

**Office of the Clerk/Treasurer**

W240N3065 Pewaukee Road  
Pewaukee, WI 53072  
(262) 691-0770 Fax 691-1798

**REVISED**

**COMMON COUNCIL  
MEETING NOTICE AND AGENDA**

**Monday, August 3, 2020**

**7:00 PM**

Common Council Chambers ~ Pewaukee City Hall  
W240 N3065 Pewaukee Road ~ Pewaukee, Wisconsin

- 
1. Call to Order and Pledge of Allegiance
  2. Public Comment - Please limit your comments to two (2) minutes, if further time for discussion is needed please contact your District Alderperson prior to the meeting.
  3. Consent Agenda
    - 3.1. Approval of the Common Council Listing Dated July 20, 2020
    - 3.2. Approval of the Accounts Payable Listing Dated August 3, 2020
  4. Second Quarter Police Services Update [Moonen]
  5. **PUBLIC HEARING**, Discussion and Possible Action Regarding the Conditional Use Permit for the Property Located at W226 N2940 Duplainville Road (PWC 0913-997-001, PWC 0914-991, PWC 0914-992-001) for the Purpose of Constructing a One-Story 25,000 Square Foot Repair Garage Building as Requested by Duplainville Land Company, LLC / John Zignego [Fuchs]
  6. Discussion and Possible Action Regarding **Ordinance 20-07** to Rezone the Property Located at W226 N2940 Duplainville Road (PWC 0931-997-001 PWC 0914-992-001 & PWC 0914-991) From M-1 General Wholesale Business To M-2 Limited Industrial and From M-2 Limited Industrial to LC Lowland Conservancy as Requested by Duplainville Land Company, LLC / John Zignego [Fuchs]
  7. Discussion and Possible Action Regarding the Certified Survey Map for the Property Located at W226 N2940 Duplainville Road (PWC 0913-997-001, PWC 0914-991, PWC 0914-992-001) for the Purpose of Combining all Parcels into One Lot as Requested by Duplainville Land Company, LLC / John Zignego [Fuchs]
  8. Discussion and Possible Action Regarding the Selection of the Busse Road Bridge Replacement Alternative [Wagner]
  9. Discussion and Possible Action to Extend Municipal Sanitary Sewer to N28 W24376 Watertown Road (PWC 0921-994) and Surrounding Properties [Wagner / Mueller]
  10. Discussion and Possible Action Regarding the Adoption of a New Water Rate in Accordance with the Public Service Commission (PSC) Approval [Wagner / Mueller]
  11. Presentation, Discussion and Possible Action Regarding the Updated Intersection Study for the

Lindsay & Redford Intersection and Intermunicipal Agreement with Waukesha County Regarding the Intersection Improvements and Associated Costs [Wagner]

12. Discussion Regarding Governor Evers Emergency Order #1 Relating to Preventing the Spread of COVID-19 by Requiring Face Coverings in Certain Situations - NO ACTION WILL BE TAKEN [Mayor Bierce]
13. Discussion and Possible Action to Set the 2021 Budget Schedule [Klein]
14. Discussion and Possible Action to Set the 2020 Trick or Treat Date and Time [Mayor Bierce]
15. Public Comment - Please limit your comments to two (2) minutes, if further time for discussion is needed please contact your district Alderperson prior to the meeting.
16. Adjournment

Kelly Tarczewski  
Clerk/Treasurer

July 31, 2020

**NOTICE**

This in-person meeting will have the option to attend virtually or by phone due to the Governor's Emergency Safer At Home order due to the COVID-19 virus.

To attend this meeting virtually or by phone please stop by Pewaukee City Hall or contact Kelly Tarczewski, City Clerk, 262-691-0770, [tarczewski@pewaukee.wi.us](mailto:tarczewski@pewaukee.wi.us) **before 3 P.M. on the date of the meeting** for directions. Meeting materials are available at <https://pewaukee.novusagenda.com/AgendaPublic/>.

It is possible that members of other governmental bodies of the municipality may be in attendance to gather information that may form a quorum. At the above stated meeting, no action will be taken by any governmental body other than the governmental body specifically referred to above in this notice.

Any person who has a qualifying disability under the Americans with Disabilities Act that requires the meeting or materials at the meeting to be in an accessible format must contact the Clerk/Treasurer, Kelly Tarczewski, at (262) 691-0770 three business days prior to the meeting so that arrangements may be made to accommodate your request.



**CITY OF PEWAUKEE  
COMMON COUNCIL AGENDA ITEM 3.1.**

**DATE:** August 3, 2020

**DEPARTMENT:** Clerk/Treasurer

**PROVIDED BY:**

***SUBJECT:***

Approval of the Common Council Listing Dated July 20, 2020

***BACKGROUND:***

***FINANCIAL IMPACT:***

***RECOMMENDED MOTION:***

**ATTACHMENTS:**

Description

7-20-2020 A/P

| INVOICE<br>NUMBER             | DESCRIPTION                     | AMOUNT    |
|-------------------------------|---------------------------------|-----------|
| VENDOR NAME: 10-33 VEHICLE S  |                                 |           |
| 1604                          | P&R WHELEN ION T-SERIES         | 1,201.20  |
| 1603                          | HWY WHELEN ION T-SERIES         | 1,201.20  |
| TOTAL VENDOR 10-33 VEHICLE S  |                                 | 2,402.40  |
| VENDOR NAME: 1ST AYD          |                                 |           |
| PSI362443                     | FD CLEANER AND TOWELS           | 497.14    |
| PSI364879                     | P&R DISINFECTANT                | 330.88    |
| TOTAL VENDOR 1ST AYD          |                                 | 828.02    |
| VENDOR NAME: ADP SCREENING &  |                                 |           |
| 2175034-05-2020               | HR EXAMS                        | 2,645.87  |
| 2175034-06-2020               | P&R EXAMS                       | 368.56    |
| TOTAL VENDOR ADP SCREENING &  |                                 | 3,014.43  |
| VENDOR NAME: ADP, LLC         |                                 |           |
| 559189996                     | HR WORKFORCE NOW                | 1,148.40  |
| 559189865                     | PPD ENDING 6/13/20              | 504.39    |
| 558379700                     | PAYROLL FEES                    | 401.34    |
| 558380303                     | HR WORKFORCE NOW                | 365.00    |
| TOTAL VENDOR ADP, LLC         |                                 | 2,419.13  |
| VENDOR NAME: ADVANCED DISPOS  |                                 |           |
| C10001974486                  | HWY RECYCLE                     | 3,287.61  |
| C10001979686                  | HWY RECYCLE                     | 8,227.80  |
| TOTAL VENDOR ADVANCED DISPOS  |                                 | 11,515.41 |
| VENDOR NAME: AECOM            |                                 |           |
| 2000364095                    | ENG SWM MANAGEMENT PLAN REVIEW  | 1,884.58  |
| 2000364781                    | ENG EMERALD LANE FLOOD ANALYSIS | 22,484.96 |
| TOTAL VENDOR AECOM            |                                 | 24,369.54 |
| VENDOR NAME: AILCO EQUIPMENT  |                                 |           |
| 210330MG                      | IT JUNE SCANNER CONTRACT        | 412.00    |
| TOTAL VENDOR AILCO EQUIPMENT  |                                 | 412.00    |
| VENDOR NAME: AIR ONE EQUIPME  |                                 |           |
| 156537                        | FD THREE TIER MOBILE HOSE CART  | 1,855.00  |
| 157812                        | COVID MASKS                     | 1,736.00  |
| 157235                        | COVID RESPIRATORS AND MASKS     | 437.60    |
| TOTAL VENDOR AIR ONE EQUIPME  |                                 | 4,028.60  |
| VENDOR NAME: AIRGAS           |                                 |           |
| 9101512843                    | FD OXYGEN                       | 87.12     |
| 9970812505                    | FD OXYGEN                       | 83.13     |
| 9970812506                    | FD OXYGEN                       | 203.54    |
| TOTAL VENDOR AIRGAS           |                                 | 373.79    |
| VENDOR NAME: ALADTEC, INC     |                                 |           |
| 2020-1357                     | IT WORKFORCE MANAGEMENT SYSTEM  | 3,662.00  |
| TOTAL VENDOR ALADTEC, INC     |                                 | 3,662.00  |
| VENDOR NAME: ALEXA STUEBER    |                                 |           |
| STUEBER                       | P&R CLASS REFUND                | 300.00    |
| TOTAL VENDOR ALEXA STUEBER    |                                 | 300.00    |
| VENDOR NAME: ALI & HAMMAD LLC |                                 |           |
| 38747                         | FD SHIPPING                     | 11.03     |
| 38833                         | FD SHIPPING                     | 32.16     |
| TOTAL VENDOR ALI & HAMMAD LLC |                                 | 43.19     |
| VENDOR NAME: ALL CITY COMMUN  |                                 |           |
| 4699519-070120                | SW ANSWERING SERVICE            | 115.50    |
| TOTAL VENDOR ALL CITY COMMUN  |                                 | 115.50    |
| VENDOR NAME: ALL-WAYS CONTRA  |                                 |           |
| 45604                         | SWM TOPSOIL                     | 159.50    |
| 45611                         | TOPSOIL                         | 72.50     |

| INVOICE<br>NUMBER            | DESCRIPTION                           | AMOUNT   |
|------------------------------|---------------------------------------|----------|
| VENDOR NAME: ALL-WAYS CONTRA |                                       |          |
| 45330                        | HWY TOPSOIL                           | 40.00    |
| 45475                        | SW TOPSOIL                            | 43.50    |
| 45219                        | SWM TOPSOIL                           | 101.50   |
| 45218                        | P&R TOPSOIL                           | 43.50    |
| TOTAL VENDOR ALL-WAYS CONTRA |                                       | 460.50   |
| VENDOR NAME: AMERICAN LITHO  |                                       |          |
| 256170-01                    | SW CITY NEWSLETTER                    | 2,016.00 |
| TOTAL VENDOR AMERICAN LITHO  |                                       | 2,016.00 |
| VENDOR NAME: AMERICAN STATE  |                                       |          |
| W12867                       | SWM CHECK HYDRAULIC LEAK              | 80.64    |
| P70896                       | SWM PRESSURE LINE AND TUBE ASSY       | 41.64    |
| P70884                       | SWM TUBE ASSY                         | 88.89    |
| TOTAL VENDOR AMERICAN STATE  |                                       | 211.17   |
| VENDOR NAME: ANDERSON, BRIAN |                                       |          |
| ANDERSON 06042020            | HWY 2020 TOOLS                        | 253.68   |
| TOTAL VENDOR ANDERSON, BRIAN |                                       | 253.68   |
| VENDOR NAME: ANNE KAHL       |                                       |          |
| KAHL                         | P&R SOFTBALL REFUND                   | 67.00    |
| TOTAL VENDOR ANNE KAHL       |                                       | 67.00    |
| VENDOR NAME: ANTHONY LYONS   |                                       |          |
| LYONS                        | P&R PARK RENTAL REFUND                | 358.36   |
| TOTAL VENDOR ANTHONY LYONS   |                                       | 358.36   |
| VENDOR NAME: ARAMARK         |                                       |          |
| 001641020065                 | HWY UNIFORMS                          | 72.72    |
| 1641073742                   | HWY UNIFORMS                          | 80.72    |
| 1641069124                   | HWY UNIFORMS                          | 76.97    |
| 1641078344                   | HWY UNIFORMS                          | 77.72    |
| 1641083007                   | HWY UNIFORMS                          | 74.72    |
| 1641087695                   | HWY UNIFORMS                          | 72.72    |
| 1641060619                   | HWY UNIFORMS                          | 72.72    |
| 1641064822                   | HWY UNIFORMS                          | 72.72    |
| TOTAL VENDOR ARAMARK         |                                       | 601.01   |
| VENDOR NAME: ARO LOCK & DOOR |                                       |          |
| 26923                        | IT LEVERS AND LOCKS                   | 448.00   |
| TOTAL VENDOR ARO LOCK & DOOR |                                       | 448.00   |
| VENDOR NAME: ASPEN HOMES     |                                       |          |
| ERSN BND RFND 1900           | BLD EROSION BOND REFUND PERMIT 190024 | 2,000.00 |
| OCC RFND 191340              | BLD OCCUPANCY BOND REFUND 191340      | 500.00   |
| TOTAL VENDOR ASPEN HOMES     |                                       | 2,500.00 |
| VENDOR NAME: ASPEN RIDGE     |                                       |          |
| 06252020                     | HWY REMOVE TREE AND GRIND STUMP       | 3,520.00 |
| TOTAL VENDOR ASPEN RIDGE     |                                       | 3,520.00 |
| VENDOR NAME: ASSESSMENTS USA |                                       |          |
| 220025                       | HR EXAMS                              | 239.00   |
| 220027                       | HR EXAMS                              | 239.00   |
| TOTAL VENDOR ASSESSMENTS USA |                                       | 478.00   |
| VENDOR NAME: AT&T CAROL STRE |                                       |          |
| 262691606806                 | CT TELEPHONE                          | 2,089.29 |
| TOTAL VENDOR AT&T CAROL STRE |                                       | 2,089.29 |
| VENDOR NAME: AT&T MOBILITY   |                                       |          |
| 287297104130X07012           | FD AIR CARD                           | 95.23    |
| 287297104130X06012           | FD AIR CARDS                          | 125.59   |
| TOTAL VENDOR AT&T MOBILITY   |                                       | 220.82   |
| VENDOR NAME: AUTO ZONE       |                                       |          |

| INVOICE<br>NUMBER               | DESCRIPTION                          | AMOUNT    |
|---------------------------------|--------------------------------------|-----------|
| VENDOR NAME: AUTO ZONE          |                                      |           |
| 4338375774                      | FD 12V ALARM                         | 32.37     |
| 4338378687                      | FD DORMAN RING TERMINAL ASSORTMENT   | 42.00     |
| TOTAL VENDOR AUTO ZONE          |                                      | 74.37     |
| VENDOR NAME: BADGER REMEDIATION |                                      |           |
| SI-10273                        | COVID CLEANING SERVICE               | 3,327.75  |
| TOTAL VENDOR BADGER REMEDIATION |                                      | 3,327.75  |
| VENDOR NAME: BAKER TILLY VIR    |                                      |           |
| BT1623945                       | SW FINANCIAL AUDIT                   | 32,600.00 |
| BT1555552                       | SW AUDIT SERVICES                    | 12,500.00 |
| BT16396687                      | SW PSC RATE HEARING                  | 6,000.00  |
| TOTAL VENDOR BAKER TILLY VIR    |                                      | 51,100.00 |
| VENDOR NAME: BARB VALERINE      |                                      |           |
| VALERINE                        | P&R CLASS REFUND                     | 32.00     |
| VALERINE                        | P&R CLASS REFUND                     | 16.00     |
| TOTAL VENDOR BARB VALERINE      |                                      | 48.00     |
| VENDOR NAME: BATTERIES PLUS     |                                      |           |
| P27339483                       | SW 12 V LEAD BATTERY                 | 18.95     |
| TOTAL VENDOR BATTERIES PLUS     |                                      | 18.95     |
| VENDOR NAME: BATTERY SYSTEMS    |                                      |           |
| 5615011                         | HWY BATTERIES                        | 64.82     |
| TOTAL VENDOR BATTERY SYSTEMS    |                                      | 64.82     |
| VENDOR NAME: BATZNER PEST CO    |                                      |           |
| 2920853                         | P&R PEST CONTROL                     | 60.00     |
| 2920841                         | P&R PEST CONTROL                     | 65.00     |
| TOTAL VENDOR BATZNER PEST CO    |                                      | 125.00    |
| VENDOR NAME: BEACON ATHLETIC    |                                      |           |
| 0518349-IN                      | P&R BASEBALL DIAMOND SUPPLIES        | 372.00    |
| TOTAL VENDOR BEACON ATHLETIC    |                                      | 372.00    |
| VENDOR NAME: BECKY KATKA        |                                      |           |
| KATKA                           | P&R PARK RENTAL REFUND               | 85.10     |
| TOTAL VENDOR BECKY KATKA        |                                      | 85.10     |
| VENDOR NAME: BETH ANN BRESTER   |                                      |           |
| BRESTER                         | P&R RENTAL REFUND                    | 395.15    |
| TOTAL VENDOR BETH ANN BRESTER   |                                      | 395.15    |
| VENDOR NAME: BIELINSKI HOMES    |                                      |           |
| ERSN RFND 181086                | BLD EROSION BOND REFUND 181086       | 2,000.00  |
| 181528 REFUND                   | BLD EROSION BOND REFUND 181528       | 2,000.00  |
| 180054 REFUND                   | BLD EROSION BOND REFUND 180054       | 2,000.00  |
| 171393                          | BLD EROSION BOND REFUND 171393       | 2,000.00  |
| 171011                          | BLD EROSION BOND REFUND 171011       | 2,000.00  |
| 170987                          | BLD EROSION BOND REFUND 170987       | 2,000.00  |
| 181619                          | BLD EROSION BOND REFUND 181619       | 2,000.00  |
| TOTAL VENDOR BIELINSKI HOMES    |                                      | 14,000.00 |
| VENDOR NAME: BILL KUCHARSKI     |                                      |           |
| KUCHARSKI                       | P&R PARK RENTAL REFUND               | 85.10     |
| TOTAL VENDOR BILL KUCHARSKI     |                                      | 85.10     |
| VENDOR NAME: BILL METZGER       |                                      |           |
| 061220 BOOTS                    | HWY BOOT REIMBURSEMENT               | 80.16     |
| TOTAL VENDOR BILL METZGER       |                                      | 80.16     |
| VENDOR NAME: BOB'S GLASS SER    |                                      |           |
| W079928                         | P&R INSULATING UNIT WITH CLEAR GLASS | 378.00    |
| TOTAL VENDOR BOB'S GLASS SER    |                                      | 378.00    |

| INVOICE<br>NUMBER                           | DESCRIPTION                                | AMOUNT     |
|---------------------------------------------|--------------------------------------------|------------|
| VENDOR NAME: BOUCHER CADILLA                |                                            |            |
| 99145                                       | P&R FUEL FILTER                            | 298.77     |
| TOTAL VENDOR BOUCHER CADILLA                |                                            | 298.77     |
| VENDOR NAME: BOUNDTREE MEDIC                |                                            |            |
| 83645828                                    | FD INFRA-RED EAR THERMOMETERS              | 218.70     |
| 83681327                                    | COVID THERMOMETER                          | 395.94     |
| TOTAL VENDOR BOUNDTREE MEDIC                |                                            | 614.64     |
| VENDOR NAME: BRADLEY GOSA                   |                                            |            |
| GOSA                                        | P&R SOFTBALL REFUND                        | 89.00      |
| TOTAL VENDOR BRADLEY GOSA                   |                                            | 89.00      |
| VENDOR NAME: BREDAN MECHANIC                |                                            |            |
| 65811                                       | IT SUPPLY DUCT RE-ROUTE                    | 472.68     |
| 65817                                       | IT SHERIFF'S OFFICE COOLING                | 402.50     |
| TOTAL VENDOR BREDAN MECHANIC                |                                            | 875.18     |
| VENDOR NAME: BRENDA MEGANCK                 |                                            |            |
| MEGANCK                                     | P&R SOFTBALL REFUND                        | 89.00      |
| TOTAL VENDOR BRENDA MEGANCK                 |                                            | 89.00      |
| VENDOR NAME: BRITTANY KIRBY                 |                                            |            |
| KIRBY                                       | P&R SPARK REFUND                           | 335.00     |
| TOTAL VENDOR BRITTANY KIRBY                 |                                            | 335.00     |
| VENDOR NAME: BROOKFIELD, CIT                |                                            |            |
| 20200457                                    | SW PROJECT WW191 PHOSPHORUS REDUCTION      | 118,764.67 |
| TOTAL VENDOR BROOKFIELD, CIT                |                                            | 118,764.67 |
| VENDOR NAME: BROOKFIELD, TOW                |                                            |            |
| 07102020                                    | SW SEWER                                   | 1,213.50   |
| TOTAL VENDOR BROOKFIELD, TOW                |                                            | 1,213.50   |
| VENDOR NAME: BROWN, SETH                    |                                            |            |
| 07022020                                    | SW SAFETY BOOT REIMBURSEMENT               | 125.00     |
| TOTAL VENDOR BROWN, SETH                    |                                            | 125.00     |
| VENDOR NAME: BRYCE FIGUEROA                 |                                            |            |
| MAY MILEAGE                                 | ASR MILEAGE                                | 25.30      |
| JUNE MILEAGE                                | ASR MILEAGE                                | 413.43     |
| TOTAL VENDOR BRYCE FIGUEROA                 |                                            | 438.73     |
| VENDOR NAME: BUMPER TO BUMPE                |                                            |            |
| 617-242562                                  | SW ROTOR AND PADS                          | 232.27     |
| 617-242228                                  | HWY ROTORS AND PADS                        | 151.87     |
| 617-241690                                  | HWY BATTERY                                | 273.98     |
| 617-241038                                  | P&R AIR FILTER AND OIL                     | 122.75     |
| 617-239693                                  | HWY BATTERY AND PLUG                       | 96.61      |
| TOTAL VENDOR BUMPER TO BUMPE                |                                            | 877.48     |
| VENDOR NAME: CATHRYN GRUBER AND ERIC ROGERS |                                            |            |
| GRUBER                                      | P&R CLASS REFUND                           | 270.00     |
| TOTAL VENDOR CATHRYN GRUBER AND ERIC ROGERS |                                            | 270.00     |
| VENDOR NAME: CENTER FOR PUBL                |                                            |            |
| 05-14908                                    | FD ANNUAL ACCREDITATION FEE                | 1,270.00   |
| TOTAL VENDOR CENTER FOR PUBL                |                                            | 1,270.00   |
| VENDOR NAME: CHA CONSULTING                 |                                            |            |
| 59537-2                                     | ENG EMERALD ACRES FLOOD MITIGATION PROJECT | 3,250.00   |
| TOTAL VENDOR CHA CONSULTING                 |                                            | 3,250.00   |
| VENDOR NAME: CHELCIE SCHNEIDER              |                                            |            |
| SCHNEIDER                                   | P&R CLASS REFUND                           | 70.00      |

| INVOICE<br>NUMBER               | DESCRIPTION                                             | AMOUNT   |
|---------------------------------|---------------------------------------------------------|----------|
| VENDOR NAME: CHELCIE SCHNEIDER  |                                                         |          |
|                                 | TOTAL VENDOR CHELCIE SCHNEIDER                          | 70.00    |
| VENDOR NAME: CHRIS SCHROEDER    |                                                         |          |
| SCHROEDER                       | P&R CLASS REFUND                                        | 90.00    |
|                                 | TOTAL VENDOR CHRIS SCHROEDER                            | 90.00    |
| VENDOR NAME: CHUCK ERICKSON     |                                                         |          |
| ERICKSON                        | REFUND PONTOON BOAT TOUR                                | 30.00    |
|                                 | TOTAL VENDOR CHUCK ERICKSON                             | 30.00    |
| VENDOR NAME: CINTAS CORP.       |                                                         |          |
| 4050672532                      | FD MATS                                                 | 129.41   |
| 4052518238                      | FD GRAY MAT                                             | 61.14    |
| 5017436599                      | MEDICINE CABINET REFILL                                 | 135.92   |
| 4053768168                      | MATS                                                    | 59.88    |
| 5017436598                      | HWY FIRST AID SUPPLIES                                  | 138.06   |
| 4055017645                      | FD MATS                                                 | 61.14    |
|                                 | TOTAL VENDOR CINTAS CORP.                               | 585.55   |
| VENDOR NAME: CINTAS CORPORATION |                                                         |          |
| 5017135417                      | HWY FIRST AID SUPPLIES                                  | 67.75    |
|                                 | TOTAL VENDOR CINTAS CORPORATION                         | 67.75    |
| VENDOR NAME: CLIA LABORATORY    |                                                         |          |
| 060920                          | FD CERTIFICATE FEE                                      | 180.00   |
|                                 | TOTAL VENDOR CLIA LABORATORY                            | 180.00   |
| VENDOR NAME: CLUB PARAGON       |                                                         |          |
| CLUB PARAGON                    | P&R PROGRAM REFUND                                      | 295.00   |
|                                 | TOTAL VENDOR CLUB PARAGON                               | 295.00   |
| VENDOR NAME: CON-COR            |                                                         |          |
| 107650                          | HWY OIL FILTER, SPARKS PLUG, AIR<br>CLEANER             | 127.36   |
|                                 | TOTAL VENDOR CON-COR                                    | 127.36   |
| VENDOR NAME: CONNIE BRUNER      |                                                         |          |
| BRUNER                          | P&R SOFTBALL REFUND                                     | 67.00    |
|                                 | TOTAL VENDOR CONNIE BRUNER                              | 67.00    |
| VENDOR NAME: CORE & MAIN LP     |                                                         |          |
| M513176                         | SW WASHERS, GASKETS, O-RINGS                            | 886.93   |
| M529737                         | SW HYD EXT                                              | 641.00   |
| M574325                         | SW LOWER ROD, WAT BREAK CPLG HALF,<br>CONVERSION FLANGE | 1,293.70 |
|                                 | TOTAL VENDOR CORE & MAIN LP                             | 2,821.63 |
| VENDOR NAME: COREY OIL          |                                                         |          |
| 337264                          | HWY FUEL                                                | 1,017.81 |
| 337237                          | HWY DIESEL                                              | 1,102.98 |
| 337265                          | HWY DIESEL                                              | 927.50   |
| 337146                          | HWY FUEL                                                | 825.70   |
| 337147                          | HWY FUEL                                                | 1,262.24 |
| 337057                          | HWY GASOLINE                                            | 1,373.50 |
| 337056                          | HWY FUEL                                                | 1,276.00 |
|                                 | TOTAL VENDOR COREY OIL                                  | 7,785.73 |
| VENDOR NAME: COUNTY WIDE EXT    |                                                         |          |
| 19441                           | FD FIRE EXTINGUISHER INSPECTION                         | 306.88   |
| 19442                           | FD ANNUAL FIRE EXTINGUISHER INSPECTION                  | 607.26   |
|                                 | TOTAL VENDOR COUNTY WIDE EXT                            | 914.14   |
| VENDOR NAME: CUMMINS SALES &    |                                                         |          |
| F6-53680                        | SW WELL #6 SERVICE                                      | 642.76   |
|                                 | TOTAL VENDOR CUMMINS SALES &                            | 642.76   |
| VENDOR NAME: DAN PLAUTZ CLEA    |                                                         |          |

| INVOICE<br>NUMBER             | DESCRIPTION                                      | AMOUNT   |
|-------------------------------|--------------------------------------------------|----------|
| VENDOR NAME: DAN PLAUTZ CLEA  |                                                  |          |
| 4902                          | HR CLEANING                                      | 2,790.00 |
| TOTAL VENDOR DAN PLAUTZ CLEA  |                                                  | 2,790.00 |
| VENDOR NAME: DANIEL LUHRING   |                                                  |          |
| 806188                        | HWY GRIND OUT 8 TREE STUMPS ON ROCKY<br>POINT RD | 420.00   |
| TOTAL VENDOR DANIEL LUHRING   |                                                  | 420.00   |
| VENDOR NAME: DEBBIE SCHREINDL |                                                  |          |
| SCHREINDL                     | P&R CLASS REFUND                                 | 50.00    |
| SCHREINDL                     | P&R CLASS REFUND                                 | 32.00    |
| TOTAL VENDOR DEBBIE SCHREINDL |                                                  | 82.00    |
| VENDOR NAME: DELTA DENTAL     |                                                  |          |
| 06/24/2020                    | DENTAL CLAIMS                                    | 2,115.70 |
| 6/17/20                       | 6/17/20                                          | 1,523.80 |
| 7/1/20                        | DENTAL CLAIMS                                    | 832.60   |
| TOTAL VENDOR DELTA DENTAL     |                                                  | 4,472.10 |
| VENDOR NAME: DENA LAUFENBERG  |                                                  |          |
| LAUFENBERG                    | P&R REFUND                                       | 8.00     |
| TOTAL VENDOR DENA LAUFENBERG  |                                                  | 8.00     |
| VENDOR NAME: DEPT OF WORKFOR  |                                                  |          |
| MAY 2020                      | CT UNEMPLOYMENT                                  | 2,002.67 |
| JUNE 2020                     | CT UNEMPLOYMENT                                  | 729.24   |
| TOTAL VENDOR DEPT OF WORKFOR  |                                                  | 2,731.91 |
| VENDOR NAME: DIVERSIFIED BEN  |                                                  |          |
| FLEX 6-19-20                  | FLEX 6-19-20                                     | 370.47   |
| 307064                        | CT JUNE 2020 FSA                                 | 198.00   |
| FLEX 6-12-20                  | FLEX 6-12-20                                     | 161.87   |
| 07/03/20                      | FLEX 7/3/20                                      | 2,971.89 |
| 6/26/20                       | FLEX                                             | 928.29   |
| TOTAL VENDOR DIVERSIFIED BEN  |                                                  | 4,630.52 |
| VENDOR NAME: DTAK, LLC        |                                                  |          |
| 42547                         | P&R YARDS OF WOOD FIBER                          | 3,010.00 |
| TOTAL VENDOR DTAK, LLC        |                                                  | 3,010.00 |
| VENDOR NAME: DWYER, CHARLIE   |                                                  |          |
| MAY MILEAGE                   | BLD MILEAGE REIMBURSEMENT                        | 93.15    |
| MARCH MILEAGE                 | BLD MARCH MILEAGE REIMBURSEMENT                  | 113.85   |
| TOTAL VENDOR DWYER, CHARLIE   |                                                  | 207.00   |
| VENDOR NAME: EAGLE ENGRAVING  |                                                  |          |
| 2020-2400                     | FD ENGRAVING                                     | 155.70   |
| TOTAL VENDOR EAGLE ENGRAVING  |                                                  | 155.70   |
| VENDOR NAME: ELEVITY          |                                                  |          |
| 159                           | IT EMAIL MONITORING AND MIMICAST                 | 2,722.50 |
| TOTAL VENDOR ELEVITY          |                                                  | 2,722.50 |
| VENDOR NAME: ELISE DIERINGER  |                                                  |          |
| DIERINGER                     | P&R SOFTBALL REFUND                              | 134.00   |
| TOTAL VENDOR ELISE DIERINGER  |                                                  | 134.00   |
| VENDOR NAME: ELLIOTT ACE HAR  |                                                  |          |
| 825651                        | FD CLEAR BAGS                                    | 25.98    |
| 826027                        | HWY RAKE AND ORGNZR                              | 51.98    |
| 826348                        | SW ROLLERS                                       | 7.99     |
| 826987                        | SW HORNET KILLER                                 | 22.95    |
| 826799                        | SW QUICK CONNECTOR                               | 46.58    |
| 826503                        | HWY BULBS                                        | 21.97    |
| TOTAL VENDOR ELLIOTT ACE HAR  |                                                  | 177.45   |
| VENDOR NAME: EMERGENCY LIGHT  |                                                  |          |

| INVOICE<br>NUMBER            | DESCRIPTION                                                    | AMOUNT    |
|------------------------------|----------------------------------------------------------------|-----------|
| VENDOR NAME: EMERGENCY LIGHT |                                                                |           |
| 200159                       | FD SIREN REPAIR                                                | 702.50    |
| 200172                       | FD EJECT SPRING KIT                                            | 15.75     |
| TOTAL VENDOR EMERGENCY LIGHT |                                                                | 718.25    |
| VENDOR NAME: EMILY GRABOWSKI |                                                                |           |
| GRABOWSKI                    | P&R SOFTBALL REFUND                                            | 67.00     |
| TOTAL VENDOR EMILY GRABOWSKI |                                                                | 67.00     |
| VENDOR NAME: ERIN JEFFREY    |                                                                |           |
| JEFFREY                      | P&R SOFTBALL REFUND                                            | 67.00     |
| TOTAL VENDOR ERIN JEFFREY    |                                                                | 67.00     |
| VENDOR NAME: FARINA TREE CAR |                                                                |           |
| 30488                        | P&R LAKE FRONT PARK AND BUILDING INSECT CONTROLS               | 390.00    |
| TOTAL VENDOR FARINA TREE CAR |                                                                | 390.00    |
| VENDOR NAME: FASTSPRING      |                                                                |           |
| DIG200529-3973-569           | FD FIRE STUDIO 6 INSTRUCTOR & PLAYER EDITION, LIVE INSTRUCTION | 3,500.00  |
| TOTAL VENDOR FASTSPRING      |                                                                | 3,500.00  |
| VENDOR NAME: FERGUSON WATERW |                                                                |           |
| 0303443                      | SW REP LID W/ PLUG                                             | 202.50    |
| 0305583                      | SW HYD PAINTING                                                | 10,200.00 |
| TOTAL VENDOR FERGUSON WATERW |                                                                | 10,402.50 |
| VENDOR NAME: FIRE SERVICE IN |                                                                |           |
| 19359                        | FD HEADLINER CLIP                                              | 50.52     |
| TOTAL VENDOR FIRE SERVICE IN |                                                                | 50.52     |
| VENDOR NAME: FORCE AMERICA,  |                                                                |           |
| 001-1443463                  | HWY ROAD TEMP SENSOR #12                                       | 791.37    |
| TOTAL VENDOR FORCE AMERICA,  |                                                                | 791.37    |
| VENDOR NAME: FREDRICK, RICHA |                                                                |           |
| 06132020                     | HWY SAFETY TOE SHOES                                           | 125.00    |
| TOTAL VENDOR FREDRICK, RICHA |                                                                | 125.00    |
| VENDOR NAME: FROEDTERT/WORKF |                                                                |           |
| 00006681-00                  | HR WELLNESS                                                    | 357.50    |
| TOTAL VENDOR FROEDTERT/WORKF |                                                                | 357.50    |
| VENDOR NAME: GAGE-IT, INC    |                                                                |           |
| C106464                      | FD PRESSURE GAUGE                                              | 64.56     |
| TOTAL VENDOR GAGE-IT, INC    |                                                                | 64.56     |
| VENDOR NAME: GALLS           |                                                                |           |
| 015687746                    | FD CLOTHING                                                    | 291.41    |
| 015603265                    | FD BADGES                                                      | 186.90    |
| 015603231                    | FD BUGLES PIN                                                  | 13.96     |
| 015764552                    | FD CLOTHING AND EMBLEM                                         | 68.48     |
| TOTAL VENDOR GALLS           |                                                                | 560.75    |
| VENDOR NAME: GEIGER, INC     |                                                                |           |
| 304005                       | FD WALL HOLDER AND PLASTIC LASERED PLATE                       | 43.20     |
| TOTAL VENDOR GEIGER, INC     |                                                                | 43.20     |
| VENDOR NAME: GEIS, DAVE      |                                                                |           |
| GEIS 06252020                | ENG BOOT REIMBURSEMENT                                         | 125.00    |
| TOTAL VENDOR GEIS, DAVE      |                                                                | 125.00    |
| VENDOR NAME: GENERAL PARTS   |                                                                |           |



| INVOICE<br>NUMBER                     | DESCRIPTION                                     | AMOUNT   |
|---------------------------------------|-------------------------------------------------|----------|
| VENDOR NAME: GENERAL PARTS            |                                                 |          |
| 6167397                               | FD THERMOCOUPLE 18 OVEN, PILOT-NAT,<br>SUPPLIES | 572.52   |
| TOTAL VENDOR GENERAL PARTS            |                                                 | 572.52   |
| VENDOR NAME: GEORGE STREITER          |                                                 |          |
| STREITER                              | P&R PARK RENTAL REFUND                          | 127.14   |
| TOTAL VENDOR GEORGE STREITER          |                                                 | 127.14   |
| VENDOR NAME: GINNY LOCKMAN            |                                                 |          |
| LOCKMAN                               | P&R CLASS REFUND                                | 16.00    |
| LOCKMAN                               | P&R CLASS REFUND                                | 25.00    |
| TOTAL VENDOR GINNY LOCKMAN            |                                                 | 41.00    |
| VENDOR NAME: GRAINGER                 |                                                 |          |
| 9548608190                            | ENG STENCIL DRAWING TEMPLATE ASSORTED           | 14.18    |
| TOTAL VENDOR GRAINGER                 |                                                 | 14.18    |
| VENDOR NAME: GRANICUS                 |                                                 |          |
| 123858                                | IT NOVUS AGENDA, NOVUS VIDEO, VOTING            | 9,850.00 |
| TOTAL VENDOR GRANICUS                 |                                                 | 9,850.00 |
| VENDOR NAME: GRENZ SERVICE C          |                                                 |          |
| I-6280-1                              | FD DIAGNOSTIC CHARGE                            | 207.50   |
| TOTAL VENDOR GRENZ SERVICE C          |                                                 | 207.50   |
| VENDOR NAME: HACH COMPANY             |                                                 |          |
| 11989690                              | SW WELL 1 WATER TESTING                         | 287.79   |
| TOTAL VENDOR HACH COMPANY             |                                                 | 287.79   |
| VENDOR NAME: HAILEY KISER             |                                                 |          |
| KISER                                 | P&R BOOT SHOE REIMBURSEMENT                     | 73.49    |
| TOTAL VENDOR HAILEY KISER             |                                                 | 73.49    |
| VENDOR NAME: HALQUIST STONE           |                                                 |          |
| 5436129-IN                            | SWM RIP RAP                                     | 208.80   |
| 5432554-IN                            | SWM RIP RAP                                     | 254.16   |
| TOTAL VENDOR HALQUIST STONE           |                                                 | 462.96   |
| VENDOR NAME: HARTLAND OVERHE          |                                                 |          |
| 93861                                 | FD OIL & LUBE OF DOORS                          | 195.00   |
| TOTAL VENDOR HARTLAND OVERHE          |                                                 | 195.00   |
| VENDOR NAME: HAWKINS, INC.            |                                                 |          |
| 4729847                               | SW CHEMICALS                                    | 4,226.83 |
| 4739939                               | SW CHEMICALS                                    | 4,428.32 |
| TOTAL VENDOR HAWKINS, INC.            |                                                 | 8,655.15 |
| VENDOR NAME: HEARTLAND BUSIN          |                                                 |          |
| 381656-H                              | IT NON SERVER MONITORING                        | 184.00   |
| TOTAL VENDOR HEARTLAND BUSIN          |                                                 | 184.00   |
| VENDOR NAME: HEPPE, ANDREW            |                                                 |          |
| 05282020                              | HWY SAFETY SHOE REIMBURSEMENT                   | 118.16   |
| TOTAL VENDOR HEPPE, ANDREW            |                                                 | 118.16   |
| VENDOR NAME: HIGH VOLTAGE MAINTENANCE |                                                 |          |
| 51045201                              | SW TROUBLESHOOTING WELL #6                      | 1,072.50 |
| 51045207                              | SW INSPECTION AND TESTING WELL #6               | 1,320.00 |
| TOTAL VENDOR HIGH VOLTAGE MAINTENANCE |                                                 | 2,392.50 |
| VENDOR NAME: HILARY PROKOP            |                                                 |          |
| PROKOP                                | P&R SOFTBALL REFUND                             | 89.00    |
| TOTAL VENDOR HILARY PROKOP            |                                                 | 89.00    |
| VENDOR NAME: HIREN PANSHERIYA         |                                                 |          |

| INVOICE<br>NUMBER             | DESCRIPTION                         | AMOUNT    |
|-------------------------------|-------------------------------------|-----------|
| <hr/>                         |                                     |           |
| VENDOR NAME: HIREN PANSHERIYA |                                     |           |
| PANSHERIYA                    | P&R PARK RENTAL REFUND              | 820.80    |
| TOTAL VENDOR HIREN PANSHERIYA |                                     | 820.80    |
| <hr/>                         |                                     |           |
| VENDOR NAME: HOMES BY TOWNE   |                                     |           |
| 181430                        | BLD EROSION BOND REFUND 181430      | 2,000.00  |
| TOTAL VENDOR HOMES BY TOWNE   |                                     | 2,000.00  |
| <hr/>                         |                                     |           |
| VENDOR NAME: HONEYWELL ANALY  |                                     |           |
| 5251732217                    | FD POSICHECK CALIBRATION            | 772.00    |
| TOTAL VENDOR HONEYWELL ANALY  |                                     | 772.00    |
| <hr/>                         |                                     |           |
| VENDOR NAME: HORNER PLUMBING  |                                     |           |
| HORNER PLUMBING               | P&R PARK RENTAL REFUND              | 463.46    |
| TOTAL VENDOR HORNER PLUMBING  |                                     | 463.46    |
| <hr/>                         |                                     |           |
| VENDOR NAME: HORWATH BUILDER  |                                     |           |
| 170210 REFUND                 | BLD EROSION BOND REFUND 170210      | 2,000.00  |
| TOTAL VENDOR HORWATH BUILDER  |                                     | 2,000.00  |
| <hr/>                         |                                     |           |
| VENDOR NAME: HUMANA           |                                     |           |
| JUNE 2020                     | JUNE 2020                           | 85,554.17 |
| TOTAL VENDOR HUMANA           |                                     | 85,554.17 |
| <hr/>                         |                                     |           |
| VENDOR NAME: HUMPHREY SERVIC  |                                     |           |
| 1211910                       | HWY FUEL AND AIR FILTERS            | 76.22     |
| 1214522                       | HWY MINI BULB                       | 76.90     |
| 1215645                       | SW OIL FILTER                       | 12.77     |
| 1214508                       | P&R OIL FILTERS                     | 14.29     |
| TOTAL VENDOR HUMPHREY SERVIC  |                                     | 180.18    |
| <hr/>                         |                                     |           |
| VENDOR NAME: HURD, AMI        |                                     |           |
| 06152020                      | CT MILEAGE REIMBURSEMENT            | 29.32     |
| TOTAL VENDOR HURD, AMI        |                                     | 29.32     |
| <hr/>                         |                                     |           |
| VENDOR NAME: HYDROCORP        |                                     |           |
| 0057843-IN                    | MCC 2 YR 09/19 -08/21               | 1,084.00  |
| TOTAL VENDOR HYDROCORP        |                                     | 1,084.00  |
| <hr/>                         |                                     |           |
| VENDOR NAME: IBM CORPORATION  |                                     |           |
| 3012457                       | IT DISTRIBUTED SOFTWARE             | 825.00    |
| TOTAL VENDOR IBM CORPORATION  |                                     | 825.00    |
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| VENDOR NAME: IS OUTFITTERS    |                                     |           |
| 11559                         | IT UPDATED PANOS ON THREE FIREWALLS | 281.25    |
| TOTAL VENDOR IS OUTFITTERS    |                                     | 281.25    |
| <hr/>                         |                                     |           |
| VENDOR NAME: J.F. AHERN COMP  |                                     |           |
| 380151                        | FD REPLACE PIPE LEAKING IN ATTIC    | 616.79    |
| TOTAL VENDOR J.F. AHERN COMP  |                                     | 616.79    |
| <hr/>                         |                                     |           |
| VENDOR NAME: JAMES OLIVA      |                                     |           |
| OLIVA                         | P&R PARK RENTAL REFUND              | 221.73    |
| TOTAL VENDOR JAMES OLIVA      |                                     | 221.73    |
| <hr/>                         |                                     |           |
| VENDOR NAME: JANET ABTS       |                                     |           |
| ABTS                          | P&R REFUND CLASSES                  | 42.00     |
| TOTAL VENDOR JANET ABTS       |                                     | 42.00     |
| <hr/>                         |                                     |           |
| VENDOR NAME: JAY RODER        |                                     |           |
| RODER                         | P&R PARK RENTAL REFUND              | 516.01    |
| TOTAL VENDOR JAY RODER        |                                     | 516.01    |
| <hr/>                         |                                     |           |
| VENDOR NAME: JEFF ROHRER      |                                     |           |
| ROHRER                        | P&R CLASS REFUND                    | 90.00     |
| <hr/>                         |                                     |           |

| INVOICE<br>NUMBER              | DESCRIPTION                      | AMOUNT    |
|--------------------------------|----------------------------------|-----------|
| VENDOR NAME: JEFF ROHRER       |                                  |           |
|                                | TOTAL VENDOR JEFF ROHRER         | 90.00     |
| VENDOR NAME: JEFFERSON FIRE    |                                  |           |
| IN119192                       | FD HONEYWELL KHAKIS              | 2,308.00  |
|                                | TOTAL VENDOR JEFFERSON FIRE      | 2,308.00  |
| VENDOR NAME: JEN CAHALAN       |                                  |           |
| CAHALAN                        | P&R FIELD TRIP REFUNDS           | 69.00     |
|                                | TOTAL VENDOR JEN CAHALAN         | 69.00     |
| VENDOR NAME: JENNIFER DUNDON   |                                  |           |
| DUNDON                         | P&R FIELD TRIPS REFUND           | 563.00    |
|                                | TOTAL VENDOR JENNIFER DUNDON     | 563.00    |
| VENDOR NAME: JENNY KEEPMAN     |                                  |           |
| KEEPMAN                        | P&R CLASS REFUND                 | 295.00    |
|                                | TOTAL VENDOR JENNY KEEPMAN       | 295.00    |
| VENDOR NAME: JENSEN EQUIPMEN   |                                  |           |
| J-667274                       | P&R TRIMMER LINE                 | 74.95     |
| J-667766                       | FD COUNTERSUNK SCREW             | 7.88      |
| J-666275                       | HWY PICCO SUPER                  | 149.77    |
| J-669448                       | SWM BLADES AND FILE 2 IN 1 GUIDE | 439.95    |
| J-669168                       | HWY PRIMER BULB                  | 3.03      |
| J-668183                       | HWY PROPANE                      | 71.68     |
| J-669276                       | HWY PICCO STAR NOSE              | 39.95     |
| J-669364                       | FD FUEL CAP                      | 39.96     |
| J-670100                       | FD CARBIDE CHAIN                 | 56.58     |
|                                | TOTAL VENDOR JENSEN EQUIPMEN     | 883.75    |
| VENDOR NAME: JERRY'S AUTOMOT   |                                  |           |
| 189872                         | FD TAHOE VEHICLE MAINTENANCE     | 152.01    |
|                                | TOTAL VENDOR JERRY'S AUTOMOT     | 152.01    |
| VENDOR NAME: JK LAWN SERVICE   |                                  |           |
| 2556                           | SW LAWN SERVICE                  | 384.00    |
| 2566                           | SW LAWN SERVICE                  | 240.00    |
| 2579                           | FD LAWN SERVICE                  | 300.30    |
| 2567                           | FD LAWN SERVICE                  | 336.00    |
| 2766                           | SW LAWN SERVICE                  | 305.00    |
| 2765                           | SW LAWN SERVICE                  | 235.00    |
| 2667                           | FD LAWN SERVICE                  | 228.00    |
| 2604                           | SW LAWN SERVICE                  | 384.00    |
| 2603                           | SW LAWN SERVICE                  | 240.00    |
| 2666                           | FD LAWN SERVICE                  | 295.00    |
|                                | TOTAL VENDOR JK LAWN SERVICE     | 2,947.30  |
| VENDOR NAME: JOHN P LOCHEN C   |                                  |           |
| T40961                         | P&R #87 FILTERS                  | 400.38    |
|                                | TOTAL VENDOR JOHN P LOCHEN C     | 400.38    |
| VENDOR NAME: JOHN'S DISPOSAL   |                                  |           |
| 450212                         | ENG CONTRACTED GARBAGE/RECYCLE   | 51,475.30 |
| 06162020                       | CT YARD WASTE STICKERS           | 265.00    |
| 461268                         | ENG MAY LANDFILL CHARGES         | 19,907.91 |
|                                | TOTAL VENDOR JOHN'S DISPOSAL     | 71,648.21 |
| VENDOR NAME: JOHNSON'S NURSE   |                                  |           |
| 63380                          | P&R BUR OAK                      | 254.00    |
|                                | TOTAL VENDOR JOHNSON'S NURSE     | 254.00    |
| VENDOR NAME: JULIE WASIELEWSKI |                                  |           |
| WASIELEWSKI                    | P&R SUMMER DAY CAMP REFUND       | 134.00    |
|                                | TOTAL VENDOR JULIE WASIELEWSKI   | 134.00    |
| VENDOR NAME: JX                |                                  |           |
| 1228795S                       | FD VEHICLE ASSESSMENT            | 157.67    |
| 1228827S                       | FD VEHICLE ASSESSMENTS           | 1,887.35  |

| INVOICE<br>NUMBER            | DESCRIPTION                                 | AMOUNT     |
|------------------------------|---------------------------------------------|------------|
| VENDOR NAME: JX              |                                             |            |
| TOTAL VENDOR JX              |                                             | 2,045.02   |
| VENDOR NAME: KAEREK HOMES IN |                                             |            |
| 181290                       | BLD EROSION BOND REFUND 181290              | 2,000.00   |
| 181289                       | BLD OCCUPANCY BOND REFUND                   | 500.00     |
| TOTAL VENDOR KAEREK HOMES IN |                                             | 2,500.00   |
| VENDOR NAME: KAESTNER AUTO E |                                             |            |
| 339871                       | HWY CONTACT, HOUSING, INSL                  | 42.14      |
| 340381                       | HWY ADAPTERS                                | 29.33      |
| 340832                       | SW BRACKET                                  | 215.88     |
| 340240                       | P&R BRACKETS                                | 107.28     |
| TOTAL VENDOR KAESTNER AUTO E |                                             | 394.63     |
| VENDOR NAME: KASKEY, MONICA  |                                             |            |
| 06122020                     | P&R REIMBURSEMENT FOR STAFF TRAINING DINNER | 164.37     |
| TOTAL VENDOR KASKEY, MONICA  |                                             | 164.37     |
| VENDOR NAME: KATE KELLEY     |                                             |            |
| KELLEY                       | P&R SOFTBALL REFUND                         | 67.00      |
| TOTAL VENDOR KATE KELLEY     |                                             | 67.00      |
| VENDOR NAME: KD GLASS LLC    |                                             |            |
| 191278                       | BLD OCCUPANCY BOND REFUND 191278            | 2,500.00   |
| TOTAL VENDOR KD GLASS LLC    |                                             | 2,500.00   |
| VENDOR NAME: KELLIHER, JOHN  |                                             |            |
| KELLIHER                     | P&R BOOTS                                   | 75.00      |
| TOTAL VENDOR KELLIHER, JOHN  |                                             | 75.00      |
| VENDOR NAME: KETTLE MORaine  |                                             |            |
| 051120                       | FD PEST CONTROL                             | 105.00     |
| TOTAL VENDOR KETTLE MORaine  |                                             | 105.00     |
| VENDOR NAME: KEVIN KNITTER   |                                             |            |
| KNITTER                      | P&R PARK RENTAL REFUND                      | 85.10      |
| TOTAL VENDOR KEVIN KNITTER   |                                             | 85.10      |
| VENDOR NAME: KINGS WAY HOMES |                                             |            |
| 191585 REFUND                | BLD OCCUPANCY BOND REFUND 191585            | 500.00     |
| TOTAL VENDOR KINGS WAY HOMES |                                             | 500.00     |
| VENDOR NAME: KM SPORTS       |                                             |            |
| 40498                        | FD EMROIDERY                                | 357.00     |
| 40499                        | FD RADIO NUMBER STRIPS                      | 60.00      |
| 40458                        | FD EMBROIDERY ON SHIRTS                     | 15.00      |
| 40427                        | FD EMBROIDERY AND CLOTHING                  | 264.00     |
| TOTAL VENDOR KM SPORTS       |                                             | 696.00     |
| VENDOR NAME: KMB ELECTRIC    |                                             |            |
| 20-14                        | P&R WIRE SCOREBOARDS, TRENCH WORK           | 3,840.47   |
| TOTAL VENDOR KMB ELECTRIC    |                                             | 3,840.47   |
| VENDOR NAME: LAFARGE AGGREGA |                                             |            |
| 712790472                    | SWM STONE                                   | 75.00      |
| 712844421                    | SWM STONE                                   | 50.00      |
| 712853715                    | HWY STONE                                   | 25.00      |
| TOTAL VENDOR LAFARGE AGGREGA |                                             | 150.00     |
| VENDOR NAME: LAKE PEWAUKEE S |                                             |            |
| 07102020                     | SW SEWER APR-JUN                            | 124,545.50 |
| TOTAL VENDOR LAKE PEWAUKEE S |                                             | 124,545.50 |
| VENDOR NAME: LAKELAND SUPPLY |                                             |            |
| 159287                       | P&R BATH TISSUE AND PAPER TOWEL             | 677.05     |

| INVOICE<br>NUMBER             | DESCRIPTION                            | AMOUNT     |
|-------------------------------|----------------------------------------|------------|
| VENDOR NAME: LAKELAND SUPPLY  |                                        |            |
|                               | TOTAL VENDOR LAKELAND SUPPLY           | 677.05     |
| VENDOR NAME: LANGE ENTERPRIS  |                                        |            |
| 72406                         | BLD TILES & SIGNS                      | 326.54     |
|                               | TOTAL VENDOR LANGE ENTERPRIS           | 326.54     |
| VENDOR NAME: LANNON STONE PR  |                                        |            |
| 1254329                       | P&R STONE                              | 38.14      |
| 1253404                       | HWY STONE                              | 891.80     |
|                               | TOTAL VENDOR LANNON STONE PR           | 929.94     |
| VENDOR NAME: LAWN BOYZ        |                                        |            |
| 1416                          | CT PILGRIMS REST CONTRACT              | 2,410.63   |
| 1404                          | CT PILGRIMS REST LAWN CARE             | 2,410.63   |
|                               | TOTAL VENDOR LAWN BOYZ                 | 4,821.26   |
| VENDOR NAME: LEASING SERVICES |                                        |            |
| 6/15/20                       | COPIER LEASE ENGINEERING               | 167.85     |
| 6/18/19                       | COURT/POLICE COPIER                    | 104.00     |
| 6/25/20                       | COPIER LEASE - BUILDING INSP           | 150.00     |
|                               | TOTAL VENDOR LEASING SERVICES          | 421.85     |
| VENDOR NAME: LEE RECREATION   |                                        |            |
| 12773-20                      | P&R SPRINGDALE PARK EQUIPMENT          | 10,500.00  |
|                               | TOTAL VENDOR LEE RECREATION            | 10,500.00  |
| VENDOR NAME: LEVEL UP CONSTR  |                                        |            |
| 06032020                      | AD CONTRACT PAYMENT - PEWAUKEE STORAGE | 49,466.50  |
| 07072020                      | AD PAYMENT 9 RETAINAGE                 | 678,366.50 |
|                               | TOTAL VENDOR LEVEL UP CONSTR           | 727,833.00 |
| VENDOR NAME: LIFE-ASSIST INC  |                                        |            |
| 1009968                       | FD FIRST AID SUPPLIES                  | 26.70      |
| 1011865                       | FD FIRST AID SUPPLIES                  | 542.84     |
| 1013113                       | FD FIRST AID SUPPLIES                  | 435.78     |
| 1010243                       | FD MAGBNESIUM SULFATE                  | 86.00      |
| 1006231                       | FD FIRST AID SUPPLIES                  | 370.14     |
| 1006534                       | FD GLOVES                              | 240.00     |
| 1009228                       | FD SUCTION UNIT BATTERY                | 92.50      |
| 1009507                       | FD DEFIB PADS                          | (90.20)    |
| 1014218                       | FD FIRST AID SUPPLIES                  | 248.41     |
| 1003070                       | FD FIRST AID SUPPLIES                  | 408.88     |
| 965197                        | FD FIRST AID SUPPLIES                  | 105.70     |
| 1002331                       | FD FLUID DISPENSING CONNECTOR          | 18.50      |
| 1003830                       | FD DEFIB PADS                          | 98.00      |
|                               | TOTAL VENDOR LIFE-ASSIST INC           | 2,583.25   |
| VENDOR NAME: LIFEQUEST        |                                        |            |
| MAY 2020                      | LIFEQUEST MONTHLY SERVICE FEE          | 4,541.91   |
|                               | TOTAL VENDOR LIFEQUEST                 | 4,541.91   |
| VENDOR NAME: LINCOLN CONTRAC  |                                        |            |
| M88592                        | SWM LASER LEVEL                        | 649.00     |
|                               | TOTAL VENDOR LINCOLN CONTRAC           | 649.00     |
| VENDOR NAME: LINDA EDMONDSON  |                                        |            |
| EDMONDSON                     | P&R CHAIR YOGA REFUND                  | 32.00      |
|                               | TOTAL VENDOR LINDA EDMONDSON           | 32.00      |
| VENDOR NAME: LINDA GAGLIONE   |                                        |            |
| GAGLIONE                      | P&R PARK RENTAL REFUND                 | 116.63     |
|                               | TOTAL VENDOR LINDA GAGLIONE            | 116.63     |
| VENDOR NAME: LINDA HOLZER     |                                        |            |
| HOLZER                        | P&R CLASS REFUND                       | 38.00      |
|                               | TOTAL VENDOR LINDA HOLZER              | 38.00      |

| INVOICE<br>NUMBER                 | DESCRIPTION                                           | AMOUNT     |
|-----------------------------------|-------------------------------------------------------|------------|
| VENDOR NAME: LISA JANSEN          |                                                       |            |
| JANSEN                            | P&R CLASS REFUND                                      | 90.00      |
| TOTAL VENDOR LISA JANSEN          |                                                       | 90.00      |
| VENDOR NAME: LISA RAMBO           |                                                       |            |
| RAMBO                             | P&R SOFTBALL REFUND                                   | 67.00      |
| TOTAL VENDOR LISA RAMBO           |                                                       | 67.00      |
| VENDOR NAME: LUNDA CONSTRUCT      |                                                       |            |
| 06252020 - PMT 5                  | SWM PAYMENT 5 FOR EMERALD ACRES<br>MITIGATION PROJECT | 148,135.45 |
| TOTAL VENDOR LUNDA CONSTRUCT      |                                                       | 148,135.45 |
| VENDOR NAME: M&M OFFICE INTE      |                                                       |            |
| 162561                            | FD ZODY TASK                                          | 1,436.74   |
| 162560                            | FD 3 DRAWER LATERAL FILE                              | 2,052.35   |
| TOTAL VENDOR M&M OFFICE INTE      |                                                       | 3,489.09   |
| VENDOR NAME: MACQUEEN EQUIPMENT   |                                                       |            |
| W03363                            | HWY WHIRLWIND MV                                      | 615.79     |
| P15274                            | HWY WHILWIND SB                                       | 170.00     |
| TOTAL VENDOR MACQUEEN EQUIPMENT   |                                                       | 785.79     |
| VENDOR NAME: MALANE KUNKEL        |                                                       |            |
| KUNKEL                            | P&R POSITIVELY FIT REFUND                             | 16.00      |
| KUNKEL                            | P&R CLASS REFUND                                      | 25.00      |
| TOTAL VENDOR MALANE KUNKEL        |                                                       | 41.00      |
| VENDOR NAME: MARY DIETZ           |                                                       |            |
| DIETZ                             | P&R POSITIVELY FIT REFUND                             | 98.00      |
| TOTAL VENDOR MARY DIETZ           |                                                       | 98.00      |
| VENDOR NAME: MARY LEDERER         |                                                       |            |
| LEDERER                           | P&R PARK RENTAL REFUND                                | 221.73     |
| TOTAL VENDOR MARY LEDERER         |                                                       | 221.73     |
| VENDOR NAME: MARY LYNN DOWNEY     |                                                       |            |
| DOWNEY                            | P&R CLASS REFUNDS                                     | 57.00      |
| DOWNEY                            | P&R CLASS REFUND                                      | 16.00      |
| TOTAL VENDOR MARY LYNN DOWNEY     |                                                       | 73.00      |
| VENDOR NAME: MATRIX TRUST COMPANY |                                                       |            |
| PD 5-8-20                         | CT LOAN REPAYMENT PD 5-8-20                           | 50.00      |
| PD 5-22-20                        | CT LOAN REPAYMENT PD 5-22-20                          | 50.00      |
| PD 06/19/20                       | CT LOAN REPAYMENT                                     | 50.00      |
| PD 06/05/20                       | CT LOAN REPAYMENT                                     | 50.00      |
| PD 07/03/20                       | CT LOAN REPAYMENT                                     | 50.00      |
| TOTAL VENDOR MATRIX TRUST COMPANY |                                                       | 250.00     |
| VENDOR NAME: MEGAN KRUSCHEL       |                                                       |            |
| KRUSCHEL                          | P&R SOFTBALL REFUND                                   | 67.00      |
| TOTAL VENDOR MEGAN KRUSCHEL       |                                                       | 67.00      |
| VENDOR NAME: MELISSA LEWIS        |                                                       |            |
| LEWIS                             | P&R SUMMER DAY CAMP REFUND                            | 545.00     |
| TOTAL VENDOR MELISSA LEWIS        |                                                       | 545.00     |
| VENDOR NAME: MENARDS              |                                                       |            |
| 64235                             | P&R SPLIT KEY RING                                    | 4.85       |
| 64282-2020                        | P&R HAMMER DRILL BIT SET                              | 21.95      |
| 64485                             | P&R SOUTH WINDOW PLYWOOD                              | 21.10      |
| 63989                             | FD 20 GAL TOTE W/ LID                                 | 49.60      |
| 65168                             | FD LP TANK EXCHANGE                                   | 63.28      |
| 65346                             | FD BATTERIES AND WATER                                | 39.51      |
| 65141                             | P&R BARREL BOLT AND OSB                               | 24.89      |
| 65139                             | P&R CONCRETE MIX                                      | 35.84      |
| 65590                             | FD WOOD LATH                                          | 28.78      |
| 65782                             | FD FUEL PREMIX AND CYCLE GAS                          | 99.60      |

| INVOICE<br>NUMBER                 | DESCRIPTION                                        | AMOUNT    |
|-----------------------------------|----------------------------------------------------|-----------|
| VENDOR NAME: MENARDS              |                                                    |           |
| 65934                             | FD FURRING STRIP                                   | 17.82     |
| 65580                             | P&R LANDSCAPE BLOCK AND BELGIAN SMOOTH             | 10.94     |
| 65514                             | P&R DOOR KNOB AND BROOM                            | 25.98     |
| 65087                             | CT EXHAUST FAN MENS ROOM POLICE                    | 183.91    |
| 64986                             | CT 32 W 4100K 30PK                                 | 59.97     |
| 65094                             | CT ALUM FOIL DUCT                                  | 21.98     |
| 64725                             | HWY TANK SPRAYER                                   | 9.98      |
| 64401                             | HWY MNT ADJ PHONE HOLDER                           | 14.99     |
| 64238                             | HWY MEASURING CONTAINER, FIBR GL                   | 27.77     |
| 64615                             | FD AIR HOSE, COUPLER                               | 31.08     |
| 64732                             | FD CLEVIS PIN, GANG VER DUP COVER                  | 8.56      |
| 64334                             | FD SPORT LOTION                                    | 29.88     |
| 91413                             | COVID TUBING, LOCK NUTS, WASHERS, PLYW             | 73.93     |
| 64286                             | COVID PLYW, ALUM ANG                               | 36.51     |
| 64349                             | COVID ALUM ANG, TWIN LOOP, COLD SHUT,<br>BOLT SNAP | 56.45     |
| 64790                             | COVID WASHERS, LOCK NUTS, SAWHORSE                 | 202.14    |
| 66201                             | SW O-RING ASSORTMENT                               | 23.98     |
| 65908                             | P&R NUTS AND BOLTS                                 | 12.24     |
| 65914                             | TOILET SUPPLY                                      | 17.52     |
| 65937                             | P&R BATTERIES                                      | 25.98     |
| 66985-2020                        | FD BIRD FOOD, SPRING WATER                         | 95.88     |
| 61124                             | COVID COVERALL                                     | 153.78    |
| 65731                             | HWY COUPLER, MALE ADAPTER                          | 8.24      |
| 65862                             | HWY HOSE CLAMP, END CAP                            | 7.60      |
| 66261                             | HWY CEDAR S4S                                      | 37.99     |
| 66245                             | FD BIRD FOOD AND WATER                             | 33.43     |
| TOTAL VENDOR MENARDS              |                                                    | 1,617.93  |
| VENDOR NAME: MICHELLE KUBIAK      |                                                    |           |
| KUBIAK                            | P&R PARK RENTAL REFUND                             | 137.65    |
| TOTAL VENDOR MICHELLE KUBIAK      |                                                    | 137.65    |
| VENDOR NAME: MID-AMERICAN RE      |                                                    |           |
| 0697516-IN                        | HWY ALCO-SAN AND DISPENSER                         | 254.05    |
| TOTAL VENDOR MID-AMERICAN RE      |                                                    | 254.05    |
| VENDOR NAME: MIKE GRAFF           |                                                    |           |
| GRAFF                             | P&R SOFTBALL REFUND                                | 89.00     |
| TOTAL VENDOR MIKE GRAFF           |                                                    | 89.00     |
| VENDOR NAME: MUGSHOTZ BAR & GRILL |                                                    |           |
| 05132020 REFUND                   | CT REFUND FOR CANCELLED EVENT                      | 723.30    |
| TOTAL VENDOR MUGSHOTZ BAR & GRILL |                                                    | 723.30    |
| VENDOR NAME: MUNI LAW & LIT       |                                                    |           |
| 13176                             | CT LEGAL FEES                                      | 12,087.70 |
| TOTAL VENDOR MUNI LAW & LIT       |                                                    | 12,087.70 |
| VENDOR NAME: MUNICIPAL TREAS      |                                                    |           |
| 1770                              | CT MEMBER FEE                                      | 30.00     |
| TOTAL VENDOR MUNICIPAL TREAS      |                                                    | 30.00     |
| VENDOR NAME: MUTUAL OF OMAHA      |                                                    |           |
| JULY 2020                         | JULY 2020 LIFE AND DISABILITY                      | 4,503.83  |
| TOTAL VENDOR MUTUAL OF OMAHA      |                                                    | 4,503.83  |
| VENDOR NAME: NAPA                 |                                                    |           |
| 5241-113636                       | FD WIPER BLADES                                    | 39.89     |
| 5241-113516                       | FD ICON BLADE                                      | 35.90     |
| 5241-110591                       | FD OIL DRY                                         | 130.65    |
| TOTAL VENDOR NAPA                 |                                                    | 206.44    |
| VENDOR NAME: NATALIE JAMES        |                                                    |           |
| JAMES                             | P&R SOFTBALL REFUND                                | 89.00     |
| TOTAL VENDOR NATALIE JAMES        |                                                    | 89.00     |
| VENDOR NAME: NATALIE SOMMERFELD   |                                                    |           |
| SOMMERFELD                        | P&R SUMMER DAY CAMP REFUND                         | 1,860.00  |

| INVOICE<br>NUMBER               | DESCRIPTION                     | AMOUNT   |
|---------------------------------|---------------------------------|----------|
| VENDOR NAME: NATALIE SOMMERFELD |                                 |          |
|                                 | TOTAL VENDOR NATALIE SOMMERFELD | 1,860.00 |
| VENDOR NAME: NATIONWIDE RETI    |                                 |          |
| PD 06/05/20                     | CT RETIREMENT                   | 1,260.09 |
| PD 06/19/20                     | CT RETIREMENT                   | 1,260.09 |
| PD 07/03/20                     | CT RETIREMENT                   | 1,260.09 |
|                                 | TOTAL VENDOR NATIONWIDE RETI    | 3,780.27 |
| VENDOR NAME: NEW VISION HOME    |                                 |          |
| 181471                          | BLD EROSION BOND REFUND 181471  | 2,000.00 |
|                                 | TOTAL VENDOR NEW VISION HOME    | 2,000.00 |
| VENDOR NAME: NORTHERN LAKE S    |                                 |          |
| 380012                          | SW WATER TESTING                | 570.00   |
| 379220                          | SW WATER TESTING                | 80.00    |
| 379580                          | SW WATER TESTING                | 60.00    |
| 380051                          | SW WATER TESTING                | 80.00    |
| 380340                          | SW WATER TESTING                | 20.00    |
| 380347                          | SW WATER TESTING                | 20.00    |
| 380517                          | SW WATER TESTING                | 60.00    |
| 379219                          | P&R COLIFORM BACTERIA           | 40.00    |
|                                 | TOTAL VENDOR NORTHERN LAKE S    | 930.00   |
| VENDOR NAME: NS412, LLC         |                                 |          |
| 108                             | HR WELLNESS                     | 300.00   |
|                                 | TOTAL VENDOR NS412, LLC         | 300.00   |
| VENDOR NAME: OCCUPATIONAL HE    |                                 |          |
| 103195509                       | HR EXAMS                        | 90.00    |
|                                 | TOTAL VENDOR OCCUPATIONAL HE    | 90.00    |
| VENDOR NAME: OFFICE COPYING     |                                 |          |
| AR116582                        | CT SHARP MX6240N CONTRACT       | 368.70   |
| AR116585                        | CRT SHARP MX3571 CONTRACT       | 11.92    |
| AR116813                        | FD SHARP MX 3070N CONTRACT      | 49.91    |
| AR114453                        | ENG SHARP MX4070N CONTRACT      | 122.13   |
| AR114454                        | CRT SHARP MX3571                | 4.36     |
| AR114452                        | FD SHARP MX3020N CONTRACT       | 56.79    |
| AR114451                        | CT SHARP MX6240N CONTRACT       | 315.48   |
| AR112588                        | CRT SHARP MX3571 CONTRACT       | 13.88    |
| AR114624                        | BLD SHARP MX3070N CONTRACT      | 86.47    |
|                                 | TOTAL VENDOR OFFICE COPYING     | 1,029.64 |
| VENDOR NAME: OFFICE DEPOT       |                                 |          |
| 500185796001                    | BLD PRINTER INK                 | 50.98    |
| 496297687001                    | BLD PENS                        | 5.18     |
| 484606978001                    | BLD USB CORD                    | 8.92     |
| 491957828001                    | COVID HP INK                    | 31.85    |
| 496297710001                    | BLD PENS                        | 17.90    |
| 485999136001                    | BLD PENS                        | 13.40    |
| 490111237001                    | BLD STICKY NOTES AND PAPER      | 34.48    |
| 508491741001                    | CT OFFICE SUPPLIES              | 45.76    |
| 492096245001                    | CT PAPER TOWEL AND LINERS       | 174.64   |
| 496686026001                    | ASR OFFICE SUPPLIES             | 67.98    |
| 509844734001                    | FD TONER                        | 210.89   |
| 509844854001                    | FD OFFICE SUPPLIES              | 60.20    |
| 509259377001                    | BLD PENS                        | 7.38     |
| 509377431001                    | BLD ENVELOPES                   | 29.99    |
| 508637727001                    | BLD PAPER                       | 33.62    |
| 508640226001                    | BLD RUBBERBANDS                 | 14.39    |
| 512210480001                    | SW OFFICE SUPPLIES              | 87.53    |
| 514055327001                    | CT SUPPLIES                     | 295.66   |
| 100750003001                    | CT OFFICE SUPPLIES              | 34.31    |
|                                 | TOTAL VENDOR OFFICE DEPOT       | 1,225.06 |
| VENDOR NAME: PARKING LOT MAI    |                                 |          |
| 0113200-IN                      | HWY PAVE LOT ROCKY POINT RD     | 3,780.00 |
|                                 | TOTAL VENDOR PARKING LOT MAI    | 3,780.00 |
| VENDOR NAME: PEA BUILDERS       |                                 |          |



| INVOICE<br>NUMBER            | DESCRIPTION                            | AMOUNT     |
|------------------------------|----------------------------------------|------------|
| VENDOR NAME: PEA BUILDERS    |                                        |            |
| OCC BND RFND 19123           | BLD OCCUPANCY BOND REFUND 191231       | 500.00     |
| TOTAL VENDOR PEA BUILDERS    |                                        | 500.00     |
| VENDOR NAME: PEG RENZ        |                                        |            |
| RENTZ                        | P&R SOFTBALL REFUND                    | 89.00      |
| TOTAL VENDOR PEG RENZ        |                                        | 89.00      |
| VENDOR NAME: PEGGY LA SAGE   |                                        |            |
| LA SAGE                      | P&R PARK RENTAL REFUND                 | 410.91     |
| TOTAL VENDOR PEGGY LA SAGE   |                                        | 410.91     |
| VENDOR NAME: PEWAUKEE FOOD P |                                        |            |
| 07072020                     | HR DONATIONS                           | 170.00     |
| TOTAL VENDOR PEWAUKEE FOOD P |                                        | 170.00     |
| VENDOR NAME: PEWAUKEE, VILLA |                                        |            |
| P&R JUNE 2020                | CT PARK AND REC INCOME SPLIT JUNE 2020 | 4,201.38   |
| JUNE 2020 EMS                | CT FIRE DEPT EMS COLLECTIONS           | 11,609.12  |
| JULY 2020 LIBRARY            | CT JOINT LIBRARY 2020                  | 69,501.00  |
| P&R MAY 2020                 | CT PARK & REC MAY 2020                 | 6,850.69   |
| LIFEQUEST MAY 2020           | CT LIFEQUEST MAY 2020                  | 14,752.36  |
| TOTAL VENDOR PEWAUKEE, VILLA |                                        | 106,914.55 |
| VENDOR NAME: PITNEY BOWES    |                                        |            |
| 1015864054                   | SW TRAVEL AND LABOR                    | 481.25     |
| TOTAL VENDOR PITNEY BOWES    |                                        | 481.25     |
| VENDOR NAME: POMP'S TIRE     |                                        |            |
| 60210663                     | FD TIRES                               | 1,794.60   |
| 60210510                     | HWY TRUCK SCRAP DISPOSAL FEE           | 60.00      |
| TOTAL VENDOR POMP'S TIRE     |                                        | 1,854.60   |
| VENDOR NAME: PORT-A-JOHN     |                                        |            |
| 0436090-IN                   | P&R SEASONAL RESTROOM                  | 93.00      |
| 0436089-IN                   | P&R SEASONAL RESTROOM                  | 93.00      |
| 0436088-IN                   | P&R SEASONAL RESTROOM                  | 93.00      |
| 0436087-IN                   | P&R SEASONAL RESTROOM                  | 93.00      |
| TOTAL VENDOR PORT-A-JOHN     |                                        | 372.00     |
| VENDOR NAME: POSTMASTER      |                                        |            |
| 061820                       | SW POSTAGE FOR BILLING                 | 2,200.00   |
| TOTAL VENDOR POSTMASTER      |                                        | 2,200.00   |
| VENDOR NAME: POWER EQUIPMENT |                                        |            |
| V1074                        | HWY VERSALIFT RENTAL                   | 3,800.00   |
| V1111                        | HWY RENTAL PERIOD CREDIT               | (1,330.00) |
| TOTAL VENDOR POWER EQUIPMENT |                                        | 2,470.00   |
| VENDOR NAME: PREMIUM WATERS, |                                        |            |
| 361769381                    | HWY WATER                              | 45.00      |
| 361764960                    | CRT WATER                              | 53.25      |
| 361769775                    | P&R WATER                              | 53.99      |
| 361780629                    | P&R WATER                              | 46.49      |
| 361785047                    | HWY WATER                              | 61.50      |
| 361780643                    | HWY WATER                              | 61.50      |
| 05312020                     | CRT WATER                              | 8.25       |
| 361785046                    | CRT WATER                              | 69.75      |
| TOTAL VENDOR PREMIUM WATERS, |                                        | 399.73     |
| VENDOR NAME: PROHEALTH CARE  |                                        |            |
| MAY 2020                     | HR EXAMS                               | 343.00     |
| TOTAL VENDOR PROHEALTH CARE  |                                        | 343.00     |
| VENDOR NAME: PUBLIC SERVICE  |                                        |            |
| 2005-I-04625                 | SW DIRECT ASSESSMENT                   | 349.66     |
| TOTAL VENDOR PUBLIC SERVICE  |                                        | 349.66     |

| INVOICE<br>NUMBER              | DESCRIPTION                                             | AMOUNT    |
|--------------------------------|---------------------------------------------------------|-----------|
| VENDOR NAME: QUALITY POWER S   |                                                         |           |
| 14549B                         | IT 3 YR PREVENTITVE MAINTENANCE                         | 1,690.00  |
| 14738A                         | IT 2 YR PREVENTIVE MAINTENANCE                          | 425.00    |
| TOTAL VENDOR QUALITY POWER S   |                                                         | 2,115.00  |
| VENDOR NAME: R&R INSURANCE S   |                                                         |           |
| 2273420                        | CT WORKERS COMPENSATION                                 | 24,350.00 |
| TOTAL VENDOR R&R INSURANCE S   |                                                         | 24,350.00 |
| VENDOR NAME: REINDERS, INC.    |                                                         |           |
| 7501609-00                     | SW LAWN SEED MIX AND SEED MULCH                         | 81.25     |
| 7501950-00                     | SWM PRO WEAVE PLUS                                      | 175.00    |
| 7502476-00                     | SWM RYEGRASS SEED                                       | 36.00     |
| TOTAL VENDOR REINDERS, INC.    |                                                         | 292.25    |
| VENDOR NAME: ROBERT BURLINGAME |                                                         |           |
| BURLINGAME                     | CANCELLED PARK RENTAL                                   | 400.40    |
| TOTAL VENDOR ROBERT BURLINGAME |                                                         | 400.40    |
| VENDOR NAME: ROBERT LUCHT      |                                                         |           |
| LUCHT                          | P&R CLASS REFUND                                        | 57.00     |
| TOTAL VENDOR ROBERT LUCHT      |                                                         | 57.00     |
| VENDOR NAME: ROBIN GLEASON     |                                                         |           |
| GLEASON                        | P&R CLASS REFUND                                        | 38.00     |
| TOTAL VENDOR ROBIN GLEASON     |                                                         | 38.00     |
| VENDOR NAME: ROMENS, RANDY     |                                                         |           |
| APR MILEAGE                    | BLD MILEAGE REIMBURSEMENT                               | 17.25     |
| TOTAL VENDOR ROMENS, RANDY     |                                                         | 17.25     |
| VENDOR NAME: RON WEIX          |                                                         |           |
| WEIX                           | P&R CLASS REFUND                                        | 172.00    |
| WEIX                           | P&R CLASS REFUNDS                                       | 106.00    |
| TOTAL VENDOR RON WEIX          |                                                         | 278.00    |
| VENDOR NAME: ROXANNE TAYLOR    |                                                         |           |
| TAYLOR                         | P&R SOFTBALL REFUND                                     | 89.00     |
| TOTAL VENDOR ROXANNE TAYLOR    |                                                         | 89.00     |
| VENDOR NAME: RUEKERT & MIELK   |                                                         |           |
| 132181                         | SW DISCUSSION OF PAVEMENT SEALING AND WELL 6 ASSISTANCE | 1,957.42  |
| 132193                         | SW SCADA SERVICE WORK                                   | 181.00    |
| 132187                         | SW DESIGN & BIDDING SERVICES                            | 18,666.55 |
| 132192                         | SW DESIGN SERVICES                                      | 4,996.75  |
| 132190                         | SW PHASE 1: CONVERT MODELING SOFTWARE                   | 597.00    |
| 132182                         | ENG WOODLEAF RESERVE EROSION CONTROL SPECIALIST         | 268.72    |
| 132184                         | ENG CHRIST EV LUTH CHURCH EROSION CONTROL INSPECTIONS   | 6,875.69  |
| 132185                         | ENG NORTHMOUND INDUSTRIAL BLD EROSION CONTROL           | 4,471.13  |
| 132186                         | ENG ANGELUS BUILDING EROSION CONTROL                    | 432.06    |
| 132188                         | ENG KLEIN DICKERT EROSION CONTROL                       | 5,135.15  |
| 132191                         | ENG KINDERCARE EROSION CONTROL                          | 458.56    |
| 132183                         | ENG OAK STREET & PENINSULA DR DESIGN                    | 4,184.00  |
| 132189                         | ENG NORTHVIEW RD SIDEWALK DESIGN                        | 1,098.00  |
| TOTAL VENDOR RUEKERT & MIELK   |                                                         | 49,322.03 |
| VENDOR NAME: RUSS VOLMAR       |                                                         |           |
| VOLMAR                         | P&R RENTAL REFUND                                       | 85.10     |
| TOTAL VENDOR RUSS VOLMAR       |                                                         | 85.10     |
| VENDOR NAME: RYAN EDWARDS      |                                                         |           |
| EDWARDS                        | P&R PARK RENTAL REFUND                                  | 200.71    |
| TOTAL VENDOR RYAN EDWARDS      |                                                         | 200.71    |

| INVOICE<br>NUMBER                              | DESCRIPTION                                       | AMOUNT         |
|------------------------------------------------|---------------------------------------------------|----------------|
| <hr/>                                          |                                                   |                |
| VENDOR NAME: SAFETY-KLEEN CO<br>83085455       | HWY OIL SERVICE                                   | 217.00         |
| TOTAL VENDOR SAFETY-KLEEN CO                   |                                                   | <hr/> 217.00   |
| VENDOR NAME: SARA LUKE<br>LUKE                 | P&R SOFTBALL REFUND                               | 67.00          |
| TOTAL VENDOR SARA LUKE                         |                                                   | <hr/> 67.00    |
| VENDOR NAME: SCHROEDER IMPLEMENT INC<br>10186  | HWY PRIMER LINE                                   | 8.26           |
| TOTAL VENDOR SCHROEDER IMPLEMENT INC           |                                                   | <hr/> 8.26     |
| VENDOR NAME: SCOTT ANDERSON<br>0921030-2019    | 2019 PROPERTY TAX REFUND                          | 2,774.29       |
| TOTAL VENDOR SCOTT ANDERSON                    |                                                   | <hr/> 2,774.29 |
| VENDOR NAME: SEIDER HEATING<br>200383-P REFUND | BLD PERMIT REFUND                                 | 325.19         |
| TOTAL VENDOR SEIDER HEATING                    |                                                   | <hr/> 325.19   |
| VENDOR NAME: SERWE IMPLEMENT<br>7198           | SWM BOLTS                                         | 447.48         |
| TOTAL VENDOR SERWE IMPLEMENT                   |                                                   | <hr/> 447.48   |
| VENDOR NAME: SHANNON SCHRAM<br>SCHRAM          | P&R SUMMER DAY CAMP REFUND                        | 620.00         |
| TOTAL VENDOR SHANNON SCHRAM                    |                                                   | <hr/> 620.00   |
| VENDOR NAME: SHARON SEEGER<br>SEEGERS          | P&R PARK RENTAL REFUND                            | 370.00         |
| TOTAL VENDOR SHARON SEEGER                     |                                                   | <hr/> 370.00   |
| VENDOR NAME: SHAWNS DEER PIC<br>APRIL BILL     | HWY DEER PICKUP                                   | 208.00         |
| MAY BILL                                       | HWY DEER PICKUP                                   | 416.00         |
| TOTAL VENDOR SHAWNS DEER PIC                   |                                                   | <hr/> 624.00   |
| VENDOR NAME: SOERENS FORD<br>36702             | HWY PANEL - COWL S                                | 25.30          |
| TOTAL VENDOR SOERENS FORD                      |                                                   | <hr/> 25.30    |
| VENDOR NAME: SOFT WATER, INC<br>052920         | SOLAR SALT                                        | 15.00          |
| 06302020                                       | FD SOLAR SALT                                     | 277.45         |
| TOTAL VENDOR SOFT WATER, INC                   |                                                   | <hr/> 292.45   |
| VENDOR NAME: STACY BROWN<br>BROWN              | P&R SUMMER DAY CAMP REFUND                        | 395.00         |
| TOTAL VENDOR STACY BROWN                       |                                                   | <hr/> 395.00   |
| VENDOR NAME: STARFIRE SYSTEM<br>29475          | IT SEMI-ANNUAL INSPECTION OF THE<br>COMPUTER ROOM | 400.00         |
| TOTAL VENDOR STARFIRE SYSTEM                   |                                                   | <hr/> 400.00   |
| VENDOR NAME: STARNET TECHNOL<br>0091392-IN     | SW VFD FAN                                        | 1,596.00       |
| TOTAL VENDOR STARNET TECHNOL                   |                                                   | <hr/> 1,596.00 |
| VENDOR NAME: STATE OF WI COU<br>APR 2020       | CRT STATES SHARE OF COURT COSTS &<br>ASSESSMENTS  | 9,537.57       |
| 07012020                                       | CRT STATES SHARE OF COURT COSTS &<br>ASSESSMENTS  | 5,187.41       |
| MAY 2020                                       | CRT STATES SHARE OF COURT COSTS &<br>ASSESSMENTS  | 7,614.70       |

| INVOICE<br>NUMBER                    | DESCRIPTION                                          | AMOUNT    |
|--------------------------------------|------------------------------------------------------|-----------|
| VENDOR NAME: STATE OF WI COU         |                                                      |           |
|                                      | TOTAL VENDOR STATE OF WI COU                         | 22,339.68 |
| VENDOR NAME: STICKYBOYZ              |                                                      |           |
| 8378                                 | BLD/HWY DECALS AND REFLECTIVE STRIPES<br>FOR TRAILER | 983.00    |
|                                      | TOTAL VENDOR STICKYBOYZ                              | 983.00    |
| VENDOR NAME: STRAND ASSOCIAT         |                                                      |           |
| 0160691                              | SW PIPE BURSTING PROJECT                             | 309.20    |
|                                      | TOTAL VENDOR STRAND ASSOCIAT                         | 309.20    |
| VENDOR NAME: STRYKER SALES C         |                                                      |           |
| 3031973M                             | FD RAINBOW DCI ADT REUSABLE                          | 571.20    |
| 3024954M                             | FD BATTERY, LARYNGOSCOPE                             | 54.81     |
|                                      | TOTAL VENDOR STRYKER SALES C                         | 626.01    |
| VENDOR NAME: SUSAN COLLAR            |                                                      |           |
| COLLAR                               | P&R SOFTBALL REFUND                                  | 67.00     |
|                                      | TOTAL VENDOR SUSAN COLLAR                            | 67.00     |
| VENDOR NAME: SUSAN OBRIEN            |                                                      |           |
| OBRIEN                               | P&R CLASS REFUND                                     | 15.00     |
|                                      | TOTAL VENDOR SUSAN OBRIEN                            | 15.00     |
| VENDOR NAME: SUSAN WILCOX            |                                                      |           |
| WILCOX                               | P&R CLASS REFUND                                     | 90.00     |
|                                      | TOTAL VENDOR SUSAN WILCOX                            | 90.00     |
| VENDOR NAME: T/A TRUCK PAINT         |                                                      |           |
| 22376                                | FD 2015 KENWORTH T680 TRUCK NO. 2852<br>REPAIRS      | 11,494.34 |
|                                      | TOTAL VENDOR T/A TRUCK PAINT                         | 11,494.34 |
| VENDOR NAME: TALLY'S TAP & EATERY    |                                                      |           |
| TALLY'S TAP                          | P&R CLASS REFUND                                     | 295.00    |
|                                      | TOTAL VENDOR TALLY'S TAP & EATERY                    | 295.00    |
| VENDOR NAME: THOMAS MANNELLA         |                                                      |           |
| 07102020                             | ACCT 12366 REFUND                                    | 149.27    |
|                                      | TOTAL VENDOR THOMAS MANNELLA                         | 149.27    |
| VENDOR NAME: THRIVE ARCHITEC         |                                                      |           |
| 19037-2                              | AD ARCHITECTURAL DESIGN - PEWAUKEE<br>STORAGE BLD    | 1,990.00  |
|                                      | TOTAL VENDOR THRIVE ARCHITEC                         | 1,990.00  |
| VENDOR NAME: TOM BARTH               |                                                      |           |
| BARTH                                | P&R SOFTBALL REFUNDS                                 | 178.00    |
|                                      | TOTAL VENDOR TOM BARTH                               | 178.00    |
| VENDOR NAME: TRIPLE CROWN PR         |                                                      |           |
| 251172                               | HWY SHIRTS                                           | 37.72     |
| 251176                               | HWY SHIRTS                                           | 118.97    |
|                                      | TOTAL VENDOR TRIPLE CROWN PR                         | 156.69    |
| VENDOR NAME: UNITED STATES TREASURY  |                                                      |           |
| 07072020                             | PCOR TAX                                             | 170.18    |
|                                      | TOTAL VENDOR UNITED STATES TREASURY                  | 170.18    |
| VENDOR NAME: URBAN MANUFACTURING INC |                                                      |           |
|                                      | URBAN MANUFACTURIN P&R CLASS REFUND                  | 300.00    |
|                                      | URBAN MANUFACTURIN P&R CLASS REFUND                  | 295.00    |
|                                      | TOTAL VENDOR URBAN MANUFACTURING INC                 | 595.00    |
| VENDOR NAME: VALERIE CHEREK          |                                                      |           |

| INVOICE<br>NUMBER            | DESCRIPTION                                                | AMOUNT     |
|------------------------------|------------------------------------------------------------|------------|
| VENDOR NAME: VALERIE CHEREK  |                                                            |            |
| CHEREK                       | P&R CLASS REFUNDS                                          | 32.00      |
| TOTAL VENDOR VALERIE CHEREK  |                                                            | 32.00      |
| VENDOR NAME: VERIZON         |                                                            |            |
| 9855687568                   | SW TELEPHONE                                               | 235.14     |
| 9854504293                   | COVID CITY EOC PHONES FOR COVID                            | 177.24     |
| 9855313168                   | FD TELEPHONE                                               | 22.11      |
| 9854504294                   | FD TELEPHONE                                               | 276.13     |
| 9856546966                   | FD TELEPHONE                                               | 282.47     |
| 9856546967                   | FD AIR CARDS                                               | 552.44     |
| 9857354092                   | FD AIR CARDS                                               | 44.22      |
| TOTAL VENDOR VERIZON         |                                                            | 1,589.75   |
| VENDOR NAME: VISU-SEWER      |                                                            |            |
| 061920                       | SW CONTRACTOR PMT PROJECT 2024 W-11                        | 99,280.45  |
| TOTAL VENDOR VISU-SEWER      |                                                            | 99,280.45  |
| VENDOR NAME: WACHTEL TREE SC |                                                            |            |
| 67552                        | SW CONIFER FUNGICIDE                                       | 225.00     |
| TOTAL VENDOR WACHTEL TREE SC |                                                            | 225.00     |
| VENDOR NAME: WATER REMEDIATI |                                                            |            |
| 017884                       | SW BASE TREATMENT CHARGE                                   | 3,534.57   |
| TOTAL VENDOR WATER REMEDIATI |                                                            | 3,534.57   |
| VENDOR NAME: WAUK CO TREAS   |                                                            |            |
| 07012020                     | CRT COUNTY JAIL ASSESSMENTS & DRIVER IMPROVEMENT SURCHARGE | 1,220.00   |
| 07072020                     | MFL FUNDS 2013-2019                                        | 5.22       |
| APRIL 2020                   | CRT COUNTY JAIL ASSESSMENTS & DRIVER IMPROVEMENT SURCHARGE | 2,721.66   |
| TOTAL VENDOR WAUK CO TREAS   |                                                            | 3,946.88   |
| VENDOR NAME: WAUKESHA CO SHE |                                                            |            |
| 07012020                     | CRT WARRANT FEE JUNE 2020                                  | 60.00      |
| MAY 2020                     | CRT WARRANT FEE                                            | 120.00     |
| TOTAL VENDOR WAUKESHA CO SHE |                                                            | 180.00     |
| VENDOR NAME: WAUKESHA COUNTY |                                                            |            |
| MAY 2020                     | CRT COUNTY JAIL ASSESSMENTS & DRIVER IMPROVEMENT CHARGE    | 2,427.45   |
| 2020-00000066-SHF5           | CT MUNICIPAL PATROL                                        | 243,539.08 |
| 2020-00000069-SHF4           | CT INMATE BILLING                                          | 17.45      |
| TOTAL VENDOR WAUKESHA COUNTY |                                                            | 245,983.98 |
| VENDOR NAME: WAUKESHA LIME & |                                                            |            |
| 1677773                      | HWY STONE                                                  | 1,185.32   |
| 1679182                      | HWY STONE                                                  | 611.66     |
| 1680777                      | HWY STONE                                                  | 1,509.14   |
| 1682668                      | HWY STONE                                                  | 206.37     |
| TOTAL VENDOR WAUKESHA LIME & |                                                            | 3,512.49   |
| VENDOR NAME: WAUKESHA WATER  |                                                            |            |
| 07092020                     | SW INTERMUNICIPAL BORDER AGREEMENT FEB-MAY                 | 55,325.01  |
| TOTAL VENDOR WAUKESHA WATER  |                                                            | 55,325.01  |
| VENDOR NAME: WCTC            |                                                            |            |
| S0717732                     | FD TRAINING                                                | 54.73      |
| TOTAL VENDOR WCTC            |                                                            | 54.73      |
| VENDOR NAME: WDATCP          |                                                            |            |
| 115-0000017162               | CT W & M CONTRACT INSPECTION                               | 1,600.00   |
| TOTAL VENDOR WDATCP          |                                                            | 1,600.00   |
| VENDOR NAME: WE ENERGIES     |                                                            |            |
| 06222020                     | P&R ELECTRICITY                                            | 27.94      |

| INVOICE<br>NUMBER                   | DESCRIPTION                      | AMOUNT    |
|-------------------------------------|----------------------------------|-----------|
| VENDOR NAME: WE ENERGIES            |                                  |           |
| 5863111330-062220                   | P&R VILLAGE PARK FLAG LIGHT      | 18.13     |
| 3207907223-062220                   | P&R FIELD LIGHTING               | 24.84     |
| 8013212530 - 7/10/                  | ELECTRIC GROUP BILL              | 11,210.06 |
| 5/5-6/4/20                          | WE ENERGIES                      | 287.67    |
| 8022665156-052120                   | P&R ELECTRICITY                  | 15.71     |
| 5863111330-052120                   | P&R FLAG LIGHT VILLAGE PARK      | 16.63     |
| 3207907223-052120                   | P&R FIELD LIGHTING               | 34.58     |
| 0000051776-6/4/20                   | SEWER ELEC                       | 14,571.45 |
| TOTAL VENDOR WE ENERGIES            |                                  | 26,207.01 |
| VENDOR NAME: WELLSPRING CONS        |                                  |           |
| 169                                 | AD CM FEE                        | 3,725.00  |
| 177                                 | AD FINAL CM FEE                  | 172.06    |
| TOTAL VENDOR WELLSPRING CONS        |                                  | 3,897.06  |
| VENDOR NAME: WESTERN CULVERT        |                                  |           |
| 060594                              | SWM CMPA PIECE                   | 363.00    |
| 060671                              | HWY CMPA 2 PIECES                | 726.00    |
| 060672                              | HWY CMPA AND BANDS               | 2,965.50  |
| TOTAL VENDOR WESTERN CULVERT        |                                  | 4,054.50  |
| VENDOR NAME: WHITLOW'S SECU         |                                  |           |
| 146945                              | P&R BUILDING KEYS                | 106.50    |
| 147584                              | P&R KEYS                         | 49.25     |
| TOTAL VENDOR WHITLOW'S SECU         |                                  | 155.75    |
| VENDOR NAME: WI ASSOCIATION         |                                  |           |
| TUFF 06252020                       | ASR WAAO MEMBERSHIP - RHETT TUFF | 60.00     |
| SIEBERS 06252020                    | ASR WAAO MEMBERSHIP JIM SIEBERS  | 60.00     |
| TOTAL VENDOR WI ASSOCIATION         |                                  | 120.00    |
| VENDOR NAME: WI DEPT JUST-RE        |                                  |           |
| MAY STATEMENT                       | HR EXAMS G1682                   | 340.00    |
| TOTAL VENDOR WI DEPT JUST-RE        |                                  | 340.00    |
| VENDOR NAME: WI DEPT TRANSPO        |                                  |           |
| 395-0000174475                      | ENG DUPLAINVILLE RD DESIGN       | 1,504.46  |
| TOTAL VENDOR WI DEPT TRANSPO        |                                  | 1,504.46  |
| VENDOR NAME: WI DNR ENVIRONM        |                                  |           |
| 268471170-2020-1                    | ENG SWM MUNICIPAL GROUP FEE      | 2,000.00  |
| TOTAL VENDOR WI DNR ENVIRONM        |                                  | 2,000.00  |
| VENDOR NAME: WILL ENTERPRISE        |                                  |           |
| 298265                              | P&R SHIRTS                       | 496.00    |
| 297138                              | P&R STAFF SHIRTS                 | 1,237.46  |
| TOTAL VENDOR WILL ENTERPRISE        |                                  | 1,733.46  |
| VENDOR NAME: WILLIAM/REID           |                                  |           |
| 57429                               | SW FLOODED SUCTION RT ASSEMBLY   | 48,000.00 |
| TOTAL VENDOR WILLIAM/REID           |                                  | 48,000.00 |
| VENDOR NAME: WILMAN DEVELOPMENT LLC |                                  |           |
| 052120                              | P&R FISHING PIER FLOATS          | 2,030.00  |
| TOTAL VENDOR WILMAN DEVELOPMENT LLC |                                  | 2,030.00  |
| VENDOR NAME: WISCONSIN DEPAR        |                                  |           |
| 395-0000174393                      | SW CAPITOL DRIVE                 | 2.89      |
| 395-0000174574                      | SW WEST WAUKESHA BYPASS          | 2.13      |
| TOTAL VENDOR WISCONSIN DEPAR        |                                  | 5.02      |
| VENDOR NAME: WISCONSIN LEGAL        |                                  |           |
| 15841                               | P&R CONTRACT RENTAL FORM         | 145.00    |
| 15843                               | BLD GREEN APPROVAL STICKERS      | 167.00    |
| 15893                               | CT BOAT LAUNCH ENVELOPES         | 137.50    |
| 15923                               | FD BUSINESS CARDS                | 222.00    |

| INVOICE<br>NUMBER                     | DESCRIPTION | AMOUNT          |
|---------------------------------------|-------------|-----------------|
| <hr/>                                 |             |                 |
| VENDOR NAME: WISCONSIN LEGAL          |             |                 |
| TOTAL VENDOR WISCONSIN LEGAL          |             | 671.50          |
| VENDOR NAME: WISCONSIN RETIR          |             |                 |
| 5/31/205/31/20                        |             | 71,779.89       |
| TOTAL VENDOR WISCONSIN RETIR          |             | <hr/> 71,779.89 |
| VENDOR NAME: WOLF CONSTRUCTI          |             |                 |
| 8166HWY COLD MIX                      |             | 419.74          |
| TOTAL VENDOR WOLF CONSTRUCTI          |             | <hr/> 419.74    |
| VENDOR NAME: XEROX CORPORATI          |             |                 |
| 010430159SW JUNE CHARGES AND CONTRACT |             | 231.85          |
| TOTAL VENDOR XEROX CORPORATI          |             | <hr/> 231.85    |
| VENDOR NAME: YUVARAJA MANAVALAN       |             |                 |
| MANAVALANP&R PARK RENTAL REFUND       |             | 163.92          |
| TOTAL VENDOR YUVARAJA MANAVALAN       |             | <hr/> 163.92    |
| GRAND TOTAL:                          |             | 2,416,009.96    |

**CITY OF PEWAUKEE  
COMMON COUNCIL AGENDA ITEM 3.2.**

**DATE:** August 3, 2020

**DEPARTMENT:** Clerk/Treasurer

**PROVIDED BY:**

***SUBJECT:***

Approval of the Accounts Payable Listing Dated August 3, 2020

***BACKGROUND:***

***FINANCIAL IMPACT:***

***RECOMMENDED MOTION:***

**ATTACHMENTS:**

Description

A/P 8-3-2020



| Check Date                     | Check  | Vendor Name                         | Description                              | Amount    |
|--------------------------------|--------|-------------------------------------|------------------------------------------|-----------|
| Bank 100 GENERAL FUND CHECKING |        |                                     |                                          |           |
| 07/21/2020                     | 129400 | 1ST AYD                             | P&R GLOVES                               | 763.73    |
| 07/21/2020                     | 129401 | AILCO EQUIPMENT FINANCE GROUP       | IT JULY SCANNER                          | 412.00    |
| 07/21/2020                     | 129402 | ALESCI HOMES                        | BLD 170906 EROSION BOND REFUND           | 2,000.00  |
| 07/21/2020                     | 129403 | ALPHA OMEGA CLEANING, INC.          | P&R JANITORIAL SERVICES                  | 568.00    |
| 07/21/2020                     | 129404 | ASSESSMENTS USA                     | HR ASR STAFF CANDIDATES EXAMS            | 717.00    |
| 07/21/2020                     | 129405 | B.A.T.I.                            | IT ONE YR SUBSCRIPTION TO LOGMEIN SERVIC | 399.00    |
| 07/21/2020                     | 129406 | BATZNER PEST CONTROL                | P&R PEST CONTROL                         | 65.00     |
| 07/21/2020                     | 129407 | BEACON ATHLETICS                    | P&R BASE ANCHORS                         | 352.00    |
| 07/21/2020                     | 129408 | BIELINSKI HOMES                     | BLD 191269 EROSION BOND REFUND           | 2,000.00  |
| 07/21/2020                     | 129409 | BREDAN MECHANICAL SYSTEMS           | IT BOILER PUMP HOSE                      | 3,993.86  |
| 07/21/2020                     | 129410 | BROOKFIELD PARTY RENTAL             | P&R CANOPY                               | 120.00    |
| 07/21/2020                     | 129411 | BRY ADLER                           | BLD 180237 EROSION BOND REFUND           | 2,000.00  |
| 07/21/2020                     | 129412 | BS&A SOFTWARE                       | IT REMOTE SOFTWARE SETUP AND TRAINING    | 10,000.00 |
| 07/21/2020                     | 129413 | BUELOW VETTER BUIKEMA OLSON & VLIET | HR ATTORNEY                              | 1,192.50  |
| 07/21/2020                     | 129414 | CARLIN SALES CORPORATION            | P&R POND SPRAY                           | 693.31    |
| 07/21/2020                     | 129415 | CUMMINS SALES & SERVICE             | IT GENERATOR INSPECTION AND MAINTENANCE  | 3,209.28  |
| 07/21/2020                     | 129416 | DIVERSIFIED BENEFIT SERVICES, INC.  | CT JULY HRA                              | 310.20    |
| 07/21/2020                     | 129417 | CHARLIE DWYER                       | BLD MILEAGE REIMBURSEMENT                | 137.42    |
| 07/21/2020                     | 129418 | ELLIOTT ACE HARDWARE                | P&R PICKUP TOOLS FOR LITTER              | 43.98     |
| 07/21/2020                     | 129419 | EMMA WOLKOMIR                       | P&R CLASS REFUND                         | 54.00     |
| 07/21/2020                     | 129420 | ERICA OKRZESIK                      | P&R CLASS REFUND                         | 83.00     |
| 07/21/2020                     | 129421 | Espire Homes                        | BLD 190612 EROSION BOND REFUND           | 2,000.00  |
| 07/21/2020                     | 129422 | ENVIRONMENTAL SYSTEMS               | IT DESKTOP CONCURRENT USE PRIMARY MAINT  | 3,900.00  |
| 07/21/2020                     | 129423 | FARINA TREE CARE                    | P&R LAKE FRONT PARK INSECT CONTROLS      | 390.00    |
| 07/21/2020                     | 129424 | FRED'S SANITARY SERVICE             | P&R CLEAN SEPTIC                         | 170.00    |
| 07/21/2020                     | 129425 | FROEDTERT HEALTH /                  | HR WELLNESS                              | 260.00    |
| 07/21/2020                     | 129426 | GLACIER LAKES CHAPTER ACBS          | P&R RENTAL REFUND                        | 240.00    |
| 07/21/2020                     | 129427 | HEARTLAND BUSINESS SYSTEMS          | IT HBSFLEX SERVICES BLOCK                | 5,400.00  |
| 07/21/2020                     | 129428 | HEARTLAND BUSINESS SYSTEMS          | P&R RENTAL REFUND                        | 295.30    |
| 07/21/2020                     | 129429 | MARIANNE HILTUNEN                   | ENG MILEAGE REIMBURSEMENT APR - JUN 2020 | 198.95    |
| 07/21/2020                     | 129430 | HOOPER HANDS BASKETBALL ACADEMY     | P&R BASKETBALL INSTRUCTION               | 1,620.00  |
| 07/21/2020                     | 129431 | HUMPHREY SERVICE PARTS, INC         | P&R AIR FILTER                           | 52.02     |
| 07/21/2020                     | 129432 | JOE YBARRA                          | P&R RENTAL REFUND                        | 85.10     |
| 07/21/2020                     | 129433 | JOHN'S DISPOSAL SERVICE             | ENG GARBAGE                              | 51,495.72 |
| 07/21/2020                     | 129434 | JOHNSON CONTROLS FIRE PROTECTION    | IT FIRE ALARM BASIC STATION 2            | 330.00    |
| 07/21/2020                     | 129435 | KAEREK HOMES INC                    | BLD 171751 EROSION BOND REFUND           | 2,000.00  |
| 07/21/2020                     | 129436 | KATHY HOFFMAN                       | P&R RENTAL REFUND                        | 200.71    |
| 07/21/2020                     | 129437 | KELLY BIEVER                        | P&R SOFTBALL REFUND                      | 89.00     |
| 07/21/2020                     | 129438 | KMB ELECTRIC                        | IT PHONE LINE STATION 2                  | 584.60    |
| 07/21/2020                     | 129439 | LAKELAND SUPPLY, INC.               | P&R LOTION                               | 445.80    |
| 07/21/2020                     | 129440 | LAUREN SERFOZO                      | P&R CLASS REFUND                         | 46.00     |
| 07/21/2020                     | 129441 | LAWN BOYZ CUSTOM CARE               | P&R BROADLEAF WEED CONTROL               | 1,200.00  |
| 07/21/2020                     | 129442 | MELANIE TABBERT                     | P&R CLASS REFUND                         | 74.00     |
| 07/21/2020                     | 129443 | MENARDS                             | P&R TELESCOPIC AUGER                     | 58.94     |
| 07/21/2020                     | 129444 | NASSCO INC                          | P&R FLOOR MOP CLEANER                    | 70.63     |
| 07/21/2020                     | 129445 | OFFICE COPYING EQUIPMENT, LTD       | ENG SHARP MX 4070N CONTRACT              | 624.79    |
| 07/21/2020                     | 129446 | OFFICE DEPOT                        | ENG PAPER                                | 145.98    |
| 07/21/2020                     | 129447 | OFFICE DEPOT                        | ENG OFFICE SUPPLIES                      | 63.10     |
| 07/21/2020                     | 129448 | PEWAUKEE VILLAGE WATER UTILITY      | P&R LAKEFRONT PARK BEACH HOUSE           | 384.86    |
| 07/21/2020                     | 129449 | POMP'S TIRE SERVICE, INC.           | P&R TIRES FOR DIAMOND TRAILER            | 407.36    |
| 07/21/2020                     | 129450 | PREMIUM WATERS, INC                 | P&R WATER                                | 71.99     |
| 07/21/2020                     | 129451 | PROHEALTH WAUKESHA MEMORIAL HOSPITA | HR EXAMS                                 | 959.00    |
| 07/21/2020                     | 129452 | PROJECT ENTERTAINMENT DBA FUN FLICK | P&R MOVIE EVENT DEPOSIT                  | 1,272.57  |
| 07/21/2020                     | 129453 | R&R INSURANCE SERVICES              | CT WORKERS COMP                          | 24,350.00 |
| 07/21/2020                     | 129454 | RICK LICHTER                        | P&R RENTAL REFUND                        | 190.20    |
| 07/21/2020                     | 129455 | ROBERT KEWAN                        | IT APR - JUN MILEAGE REIMBURSEMENT       | 60.66     |
| 07/21/2020                     | 129456 | RUSS'S MULCH & TOPSOIL              | P&R MULCH                                | 1,333.00  |

| Check Date | Check  | Vendor Name                        | Description                              | Amount    |
|------------|--------|------------------------------------|------------------------------------------|-----------|
| 07/21/2020 | 129457 | MICHAEL & DENISE SCHAMENS          | BLD 171579 EROSION BOND REFUND           | 2,000.00  |
| 07/21/2020 | 129458 | SHARREL NORWOOD                    | P&R RENTAL REFUND                        | 190.20    |
| 07/21/2020 | 129459 | SHERWIN-WILLIAMS                   | P&R FIELD MARKING PAINT                  | 134.85    |
| 07/21/2020 | 129460 | SITEONE LANDSCAPE SUPPLY LLC       | P&R VALVE COVER                          | 259.74    |
| 07/21/2020 | 129461 | THIS TIME TOMORROW                 | P&R RENTAL REFUND                        | 178.67    |
| 07/21/2020 | 129462 | WAUKESHA OLDE CAR CLUB             | P&R RENTAL REFUND                        | 200.71    |
| 07/21/2020 | 129463 | WHITLOW'S SECURITY SPECIALISTS     | P&R VILLAGE KEY                          | 27.55     |
| 07/21/2020 | 129464 | WISCONSIN DEPARTMENT OF            | HR G1682 EXAMS                           | 74.00     |
| 07/21/2020 | 129465 | WMCCA                              | CRT JUDICIAL EDUCATION CERTIFICATE PROGR | 660.00    |
| 07/21/2020 | 129466 | AIRGAS USA                         | FD OXYGEN                                | 350.49    |
| 07/21/2020 | 129467 | ALI & HAMMAD LLC                   | FD SHIPPING                              | 35.22     |
| 07/21/2020 | 129468 | CINTAS CORPORATION #184            | FD MATS                                  | 258.82    |
| 07/21/2020 | 129469 | COLUMBUS SUPPLY                    | FD RESCUE VEST                           | 232.86    |
| 07/21/2020 | 129470 | ELLIOTT ACE HARDWARE               | FD RAT TRAP                              | 149.98    |
| 07/21/2020 | 129471 | EMERGENCY LIGHTING & ELECTRONICS   | FD SHIPPING COSTS TO RETURN SIREN FOR RE | 20.31     |
| 07/21/2020 | 129472 | HEIN ELECTRIC SUPPLY               | FD PORCELAIN WIRE HOLD                   | 21.11     |
| 07/21/2020 | 129473 | JERRY'S AUTOMOTIVE SERIVCE LLC     | FD OIL AND AIR FILTERS                   | 152.94    |
| 07/21/2020 | 129474 | KWIK TRIP INC.                     | FD FUEL                                  | 3,080.68  |
| 07/21/2020 | 129475 | OFFICE FURNITURE WAREHOUSE LLC     | FD WAREDOBE CABINET                      | 447.00    |
| 07/21/2020 | 129476 | STREICHER'S                        | FD HELMETS AND BLACK PANELS              | 44.97     |
| 07/22/2020 | 129477 | DIVERSIFIED BENEFIT SERVICES, INC. | CH FLEX ADMIN SERVICES FOR JULY          | 212.00    |
| 07/22/2020 | 22(E)  | DELTA DENTAL                       | DENTAL CLAIMS                            | 1,545.00  |
| 07/22/2020 | 23(E)  | DELTA DENTAL                       | DENTAL CLAIMS 7/8/20                     | 1,039.30  |
| 07/22/2020 | 24(E)  | DELTA DENTAL                       | DENTAL CLAIMS 7/22/20                    | 2,198.00  |
| 07/22/2020 | 25(E)  | DIVERSIFIED BENEFIT SERVICES, INC. | FLEX PAYMENTS 7/17/20                    | 439.74    |
| 07/22/2020 | 26(E)  | DIVERSIFIED BENEFIT SERVICES, INC. | FLEX REIMBURSEMENTS 7/10/20              | 657.29    |
| 07/22/2020 | 27(E)  | WELLS FARGO                        | DEFERRED COMP                            | 5,345.00  |
| 07/22/2020 | 28(E)  | WELLS FARGO                        | DEFERRED COMP PAY DATE 6-19-20           | 5,170.00  |
| 07/22/2020 | 29(E)  | WELLS FARGO                        | DEFERRED COMP PAY DATE 7-3-20            | 5,170.00  |
| 07/22/2020 | 30(E)  | WI DEPT OF REVENUE/SALES TAX       | SALES TAX JUNE 2020                      | 233.76    |
| 07/22/2020 | 31(E)  | AT&T                               | 7/1/20                                   | 202.20    |
| 07/22/2020 | 32(E)  | WE ENERGIES                        | 7/1/20                                   | 3,570.19  |
| 07/22/2020 | 33(E)  | WE ENERGIES                        | 7/22/20                                  | 19,793.15 |
| 07/24/2020 | 129478 | UNITED STATES POSTAL SERVICE       | PR FALL 2020                             | 1,977.57  |
| 07/29/2020 | 129479 | 1ST AYD                            | FD DISINFECT SPRAY                       | 991.48    |
| 07/29/2020 | 129480 | ACTION FIRE & ALARM                | FIRE EXTINGUISHER INSPECTION             | 628.80    |
| 07/29/2020 | 129481 | ADP, LLC                           | HR WORKFORCE NOW                         | 630.00    |
| 07/29/2020 | 129482 | ADVANCED DISPOSAL                  | HWY RECYCLE                              | 4,754.24  |
| 07/29/2020 | 129483 | AECOM TECHNICAL SERVICES, INC      | ENG SWM PLAN REVIEW                      | 17,236.98 |
| 07/29/2020 | 129484 | ALESCI HOMES                       | BLD 191272 OCCUPANCY BOND REFUND         | 500.00    |
| 07/29/2020 | 129485 | ALL-WAYS CONTRACTORS, INC          | P&R TOPSOIL                              | 296.50    |
| 07/29/2020 | 129486 | AUCA CHICAGO MC LOCKBOX            | HWY UNIFORMS                             | 147.94    |
| 07/29/2020 | 129487 | ARC DOCUMENT SOLUTIONS LLC         | ENG SUPPLIES                             | 18.00     |
| 07/29/2020 | 129488 | ARROW TERMINAL, LLC                | HWY WASHERS AND NUTS                     | 319.08    |
| 07/29/2020 | 129489 | ASSESSMENT TECHNOLOGIES LLC        | IT PROGRAMMER SUPPORT CLEAN UP SKETCHES  | 2,968.75  |
| 07/29/2020 | 129490 | AT&T CAROL STREAM IL               | CT TELEPHONE                             | 2,175.38  |
| 07/29/2020 | 129491 | BANK OF FLOWERS                    | CT FLOWERS                               | 97.00     |
| 07/29/2020 | 129492 | BATZNER PEST CONTROL               | P&R PEST CONTROL                         | 60.00     |
| 07/29/2020 | 129493 | BIELINSKI HOMES                    | BLD 181038 EROSION BOND REFUND           | 8,000.00  |
| 07/29/2020 | 129494 | BROOKFIELD PARTY RENTAL            | P&R CANOPY                               | 1,535.60  |
| 07/29/2020 | 129495 | BUMPER TO BUMPER HARTLAND          | P&R V-POWER                              | 32.85     |
| 07/29/2020 | 129496 | CAROL RUNZHEIMER                   | P&R RENTAL REFUND                        | 242.50    |
| 07/29/2020 | 129497 | CINTAS CORPORATION #184            | FD MATS                                  | 339.88    |
| 07/29/2020 | 129498 | CINTAS CORPORATION #184            | P&R SAFETY RESTOCK                       | 42.79     |
| 07/29/2020 | 129499 | COREY OIL                          | HWY UNLEADED GASOLINE                    | 2,385.13  |
| 07/29/2020 | 129500 | CRAIG POHL                         | P&R 8 GAMES                              | 192.00    |
| 07/29/2020 | 129501 | DANIEL LUHRING                     | HWY GRIND OUT STUMP ON SPRINGDALE ESTATE | 80.00     |
| 07/29/2020 | 129502 | DIGGERS HOTLINE                    | SW JUNE 2020                             | 366.30    |
| 07/29/2020 | 129503 | DIVE RIGHT IN SCUBA - PLAINFIELD   | FD RAPID RESCUE EXTREME SURFACE SUIT     | 570.00    |
| 07/29/2020 | 129504 | ELEVITY                            | IT REMOTE MAINTENANCE, MICROSOFT 365, RE | 2,722.50  |

| Check Date | Check  | Vendor Name                       | Description                       | Amount     |
|------------|--------|-----------------------------------|-----------------------------------|------------|
| 07/29/2020 | 129505 | ELLIOTT ACE HARDWARE              | HWY WATCH BATTERIES               | 120.40     |
| 07/29/2020 | 129506 | EXQUISITE EXTERIORS LLC           | FD WINDOW CLEANING                | 80.00      |
| 07/29/2020 | 129507 | GREG WESTON                       | AD DEER CONTROL                   | 50.00      |
| 07/29/2020 | 129508 | HALQUIST STONE                    | P&R SPRINGDALE PLAYGROUND STONE   | 12.39      |
| 07/29/2020 | 129509 | HARTLAND OVERHEAD DOOR            | FD DOOR REPAIR                    | 155.00     |
| 07/29/2020 | 129510 | HAWKINS, INC.                     | SW CHEMICALS                      | 3,959.05   |
| 07/29/2020 | 129511 | HEARTLAND BUSINESS SYSTEMS        | IT NETWORK MONITORING SUPPORT     | 184.00     |
| 07/29/2020 | 129512 | HEIN ELECTRIC SUPPLY              | FD STR BLD CONN 3W                | 93.66      |
| 07/29/2020 | 129513 | HUMPHREY SERVICE PARTS, INC       | HWY OIL FILTER                    | 28.43      |
| 07/29/2020 | 129514 | J.F. AHERN COMPANY                | FD SPRINKLER INSPECTION           | 793.00     |
| 07/29/2020 | 129515 | J.F. AHERN COMPANY                | FD SPRINKLER REFUND               | 100.00     |
| 07/29/2020 | 129516 | JIM TREDWELL                      | P&R RENTAL REFUND                 | 85.00      |
| 07/29/2020 | 129517 | JOHN'S DISPOSAL SERVICE           | ENG JUNE LANDFILL CHARGES         | 16,472.89  |
| 07/29/2020 | 129518 | JX ENTERPRISES, INC.              | HWY BUSHING MOUNTING EXHAUST      | 38.60      |
| 07/29/2020 | 129519 | KAEREK HOMES INC                  | BLD 191833 OCCUPANCY BOND REFUND  | 4,500.00   |
| 07/29/2020 | 129520 | KEITH KAUFMAN                     | AD DEER CONTROL                   | 50.00      |
| 07/29/2020 | 129521 | KETTLE CREEK HOMES                | BLD 190842 EROSION BOND REFUND    | 2,000.00   |
| 07/29/2020 | 129522 | KM SPORTS                         | P&R INCREDIBALL SOFTSTICH DOZENS  | 260.00     |
| 07/29/2020 | 129523 | KMB ELECTRIC                      | P&R ELECTRICAL BOX COVERS FOR PSC | 865.00     |
| 07/29/2020 | 129524 | LAFARGE AGGREGATES ILLINOIS, INC. | SWM STONES                        | 225.00     |
| 07/29/2020 | 129525 | LAKELAND SUPPLY, INC.             | P&R TOWEL ROLLS, TISSUES          | 896.90     |
| 07/29/2020 | 129526 | LAWN BOYZ CUSTOM CARE             | P&R BROADLEAF WEED CONTROL        | 2,340.00   |
| 07/29/2020 | 129527 | LEE RECREATION                    | P&R SPRINGDALE PARK PLAYGROUND    | 4,500.00   |
| 07/29/2020 | 129528 | LIFE-ASSIST INC                   | FD FIRST AID SUPPLIES             | 1,118.78   |
| 07/29/2020 | 129529 | LITHO-CRAFT                       | SW JOB WORK ORDER BOOKS           | 129.00     |
| 07/29/2020 | 129530 | MADINA SABIROVA                   | P&R CLASS REFUND                  | 49.00      |
| 07/29/2020 | 129531 | MATTHEWS INTERNATIONAL            | CT DIAMOND FOR HANSEN AND GORE    | 305.38     |
| 07/29/2020 | 129532 | MED COMPASS                       | HR SAFETY                         | 668.00     |
| 07/29/2020 | 129533 | MENARDS                           | FD SOCKET TRAYS                   | 210.65     |
| 07/29/2020 | 129534 | MID-AMERICAN RESEARCH CHEMICAL    | HWY BRAKE AND PARTS CLEANER       | 263.40     |
| 07/29/2020 | 129535 | MIDWEST PAVING                    | HWY HYDRALIC REPAIR               | 786.56     |
| 07/29/2020 | 129536 | MJW DEVELOPMENT LLC               | BLD 170803 EROSION BOND REFUND    | 2,000.00   |
| 07/29/2020 | 129537 | MUNICIPAL WELL & PUMP             | SW SPARE MOTOR WELL #6            | 28,070.00  |
| 07/29/2020 | 129538 | NAPA                              | SW GASKET MATERIAL GUN CLUB       | 11.17      |
| 07/29/2020 | 129539 | OFFICE DEPOT                      | FD OFFICE SUPPLIES                | 822.84     |
| 07/29/2020 | 129540 | OFFICE DEPOT                      | SW OFFICE SUPPLIES                | 158.56     |
| 07/29/2020 | 129541 | PACK 13 - CUB SCOUTS              | P&R RENTAL REFUND                 | 80.00      |
| 07/29/2020 | 129542 | PAYNE & DOLAN                     | ENG CONTRACT PAYMENT              | 412,564.31 |
| 07/29/2020 | 129543 | PORT-A-JOHN                       | P&R SEASONAL RESTROOM             | 372.00     |
| 07/29/2020 | 129544 | POSITIVELY PEWAUKEE               | P&R RENTAL REFUND                 | 620.00     |
| 07/29/2020 | 129545 | PREMIUM WATERS, INC               | P&R WATER                         | 63.49      |
| 07/29/2020 | 129546 | PUBLIC SERVICE COMMISSION OF WI   | SW JUNE EXPENSES                  | 4,214.29   |
| 07/29/2020 | 129547 | REINDERS, INC.                    | SWM METAL STAPLES                 | 40.18      |
| 07/29/2020 | 129548 | MOTION & CONTROL ENTERPRISES LLC  | HWY COUPLER                       | 219.74     |
| 07/29/2020 | 129549 | ROMENS PLUMBING LLC               | CT CROSS CONNECTION INSPECTIONS   | 400.00     |
| 07/29/2020 | 129550 | RUEKERT & MIELKE, INC.            | SW DESIGN AND BIDDING SERVICES    | 82,753.14  |
| 07/29/2020 | 129551 | RUSS'S MULCH & TOPSOIL            | P&R WOOD CHIPS                    | 945.00     |
| 07/29/2020 | 129552 | SAFETY-KLEEN CORP                 | HWY PARTS WASHER SERVICE SOLVENT  | 200.00     |
| 07/29/2020 | 129553 | SHAWNS DEER PICK UP               | HWY DEER REMOVAL                  | 260.00     |
| 07/29/2020 | 129554 | SHERWIN-WILLIAMS                  | P&R EZ-STRAINER INTAKEST          | 112.75     |
| 07/29/2020 | 129555 | SOWMYA NAGARAJ                    | P&R RENTAL REFUND                 | 242.50     |
| 07/29/2020 | 129556 | Strand Associates, Inc            | SW GENERAL ON CALL SERVICES       | 388.68     |
| 07/29/2020 | 129557 | TAYLOR COMPUTER SERVICES          | SW DELL MINI TOWER PC             | 2,417.95   |
| 07/29/2020 | 129558 | TIFFANY VANDE ZANDE               | P&R RENTAL REFUND                 | 106.00     |
| 07/29/2020 | 129559 | TOM CASANOVA                      | CT SPECIAL EVENT REFUND           | 335.00     |
| 07/29/2020 | 129560 | TOM WHALEN                        | P&R RENTAL REFUND                 | 190.20     |
| 07/29/2020 | 129561 | TRAFFICE ANALYSIS & DESIGN INC    | ENG CTH F/LINDSAY ICE ANALYSIS    | 8,676.00   |
| 07/29/2020 | 129562 | VERATHON                          | FD GLIDERITE RIGID STYLET PACKS   | 362.17     |
| 07/29/2020 | 129563 | VERIZON                           | SW                                | 265.97     |
| 07/29/2020 | 129564 | VICTORY HOMES                     | BLD 170678 EROSION BOND REFUND    | 2,000.00   |

| Check Date | Check  | Vendor Name                        | Description                              | Amount    |
|------------|--------|------------------------------------|------------------------------------------|-----------|
| 07/29/2020 | 129565 | WACHTEL TREE SCIENCE               | SW CONIFER FUNGICIDE ROUND 2             | 225.00    |
| 07/29/2020 | 129566 | WAUKESHA LIME & STONE CO.          | SWM STONE                                | 1,276.83  |
| 07/29/2020 | 129567 | WESTERN CULVERT & SUPPLY           | SWM CMPA                                 | 4,123.20  |
| 07/29/2020 | 129568 | WI DEPT OF JUSTICE-TIME            | CT TIME ACCESS                           | 150.00    |
| 07/29/2020 | 129569 | WI DEPT TRANSPORTATION             | ENG DUPLAINVILLE RD DESIGN               | 1,454.87  |
| 07/29/2020 | 129570 | WISCONSIN LEGAL BLANK              | CT ABSENTEE ENVELOPES                    | 2,238.00  |
| 07/29/2020 | 129571 | WOLDANSKI, KELLEY                  | HR SIEBERS ICE CREAM SOCIAL REIMBURSEMEN | 14.91     |
| 07/29/2020 | 129572 | XEROX CORPORATION                  | SW JULY CONTRACT AND PRINTS              | 922.92    |
| 07/29/2020 | 129573 | CINTAS CORPORATION #184            | FD MATS                                  | 61.14     |
| 07/29/2020 | 129574 | CINTAS CORPORATION #184            | SW FIRST AID SUPPLIES                    | 190.22    |
| 07/29/2020 | 129575 | CINTAS CORPORATION #184            | HWY SUPPLY RESTOCK                       | 88.52     |
| 07/30/2020 | 34(E)  | ADP, LLC                           | PAYROLL PROCESSING FEES                  | 488.36    |
| 07/30/2020 | 35(E)  | ADP, LLC                           | PR PROCESSING FEES AND G/L REWRITE       | 1,383.97  |
| 07/30/2020 | 36(E)  | AUTHNET                            | CREDIT CARD PROCESSING FEES              | 39.55     |
| 07/30/2020 | 37(E)  | DELTA DENTAL                       | DENTAL CLAIMS 7/29/20                    | 2,886.51  |
| 07/30/2020 | 38(E)  | DIVERSIFIED BENEFIT SERVICES, INC. | FLEX 7/24/20                             | 669.55    |
| 07/30/2020 | 39(E)  | DIVERSIFIED BENEFIT SERVICES, INC. | 7/31/20 FLEX CLAIMS                      | 1,459.56  |
| 07/30/2020 | 40(E)  | HEARTLAND PAYMENT SYSTEMS - CC     | CREDIT CARD PROCESSING FEES              | 453.99    |
| 07/30/2020 | 41(E)  | HUMANA                             | HEALTH INSURANCE                         | 85,563.22 |
| 07/30/2020 | 42(E)  | HUMANA                             | HEALTH INSURANCE                         | 85,009.55 |
| 07/30/2020 | 43(E)  | LEASING SERVICES                   | COPIER LEASE                             | 150.00    |
| 07/30/2020 | 44(E)  | LEASING SERVICES                   | COPIER LEASE                             | 104.00    |
| 07/30/2020 | 45(E)  | LEASING SERVICES                   | COPIER LEASE                             | 370.00    |
| 07/30/2020 | 46(E)  | LEASING SERVICES                   | COPIER LEASE                             | 200.00    |
| 07/30/2020 | 47(E)  | LEASING SERVICES                   | COPIER LEASE                             | 167.85    |
| 07/30/2020 | 48(E)  | MUTUAL OF OMAHA                    | AUGUST 2020                              | 4,523.34  |
| 07/30/2020 | 49(E)  | PITNEY BOWES GLOBAL                | 7/2/20 POSTAGE                           | 2,625.07  |
| 07/30/2020 | 50(E)  | WE ENERGIES                        | 7/27/20                                  | 198.61    |
| 07/30/2020 | 51(E)  | WE ENERGIES                        | 0000-051-847 7/31/20                     | 2,859.41  |

|                             |              |
|-----------------------------|--------------|
| 100 TOTALS:                 |              |
| Total of 206 Checks:        | 1,023,721.74 |
| Less 1 Void Checks:         | 339.88       |
| Total of 205 Disbursements: | 1,023,381.86 |

**CITY OF PEWAUKEE  
COMMON COUNCIL AGENDA ITEM 4.**

**DATE:** August 3, 2020

**DEPARTMENT:** Clerk/Treasurer

**PROVIDED BY:**

***SUBJECT:***

Second Quarter Police Services Update [Moonen]

***BACKGROUND:***

***FINANCIAL IMPACT:***

***RECOMMENDED MOTION:***

**ATTACHMENTS:**

Description

Second Quarter Report

|                                      |
|--------------------------------------|
| <b>CITY OF PEWAUKEE</b>              |
| <b>2020 - 2ND QUARTER STATISTICS</b> |

| ADMINISTRATIVE |        |
|----------------|--------|
| GAS GALLONS    | 3,260  |
| TOTAL MILES    | 31,317 |

| ENFORCEMENT            |     |
|------------------------|-----|
| CITATIONS              | 116 |
| ORD. CITATIONS (JUV.)  | 7   |
| ORD. CITATIONS (ADULT) | 34  |
| WRITTEN WARNINGS       | 12  |
| DA REFERRALS (JUV.)    | 0   |
| DA REFERRALS (ADULT)   | 18  |

| ACTIVITY                |      |
|-------------------------|------|
| TOTAL CALLS FOR SERVICE | 1352 |
| TOTAL IR'S TAKEN        | 113  |
| COMMUNITY CONTACTS      | 1565 |
| TRAFFIC STOPS           | 104  |
| ASSIST OTHER WSD        | 125  |
| ASSIST OTHER AGENCY     | 74   |
| BACK-UP REQUESTED       | 111  |
| ASSIST FIRE/EMS         | 149  |
| PDO ONLY                | 32   |
| PERSONAL INJURY         | 9    |
| FATAL ACCIDENT          | 1    |
| OWI                     | 3    |
| BUSINESS CHECKS         | 1305 |
| OPEN DOORS              | 16   |



LIEUTENANT MARC R. MOONEN

LIEUTENANT ANTHONY SHECKLES

**CITY OF PEWAUKEE  
COMMON COUNCIL AGENDA ITEM 5.**

**DATE:** August 3, 2020

**DEPARTMENT:** Planning

**PROVIDED BY:**

***SUBJECT:***

**PUBLIC HEARING,** Discussion and Possible Action Regarding the Conditional Use Permit for the Property Located at W226 N2940 Duplainville Road (PWC 0913-997-001, PWC 0914-991, PWC 0914-992-001) for the Purpose of Constructing a One-Story 25,000 Square Foot Repair Garage Building as Requested by Duplainville Land Company, LLC / John Zignego [Fuchs]

***BACKGROUND:***

***FINANCIAL IMPACT:***

***RECOMMENDED MOTION:***

**ATTACHMENTS:**

Description

Zignego Site & Building Plans

Noise Study

Gloss Opposition

Zignego Conditional Use Permit



PROPOSED NEW REPAIR FACILITY BUILDING:

ZIGNEGO REPAIR FACILITY

W226 N2940 DUPLAINVILLE ROAD  
PEWAUKEE, WISCONSIN 53186



1 AERIAL VIEW - NORTH ELEVATION LOOKING SOUTH  
NO SCALE



2 AERIAL VIEW - LOOKING NORTH / NORTH EAST  
NO SCALE

CODE CALCULATIONS AND ANALYSIS: SHELL BUILDING

OCCUPANCY CALCULATION: (ACTUAL OCCUPANT LOAD IS 222)

OCCUPANCY S-1 EQUIPMENT AND VEHICLE REPAIR GARAGE (PRIMARY)  
500 SQUARE FEET IS MAXIMUM FLOOR AREA ALLOWANCE PER OCCUPANT  
21,764 SQUARE FEET GROSS / 100 SQUARE FEET PER PERSON = 218 PEOPLE MAXIMUM  
OCCUPANCY B BUSINESS (SECONDARY)  
100 SQUARE FEET IS MAXIMUM FLOOR AREA ALLOWANCE PER OCCUPANT  
5,953 SQUARE FEET GROSS / 100 SQUARE FEET PER PERSON = 60 PEOPLE MAXIMUM  
TOTAL OCCUPANCY = 278 PEOPLE MAXIMUM (ACTUAL OCCUPANCY WILL BE LESS THAN 500)

PLUMBING FIXTURE CALCULATION: PLUMBING FACILITIES TO BE ADDED AS NEEDED  
BASED ON TOTAL OCCUPANCY = 222 PEOPLE MAXIMUM IN THE FUTURE TENANTS, ACTUAL PLUMBING  
CALCULATIONS PROVIDED IN THE CODE ANALYSIS FOR EACH TENANT.

EXIT WIDTH REQUIRED AND EXIT ACCESS TRAVEL DISTANCE:

EXIT WIDTH REQUIRED 278 x 20 = 55.6 INCHES OR 32 INCHES EACH MINIMUM CLEAR X (2) EXITS  
EXIT WIDTH PROVIDED (9) 36" WIDE DOORS x 34" = 306" WIDTH  
TOTAL EXIT WIDTH PROVIDED OF 306" EXCEEDS REQUIRED EXIT WIDTH CALCULATED (55.6")  
TOTAL NUMBER OF EXISTING EXITS PROVIDED (9) EXCEEDS THE NUMBER OF EXITS REQUIRED (2)  
REFER TO SHEET A0.1 FOR ADDITIONAL INFORMATION

EXIT TRAVEL DISTANCE:  
CURRENT TRAVEL DISTANCE TO EXITS ALONG EXIT EGRESS DOES NOT EXCEED CODE MAXIMUM  
OF 250 FEET. REFER TO EXITING DIAGRAM ON SHEET A0.1.

AREA AND HEIGHT LIMITATION CALCULATIONS:

PER IBC TABLE 504.3, 504.4 AND 506.2:  
FOR OCCUPANCY GROUP S-1 WHICH IS MORE RESTRICTIVE THAN B (TYPE 2B  
CONSTRUCTION - WITH AUTOMATIC SPRINKLER INCREASE)  
3 STORIES AND 70,000 S.F. ALLOWED FROM TABLE 506.2 WITH AUTOMATIC SPRINKLER  
SYSTEM INCREASE 70,000 S.F. MAXIMUM ALLOWED. (WITH FRONTAGE INCREASE) 73,625  
S.F. MAXIMUM ALLOWED  
THE ACTUAL OVERALL SIZE IS 27,770 S.F. AND 1 (ONE) STORY.  
THE BUILDING AREA WITH THE PROPOSED ADDITION WAS AND IS MORE THAN ABOVE  
THE MAXIMUM ALLOWABLE AREA LIMITS PER TABLE 504.4 WITH AUTOMATIC SPRINKLER  
AND FRONTAGE INCLUDED. THE BUILDING IS CLASSIFIED AS CONSTRUCTED (TYPE 2B).

BUILDING IS BELOW ALLOWABLE HEIGHT LIMIT OF 75 FEET. THE ACTUAL IS 29'-6" FEET  
MAXIMUM WHICH BELOW THE 75 FEET MAXIMUM HEIGHT ALLOWED PER TABLE 504.3.O.K

MULTIPLE OCCUPANCIES:

BUILDING DESIGN IS BASED ON NON-SEPARATED OCCUPANCIES PER IBC 508.3.  
THE ALLOWABLE AREA, STORY AND HEIGHT BELOW IS THE MORE RESTRICTIVE  
OCCUPANCY GROUP, WHICH IS F-1. REFER TO IBC TABLE 506.2.  
ALL OF THESE OCCUPANCIES ARE ALLOWED AS PART OF IBC 507.

CONSTRUCTION CLASSIFICATION REQUIREMENTS:

PER IBC TABLE 601 AND TABLE 602:  
TYPE IIB CONSTRUCTION:  
PRIMARY STRUCTURAL FRAME "0" RATING REQUIRED  
INTERIOR BEARING WALLS "0" RATING REQUIRED  
EXTERIOR BEARING WALLS "0" RATING REQUIRED  
(PER TABLE 602 > 30 FEET "0" RATING REQUIRED  
NONBEARING WALLS AND PARTITIONS "0" RATING REQUIRED  
FLOOR CONSTRUCTION AND SECONDARY MEMBERS "0" RATING REQUIRED  
ROOF CONSTRUCTION AND SECONDARY MEMBERS "0" RATING REQUIRED

BUILDING ENVELOPE REQUIREMENTS: PROPOSED TO USE PRESCRIPTIVE METHOD.  
PER SPS 363.0402 BUILDING ENVELOPE REQUIREMENTS: (1) OPAQUE ASSEMBLIES.  
SUBSTITUTE 2009 IECC TABLE 502.2 (1) PER SPS 363.5402 BUILDING ENVELOPE  
REQUIREMENTS, (1) INSULATION AND FENESTRATION REQUIREMENTS BY  
COMPONENT. REFER TO SHEET AS.1 ARCHITECTURAL ELEVATIONS.

SHEET INDEX

|             |                       |
|-------------|-----------------------|
| 0 - GENERAL |                       |
| T1.1        | TITLE SHEET           |
| T1.2        | EXTERIOR PERSPECTIVES |

|                    |                |
|--------------------|----------------|
| 1 - SPECIFICATIONS |                |
| GS.1               | SPECIFICATIONS |
| GS.2               | SPECIFICATIONS |

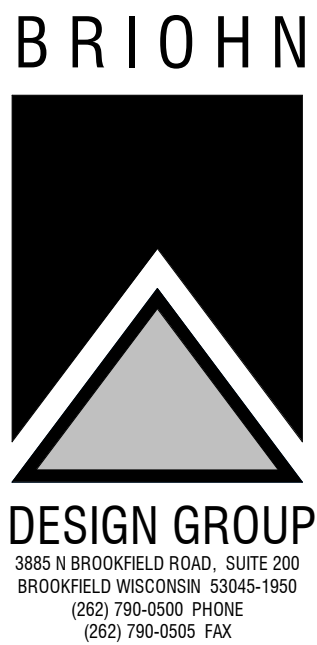
|            |                         |
|------------|-------------------------|
| 2 - SURVEY |                         |
| EX1        | EXISTING CONDITIONS MAP |
| EX2        | EXISTING CONDITIONS MAP |
| EX3        | EXISTING CONDITIONS MAP |

|           |                                 |
|-----------|---------------------------------|
| 3 - CIVIL |                                 |
| C0.1      | SITE CROSS-SECTIONS EXHIBIT     |
| C1.0      | SITE DIMENSION AND GRADING PLAN |
| C1.1      | MASS GRADING PLAN               |
| C2.0      | SITE UTILITY PLAN               |
| C3.0      | DETAILS                         |
| C3.1      | DETAILS                         |

|                 |                                                  |
|-----------------|--------------------------------------------------|
| 4 - LANDSCAPING |                                                  |
| L1.0            | EXISTING LANDSCAPE AND NATURAL RESOURCES EXHIBIT |

|                   |                                                  |
|-------------------|--------------------------------------------------|
| 5 - ARCHITECTURAL |                                                  |
| A0.1              | ARCHITECTURAL SITE PLAN                          |
| A1.0              | OVERALL FLOOR PLAN                               |
| A1.1              | MEZZANINE FLOOR PLAN                             |
| A1.2              | ENLARGED FIRST FLOOR PLAN, SCHEDULES & NOTES     |
| A1.3              | ENLARGED MEZZANINE FLOOR PLAN, SCHEDULES & NOTES |
| A4.1              | ROOF PLAN                                        |
| AS.1              | EXTERIOR ELEVATIONS                              |
| A6.1              | BUILDING SECTIONS                                |

|                |                                    |
|----------------|------------------------------------|
| 6 - ELECTRICAL |                                    |
| E1.0           | EXTERIOR PHOTOMETRIC LIGHTING PLAN |
| E2.0           | LIGHTING CUT SHEETS                |
| E2.1           | LIGHTING CUT SHEETS                |
| E2.2           | LIGHTING CUT SHEETS                |



TITLE SHEET

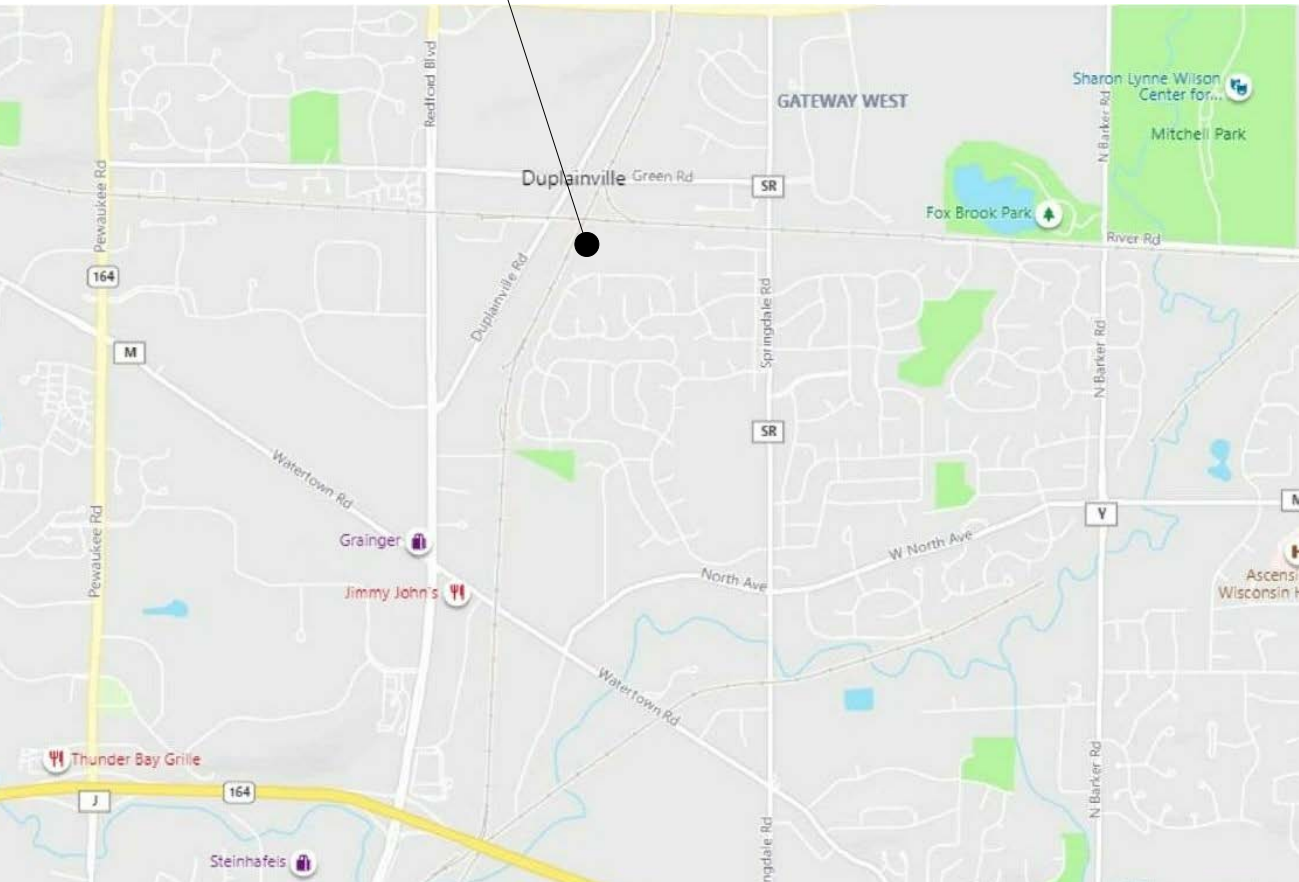
PROPOSED NEW REPAIR FACILITY BUILDING  
ZIGNEGO REPAIR FACILITY  
W226 N2940 DUPLAINVILLE ROAD  
PEWAUKEE, WISCONSIN 53186

CITY OF PEWAUKEE SUBMISSION FOR: SITE AND BUILDING; REZONING; CSM AND CONDITIONAL USE APPROVAL TO: PLAN COMMISSION AND COUNCIL

MAY 28, 2020

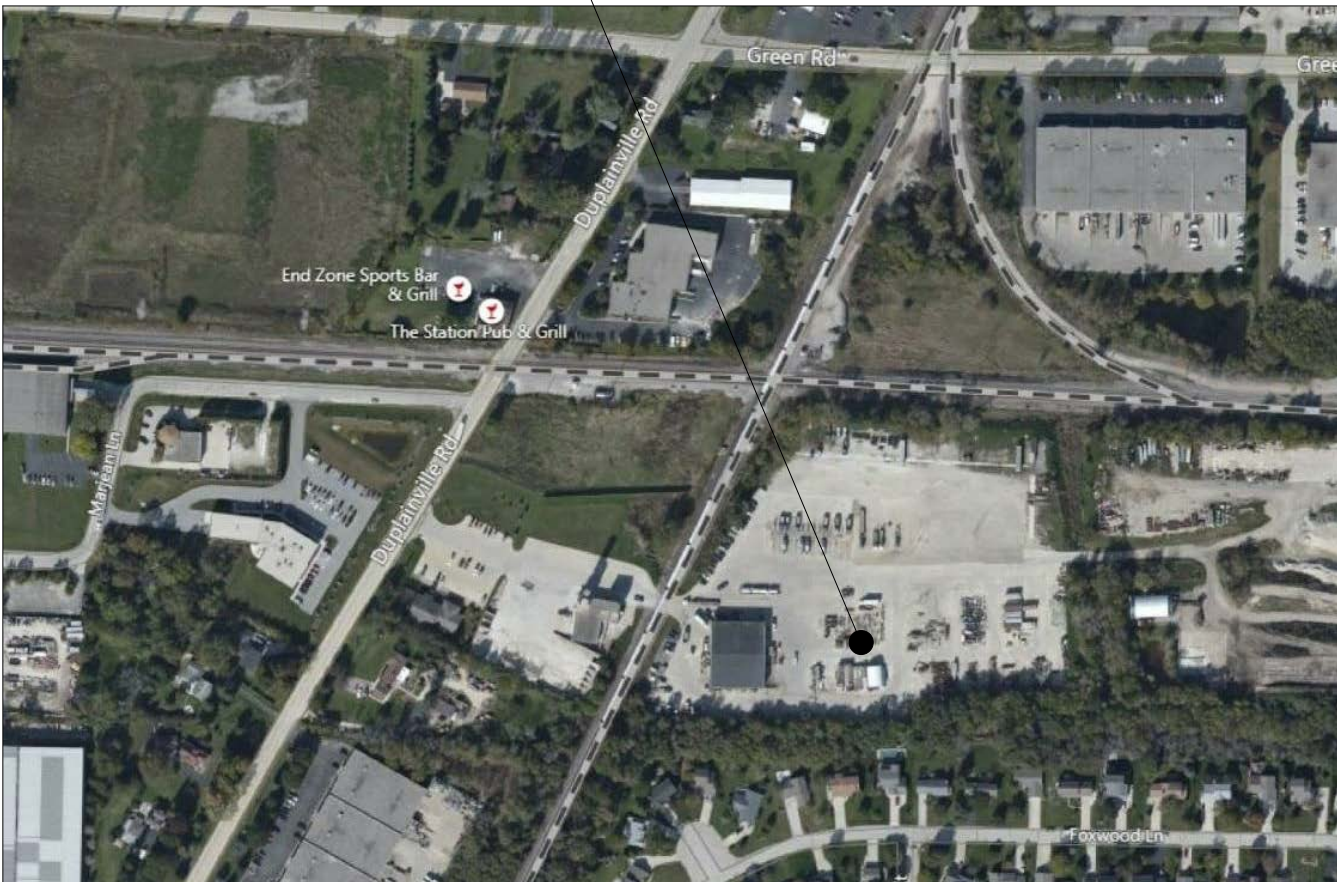
|                                                                                                                |                                                                                                                |                                                                                                                |
|----------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| OWNER :                                                                                                        | GENERAL CONTRACTOR :                                                                                           | ARCHITECT :                                                                                                    |
| ZIGNEGO COMPANY, INC.<br>TIM ZIGNEGO & TER ZIGNEGO                                                             | BRIOHN BUILDING CORPORATION<br>MIKE BYRNE                                                                      | BRIOHN DESIGN GROUP LLC<br>DOMENICO FERRANTE, AIA                                                              |
| W226 N2940 DUPLAINVILLE ROAD<br>PEWAUKEE, WI 53186                                                             | 3885 N. BROOKFIELD RD., SUITE 200<br>BROOKFIELD, WISCONSIN 53045<br>(262) 790-0500 PHONE<br>(262) 790-0505 FAX | 3885 N. BROOKFIELD RD., SUITE 200<br>BROOKFIELD, WISCONSIN 53045<br>(262) 790-0500 PHONE<br>(262) 790-0505 FAX |
| STRUCTURAL ENGINEER:                                                                                           | CIVIL ENGINEER:                                                                                                | LANDSCAPE DESIGNER:                                                                                            |
| BRIOHN DESIGN GROUP LLC<br>KEVIN JANKOWSKI, PE<br>CHRIS CLINE, PE                                              | JSD PROFESSIONAL SERVICES, INC.<br>RIZAL W. ISKANDARSJACH, P.E., P.L.S.                                        | JSD PROFESSIONAL SERVICES, INC.<br>KRISTIN SHERFINSKI                                                          |
| 3885 N. BROOKFIELD RD., SUITE 100<br>BROOKFIELD, WISCONSIN 53045<br>(262) 790-0500 PHONE<br>(262) 790-0505 FAX | W238 N1610 BUSSE ROAD, SUITE 100<br>WAUKESHA, WISCONSIN 53188<br>(262) 513-0666 PHONE<br>(262) 513-1232 FAX    | W238 N1610 BUSSE ROAD, SUITE 100<br>WAUKESHA, WISCONSIN 53188<br>(262) 513-0666 PHONE<br>(262) 513-1232 FAX    |

PROJECT LOCATION:



3 SITE LOCATION MAP  
NO SCALE

PROJECT SITE LOCATION:



4 VICINITY MAP  
NO SCALE

PROJECT INFORMATION:

|                        |                                                                                                                                                                                                            |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CODE:                  | SPS 360-366 WISCONSIN COMMERCIAL BUILDING CODE<br>(IBC 2015, IECC 2015/2009, IEBC 2015, IMC 2015 AND IFGC 2009)<br>SPS 314 FIRE PREVENTION (REFERENCED NFPA)<br>SPS 316 ELECTRICAL<br>SPS 381-387 PLUMBING |
| OCCUPANCY:             | F-1 (MANUFACTURING)<br>S-1 (STORAGE)<br>B (BUSINESS - OFFICE)                                                                                                                                              |
| CLASS OF CONSTRUCTION: | TYPE 2B                                                                                                                                                                                                    |
| SPRINKLER SYSTEM:      | FULL - NFPA 13                                                                                                                                                                                             |
| FLOOR LEVELS:          | 2 (ONE STORY PLUS MEZZANINE)                                                                                                                                                                               |
| NUMBER OF STORIES:     | 1 + MEZZANINE                                                                                                                                                                                              |
| TOTAL SITE AREA:       | 1,033,907 SF 23.74 ACRES                                                                                                                                                                                   |
| TOTAL BUILDING AREA:   | 24,800 SF FOOTPRINT (MAIN LEVEL),<br>2,917 SF MEZZANINE = 27,717 SF OVERALL COMBINED TOTAL AREA                                                                                                            |

NOTE:

ALL MECHANICAL, ELECTRICAL, PLUMBING AND FIRE  
SPRINKLER ENGINEERING BY DESIGN-BUILD CONTRACTORS



APPLICABLE  
TO ALL  
PLAN VIEWS

|                                                                         |  |
|-------------------------------------------------------------------------|--|
| Revised Plan Commission Per City Of Pewaukee Letter Dated June 15, 2020 |  |
| Date June 30, 2020                                                      |  |
| JOB: 3239                                                               |  |
| DRAWN: CK                                                               |  |
| CHECKED: DF / KJ                                                        |  |
| DATE: MAY 28, 2020                                                      |  |
| SHEET:                                                                  |  |
| T1.1                                                                    |  |

















CREATE THE VISION TELL THE STORY

MADISON | MILWAUKEE | WAUSAU  
APPLETON | KENOSHA | CHICAGO  
COEUR D'ALENE

MILWAUKEE REGIONAL OFFICE  
W238 N1610 BUSSE ROAD, SUITE 100  
WAUKESHA, WISCONSIN 53188  
P. 262.513.0666

CLIENT:  
BRIHON DESIGN GROUP

CLIENT ADDRESS:  
3885 N BROOKFIELD RD, STE 200  
BROOKFIELD, WI, 53045

PROJECT:  
PROPOSED ZIGNAGO  
REPAIR FACILITY  
BUILDING

PROJECT LOCATION:  
PEWAUKEE, WI  
WAUKESHA COUNTY

| PLAN MODIFICATIONS: |       |              |
|---------------------|-------|--------------|
| #                   | Date: | Description: |
| 1                   |       |              |
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| 15                  |       |              |

Design/Drawn: IRN  
Approved: RW

SHEET TITLE:  
EXISTING CONDITIONS  
MAP

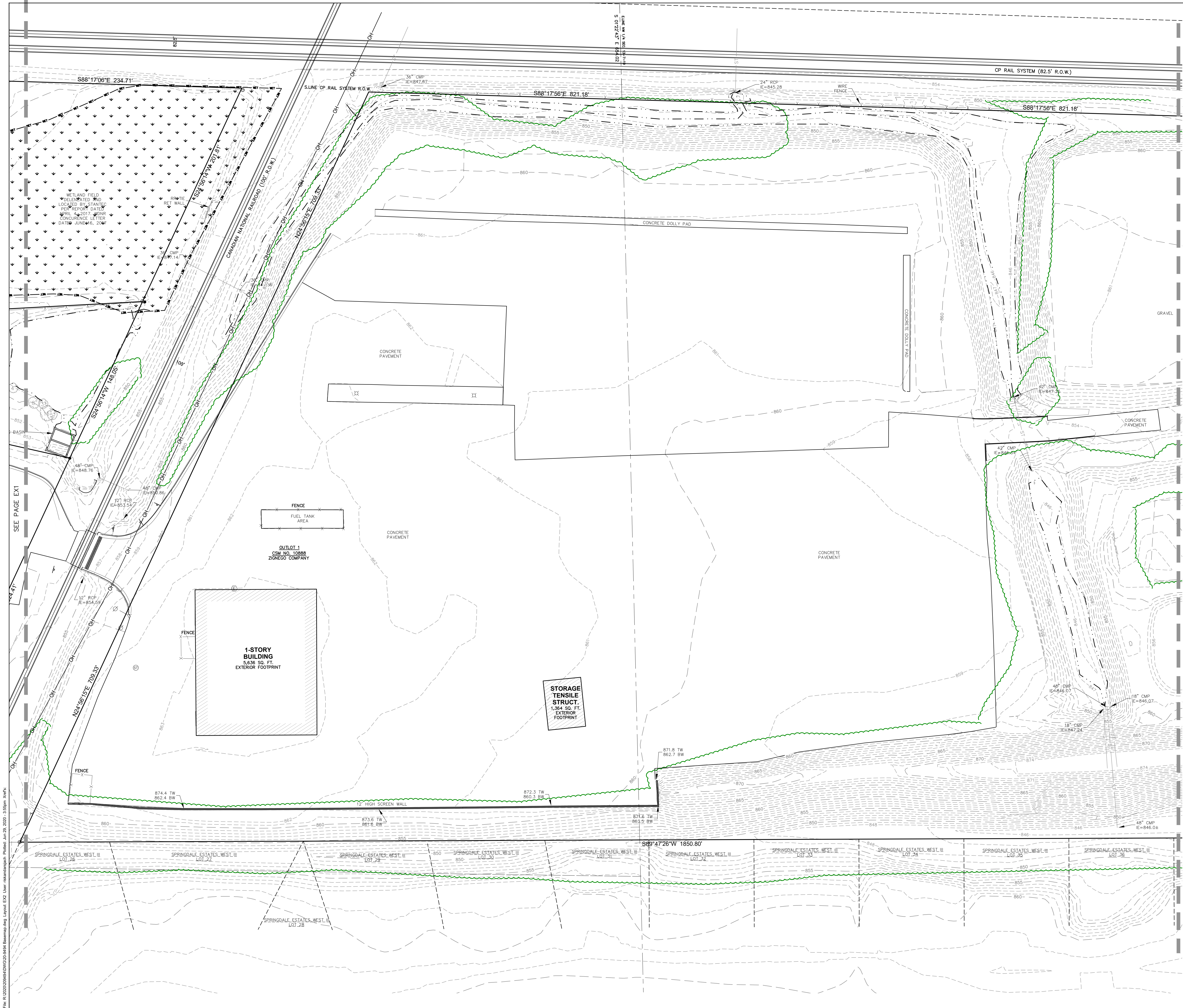
SHEET NUMBER:

EX1

JSD PROJECT NO: 20-0459







CREATE THE VISION TELL THE STORY

MADISON | MILWAUKEE | WAUSAU  
APPLETON | KENOSHA | CHICAGO  
COEUR D'ALENE

MILWAUKEE REGIONAL OFFICE  
W238 N1610 BUSSE ROAD, SUITE 100  
WAUKESHA, WISCONSIN 53188  
P. 262.513.0666

CLIENT:

CLIENT ADDRESS:

PROJECT:  
**PROPOSED ZIGNAGO  
REPAIR FACILITY  
BUILDING**

PROJECT LOCATION:  
**PEWAUKEE, WI  
WAUKESHA COUNTY**

| PLAN MODIFICATIONS: |       |              |
|---------------------|-------|--------------|
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Design/Drawn: IRN  
Approved: RW

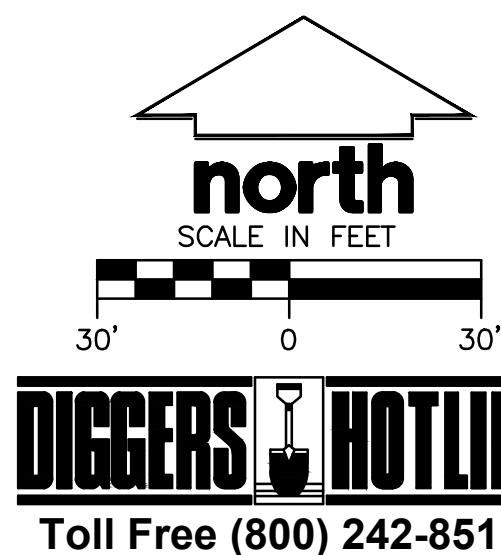
SHEET TITLE:  
**EXISTING CONDITIONS  
MAP**

SHEET NUMBER:

**EX2**

JSD PROJECT NO:

THESE PLANS AND DESIGNS ARE COPYRIGHT PROTECTED AND MAY NOT BE USED IN WHOLE OR IN PART WITHOUT THE WRITTEN CONSENT OF JSD PROFESSIONAL SERVICES, INC.







CREATE THE VISION TELL THE STORY

MADISON | MILWAUKEE | WAUSAU  
APPLETON | KENOSHA | CHICAGO  
COEUR D'ALENE

MILWAUKEE REGIONAL OFFICE  
W238 N1610 BUSSE ROAD, SUITE 100  
WAUKESHA, WISCONSIN 53188  
P. 262.513.0666

CLIENT:

CLIENT ADDRESS:

PROJECT:  
**PROPOSED ZIGNAGO  
REPAIR FACILITY  
BUILDING**

PROJECT LOCATION:  
**PEWAUKEE, WI  
WAUKESHA COUNTY**

| PLAN MODIFICATIONS: |       |              |
|---------------------|-------|--------------|
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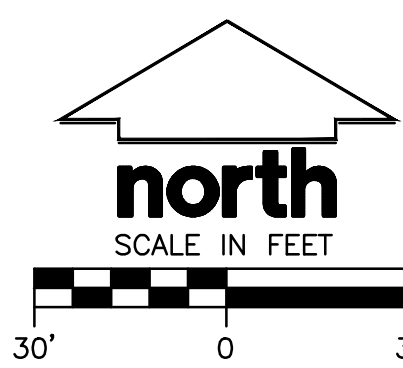
Design/Drawn: IRM  
Approved: RW

SHEET TITLE:  
**EXISTING CONDITIONS  
MAP**

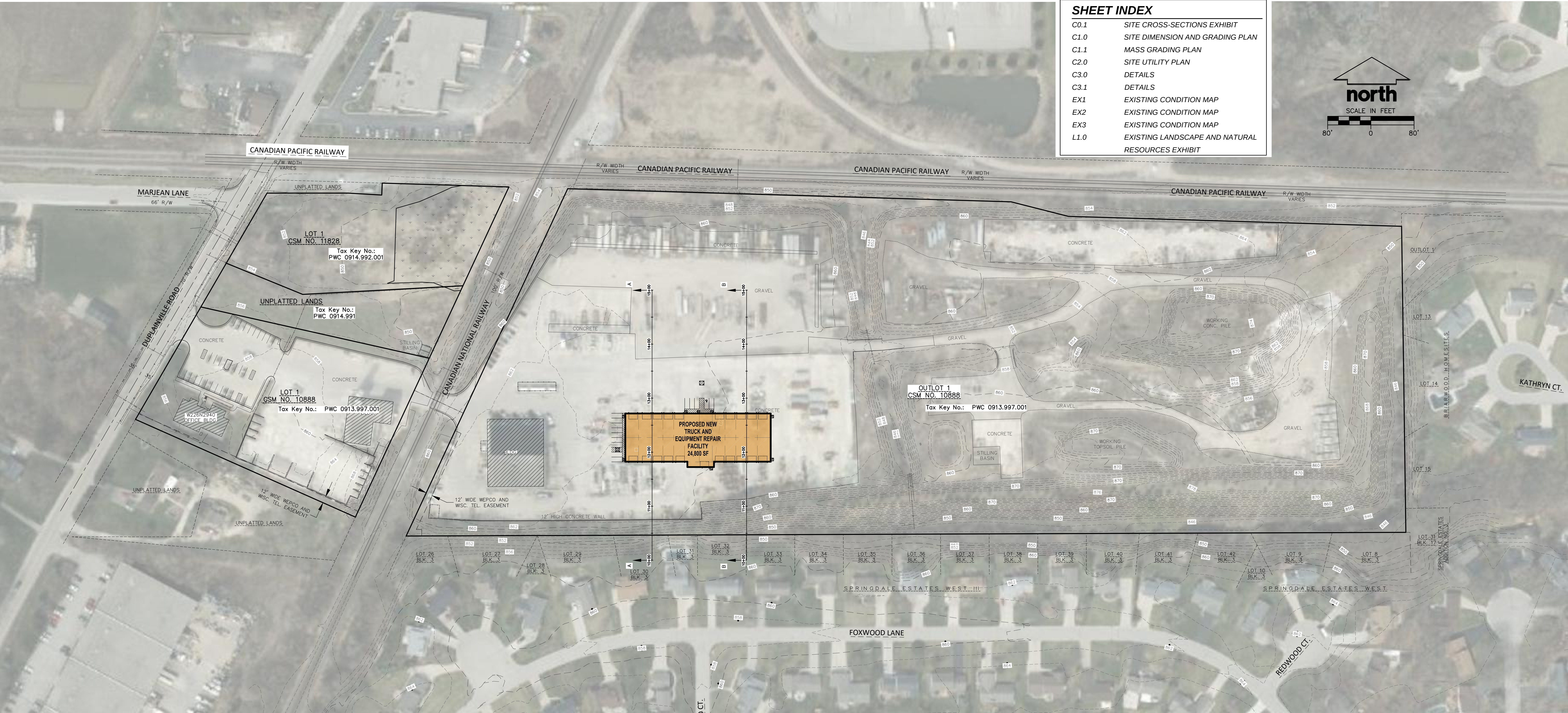
SHEET NUMBER:

**EX3**

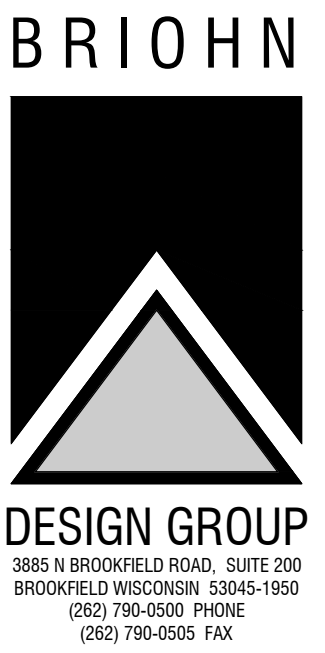
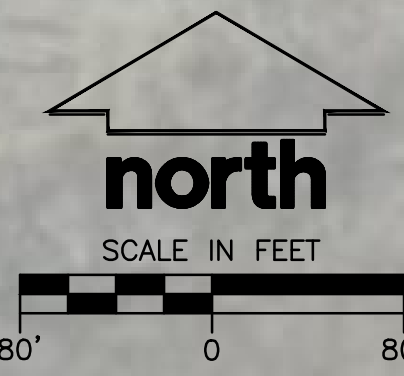
JSD PROJECT NO: 20-0450





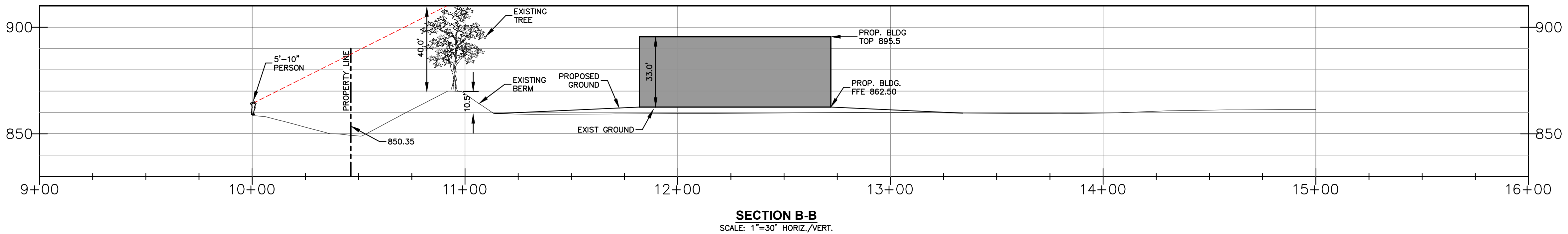
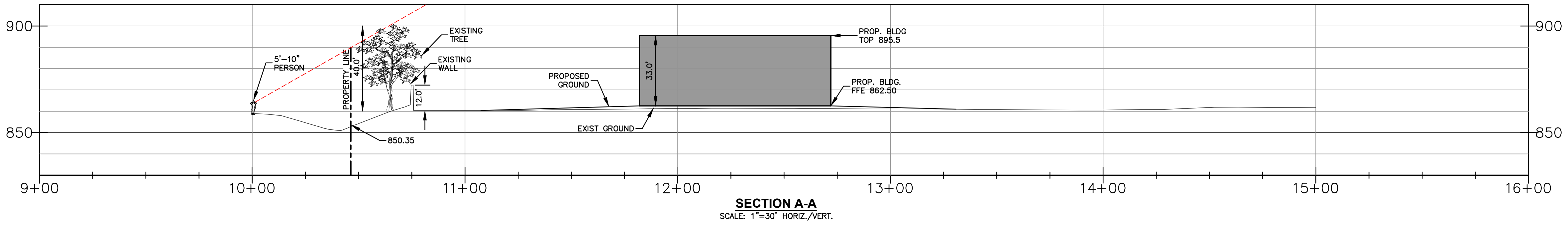


| SHEET INDEX |                                                  |
|-------------|--------------------------------------------------|
| C0.1        | SITE CROSS-SECTIONS EXHIBIT                      |
| C1.0        | SITE DIMENSION AND GRADING PLAN                  |
| C1.1        | MASS GRADING PLAN                                |
| C2.0        | SITE UTILITY PLAN                                |
| C3.0        | DETAILS                                          |
| C3.1        | DETAILS                                          |
| EX1         | EXISTING CONDITION MAP                           |
| EX2         | EXISTING CONDITION MAP                           |
| EX3         | EXISTING CONDITION MAP                           |
| L1.0        | EXISTING LANDSCAPE AND NATURAL RESOURCES EXHIBIT |



SITE CROSS-SECTIONS  
EXHIBIT

PROPOSED ZIGNAGO  
REPAIR FACILITY BUILDING  
DUPLAINVILLE ROAD  
PEWAUKEE, WI

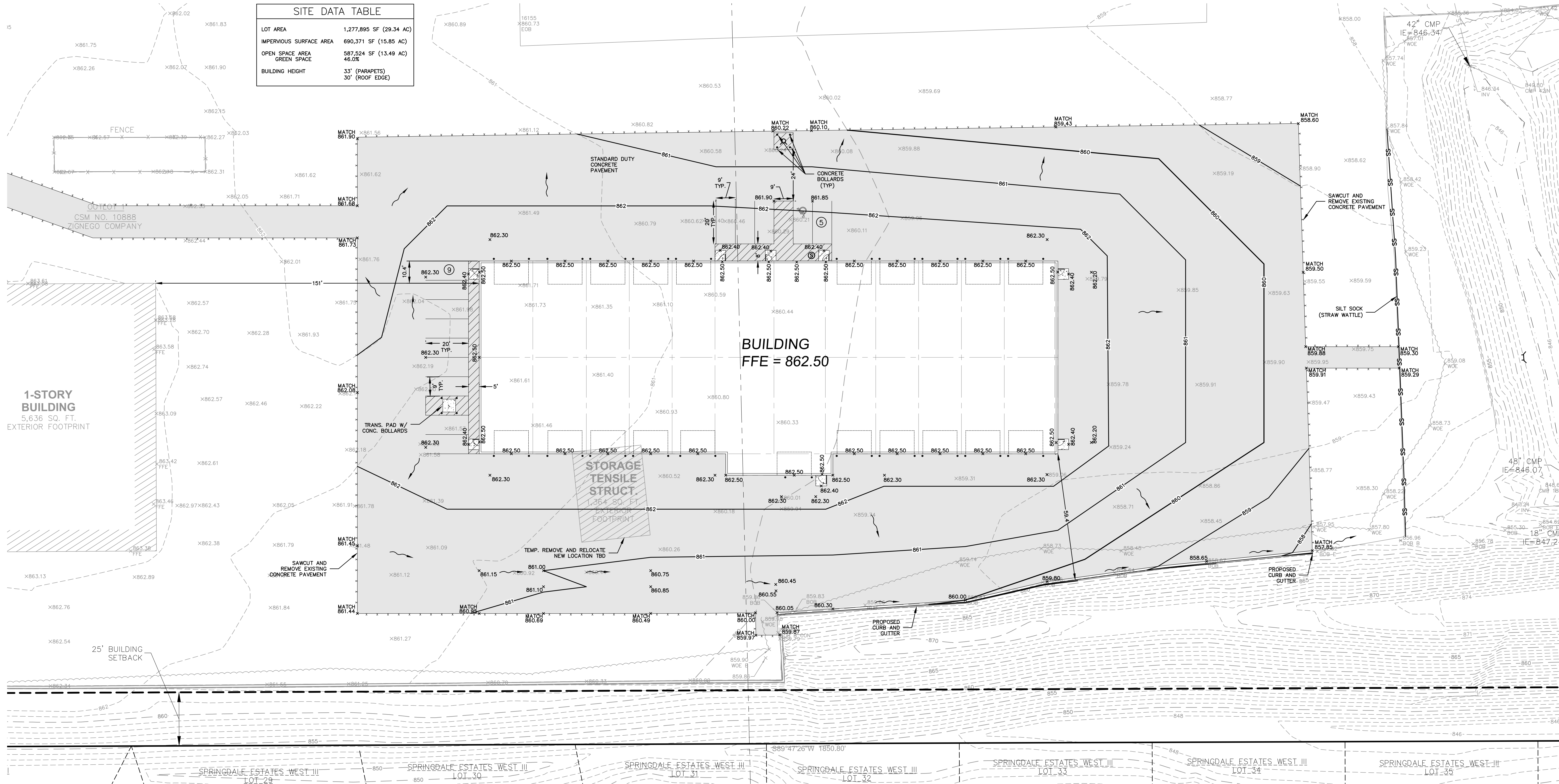


REVISED PLAN COMMISSION 06/07/20

|          |          |
|----------|----------|
| JOB:     | 20-9494  |
| DRAWN:   | PSM      |
| CHECKED: |          |
| DATE:    | 06/01/20 |
| SHEET:   |          |

C0.1





GENERAL NOTES AND SPECIFICATIONS

1. THE INTENTION OF THE PLANS AND SPECIFICATIONS IS TO SET FORTH PERFORMANCE AND CONSTRUCTION MATERIAL STANDARDS FOR THE PROPER EXECUTION OF WORK. ALL WORKS CONTAINED WITHIN THE PLANS AND SPECIFICATIONS SHALL BE COMPLETED IN ACCORDANCE WITH ALL REQUIREMENTS FROM LOCAL, STATE, FEDERAL OR OTHER GOVERNING AGENCY'S LAWS, REGULATIONS, JURISDICTIONAL ORDINANCES/CODES/RULES/ETC., AND THE OWNER'S DIRECTION.
2. THE CONTRACTOR IS RESPONSIBLE FOR PERFORMING ANY ADDITIONAL SOILS INVESTIGATIONS THEY FEEL IS NECESSARY FOR THE PROPER EVALUATION OF THE SITE FOR PURPOSES OF PLANNING, BIDDING, OR CONSTRUCTING THE PROJECT AT NO ADDITIONAL COST TO THE OWNER.
3. THE CONTRACTOR IS RESPONSIBLE TO REVIEW AND UNDERSTAND ALL COMPONENTS OF THE PLANS AND SPECIFICATIONS, INCLUDING FIELD VERIFYING SOIL CONDITIONS, PRIOR TO SUBMISSION OF A BID PROPOSAL.
4. THE CONTRACTOR SHALL PROMPTLY REPORT ANY ERRORS OR AMBIGUITIES DISCOVERED AS PART OF THEIR REVIEW OF PLANS, SPECIFICATIONS, REPORTS AND FIELD INVESTIGATIONS.
5. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE COMPUTATION OF QUANTITIES AND WORK REQUIRED TO COMPLETE THIS PROJECT. THE CONTRACTOR'S BID SHALL BE BASED ON THEIR OWN COMPUTATIONS AND UNDER NO CIRCUMSTANCES BE BASED ON THE ENGINEER'S ESTIMATE.
6. QUESTIONS/CLARIFICATIONS WILL BE INTERPRETED BY ENGINEER/OWNER PRIOR TO THE AWARD OF CONTRACT. ENGINEER/OWNER WILL SUBMIT OFFICIAL RESPONSES IN WRITING. INTERPRETATIONS PRESENTED IN OFFICIAL RESPONSES SHALL BE BINDING ON ALL PARTIES ASSOCIATED WITH THE CONTRACT. IN NO WAY SHALL WORD-OF-MOUTH DIALOG CONSTITUTE AN OFFICIAL RESPONSE.
7. PRIOR TO START OF WORK, CONTRACTOR SHALL BE COMPLETELY FAMILIAR WITH ALL CONDITIONS OF THE SITE, AND SHALL ACCOUNT FOR CONDITIONS THAT AFFECT OR MAY AFFECT CONSTRUCTION INCLUDING, BUT NOT LIMITED TO, LIMITATIONS OF WORK ACCESS, SPACE, LIMITATIONS OF OVERHEAD OBSTRUCTIONS, TRAFFIC PATTERNS, LOCAL REQUIREMENTS, ADJACENT ACTIVITIES, ETC. FAILURE TO REVIEW SITE CONDITIONS SHALL NOT BE CAUSE FOR CLAIM OF JOB EXTRAS.
8. COMMENCEMENT OF CONSTRUCTION SHALL EXPLICITLY CONFIRM THAT THE CONTRACTOR HAS REVIEWED THE PLANS AND SPECIFICATIONS IN THEIR ENTIRETY AND CERTIFIES THAT THEIR SUBMITTED BID PROPOSAL CONTAINS PROVISIONS TO COMPLETE THE PROJECT, WITH THE EXCEPTION OF UNFORESEEN FIELD CONDITIONS; ALL APPLICABLE PERMITS HAVE BEEN OBTAINED; AND CONTRACTOR UNDERSTANDS ALL OF THE REQUIREMENTS OF THE PROJECT.
9. SHOULD ANY DISCREPANCIES OR CONFLICTS IN THE PLANS OR SPECIFICATIONS BE DISCOVERED AFTER THE AWARD OF CONTRACT, ENGINEER SHALL BE NOTIFIED IN WRITING IMMEDIATELY AND CONSTRUCTION OF ITEMS AFFECTED BY THE DISCREPANCIES/CONFLICTS SHALL NOT COMMENCE, OR CONTINUE, UNTIL A WRITTEN RESPONSE FROM ENGINEER/OWNER IS DISTRIBUTED. IN THE EVENT OF A CONFLICT BETWEEN REFERENCED CODES, STANDARDS, SPECIFICATIONS AND PLANS, THE ONE ESTABLISHING THE MOST STRINGENT REQUIREMENTS SHALL BE FOLLOWED.
10. THE CONTRACTOR SHALL, AT ITS OWN EXPENSE, OBTAIN ALL NECESSARY PERMITS AND LICENSES TO COMPLETE THE PROJECT. OBTAINING PERMITS, OR DELAYS IN OBTAINING PERMITS, IS NOT CAUSE FOR A DELAY OF THE CONTRACT OR SCHEDULE. CONTRACTOR SHALL COMPLY WITH ALL PERMIT REQUIREMENTS.
11. THE CONTRACTOR SHALL NOTIFY ALL INTERESTED GOVERNING AGENCIES, UTILITY COMPANIES AFFECTED BY THIS CONSTRUCTION PROJECT, AND "DIGGER'S HOTLINE" IN ADVANCE OF CONSTRUCTION TO COMPLY WITH ALL JURISDICTIONAL ORDINANCES/CODES/RULES/ETC., PERMIT STIPULATIONS, AND OTHER APPLICABLE STANDARDS. CONTRACTOR IS RESPONSIBLE TO DETERMINE WHICH ORDINANCES/CODES/RULES/ETC. ARE APPLICABLE.
12. SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE TO INITIATE, INSTITUTE, ENFORCE, MAINTAIN, AND SUPERVISE ALL SAFETY PRECAUTIONS AND JOB SITE SAFETY PROGRAMS IN CONNECTION WITH THE WORK.
13. CONTRACTOR SHALL KEEP THE JOBSITE CLEAN AND ORDERLY AT ALL TIMES. ALL LOCATIONS OF THE SITE SHALL BE KEPT IN A WORKING MANNER SUCH THAT DEBRIS IS REMOVED CONTINUOUSLY AND ALL RESPECTIVE CONTRACTORS OPERATE UNDER GENERAL "GOOD HOUSEKEEPING".
14. THE CONTRACTOR SHALL INDEMNIFY THE OWNER, JSD, AND THEIR AGENTS FROM ALL LIABILITY INVOLVED WITH THE CONSTRUCTION, INSTALLATION, AND TESTING OF THE WORK ON THIS PROJECT.
15. ALL FIELD/RAIN TILE ENCOUNTERED DURING CONSTRUCTION OPERATIONS SHALL BE IMMEDIATELY REPORTED TO ENGINEER/OWNER. TILES ORIGINATING OUTSIDE THE PROJECT LIMITS SHALL BE RECONNECTED OR ROUTED TO MAINTAIN DRAINAGE. ENGINEER/OWNER SHALL DETERMINE THE MOST FAVORABLE METHOD OF RE-ESTABLISHMENT OF OFFSITE DRAINAGE. IF TILE IS ENCOUNTERED DURING TRENCH EXCAVATIONS, RE-ESTABLISHING TILE FUNCTIONALITY SHALL BE CONSIDERED AN INCIDENTAL EXPENSE.

PAVING NOTES

1. ALL PAVING SHALL CONFORM TO "STATE OF WISCONSIN STANDARD SPECIFICATIONS FOR HIGHWAY & STRUCTURE CONSTRUCTION AND APPLICABLE CITY OF PEWAUKEE ORDINANCES.
2. CONCRETE PAVING SPECIFICATIONS--  
CODES AND STANDARDS -- THE PLACING, CONSTRUCTION AND COMPOSITION OF THE CONCRETE PAVEMENT SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTIONS 415 AND 416 OF THE STATE OF WISCONSIN STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, CURRENT EDITION. HEREFTER, THIS PUBLICATION WILL BE REFERRED TO AS STATE HIGHWAY SPECIFICATIONS.  
CRUSHED AGGREGATE BASE COURSE -- THE BASE COURSE SHALL CONFORM TO SECTIONS 301 AND 305, STATE HIGHWAY SPECIFICATIONS.  
SURFACE PREPARATION -- NOTIFY CONTRACTOR OF UNSATISFACTORY CONDITIONS. DO NOT BEGIN PAVING WORK UNTIL DEFICIENT SUBBASE AREAS HAVE BEEN CORRECTED AND ARE READY TO RECEIVE PAVING.  
3. GRADE CONTROL -- ESTABLISH AND MAINTAIN REQUIRED LINES AND ELEVATIONS FOR EACH COURSE DURING CONSTRUCTION.  
CRUSHED AGGREGATE BASE COURSE -- BASE COURSE SHALL CONFORM TO SECTIONS 301 AND 305, STATE HIGHWAY SPECIFICATIONS.  
SURFACE PREPARATION -- NOTIFY CONTRACTOR OF UNSATISFACTORY CONDITIONS. DO NOT BEGIN PAVING WORK UNTIL DEFICIENT SUBBASE AREAS HAVE BEEN CORRECTED AND ARE READY TO RECEIVE PAVING.

PAVEMENT THICKNESS NOTES

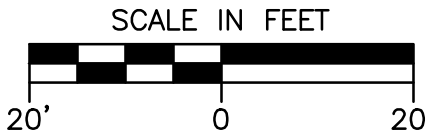
ALL PAVING SHALL CONFORM TO "STATE OF WISCONSIN STANDARD SPECIFICATIONS FOR HIGHWAY & STRUCTURE CONSTRUCTION -- CURRENT EDITION AND ADDENDUM, APPLICABLE CITY OF PEWAUKEE ORDINANCES, AND THE GEOTECHNICAL REPORT.  
\*\* FINAL PAVEMENT DESIGN TO BE DETERMINED BY OWNER BASED ON GEOTECHNICAL ENGINEER OF RECORD RECOMMENDATIONS. ALL PAVING SHALL BE PERFORMED IN ACCORDANCE WITH THE GEOTECHNICAL ENGINEER OF RECORDS RECOMMENDATIONS AS SPECIFIED IN THE SAID GEOTECHNICAL REPORT.

MINIMUM PAVEMENT STRUCTURE

- CONCRETE PAVEMENT
- CONCRETE STOOP
- SAWCUT
- SS SILT SOCK

GRADING NOTES

1. CONTRACTOR SHALL VERIFY ALL GRADES, ENSURE ALL AREAS DRAIN PROPERLY AND REPORT ANY DISCREPANCIES TO JSD PROFESSIONAL SERVICES, INC. PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITIES.
2. ALL EXISTING CONTOURS REPRESENT EXISTING SURFACE GRADES UNLESS OTHERWISE NOTED. ALL PROPOSED GRADES SHOWN ARE FINISH SURFACE GRADES UNLESS OTHERWISE NOTED.
3. ALL EXCAVATIONS AND MATERIAL PLACEMENT SHALL BE COMPLETED TO DESIGN ELEVATIONS AS DEPICTED IN THE PLANS.  
• CONTRACTOR SHALL ASSUME SOLE RESPONSIBILITY FOR THE COMPUTATION(S) OF ALL GRADING QUANTITIES. WHILE JSD ATTEMPTS TO PROVIDE A COST EFFECTIVE APPROACH TO BALANCE EARTHWORK, GRADING DESIGN IS BASED ON MANY FACTORS, INCLUDING SAFETY, AESTHETICS, AND COMMON ENGINEERING STANDARD OF CARE. THEREFORE NO GUARANTEE CAN BE MADE FOR A BALANCED SITE.  
• THE CONTRACTOR MAY SOLICIT APPROVAL FROM ENGINEER/OWNER TO ADJUST FINAL GRADES FROM DESIGN GRADES TO PROVIDE AN OVERALL SITE BALANCE AS A RESULT OF FIELD CONDITIONS.
4. GRADING ACTIVITIES SHALL BE IN A MANNER TO ALLOW POSITIVE DRAINAGE ACROSS DISTURBED SOILS, WHICH MAY INCLUDE EXCAVATION OF TEMPORARY DITCHES TO PREVENT PONDING, AND IF NECESSARY PUMPING TO ALLEVIATE PONDING. CONTRACTOR SHALL PREVENT SURFACE WATER FROM ENTERING INTO EXCAVATIONS. IN NO WAY SHALL OWNER BE RESPONSIBLE FOR REMEDIATION OF UNSUITABLE SOILS CREATED/ORIGINATED AS A RESULT OF IMPROPER SITE GRADING OR SEQUENCING. CONTRACTOR SHALL SEQUENCE GRADING ACTIVITIES TO LIMIT EXPOSURE OF DISTURBED SOILS DUE TO WEATHER.
5. THE CONTRACTOR IS RESPONSIBLE FOR MEETING MINIMUM COMPACTION STANDARDS AS RECOMMENDED BY THE GEOTECHNICAL ENGINEER. CONTRACTOR SHALL REFER TO THE GEOTECHNICAL ENGINEERING SERVICES REPORT FOR SITE COMPACTION REQUIREMENTS. THE CONTRACTOR SHALL NOTIFY ENGINEER/OWNER IF PROPER COMPACTION CANNOT BE OBTAINED. THE PROJECT'S GEOTECHNICAL CONSULTANT SHALL DETERMINE WHICH IN-SITU SOILS ARE TO BE CONSIDERED UNSUITABLE SOILS. THE ENGINEER/OWNER AND GEOTECHNICAL TESTING CONSULTANT WILL DETERMINE IF REMEDIAL MEASURES WILL BE NECESSARY.
6. IN THE EVENT THAT ANY MOISTURE-DENSITY TEST(S) FAIL TO MEET SPECIFICATION REQUIREMENTS, THE CONTRACTOR SHALL PERFORM CORRECTIVE WORK AS NECESSARY TO BRING THE MATERIAL INTO COMPLIANCE AND RETEST THE FAILED AREA AT NO COST TO THE OWNER.
7. WITH THE AUTHORIZATION OF THE ENGINEER/OWNER, MATERIAL THAT IS TOO WET TO PERMIT PROPER COMPACTION MAY BE SPREAD ON FILL AREAS IN AN EFFORT TO DRY. CONTRACTOR SHALL CLEARLY FIELD MARK THE EXTERIOR LIMITS OF SPREAD MATERIAL WITH PAINTED LATH AND SUBMIT A PLAN TO THE ENGINEER/OWNER THAT IDENTIFIES THE LIMITS. UNDER NO CONDITION SHALL THE SPREAD MATERIAL DEPTH EXCEED THE MORE RESTRICTIVE OF THE EFFECTIVE TREATMENT DEPTH OF MACHINERY THAT WILL BE USED TO TURNOVER THE SPREAD MATERIAL; OR THE MAXIMUM COMPACTION LIFT DEPTH.
8. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY ENGINEER/OWNER IF GROUNDWATER IS ENCOUNTERED DURING EXCAVATION.
9. CONTRACTOR IS SOLELY RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION OF ADEQUATE AND SAFE TEMPORARY SHORING, BRACING, RETENTION STRUCTURES, AND EXCAVATIONS.
10. THE SITE SHALL BE COMPLETED TO WITHIN 0.10'-FT (+/-) OF THE PROPOSED GRADES AS INDICATED WITHIN THE PLANS PRIOR TO PLACEMENT OF TOPSOIL OR STONE. CONTRACTOR IS ENCOURAGED TO SEQUENCE CONSTRUCTION SUCH THAT THE SITE IS DIVIDED INTO SMALLER AREAS TO ALLOW STABILIZATION OF DISTURBED SOILS IMMEDIATELY UPON COMPLETION OF INDIVIDUAL SMALLER AREAS.
11. THE CONTRACTOR SHALL CONTACT "DIGGER'S HOTLINE" FOR LOCATIONS OF ALL EXISTING UTILITIES PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES AND SHALL BE RESPONSIBLE FOR PROTECTING SAID UTILITIES FROM ANY DAMAGE DURING CONSTRUCTION.
12. CONTRACTOR SHALL PROTECT INLETS AND ADJACENT PROPERTIES WITH SILT FENCING OR APPROVED EROSION CONTROL METHODS UNTIL CONSTRUCTION IS COMPLETED. CONTRACTOR SHALL PLACE SILT FENCING AT DOWN SLOPE SIDE OF GRADING LIMITS.
13. CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO ANY EXISTING FACILITIES OR UTILITIES. ANY DAMAGE SHALL BE REPAIRED TO THE OWNER'S SATISFACTION AT THE EXPENSE OF THE CONTRACTOR.
14. WORK WITHIN ANY ROADWAY RIGHT-OF-WAY SHALL BE COORDINATED WITH THE APPROPRIATE MUNICIPAL OFFICIAL PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION ACTIVITIES. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND FEES. GRADING WITHIN RIGHT-OF-WAY IS SUBJECT TO APPROVAL BY SAID OFFICIALS. RESTORATION OF RIGHT-OF-WAY IS CONSIDERED INCIDENTAL AND SHALL BE INCLUDED IN THE COST OF GRADING. RESTORATION SHALL INCLUDE ALL ITEMS NECESSARY TO RESTORE RIGHT-OF-WAY IN-KIND INCLUDING LANDSCAPING.
15. CONTRACTOR SHALL COMPLY WITH ALL CITY AND/OR STATE CONSTRUCTION STANDARDS/ORDINANCES.



LEGEND

- SANITARY SEWER MANHOLE
- STORM MANHOLE
- CLEAN OUT
- CATCH BASIN ROUND
- CATCH BASIN SQUARE
- CURB INLET
- FIRE HYDRANT
- WATER VALVE
- GAS VALVE
- LIGHT POLE
- YARD LIGHT
- MAIL BOX
- TELEPHONE PEDESTAL
- ELECTRICAL MANHOLE
- SIGN
- POWER POLE
- GUY WIRE
- BOLLARD
- TRAFFIC LIGHT
- SOIL BORING
- SANITARY SEWER
- WATER MAIN
- STORM SEWER
- UNDERGROUND GAS
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SITE DIMENSION AND  
GRADING PLAN

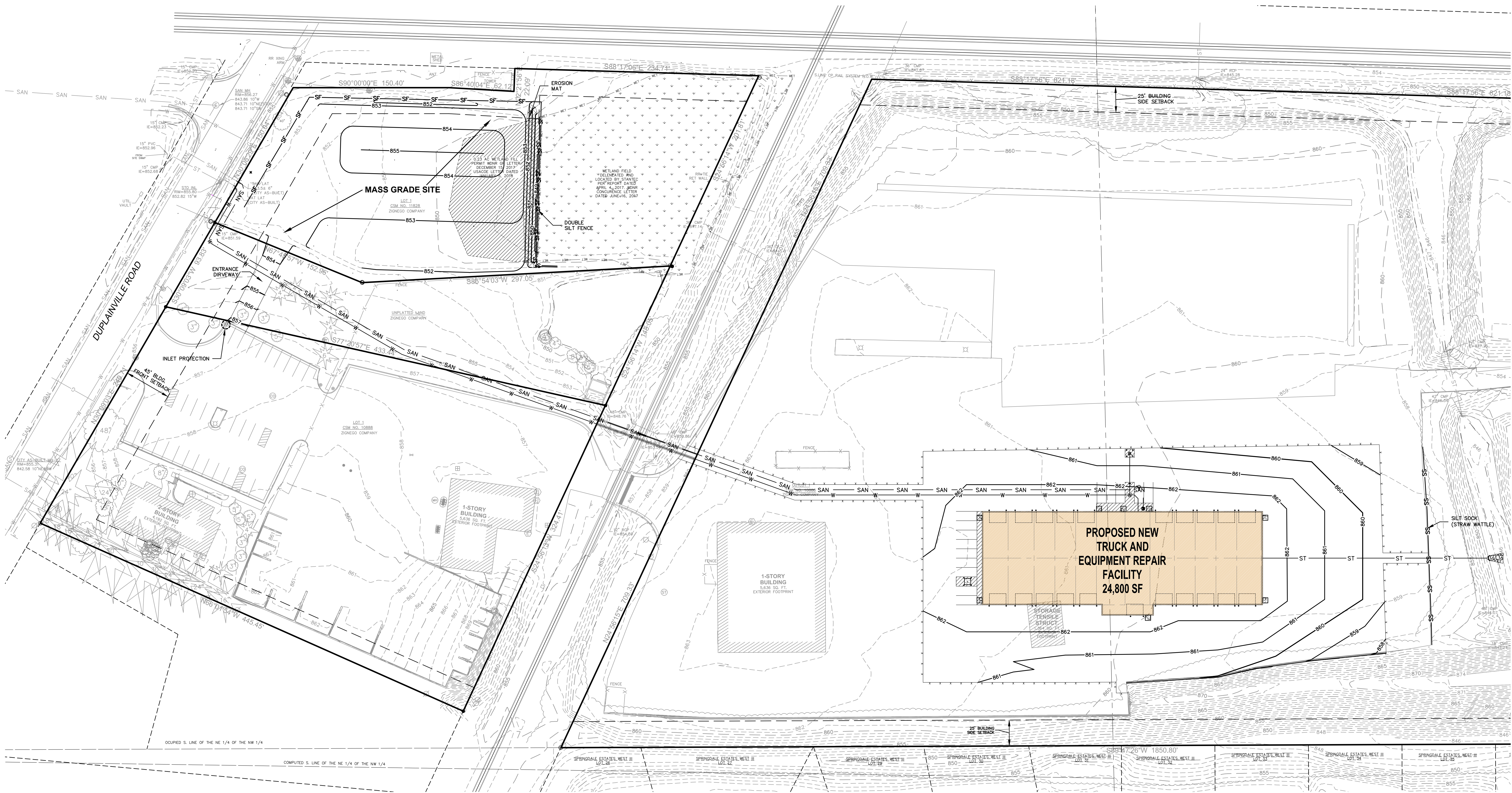
SHEET TITLE

PROPOSED ZIGNAGO  
REPAIR FACILITY BUILDING  
DUPLAINVILLE ROAD  
PEWAUKEE, WI

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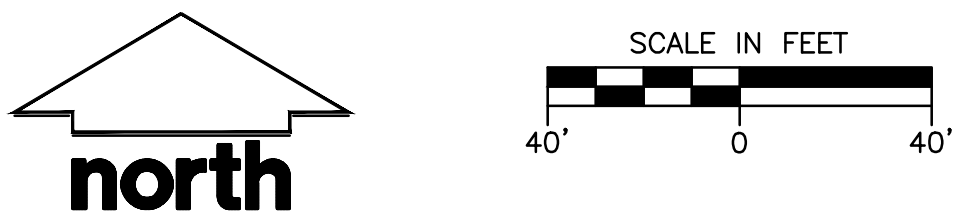
EROSION AND SEDIMENT CONTROL NOTES:

1. ALL CONSTRUCTION SHALL ADHERE TO THE REQUIREMENTS SET FORTH IN WISCONSIN'S NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) STORMWATER GENERAL PERMIT FOR CONSTRUCTION SITE LAND DISTURBANCE ACTIVITIES. ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES (WDNR) TECHNICAL STANDARDS (REFERRED TO AS BMP'S) AND CITY OF OAK CREEK ORDINANCE. THESE PROCEDURES AND STANDARDS SHALL BE REFERRED TO AS BEST MANAGEMENT PRACTICES (BMP'S). IT IS THE RESPONSIBILITY OF ALL CONTRACTORS ASSOCIATED WITH THE PROJECT TO OBTAIN A COPY OF, AND UNDERSTAND, THE BMP'S PRIOR TO THE START OF CONSTRUCTION ACTIVITIES.
2. THE EROSION CONTROL MEASURES INDICATED ON THE PLANS ARE THE MINIMUM REQUIREMENTS. ADDITIONAL CONTROL MEASURES AS DIRECTED BY JSD PROFESSIONAL SERVICES, INC. OR GOVERNING AGENCIES SHALL BE INSTALLED WITHIN 24 HOURS OF REQUEST.
3. MODIFICATIONS TO THE APPROVED EROSION CONTROL PLAN IN ORDER TO MEET UNFORESEEN FIELD CONDITIONS ARE ALLOWED IF MODIFICATIONS CONFORM TO BMP'S. ALL MODIFICATIONS MUST BE APPROVED BY JSD/MUNICIPALITY PRIOR TO DEVIATION OF THE APPROVED PLAN.
4. INSTALL PERIMETER EROSION CONTROL MEASURES (SUCH AS CONSTRUCTION ENTRANCES, SILT FENCE AND EXISTING INLET PROTECTION) PRIOR TO ANY SITE WORK, INCLUDING GRADING OR DISTURBANCE OF EXISTING SURFACE COVER, AS SHOWN ON PLAN IN ORDER TO PROTECT ADJACENT PROPERTIES/STORM SEWER SYSTEMS FROM SEDIMENT TRANSPORT.
5. CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT ALL LOCATIONS OF VEHICLE INGRESS/EGRESS POINTS. CONTRACTOR IS RESPONSIBLE TO COORDINATE LOCATION(S) WITH THE PROPER AUTHORITIES, PROVIDE NECESSARY FEES AND OBTAIN ALL REQUIRED APPROVALS OR PERMITS. ADDITIONAL CONSTRUCTION ENTRANCES OTHER THAN AS SHOWN ON THE PLANS MUST BE PRIOR APPROVED BY THE APPLICABLE GOVERNING AGENCIES PRIOR TO INSTALLATION.
6. PAVED SURFACES ADJACENT TO CONSTRUCTION ENTRANCES SHALL BE SWEEPED AND/OR SCRAPED TO REMOVE ACCUMULATED SOIL, DIRT AND/OR DUST AFTER THE END OF EACH WORK DAY AND AS REQUESTED BY THE GOVERNING AGENCIES.
7. ALL EXISTING STORM SEWER FACILITIES THAT WILL COLLECT RUNOFF FROM DISTURBED AREAS SHALL BE PROTECTED TO PREVENT SEDIMENT DEPOSITION WITHIN STORM SEWER SYSTEMS. INLET PROTECTION SHALL BE IMMEDIATELY FITTED AT THE INLET OF ALL INSTALLED STORM SEWER. ALL INLETS, STRUCTURES, PIPES, AND SWALES SHALL BE KEPT CLEAN AND FREE OF SEDIMENTATION AND DEBRIS.
8. EROSION CONTROL FOR UTILITY CONSTRUCTION (STORM SEWER, SANITARY SEWER, WATER MAIN, ETC.) OUTSIDE OF THE PERIMETER CONTROLS SHALL INCORPORATE THE FOLLOWING:
  - PLACE EXCAVATED TRENCH MATERIAL ON THE HIGH SIDE OF THE TRENCH.
  - BACKFILL, COMPACT, AND STABILIZE THE TRENCH IMMEDIATELY AFTER PIPE CONSTRUCTION.
  - DISCHARGE TRENCH WATER INTO A SEDIMENTATION BASIN OR FILTERING TANK IN ACCORDANCE WITH BMP'S PRIOR TO RELEASE INTO STORM SEWER OR DITCHES.
9. AT A MINIMUM, SEDIMENT BASINS AND NECESSARY TEMPORARY DRAINAGE PROVISIONS SHALL BE CONSTRUCTED AND OPERATIONAL BEFORE BEGINNING OF SIGNIFICANT MASS GRADING OPERATIONS TO PREVENT DISCHARGE OF INTEGRATED RUNOFF.
10. ALL TEMPORARY AND PERMANENT EROSION CONTROL MEASURES MUST BE MAINTAINED AND REPAIRED AS NEEDED. THE GENERAL CONTRACTOR WILL BE RESPONSIBLE FOR INSPECTION AND REPAIR DURING CONSTRUCTION. THE OWNER WILL BE RESPONSIBLE IF EROSION CONTROL IS REQUIRED AFTER THE CONTRACTOR HAS COMPLETED THE PROJECT.
11. TOPSOIL STOCKPILES SHALL HAVE A BERM OR TRENCH AROUND THE CIRCUMFERENCE AND PERIMETER SILT FENCE TO CONTROL SILT. IF TOPSOIL STOCKPILE REMAINS UNDISTURBED FOR MORE THAN SEVEN (7) DAYS, TEMPORARY SEEDING AND STABILIZATION IS REQUIRED.
12. EROSION CONTROL MEASURES TEMPORARILY REMOVED FOR UNAVOIDABLE CONSTRUCTION ACTIVITIES SHALL BE IN WORKING ORDER PRIOR TO THE COMPLETION OF EACH WORK DAY.
13. MAINTAIN SOIL EROSION CONTROL DEVICES THROUGH THE DURATION OF THIS PROJECT. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN THIRTY (30) DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED. DISTURBANCES ASSOCIATED WITH EROSION CONTROL REMOVAL SHALL BE IMMEDIATELY STABILIZED.

EROSION AND SEDIMENT CONTROL NOTES:

1. PUMPS MAY BE USED AS BYPASS DEVICES, IN NO CASE SHALL PUMPED WATER BE DIVERTED OUTSIDE THE PROJECT LIMITS.
  2. GRADING EFFORTS SHALL BE CONDUCTED IN SUCH A MANNER AS TO MINIMIZE EROSION. EROSION AND SEDIMENT CONTROL MEASURES SHALL CONSIDER THE TIME OF YEAR, SITE CONDITIONS, AND THE USE OF TEMPORARY OR PERMANENT MEASURES. ALL DISTURBED AREAS THAT WILL NOT BE WORKED FOR A PERIOD OF THIRTY (30) DAYS REQUIRE TEMPORARY SEEDING FOR EROSION CONTROL. SEEDING FOR EROSION CONTROL SHALL BE IN ACCORDANCE WITH TECHNICAL STANDARDS.
  3. ALL DISTURBED SLOPES EXCEEDING 4:1 YET LESS THAN 3:1, SHALL BE STABILIZED WITH NORTH AMERICAN GREEN 575BN EROSION MATTING (OR APPROVED EQUAL) AND DISTURBED SLOPES EXCEEDING 3:1 YET LESS THAN 2:1 SHALL BE STABILIZED WITH NORTH AMERICAN GREEN C125BN (OR APPROVED EQUAL) OR APPLICATION OF AN APPROVED POLYMER SOIL STABILIZATION TREATMENT OR A COMBINATION THEREOF, AS REQUIRED. EROSION MATTING AND/OR NETTING USED ON SITE SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S GUIDELINES.
  4. DURING PERIODS OF EXTENDED DRY WEATHER, THE CONTRACTOR SHALL KEEP A WATER TRUCK ON SITE FOR THE PURPOSE OF WATERING DOWN SOILS WHICH MAY OTHERWISE BECOME AIRBORNE. THE CONTRACTOR IS RESPONSIBLE FOR CONTROLLING WIND EROSION (DUST) DURING CONSTRUCTION AT HIS/HER EXPENSE.
  5. DISTURBED AREAS AND AREAS USED FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION SHALL BE VISUALLY INSPECTED FOR EVIDENCE OF, OR THE POTENTIAL FOR, POLLUTANTS ENTERING THE DRAINAGE SYSTEM ON A DAILY BASIS.
  6. QUALIFIED PERSONNEL (PROVIDED BY THE GENERAL/PRIME CONTRACTOR) SHALL INSPECT DISTURBED AREAS OF THE CONSTRUCTION SITE THAT HAVE NOT BEEN FINALLY STABILIZED AND EROSION AND SEDIMENT CONTROLS WITHIN 24 HOURS OF ALL 0.5-INCH, OR MORE, PRECIPITATION EVENTS WITH A MINIMUM INSPECTION INTERVAL OF ONCE EVERY SEVEN (7) CALENDAR DAYS IN THE ABSENCE OF A QUALIFYING RAIN OR SNOWFALL EVENT. REPORTING SHALL BE IN ACCORDANCE WITH PART IV D.A. (c)-(f) OF THE NPDES GENERAL PERMIT. CONTRACTOR SHALL IMMEDIATELY ARRANGE TO HAVE ANY DEFICIENT ITEMS REVEALED DURING INSPECTIONS REPAIRED/REPLACED.
  7. THE FOLLOWING MAINTENANCE PRACTICES SHALL BE USED TO MAINTAIN, IN GOOD AND EFFECTIVE OPERATING CONDITIONS, VEGETATION, EROSION AND SEDIMENT CONTROL MEASURES, AND OTHER PROTECTIVE MEASURES IDENTIFIED IN THIS PLAN. UPON IDENTIFICATION, DEFICIENCIES IN STORMWATER CONTROLS SHALL BE ADDRESSED IMMEDIATELY. THE MAINTENANCE PROCEDURES FOR THIS DEVELOPMENT SHALL INCLUDE, BUT NOT BE LIMITED TO THE BELOW:
    - SILT FENCE - REPAIR OR REPLACE ANY DAMAGED FILTER FABRIC AND/OR STAKES. REMOVE ACCUMULATED SEDIMENT WHEN IT HAS REACHED ONE-HALF THE ABOVE GROUND HEIGHT OF THE FENCE.
    - CONSTRUCTION ENTRANCE - AS NEEDED, ADD STONE TO MAINTAIN CONSTRUCTION ENTRANCE DIMENSIONS AND EFFECTIVENESS.
    - DITCH CHECK (STRAW BALES) - RE-SECURE STAKES; ADJUST OR REPOSITION BALES TO ADDRESS PROPER FLOW OF STORMWATER AND REMOVE ACCUMULATED SEDIMENT WHEN IT HAS REACHED ONE-HALF THE HEIGHT OF THE BALES.
    - EROSION CONTROL MATTING - REPAIR MATTING IMMEDIATELY IF INSPECTION REVEALS BREACHED OR FAILED CONDITIONS. REPAIR AND RE-GRADE SOIL WHERE OCCURRENCE.
    - DIVERSION BERM/SWALE - REPLACE OR RE-COMPACT THE CONSTRUCTION MATERIALS AS NECESSARY.
    - INLET PROTECTION - CLEAN, REPAIR OR REPLACE FILTER FABRIC AND/OR STONE WHEN CONTROL MEASURE IS CLOGGED. INLET FILTER BAGS SHALL BE REPLACED ONCE BAG BECOMES ONE-HALF FULL OF SEDIMENT.
- ADDITIONAL POLLUTANT CONTROL MEASURES TO BE IMPLEMENTED DURING CONSTRUCTION ACTIVITIES SHALL INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING:
- CONSTRUCTION WASTE SHALL BE PROPERLY DISPOSED OF. THIS INCLUDES ALL CONSTRUCTION SITE WASTE MATERIAL, SANITARY WASTE, AND WASTE FROM VEHICLE TRACKING OF SEDIMENTS. THE CONTRACTOR SHALL ENSURE THAT NO MATERIAL WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURNED, QUINNED, OR DISCHARGED TO THE WATERS OF THE STATE.
  - VEHICLES HAULING MATERIAL AWAY FROM THE SITE SHALL BE COVERED WITH A TARPULIN TO PREVENT BLOWING DEBRIS.
  - DUST CONTROL SHALL BE ACCOMPLISHED BY ONE OR MORE OF THE FOLLOWING METHODS:
    - A. COVERING SOIL OR MORE OF THE SOIL SURFACE WITH A NON-ERODIBLE MATERIAL.
    - B. ROUGHENING THE SOIL TO PRODUCE RIDGES PERPENDICULAR TO THE PREVAILING WIND. RIDGES SHALL BE AT LEAST SIX (6) INCHES IN HEIGHT.
    - C. FREQUENT WATERING OF EXCAVATION AND FILL AREAS.
    - D. PROVIDING GRAVEL OR PAVING AT ENTRANCE/EXIT DRIVES, PARKING AREAS AND TRANSIT PATHS.
    - E. STREET SWEEPING SHALL BE PERFORMED TO IMMEDIATELY REMOVE ANY SEDIMENT TRACKED ON PAVEMENTS.

| LEGEND |                             |
|--------|-----------------------------|
|        | SILT FENCE                  |
|        | SILT SOCK                   |
|        | INLET PROTECTION            |
|        | TEMPORARY TOPSOIL STOCKPILE |
|        | RIPRAP                      |
|        | EROSION MAT                 |



| LEGEND |                          |
|--------|--------------------------|
|        | SANITARY SEWER MANHOLE   |
|        | STORM MANHOLE            |
|        | CLEAN OUT                |
|        | CATCH BASIN ROUND        |
|        | CATCH BASIN SQUARE       |
|        | CURB INLET               |
|        | FIRE HYDRANT             |
|        | WATER VALVE              |
|        | GAS VALVE                |
|        | LIGHT POLE               |
|        | YARD LIGHT               |
|        | MAIL BOX                 |
|        | TELEPHONE PEDESTAL       |
|        | ELECTRICAL MANHOLE       |
|        | SIGN                     |
|        | POWER POLE               |
|        | GUY WIRE                 |
|        | BOLLARD                  |
|        | TRAFFIC LIGHT            |
|        | SOIL BORING              |
|        | SANITARY SEWER           |
|        | WATER MAIN               |
|        | STORM SEWER              |
|        | UNDERGROUND GAS          |
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MASS GRADING PLAN

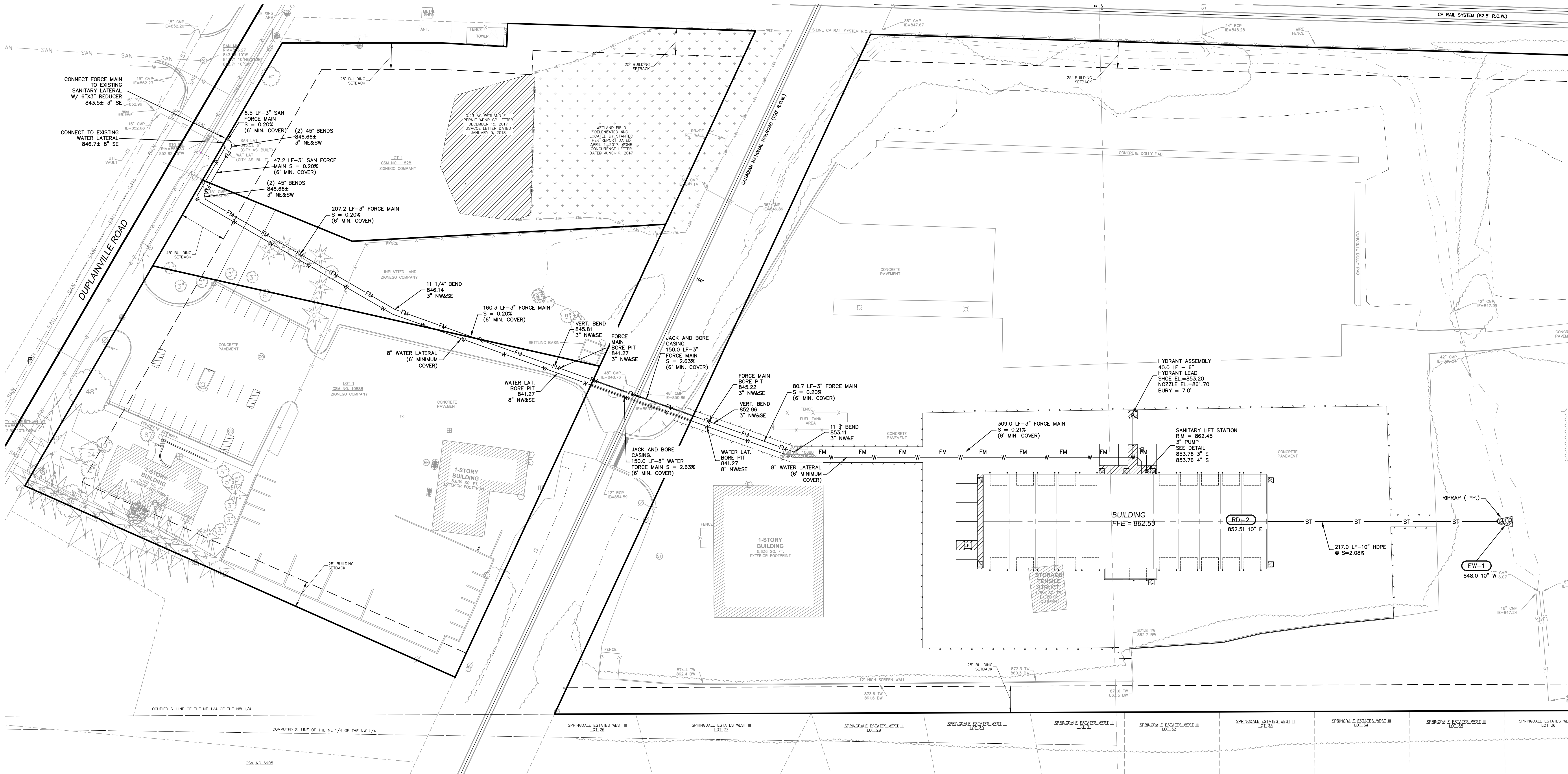
PROPOSED ZIGNAGO  
REPAIR FACILITY BUILDING  
DUPLAINVILLE ROAD  
PEWAUKEE, WI

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| REVISION | DATE     | BY  | APP |
| 1        | 06/01/20 | JSD | PSM |

JOB: 20-9494  
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DATE: 06/01/20  
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UTILITY NOTES

- EXISTING UTILITIES ARE SHOWN FOR INFORMATIONAL PURPOSES ONLY AND ARE NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE TYPE, LOCATION, SIZE AND ELEVATION OF UNDERGROUND UTILITIES AS THEY DEEM NECESSARY FOR PROPOSED UTILITY CONNECTIONS AND/OR TO AVOID DAMAGE THERETO. CONTRACTOR SHALL CALL "DIGGER'S HOTLINE" PRIOR TO ANY CONSTRUCTION.
- ALL UTILITY WORK SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN (WISCONSIN LATEST EDITION AND ADDENDUM) AND ALL STATE AND LOCAL CODES AND SPECIFICATIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE WHICH SPECIFICATIONS AND CODES APPLY, AND TO COORDINATE ALL CONSTRUCTION ACTIVITIES WITH THE APPROPRIATE LOCAL AND STATE AUTHORITIES.
- UTILITY CONSTRUCTION AND SPECIFICATIONS SHALL COMPLY WITH THE CITY OF PEWAUKEE CONSTRUCTION STANDARDS AND WISCONSIN DEPARTMENT OF SAFETY AND PROFESSIONAL SERVICES DSPS 382.
- TRACER WIRE SHALL BE INSTALLED AS NECESSARY IN ACCORD WITH 182.0715(2R) OF THE STATE STATUTES AND CITY OF PEWAUKEE REQUIREMENTS.
- LENGTHS OF PROPOSED UTILITIES ARE TO CENTER OF STRUCTURES OR FITTINGS AND MAY VARY SLIGHTLY FROM PLAN. LENGTHS ARE SHOWN FOR CONTRACTOR CONVENIENCE ONLY. CONTRACTOR IS SOLELY RESPONSIBLE FOR COMPUTATIONS OF MATERIALS REQUIRED TO COMPLETE WORK. LENGTHS SHALL BE FIELD VERIFIED DURING CONSTRUCTION.
- CONTRACTOR SHALL ADJUST AND/OR RECONSTRUCT EXISTING UTILITY COVERS (SUCH AS MANHOLE COVERS, VALVE BOX COVERS, ETC.) TO MATCH FINISHED GRADES OF THE AREAS DISTURBED DURING CONSTRUCTION.
- CONTRACTOR SHALL FIELD VERIFY LOCATIONS, ELEVATIONS, AND SIZES OF PROPOSED UTILITIES AND CHECK ALL UTILITY CROSSINGS FOR CONFLICTS PRIOR TO ATTEMPTING CONNECTIONS AND BEGINNING UTILITY CONSTRUCTION.
- STORM SEWER SPECIFICATIONS –

PIPE – HIGH DENSITY DUAL-WALL POLYETHYLENE CORRUGATED PIPE SHALL BE AS MANUFACTURED BY ADS OR EQUAL WITH WATER TIGHT JOINTS, AND SHALL MEET THE REQUIREMENTS OF AASHTO DESIGNATION M-204 TYPE "S".

INLETS/CATCH BASINS – INLETS/CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH FILE NO. 25 OF THE "STANDARD SPECIFICATIONS". FRAME & GRATE SHALL BE NEENAH R-2501 WITH TYPE G GRATE, OR EQUAL. CURB FRAME & GRATE SHALL BE NEENAH R-3067, OR EQUAL.

FIELD TILE CONNECTION – ALL FIELD TILE ENCOUNTERED DURING CONSTRUCTION SHALL BE INCLUDED IN THE UNIT PRICE(S) FOR STORM SEWER. TILE LINES CROSSED BY THE TRENCH SHALL BE REPLACED WITH THE SAME MATERIAL AS THE STORM SEWER.

9. SANITARY FORCE MAIN SPECIFICATIONS

PIPE – SANITARY FORCE MAIN MATERIAL SHALL BE POLYVINYL CHLORIDE (PVC) MEETING REQUIREMENTS OF ASTM D-2241-09 CLASS 160, WITH EITHER SOLVENT WELD OR ELASTOMERIC JOINTS, MEETING THE REQUIREMENTS OF ASTM D-2241-09 CLASS 160.

BEDDING AND COVER MATERIAL – PIPE BEDDING AND COVER MATERIAL SHALL BE SAND, CRUSHED STONE CHIPS OR CRUSHED STONE SCREENINGS CONFORMING TO CHAPTER 8.43.2 OF THE "STANDARD SPECIFICATIONS".

BACKFILL – BACKFILL MATERIAL AND INSTALLATION SHALL BE IN ACCORDANCE WITH CHAPTER 2.6.0 OF THE "STANDARD SPECIFICATIONS". GRAVEL BACKFILL IS REQUIRED IN ALL PAVED AREAS AND TO A POINT 5 FEET BEYOND THE EDGE OF PAVEMENT. TRENCHES RUNNING PARALLEL TO AND LESS THAN 5 FEET FROM THE EDGE OF PAVEMENT SHALL ALSO REQUIRE GRAVEL BACKFILL. LANDSCAPED AREAS MAY BE BACKFILLED WITH EXCAVATED MATERIAL IN CONFORMANCE WITH SECTION 8.43.5 OF THE "STANDARD SPECIFICATIONS".

UTILITY NOTES

1. WATER MAIN SPECIFICATIONS –

PIPE – POLYVINYL CHLORIDE (PVC) PIPE SHALL MEET THE REQUIREMENTS OF AWWA STANDARD C-900, CLASS 150, DR-18 WITH CAST IRON O.D. AND INTEGRAL ELASTOMERIC BELL AND SPIGOT JOINTS. NON-METALLIC WATERMAINS SHALL BE INSTALLED WITH BLUE INSTALLATION TRACER WIRE AND CONFORM WITH SPS 382.30 (11)(I).

VALVES AND VALVE BOXES – GATE VALVES SHALL BE AWWA GATE VALVES MEETING THE REQUIREMENTS OF AWWA C-500 AND CHAPTER 8.27.0 OF THE "STANDARD SPECIFICATIONS". GATE VALVES AND VALVE BOXES SHALL CONFORM TO LOCAL PLUMBING ORDINANCES.

HYDRANTS – HYDRANTS SHALL CONFORM TO THE SPECIFICATION OF THE CITY OF PEWAUKEE. THE DISTANCE FROM THE GROUND LINE TO THE CENTERLINE OF THE LOWEST NOZZLE AND THE LOWEST CONNECTION OF THE FIRE DEPARTMENT SHALL BE NO LESS THAN 18-INCHES AND NO GREATER THAN 23-INCHES.

BEDDING AND COVER MATERIAL – PIPE BEDDING AND COVER MATERIAL SHALL BE SAND, CRUSHED STONE CHIPS OR CRUSHED STONE SCREENINGS CONFORMING TO CHAPTER 8.43.2 OF THE "STANDARD SPECIFICATIONS".

BACKFILL – BACKFILL MATERIAL AND INSTALLATION SHALL BE IN ACCORDANCE WITH CHAPTER 2.6.0 OF THE "STANDARD SPECIFICATIONS". GRAVEL BACKFILL IS REQUIRED IN ALL PAVED AREAS AND TO A POINT 5 FEET BEYOND THE EDGE OF PAVEMENT. TRENCHES RUNNING PARALLEL TO AND LESS THAN 5 FEET FROM THE EDGE OF PAVEMENT SHALL ALSO REQUIRE GRAVEL BACKFILL. LANDSCAPED AREAS MAY BE BACKFILLED WITH EXCAVATED MATERIAL IN CONFORMANCE WITH SECTION 8.43.5 OF THE "STANDARD SPECIFICATIONS".

2. SANITARY SEWER SPECIFICATIONS –

PIPE – SANITARY SEWER PIPE MATERIAL SHALL BE POLYVINYL CHLORIDE (PVC) MEETING REQUIREMENTS OF ASTM D 3034, SDR-35, WITH INTEGRAL BELL TYPE FLEXIBLE ELASTOMERIC JOINTS, MEETING THE REQUIREMENTS OF ASTM D-3212.

BEDDING AND COVER MATERIAL – BEDDING AND COVER MATERIAL SHALL CONFORM TO THE APPROPRIATE SECTIONS OF THE "STANDARD SPECIFICATION" WITH THE FOLLOWING MODIFICATION: "COVER MATERIAL SHALL BE THE SAME AS USED FOR BEDDING AND SHALL CONFORM TO SECTION 8.43.2 (A). BEDDING AND COVER MATERIAL SHALL BE PLACED IN A MINIMUM OF THREE SEPARATE LIFTS, OR AS REQUIRED TO INSURE ADEQUATE COMPACTING OF THESE MATERIALS, WITH ONE LIFT OF BEDDING MATERIAL ENDING AT OR NEAR THE SPRINGLINE OF THE PIPE. THE CONTRACTOR SHALL TAKE CARE TO COMPLETELY WORK BEDDING MATERIAL UNDER THE HAUNCH OF THE PIPE TO PROVIDE ADEQUATE SIDE SUPPORT."

BACKFILL – BACKFILL MATERIAL AND INSTALLATION SHALL BE IN ACCORDANCE WITH CHAPTER 2.6.0 OF THE "STANDARD SPECIFICATIONS". GRAVEL BACKFILL IS REQUIRED IN ALL PAVED AREAS AND TO A POINT 5 FEET BEYOND THE EDGE OF PAVEMENT. TRENCHES RUNNING PARALLEL TO AND LESS THAN 5 FEET FROM THE EDGE OF PAVEMENT SHALL ALSO REQUIRE GRAVEL BACKFILL. LANDSCAPED AREAS MAY BE BACKFILLED WITH EXCAVATED MATERIAL IN CONFORMANCE WITH SECTION 8.43.5 OF THE "STANDARD SPECIFICATIONS".

MANHOLES – MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH FILE NOS. 12, 13 AND 15 OF THE "STANDARD SPECIFICATIONS" AND ALL SPECIAL PROVISIONS OF THE CITY OF PEWAUKEE.

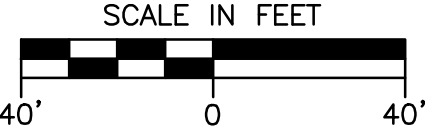
MANHOLE FRAMES AND COVERS – MANHOLE FRAMES AND COVERS SHALL BE NEENAH R-1642 WITH TYPE "B" SELF SEALING LIDS, NON-ROCKING OR EQUAL.

3. WATER MAIN, SANITARY FORCE MAIN, AND SANITARY SEWER SHALL BE INSULATED WHEREVER THE DEPTH OF COVER IS LESS THAN 6 FEET. INSULATION AND PLACING OF INSULATION SHALL CONFORM TO CHAPTER 4.17.0 "INSULATION" OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN 6TH EDITION UPDATED WITH ITS LATEST ADDENDUM (TYP.).

4. TRACER WIRE SHALL BE INSTALLED ALONG THE SANITARY SEWER SERVICE. THE TRACER WIRE SHALL BE CONTINUOUS AND SHALL BE EXTENDED ABOVE GRADE VIA A 4-INCH PVC PIPE WITH SCREW-ON CAP ADJACENT TO THE PROPOSED TERMINATION POINT OF THE LATERAL FOR THE PROPOSED BUILDING.

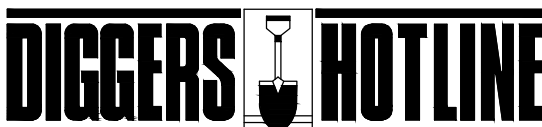
5. ALL NEW ON-SITE SANITARY, STORM AND WATER UTILITIES SHALL BE PRIVATELY OWNED AND MAINTAINED BY THE PROPERTY OWNER.

6. THE CONTRACTOR SHALL CONTACT THE CITY OF PEWAUKEE ENGINEERING DEPARTMENT 72-HOURS IN ADVANCE OF SANITARY, WATER AND STORM CONNECTIONS TO THE CITY-OWNED SYSTEM TO SCHEDULE INSPECTIONS.



LEGEND

- |   |                        |   |                          |
|---|------------------------|---|--------------------------|
| ⊙ | SANITARY SEWER MANHOLE | ⊗ | POWER POLE               |
| ⊕ | STORM MANHOLE          | — | GUY WIRE                 |
| ⊖ | CLEAN OUT              | • | BOLLARD                  |
| ⊕ | CATCH BASIN ROUND      | ⊙ | TRAFFIC LIGHT            |
| ⊕ | CATCH BASIN SQUARE     | ⊕ | SOIL BORING              |
| ⊕ | CURB INLET             | — | SAN                      |
| ⊕ | FIRE HYDRANT           | — | SANITARY SEWER           |
| — | W                      | — | WATER MAIN               |
| — | ST                     | — | STORM SEWER              |
| — | W                      | — | WATER VALVE              |
| — | G                      | — | UNDERGROUND GAS          |
| — | E                      | — | UNDERGROUND ELECTRIC     |
| — | T                      | — | UNDERGROUND TELEPHONE    |
| — | FIB                    | — | UNDERGROUND FIBER OPTICS |
| — | OH                     | — | OVERHEAD UTILITY         |
| ⊕ | ELECTRICAL MANHOLE     |   |                          |
| — | SIGN                   |   |                          |

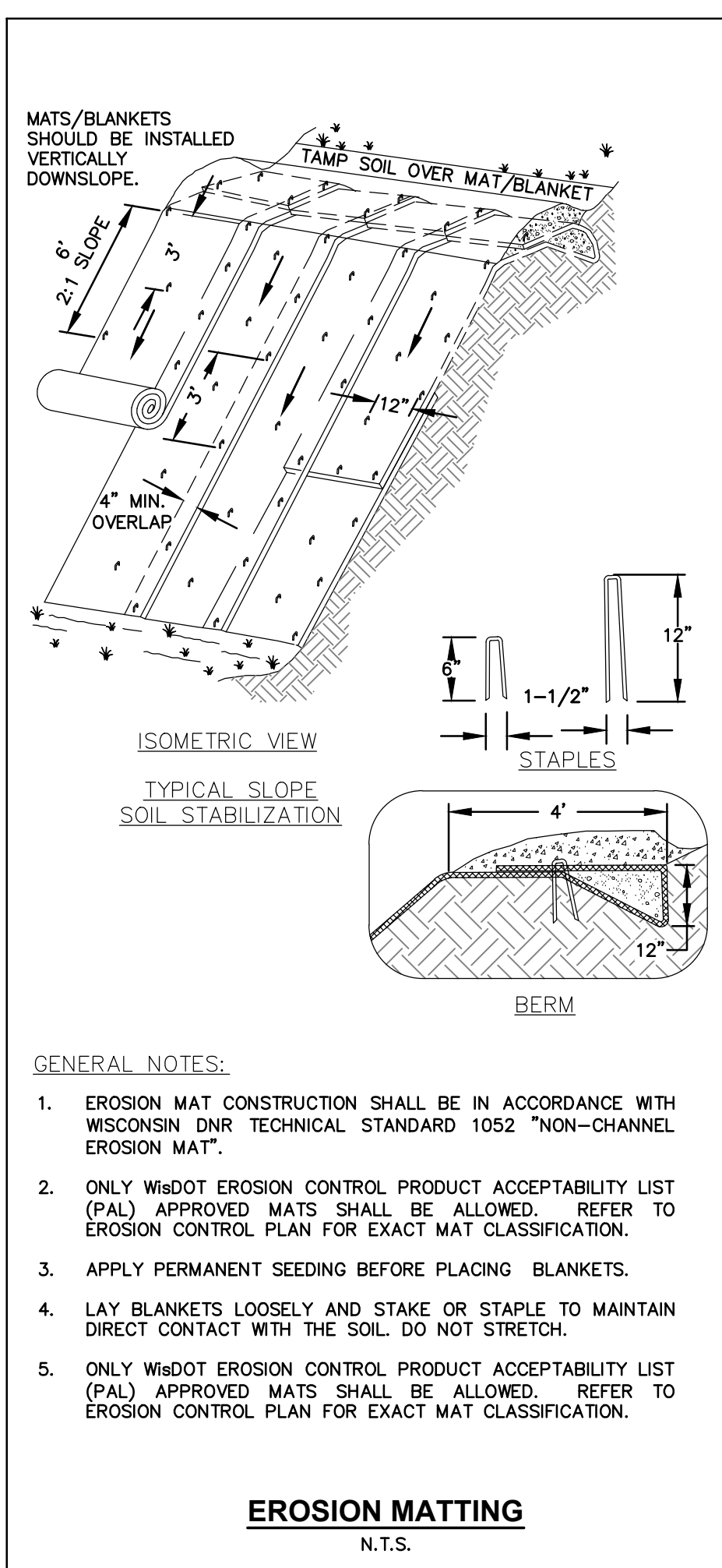
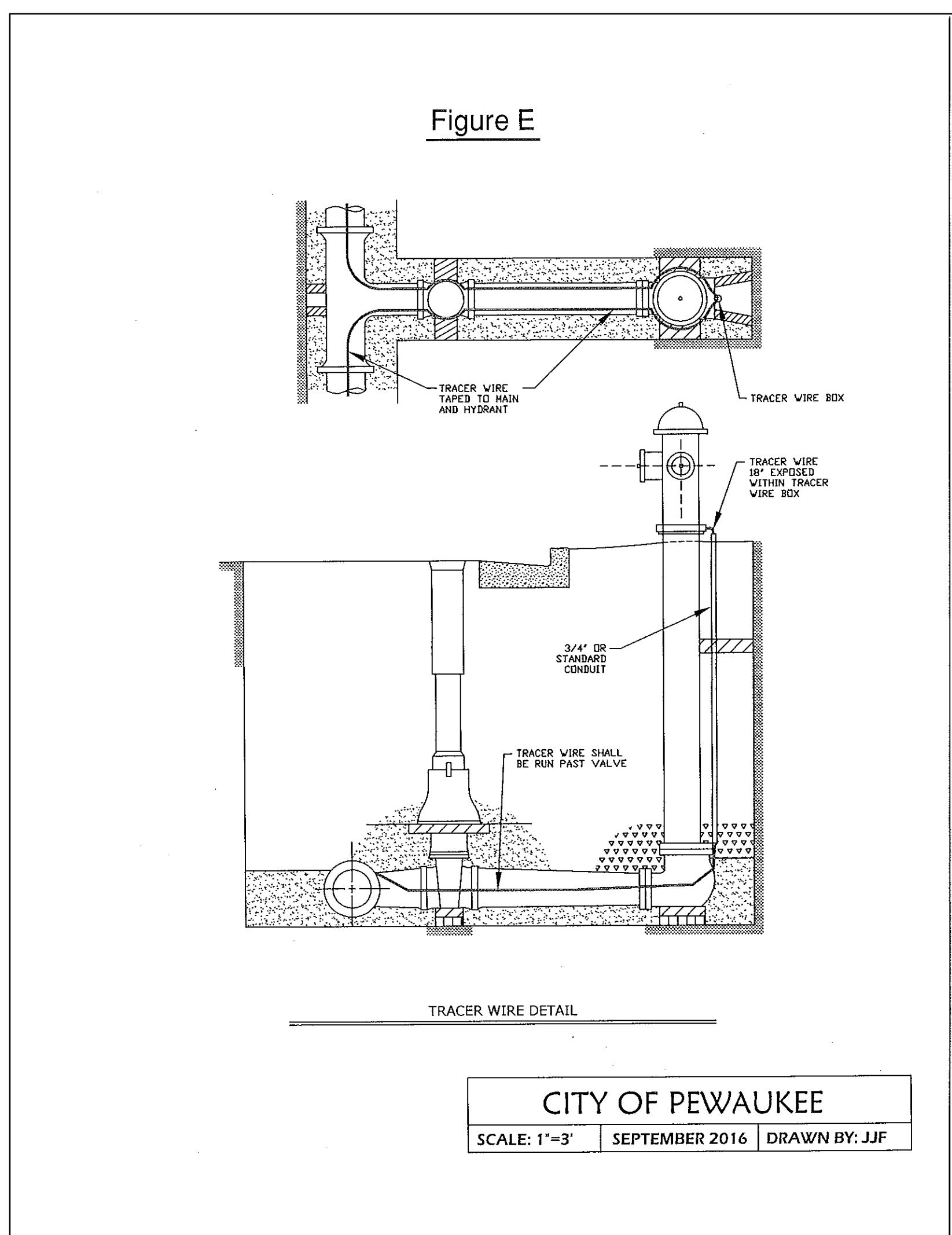
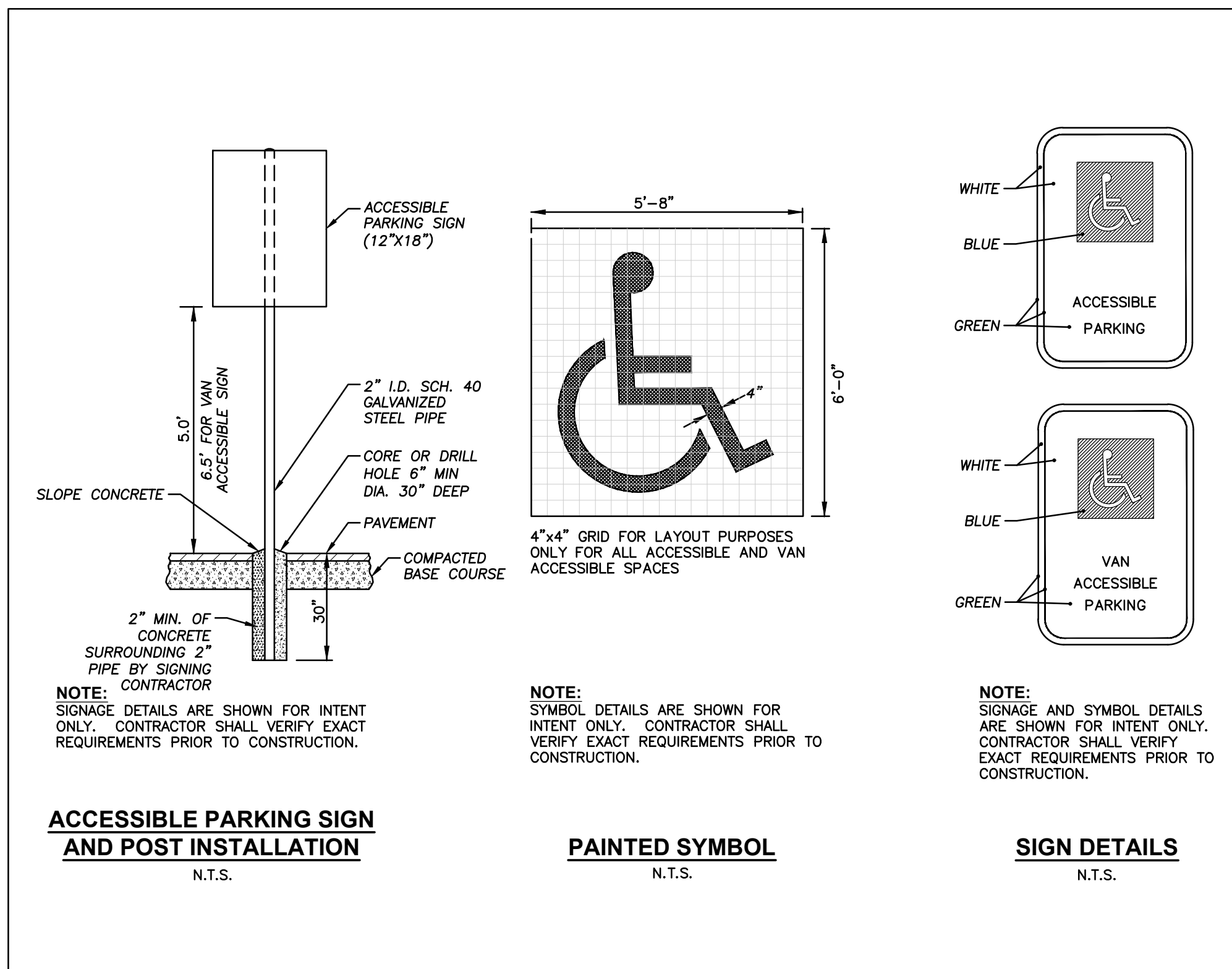
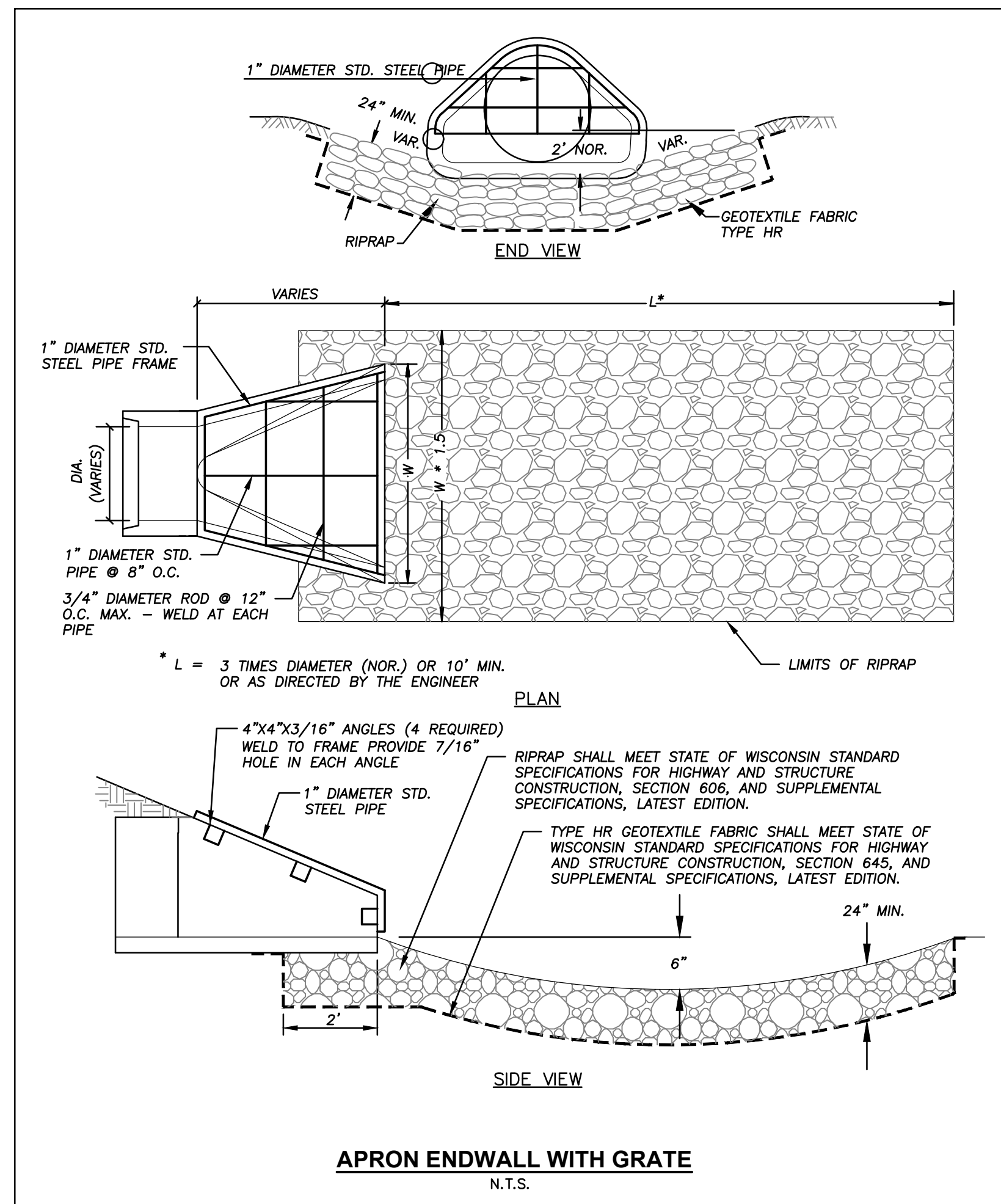
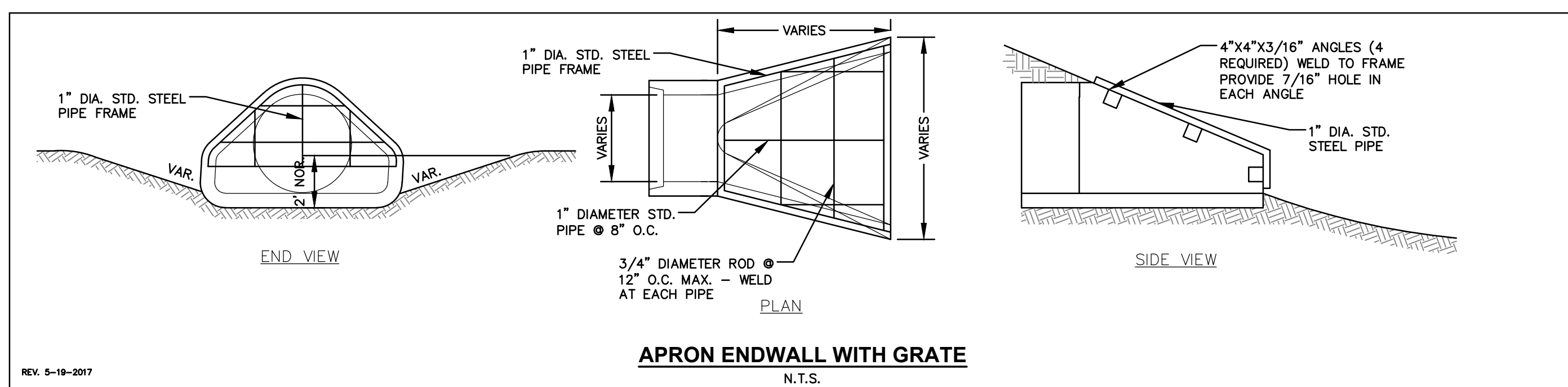
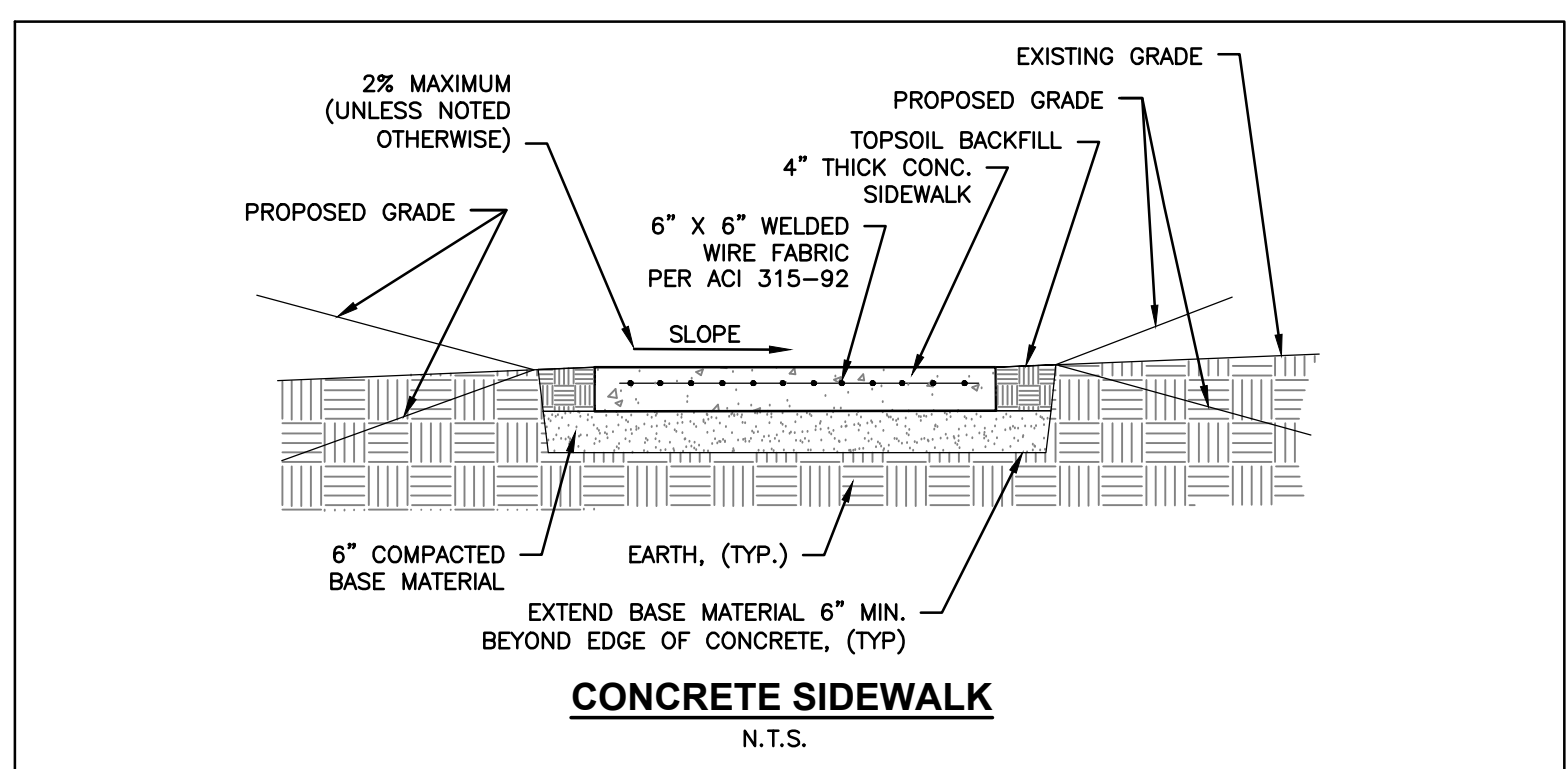
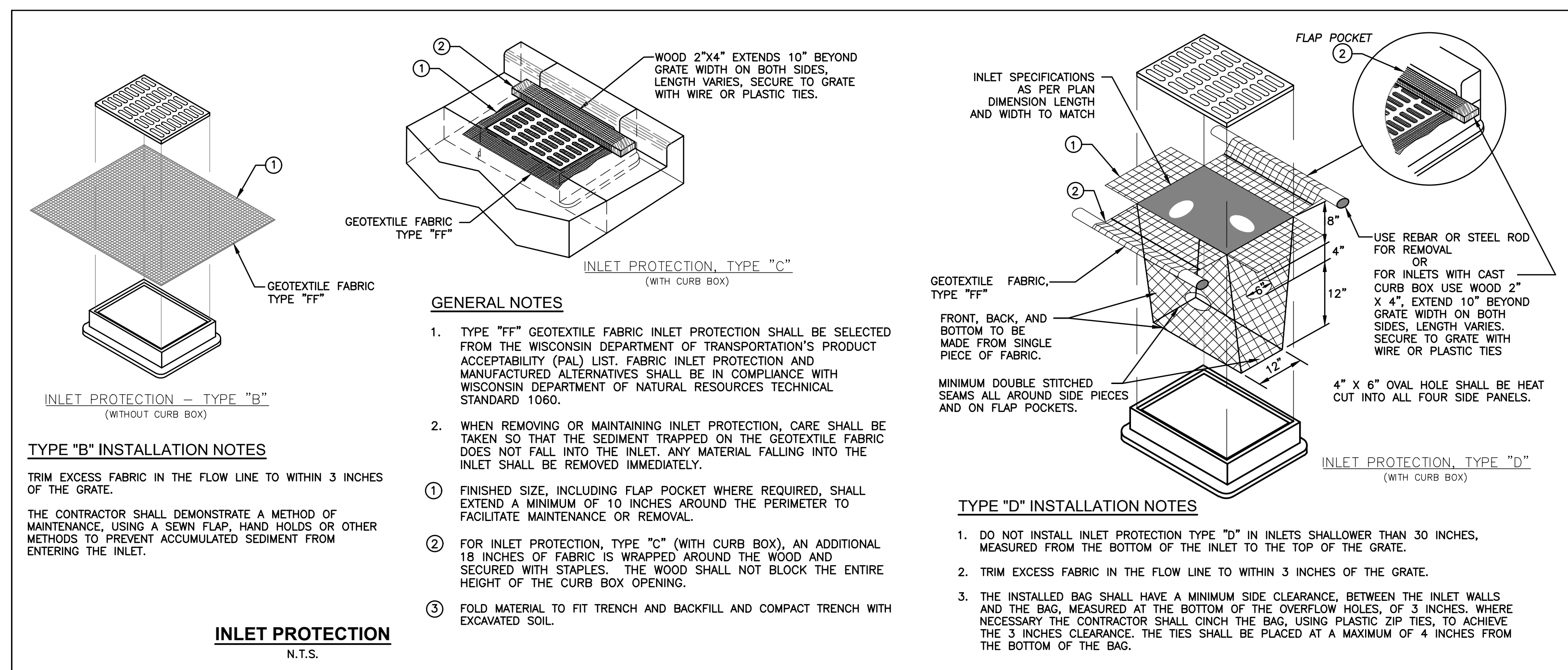
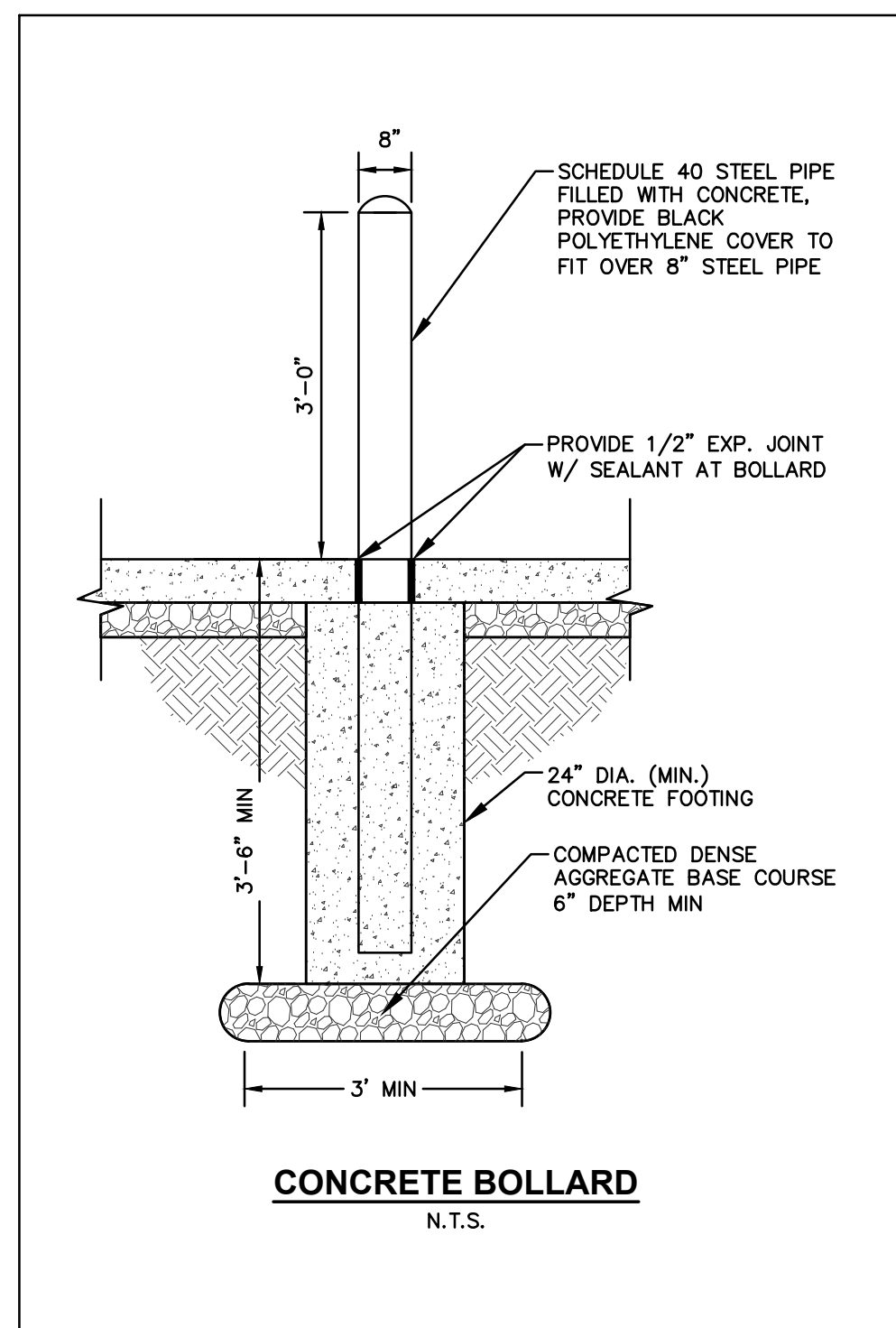
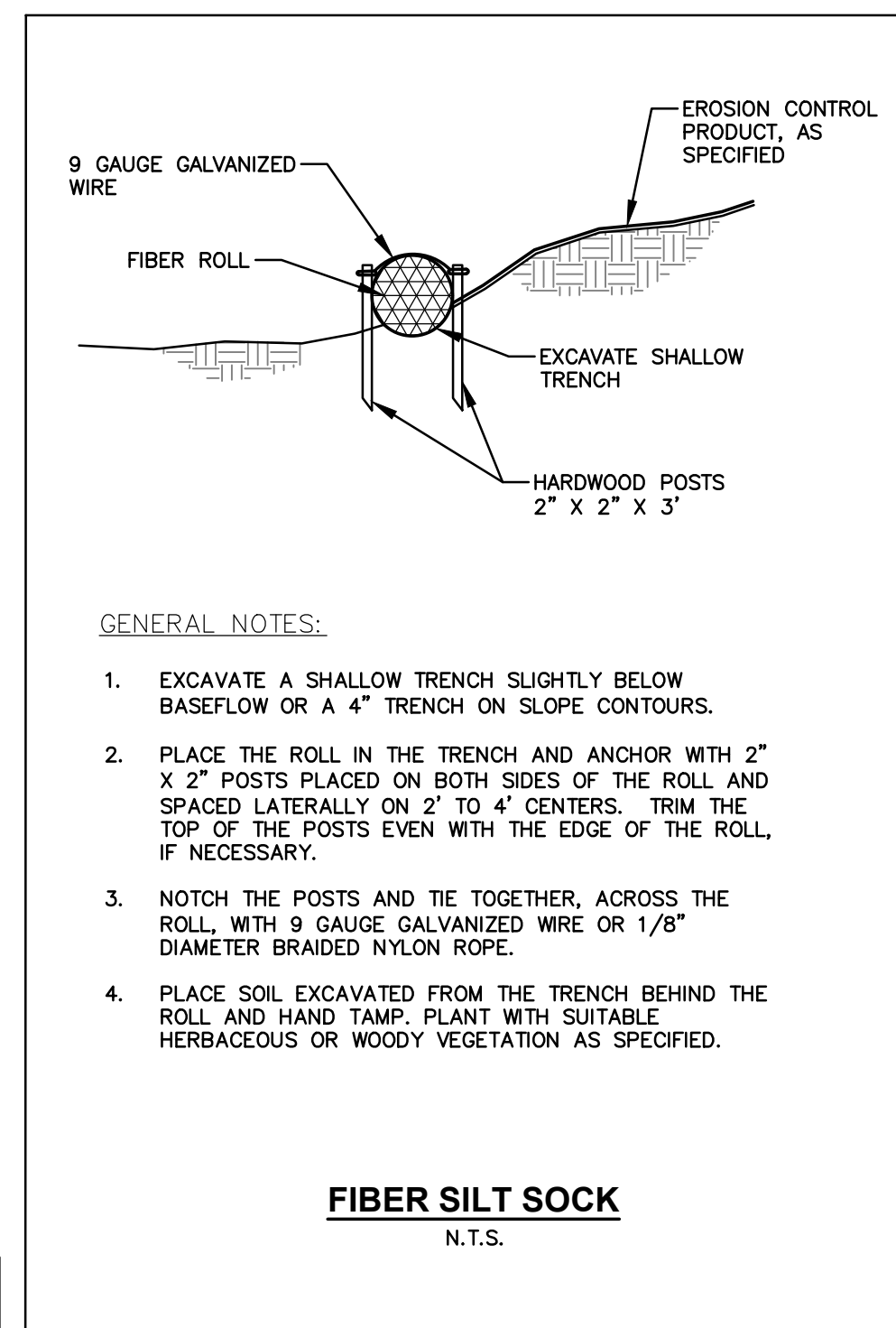
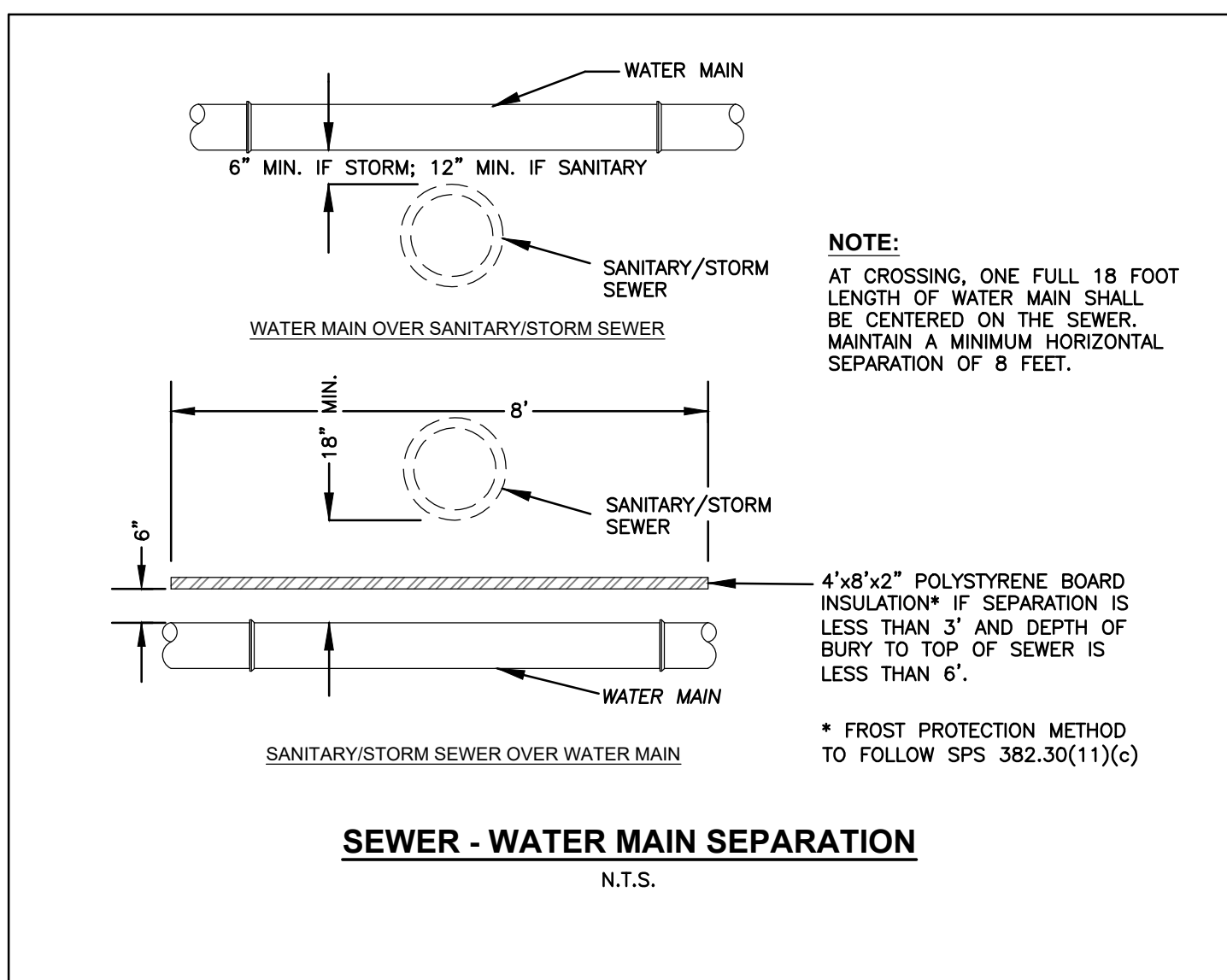
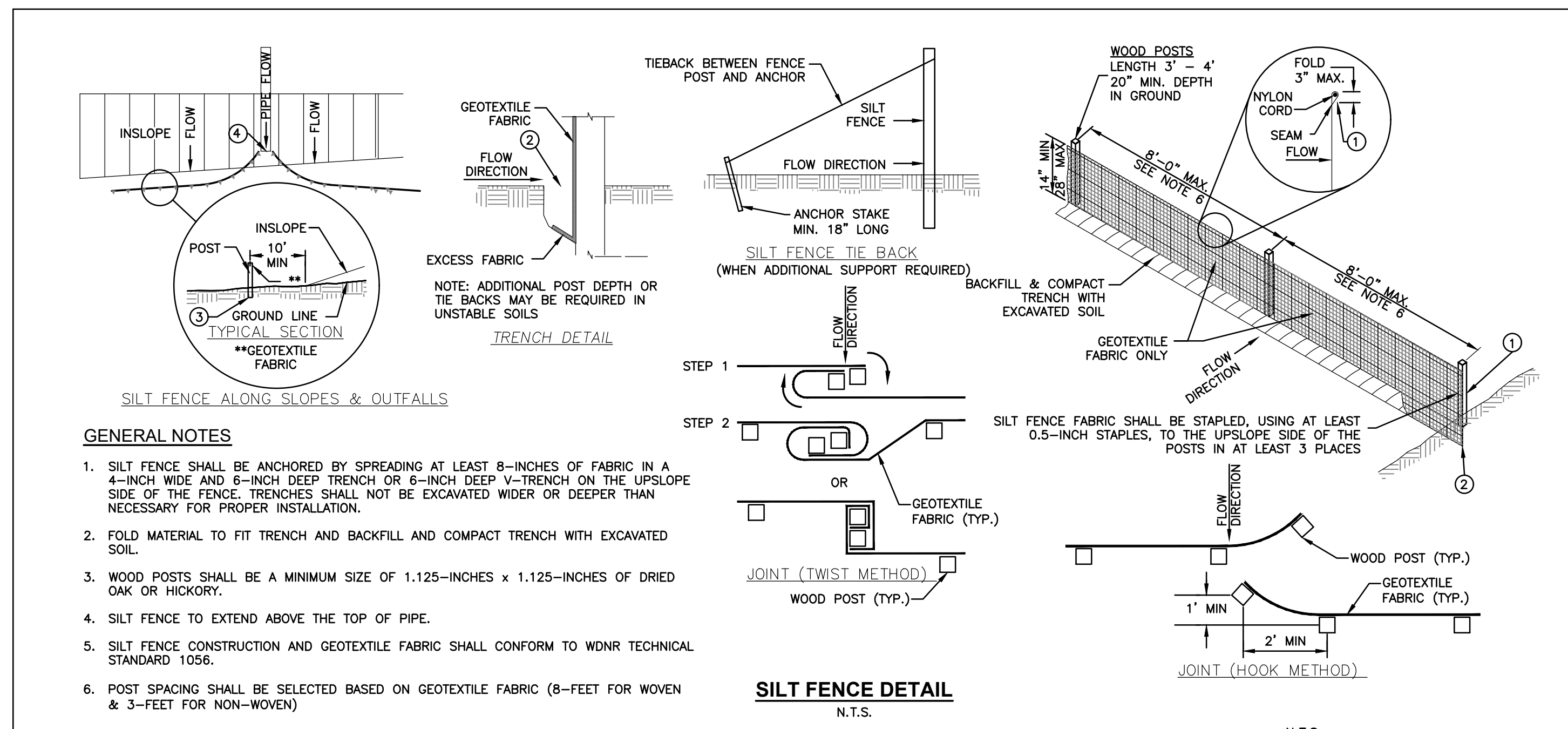


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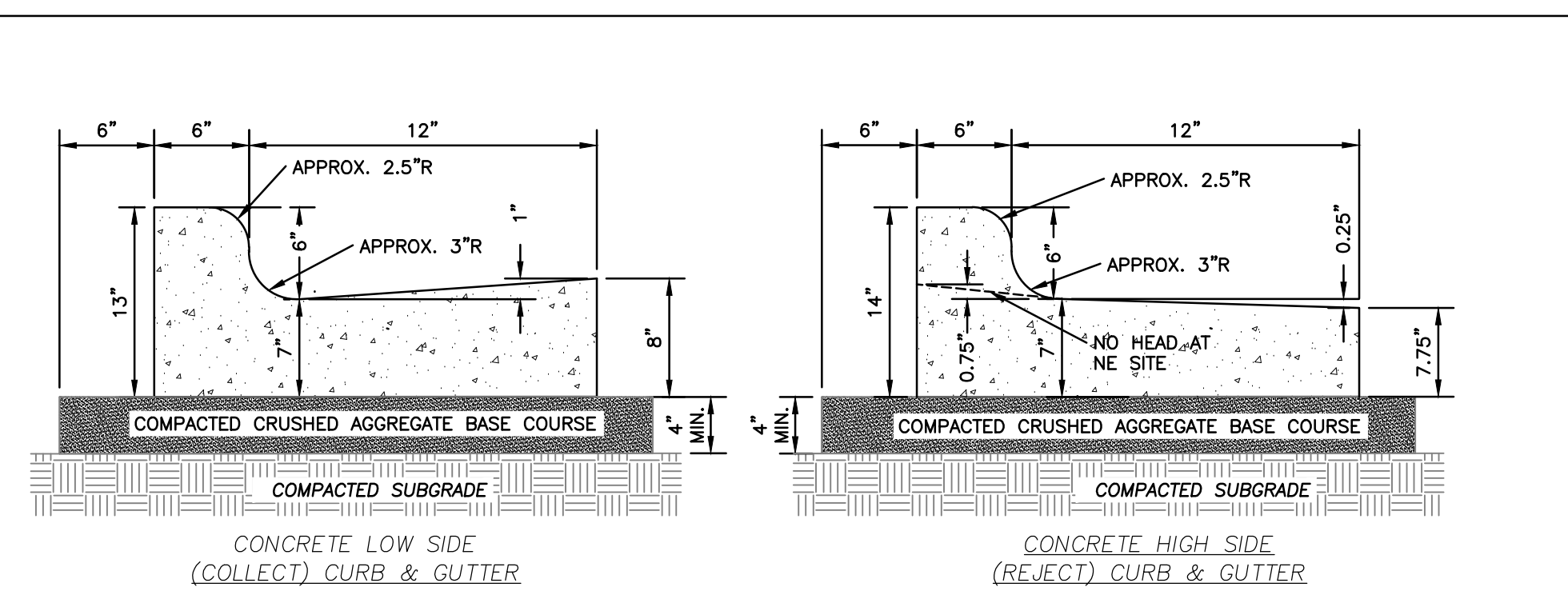
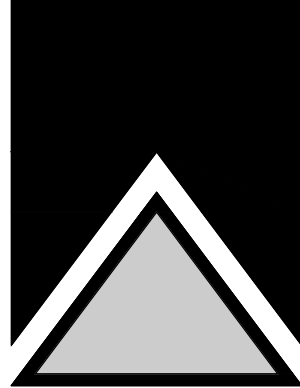
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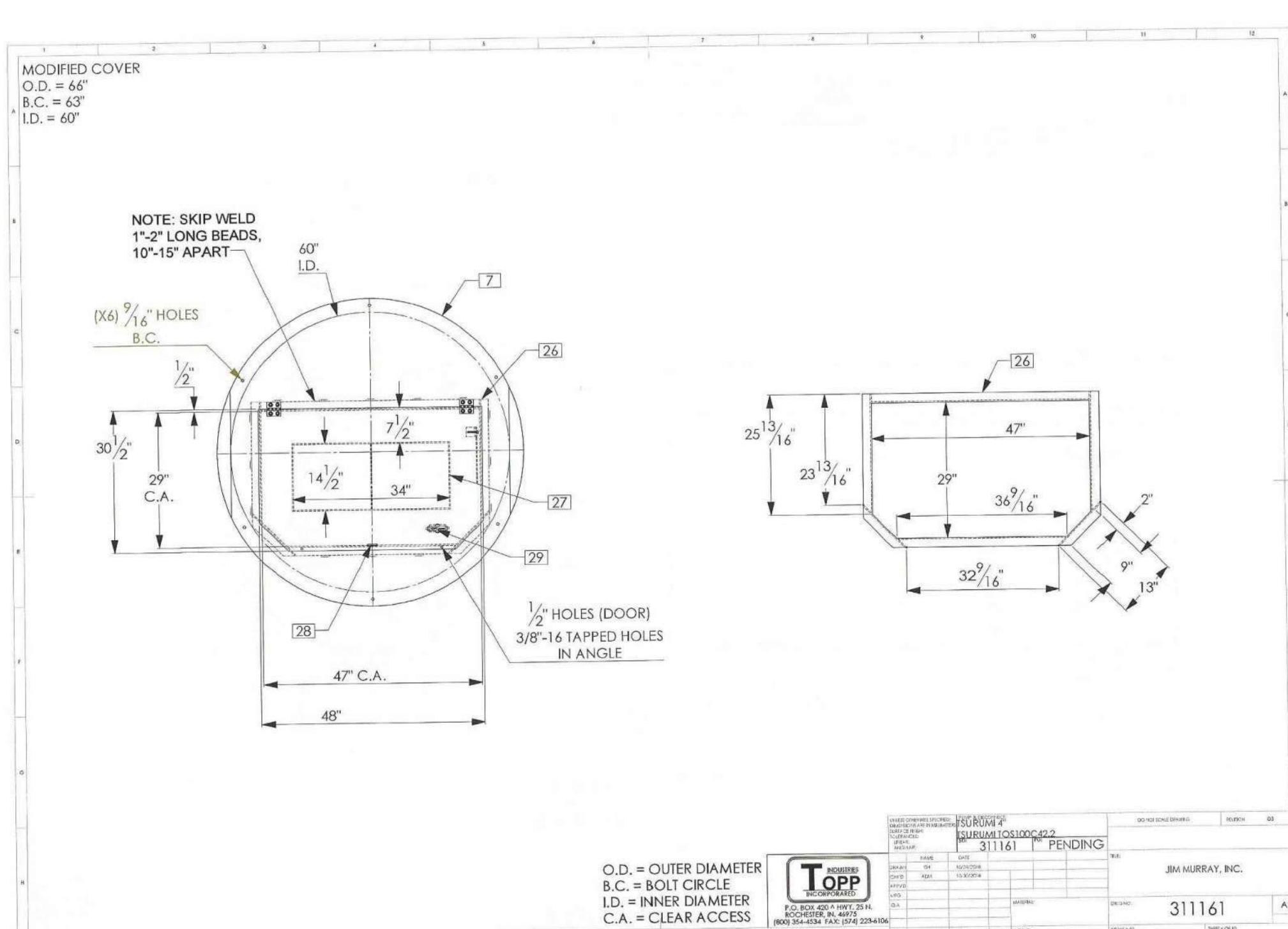
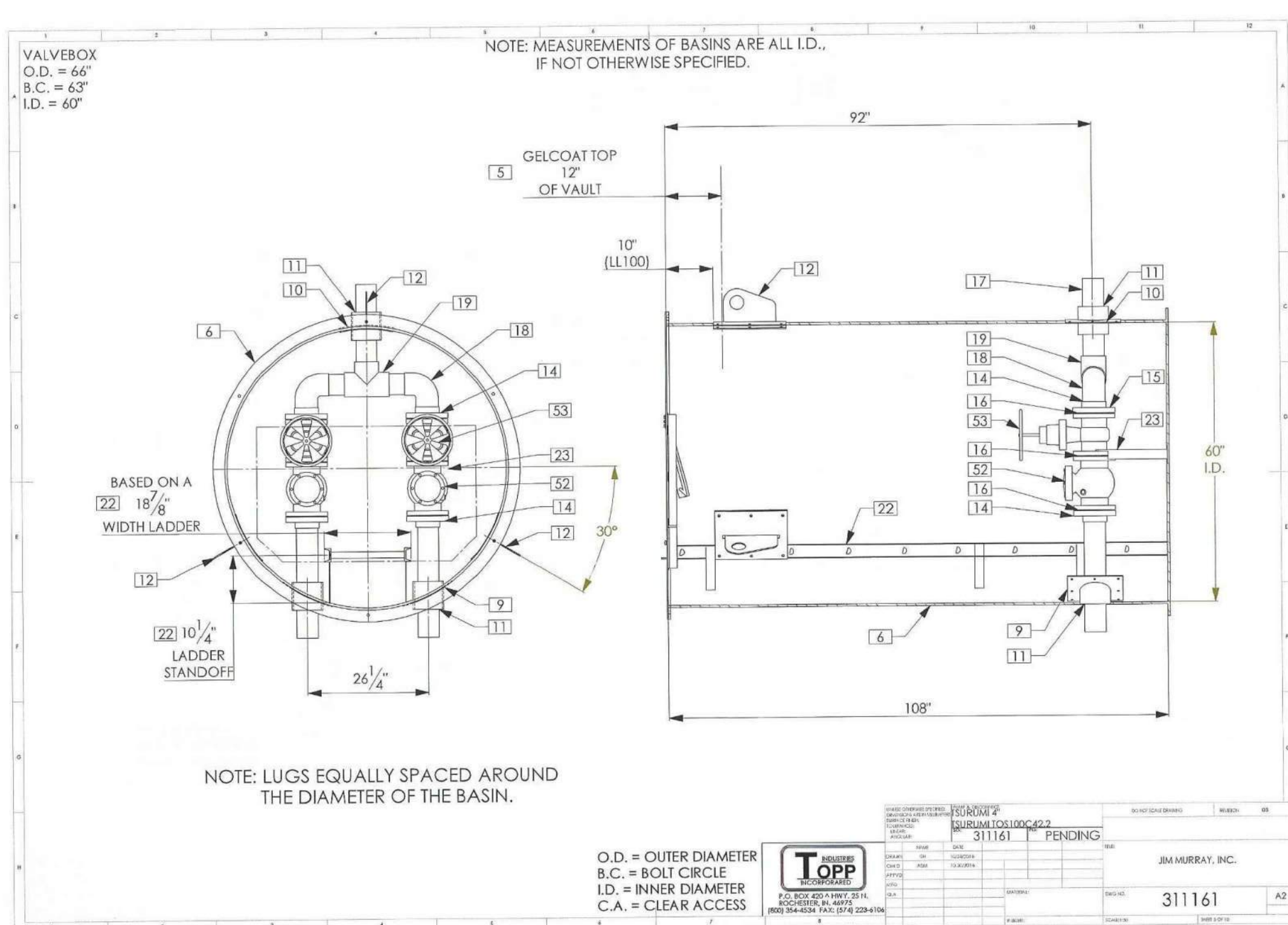
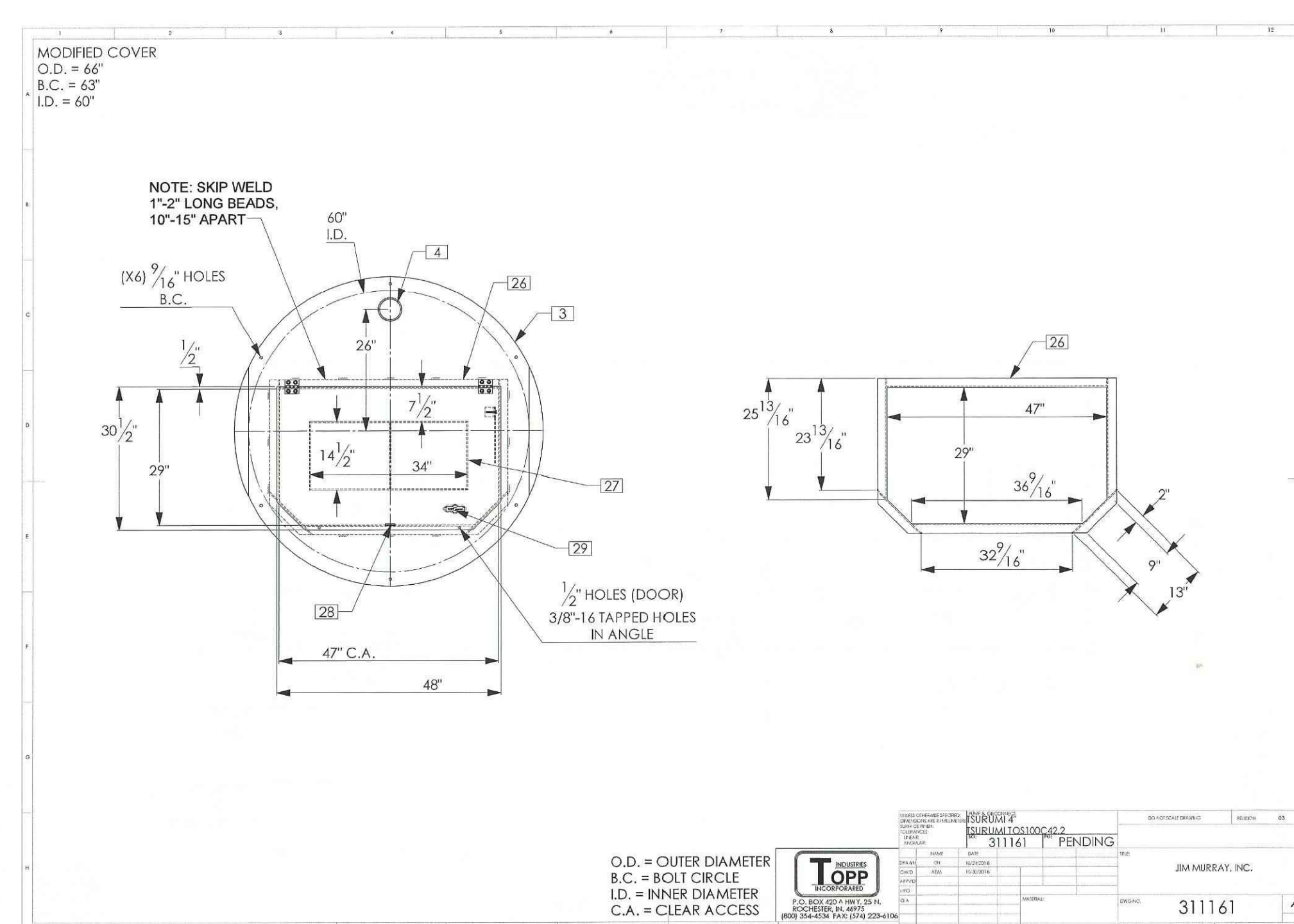
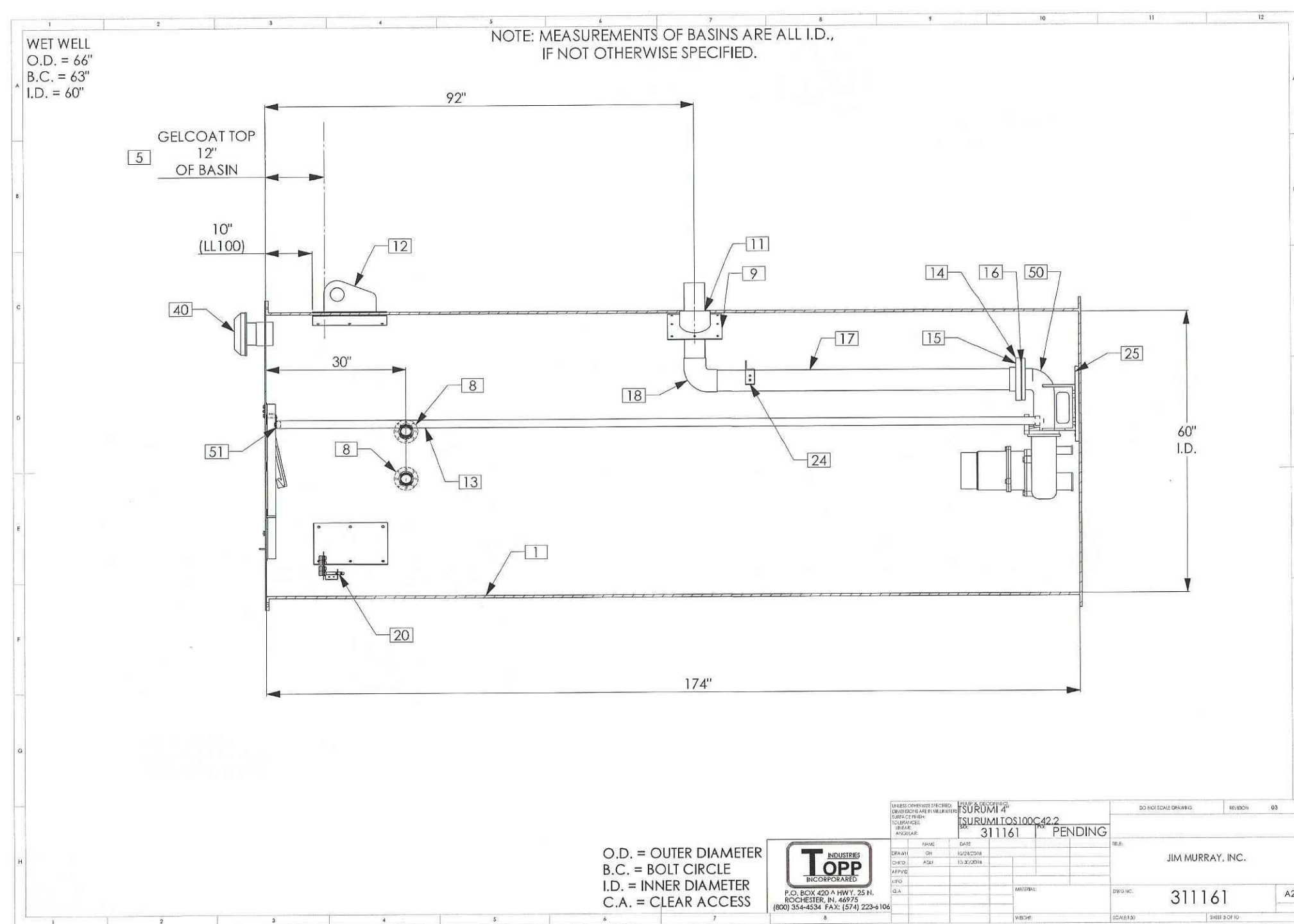
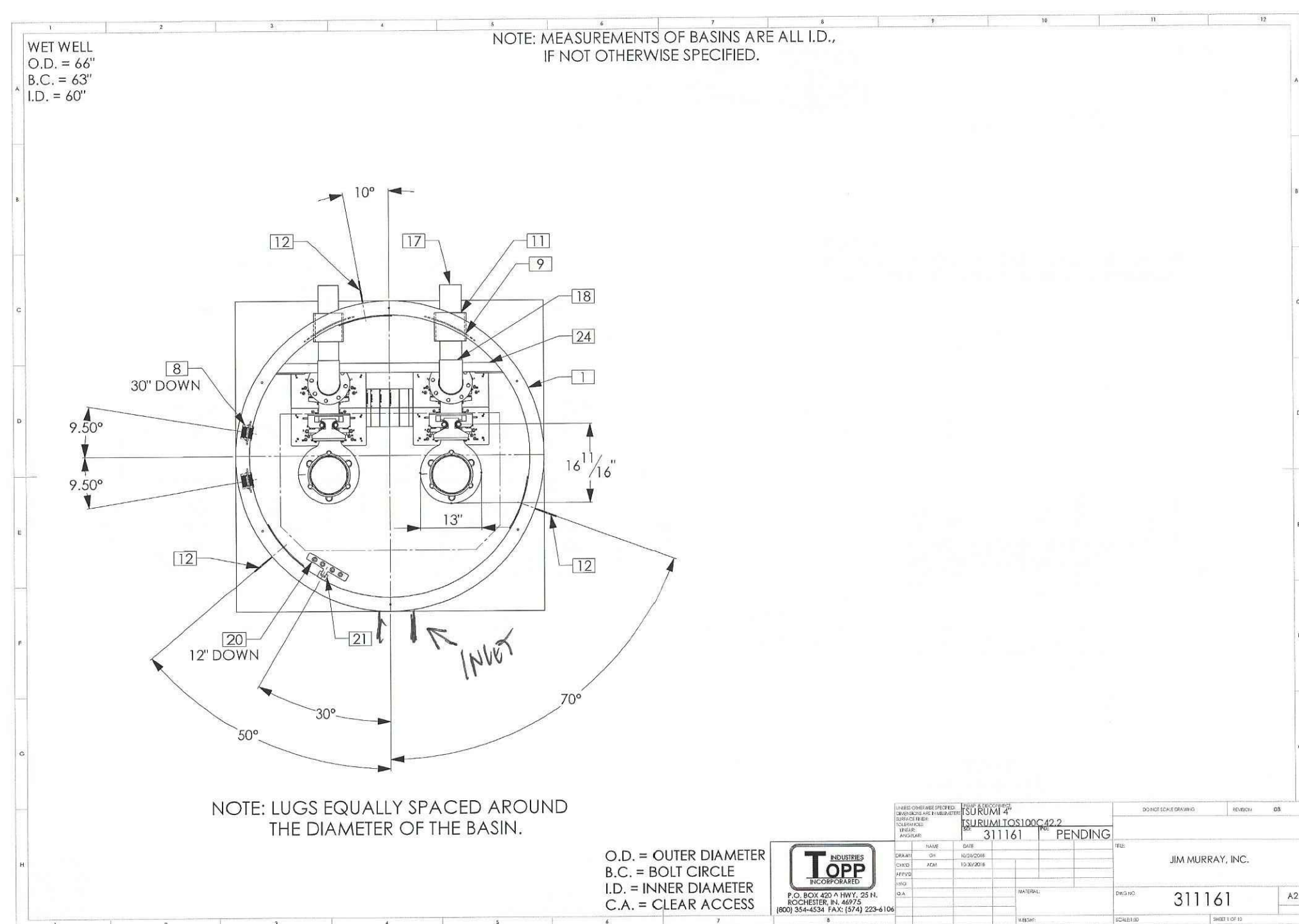




## GENERAL NOTES

1. LATERAL CONTRACTION JOINTS SHALL BE PLACED AT INTERVALS OF NOT MORE THAN 15 FEET NOR LESS THAN 6 FEET. THE JOINTS SHALL BE A MINIMUM OF 3 INCHES IN DEPTH.
2. EXPANSION JOINTS SHALL BE PLACED TRANSVERSELY AT RADIUS POINTS ON CURVES OF RADIUS 200 FEET OR LESS, AND AT ANGLE POINTS, OR AS DIRECTED BY THE ENGINEER OF RECORD. THE EXPANSION JOINT FILLER SHALL BE A ONE-PIECE FIBER BOARD OR THE APPROVED EQUIVALENT MATERIAL HAVING THE SAME DIMENSIONS AS CURB & GUTTER AT THAT STATION AND BE 0.5 INCH THICK.
3. IN ALL CASES, CONCRETE CURB & GUTTER SHALL BE PLACED ON THOROUGHLY COMPACTED CRUSHED STONE.

**18" STANDARD CURB & GUTTER**  
N.T.S.



| ITEM NO. | PART NUMBER            | DESCRIPTION                                          | QTY.  |
|----------|------------------------|------------------------------------------------------|-------|
| 1        | FRANK1745              | 80" X 12" FG BASIN W/EL. ANTI-FLOAT                  | 1     |
| 2        | SD                     | DUPLEX PUMP MOUNTING STUDS                           | 1     |
| 3        | 311161_GABREA          | 1/4" ALUM. HATCH CYL. HINGED & LOCKABLE              | 1     |
| 4        | 17A108                 | 4" ALUM. COUPLING - W/SHIM IN CORNER                 | 1     |
| 5        | GELW6055               | GELCOAT TOP 12" OF BASIN AND VALVE                   | 1     |
| 6        | FRANK108F              | 80" X 108" FIBERGLASS BASIN W/FG AND FLOUT           | 1     |
| 7        | 311161_VELC4016A       | 1/4" ALUM. HATCH CYL. HINGED & LOCKABLE, NO VENT     | 1     |
| 8        | C205FG                 | 2" NPT BALL-ON COMPRESSIBLE FG COUPLING - ELECTRICAL | 2     |
| 9        | SLV600A-M, 26.25 PLATE | 4" ALUM. SLEEVES FOR 40" BASIN - DISCHARGE           | 4     |
| 10       | SLV600A-M              | 4" ALUMINUM SLEEVE FOR 40" BASIN - DISCHARGE         | 1     |
| 11       | LS-300-S316            | LS-300-S316 5A LINSSEALS                             | 50    |
| 12       | LL100                  | 1/2" STEEL LIFTING LUGS                              | 6     |
| 13       | 13-0103                | 1 1/2" 304 SS PIPE                                   | 80 FT |
| 14       | 16-1103                | 4" SCH80 PVC VANDERBILT FLANGE SW                    | 5     |
| 15       | 100-0001               | SS BOLTS, WASHERS & LOCK NUTS                        | 44    |
| 16       | 17-0212                | 3/16" X 4" RUBBER RING GASKET                        | 6     |
| 17       | 14-0108                | 4" SCH80 PVC PIPE                                    | 40 FT |
| 18       | 14-0217                | 4" SCH80 PVC 90° ELBOW (DW)                          | 4     |
| 19       | 14-0318                | 4" SCH80 PVC Tee (DW)                                | 1     |
| 20       | 50914                  | STAINLESS STEEL FLOAT BRACKET W/1/4" CORD GRPS       | 1     |
| 21       | FRCLP                  | FRONT BRACKET ALU                                    | 1     |
| 22       | AL12                   | ALUM LADDER                                          | 9 FT  |
| 23       | 17-0360L               | SS Valve Bracing                                     | 2     |
| 24       | 14-0103                | ALUMINUM SHIPPING BRACING FOR 40" BASIN              | 1     |
| 25       | SP115GADUP             | GRID PLATE, 26.25" SPREAD                            | 1     |
| 26       | AL1A1-422              | 1/4" X 2" X 2" ALUMINUM ANGLE                        | 2     |
| 27       | AL1E1-40300            | 1/2" X 2" ALUMINUM FLAT BAR                          | 2     |
| 28       | LOCK P916              | LOCKING PLATE                                        | 2     |
| 29       | ALUMINUM HANDLE        | RECESSED ALUMINUM HANDLE                             | 2     |









ZIGNEO REPAIR FACILITY

PEWAUKEE, WISCONSIN 53186

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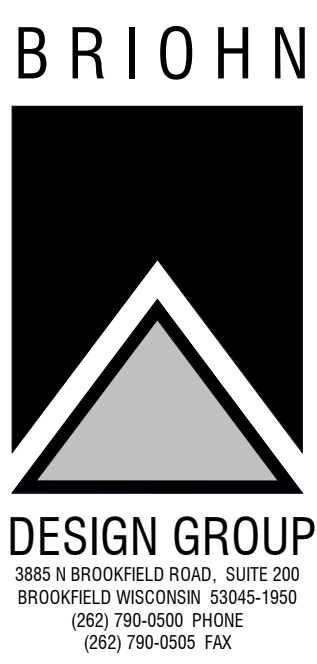
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| DOB:     | 3239         |
| DRAWN:   | CK           |
| CHECKED: | DF/KJ        |
| DATE:    | MAY 28, 2020 |
| HEET:    |              |

## A0.1





| KEYNOTE LEGEND FLOOR PLAN |                                                                                                                                                |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| MARK                      | FLOOR PLAN CODED NOTES                                                                                                                         |
| F11                       | 4" DIAMETER X 4'-0" TALL CONCRETE FILLED STEEL PIPE BOLLARD(S), PAINTED SAFETY YELLOW.                                                         |
| F12                       | PAINTED "SAFETY YELLOW" OSHA "Z" SHAPED GUARDS 4'-0" TALL AT OVERHEAD DOOR TRACK LOCATIONS BOLTED TO PRECAST WALL.                             |
| F13                       | CONCRETE STOOP - REFER TO STRUCTURAL PLAN AND CIVIL DRAWINGS. (PROVIDE RIGID INSULATION 4" THICK EXTENDING 24" PAST EDGE OF CONCRETE TYPICAL). |
| F14                       | PROVIDE EXTERIOR CODE REQUIRED EXIT DOOR LIGHT FIXTURES - REFER TO ELECTRICAL PLANS.                                                           |
| F15                       | EXIT DOORS TO HAVE CODE COMPLIANT EXIT LIGHTS AND EMERGENCY EGRESS LIGHTING PER CODE TYPICAL.                                                  |
| F18                       | 12" X 12'-0" TRENCH DRAIN AT DRIVE THRU DOORS WITH SLOPING CONCRETE FLOOR - REFER TO PLUMBING DRAWINGS.                                        |
| F19                       | SERVICE PIT 5'-0" DEEP WITH SUMP AND CONCRETE STAIRS AT EITHER END - REFER TO STRUCTURAL DRAWINGS.                                             |
| F21                       | 12" X 70'-0" TRENCH DRAIN AT DRIVE THRU DOORS WITH SLOPING CONCRETE FLOOR - REFER TO PLUMBING DRAWINGS.                                        |
| F22                       | FIRE DEPARTMENT ACCESS TO SPRINKLER RISER ROOM WITH KNOX BOX LOCATED NEAR DOOR.                                                                |
| F23                       | FIRE DEPARTMENT CONNECTION WITH STROBE ALARM LOCATED ABOVE 17'-18 FEET AFF TO BE CONFIRMED BY FIRE OFFICIAL.                                   |
| F24                       | IMP PANEL SEPARATION WALL.                                                                                                                     |
| F27                       | VERTICAL CONDUCTOR. NOTE: PROVIDE COLUMN AND VERTICAL CONDUCTOR PROTECTION FOR WAREHOUSE COLUMNS (PROVIDE CLEAN-OUT AS REQUIRED).              |



OVERALL FLOOR PLAN

PROPOSED NEW REPAIR FACILITY BUILDING  
ZIGNEGO REPAIR FACILITY  
W226 N2940 DUPLAINVILLE ROAD  
PEWAUKEE, WISCONSIN 53186

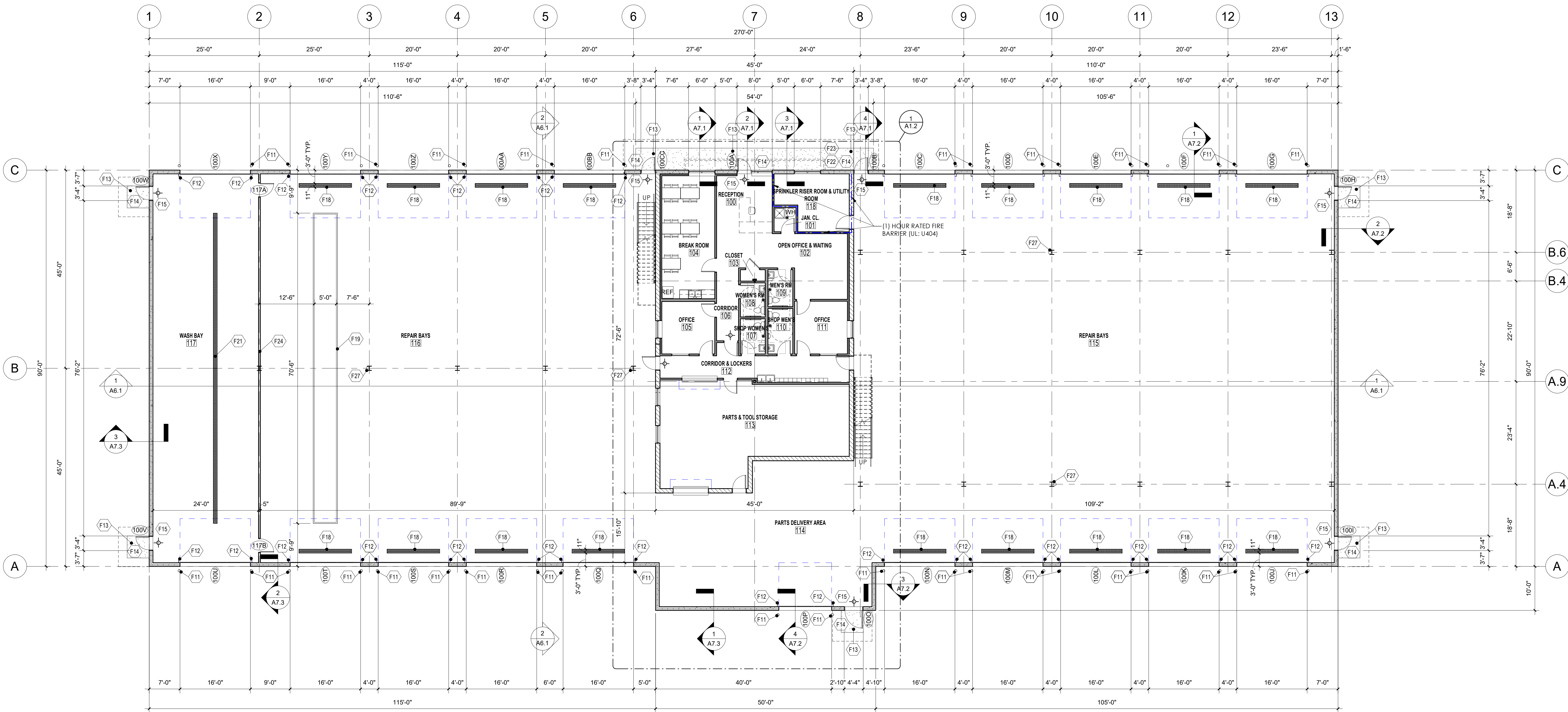
Revised Plan Commission Per City Of Pewaukee Letter Dated June 15, 2020

Date

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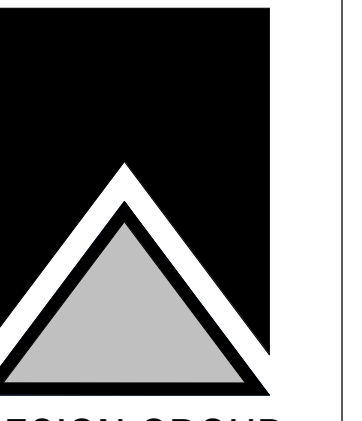
A1.0



1 OVERALL FIRST FLOOR PLAN  
3/32" = 1'-0"







**DESIGN GROUP**  
85 N. BROOKFIELD ROAD, SUITE 200  
BROOKFIELD WISCONSIN 53045-1950  
(262) 790-0500 PHONE  
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## MEZZANINE FLOOR PLAN

—

# PROPOSED NEW REPAIR FACILITY BUILDING

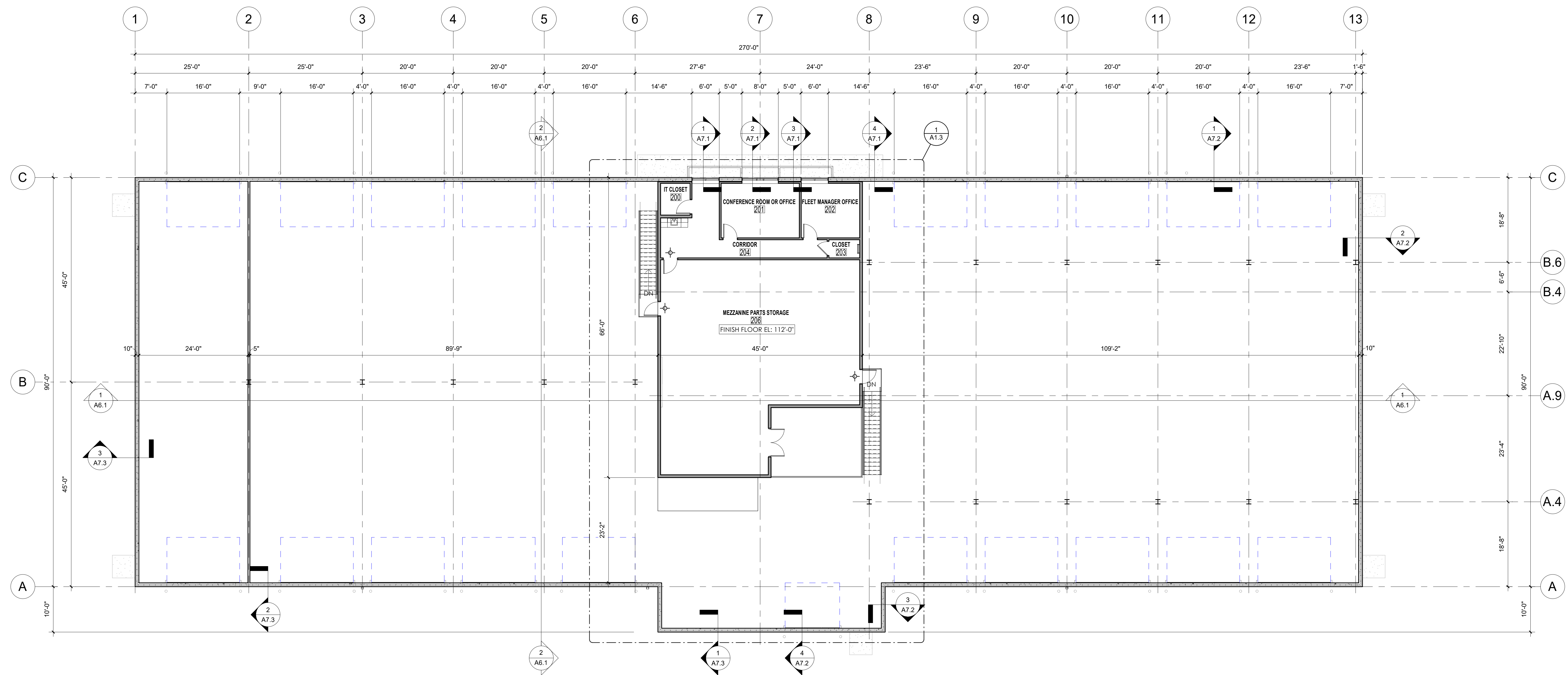
# ZIGNEGO REPAIR FACILITY

W 220 N 2940 DUFRAINVILLE ROAD  
PEWAUKEE, WISCONSIN 53186

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| B:     | 3239         |
| AWN:   | CK           |
| ECKED: | DF/KJ        |
| TE:    | MAY 28, 2020 |
| EET:   |              |

## A1.1



**1** MEZZANINE FLOOR PLAN  
3/32" = 1'-0"



#### DOOR & DOOR HARDWARE NOTES:

1. ALL HANDLES, PULLS, LATCHES, LOCKS, AND OTHER PARTS ON ACCESSIBLE DOORS SHALL HAVE A SHAPE THAT IS EASY TO GRASP WITH ONE HAND AND DOES NOT REQUIRE TIGHT GRASPING, BENCHING, OR TWISTING OF THE WRIST TO OPERATE. SUCH HARDWARE SHALL BE 34 INCHES MINIMUM TO 48 INCHES MAXIMUM ABOVE THE FLOOR OR GROUND, WHERE SLIDING DOORS ARE IN THE FULLY OPEN POSITION, OPERATING HARDWARE SHALL BE EXPOSED AND USABLE FROM BOTH SIDES.
  2. DOORS CLOSERS SHALL BE ADJUSTED SO THAT FROM AN OPEN POSITION OF 90 DEGREES, THE TIME TO MOVE THE DOOR TO AN OPEN POSITION OF 12 DEGREES SHALL BE 5 SECONDS MINIMUM.
  3. DOOR SPRING HINGES SHALL BE ADJUSTED SO THAT THE OPEN POSITION OF 70 DEGREES, THE DOOR SHALL MOVE TO THE CLOSED POSITION IN 1.5 SECONDS MINIMUM, MEASURED UNDER AMBIENT CONDITIONS.
  4. FIRE DOORS SHALL HAVE THE MINIMUM OPENING FORCE ALLOWABLE BY THE APPROPRIATE AUTHORITY. THE MAXIMUM FORCE FOR PUSHING OPEN OR PULLING OPEN DOORS OTHER THAN FIRE DOORS SHALL BE AS FOLLOWS:
    - A. INTERIOR HINGED DOOR: 5.0 POUNDS (22.2N)
    - B. SLIDING OR FOLDING DOOR: 5.0 POUNDS (22.2N)THESE FORCES DO NOT APPLY TO THE FORCE REQUIRED TO RETRACT LATCH BOLTS OR DISENGAGE OTHER DEVICES THAT HOLD THE DOOR IN A CLOSED POSITION.
  5. DOOR SURFACE WITHIN 10 INCHES OF THE FLOOR OR GROUND MEASURED VERTICALLY SHALL BE A SMOOTH SURFACE ON THE PUSH SIDE EXTENDING THE FULL WIDTH OF THE DOOR. PARTS CREATING HORIZONTAL OR VERTICAL JOINTS IN SUCH SURFACE SHALL BE WITHIN 1/16 INCH OF THE SMA PLANE AS THE OTHER. CAVITIES CREATED BY ADDED KICK PLATE SHALL BE CAPPED.
- EXCEPTIONS:
- A. SLIDING DOORS
  - B. TEMPERED GLASS DOORS WITHOUT STILES AND HAVING A BOTTOM RAIL OR SHOE WITH THE TOP LEADING EDGE TAPERED AT NO LESS THAN 60 DEGREES FROM THE HORIZONTAL SHALL NOT BE REQUIRED TO MEET THE 10 INCH BOTTOM RAIL HEIGHT REQUIREMENT
  - C. DOORS WHICH DO NOT EXTEND TO WITHIN 10 INCHES OF THE FLOOR OR GROUND.
6. DOORS AND Sidelights ADJACENT TO DOORS CONTAINING ONE OR MORE GLAZING PANELS THAT PERMIT VIEWING THROUGH THE PANEL SHALL HAVE THE BOTTOM OF AT LEAST ONE PANEL 43 INCHES MAXIMUM ABOVE THE FLOOR OR GROUND.
  7. EGRESS DOORS SHALL BE EASILY OPERABLE FROM EGRESS SIDE WITHOUT THE USE OF A KEY. SPECIAL KNOWLEDGE OR EFFORT UNLESS SPECIFICALLY PERMITTED IN IBC 1010.1.9.

#### TOILET ROOM NOTES:

1. 6-1/2" MAXIMUM SINK DEPTH.
2. INSULATE PIPES BELOW COUNTERTOPS (WATER AND WASTE LINES) w/ PVC MOLDED PROTECTION.
3. FLUSH VALVE FOR URINAL MUST NOT EXCEED 44" IN HEIGHT.
4. PROVIDE LEVER FAUCETS HANDLES AAT ALL SINKS AND LAVATORIES.
5. ALL DIMENSIONS SHOWN ARE FROM WALL FINISH.

#### DRINKING FOUNTAIN NOTES:

1. CONTROLS MUST BE MOUNTED IN FRONT OR SIDE MOUNTED NEAR FRONT EDGE
2. PROVIDE 30" x 48" CLEAR FLOOR SPACE

#### STANDARD MOUNTING HEIGHT NOTES:

1. ALL SIGNAGE SHALL MEET THE REQUIREMENTS OF ADA AND ANSI A117.1 SEC. 703.
2. SIGN SHALL BE MOUNTED WHERE INDICATED, WHERE THERE IS NO WALL SPACE ADJACENT TO LATCH SIDE OF DOOR, SIGN SHALL BE MOUNTED ON NEAREST ADJACENT WALL.
3. MOUNTING LOCATION FOR SIGNAGE SHALL BE SO THAT A PERSON MAY APPROACH WITHIN 3" OF SIGNAGE WITHOUT ENCOUNTERING PROTRUDING OBJECTS OR STANDING WITHIN THE SWING OF THE DOOR.
4. FACILITIES AND ELEMENTS REQUIRED TO BE IDENTIFIED AS ACCESSIBLE SHALL INCLUDE THE INTERNATIONAL SYMBOL OF ACCESSIBILITY.

#### GENERAL NOTES

1. VERIFY ALL CONDITIONS, DIMENSIONS, AND ALIGNMENT OF WALLS. BRING ANY DISCREPANCIES TO BRIORNS ATTENTION PRIOR TO FABRICATION / CONSTRUCTION BEGINS.
2. VERIFY LOCATION OF ACCESS PANELS WITH MECHANICAL AND ELECTRICAL DRAWINGS FOR ACCESS TO MECHANICAL AND ELECTRICAL ITEMS.
3. SEAL PENETRATIONS IN FIRE RATED ASSEMBLIES AND SMOKE BARRIERS TO MEET REQUIRED RATINGS. UTILIZE UL APPROVED METHODS.
4. DURING CONSTRUCTION, AREA SHALL BE KEPT BROOM CLEAN AND FREE OF DEBRIS.
5. CONCRETE SLABS AND SIDEWALKS, REFER TO STRUCTURAL DRAWINGS.
6. (AS REQUIRED BY IECC 502.4 AIR LEAKAGE)
- SEAL PENETRATIONS AT WINDOW AND DOOR ASSEMBLIES (IECC 502.4.1)
- SEAL PENETRATIONS AT CURTAIN WALL, STOREFRONT GLAZING, AND COMMERCIAL ENTRANCE DOORS (IECC 502.4.2)
- SEALING ON THE BUILDING ENVELOPE (IECC 502.4.3)
- SEAL PENETRATIONS AT OUTDOOR AIR INTAKES AND EXHAUST OPENING (IECC 502.4.4)
- SEAL LOADING DOCK WEATHER SEALS (IECC 502.4.5)
- SEAL PENETRATIONS AT VESTIBULES (IECC 502.4.6)
- SEAL PENETRATIONS AT RECESSED LUMINAIRES (IECC 502.4.7)
7. FIRE EXTINGUISHERS TO BE FURNISHED BY G.C. AND LOCATED AS REQUIRED BY INTERNATIONAL FIRE CODE & LOCAL FIRE INSPECTOR AND OR FIRE DEPT.
8. STUD TRAINING EXTENDED UP TO STRUCTURE ABOVE SHALL HAVE SLIP TRACK W/O MECH. FASTENING ALLOWING DEFLECTION.
9. ALL EXPOSED GYPSUM WALL BOARD SHALL BE TYPE "X" TAPED AND COATED SMOOTH READY TO PAINT.
10. RETURN GYPSUM WALL BOARD INTO JAMBS AND HEADS @ EXTERIOR WALLS WITH WINDOWS AND DOORS.
11. VERIFY LOCATION OF ACCESS PANELS REQUIRED AND COORDINATE SPECIFIC FINISH REQUIREMENTS WITH B.O.G.
12. ALL NEW INTERIOR SPACES SHALL BE CONSTRUCTED AS ACCESSIBLE AND IN ACCORDANCE WITH CHAPTER 11 AND ICC / ANSI A117.1-2003 REQUIREMENTS.
13. SEAL PENETRATIONS IN FIRE RATED ASSEMBLIES AND SMOKE BARRIERS TO MEET THE REQUIRED RATINGS. UL APPROVED METHODS.
14. RECEPTION DESK, OFFICE FURNITURE, FIXTURES AND EQUIPMENT BY TENANT.
15. BREAK ROOM FURNITURE BY TENANT.

#### FLOOR PLAN LEGEND

| ROOM   | ROOM NAME                                          |     |                              |
|--------|----------------------------------------------------|-----|------------------------------|
| 100    | ROOM NUMBER                                        | --- | PARTITION TO BE DEMOLISHED   |
| 100    | DOOR NUMBER                                        | --- | DOOR AND FRAME TO BE REMOVED |
| 1      | PARTITION TYPE                                     | --- | EXISTING PARTITION TO REMAIN |
| 1      | PLAN NOTES                                         | --- | EXISTING DOOR TO REMAIN      |
| F.E.   | SURFACE MOUNTED FIRE EXTINGUISHER                  | --- | NEW CONSTRUCTION             |
| F.E.C. | RECESSED EXTINGUISHER CABINET w/ FIRE EXTINGUISHER | --- | NEW DOOR & FRAME             |
| +      | EXIT LIGHT                                         | --- |                              |
| +      | EXIT LIGHT (DIRECTIONAL)                           | --- |                              |

### KEYNOTE LEGEND FLOOR PLAN

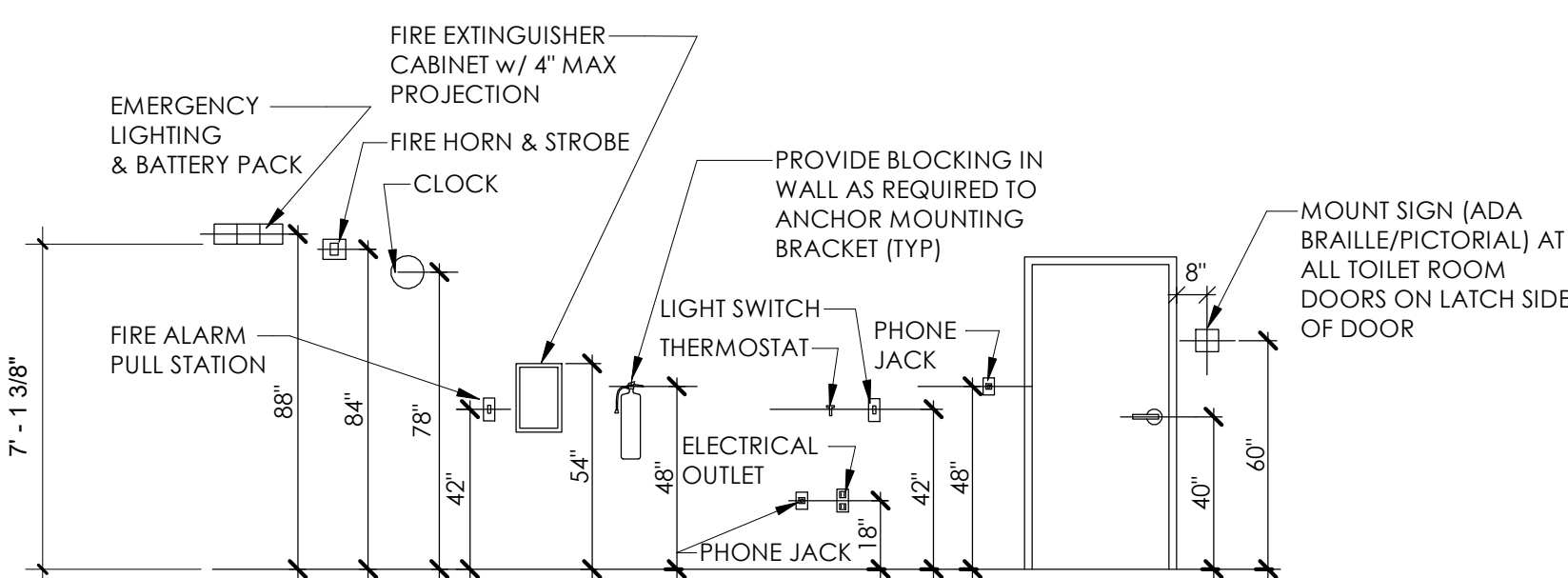
| MARK | FLOOR PLAN CODED NOTES                                                                                                                         |
|------|------------------------------------------------------------------------------------------------------------------------------------------------|
| F01  | PLASTIC LAMINATED SILL.                                                                                                                        |
| F02  | MOP SINK LOCATION. PROVIDE FRP UP TO 4'-0" AFF BEHIND SINK AND 12" TO EACH SIDE.                                                               |
| F03  | PROVIDE FLOOR MOUNTED ELECTRIC WATER HEATER. PROVIDE SPILL CONTAINMENT PAN.                                                                    |
| F04  | FLOOR DRAIN - SEE PLUMBING FOR RIM ELEVATION.                                                                                                  |
| F05  | BASE & UPPER MILLWORK. SEE INTERIOR ELEVATIONS.                                                                                                |
| F06  | 4'-0"W x 4'-0"H BORROWED LITE. IF APPLICABLE. (NOTE: TOP OF FRAME TO ALIGN WITH ADJACENT DOOR FRAME).                                          |
| F07  | PROVIDE 1" SEPARATION BETWEEN FURRING STUDS AND PRECAST FOR TO ALLOW FOR PRECAST MOVEMENT.                                                     |
| F08  | ALL OFFICE FURNITURE, FIXTURES AND EQUIPMENT BY OWNER (TYPICAL), INCLUDING APPLIANCES BY OWNER.                                                |
| F11  | 4" DIAMETER X 4'-0" TALL CONCRETE FILLED STEEL PIPE BOLLARD(S). PAINTED SAFETY YELLOW.                                                         |
| F12  | PAINTED "SAFETY YELLOW" OSHA "Z" SHAPED GUARDS 4'-0" TALL AT OVERHEAD DOOR TRACK LOCATIONS BOLTED TO PRECAST WALL.                             |
| F13  | CONCRETE STOOP - REFER TO STRUCTURAL PLAN AND CIVIL DRAWINGS. (PROVIDE RIGID INSULATION 4" THICK EXTENDING 24" PAST EDGE OF CONCRETE TYPICAL). |
| F14  | PROVIDE EXTERIOR CODE REQUIRED EXIT DOOR LIGHT FIXTURES - REFER TO ELECTRICAL PLANS.                                                           |
| F15  | EXIT DOORS TO HAVE CODE COMPLIANT EXITS LIGHTS AND EMERGENCY EGRESS LIGHTING PER CODE TYPICAL.                                                 |
| F18  | 12" X 12'-0" TRENCH DRAIN AT DRIVE THRU DOORS WITH SLOPING CONCRETE FLOOR - REFER TO PLUMBING DRAWINGS.                                        |
| F20  | TWO COMPARTMENT SHOP SIDE HAND WASHING SINK PER CODE.                                                                                          |
| F22  | FIRE DEPARTMENT ACCESS TO SPRINKLER RISER ROOM WITH KNOX BOX LOCATED NEAR DOOR.                                                                |
| F23  | FIRE DEPARTMENT CONNECTION WITH STROBE ALARM LOCATED ABOVE 17'-18 FEET AFF TO BE CONFIRMED BY FIRE OFFICIAL.                                   |

#### PARTITION TYPES

| TAG | STUD TYPE                 | STUD HEIGHT               | INSULATION       | VAPOR BARRIER | NOTED SIDE SURFACE MATERIAL  | NOTED SIDE SURFACE HEIGHT | OPPOSITE SIDE SURFACE MATERIAL | OPPOSITE SIDE SURFACE HEIGHT              |
|-----|---------------------------|---------------------------|------------------|---------------|------------------------------|---------------------------|--------------------------------|-------------------------------------------|
| A1  | 3 5/8" STEEL STUD FURRING | TO 6" ABOVE CEILING       | R-11 BATT.       | 6 MIL POLY    | 5/8" TYPE "X" GYP. WALLBOARD | TO 6" ABOVE CEILING       | ---                            | ---                                       |
| A2  | 3 5/8" STEEL STUDS        | TO 6" ABOVE CEILING       | 3.5" SOUND BATT. | ---           | 5/8" TYPE "X" GYP. WALLBOARD | TO 6" ABOVE CEILING       | 5/8" TYPE "X" GYP. WALLBOARD   | TO 6" ABOVE CEILING                       |
| A3  | 3 5/8" STEEL STUD FURRING | TO 6" ABOVE CEILING       | R-11 BATT.       | ---           | 5/8" TYPE "X" GYP. WALLBOARD | TO 6" ABOVE CEILING       | ---                            | ---                                       |
| A4  | 3 5/8" STEEL STUDS        | TO UNDERSIDE OF DECK      | 3.5" SOUND BATT. | ---           | 5/8" TYPE "X" GYP. WALLBOARD | TO DECK                   | 5/8" TYPE "X" GYP. WALLBOARD   | TO DECK (1) HOUR RATED FIRE BARRIER UL404 |
| B1  | 6" STEEL STUDS            | TO UNDERSIDE OF STRUCTURE | 6" SOUND BATT.   | ---           | 5/8" TYPE "X" GYP. WALLBOARD | TO 6" ABOVE CEILING       | 5/8" TYPE "X" GYP. WALLBOARD   | TO 6" ABOVE CEILING                       |
| B2  | 6" STEEL STUDS            | TO UNDERSIDE OF DECK      | 6" SOUND BATT.   | ---           | 5/8" TYPE "X" GYP. WALLBOARD | TO DECK                   | 5/8" TYPE "X" GYP. WALLBOARD   | TO DECK                                   |
| B3  | 6" STEEL STUDS            | TO UNDERSIDE OF DECK      | 6" SOUND BATT.   | ---           | 5/8" TYPE "X" GYP. WALLBOARD | TO DECK                   | 5/8" TYPE "X" GYP. WALLBOARD   | TO DECK (1) HOUR RATED FIRE BARRIER UL404 |
| C1  | 12" CMU                   | 11'-0" AFF.               | ---              | ---           | ---                          | ---                       | ---                            | ---                                       |

1. ALL STEEL STUDS SHALL BE 25 GAUGE STUDS @ 16" O.C. (UNLESS NOTED OTHERWISE) - SEE STRUCTURAL FOR GAUGE AND SIZE
2. ALL EXPOSED GYPSUM WALL BOARD SHALL BE TAPED & COATED SMOOTH, READY FOR PAINT - LEVEL 4 FINISH
3. USE 8" METAL STUDS AND INSTALL MOISTURE RESISTANT GYPSUM WALL BOARD AT ALL "WET WALL" LOCATIONS: UNO
4. AT EXTERIOR WALLS, RETURN GYPSUM WALL BOARD INTO WINDOW JAMBS AND HEAD
5. STUDS EXTENDED TO DECK AND/OR JOIST SHALL HAVE A SIP CONNECTION TO ALLOW FOR DEFLECTION
6. INTERIOR WALL AND CEILING FINISHES SHALL COMPLY WITH IBC SECTION 803 AND ASTM E84 AND UL 723 - NOTE PROVIDE CLASS A MINIMUM
7. INTERIOR FLOOR FINISHES SHALL COMPLY WITH IBC SECTION 804
8. BATT INSULATION LOCATED ABOVE CEILING AND EXPOSED SHALL BE COVERED TO MEET EXPOSED RATED BARRIER REQUIREMENTS.

NOTE: PROVIDE A 7/8" - 1" GAP BETWEEN PRECAST WALL INTERIOR SIDE STEEL STUD FURRING AND DO NOT ATTACH FURRING TO PRECAST.

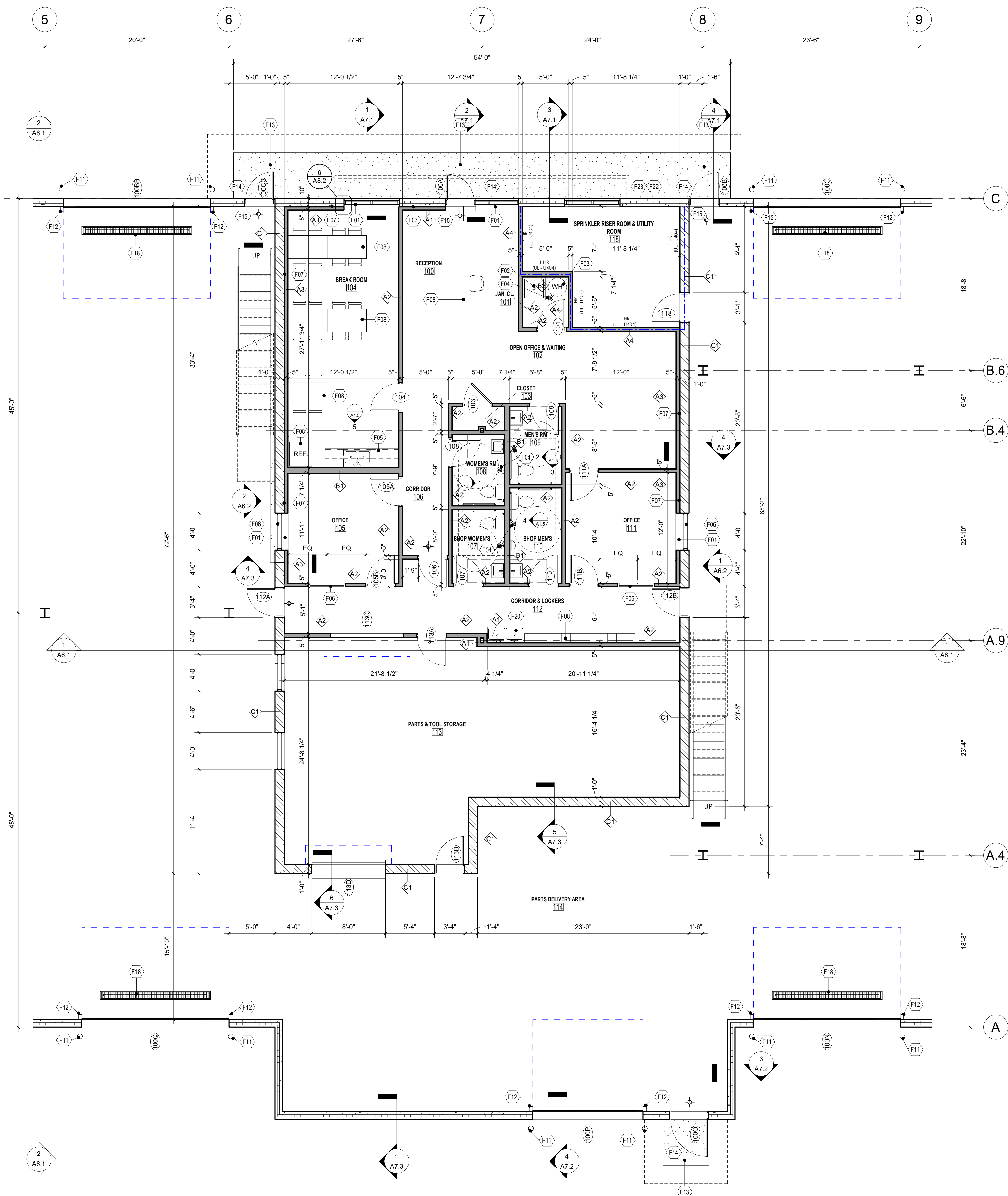


### STANDARD MOUNTING HEIGHTS

NOT ALL ARE USED. SEE PLANS FOR APPLICABLE FIXTURES & ACCESSORIES. FOR INFORMATION ONLY.

#### STANDARD MOUNTING HEIGHT NOTES:

1. ALL SIGNAGE SHALL MEET THE REQUIREMENTS OF ADA AND ANSI A117.1 SEC. 703.
2. SIGN SHALL BE MOUNTED WHERE INDICATED, WHERE THERE IS NO WALL SPACE ADJACENT TO LATCH SIDE OF DOOR, SIGN SHALL BE MOUNTED ON NEAREST ADJACENT WALL.
3. MOUNTING LOCATION FOR SIGNAGE SHALL BE SO THAT A PERSON MAY APPROACH WITHIN 3" OF SIGNAGE WITHOUT ENCOUNTERING PROTRUDING OBJECTS OR STANDING WITHIN THE SWING OF THE DOOR.
4. FACILITIES AND ELEMENTS REQUIRED TO BE IDENTIFIED AS ACCESSIBLE SHALL INCLUDE THE INTERNATIONAL SYMBOL OF ACCESSIBILITY.

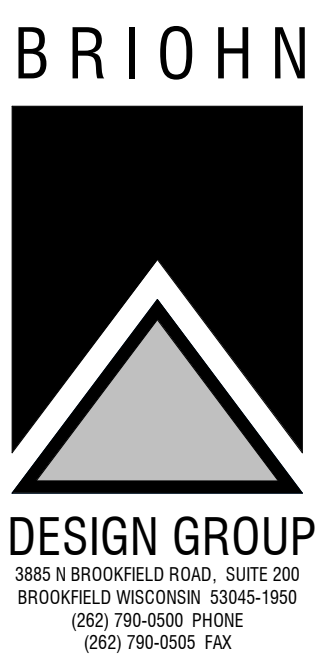


### 1 ENLARGED FIRST FLOOR PLAN

3/16" = 1'-0"



APPLICABLE TO ALL PLAN VIEWS



## ENLARGED FIRST FLOOR PLAN, SCHEDULES & NOTES

### PROPOSED NEW REPAIR FACILITY BUILDING ZIGNEGO REPAIR FACILITY W226 N2940 DUPLAINVILLE ROAD PEWAUKEE, WISCONSIN 53186

|                                                                          |          |              |
|--------------------------------------------------------------------------|----------|--------------|
| Revised Plan Commission Per City of Pewaukee Letter Dated: June 15, 2020 | Job:     | 3239         |
| Date: June 30, 2020                                                      | Drawn:   | CK           |
|                                                                          | Checked: | DF/KJ        |
|                                                                          | Date:    | MAY 28, 2020 |
|                                                                          | Sheet:   |              |

## A1.2



DOOR & DOOR HARDWARE NOTES:

1. ALL HANDLES, PULLS, LATCHES, LOCKS, AND OTHER PARTS ON ACCESSIBLE DOORS SHALL HAVE A SHAPE THAT IS EASY TO GRASP WITH ONE HAND AND DOES NOT REQUIRE TIGHT GRASPING, PINCHING, OR TWISTING OF THE WRIST TO OPERATE. SUCH HARDWARE SHALL BE 3/4 INCHES MINIMUM TO 48 INCHES MAXIMUM ABOVE THE FLOOR OR GROUND, WHERE SLIDING DOORS ARE IN THE FULLY OPEN POSITION, OPERATING HARDWARE SHALL BE EXPOSED AND USABLE FROM BOTH SIDES.
2. DOORS CLOSERS SHALL BE ADJUSTED SO THAT FROM AN OPEN POSITION OF 90 DEGREES, THE TIME TO MOVE THE DOOR TO AN OPEN POSITION OF 12 DEGREES SHALL BE 5 SECONDS MINIMUM.
3. DOOR SPRING HINGES SHALL BE ADJUSTED SO THAT THE OPEN POSITION OF 70 DEGREES, THE DOOR SHALL MOVE TO THE CLOSED POSITION IN 1.5 SECONDS MINIMUM, MEASURED UNDER AMBIENT CONDITIONS.
4. FIRE DOORS SHALL HAVE THE MINIMUM OPENING FORCE ALLOWING BY THE APPROPRIATE AUTHORITY. THE MAXIMUM FORCE FOR PUSHING OPEN OR PULLING OPEN DOORS OTHER THAN FIRE DOORS SHALL BE AS FOLLOWS:
  - A. INTERIOR HINGED DOOR: 5.0 POUNDS (22.2N)
  - B. SLIDING OR FOLDING DOOR: 5.0 POUNDS (22.2N)THESE FORCES DO NOT APPLY TO THE FORCE REQUIRED TO RETRACT LATCH BOLTS OR DISENGAGE OTHER DEVICES THAT HOLD THE DOOR IN A CLOSED POSITION.
5. DOOR SURFACE WITHIN 10 INCHES OF THE FLOOR OR GROUND MEASURED VERTICALLY SHALL BE A SMOOTH SURFACE ON THE PUSH SIDE EXTENDING THE FULL WIDTH OF THE DOOR. PARTS CREATING HORIZONTAL OR VERTICAL JOINTS IN SUCH SURFACE SHALL BE WITHIN 1/16 INCH OF THE SMA PLANE AS THE OTHER. CAVITIES CREATED BY ADDED KICK PLATE SHALL BE CAPPED. EXCEPTIONS:
  - A. SLIDING DOORS
  - B. TEMPERED GLASS DOORS WITHOUT STILES AND HAVING A BOTTOM RAIL OR SHOE WITH THE TOP LEADING EDGE TAPERED AT NO LESS THAN 60 DEGREES FROM THE HORIZONTAL SHALL NOT BE REQUIRED TO MEET THE 10 INCH BOTTOM RAIL HEIGHT REQUIREMENT
  - C. DOORS WHICH DO NOT EXTEND TO WITHIN 10 INCHES OF THE FLOOR OR GROUND.
6. DOORS AND SLEIGHTS ADJACENT TO DOORS CONTAINING ONE OR MORE GLAZING PANELS THAT PERMIT VIEWING THROUGH THE PANELS SHALL HAVE THE BOTTOM OF AT LEAST ONE PANEL 43 INCHES MAXIMUM ABOVE THE FLOOR OR GROUND.
7. EGRESS DOORS SHALL BE READILY OPERABLE FROM EGRESS SIDE WITHOUT THE USE OF A KEY. SPECIAL KNOWLEDGE OR EFFORT UNLESS SPECIFICALLY PERMITTED IN IBC 1010.1.9.

TOILET ROOM NOTES:

1. 6-1/2" MAXIMUM SINK DEPTH.
2. INSULATE PIPES BELOW COUNTERTOPS (WATER AND WASTE LINES w/ PVC MOLDED PROTECTION).
3. FLUSH VALVE FOR URINAL MUST NOT EXCEED 44" IN HEIGHT.
4. PROVIDE LEVER FAUCETS HANDLES AAT ALL SINKS AND LAVATORIES.
5. ALL DIMENSIONS SHOWN ARE FROM WALL FINISH.

DRINKING FOUNTAIN NOTES:

1. CONTROLS MUST BE MOUNTED IN FRONT OR SIDE MOUNTED NEAR TOP EDGE
2. PROVIDE 30" x 48" CLEAR FLOOR SPACE

STANDARD MOUNTING HEIGHT NOTES:

1. ALL SIGNAGE SHALL MEET THE REQUIREMENTS OF ADA AND ANSI A117.1 SEC. 703.
2. SIGN SHALL BE MOUNTED WHERE INDICATED, WHERE THERE IS NO WALL SPACE ADJACENT TO LATCH SIDE OF DOOR, SIGN SHALL BE MOUNTED ON NEAREST ADJACENT WALL.
3. MOUNTING LOCATION FOR SIGNAGE SHALL BE SO THAT A PERSON MAY APPROACH WITHIN 3' OF SIGNAGE WITHOUT ENCOUNTERING PROTRUDING OBJECTS OR STANDING WITHIN THE SWING OF THE DOOR.
4. FACILITIES AND ELEMENTS REQUIRED TO BE IDENTIFIED AS ACCESSIBLE SHALL INCLUDE THE INTERNATIONAL SYMBOL OF ACCESSIBILITY.

GENERAL NOTES

1. VERIFY ALL CONDITIONS, DIMENSIONS, AND ALIGNMENT OF WALLS. BRING ANY DISCREPANCIES TO BRIOHNS ATTENTION PRIOR TO FABRICATION / CONSTRUCTION BEGINS.
2. VERIFY LOCATION OF ACCESS PANELS WITH MECHANICAL AND ELECTRICAL DRAWINGS FOR ACCESS TO MECHANICAL AND ELECTRICAL ITEMS.
3. SEAL PENETRATIONS IN FIRE RATED ASSEMBLIES AND SMOKE BARRIERS TO MEET REQUIRED RATINGS. UTILIZE UL APPROVED METHODS.
4. DURING CONSTRUCTION, AREA SHALL BE KEPT BROOM CLEAN AND FREE OF DEBRIS.
5. CONCRETE SLABS AND SIDEWALKS, REFER TO STRUCTURAL DRAWINGS.
6. (AS REQUIRED BY IECC 502.4.3 AIR FAKAGE)
7. SEAL PENETRATIONS AT WINDOW AND DOOR ASSEMBLIES (IECC 502.4.1)
8. SEAL PENETRATIONS AT CURTAIN WALL, STOREFRONT GLAZING, AND COMMERCIAL ENTRANCE DOORS (IECC 502.4.2)
9. SEALING ON THE BUILDING ENVELOPE (IECC 502.4.3)
10. SEAL PENETRATIONS AT OUTDOOR AIR INTAKES AND EXHAUST OPENING (IECC 502.4.4)
11. SEAL LOADING DOCK WEATHER REALS (IECC 502.4.5)
12. SEAL PENETRATIONS AT VESTIBULES (IECC 502.4.4)
13. SEAL PENETRATIONS AT RECESSED LUMINAIRES (IECC 502.4.7)
14. FIRE EXTINGUISHERS TO BE FURNISHED BY G.C. AND LOCATED AS REQUIRED BY INTERNATIONAL FIRE CODE & LOCAL FIRE INSPECTOR AND OR FIRE DEPT.
15. STUD DRAWING EXTENDED UP TO STRUCTURE ABOVE SHALL HAVE SLIP TRACK W/O MECH. FASTENING ALLOWING DEFLECTION.
16. ALL EXPOSED GYPSUM WALL BOARD SHALL BE TYPE "X" TAPED AND COATED SMOOTH READY TO PAINT.
17. RETURN GYPSUM WALLBOARD INTO JAMBS AND HEADS @ EXTERIOR WALLS WITH WINDOWS AND DOORS.
18. VERIFY LOCATION OF ACCESS PANELS REQUIRED AND COORDINATE SPECIFIC FINISH REQUIREMENTS WITH IDS.
19. ALL NEW INTERIOR SPACES SHALL BE CONSTRUCTED AS ACCESSIBLE AND IN ACCORDANCE WITH CHAPTER 11 AND ICC / ANSI A117.1-2003 REQUIREMENTS.
20. SEAL PENETRATIONS IN FIRE RATED ASSEMBLIES AND SMOKE BARRIERS TO MEET THE REQUIRED RATINGS. UL APPROVED METHODS.
21. RECEPTION DESK, OFFICE FURNITURE, FIXTURES AND EQUIPMENT BY TENANT.
22. BREAK ROOM FURNITURE BY TENANT.

FLOOR PLAN LEGEND

| ROOM | ROOM NAME                                         | ROOM NUMBER | PARTITION TO BE DEMOLISHED   |
|------|---------------------------------------------------|-------------|------------------------------|
| 100  | DOOR NUMBER                                       |             |                              |
| 1    | PARTITION TYPE                                    |             | DOOR AND FRAME TO BE REMOVED |
| 1    | PLAN NOTES                                        |             | EXISTING PARTITION TO REMAIN |
| 1    | SURFACE MOUNTED FIRE EXTINGUISHER                 |             | EXISTING DOOR TO REMAIN      |
| 1    | RECESSED EXTINGUISHER CABINET & FIRE EXTINGUISHER |             | NEW CONSTRUCTION             |
| 1    | EXIT LIGHT (DIRECTIONAL)                          |             | NEW DOOR & FRAME             |

KEYNOTE LEGEND FLOOR PLAN

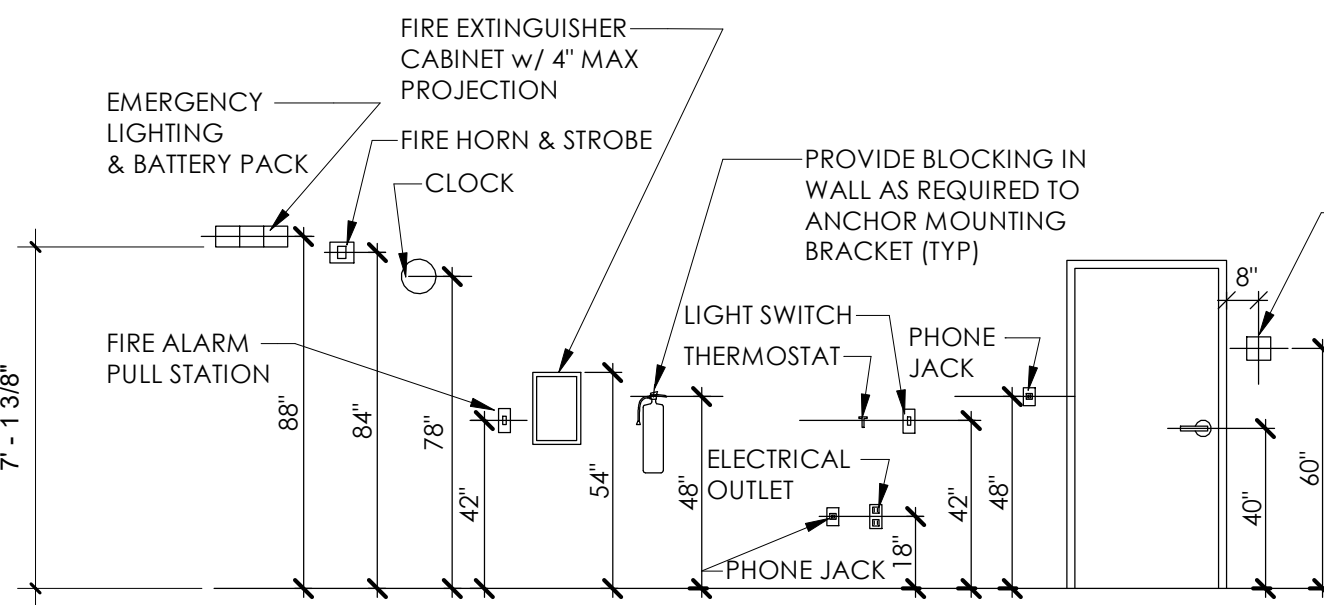
| MARK | FLOOR PLAN CODED NOTES                                                                                                                                                                                                                                                                                                                 |
|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| F01  | PLASTIC LAMINATED SILL.                                                                                                                                                                                                                                                                                                                |
| F05  | BASE & UPPER MILLWORK. SEE INTERIOR ELEVATIONS.                                                                                                                                                                                                                                                                                        |
| F07  | PROVIDE 1" SEPARATION BETWEEN FURRING STUDS AND PRECAST FOR TO ALLOW FOR PRECAST MOVEMENT.                                                                                                                                                                                                                                             |
| F16  | ROOF HATCH AND STEEL LADDER (PAINTED WITH DESIGN AND FABRICATION TO BE CODE/OSHA/ANSI COMPLIANT, FOR ACCESS TO INTERMEDIATE TRANSFER PLATFORM THEN LADDER FROM PLATFORM TO ROOF HATCH AT TALL ROOF. PROVIDE 2x6 FIRE TREATED WOOD BLOCKING IN WALL @ 5'-0" O.C., PROVIDE CURB AND FLASHING AS REQUIRED - REFER TO STRUCTURAL DRAWINGS. |
| F25  | 42" HIGH GUARDRAIL WITH INTERMEDIATE RAILS AND 4" HIGH TOE PLATE PER ADA, WITH REMOVABLE RAILINGS.                                                                                                                                                                                                                                     |
| F26  | DESIGNATED AS "UNOCCUPIED SPACE".                                                                                                                                                                                                                                                                                                      |
| F28  | PAINTED STEEL TUBE SUNSHADE - SEE STRUCTURAL & REFERENCED ARCHITECTURAL SECTIONS.                                                                                                                                                                                                                                                      |

PARTITION TYPES

| TAG | STUD TYPE                 | STUD HEIGHT               | INSULATION       | VAPOR BARRIER | NOTED SIDE SURFACE MATERIAL  | NOTED SIDE SURFACE HEIGHT | OPPOSITE SIDE SURFACE MATERIAL | OPPOSITE SIDE SURFACE HEIGHT              |
|-----|---------------------------|---------------------------|------------------|---------------|------------------------------|---------------------------|--------------------------------|-------------------------------------------|
| A1  | 3 5/8" STEEL STUD FURRING | TO 6" ABOVE CEILING       | R-11 BATT.       | 6 MIL POLY    | 5/8" TYPE "X" GYP. WALLBOARD | TO 6" ABOVE CEILING       | ---                            | ---                                       |
| A2  | 3 5/8" STEEL STUDS        | TO 6" ABOVE CEILING       | 3.5" SOUND BATT. | ---           | 5/8" TYPE "X" GYP. WALLBOARD | TO 6" ABOVE CEILING       | 5/8" TYPE "X" GYP. WALLBOARD   | TO 6" ABOVE CEILING                       |
| A3  | 3 5/8" STEEL STUD FURRING | TO 6" ABOVE CEILING       | R-11 BATT.       | ---           | 5/8" TYPE "X" GYP. WALLBOARD | TO 6" ABOVE CEILING       | ---                            | ---                                       |
| A4  | 3 5/8" STEEL STUDS        | TO UNDERSIDE OF DECK      | 3.5" SOUND BATT. | ---           | 5/8" TYPE "X" GYP. WALLBOARD | TO DECK                   | 5/8" TYPE "X" GYP. WALLBOARD   | TO DECK (1) HOUR RATED FIRE BARRIER UL404 |
| B1  | 6" STEEL STUDS            | TO UNDERSIDE OF STRUCTURE | 6" SOUND BATT.   | ---           | 5/8" TYPE "X" GYP. WALLBOARD | TO 6" ABOVE CEILING       | 5/8" TYPE "X" GYP. WALLBOARD   | TO 6" ABOVE CEILING                       |
| B2  | 6" STEEL STUDS            | TO UNDERSIDE OF DECK      | 6" SOUND BATT.   | ---           | 5/8" TYPE "X" GYP. WALLBOARD | TO DECK                   | 5/8" TYPE "X" GYP. WALLBOARD   | TO DECK                                   |
| B3  | 6" STEEL STUDS            | TO UNDERSIDE OF DECK      | 6" SOUND BATT.   | ---           | 5/8" TYPE "X" GYP. WALLBOARD | TO DECK                   | 5/8" TYPE "X" GYP. WALLBOARD   | TO DECK (1) HOUR RATED FIRE BARRIER UL404 |
| C1  | 12" CMU                   | 11'-0" A.S.F.             | ---              | ---           | ---                          | ---                       | ---                            | ---                                       |

1. ALL STEEL STUDS SHALL BE 25 GAUGE STUDS @ 16" O.C., (UNLESS NOTED OTHERWISE) - SEE STRUCTURAL FOR GAUGE AND SIZE
2. ALL EXPOSED GYPSUM WALL BOARD SHALL BE TAPED & COATED SMOOTH, READY FOR PAINT - LEVEL 4 FINISH
3. USE 8" METAL STUDS AND INSTALL MOISTURE RESISTANT GYPSUM WALL BOARD AT ALL "WET WALL" LOCATIONS - UNO
4. AT EXTERIOR WALLS, RETURN GYPSUM WALL BOARD INTO WINDOW JAMBS AND HEAD
5. STUDS EXTENDED TO DECK AND/OR JOIST SHALL HAVE A SLIP CONNECTION TO ALLOW FOR DEFLECTION
6. INTERIOR WALL AND CEILING FINISHES SHALL COMPLY WITH IBC SECTION 803 AND ASTM E84 AND UL 723 - NOTE PROVIDE CLASS A MINIMUM
7. INTERIOR FLOOR FINISHES SHALL COMPLY WITH IBC SECTION 804
8. BATT INSULATION LOCATED ABOVE CEILING AND EXPOSED SHALL BE COVERED TO MEET EXPOSED RATED BARRIER REQUIREMENTS.

NOTE: PROVIDE A 7/8" - 1" GAP BETWEEN PRECAST WALL INTERIOR SIDE STEEL STUD FURRING AND DO NOT ATTACH FURRING TO PRECAST.

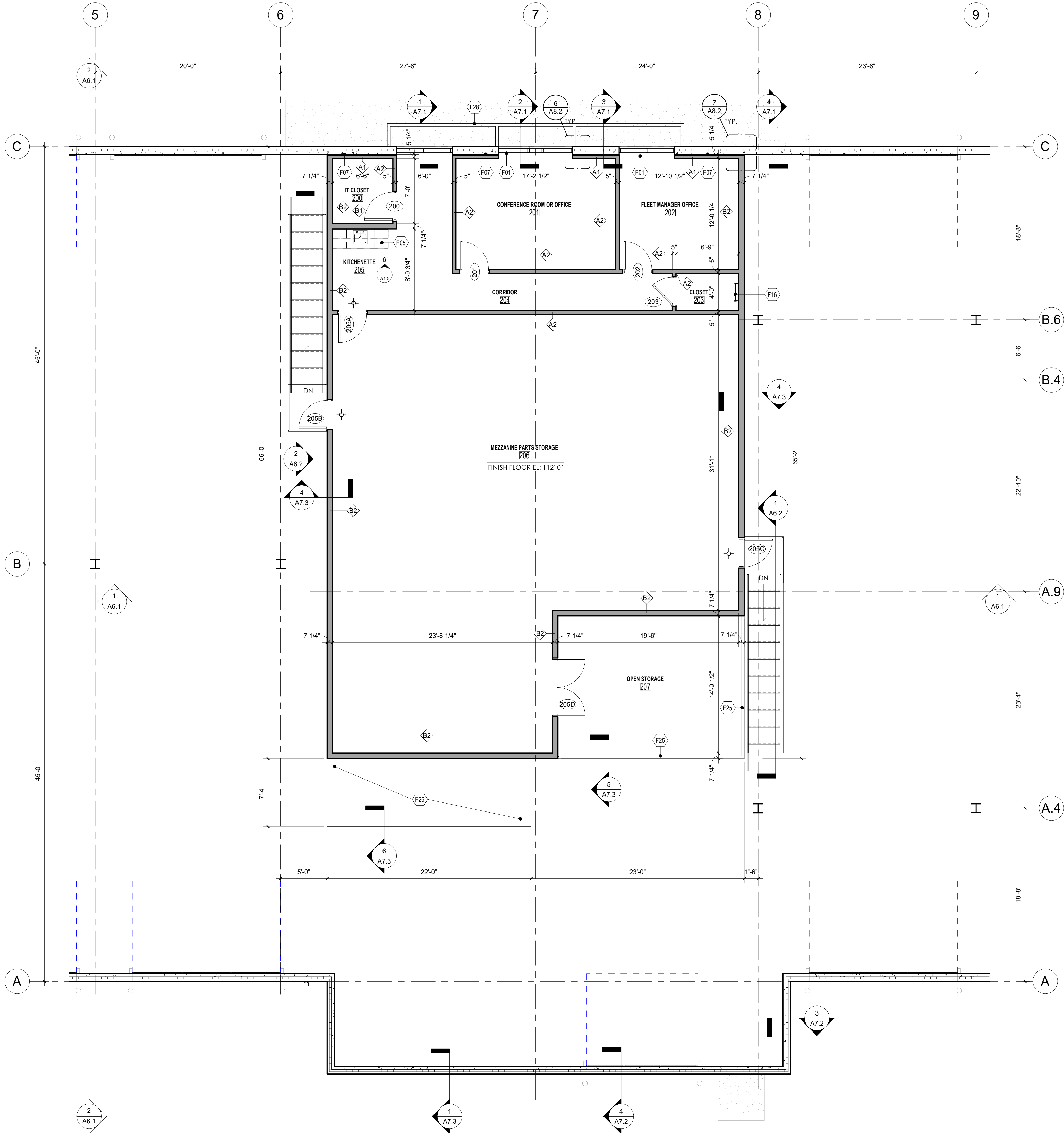


STANDARD MOUNTING HEIGHTS

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STANDARD MOUNTING HEIGHT NOTES:

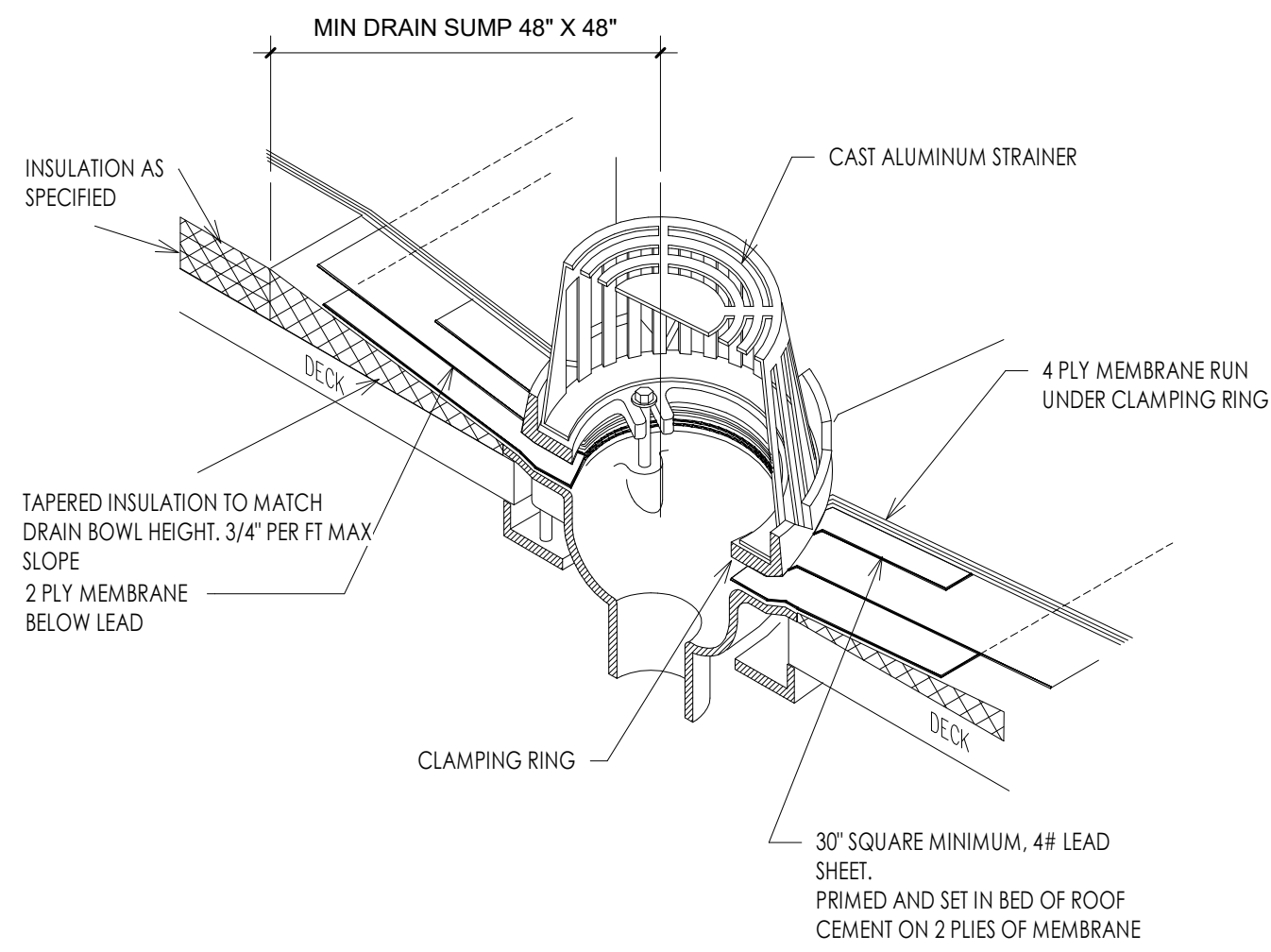
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3. MOUNTING LOCATION FOR SIGNAGE SHALL BE SO THAT A PERSON MAY APPROACH WITHIN 3' OF SIGNAGE WITHOUT ENCOUNTERING PROTRUDING OBJECTS OR STANDING WITHIN THE SWING OF THE DOOR.
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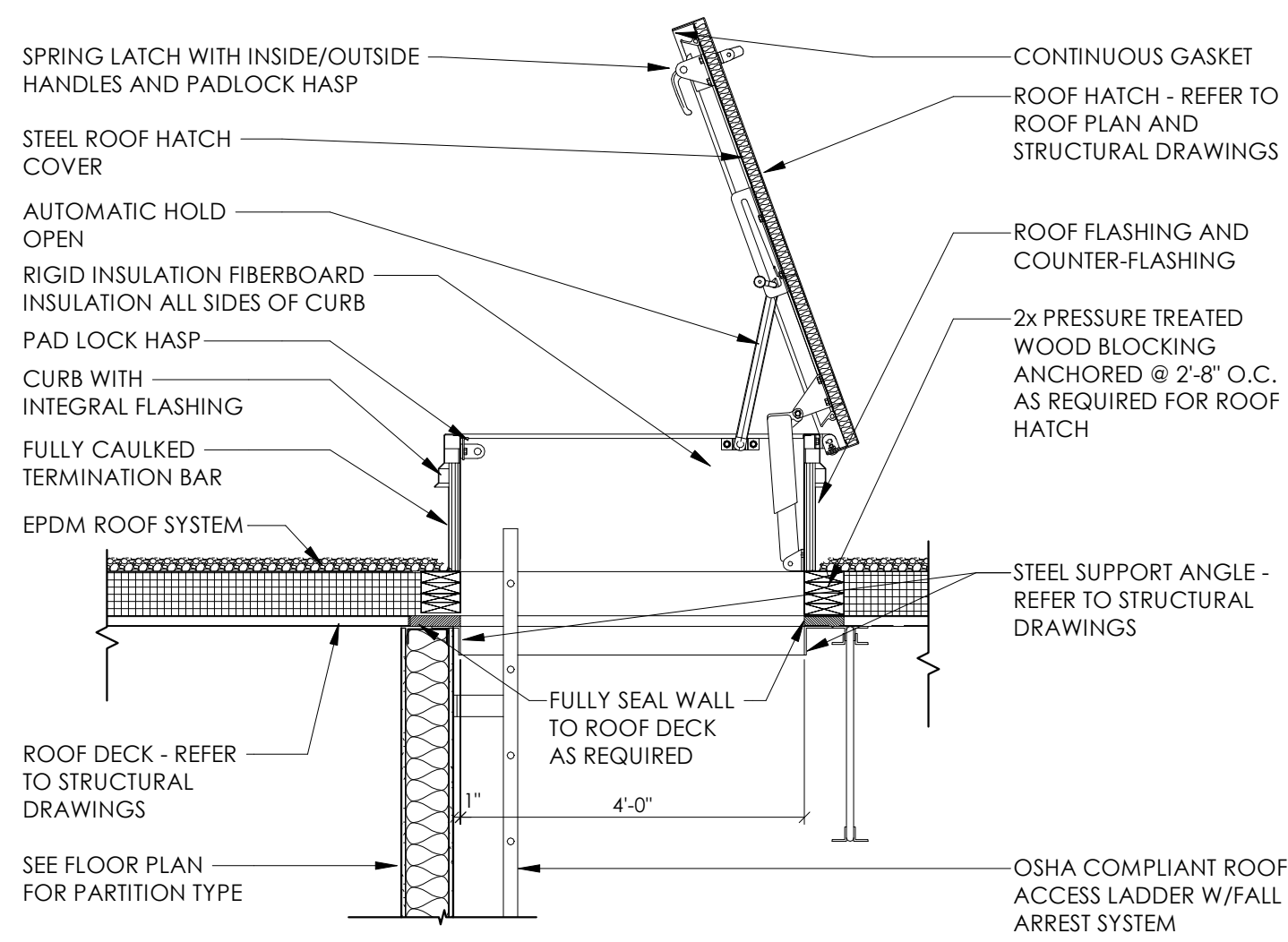
1 ENLARGED MEZZANINE FLOOR PLAN

3/16" = 1'-0"





3 ROOF DRAIN DETAIL  
1/2" = 1'-0"



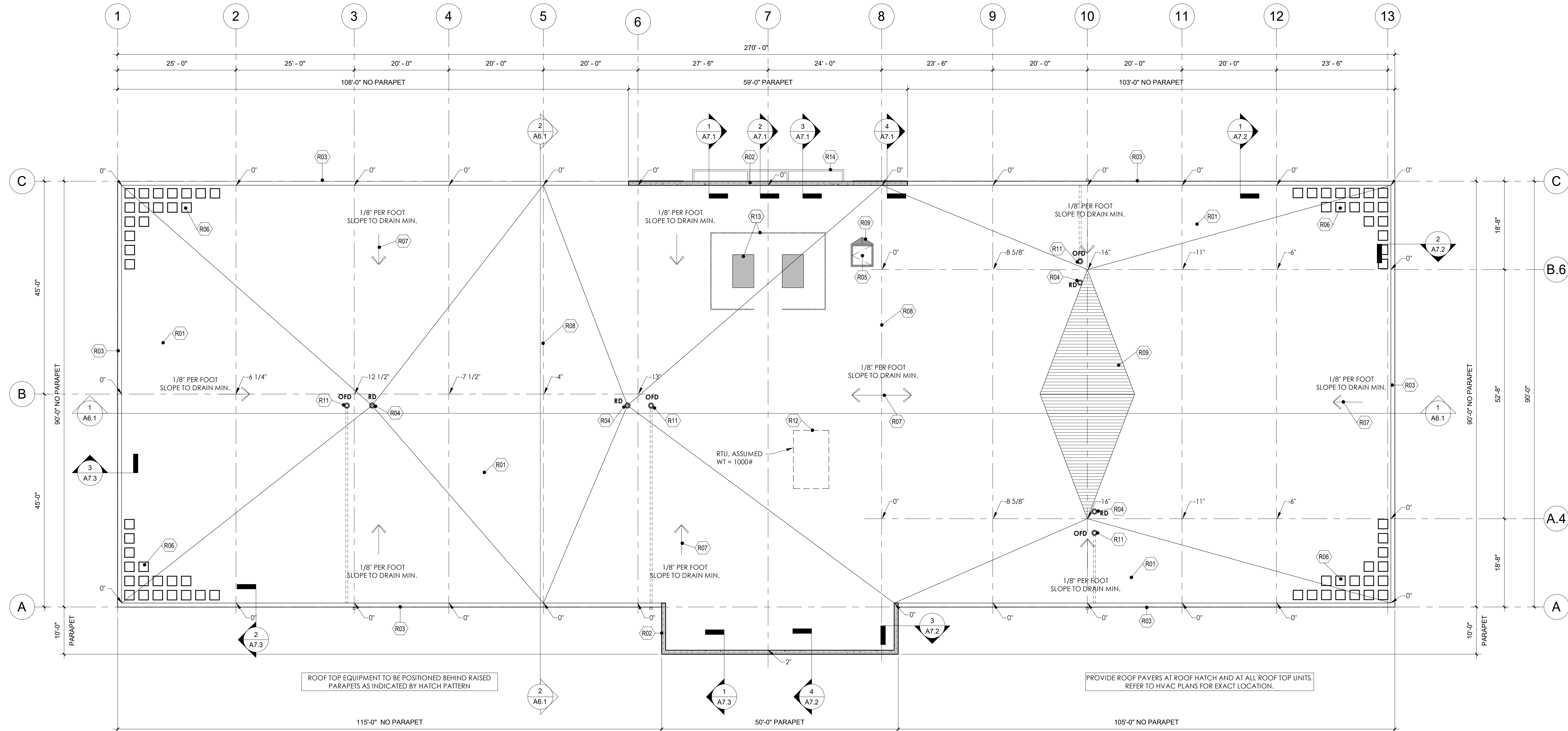
2 ROOF HATCH DETAIL  
1/2" = 1'-0"

## KEYNOTE LEGEND ROOF PLAN

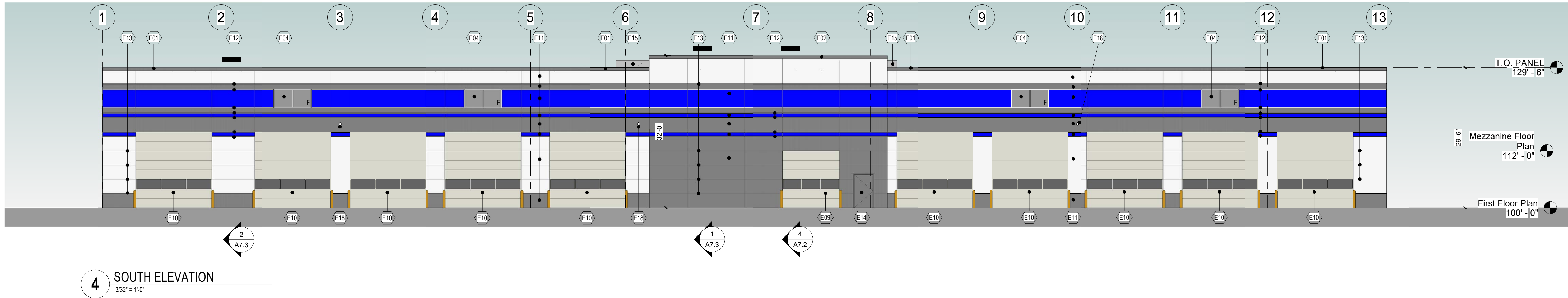
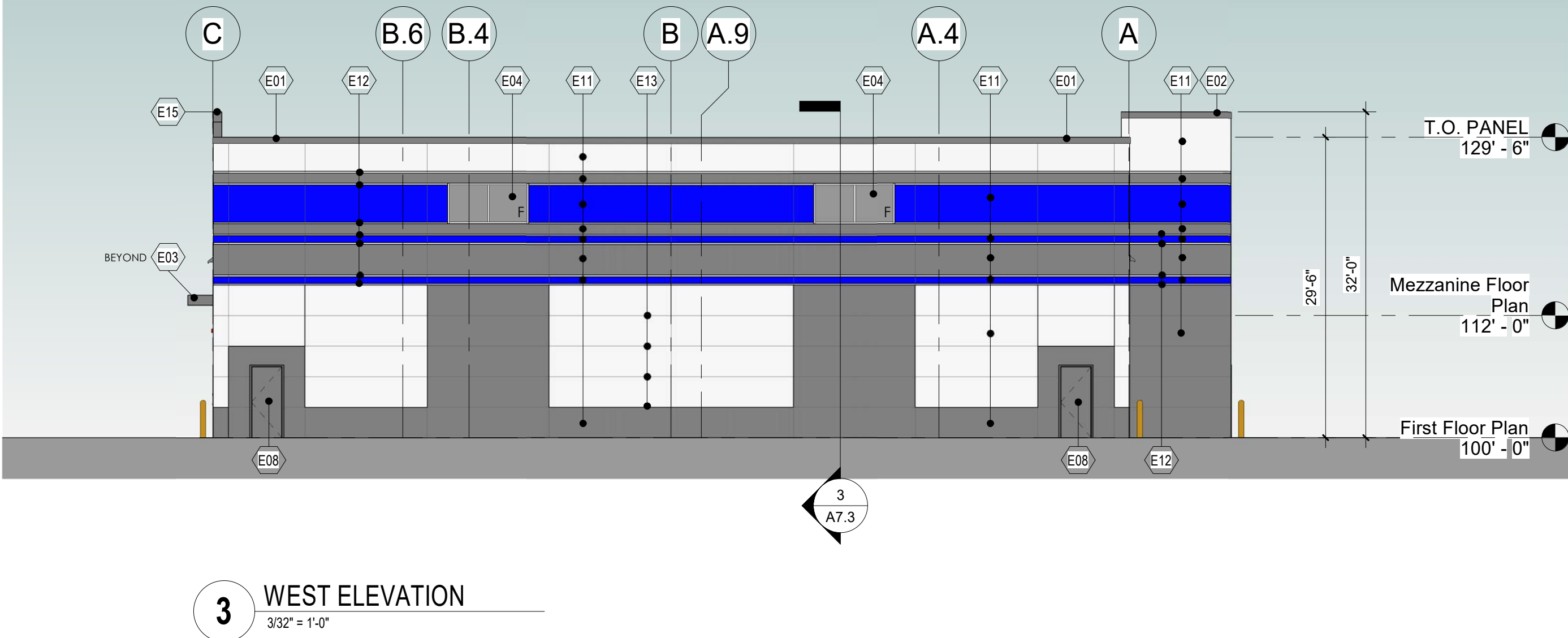
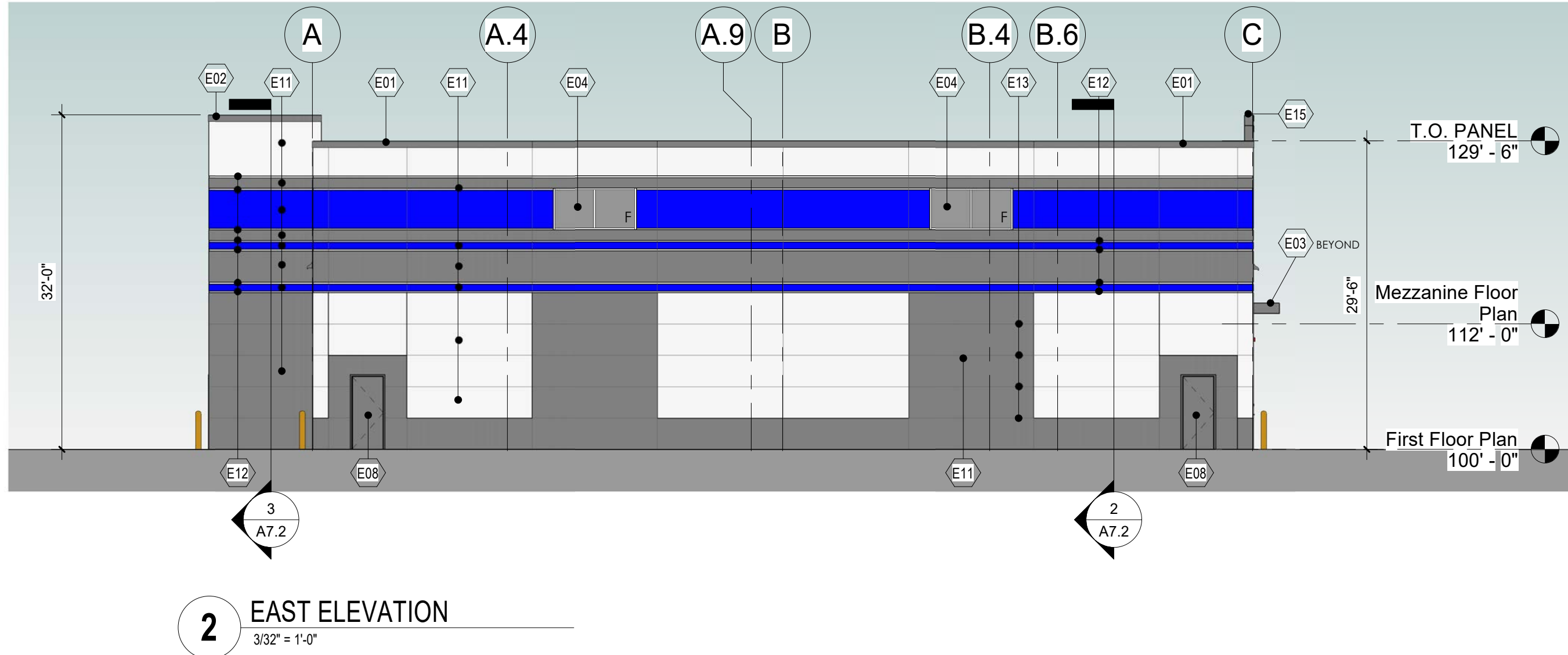
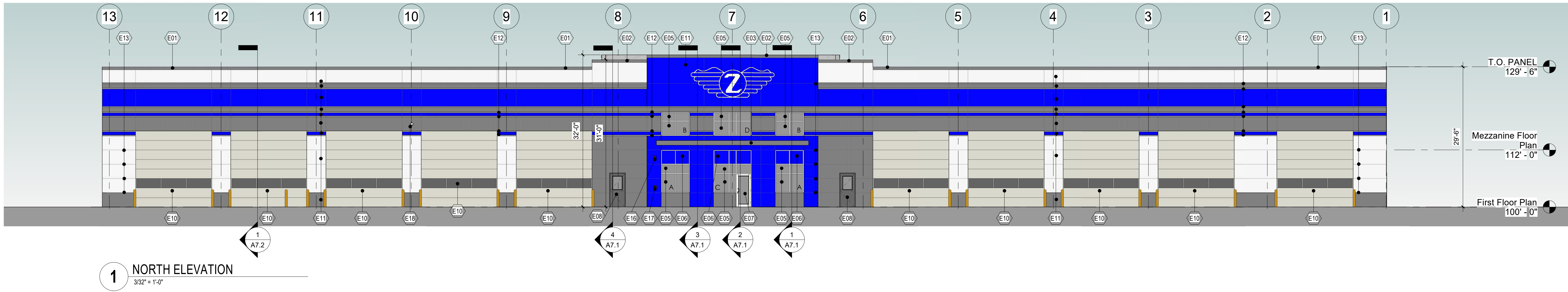
| MARK | ROOF PLAN CODED NOTES                                                                                                                                                                                                                                                                                                    |
|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| R01  | BALLASTED SINGLY-PLY MEMBRANE ROOFING SYSTEM. SEE ROOF SPECIFICATIONS FOR ROOF TYPE I.                                                                                                                                                                                                                                   |
| R02  | PRE-FINISHED METAL CAP/COPING ON SINGLE 2x PRESSURE TREATED WOOD BLOCKING. EXTEND RUBBER MEMBRANE FLASHING TO EXTEND UP AND OVER FT WOOD BLOCKING AND FULLY SEAL TO FACE OF PRE-CAST CONCRETE WALL PANEL.                                                                                                                |
| R03  | PRE-FINISHED METAL GRAVEL STOP, FASCIA AND RUBBER MEMBRANE FLASHING AND ROOFING.                                                                                                                                                                                                                                         |
| R04  | ROOF DRAINS AND SUMP PANS - REFER TO STRUCTURAL. (SEE DETAIL "3" ON THIS SHEET).                                                                                                                                                                                                                                         |
| R05  | ROOF HATCH. PROVIDE CODE-COMPLIANT HATCH SIZE, FOR USE WITH CSHA APPROVED STEEL LADDER ACCESS FROM FLOOR LEVEL BELOW. PROVIDE FRAMING CURB, FLASHING AND TAPERED INSULATION FOR DRAINAGE AROUND HATCH AS REQUIRED. SEE DETAIL 2/A4.1.                                                                                    |
| R06  | CONCRETE BALLAST PAVERS - 2' X 2' X 2" WITH PROTECTION SHEET.                                                                                                                                                                                                                                                            |
| R07  | SLOPE DIRECTION ARROWS - TYPICAL.                                                                                                                                                                                                                                                                                        |
| R08  | ROOF HIGH POINT.                                                                                                                                                                                                                                                                                                         |
| R09  | PROVIDE TAPERED INSULATION TO SLOPE TO ROOF DRAINS.                                                                                                                                                                                                                                                                      |
| R11  | SECONDARY ROOF DRAINS WITH EXTERIOR PIPE DISCHARGE THROUGHWALL - REFER TO ARCHITECTURAL ELEVATION DRAWINGS, STRUCTURAL, AND PLUMBING DRAWINGS. PLACE DRAINS 2" HIGHER THAN LOCATION OF PRIMARY DRAINS DO NOT PLACE PIPE OUTFALL DIRECTLY ABOVE EXTERIOR DOORS OR WINDOWS. COORDINATE PIPE SIZE WITH PLUMBING CONTRACTOR. |
| R12  | CAMBRIDGE UNIT.                                                                                                                                                                                                                                                                                                          |
| R13  | SPACE DESIGNATED FOR ROOF TOP UNITS AND PREFINISHED METAL SCREEN WALL.                                                                                                                                                                                                                                                   |
| R14  | PAINTED STEEL TUBE SUNSHADE - SEE STRUCTURAL & REFERENCED ARCHITECTURAL SECTIONS.                                                                                                                                                                                                                                        |

### ROOFING SYSTEM NOTES:

ROOF SYSTEM #1:  
BALLASTED SINGLE PLY EPDM 60 MIL ON MIN. 5" EPS TYPE II (1.35 LB/CUFT) DIRECT TO DECK ON CONTINUOUS INSULATION (TWO LAYERS STAGGERED) MIN. R-24.  
ROOF SYSTEM #2:  
DIRECTLY ADHERED SINGLE PLY EPDM (60 MIL.) ON TAPERED INSULATION (SEE ROOF PLAN)







THE PROPOSED COMMERCIAL NON-RESIDENTIAL BUILDING TO BE LOCATED IN CLIMATE ZONE 6 (PER IECC SECTION 502) PER TABLE 502.2 (1). BUILDING ENVELOPE REQUIREMENTS - OPAQUE ASSEMBLIES.

ROOFS - PROPOSED ROOF INSULATION ENTIRELY ABOVE DECK R-20ci REQUIRED AND R-25ci PROVIDED MEETS OR EXCEEDS CODE MINIMUM.

WALLS ABOVE GRADE PROPOSED EXTERIOR WALL - MASS (PRECAST INSULATED CONCRETE) R-13.3ci REQUIRED AND R-15.37ci PROVIDED MEETS OR EXCEEDS CODE MINIMUM.

SLAB-ON-GRADE FLOORS - PROPOSED UNHEATED SLABS R-10 FOR 24 INCHES BELOW REQUIRED AND R-10 FOR 24 INCHES OR MORE PROVIDED MEETS OR EXCEEDS CODE MINIMUM.

PER TABLE 502.3 BUILDING ENVELOPE REQUIREMENTS: FENESTRATION  
VERTICAL FENESTRATION (40% MAXIMUM ALLOWED ABOVE GRADE) 10.32% ACTUAL PROVIDED. REQUIRED U- FACTOR .40; ACTUAL PROVIDED .29 AND SHGC .41

PER 2015 IECC:

C402.5 AIR LEAKAGE THERMAL ENVELOPE. PROPOSED BUILDING COMPLIES.

C402.5.1 AIR BARRIER PER C402.5.1.2.1 MATERIALS SEE EXCEPTION 13 CAST-IN-PLACE AND PRECAST CONCRETE. PROPOSED BUILDING COMPLIES.

C402.5.2 AIR LEAKAGE FENESTRATION SEE EXCEPTION 1. FIELD FABRICATED FENESTRATION ASSEMBLIES THAT ARE SEALED IN ACCORDANCE WITH SECTION C402.5.1. PROPOSED BUILDING COMPLIES.

C402.5.3 ROOMS CONTAINING FUEL - BURNING APPLIANCES EXCEPTION 1. DIRECT VENT APPLIANCES WITH BOTH INTAKE AND EXHAUST PIPES INSTALLED CONTINUOUS TO OUTSIDE. PROPOSED BUILDING COMPLIES.

C402.5.4 DOORS AND ACCESS OPENINGS TO SHAFTS, CHUTES, STAIRWAYS AND ELEVATOR LOBBIES. NOT APPLICABLE TO PROPOSED BUILDING.

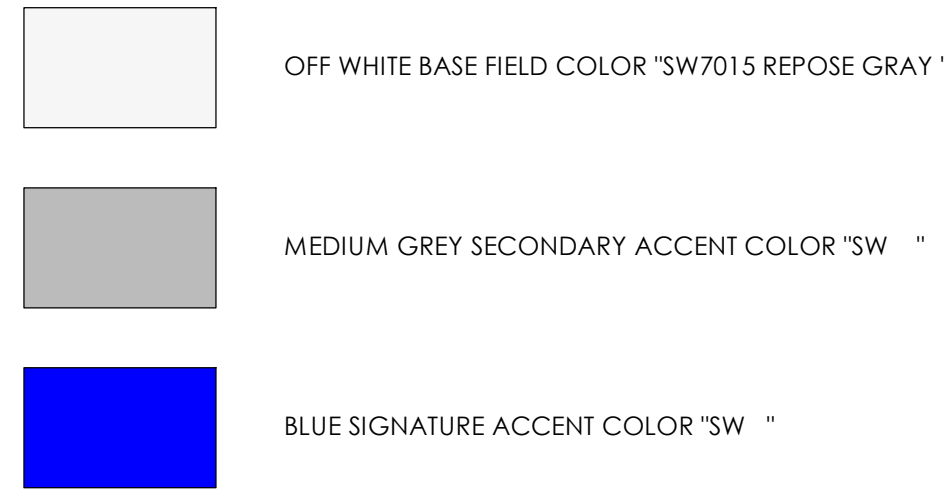
C402.5.5 AIR INTAKES, EXHAUST OPENINGS, STAIRWAYS AND SHAFTS. IF REQUIRED TO BE DAMPERED. PROPOSED BUILDING COMPLIES.

C402.5.6 LOADING DOCK WEATHER SEALS TO BE PROVIDED FOR LOADING DOCK DOORS. PROPOSED BUILDING COMPLIES.

C402.5.7 VESTIBULES EXCEPTION 2. DOORS NOT INTENDED TO BE USED BY THE PUBLIC, SUCH AS DOORS TO MECHANICAL OR ELECTRICAL EQUIPMENT ROOMS, ON INTENDED SOLELY FOR EMPLOYEE USE. EXCEPTION 4 DOORS THAT OPEN DIRECTLY FROM A SPACE LESS THAN 3,000 SQUARE FEET IN AREA. EXCEPTION 6 DOORS USED PRIMARILY TO FACILITATE VEHICULAR MOVEMENT OR MATERIAL AND ADJACENT PERSONNEL DOORS. PROPOSED BUILDING COMPLIES.

C402.5.8 RECESSED LIGHTING. NOT APPLICABLE TO PROPOSED BUILDING.

ELEVATION PAINT COLOR KEY:



NOTE:  
ALL EXTERIOR DOORS WHERE REQUIRED SHALL BE NUMBERED ON EXTERIOR SIDE REQUIRED BY THE OAK CREEK FIRE DEPARTMENT.

NOTE:  
ALL WINDOWS SHALL BE LOW "E" COATED BRONZE-GRAY TINTED 1" INSULATED GLAZING SET IN THERMALLY BROKEN "CLEAR" ANODIZED ALUMINUM WINDOW FRAMES WITH ACCENT METAL WHERE REFERENCED ON THE ELEVATIONS SHALL MATCH "CLEAR" COLOR. SPANDREL GLASS SHALL BE "BRONZE" TO COMPLEMENT VISION GLASS. U - VALUE / FACTOR - .29 WITH SH GC - .41

SAFETY GLAZING:  
PER IBC 2406.4 PROVIDE SAFETY GLAZING IN HAZARDOUS LOCATIONS AS REQUIRED DEFINED IN THIS CODE SECTION. GLAZING SHALL MEET CPSC SAFETY GLAZING TEST.

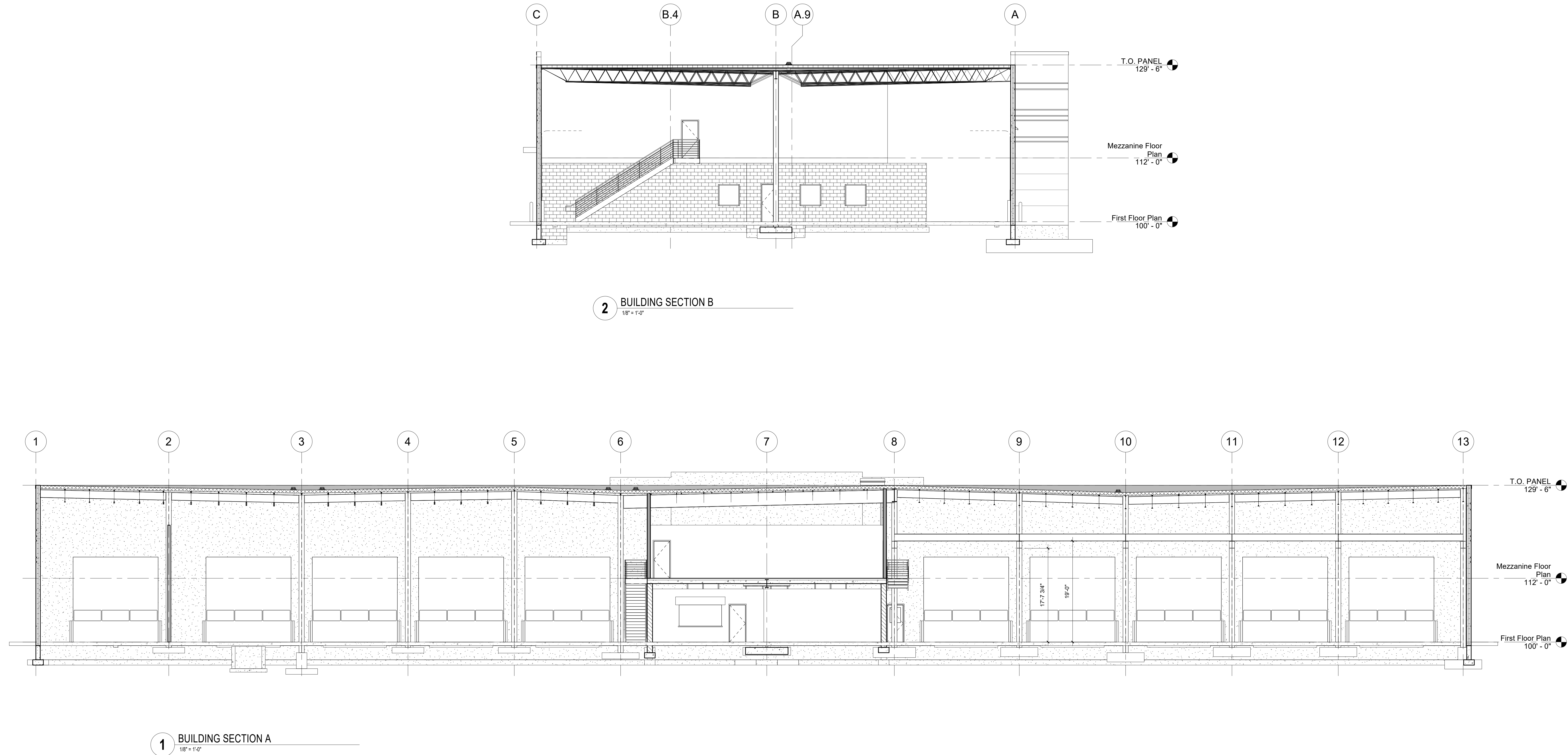
NOTE:  
ROOF TOP UNITS SHALL BE INSTALLED BEHIND THE PARAPETS ON THE ROOF TO PROVIDE SCREENING.

WINDOW TYPE NOTES:  
SEE WINDOW TYPES ON SHEET A5.2 FOR INFORMATION ON SPECIFIED WINDOWS.

| KEYNOTE LEGEND ELEVATION |                                                                                                                                                                                                                                                                 |
|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ELEVATION CODED NOTES    |                                                                                                                                                                                                                                                                 |
| MARK                     |                                                                                                                                                                                                                                                                 |
| E01                      | PRE FINISHED METAL 24 GA. GRAVEL STOP COLOR SHALL BE "CLEAR ANODIZED FINISH".                                                                                                                                                                                   |
| E02                      | PRE FINISHED METAL 24 GA. METAL CAP/COPING FINISH COLOR SHALL BE "CLEAR ANODIZED FINISH".                                                                                                                                                                       |
| E03                      | PRE FINISHED METAL 24 GA. METAL CANOPY AND SOFFIT FINISH COLOR SHALL BE "GREY FINISH" AS INDICATED ON ELEVATIONS.                                                                                                                                               |
| E04                      | FIXED AND THERMALLY BROKEN PRE FINISHED ALUMINUM FRAMED AND 1" INSULATED LOW-E TINTED CLERESTORY WINDOWS UNITS.                                                                                                                                                 |
| E05                      | FIXED AND THERMALLY BROKEN PRE FINISHED ALUMINUM FRAMED AND 1" INSULATED LOW-E TINTED STANDARD WINDOWS UNITS - VISION.                                                                                                                                          |
| E06                      | FIXED AND THERMALLY BROKEN PRE FINISHED ALUMINUM FRAMED AND 1" INSULATED LOW-E TINTED STANDARD WINDOWS UNITS - SPANDREL.                                                                                                                                        |
| E07                      | FIXED AND THERMALLY BROKEN PRE FINISHED ALUMINUM FRAMED AND 1" INSULATED LOW-E TINTED STANDARD WINDOW AND ENTRY UNITS.                                                                                                                                          |
| E08                      | 3'-0" x 7'-0" INSULATED AND PAINTED GALVANIZED HOLLOW METAL DOOR AND FRAME WITH ADA HARDWARE - PAINTED TO MATCH ADJACENT WALL COLOR. INCLUDE PREFINISHED GALVANIZED METAL DRIP EDGE AT HEAD - FINISH TO DOOR FRAME AND DOOR COLOR.                              |
| E09                      | 12'-0" x 12'-0" INSULATED FACTORY PRE FINISHED "WHITE" STEEL OVERHEAD DOOR AND FRAME WITH WEATHER SEAL - PRE FINISHED COLOR TO COMPLEMENT OFF WHITE COLOR OF WALL COLOR. NOTE PROVIDE FULL PANEL VISION LITES. PROVIDE 6" DIA x 3'-6" H PAINTED STEEL BOLLARDS. |
| E10                      | 16'-0" x 16'-0" INSULATED FACTORY PRE FINISHED "WHITE" STEEL OVERHEAD DOOR AND FRAME WITH WEATHER SEAL - PRE FINISHED COLOR TO COMPLEMENT OFF WHITE COLOR OF WALL COLOR. NOTE PROVIDE FULL PANEL VISION LITES. PROVIDE 6" DIA x 3'-6" H PAINTED STEEL BOLLARDS. |
| E11                      | TYPICAL FOR - BUILDING WALLS SHALL BE CONSTRUCTED OF 10" INSULATED AND PAINTED PRE-CAST CONCRETE WALL PANELS "PAINT FINISH SHALL BE TWO COLORS WITH THE MAIN FIELD COLOR - OFF WHITE WITH TWO ACCENT COLORS AS INDICATED ON ELEVATIONS.                         |
| E12                      | TYPICAL FOR - BUILDING WALLS SHALL BE CONSTRUCTED OF 10" INSULATED AND PAINTED PRE-CAST CONCRETE WITH 2" REVEALS AS INDICATED ON ELEVATIONS.                                                                                                                    |
| E13                      | TYPICAL FOR - BUILDING WALLS SHALL BE CONSTRUCTED OF 10" INSULATED AND PAINTED PRE-CAST CONCRETE WITH 1 1/2" REVEALS AS INDICATED ON ELEVATIONS.                                                                                                                |
| E14                      | 4'-0" x 7'-0" INSULATED AND PAINTED GALVANIZED HOLLOW METAL DOOR AND FRAME WITH ADA HARDWARE - PAINTED TO MATCH ADJACENT WALL COLOR. INCLUDE PREFINISHED GALVANIZED METAL DRIP EDGE AT HEAD - FINISH TO DOOR FRAME AND DOOR COLOR.                              |
| E15                      | PARAPET - BEYOND.                                                                                                                                                                                                                                               |
| E16                      | PROVIDE ALARM (HORN / STROBE).                                                                                                                                                                                                                                  |
| E17                      | PROVIDE KNOX BOX - VERIFY LOCATION WITH FIRE INSPECTOR PRIOR TO INSTALLATION. PROVIDE KNOX BOX - VERIFY LOCATION WITH FIRE INSPECTOR PRIOR TO INSTALLATION.                                                                                                     |
| E18                      | PROVIDE SECONDARY DRAIN METAL COVERED DISCHARGE.                                                                                                                                                                                                                |



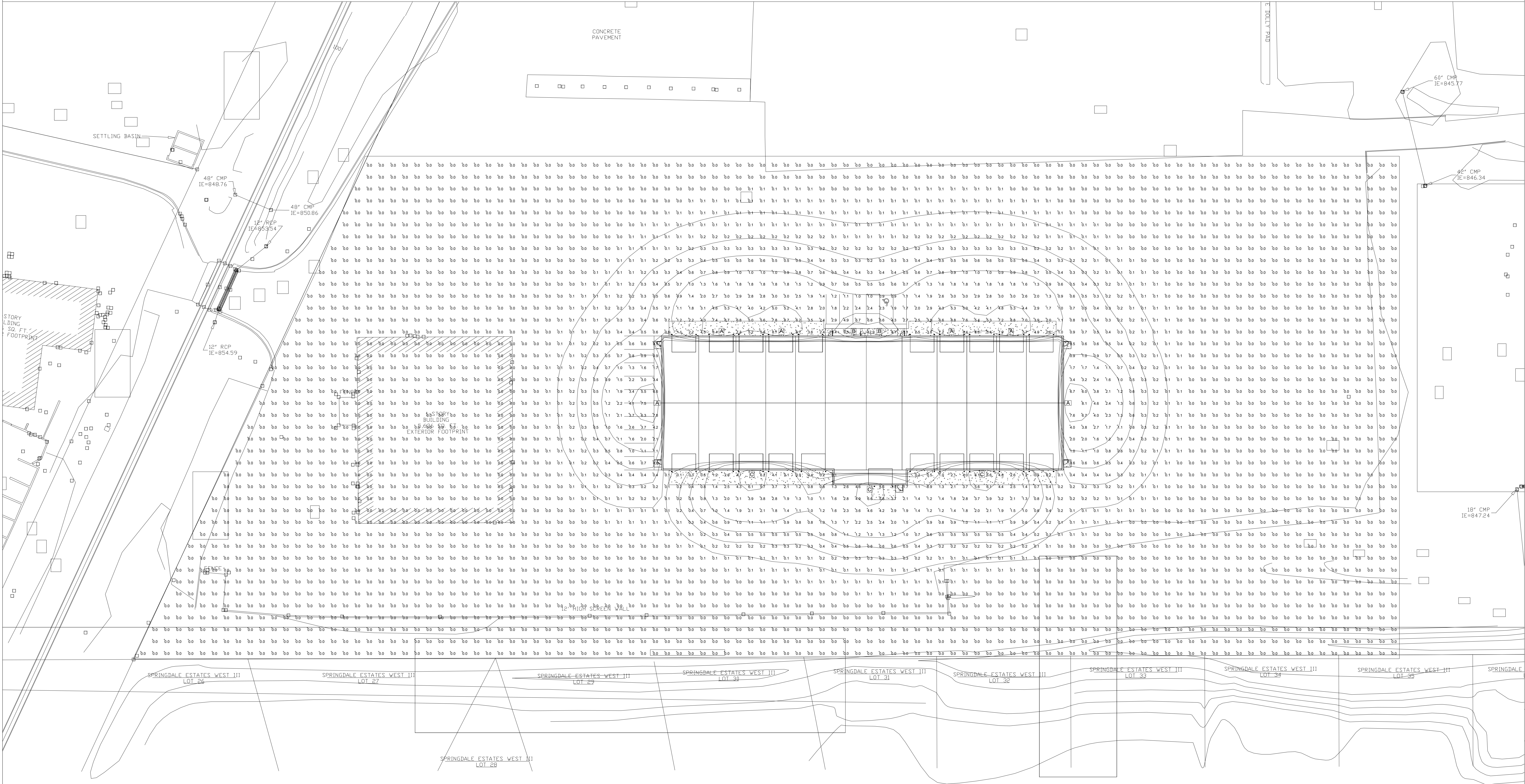
| Rev | Date          | Description                                                             |
|-----|---------------|-------------------------------------------------------------------------|
| 1   | June 15, 2020 | Revised Plan Commission Per City of Pewaukee Letter Dated June 15, 2020 |
| 2   | June 30, 2020 |                                                                         |
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| Luminaire Schedule                                                                |       |          |                           |                    |              |                 |
|-----------------------------------------------------------------------------------|-------|----------|---------------------------|--------------------|--------------|-----------------|
| Symbol                                                                            | Label | Quantity | Manufacturer              | Description        | Number Lamps | Lumens Per Lamp |
|  | A     | 6        | SLG-Spring Lighting Group | ALS 130 T4 G1 5K   | 1            | 12885           |
|                                                                                   |       |          |                           | Wall Mounted @ 19' |              |                 |
|  | B     | 2        | SLG-Spring Lighting Group | WFM 49 G1 5K       | 1            | 4900            |
|                                                                                   |       |          |                           | Wall Mounted @ 11' |              |                 |
|  | C     | 3        | SLG-Spring Lighting Group | ALS 90 T3 G1 5K    | 1            | 9000            |
|                                                                                   |       |          |                           | Wall Mounted @ 19' |              |                 |

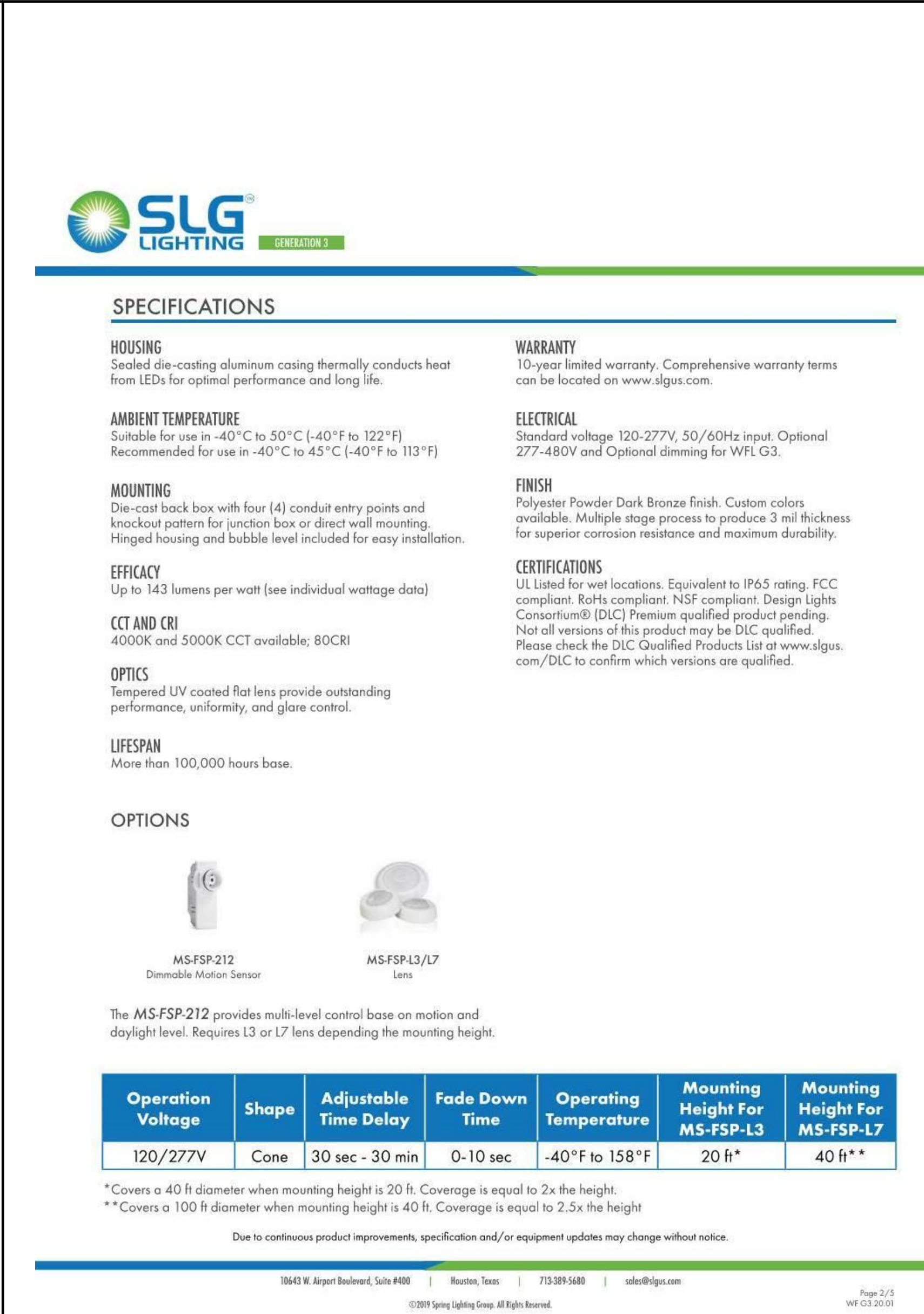
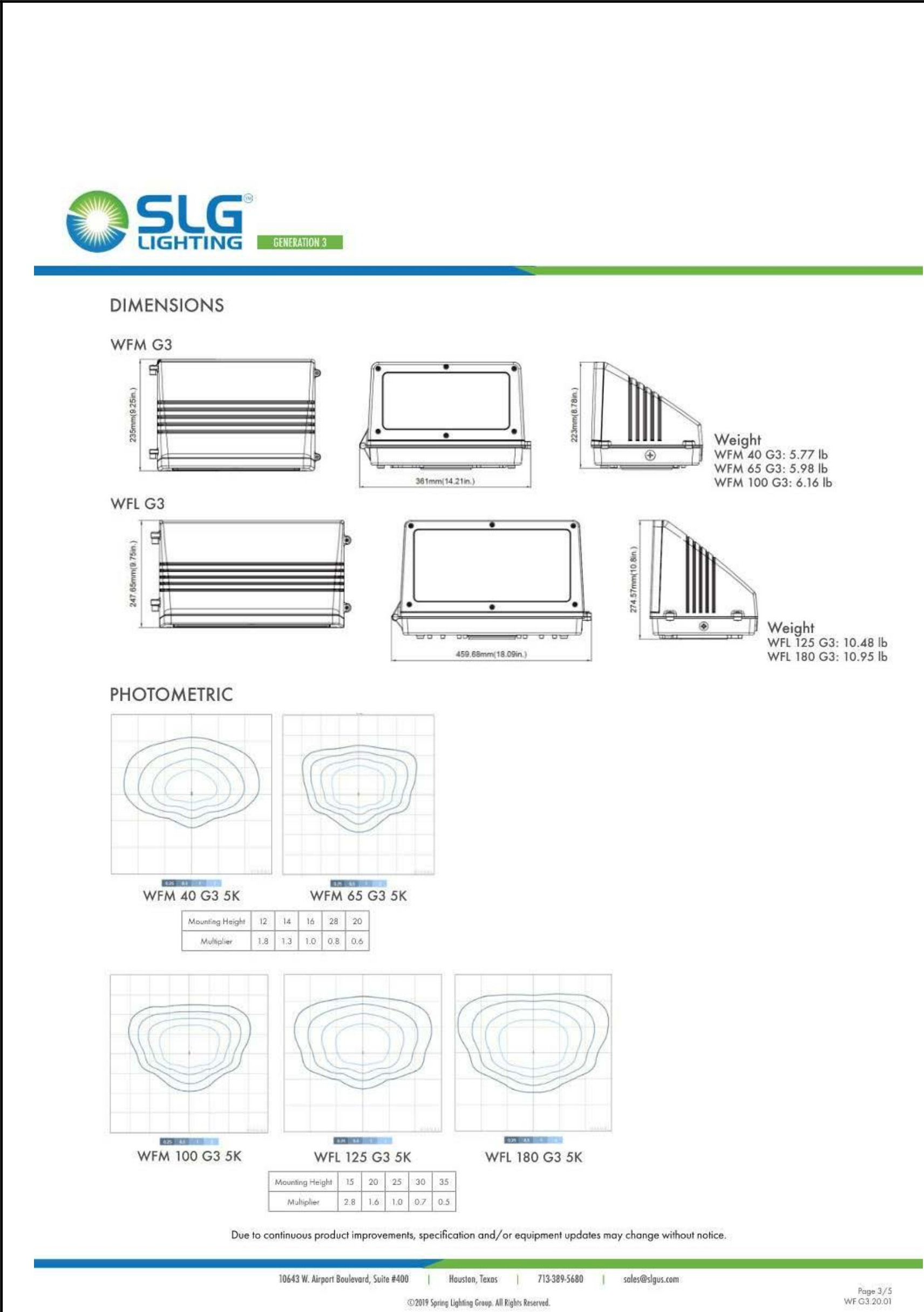
| Statistics   |        |        |         |        |         |         |         |
|--------------|--------|--------|---------|--------|---------|---------|---------|
| Description  | Symbol | Avg    | Max     | Min    | Max/Min | Avg/Min | Avg/Max |
| Calc Zone #1 | +      | 0.4 fc | 16.9 fc | 0.0 fc | N/A     | N/A     | 0.0:1   |





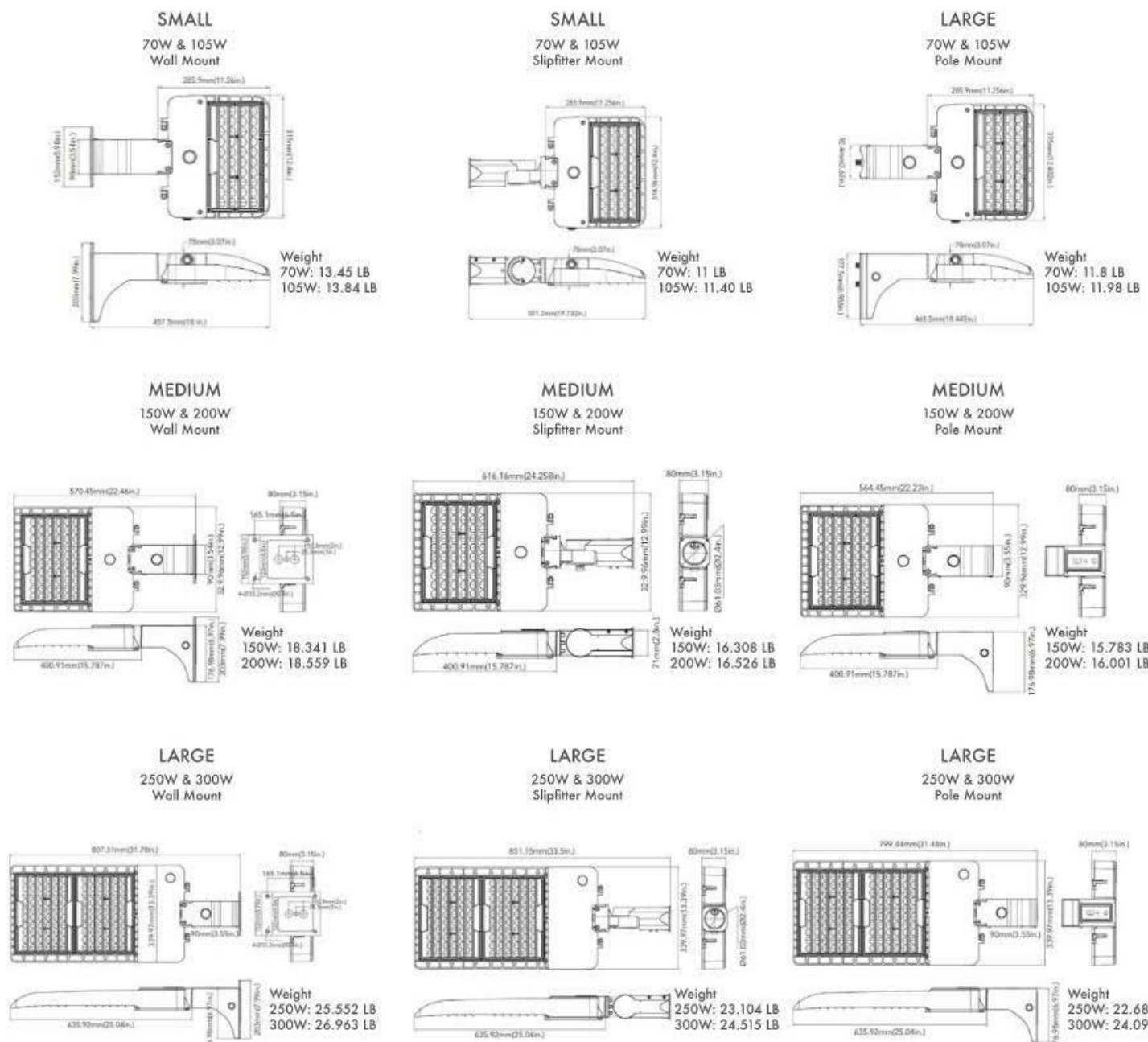








DIMENSIONS



Due to continuous product improvements, specification and/or equipment updates may change without notice.

OPTIONS



The MS-FSP-212 provides multi-level control base on motion and daylight level. Requires L3 or L7 lens depending the mounting height.

| Operation Voltage | Shape | Adjustable Time Delay | Fade Down Time | Operating Temperature | Mounting Height For MS-FSP-L3 | Mounting Height For MS-FSP-L7 |
|-------------------|-------|-----------------------|----------------|-----------------------|-------------------------------|-------------------------------|
| 120/277V          | Cone  | 30 sec ~ 30 min       | 0-10 sec       | -40°F to 158°F        | 20 ft*                        | 40 ft**                       |

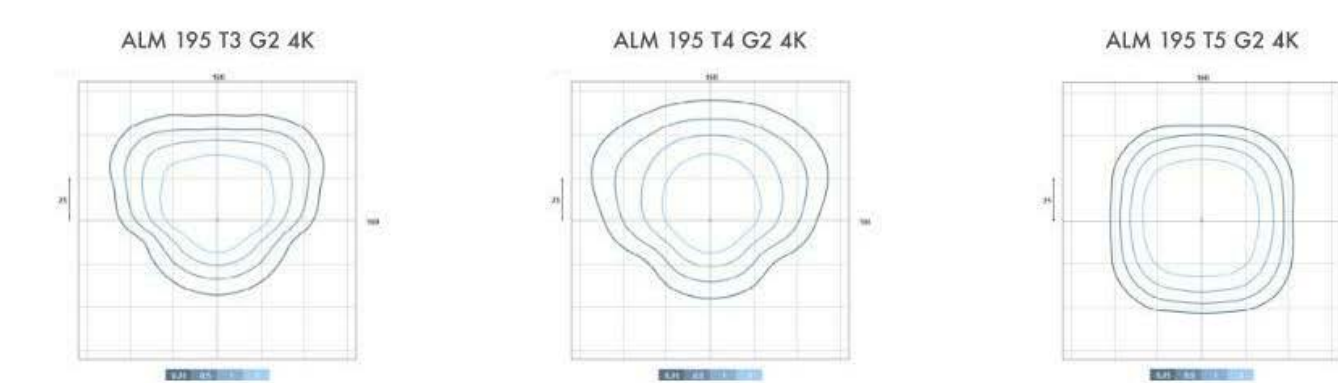
\*Covers a 40 ft diameter when mounting height is 20 ft. Coverage is equal to 2x the height.  
\*\*Covers a 100 ft diameter when mounting height is 40 ft. Coverage is equal to 2.5x the height

PHOTOMETRIC

**Type III**  
Type III optics produce an asymmetrical pattern that directs the majority of the light forward and equally on both sides of the luminaire. In a back-to-back configuration, it creates a rectangular pattern which can extend pole spacings.

**Type IV**  
Type IV is suitable for applications where light is primarily required forward with minimal back light. Typical installations include perimeter poles.

**Type V**  
Type V optics produce a symmetrical square distribution pattern that distributes light equally on all sides of the luminaire. Type V luminaires is universal for most area lighting applications.



| Mounting Height | 15  | 20  | 25  | 30  | 35  |
|-----------------|-----|-----|-----|-----|-----|
| Multiplier      | 2.8 | 1.6 | 1.0 | 0.7 | 0.5 |

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SPECIFICATIONS

**HOUSING**  
One piece die-cast aluminum housing with anti-corrosive paint.

**AMBIENT TEMPERATURE**  
Suitable for use in -40°C to +45°C (-40°F to 113°F)

**MOUNTING**  
Mounting options include Square and Round Pole Mount, Wall Mount, Adjustable Splitter Mount and option for photocell, Trunnion Mount for ALS and ALM, and Yoke Mount for ALL.

**EFFICACY**  
Up to 133 lumen's per watt (see individual wattage data)

**CCT AND CRI**  
4000K and 5000K CCT available; 70CRI

**OPTICS**  
Precision molded secondary optics produce superior uniformity, minimal light trespass and maximum pole spacing. Optics sealed to LED package for IP66 protection.

**WARRANTY**  
10-year limited warranty. Comprehensive warranty terms can be located on www.slglux.com.

MOUNTING



Due to continuous product improvements, specification and/or equipment updates may change without notice.

Type: C

PROJECT: \_\_\_\_\_  
CATALOG #: \_\_\_\_\_  
FEATURE TYPE: \_\_\_\_\_  
NOTES: \_\_\_\_\_

AL Area Light Generation 1 & 2



(Images are shown for illustration purpose only.)

The AL Series Area Light Gen 1 and Gen 2 comes in three sizes small, medium, and large with a lumen output between 9,000 to 39,300 lumens. This versatile luminaire has different mounting options, photocell, and motion sensors for efficiency and greater energy savings.

**APPLICATIONS**  
Auto Dealerships, Parking Lots, Walkways, Roadways, and other Public Areas, etc.

**REPLACEMENT**  
ALS: 175W- 250W MH, ALM: 400W MH,  
ALL: 750W-1000W MH

MOUNTING & OPTIONS

| ORDERING GUIDE     | EXAMPLE: ALM 140 T3 G1 5K                                                     |
|--------------------|-------------------------------------------------------------------------------|
| Luminaire Type     | Lumen Output                                                                  |
| ALS*               | 90 9,000 Lumens                                                               |
| Area Light Small   | 130 13,400 Lumens                                                             |
| ALM*               | 195 19,700 Lumens                                                             |
| Area Light Medium  | 260 26,200 Lumens                                                             |
| ALL*               | 330 33,250 Lumens                                                             |
| Area Light Large   | 390 39,300 Lumens                                                             |
| Dist. Type         | Generation                                                                    |
| T3+ Type III       | G1                                                                            |
| T4+ Type IV        | G2                                                                            |
| T5+ Type V         |                                                                               |
| Voltage            | CCT                                                                           |
| BLANK+ 120-277V    | 4K 4000K                                                                      |
| HVU+ 347-480V      | 5K 5000K                                                                      |
| Finish             | Mount                                                                         |
| BLANK+ Dark Bronze | AL-SPAR+ Square and Round Pole Mount                                          |
| C+ Custom*         | AL-WM+ Wall Mount                                                             |
|                    | AL-SD+ Splitter Mount                                                         |
|                    | AL-T+ Trunnion Mount                                                          |
|                    | ALG2-Y+ Yoke Mount (ALL only)                                                 |
|                    | Options                                                                       |
|                    | PC-1+Twist-lock Photocell (120-277V)                                          |
|                    | PC-2+Twist-lock Photocell (347-480V)                                          |
|                    | FC-3+7.5m recessed.                                                           |
|                    | MS-FSP-212+Motion Sensor (Choose 1)                                           |
|                    | L3=40" diameter lens                                                          |
|                    | L7=100" diameter lens                                                         |
|                    | AL-RC-ML+House side shield for ALM-ALL G2 Series only. ALL requires 2 shields |

\*For a custom color, please call to place your order

Due to continuous product improvements, specification and/or equipment updates may change without notice.

ELECTRICAL LOAD

|     | Series Number        | Wattage | Current (A) |      |      |      |      |      |
|-----|----------------------|---------|-------------|------|------|------|------|------|
|     |                      |         | 120V        | 208V | 240V | 277V | 347V | 480V |
| ALS | ALS 90 T3 G1 5K      | 70W     | 0.58        | 0.34 | 0.30 | 0.25 | N/A  | N/A  |
|     | ALS 130 T3 G1 5K     | 105W    | 0.87        | 0.50 | 0.44 | 0.38 | N/A  | N/A  |
|     | ALM 195 T3 G2 5K     | 150W    | 1.25        | 0.72 | 0.63 | 0.54 | 0.43 | 0.31 |
| ALM | ALM 195 T3 G2 HVU 5K | 150W    | 1.25        | 0.72 | 0.63 | 0.54 | 0.43 | 0.31 |
|     | ALM 260 T3 G2 5K     | 200W    | 1.66        | 0.96 | 0.83 | 0.72 | 0.58 | 0.42 |
|     | ALM 260 T3 G2 HVU 5K | 200W    | 1.66        | 0.96 | 0.83 | 0.72 | 0.58 | 0.42 |
| ALL | ALL 330 T3 G2 5K     | 250W    | 2.08        | 1.20 | 1.04 | 0.90 | 0.72 | 0.52 |
|     | ALL 330 T3 G2 HVU 5K | 250W    | 2.08        | 1.20 | 1.04 | 0.90 | 0.72 | 0.52 |
|     | ALL 390 T3 G2 5K     | 300W    | 2.5         | 1.44 | 1.25 | 1.08 | 0.87 | 0.62 |
|     | ALL 390 T3 G2 HVU 5K | 300W    | 2.5         | 1.44 | 1.25 | 1.08 | 0.87 | 0.62 |
|     | ALL 390 T3 G2 HVU 5K | 300W    | 2.5         | 1.44 | 1.25 | 1.08 | 0.87 | 0.62 |

PROJECTED LUMINAIRE MAINTENANCE

| Ambient Temperature | OPERATING HOURS |        |        |         |                        |
|---------------------|-----------------|--------|--------|---------|------------------------|
|                     | 0               | 25,000 | 50,000 | 100,000 | Calculated L70 (Hours) |
| 25°C / 77°F         | 1               | 0.95   | 0.91   | 0.81    | >214,973               |

Lumen Ambient Temperature (LAT) Multipliers

| Ambient |       | Lumen Multiplier |
|---------|-------|------------------|
| 0°C     | 32°F  | 1.02             |
| 10°C    | 50°F  | 1.01             |
| 20°C    | 68°F  | 1.00             |
| 25°C    | 77°F  | 1.00             |
| 30°C    | 86°F  | 0.98             |
| 40°C    | 104°F | 0.98             |

Due to continuous product improvements, specification and/or equipment updates may change without notice.

PERFORMANCE INFORMATION

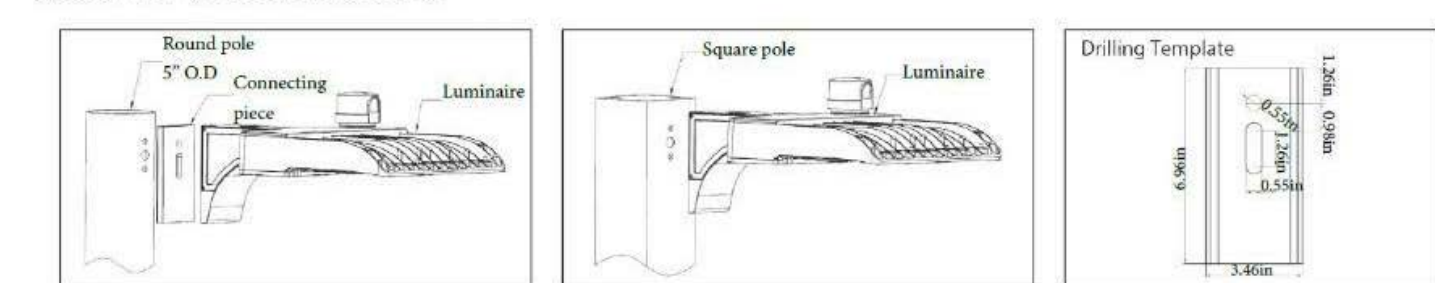
|                  |         | 5000K CCT |           |   |   |   | 4000K CCT |   |   |   |
|------------------|---------|-----------|-----------|---|---|---|-----------|---|---|---|
| Series Number    | Wattage | Lumen     | Dist Type | B | U | G | Lumen     | B | U | G |
| ALS 90 T3 G1 5K  | 70W     | 9,000 Lm  | Type III  | 2 | 0 | 2 | 9,000 Lm  | 2 | 0 | 2 |
|                  |         | 8,670 Lm  | Type IV   | 2 | 0 | 2 | 8,750 Lm  | 2 | 0 | 2 |
|                  |         | 9,479 Lm  | Type V    | 3 | 0 | 1 | 9,777 Lm  | 3 | 0 | 1 |
| ALS 130 T3 G1 5K | 105W    | 13,400 Lm | Type III  | 3 | 0 | 2 | 13,400 Lm | 3 | 0 | 2 |
|                  |         | 13,676 Lm | Type IV   | 3 | 0 | 3 | 13,999 Lm | 3 | 0 | 3 |
|                  |         | 12,787 Lm | Type V    | 3 | 0 | 1 | 12,885 Lm | 3 | 0 | 1 |
| ALM 195 T3 G2 5K | 150W    | 19,700 Lm | Type III  | 3 | 0 | 2 | 19,497 Lm | 3 | 0 | 2 |
|                  |         | 18,800 Lm | Type IV   | 3 | 0 | 3 | 18,800 Lm | 3 | 0 | 3 |
|                  |         | 21,150 Lm | Type V    | 4 | 0 | 2 | 21,385 Lm | 4 | 0 | 2 |
| ALM 260 T3 G2 5K | 200W    | 26,200 Lm | Type III  | 3 | 0 | 2 | 26,096 Lm | 3 | 0 | 2 |
|                  |         | 25,000 Lm | Type IV   | 3 | 0 | 3 | 25,000 Lm | 3 | 0 | 3 |
|                  |         | 27,200 Lm | Type V    | 4 | 0 | 2 | 27,086 Lm | 4 | 0 | 2 |
| ALL 330 T3 G2 5K | 250W    | 33,250 Lm | Type III  | 4 | 0 | 3 | 32,883 Lm | 4 | 0 | 3 |
|                  |         | 30,500 Lm | Type IV   | 4 | 0 | 3 | 30,000 Lm | 4 | 0 | 3 |
|                  |         | 35,250 Lm | Type V    | 5 | 0 | 2 | 34,623 Lm | 5 | 0 | 2 |
| ALL 390 T3 G2 5K | 300W    | 39,300 Lm | Type III  | 4 | 0 | 3 | 39,495 Lm | 4 | 0 | 3 |
|                  |         | 37,000 Lm | Type IV   | 4 | 0 | 4 | 36,000 Lm | 4 | 0 | 4 |
|                  |         | 42,300 Lm | Type V    | 5 | 0 | 2 | 42,998 Lm | 5 | 0 | 2 |

PERFORMANCE COMPARISON

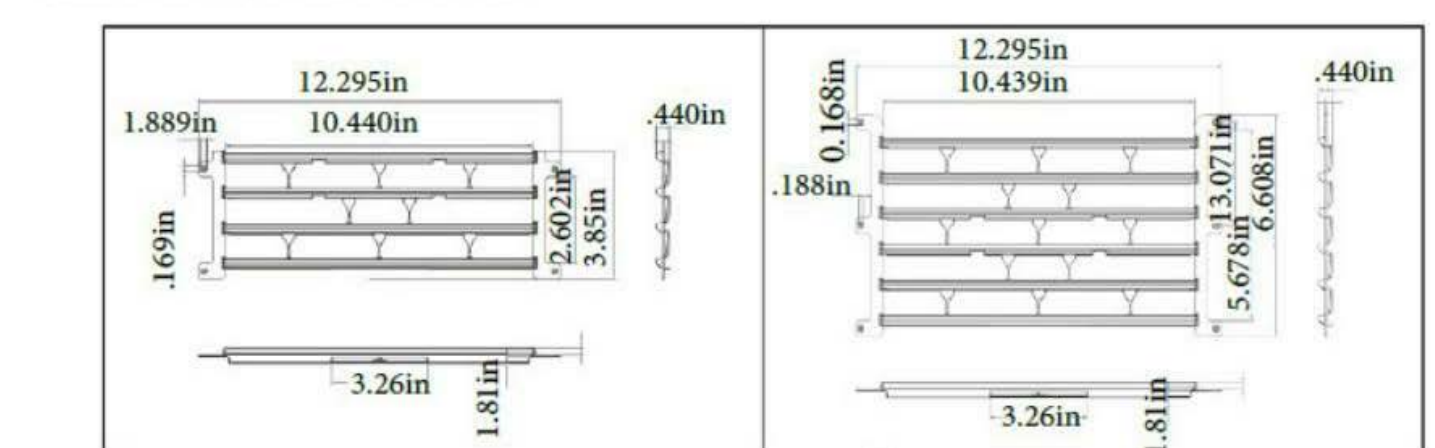
| Product Series | Wattage | Lumen     | Efficacy | Replaces | Voltage  | Max Mounting Height | DLC      |
|----------------|---------|-----------|----------|----------|----------|---------------------|----------|
| ALS 90         | 70W     | 9,000 Lm  | 129 Lm/W | 175W     | 120-277V | 15-20 ft            | Standard |
| ALS 130        | 105W    | 13,400 Lm | 128 Lm/W | 250W     | 120-277V | 15-20 ft            | Standard |
| ALM 195        | 150W    | 19,700 Lm | 131 Lm/W | 400W     | 120-277V | 20-30 ft            | Premium  |
| ALM 260        | 200W    | 26,200 Lm | 131 Lm/W | 400W     | 120-277V | 20-30 ft            | Premium  |
| ALL 330        | 250W    | 33,250 Lm | 133 Lm/W | 750W     | 120-277V | 30-50 ft            | Premium  |
| ALL 390        | 300W    | 39,300 Lm | 131 Lm/W | 1000W    | 120-277V | 30-50 ft            | Premium  |

Due to continuous product improvements, specification and/or equipment updates may change without notice.

MOUNTING DIMENSIONS



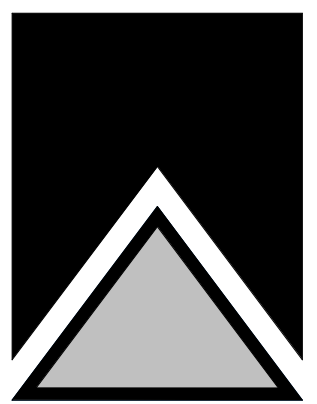
BACKLIGHT CONTROL OPTIONS



EPA OF AREA LIGHT

| S | ALS 90  | 70W  | 0.626  | 0.705  | 0.971  | 0.981  | 0.982  | 0.975  | 0.982  |
|---|---------|------|--------|--------|--------|--------|--------|--------|--------|
| M | ALS 130 | 105W | 0.4418 | 0.7145 | 0.8813 | 0.8836 | 1.0548 | 1.0135 | 1.0548 |
| L | ALM 195 | 150W | 0.5614 | 0.8471 | 1.105  | 1.1228 | 1.294  | 1.2503 | 1.294  |
|   | ALM 260 | 200W |        |        |        |        |        |        |        |
|   | ALL 330 | 250W |        |        |        |        |        |        |        |
|   | ALL 390 | 300W |        |        |        |        |        |        |        |

Due to continuous product improvements, specification and/or equipment updates may change without notice.



DESIGN GROUP  
3805 N BROADFIELD ROAD, SUITE 200  
BROOKFIELD, WISCONSIN 53005-1950  
(262) 780-6500 PHONE  
(262) 780-6505 FAX

LIGHTING CUT SHEETS

PROPOSED NEW REPAIR FACILITY BUILDING

ZIGNEGO REPAIR FACILITY

W226 N2940 DUPLAINVILLE ROAD  
PEWAUKEE, WISCONSIN 53186

| Rev | Date          | Description                                                             |
|-----|---------------|-------------------------------------------------------------------------|
| 1   | June 20, 2020 | Revised Plan Commission Per City of Pewaukee Letter Dated June 15, 2020 |

JOB: 3239  
DRAWN: CK  
CHECKED: DF / KJ  
DATE: MAY 28, 2020  
SHEET:

E2.2



July 15, 2020

Domenico Ferrante, Principal in Charge  
Briohn Design Group, LLC  
3885 N. Brookfield Road, Suite 200  
Brookfield, Wisconsin 53045

Subject: Evaluation of Noise Impact from PROPOSED ZIGNAGO REPAIR FACILITY BUILDING

Dear Dom:

We are not aware of any pertinent noise ordinance of Waukesha County or City of Pewaukee. We do note that the Village Code for Eagle, WI has a limit of 60 dBA in this stationary noise clause:

(J) STATIONARY NOISE LIMITS

(1) Maximum permission Sound Levels

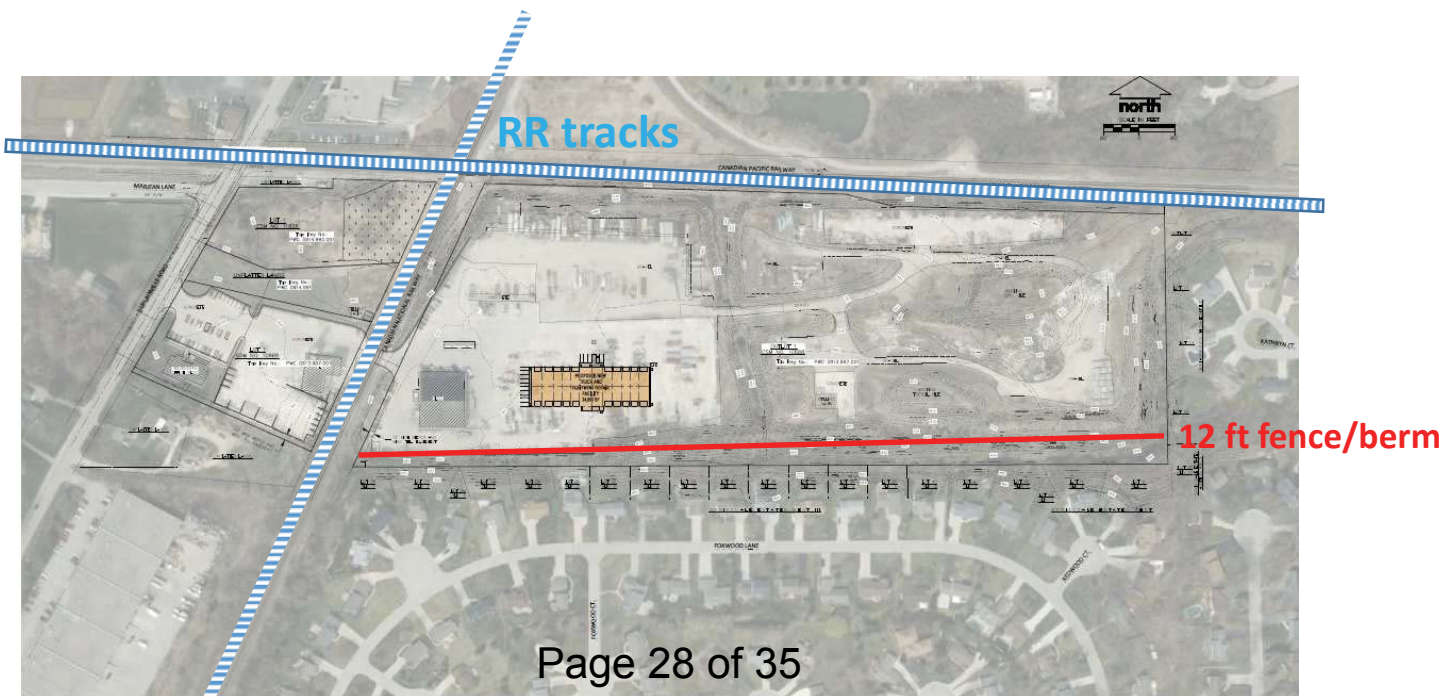
(a) Noise from a stationary source shall not exceed the following levels measured at the property line:

| Zone        | Noise Rating Daytime | Noise Rating Nighttime |
|-------------|----------------------|------------------------|
| Residential | 77                   | 60                     |
| Business    | 77                   | 60                     |
| Industrial  | 79                   | 79                     |

In general, the residential properties to the South and East of the expanded Zignago site might experience noise levels as low as 45 dBA during calm nights. These levels rise to 55-60 dBA during these typical events: excessive local traffic; winds 12-20 mph; seasonal insects; significant numbers of residential A/C outdoor condenser units in operation.

The building footprint in the approximate center of the aerial view below hints at the likely change in activities at the site. Trucks coming to Zignago for repair will now go there as opposed to an existing on-site facility.

The presence of this new structure will serve to block (attenuate) noise from equipment on its North side. As for trucks passing South of the building, the 12 ft high fence and berm south of Zignago will act as effective barriers for any noise originating lower than that height. These factors, as well as the presumption of quiet A/C units etc. associated with the new building, generally suggest that there will not be any new significant noise impact.



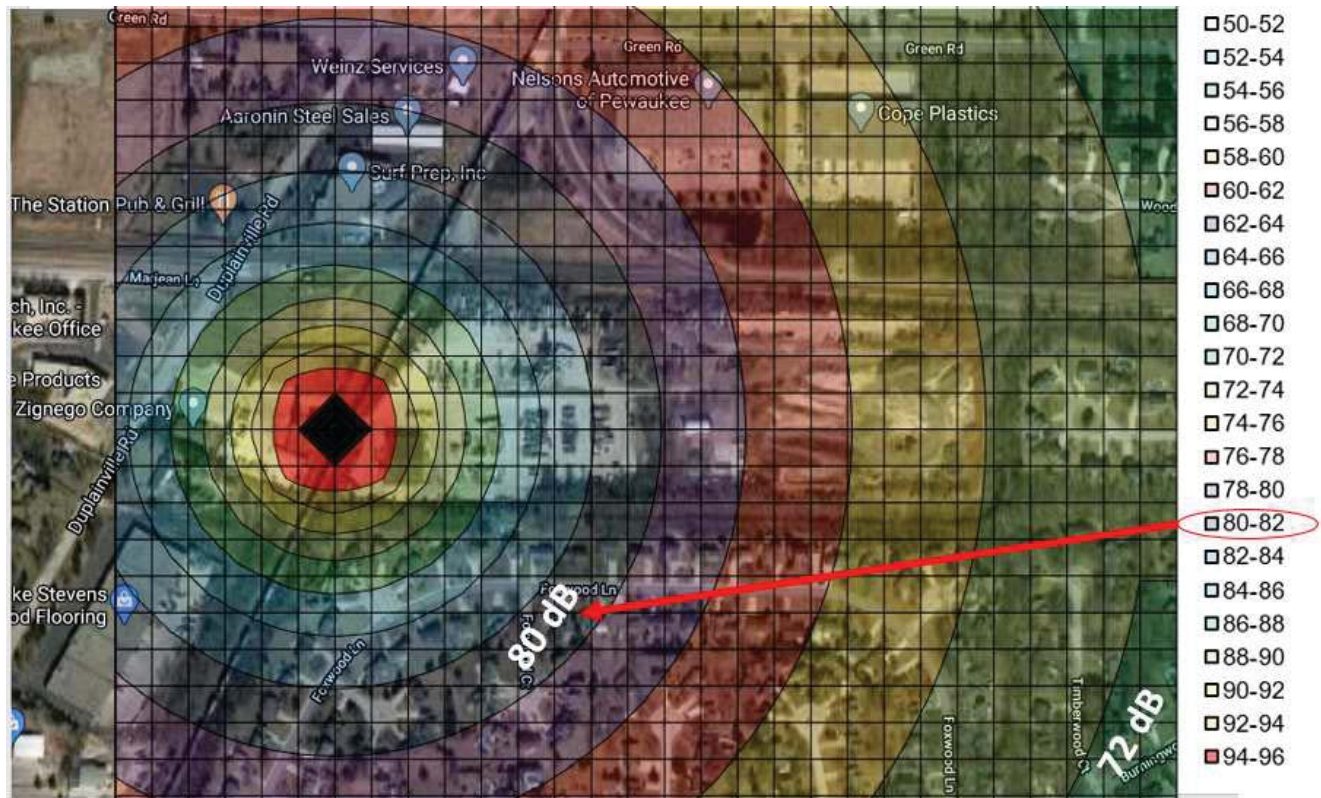


The RR tracks that split the Zignego property N-S, and also along the North border, host trains typically twice per hour. By law, their horns have a minimum noise level of 96 dB at 100 ft, and typically blow at 3 locations included the driveway on the Zignego property as indicated at the center of the red spot immediately below.

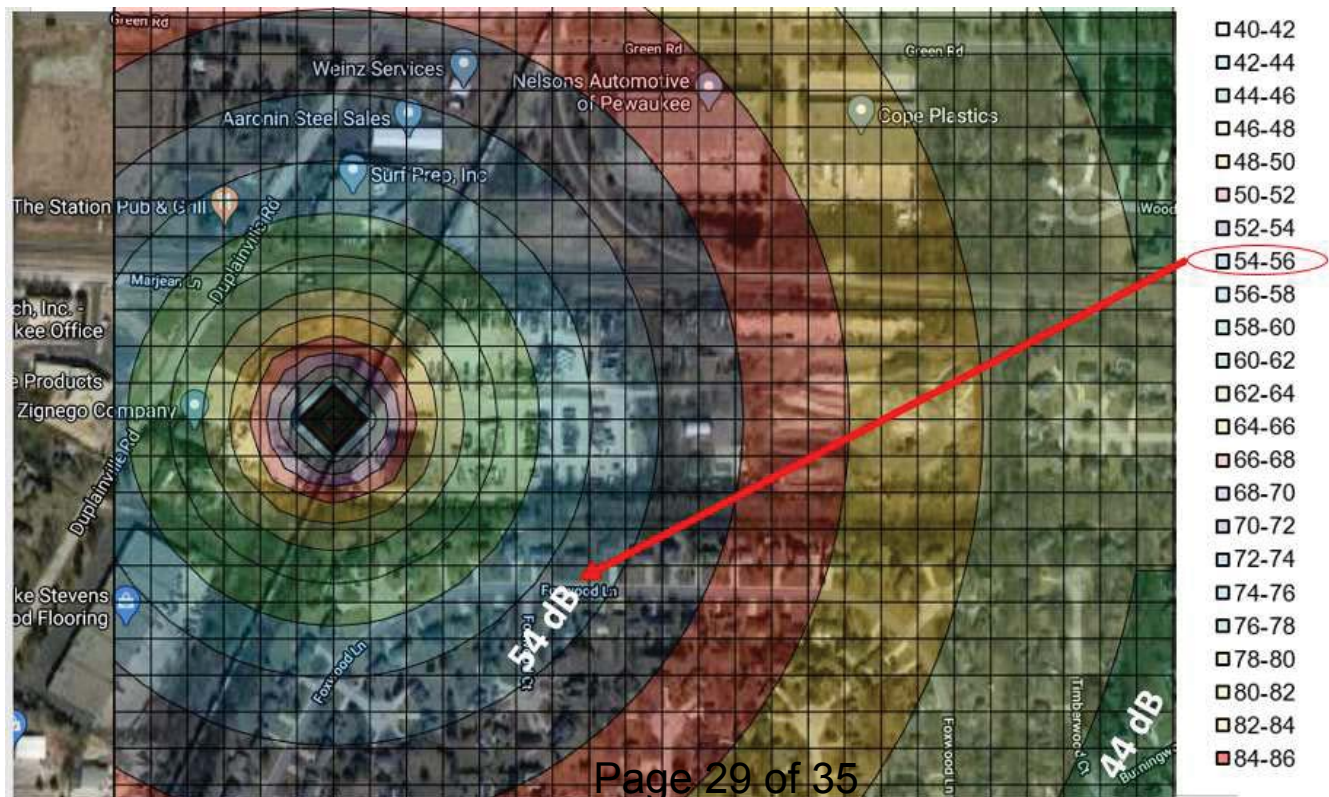
The upper set of noise contours represent the propagation of the horn sound through the neighborhood.

The lower set of noise contours shows sound propagation of backup beepers used on Zignego trucks.

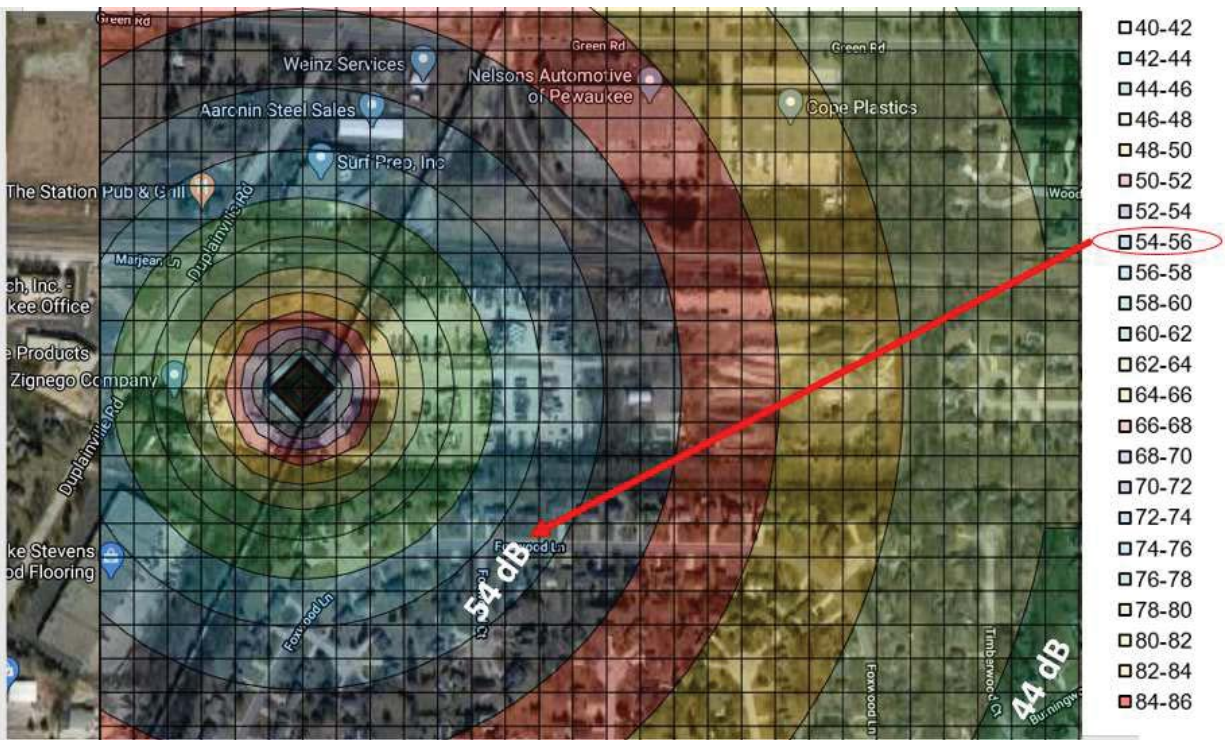
Train horns must produce a minimum sound level of 96 decibels (dB) in a 30-meter radius from the locomotive Max 110 dB at 100 ft.



Typical backup beepers 97 dB at 4 ft.....=> 73 dB at 100 ft

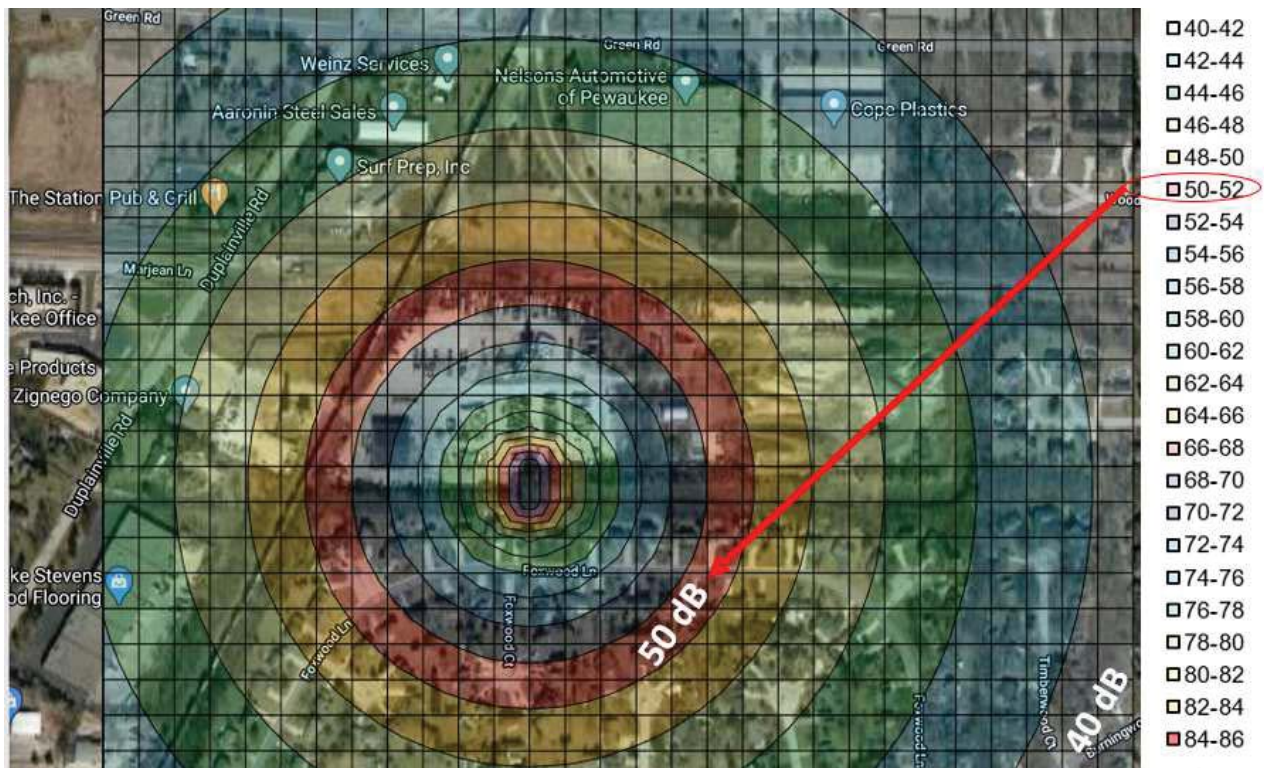






Above is the same plot as the bottom of the previous page. It indicates the propagation strength of truck beeper noise from a location that is in common use today.

Below, the same truck noise has been transferred to the location between the new building and the South property fence. The effect of the fence and berm, when the trucks are in close proximity, is to attenuate the noise about 7 dB. This reduction helps offset the increase in noise that might be expected by trucks closer to some houses.





General Conclusions:

1. We do not believe that truck routing changes will have a significant effect with respect to the current arrangement.
2. We are not aware of any new equipment or practices that are likely to change the status quo with respect to noise levels. This assumes that any HVAC equipment associated with the new building will be selected for quiet operation.
3. The presence of the new building may help to shield some of the noise from yard activities by blocking line of sight to homes.
4. The level of noise from plant activities is certainly lower than the regular passing trains, and generally about the same level as other "natural" events in the neighborhood.

Regards,

A handwritten signature in blue ink, appearing to read "Steve Wise".

Steve Wise



## Tarczewski, Kelly

---

**From:** Paul Gloss  
**Sent:** Thursday, July 30, 2020 2:41 PM  
**To:** Tarczewski, Kelly  
**Subject:** Zignego repair facility

Dear K. Tarczewski,

I want to comment on the repair shop that Zignego wants to build on the Pewaukee property. I will not be able to attend the hearing because I will be at work.

I want to oppose the building for the following.

They have no regard for the residents around the property. The truck drivers will clean the tanks on the trucks at all hours and some times 7 days a week.

the cleaning process is basically the use of a jack hammer on the side of the tank. The noise is loud and carries for quite a distance.

I have called Zignego in the past to complain about the noise. When I did, the woman that answered the phone said that she did not hear any noise, even though it was going on as we spoke.

She treated me like I was a complete idiot and sounded like she was annoyed that I was calling.

I was passed to Mr. Zignego and explained why I was calling. He said that he would look into the noise. He had no interest in doing so, because, the noise went on for the next 3 days. Starting at 6 am and going on to well past dark.

This can go on any and all days, for hours at a time. Even on Saturday and Sunday, from 6 am until when ever.

Sincerely

Paul Gloss  
N28W22584 Foxwood Lane.



**A COVENANT  
REGARDING THE ISSUANCE OF A  
CONDITIONAL USE PERMIT  
BY THE  
CITY OF PEWAUKEE**

**TAX KEY NUMBER(S) OR PARCEL(S) INVOLVED:**      **CONDITIONAL USE PERMIT:**  
**NO. CUP-20-8-1**

**PWC 0913997001, 0914991, 0914992001**

**LEGAL DESCRIPTION:**

LOT 1 & OUTLOT 1 CERT SURV 10888 VOL 106/17 REC AS  
DOC# 3848891 PT NE1/4 & NW1/4 SEC 13 T7N R19E :: DOC#  
2774060 & DOC# 2774061 & DOC# 3798702

**PERSON(S), AGENT(S) OR CORPORATION(S) PETITIONING  
FOR PERMIT:**

Zignego Co./Duplainville Land Company

Recording area

Name & Return Address

City of Pewaukee  
W240N3065 Pewaukee Rd  
Pewaukee, WI 53072

**WHEREAS,** It is understood by all parties to this covenant that Section 62.23 of WIS. Statutes prescribes the legal basis for the granting of a conditional use permit by a City and Chapter 17 of the City Codes and Ordinances provides for the issuance of such permits as well as the standards by which all such uses will be measured; and,

**WHEREAS,** The City Plan Commission has held a meeting on July 16, 2020; has reviewed the various elements of the petitioners proposal; and has recommended that a Conditional Use Permit be granted to the above named petitioner for the property/parcel identified above; and,

**WHEREAS,** The City Common Council, held a public hearing meeting held on August 3, 2020.

**NOW, THEREFORE,** let it be known that the City Common Council by its action on August 3, 2020 has, hereby, granted a Conditional Use Permit for the following use(s):

Constructing a one-story 25,000 square foot repair garage building.

**FURTHER,** such approved use of the above designated parcel(s) are hereby allowed based on the following conditions being continually met:



1. This Conditional Use Permit is personal to the Zignego companies, including, but not limited to Zignego Company, Inc., Zignego Ready Mix, Inc., and Z Mix USA, Inc., and does not run with the land and is not transferrable.
2. Conditional Use approval is subject to annual review by the Plan Commission and Common Council as may be initiated by the City Planner or Alderperson in case of frequent noise complaints and enforcement actions.
3. The Applicant shall provide an approval document from the railroad company that approves of the proposed improvements within the railroad right-of-way, prior to issuance of a Building Permit.
4. The Applicant shall address the following Engineering Department comments to the satisfaction of the City Engineer or their designee, prior to the issuance of a Building Permit:
  - Final grading, erosion control and storm water management plans shall be submitted for approval by the Engineering Department prior to any land disturbance activities.
  - Municipal sewer and water are required for the building. Easements across the other parcels are required for these utilities.
  - The existing laterals that are unused are required to be abandoned at the main. The existing water laterals 1 inch services so a new lateral will need to be tapped to provide fire protection. This must be coordinated with the Utility Manager.
  - A sampling manhole is required at the lot line on the sanitary lateral.
  - A drainage and access easement must be granted for the existing swale through the property, on the north side of the lot, on the south side of the lot, and the east side of the lot.
  - The Engineering Department must review and approve the grading plan as well as the erosion control plan for the filling operation, including the northerly lot adjacent to Duplainville Road. This must include a schedule for this operation.
  - The dilapidated fence/wire along the east and south property lines shall be removed or replaced. If replaced, the fence is subject to review and approval of a Building Permit. Furthermore, any land that is not stabilized shall be stabilized with a substantial vegetative growth.
5. All signage shall comply with all standards set forth in Section 17.0700 of the City's Zoning Code and require separate review and approval by the City Planner as well as a Sign Permit from the Building Services Department, prior to installation.
6. Building lighting shall be mounted at a height not to exceed 12-feet, shall be full cut-off light fixtures, and the lighting source shall not be visible or cause glare that impacts adjacent residential uses.
7. Regular hours of operations are from 7:00 a.m. to 5:00 p.m. During these hours, the applicant hereby agrees to conduct activities that produce loud or excessive noise within the repair facility where reasonably practicable and to limit the opening of the garage doors on the south side of the building.
8. During the hours of 5:00 p.m. to 7:00 a.m., limited business operations will occur onsite. As such, the applicant agrees to operate and manage the subject business use to limit noise and potential adverse impacts to adjacent residential properties. In this regard, the applicant agrees to the following:
  1. Activities that create loud or excessive noise or cause other adverse impacts to adjacent residential properties, such as the cleaning and washing of cement trucks, concrete drums, and mixers, shall be done inside the repair facility.
  2. The overhead doors on the south side of the building shall remain closed, except for the entering and exiting of vehicles.
9. The applicant shall provide contact information for a manager onsite during all shifts to the City Planner, Alderperson, and Sheriff's Department.



The parties hereto, namely the City of Pewaukee and the Equitable Owner of the property for which this conditional use has been sought, set their signatures or the signatures of their representatives below, thereby agreeing to the provisions and conditions set forth in this covenant.

\_\_\_\_\_  
Attest:

\_\_\_\_\_  
Signature of equitable owner

\_\_\_\_\_  
Date

\_\_\_\_\_  
Kelly Tarczewski  
City Clerk

\_\_\_\_\_  
Steve Bierce  
Mayor, City of Pewaukee

\_\_\_\_\_  
Date

State of Wisconsin  
County of Waukesha

Signed or attested before me on \_\_\_\_\_, 2020 by Steve Bierce, Mayor and Kelly Tarczewski, Clerk.

(Seal)

\_\_\_\_\_  
Ami Hurd  
My Commission expires \_\_\_\_\_

This instrument was drafted by Ami Hurd, Deputy Clerk



**CITY OF PEWAUKEE  
COMMON COUNCIL AGENDA ITEM 6.**

**DATE:** August 3, 2020

**DEPARTMENT:** Planning

**PROVIDED BY:**

***SUBJECT:***

Discussion and Possible Action Regarding **Ordinance 20-07** to Rezone the Property Located at W226 N2940 Duplainville Road (PWC 0931-997-001 PWC 0914-992-001 & PWC 0914-991) From M-1 General Wholesale Business To M-2 Limited Industrial and From M-2 Limited Industrial to LC Lowland Conservancy as Requested by Duplainville Land Company, LLC / John Zignego [Fuchs]

***BACKGROUND:***

***FINANCIAL IMPACT:***

***RECOMMENDED MOTION:***

**ATTACHMENTS:**

Description

Zignego Staff Report

Zignego Rezoning Exhibit

Zignego Narrative

Zignego Comment Response Letter

20-07 Zignego Rezone





**Office of the Planner & Community Development Director**  
W240 N3065 Pewaukee Road  
Pewaukee, Wisconsin 53072  
Phone (262) 691-0770 Fax (262) 691-1798  
[fuchs@pewaukee.wi.us](mailto:fuchs@pewaukee.wi.us)

## REPORT TO THE PLAN COMMISSION

Meeting of July 16, 2020

---

**Date:** July 9, 2020

**Project Name:** Zignego repair facility Rezoning, Certified Survey Map, Conditional Use, and Site & Building Plans

**Project Address/Tax Key No.:** W226N2940, W226N2966, and W226N2974 Duplainville Road/PWC 0913997001, 0914991, and 0914992001

**Applicant:** Tim Zignego

**Property Owner:** Duplainville Land Company, LLC and Zignego Co.

**Current Zoning:** M-1 General Wholesale Business/Warehouse District and M-2 Limited Industrial District

**Proposed Zoning:** M-2 Limited Industrial District

**2050 Land Use Map Designation:** Manufacturing / Fabrication / Warehousing

**Use of Surrounding Properties:** CP Rail System to the north, single-family residential to the south and east and commercial (M-2 zoned) properties to the west

---

### **Project Description/Analysis**

The applicant submitted a Rezoning Application, Certified Survey Map, Conditional Use Permit, and Site & Building plans related to the construction of a repair garage facility upon property located at W226N2940 Duplainville Road.

The applications involve multiple properties, but the building itself is located on the east side of the railroad tracks. The applicant owns three properties, which consist of the Zignego Group offices and parking lot, a batch plant, an existing repair garage, and vacant developable land.

#### Rezoning Application

The applicant is proposing to rezone the eastern half of Outlot No. 1 of CSM No. 10888. The rezoning will eliminate an existing split zoning issue and make all lots owned by Zignego and part of the overall current and future development area zoned M-2 Limited Industrial District.

#### Certified Survey Map

The proposed Certified Survey Map combines all properties owned by Zignego. This includes Lot 1 and Outlot 1 of CSM No. 10888 (W226N2940 Duplainville Road) (Tax Key No. 0913 997 001) as well as the two lots to the north located at W226N2966 Duplainville Road (Tax Key No. 0914 992 001) and W226N2974 Duplainville Road (Tax Key No. 0914 991).



The total area of land depicted as Lot 1 on the proposed CSM is 29.3240 acres. Note that the railroad will bisect the parcel.

### Conditional Use Permit

The Conditional Use Application is for the approval of the proposed repair facility, which is not a listed Permitted Use within the M-2 District.

### Site & Building Plans

#### Site Plan:

The applicant is proposing a 24,800 square foot building. The building will be located within an existing paved area of the site, so no new impervious surface is being added. Considering the combined area as shown on the proposed CSM, the site has approximately 46% greenspace, which is in compliance with the City's minimum greenspace ratio of 40%.

The front portion of the site is accessible from Duplainville Road; however, the proposed building will be accessed through a private crossing of the Canadian National Railroad. The applicant has an agreement with SOO Line Railroad Company from 1976 to utilize this crossing. As the applicant is making a modification to the site on the east side of the railroad tracks, staff is recommending that the applicant provide an approval document from the railroad company that approves of the proposed facility and improvements, prior to issuance of a Building Permit.

Following their review, the Engineering Department provided the comments below. Staff recommends that the applicant address the following Engineering Department comments to the satisfaction of the City Engineer or their designee, prior to the issuance of a Building Permit:

- Final grading, erosion control and storm water management plans shall be submitted for approval by the Engineering Department prior to any land disturbance activities.
- Municipal sewer and water are required for the building. Easements across the other parcels are required for these utilities.
- The existing laterals that are unused are required to be abandoned at the main. The existing water laterals 1 inch services so a new lateral will need to be tapped to provide fire protection. This must be coordinated with the Utility Manager.
- A sampling manhole is required at the lot line on the sanitary lateral.
- A drainage and access easement must be granted for the existing swale through the property, on the north side of the lot, on the south side of the lot, and the east side of the lot.
- If filling of the northerly lot is to occur, the Engineering Department must review and approve the grading plan as well as the erosion control plan for the filling operation. This must include a schedule for this operation.
- The dilapidated fence/wire along the east and south property lines shall be removed. In addition, any land that is not stabilized shall be stabilized with a substantial vegetative growth.

#### Natural Resources:

There is a wetland located in the northeast corner of the property that is located to the west of the railroad tracks at W226N2974 Duplainville Road. This wetland and the required wetland setback are illustrated on the CSM. There is no development proposed near the wetland area.

#### Parking:



The site plan includes 9 parking spaces on the west side of the building and 5 parking spaces on the north side, including one ADA accessible space. The parking spaces are 9' x 20' (180 square feet) in size, which complies with Zoning Code standards.

**Landscaping:**

No new landscaping is proposed. The applicant did provide a plan showing existing plantings and tree lines (see Sheet L1.0).

**Lighting:**

The Lighting Plan consists of building lighting only. This includes two lights mounted at 11-feet on the north side of the building near the entrance and nine other light fixtures mounted at 19-feet around the building. Light levels are at 0.0 footcandles at the property lines; however, glare from the building lights is also a concern. Considering a maximum mounting height of 19-feet as well as the existing wall and landscaping staff does not find that the proposed lights will adversely impact the adjacent properties.

However, in case lighting is a concern or seen through trees, particularly in winter months, staff recommends that building lighting on the south, east, and west sides of the building be shut off at 9:00 p.m.

**Architecture:**

The proposed building consists primarily of painted precast concrete wall panels of different colors. The building has a maximum parapet height of 33'-0". The building includes ten 16' x 16' overhead doors on the north and south sides of the building. There is also a 12' x 12' overhead door on the south side of the building for a total of 21 overhead doors.

From an aesthetic standpoint, staff would typically have concerns with the number of overhead doors on the building, as well as perhaps the lack of other architectural features. However, this building is not visible by any adjacent properties or public rights-of-way; therefore, staff does not have recommendations related to the architecture of the building.

Note that rooftop mechanicals will be screened by a prefinished metal screen wall.

**Signage:**

Sign plans include the Zignego logo on the north side of the building that will be cast into the precast concrete wall panel and painted as shown on the building elevation. Signage shall comply with all standards set forth in Section 17.0700 of the City's Zoning Code and require separate review and approval by the City Planner as well as a Sign Permit from the Building Services Department, prior to installation.

## **Planning Staff Comments**

Staff has discussed two notable concerns with the applicant. The first concern is related to the limited access to the area of the property located east of the railroad tracks where the proposed building is to be located. With access solely via a private crossing of the railroad tracks, there is concern with Emergency Medical Service (EMS) response if a train is stopped in front of this crossing.



The applicant has indicated that the building will not substantially increase the number of employees that will be working on the east side of the railroad tracks. Staff finds that without a significant increase in activity level and use of this portion of the property, the proposed plans will not exacerbate this safety concern, and therefore, staff does not object to the proposed building based on this issue.

Staff's original comment and the applicant's response are below for review and consideration.

Staff Comment No. 2:

How much will the proposed building increase business activity and use of the property located on the east side of the railroad tracks? Has the railroad been contacted regarding the development?

Staff has concerns with significantly increasing activities on the east side of the railroad tracks due to the limited accessibility, particularly considering cases of emergency. Presumably this is why it was made an outlot in 2010; so that no further development would occur.

Is the building and this part of the site utilized by Zignego employees only or would customer traffic extend to this side of the property as well?

Applicant's response:

Zignego does not expect any significant increase in business activity. The main purpose is to provide a better workspace for the them to perform their truck and equipment related repair services which occur in an existing building whKh is located due west about 151 feet of the proposed new repair garage. The current building used for repairs does not lend itself to an efficient layout for Zignego to perform the repairs from. Once the new repair garage is completed, the existing building will house more of the parts required to service their current fleet of trucks and other construction related equipment, some of which is currently stored outside.

The remainder of the existing warehouse building built in the late seventies and early eighties will house the welding operations and parts inventory functions. The new and expanded repair garage will allow Zignego's mechanics to perform all the repair and replacement service requirements needed by Zignego to operate more efficiently and more importantly safely.

Zignego and JSD has reached out to the railroad to let them know what our proposal entails and to work out utility access logistics. Staff has concerns with significantly increasing activities on the east side of the railroad tracks due to the limited accessibility, particularly considering cases of emergency, which is why it was made an out-lot in 2010; so that no further development would occur. Our proposal to build a new building is for improved existing operations and will be used by Zignego employees not outside customers. Zignego is conscientious of safety and respects the concerns of the city staff as well, but they are of the opinion that the addition of a dedicated repair garage is an enhancement of what is already occurring on the east lot currently. Zignego has and will continue to work to maintain safe business operations on the entire parcel.

For reasons spelled out above, we propose to build the new repair garage for Zignego. JSD who is the engineer and surveyor, affirms that no issues with the conversion of the Lot and Out lot



under the current CSM arrangement to a single lot arrangement with the railroad bisecting the lot.

The new building would only be used by and for Zignego employees. They plan on 10 employees for the daily average occupancy with about 15 employees at the most. This coincides to their current levels of occupancy east of the railroad.

The second concern is related to noise, both with the activity occurring within the facility (when garage doors are left open) and the beeping of trucks backing out of the building. Staff's Comment No. 10 states, "Staff understands it is not preferred, but a drive-through type facility with less overhead doors is suggested. This would reduce potential noise concerns as well as provide higher quality architecture in keeping with the City of Pewaukee design standards."

The applicant's response is below.

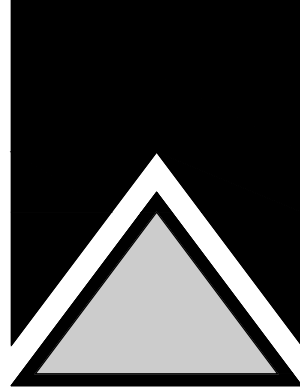
Zignego currently operates its truck and equipment repair in manner which the city describes above and which is preferred by the city. The repair garage function happens on the northern half of the existing CMU building which is located immediately east of the railroad tracks which run north and south. The existing building is located 151 feet west of the proposed new repair garage. The major reason for needing the new repair garage is to improve the efficiency and safety of their current operations. Zignego has operated in both types of garages and has found that the multi door garage works best for their needs. The new garage will incorporate interior top running and jib cranes to help facilitate better material and parts handling as part of their repair operations. They are also adding a wash bay which will allow Zignego to clean the trucks and equipment before and after the equipment and trucks are serviced. Zignego has always operated as a good neighbor and will continue to do so.

The new facility will be managed to minimize truck movements on the south side of the proposed building. The repair work will take place during normal business hours and evenings with repair work rarely happening outside of those hours. The truck movements required will occur more so on the north side of the new building. The proposed new building will provide blockage of current yard sounds which will improve this aspect of their current business operations.

## **Recommendation**

Staff does not find that the noise concern has been fully addressed. As such, staff would like to discuss this issue further with the Plan Commission and hear public comment from adjacent property owners, if any, prior to making a final recommendation.





DESIGN GROUP  
3845 N BROOKFIELD ROAD, SUITE 200  
BROOKFIELD, WISCONSIN 53005-1900  
(262) 780-0500 PHONE  
(262) 780-0505 FAX

RE-ZONING EXHIBIT

SHEET TITLE

PROPOSED ZIGNAGO  
REPAIR FACILITY BUILDING  
DUPLAINVILLE ROAD  
PEWAUKEE, WI

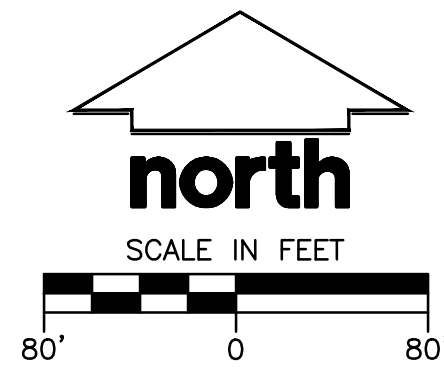
JOB: 20-9494  
DRAWN: PSM

CHECKED: 06/01/20

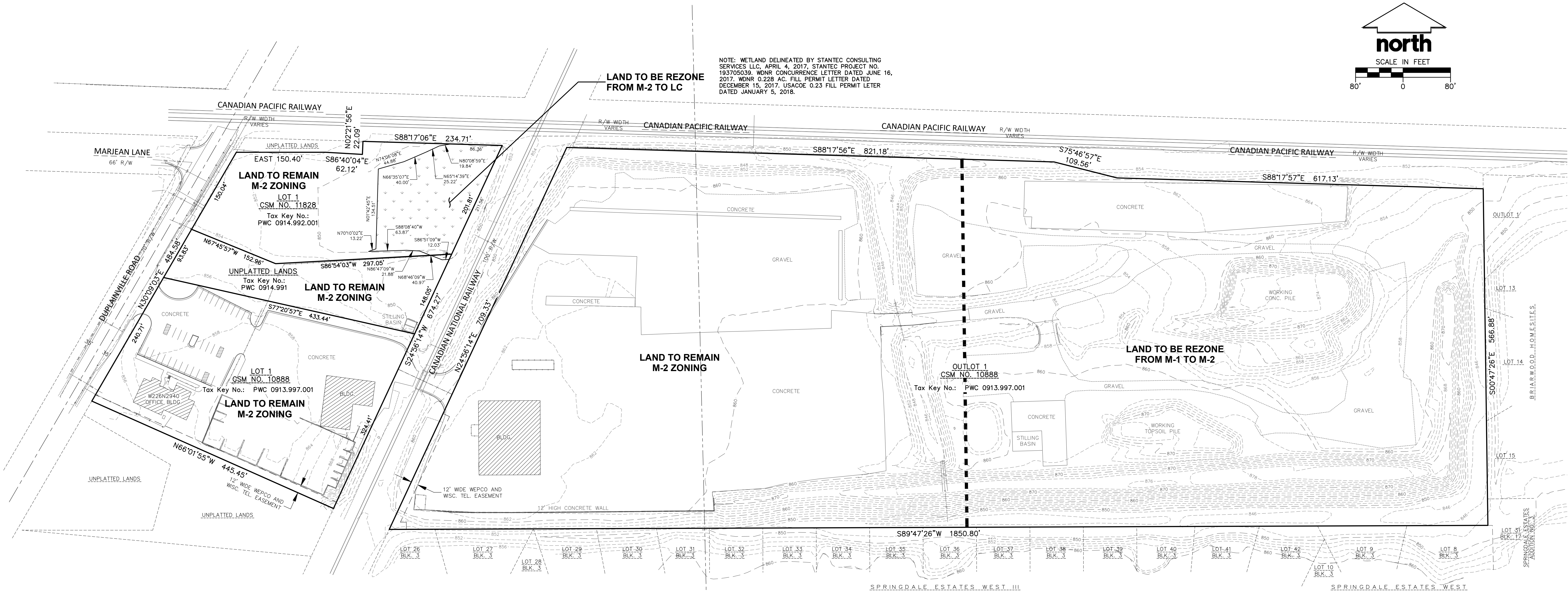
DATE: 06/01/20

SHEET:

EX-1



NOTE: WETLAND DELINEATED BY STANTEC CONSULTING SERVICES LLC, APRIL 4, 2017, STANTEC PROJECT NO. 193705039, WDNR CONCURRENCE LETTER DATED JUNE 16, 2017, WDNR 0.228 AC. FILL PERMIT LETTER DATED DECEMBER 15, 2017, USACOE 0.23 FILL PERMIT LETTER DATED JANUARY 5, 2018.



**LAND TO BE REZONE FROM M-1 TO M-2:**

The East 11.83 acres, more or less, of Outlot 1 of Certified Survey Map No. 10888, recorded in Waukesha County Register of Deeds Office on August 9, 2011 as Document No. 3848891, being a part of the Northeast 1/4 of the Northwest 1/4 and the Northwest 1/4 of the Northeast 1/4 of Section 13, Township 7 North, Range 19 East, City of Pewaukee, Waukesha County, Wisconsin.

Part of Tax Key No.: PWC 0913.997.001

**LAND TO BE REZONE FROM M-2 TO LC:**

Being being a part of the Northeast 1/4 of the Northwest 1/4 of Section 13, Township 7 North, Range 19 East, in the City of Pewaukee, Waukesha County, Wisconsin, bounded and described as follows:

Commencing and beginning of the northeast corner of Lot 1 of Certified Survey Map No. 11828, thence South 24°56'14" West along the westerly line of the Canadian National Railway right-of-way, 211.56 feet; thence South 86°51'09" West, 12.03 feet; thence North 68°46'09" West, 40.97 feet; thence North 86°47'09" West, 21.88 feet; thence South 88°08'40" West, 63.87 feet; thence North 70°10'02" East, 13.22 feet; thence North 01°42'45" East, 134.51 feet; thence North 74°05'08" East, 44.88 feet; thence North 66°35'07" East, 40.00 feet; thence North 65°14'39" East, 25.22 feet; thence North 80°08'59" East, 19.84 feet to the south line of the Canadian Pacific Railway right-of-way; thence South 88°17'06" East along said south line, 86.36 feet to the point of beginning.

Part of Tax Key No.: PWC 0914.992.001

Part of Tax Key No.: PWC 0914.991

**DIGGERS HOTLINE**  
Call 811 or (800) 242-8511  
Milwaukee Area (262) 432-7910  
Hearing Impaired TDD (800) 542-2289  
www.DiggersHotline.com

**JSD Professional Services, Inc.**  
• Engineers • Surveyors • Planners  
MILWAUKEE REGIONAL OFFICE  
W238N1610 BUSSE RD, SUITE 100  
WAUKESHA, WISCONSIN 53188  
262.513.0666 PHONE | 262.513.1232 FAX  
www.jsdinc.com  
JSD JOB NO.: 20-9494



## Project Narrative for the Proposed New Zignego Repair Garage

**PROPOSED ONE-STORY 24,800 SQUARE FOOT (FOOTPRINT) REPAIR GARAGE BUILDING WITH  
2,917 SQUARE FOOT MEZZANINE LEVEL (OFFICE AND STORAGE)  
AT W226 N2940 DUPLAINVILLE ROAD, CITY OF PEWAUKEE, WISCONSIN:**

### ***Submission information for:***

***Petition for Conditional Use Approval***

***Petition for Rezoning District Map Amendment***

***Application for Site and Building Plan Review***

***Application for Minor Land Division / Certified Survey Map***

May 28, 2020 Revised June 30, 2020

### Applicant's Contact Person:

Domenico Ferrante, AIA  
Briohn Design Group, LLC  
3885 N. Brookfield Road, Suite 200  
Brookfield, Wisconsin 53045  
(262) 790-0500

### Property Owner:

Duplainville Land Company, LLC  
Attn: John W Zignego - Primary and Tim Zignego - Contact  
W226 N2940 Duplainville Road  
Pewaukee, WI 53186  
262-547-4700

### Site Data:

Land to be rezoned from M-2 and M-1 (eastern half) to M-2:

Outlot 1 CSM #10888

Property addresses: assigned to W226 N2940 Duplainville Road

Tax key numbers: PWC 0913 997 001

Legal description: See attached legal description and property exhibit

Land to be rezoned from M-2 to M-2:

Lot 1 CSM #10888

Property addresses: assigned to W226 N2940 Duplainville Road

Tax key numbers: PWC 0913 997 001

Legal description: See attached legal description and property exhibit



Land to be rezoned from M-2 to M-2:

Lot 1 CSM #11828

Property addresses: unassigned currently propose assigning to W226 N2940 Duplainville Road

Tax key numbers: PWC 0914 992 001

Legal description: See attached legal description and property exhibit

Land to be rezoned from M-2 to M-2:

Unplatted Lands

Property addresses: assigned to W226 N2940 Duplainville Road

Tax key numbers: PWC 0914 991

Legal description: See attached legal description and property exhibit

We also are proposing the property to be CSM as one lot – refer to draft CSM submitted by JSD.

**Current Zoning District:**

Parcels West of Railroad Crossing is currently Zoned M2

Parcel East of Railroad Crossing (Outlot) is currently Zoned M2 on western half and M1 on eastern half

**Current and Proposed Land Use:**

Parcels West of Railroad Crossing is currently used as a Business Office, Batch plant and equipment with employee parking

Parcel East of Railroad Crossing is currently used as an area for equipment and truck parking and storage with a parts warehouse, welding shop and repair garage building and paving contractor's yard – Propose adding a new Repair Garage for equipment and trucks which will take the place of some current equipment and yard storage

**Description of Existing Environmental Features:**

Parcels are bounded by Duplainville Road on the west with industrial and commercial uses, railroad on the north and other industrial properties and uses, and on the east, there are existing single-family homes. Along the south boundary, the western portion is adjacent to other industrial uses with eastern portion single family homes. Zignego has in the past and continues to be aware of their property's relationship to residential areas. They have and continue to be respectful neighbors.

This is exemplified by the 300 feet long by 12 feet tall concrete sound and visual barrier wall constructed several years ago to buffer their property from the residential area located south of Zignego's property. In addition to the concrete wall, Zignego added a 15 feet tall earth berm planted with a significant amount of landscaping (trees) as part of the overall southern sound and visual barrier.



We purposely sited the building not only to address Zignego's needs but to take advantage of this significant sound and visual buffer.

**Projected number of Employees and or customers and hours of operation:**

Proposed new building will not have any visitors or customers. Zignego expects a total of 15 full time employees in 2021 with 10 full time employees on average and modest increase over time. The planned for hours of operation for the new repair shop are as follows: operation 6 days a week Monday through Saturday; 10 hours Monday through Friday and 5 hours on Saturday; and nights and weekends when workload requires.

**Existing Site:**

Total area is 1,277,357 SF (29.32 acres) Combined.

Refer to attached site area exhibit.

**Building Overall Area: 27,717 SF**

**Building Mezzanine Area: 2,917 SF**

**Building Footprint: 24,800 SF**

**Parking Proposed:**

We are proposing adding by striping 15 new parking stalls near the new building, which satisfies the needed amount of parking required for the new Repair Garage building.

**Green space ratio:**

Based on the impervious areas noted above, we are indicating an initial green space of 619,987sf (14.23 acres), which is 49.0%, and greater than the 40% Minimum Green Space required per ordinance. Since the proposed new building will replace existing concrete paved area, we are not adding additional impervious surface.

**Storm Water Management:**

A Storm Water Management Plan is not required as discussed with the city engineers. Our civil engineer will provide and submit a memorandum of understanding to the city of Pewaukee engineering department identifying that the proposed new building will maintain the current SWMP by the replacement of 24,800 SF of existing paved surfaces with new roof surfaces.

**Traffic Generation:**

The occurrence of onsite generated peak traffic levels anticipated during typical 7am-4pm weekday business hours. Zignego does not intend for the new repair garage to add any significant additional traffic generation. Anticipated customer visitations are anticipated and continue to be very low during normal work hours for Zignego. We do not plan on adding an additional access drive on Duplainville Road. The current access is sufficient to meet the needs of Zignego.



**Exterior Building Materials and landscape:**

We propose to construct a new single-story repair garage building with materials used in a contemporary architectural style. See building elevations for design and material concepts. Zignego proposes to cast the Zignego logo in relief over the main entry to the new building. This can be seen on the elevations as well. Zignego proposes if required to store the trash and recycling receptacles inside the proposed building or adjacent warehouse building. The proposed building is sited several hundred feet from Duplainville Road and will have little visibility outside of Zignego's property.

**Project Schedule:**

We intend to proceed with this project as the pace of municipal approval allow. We are scheduled for state plan review July of this year. We intend to submit for building permit and engineering final reviews immediately afterward. We ideally anticipate that this would have us receiving permits and starting construction mid to late July 2020.



## SITE STATISTICS EXHIBIT FOR ZIGNEGO

| <b>Zignego Property</b> | <b>Tax Key</b> | <b>Area (SF)</b> | <b>Area (AC.)</b> | <b>Impervious (SF)</b> | <b>Pervious (SF)</b> | <b>Pervious (%)</b> |
|-------------------------|----------------|------------------|-------------------|------------------------|----------------------|---------------------|
| Outlot 1 CSM No. 10888  | 0913 997 001   | 1,033,907        | 23.74             | 563,095                | 470,812              | 46% *               |
| Lot 1 CSM No. 10888     | 0913 997 001   | 121,997          | 2.80              | 93,879                 | 28,118               | 23%                 |
| Unplatted Lands         | 0914 991       | 40,391           | 0.93              | 396                    | 39,995               | 99%                 |
| Lot 1 CSM No. 11828     | 0914 992 002   | 81,062           | 1.86              | 0                      | 81,062               | 100%                |
| <b>TOTAL</b>            |                | <b>1,277,357</b> | <b>29.32</b>      | <b>657,370</b>         | <b>619,987</b>       | <b>49%</b>          |

\*working concrete pile area considered to be impervious





**BRIOHN** DESIGN  
GROUP, LLC

July 1, 2020

Nick Fuchs, Planner & Community Development Director  
City of Pewaukee Office of the Planner & Community Development Director  
W20 N 3065 Pewaukee Road  
Pewaukee, Wisconsin 53072

Re: The June 14, 2020 Comment and Recommendations letter from the office of the Planner about plans submitted for a proposed new repair garage for Zignego to be located on their current out lot – W226N2940, W226N2966 and W225N2974 Duplainville Road

Nick,

The response and answers to questions shall follow the city's comments and recommendations in green.

1. Please include a site data table on the Site Plan that includes site size, building height - 30 feet roof and 33 feet at parapet, and the percentage and square footage of greenspace and impervious surfaces onsite.

The Site data table which includes the size of the site, building height and the percentage and square footage of greenspace and impervious surfaces are included on JSD sheet C1.0 Site dimension and grading plan.

2. How much will the proposed building increase business activity and use of the property located on the east side of the railroad tracks? Has the railroad been contacted regarding the development?

Zignego does not expect any significant increase in business activity. The main purpose is to provide a better workspace for the them to perform their truck and equipment related repair services which occur in an existing building which is located due west about 151 feet of the proposed new repair garage. The current building used for repairs does not lend itself to an efficient layout for Zignego to perform the repairs from. Once the new repair garage is completed, the existing building will house more of the parts required to service their current fleet of trucks and other construction related equipment, some of which is currently stored outside.



The remainder of the existing warehouse building built in the late seventies and early eighties will house the welding operations and parts inventory functions. The new and expanded repair garage will allow Zignego's mechanics to perform all the repair and replacement service requirements needed by Zignego to operate more efficiently and more importantly safely.

Zignego and JSD has reached out to the railroad to let them know what our proposal entails and to work out utility access logistics.

Staff has concerns with significantly increasing activities on the east side of the railroad tracks due to the limited accessibility, particularly considering cases of emergency, which is why it was made an out-lot in 2010; so that no further development would occur. Our proposal to build a new building is for improved existing operations and will be used by Zignego employees not outside customers. Zignego is conscientious of safety and respects the concerns of the city staff as well, but they are of the opinion that the addition of a dedicated repair garage is an enhancement of what is already occurring on the east lot currently. Zignego has and will continue to work to maintain safe business operations on the entire parcel.

For reasons spelled out above, we propose to build the new repair garage for Zignego. JSD who is the engineer and surveyor, affirms that no issues with the conversion of the Lot and Out lot under the current CSM arrangement to a single lot arrangement with the railroad bisecting the lot.

Is the building and this part of the site utilized by Zignego employees only or would customer traffic extend to this side of the property as well?

The new building would only be used by and for Zignego employees. They plan on 10 employees for the daily average occupancy with about 15 employees at the most. This coincides to their current levels of occupancy east of the railroad.

3. Please illustrate setbacks on the site plan. The building setbacks for the property east of the tracks are below.
  - a. Front yard = 45 feet
  - b. Side yard = 25-feet
  - c. Rear yard = 35 feet

We show the setbacks on the civil site plans.



4. As already discussed, public sewer and water extensions are required. Note final grading, erosion control, utility, and storm water management plans, as may be necessary, must be approved by the Engineering Department, prior to land disturbance activities.

JSD has laid out and designed the grading, utilities and other site related items per accepted codes and civil engineering standard practices. They will work with city engineering to make sure items designed will comply with accepted standards and current codes.

5. Is everything in green on the Architectural Site Plan greenspace?

YES

6. All new paving shall meet the standards of Section 17.0601c. of the City's Zoning Code.

We propose to pave the entire construction area with a heavy-duty concrete. Refer to JSD civil drawings which will make references to the city ordinance requirements.

7. As discussed, staff would like to schedule a site visit to review the proposed building location as well as the existing screening and landscaping. More comments may follow after that, but it is recommended that details be provided as far as the view from the adjacent residential properties. Could a site line drawing be created to show the portion of the building that will be visible from those properties? This would also assist in reviewing the mounting height of the building lights and the screening of rooftop mechanicals.

We did schedule a site visit with the city, and both Nick Fuchs and Scott Klein were in attendance. Tim Zignego, Riz Iskandarsjach and Domenico Ferrante were present as well. This site visit happened June 24, 2020 at 9:00am.

After walking the site vicinity of the proposed new repair garage. A few conclusions were made:

The visual concerns for the residential area to the south should not be an issue. The current sound levels would not be increased based on discussions with Zignego. The frequency of onsite truck movement would not be increased. Zignego has and will continue to operate their existing business operations in a manner that is appropriate to the surrounding community.

They have had few issues with their neighbors over their 40 years located on this site.

They have been proactive to neighborhood concerns and built a 12 feet tall concrete sound wall and berm with very generous amount of landscaping to help minimize visual and sound concerns. They have also put into place policies which keep noise down. Zignego has had a long history at this location and have made and continue to make investments at this location which benefits not only Zignego but the City of Pewaukee as well.



8. Please provide additional sign details. Is the proposed sign a wall mounted sign or is that something incorporated into the building itself?

The Zignego logo would cast into the precast concrete panel where shown on the north elevation. The logo would be painted with their corporate colors. The location of the sign generally would be limited to visibility on site only. We will work with the wall panel pre-caster to accomplish this.

9. Related to the Certified Survey Map, please consider the following comments:
- a. Section 17.0208a. of the City's Zoning Code and Section 18.0800f. of the City's Land Division Ordinance require 33 feet of frontage abutting a public right-of-way. As the proposed Lot 2 does not meet this requirement, it is recommended that all properties be combined into a single parcel (with the railroad right-of-way bisecting the property). The property was platted as one parcel prior to 2010. We propose that the properties to be combined into one parcel – "Lot 1".
  - b. Please include building setback lines per 18.0603b. as well the 25-foot wetland setback. *Setback added.*
  - c. Please show the proposed access easement for Lot 2 (Combined as one parcel) as well as any utility easements and any other proposed easements. Shown.

10. Staff understands it is not preferred, but a drive-through type facility with less overhead doors is suggested. This would reduce potential noise concerns as well as provide higher quality architecture in keeping with the City of Pewaukee design standards.

Zignego currently operates its truck and equipment repair in manner which the city describes above and which is preferred by the city. The repair garage function happens on the northern half of the existing CMU building which is located immediately east of the railroad tracks which run north and south. The existing building is located 151 feet west of the proposed new repair garage. The major reason for needing the new repair garage is to improve the efficiency and safety of their current operations. Zignego has operated in both types of garages and has found that the multi door garage works best for their needs. The new garage will incorporate interior top running and jib cranes to help facilitate better material and parts handling as part of their repair operations. They are also adding a wash bay which will allow Zignego to clean the trucks and equipment before and after the equipment and trucks are serviced. Zignego has always operated as a good neighbor and will continue to do so.

The new facility will be managed to minimize truck movements on the south side of the proposed building. The repair work will take place during normal business hours and evenings with repair work



rarely happening outside of those hours. The truck movements required will occur more so on the north side of the new building. The proposed new building will provide blockage of current yard sounds which will improve this aspect of their current business operations.

Respectfully submitted,



Domenico Ferrante AIA, Principal-In-Charge  
Briohn Design Group, LLC

c/o:

Mike Byrne VP, Project Manager  
Briohn Building Corp  
Tim Zignego  
Zignego Red-Mix, Inc.



## ORDINANCE 20-07

**TO AMEND THE ZONING MAP OF  
THE CITY OF PEWAUKEE, WAUKESHA COUNTY, WISCONSIN**

The Common Council of the City of Pewaukee, Waukesha County, Wisconsin do ordain that the Zoning Map of the City of Pewaukee, Wisconsin is hereby amended to change the zoning classification of the property described below as follows:

FROM: **M-1 General Wholesale Business**

TO: **M-2 Limited Industrial (PWC 0931-997-001)**

FROM: **M-2 Limited Industrial**

TO: **LC Lowland Conservancy (PWC 091-992-001 & PWC 0914-991)**

SECTION 1 - DESCRIPTION**Common Description:****Land to be rezoned from M-1 to M-2:**

The East 11.83 acres, more or less, of Outlot 1 of Certified Survey Map No. 10888, recorded in Waukesha County Register of Deeds Office on August 9, 2011 as Document No. 3848891, being a part of the Northeast  $\frac{1}{4}$  of the Northwest  $\frac{1}{4}$  and the Northwest  $\frac{1}{4}$  of the Northeast  $\frac{1}{4}$  of section 13, Township 7 North, Range 19 East, City of Pewaukee, Waukesha county, Wisconsin. Part of Tax Key No.: PWC 0913997001

**Land to be rezoned from M-2 to LC:**

Being a part of the Northeast  $\frac{1}{4}$  of the Northwest  $\frac{1}{4}$  of Section 13, Township 7 North, Range 19 East, in the City of Pewaukee, Waukesha County, Wisconsin, bounded and described as follows: Commencing and beginning at the northeast corner of Lot 1 of Certified Survey Map No. 11828, thence South 24°56'14" West along the westerly line of the Canadian National Railway right-of-way, 211.56 feet; thence South 86°51'09" West, 12.03 feet; thence North 68°46'09" West, 40.97 feet; thence North 86°47'09" West, 21.88 feet; thence South 88°08'40" West, 63.87 feet; thence North 70°10'02" East, 13.22 feet; thence North 01°42'45" East, 134.51 feet; thence North 74°05'08" East, 44.88 feet; thence North 66°35'07" East, 40.00 feet; thence North 65°14'39" East, 25.22 feet; thence North 80°08'59" East, 19.84 feet to the south line of the Canadian Pacific Railway right-of-way; thence South 88°17'06" East along said south line, 86.36 feet to the point of beginning. Part of Tax Key No.: PWC 0914992001 & PWC 0914991

**Tax Key Number:** PWC 0913997001, PWC 0914992001, PWC 0914991

**Property Address:** W226 N2940 Duplainville Road



**This Amendment to the Zoning Map** (Change in zoning) is being proposed for the purpose of: constructing a one-story 25,000 square foot repair garage building.

SECTION 2 –SEVERABILITY

The several sections of this Ordinance are declared to be severable. If any section shall be declared by a decision of a court of competent jurisdiction to be invalid, such decision shall not affect the validity of the other provisions of the Ordinance.

SECTION 3 - ACTION

This Ordinance shall take effect upon passage and posting.

Dated this 3<sup>rd</sup> day of August, 2020

COMMON COUNCIL OF THE CITY OF PEWAUKEE

WAUKESHA COUNTY, WISCONSIN

Attest:

\_\_\_\_\_  
Steve Bierce, Mayor

\_\_\_\_\_  
Kelly Tarczewski, Clerk/Treasurer



**CITY OF PEWAUKEE  
COMMON COUNCIL AGENDA ITEM 7.**

**DATE:** August 3, 2020

**DEPARTMENT:** Planning

**PROVIDED BY:**

***SUBJECT:***

Discussion and Possible Action Regarding the Certified Survey Map for the Property Located at W226 N2940 Duplainville Road (PWC 0913-997-001, PWC 0914-991, PWC 0914-992-001) for the Purpose of Combining all Parcels into One Lot as Requested by Duplainville Land Company, LLC / John Zignego [Fuchs]

***BACKGROUND:***

***FINANCIAL IMPACT:***

***RECOMMENDED MOTION:***

**ATTACHMENTS:**

Description

Zignego CSM



CERTIFIED SURVEY MAP No. \_\_\_\_\_

ALL THAT PART OF LOT 1 AND OUTLOT 1 OF CERTIFIED SURVEY MAP NO. 10888; LOT 1 OF CERTIFIED SURVEY MAP NO. 11828; AND ADDITIONAL LANDS, LOCATED IN THE NORTHEAST 1/4 OF THE NORTHWEST 1/4 AND THE NORTHWEST 1/4 OF THE NORTHEAST 1/4 OF SECTION 13, TOWNSHIP 7 NORTH, RANGE 19 EAST, CITY OF PEWAUKEE, WAUKESHA COUNTY, WISCONSIN.

SEE SHEETS 2 THRU 5 FOR  
BOUNDARY DETAILS

NOTE:

CSM NO. 10888 RECORDED IN  
WAUKESHA CO. REGISTER OF  
DEEDS ON AUG. 9, 2011, AS  
DOC. NO. 3848891.

CSM NO. 11828 RECORDED IN  
WAUKESHA CO. REGISTER OF  
DEEDS ON MAR. 25, 2019, AS  
DOC. NO. 4388415.

PREPARED BY:

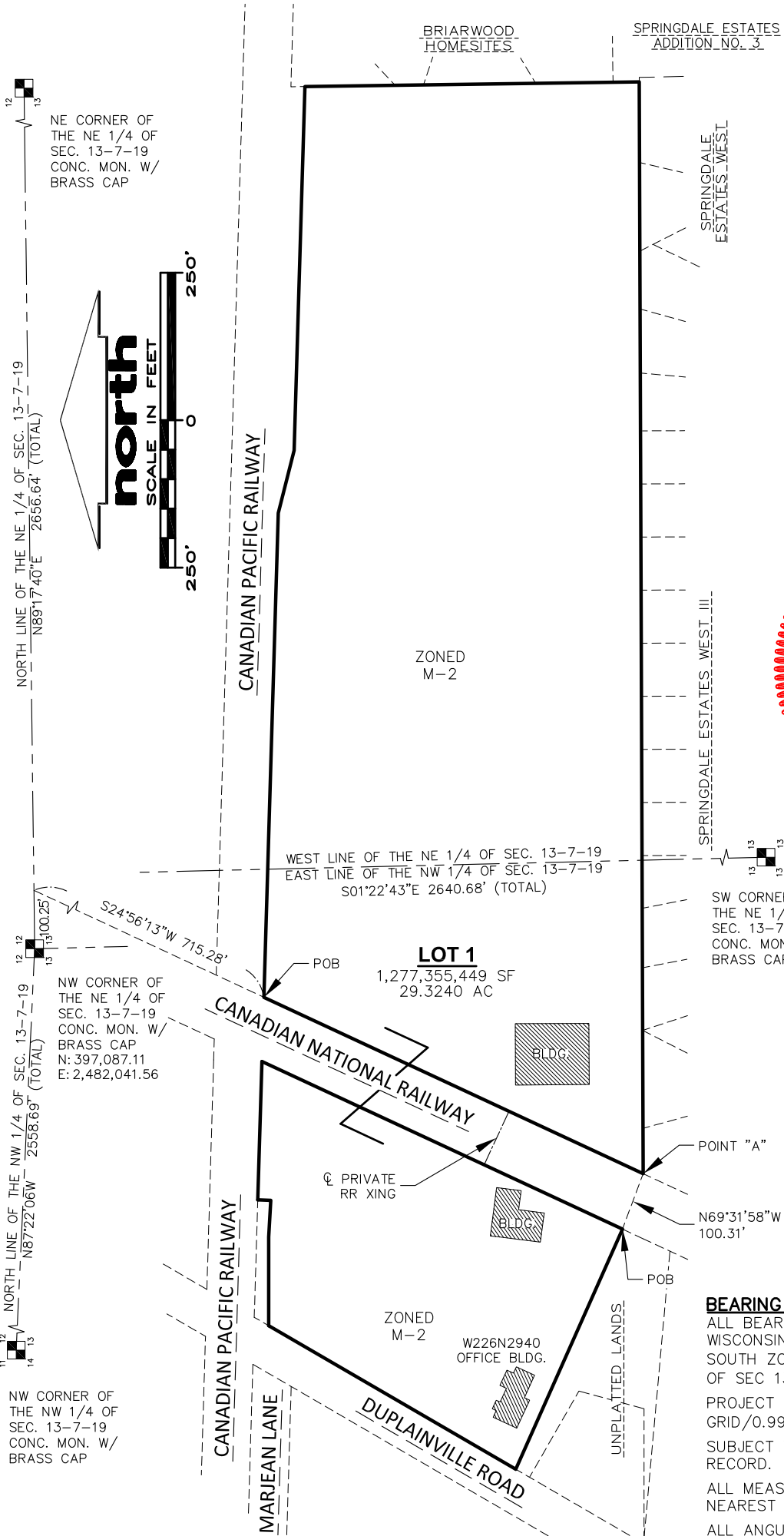
**JSD** Professional Services, Inc.  
Engineers • Surveyors • Planners  
MILWAUKEE REGIONAL OFFICE  
W238 N1610 BUSSE ROAD, SUITE 100  
WAUKESHA, WISCONSIN 53188  
262.513.0666 PHONE | 262.513.1232 FAX

PREPARED FOR:

DUPLAINVILLE LAND COMPANY LLC  
W226N2940 DUPLAINVILLE RD  
WAUKESHA, WI 53186-8815

M-2 ZONING SETBACKS:

FRONT: 45 FEET  
SIDE: EQUAL TO ADJACENT  
DISTRICT BUT NOT LESS THAN 25  
FEET.  
REAR: 25 FEET  
WETLAND: 25 FEET  
BUILDINGS NOT CLOSER THAN 50  
FEET FROM OTHER STRUCTURES.



BEARING BASIS:

ALL BEARINGS ARE REFERENCED TO THE  
WISCONSIN STATE PLANE COORDINATE SYSTEM,  
SOUTH ZONE. THE NORTH LINE OF THE NE 1/4  
OF SEC 13-7-19, WAS USED AS N89°17'40"E.  
PROJECT CONVERSION FACTOR:  
GRID/0.999990961 = GROUND  
SUBJECT TO EASEMENTS AND RESTRICTIONS OF  
RECORD.  
ALL MEASUREMENTS HAVE BEEN MADE TO THE  
NEAREST ONE-HUNDREDTH OF A FOOT.  
ALL ANGULAR MEASUREMENTS HAVE BEEN  
MADE TO THE NEAREST ONE SECOND.

DATED THIS \_\_\_\_\_ DAY OF JULY, 2020  
THIS INSTRUMENT WAS DRAFTED BY RIZAL W. ISKANDARSJACH, S-2738

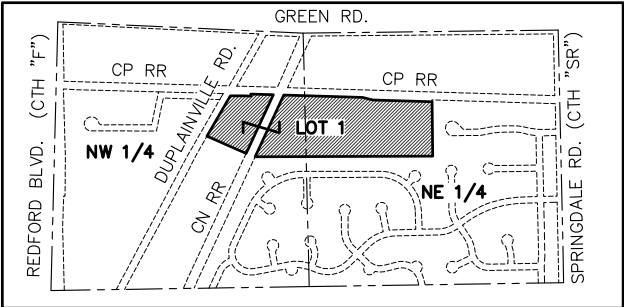
SHEET 1 OF 11



CERTIFIED SURVEY MAP No. \_\_\_\_\_

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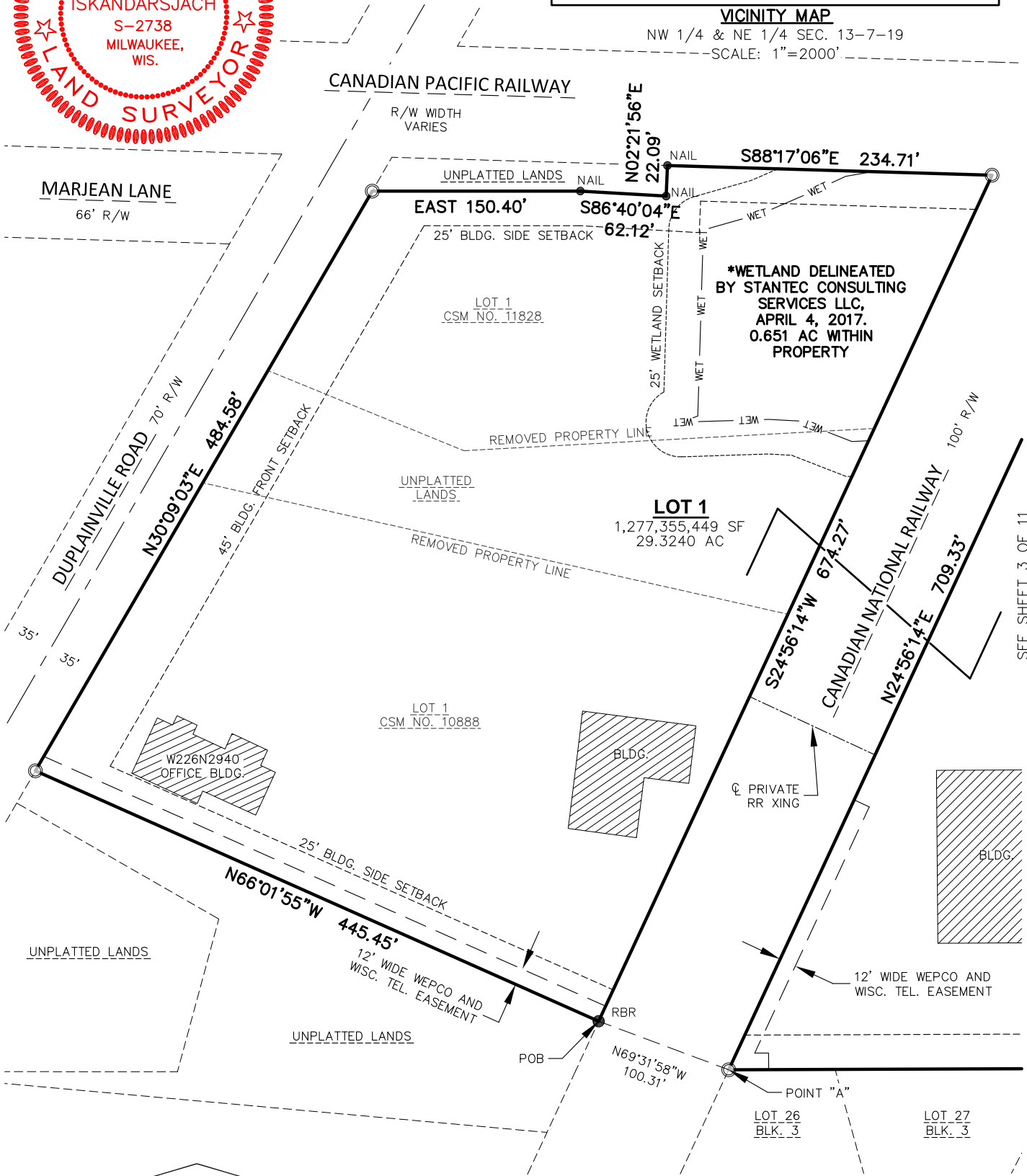
\*NOTE: WETLAND DELINEATED BY STANTEC CONSULTING SERVICES LLC, APRIL 4, 2017, STANTEC PROJECT NO. 193705039. WDNR CONCURRENCE LETTER DATED JUNE 16, 2017. WDNR 0.228 AC. FILL PERMIT LETTER DATED DECEMBER 15, 2017. USACOE 0.23 FILL PERMIT LETTER DATED JANUARY 5, 2018.



VICINITY MAP

NW 1/4 & NE 1/4 SEC. 13-7-19

SCALE: 1"=2000'



SEE SHEET 3 OF 11



DATED THIS \_\_\_\_\_ DAY OF JULY, 2020  
THIS INSTRUMENT WAS DRAFTED BY RIZAL W. ISKANDARSJACH, S-2738

LEGEND:

- 1" IRON PIPE FOUND
- 3/4" REBAR FOUND
- 7/8" NAIL FOUND



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SEE SHEET 4 OF 11

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CERTIFIED SURVEY MAP No. \_\_\_\_\_

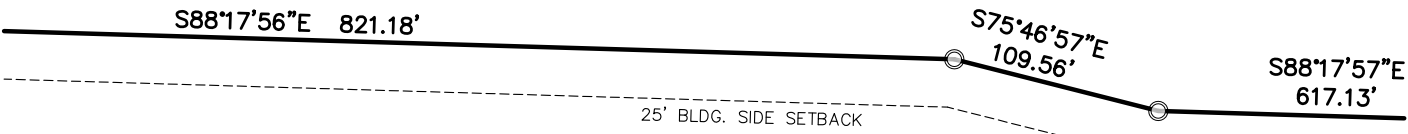
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- LEGEND:**
- 1" IRON PIPE FOUND
  - RBR 3/4" REBAR FOUND
  - NAIL 7/8" NAIL FOUND



CANADIAN PACIFIC RAILWAY R/W WIDTH VARIES



**LOT 1**

1,277,355,449 SF  
29.3240 AC

OUTLOT 1  
CSM NO. 10888

25' BLDG. SIDE SETBACK

|                      |                  |                  |                  |                  |                  |                  |                  |
|----------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| S89°47'26"W 1850.80' |                  |                  |                  |                  |                  |                  |                  |
| LOT 33<br>BLK. 3     | LOT 34<br>BLK. 3 | LOT 35<br>BLK. 3 | LOT 36<br>BLK. 3 | LOT 37<br>BLK. 3 | LOT 38<br>BLK. 3 | LOT 39<br>BLK. 3 | LOT 40<br>BLK. 3 |

SPRINGDALE ESTATES WEST III

SEE SHEET 3 OF 11

SEE SHEET 5 OF 11

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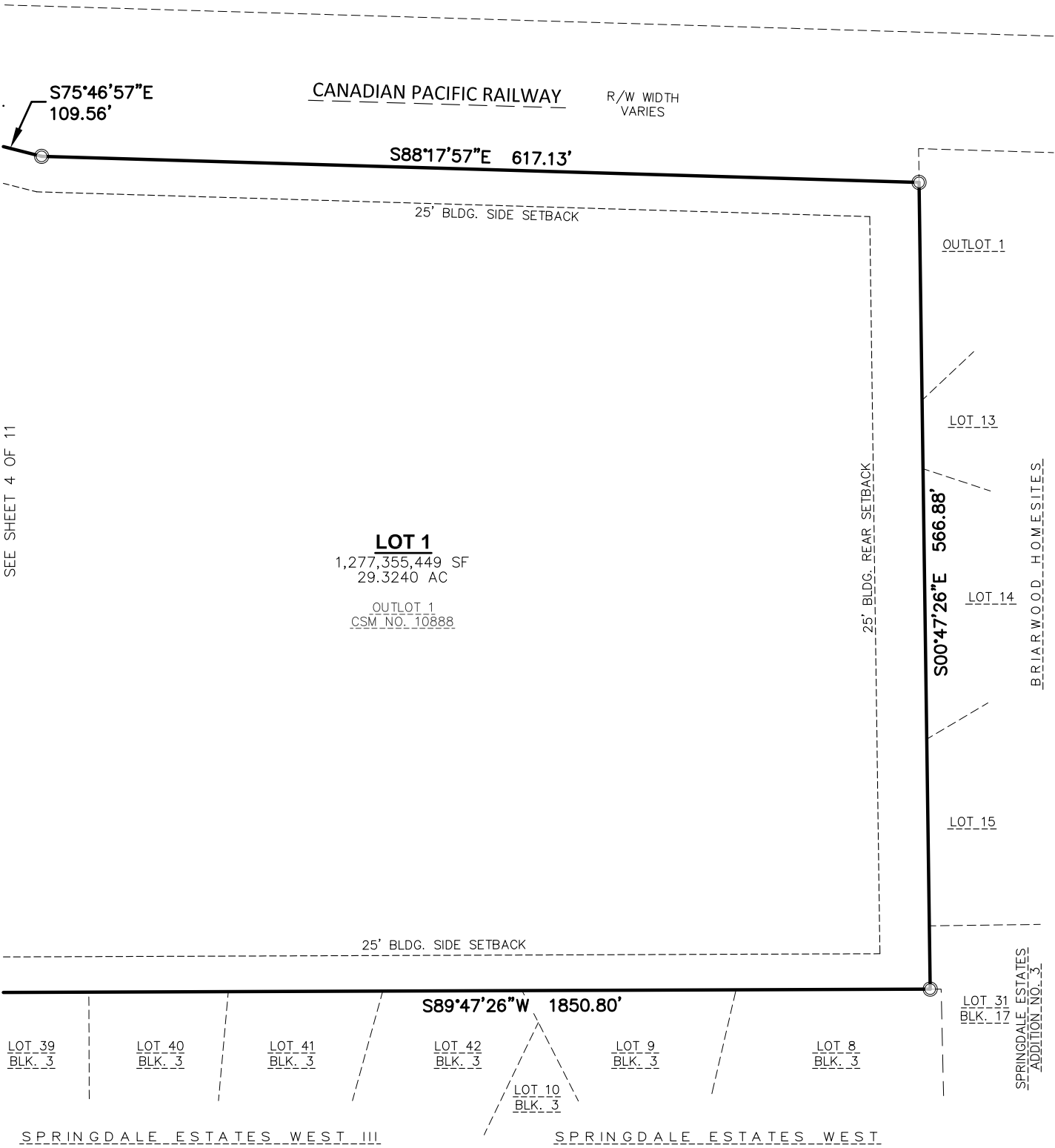


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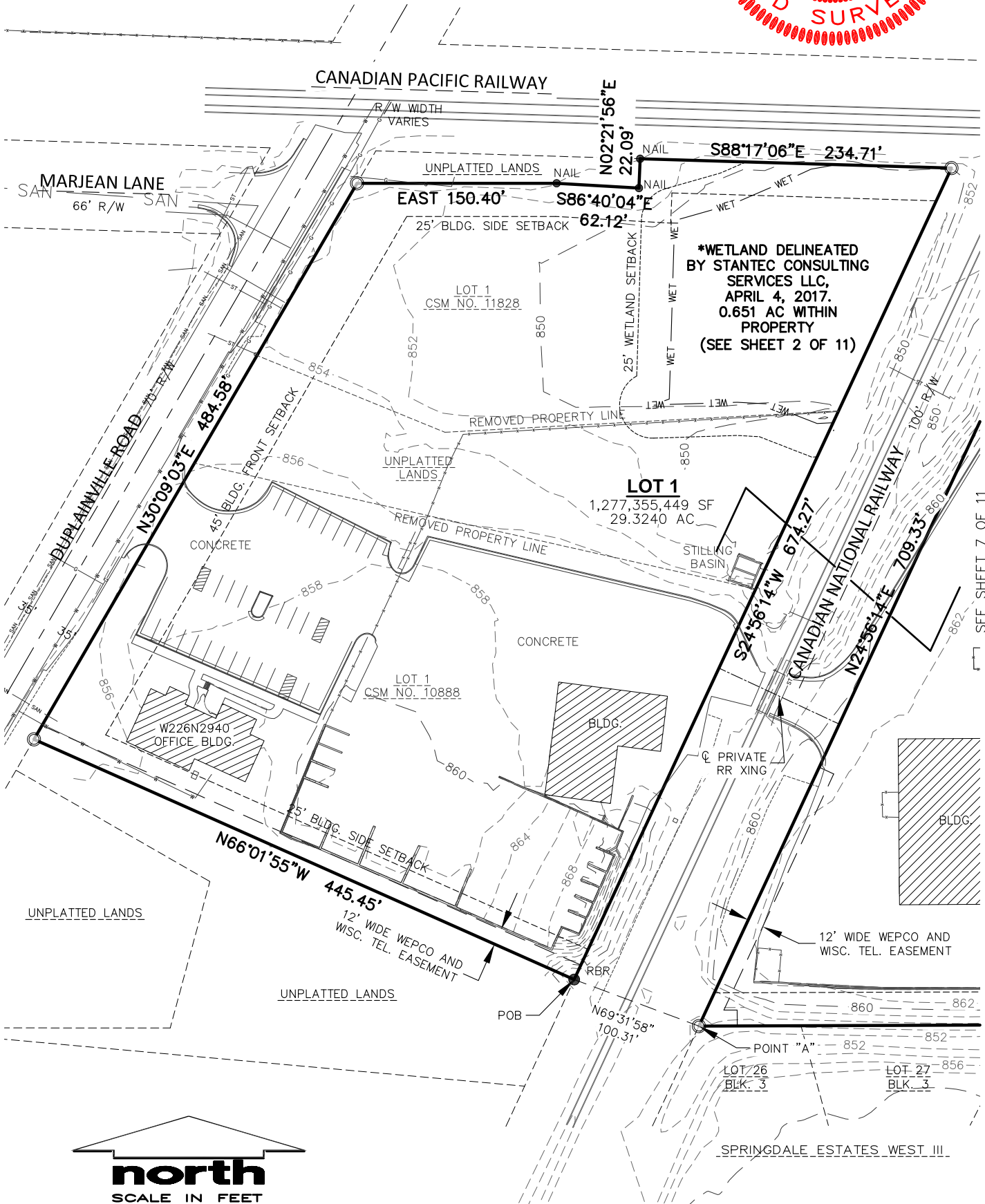




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NOTE: SHEETS 6 THRU 9 ARE FOR PLANIMETRICS  
REFERENCE ONLY. REFER TO SHEETS 1 THRU 5 FOR  
BOUNDARY INFORMATION.



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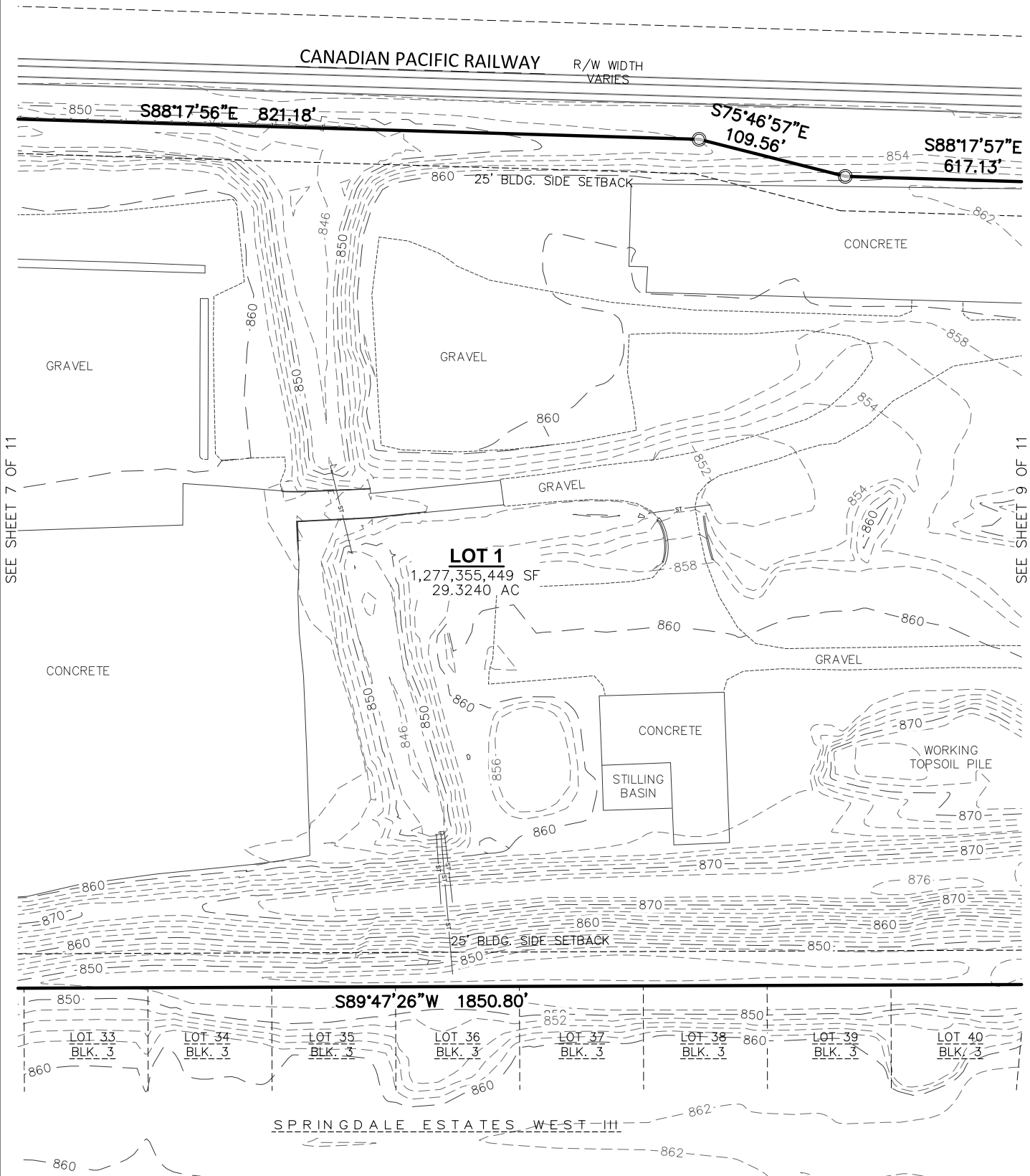
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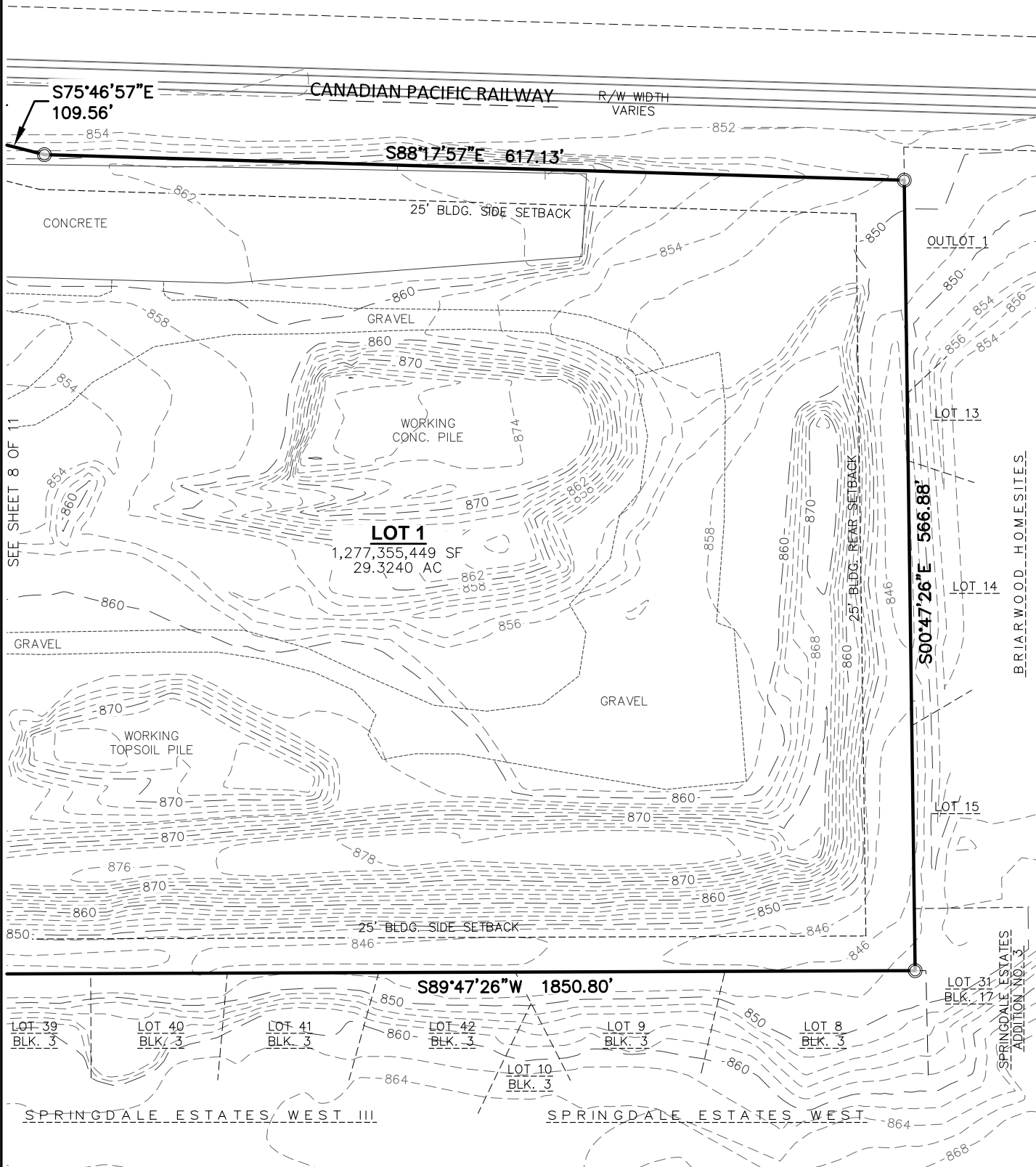


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SURVEYOR'S CERTIFICATE:

State of Wisconsin )  
 ) SS  
Waukesha County )

I, Rizal W. Iskandarsjach, Professional Land Surveyor, do hereby certify that I have surveyed, divided, and mapped all of Lot 1 and Outlot 1 of Certified Survey Map No. 10888; Lot 1 of Certified Survey Map No. 11828; and additional lands, located in the Northeast 1/4 of the Northwest 1/4 and the Northwest 1/4 or the Northeast 1/4 of Section 13, Township 7 North, Range 19 East, City of Pewaukee, Waukesha County, Wisconsin, bounded and described as follows:

Commencing at the northwest corner of the Northeast 1/4 of said Section 13; thence North 89°17'40" East along the north line of said Northeast 1/4 section, 100.25 feet to the easterly line of the Canadian National Railway right-of-way; thence South 24°56'13" West along said easterly line, 715.28 feet to the south line of the Canadian Pacific Railway right-of-way, the northwest corner of said Outlot 1 and the point of beginning;

Thence South 88°17'57" East along said south line, 821.18 feet; thence South 75°46'57" East along said south line, 109.56 feet; thence South 88°17'57" East along said south line, 617.13 feet to the west line of Briarwood Homesites Subdivision; thence South 00°47'26" East along said west line and then along the west line of Springdale Estates Addition No. 3 Subdivision, 566.88 feet to the north line of Springdale Estates West Subdivision; thence South 89°47'25" West along said north line and then along the north line of Springdale Estates West III Subdivision, 1850.80 feet to the easterly line of said Canadian National Railway right-of-way and POINT "A"; thence North 24°56'14" East along said easterly line, 709.33 feet to the point of beginning.

ALSO, commencing at said POINT "A"; thence North 69°31'58" West, 100.31 feet to the southeast corner of Lot 1 of said Certified Survey Map No. 10888 and a second point of beginning;

Thence North 66°01'55" West, 445.45 feet to the easterly line of Duplainville Road, thence North 30°09'03" East along said easterly line, 484.58 feet to the northwest corner of Lot 1 of said Certified Survey Map No. 11828; thence Due East along the northerly line of said Lot 1, 150.40 feet; thence South 86°40'04" East along said northerly line, 62.12 feet; thence North 02°21'56" East along said northerly line, 22.09 feet to the south line of said Canadian Pacific Railway right-of-way; thence South 88°17'06" East along said south line, 234.71 feet to the westerly line of said Canadian National Railway right-of-way; thence South 24°56'14" West along said westerly line, 674.27 feet to the second point of beginning.

Containing in all 1,277,355 square feet (29.3240 acres) of land, more or less.

All subject to easements and restrictions of record and potential future road widening and government restrictions, if any.

That I have made such survey, land division, and map by the direction of DUPLAINVILLE LAND COMPANY LLC, owner said lands.

That such map is a correct representation of all exterior boundaries of the land surveyed and the land division thereof made.

That I have fully complied with the provisions of Chapter 236 of the Wisconsin Statutes and the regulations of the City of Pewaukee in surveying, dividing and mapping the same.

DATED THIS \_\_\_\_ DAY OF JULY, 2020

Rizal W. Iskandarsjach, P.L.S.  
Professional Land Surveyor, S-2738





CERTIFIED SURVEY MAP No. \_\_\_\_\_

ALL THAT PART OF LOT 1 AND OUTLOT 1 OF CERTIFIED SURVEY MAP NO. 10888; LOT 1 OF CERTIFIED SURVEY MAP NO. 11828; AND ADDITIONAL LANDS, LOCATED IN THE NORTHEAST 1/4 OF THE NORTHWEST 1/4 AND THE NORTHWEST 1/4 OF THE NORTHEAST 1/4 OF SECTION 13, TOWNSHIP 7 NORTH, RANGE 19 EAST, CITY OF PEWAUKEE, WAUKESHA COUNTY, WISCONSIN.

OWNER'S CERTIFICATES

DUPLAINVILLE LAND COMPANY, LLC, as owner, do hereby certify that said company caused the land described in the foregoing affidavit of Rizal W. Iskandarsjach, to be surveyed, divided, and mapped as represented on this map, in accordance with the provisions of Chapter 236 of the Wisconsin Statutes and the regulations of the City of Pewaukee in surveying, dividing and mapping the same.

DUPLAINVILLE LAND COMPANY, LLC

\_\_\_\_\_(sign)  
\_\_\_\_\_(print) Date \_\_\_\_\_  
\_\_\_\_\_(title)

State of Wisconsin )  
 ) SS  
\_\_\_\_\_ County )

Personally came before me this \_\_\_\_\_ day of \_\_\_\_\_, 2020, the above named \_\_\_\_\_, as the \_\_\_\_\_ of the above named company and acknowledged that they executed the foregoing instrument as such officers as the deed of said company, as Manager, by its authority.

\_\_\_\_\_(sign)  
\_\_\_\_\_(print)  
Notary Public, \_\_\_\_\_ County, \_\_\_\_\_  
My Commission Expires \_\_\_\_\_

PLAN COMMISSION APPROVAL

This Certified Survey Map is hereby approved by the Plan Commission of the City of Pewaukee, on this \_\_\_\_\_ day of \_\_\_\_\_, 2020.

\_\_\_\_\_  
Steve Bierce, Chairperson Date \_\_\_\_\_

\_\_\_\_\_  
Brandon Bergman, Secretary Date \_\_\_\_\_

COMMON COUNCIL APPROVAL

This Certified Survey Map is approved and dedication accepted by the Common Council of the City of Pewaukee, on this \_\_\_\_\_ day of \_\_\_\_\_, 2020.

\_\_\_\_\_  
Steve Bierce, Mayor Date \_\_\_\_\_

\_\_\_\_\_  
Kelly Tarczewski, Clerk /Treasurer Date \_\_\_\_\_





**CITY OF PEWAUKEE  
COMMON COUNCIL AGENDA ITEM 8.**

**DATE:** August 3, 2020

**DEPARTMENT:** PW - Engineering

**PROVIDED BY:** Magdelene Wagner

***SUBJECT:***

Discussion and Possible Action Regarding the Selection of the Busse Road Bridge Replacement Alternative [Wagner]

***BACKGROUND:***

The City is required to inspect all four bridge owned and maintained by the City bi-annually. Busse Road Bridge is located south of I-94 and north of Bluemound Road. During the 2016 inspection of Busse Road Bridge, it was determined the bridge is in failure due to the haunches of the culvert pipe rusting through. In early 2017, the City was ordered by the State of Wisconsin to weight restrict the bridge due to its condition. Preliminary discussion occurred in 2017 on options for rehabilitating the bridge due to the low volume of the roadway. However, it was determined any rehabilitation would increase the floodplain elevation which would not be allowed without purchasing, at a minimum, floodplain easements from upstream properties. Given this and the condition of the existing culverts and headwalls, the City decided to pursue a bridge replacement. The City authorized the design for the Busse Road Bridge Replacement in 2018, executing a design contract with the Consultant, IMEG.

Shortly after the design agreement was executed, Busse Road Bridge's headwall was partially washed out. A temporary fix was permitted and completed in May 2018 by City forces.

In 2018, the Consultant completed the survey, wetland delineations, stream modeling, and alternatives. This was presented to Staff in late 2018. Interestingly, during the design right of way research, it was determined that the existing bridge and a portion of Busse Road are not in the platted right of way, but rather on private property. In addition, Staff and Consultant met with the Wisconsin Department of Natural Resources on site to discuss possible locations of the bridge and get preliminary buy-in from the regulating bodies.

Alternative One is moving the bridge to be contained with the existing platted right of way to the west of the current bridge location. See attachment labeled Alternative One. The estimated cost of installing the bridge in this location is \$487,855. Permanent property acquisition is required for the road that is currently located outside of the right of way. This would require 0.09 acre right of way from Johnson/Rosseau and 0.05 acre right of way from Jones. During Staff discussion with the adjacent property owners, we will likely need to condemn this land as our preliminary discussions with them is they do not support this alternative. Mr. Rosseau has stated this area in the front is his only location for a replacement septic field for this home. In addition, temporary construction easements (0.04 acre from Johnson/Rosseau and 0.05 acre from Jones) are required for this alternative. The acquisition costs are not included in the estimate above.

Alternative Two is replacing the bridge in its current location which requires a temporary crossing for access to the Jones parcel. See attachment labeled Alternative Two. The estimated cost of installing the bridge in its current location with a temporary crossing is \$621,080. Permanent property acquisition is required for the bridge and the road that is currently located outside of the right of way in the amount of 0.27 acre from Jones. In addition, a temporary construction easement is required for the temporary access in the amount of 0.18 acre which would be required from



Jones. The acquisition costs are not included in the above estimate. A temporary access is required for this alternative as Busse Road is the only access for the Jones property and the business that operates from this location. The access is required to be constructed to allow emergency operations to utilize the road if necessary. This alternative cannot be constructed without an access to this property. To further clarify, this access is a temporary crossing that passes the base flow of the stream without overtopping. Any rainfall events will likely overtop the crossing reducing or eliminating the access to this parcel until the water recedes and will likely require some additional maintenance before access can be granted again.

Staff also briefly reviewed 2 additional alternatives of bridges to the east and west of the existing bridge, but these were ruled out due to property acquisition, environmental considerations, and/or moving the bridge too close to the existing structures.

Staff had preliminary discussions with the adjacent property owners based on the two viable alternatives. A letter was received from Ms. Jones regarding the desire to replace the bridge in its current location to preserve the beauty of the area and preserve trees. She also offered to donate or receive a nominal fee the land if necessary to accommodate the current location. See attachment Jones Letter. It is also our understanding that Johnson/Rosseau are opposed to any acquisition of their property.

This is a difficult project to give a recommendation for. Alternate One appears to be the cheaper alternative by \$133,225. It is unlikely that the required land acquisition costs will exceed this value, but it is not known at this time. However, the neighbors impacted do not support this alternative so the acquisition will likely be a lengthy process. The WDNR has stated they would likely approve this alternative location.

Alternate Two is more expensive, largely due to the temporary crossing that is required for the Jones parcel. The permitting from the WDNR might be slightly more difficult for this reason as well, but still attainable. The land acquisition is more with this alternative, however, we have a property owner who is willing to work with the City with the acquisition (perhaps even donate the land) so the process will likely move quickly. In addition, the neighbors prefer this alternative. Alternate Two is riskier from an access and safety perspective. The temporary crossing is highly dependent on the weather/rainfall during the construction period. Any rainfall or snow melt may eliminate the access until the water levels recede and access is returned to the property which we will have no control on the timing of this. Access will be limited for police and fire service and their equipment to the Jones property. An alternate emergency only access from I-94 may be possible, however we have not pursued this discussion yet with the State and we have no guarantees we will be granted this access.

If you were to look at this from a purely fiscal and safety viewpoint, we would recommend Alternative One. However, we have the adjacent property owners who strongly oppose this alternative and we need land from both of the property owners to construct this alternative. For Alternative Two, we need land from one property owner who is willing to allow the required acquisition for this alternative.

Mr. Mueller on behalf of Ms. Jones has asked for several items and letters to be included in the agenda packet as well for your information and discussion. You will find these under Mueller Items.

### ***FINANCIAL IMPACT:***

The City currently has budgeted in 2020 \$350,000 from the Storm Water Utility and \$350,000 from the Road portion of the City budget for a total of \$700,000 allocated for the Busse Road Bridge Replacement. Grant funding sought for this project have not been awarded.

Alternative One has an estimated budget without property acquisition of \$487,855.

Alternative Two has an estimated budget without property acquisition of \$621,080.



It should be noted that these estimates are based on a cast in place structure. From the initial estimates, this would be the least expensive method for this bridge replacement. We will review a precast bridge (commonly referred to as a Conspan) once a final location of the bridge is selected to ensure we are pursuing the least expensive method to replace this bridge.

Property acquisition costs were not included in the estimates due to the wide variance in acquisition costs and to not bias the process. A typical property appraisal cost is in the range of \$2,500 to \$4,000 per parcel which we are required to complete and must offer to pay for an additional one if the property owner would elect to have one of their own. In addition, we will incur Attorney fees in the final paperwork and filings. If the property owners do not accept the appraised value offered, we could potentially go to Condemnation Court.

***RECOMMENDED MOTION:***

Direct staff to pursue Alternate \_\_\_\_\_ as the recommended replacement of the Busse Road Bridge.

**ATTACHMENTS:**

Description

Busse Road Bridge Location

Busse Bridge Property owners

Alternate One

Alternate One Estimate

Alternate Two

Alternate Two Estimate

Jones Letter

Mueller Letter 3.2.2020

Mueller Letter 3.6.2020

Maps from Mueller

Mueller Letter 7.29.2020









|     |  |      |         |          |  |     |      |         |          |  |                 |
|-----|--|------|---------|----------|--|-----|------|---------|----------|--|-----------------|
| NO. |  | DATE | APPROV. | REVISION |  | NO. | DATE | APPROV. | REVISION |  | DRAWN<br>SMA    |
|     |  |      |         |          |  |     |      |         |          |  | CHECKED<br>BBB  |
|     |  |      |         |          |  |     |      |         |          |  | DESIGNED<br>MSB |

|                                                                             |  |               |  |                                                                          |                                                                                                                                                                                                                                                                         |                       |
|-----------------------------------------------------------------------------|--|---------------|--|--------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| PROJECT TITLE<br>CLIENT NAME<br>VILLAGE, TOWN, OR CITY<br>COUNTY, WISCONSIN |  | ALTERNATIVE 1 |  | DATE<br>JAN 2018<br>FILE<br>22ND BUSSE RD TOPO REL<br>JOB NO.<br>2800001 |  <b>Robert E. Lee &amp; Associates, Inc.</b><br>ENGINEERING, SURVEYING, ENVIRONMENTAL SERVICES<br>1250 CENTENNIAL CENTRE BOULEVARD HOBART, WI 54155<br>920-662-9541 www.raleec.com | SHEET NO.<br><b>X</b> |
|                                                                             |  |               |  |                                                                          |                                                                                                                                                                                                                                                                         |                       |







**BUSSE RD**

**PEWAUKEE, WI**

**IMEG NO. 18002280.00**

**ALTERNATE 1 - WEST REALIGNMENT**

|              | ITEM DESCRIPTION                     | UNIT             | TOTAL<br>QUANTITY | UNIT PRICE   | TOTAL COST          |
|--------------|--------------------------------------|------------------|-------------------|--------------|---------------------|
| 1            | PAVEMENT REMOVAL                     | SQ YD            | 9,000             | \$12.00      | \$108,000.00        |
| 2            | GUARDRAIL REMOVAL                    | L.F.             | 360               | \$10.00      | \$3,600.00          |
| 3            | EARTH EXCAVATION                     | CU YD            | 700               | \$35.00      | \$24,500.00         |
| 4            | AGGREGATE BASE COURSE, TYPE B 10"    | TON              | 560               | \$30.00      | \$16,800.00         |
| 5            | HOT-MIX ASPHALT SURFACE COURSE, 1.5" | TON              | 85                | \$95.00      | \$8,075.00          |
| 6            | HOT-MIX ASPHALT BINDER COURSE, 3.5"  | TON              | 210               | \$95.00      | \$19,950.00         |
| 7            | BITUMINOUS MATERIALS (TACK COAT)     | LBS              | 230               | \$1.00       | \$230.00            |
| 8            | GUARDRAIL                            | L.F.             | 200               | \$23.00      | \$4,600.00          |
| 9            | RIPRAP HEAVY                         | CU YD            | 400               | \$60.00      | \$24,000.00         |
| 10           | TREE REMOVAL (6 TO 15 IN DIAMETER)   | UNIT<br>DIAMETER | 217               | \$100.00     | \$21,700.00         |
| 11           | TREE REMOVAL (OVER 15 IN DIAMETER)   | UNIT<br>DIAMETER | 294               | \$100.00     | \$29,400.00         |
| 12           | CLEARING AND GRUBBING                | SQ YD            | 1,750             | \$4.00       | \$7,000.00          |
| 13           | RIGHT-OF-WAY ACQUISITION             | AC               | 0.06              |              |                     |
| 14           | TEMPORARY CONSTRUCTION EASEMENT      | AC               |                   |              |                     |
| 15           | BRIDGE                               | L.S.             | 1                 | \$220,000.00 | \$220,000.00        |
| <b>TOTAL</b> |                                      |                  |                   |              | <b>\$487,855.00</b> |



Wednesday, July 3, 2019 2:27:20 PM  
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| REVISIONS |             | DATE |  |
|-----------|-------------|------|--|
| No.       | DESCRIPTION |      |  |
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4850 GRAND AVENUE  
CURVEE, IL 60031  
PH: 630.335.7100  
www.imegcorp.com  
Illinois Design Firm Registration #164-000973

|                                        |                               |
|----------------------------------------|-------------------------------|
| BUSSE ROAD PHII<br>PEWAUKEE, WISCONSIN | PROP. TEMP CL ROAD AND BRIDGE |
|----------------------------------------|-------------------------------|

IMEG Project No:  
18000358.00  
File Name:  
2280 Busse Rd Topo-1-30.dwg  
© COPYRIGHT 2019  
ALL RIGHTS RESERVED  
Field Book No: #####  
Drawn By: TEM  
Checked By: JT  
Date: 07/03/2019

1  
Sheet 1 of 1



**BUSSE RD**

**PEWAUKEE, WI**

**IMEG NO. 18002280.00**

**ALTERNATE 3 - EXISTING ALIGNMENT WITH TEMPORARY BYPASS**

|              | ITEM DESCRIPTION                     | UNIT             | TOTAL<br>QUANTITY | UNIT PRICE   | TOTAL COST          |
|--------------|--------------------------------------|------------------|-------------------|--------------|---------------------|
| 1            | PAVEMENT REMOVAL                     | SQ YD            | 900               | \$12.00      | \$10,800.00         |
| 2            | GUARDRAIL REMOVAL                    | L.F.             | 560               | \$10.00      | \$5,600.00          |
| 3            | EARTH EXCAVATION                     | CU YD            | 600               | \$35.00      | \$21,000.00         |
| 4            | AGGREGATE BASE COURSE, TYPE B 10"    | TON              | 500               | \$30.00      | \$15,000.00         |
| 5            | HOT-MIX ASPHALT SURFACE COURSE, 1.5" | TON              | 75                | \$95.00      | \$7,125.00          |
| 6            | HOT-MIX ASPHALT BINDER COURSE, 3.5"  | TON              | 185               | \$95.00      | \$17,575.00         |
| 7            | BITUMINOUS MATERIALS (TACK COAT)     | LBS              | 200               | \$1.00       | \$200.00            |
| 8            | GUARDRAIL                            | L.F.             | 560               | \$23.00      | \$12,880.00         |
| 9            | PIPE CULVERTS, SPECIAL 72"           | L.F.             | 100               | \$200.00     | \$20,000.00         |
| 10           | RIPRAP HEAVY                         | CU YD            | 400               | \$60.00      | \$24,000.00         |
| 11           | TREE REMOVAL (6 TO 15 IN DIAMETER)   | UNIT<br>DIAMETER | 231               | \$100.00     | \$23,100.00         |
| 12           | TREE REMOVAL (OVER 15 IN DIAMETER)   | UNIT<br>DIAMETER | 176               | \$100.00     | \$17,600.00         |
| 13           | CLEARING AND GRUBBING                | SQ YD            | 1,550             | \$4.00       | \$6,200.00          |
| 14           | TEMPORARY CONSTRUCTION EASEMENT      | AC               |                   |              |                     |
| 15           | BRIDGE                               | L.S.             | 1                 | \$220,000.00 | \$220,000.00        |
| 16           | TEMPORARY BYPASS BRIDGE              | L.S.             | 1                 | \$220,000.00 | \$220,000.00        |
| <b>TOTAL</b> |                                      |                  |                   |              | <b>\$621,080.00</b> |



**Subject:**

Busse Rd Bridge Replacement -5/10/19 letter

May 10th, 2019  
Jeffery Weigel PE  
Director of Public Works  
City Of Pewaukee  
W240 N3065 Pewaukee Rd  
Pewaukee, Wi.  
53072

Dear Mr. Weigel,

I wanted to share with the Pewaukee Community my love for the Pewaukee River and the land that I have lived on since 1978. Although the River has sometimes challenged us and our homestead, it is an extraordinary asset to everyone who lives near it or gets to enjoy it. The way the River twists and turns just before the Busse Road bridge is nothing short of spectacular. The beautiful natural "S" curve prior to meeting the existing bridge is immediately before a stand of raspberry bushes that I have picked for the past 40 years! (Pictures attached)

It is my understanding, based upon the attached civil engineer's proposed bridge replacement design, that the new all concrete bridge would be positioned to the west of the existing quaint culvert bridge. Not only will this proposed design remove the beauty of the "S" curve, the raspberry bushes, and mature walnut trees, but it will require that the foundation of the old bridge, and as I understand it, approximately 100 feet before and after the bridge be removed. The proposed plan will also require the filling of approximately 9,000+/- square feet of surrounding wetlands and the acquisition of a small bit of private property. In addition to these requirements, the utilities that currently run under the road and bridge, must be addressed, because according to the attached plan they actually run across part of my property with no current utility easement documents.

To prevent the destruction of this natural Pewaukee asset and reduce excess expenses, I would like to suggest that serious consideration be given to the following concepts:

1. Donation of some of my property that is currently surveyed as part of the road and bridge so that the existing bridge could be replaced with no cost or expense for-
  - a. Building new approaches to the proposed bridge, with the change in alignment, acquiring additional property to construct the proposed changes in the road alignment.
  - b. The cost for over excavating the existing wetlands, providing permanent select back fill for the wetlands (and associated destruction of the areas natural beauty).
  - c. The additional cost of moving the existing utilities and providing the proper easement documents for the existing utilities.
  - d. Removal of the multiple Maple and Walnut on either side of the road and destruction of the large berry path on the north of the culvert.
- 2A. In an effort to utilize the extensive existing bridge approach from the north and south, I would offer my land to the east of the existing bridge as a temporary access point to my property. This temporary access would be a lower cost alternative for the city vs. the associated expenses with 1a, 1b, 1c and 1d. I would grant this access for as long as it takes to replace the existing bridge. This concept would allow the City to maximize the utilization of the existing approaches and as much of the existing structure as possible.



2B. As an alternative to 2A above, a civil engineering friend has suggested that it maybe possible to replace the bridge with a "CONTECH Engineered Solution" alternative. This alternative could utilize the current approaches and offers the city the possibility to replace one direction of the bridge at a time without the need to disrupt the surrounding area at all or the expense of building and removing a temporary access around the existing bridge.

CONTECH Website - <https://www.conteches.com/bridges-and-structures>

These alternative offers would:

1. Reduce the overall replacement cost for bridge to the city.
2. Preserve the beauty of the River's natural path and wetlands as well as the Pewaukee River's only "S" curve.
3. Minimize the cost of the replacement bridge and the related north and south approaches
4. Preserve the natural beauty of the Pewaukee River where Pewaukee residents fish and walk with their children and grandchildren.

In my absence please speak directly to my son Steve Mueller as he is available almost anytime to discuss these alternative ideas with you. His phone number is 414 687 7300.

I look forward to hearing from you before any final decisions are made regarding the Busse Rd bridge replacement and my property so we can discuss the above alternatives and any others that friends of the Pewaukee River may have.

Sincerely,



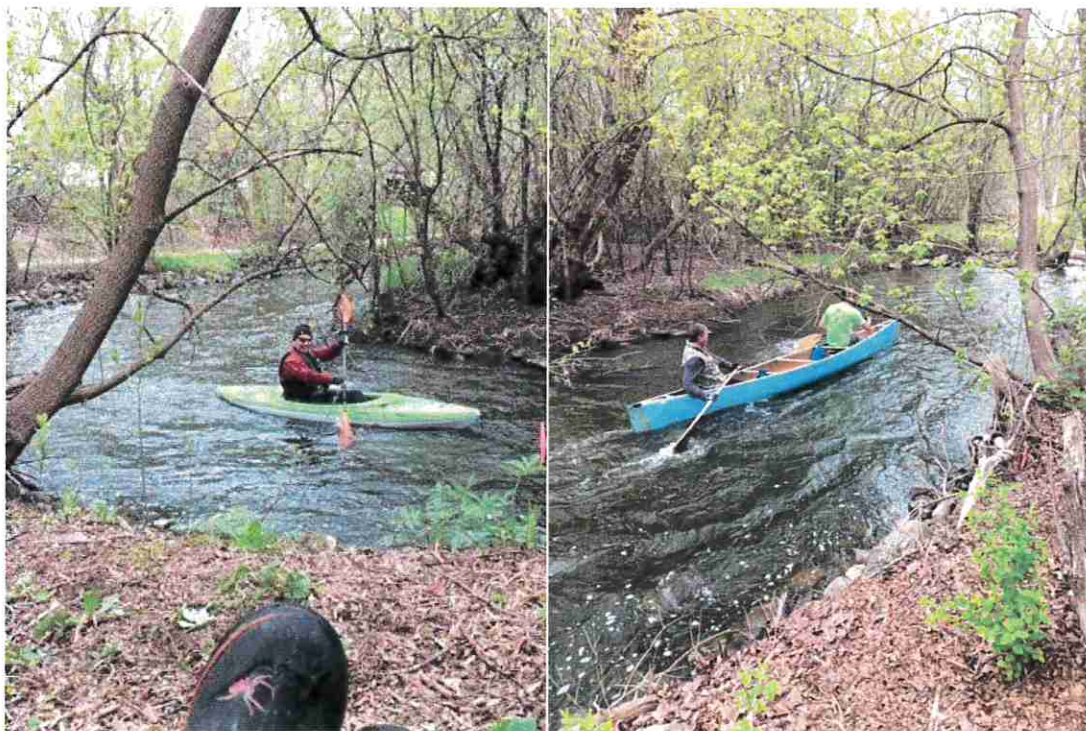
Regina C Jones  
W235 N1264 Busse Rd  
Waukesha, WI.  
53188

Enclosures- Pictures of "S" curve at Busse Rd  
LEE Bridge design alternatives  
Contech CON/SPAN Series options

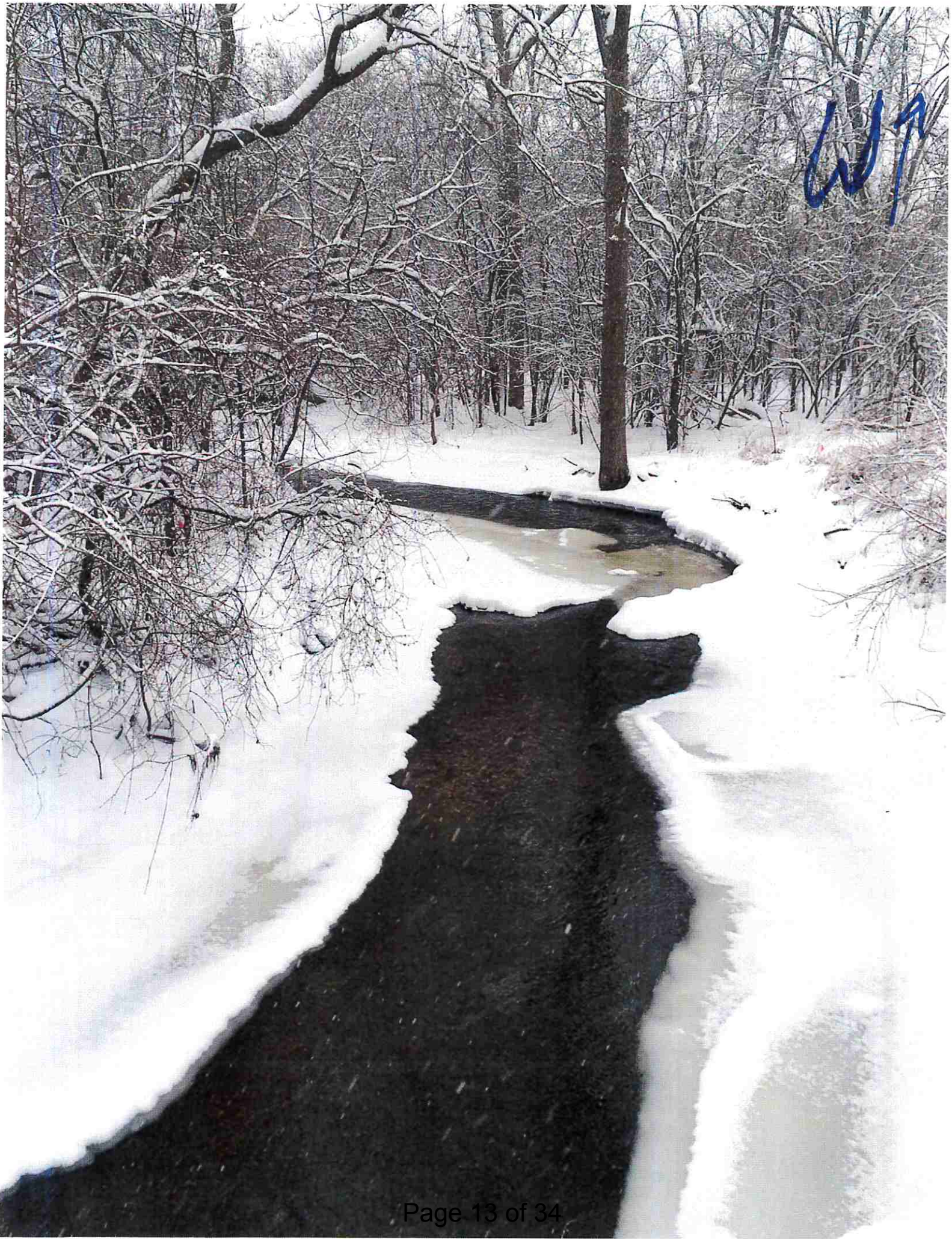
CC Steve Bierce  
Brian Dziwulski  
Jerry Wamser  
Nick Fuchs  
Nick Phalin -CPRP  
Steve Mueller



## Pewaukee River "S" Curve at Busse Rd









March 2nd, 2020

Dear members of the Pewaukee Common Council et al,

In late 2018 when my mother Jean Jones learned of the Busse Rd bridge replacement plan over the Pewaukee River and the related destruction of the surrounding trees, wetlands and S Curve in the River, she was upset to say the least. After a number of conversations, she decided to put her money where her heart was and donate her land "under" the road and bridge to the City to save the natural beauty around this very special river crossing.

This offer was made to save the city construction costs and land acquisition costs. In fact, she put this in writing on March 13th 2019 and sent it to the City Department of Public Works office. A copy of the letter is enclosed for your review. Furthermore, she remains committed to this land donation today and if more appropriate, to save the city appraisal costs, she will sell this nominal amount property to the City for whatever the lowest charge could be.

Suffices to say Jean Jones has totally enjoyed this river scene for the last 40 years. That said, she obviously wants to do everything in her power, at age 88  $\frac{3}{4}$  to preserve this scene for generations to come.

She thanks you for your consideration and asks that you please review the pictures and diagrams attached to experience "2nd hand" the City's spectacular asset of the Pewaukee River and its wetlands at the intersection of Busse Rd and the river.

Regards,



Steve Mueller

CC     Steve Bierce  
       Ray Grosch  
       Brandon Bergman  
       Jeff Kara  
       Colleen Brown  
       Jerry Wamser  
       Brian Dziwulski  
       Kelly Tarczewski  
       Nick Fuchs

Enclosures:     -3/13/19 Letter to Pewaukee DPW  
                      -Pictures of Pewaukee River "S" curve at Busse Rd.  
                      -Diagrams of Pewaukee River at Busse Rd.



Date: March 13th, 2019

Jeffery Weigel

Director of Public Works

City Of Pewaukee

W240 N3065 Pewaukee Rd

Pewaukee, Wi.

53072



Dear Mr. Weigel,

I wanted to share with the Pewaukee Community my love for the Pewaukee River and the land that I have lived on since 1978. Although the River has sometimes challenged us and our homestead, it is an extraordinary asset to everyone who lives near it or gets to enjoy it. The way the River twists and turns just before the Busse Road bridge is nothing short of spectacular. The beautiful natural "S" curve prior to meeting the existing bridge is immediately before a stand of raspberry bushes that I have picked for the past 40 years! (Picture attached)

It is my understanding, based upon the attached civil engineer's proposed bridge replacement design, that the new all bridge would be positioned to the west of the existing quaint culvert bridge. Not only will this proposed design remove the beauty of the "S" curve, the raspberry bushes, and mature walnut trees, but it will require that the foundation of the old bridge, and as I understand it, approximately 100 feet before and after the bridge be removed. The proposed plan will also require the back filling of approximately 9,000-13,000 square feet of surrounding wetlands and the acquisition of some private property. In addition to these requirements, the utilities that currently run under the road and bridge, must be addressed, because according to the attached plan they actually run across part of my property.

To prevent the destruction of this natural Pewaukee asset and reduce excess expenses, I would like to suggest that serious consideration be given to the following alternatives:

1. Donation of my property that is currently surveyed as part of the road and bridge so that the existing bridge could be replaced with no cost or expense-
  - a. for building new approaches to the proposed bridge.
  - b. for the permanent back filling of the wetlands (and associated destruction of the areas natural beauty).
  - c. for moving of existing utilities.
- 2A. In an effort to utilize the extensive existing bridge approach from the north and south, I would offer my land to the east of the existing bridge as a temporary access point to my property. This temporary access would be a lower cost alternative for the city vs. the associated expenses with 1a, 1b, and 1c. I would grant this access for as long as it takes to replace the existing bridge. This concept would allow the City to maximize the utilization of the existing approaches and as much of the existing structure as possible.
- 2B. As an alternative to 2A above, a civil engineering friend has suggested that it maybe possible to replace the bridge with a "Contech Bridge and Structures"\* alternative. This alternative would also utilize the the current approaches and offers the city the possibility to replace one direction of the bridge at a time without the need to disrupt the surrounding area at all or the expense of building a temporary access around the existing bridge

\* <https://www.conteches.com/bridges-and-structures>



These alternative offers would:

1. Preserve the beauty of the River's natural path and wetlands as well as the Pewaukee River's only "S" curve.
2. Minimize the cost of the replacement bridge and the related north and south approaches
3. Preserve the natural beauty of the Pewaukee River where Pewaukee residents fish and walk with their children and grandchildren.

In my absence please speak directly to my son Steve Mueller as he is available almost anytime to discuss these alternative ideas with you. His phone number is 414 687 7300.

I look forward to hearing from you before any final decisions are made regarding the Busse Rd bridge replacement and my property so we can discuss the above alternatives and any others that friends of the Pewaukee river may have.

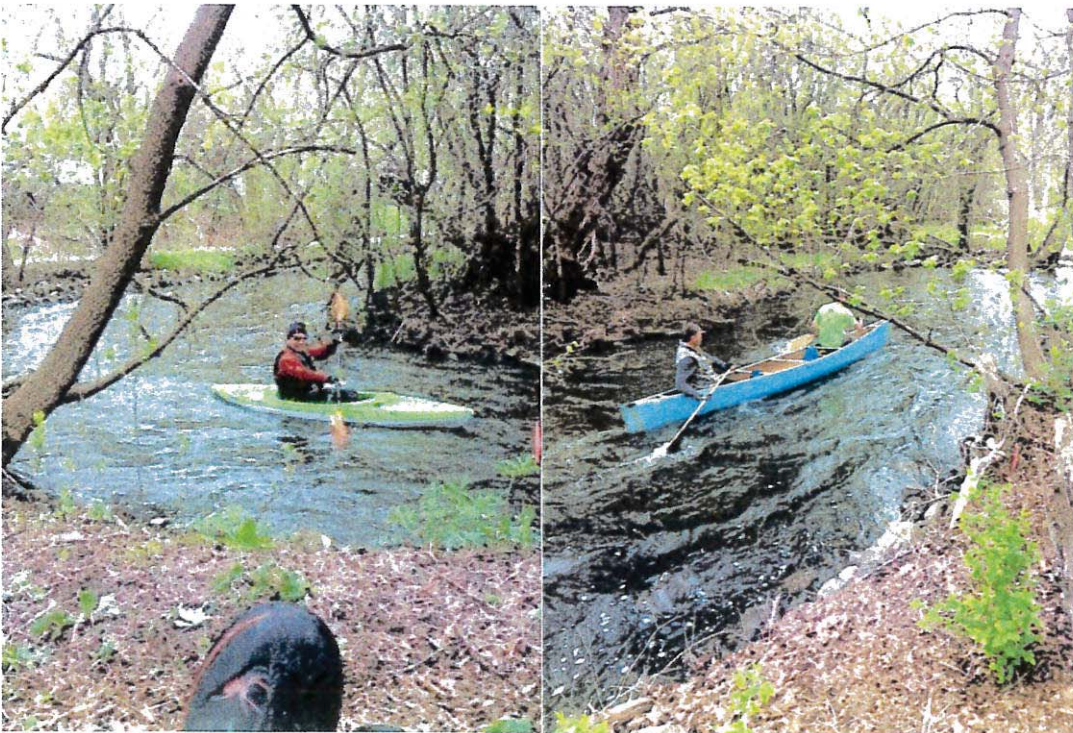
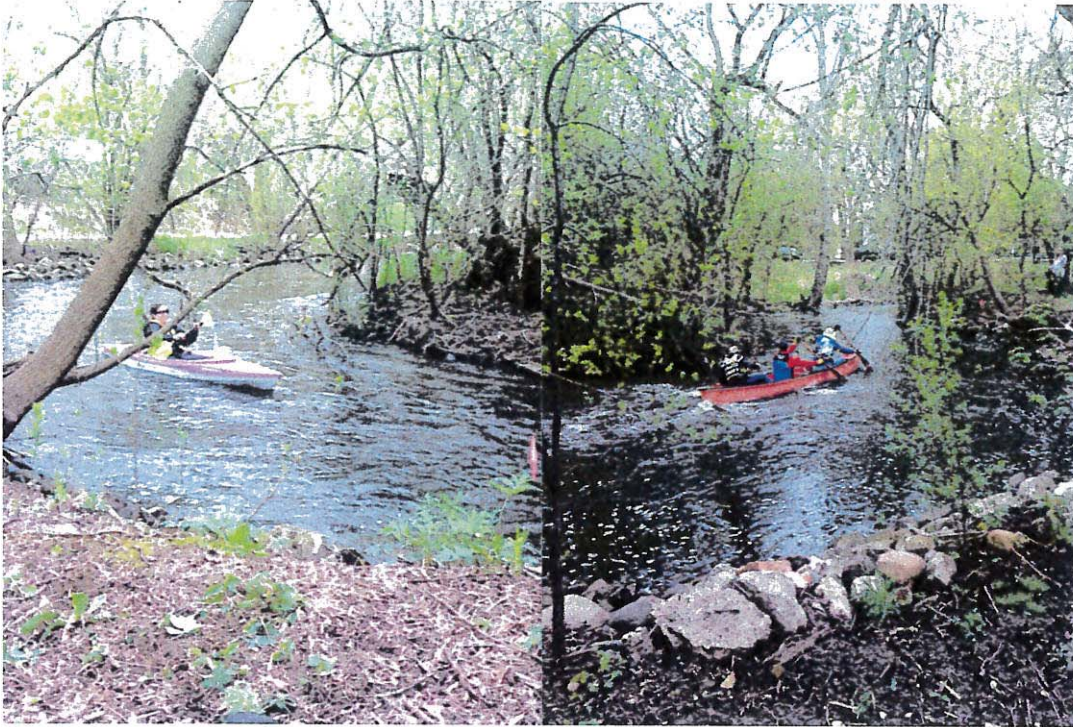
Sincerely,

Regina C Jones  
W235 N1264 Busse Rd  
Waukesha, Wi.  
53188

cc Steve Bierce  
Nick Fuchs  
Kelly Woldanski  
Steve Mueller  
Sheri Enters



## Pewaukee River "S" Curve at Busse Rd

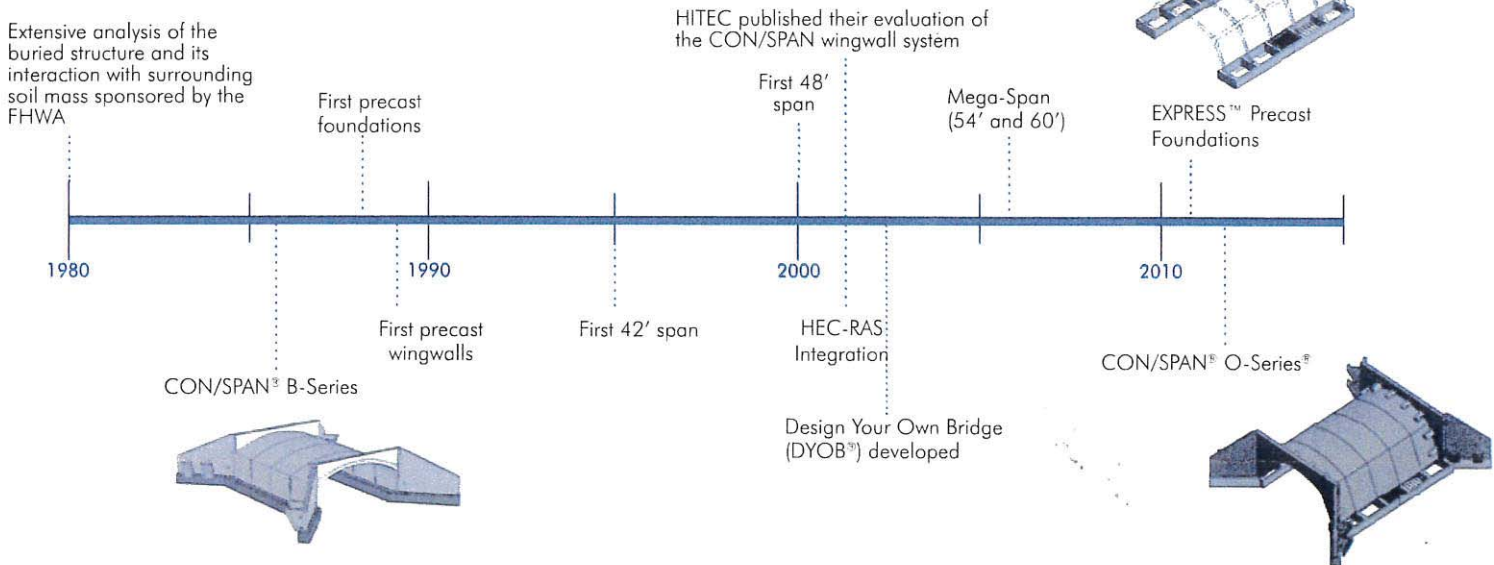




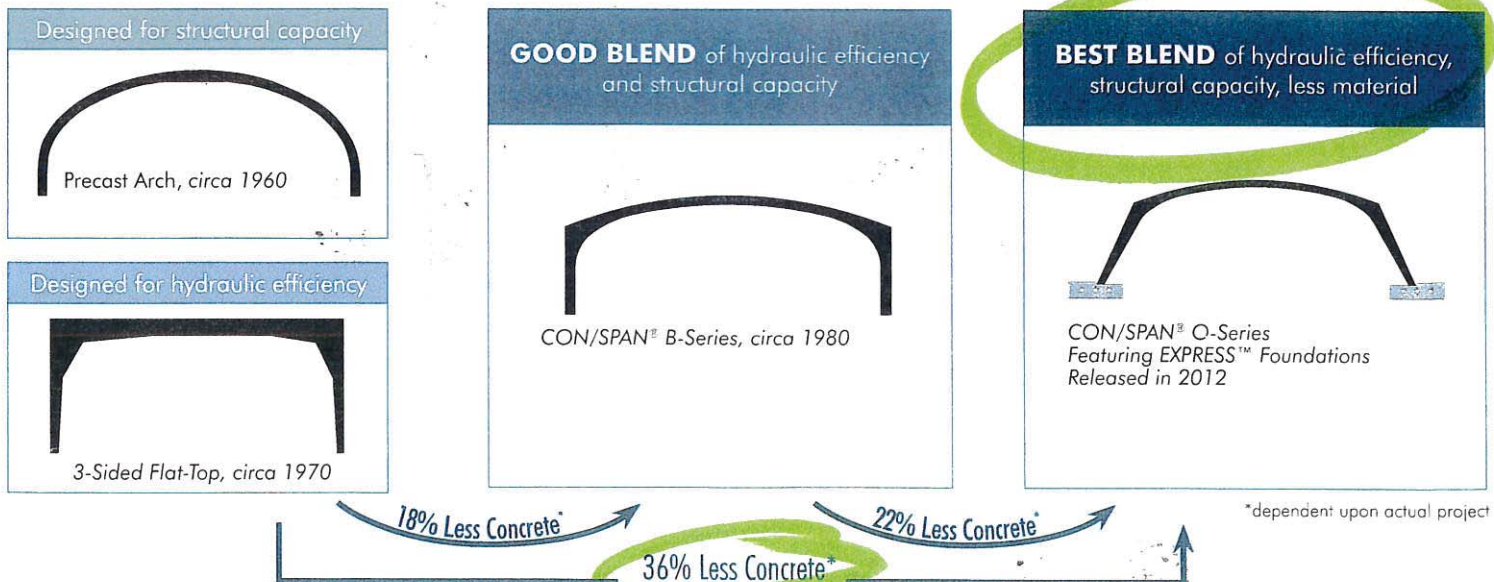


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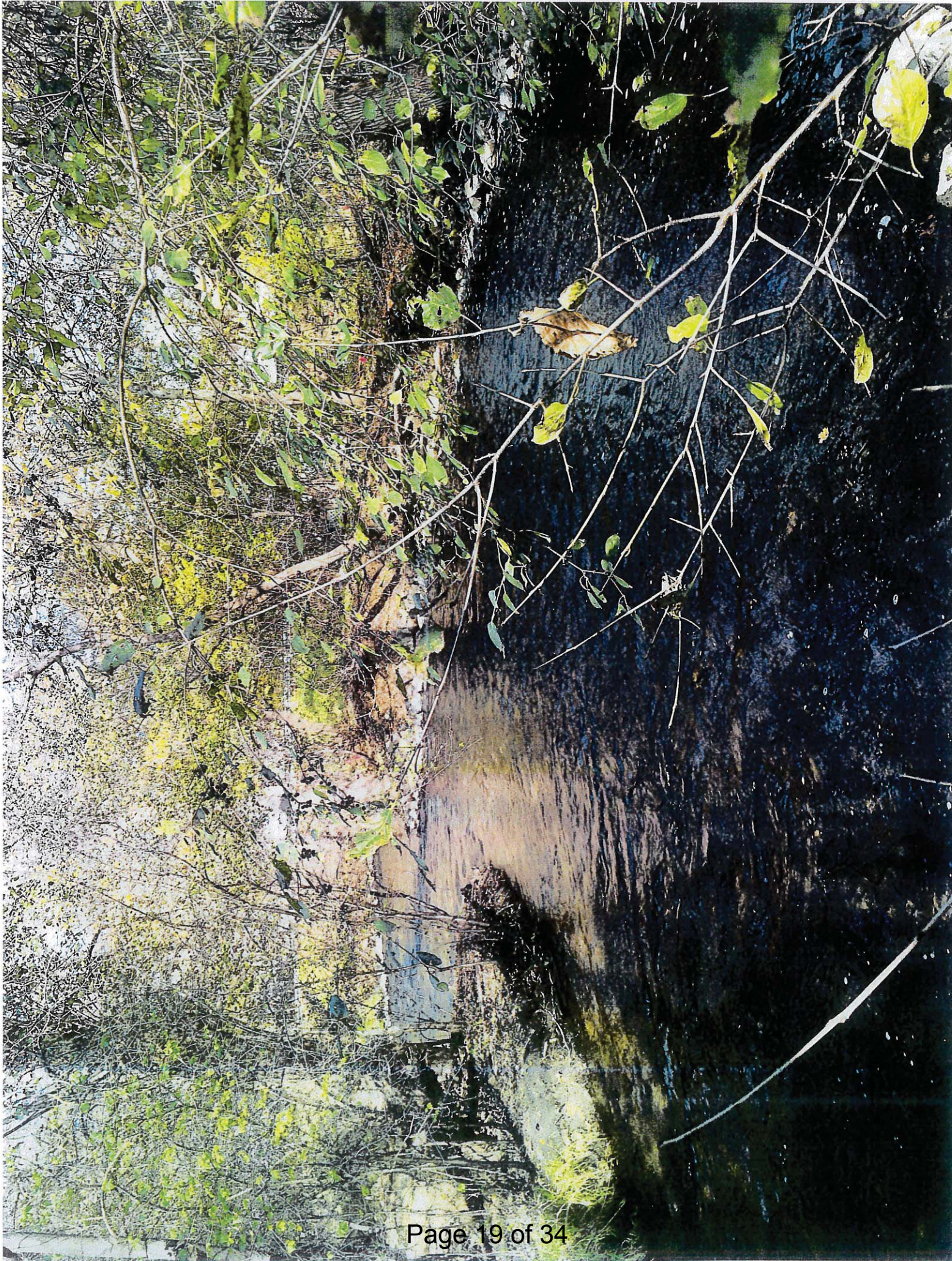
## A Legacy of Innovative Technologies...



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**Subject:** Pewaukee River "S" Curve at Busse Rd. Bridge





March 6<sup>th</sup>, 2020

Dear members of the Pewaukee Common Council et al,

This letter is in regards to the replacement of the Busse Rd Bridge over the Pewaukee River.

For those of you who don't know me, I am Jean Jones' son Steve. Jean Jones owns the property at W 235 N 1264 Busse Rd, immediately North and East of the Busse Rd Bridge.

She has asked me to represent her at Mondays' 3/16/20 Common Council meeting since she is out of town. Simply stated my mother does not want to see the picturesque "S" curve at Busse Rd and the River, the nearby 100-year-old trees or the surrounding beauty dismantled by engineers whose task is to just replace a decaying old "bridge".

If you have NOT visited this beautiful river crossing on a spring morning, or on a summer noontime walk, during a sunset or after a fresh snowfall then you have missed seeing a spectacular City asset. To prove the point ask anyone who has canoed or kayaked this stretch of the river and they will immediately share that it is truly a very special place in the river. Please do not let this marvelous piece of nature be lost forever due to a short-sighted bridge replacement.

**Bridge replacement facts:**

- The City's engineers are really only considering "2" replacement bridge options (please see attachments #1 & #2),
- The two options drastically change the beauty of the area,
- Both options require the removal of the 100+ year old trees along Busse Rd.,
- The tree removal cost estimate is \$40,000-\$50,000,
- Both options require the unnecessary acquisition of property,
- Replacement options #1 & #2 are estimated to cost approximately \$500,000 – \$600,000,
- Option #1 moving the Bridge to the West will destroy the most beautiful "S" curve along the entire Pewaukee River.

***-THERE ARE OTHER OPTIONS !***



Jean Jones, the neighboring residents and property owners respectfully request that you ask the Engineers to give serious consideration to ideas #3 & #4 (attached). These are ideas that need to be seriously evaluated beyond options #1 & #2 that heretofore have been the only options given serious consideration by the engineers as evidenced by the design time invested in them.

That said it is fear of the residents that without your direct engagement the engineers will just replace an old limestone culvert bridge which will diminish the River's beauty and this magnificent city asset forever!

Please request the engineers evaluate all of the options before it is too late for cost effective evaluation!

Sincerely,



Steve Mueller  
414 687 7300

CC Steve Bierce  
Ray Grosch  
Brandon Bergman  
Jeff Kara  
Colleen Brown  
Jerry Wamser  
Brian Dziwulski  
Kelly Tarczewski  
Nick Fuchs

Enclosures:

Engineer's Option #1- Replace Bridge to the West.

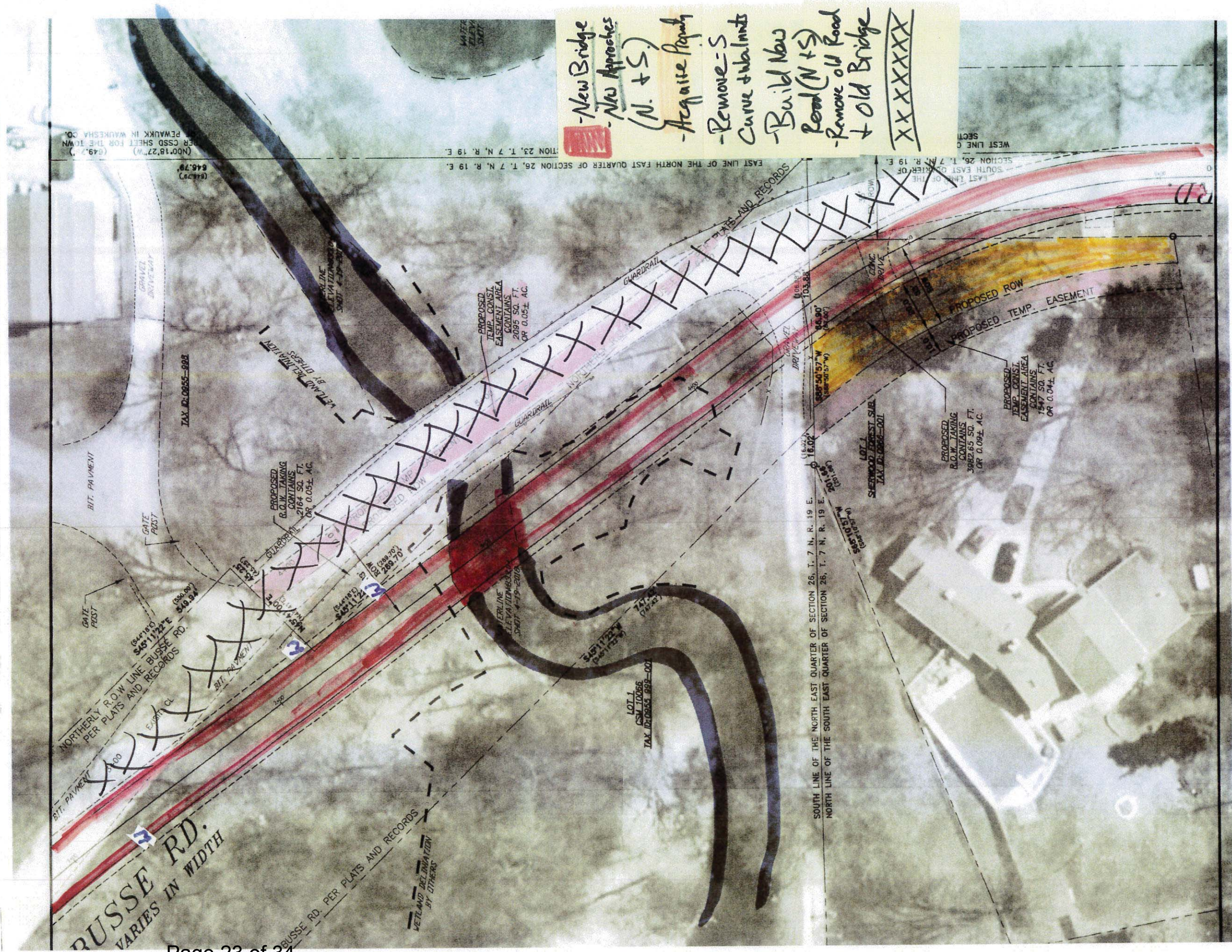
Engineer's Option #2- Replace bridge in place w/ Temp bypass at **HIGH Grade** next to Bridge

**"IDEA"** Option #3- Replace bridge in place w/ Temp bypass at a **LOW Grade** crossing where fewer if any mature trees must be removed.

**"IDEA"** Option #4- Replace bridge in place ONE direction at a time a "Contech" Solution



井









#3





**LOT 1**  
**SHERWOOD FOREST SUB.**  
**TAX ID: 0955-998**

**PROPOSED R.O.W. TAKING CONTAINS 11,924.64 SQ. FT. OR 0.27± AC.**

**WATERLINE ELEVATION 833.0± SHOT 4-19-2016**

**CENTERLINE OF BY-PASS**

**GRAVEL DRIVEWAY**

**CONC. DRIVE**

**SOUTH LINE OF THE NORTH EAST QUARTER OF SECTION 26, T. 7 N., R. 19 E.**  
**NORTH LINE OF THE SOUTH EAST QUARTER OF SECTION 28, T. 7 N., R. 19 E.**  
**EAST LINE OF THE NORTH WEST QUARTER OF SECTION 23, T. 7 N., R. 19 E.**  
**WEST LINE OF THE NORTH WEST QUARTER OF SECTION 23, T. 7 N., R. 19 E.**  
**SOUTH LINE OF THE NORTH WEST QUARTER OF SECTION 26, T. 7 N., R. 19 E.**  
**NORTH LINE OF THE SOUTH WEST QUARTER OF SECTION 28, T. 7 N., R. 19 E.**

**TAX ID: 0955-998**

**Replace  
in place  
1 Direction  
at a Time.**

Page 26 of 34



Dear Pewaukee City Council Members,

July 29, 2020

Regina Jones and I have been suggesting that the City's consulting engineer seriously consider replacing the Busse Rd. Bridge exactly where it is today and do so by utilizing a temporary crossing of the Pewaukee River to the East of proposed consulting engineers Alt #2. This would provide a number of significant advantages over the proposed Alt #1 (which is currently suggested to be the least costly option at \$487K); and also be less expensive than improvements identified in the consultant engineers Alt #2.

Furthermore, based on my consultations, I believe Alt #1 will have additional costs beyond the suggested \$487K.

**Alternate designs – see attached:**

Alternate #3 is designed for a Standard Pumper Fire Truck with a 36.7 Steering angle

Alternate #4 is designed for a Standard Ladder Fire Truck with a 45.5 Steering angle

**The advantages to a temporary crossing (Alt #3 or #4) to the East include:**

- \* Significantly less environmental impact
- \* Significantly less destruction to the Natural beauty of the River and surrounding area.
- \* No permanent fill in the wetland to the West which does not appear to be in Alt #1
- cost estimate numbers
  - adds \$40K- \$50K to the Alt #1 \$487k estimate
- \* No over excavation quantity or backfill material, that will be needed to achieve proper roadway bedding through the wetland, has been included in the Alt #1 cost estimate
  - adds \$15K-\$20K to the Alt #1 \$487k estimate
- \* Significant less tree removal and grubbing vs. Alt #1
  - Alt #1 estimate is \$50K in the \$487k estimate
- \* Significantly less asphalt removal than in Alt #1
- \* Significantly less NEW asphalt required than in Alt #1
- \* No need for land acquisition:
  - No need for multiple appraisals
  - No need to exercise eminent domain
  - No need to add City attorney's fees to gain land required

**Placing the temporary crossing (Alt #3 or #4) to the East of Alt #2** is appropriate and more cost effective for the following reasons:

- \* Only one 16' lane aggregate access drive and crossing would be required due to the greatly reduced winter traffic to the Jones property. A 20' width would be provided at the crossing itself.



- \* The culverts used for the temporary crossing could be salvaged upon project completion. The ability to re-use these culverts on future projects provides material value to the City.
- \* Less excavation and fill is needed for the temporary crossing because the crossing elevation is lower
- \* The design supports the City's full size Fire Apparatus as may be needed.
- \* The temporary crossing would be significantly less expensive vs the temporary bridge suggested in Alt #2.

**Regina Jones plans to donate her land that the road and bridge are currently built on.**

If Alt #3 or #4 are incorporated Jones has no intentions of raising any issues related to inaccurate historic property representations

It is our conclusion that maintaining the location of the existing street and bridge will significantly reduce the amount of street reconstruction that is required. Further reductions in overall cost can be realized by providing a one lane temporary crossing to the East of the existing bridge and specifically Alt #2. As such, the comparison of construction costs of Alt #3 or Alt #4 vs. the overall "modified" costs for Alt #1 will save the City money.

Alt #3 or #4 will also have significantly less environmental impact, supports what the neighbors prefer and will maintain the natural beauty of the area.

Respectfully,



**Steve Mueller**  
**414 687 7300**

**General notes to the Busse Rd Bridge replacement project:**

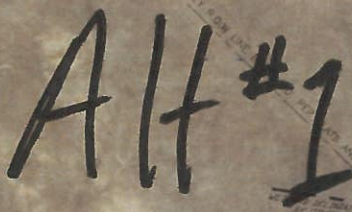
1. Property owners Regina Mueller Jones Trust and Steven J Mueller are willing to grant a construction permit or a nominal fee temporary limited easement for land needed to construct and remove the temporary aggregate access drive and crossing.
2. Property owners Regina Mueller Jones Trust and Steven J Mueller are willing to provide a permanent highway easement (or donate property) to encompass the land needed to maintain Busse road on the existing alignment.
3. Constructing a temporary aggregate access drive as shown, in Alt #3 and #4, with the 48-inch corrugated steel culverts and temporary concrete headwalls is likely to cost



\$100,000- \$150,000 less than the temporary structure estimated by the consulting engineer

4. Additional cost savings will be realized by Alt #3 & #4, by the reduction of grading, pavement removal, tree clearing and grubbing, importing fill and new asphalt that is required compared to the two alternatives currently being considered.
5. Keeping the new Bridge on the existing street alignment and providing a lower temporary access drive crossing as shown in Alt #3 & #4 minimizes the impacts to the surrounding natural features and environment







**BUSSE RD**

**PEWAUKEE, WI**

**IMEG NO. 18002280.00**

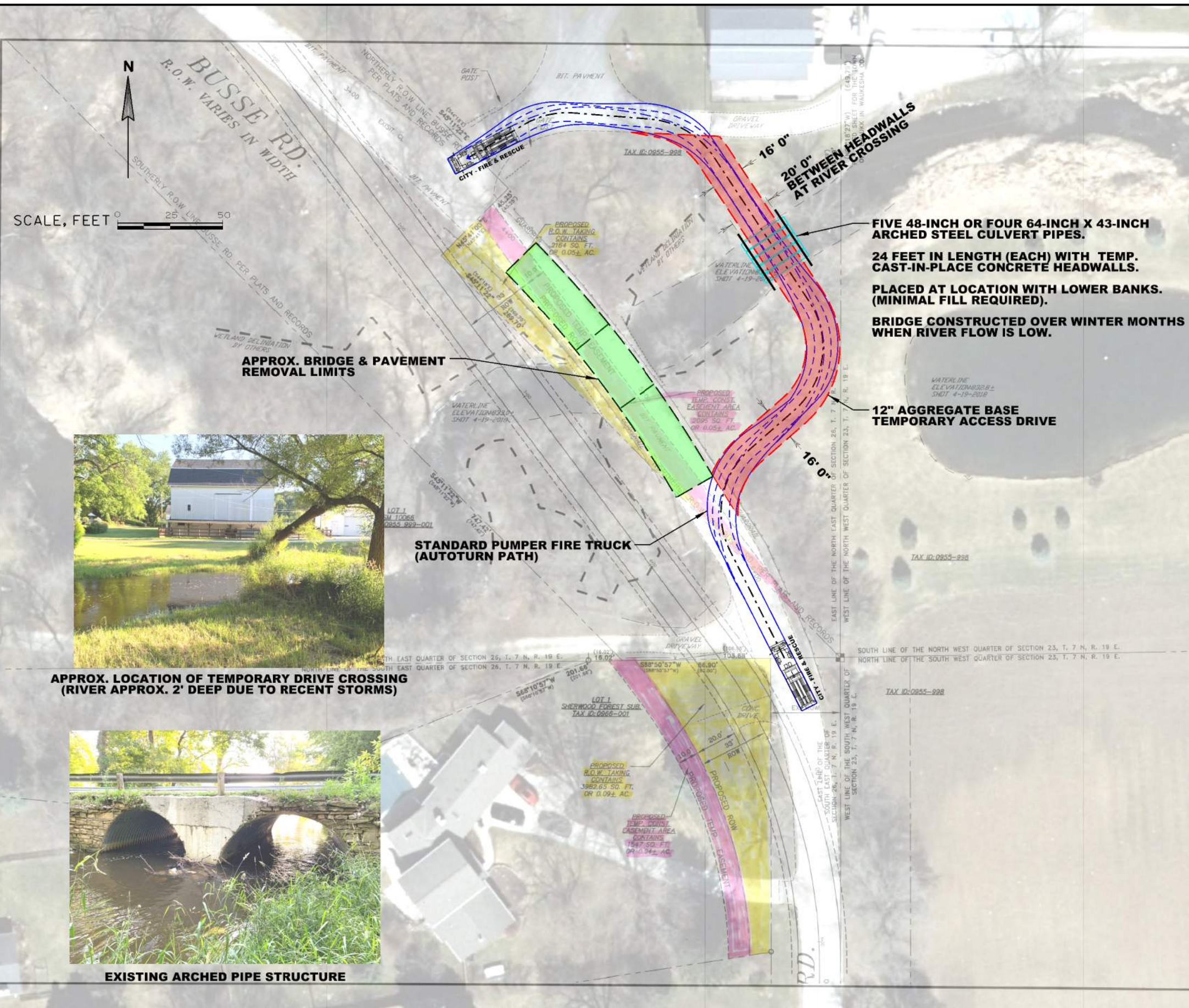
**ALTERNATE 1 - WEST REALIGNMENT**

|              | ITEM DESCRIPTION                     | UNIT             | TOTAL<br>QUANTITY | UNIT PRICE   | TOTAL COST          |
|--------------|--------------------------------------|------------------|-------------------|--------------|---------------------|
| 1            | PAVEMENT REMOVAL                     | SQ YD            | 9,000             | \$12.00      | \$108,000.00        |
| 2            | GUARDRAIL REMOVAL                    | L.F.             | 360               | \$10.00      | \$3,600.00          |
| 3            | EARTH EXCAVATION                     | CU YD            | 700               | \$35.00      | \$24,500.00         |
| 4            | AGGREGATE BASE COURSE, TYPE B 10"    | TON              | 560               | \$30.00      | \$16,800.00         |
| 5            | HOT-MIX ASPHALT SURFACE COURSE, 1.5" | TON              | 85                | \$95.00      | \$8,075.00          |
| 6            | HOT-MIX ASPHALT BINDER COURSE, 3.5"  | TON              | 210               | \$95.00      | \$19,950.00         |
| 7            | BITUMINOUS MATERIALS (TACK COAT)     | LBS              | 230               | \$1.00       | \$230.00            |
| 8            | GUARDRAIL                            | L.F.             | 200               | \$23.00      | \$4,600.00          |
| 9            | RIPRAP HEAVY                         | CU YD            | 400               | \$60.00      | \$24,000.00         |
| 10           | TREE REMOVAL (6 TO 15 IN DIAMETER)   | UNIT<br>DIAMETER | 217               | \$100.00     | \$21,700.00         |
| 11           | TREE REMOVAL (OVER 15 IN DIAMETER)   | UNIT<br>DIAMETER | 294               | \$100.00     | \$29,400.00         |
| 12           | CLEARING AND GRUBBING                | SQ YD            | 1,750             | \$4.00       | \$7,000.00          |
| 13           | RIGHT-OF-WAY ACQUISITION             | AC               | 0.06              |              |                     |
| 14           | TEMPORARY CONSTRUCTION EASEMENT      | AC               |                   |              |                     |
| 15           | BRIDGE                               | L.S.             | 1                 | \$220,000.00 | \$220,000.00        |
| <b>TOTAL</b> |                                      |                  |                   |              | <b>\$487,855.00</b> |















**CITY OF PEWAUKEE  
COMMON COUNCIL AGENDA ITEM 9.**

**DATE:** August 3, 2020

**DEPARTMENT:** PW - Water/Sewer

**PROVIDED BY:** Magdelene Wagner

***SUBJECT:***

Discussion and Possible Action to Extend Municipal Sanitary Sewer to N28 W24376 Watertown Road (PWC 0921-994) and Surrounding Properties [Wagner / Mueller]

***BACKGROUND:***

Since the previous home at N28W24376 Watertown Road (see location map) burned down several years ago, the Engineering Department has answered numerous inquiries about municipal sewer service to the parcel. The answer is not necessarily a simple one. There are 3 lots on the north side of Watertown Road which currently do not have access to municipal sewer. In order to serve this parcel (and the other two) with sewer service, the existing sanitary sewer must be extended from one of two locations - Creekside Drive or Single Tree Drive. If we are servicing this middle lot and extending the municipal sewer, it makes sense to extend it to all three of the parcels currently without service. We have not contacted either parcel on either side of the parcel requesting sewer service nor have they contacted us. Let's discuss each of these connection points in relation to the lot in question.

Creekside Drive:

The existing sanitary sewer is located outside the existing pavement on the south side of Watertown Road and the West side of Creekside Drive. It's invert elevation is 839.83. The lot requesting service is 370 feet from this manhole on the north side of Watertown Road. To serve this parcel, we will need to extend the sewer on the south (or north) side of Watertown Road and extend a lateral to the parcel for connection across Watertown Road. Extending service from this connection point would likely allow gravity basement service for each of the lots with the assumption the first floor elevations are between 855 and 859.

Single Tree Drive:

The existing sanitary sewer is located outside the existing pavement on the north side of Watertown Road and east of the existing drive for Sanborne Tube. It's invert elevation is 851.23. The lot in question is 400 feet from this manhole on the north side of Watertown Road. To serve this parcel, we will need to extend the sewer on the north side of Watertown Road and extend a lateral to the parcel for connection. Extending service from this connection point would not allow basement gravity service for each of the lots without private mechanical means (pumping) assuming the first floor elevations are between 855 and 859.

However, construction along this corridor has its challenges. Groundwater is very high in this area. Previous projects indicate the groundwater is 4-6 feet below the surface ground elevation and it flows like an underground river. This translates to a large dewatering operation being required for the construction of the project. This is also within Watertown Road's right of way which is a Waukesha County right of way. We will need permission from the County to install the extension within the right of way and slurry backfill will likely be required. If we need to cross Watertown Road (coming from Creekside Drive), we will be crossing 2 shallow and very large forcemains (20" & 30") servicing the Village's large lift station to the west. All these challenges increase the cost of this potential sanitary sewer extension.



In the past, the City has required 2/3's of the properties in an area to request sanitary sewer before it is considered or the City brings it up prior to a road reconstruction project. We have 1 out of 3 properties requesting the service and Waukesha County controls the road improvements on Watertown Road (they have no plans for a project along this corridor to my knowledge). In other words, the City was not planning a sewer extension in this area in the near future.

This item is being brought forward to the Common Council at the request of the property owner requesting service (see Schulz letter). The owner's would really like to have municipal sewer rather than a private system on the site.

It should be noted parcels to the west of Sanborne Tube on the North side of Watertown Road are Village of Pewaukee parcels. Parcels on the south side of Watertown Road are City of Pewaukee parcels which will need service at a future date.

It should also be noted that municipal water service is already existing along this corridor.

### ***FINANCIAL IMPACT:***

A very rough estimate of the project extending from Creekside Drive is \$175,000 to \$200,000 for this project. A very rough estimate of the project extending from Single Tree Drive is \$125,000 to \$150,000 for this project. We would include this in the 2021 budget as a project and ultimately the cost of the project would be assessed back to the property owners benefiting from the project.

### ***RECOMMENDED MOTION:***

If desired, direct Staff to budget a design and construction for municipal sanitary sewer extension project in 2021 for the three parcels on Watertown Road including the assessments associated with the project.

### **ATTACHMENTS:**

Description

project location

Schulz Request







Dear Members of the Pewaukee Common Council,

May I first thank you for taking the time to hear our request regarding N28 W24376, Watertown Road. My family feels very blessed for living and serving in a community whose government takes the time to listen to their constituents. So our sincerest thank you in that regard first and foremost.

Last year, my family purchased a vacant lot on Watertown Road with hopes to move while remaining in the Pewaukee school district for our special needs son. This lot used to feature a lovely home, but that home was lost to a fire years ago and was subsequently razed to the ground. In doing so, it severely crippled any options for a septic system to be used on that lot. We want nothing more than to build a lovely house on what is currently an eye sore of a lot, but without an adequate sewer option, it makes the feasibility of a long term home there difficult to envision.

We humbly request your consideration for running a sewer lateral to our lot at N28 W24376, Watertown Road. In doing so, allowing us to move forward with plans to build our dream future/forever home here in Pewaukee. A home that should greatly increase tax revenues as well as ensure ongoing sanitation service fees are paid to our city in perpetuity. We only ask at the very least the service be extended to our lot and would gladly contribute up to \$60,000 toward that effort.

Thank you again for your consideration and service to our community.

Sincerely,

The Schulz Family (Thomas, Amy, Aaron, and Logan)

RECEIVED

JUL 11 2020

Initial: \_\_\_\_\_



**CITY OF PEWAUKEE  
COMMON COUNCIL AGENDA ITEM 10.**

**DATE:** August 3, 2020

**DEPARTMENT:** PW - Water/Sewer

**PROVIDED BY:** Magdelene Wagner/Jane Mueller

***SUBJECT:***

Discussion and Possible Action Regarding the Adoption of a New Water Rate in Accordance with the Public Service Commission (PSC) Approval [Wagner / Mueller]

***BACKGROUND:***

See attached memorandum.

***FINANCIAL IMPACT:***

***RECOMMENDED MOTION:***

**ATTACHMENTS:**

Description

Staff Report

Public Service Commission Order



To: Common Council

From: Jane E. Mueller, Utility Manager

Magdelene Wagner, Director of Public Works

Date: 7/29/20

Re: Public Service Commission – Final Decision City of Pewaukee Water Rate Increase

As you know, the Wisconsin Public Service Commission sets the operating rules and rates for Water Utilities throughout the State of Wisconsin. In June 2019, the Utility submitted a water rate case to the Commission for review and consideration for a rate increase. After many months of very thorough questioning and detailed responses, the City was issued a final decision on the rate making on July 20, 2020.

### **Rates**

The authorized rates in the decision will result in an estimated net operating income of approximately \$316,058 which provides a 4.9% return on the water utility net investment base of \$6,450,165.

|                                              | <b>New Rate</b> | <b>Previous Rate</b> |                               |
|----------------------------------------------|-----------------|----------------------|-------------------------------|
| <u>Public Fire Protection</u>                | \$0.05444       | \$0.04505            | per \$1,000 of assessed value |
| <u>Private Fire Protection</u>               | No change       |                      |                               |
| <u>General Service - Metered Per quarter</u> |                 |                      |                               |
| 5/8" & ¾" meter                              | No change       | \$25.20              |                               |
| 1" meter                                     | \$36.00         | \$34.50              |                               |
| 1 ¼" meter                                   | \$48.00         | \$45.00              |                               |
| 1 ½" meter                                   | \$60.00         | \$54.00              |                               |
| 2" meter                                     | \$84.00         | \$75.00              |                               |
| 3" meter                                     | \$147.00        | \$126.00             |                               |
| 4" meter                                     | \$216.00        | \$189.00             |                               |
| 6" meter                                     | \$360.00        | \$345.00             |                               |
| <u>Volume Charge</u>                         |                 |                      |                               |
|                                              | \$3.62          | \$2.83               | per 1,000 gallons used        |

### **Additional Public Service Commission Comments/Concerns**

Please see page 5, 6 & 7 of the Final Decision. The PSC has concerns over the funding of the Utility's long term debt. The Utility uses the collection of RCA's and special assessments to fund long term plant debt. The PSC is concerned that our debt of 82.25% debt ratio is too high to provide the degree of financial



integrity that is required over the long term. A good general municipal practice is roughly 50% equity and 50% debt. The Commission recommends that the debt ratio be reduced to reasonable levels as soon as practical.

The Public Service Commission is also concerned about the City practice of installing municipal water main and service without requiring payment or connection to the water system. Additionally, they question the City's practice of deferring the levying of special assessments on large undeveloped parcels of land.

As the 2019 annual PSC report was prepared, our new auditor decided to remove/reclassify a reporting entry of \$1,764,319 from the Special Assessment Receivable Account 124. This identifies the deferred Special Assessments for the Utility. The PSC disagrees with this blanket removal/reclassification even after discussions with our new auditor. As part of this PSC order to address their concern on this issue, the Utility is required verify that the uncollected balance of the deferral is correct. The corrected balance must be entered in account 124 and an amended 2019 PSC report must be filed within 90 days.

Recommended action:

Staff recommends the adoption of the new water utility rates established by the Wisconsin Public Service Commission to take effect for the 4<sup>th</sup> quarter 2020 billing cycle beginning on September 21, 2020.

Additionally, the Common Council will take into consideration the concerns regarding the policies and practices of the collection of special assessments and their deferrals. Staff will review the balance of the deferred special assessments and submit an amended 2019 PSC annual report reflecting the correct balance.



**PUBLIC SERVICE COMMISSION OF WISCONSIN**

Application of the City of Pewaukee, Waukesha County, Wisconsin,  
as a Water Public Utility, for Authority to Adjust Water Rates

4625-WR-103

**FINAL DECISION**

This is the Final Decision in the Class 1 proceeding conducted by the Public Service Commission (Commission) on the application of City of Pewaukee Water Utility (applicant) for approval to increase water rates. This application is APPROVED subject to conditions.

**Introduction**

The applicant applied to the Commission on June 18, 2019 for authority to increase water rates. Pursuant to due notice, the Commission held an audio hearing on June 23, 2020 before Administrative Law Judge Michael E. Newmark. The parties, for purposes of review under Wis. Stat. §§ 227.47 and 227.53, are listed in Appendix A. The applicant is the only party to this proceeding.

**Findings of Fact**

1. The applicant's presently authorized rates for water utility service will produce operating revenues of \$2,139,095 for the 2019 test year. These rates fall short of the test year revenue needed by \$419,485 and are unreasonable.

2. The estimated net investment rate base applicable to water utility operations for the 2019 test year is \$6,450,165.



3. The rate changes set forth for water service in Appendix C will permit the applicant to earn the necessary revenue requirement and are consistent with the cost of service and rate design.

4. It is reasonable to require the applicant to review all special assessments and file an amended 2019 PSC Annual Report that includes the correct balance for Account 124 no later than 90 days from the service date of this Final Decision.

5. It is reasonable to require the applicant to file a report of the cumulative status of Reserve Capacity Assessment (RCA) collections compared to construction costs expended. This report shall be submitted no later than the due date of the utility's annual financial report to the Commission.

### **Conclusions of Law**

1. The applicant is a municipal public utility as defined in Wis. Stat. § 196.01(5)(a).

2. The Commission has authority under Wis. Stat. §§ 196.02(1), 196.03(1) and (3), 196.19, 196.20, 196.22, 196.37(1), (2), and (3), and 196.395 to authorize the applicant to increase water utility rates and revise tariff provisions.

3. The Commission has authority under Wis. Stat. § 15.02(4) to delegate to the Administrator of the Division of Water Utility Regulation and Analysis, those functions vested by law as enumerated above. It has delegated the authority to the Administrator of the Division of Water Utility Regulation and Analysis.

### **Opinion**

#### **Net Investment Rate Base**

The estimated net investment rate base for the 2019 test year is as follows:



|                                                                         |                    |
|-------------------------------------------------------------------------|--------------------|
| Utility Financed Plant in Service                                       | \$10,302,829       |
| Less: Accumulated Provision for Depreciation                            | <u>\$3,243,924</u> |
| Net Plant in Service                                                    | \$7,058,905        |
| Plus: Materials and Supplies                                            | 8,330              |
| Less: Regulatory Liability for Pre-2003 Accumulated Depreciation - CIAC | <u>617,070</u>     |
| Net Investment Rate Base                                                | <u>\$6,450,165</u> |

### Comparative Income Statement

Commission staff submitted a revenue requirement for the test year as shown in Ex.-PSC- Revenue Requirement ([PSC REF#: 384596](#)). The estimated test year income statement showing the effect of the increase in revenue that will result from authorized rates is as follows:

|                        | <u>At Present Rates</u> | <u>Authorized Increase</u> | <u>After Rate Increase</u> |
|------------------------|-------------------------|----------------------------|----------------------------|
| Operating Revenues     | \$2,139,095             | \$419,485                  | \$2,558,580                |
| Operating Expenses:    |                         |                            |                            |
| Oper. & Maint. Exp.    | \$1,279,218             |                            | \$1,279,218                |
| Depreciation           | 328,616                 |                            | 328,616                    |
| Amortization           | 42,500                  |                            | 42,500                     |
| Taxes & Tax Equiv.     | <u>592,188</u>          |                            | <u>592,188</u>             |
| Total Oper. Expenses   | <u>\$2,242,522</u>      |                            | <u>\$2,242,522</u>         |
| Oper. Income (or Loss) | <u>(\$103,427)</u>      |                            | <u>\$316,058</u>           |
| Rate of Return         | NA                      |                            | 4.90%                      |

Commission staff computed the depreciation expense included in the revenue requirement for the 2019 test year using the depreciation rates shown in Appendix E. For



purposes of computing the depreciation expense on the average investment for each plant account, these depreciation rates are effective as of January 1, 2019.

### **Treatment Plant Addition**

In 2018, the applicant constructed a treatment plant facility at Well No. 1. In 2018 and 2019, the applicant incurred a total of approximately \$1,637,000 in project costs. The total project cost is approximately 18 percent higher than the cost approved by the Commission in the Final Decision in docket 4625-CW-118. The applicant stated the costs were higher than expected due primarily to the bids being higher than engineering estimates included in docket 4625-CW-118. The Commission considers the higher costs to be reasonable, and the project is included in net investment rate base for the 2019 test year.

### **Still River Well and Pumping Station Construction Project**

In 2013 and 2014, the applicant constructed the Still River Well and Pumping Station (Well No. 8) at a total cost of \$2,915,630. The project cost is approximately 79 percent higher than the \$1,630,000 cost approved by the Commission in the Final Decision in docket 4625-CW-115. The applicant filed information showing that both the final scope and final cost of the project components exceeded those approved by the Commission. Commission staff included the authorized amount of \$1,630,000 in its revenue requirement analysis in this rate case.

The Commission opened docket 4625-WI-100 to investigate the Still River Well and Pumping Station project and determine if the applicant will be able to recover the unauthorized project costs. At the public hearing in the present rate proceeding, Commission staff stated the Commission could consider issuing an Interim Order in the present rate case docket. An Interim Order would provide an opportunity to further adjust rates in a Final Decision in this docket, in



the event the Commission allows rate recovery of the costs under consideration in docket 4625-WI-100. However, the applicant stated at the hearing that it plans to file a future rate case application in 2021. The applicant further stated that, if the Commission allows recovery of the costs in 4625-WI-100, the applicant could wait to include those costs in its next rate application. Based on Commission staff's analysis of this issue and the statement made by representatives of the applicant at the public hearing, the Commission finds it reasonable to issue a Final Decision at this time and to address the recovery of cost overruns for the Still River Well and Pumping Station project in a later proceeding.

### **Capital Structure**

The applicant requested a return on net investment rate base of 15.30 percent. The benchmark rate of return is calculated weekly based on a three-month rolling average of municipal bond rates, with a floor determined annually. The benchmark rate of return at the time the revenue requirement was finalized for this case was 4.90 percent. The applicant's capital employed in providing public utility service that is associated with the net investment rate base is estimated to be 17.75 percent municipal equity and 82.25 percent long-term debt. Most of the applicant's investments in plant are funded over the long term by RCAs and special assessments. Utility plant that will be funded by RCAs and special assessments is not included in net investment rate base. This plant is being financed on an interim basis with debt which temporarily inflates this debt ratio. The composite cost of debt is 1.08 percent. A return on rate base of 4.90 percent will provide an adequate return on municipal earning equity and 5.52 times interest coverage. This return on rate base will provide the municipality with sufficient earnings on its investment. If the application collects special assessments and RCAs as estimated, the



debt service coverage ratio is estimated to be 1.25. If the applicant collects only half of the estimated special assessments and RCAs, the applicant will still be able to make all debt payments, however, the debt service coverage ratio will be significantly lower than 1.25. This return on rate base will also maintain confidence in the utility's financial integrity without resulting in rates to customers that are excessive.

The Commission cautions the applicant, however, that a 82.25 percent debt ratio is too high to provide the degree of financial integrity that is required over the long term and recommends that the debt ratio be reduced to reasonable levels as soon as practical. A reasonable municipal structure is generally considered to be roughly 50 percent equity and 50 percent debt.

The applicant's high level of debt is partially due to the applicant's practice of extending water mains but not collecting special assessment revenues from new customers in a timely manner. As of December 31, 2018, the applicant reported Special Assessments Receivable of \$2,043,017 in Account 124 (Other Investments). The City of Pewaukee (City) is deferring a large portion of the balance until a property owner decides to connect to the water system, sells the property, or subdivides the property. In addition, the City does not require connection to the municipal water system when main is installed in front of existing homes. Further, the City has delayed levying special assessments on some of the water main extensions because they pertain to large parcels that have not been split into residential units. Because the City has not levied these assessments, the applicant has not reported the related deferred assessments on its books. In 2019, the applicant made an adjusting entry to remove \$1,764,319 of Special Assessments Receivable from Account 124. This adjustment was not correct. Deferred special assessments



must be reported in Account 124 until they are collected. The Commission, therefore, finds it reasonable to require the applicant to review all outstanding special assessments, both deferred and not yet levied, to determine the correct balance for Account 124. The applicant shall then file an amended 2019 PSC Annual Report that reflects the correct balance for Account 124.

### **Cost of Service**

Commission staff submitted for the record an analysis of the cost of supplying water for general service and for public fire protection (PFP) service. Commission staff used the base-extra capacity cost allocation method for the analysis. Under this method, the operating expenses are allocated first to the service cost functional components of base, customer, extra-capacity maximum-day and extra capacity maximum-hour demand, and fire protection and then to each of the customer classes served. Summaries of these analyses are shown in Schedules 8 and 11 of Ex.-PSC-COSS and Rate Design ([PSC REF#: 385850](#)), Commission staff's proposal in the record in this proceeding. Appendix B shows customer class revenue requirements resulting from the cost analysis compared with revenues at authorized rates.

### **Rates**

Water service rates authorized in this decision will result in an estimated net operating income of approximately \$316,058 which provides a 4.90 percent return on the water utility net investment rate base of \$6,450,165. Commission staff provided the applicant with Commission staff's proposed rates for review prior to the hearing and the applicant had no objection to these rates.

As shown in attached Appendix B, the base-extra capacity cost allocation method results in a relatively wide range of increases in the charges to the various general service customer



classes to reflect the cost of providing service to such classes. The percentage rate increase to any individual customer will not necessarily equal the overall percentage increase to the associated customer class, but rather will depend on the specific water use of that customer.

The authorized rates as set forth in Appendix C are based on the cost of providing service to various customer classes or types of service. All customers will be required to pay an appropriate amount for the service provided.

Commission staff computed some typical water bills for single family residential, multifamily residential, commercial, industrial, and public authority customers using Schedule Mg-1 to compare present rates with the new rates. That comparison is set forth in Appendix D.

The overall increase in annual revenues is 20.60 percent and is comprised of a 20.53 percent increase in general service charges and a 20.83 percent increase in PFP charges. A typical residential customer's bill, not including PFP, will rise 17.06 percent. Rates have risen because of a 33.65 percent increase in gross plant investment and a 19.66 percent increase in operating expenses since the applicant's last conventional rate case in 2013. The typical bills calculated using the authorized rates are slightly below average when compared with those of similarly sized water utilities in the state.

The annual PFP charge will increase by 20.83 percent, compared to a 20.53 percent increase in general service charges. The larger increase in the PFP charge results from a greater proportion of the annual operating costs being allocated to fire protection compared to what was allocated at the time of the applicant's last rate proceeding, based on current ratios of maximum general service demand to available system fire protection capacity. The larger increase in the PFP charge is reasonable, in that it reflects the cost of providing service appropriately.



The authorized general service rates provide a greater percentage increase to large-volume users than for average residential customers. This greater increase is caused by the relatively larger increases in the rates for the high-volume rate blocks based on the results of the base-extra capacity cost allocation as discussed above. The greater increase to large-volume users is reasonable, in that the authorized rates reflect the cost of providing service more appropriately than do the present rates.

The applicant has agreed to revise its tariff provisions (operating rules and main extension rules) to be consistent with those of other Wisconsin water utilities. The proposed rules were incorporated into the record by receipt of Ex.-PSC-COSS and Rate Design which incorporates the rules by reference. They are in accordance with Commission policy and the Wisconsin Administrative Code.

**Items from Previous Rate Case (Docket 4625-WR-102)**

In the Final Decision in the applicant's last rate case in docket 4625-WR-102 ([PSC REF#: 199410](#)), Order Point No. 2 stated the applicant shall file a report annually of the cumulative status of RCA collections compared to construction costs expended. A large gap still exists between the amount of construction completed and the collection of RCAs to fund this construction. In order to monitor the progress the applicant is making on closing the gap between spending and RCA collections, the Commission requires the applicant to continue to file reports annually showing cumulative RCA collections and cumulative spending on construction.

Order Point No. 3 from the Final Decision in the applicant's last rate case in docket 4625-WR-102 ([PSC REF#: 199410](#)) stated that the applicant shall amortize \$42,500 per year until the full amount of the deferred costs from docket 4625-CW-115 has been recovered. This expense



was included in the Commission staff revenue requirement for this case, and the Commission finds it reasonable that the applicant shall continue recording this expense.

### **Effective Date**

The test year commenced on January 1, 2019. Pursuant to Wis. Stat. § 196.19, the changes in rates and tariff provisions that are authorized in this Final Decision take effect no sooner than one day after the date of service, provided that these rates and tariff provisions are filed with the Commission and the applicant makes a copy of the new rates available to the public before this date by placing a copy of the new rates at locations where customer payments are accepted, on the applicant's website, or in a form and place that is otherwise readily accessible to the public.

### **Order**

1. This Final Decision takes effect one day after the date of service.
2. The authorized rate increases and tariff provisions shall take effect no sooner than one day after the day the applicant has: (a) filed these rates and tariff provisions with the Commission; and (b) made them available to the public at locations where customer payments are accepted, on the applicant's website, or in a form and place that is otherwise readily accessible to the public, pursuant to Wis. Stat. § 196.19 and Wis. Admin. Code § PSC 185.33(1)(f). If a copy of the new rates and tariff provisions is not made available to the public when they are filed with the Commission, the new rates and tariff provisions shall take effect one day after the day they are made available to the public.
3. The rates approved in this docket shall take effect no later than 90 days from the service date of this Final Decision or as directed by the Commission or Commission staff.



4. The applicant shall review all special assessments and file an amended 2019 PSC Annual Report that includes the correct balance for Account 124 no later than 90 days from the service date of this Final Decision.

5. Annually, the applicant shall file a report of the cumulative status of RCA collections compared to construction costs expended. This report shall be submitted no later than the due date of the utility's PSC Annual Report.

6. The applicant shall amortize \$42,500 per year until the full amount of the deferred costs from docket 4625-CW-115 has been recovered.

7. Jurisdiction is retained.

Dated at Madison, Wisconsin, July 20, 2020.

For the Commission:

A handwritten signature in black ink, appearing to read "Denise L. Schmidt". The signature is fluid and cursive, with the first name "Denise" and last name "Schmidt" clearly distinguishable.

Denise L. Schmidt  
Administrator  
Division of Water Utility Regulation and Analysis

DLS:ajh:kab:ggl DL:01749142

See attached Notice of Appeal Rights



PUBLIC SERVICE COMMISSION OF WISCONSIN  
4822 Madison Yards Way  
P.O. Box 7854  
Madison, Wisconsin 53707-7854

**NOTICE OF RIGHTS FOR REHEARING OR JUDICIAL REVIEW, THE  
TIMES ALLOWED FOR EACH, AND THE IDENTIFICATION OF THE  
PARTY TO BE NAMED AS RESPONDENT**

The following notice is served on you as part of the Commission's written decision. This general notice is for the purpose of ensuring compliance with Wis. Stat. § 227.48(2), and does not constitute a conclusion or admission that any particular party or person is necessarily aggrieved or that any particular decision or order is final or judicially reviewable.

*PETITION FOR REHEARING*

If this decision is an order following a contested case proceeding as defined in Wis. Stat. § 227.01(3), a person aggrieved by the decision has a right to petition the Commission for rehearing within 20 days of the date of service of this decision, as provided in Wis. Stat. § 227.49. The date of service is shown on the first page. If there is no date on the first page, the date of service is shown immediately above the signature line. The petition for rehearing must be filed with the Public Service Commission of Wisconsin and served on the parties. An appeal of this decision may also be taken directly to circuit court through the filing of a petition for judicial review. It is not necessary to first petition for rehearing.

*PETITION FOR JUDICIAL REVIEW*

A person aggrieved by this decision has a right to petition for judicial review as provided in Wis. Stat. § 227.53. In a contested case, the petition must be filed in circuit court and served upon the Public Service Commission of Wisconsin within 30 days of the date of service of this decision if there has been no petition for rehearing. If a timely petition for rehearing has been filed, the petition for judicial review must be filed within 30 days of the date of service of the order finally disposing of the petition for rehearing, or within 30 days after the final disposition of the petition for rehearing by operation of law pursuant to Wis. Stat. § 227.49(5), whichever is sooner. If an *untimely* petition for rehearing is filed, the 30-day period to petition for judicial review commences the date the Commission serves its original decision.<sup>1</sup> The Public Service Commission of Wisconsin must be named as respondent in the petition for judicial review.

If this decision is an order denying rehearing, a person aggrieved who wishes to appeal must seek judicial review rather than rehearing. A second petition for rehearing is not permitted.

Revised: March 27, 2013

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<sup>1</sup> See *Currier v. Wisconsin Dep't of Revenue*, 2006 WI App 12, 288 Wis. 2d 693, 709 N.W.2d 520.



**CONTACT LIST FOR SERVICE BY PARTIES**

**PUBLIC SERVICE COMMISSION OF WISCONSIN**

(Not a party but must be served per Wis. Stat. § 227.53)

MARK RUSZKIEWICZ; ALEX HANNA

4822 MADISON YARDS WAY

PO BOX 7854

MADISON, WI 53707

[MARK2.RUSZKIEWICZ@WISCONSIN.GOV](mailto:MARK2.RUSZKIEWICZ@WISCONSIN.GOV); [ALEX.HANNA@WISCONSIN.GOV](mailto:ALEX.HANNA@WISCONSIN.GOV)

**CITY OF PEWAUKEE WATER UTILITY**

JANE MUELLER; MAGDELENE WAGNER

W240 N3065 PEWAUKEE RD

PEWAUKEE, WI 53072

[JEM@PEWAUKEE.WI.US](mailto:JEM@PEWAUKEE.WI.US); [WAGNER@PEWAUKEE.WI.US](mailto:WAGNER@PEWAUKEE.WI.US)



**City of Pewaukee Water Utility**  
**Comparison of Revenue**  
**at**  
**Present Rates, Cost of Service and Authorized Rates**

| <b>Customer Class</b>   | <b>Revenue at<br/>Present<br/>Rates</b> | <b>Cost of Service</b>      |                                                | <b>Authorized Rates</b> |                                                |                                           |
|-------------------------|-----------------------------------------|-----------------------------|------------------------------------------------|-------------------------|------------------------------------------------|-------------------------------------------|
|                         |                                         | <b>Revenue<br/>Required</b> | <b>Increase<br/>over<br/>Present<br/>Rates</b> | <b>Revenue</b>          | <b>Increase<br/>over<br/>Present<br/>Rates</b> | <b>Percent of<br/>Cost of<br/>Service</b> |
| Residential             | \$929,033                               | \$1,079,182                 | 16.16%                                         | \$1,089,040             | 17.22%                                         | 100.91%                                   |
| Multifamily Residential | \$162,704                               | \$218,868                   | 34.52%                                         | \$203,519               | 25.09%                                         | 92.99%                                    |
| Commercial              | \$399,967                               | \$501,680                   | 25.43%                                         | \$501,608               | 25.41%                                         | 99.99%                                    |
| Industrial              | \$95,456                                | \$114,030                   | 19.46%                                         | \$119,346               | 25.03%                                         | 104.66%                                   |
| Public Authority        | \$3,419                                 | \$3,421                     | 0.07%                                          | \$4,076                 | 19.21%                                         | 119.12%                                   |
| Public Fire Protection  | <u>\$445,822</u>                        | <u>\$538,705</u>            | 20.83%                                         | <u>\$538,705</u>        | 20.83%                                         | 100.00%                                   |
| <b>Total</b>            | <u>\$2,036,401</u>                      | <u>\$2,455,886</u>          | <u>20.60%</u>                                  | <u>\$2,456,294</u>      | <u>20.62%</u>                                  | <u>100.02%</u>                            |



**City of Pewaukee Water Utility**  
**Authorized Water Rates and Rules**



**City of Pewaukee Water Utility**

**Water Rate File Changes**

**New or Amended**

F-1  
Upf-1  
Mg-1  
NSM-1  
Am-1  
OC-1  
Mpa-1  
Ug-1  
Sg-1  
BW-1  
R-1  
Cz-1  
X-1  
X-2  
X-3



**City of Pewaukee Water Utility**

**Public Fire Protection Service**

Public fire protection service includes the use of hydrants for fire protection service only and such quantities of water as may be demanded for the purpose of extinguishing fires within the service area. This service shall also include water used for testing equipment and training personnel. For all other purposes, the metered or other rates set forth, or as may be filed with the Public Service Commission, shall apply.

Under Wis. Stat. § 196.03(3)(b), the municipality has chosen to have the utility bill the retail general service customers for public fire protection service. The municipality has also elected to make the charges in this schedule applicable to non-general service customer with private wells who own property that is located both within the municipal limits and in an area where the utility has an obligation to provide water for public fire protection.

**Public Fire Protection Service Charges:**

Quarterly: \$0.05444 per \$1,000 of assessed valuation

Annually: \$0.21774 per \$1,000 of assessed valuation

This rate is based on total assessed valuation of \$2,474,040,000 and a total annual public fire protection charge of \$538,705. The total assessed valuation included taxable parcels, tax exempt parcels, and non-general service customers with private wells.

Customers who are provided service under Schedules Mg-1, Ug-1, or Sg-1 shall also be subject to the charges in this schedule according to the size of their primary meter. Customers who are provided service under Schedule Am-1 are exempt from these charges for any additional meters.

Billing: Same as Schedule Mg-1.



**Public Service Commission of Wisconsin**

**City of Pewaukee Water Utility**

**Private Fire Protection Service - Unmetered**

This service shall consist of permanent or continuous unmetered connections to the main for the purpose of supplying water to private fire protection systems such as automatic sprinkler systems, standpipes, and private hydrants. This service shall also include reasonable quantities of water used for testing check valves and other backflow prevention devices.

**Quarterly Private Fire Protection Service Demand Charges:**

|                                 |    |        |
|---------------------------------|----|--------|
| 2 - inch or smaller connection: | \$ | 12.00  |
| 3 - inch connection:            | \$ | 22.50  |
| 4 - inch connection:            | \$ | 37.50  |
| 6 - inch connection:            | \$ | 75.00  |
| 8 - inch connection:            | \$ | 120.00 |
| 10 - inch connection:           | \$ | 180.00 |
| 12 - inch connection:           | \$ | 240.00 |
| 14 - inch connection:           | \$ | 300.00 |
| 16 - inch connection:           | \$ | 360.00 |

Billing: Same as Schedule Mg-1.



**RATE FILE**Sheet No. 1 of 1Schedule No. Mg-1Amendment No. 14**Public Service Commission of Wisconsin****City of Pewaukee Water Utility****General Service - Metered**

## Quarterly Service Charges:

|                     |          |                  |             |
|---------------------|----------|------------------|-------------|
| 5/8 - inch meter:   | \$ 25.20 | 3 - inch meter:  | \$ 147.00   |
| 3/4 - inch meter:   | \$ 25.20 | 4 - inch meter:  | \$ 216.00   |
| 1 - inch meter:     | \$ 36.00 | 6 - inch meter:  | \$ 360.00   |
| 1 1/4 - inch meter: | \$ 48.00 | 8 - inch meter:  | \$ 540.00   |
| 1 1/2 - inch meter: | \$ 60.00 | 10 - inch meter: | \$ 795.00   |
| 2 - inch meter:     | \$ 84.00 | 12 - inch meter: | \$ 1,050.00 |

## Plus Volume Charges:

All water used quarterly: \$3.62 per 1,000 gallons

**Billing:** Bills for water service are rendered quarterly and become due and payable upon issuance following the period for which service is rendered. A late payment charge of 1 percent per month will be added to bills not paid within 20 days of issuance. This late payment charge will be applied to the total unpaid balance for utility service, including unpaid late payment charges. The late payment charge is applicable to all customers. The utility customer may be given a written notice that the bill is overdue no sooner than 20 days after the bill is issued. Unless payment or satisfactory arrangement for payment is made within the next 10 days, service may be disconnected pursuant to Wis. Adm. Code ch. PSC 185.

**Combined Metering:** Volumetric meter readings will be combined for billing if the utility for its own convenience places more than one meter on a single water service lateral. Multiple meters placed for the purpose of identifying water not discharged into the sanitary sewer are not considered for utility convenience and shall not be combined for billing. This requirement does not preclude the utility from combining readings when metering configurations support such an approach. Meter readings from individually metered separate service laterals shall not be combined for billing purposes.

EFFECTIVE: =TBD=

PSCW AUTHORIZATION: 4625-WR-103



**Public Service Commission of Wisconsin****City of Pewaukee Water Utility****Non-Standard Meter Service**

The utility shall assess a charge of \$15.00 per quarter to a customer who is provided service under Schedule Mg-1 and who requests a non-standard meter. The utility may only charge a customer one NSM charge for customers with both water and electric services.

If a customer establishes service at a new location on which a standard meter is installed, and the customer requests non-standard meter service, the utility shall assess the customer a one-time charge, based on actual utility costs, for the installation of a non-standard meter.

If a customer requests initial service at a location where a non-standard meter is installed, the utility may not assess a charge for installing a standard meter. The utility may not charge an existing customer who chooses to convert from a non-standard meter to a standard meter.

Billing: Same as Schedule Mg-1.



## City of Pewaukee Water Utility

**Additional Meter Rental Charge**

Upon request, the utility shall furnish and install additional meters to:

- A. Water service customers for the purpose of measuring the volume of water used that is not discharged into the sanitary sewer system; and
- B. Sewerage service customers who are not customers of the water utility for the purpose of determining the volume of sewage that is discharged into the sanitary sewer system.

The utility shall charge a meter installation charge of \$30.00 and a quarterly rental fee for the use of this additional meter.

## Quarterly Additional Meter Rental Charges:

|                     |    |       |
|---------------------|----|-------|
| 5/8 - inch meter:   | \$ | 12.60 |
| 3/4 - inch meter:   | \$ | 12.60 |
| 1 - inch meter:     | \$ | 18.00 |
| 1 1/4 - inch meter: | \$ | 24.00 |
| 1 1/2 - inch meter: | \$ | 30.00 |
| 2 - inch meter:     | \$ | 42.00 |

This schedule applies only if the additional meter is installed on the same service lateral as the primary meter and either:

- A. The additional meter is 3/4-inch or smaller if the metering configuration is the Addition Method; or
- B. The additional meter is 2-inch or smaller for all other metering configurations.

If the additional meter is larger than 2-inch or larger than 3/4-inch and installed in the Addition Method, each meter shall be treated as a separate account and Schedule Mg-1 rates shall apply.

Billing: Same as Schedule Mg-1.



**Public Service Commission of Wisconsin**

**City of Pewaukee Water Utility**

|                      |
|----------------------|
| <b>Other Charges</b> |
|----------------------|

Payment Not Honored by Financial Institution Charge: The utility shall assess a \$29.00 charge when a payment rendered for utility service is not honored by the customer's financial institution. This charge may not be in addition to, but may be inclusive of, other such charges when the payment was for multiple services.

Billing: Same as Schedule Mg-1.



## RATE FILE

Sheet No. 1 of 1

Schedule No. Mpa-1

Amendment No. 14

## Public Service Commission of Wisconsin

### City of Pewaukee Water Utility

#### Public Service

##### Metered Service

Water used by the City of Pewaukee on an intermittent basis for flushing sewers, street washing, flooding skating rinks, drinking fountains, etc., shall be metered and billed according to the rates set forth in Schedule Mg-1.

##### Unmetered Service

Where it is impossible to meter the service, the utility shall estimate the volume of water used based on the pressure, size of opening, and the period of time the water is used. The estimated quantity shall be billed at the volumetric rates set forth in Schedule Mg-1, excluding any service charges.

Billing: Same as Schedule Mg-1.

EFFECTIVE: =TBD=

PSCW AUTHORIZATION: 4625-WR-103



**Public Service Commission of Wisconsin****City of Pewaukee Water Utility****General Water Service - Unmetered**

Service may be supplied temporarily on an unmetered basis where the utility cannot immediately install a water meter, including water used for construction. Unmetered service shall be billed the amount that would be charged to a metered residential customer using 14,000 gallons of water quarterly under Schedule Mg-1, including the service charge for a  $\frac{5}{8}$ -inch meter. If the utility determines that actual usage exceeds 14,000 gallons of water quarterly, an additional charge for the estimated excess usage shall be made according to the rates under Schedule Mg-1.

This schedule applies only to customers with a 1-inch or smaller service connection. For customers with a larger service connection, the utility shall install a temporary meter and charges shall be based on the rates set forth under Schedule Mg-1.

Billing: Same as Schedule Mg-1.



**Public Service Commission of Wisconsin****City of Pewaukee Water Utility****Seasonal Service**

Seasonal customers are general service customers who voluntarily request disconnection of water service and who resume service at the same location within 12 months of the disconnection, unless service has been provided to another customer at that location in the intervening period. The utility shall bill seasonal customers the applicable service charges under Schedule Mg-1 year-round, including the period of temporary disconnection.

Seasonal service shall include customers taking service under Schedule Mg-1, Schedule Ug-1, or Schedule Am-1.

Upon reconnection, the utility shall apply a charge under Schedule R-1 and require payment of any unpaid charges under this schedule.

Billing: Same as Schedule Mg-1, unless the utility and customer agree to an alternative payment schedule for the period of voluntary disconnection.



**Public Service Commission of Wisconsin****City of Pewaukee Water Utility****Bulk Water**

All bulk water supplied from the water system through hydrants or other connections shall be metered or estimated by the utility. Utility personnel or a party approved by the utility shall supervise the delivery of water.

Bulk water sales are:

- A. Water supplied by tank trucks or from hydrants for the purpose of extinguishing fires outside the utility's service area;
- B. Water supplied by tank trucks or from hydrants for purposes other than extinguishing fires, such as water used for irrigation or filling swimming pools; or,
- C. Water supplied from hydrants or other temporary connections for general service type applications, except that Schedule Ug-1 applies for water supplied for construction purposes.

A service charge of \$30.00 and a charge for the volume of water used shall be billed to the party using the water. The volumetric charge shall be calculated using the highest volumetric rate for residential customers under Schedule Mg-1. In addition, for meters that are assigned to bulk water customers for more than 7 days, the applicable service charge in Schedule Mg-1 will apply after the first 7 days.

The water utility may require a reasonable deposit for the temporary use of its equipment under this and other rate schedules. The deposit(s) collected shall be refunded upon return of the utility's equipment. Damaged or lost equipment shall be repaired or replaced at the customer's expense.

Billing: Same as Schedule Mg-1.



**Public Service Commission of Wisconsin****City of Pewaukee Water Utility**

|                             |
|-----------------------------|
| <b>Reconnection Charges</b> |
|-----------------------------|

The utility shall assess a charge to reconnect a customer, which includes reinstalling a meter and turning on the valve at the curb stop, if necessary. A utility may not assess a charge for disconnecting a customer.

During normal business hours: \$30.00

After normal business hours: \$60.00

Billing: Same as Schedule Mg-1.



**Public Service Commission of Wisconsin**

**City of Pewaukee Water Utility**

|                                          |
|------------------------------------------|
| <b>Water Lateral Installation Charge</b> |
|------------------------------------------|

The utility shall charge a customer for the actual cost of installing a water service lateral from the main through curb stop and box if these costs are not contributed as part of a subdivision development or otherwise recovered under Wis. Stats. Chapter 66.

Billing: Same as Schedule Mg-1.



**City of Pewaukee Water Utility**

**Water Utility Operating Rules**

Compliance with Rules

All persons now receiving water service from this water utility, or who may request service in the future, shall be considered as having agreed to be bound by the rules and regulations as filed with the Public Service Commission of Wisconsin.

Establishment of Service

Application for water service may be made in writing on a form furnished by the water utility. The application will contain the legal description of the property to be served, the name of the owner, the exact use to be made of the service, and the size of the service lateral and meter desired. Note particularly any special refrigeration, fire protection, or water-consuming air-conditioning equipment.

Service will be furnished only if (1) the premises have a frontage on a properly platted street or public strip in which a cast iron or other long-life water main has been laid, or where the property owner has agreed to and complied with the provisions of the water utility's filed main extension rule, (2) the property owner has installed or agrees to install a service lateral from the curb stop to the point of use that is not less than 6 feet below the surface of an established or proposed grade and meets the water utility's specifications, and (3) the premises have adequate piping beyond the metering point.

The owner of a multi-unit dwelling has the option of being served by individual metered water service to each unit. The owner, by selecting this option, is required to provide interior plumbing and meter settings to enable individual metered service to each unit and individual disconnection without affecting service to other units. Each meter and meter connection will be treated as a separate water utility account for the purpose of the filed rules and regulations.

No division of the water service lateral to any lot or parcel of land shall be made for the extension and independent metering of the supply to an adjoining lot or parcel of land. Except for duplexes, no division of a water service lateral shall be made at the curb for separate supplies for two or more separate premises having frontage on any street or public service strip, whether owned by the same or different parties. Duplexes may be served by one lateral provided (1) individual metered service and disconnection is provided and (2) it is permitted by local ordinance.

Buildings used in the same business, located on the same parcel, and served by a single lateral may have the customer's water supply piping installed to a central point so that volume can be metered in one place.

The water utility may withhold approval of any application where full information of the purpose of such supply is not clearly indicated and set forth by the applicant property owner.



**Public Service Commission of Wisconsin****City of Pewaukee Water Utility****Water Utility Operating Rules**Reconnection of Service

Where the water utility has disconnected service at the customer's request, a reconnection charge shall be made when the customer requests reconnection of service. See Schedule R-1 for the applicable rate.

A reconnection charge shall also be required from customers whose services are disconnected (shut off at curb stop box) because of nonpayment of bills when due. See Schedule R-1 for the applicable rate.

If reconnection is requested for the same location by any member of the same household, or, if a place of business, by any partner of the same business, it shall be considered as the same customer.

Temporary Metered Service, Meter, and Deposits

An applicant for temporary water service on a metered basis shall make and maintain a monetary deposit for each meter installed as security for payment for use of water and for such other charges which may arise from the use of the supply. A charge shall be made for setting the valve and furnishing and setting the meter. See Schedule BW-1 for the applicable rate.

Water for Construction

When water is requested for construction purposes or for filling tanks or other such uses, an application shall be made to the water utility, in writing, giving a statement of the amount of construction work to be done or the size of the tank to be filled, etc. Payment for the water for construction may be required in advance at the scheduled rates. The service lateral must be installed into the building before water can be used. No connection with the service lateral at the curb shall be made without special permission from the water utility. In no case will any employee of the water utility turn on water for construction work unless the contractor has obtained permission from the water utility.

Customers shall not allow contractors, masons, or other persons to take unmetered water from their premises without permission from the water utility. Any customer failing to comply with this provision may have water service discontinued and will be responsible for the cost of the estimated volume of water used.



**City of Pewaukee Water Utility****Water Utility Operating Rules**Use of Hydrants

In cases where no other supply is available, permission may be granted by the water utility to use a hydrant. No hydrant shall be used until the proper meter and valve are installed. In no case shall any valve be installed or moved except by an employee of the water utility.

Before a valve is set, payment must be made for its setting and for the water to be used at the scheduled rates. Where applicable, see Schedule BW-1 for deposits and charges. Upon completing the use of the hydrant, the customer must notify the water utility to that effect.

Operation of Valves and Hydrants and Unauthorized Use of Water - Penalty

Any person who shall, without authority of the water utility, allow contractors, masons, or other unauthorized persons to take water from their premises, operate any valve connected with the street or supply mains, or open any fire hydrant connected with the distribution system, except for the purpose of extinguishing fire, or who shall wantonly damage or impair the same, shall be subject to a fine as provided by municipal ordinance. Utility permission for the use of hydrants applies only to such hydrants that are designated for the specific use.

Refunds of Monetary Deposits

All money deposited as security for payment of charges arising from the use of temporary water service on a metered basis, or for the return of a hydrant valve and fixtures if the water is used on an unmetered basis, will be refunded to the depositor on the termination of the use of water, the payment of all charges levied against the depositor, and the return of the water utility's equipment.

Service Laterals

No water service lateral shall be laid through any trench having cinders, rubbish, rock or gravel fill, or any other material which may cause injury to or disintegration of the service lateral, unless adequate means of protection are provided by sand filling or such other insulation as may be approved by the water utility. Service laterals passing through curb or retaining walls shall be adequately safeguarded by provision of a channel space or pipe casing not less than twice the diameter of the service connection. The space between the service lateral and the channel or pipe casing shall be filled and lightly caulked with an oakum, mastic cement, or other resilient material and made impervious to moisture.

In backfilling the pipe trench, the service lateral must be protected against injury by carefully hand tamping the ground filling around the pipe. There should be at least 6 inches of ground filling over the pipe, and it should be free from hard lumps, rocks, stones, or other injurious material.



**Public Service Commission of Wisconsin****City of Pewaukee Water Utility****Water Utility Operating Rules**Service Laterals (continued)

All water service laterals shall be of undiminished size from the street main into the point of meter placement. Beyond the meter outlet valve, the piping shall be sized and proportioned to provide, on all floors, at all times, an equitable distribution of the water supply for the greatest probable number of fixtures or appliances operating simultaneously.

Replacement and Repair of Service Laterals

The service lateral from the main to and through the curb stop will be maintained and kept in repair and, when worn out, replaced at the expense of the water utility. The property owner shall maintain the service lateral from the curb stop to the point of use.

If an owner fails to repair a leaking or broken service lateral from the curb to the point of metering or use within such time as may appear reasonable to the water utility after notification has been served on the owner by the water utility, the water will be shut off and will not be turned on again until the repairs have been completed.

Abandonment of Service

If a property owner changes the use of a property currently receiving water service such that water service will no longer be needed in the future, the water utility may require the abandonment of the water service at the water main. In such case, the property owner may be responsible for all removal and/or repair costs, including the water main and the utility portion of the water service lateral.

Charges for Water Wasted Due to Leaks

See Wis. Admin. Code § PSC 185.35 or Schedule X-4, if applicable.

Thawing Frozen Service Laterals

See Wis. Admin. Code § PSC 185.88 or Schedule X-4, if applicable.

Curb Stop Boxes

The curb stop box is the property of the water utility. The water utility is responsible for its repair and maintenance. This includes maintaining, through adjustment, the curb stop box at an appropriate grade level where no direct action by the property owner or occupant has contributed to an elevation problem. The property owner is responsible for protecting the curb stop box from situations that could obstruct access to it or unduly expose it to harm. The water utility shall not be liable for failure to locate the curb stop box and shut off the water in case of a leak on the owner's premises.



**Public Service Commission of Wisconsin****City of Pewaukee Water Utility****Water Utility Operating Rules**Installation of Meters

Meters will be owned, furnished, and installed by the water utility or a utility-approved contractor and are not to be disconnected or tampered with by the customer. All meters shall be so located that they shall be protected from obstructions and permit ready access for reading, inspection, and servicing, such location to be designated or approved by the water utility. All piping within the building must be supplied by the owner. Where additional meters are desired by the owner, the owner shall pay for all piping. Where applicable, see Schedule Am-1 for rates.

Repairs to Meters

Meters will be repaired by the water utility, and the cost of such repairs caused by ordinary wear and tear will be borne by the water utility.

Repair of any damage to a meter resulting from the carelessness of the owner of the premises, owner's agent, or tenant, or from the negligence of any one of them to properly secure and protect same, including any damage that may result from allowing a water meter to become frozen or to be damaged from the presence of hot water or steam in the meter, shall be paid for by the customer or the owner of the premises.

Service Piping for Meter Settings

Where the original service piping is installed for a new metered customer, where existing service piping is changed for the customer's convenience, or where a new meter is installed for an existing unmetered customer, the owner of the premises at his/her expense shall provide a suitable location and the proper connections for the meter. The meter setting and associated plumbing shall comply with the water utility's standards. The water utility should be consulted as to the type and size of the meter setting.

Turning on Water

The water may only be turned on for a customer by an authorized employee of the water utility. Plumbers may turn the water on to test their work, but upon completion must leave the water turned off.

Sprinkling Restrictions and Emergency Water Conditions

Where the municipality has a policy regarding sprinkling restrictions and/or emergency water conditions, failure to comply with such may result in disconnection of service.

See Wis. Admin. Code § PSC 185.37.



**Public Service Commission of Wisconsin****City of Pewaukee Water Utility****Water Utility Operating Rules**Failure to Read Meters

Where the water utility is unable to read a meter, the fact will be plainly indicated on the bill, and either an estimated bill will be computed or the minimum charge applied. The difference shall be adjusted when the meter is again read, that is, the bill for the succeeding billing period will be computed with the gallons or cubic feet in each block of the rate schedule doubled, and credit will be given on that bill for the amount of the bill paid the preceding period. Only in unusual cases shall more than three consecutive estimated or minimum bills be rendered.

If the meter is damaged (see Surreptitious Use of Water) or fails to operate, the bill will be based on the average use during the past year, unless there is some reason why the use is not normal. If the average use cannot be properly determined, the bill will be estimated by some equitable method.

See Wis. Admin. Code § PSC 185.33.

Complaint Meter Tests

See Wis. Admin. Code § PSC 185.77.

Inspection of Premises

During reasonable hours, any officer or authorized employee of the water utility shall have the right of access to the premises supplied with service for the purpose of inspection or for the enforcement of the water utility's rules and regulations. Whenever appropriate, the water utility will make a systematic inspection of all unmetered water taps for the purpose of checking waste and unnecessary use of water.

See Wis. Stat. § 196.171.

Vacation of Premises

When premises are to be vacated, the water utility shall be notified, in writing, at once, so that it may remove the meter and shut off the water supply at the curb stop. The owner of the premises shall be liable for prosecution for any damage to the water utility's property. See "Abandonment of Service" in Schedule X-1 for further information.

Deposits for Residential Service

See Wis. Admin. Code § PSC 185.36.



**Public Service Commission of Wisconsin**

**City of Pewaukee Water Utility**

**Water Utility Operating Rules**

Deposits for Nonresidential Service

See Wis. Admin. Code § PSC 185.361.

Deferred Payment Agreement

See Wis. Admin. Code § PSC 185.38 or Schedule X-4, if applicable.

Dispute Procedures

See Wis. Admin. Code § PSC 185.39.

Disconnection and Refusal of Service

See Wis. Admin. Code § PSC 185.37.

The following is an example of a disconnection notice that the utility may use to provide the required notice to customers.

DISCONNECTION NOTICE

Dear Customer:

The bill enclosed with this notice includes your current charge for water utility service and your previous unpaid balance.

You have 10 days to pay the water utility service arrears or your service is subject to disconnection.

If you fail to pay the service arrears or fail to contact us within the 10 days allowed to make reasonable deferred payment arrangement or other suitable arrangement, we will proceed with disconnection action.

To avoid the inconvenience of service interruption and an additional charge of (amount) for reconnection, we urge you to pay the full arrears IMMEDIATELY AT ONE OF OUR OFFICES.

If you have entered into a Deferred Payment Agreement with us and have failed to make the deferred payments you agreed to, your service will be subject to disconnection unless you pay the entire amount due within 10 days.

If you have a reason for delaying the payment, call us and explain the situation.



**City of Pewaukee Water Utility**

**Water Utility Operating Rules**

Disconnection and Refusal of Service (continued)

DISCONNECTION NOTICE (continued)

PLEASE CALL THIS TELEPHONE NUMBER, (telephone number), IMMEDIATELY IF:

1. You dispute the notice of delinquent account.
2. You have a question about your water utility service arrears.
3. You are unable to pay the full amount of the bill and are willing to enter into a deferred payment agreement with us.
4. There are any circumstances you think should be taken into consideration before service is discontinued.
5. Any resident is seriously ill.

Illness Provision: If there is an existing medical emergency in your home and you furnish the water utility with a statement signed by either a licensed Wisconsin physician or a public health official, we will delay disconnection of service up to 21 days. The statement must identify the medical emergency and specify the period of time during which disconnection will aggravate the existing emergency.

Deferred Payment Agreements: If you are a residential customer and you are unable to pay the full amount of the water utility service arrears on your bill, you may contact the water utility to discuss arrangements to pay the arrears over an extended period of time.

This time payment agreement will require:

1. Payment of a reasonable amount at the time the agreement is made.
2. Payment of the remainder of the outstanding balance in monthly installments over a reasonable length of time.
3. Payment of all future water utility service bills in full by the due date.

In any situation where you are unable to resolve billing disputes or disputes about the grounds for proposed disconnection through contacts with our water utility, you may make an appeal to the Public Service Commission of Wisconsin by calling (800) 225-7729.

(WATER UTILITY NAME)



**Public Service Commission of Wisconsin****City of Pewaukee Water Utility****Water Utility Operating Rules**Collection of Overdue Bills

An amount owed by the customer may be levied as a tax as provided in Wis. Stat. § 66.0809.

Surreptitious Use of Water

When the water utility has reasonable evidence that a person is obtaining water, in whole or in part, by means of devices or methods used to stop or interfere with the proper metering of the water utility service being delivered, the water utility reserves the right to estimate and present immediately a bill for unmetered service as a result of such interference, and such bill shall be payable subject to a 24-hour disconnection of service. If the water utility disconnects the service for any such reason, the water utility will reconnect the service upon the following conditions:

- A. The customer will be required to deposit with the water utility an amount sufficient to guarantee the payment of the bills for water utility service.
- B. The customer will be required to pay the water utility for any and all damages to water utility equipment resulting from such interference with the metering.
- C. The customer must further agree to comply with reasonable requirements to protect the water utility against further losses.

See Wis. Stat. §§ 98.26 and 943.20.

Repairs to Mains

The water utility reserves the right to shut off the water supply in the mains temporarily to make repairs, alterations, or additions to the plant or system. When the circumstances will permit, the water utility will give notification, by newspaper publication or otherwise, of the discontinuance of the water supply. No credit will be allowed to customers for such temporary suspension of the water supply.

See Wis. Admin. Code § PSC 185.87.

Duty of Water Utility with Respect to Safety of the Public

It shall be the duty of the water utility to see that all open ditches for water mains, hydrants, and service laterals are properly guarded to prevent accident to any person or vehicle, and at night there shall be displayed proper signal lighting to insure the safety of the public.



## Public Service Commission of Wisconsin

## City of Pewaukee Water Utility

**Water Utility Operating Rules**Handling Water Mains and Service Laterals in Excavation Trenches

Contractors must call Digger's Hotline and ensure a location is done to establish the existence and location of all water mains and service laterals as provided in Wis. Stat. § 182.0175. Where water mains or service laterals have been removed, cut, or damaged during trench excavation, the contractors must, at their own expense, cause them to be replaced or repaired at once. Contractors must not shut off the water service laterals to any customer for a period exceeding 6 hours.

Protective Devices

- A. Protective Devices in General: The owner or occupant of every premise receiving water supply shall apply and maintain suitable means of protection of the premise supply and all appliances against damage arising in any manner from the use of the water supply, variation of water pressure, or any interruption of water supply. Particularly, such owner or occupant must protect water-cooled compressors for refrigeration systems by means of high and/or low pressure safety cutout devices. There shall likewise be provided means for the prevention of the transmission of water ram or noise of operation of any valve or appliance through the piping of their own or adjacent premises.
- B. Relief Valves: On all "closed systems" (i.e., systems having a check valve, pressure regulator, reducing valve, water filter, or softener), an effective pressure relief valve shall be installed at or near the top of the hot water tank or at the hot water distribution pipe connection to the tank. No stop valve shall be placed between the hot water tank and the relief valve or on the drain pipe. See applicable plumbing codes.
- C. Air Chambers: An air chamber or approved shock absorber shall be installed at the terminus of each riser, fixture branch, or hydraulic elevator main for the prevention of undue water hammer. The air chamber shall be sized in conformance with local plumbing codes. Where possible, the air chamber should be provided at its base with a valve for water drainage and replenishment of air.

Cross-Connections

Every person owning or occupying a premise receiving municipal water supply shall maintain such municipal water supply free from any connection, either of a direct or of an indirect nature, with a water supply from a foreign source or of any manner of connection with any fixture or appliance whereby water from a foreign supply or the waste from any fixture, appliance, or waste or soil pipe may flow or be siphoned or pumped into the piping of the municipal water system.

See Wis. Admin. Code § NR 811.06.



**City of Pewaukee Water Utility****Water Main Extension Rule**

Water mains will be extended for new customers on the following basis:

- A. Where the cost of the extension is to immediately be collected through assessment by the municipality against the abutting property, the procedure set forth under Wis. Stat. § 66.0703 will apply, and no additional customer contribution to the utility will be required.
- B. Where the municipality is unwilling or unable to make a special assessment, the extension will be made on a customer-financed basis as follows:
  - 1. The applicant(s) will advance as a contribution in aid of construction the total amount equivalent to that which would have been assessed for all property under paragraph A.
  - 2. Part of the contribution required in paragraph B.1. will be refundable. When additional customers are connected to the extended main within 10 years of the date of completion, contributions in aid of construction will be collected equal to the amount which would have been assessed under paragraph A. for the abutting property being served. This amount will be refunded to the original contributor(s). In no case will the contributions received from additional customers exceed the proportionate amount which would have been required under paragraph A., nor will it exceed the total assessable cost of the original extension.
- C. When a customer connects to a transmission main or connecting loop installed at utility expense within 10 years of the date of completion, there will be a contribution required of an amount equivalent to that which would have been assessed under paragraph A.



**City of Pewaukee Water Utility**

|                                                         |
|---------------------------------------------------------|
| <b>Water Main Installations in Platted Subdivisions</b> |
|---------------------------------------------------------|

Application for installation of water mains in regularly platted real estate development subdivisions shall be filed with the utility.

If the developer, or a contractor employed by the developer, is to install the water mains (with the approval of the utility), the developer shall be responsible for the total cost of construction.

If the utility or its contractor is to install the water mains, the developer shall be required to advance to the utility, prior to the beginning of the construction, the total estimated cost of the extension. If the final costs exceed estimated costs, an additional billing will be made for the balance of the cost due. This balance is to be paid within 30 days. If final costs are less than estimated, a refund of the overpayment will be made by the water utility.



### City of Pewaukee Water Utility

#### Customer Water Bill Comparison at Present and Authorized Rates

| Customer Type           | Meter Size | Volume<br>(1000<br>Gallons) | <u>Quarterly</u>      |                       | Percent Change |
|-------------------------|------------|-----------------------------|-----------------------|-----------------------|----------------|
|                         |            |                             | Bills at Old<br>Rates | Bills at New<br>Rates |                |
| Small Residential       | 3/4"       | 7                           | \$ 45.01              | \$ 50.54              | 12.29%         |
| Average Residential     | 3/4"       | 14                          | \$ 64.82              | \$ 75.88              | 17.06%         |
| Large Residential       | 3/4"       | 25                          | \$ 95.95              | \$ 115.70             | 20.58%         |
| Large Residential       | 3/4"       | 75                          | \$ 237.45             | \$ 296.70             | 24.95%         |
| Large Residential       | 3/4"       | 150                         | \$ 449.70             | \$ 568.20             | 26.35%         |
| Multifamily Residential | 2"         | 150                         | \$ 499.50             | \$ 627.00             | 25.53%         |
| Multifamily Residential | 2"         | 300                         | \$ 924.00             | \$ 1,170.00           | 26.62%         |
| Multifamily Residential | 2"         | 450                         | \$ 1,348.50           | \$ 1,713.00           | 27.03%         |
| Multifamily Residential | 2"         | 1,000                       | \$ 2,905.00           | \$ 3,704.00           | 27.50%         |
| Commercial              | 3"         | 1,500                       | \$ 4,371.00           | \$ 5,577.00           | 27.59%         |
| Commercial              | 3"         | 3,500                       | \$ 10,031.00          | \$ 12,817.00          | 27.77%         |
| Commercial              | 4"         | 2,700                       | \$ 7,830.00           | \$ 9,990.00           | 27.59%         |
| Commercial              | 4"         | 3,700                       | \$ 10,660.00          | \$ 13,610.00          | 27.67%         |
| Industrial              | 2"         | 500                         | \$ 1,490.00           | \$ 1,894.00           | 27.11%         |
| Industrial              | 2"         | 1,100                       | \$ 3,188.00           | \$ 4,066.00           | 27.54%         |
| Industrial              | 2"         | 2,500                       | \$ 7,150.00           | \$ 9,134.00           | 27.75%         |
| Industrial              | 3"         | 775                         | \$ 2,319.25           | \$ 2,952.50           | 27.30%         |
| Public Authority        | 1 1/2"     | 30                          | \$ 138.90             | \$ 168.60             | 21.38%         |
| Public Authority        | 1 1/2"     | 40                          | \$ 167.20             | \$ 204.80             | 22.49%         |
| Public Authority        | 2"         | 50                          | \$ 216.50             | \$ 265.00             | 22.40%         |
| Public Authority        | 3"         | 15                          | \$ 168.45             | \$ 201.30             | 19.50%         |



**City of Pewaukee Water Utility**

**Schedule of Water Depreciation Rates  
Effective January 1, 2019**

| Account<br>Number | Account Title                              | Depreciation<br>Rate |
|-------------------|--------------------------------------------|----------------------|
|                   | <b>SOURCE OF SUPPLY PLANT</b>              |                      |
| 314               | Wells and Springs                          | 2.90%                |
| 316               | Supply Mains                               | 1.80%                |
|                   | <b>PUMPING PLANT</b>                       |                      |
| 321               | Structures and Improvements                | 3.20%                |
| 325               | Electric Pumping Equipment                 | 4.40%                |
| 328               | Other Pumping Equipment                    | 4.40%                |
|                   | <b>WATER TREATMENT PLANT</b>               |                      |
| 331               | Structures and Improvements                | 3.20%                |
| 334               | Other Water Treatment Equipment            | 6.00%                |
|                   | <b>TRANSMISSION AND DISTRIBUTION PLANT</b> |                      |
| 342               | Distribution Reservoirs and Standpipes     | 1.90%                |
| 343               | Transmission and Distribution Mains        | 1.30%                |
| 345               | Services                                   | 2.90%                |
| 346               | Meters                                     | 5.50%                |
| 348               | Hydrants                                   | 2.20%                |
|                   | <b>GENERAL PLANT</b>                       |                      |
| 391               | Office Furniture and Equipment             | 5.80%                |
| 391.1             | Computer Equipment                         | 26.70%               |
| 392               | Transportation Equipment                   | 13.30%               |
| 396               | Power Operated Equipment                   | 7.50%                |
| 397               | Communication equipment                    | 15.00%               |
| 397.1             | SCADA Equipment                            | 9.20%                |
| 398               | Miscellaneous Equipment                    | 5.80%                |



**CITY OF PEWAUKEE  
COMMON COUNCIL AGENDA ITEM 11.**

**DATE:** August 3, 2020

**DEPARTMENT:** Public Works

**PROVIDED BY:** Magdelene Wagner

***SUBJECT:***

Presentation, Discussion and Possible Action Regarding the Updated Intersection Study for the Lindsay & Redford Intersection and Intermunicipal Agreement with Waukesha County Regarding the Intersection Improvements and Associated Costs [Wagner]

***BACKGROUND:***

At the June 15th Common Council meeting, Staff was directed to authorize TADI to complete an updated intersection study for the Lindsay/Redford Intersection for the anticipated future growth in the area. They also authorized Staff to begin discussions with Waukesha County on an Intermunicipal Agreement for the possible funding of improvements and the support of applying for the Highway Safety Improvement Program Grant Application for an RCUT intersection by August 15th.

TADI completed the analysis and we met with the County to discuss the revised study. The County had some valid feedback on the projections from the future developments in the area and the impact on the intersection. The study was revised and the final report is attached. It appears that the future projected traffic counts will meet the warrants for a signalized intersection. It also states that an RCUT intersection will meet the needs of the intersection in 2030 with some additional improvements/turn lanes. TADI will present the study and be available for questions at the Council meeting.

Staff met with the County and they have been pursuing the grant application for the RCUT and will be ready to submit by the August 15th deadline. They are only addressing the current needs of the intersection and will not be doing the additional improvements recommended in the most recent study. Traffic signals do not meet the warrants today and therefore will not be an option for HSIP grant. Waukesha County has stated this intersection is only being submitted due to the City's participation and funding as they have many other intersections that are more dangerous than Lindsay & Redford.

An important note for this construction project. It is likely that if we are funded by the HSIP grant, construction would not occur until 2024. We could ask to complete it sooner, but it would depend on funding of other grant awardees.

***FINANCIAL IMPACT:***

The County has an estimate of about \$1,000,000 for the RCUT intersection. If the grant is received, they fund 90% of the cost of the improvement. The City would be responsible for the remainder of the cost, approximately \$100,000. In addition, a small amount of land acquisition is anticipated beyond this cost which is estimated at \$30,000.

***RECOMMENDED MOTION:***

Common Council agree to the RCUT as the intersection improvement project, agree in concept with the Intermunicipal



Agreement contingent on Waukesha County being successful in obtaining the HSIP grant, agree in concept to the City funding all costs outside of the grant funding, and require City Attorney review and approval of the agreement.

**ATTACHMENTS:**

Description

TADI Draft Study

DRAFT HSIP Support Data

Draft Agreement





# TRAFFIC IMPACT ANALYSIS CTH F & LINDSAY ROAD INTERSECTION

DATE SUBMITTED: JULY 29, 2020

# DRAFT

**PREPARED FOR:**

City of Pewaukee  
N240W3065 Pewaukee Road  
Pewaukee, WI 53072  
Contact Person: Magdelene Wagner, P.E.  
Phone: (262) 548-5570  
Email: wagner@pewaukee.wi.us

**PREPARED BY:**

Traffic Analysis and Design, Inc. (TADI)  
P.O. Box 128  
Cedarburg, WI 53012  
Authors: John Campbell, P.E., RSP<sub>2</sub>  
Don Lee, P.E.  
Phone: (800) 605-3091



***DRAFT***

TRAFFIC IMPACT ANALYSIS  
FOR:

## **CTH F & Lindsay Road Intersection**

CITY OF PEWAUKEE, WAUKESHA COUNTY, WISCONSIN

DATE SUBMITTED: July 29, 2020

**PREPARED FOR:**

City of Pewaukee  
N240 W3065 Pewaukee Road  
Pewaukee, WI 53072  
Phone: (262) 548-5570  
Contact Person: Magdelene Wagner, P.E.

**PREPARED BY:**

Traffic Analysis & Design, Inc.  
N36 W7505 Buchanan Street  
Cedarburg, WI 53012  
Phone: (800) 605-3091  
Contact Persons: John Campbell, P.E., RSP<sub>2</sub>  
Don Lee, P.E.



**CTH F & Lindsay Road Intersection  
Traffic Impact Analysis  
Table of Contents**

|                                                      |     |
|------------------------------------------------------|-----|
| LIST OF EXHIBITS.....                                | ii  |
| LIST OF APPENDICES.....                              | iii |
| CHAPTER I – INTRODUCTION & EXECUTIVE SUMMARY.....    | 1   |
| Part A – Purpose of Report and Study Objectives..... | 1   |
| Part B – Executive Summary.....                      | 1   |
| CHAPTER II – EXISTING CONDITIONS.....                | 7   |
| Part A – Physical Characteristics.....               | 7   |
| Part B – Traffic Volumes.....                        | 7   |
| Part C – Capacity Level of Service.....              | 8   |
| Part D – Safety.....                                 | 9   |
| Part E – Sources of Data.....                        | 9   |
| CHAPTER III – DEVELOPMENT TRAFFIC.....               | 10  |
| Part A – Planned and Potential Development.....      | 10  |
| Part B – Proposed Site Traffic Forecasting.....      | 10  |
| Part C – Build Traffic.....                          | 12  |
| CHAPTER IV – TRAFFIC AND IMPROVEMENT ANALYSIS.....   | 14  |
| Part A – Alternatives Evaluated.....                 | 14  |
| Part B – Capacity Level of Service Analysis.....     | 15  |
| Part C – Traffic Control Needs.....                  | 19  |
| Part D – Intersection Conttol Evaluation.....        | 19  |
| Part E – Intersection Sight Distance Analysis.....   | 20  |
| CHAPTER V – RECOMMENDATIONS AND CONCLUSION.....      | 21  |
| Part A – Recommendations.....                        | 21  |
| Part B – Conclusion.....                             | 24  |

## LIST OF EXHIBITS

Exhibit 1A.....Project Overview Map  
Exhibit 1B.....Proposed and Potential Development Areas  
Exhibit 2.....Existing Transportation Detail  
Exhibit 3A.....Year 2020 Existing Traffic Volumes  
Exhibit 3B.....Year 2030 Background Traffic Volumes  
Exhibit 4A-G.....Trip Generation and Distribution Tables – Parcels A through G  
Exhibit 5A-G.....Development New Trips – Parcels A through G  
Exhibit 5H.....Development New Trips – All Year 2020 through 2023 Parcels  
Exhibit 5J.....Development New Trips – All Parcels  
Exhibit 6A.....Sports Complex Partial Use Traffic Volumes  
Exhibit 6B.....Sports Complex Full Use Traffic Volumes  
Exhibit 7A.....Year 2020 Full Build Traffic Volumes – Partial Park Use  
Exhibit 7B.....Year 2030 Full Build Traffic Volumes – Partial Park Use  
Exhibit 7C.....Year 2020 Full Build Traffic Volumes – Full Park Use  
Exhibit 7D.....Year 2030 Full Build Traffic Volumes – Full Park Use  
Exhibit 8A.....Recommended Modifications – Traffic Signal Alternative  
Exhibit 8B.....Recommended Modifications – RCUT Alternative



## LIST OF APPENDICES

### Appendix A...Traffic

*Existing Turning Movement Counts*  
*Growth Rate Calculations*  
*Crash Plot*  
*Intersection Sight Distance Calculations*

### Appendix B...Peak Hour Analysis Outputs

*Year 2020 Background Traffic*

### Appendix C...Peak Hour Improvement Analysis Outputs

*Year 2020 (Partial Park Use) Traffic with Modifications*  
*Year 2020 (Full Park Use) Traffic with Modifications*  
*Year 2030 (Partial Park Use) Traffic with Modifications*  
*Year 2030 (Full Park Use) Traffic with Modifications*

### Appendix D...ICE Analysis

### Appendix E...Traffic Signal Warrant Backup

*Year 2020 Background Traffic – Park at Partial Use*  
*Year 2020 Background Traffic – Park at Partial Use & Western Developments at 45%*  
*Build out*

## CHAPTER I – INTRODUCTION & EXECUTIVE SUMMARY

### PART A – PURPOSE OF REPORT AND STUDY OBJECTIVES

Based on a history of angle crashes at the County Trunk Highway (CTH) F intersection with Lindsay Road, the City of Pewaukee has requested a Traffic Impact Analysis (TIA) and Intersection Control Evaluation (ICE) at the subject intersection to determine the most effective traffic control to handle existing and design year traffic volumes. The subject intersection is located within the City of Pewaukee, Waukesha County, Wisconsin. Traffic Analysis & Design, Inc. has been retained to identify the existing traffic operating conditions, the full build (with planned and potential development) traffic operating conditions and modification options necessary to provide safe and efficient traffic operations under future year full build conditions.

This report documents the procedures, findings and conclusions of the TIA and ICE. The analysis identifies recommended modifications based on existing intersection geometrics, background traffic volumes and additional traffic expected to be generated by the planned and potential developments within the limits of the study area.

### PART B – EXECUTIVE SUMMARY

The executive summary includes a description of the study area, description of the planned and potential developments areas and conclusions based on the findings of the TIA.

#### B1. Location of Study Site with Respect to Area Roadway Network

Based on discussions with City of Pewaukee and as shown in [Exhibit 1A](#), the study area for the residential development includes the following intersections:

- CTH F intersection with Lindsay Road (existing two-way stop control)

#### B2. Adjacent Development Description and Timings

Several planned and potential development parcels have been identified by the City of Pewaukee within the study area adjacent to the subject intersection. The planned and potential development parcels are shown on [Exhibits 1A&B](#) and are described as follows:

##### Year 2020 through 2023

- Parcel A – 47 Single Family Houses
- Parcel B – 7 Single Family Houses
- Parcel C – 82 Single Family Houses
- Parcel D – 60 Single Family Houses
- Parcel E – 26 Acres Manufacturing/Industrial
- Parcel F – 64 Single Family Houses

##### Year 2030

- Parcel G – 23 Single Family Houses (two areas combined)

Full build out of the development parcels from year 2020 through year 2023 was included in the opening Year 2020 full build traffic conditions and full build out of all parcels was included in the future Year 2030 full build traffic conditions.

#### B3. Site Access

Access to each of the listed adjacent development parcels was assumed via the adjacent main arterials. However, since this study is for a single intersection, only the trips traveling through the main intersection were considered.



**B4. Generated Traffic**

Upon full build and based on the trip rates from the ITE Trip Generation Manual, the total number of daily (24-hour) new trips, weekday morning peak hour new trips and weekday evening peak hour new trips for each of the known adjacent developments under full build conditions is as follows:

Year 2020 through 2023

- Parcel A – daily 520, morning 40 (10 in/30 out), evening 50 (30 in/20 out)
- Parcel B – daily 90, morning 10 (5 in/5 out), evening 10 (5 in/5 out)
- Parcel C – daily 870, morning 65 (15 in/50 out), evening 85 (55 in/30 out)
- Parcel D – daily 650, morning 45 (10 in/35 out), evening 60 (40 in/20 out)
- Parcel E – daily 900, morning 115 (105 in/10 out), evening 120 (50 in/70 out)
- Parcel F – daily 690, morning 50 (15 in/35 out), evening 65 (40 in/25 out)

Year 2030

- Parcel G – daily 270, morning 20 (5 in/15 out), evening 25 (15 in/10 out)

**B5. Alternatives Evaluated**

The CTH F intersection with Lindsay Road is currently operating under two-way stop sign control with stop control present on the east and west approaches. Operational and safety concerns are currently being experienced under the existing traffic control. To improve operations and safety at the intersection, the following potential traffic control alternatives were evaluated at the study area intersection:

- Traffic signal control
- Restricted Crossing U-turn (RCUT) with merging/yield control

**B6. Year 2020 Background Traffic**

The study area intersections were analyzed based on the procedures set forth in the *Highway Capacity Manual* (HCM), 6<sup>th</sup> Edition. Intersection operation is defined by “level of service”. Level of Service (LOS) is a quantitative measure that refers to the overall quality of flow at an intersection ranging from very good, represented by LOS ‘A’, to very poor, represented by LOS ‘F’. For the purpose of this study, LOS D or better was used to define desirable peak hour operating conditions.

The analysis was conducted using existing intersection geometrics and traffic control. The CTH F intersection with Lindsay Road is currently operating acceptably at LOS D or better operations under the Year 2020 background traffic volumes except the eastbound and westbound movements which are currently operating unacceptably with higher delays at LOS E/F during the typical weekday morning and weekday evening peak hours.

**B7. Recommended Modifications**

Full build traffic volumes include full build out of the identified adjacent planned and potential development areas as described above as well as a near full capacity event at the Pewaukee Sports Complex. The following modifications, as shown in [Exhibits 8A&8B](#), are recommended to accommodate the current Year 2020 full build and future Year 2030 full build traffic volumes.

- Reconstruct the CTH F intersection with Lindsay Road under either traffic signal control or RCUT geometry with control as described below:

***Traffic Signal Control Option****Northbound*

- Extend the existing left-turn lane to 400 feet of storage and if possible, realign to provide positive offset from the opposing left-turn lane

*Southbound*

- Extend the existing left-turn lane to 300 feet of storage and if possible, realign to provide positive offset from the opposing left-turn lane

*Eastbound*

- An exclusive left-turn lane with 150 feet of storage and if possible, positively offset from the opposing left-turn lane
- A shared through/right-turn lane

*Westbound*

- An exclusive left-turn lane with 225 feet of storage and if possible, positively offset from the opposing left-turn lane
- A shared through/right-turn lane

*General*

- Provide a full actuated traffic signal with northbound protected/permitted flashing yellow left-turn phasing

***RCUT Control Option****Northbound*

- An exclusive left-turn lane with 350 feet of storage and if possible, positively offset from the opposing left-turn lane
- Two through lanes
- An exclusive, and offset, right-turn lane that has a channelizing island and is yield controlled

*Southbound*

- An exclusive left-turn lane with 250 feet of storage and if possible, positively offset from the opposing left-turn lane
- Two through lanes
- An exclusive, and offset, right-turn lane that has a channelizing island and is yield controlled

*Eastbound*

- A single approach lane with stop control – this lane would service EB right-turn traffic, and EB thru and left-turn traffic that would make a right-turn, then a U-turn at the southern U-turn location



*Westbound*

- An exclusive free-flow right-turn lane with 150 feet of storage and an acceleration lane onto CTH F
- A second approach lane (inside) with stop control – this lane would service Lindsay Road traffic that would make a right-turn, then use the northern U-turn location to reach their destination

*North Median Cut*

- Provide a median cut at approximately 1,000 – 1,500 feet north of the CTH F/Lindsay intersection
- An exclusive northbound left-turn lane within the median with 300 feet of storage

*South Median Cut*

- Provide a median cut at approximately 1,000 - 1,500 feet south of the CTH F/Lindsay intersection
- An exclusive southbound left-turn lane within the median with 300 feet of storage

*General*

- It is recommended that the designers of this intersection follow best practices for RCUT design as it is a relatively rare geometric configuration. There are several resources available from WisDOT, MnDOT, NCDOT, VDOT, FHWA to assist with the design.
- Street lighting at the intersection and at both U-turn locations is recommended.
- Overhead signing and pavement marking is recommended on the minor street approaches to guide drivers to the correct lane choice.
- The free-flow right-turn lane on the WB approach is meant for the right-turn traffic only (not traffic going to the U-turn location). Designers should consider physically restricting right-turn free flow traffic from having the opportunity to cross lanes and access the U-turn location.
- At the U-turns, drivers may sometimes use the bulb-outs as a storage spot. The purpose of the bulb-out is extra pavement for trucks and buses to complete the U-turn maneuver. If drivers use the bulb-outs as a temporary storage spot before accelerating onto CTH F, it should be discouraged through enforcement, signing, pavement marking and/or public education.
- A public education campaign is recommended to help education motorists what to expect at an RCUT and how to drive a RCUT intersection.

The analysis in this study focused on identifying safety and operational solutions for the intersection of CTH F and Lindsay Road. This intersection has a known safety issue with high-speed right-angle crashes. Based on the analysis, two feasible alternatives for accommodating traffic through the year 2030 were considered, traffic signal control and Restricted Crossing U-turn (RCUT) control.

A traffic signal is an improvement nearly everyone is familiar with, whereas a RCUT is a configuration much less familiar to drivers. Traffic signals are typically installed when side-street volumes compared to mainline volumes exceed certain thresholds (i.e., warrants). Future traffic growth and anticipated developments in the area indicate traffic signal warrants are met in

the next few years with anticipated residential development. In high-speed locations, like at the CTH F intersection with Lindsay Road, traffic signals can observe severe right-angle, left-turn angle, and rear-end crashes and will create the need to stop for northbound and southbound traffic. Traffic signals, however, offer a wide range of flexibility in handling fluctuations in traffic demand.

RCUTs are not nearly as common as traffic signals but are growing in popularity because they have been successful at reducing crashes at high-speed intersections. While traffic signals can be installed in a variety of situations, RCUTs require a unique set of characteristics – such as relatively low minor street volumes, the absence of access points on the major route and available median areas to provide for U-turn movements. The intersection of CTH F & Lindsay Road has these unique characteristics, thus a RCUT was evaluated and determined to be a feasible solution.

At a RCUT intersection, the right-angle conflict points are eliminated (which is the existing cause of crashes at CTH F & Lindsay Road). Northbound and southbound drivers would maintain free-flow operations, and northbound and southbound left-turn movements would operate as they do in the existing conditions. Thus, a high level of mobility would be maintained. Drivers intending to cross CTH F or turn onto CTH F from Lindsay Road would do so differently. Per the recommended geometry, WB right-turn traffic would be provided a free-flow ramp lane which will eliminate delay associated with that movement. Also, in the WB direction, a second “inside” lane would service traffic intending to cross CTH F. These WB drivers in the inside lane would make a WB right-turn and then utilize the northern U-turn location to get to their destination. In the EB direction, a single approach lane is recommended. EB drivers intending to cross or turn north onto CTH F would make a right-turn and then a U-turn to access their destination.

There are pros and cons to both intersection types analyzed in this report. The RCUT reduces conflict points and maintains a high level of mobility for CTH F traffic while minor street through and left-turn traffic would have a longer (but safer) maneuver. The traffic signal is a more familiar improvement that offers flexibility to handle fluctuations in traffic but is potentially susceptible to high-speed crashes, including right-angle crashes that can result when motorists run a red-light. Traffic signals also require continual maintenance and updates to their timings.

The intent of this analysis was to analyze projected traffic volumes at the intersection of CTH F and Lindsay Road and determine feasible solutions to mitigate the existing severe right-angle crash issue. A traffic signal or a RCUT intersection appear to be feasible alternatives based on assumptions and analysis in this study.

With the recommended modifications, all movements at the study area intersections are expected to continue to operate at acceptable levels under the current Year 2020 full build and future Year 2030 full build traffic conditions with up to 13 of 17 sport complex fields active concurrently with the PM peak hour of traffic. Acceptable levels of delay for this study is defined as LOS E or better and a 95th percentile queue less than 150 feet for minor street movements and LOS D or better for major street movements.

## **B8. Conclusion**

A traffic signal or an RCUT controlled intersection are expected to provide acceptable operations through year 2030 based on the background growth rate assumptions and modifications identified in this TIA. A comparison summary of the alternatives is provided on the next page.



# Comparison Table

## RCUT

## TRAFFIC SIGNAL

|                                                                                                                                                                                                                                                                                                                                                     |                                                                                                     |                                                                                                                                                                                                                                                                                                                                               |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>✓ RCUTs reduce the number of conflict points from 32 to 18 and eliminate the conflict point (right-angle) contributing to the existing severe crashes. RCUTs have been very successful at reducing severe right-angle crashes.</p>                                                                                                               | <p>SAFETY</p>      | <p>Traffic signals reduce the risk of right-angle collisions. However, high-speed traffic signals are prone to severe rear-end crashes and red-light running crashes.</p>                                                                                                                                                                     |
| <p>✓ Minor street traffic may experience more delay and travel time, but the overall operations are substantially better than a traffic signal. In the full-build 2030, the AM and PM peak hours expect:<br/>→ 556,000 fewer peak hour stops annually<br/>→ \$60,000 road user delay cost savings.</p>                                              | <p>OPERATIONS</p>  | <p>All movements are expected to operate at acceptable levels, however, major street (CTH F) traffic is required to stop to service Lindsay Road traffic. A signal would result in over 1,000,000 stops per year in the full-build 2030 scenario, AM and PM peak hour combined. Road user delay costs would be higher compared to a RCUT.</p> |
| <p>Initial costs are estimated at \$700,000 - \$950,000 (not including a WB right-turn bypass lane which could add \$300k+). It is expected the RCUT could qualify for 90% federal aid through the HSIP program and minimal maintenance costs would be expected.</p>                                                                                | <p>COST</p>        | <p>Initial costs are estimated at \$500,000 to \$750,000 depending on the amount of geometric changes implemented. A signal could potentially qualify for federal aid through the HSIP program. Traffic signals do incur more annual maintenance costs than RCUTs. ✓</p>                                                                      |
| <p>RCUTs are less familiar to drivers than traffic signals. Therefore, additional public education is suggested for helping drivers understand the intersection. While the configuration of a RCUT is unique, the movements drivers make are commonplace. After implementation, the concept is generally well-received by the traveling public.</p> | <p>EDUCATION</p>   | <p>Drivers are very familiar with traffic signals. If a flashing yellow arrow is used for left-turn movements, public education regarding the operations of a flashing yellow arrow is suggested. ✓</p>                                                                                                                                       |

## CHAPTER II – EXISTING CONDITIONS

### PART A – PHYSICAL CHARACTERISTICS

[Exhibit 2](#) shows the existing transportation detail for the CTH F intersection with Lindsay Road. More specifically, the exhibit illustrates intersection lane configurations, intersection traffic controls, posted speed limits and median types for the transportation arterials.

#### A1. Study Area Roadways

The study area roadways are discussed below:

*Redford Boulevard (CTH F)* is a north/south four-lane divided arterial highway with a posted speed limit of 55 miles per hour (mph) within the limits of the study area. According to WisDOT, the annual average daily traffic (AADT) volumes on CTH F were 23,000-vpd (2018 count) north of Lindsay Road and 22,000-vpd (2019 count) to the south. Sidewalks do not currently exist along either side of CTH F within the limits of the study area.

*Lindsay Road* is an east-west two-lane undivided minor arterial with a posted speed limit of 35-mph within the limits of the study area. The WisDOT AADT volumes on Lindsay Road were 1,600-vpd (2018 count) west of CTH F and 960-vpd (2015 count) to the east. Sidewalks do not currently exist along either side of Lindsay Road within the limits of the study area.

#### A2. Alternative Modes of Transportation

Pedestrians and bicyclists may use their respective modes to access the area, though these alternate modes are expected to make up a very small portion of the overall trips to/from the study area. Therefore, for the purpose of this analysis, all traffic to and from the planned and potential development areas was assumed to be by motor vehicle.

No transit routes currently exist along either the CTH F or Lindsay Road corridors.

### PART B – TRAFFIC VOLUMES

#### B1. Existing Traffic Volumes

The weekday morning and weekday evening peak hours are expected to drive the modifications needed to adequately accommodate the CTH F intersection with Lindsay Road under current and future traffic conditions, as they represent the highest volumes along the transportation system and the highest trip generation for the planned/potential developments. Weekday thirteen hour (6:00 am to 7:00 pm) turning movement counts were conducted in late September/early October of 2019 at the CTH F intersection with Lindsay Road. In addition, in order to take into account traffic from the Pewaukee Sports Complex located immediately west of the subject intersection, additional peak hour turning movement counts were conducted at the Pewaukee Sports Complex driveway in June of 2020.

Based on the turning movement counts at the CTH F intersection with Lindsay Road, the weekday morning and weekday evening peak hours were identified as being 7:00 to 8:00 am and 4:30 to 5:30 pm; respectively. The existing traffic volumes are shown in [Exhibit 3A](#). The traffic counts used to determine peak hour factors and truck percentages have been included in the [Appendix](#) of this study.

#### B2. Forecast Traffic Volumes

Historical WisDOT AADT volumes from the year 1985 through year 2019 were collected along the CTH F corridor within the limits of the study area: specifically, immediately to the north and south of Lindsay Road. Historical AADT trend lines were developed to determine the expected annual growth of traffic that may occur on the corridor between the present and future year 2030.



Based on the traffic projections (1985 – 2019) and assuming the historic trends will continue at a linear rate, traffic volumes at the study area intersection would be expected to increase at a rate of approximately 1.25-percent per year. This growth factor was then applied to the CTH F intersection with Lindsay Road turning movement volumes to determine the Year 2030 background traffic volumes. The Year 2030 background traffic volumes are shown in [Exhibit 3B](#). The historic growth rate calculations are included in the [Appendix](#) of this report.

## PART C – CAPACITY LEVEL OF SERVICE

### C1. Level of Service Definitions

The study area intersections were analyzed based on the procedures set forth in the *Highway Capacity Manual* (HCM), 6<sup>th</sup> Edition. Intersection operation is defined by “level of service”. Level of Service (LOS) is a quantitative measure that refers to the overall quality of flow at an intersection ranging from very good, represented by LOS ‘A’, to very poor, represented by LOS ‘F’. For the purpose of this study, LOS D or better was used to define desirable peak hour operating conditions. Descriptions of the various levels of service are as follows:

*LOS A* is the highest level of service that can be achieved. Under this condition, intersection approaches appear quite open, turning movements are easily made, and nearly all drivers find freedom of operation. At signalized and unsignalized intersections, average delays are less than 10 seconds.

*LOS B* represents stable operation. At signalized intersections, average vehicle delays are 10 to 20 seconds. At unsignalized intersections, average delays are 10 to 15 seconds.

*LOS C* still represents stable operation, but periodic backups of a few vehicles may develop behind turning vehicles. Most drivers begin to feel restricted, but not objectionably so. At signalized intersections, average vehicle delays are 20 to 35 seconds. At unsignalized intersections, average delays are 15 to 25 seconds.

*LOS D* represents increasing traffic restrictions as the intersection approaches instability. Delays to approaching vehicles may be substantial during short peaks within the peak period, but periodic clearance of long lines occurs, thus preventing excessive backups. At signalized intersections, average vehicle delays are 35 to 55 seconds. At unsignalized intersections, average delays are 25 to 35 seconds.

*LOS E* represents the capacity of the intersection. At signalized intersections, average vehicle delays are 55 to 80 seconds. At unsignalized intersections, average delays are 35 to 50 seconds.

*LOS F* represents jammed conditions where the intersection is over capacity and acceptable gaps for unsignalized intersections in the mainline traffic flow are minimal. At signalized intersections, average vehicle delays exceed 80 seconds. At unsignalized intersections, average delays exceed 50 seconds.

### C2. Year 2020 Background Traffic Operations – No Modifications

[Table 1](#) shows the Year 2020 background traffic (no development) peak hour operating conditions at the study area intersections. The Year 2020 background traffic analysis was conducted using the existing lane configurations shown in [Exhibit 2](#) and the Year 2020 background traffic volumes shown in [Exhibit 3A](#).

**Table 1**  
**Year 2020 Background Traffic Peak Hour Operating Conditions**  
**With Existing Geometrics and Traffic Control**

| Analysis Scenario                                   | Peak Hour |       | Level of Service per Movement by Approach |    |    |           |    |    |            |    |    |            |    |    | Intersection Level of Service |
|-----------------------------------------------------|-----------|-------|-------------------------------------------|----|----|-----------|----|----|------------|----|----|------------|----|----|-------------------------------|
|                                                     |           |       | Eastbound                                 |    |    | Westbound |    |    | Northbound |    |    | Southbound |    |    |                               |
|                                                     |           |       | LT                                        | TH | RT | LT        | TH | RT | LT         | TH | RT | LT         | TH | RT |                               |
| #100 - CTH F & Lindsay Road<br>Two-Way Stop Control | AM        | LOS   | F                                         |    |    | E         |    |    | B          | *  | *  | B          | *  | *  | A                             |
|                                                     |           | Delay | 50                                        |    |    | 47        |    |    | 13         | *  | *  | 11         | *  | *  |                               |
|                                                     |           | Queue | 70                                        |    |    | 55        |    |    | 25         | *  | *  | 25         | *  | *  |                               |
|                                                     | PM        | LOS   | F                                         |    |    | F         |    |    | B          | *  | *  | C          | *  | *  | B                             |
|                                                     |           | Delay | 157                                       |    |    | 361       |    |    | 14         | *  | *  | 17         | *  | *  |                               |
|                                                     |           | Queue | 120                                       |    |    | 210       |    |    | 25         | *  | *  | 25         | *  | *  |                               |

(-) movement that isn't available or allowed; (\*) free flow movement; delay value shown in seconds; queue value shown in feet

As shown in [Table 1](#), the CTH F intersection with Lindsay Road is currently operating acceptably at LOS D or better operations under Year 2020 background traffic volumes and current conditions except the eastbound and westbound movements which are currently operating unacceptably at LOS E/F during the typical weekday morning and weekday evening peak hours.

## PART D – SAFETY

A review of the crash records indicated that twenty-seven (27) non-deer crashes occurred at the intersection of CTH F with Lindsay Road between January 2014 and September 2019. The intersection crash rate was calculated to be 0.54 crashes per million entering vehicles (MEV) and the intersection averaged 4.7 crashes per year.

Most concerning at this location is the severity of the crashes observed. Seven (7) crashes resulted in Type C injury, another seven (7) resulted in Type B injury, and one (1) resulted in Type A injury. The remaining crashes (12) resulted in property damage only. An intersection crash plot and statistics have been included in the [appendix](#).

Seventy eight percent (78%) of the crashes were right-angle crashes. Drivers have difficulty crossing CTH F from Lindsay Road, particularly in the westbound direction where 17 right-angle crashes occurred (11 struck by southbound vehicles and 6 by northbound vehicles). Factors leading to these angle crashes include:

- Lindsay Road drivers misjudging available gaps
- Drivers not seeing oncoming northbound/southbound CTH F vehicles
- The higher speeds of CTH F (55-mph posted speed)

In reviewing the accident report forms, drivers often stated they stopped in the median and did not see the approaching southbound vehicle. Because sight distance is adequate, it is suspected that drivers are overloaded with information navigating this intersection. Furthermore, the high speeds on CTH F increase the likelihood and severity of collisions.

## PART E – SOURCES OF DATA

The following sources of data were obtained for use in conducting this traffic study:

- Turning movement traffic counts – Traffic Analysis & Design, Inc.
- Crash Analysis – Traffic Analysis & Design, Inc.
- Existing transportation detail – Traffic Analysis & Design, Inc. and Google™ Earth
- Development information – City of Pewaukee



## CHAPTER III – DEVELOPMENT TRAFFIC

### PART A – PLANNED AND POTENTIAL DEVELOPMENT

#### A1. Development Description and Site Location

Several planned and potential development parcels have been identified by the City of Pewaukee within the study area adjacent to the CTH F intersection with Lindsay Road. The planned and potential development parcels are shown on [Exhibits 2A&B](#) and are described as follows:

##### Year 2020 through 2023

- Parcel A – 47 Single Family Houses
- Parcel B – 7 Single Family Houses
- Parcel C – 82 Single Family Houses
- Parcel D – 60 Single Family Houses
- Parcel E – 26 Acres Manufacturing/Industrial
- Parcel F – 64 Single Family Houses

##### Year 2030

- Parcel G – 23 Single Family Houses (two areas combined)

Full build out of the development parcels from year 2020 through year 2023 was included in the opening Year 2020 full build traffic conditions and full build out of all parcels was included in the future Year 2030 full build traffic conditions)

#### A2. Site Access

Access to each of the listed adjacent development parcels was assumed via the adjacent main arterials. However, since this study is for a single intersection, only the trips traveling through the main intersection were considered.

### PART B – PROPOSED SITE TRAFFIC FORECASTING

To address any potential future traffic impacts at the CTH F intersection with Lindsay Road, it is necessary to identify the hourly and daily volume of traffic generated by the planned and potential developments within the study area. The traffic volumes expected to be generated by the planned and potential developments are based on the size and type of the proposed uses, and on trip rates as published in the Institute of Transportation Engineer's (ITE) *Trip Generation Manual, 10<sup>th</sup> Edition, 2017*.

#### B1. Trip Generation – Planned and Potential Developments

The expected trip generation tables for the planned and potential developments are shown in [Exhibits 4A through 4G](#). As shown, , the total number of daily (24-hour) new trips, weekday morning peak hour new trips and weekday evening peak hour new trips for each of the known adjacent developments under full build conditions is as follows:

##### Year 2020 through 2023

- Parcel A – daily 520, morning 40 (10 in/30 out), evening 50 (30 in/20 out)
- Parcel B – daily 90, morning 10 (5 in/5 out), evening 10 (5 in/5 out)
- Parcel C – daily 870, morning 65 (15 in/50 out), evening 85 (55 in/30 out)
- Parcel D – daily 650, morning 45 (10 in/35 out), evening 60 (40 in/20 out)
- Parcel E – daily 900, morning 115 (105 in/10 out), evening 120 (50 in/70 out)
- Parcel F – daily 690, morning 50 (15 in/35 out), evening 65 (40 in/25 out)

Year 2030

- Parcel G – daily 270, morning 20 (5 in/15 out), evening 25 (15 in/10 out)

**B2. Trip Generation – Sports Complex**

Because the turning movement counts conducted for this project were taken in the late fall and in order to take into account traffic from the Pewaukee Sports Complex located immediately west of the subject intersection, additional peak hour turning movement counts were conducted at the Pewaukee Sports Complex driveway in June of 2020. These counts were taken during a time when two baseball fields in use. Because there are currently 4 baseball fields and 13 soccer fields at the facility, the driveway turning movement counts were factored up to reflect a full sports complex event. In addition, the driveway trips to/from the east of the Pewaukee Sports Complex were distributed onto the CTH F intersection with Lindsay Road based on the existing traffic patterns as described in the next section.

**B3. Trip Distribution**

The general trip distribution for the planned and potential developments as well as the Pewaukee Sports Complex as listed below was determined based on the existing traffic counts, the type of proposed land uses, the location of existing populations, and anticipated growth areas outside the immediate study area.

**West of CTH F**

- 25-percent to/from the north on CTH F
- 25-percent to/from the south on CTH F
- 5-percent to/from the east on Lindsay Road
- 45-percent to/from the west on Lindsay Road (to STH 164)

**East of CTH F**

- 30-percent to/from the north on CTH F
- 30-percent to/from the south on CTH F
- 5-percent to/from the west on Lindsay Road
- 20-percent to/from the east on Lisbon Road
- 15-percent to/from the west on Lisbon Road (via Weyer Road or other north/south corridors)

**Industrial Site East of CTH F**

- 30-percent to/from the north on CTH F
- 50-percent to/from the south on CTH F
- 10-percent to/from the east on Lindsay Road
- 10-percent to/from the west on Lindsay Road

The expected trip distribution for the planned and potential developments are shown in table format in [Exhibits 4A through 4G](#) based on the location of the development site in relation to the CTH F intersection with Lindsay Road.



## **B4. Trip Assignment**

The peak hour trips expected to be generated by the full build-out of the planned and potential developments were assigned to the CTH F intersection with Lindsay Road based on the above trip distribution and are shown on [Exhibits 5A through 5G](#) as follows:

### Year 2020 through 2023

- Parcel A – [Exhibits 5A](#)
- Parcel B – [Exhibits 5B](#)
- Parcel C – [Exhibits 5C](#)
- Parcel D – [Exhibits 5D](#)
- Parcel E – [Exhibits 5E](#)
- Parcel F – [Exhibits 5F](#)

### Year 2030

- Parcel G – [Exhibits 5G](#)

The Pewaukee Sports Complex driveway (partial use) trips are shown in [Exhibit 6A](#) and the Pewaukee Sports Complex driveway (full use) trips are shown in [Exhibit 6B](#).

## **PART C – BUILD TRAFFIC**

### **C1. Year 2020 Full Build (With Partial Park) Traffic Volumes**

The Year 2020 full build (with partial park) traffic volumes assume the full build out of the Year 2020 through Year 2023 development sites as well as partial use of the Pewaukee Sports Complex. The Year 2020 full build (with partial park) traffic was determined by adding the Year 2020 Background traffic volumes ([Exhibit 3A](#)) to the planned and potential developments new trips for Parcels A through F ([Exhibits 5A through 5F](#)) and the Pewaukee Sports Complex driveway (partial use) trips ([Exhibit 6A](#)). The Year 2020 full build (with partial park) traffic volumes are shown in [Exhibit 7A](#).

### **C2. Year 2030 Full Build (With Partial Park) Traffic Volumes**

The Year 2030 full build (with partial park) traffic volumes assume the full build out of all development sites as well as partial use of the Pewaukee Sports Complex. The Year 2030 full build (with partial park) traffic was determined by adding the Year 2030 Background traffic volumes ([Exhibit 3B](#)) to the planned and potential developments new trips for Parcels A through G ([Exhibits 5A through 5G](#)) and the Pewaukee Sports Complex driveway (partial use) trips ([Exhibit 6A](#)). The Year 2030 full build (with partial park) traffic volumes are shown in [Exhibit 7B](#).

### **C3. Year 2020 Full Build (With Full Park) Traffic Volumes**

The Year 2020 full build (with full park) traffic volumes assume the full build out of the Year 2020 through Year 2023 development sites as well as full use of the Pewaukee Sports Complex. The Year 2020 full build (with full park) traffic was determined by adding the Year 2020 Background traffic volumes ([Exhibit 3A](#)) to the planned and potential developments new trips for Parcels A through F ([Exhibits 5A through 5F](#)) and the Pewaukee Sports Complex driveway (full use) trips ([Exhibit 6B](#)). The Year 2020 full build (with full park) traffic volumes are shown in [Exhibit 7C](#).

### **C4. Year 2030 Full Build (With Full Park) Traffic Volumes**

The Year 2030 full build (with full park) traffic volumes assume the full build out of all development sites as well as full use of the Pewaukee Sports Complex. The Year 2030 full build

(with full park) traffic was determined by adding the Year 2030 Background traffic volumes ([Exhibit 3B](#)) to the planned and potential developments new trips for Parcels A through G ([Exhibits 5A through 5G](#)) and the Pewaukee Sports Complex driveway (full use) trips ([Exhibit 6B](#)). The Year 2030 full build (with full park) traffic volumes are shown in [Exhibit 7D](#).



## CHAPTER IV – TRAFFIC AND IMPROVEMENT ANALYSIS

### PART A – ALTERNATIVES EVALUATED

The CTH F intersection with Lindsay Road is currently operating under two-way stop sign control with stop control present on the east and west approaches. As previously discussed, operational and safety concerns are currently being experienced under the existing traffic control. To improve operations and safety at the intersection, the following potential traffic control alternatives were evaluated at the study area intersection:

- Traffic signal control
- Restricted Crossing U-turn (RCUT) with merging/yield control

These alternatives are described in detail below.

#### A1. Traffic Signal Control

*Note that traffic signal warrants should be viewed as guidelines to help decide whether a traffic signal may be installed. Meeting traffic signal warrants does not translate to a legal requirement for their installation. Warrant descriptions and completed warrant analysis worksheets are included in the [appendix](#) of this study.*

A traffic signal warrant analyses was performed at the CTH F intersection with Lindsay Road as part of this study. Chapter 4C of the 2009 *Manual on Uniform Traffic Control Devices* (MUTCD) outlines the standards for determining the need for traffic signals at a particular location. For a traffic signal to be installed, at least one of the following warrants must be satisfied. The nine signal warrants are listed below:

- Warrant 1, Eight-Hour Vehicular Volume
- Warrant 2, Four-Hour Vehicular Volume
- Warrant 3, Peak Hour
- Warrant 4, Pedestrian Hour
- Warrant 5, School Crossing
- Warrant 6, Coordinated Signal Systems
- Warrant 7, Crash Experience
- Warrant 8, Roadway Network
- Warrant 8, Intersection Near a Grade Crossing

Warrants 1 and 2 have been evaluated for this location. The posted speed limit along CTH F is 55-mph at the Lindsay Road intersection, so it was analyzed using the 70-percent minimum vehicular volumes per standard practice since the speed is greater than 40-mph.

The warrant analysis assumes the intersections to include two-lane approaches northbound and southbound on CTH F (major street) and a one-lane approaches eastbound and westbound along Lindsay Road (minor street). Because the east and west Lindsay Road approaches would require a dedicated left-turn lane and a shared through/right-turn lane under a traffic signal modification alternative, 100-percent of the right-turn movements on the Lindsay Road approaches were included in the approach volume per the MUTCD.

The traffic signal warrant study was conducted using the existing 13-hour turning movement counts collected at the intersection as part of this study.

Based on the warrant analysis, the Four-Hour Warrant is expected to be met under the Year 2020 background traffic volume conditions. The Year 2020 background traffic volumes include

partial use of the Pewaukee Sports Complex, assuming 4 sports fields are in use. Therefore, traffic signals are currently warranted at this intersection.

In addition, the Four-Hour Warrant and the Eight-Hour Warrant are expected to be met under the Year 2020 partial build traffic volume conditions with approximately 45-percent of the identified western residential properties build out but none of the identified parcels to the east of CTH F included. This scenario also included only partial use (4 fields in use) of the sports complex.

## **A2. RCUT**

A Restricted Crossing U-turn (RCUT) intersection is an intersection that restricts the left-turn and through movements from the minor street approaches at an intersection. This intersection control is sometimes utilized as a safety treatment at an isolated intersection on a four-lane divided arterial in a rural area. The goal of an RCUT is to reduce conflict points at the intersection to improve overall safety. Compared to a conventional 4-legged intersection, an RCUT intersection drastically decreases the risk of angle crashes due to converting minor street through and left-turn movements to right-turn and U-turn movements.

At the CTH F intersection with Lindsay Road under RCUT control, the east and west approaches of the intersection would only allow the left-in/right-in/right-out movements. The through and left-turn movements on the east and west approaches would be required to make a right-turn maneuver at the main intersection and would then make a U-turn movement downstream from the intersection prior to continuing onto their intended route, either an additional right-turn from CTH F onto Lindsay Road or continuing northbound or southbound on CTH F.

To accommodate projected traffic on Lindsay Road, a multi-lane approach was analyzed on the WB approach. The outside lane was analyzed as a WB free-flow right-turn lane that merges into NB CTH F via an acceleration lane. This free-flow lane increases the capacity of a RCUT by separating the right-turn movements. The inside lane on the WB approach was analyzed as stop controlled and is meant to service the thru- and left-turn traffic that will utilize the U-turn to complete their maneuver. The EB approach was analyzed as a single lane stop controlled approach.

## **PART B – CAPACITY LEVEL OF SERVICE ANALYSIS**

Each of the potential traffic control alternatives were evaluated using the Synchro 10 modeling software. Acceptable levels of delay for this study is defined as LOS E or better and a 95th percentile queue less than 150 feet for minor street movements and LOS D or better for major street movements.

To estimate storage length requirements for turn bays at the study area intersections with modifications, a queuing analysis has been conducted. Note that the 95<sup>th</sup> percentile probable queue lengths were used for the design of turn bay storage at stop sign and traffic signal-controlled intersections.

### **B1. Year 2020 Full Build (with partial park) Traffic Operating Conditions**

[Table 2A](#) shows the Year 2020 full build (with partial park) traffic peak hour operating conditions at the study area intersections. The Year 2020 full build (with partial park) traffic volumes assume the full build out of the Year 2020 through Year 2023 development sites as well as partial use of the Pewaukee Sports Complex. The Year 2020 full build (with partial park) traffic volumes are shown in [Exhibit 7A](#).



**Table 2A**  
**Year 2020 Build (With Partial Park) Traffic Peak Hour Operating Conditions**  
**With Modified Geometrics and Traffic Control**

| Analysis Scenario                                                            | Peak Hour |       | Level of Service per Movement by Approach |    |    |           |    |    |            |    |    |            |    |    | Intersection     |
|------------------------------------------------------------------------------|-----------|-------|-------------------------------------------|----|----|-----------|----|----|------------|----|----|------------|----|----|------------------|
|                                                                              |           |       | Eastbound                                 |    |    | Westbound |    |    | Northbound |    |    | Southbound |    |    | Level of Service |
|                                                                              |           |       | LT                                        | TH | RT | LT        | TH | RT | LT         | TH | RT | LT         | TH | RT |                  |
| #130 - CTH F<br>& Lindsay Road<br>Left-in/Right-in/Right-out<br><b>RCUT^</b> | AM        | LOS   | -                                         | C  | -  | B         | B  | *  | *          | B  | *  | *          | A  |    |                  |
|                                                                              |           | Delay | -                                         | 21 | -  | 14        | 13 | *  | *          | 12 | *  | *          |    |    |                  |
|                                                                              |           | Queue | -                                         | 55 | -  | 25        | 25 | *  | *          | 25 | *  | *          |    |    |                  |
|                                                                              | PM        | LOS   | -                                         | C  | -  | D         | C  | *  | *          | C  | *  | *          | A  |    |                  |
|                                                                              |           | Delay | -                                         | 19 | -  | 28        | 15 | *  | *          | 18 | *  | *          |    |    |                  |
|                                                                              |           | Queue | -                                         | 40 | -  | 55        | 30 | *  | *          | 25 | *  | *          |    |    |                  |
| #110 - CTH F<br>& North Crossover<br>RCUT Intersection                       | AM        | LOS   | -                                         | -  | -  | B         | *  | *  | *          | *  | A  |            |    |    |                  |
|                                                                              |           | Delay | -                                         | -  | -  | 14        | *  | *  | *          | *  |    |            |    |    |                  |
|                                                                              |           | Queue | -                                         | -  | -  | 25        | *  | *  | *          | *  |    |            |    |    |                  |
|                                                                              | PM        | LOS   | -                                         | -  | -  | C         | *  | *  | *          | *  | A  |            |    |    |                  |
|                                                                              |           | Delay | -                                         | -  | -  | 16        | *  | *  | *          | *  |    |            |    |    |                  |
|                                                                              |           | Queue | -                                         | -  | -  | 30        | *  | *  | *          | *  |    |            |    |    |                  |
| #120 - CTH F<br>& South Crossover<br>RCUT Intersection                       | AM        | LOS   | -                                         | -  | -  | *         | *  | *  | B          | *  | A  |            |    |    |                  |
|                                                                              |           | Delay | -                                         | -  | -  | *         | *  | *  | 13         | *  |    |            |    |    |                  |
|                                                                              |           | Queue | -                                         | -  | -  | *         | *  | *  | 25         | *  |    |            |    |    |                  |
|                                                                              | PM        | LOS   | -                                         | -  | -  | *         | *  | *  | C          | *  | A  |            |    |    |                  |
|                                                                              |           | Delay | -                                         | -  | -  | *         | *  | *  | 24         | *  |    |            |    |    |                  |
|                                                                              |           | Queue | -                                         | -  | -  | *         | *  | *  | 30         | *  |    |            |    |    |                  |

(-) movement that isn't available or allowed; (\*) free flow movement; delay value shown in seconds; queue value shown in feet

(<sup>A</sup>) design has dual WBR lanes; veh heading north to use outer freeflow R-turn lane; veh heading west/south to use inner stop-controlled R-turn lane; WBR LOS shown for inner stop-controlled lane; design has NBR/SBR yield controlled

As shown in [Table 2A](#), all study area intersections are expected to operate acceptably at LOS D or better operations under Year 2020 full build (with partial park) traffic conditions and RCUT traffic control geometry during the typical weekday morning and evening peak hours.

## **B2. Year 2020 Full Build (with full park) Traffic Operating Conditions**

[Table 2B](#) shows the Year 2020 full build (with full park) traffic peak hour operating conditions at the study area intersections. The Year 2020 full build (with full park) traffic volumes assume the full build out of the Year 2020 through Year 2023 development sites as well as full use of the Pewaukee Sports Complex. The Year 2020 full build (with full park) traffic volumes are shown in [Exhibit 7C](#).

**Table 2B**

**Year 2020 Build (With Full Park) Traffic Peak Hour Operating Conditions  
With Modified Geometrics and Traffic Control**

| Analysis Scenario                                                                       | Peak Hour |       | Level of Service per Movement by Approach |    |    |           |     |     |            |    |     |            |    |    | Intersection Level of Service |
|-----------------------------------------------------------------------------------------|-----------|-------|-------------------------------------------|----|----|-----------|-----|-----|------------|----|-----|------------|----|----|-------------------------------|
|                                                                                         |           |       | Eastbound                                 |    |    | Westbound |     |     | Northbound |    |     | Southbound |    |    |                               |
|                                                                                         |           |       | LT                                        | TH | RT | LT        | TH  | RT  | LT         | TH | RT  | LT         | TH | RT |                               |
| #100 - CTH F<br>& Lindsay Road<br><i>Traffic Signal Control</i>                         | AM        | LOS   | C                                         | C  | C  | C         | A   | A   | A          | A  | B   | A          |    | B  |                               |
|                                                                                         |           | Delay | 23                                        | 23 | 25 | 22        | 9   | 6   | 4          | 10 | 12  | 7          |    |    |                               |
|                                                                                         |           | Queue | 70                                        | 65 | 60 | 35        | 25  | 120 | 25         | 30 | 285 | 0          |    |    |                               |
|                                                                                         | PM        | LOS   | C                                         | C  | C  | C         | B   | A   | A          | B  | B   | B          |    | B  |                               |
|                                                                                         |           | Delay | 31                                        | 27 | 30 | 29        | 16  | 8   | 4          | 19 | 15  | 10         |    |    |                               |
|                                                                                         |           | Queue | 70                                        | 65 | 90 | 105       | 135 | 260 | 25         | 40 | 330 | 30         |    |    |                               |
| #130 - CTH F<br>& Lindsay Road<br>Left-in/Right-in/Right-out<br><i>RCUT<sup>A</sup></i> | AM        | LOS   | -                                         | C  | -  | B         | B   | *   | *          | B  | *   | *          |    | A  |                               |
|                                                                                         |           | Delay | -                                         | 21 | -  | 14        | 13  | *   | *          | 12 | *   | *          |    |    |                               |
|                                                                                         |           | Queue | -                                         | 55 | -  | 25        | 25  | *   | *          | 25 | *   | *          |    |    |                               |
|                                                                                         | PM        | LOS   | -                                         | C  | -  | D         | C   | *   | *          | C  | *   | *          |    | A  |                               |
|                                                                                         |           | Delay | -                                         | 23 | -  | 33        | 22  | *   | *          | 18 | *   | *          |    |    |                               |
|                                                                                         |           | Queue | -                                         | 65 | -  | 80        | 85  | *   | *          | 25 | *   | *          |    |    |                               |
| #110 - CTH F<br>& North Crossover<br>RCUT Intersection                                  | AM        | LOS   | -                                         | -  | -  | -         | B   | *   | *          | -  | *   | -          |    | A  |                               |
|                                                                                         |           | Delay | -                                         | -  | -  | -         | 14  | *   | *          | -  | *   | -          |    |    |                               |
|                                                                                         |           | Queue | -                                         | -  | -  | -         | 25  | *   | *          | -  | *   | -          |    |    |                               |
|                                                                                         | PM        | LOS   | -                                         | -  | -  | -         | C   | *   | *          | -  | *   | -          |    | A  |                               |
|                                                                                         |           | Delay | -                                         | -  | -  | -         | 19  | *   | *          | -  | *   | -          |    |    |                               |
|                                                                                         |           | Queue | -                                         | -  | -  | -         | 45  | *   | *          | -  | *   | -          |    |    |                               |
| #120 - CTH F<br>& South Crossover<br>RCUT Intersection                                  | AM        | LOS   | -                                         | -  | -  | -         | *   | *   | *          | B  | -   | *          |    | A  |                               |
|                                                                                         |           | Delay | -                                         | -  | -  | -         | *   | *   | *          | 13 | -   | *          |    |    |                               |
|                                                                                         |           | Queue | -                                         | -  | -  | -         | *   | *   | *          | 25 | -   | *          |    |    |                               |
|                                                                                         | PM        | LOS   | -                                         | -  | -  | -         | *   | *   | *          | D  | -   | *          |    | A  |                               |
|                                                                                         |           | Delay | -                                         | -  | -  | -         | *   | *   | *          | 32 | -   | *          |    |    |                               |
|                                                                                         |           | Queue | -                                         | -  | -  | -         | *   | *   | *          | 55 | -   | *          |    |    |                               |

(-) movement that isn't available or allowed; (\*) free flow movement; delay value shown in seconds; queue value shown in feet

(<sup>A</sup>) design has dual WBR lanes; veh heading north to use outer freeflow R-turn lane; veh heading west/south to use inner stop-controlled R-turn lane; WBR LOS shown for inner stop-controlled lane; design has NBR/SBR yield controlled

As shown in [Table 2B](#), all study area intersections are expected to operate acceptably at LOS D or better operations under Year 2020 full build (with full park) traffic conditions with either traffic signal control or RCUT traffic control geometry during the typical weekday morning and evening peak hours.

### **B3. Year 2030 Full Build (with partial park) Traffic Operating Conditions**

[Table 3A](#) shows the Year 2030 full build (with partial park) traffic peak hour operating conditions at the study area intersections. The Year 2030 full build (with partial park) traffic volumes assume the full build out of all development sites as well as partial use of the Pewaukee Sports Complex. The Year 2030 full build (with partial park) traffic volumes are shown in [Exhibit 7B](#).



**Table 3A**  
**Year 2030 Build (With Partial Park) Traffic Peak Hour Operating Conditions**  
**With Modified Geometrics and Traffic Control**

| Analysis Scenario                                                            | Peak Hour |       | Level of Service per Movement by Approach |    |    |           |    |    |            |    |    |            |    |    | Intersection     |
|------------------------------------------------------------------------------|-----------|-------|-------------------------------------------|----|----|-----------|----|----|------------|----|----|------------|----|----|------------------|
|                                                                              |           |       | Eastbound                                 |    |    | Westbound |    |    | Northbound |    |    | Southbound |    |    | Level of Service |
|                                                                              |           |       | LT                                        | TH | RT | LT        | TH | RT | LT         | TH | RT | LT         | TH | RT |                  |
| #130 - CTH F<br>& Lindsay Road<br>Left-in/Right-in/Right-out<br><i>RCUT^</i> | AM        | LOS   | -                                         |    | D  | -         |    | C  | B          | *  | *  | B          | *  | *  | A                |
|                                                                              |           | Delay | -                                         |    | 28 | -         |    | 16 | 15         | *  | *  | 13         | *  | *  |                  |
|                                                                              |           | Queue | -                                         |    | 80 | -         |    | 25 | 25         | *  | *  | 25         | *  | *  |                  |
|                                                                              | PM        | LOS   | -                                         |    | C  | -         |    | E  | C          | *  | *  | C          | *  | *  | A                |
|                                                                              |           | Delay | -                                         |    | 24 | -         |    | 42 | 19         | *  | *  | 22         | *  | *  |                  |
|                                                                              |           | Queue | -                                         |    | 55 | -         |    | 90 | 40         | *  | *  | 25         | *  | *  |                  |
| #110 - CTH F<br>& North Crossover<br>RCUT Intersection                       | AM        | LOS   | -                                         |    |    | -         |    |    | C          | *  |    |            | *  |    | A                |
|                                                                              |           | Delay | -                                         |    |    | -         |    |    | 17         | *  |    |            | *  |    |                  |
|                                                                              |           | Queue | -                                         |    |    | -         |    |    | 25         | *  |    |            | *  |    |                  |
|                                                                              | PM        | LOS   | -                                         |    |    | -         |    |    | C          | *  |    |            | *  |    | A                |
|                                                                              |           | Delay | -                                         |    |    | -         |    |    | 20         | *  |    |            | *  |    |                  |
|                                                                              |           | Queue | -                                         |    |    | -         |    |    | 40         | *  |    |            | *  |    |                  |
| #120 - CTH F<br>& South Crossover<br>RCUT Intersection                       | AM        | LOS   | -                                         |    |    | -         |    |    | *          |    |    | C          | *  |    | A                |
|                                                                              |           | Delay | -                                         |    |    | -         |    |    | *          |    |    | 15         | *  |    |                  |
|                                                                              |           | Queue | -                                         |    |    | -         |    |    | *          |    |    | 25         | *  |    |                  |
|                                                                              | PM        | LOS   | -                                         |    |    | -         |    |    | *          |    |    | D          | *  |    | A                |
|                                                                              |           | Delay | -                                         |    |    | -         |    |    | *          |    |    | 32         | *  |    |                  |
|                                                                              |           | Queue | -                                         |    |    | -         |    |    | *          |    |    | 45         | *  |    |                  |

(-) movement that isn't available or allowed; (\*) free flow movement; delay value shown in seconds; queue value shown in feet

(<sup>A</sup>) design has dual WBR lanes; veh heading north to use outer freeflow R-turn lane; veh heading west/south to use inner stop-controlled R-turn lane; WBR LOS shown for inner stop-controlled lane; design has NBR/SBR yield controlled

As shown in [Table 3A](#), all study area intersections are expected to operate acceptably at LOS D or better operations under Year 2030 full build (with partial park) traffic conditions and RCUT traffic control geometry except the westbound right-turn movements at the CTH F intersection with Lindsay Road which are expected to operate at LOS E (7 seconds over the LOS D threshold) during the typical weekday evening peak period.

#### **B4. Year 2030 Full Build (with full park) Traffic Operating Conditions**

[Table 3B](#) shows the Year 2030 full build (with full park) traffic peak hour operating conditions at the study area intersections. The Year 2030 full build (with partial park) traffic volumes assume the full build out of all development sites as well as full use of the Pewaukee Sports Complex. The Year 2030 full build (with full park) traffic volumes are shown in [Exhibit 7D](#).

**Table 3B**

**Year 2030 Build (With Full Park) Traffic Peak Hour Operating Conditions  
With Modified Geometrics and Traffic Control**

| Analysis Scenario                                                                       | Peak Hour |       | Level of Service per Movement by Approach |    |     |           |     |     |            |    |     |            |    |    | Intersection     |
|-----------------------------------------------------------------------------------------|-----------|-------|-------------------------------------------|----|-----|-----------|-----|-----|------------|----|-----|------------|----|----|------------------|
|                                                                                         |           |       | Eastbound                                 |    |     | Westbound |     |     | Northbound |    |     | Southbound |    |    | Level of Service |
|                                                                                         |           |       | LT                                        | TH | RT  | LT        | TH  | RT  | LT         | TH | RT  | LT         | TH | RT |                  |
| #100 - CTH F<br>& Lindsay Road<br><i>Traffic Signal Control</i>                         | AM        | LOS   | C                                         | C  | C   | C         | A   | A   | A          | B  | B   | A          | B  |    |                  |
|                                                                                         |           | Delay | 27                                        | 26 | 29  | 25        | 10  | 6   | 4          | 11 | 13  | 7          |    |    |                  |
|                                                                                         |           | Queue | 75                                        | 70 | 70  | 40        | 25  | 145 | 25         | 35 | 355 | 0          |    |    |                  |
|                                                                                         | PM        | LOS   | D                                         | C  | D   | D         | C   | A   | A          | C  | B   | A          | C  |    |                  |
|                                                                                         |           | Delay | 38                                        | 32 | 38  | 40        | 24  | 10  | 4          | 25 | 16  | 9          |    |    |                  |
|                                                                                         |           | Queue | 70                                        | 65 | 110 | 150       | 170 | 345 | 25         | 60 | 400 | 30         |    |    |                  |
| #130 - CTH F<br>& Lindsay Road<br>Left-in/Right-in/Right-out<br><i>RCUT<sup>A</sup></i> | AM        | LOS   | -                                         | D  | -   | C         | B   | *   | *          | B  | *   | *          | A  |    |                  |
|                                                                                         |           | Delay | -                                         | 28 | -   | 16        | 15  | *   | *          | 13 | *   | *          |    |    |                  |
|                                                                                         |           | Queue | -                                         | 80 | -   | 25        | 25  | *   | *          | 25 | *   | *          |    |    |                  |
|                                                                                         | PM        | LOS   | -                                         | D  | -   | F         | D   | *   | *          | C  | *   | *          | A  |    |                  |
|                                                                                         |           | Delay | -                                         | 30 | -   | 55        | 31  | *   | *          | 22 | *   | *          |    |    |                  |
|                                                                                         |           | Queue | -                                         | 85 | -   | 130       | 125 | *   | *          | 25 | *   | *          |    |    |                  |
| #110 - CTH F<br>& North Crossover<br>RCUT Intersection                                  | AM        | LOS   | -                                         | -  | -   | C         | *   | *   | -          | *  | -   | A          |    |    |                  |
|                                                                                         |           | Delay | -                                         | -  | -   | 17        | *   | *   | -          | *  | -   |            |    |    |                  |
|                                                                                         |           | Queue | -                                         | -  | -   | 25        | *   | *   | -          | *  | -   |            |    |    |                  |
|                                                                                         | PM        | LOS   | -                                         | -  | -   | D         | *   | *   | -          | *  | -   | A          |    |    |                  |
|                                                                                         |           | Delay | -                                         | -  | -   | 25        | *   | *   | -          | *  | -   |            |    |    |                  |
|                                                                                         |           | Queue | -                                         | -  | -   | 65        | *   | *   | -          | *  | -   |            |    |    |                  |
| #120 - CTH F<br>& South Crossover<br>RCUT Intersection                                  | AM        | LOS   | -                                         | -  | -   | *         | *   | -   | C          | *  | -   | A          |    |    |                  |
|                                                                                         |           | Delay | -                                         | -  | -   | *         | *   | -   | 15         | *  | -   |            |    |    |                  |
|                                                                                         |           | Queue | -                                         | -  | -   | *         | *   | -   | 25         | *  | -   |            |    |    |                  |
|                                                                                         | PM        | LOS   | -                                         | -  | -   | *         | *   | -   | E          | *  | -   | A          |    |    |                  |
|                                                                                         |           | Delay | -                                         | -  | -   | *         | *   | -   | 49         | *  | -   |            |    |    |                  |
|                                                                                         |           | Queue | -                                         | -  | -   | *         | *   | -   | 85         | *  | -   |            |    |    |                  |

(-) movement that isn't available or allowed; (\*) free flow movement; delay value shown in seconds; queue value shown in feet

(\*) design has dual WBR lanes; veh heading north to use outer freeflow R-turn lane; veh heading west/south to use inner stop-controlled R-turn lane;

WBR LOS shown for inner stop-controlled lane; design has NBR/SBR yield controlled

As shown in Table 3B, all study area intersections are expected to operate acceptably at LOS D or better operations under Year 2030 full build (with full park) traffic conditions with either traffic signal control or RCUT traffic control geometry except the westbound right-turn movements at the CTH F intersection with Lindsay Road which are expected to operate at LOS F (20 seconds over the LOS D threshold) during the typical weekday evening peak period and the southbound left-turn/U-turn movements at the south crossover which are expected to operate at LOS E (14 seconds over the LOS D threshold) during the typical weekday evening peak period.

It should be noted that the full-build scenario assumes all 17 of 17 sport complex fields are in use which may be unlikely during the typical PM peak hour. With up to 13 of 17 sport complex fields active during the 2030 PM peak hour all movements operate acceptably per the aforementioned acceptability definition.

### PART C – TRAFFIC CONTROL NEEDS

Modifications to the existing traffic control are recommended at the CTH F intersection with Lindsay Road as follows.

- Reconstruct the CTH F intersection with Lindsay Road under either traffic signal control or RCUT geometry.

### PART D – INTERSECTION CONTTOL EVALUATION

Because modifications to the traffic control are necessary at the CTH F intersection with Lindsay Road, an Intersection Control Evaluation (ICE) was completed for the subject intersection. The



aforementioned traffic control alternatives were considered based on the decision matrix included in the Appendix. Based on the analysis, either traffic signal control or RCUT control is the recommended traffic control under the Year 2020 full build and Year 2030 full build traffic volume scenario. The results of the analysis are included in the [Appendix](#) of this report.

#### **PART E – INTERSECTION SIGHT DISTANCE ANALYSIS**

The party responsible for designing the intersections will be responsible for cross-checking, verifying and designing for all applicable sight distances. Site observation indicates that intersection sight distance (ISD) is expected to be met. ISD must be double checked during the permit application stage of development.

## CHAPTER V – RECOMMENDATIONS AND CONCLUSION

### PART A – RECOMMENDATIONS

#### A1. Year 2020 Background Traffic

The study area intersections were analyzed based on the procedures set forth in the *Highway Capacity Manual* (HCM), 6<sup>th</sup> Edition. Intersection operation is defined by “level of service”. Level of Service (LOS) is a quantitative measure that refers to the overall quality of flow at an intersection ranging from very good, represented by LOS ‘A’, to very poor, represented by LOS ‘F’. For the purpose of this study, LOS D or better was used to define desirable peak hour operating conditions.

The analysis was conducted using existing intersection geometrics and traffic control. The CTH F intersection with Lindsay Road is currently operating acceptably at LOS D or better operations under the Year 2020 background traffic volumes except the eastbound and westbound movements which are currently operating unacceptably with higher delays at LOS E/F during the typical weekday morning and weekday evening peak hours.

#### A2. Recommended Modifications

Full build traffic volumes include full build out of the identified adjacent planned and potential development areas as described above as well as a near full capacity event at the Pewaukee Sports Complex. The following modifications, as shown in [Exhibits 8A&8B](#), are recommended to accommodate the current Year 2020 full build and future Year 2030 full build traffic volumes.

- Reconstruct the CTH F intersection with Lindsay Road under either traffic signal control or RCUT geometry as described below:

##### *Traffic Signal Control Option*

##### *Northbound*

- Extend the existing left-turn lane to 400 feet of storage and if possible, realign to provide positive offset from the opposing left-turn lane

##### *Southbound*

- Extend the existing left-turn lane to 300 feet of storage and if possible, realign to provide positive offset from the opposing left-turn lane

##### *Eastbound*

- An exclusive left-turn lane with 150 feet of storage and if possible, positively offset from the opposing left-turn lane
- A shared through/right-turn lane

##### *Westbound*

- An exclusive left-turn lane with 225 feet of storage and if possible, positively offset from the opposing left-turn lane
- A shared through/right-turn lane

##### *General*

- Provide a full actuated traffic signal with northbound protected/permitted flashing yellow left-turn phasing



***RCUT Control Option****Northbound*

- An exclusive left-turn lane with 350 feet of storage and if possible, positively offset from the opposing left-turn lane
- Two through lanes
- An exclusive, and offset, right-turn lane that has a channelizing island and is yield controlled

*Southbound*

- An exclusive left-turn lane with 250 feet of storage and if possible, positively offset from the opposing left-turn lane
- Two through lanes
- An exclusive, and offset, right-turn lane that has a channelizing island and is yield controlled

*Eastbound*

- A single approach lane with stop control – this lane would service EB right-turn traffic, and EB thru and left-turn traffic that would make a right-turn, then a U-turn at the southern U-turn location

*Westbound*

- An exclusive free-flow right-turn lane with 150 feet of storage and an acceleration lane onto CTH F
- A second approach lane (inside) with stop control – this lane would service Lindsay Road traffic that would make a right-turn, then use the northern U-turn location to reach their destination

*North Median Cut*

- Provide a median cut at approximately 1,000 – 1,500 feet north of the CTH F/Lindsay intersection
- An exclusive northbound left-turn lane within the median with 300 feet of storage

*South Median Cut*

- Provide a median cut at approximately 1,000 – 1,500 feet south of the CTH F/Lindsay intersection
- An exclusive southbound left-turn lane within the median with 300 feet of storage

*General*

- It is recommended that the designers of this intersection follow best practices for RCUT design as it is a relatively rare geometric configuration. There are several resources available from WisDOT, MnDOT, NCDOT to assist with the design.
- Street lighting at the intersection and at both U-turn locations is recommended
- Overhead signing and pavement marking is recommended on the minor street approaches to guide drivers to the correct lane choice.
- The free-flow right-turn lanes on the minor street approaches are meant for the right-turn traffic only (not traffic going to the U-turn location). Designers should consider

- physically restricting right-turn free flow traffic from having the opportunity to cross lanes and access the U-turn location.
- At the U-turns, drivers may sometimes use the bulb-outs as a storage spot. The purpose of the bulb-out is extra pavement for trucks and buses to complete the U-turn maneuver. If drivers use the bulb-outs as a temporary storage spot before accelerating onto CTH F, it should be discouraged through enforcement, signing, pavement marking and/or public education.
  - A public education campaign is recommended to help educate motorists what to expect at an RCUT and how to drive a RCUT intersection.

The analysis in this study focused on identifying safety and operational solutions for the intersection of CTH F and Lindsay Road. This intersection has a known safety issue with high-speed right-angle crashes. Based on the analysis, two feasible alternatives for accommodating traffic through the year 2030 were considered, traffic signal control and Restricted Crossing U-turn (RCUT) control.

A traffic signal is an improvement nearly everyone is familiar with, whereas a RCUT is a configuration much less familiar to drivers. Traffic signals are typically installed when side-street volumes compared to mainline volumes exceed certain thresholds (i.e., warrants). Future traffic growth and anticipated developments in the area indicate traffic signal warrants are met in the next few years with anticipated residential development. In high-speed locations, like at the CTH F intersection with Lindsay Road, traffic signals can observe severe right-angle, left-turn angle, and rear-end crashes and will create the need to stop for northbound and southbound traffic. Traffic signals also offer a wide range of flexibility in handling fluctuations in traffic demand.

RCUTs are not nearly as common as traffic signals but are growing in popularity because they have been successful at reducing crashes at high-speed intersections. While traffic signals can be installed in a variety of situations, RCUTs require a unique set of characteristics – such as relatively low minor street volumes, the absence of access points on the major route and available median areas to provide for U-turn movements. The intersection of CTH F & Lindsay Road has these unique characteristics, thus a RCUT was evaluated and determined to be a feasible solution.

At a RCUT intersection, the right-angle conflict points are eliminated (which is the existing cause of crashes at CTH F & Lindsay Road). Northbound and southbound drivers would maintain free-flow operations, and northbound and southbound left-turn movements would operate as they do in the existing conditions. Thus, a high level of mobility would be maintained. Drivers intending to cross CTH F or turn onto CTH F from Lindsay Road would do so differently. Per the recommended geometry, WB right-turn traffic would be provided a free-flow ramp lane which will eliminate delay associated with that movement. Also, in the WB direction, a second “inside” lane would service traffic intending to cross CTH F. These WB drivers in the inside lane would make a WB right-turn and then utilize the northern U-turn location to get to their destination. In the EB direction, a single approach lane is recommended. EB drivers intending to cross or turn north onto CTH F would make a right-turn and then a U-turn to access their destination.

There are pros and cons to both intersection types analyzed in this report. The RCUT reduces conflict points and maintains a high level of mobility for CTH F traffic while minor street through and left-turn traffic would have a longer (but safer) maneuver. The traffic signal is a more familiar improvement that offers flexibility to handle fluctuations in traffic but is



potentially susceptible to high-speed crashes, including right-angle crashes that can result when motorists run a red-light. Traffic signals also require continual maintenance and updates to their timings.

The intent of this analysis was to analyze projected traffic volumes at the intersection of CTH F and Lindsay Road and determine feasible solutions to mitigate the existing severe right-angle crash issue. A traffic signal or a RCUT intersection appear to be feasible alternatives based on assumptions and analysis in this study.

With the recommended modifications, all movements at the study area intersections are expected to continue to operate at acceptable levels under the current Year 2020 full build and future Year 2030 full build traffic conditions. Acceptable levels of delay for this study is defined as LOS E or better and a 95th percentile queue less than 150 feet for minor street movements and LOS D or better for major street movements.

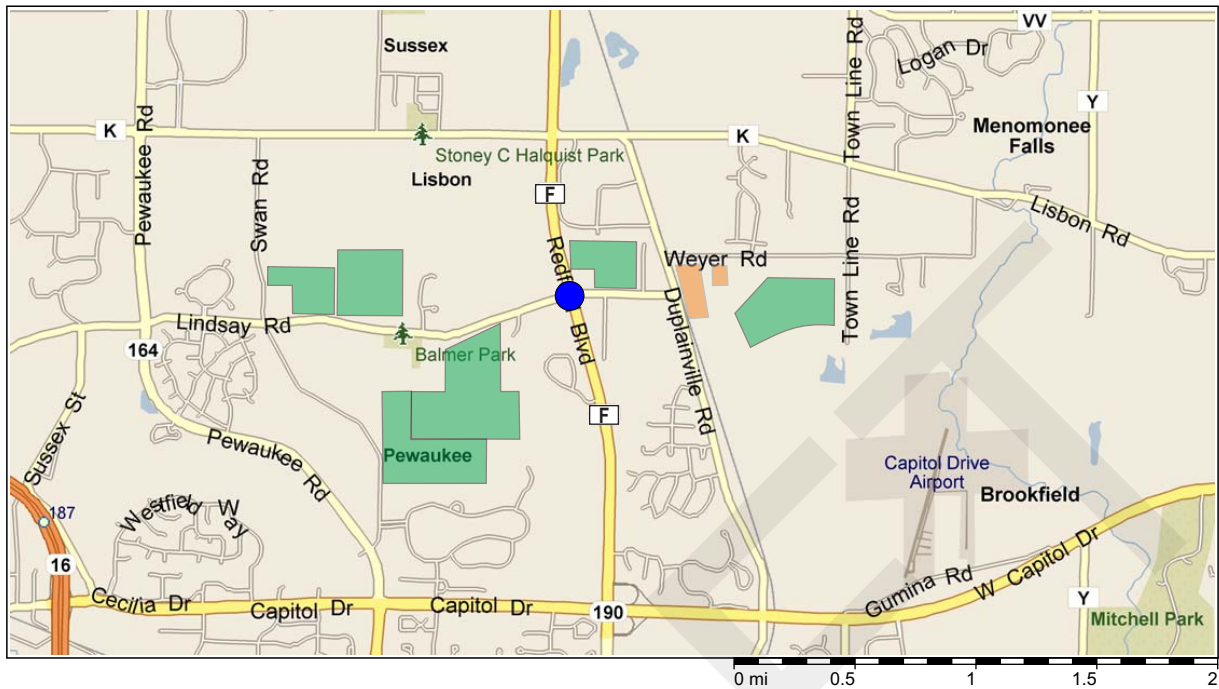
## PART B – CONCLUSION

A traffic signal or an RCUT controlled intersection are expected to provide acceptable operations through year 2030 based on the background growth rate assumptions and modifications identified in this TIA. A comparison summary of the alternatives is provided below.

### Comparison Table

| RCUT                                                                                                                                                                                                                                                                                                                                                |                                                                                                   | TRAFFIC SIGNAL                                                                                                                                                                                                                                                                                                                                |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>✓ RCUTs reduce the number of conflict points from 32 to 18 and eliminate the conflict point (right-angle) contributing to the existing severe crashes. RCUTs have been very successful at reducing severe right-angle crashes.</p>                                                                                                               | SAFETY<br>     | <p>Traffic signals reduce the risk of right-angle collisions. However, high-speed traffic signals are prone to severe rear-end crashes and red-light running crashes.</p>                                                                                                                                                                     |
| <p>✓ Minor street traffic may experience more delay and travel time, but the overall operations are substantially better than a traffic signal. In the full-build 2030, the AM and PM peak hours expect:<br/>→ 556,000 fewer peak hour stops annually<br/>→ \$60,000 road user delay cost savings.</p>                                              | OPERATIONS<br> | <p>All movements are expected to operate at acceptable levels, however, major street (CTH F) traffic is required to stop to service Lindsay Road traffic. A signal would result in over 1,000,000 stops per year in the full-build 2030 scenario, AM and PM peak hour combined. Road user delay costs would be higher compared to a RCUT.</p> |
| <p>Initial costs are estimated at \$700,000 - \$950,000 (not including a WB right-turn bypass lane which could add \$300k+). It is expected the RCUT could qualify for 90% federal aid through the HSIP program and minimal maintenance costs would be expected.</p>                                                                                | COST<br>       | <p>Initial costs are estimated at \$500,000 to \$750,000 depending on the amount of geometric changes implemented. A signal could potentially qualify for federal aid through the HSIP program. Traffic signals do incur more annual maintenance costs than RCUTs. ✓</p>                                                                      |
| <p>RCUTs are less familiar to drivers than traffic signals. Therefore, additional public education is suggested for helping drivers understand the intersection. While the configuration of a RCUT is unique, the movements drivers make are commonplace. After implementation, the concept is generally well-received by the traveling public.</p> | EDUCATION<br>  | <p>Drivers are very familiar with traffic signals. If a flashing yellow arrow is used for left-turn movements, public education regarding the operations of a flashing yellow arrow is suggested. ✓</p>                                                                                                                                       |

# Pewaukee, Wisconsin



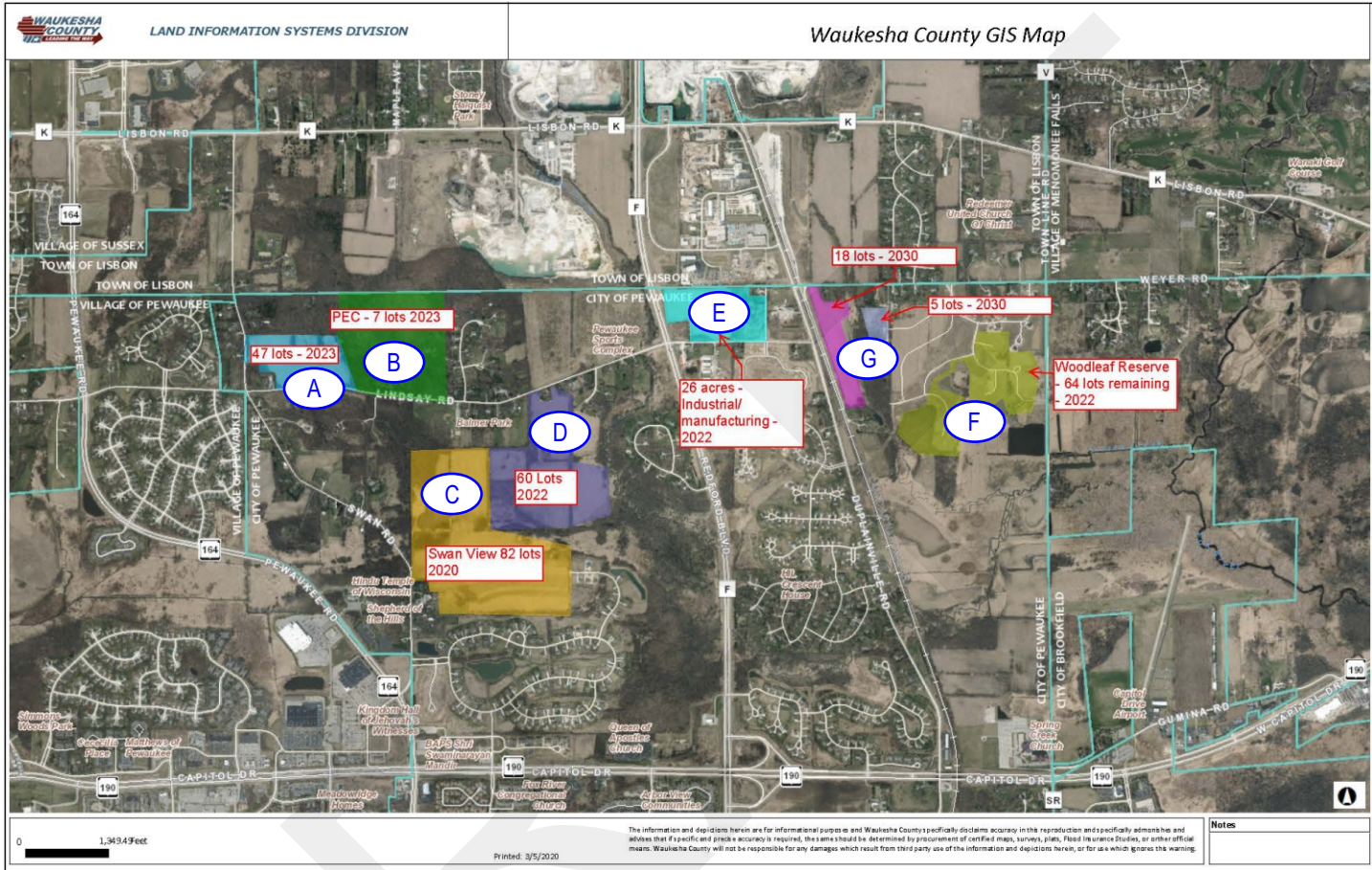
## LEGEND

- Study Intersection
- Developed Area 2020/2022
- Developed Area 2030

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**LEGEND**

- Study Intersection
- X Parcel Designation (relates to Trip Generation Tables)

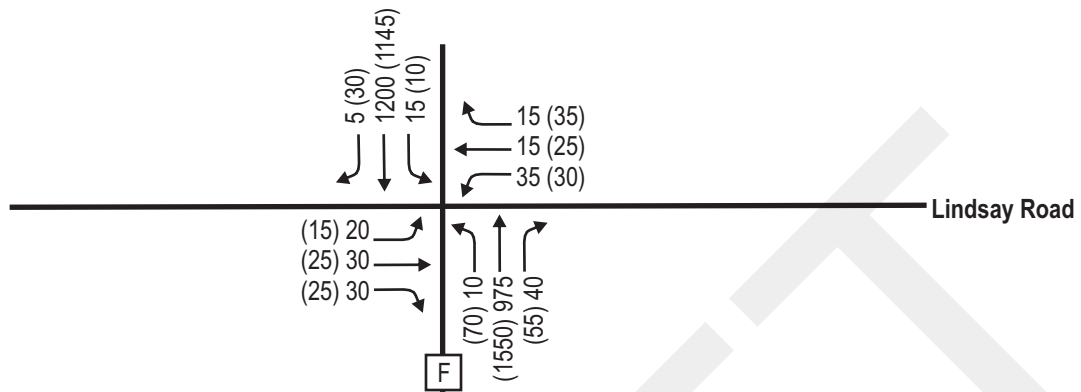
# LEGEND

-  Stop Sign
-  Existing Lane Configuration
-  Existing Storage Length (in Feet)
-  Divided Roadway Median

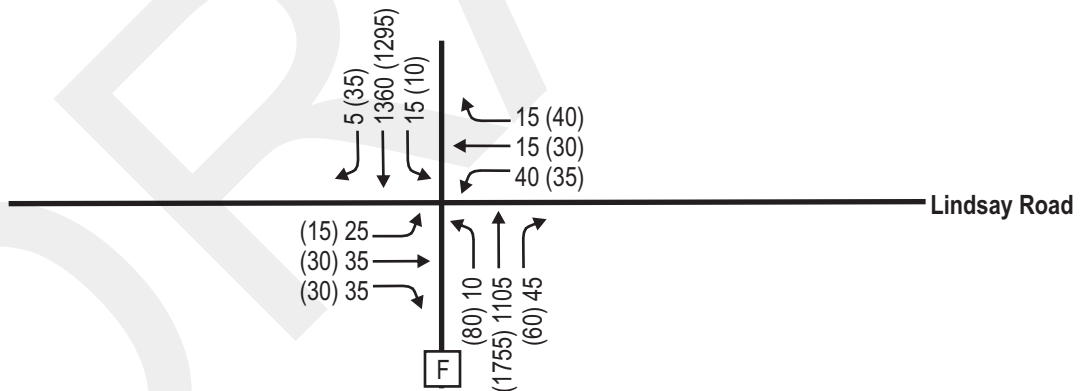


## EXHIBIT 2 EXISTING TRANSPORTATION DETAIL





**EXHIBIT 3A**  
**YEAR 2020 EXISTING TRAFFIC VOLUMES**



**EXHIBIT 3B**  
**YEAR 2030 BACKGROUND TRAFFIC VOLUMES**

**Exhibit 4A**  
**Northwest Residential A Trip Generation Table**

| Land Use               | ITE Code | Proposed Size | Weekday Daily | AM Peak     |             |           | PM Peak     |             |           |
|------------------------|----------|---------------|---------------|-------------|-------------|-----------|-------------|-------------|-----------|
|                        |          |               |               | In          | Out         | Total     | In          | Out         | Total     |
| Single Family Detached | 210      | 47 Units      | 520<br>FCE    | 10<br>(25%) | 30<br>(75%) | 40<br>FCE | 30<br>(63%) | 20<br>(37%) | 50<br>FCE |
| <b>Total New Trips</b> |          |               | <b>520</b>    | <b>10</b>   | <b>30</b>   | <b>40</b> | <b>30</b>   | <b>20</b>   | <b>50</b> |

**TRIP DISTRIBUTION**

|                  |     |            |           |           |           |           |           |           |
|------------------|-----|------------|-----------|-----------|-----------|-----------|-----------|-----------|
| North on CTH F   | 25% | 130        | 5         | 10        | 15        | 10        | 5         | 15        |
| South on CTH F   | 25% | 130        | 0         | 5         | 5         | 5         | 5         | 10        |
| East on Lindsay  | 5%  | 30         | 0         | 0         | 0         | 0         | 0         | 0         |
| North on STH 164 | 20% | 100        | 0         | 5         | 5         | 5         | 5         | 10        |
| South on STH 164 | 25% | 130        | 5         | 10        | 15        | 10        | 5         | 15        |
| <b>100%</b>      |     | <b>520</b> | <b>10</b> | <b>30</b> | <b>40</b> | <b>30</b> | <b>20</b> | <b>50</b> |

**Exhibit 4B**  
**Northwest Residential B Trip Generation Table**

| Land Use               | ITE Code | Proposed Size | Weekday Daily | AM Peak    |            |           | PM Peak    |            |           |
|------------------------|----------|---------------|---------------|------------|------------|-----------|------------|------------|-----------|
|                        |          |               |               | In         | Out        | Total     | In         | Out        | Total     |
| Single Family Detached | 210      | 7 Units       | 90<br>FCE     | 5<br>(25%) | 5<br>(75%) | 10<br>FCE | 5<br>(63%) | 5<br>(37%) | 10<br>FCE |
| <b>Total New Trips</b> |          |               | <b>90</b>     | <b>5</b>   | <b>5</b>   | <b>10</b> | <b>5</b>   | <b>5</b>   | <b>10</b> |

**TRIP DISTRIBUTION**

|                  |     |           |          |          |           |          |          |           |
|------------------|-----|-----------|----------|----------|-----------|----------|----------|-----------|
| North on CTH F   | 25% | 25        | 5        | 5        | 10        | 5        | 5        | 10        |
| South on CTH F   | 25% | 25        | 0        | 0        | 0         | 0        | 0        | 0         |
| East on Lindsay  | 5%  | 0         | 0        | 0        | 0         | 0        | 0        | 0         |
| North on STH 164 | 20% | 20        | 0        | 0        | 0         | 0        | 0        | 0         |
| South on STH 164 | 25% | 20        | 0        | 0        | 0         | 0        | 0        | 0         |
| <b>100%</b>      |     | <b>90</b> | <b>5</b> | <b>5</b> | <b>10</b> | <b>5</b> | <b>5</b> | <b>10</b> |

**Exhibit 4C**  
**Southwest Residential C Trip Generation Table**

| Land Use               | ITE Code | Proposed Size | Weekday Daily | AM Peak     |             |           | PM Peak     |             |           |
|------------------------|----------|---------------|---------------|-------------|-------------|-----------|-------------|-------------|-----------|
|                        |          |               |               | In          | Out         | Total     | In          | Out         | Total     |
| Single Family Detached | 210      | 82 Units      | 870<br>FCE    | 15<br>(25%) | 50<br>(75%) | 65<br>FCE | 55<br>(63%) | 30<br>(37%) | 85<br>FCE |
| <b>Total New Trips</b> |          |               | <b>870</b>    | <b>15</b>   | <b>50</b>   | <b>65</b> | <b>55</b>   | <b>30</b>   | <b>85</b> |

**TRIP DISTRIBUTION**

|                  |     |            |           |           |           |           |           |           |
|------------------|-----|------------|-----------|-----------|-----------|-----------|-----------|-----------|
| North on CTH F   | 25% | 220        | 5         | 15        | 20        | 15        | 10        | 25        |
| South on CTH F   | 25% | 220        | 5         | 15        | 20        | 15        | 10        | 25        |
| East on Lindsay  | 5%  | 40         | 0         | 0         | 0         | 0         | 0         | 0         |
| North on STH 164 | 20% | 170        | 0         | 5         | 5         | 10        | 5         | 15        |
| South on STH 164 | 25% | 220        | 5         | 15        | 20        | 15        | 5         | 20        |
| <b>100%</b>      |     | <b>870</b> | <b>15</b> | <b>50</b> | <b>65</b> | <b>55</b> | <b>30</b> | <b>85</b> |



**Exhibit 4D**  
**Southwest Residential D Trip Generation Table**

| Land Use               | ITE Code | Proposed Size | Weekday Daily | AM Peak     |             |           | PM Peak     |             |           |
|------------------------|----------|---------------|---------------|-------------|-------------|-----------|-------------|-------------|-----------|
|                        |          |               |               | In          | Out         | Total     | In          | Out         | Total     |
| Single Family Detached | 210      | 60 Units      | 650<br>FCE    | 10<br>(25%) | 35<br>(75%) | 45<br>FCE | 40<br>(63%) | 20<br>(37%) | 60<br>FCE |
| <b>Total New Trips</b> |          |               | <b>650</b>    | <b>10</b>   | <b>35</b>   | <b>45</b> | <b>40</b>   | <b>20</b>   | <b>60</b> |

**TRIP DISTRIBUTION**

|                  |             |            |           |           |           |           |           |           |
|------------------|-------------|------------|-----------|-----------|-----------|-----------|-----------|-----------|
| North on CTH F   | 25%         | 160        | 5         | 10        | 15        | 10        | 5         | 15        |
| South on CTH F   | 25%         | 160        | 5         | 10        | 15        | 10        | 5         | 15        |
| East on Lindsay  | 5%          | 35         | 0         | 0         | 0         | 0         | 0         | 0         |
| North on STH 164 | 20%         | 135        | 0         | 5         | 5         | 10        | 5         | 15        |
| South on STH 164 | 25%         | 160        | 0         | 10        | 10        | 10        | 5         | 15        |
|                  | <b>100%</b> | <b>650</b> | <b>10</b> | <b>35</b> | <b>45</b> | <b>40</b> | <b>20</b> | <b>60</b> |

**Exhibit 4E**  
**Manufacturing/Industrial E Trip Generation Table**

| Land Use                 | ITE Code | Proposed Size | Weekday Daily | AM Peak      |             |            | PM Peak     |             |               |
|--------------------------|----------|---------------|---------------|--------------|-------------|------------|-------------|-------------|---------------|
|                          |          |               |               | In           | Out         | Total      | In          | Out         | Total         |
| Manufacturing/Industrial | 140      | 26 Acres      | 900<br>FCE    | 105<br>(90%) | 10<br>(10%) | 115<br>FCE | 50<br>(43%) | 70<br>(57%) | 120<br>(4.54) |
| <b>Total New Trips</b>   |          |               | <b>900</b>    | <b>105</b>   | <b>10</b>   | <b>115</b> | <b>50</b>   | <b>70</b>   | <b>120</b>    |

**TRIP DISTRIBUTION**

|                 |             |            |            |           |            |           |           |            |
|-----------------|-------------|------------|------------|-----------|------------|-----------|-----------|------------|
| North on CTH F  | 30%         | 270        | 30         | 5         | 35         | 15        | 25        | 40         |
| South on CTH F  | 50%         | 450        | 55         | 5         | 60         | 25        | 35        | 60         |
| East on Lindsay | 10%         | 90         | 10         | 0         | 10         | 5         | 5         | 10         |
| West on Lindsay | 10%         | 90         | 10         | 0         | 10         | 5         | 5         | 10         |
|                 | <b>100%</b> | <b>900</b> | <b>105</b> | <b>10</b> | <b>115</b> | <b>50</b> | <b>70</b> | <b>120</b> |

**Exhibit 4F**  
**Northeast Residential F Trip Generation Table**

| Land Use               | ITE Code | Proposed Size | Weekday Daily | AM Peak     |             |           | PM Peak     |             |           |
|------------------------|----------|---------------|---------------|-------------|-------------|-----------|-------------|-------------|-----------|
|                        |          |               |               | In          | Out         | Total     | In          | Out         | Total     |
| Single Family Detached | 210      | 64 Units      | 690<br>FCE    | 15<br>(25%) | 35<br>(75%) | 50<br>FCE | 40<br>(63%) | 25<br>(37%) | 65<br>FCE |
| <b>Total New Trips</b> |          |               | <b>690</b>    | <b>15</b>   | <b>35</b>   | <b>50</b> | <b>40</b>   | <b>25</b>   | <b>65</b> |

**TRIP DISTRIBUTION**

|                             |     |            |           |           |           |           |           |           |
|-----------------------------|-----|------------|-----------|-----------|-----------|-----------|-----------|-----------|
| North on CTH F              | 30% | 210        | 5         | 10        | 15        | 10        | 10        | 20        |
| South on CTH F              | 30% | 210        | 5         | 10        | 15        | 10        | 10        | 20        |
| East on Lisbon              | 20% | 140        | 5         | 10        | 15        | 10        | 5         | 15        |
| West on Lindsay             | 5%  | 30         | 0         | 0         | 0         | 0         | 0         | 0         |
| West on Lisbon/North on Dup | 15% | 100        | 0         | 5         | 5         | 10        | 0         | 10        |
| <b>100%</b>                 |     | <b>690</b> | <b>15</b> | <b>35</b> | <b>50</b> | <b>40</b> | <b>25</b> | <b>65</b> |

**Exhibit 4G**  
**Northeast Residential G Trip Generation Table**

| Land Use               | ITE Code | Proposed Size | Weekday Daily | AM Peak    |             |           | PM Peak     |             |           |
|------------------------|----------|---------------|---------------|------------|-------------|-----------|-------------|-------------|-----------|
|                        |          |               |               | In         | Out         | Total     | In          | Out         | Total     |
| Single Family Detached | 210      | 23 Units      | 270<br>FCE    | 5<br>(25%) | 15<br>(75%) | 20<br>FCE | 15<br>(63%) | 10<br>(37%) | 25<br>FCE |
| <b>Total New Trips</b> |          |               | <b>270</b>    | <b>5</b>   | <b>15</b>   | <b>20</b> | <b>15</b>   | <b>10</b>   | <b>25</b> |

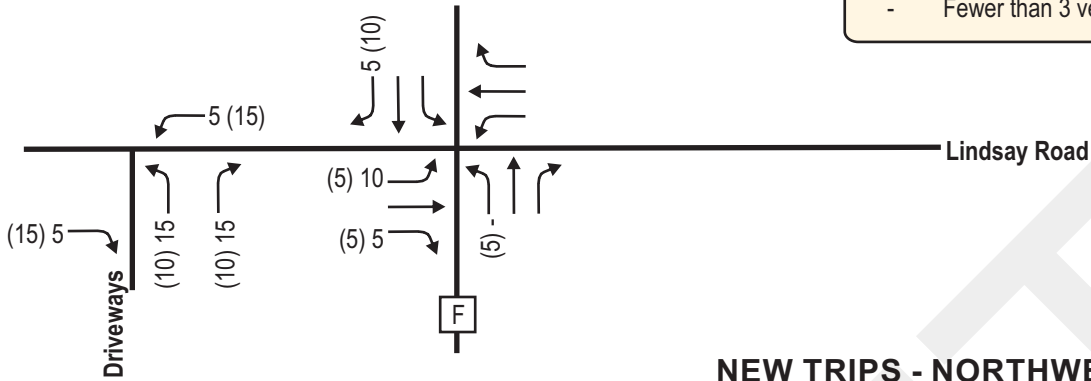
**TRIP DISTRIBUTION**

|                             |     |            |          |           |           |           |           |           |
|-----------------------------|-----|------------|----------|-----------|-----------|-----------|-----------|-----------|
| North on CTH F              | 30% | 80         | 5        | 5         | 10        | 5         | 5         | 10        |
| South on CTH F              | 30% | 90         | 0        | 5         | 5         | 5         | 5         | 10        |
| East on Lisbon              | 20% | 50         | 0        | 5         | 5         | 5         | 0         | 5         |
| West on Lindsay             | 5%  | 10         | 0        | 0         | 0         | 0         | 0         | 0         |
| West on Lisbon/North on Dup | 15% | 40         | 0        | 0         | 0         | 0         | 0         | 0         |
| <b>100%</b>                 |     | <b>270</b> | <b>5</b> | <b>15</b> | <b>20</b> | <b>15</b> | <b>10</b> | <b>25</b> |

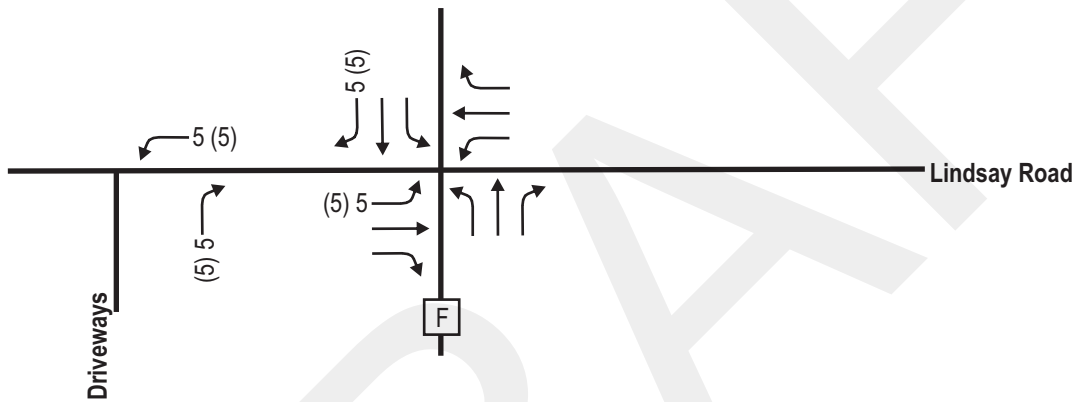


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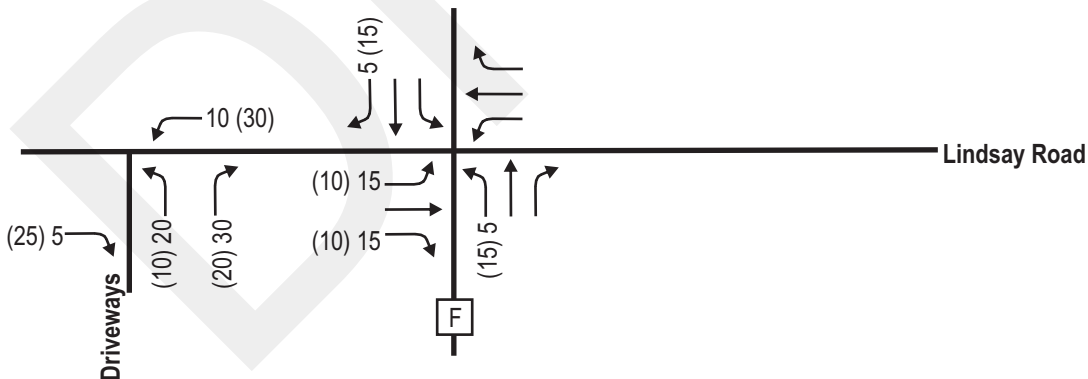
- XX Weekday AM Peak Hour (7:00-8:00AM)
- (XX) Weekday PM Peak Hour (4:30-5:30PM)
- Fewer than 3 vehicles per hour



**EXHIBIT 5A**  
**NEW TRIPS - NORTHWEST RESIDENTIAL A**



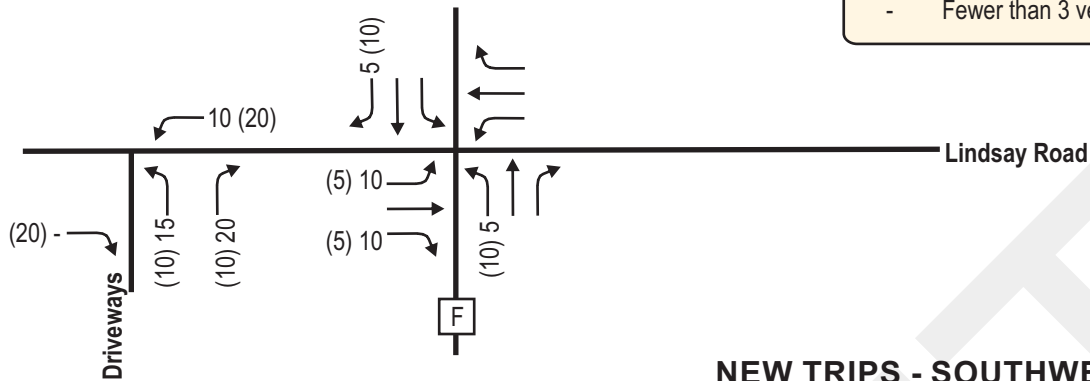
**EXHIBIT 5B**  
**NEW TRIPS - NORTHWEST RESIDENTIAL B**



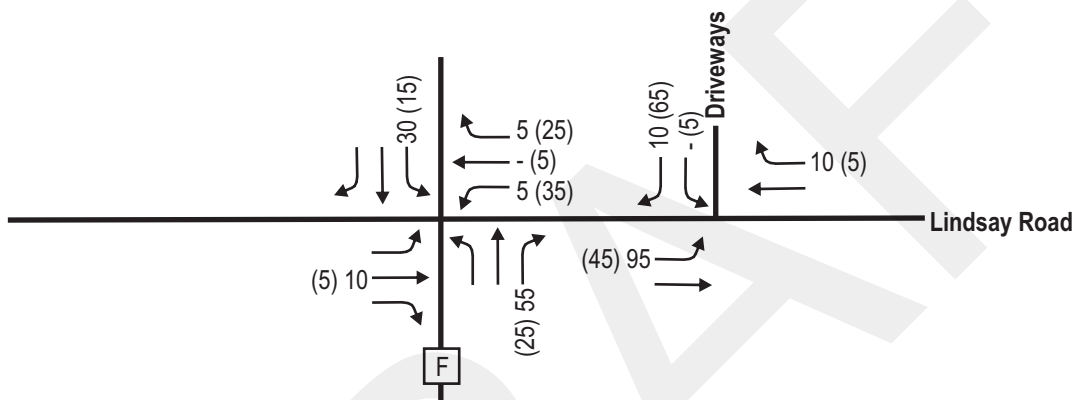
**EXHIBIT 5C**  
**NEW TRIPS - SOUTHWEST RESIDENTIAL C**

# LEGEND

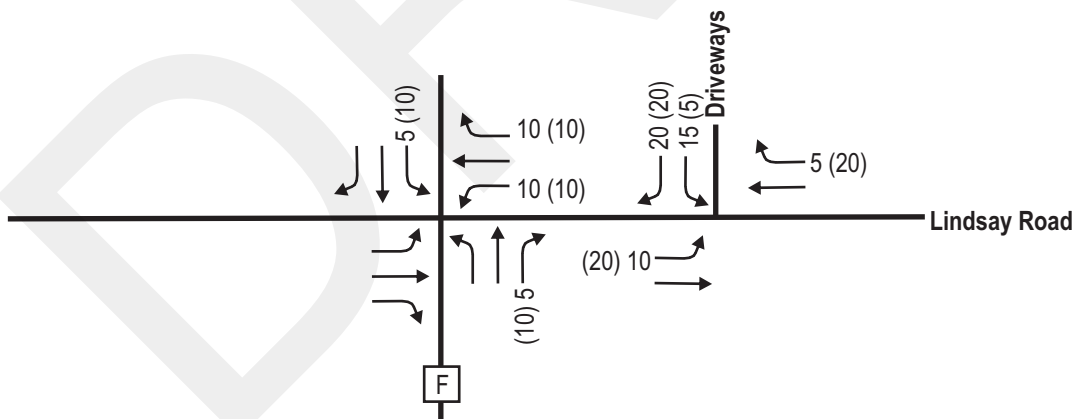
- XX Weekday AM Peak Hour (7:00-8:00AM)
- (XX) Weekday PM Peak Hour (4:30-5:30PM)
- Fewer than 3 vehicles per hour



**EXHIBIT 5D**  
**NEW TRIPS - SOUTHWEST RESIDENTIAL D**



**EXHIBIT 5E**  
**NEW TRIPS - MANUFACTURING/INDUSTIRAL E**

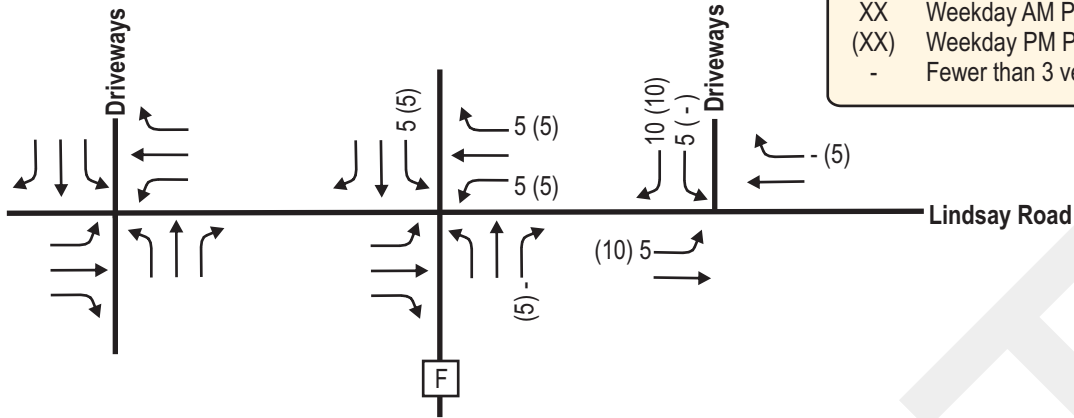


**EXHIBIT 5F**  
**NEW TRIPS - NORTHEAST RESIDENTIAL F**

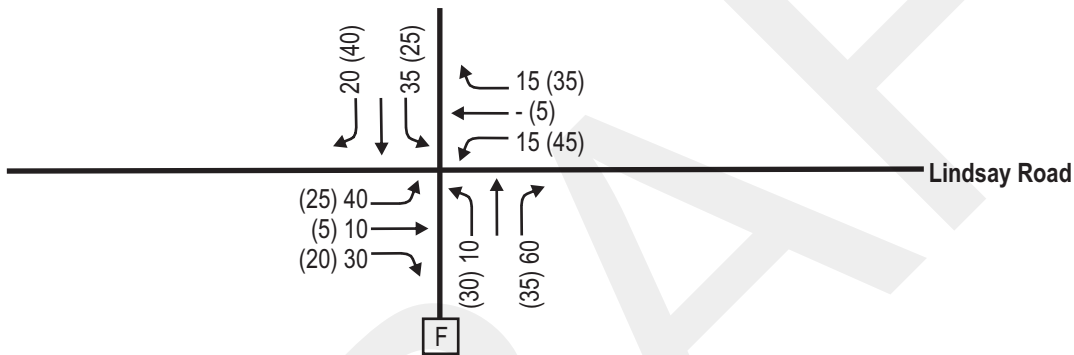


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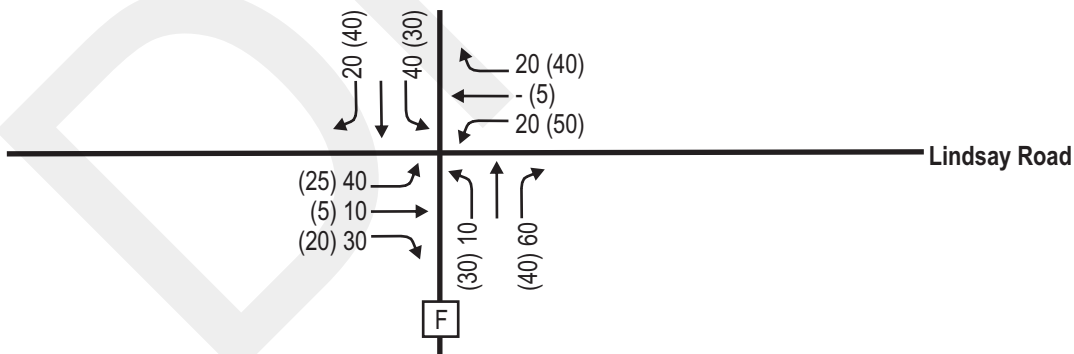
- XX Weekday AM Peak Hour (7:00-8:00AM)
- (XX) Weekday PM Peak Hour (4:30-5:30PM)
- Fewer than 3 vehicles per hour



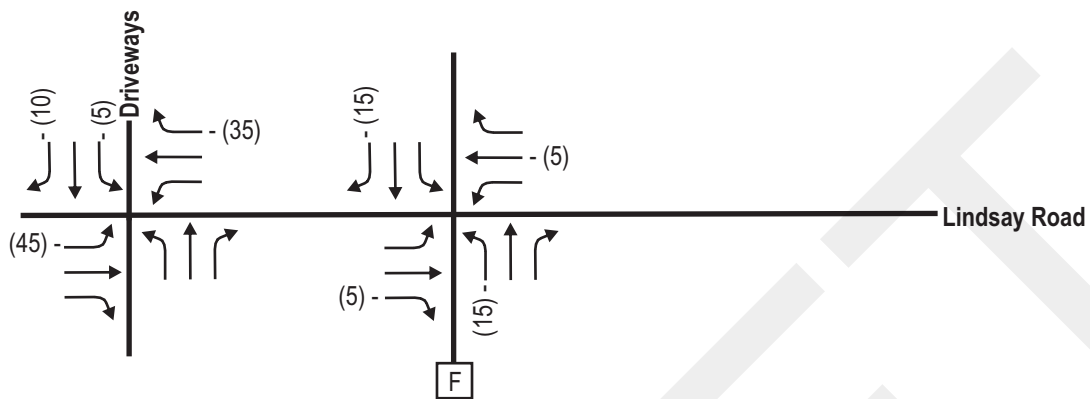
**EXHIBIT 5G**  
**NEW TRIPS - NORTHEAST RESIDENTIAL G**



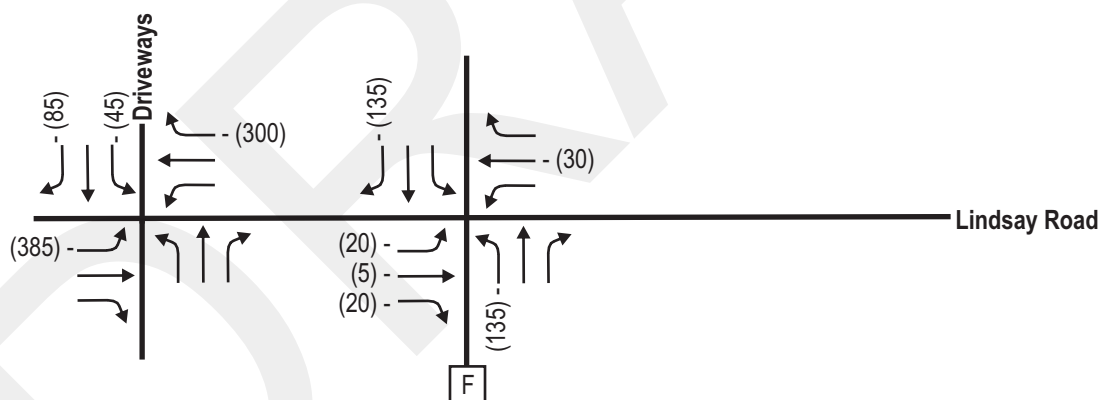
**EXHIBIT 5H**  
**NEW TRIPS - ALL YEAR 2020/2023 NEW DEVELOPMENT**



**EXHIBIT 5J**  
**NEW TRIPS - ALL YEAR 2020/2023 & YEAR 2030 NEW DEVELOPMENT**

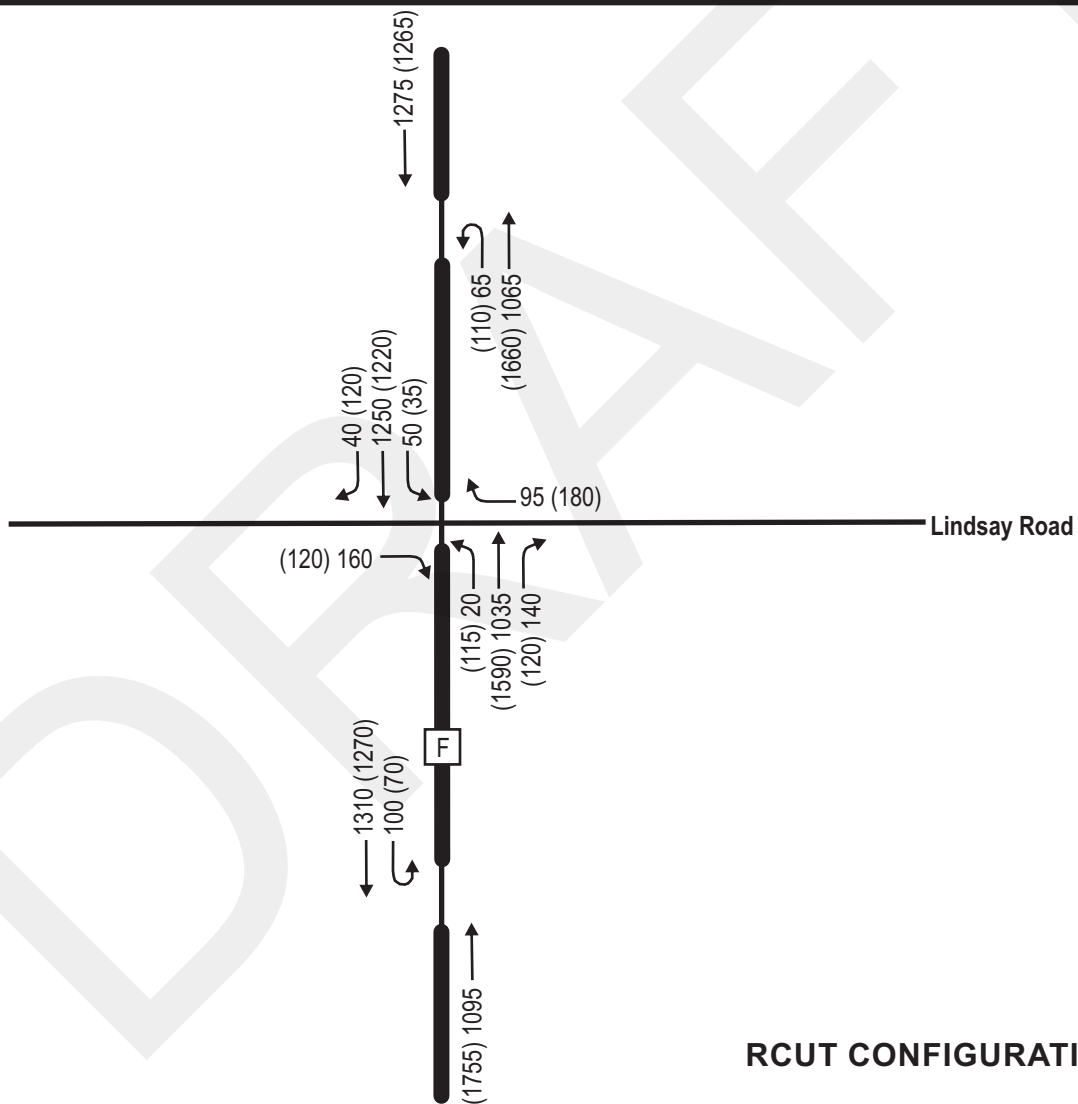
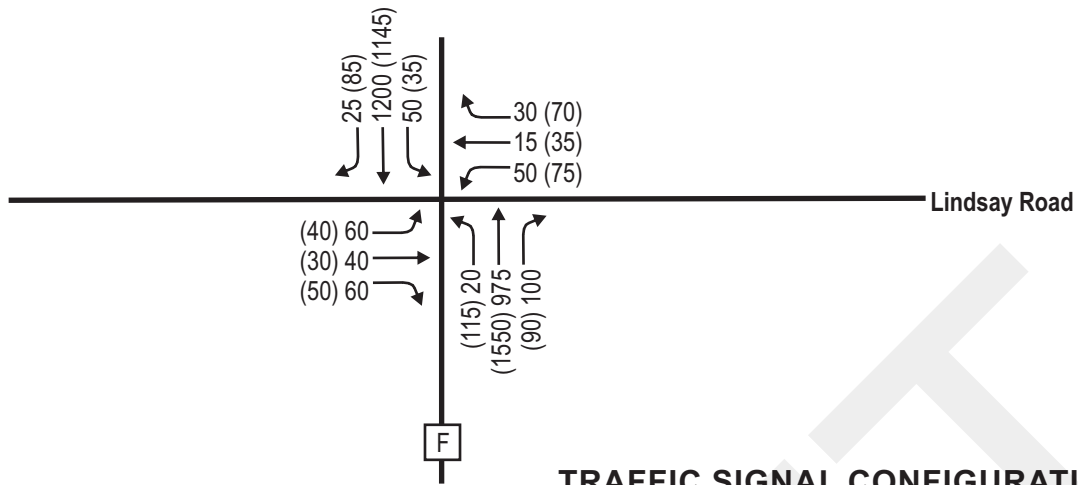


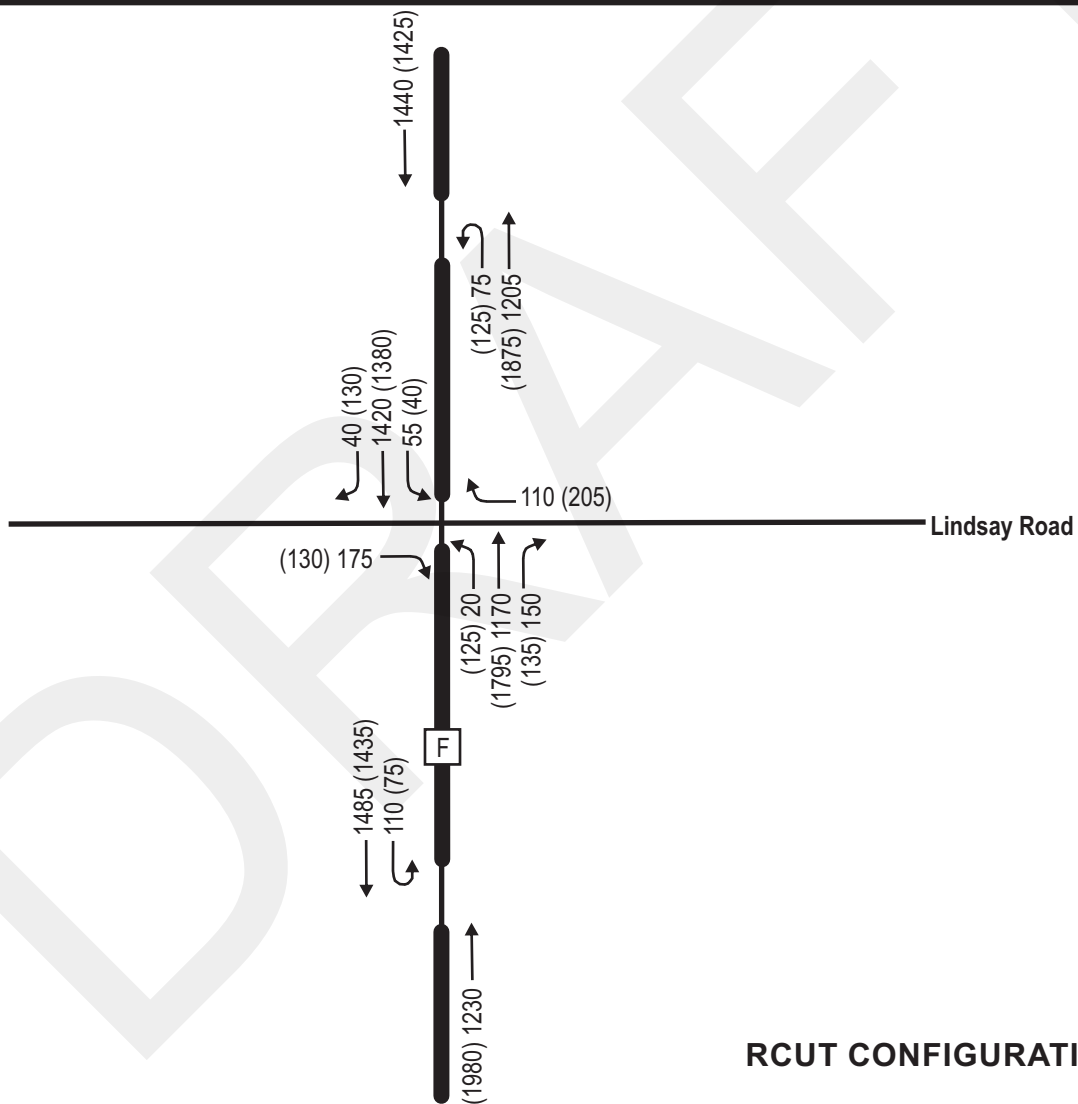
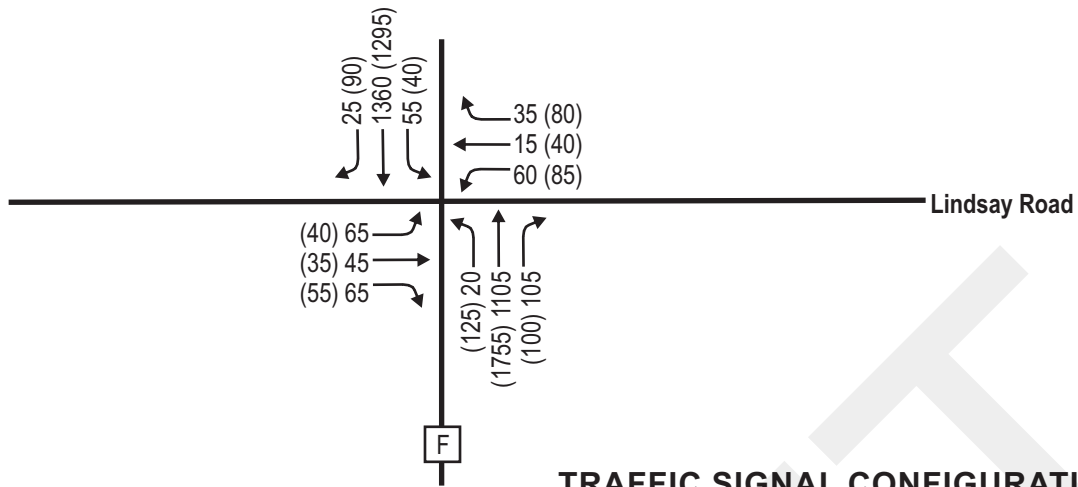
**EXHIBIT 6A**  
**SPORTS COMPLEX PARTIAL USE TRAFFIC VOLUMES**



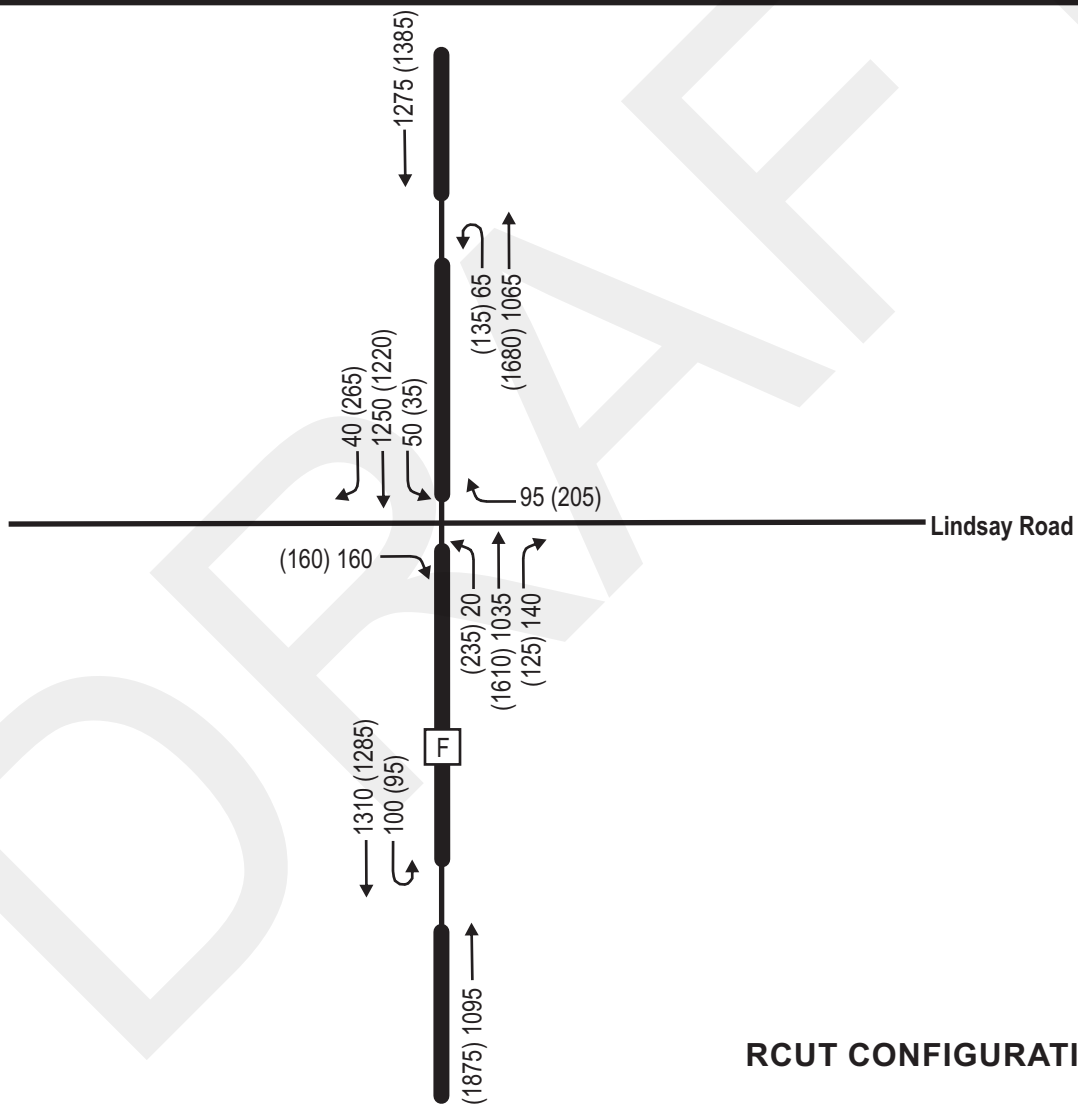
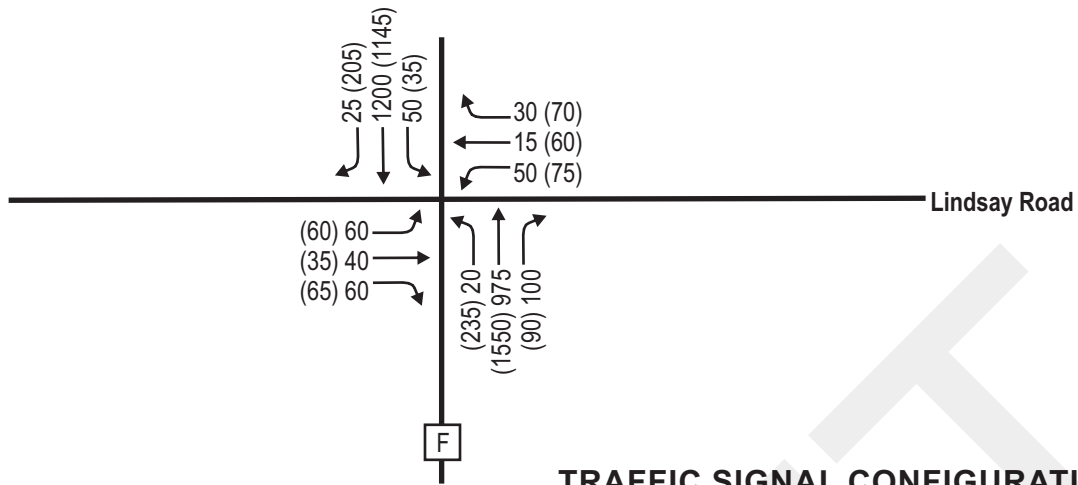
**EXHIBIT 6B**  
**SPORTS COMPLEX FULL USE TRAFFIC VOLUMES**

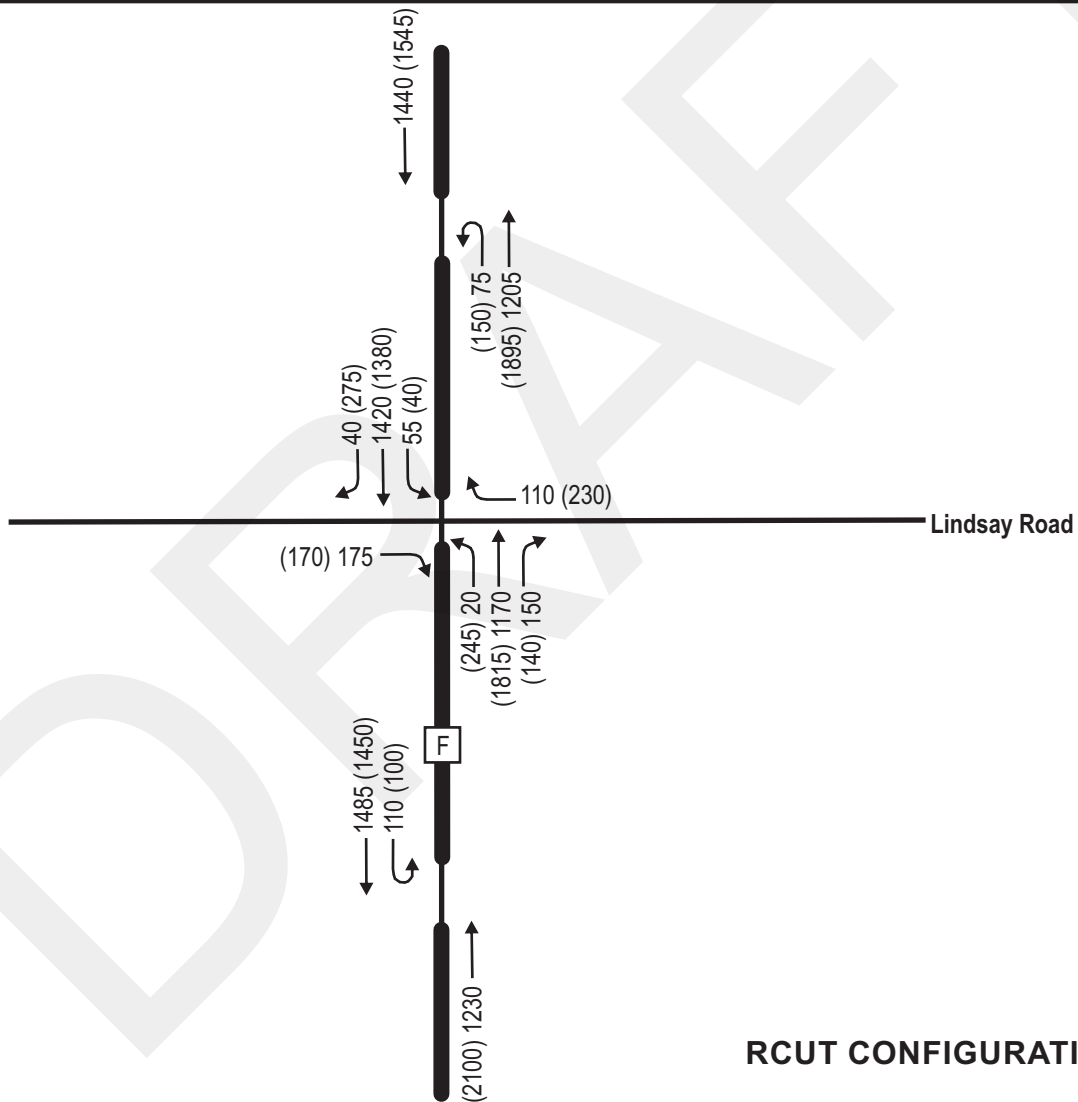
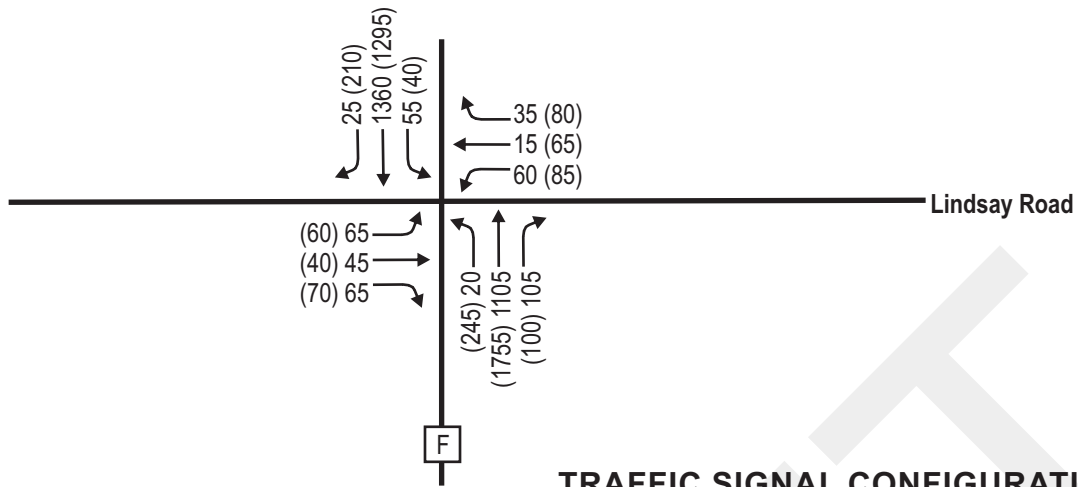














# LEGEND

-  Traffic Signal
-  Lane Configuration
-  Proposed Storage Length (in Feet)





## LEGEND

- Lane Configuration
- XX' Proposed Storage Length (in Feet)





## **Appendix A Traffic**

*Existing Turning Movement Counts*

*Growth Rate Calculations*

*Crash Plot*

*Intersection Sight Distance Calculations*

# Intersection Traffic Volume Report

| Count Basics                   |                            | Version 2013.14.1 | Page 1 of 13       |
|--------------------------------|----------------------------|-------------------|--------------------|
| Start Date:                    | Monday, September 30, 2019 | Weekday           | Schools in Session |
| Total Number of Hours Counted: | 13                         | Non-Holiday       | No Special Events  |

## Base Information, Observed (13) Hour and Estimated (24) Hour Volume Summaries

Intersection of: CTH F and Lindsay Road

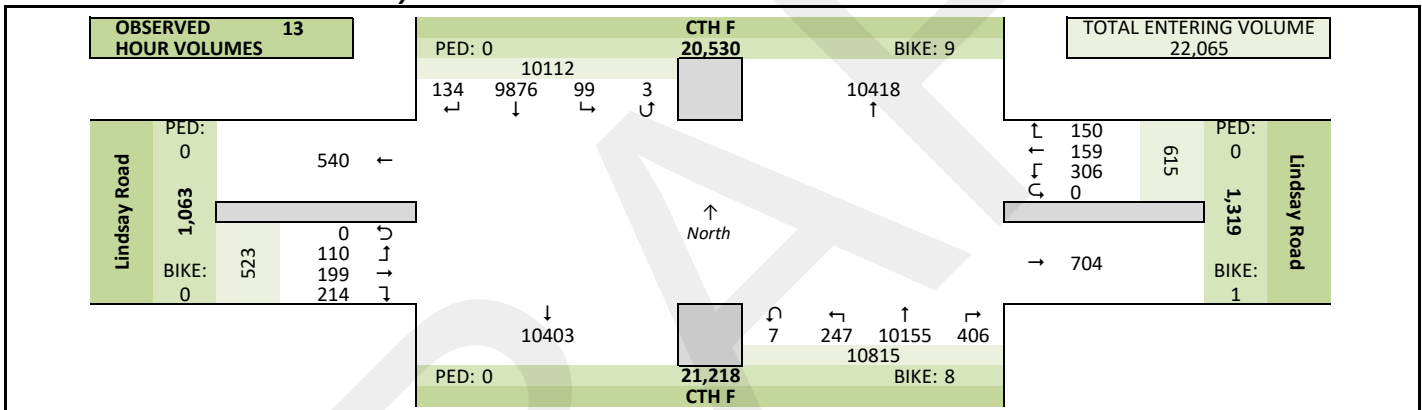
### Site Information

|                              |                                           |                 |    |
|------------------------------|-------------------------------------------|-----------------|----|
| Municipality                 | Pewaukee                                  |                 |    |
| County                       | Waukesha                                  | WisDOT Region   | SE |
| Traffic Control              | Partial Stop Control                      |                 |    |
| Roadway Names                |                                           | North Direction | ↑  |
| North Leg                    | CTH F                                     |                 |    |
| East Leg                     | Lindsay Road                              |                 |    |
| South Leg                    | CTH F                                     |                 |    |
| West Leg                     | Lindsay Road                              |                 |    |
| Special Considerations       |                                           |                 |    |
| Schools                      | In Session                                |                 |    |
| Holidays                     | None                                      |                 |    |
| Special Events               | None                                      |                 |    |
| Special Pedestrians Observed |                                           |                 |    |
|                              | Pre-school children                       | None            |    |
|                              | Elementry school age children             | None            |    |
|                              | Visually impaired (white cane/helper dog) | None            |    |
|                              | Elderly/disabled (except wheelchairs)     | None            |    |
|                              | Wheelchairs/electric scooters             | None            |    |
|                              | Other (describe)                          | None            |    |

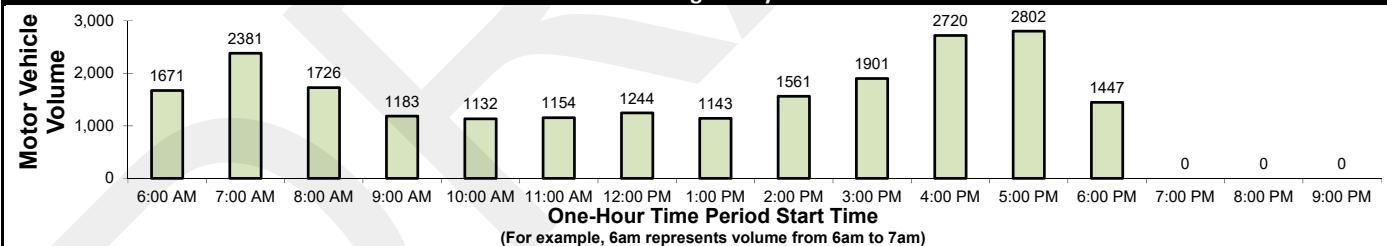
### Count Information

|                                  |                           |                            |                                  |                              |                |
|----------------------------------|---------------------------|----------------------------|----------------------------------|------------------------------|----------------|
| Hrs Counted: 6:00 AM-7:00 PM     |                           |                            |                                  |                              |                |
| 1st Day of Count                 |                           | Monday, September 30, 2019 |                                  |                              | Weather        |
| AM Peak Period                   |                           | Friday, October 4, 2019    |                                  |                              | Clear & Dry    |
| Midday Peak Period               |                           | Monday, September 30, 2019 |                                  |                              | Clear & Dry    |
| PM Peak Period                   |                           | Monday, September 30, 2019 |                                  |                              | Clear & Dry    |
| Calculated Peak Hours            |                           |                            |                                  |                              |                |
|                                  | AM                        | 7:00-8:00am                | MD                               | 11:30-12:30am                | PM 4:30-5:30pm |
| Peak Hours Selected for Analysis |                           |                            |                                  |                              |                |
|                                  | AM                        | 7:00-8:00am                | MD                               | 11:30-12:30am                | PM 4:30-5:30pm |
| Daily/Seasonal Adjustment Group  |                           |                            | (4) Rural Arterials & Collectors |                              |                |
| Count Expansion Group            |                           |                            | (4) Rural Arterials & Collectors |                              |                |
| Daily/Seasonal Adjustment Factor |                           |                            | 0.899                            | Count Expansion Factor 1.201 |                |
| Company Name TADI                |                           |                            | Manual Adj. 1.000                |                              |                |
| Observers                        | AM Peak Period            |                            | Amy Scheuerlein                  |                              |                |
|                                  | Midday Peak Period        |                            | Ted Atwell                       |                              |                |
|                                  | PM Peak Period            |                            | Wendy Picard                     |                              |                |
| Comments                         | 2018 DOT Seasonal Factors |                            |                                  |                              |                |

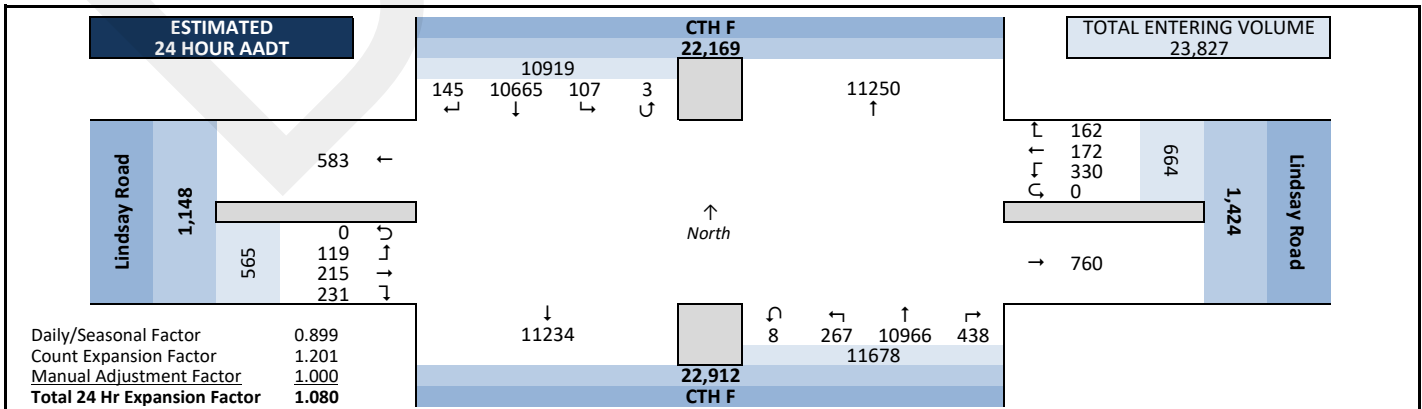
### Observed 13 Hour Volume Summary



### Total Entering Hourly Volume



### Estimated 24 Hour AADT





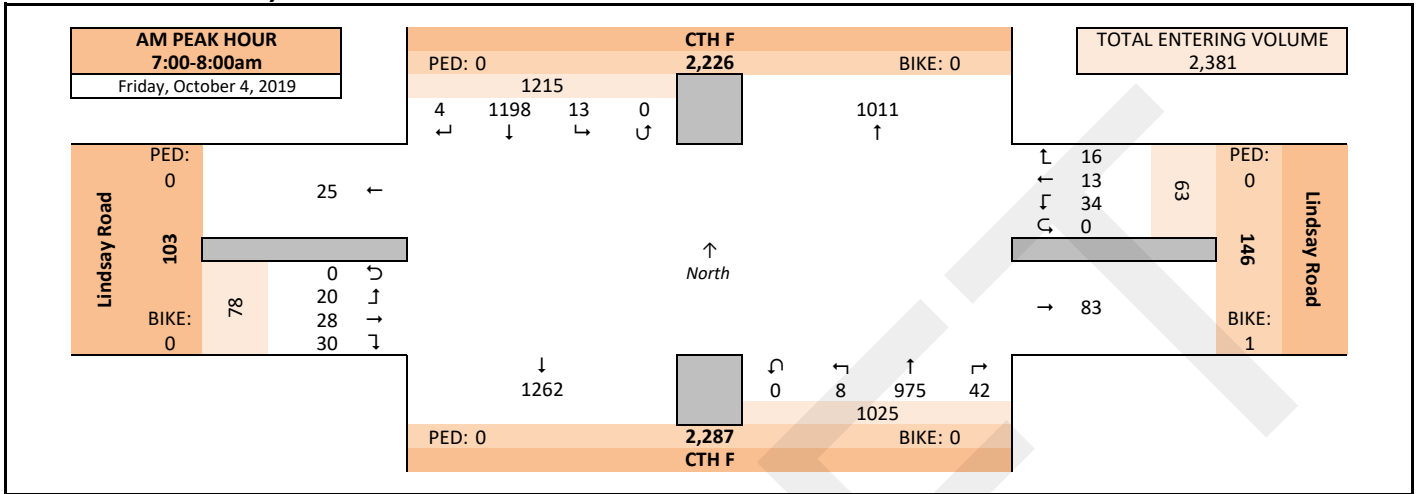
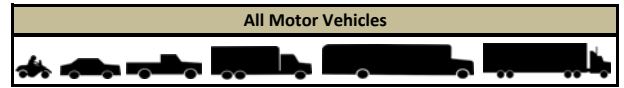
# Intersection Traffic Volume Report

## Peak Hour Volume Graphical Summary

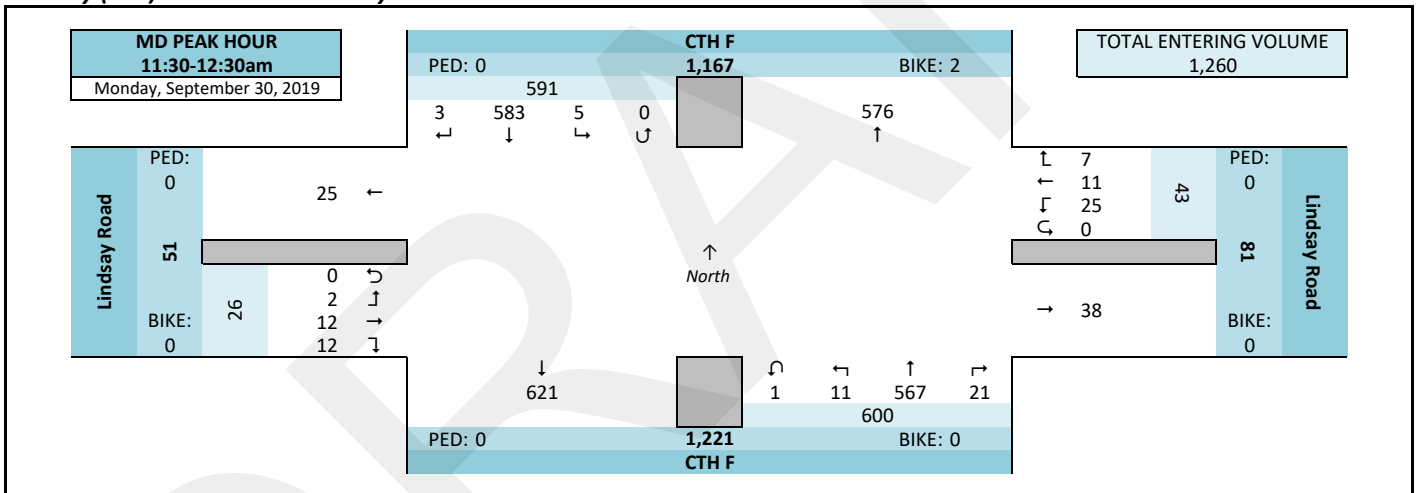
| Count Basics                   |                            | Page 2 of 13 |                    |
|--------------------------------|----------------------------|--------------|--------------------|
| Start Date:                    | Monday, September 30, 2019 | Weekday      | Schools in Session |
| Total Number of Hours Counted: | 13                         | Non-Holiday  | No Special Events  |

### CTH F and Lindsay Road

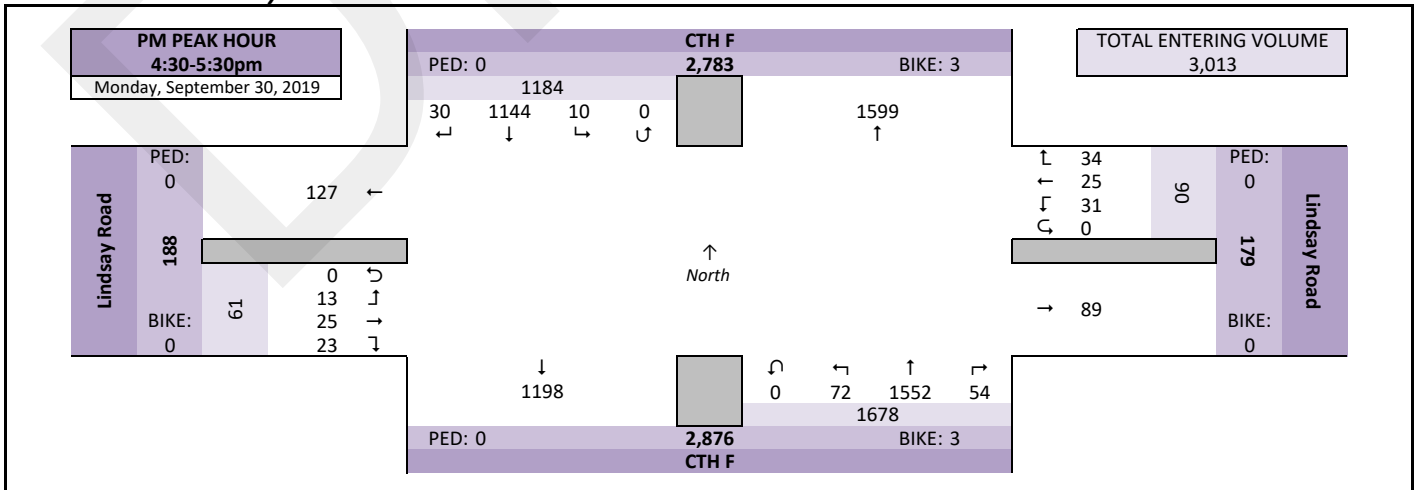
#### AM Peak Hour Summary



#### Midday (MD) Peak Hour Summary



#### PM Peak Hour Summary

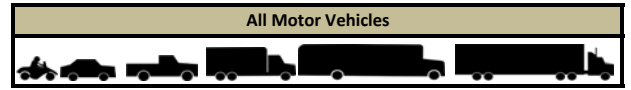


# Intersection Traffic Volume Report

|                                |                            |             |                    |
|--------------------------------|----------------------------|-------------|--------------------|
| Count Basics                   |                            |             | Page 3 of 13       |
| Start Date:                    | Monday, September 30, 2019 | Weekday     | Schools in Session |
| Total Number of Hours Counted: | 13                         | Non-Holiday | No Special Events  |

## Peak Hour Volume Summary

### CTH F and Lindsay Road



#### Peak Hour Volumes, Truck Percentages, and PHFs

| Friday, October 4, 2019 |                       | From North |      |      |      |       | From East    |      |      |      |       | From South |      |      |      |       | From West    |      |      |      |       |        |
|-------------------------|-----------------------|------------|------|------|------|-------|--------------|------|------|------|-------|------------|------|------|------|-------|--------------|------|------|------|-------|--------|
| AM Peak Hour            | AM Peak Hour          | CTH F      |      |      |      |       | Lindsay Road |      |      |      |       | CTH F      |      |      |      |       | Lindsay Road |      |      |      |       |        |
|                         | Start Time            | Right      | Thru | Left | U-Tn | Total | Right        | Thru | Left | U-Tn | Total | Right      | Thru | Left | U-Tn | Total | Right        | Thru | Left | U-Tn | Total | Totals |
|                         | 7:00 AM               | 0          | 286  | 2    | 0    | 288   | 3            | 2    | 9    | 0    | 14    | 7          | 182  | 2    | 0    | 191   | 4            | 6    | 3    | 0    | 13    | 506    |
|                         | 7:15 AM               | 2          | 299  | 3    | 0    | 304   | 1            | 3    | 7    | 0    | 11    | 11         | 246  | 1    | 0    | 258   | 8            | 6    | 4    | 0    | 18    | 591    |
|                         | 7:30 AM               | 0          | 313  | 4    | 0    | 317   | 5            | 4    | 7    | 0    | 16    | 9          | 278  | 3    | 0    | 290   | 8            | 8    | 6    | 0    | 22    | 645    |
|                         | 7:45 AM               | 2          | 300  | 4    | 0    | 306   | 7            | 4    | 11   | 0    | 22    | 15         | 269  | 2    | 0    | 286   | 10           | 8    | 7    | 0    | 25    | 639    |
|                         | Peak Hour Volume      | 4          | 1198 | 13   | 0    | 1215  | 16           | 13   | 34   | 0    | 63    | 42         | 975  | 8    | 0    | 1025  | 30           | 28   | 20   | 0    | 78    | 2381   |
|                         | Rounded Hourly Volume | 5          | 1200 | 15   | 0    | 1220  | 15           | 15   | 35   | 0    | 65    | 40         | 975  | 10   | 0    | 1025  | 30           | 30   | 20   | 0    | 80    | 2390   |
|                         | % Single Unit Trucks  | 0.0        | 7.1  | 7.7  | 0.0  | 7.1   | 12.5         | 7.7  | 0.0  | 0.0  | 4.8   | 7.1        | 5.8  | 0.0  | 0.0  | 5.9   | 0.0          | 3.6  | 0.0  | 0.0  | 1.3   | 6.3    |
|                         | % Heavy Trucks        | 0.0        | 1.8  | 0.0  | 0.0  | 1.8   | 0.0          | 0.0  | 0.0  | 0.0  | 0.0   | 2.4        | 2.5  | 0.0  | 0.0  | 2.4   | 0.0          | 0.0  | 0.0  | 0.0  | 0.0   | 2.0    |
| % Trucks (Total)        | 0.0                   | 8.9        | 7.7  | 0.0  | 8.9  | 12.5  | 7.7          | 0.0  | 0.0  | 4.8  | 9.5   | 8.3        | 0.0  | 0.0  | 8.3  | 0.0   | 3.6          | 0.0  | 0.0  | 1.3  | 8.3   |        |
| Peak Hour Factor (PHF)  | 0.50                  | 0.96       | 0.81 | 0.00 | 0.96 | 0.57  | 0.81         | 0.77 | 0.00 | 0.72 | 0.70  | 0.88       | 0.67 | 0.00 | 0.88 | 0.75  | 0.87         | 0.71 | 0.00 | 0.78 | 0.92  |        |

| Monday, September 30, 2019 |                         | From North |      |      |      |       | From East    |      |      |      |       | From South |      |      |      |       | From West    |      |      |      |       |        |
|----------------------------|-------------------------|------------|------|------|------|-------|--------------|------|------|------|-------|------------|------|------|------|-------|--------------|------|------|------|-------|--------|
| Midday (MD) Peak Hour      | MD Peak Hour Start Time | CTH F      |      |      |      |       | Lindsay Road |      |      |      |       | CTH F      |      |      |      |       | Lindsay Road |      |      |      |       | Totals |
|                            |                         | Right      | Thru | Left | U-Tn | Total | Right        | Thru | Left | U-Tn | Total | Right      | Thru | Left | U-Tn | Total | Right        | Thru | Left | U-Tn | Total |        |
|                            | 11:30 AM                | 1          | 155  | 1    | 0    | 157   | 1            | 2    | 9    | 0    | 12    | 5          | 124  | 4    | 0    | 133   | 1            | 2    | 0    | 0    | 3     | 305    |
|                            | 11:45 AM                | 2          | 127  | 0    | 0    | 129   | 2            | 1    | 5    | 0    | 8     | 6          | 157  | 1    | 0    | 164   | 5            | 4    | 0    | 0    | 9     | 310    |
|                            | 12:00 PM                | 0          | 147  | 1    | 0    | 148   | 2            | 6    | 4    | 0    | 12    | 7          | 156  | 5    | 0    | 168   | 1            | 4    | 1    | 0    | 6     | 334    |
|                            | 12:15 PM                | 0          | 154  | 3    | 0    | 157   | 2            | 2    | 7    | 0    | 11    | 3          | 130  | 1    | 1    | 135   | 5            | 2    | 1    | 0    | 8     | 311    |
|                            | Peak Hour Volume        | 3          | 583  | 5    | 0    | 591   | 7            | 11   | 25   | 0    | 43    | 21         | 567  | 11   | 1    | 600   | 12           | 12   | 2    | 0    | 26    | 1260   |
|                            | Rounded Hourly Volume   | 5          | 585  | 5    | 0    | 595   | 5            | 10   | 25   | 0    | 40    | 20         | 565  | 10   | 0    | 595   | 10           | 10   | 0    | 0    | 20    | 1250   |
|                            | % Single Unit Trucks    | 0.0        | 15.6 | 20.0 | 0.0  | 15.6  | 42.9         | 0.0  | 16.0 | 0.0  | 16.3  | 9.5        | 16.0 | 0.0  | 0.0  | 15.5  | 0.0          | 0.0  | 0.0  | 0.0  | 0.0   | 15.2   |
|                            | % Heavy Trucks          | 0.0        | 3.6  | 0.0  | 0.0  | 3.6   | 0.0          | 0.0  | 0.0  | 0.0  | 0.0   | 0.0        | 5.3  | 0.0  | 0.0  | 5.0   | 0.0          | 0.0  | 0.0  | 0.0  | 0.0   | 4.0    |
|                            | % Trucks (Total)        | 0.0        | 19.2 | 20.0 | 0.0  | 19.1  | 42.9         | 0.0  | 16.0 | 0.0  | 16.3  | 9.5        | 21.3 | 0.0  | 0.0  | 20.5  | 0.0          | 0.0  | 0.0  | 0.0  | 0.0   | 19.3   |
|                            | Peak Hour Factor (PHF)  | 0.37       | 0.94 | 0.42 | 0.00 | 0.94  | 0.87         | 0.46 | 0.69 | 0.00 | 0.90  | 0.75       | 0.90 | 0.55 | 0.25 | 0.89  | 0.60         | 0.75 | 0.50 | 0.00 | 0.72  | 0.94   |

| Monday, September 30, 2019 |                        | From North |      |      |      |       | From East    |      |      |      |       | From South |      |      |      |       | From West    |      |      |      |       |        |
|----------------------------|------------------------|------------|------|------|------|-------|--------------|------|------|------|-------|------------|------|------|------|-------|--------------|------|------|------|-------|--------|
| PM Peak Hour               | PM Peak Hour           | CTH F      |      |      |      |       | Lindsay Road |      |      |      |       | CTH F      |      |      |      |       | Lindsay Road |      |      |      |       |        |
|                            | Start Time             | Right      | Thru | Left | U-Tn | Total | Right        | Thru | Left | U-Tn | Total | Right      | Thru | Left | U-Tn | Total | Right        | Thru | Left | U-Tn | Total | Totals |
|                            | 4:30 PM                | 4          | 278  | 3    | 0    | 285   | 7            | 6    | 8    | 0    | 21    | 9          | 389  | 15   | 0    | 413   | 2            | 4    | 2    | 0    | 8     | 727    |
|                            | 4:45 PM                | 7          | 260  | 1    | 0    | 268   | 7            | 9    | 12   | 0    | 28    | 11         | 348  | 20   | 0    | 379   | 7            | 9    | 4    | 0    | 20    | 695    |
|                            | 5:00 PM                | 8          | 287  | 1    | 0    | 296   | 10           | 5    | 7    | 0    | 22    | 15         | 370  | 17   | 0    | 402   | 5            | 5    | 3    | 0    | 13    | 733    |
|                            | 5:15 PM                | 11         | 319  | 5    | 0    | 335   | 10           | 5    | 4    | 0    | 19    | 19         | 445  | 20   | 0    | 484   | 9            | 7    | 4    | 0    | 20    | 858    |
|                            | Peak Hour Volume       | 30         | 1144 | 10   | 0    | 1184  | 34           | 25   | 31   | 0    | 90    | 54         | 1552 | 72   | 0    | 1678  | 23           | 25   | 13   | 0    | 61    | 3013   |
|                            | Rounded Hourly Volume  | 30         | 1145 | 10   | 0    | 1185  | 35           | 25   | 30   | 0    | 90    | 55         | 1550 | 70   | 0    | 1675  | 25           | 25   | 15   | 0    | 65    | 3015   |
|                            | % Single Unit Trucks   | 0.0        | 3.8  | 0.0  | 0.0  | 3.6   | 2.9          | 4.0  | 0.0  | 0.0  | 2.2   | 1.9        | 3.0  | 1.4  | 0.0  | 2.9   | 4.3          | 0.0  | 7.7  | 0.0  | 3.3   | 3.2    |
|                            | % Heavy Trucks         | 0.0        | 0.9  | 20.0 | 0.0  | 1.0   | 0.0          | 0.0  | 0.0  | 0.0  | 0.0   | 0.0        | 0.7  | 0.0  | 0.0  | 0.7   | 0.0          | 0.0  | 0.0  | 0.0  | 0.0   | 0.8    |
|                            | % Trucks (Total)       | 0.0        | 4.6  | 20.0 | 0.0  | 4.6   | 2.9          | 4.0  | 0.0  | 0.0  | 2.2   | 1.9        | 3.7  | 1.4  | 0.0  | 3.5   | 4.3          | 0.0  | 7.7  | 0.0  | 3.3   | 3.9    |
|                            | Peak Hour Factor (PHF) | 0.68       | 0.90 | 0.50 | 0.00 | 0.88  | 0.85         | 0.69 | 0.65 | 0.00 | 0.80  | 0.71       | 0.87 | 0.90 | 0.00 | 0.87  | 0.64         | 0.69 | 0.81 | 0.00 | 0.76  | 0.88   |

#### Peak Hour Pedestrian and Bicyclist Volumes

| Pedestrians and Bicyclists                                                          |          | Crossing  |           |       | Crossing  |           |       | Crossing  |           |       | Crossing  |           |       | Total Ped & Bike Volume |
|-------------------------------------------------------------------------------------|----------|----------------------------------------------------------------------------------------------|-----------|-------|-----------------------------------------------------------------------------------------------|-----------|-------|------------------------------------------------------------------------------------------------|-----------|-------|------------------------------------------------------------------------------------------------|-----------|-------|-------------------------|
|  |          | North Approach                                                                               |           |       | East Approach                                                                                 |           |       | South Approach                                                                                 |           |       | West Approach                                                                                  |           |       |                         |
| 15-Minute Start Time                                                                |          | CTH F                                                                                        |           |       | Lindsay Road                                                                                  |           |       | CTH F                                                                                          |           |       | Lindsay Road                                                                                   |           |       |                         |
|                                                                                     |          | Pedestrian                                                                                   | Bicyclist | Total | Pedestrian                                                                                    | Bicyclist | Total | Pedestrian                                                                                     | Bicyclist | Total | Pedestrian                                                                                     | Bicyclist | Total |                         |
| AM                                                                                  | 7:00 AM  | 0                                                                                            | 0         | 0     | 0                                                                                             | 0         | 0     | 0                                                                                              | 0         | 0     | 0                                                                                              | 0         | 0     |                         |
|                                                                                     | 7:15 AM  | 0                                                                                            | 0         | 0     | 0                                                                                             | 0         | 0     | 0                                                                                              | 0         | 0     | 0                                                                                              | 0         | 0     |                         |
|                                                                                     | 7:30 AM  | 0                                                                                            | 0         | 0     | 0                                                                                             | 1         | 1     | 0                                                                                              | 0         | 0     | 0                                                                                              | 0         | 1     |                         |
|                                                                                     | 7:45 AM  | 0                                                                                            | 0         | 0     | 0                                                                                             | 0         | 0     | 0                                                                                              | 0         | 0     | 0                                                                                              | 0         | 0     |                         |
|                                                                                     | Total    | 0                                                                                            | 0         | 0     | 0                                                                                             | 1         | 1     | 0                                                                                              | 0         | 0     | 0                                                                                              | 0         | 1     |                         |
| MD                                                                                  | 11:30 AM | 0                                                                                            | 0         | 0     | 0                                                                                             | 0         | 0     | 0                                                                                              | 0         | 0     | 0                                                                                              | 0         | 0     |                         |
|                                                                                     | 11:45 AM | 0                                                                                            | 2         | 2     | 0                                                                                             | 0         | 0     | 0                                                                                              | 0         | 0     | 0                                                                                              | 0         | 2     |                         |
|                                                                                     | 12:00 PM | 0                                                                                            | 0         | 0     | 0                                                                                             | 0         | 0     | 0                                                                                              | 0         | 0     | 0                                                                                              | 0         | 0     |                         |
|                                                                                     | 12:15 PM | 0                                                                                            | 0         | 0     | 0                                                                                             | 0         | 0     | 0                                                                                              | 0         | 0     | 0                                                                                              | 0         | 0     |                         |
|                                                                                     | Total    | 0                                                                                            | 2         | 2     | 0                                                                                             | 0         | 0     | 0                                                                                              | 0         | 0     | 0                                                                                              | 0         | 2     |                         |
| PM                                                                                  | 4:30 PM  | 0                                                                                            | 1         | 1     | 0                                                                                             | 0         | 0     | 0                                                                                              | 2         | 2     | 0                                                                                              | 0         | 3     |                         |
|                                                                                     | 4:45 PM  | 0                                                                                            | 1         | 1     | 0                                                                                             | 0         | 0     | 0                                                                                              | 1         | 1     | 0                                                                                              | 0         | 2     |                         |
|                                                                                     | 5:00 PM  | 0                                                                                            | 1         | 1     | 0                                                                                             | 0         | 0     | 0                                                                                              | 0         | 0     | 0                                                                                              | 0         | 1     |                         |
|                                                                                     | 5:15 PM  | 0                                                                                            | 0         | 0     | 0                                                                                             | 0         | 0     | 0                                                                                              | 0         | 0     | 0                                                                                              | 0         | 0     |                         |
|                                                                                     | Total    | 0                                                                                            | 3         | 3     | 0                                                                                             | 0         | 0     | 0                                                                                              | 3         | 3     | 0                                                                                              | 0         | 6     |                         |



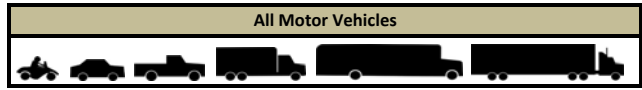
# Intersection Traffic Volume Report

## Hourly Volume Summary - Motor Vehicle Data

### CTH F and Lindsay Road

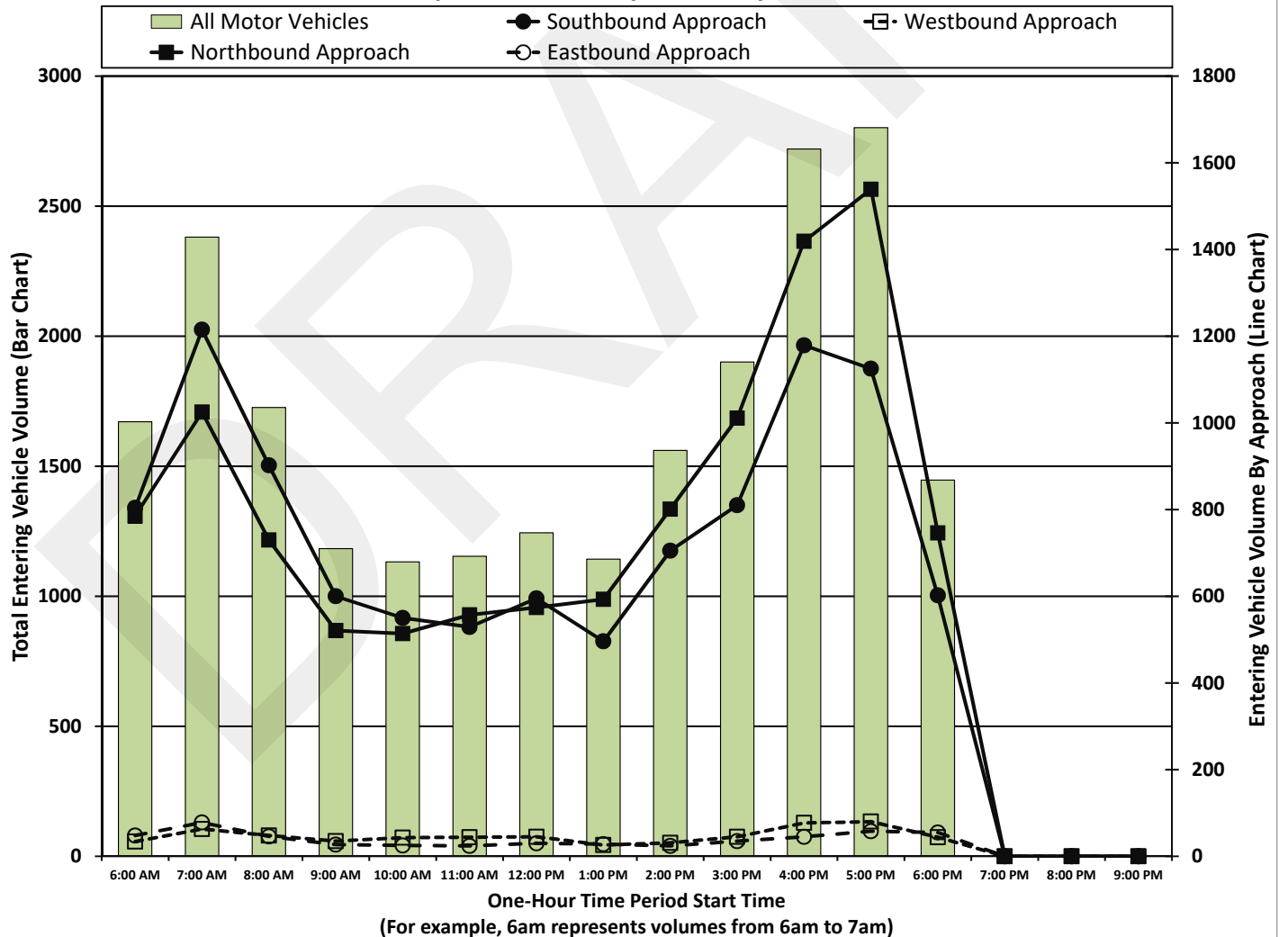
#### One-Hour Motor Vehicle Data

| Count Basics                   |                            |             | Page 4 of 13       |
|--------------------------------|----------------------------|-------------|--------------------|
| Start Date:                    | Monday, September 30, 2019 | Weekday     | Schools in Session |
| Total Number of Hours Counted: | 13                         | Non-Holiday | No Special Events  |



| One-Hour<br>Time Period<br>Start Time | From North |      |      |      |       | From East    |      |      |      |       | From South |      |       |      |       | From West    |      |      |      |       | Total<br>Vehicle<br>Volume | Directional<br>Volume Totals |      |       |
|---------------------------------------|------------|------|------|------|-------|--------------|------|------|------|-------|------------|------|-------|------|-------|--------------|------|------|------|-------|----------------------------|------------------------------|------|-------|
|                                       | CTH F      |      |      |      |       | Lindsay Road |      |      |      |       | CTH F      |      |       |      |       | Lindsay Road |      |      |      |       |                            |                              |      |       |
|                                       | Right      | Thru | Left | U-Tn | Total | Right        | Thru | Left | U-Tn | Total | Right      | Thru | Left  | U-Tn | Total | Right        | Thru | Left | U-Tn | Total |                            | E/W                          | N/S  |       |
| AM                                    | 6:00 AM    | 3    | 794  | 7    | 0     | 804          | 9    | 6    | 19   | 0     | 34         | 52   | 731   | 2    | 0     | 785          | 26   | 11   | 11   | 0     | 48                         | 1671                         | 82   | 1589  |
|                                       | 7:00 AM    | 4    | 1198 | 13   | 0     | 1215         | 16   | 13   | 34   | 0     | 63         | 42   | 975   | 8    | 0     | 1025         | 30   | 28   | 20   | 0     | 78                         | 2381                         | 141  | 2240  |
|                                       | 8:00 AM    | 5    | 893  | 4    | 0     | 902          | 11   | 9    | 28   | 0     | 48         | 17   | 707   | 6    | 0     | 730          | 15   | 18   | 13   | 0     | 46                         | 1726                         | 94   | 1632  |
|                                       | 9:00 AM    | 6    | 589  | 5    | 0     | 600          | 8    | 4    | 23   | 0     | 35         | 21   | 495   | 5    | 0     | 521          | 14   | 8    | 5    | 0     | 27                         | 1183                         | 62   | 1121  |
| MD                                    | 10:00 AM   | 3    | 543  | 3    | 1     | 550          | 5    | 11   | 27   | 0     | 43         | 24   | 481   | 8    | 1     | 514          | 11   | 13   | 1    | 0     | 25                         | 1132                         | 68   | 1064  |
|                                       | 11:00 AM   | 5    | 520  | 4    | 0     | 529          | 8    | 10   | 26   | 0     | 44         | 23   | 522   | 11   | 1     | 557          | 11   | 11   | 2    | 0     | 24                         | 1154                         | 68   | 1086  |
|                                       | 12:00 PM   | 6    | 583  | 6    | 0     | 595          | 6    | 21   | 18   | 0     | 45         | 19   | 543   | 10   | 2     | 574          | 11   | 16   | 3    | 0     | 30                         | 1244                         | 75   | 1169  |
|                                       | 1:00 PM    | 9    | 485  | 2    | 0     | 496          | 5    | 10   | 11   | 0     | 26         | 20   | 553   | 19   | 1     | 593          | 14   | 8    | 6    | 0     | 28                         | 1143                         | 54   | 1089  |
| PM                                    | 2:00 PM    | 15   | 683  | 7    | 0     | 705          | 5    | 9    | 17   | 0     | 31         | 25   | 762   | 13   | 1     | 801          | 6    | 11   | 7    | 0     | 24                         | 1561                         | 55   | 1506  |
|                                       | 3:00 PM    | 11   | 789  | 8    | 2     | 810          | 13   | 9    | 23   | 0     | 45         | 31   | 953   | 27   | 0     | 1011         | 14   | 13   | 8    | 0     | 35                         | 1901                         | 80   | 1821  |
|                                       | 4:00 PM    | 23   | 1143 | 13   | 0     | 1179         | 24   | 23   | 30   | 0     | 77         | 40   | 1328  | 51   | 0     | 1419         | 17   | 19   | 9    | 0     | 45                         | 2720                         | 122  | 2598  |
|                                       | 5:00 PM    | 29   | 1079 | 17   | 0     | 1125         | 30   | 18   | 32   | 0     | 80         | 60   | 1414  | 65   | 0     | 1539         | 28   | 17   | 13   | 0     | 58                         | 2802                         | 138  | 2664  |
|                                       | 6:00 PM    | 15   | 577  | 10   | 0     | 602          | 10   | 16   | 18   | 0     | 44         | 32   | 691   | 22   | 1     | 746          | 17   | 26   | 12   | 0     | 55                         | 1447                         | 99   | 1348  |
|                                       | 7:00 PM    | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0     | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                          | 0                            | 0    | 0     |
|                                       | 8:00 PM    | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0     | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                          | 0                            | 0    | 0     |
|                                       | 9:00 PM    | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0     | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                          | 0                            | 0    | 0     |
| Totals                                |            | 134  | 9876 | 99   | 3     | 10112        | 150  | 159  | 306  | 0     | 615        | 406  | 10155 | 247  | 7     | 10815        | 214  | 199  | 110  | 0     | 523                        | 22065                        | 1138 | 20927 |

### Graphical Summary of Hourly Volumes



### 15-Minute Motor Vehicle Data

All Motor Vehicles

### CTH F and Lindsay Road

## 15-Minute Motor Vehicle Data

### Peak Hour All Vehicle Volume Summary

| Hourly<br>Time Period<br>Start Time | From North |      |      |      |       | From East    |      |      |      |       | From South |      |      |      |       | From West    |      |      |      |       | Total<br>Hourly<br>Volume | PHF  |
|-------------------------------------|------------|------|------|------|-------|--------------|------|------|------|-------|------------|------|------|------|-------|--------------|------|------|------|-------|---------------------------|------|
|                                     | CTH F      |      |      |      |       | Lindsay Road |      |      |      |       | CTH F      |      |      |      |       | Lindsay Road |      |      |      |       |                           |      |
|                                     | Right      | Thru | Left | U-Tn | Total | Right        | Thru | Left | U-Tn | Total | Right      | Thru | Left | U-Tn | Total | Right        | Thru | Left | U-Tn | Total |                           |      |
| AM 7:00 AM                          | 4          | 1198 | 13   | 0    | 1215  | 16           | 13   | 34   | 0    | 63    | 42         | 975  | 8    | 0    | 1025  | 30           | 28   | 20   | 0    | 78    | 2381                      | 0.92 |
| MD 11:30 AM                         | 3          | 583  | 5    | 0    | 591   | 7            | 11   | 25   | 0    | 43    | 21         | 567  | 11   | 1    | 600   | 12           | 12   | 2    | 0    | 26    | 1260                      | 0.94 |
| PM 4:30 PM                          | 30         | 1144 | 10   | 0    | 1184  | 34           | 25   | 31   | 0    | 90    | 54         | 1552 | 72   | 0    | 1678  | 23           | 25   | 13   | 0    | 61    | 3013                      | 0.88 |



# Intersection Traffic Volume Report

| Count Basics                   |                            |             | Page 6 of 13       |
|--------------------------------|----------------------------|-------------|--------------------|
| Start Date:                    | Monday, September 30, 2019 | Weekday     | Schools in Session |
| Total Number of Hours Counted: | 13                         | Non-Holiday | No Special Events  |

## 15-Minute Automobile Data

### CTH F and Lindsay Road

| Automobiles (Cars, Light Trucks, & Motorcycles)                                     |                                                                                     |                                                                                     |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|  |  |  |

### 15-Minute Automobile Data

| 15-Minute<br>Time Period<br>Start Time | From North |      |      |      |       | From East    |      |      |      |       | From South |      |      |      |       | From West    |      |      |      |       | 15-Min<br>Totals | Hourly<br>Sum |      |
|----------------------------------------|------------|------|------|------|-------|--------------|------|------|------|-------|------------|------|------|------|-------|--------------|------|------|------|-------|------------------|---------------|------|
|                                        | CTH F      |      |      |      |       | Lindsay Road |      |      |      |       | CTH F      |      |      |      |       | Lindsay Road |      |      |      |       |                  |               |      |
|                                        | Right      | Thru | Left | U-Tn | Total | Right        | Thru | Left | U-Tn | Total | Right      | Thru | Left | U-Tn | Total | Right        | Thru | Left | U-Tn | Total |                  |               |      |
| AM Peak Period                         | 6:00 AM    | 0    | 110  | 0    | 0     | 110          | 1    | 1    | 7    | 0     | 9          | 11   | 112  | 1    | 0     | 124          | 4    | 0    | 2    | 0     | 6                | 249           | 1490 |
|                                        | 6:15 AM    | 0    | 164  | 2    | 0     | 166          | 3    | 2    | 3    | 0     | 8          | 11   | 119  | 1    | 0     | 131          | 5    | 5    | 5    | 0     | 15               | 320           | 1702 |
|                                        | 6:30 AM    | 2    | 207  | 3    | 0     | 212          | 1    | 0    | 4    | 0     | 5          | 15   | 203  | 0    | 0     | 218          | 9    | 3    | 0    | 0     | 12               | 447           | 1925 |
|                                        | 6:45 AM    | 1    | 228  | 1    | 0     | 230          | 1    | 3    | 1    | 0     | 5          | 13   | 211  | 0    | 0     | 224          | 8    | 3    | 4    | 0     | 15               | 474           | 2075 |
|                                        | 7:00 AM    | 0    | 256  | 2    | 0     | 258          | 1    | 2    | 9    | 0     | 12         | 7    | 169  | 2    | 0     | 178          | 4    | 6    | 3    | 0     | 13               | 461           | 2184 |
|                                        | 7:15 AM    | 2    | 269  | 3    | 0     | 274          | 1    | 3    | 7    | 0     | 11         | 11   | 228  | 1    | 0     | 240          | 8    | 6    | 4    | 0     | 18               | 543           | 2170 |
|                                        | 7:30 AM    | 0    | 294  | 3    | 0     | 297          | 5    | 4    | 7    | 0     | 16         | 7    | 252  | 3    | 0     | 262          | 8    | 8    | 6    | 0     | 22               | 597           | 2018 |
|                                        | 7:45 AM    | 2    | 272  | 4    | 0     | 278          | 7    | 3    | 11   | 0     | 21         | 13   | 245  | 2    | 0     | 260          | 10   | 7    | 7    | 0     | 24               | 583           | 1757 |
|                                        | 8:00 AM    | 3    | 250  | 1    | 0     | 254          | 3    | 3    | 7    | 0     | 13         | 3    | 166  | 1    | 0     | 170          | 4    | 1    | 5    | 0     | 10               | 447           | 1483 |
|                                        | 8:15 AM    | 0    | 192  | 1    | 0     | 193          | 2    | 4    | 7    | 0     | 13         | 5    | 160  | 4    | 0     | 169          | 6    | 9    | 1    | 0     | 16               | 391           | 1282 |
|                                        | 8:30 AM    | 0    | 185  | 1    | 0     | 186          | 2    | 0    | 3    | 0     | 5          | 3    | 127  | 1    | 0     | 131          | 3    | 5    | 6    | 0     | 14               | 336           | 1142 |
|                                        | 8:45 AM    | 1    | 164  | 1    | 0     | 166          | 1    | 2    | 8    | 0     | 11         | 4    | 124  | 0    | 0     | 128          | 1    | 2    | 1    | 0     | 4                | 309           | 1035 |
|                                        | 9:00 AM    | 1    | 117  | 3    | 0     | 121          | 2    | 0    | 10   | 0     | 12         | 2    | 104  | 1    | 0     | 107          | 2    | 3    | 1    | 0     | 6                | 246           | 992  |
|                                        | 9:15 AM    | 0    | 126  | 0    | 0     | 126          | 1    | 1    | 4    | 0     | 6          | 5    | 110  | 1    | 0     | 116          | 2    | 0    | 1    | 0     | 3                | 251           | 963  |
|                                        | 9:30 AM    | 2    | 111  | 1    | 0     | 114          | 3    | 3    | 5    | 0     | 11         | 6    | 90   | 2    | 0     | 98           | 2    | 3    | 1    | 0     | 6                | 229           | 906  |
|                                        | 9:45 AM    | 2    | 153  | 0    | 0     | 155          | 1    | 0    | 3    | 0     | 4          | 5    | 90   | 1    | 0     | 96           | 7    | 2    | 2    | 0     | 11               | 266           | 915  |
| Midday Peak Period                     | 10:00 AM   | 0    | 112  | 0    | 0     | 112          | 1    | 3    | 5    | 0     | 9          | 4    | 87   | 0    | 0     | 91           | 2    | 3    | 0    | 0     | 5                | 217           | 857  |
|                                        | 10:15 AM   | 1    | 104  | 2    | 0     | 107          | 0    | 3    | 4    | 0     | 7          | 5    | 68   | 3    | 0     | 76           | 2    | 2    | 0    | 0     | 4                | 194           | 853  |
|                                        | 10:30 AM   | 1    | 103  | 1    | 1     | 106          | 4    | 1    | 4    | 0     | 9          | 5    | 108  | 2    | 1     | 116          | 3    | 3    | 1    | 0     | 7                | 238           | 880  |
|                                        | 10:45 AM   | 1    | 95   | 0    | 0     | 96           | 0    | 2    | 11   | 0     | 13         | 5    | 84   | 2    | 0     | 91           | 4    | 4    | 0    | 0     | 8                | 208           | 898  |
|                                        | 11:00 AM   | 0    | 87   | 0    | 0     | 87           | 4    | 3    | 5    | 0     | 12         | 7    | 98   | 4    | 1     | 110          | 1    | 2    | 1    | 0     | 4                | 213           | 934  |
|                                        | 11:15 AM   | 2    | 99   | 3    | 0     | 104          | 0    | 3    | 5    | 0     | 8          | 2    | 97   | 2    | 0     | 101          | 4    | 3    | 1    | 0     | 8                | 221           | 991  |
|                                        | 11:30 AM   | 1    | 130  | 1    | 0     | 132          | 1    | 2    | 8    | 0     | 11         | 4    | 102  | 4    | 0     | 110          | 1    | 2    | 0    | 0     | 3                | 256           | 1017 |
|                                        | 11:45 AM   | 2    | 102  | 0    | 0     | 104          | 0    | 1    | 5    | 0     | 6          | 6    | 118  | 1    | 0     | 125          | 5    | 4    | 0    | 0     | 9                | 244           | 1006 |
|                                        | 12:00 PM   | 0    | 122  | 1    | 0     | 123          | 2    | 6    | 3    | 0     | 11         | 7    | 118  | 5    | 0     | 130          | 1    | 4    | 1    | 0     | 6                | 270           | 982  |
|                                        | 12:15 PM   | 0    | 117  | 2    | 0     | 119          | 1    | 2    | 5    | 0     | 8          | 2    | 108  | 1    | 1     | 112          | 5    | 2    | 1    | 0     | 8                | 247           | 948  |
|                                        | 12:30 PM   | 3    | 104  | 1    | 0     | 108          | 1    | 8    | 5    | 0     | 14         | 2    | 114  | 1    | 0     | 117          | 2    | 4    | 0    | 0     | 6                | 245           | 927  |
|                                        | 12:45 PM   | 3    | 111  | 1    | 0     | 115          | 0    | 4    | 2    | 0     | 6          | 6    | 81   | 3    | 1     | 91           | 3    | 4    | 1    | 0     | 8                | 220           | 929  |
|                                        | 1:00 PM    | 1    | 114  | 0    | 0     | 115          | 0    | 2    | 3    | 0     | 5          | 3    | 98   | 3    | 1     | 105          | 6    | 3    | 2    | 0     | 11               | 236           | 933  |
|                                        | 1:15 PM    | 4    | 87   | 0    | 0     | 91           | 4    | 4    | 1    | 0     | 9          | 3    | 114  | 6    | 0     | 123          | 1    | 1    | 1    | 0     | 3                | 226           | 989  |
|                                        | 1:30 PM    | 1    | 103  | 1    | 0     | 105          | 1    | 3    | 4    | 0     | 8          | 5    | 121  | 4    | 0     | 130          | 2    | 1    | 1    | 0     | 4                | 247           | 1060 |
|                                        | 1:45 PM    | 3    | 90   | 1    | 0     | 94           | 0    | 1    | 1    | 0     | 2          | 6    | 106  | 6    | 0     | 118          | 5    | 3    | 2    | 0     | 10               | 224           | 1216 |
| PM Peak Period                         | 2:00 PM    | 2    | 135  | 0    | 0     | 137          | 0    | 2    | 2    | 0     | 4          | 5    | 137  | 3    | 0     | 145          | 1    | 5    | 0    | 0     | 6                | 292           | 1315 |
|                                        | 2:15 PM    | 4    | 119  | 0    | 0     | 123          | 2    | 2    | 5    | 0     | 9          | 4    | 156  | 4    | 0     | 164          | 0    | 0    | 1    | 0     | 1                | 297           | 1409 |
|                                        | 2:30 PM    | 3    | 179  | 3    | 0     | 185          | 1    | 2    | 3    | 0     | 6          | 8    | 191  | 3    | 1     | 203          | 3    | 2    | 4    | 0     | 9                | 403           | 1498 |
|                                        | 2:45 PM    | 6    | 135  | 1    | 0     | 142          | 1    | 3    | 4    | 0     | 8          | 6    | 158  | 3    | 0     | 167          | 2    | 2    | 2    | 0     | 6                | 323           | 1580 |
|                                        | 3:00 PM    | 4    | 178  | 1    | 0     | 183          | 5    | 2    | 5    | 0     | 12         | 8    | 173  | 5    | 0     | 186          | 2    | 2    | 1    | 0     | 5                | 386           | 1734 |
|                                        | 3:15 PM    | 1    | 150  | 1    | 0     | 152          | 1    | 2    | 3    | 0     | 6          | 7    | 208  | 2    | 0     | 217          | 4    | 4    | 3    | 0     | 11               | 386           | 1920 |
|                                        | 3:30 PM    | 4    | 215  | 3    | 1     | 223          | 3    | 3    | 7    | 0     | 13         | 5    | 224  | 11   | 0     | 240          | 5    | 3    | 1    | 0     | 9                | 485           | 2162 |
|                                        | 3:45 PM    | 1    | 171  | 2    | 1     | 175          | 4    | 1    | 6    | 0     | 11         | 4    | 271  | 8    | 0     | 283          | 3    | 3    | 2    | 0     | 8                | 477           | 2370 |
|                                        | 4:00 PM    | 6    | 270  | 5    | 0     | 281          | 3    | 3    | 2    | 0     | 8          | 7    | 257  | 9    | 0     | 273          | 5    | 3    | 2    | 0     | 10               | 572           | 2564 |
|                                        | 4:15 PM    | 6    | 291  | 3    | 0     | 300          | 7    | 3    | 7    | 0     | 17         | 10   | 288  | 7    | 0     | 305          | 3    | 2    | 1    | 0     | 6                | 628           | 2707 |
|                                        | 4:30 PM    | 4    | 261  | 2    | 0     | 267          | 7    | 6    | 8    | 0     | 21         | 9    | 374  | 15   | 0     | 398          | 2    | 4    | 1    | 0     | 7                | 693           | 2895 |
|                                        | 4:45 PM    | 7    | 251  | 0    | 0     | 258          | 7    | 8    | 12   | 0     | 27         | 11   | 336  | 19   | 0     | 366          | 7    | 9    | 4    | 0     | 20               | 671           | 2878 |
|                                        | 5:00 PM    | 8    | 280  | 1    | 0     | 289          | 10   | 5    | 7    | 0     | 22         | 15   | 359  | 17   | 0     | 391          | 5    | 5    | 3    | 0     | 13               | 715           | 2688 |
|                                        | 5:15 PM    | 11   | 299  | 5    | 0     | 315          | 9    | 5    | 4    | 0     | 18         | 18   | 426  | 20   | 0     | 464          | 8    | 7    | 4    | 0     | 19               | 816           | 2354 |
|                                        | 5:30 PM    | 8    | 272  | 4    | 0     | 284          | 4    | 5    | 10   | 0     | 19         | 14   | 324  | 18   | 0     | 356          | 9    | 3    | 5    | 0     | 17               | 676           | 1902 |
|                                        | 5:45 PM    | 2    | 176  | 6    | 0     | 184          | 5    | 3    | 11   | 0     | 19         | 9    | 252  | 10   | 0     | 271          | 5    | 1    | 1    | 0     | 7                | 481           | 1559 |
|                                        | 6:00 PM    | 2    | 177  | 2    | 0     | 181          | 3    | 6    | 5    | 0     | 14         | 8    | 160  | 2    | 0     | 170          | 5    | 8    | 3    | 0     | 16               | 381           | 1389 |
|                                        | 6:15 PM    | 3    | 145  | 2    | 0     | 150          | 0    | 2    | 3    | 0     | 5          | 6    | 187  | 8    | 0     | 201          | 2    | 5    | 1    | 0     | 8                | 364           |      |
|                                        | 6:30 PM    | 6    | 120  | 5    | 0     | 131          | 5    | 4    | 2    | 0     | 11         | 8    | 165  | 6    | 0     | 179          | 5    | 5    | 2    | 0     | 12               | 333           |      |
|                                        | 6:45 PM    | 3    | 115  | 0    | 0     | 118          | 2    | 4    | 8    | 0     | 14         | 8    | 146  | 6    | 1     | 161          | 4    | 8    | 6    | 0     | 18               | 311           |      |
| 7:00 PM                                | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                |               |      |
| 7:15 PM                                | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                |               |      |
| 7:30 PM                                | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                |               |      |
| 7:45 PM                                | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                |               |      |
| 8:00 PM                                | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                |               |      |
| 8:15 PM                                | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                |               |      |
| 8:30 PM                                | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                |               |      |
| 8:45 PM                                | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                |               |      |
| 9:00 PM                                | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                |               |      |
| 9:15 PM                                | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                |               |      |
| 9:30 PM                                | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                |               |      |
| 9:45 PM                                | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                |               |      |
| Totals                                 |            | 130  | 8717 | 86   | 3     | 8936         | 133  | 150  | 281  | 0     | 564        | 363  | 8924 | 244  | 7     | 9538         | 210  | 189  | 108  | 0     | 507              | 19545         |      |

### Peak Hour Automobile Volume Summary

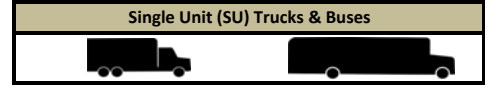
| Hourly Time Period | Start Time | From North |  |  |  | From East |  |  |  | From South |  |
|--------------------|------------|------------|--|--|--|-----------|--|--|--|------------|--|
|--------------------|------------|------------|--|--|--|-----------|--|--|--|------------|--|

# Intersection Traffic Volume Report

## 15-Minute Single Unit (SU) Truck & Bus Data

| Count Basics                   |                            |             | Page 7 of 13       |
|--------------------------------|----------------------------|-------------|--------------------|
| Start Date:                    | Monday, September 30, 2019 | Weekday     | Schools in Session |
| Total Number of Hours Counted: | 13                         | Non-Holiday | No Special Events  |

### CTH F and Lindsay Road



### 15-Minute Single Unit (SU) Truck & Bus Data

| 15-Minute<br>Time Period<br>Start Time | From North |      |      |      |       | From East    |      |      |      |       | From South |      |      |      |       | From West    |      |      |      |       | 15-Min<br>Totals | Hourly<br>Sum |     |
|----------------------------------------|------------|------|------|------|-------|--------------|------|------|------|-------|------------|------|------|------|-------|--------------|------|------|------|-------|------------------|---------------|-----|
|                                        | CTH F      |      |      |      |       | Lindsay Road |      |      |      |       | CTH F      |      |      |      |       | Lindsay Road |      |      |      |       |                  |               |     |
|                                        | Right      | Thru | Left | U-Tn | Total | Right        | Thru | Left | U-Tn | Total | Right      | Thru | Left | U-Tn | Total | Right        | Thru | Left | U-Tn | Total |                  |               |     |
| AM Peak Period                         | 6:00 AM    | 0    | 13   | 0    | 0     | 13           | 0    | 0    | 0    | 0     | 0          | 0    | 8    | 0    | 0     | 8            | 0    | 0    | 0    | 0     | 0                | 21            | 136 |
|                                        | 6:15 AM    | 0    | 16   | 0    | 0     | 16           | 2    | 0    | 0    | 0     | 2          | 1    | 10   | 0    | 0     | 11           | 0    | 0    | 0    | 0     | 0                | 29            | 152 |
|                                        | 6:30 AM    | 0    | 16   | 1    | 0     | 17           | 0    | 0    | 3    | 0     | 3          | 1    | 16   | 0    | 0     | 17           | 0    | 0    | 0    | 0     | 0                | 37            | 164 |
|                                        | 6:45 AM    | 0    | 17   | 0    | 0     | 17           | 1    | 0    | 1    | 0     | 2          | 0    | 30   | 0    | 0     | 30           | 0    | 0    | 0    | 0     | 0                | 49            | 163 |
|                                        | 7:00 AM    | 0    | 25   | 0    | 0     | 25           | 2    | 0    | 0    | 0     | 2          | 0    | 10   | 0    | 0     | 10           | 0    | 0    | 0    | 0     | 0                | 37            | 150 |
|                                        | 7:15 AM    | 0    | 27   | 0    | 0     | 27           | 0    | 0    | 0    | 0     | 0          | 0    | 14   | 0    | 0     | 14           | 0    | 0    | 0    | 0     | 0                | 41            | 156 |
|                                        | 7:30 AM    | 0    | 16   | 1    | 0     | 17           | 0    | 0    | 0    | 0     | 0          | 2    | 17   | 0    | 0     | 19           | 0    | 0    | 0    | 0     | 0                | 36            | 163 |
|                                        | 7:45 AM    | 0    | 17   | 0    | 0     | 17           | 0    | 1    | 0    | 0     | 1          | 1    | 16   | 0    | 0     | 17           | 0    | 1    | 0    | 0     | 1                | 36            | 177 |
|                                        | 8:00 AM    | 0    | 12   | 0    | 0     | 12           | 1    | 0    | 0    | 0     | 1          | 0    | 30   | 0    | 0     | 30           | 0    | 0    | 0    | 0     | 0                | 43            | 190 |
|                                        | 8:15 AM    | 1    | 27   | 0    | 0     | 28           | 0    | 0    | 1    | 0     | 1          | 1    | 18   | 0    | 0     | 19           | 0    | 0    | 0    | 0     | 0                | 48            | 184 |
|                                        | 8:30 AM    | 0    | 10   | 0    | 0     | 10           | 1    | 0    | 1    | 0     | 2          | 1    | 37   | 0    | 0     | 38           | 0    | 0    | 0    | 0     | 0                | 50            | 167 |
|                                        | 8:45 AM    | 0    | 30   | 0    | 0     | 30           | 1    | 0    | 0    | 0     | 1          | 0    | 16   | 0    | 0     | 16           | 1    | 1    | 0    | 0     | 2                | 49            | 155 |
|                                        | 9:00 AM    | 1    | 11   | 0    | 0     | 12           | 0    | 0    | 0    | 0     | 0          | 1    | 24   | 0    | 0     | 25           | 0    | 0    | 0    | 0     | 0                | 37            | 140 |
|                                        | 9:15 AM    | 0    | 15   | 1    | 0     | 16           | 0    | 0    | 0    | 0     | 0          | 0    | 15   | 0    | 0     | 15           | 0    | 0    | 0    | 0     | 0                | 31            | 153 |
|                                        | 9:30 AM    | 0    | 19   | 0    | 0     | 19           | 0    | 0    | 0    | 0     | 0          | 1    | 18   | 0    | 0     | 19           | 0    | 0    | 0    | 0     | 0                | 38            | 180 |
| 9:45 AM                                | 0          | 17   | 0    | 0    | 17    | 1            | 0    | 1    | 0    | 2     | 0          | 14   | 0    | 0    | 14    | 1            | 0    | 0    | 0    | 1     | 34               | 192           |     |
| Midday Peak Period                     | 10:00 AM   | 0    | 23   | 0    | 0     | 23           | 0    | 1    | 2    | 0     | 3          | 2    | 22   | 0    | 0     | 24           | 0    | 0    | 0    | 0     | 0                | 50            | 207 |
|                                        | 10:15 AM   | 0    | 32   | 0    | 0     | 32           | 0    | 0    | 0    | 0     | 0          | 0    | 24   | 1    | 0     | 25           | 0    | 1    | 0    | 0     | 1                | 58            | 202 |
|                                        | 10:30 AM   | 0    | 21   | 0    | 0     | 21           | 0    | 1    | 1    | 0     | 2          | 1    | 26   | 0    | 0     | 27           | 0    | 0    | 0    | 0     | 0                | 50            | 187 |
|                                        | 10:45 AM   | 0    | 29   | 0    | 0     | 29           | 0    | 0    | 0    | 0     | 0          | 1    | 19   | 0    | 0     | 20           | 0    | 0    | 0    | 0     | 0                | 49            | 177 |
|                                        | 11:00 AM   | 0    | 23   | 0    | 0     | 23           | 0    | 1    | 1    | 0     | 2          | 1    | 19   | 0    | 0     | 20           | 0    | 0    | 0    | 0     | 0                | 45            | 176 |
|                                        | 11:15 AM   | 0    | 20   | 0    | 0     | 20           | 1    | 0    | 1    | 0     | 2          | 2    | 19   | 0    | 0     | 21           | 0    | 0    | 0    | 0     | 0                | 43            | 185 |
|                                        | 11:30 AM   | 0    | 22   | 0    | 0     | 22           | 0    | 0    | 1    | 0     | 1          | 1    | 16   | 0    | 0     | 17           | 0    | 0    | 0    | 0     | 0                | 40            | 192 |
|                                        | 11:45 AM   | 0    | 19   | 0    | 0     | 19           | 2    | 0    | 0    | 0     | 2          | 0    | 27   | 0    | 0     | 27           | 0    | 0    | 0    | 0     | 0                | 48            | 206 |
|                                        | 12:00 PM   | 0    | 22   | 0    | 0     | 22           | 0    | 0    | 1    | 0     | 1          | 0    | 31   | 0    | 0     | 31           | 0    | 0    | 0    | 0     | 0                | 54            | 224 |
|                                        | 12:15 PM   | 0    | 28   | 1    | 0     | 29           | 1    | 0    | 2    | 0     | 3          | 1    | 17   | 0    | 0     | 18           | 0    | 0    | 0    | 0     | 0                | 50            | 223 |
|                                        | 12:30 PM   | 0    | 23   | 0    | 0     | 23           | 0    | 0    | 0    | 0     | 0          | 1    | 28   | 0    | 0     | 29           | 0    | 2    | 0    | 0     | 2                | 54            | 213 |
|                                        | 12:45 PM   | 0    | 38   | 0    | 0     | 38           | 1    | 1    | 0    | 0     | 2          | 0    | 26   | 0    | 0     | 26           | 0    | 0    | 0    | 0     | 0                | 66            | 203 |
|                                        | 1:00 PM    | 0    | 29   | 0    | 0     | 29           | 0    | 0    | 1    | 0     | 1          | 2    | 21   | 0    | 0     | 23           | 0    | 0    | 0    | 0     | 0                | 53            | 182 |
|                                        | 1:15 PM    | 0    | 8    | 0    | 0     | 8            | 0    | 0    | 1    | 0     | 1          | 1    | 30   | 0    | 0     | 31           | 0    | 0    | 0    | 0     | 0                | 40            | 186 |
|                                        | 1:30 PM    | 0    | 24   | 0    | 0     | 24           | 0    | 0    | 0    | 0     | 0          | 0    | 20   | 0    | 0     | 20           | 0    | 0    | 0    | 0     | 0                | 44            | 205 |
| 1:45 PM                                | 0          | 17   | 0    | 0    | 17    | 0            | 0    | 0    | 0    | 0     | 0          | 28   | 0    | 0    | 28    | 0            | 0    | 0    | 0    | 0     | 45               | 202           |     |
| PM Peak Period                         | 2:00 PM    | 0    | 28   | 1    | 0     | 29           | 0    | 0    | 0    | 0     | 0          | 1    | 27   | 0    | 0     | 28           | 0    | 0    | 0    | 0     | 0                | 57            | 201 |
|                                        | 2:15 PM    | 0    | 29   | 0    | 0     | 29           | 0    | 0    | 3    | 0     | 3          | 1    | 25   | 0    | 0     | 26           | 0    | 1    | 0    | 0     | 1                | 59            | 179 |
|                                        | 2:30 PM    | 0    | 22   | 1    | 0     | 23           | 0    | 0    | 0    | 0     | 0          | 0    | 18   | 0    | 0     | 18           | 0    | 0    | 0    | 0     | 0                | 41            | 156 |
|                                        | 2:45 PM    | 0    | 18   | 1    | 0     | 19           | 1    | 0    | 0    | 0     | 1          | 0    | 23   | 0    | 0     | 23           | 0    | 1    | 0    | 0     | 1                | 44            | 149 |
|                                        | 3:00 PM    | 0    | 17   | 0    | 0     | 17           | 0    | 1    | 0    | 0     | 1          | 1    | 15   | 0    | 0     | 16           | 0    | 0    | 1    | 0     | 1                | 35            | 132 |
|                                        | 3:15 PM    | 1    | 15   | 1    | 0     | 17           | 0    | 0    | 1    | 0     | 1          | 2    | 15   | 1    | 0     | 18           | 0    | 0    | 0    | 0     | 0                | 36            | 129 |
|                                        | 3:30 PM    | 0    | 21   | 0    | 0     | 21           | 0    | 0    | 1    | 0     | 1          | 1    | 10   | 0    | 0     | 11           | 0    | 1    | 0    | 0     | 1                | 34            | 128 |
|                                        | 3:45 PM    | 0    | 14   | 0    | 0     | 14           | 0    | 0    | 0    | 0     | 0          | 2    | 11   | 0    | 0     | 13           | 0    | 0    | 0    | 0     | 0                | 27            | 121 |
|                                        | 4:00 PM    | 0    | 12   | 0    | 0     | 12           | 0    | 1    | 0    | 0     | 1          | 0    | 18   | 0    | 0     | 18           | 0    | 1    | 0    | 0     | 1                | 32            | 111 |
|                                        | 4:15 PM    | 0    | 16   | 1    | 0     | 17           | 0    | 1    | 0    | 0     | 1          | 3    | 14   | 0    | 0     | 17           | 0    | 0    | 0    | 0     | 0                | 35            | 92  |
|                                        | 4:30 PM    | 0    | 13   | 0    | 0     | 13           | 0    | 0    | 0    | 0     | 0          | 0    | 13   | 0    | 0     | 13           | 0    | 0    | 1    | 0     | 1                | 27            | 95  |
|                                        | 4:45 PM    | 0    | 8    | 0    | 0     | 8            | 0    | 1    | 0    | 0     | 1          | 0    | 7    | 1    | 0     | 8            | 0    | 0    | 0    | 0     | 0                | 17            | 87  |
|                                        | 5:00 PM    | 0    | 4    | 0    | 0     | 4            | 0    | 0    | 0    | 0     | 0          | 0    | 9    | 0    | 0     | 9            | 0    | 0    | 0    | 0     | 0                | 13            | 88  |
|                                        | 5:15 PM    | 0    | 18   | 0    | 0     | 18           | 1    | 0    | 0    | 0     | 1          | 1    | 17   | 0    | 0     | 18           | 1    | 0    | 0    | 0     | 1                | 38            | 92  |
|                                        | 5:30 PM    | 0    | 7    | 1    | 0     | 8            | 1    | 0    | 0    | 0     | 1          | 1    | 9    | 0    | 0     | 10           | 0    | 0    | 0    | 0     | 0                | 19            | 65  |
| 5:45 PM                                | 0          | 10   | 0    | 0    | 10    | 0            | 0    | 0    | 0    | 0     | 2          | 5    | 0    | 0    | 7     | 0            | 1    | 0    | 0    | 1     | 18               | 54            |     |
| 6:00 PM                                | 1          | 7    | 1    | 0    | 9     | 0            | 0    | 0    | 0    | 0     | 0          | 7    | 0    | 0    | 7     | 1            | 0    | 0    | 0    | 1     | 17               | 42            |     |
| 6:15 PM                                | 0          | 4    | 0    | 0    | 4     | 0            | 0    | 0    | 0    | 0     | 0          | 7    | 0    | 0    | 7     | 0            | 0    | 0    | 0    | 0     | 11               |               |     |
| 6:30 PM                                | 0          | 4    | 0    | 0    | 4     | 0            | 0    | 0    | 0    | 0     | 1          | 3    | 0    | 0    | 4     | 0            | 0    | 0    | 0    | 0     | 8                |               |     |
| 6:45 PM                                | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 1          | 5    | 0    | 0    | 6     | 0            | 0    | 0    | 0    | 0     | 6                |               |     |
| 7:00 PM                                | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                |               |     |
| 7:15 PM                                | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                |               |     |
| 7:30 PM                                | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                |               |     |
| 7:45 PM                                | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                |               |     |
| 8:00 PM                                | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                |               |     |
| 8:15 PM                                | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                |               |     |
| 8:30 PM                                | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                |               |     |
| 8:45 PM                                | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                |               |     |
| 9:00 PM                                | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                |               |     |
| 9:15 PM                                | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                |               |     |
| 9:30 PM                                | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                |               |     |
| 9:45 PM                                | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                |               |     |
| Totals                                 |            | 4    | 933  | 11   | 0     | 948          | 17   | 9    | 23   | 0     | 49         | 39   | 924  | 3    | 0     | 966          | 4    | 10   | 2    | 0     | 16               | 1979          |     |

### Peak Hour Single Unit (SU) Truck & Buses Volume Summary

| Hourly<br>Time Period<br>Start Time | From North |      |      |      |       | From East    |      |      |      |       | From South |      |      |      |       | From West    |      |      |      |       | Total<br>Hourly<br>Volume |
|-------------------------------------|------------|------|------|------|-------|--------------|------|------|------|-------|------------|------|------|------|-------|--------------|------|------|------|-------|---------------------------|
|                                     | CTH F      |      |      |      |       | Lindsay Road |      |      |      |       | CTH F      |      |      |      |       | Lindsay Road |      |      |      |       |                           |
|                                     | Right      | Thru | Left | U-Tn | Total | Right        | Thru | Left | U-Tn | Total | Right      | Thru | Left | U-Tn | Total | Right        | Thru | Left | U-Tn | Total |                           |
| AM 7:00 AM                          | 0          | 85   | 1    | 0    | 86    | 2            | 1    | 0    | 0    | 3     | 3          | 57   | 0    | 0    | 60    | 0            | 1    | 0    | 0    | 1     | 150                       |
| MD 11:30 AM                         | 0          | 91   | 1    | 0    | 92    | 3            | 0    | 4    | 0    | 7     | 2          | 91   | 0    | 0    | 93    | 0            | 0    | 0    | 0    | 0     | 192                       |
| PM 4:30 PM                          | 0          | 43   | 0    | 0    | 43    | 1            | 1    | 0    | 0    | 2     | 1          | 46   | 1    | 0    | 48    | 1            | 0    | 1    | 0    | 2     | 99                        |

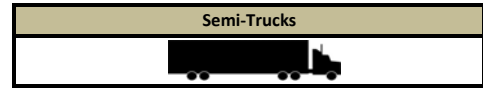


# Intersection Traffic Volume Report

| Count Basics                   |                            |             | Page 8 of 13       |
|--------------------------------|----------------------------|-------------|--------------------|
| Start Date:                    | Monday, September 30, 2019 | Weekday     | Schools in Session |
| Total Number of Hours Counted: | 13                         | Non-Holiday | No Special Events  |

## 15-Minute Semi-Truck Data

### CTH F and Lindsay Road



#### 15-Minute Semi-Truck Data

| 15-Minute<br>Time Period<br>Start Time | From North |      |      |      |       | From East    |      |      |      |       | From South |      |      |      |       | From West    |      |      |      |       | 15-Min<br>Totals | Hourly<br>Sum |    |
|----------------------------------------|------------|------|------|------|-------|--------------|------|------|------|-------|------------|------|------|------|-------|--------------|------|------|------|-------|------------------|---------------|----|
|                                        | CTH F      |      |      |      |       | Lindsay Road |      |      |      |       | CTH F      |      |      |      |       | Lindsay Road |      |      |      |       |                  |               |    |
|                                        | Right      | Thru | Left | U-Tn | Total | Right        | Thru | Left | U-Tn | Total | Right      | Thru | Left | U-Tn | Total | Right        | Thru | Left | U-Tn | Total |                  |               |    |
| AM Peak Period                         | 6:00 AM    | 0    | 3    | 0    | 0     | 3            | 0    | 0    | 0    | 0     | 0          | 0    | 8    | 0    | 0     | 8            | 0    | 0    | 0    | 0     | 0                | 11            | 45 |
|                                        | 6:15 AM    | 0    | 7    | 0    | 0     | 7            | 0    | 0    | 0    | 0     | 0          | 0    | 5    | 0    | 0     | 5            | 0    | 0    | 0    | 0     | 0                | 12            | 42 |
|                                        | 6:30 AM    | 0    | 6    | 0    | 0     | 6            | 0    | 0    | 0    | 0     | 0          | 0    | 8    | 0    | 0     | 8            | 0    | 0    | 0    | 0     | 0                | 14            | 37 |
|                                        | 6:45 AM    | 0    | 7    | 0    | 0     | 7            | 0    | 0    | 0    | 0     | 0          | 0    | 1    | 0    | 0     | 1            | 0    | 0    | 0    | 0     | 0                | 8             | 35 |
|                                        | 7:00 AM    | 0    | 5    | 0    | 0     | 5            | 0    | 0    | 0    | 0     | 0          | 0    | 3    | 0    | 0     | 3            | 0    | 0    | 0    | 0     | 0                | 8             | 47 |
|                                        | 7:15 AM    | 0    | 3    | 0    | 0     | 3            | 0    | 0    | 0    | 0     | 0          | 0    | 4    | 0    | 0     | 4            | 0    | 0    | 0    | 0     | 0                | 7             | 53 |
|                                        | 7:30 AM    | 0    | 3    | 0    | 0     | 3            | 0    | 0    | 0    | 0     | 0          | 0    | 9    | 0    | 0     | 9            | 0    | 0    | 0    | 0     | 0                | 12            | 61 |
|                                        | 7:45 AM    | 0    | 11   | 0    | 0     | 11           | 0    | 0    | 0    | 0     | 0          | 1    | 8    | 0    | 0     | 9            | 0    | 0    | 0    | 0     | 0                | 20            | 65 |
|                                        | 8:00 AM    | 0    | 6    | 0    | 0     | 6            | 0    | 0    | 1    | 0     | 1          | 0    | 7    | 0    | 0     | 7            | 0    | 0    | 0    | 0     | 0                | 14            | 53 |
|                                        | 8:15 AM    | 0    | 5    | 0    | 0     | 5            | 0    | 0    | 0    | 0     | 0          | 0    | 10   | 0    | 0     | 10           | 0    | 0    | 0    | 0     | 0                | 15            | 54 |
|                                        | 8:30 AM    | 0    | 7    | 0    | 0     | 7            | 0    | 0    | 0    | 0     | 0          | 0    | 9    | 0    | 0     | 9            | 0    | 0    | 0    | 0     | 0                | 16            | 45 |
|                                        | 8:45 AM    | 0    | 5    | 0    | 0     | 5            | 0    | 0    | 0    | 0     | 0          | 0    | 3    | 0    | 0     | 3            | 0    | 0    | 0    | 0     | 0                | 8             | 45 |
|                                        | 9:00 AM    | 0    | 5    | 0    | 0     | 5            | 0    | 0    | 0    | 0     | 0          | 1    | 9    | 0    | 0     | 10           | 0    | 0    | 0    | 0     | 0                | 15            | 51 |
|                                        | 9:15 AM    | 0    | 4    | 0    | 0     | 4            | 0    | 0    | 0    | 0     | 0          | 0    | 2    | 0    | 0     | 2            | 0    | 0    | 0    | 0     | 0                | 6             | 57 |
|                                        | 9:30 AM    | 0    | 7    | 0    | 0     | 7            | 0    | 0    | 0    | 0     | 0          | 0    | 9    | 0    | 0     | 9            | 0    | 0    | 0    | 0     | 0                | 16            | 70 |
| 9:45 AM                                | 0          | 4    | 0    | 0    | 4     | 0            | 0    | 0    | 0    | 0     | 0          | 10   | 0    | 0    | 10    | 0            | 0    | 0    | 0    | 0     | 14               | 68            |    |
| Midday Peak Period                     | 10:00 AM   | 0    | 8    | 0    | 0     | 8            | 0    | 0    | 0    | 0     | 0          | 0    | 13   | 0    | 0     | 13           | 0    | 0    | 0    | 0     | 0                | 21            | 68 |
|                                        | 10:15 AM   | 0    | 7    | 0    | 0     | 7            | 0    | 0    | 0    | 0     | 0          | 0    | 12   | 0    | 0     | 12           | 0    | 0    | 0    | 0     | 0                | 19            | 58 |
|                                        | 10:30 AM   | 0    | 2    | 0    | 0     | 2            | 0    | 0    | 0    | 0     | 0          | 0    | 12   | 0    | 0     | 12           | 0    | 0    | 0    | 0     | 0                | 14            | 45 |
|                                        | 10:45 AM   | 0    | 7    | 0    | 0     | 7            | 0    | 0    | 0    | 0     | 0          | 1    | 6    | 0    | 0     | 7            | 0    | 0    | 0    | 0     | 0                | 14            | 40 |
|                                        | 11:00 AM   | 0    | 7    | 0    | 0     | 7            | 0    | 0    | 0    | 0     | 0          | 0    | 4    | 0    | 0     | 4            | 0    | 0    | 0    | 0     | 0                | 11            | 44 |
|                                        | 11:15 AM   | 0    | 2    | 0    | 0     | 2            | 0    | 0    | 0    | 0     | 0          | 0    | 4    | 0    | 0     | 4            | 0    | 0    | 0    | 0     | 0                | 6             | 43 |
|                                        | 11:30 AM   | 0    | 3    | 0    | 0     | 3            | 0    | 0    | 0    | 0     | 0          | 0    | 6    | 0    | 0     | 6            | 0    | 0    | 0    | 0     | 0                | 9             | 51 |
|                                        | 11:45 AM   | 0    | 6    | 0    | 0     | 6            | 0    | 0    | 0    | 0     | 0          | 0    | 12   | 0    | 0     | 12           | 0    | 0    | 0    | 0     | 0                | 18            | 46 |
|                                        | 12:00 PM   | 0    | 3    | 0    | 0     | 3            | 0    | 0    | 0    | 0     | 0          | 0    | 7    | 0    | 0     | 7            | 0    | 0    | 0    | 0     | 0                | 10            | 38 |
|                                        | 12:15 PM   | 0    | 9    | 0    | 0     | 9            | 0    | 0    | 0    | 0     | 0          | 0    | 5    | 0    | 0     | 5            | 0    | 0    | 0    | 0     | 0                | 14            | 33 |
|                                        | 12:30 PM   | 0    | 1    | 0    | 0     | 1            | 0    | 0    | 0    | 0     | 0          | 0    | 3    | 0    | 0     | 3            | 0    | 0    | 0    | 0     | 0                | 4             | 27 |
|                                        | 12:45 PM   | 0    | 5    | 0    | 0     | 5            | 0    | 0    | 0    | 0     | 0          | 0    | 5    | 0    | 0     | 5            | 0    | 0    | 0    | 0     | 0                | 10            | 31 |
|                                        | 1:00 PM    | 0    | 2    | 0    | 0     | 2            | 0    | 0    | 0    | 0     | 0          | 0    | 3    | 0    | 0     | 3            | 0    | 0    | 0    | 0     | 0                | 5             | 28 |
|                                        | 1:15 PM    | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 8    | 0    | 0     | 8            | 0    | 0    | 0    | 0     | 0                | 8             | 42 |
|                                        | 1:30 PM    | 0    | 6    | 0    | 0     | 6            | 0    | 0    | 0    | 0     | 0          | 0    | 2    | 0    | 0     | 2            | 0    | 0    | 0    | 0     | 0                | 8             | 44 |
| 1:45 PM                                | 0          | 5    | 0    | 0    | 5     | 0            | 0    | 0    | 0    | 0     | 0          | 2    | 0    | 0    | 2     | 0            | 0    | 0    | 0    | 0     | 7                | 44            |    |
| PM Peak Period                         | 2:00 PM    | 0    | 8    | 0    | 0     | 8            | 0    | 0    | 0    | 0     | 0          | 0    | 11   | 0    | 0     | 11           | 0    | 0    | 0    | 0     | 0                | 19            | 45 |
|                                        | 2:15 PM    | 0    | 5    | 0    | 0     | 5            | 0    | 0    | 0    | 0     | 0          | 0    | 5    | 0    | 0     | 5            | 0    | 0    | 0    | 0     | 0                | 10            | 37 |
|                                        | 2:30 PM    | 0    | 1    | 0    | 0     | 1            | 0    | 0    | 0    | 0     | 0          | 0    | 7    | 0    | 0     | 7            | 0    | 0    | 0    | 0     | 0                | 8             | 33 |
|                                        | 2:45 PM    | 0    | 4    | 0    | 0     | 4            | 0    | 0    | 0    | 0     | 0          | 0    | 4    | 0    | 0     | 4            | 0    | 0    | 0    | 0     | 0                | 8             | 32 |
|                                        | 3:00 PM    | 0    | 5    | 0    | 0     | 5            | 0    | 0    | 0    | 0     | 0          | 0    | 6    | 0    | 0     | 6            | 0    | 0    | 0    | 0     | 0                | 11            | 35 |
|                                        | 3:15 PM    | 0    | 1    | 0    | 0     | 1            | 0    | 0    | 0    | 0     | 0          | 0    | 5    | 0    | 0     | 5            | 0    | 0    | 0    | 0     | 0                | 6             | 42 |
|                                        | 3:30 PM    | 0    | 1    | 0    | 0     | 1            | 0    | 0    | 0    | 0     | 0          | 0    | 6    | 0    | 0     | 6            | 0    | 0    | 0    | 0     | 0                | 7             | 49 |
|                                        | 3:45 PM    | 0    | 1    | 0    | 0     | 1            | 0    | 0    | 0    | 0     | 0          | 1    | 9    | 0    | 0     | 10           | 0    | 0    | 0    | 0     | 0                | 11            | 49 |
|                                        | 4:00 PM    | 0    | 10   | 0    | 0     | 10           | 0    | 0    | 1    | 0     | 1          | 0    | 7    | 0    | 0     | 7            | 0    | 0    | 0    | 0     | 0                | 18            | 45 |
|                                        | 4:15 PM    | 0    | 6    | 0    | 0     | 6            | 0    | 0    | 0    | 0     | 0          | 0    | 7    | 0    | 0     | 7            | 0    | 0    | 0    | 0     | 0                | 13            | 32 |
|                                        | 4:30 PM    | 0    | 4    | 1    | 0     | 5            | 0    | 0    | 0    | 0     | 0          | 0    | 2    | 0    | 0     | 2            | 0    | 0    | 0    | 0     | 0                | 7             | 23 |
|                                        | 4:45 PM    | 0    | 1    | 1    | 0     | 2            | 0    | 0    | 0    | 0     | 0          | 0    | 5    | 0    | 0     | 5            | 0    | 0    | 0    | 0     | 0                | 7             | 21 |
|                                        | 5:00 PM    | 0    | 3    | 0    | 0     | 3            | 0    | 0    | 0    | 0     | 0          | 0    | 2    | 0    | 0     | 2            | 0    | 0    | 0    | 0     | 0                | 5             | 26 |
|                                        | 5:15 PM    | 0    | 2    | 0    | 0     | 2            | 0    | 0    | 0    | 0     | 0          | 0    | 2    | 0    | 0     | 2            | 0    | 0    | 0    | 0     | 0                | 4             | 25 |
|                                        | 5:30 PM    | 0    | 3    | 0    | 0     | 3            | 0    | 0    | 0    | 0     | 0          | 0    | 2    | 0    | 0     | 2            | 0    | 0    | 0    | 0     | 0                | 5             | 25 |
|                                        | 5:45 PM    | 0    | 5    | 0    | 0     | 5            | 0    | 0    | 0    | 0     | 0          | 0    | 7    | 0    | 0     | 7            | 0    | 0    | 0    | 0     | 0                | 12            | 23 |
|                                        | 6:00 PM    | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 4    | 0    | 0     | 4            | 0    | 0    | 0    | 0     | 0                | 4             | 16 |
|                                        | 6:15 PM    | 0    | 1    | 0    | 0     | 1            | 0    | 0    | 0    | 0     | 0          | 0    | 3    | 0    | 0     | 3            | 0    | 0    | 0    | 0     | 0                | 4             |    |
|                                        | 6:30 PM    | 0    | 2    | 0    | 0     | 2            | 0    | 0    | 0    | 0     | 0          | 0    | 1    | 0    | 0     | 1            | 0    | 0    | 0    | 0     | 0                | 3             |    |
|                                        | 6:45 PM    | 0    | 2    | 0    | 0     | 2            | 0    | 0    | 0    | 0     | 0          | 0    | 3    | 0    | 0     | 3            | 0    | 0    | 0    | 0     | 0                | 5             |    |
|                                        | 7:00 PM    | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                | 0             |    |
| 7:15 PM                                | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                |               |    |
| 7:30 PM                                | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                |               |    |
| 7:45 PM                                | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                |               |    |
| 8:00 PM                                | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                |               |    |
| 8:15 PM                                | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                |               |    |
| 8:30 PM                                | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                |               |    |
| 8:45 PM                                | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                |               |    |
| 9:00 PM                                | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                |               |    |
| 9:15 PM                                | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                |               |    |
| 9:30 PM                                | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                |               |    |
| 9:45 PM                                | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                |               |    |
| Totals                                 |            | 0    | 226  | 2    | 0     | 228          | 0    | 0    | 2    | 0     | 2          | 4    | 307  | 0    | 0     | 311          | 0    | 0    | 0    | 0     | 0                | 541           |    |

#### Peak Hour Semi-Truck Volume Summary

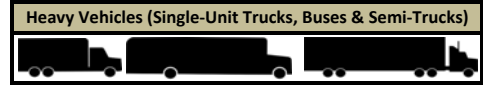
| Hourly<br>Time Period<br>Start Time | <div>↓</div> <div>From North</div> |      |      |      |       | <div>↶</div> <div>From East</div> |      |      |      |       | <div>↑</div> <div>From South</div> |      |      |      |       | <div>↷</div> <div>From West</div> |      |      |      |       | Total<br>Hourly<br>Volume |
|-------------------------------------|------------------------------------|------|------|------|-------|-----------------------------------|------|------|------|-------|------------------------------------|------|------|------|-------|-----------------------------------|------|------|------|-------|---------------------------|
|                                     | CTH F                              |      |      |      |       | Lindsay Road                      |      |      |      |       | CTH F                              |      |      |      |       | Lindsay Road                      |      |      |      |       |                           |
|                                     | Right                              | Thru | Left | U-Tn | Total | Right                             | Thru | Left | U-Tn | Total | Right                              | Thru | Left | U-Tn | Total | Right                             | Thru | Left | U-Tn | Total |                           |
| AM 7:00 AM                          | 0                                  | 25   | 0    | 0    | 25    | 0                                 | 0    | 1    | 0    | 1     | 0                                  | 34   | 0    | 0    | 35    | 0                                 | 0    | 0    | 0    | 0     | 61                        |
| MD 11:30 AM                         | 0                                  | 17   | 0    | 0    | 17    | 0                                 | 0    | 0    | 0    | 0     | 0                                  | 16   | 0    | 0    | 16    | 0                                 | 0    | 0    | 0    | 0     | 33                        |
| PM 4:30 PM                          | 0                                  | 21   | 1    | 0    | 22    | 0                                 | 0    | 1    | 0    | 1     | 1                                  | 25   | 0    | 0    | 26    | 0                                 | 0    | 0    | 0    | 0     | 49                        |

# Intersection Traffic Volume Report

| Count Basics                   |                            |             |                    | Page 9 of 13 |
|--------------------------------|----------------------------|-------------|--------------------|--------------|
| Start Date:                    | Monday, September 30, 2019 | Weekday     | Schools in Session |              |
| Total Number of Hours Counted: | 13                         | Non-Holiday | No Special Events  |              |

## 15-Minute Heavy Vehicle Data

### CTH F and Lindsay Road



#### 15-Minute Heavy Vehicle Data

| 15-Minute<br>Time Period<br>Start Time | From North |      |      |      |       | From East    |      |      |      |       | From South |      |      |      |       | From West    |      |      |      |       | 15-Min<br>Totals | Hourly<br>Sum |     |
|----------------------------------------|------------|------|------|------|-------|--------------|------|------|------|-------|------------|------|------|------|-------|--------------|------|------|------|-------|------------------|---------------|-----|
|                                        | CTH F      |      |      |      |       | Lindsay Road |      |      |      |       | CTH F      |      |      |      |       | Lindsay Road |      |      |      |       |                  |               |     |
|                                        | Right      | Thru | Left | U-Tn | Total | Right        | Thru | Left | U-Tn | Total | Right      | Thru | Left | U-Tn | Total | Right        | Thru | Left | U-Tn | Total |                  |               |     |
| AM Peak Period                         | 6:00 AM    | 0    | 16   | 0    | 0     | 16           | 0    | 0    | 0    | 0     | 0          | 0    | 16   | 0    | 0     | 16           | 0    | 0    | 0    | 0     | 0                | 32            | 181 |
|                                        | 6:15 AM    | 0    | 23   | 0    | 0     | 23           | 2    | 0    | 0    | 0     | 2          | 1    | 15   | 0    | 0     | 16           | 0    | 0    | 0    | 0     | 0                | 41            | 194 |
|                                        | 6:30 AM    | 0    | 22   | 1    | 0     | 23           | 0    | 0    | 3    | 0     | 3          | 1    | 24   | 0    | 0     | 25           | 0    | 0    | 0    | 0     | 0                | 51            | 201 |
|                                        | 6:45 AM    | 0    | 24   | 0    | 0     | 24           | 1    | 0    | 1    | 0     | 2          | 0    | 31   | 0    | 0     | 31           | 0    | 0    | 0    | 0     | 0                | 57            | 198 |
|                                        | 7:00 AM    | 0    | 30   | 0    | 0     | 30           | 2    | 0    | 0    | 0     | 2          | 0    | 13   | 0    | 0     | 13           | 0    | 0    | 0    | 0     | 0                | 45            | 197 |
|                                        | 7:15 AM    | 0    | 30   | 0    | 0     | 30           | 0    | 0    | 0    | 0     | 0          | 0    | 18   | 0    | 0     | 18           | 0    | 0    | 0    | 0     | 0                | 48            | 209 |
|                                        | 7:30 AM    | 0    | 19   | 1    | 0     | 20           | 0    | 0    | 0    | 0     | 0          | 2    | 26   | 0    | 0     | 28           | 0    | 0    | 0    | 0     | 0                | 48            | 224 |
|                                        | 7:45 AM    | 0    | 28   | 0    | 0     | 28           | 0    | 1    | 0    | 0     | 1          | 2    | 24   | 0    | 0     | 26           | 0    | 1    | 0    | 0     | 1                | 56            | 242 |
|                                        | 8:00 AM    | 0    | 18   | 0    | 0     | 18           | 1    | 0    | 1    | 0     | 2          | 0    | 37   | 0    | 0     | 37           | 0    | 0    | 0    | 0     | 0                | 57            | 243 |
|                                        | 8:15 AM    | 1    | 32   | 0    | 0     | 33           | 0    | 0    | 1    | 0     | 1          | 1    | 28   | 0    | 0     | 29           | 0    | 0    | 0    | 0     | 0                | 63            | 238 |
|                                        | 8:30 AM    | 0    | 17   | 0    | 0     | 17           | 1    | 0    | 1    | 0     | 2          | 1    | 46   | 0    | 0     | 47           | 0    | 0    | 0    | 0     | 0                | 66            | 212 |
|                                        | 8:45 AM    | 0    | 35   | 0    | 0     | 35           | 1    | 0    | 0    | 0     | 1          | 0    | 19   | 0    | 0     | 19           | 1    | 1    | 0    | 0     | 2                | 57            | 200 |
| 9:00 AM                                | 1          | 16   | 0    | 0    | 17    | 0            | 0    | 0    | 0    | 0     | 2          | 33   | 0    | 0    | 35    | 0            | 0    | 0    | 0    | 0     | 52               | 191           |     |
| 9:15 AM                                | 0          | 19   | 1    | 0    | 20    | 0            | 0    | 0    | 0    | 0     | 0          | 17   | 0    | 0    | 17    | 0            | 0    | 0    | 0    | 0     | 37               | 210           |     |
| 9:30 AM                                | 0          | 26   | 0    | 0    | 26    | 0            | 0    | 0    | 0    | 0     | 1          | 27   | 0    | 0    | 28    | 0            | 0    | 0    | 0    | 0     | 54               | 250           |     |
| 9:45 AM                                | 0          | 21   | 0    | 0    | 21    | 1            | 0    | 1    | 0    | 2     | 0          | 24   | 0    | 0    | 24    | 1            | 0    | 0    | 0    | 1     | 48               | 260           |     |
| Midday Peak Period                     | 10:00 AM   | 0    | 31   | 0    | 0     | 31           | 0    | 1    | 2    | 0     | 3          | 2    | 35   | 0    | 0     | 37           | 0    | 0    | 0    | 0     | 0                | 71            | 275 |
|                                        | 10:15 AM   | 0    | 39   | 0    | 0     | 39           | 0    | 0    | 0    | 0     | 0          | 0    | 36   | 1    | 0     | 37           | 0    | 1    | 0    | 0     | 1                | 77            | 260 |
|                                        | 10:30 AM   | 0    | 23   | 0    | 0     | 23           | 0    | 1    | 1    | 0     | 2          | 1    | 38   | 0    | 0     | 39           | 0    | 0    | 0    | 0     | 0                | 64            | 232 |
|                                        | 10:45 AM   | 0    | 36   | 0    | 0     | 36           | 0    | 0    | 0    | 0     | 0          | 2    | 25   | 0    | 0     | 27           | 0    | 0    | 0    | 0     | 0                | 63            | 217 |
|                                        | 11:00 AM   | 0    | 30   | 0    | 0     | 30           | 0    | 1    | 1    | 0     | 2          | 1    | 23   | 0    | 0     | 24           | 0    | 0    | 0    | 0     | 0                | 56            | 220 |
|                                        | 11:15 AM   | 0    | 22   | 0    | 0     | 22           | 1    | 0    | 1    | 0     | 2          | 2    | 23   | 0    | 0     | 25           | 0    | 0    | 0    | 0     | 0                | 49            | 228 |
|                                        | 11:30 AM   | 0    | 25   | 0    | 0     | 25           | 0    | 0    | 1    | 0     | 1          | 1    | 22   | 0    | 0     | 23           | 0    | 0    | 0    | 0     | 0                | 49            | 243 |
|                                        | 11:45 AM   | 0    | 25   | 0    | 0     | 25           | 2    | 0    | 0    | 0     | 2          | 0    | 39   | 0    | 0     | 39           | 0    | 0    | 0    | 0     | 0                | 66            | 252 |
|                                        | 12:00 PM   | 0    | 25   | 0    | 0     | 25           | 0    | 0    | 1    | 0     | 1          | 0    | 38   | 0    | 0     | 38           | 0    | 0    | 0    | 0     | 0                | 64            | 262 |
|                                        | 12:15 PM   | 0    | 37   | 1    | 0     | 38           | 1    | 0    | 2    | 0     | 3          | 1    | 22   | 0    | 0     | 23           | 0    | 0    | 0    | 0     | 0                | 64            | 256 |
|                                        | 12:30 PM   | 0    | 24   | 0    | 0     | 24           | 0    | 0    | 0    | 0     | 0          | 1    | 31   | 0    | 0     | 32           | 0    | 2    | 0    | 0     | 2                | 58            | 240 |
|                                        | 12:45 PM   | 0    | 43   | 0    | 0     | 43           | 1    | 1    | 0    | 0     | 2          | 0    | 31   | 0    | 0     | 31           | 0    | 0    | 0    | 0     | 0                | 76            | 234 |
| 1:00 PM                                | 0          | 31   | 0    | 0    | 31    | 0            | 0    | 1    | 0    | 1     | 2          | 24   | 0    | 0    | 26    | 0            | 0    | 0    | 0    | 0     | 58               | 210           |     |
| 1:15 PM                                | 0          | 8    | 0    | 0    | 8     | 0            | 0    | 1    | 0    | 1     | 1          | 38   | 0    | 0    | 39    | 0            | 0    | 0    | 0    | 0     | 48               | 228           |     |
| 1:30 PM                                | 0          | 30   | 0    | 0    | 30    | 0            | 0    | 0    | 0    | 0     | 0          | 22   | 0    | 0    | 22    | 0            | 0    | 0    | 0    | 0     | 52               | 249           |     |
| 1:45 PM                                | 0          | 22   | 0    | 0    | 22    | 0            | 0    | 0    | 0    | 0     | 0          | 30   | 0    | 0    | 30    | 0            | 0    | 0    | 0    | 0     | 52               | 246           |     |
| PM Peak Period                         | 2:00 PM    | 0    | 36   | 1    | 0     | 37           | 0    | 0    | 0    | 0     | 0          | 1    | 38   | 0    | 0     | 39           | 0    | 0    | 0    | 0     | 0                | 76            | 246 |
|                                        | 2:15 PM    | 0    | 34   | 0    | 0     | 34           | 0    | 0    | 3    | 0     | 3          | 1    | 30   | 0    | 0     | 31           | 0    | 1    | 0    | 0     | 1                | 69            | 216 |
|                                        | 2:30 PM    | 0    | 23   | 1    | 0     | 24           | 0    | 0    | 0    | 0     | 0          | 0    | 25   | 0    | 0     | 25           | 0    | 0    | 0    | 0     | 0                | 49            | 189 |
|                                        | 2:45 PM    | 0    | 22   | 1    | 0     | 23           | 1    | 0    | 0    | 0     | 1          | 0    | 27   | 0    | 0     | 27           | 0    | 1    | 0    | 0     | 1                | 52            | 181 |
|                                        | 3:00 PM    | 0    | 22   | 0    | 0     | 22           | 0    | 1    | 0    | 0     | 1          | 1    | 21   | 0    | 0     | 22           | 0    | 0    | 1    | 0     | 1                | 46            | 167 |
|                                        | 3:15 PM    | 1    | 16   | 1    | 0     | 18           | 0    | 0    | 1    | 0     | 1          | 2    | 20   | 1    | 0     | 23           | 0    | 0    | 0    | 0     | 0                | 42            | 171 |
|                                        | 3:30 PM    | 0    | 22   | 0    | 0     | 22           | 0    | 0    | 1    | 0     | 1          | 1    | 16   | 0    | 0     | 17           | 0    | 1    | 0    | 0     | 1                | 41            | 177 |
|                                        | 3:45 PM    | 0    | 15   | 0    | 0     | 15           | 0    | 0    | 0    | 0     | 0          | 3    | 20   | 0    | 0     | 23           | 0    | 0    | 0    | 0     | 0                | 38            | 170 |
|                                        | 4:00 PM    | 0    | 22   | 0    | 0     | 22           | 0    | 1    | 1    | 0     | 2          | 0    | 25   | 0    | 0     | 25           | 0    | 1    | 0    | 0     | 1                | 50            | 156 |
|                                        | 4:15 PM    | 0    | 22   | 1    | 0     | 23           | 0    | 1    | 0    | 0     | 1          | 3    | 21   | 0    | 0     | 24           | 0    | 0    | 0    | 0     | 0                | 48            | 124 |
|                                        | 4:30 PM    | 0    | 17   | 1    | 0     | 18           | 0    | 0    | 0    | 0     | 0          | 0    | 15   | 0    | 0     | 15           | 0    | 0    | 1    | 0     | 1                | 34            | 118 |
|                                        | 4:45 PM    | 0    | 9    | 1    | 0     | 10           | 0    | 1    | 0    | 0     | 1          | 0    | 12   | 1    | 0     | 13           | 0    | 0    | 0    | 0     | 0                | 24            | 108 |
|                                        | 5:00 PM    | 0    | 7    | 0    | 0     | 7            | 0    | 0    | 0    | 0     | 0          | 0    | 11   | 0    | 0     | 11           | 0    | 0    | 0    | 0     | 0                | 18            | 114 |
|                                        | 5:15 PM    | 0    | 20   | 0    | 0     | 20           | 1    | 0    | 0    | 0     | 1          | 1    | 19   | 0    | 0     | 20           | 1    | 0    | 0    | 0     | 1                | 42            | 117 |
|                                        | 5:30 PM    | 0    | 10   | 1    | 0     | 11           | 1    | 0    | 0    | 0     | 1          | 1    | 11   | 0    | 0     | 12           | 0    | 0    | 0    | 0     | 0                | 24            | 90  |
|                                        | 5:45 PM    | 0    | 15   | 0    | 0     | 15           | 0    | 0    | 0    | 0     | 0          | 2    | 12   | 0    | 0     | 14           | 0    | 1    | 0    | 0     | 1                | 30            | 77  |
|                                        | 6:00 PM    | 1    | 7    | 1    | 0     | 9            | 0    | 0    | 0    | 0     | 0          | 0    | 11   | 0    | 0     | 11           | 1    | 0    | 0    | 0     | 1                | 21            | 58  |
|                                        | 6:15 PM    | 0    | 5    | 0    | 0     | 5            | 0    | 0    | 0    | 0     | 0          | 0    | 10   | 0    | 0     | 10           | 0    | 0    | 0    | 0     | 0                | 15            |     |
|                                        | 6:30 PM    | 0    | 6    | 0    | 0     | 6            | 0    | 0    | 0    | 0     | 0          | 1    | 4    | 0    | 0     | 5            | 0    | 0    | 0    | 0     | 0                | 11            |     |
|                                        | 6:45 PM    | 0    | 2    | 0    | 0     | 2            | 0    | 0    | 0    | 0     | 0          | 1    | 8    | 0    | 0     | 9            | 0    | 0    | 0    | 0     | 0                | 11            |     |
|                                        | 7:00 PM    | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                | 0             |     |
|                                        | 7:15 PM    | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                | 0             |     |
|                                        | 7:30 PM    | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                | 0             |     |
|                                        | 7:45 PM    | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                | 0             |     |
| 8:00 PM                                | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                |               |     |
| 8:15 PM                                | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                |               |     |
| 8:30 PM                                | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                |               |     |
| 8:45 PM                                | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                |               |     |
| 9:00 PM                                | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                |               |     |
| 9:15 PM                                | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                |               |     |
| 9:30 PM                                | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                |               |     |
| 9:45 PM                                | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                |               |     |
| Totals                                 |            | 4    | 1159 | 13   | 0     | 1176         | 17   | 9    | 25   | 0     | 51         | 43   | 1231 | 3    | 0     | 1277         | 4    | 10   | 2    | 0     | 16               | 2520          |     |

#### Peak Hour Heavy Vehicle Volume Summary

| Hourly<br>Time Period<br>Start Time | From North |      |      |      |       | From East    |      |      |      |       | From South |      |      |      |       | From West    |      |      |      |       | Total<br>Hourly<br>Volume |
|-------------------------------------|------------|------|------|------|-------|--------------|------|------|------|-------|------------|------|------|------|-------|--------------|------|------|------|-------|---------------------------|
|                                     | CTH F      |      |      |      |       | Lindsay Road |      |      |      |       | CTH F      |      |      |      |       | Lindsay Road |      |      |      |       |                           |
|                                     | Right      | Thru | Left | U-Tn | Total | Right        | Thru | Left | U-Tn | Total | Right      | Thru | Left | U-Tn | Total | Right        | Thru | Left | U-Tn | Total |                           |
| AM 7:00 AM                          | 0          | 107  | 1    | 0    | 108   | 2            | 1    | 0    | 0    | 3     | 4          | 81   | 0    | 0    | 85    | 0            | 1    | 0    | 0    | 1     | 197                       |
| MD 11:30 AM                         | 0          | 112  | 1    | 0    | 113   | 3            | 0    | 4    | 0    | 7     | 2          | 121  | 0    | 0    | 123   | 0            | 0    | 0    | 0    | 0     | 243                       |
| PM 4:30 PM                          | 0          | 53   | 2    | 0    | 55    | 1            | 1    | 0    | 0    | 2     | 1          | 57   | 1    | 0    | 59    | 1            | 0    | 1    | 0    | 2     | 118                       |



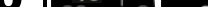
## Intersection Traffic Volume Report

### 15-Minute Heavy Vehicle Percentages

### ***CTH F and Lindsay Road***

### 15-Minute Heavy Vehicle Percentages

|                                   |                            |                      |                    |
|-----------------------------------|----------------------------|----------------------|--------------------|
| <b>Count Basics</b>               |                            | <b>Page 10 of 13</b> |                    |
| Start Date:                       | Monday, September 30, 2019 | Weekday              | Schools in Session |
| Total Number of Hours Counted: 13 |                            | Non-Holiday          | No Special Events  |

| Heavy Vehicles (Single-Unit Trucks, Buses & Semi-Trucks) |                                                                                    |
|----------------------------------------------------------|------------------------------------------------------------------------------------|
| %                                                        |  |

| 15-Minute<br>Time Period<br>Start Time |          | From North |      |       |      |       | From East    |      |      |      |       | From South |      |      |      |       | From West    |       |      |      |       | Total<br>Heavy<br>Vehicle<br>Percent | Hourly<br>Heavy<br>Vehicle<br>Percent |
|----------------------------------------|----------|------------|------|-------|------|-------|--------------|------|------|------|-------|------------|------|------|------|-------|--------------|-------|------|------|-------|--------------------------------------|---------------------------------------|
|                                        |          | CTH F      |      |       |      |       | Lindsay Road |      |      |      |       | CTH F      |      |      |      |       | Lindsay Road |       |      |      |       |                                      |                                       |
|                                        |          | Right      | Thru | Left  | U-Tn | Total | Right        | Thru | Left | U-Tn | Total | Right      | Thru | Left | U-Tn | Total | Right        | Thru  | Left | U-Tn | Total |                                      |                                       |
| AM Peak Period                         | 6:00 AM  | 0.0        | 12.7 | 0.0   | 0.0  | 12.7  | 0.0          | 0.0  | 0.0  | 0.0  | 0.0   | 0.0        | 12.5 | 0.0  | 0.0  | 11.4  | 0.0          | 0.0   | 0.0  | 0.0  | 0.0   | 11.4                                 | 10.8                                  |
|                                        | 6:15 AM  | 0.0        | 12.3 | 0.0   | 0.0  | 12.2  | 40.0         | 0.0  | 0.0  | 0.0  | 20.0  | 8.3        | 11.2 | 0.0  | 0.0  | 10.9  | 0.0          | 0.0   | 0.0  | 0.0  | 0.0   | 11.4                                 | 10.2                                  |
|                                        | 6:30 AM  | 0.0        | 9.6  | 25.0  | 0.0  | 9.8   | 0.0          | 0.0  | 42.9 | 0.0  | 37.5  | 6.2        | 10.6 | 0.0  | 0.0  | 10.3  | 0.0          | 0.0   | 0.0  | 0.0  | 0.0   | 10.2                                 | 9.5                                   |
|                                        | 6:45 AM  | 0.0        | 9.5  | 0.0   | 0.0  | 9.4   | 50.0         | 0.0  | 50.0 | 0.0  | 28.6  | 0.0        | 12.8 | 0.0  | 0.0  | 12.2  | 0.0          | 0.0   | 0.0  | 0.0  | 0.0   | 10.7                                 | 8.7                                   |
|                                        | 7:00 AM  | 0.0        | 10.5 | 0.0   | 0.0  | 10.4  | 66.7         | 0.0  | 0.0  | 0.0  | 14.3  | 0.0        | 7.1  | 0.0  | 0.0  | 6.8   | 0.0          | 0.0   | 0.0  | 0.0  | 0.0   | 8.9                                  | 8.3                                   |
|                                        | 7:15 AM  | 0.0        | 10.0 | 0.0   | 0.0  | 9.9   | 0.0          | 0.0  | 0.0  | 0.0  | 0.0   | 0.0        | 7.3  | 0.0  | 0.0  | 7.0   | 0.0          | 0.0   | 0.0  | 0.0  | 0.0   | 8.1                                  | 8.8                                   |
|                                        | 7:30 AM  | 0.0        | 6.1  | 25.0  | 0.0  | 6.3   | 0.0          | 0.0  | 0.0  | 0.0  | 0.0   | 22.2       | 9.4  | 0.0  | 0.0  | 9.7   | 0.0          | 0.0   | 0.0  | 0.0  | 0.0   | 7.4                                  | 10.0                                  |
|                                        | 7:45 AM  | 0.0        | 9.3  | 0.0   | 0.0  | 9.2   | 0.0          | 25.0 | 0.0  | 0.0  | 4.5   | 13.3       | 8.9  | 0.0  | 0.0  | 9.1   | 0.0          | 12.5  | 0.0  | 0.0  | 4.0   | 8.8                                  | 12.1                                  |
|                                        | 8:00 AM  | 0.0        | 6.7  | 0.0   | 0.0  | 6.6   | 25.0         | 0.0  | 12.5 | 0.0  | 13.3  | 0.0        | 18.2 | 0.0  | 0.0  | 17.9  | 0.0          | 0.0   | 0.0  | 0.0  | 0.0   | 11.3                                 | 14.1                                  |
|                                        | 8:15 AM  | 100.0      | 14.3 | 0.0   | 0.0  | 14.6  | 0.0          | 0.0  | 12.5 | 0.0  | 7.1   | 16.7       | 14.9 | 0.0  | 0.0  | 14.6  | 0.0          | 0.0   | 0.0  | 0.0  | 0.0   | 13.9                                 | 15.7                                  |
| Midday Peak Period                     | 8:30 AM  | 0.0        | 8.4  | 0.0   | 0.0  | 8.4   | 33.3         | 0.0  | 25.0 | 0.0  | 28.6  | 25.0       | 26.6 | 0.0  | 0.0  | 26.4  | 0.0          | 0.0   | 0.0  | 0.0  | 0.0   | 16.4                                 | 15.7                                  |
|                                        | 8:45 AM  | 0.0        | 17.6 | 0.0   | 0.0  | 17.4  | 50.0         | 0.0  | 0.0  | 0.0  | 8.3   | 0.0        | 13.3 | 0.0  | 0.0  | 12.9  | 50.0         | 33.3  | 0.0  | 0.0  | 33.3  | 15.6                                 | 16.2                                  |
|                                        | 9:00 AM  | 50.0       | 12.0 | 0.0   | 0.0  | 12.3  | 0.0          | 0.0  | 0.0  | 0.0  | 0.0   | 50.0       | 24.1 | 0.0  | 0.0  | 24.6  | 0.0          | 0.0   | 0.0  | 0.0  | 0.0   | 17.4                                 | 16.1                                  |
|                                        | 9:15 AM  | 0.0        | 13.1 | 100.0 | 0.0  | 13.7  | 0.0          | 0.0  | 0.0  | 0.0  | 0.0   | 0.0        | 13.4 | 0.0  | 0.0  | 12.8  | 0.0          | 0.0   | 0.0  | 0.0  | 0.0   | 12.8                                 | 17.9                                  |
|                                        | 9:30 AM  | 0.0        | 19.0 | 0.0   | 0.0  | 18.6  | 0.0          | 0.0  | 0.0  | 0.0  | 0.0   | 14.3       | 23.1 | 0.0  | 0.0  | 22.2  | 0.0          | 0.0   | 0.0  | 0.0  | 0.0   | 19.1                                 | 21.6                                  |
|                                        | 9:45 AM  | 0.0        | 12.1 | 0.0   | 0.0  | 11.9  | 50.0         | 0.0  | 25.0 | 0.0  | 33.3  | 0.0        | 21.1 | 0.0  | 0.0  | 20.0  | 12.5         | 0.0   | 0.0  | 0.0  | 8.3   | 15.3                                 | 22.1                                  |
|                                        | 10:00 AM | 0.0        | 21.7 | 0.0   | 0.0  | 21.7  | 0.0          | 25.0 | 28.6 | 0.0  | 25.0  | 33.3       | 28.7 | 0.0  | 0.0  | 28.9  | 0.0          | 0.0   | 0.0  | 0.0  | 0.0   | 24.7                                 | 24.3                                  |
|                                        | 10:15 AM | 0.0        | 27.3 | 0.0   | 0.0  | 26.7  | 0.0          | 0.0  | 0.0  | 0.0  | 0.0   | 0.0        | 34.6 | 25.0 | 0.0  | 32.7  | 0.0          | 33.3  | 0.0  | 0.0  | 20.0  | 28.4                                 | 23.4                                  |
|                                        | 10:30 AM | 0.0        | 18.3 | 0.0   | 0.0  | 17.8  | 0.0          | 50.0 | 20.0 | 0.0  | 18.2  | 16.7       | 26.0 | 0.0  | 0.0  | 25.2  | 0.0          | 0.0   | 0.0  | 0.0  | 0.0   | 21.2                                 | 20.9                                  |
|                                        | 10:45 AM | 0.0        | 27.5 | 0.0   | 0.0  | 27.3  | 0.0          | 0.0  | 0.0  | 0.0  | 0.0   | 28.6       | 22.9 | 0.0  | 0.0  | 22.9  | 0.0          | 0.0   | 0.0  | 0.0  | 0.0   | 23.2                                 | 19.5                                  |
| PM Peak Period                         | 11:00 AM | 0.0        | 25.6 | 0.0   | 0.0  | 25.6  | 0.0          | 25.0 | 16.7 | 0.0  | 14.3  | 12.5       | 19.0 | 0.0  | 0.0  | 17.9  | 0.0          | 0.0   | 0.0  | 0.0  | 0.0   | 20.8                                 | 19.1                                  |
|                                        | 11:15 AM | 0.0        | 18.2 | 0.0   | 0.0  | 17.5  | 100.0        | 0.0  | 16.7 | 0.0  | 20.0  | 50.0       | 19.2 | 0.0  | 0.0  | 19.8  | 0.0          | 0.0   | 0.0  | 0.0  | 0.0   | 18.1                                 | 18.7                                  |
|                                        | 11:30 AM | 0.0        | 16.1 | 0.0   | 0.0  | 15.9  | 0.0          | 0.0  | 11.1 | 0.0  | 8.3   | 20.0       | 17.7 | 0.0  | 0.0  | 17.3  | 0.0          | 0.0   | 0.0  | 0.0  | 0.0   | 16.1                                 | 19.3                                  |
|                                        | 11:45 AM | 0.0        | 19.7 | 0.0   | 0.0  | 19.4  | 100.0        | 0.0  | 0.0  | 0.0  | 25.0  | 0.0        | 24.8 | 0.0  | 0.0  | 23.8  | 0.0          | 0.0   | 0.0  | 0.0  | 0.0   | 21.3                                 | 20.0                                  |
|                                        | 12:00 PM | 0.0        | 17.0 | 0.0   | 0.0  | 16.9  | 0.0          | 0.0  | 25.0 | 0.0  | 8.3   | 0.0        | 24.4 | 0.0  | 0.0  | 22.6  | 0.0          | 0.0   | 0.0  | 0.0  | 0.0   | 19.2                                 | 21.1                                  |
|                                        | 12:15 PM | 0.0        | 24.0 | 33.3  | 0.0  | 24.2  | 50.0         | 0.0  | 28.6 | 0.0  | 27.3  | 33.3       | 16.9 | 0.0  | 0.0  | 17.0  | 0.0          | 0.0   | 0.0  | 0.0  | 0.0   | 20.6                                 | 21.3                                  |
|                                        | 12:30 PM | 0.0        | 18.7 | 0.0   | 0.0  | 18.2  | 0.0          | 0.0  | 0.0  | 0.0  | 0.0   | 33.3       | 21.4 | 0.0  | 0.0  | 21.5  | 0.0          | 33.3  | 0.0  | 0.0  | 25.0  | 19.1                                 | 20.6                                  |
|                                        | 12:45 PM | 0.0        | 27.9 | 0.0   | 0.0  | 27.2  | 100.0        | 20.0 | 0.0  | 0.0  | 25.0  | 0.0        | 27.7 | 0.0  | 0.0  | 25.4  | 0.0          | 0.0   | 0.0  | 0.0  | 0.0   | 25.7                                 | 20.1                                  |
|                                        | 1:00 PM  | 0.0        | 21.4 | 0.0   | 0.0  | 21.2  | 0.0          | 0.0  | 25.0 | 0.0  | 16.7  | 40.0       | 19.7 | 0.0  | 0.0  | 19.8  | 0.0          | 0.0   | 0.0  | 0.0  | 0.0   | 19.7                                 | 18.4                                  |
|                                        | 1:15 PM  | 0.0        | 8.4  | 0.0   | 0.0  | 8.1   | 0.0          | 0.0  | 50.0 | 0.0  | 10.0  | 25.0       | 25.0 | 0.0  | 0.0  | 24.1  | 0.0          | 0.0   | 0.0  | 0.0  | 0.0   | 17.5                                 | 18.7                                  |
| PM Peak Period                         | 1:30 PM  | 0.0        | 22.6 | 0.0   | 0.0  | 22.2  | 0.0          | 0.0  | 0.0  | 0.0  | 0.0   | 0.0        | 15.4 | 0.0  | 0.0  | 14.5  | 0.0          | 0.0   | 0.0  | 0.0  | 0.0   | 17.4                                 | 19.0                                  |
|                                        | 1:45 PM  | 0.0        | 19.6 | 0.0   | 0.0  | 19.0  | 0.0          | 0.0  | 0.0  | 0.0  | 0.0   | 0.0        | 22.1 | 0.0  | 0.0  | 20.3  | 0.0          | 0.0   | 0.0  | 0.0  | 0.0   | 18.8                                 | 16.8                                  |
|                                        | 2:00 PM  | 0.0        | 21.1 | 100.0 | 0.0  | 21.3  | 0.0          | 0.0  | 0.0  | 0.0  | 0.0   | 16.7       | 21.7 | 0.0  | 0.0  | 21.2  | 0.0          | 0.0   | 0.0  | 0.0  | 0.0   | 20.7                                 | 15.8                                  |
|                                        | 2:15 PM  | 0.0        | 22.2 | 0.0   | 0.0  | 21.7  | 0.0          | 0.0  | 37.5 | 0.0  | 25.0  | 20.0       | 16.1 | 0.0  | 0.0  | 15.9  | 0.0          | 100.0 | 0.0  | 0.0  | 50.0  | 18.9                                 | 13.3                                  |
|                                        | 2:30 PM  | 0.0        | 11.4 | 25.0  | 0.0  | 11.5  | 0.0          | 0.0  | 0.0  | 0.0  | 0.0   | 0.0        | 11.6 | 0.0  | 0.0  | 11.0  | 0.0          | 0.0   | 0.0  | 0.0  | 0.0   | 10.8                                 | 11.2                                  |
|                                        | 2:45 PM  | 0.0        | 14.0 | 50.0  | 0.0  | 13.9  | 50.0         | 0.0  | 0.0  | 0.0  | 11.1  | 0.0        | 14.6 | 0.0  | 0.0  | 13.9  | 0.0          | 33.3  | 0.0  | 0.0  | 14.3  | 13.9                                 | 10.3                                  |
|                                        | 3:00 PM  | 0.0        | 11.0 | 0.0   | 0.0  | 10.7  | 0.0          | 33.3 | 0.0  | 0.0  | 7.7   | 11.1       | 10.8 | 0.0  | 0.0  | 10.6  | 0.0          | 0.0   | 50.0 | 0.0  | 16.7  | 10.6                                 | 8.8                                   |
|                                        | 3:15 PM  | 50.0       | 9.6  | 50.0  | 0.0  | 10.6  | 0.0          | 0.0  | 25.0 | 0.0  | 14.3  | 22.2       | 8.8  | 33.3 | 0.0  | 9.6   | 0.0          | 0.0   | 0.0  | 0.0  | 0.0   | 9.8                                  | 8.2                                   |
|                                        | 3:30 PM  | 0.0        | 9.3  | 0.0   | 0.0  | 9.0   | 0.0          | 0.0  | 12.5 | 0.0  | 7.1   | 16.7       | 6.7  | 0.0  | 0.0  | 6.6   | 0.0          | 25.0  | 0.0  | 0.0  | 10.0  | 7.8                                  | 7.6                                   |
|                                        | 3:45 PM  | 0.0        | 8.1  | 0.0   | 0.0  | 7.9   | 0.0          | 0.0  | 0.0  | 0.0  | 0.0   | 42.9       | 6.9  | 0.0  | 0.0  | 7.5   | 0.0          | 0.0   | 0.0  | 0.0  | 0.0   | 7.4                                  | 6.7                                   |
| PM Peak Period                         | 4:00 PM  | 0.0        | 7.5  | 0.0   | 0.0  | 7.3   | 0.0          | 25.0 | 33.3 | 0.0  | 20.0  | 0.0        | 8.9  | 0.0  | 0.0  | 8.4   | 0.0          | 25.0  | 0.0  | 0.0  | 9.1   | 8.0                                  | 5.7                                   |
|                                        | 4:15 PM  | 0.0        | 7.0  | 25.0  | 0.0  | 7.1   | 0.0          | 25.0 | 0.0  | 0.0  | 5.6   | 23.1       | 6.8  | 0.0  | 0.0  | 7.3   | 0.0          | 0.0   | 0.0  | 0.0  | 0.0   | 7.1                                  | 4.4                                   |
|                                        | 4:30 PM  | 0.0        | 6.1  | 33.3  | 0.0  | 6.3   | 0.0          | 0.0  | 0.0  | 0.0  | 0.0   | 0.0        | 3.9  | 0.0  | 0.0  | 3.6   | 0.0          | 0.0   | 50.0 | 0.0  | 12.5  | 4.7                                  | 3.9                                   |
|                                        | 4:45 PM  | 0.0        | 3.5  | 100.0 | 0.0  | 3.7   | 0.0          | 11.1 | 0.0  | 0.0  | 3.6   | 0.0        | 3.4  | 5.0  | 0.0  | 3.4   | 0.0          | 0.0   | 0.0  | 0.0  | 0.0   | 3.5                                  | 3.6                                   |
|                                        | 5:00 PM  | 0.0        | 2.4  | 0.0   | 0.0  | 2.4   | 0.0          | 0.0  | 0.0  | 0.0  | 0.0   | 0.0        | 3.0  | 0.0  | 0.0  | 2.7   | 0.0          | 0.0   | 0.0  | 0.0  | 0.0   | 2.5                                  | 4.1                                   |
|                                        | 5:15 PM  | 0.0        | 6.3  | 0.0   | 0.0  | 6.0   | 10.0         | 0.0  | 0.0  | 0.0  | 5.3   | 5.3        | 4.3  | 0.0  | 0.0  | 4.1   | 11.1         | 0.0   | 0.0  | 0.0  | 5.0   | 4.9                                  | 4.7                                   |
|                                        | 5:30 PM  | 0.0        | 3.5  | 20.0  | 0.0  | 3.7   | 20.0         | 0.0  | 0.0  | 0.0  | 5.0   | 6.7        | 3.3  | 0.0  | 0.0  | 3.3   | 0.0          | 0.0   | 0.0  | 0.0  | 0.0   | 3.4                                  | 4.5                                   |
|                                        | 5:45 PM  | 0.0        | 7.9  | 0.0   | 0.0  | 7.5   | 0.0          | 0.0  | 0.0  | 0.0  | 0.0   | 18.2       | 4.5  | 0.0  | 0.0  | 4.9   | 0.0          | 50.0  | 0.0  | 0.0  | 12.5  | 5.9                                  | 4.7                                   |
|                                        | 6:00 PM  | 33.3       | 3.8  | 33.3  | 0.0  | 4.7   | 0.0          | 0.0  | 0.0  | 0.0  | 0.0   | 0.0        | 6.4  | 0.0  | 0.0  | 6.1   | 16.7         | 0.0   | 0.0  | 0.0  | 5.9   | 5.2                                  | 4.0                                   |
|                                        | 6:15 PM  | 0.0        | 3.3  | 0.0   | 0.0  | 3.2   | 0.0          | 0.0  | 0.0  | 0.0  | 0.0   | 0.0        | 5.1  | 0.0  | 0.0  | 4.7   | 0.0          | 0.0   | 0.0  | 0.0  | 0.0   | 4.0                                  |                                       |
| 6:30 PM                                | 0.0      | 4.8        | 0.0  | 0.0   | 4.4  | 0.0   | 0.0          | 0.0  | 0.0  | 0.0  | 11.1  | 2.4        | 0.0  | 0.0  | 2.7  | 0.0   | 0.0          | 0.0   | 0.0  | 0.0  | 3.2   |                                      |                                       |
| 6:45 PM                                | 0.0      | 1.7        | 0.0  | 0.0   | 1.7  | 0.0   | 0.0          | 0.0  | 0.0  | 0.0  | 11.1  | 5.2        | 0.0  | 0.0  | 5.3  | 0.0   | 0.0          | 0.0   | 0.0  | 0.0  | 3.4   |                                      |                                       |
| PM Peak Period                         | 7:00 PM  | 0.0        | 0.0  | 0.0   | 0.0  | 0.0   | 0.0          | 0.0  | 0.0  | 0.0  | 0.0   | 0.0        | 0.0  | 0.0  | 0.0  | 0.0   | 0.0          | 0.0   | 0.0  | 0.0  | 0.0   | 0.0                                  |                                       |
|                                        | 7:15 PM  | 0.0        | 0.0  | 0.0   | 0.0  | 0.0   | 0.0          | 0.0  | 0.0  | 0.0  | 0.0   | 0.0        | 0.0  | 0.0  | 0.0  | 0.0   | 0.0          | 0.0   | 0.0  | 0.0  | 0.0   | 0.0                                  |                                       |
|                                        | 7:30 PM  | 0.0        | 0.0  | 0.0   | 0.0  | 0.0   | 0.0          | 0.0  | 0.0  | 0.0  | 0.0   | 0.0        | 0.0  | 0.0  | 0.0  | 0.0   | 0.0          | 0.0   | 0.0  | 0.0  | 0.0   | 0.0                                  |                                       |
|                                        | 7:45 PM  | 0.0        | 0.0  | 0.0   | 0.0  | 0.0   | 0.0          | 0.0  | 0.0  | 0.0  | 0.0   | 0.0        | 0.0  | 0.0  | 0.0  | 0.0   | 0.0          | 0.0   | 0.0  | 0.0  | 0.0   | 0.0                                  |                                       |
|                                        | 8:00 PM  | 0.0        | 0.0  | 0.0   | 0.0  | 0.0   | 0.0          | 0.0  | 0.0  | 0.0  | 0.0   | 0.0        | 0.0  | 0.0  | 0.0  | 0.0   | 0.0          | 0.0   | 0.0  | 0.0  | 0.0   | 0.0                                  |                                       |
|                                        | 8:15 PM  | 0.0        | 0.0  | 0.0   | 0.0  | 0.0   | 0.0          | 0.0  | 0.0  | 0.0  | 0.0   | 0.0        | 0.0  | 0.0  | 0.0  | 0.0   | 0.0          | 0.0   | 0.0  | 0.0  | 0.0   | 0.0                                  |                                       |
|                                        | 8:30 PM  | 0.0        | 0.0  | 0.0   | 0.0  | 0.0   | 0.0          | 0.0  | 0.0  | 0.0  | 0.0   | 0.0        | 0.0  | 0.0  | 0.0  | 0.0   | 0.0          | 0.0   | 0.0  | 0.0  | 0.0   | 0.0                                  |                                       |
|                                        | 8:45 PM  | 0.0        | 0.0  | 0.0   | 0.0  | 0.0   | 0.0          | 0.0  | 0.0  | 0.0  | 0.0   | 0.0        | 0.0  | 0.0  | 0.0  | 0.0   | 0.0          | 0.0   | 0.0  | 0.0  | 0.0   | 0.0                                  |                                       |
|                                        | 9:00 PM  | 0.0        | 0.0  | 0.0   | 0.0  | 0.0   | 0.0          | 0.0  | 0.0  | 0.0  | 0.0   | 0.0        | 0.0  | 0.0  | 0.0  | 0.0   | 0.0          | 0.0   | 0.0  | 0.0  | 0.0   | 0.0                                  |                                       |
|                                        | 9:15 PM  | 0.0        | 0.0  | 0.0   | 0.0  | 0.0   | 0.0          | 0.0  | 0.0  | 0.0  | 0.0   | 0.0        | 0.0  | 0.0  | 0.0  | 0.0   | 0.0          |       |      |      |       |                                      |                                       |

### Peak Hour Heavy Vehicle Percentages Summary

| Hourly<br>Time Period<br>Start Time | From North |      |      |      |       | From East    |      |      |      |       | From South |      |      |      |       | From West    |      |      |      |       | Hourly<br>Heavy<br>Vehicle<br>Percent |
|-------------------------------------|------------|------|------|------|-------|--------------|------|------|------|-------|------------|------|------|------|-------|--------------|------|------|------|-------|---------------------------------------|
|                                     | CTH F      |      |      |      |       | Lindsay Road |      |      |      |       | CTH F      |      |      |      |       | Lindsay Road |      |      |      |       |                                       |
|                                     | Right      | Thru | Left | U-Tn | Total | Right        | Thru | Left | U-Tn | Total | Right      | Thru | Left | U-Tn | Total | Right        | Thru | Left | U-Tn | Total |                                       |
| AM 7:00 AM                          | 0.0        | 8.9  | 7.7  | 0.0  | 8.9   | 12.5         | 7.7  | 0.0  | 0.0  | 4.8   | 9.5        | 8.3  | 0.0  | 0.0  | 8.3   | 0.0          | 3.6  | 0.0  | 0.0  | 1.3   | 8.3                                   |
| AM 11:30 AM                         | 0.0        | 19.2 | 20.0 | 0.0  | 19.1  | 42.9         | 0.0  | 16.0 | 0.0  | 16.3  | 9.5        | 21.3 | 0.0  | 0.0  | 20.5  | 0.0          | 0.0  | 0.0  | 0.0  | 0.0   | 19.1                                  |
| PM 4:30 PM                          | 0.0        | 4.6  | 20.0 | 0.0  | 4.6   | 2.9          | 4.0  | 0.0  | 0.0  | 2.2   | 1.9        | 3.7  | 1.4  | 0.0  | 3.5   | 4.3          | 0.0  | 7.7  | 0.0  | 3.3   | 3.3                                   |

# Intersection Traffic Volume Report

## 15-Minute Pedestrian and Bicyclist Data

|                                |                            |             |                      |
|--------------------------------|----------------------------|-------------|----------------------|
| <b>Count Basics</b>            |                            |             | <b>Page 11 of 13</b> |
| Start Date:                    | Monday, September 30, 2019 | Weekday     | Schools in Session   |
| Total Number of Hours Counted: | 13                         | Non-Holiday | No Special Events    |

### CTH F and Lindsay Road



#### 15-Minute Pedestrian and Bicyclist Data

| 15-Minute<br>Time Period<br>Start Time |          | Crossing  |           |       | Crossing  |           |       | Crossing  |           |       | Crossing  |           |       | 15-Min<br>Totals | Hourly<br>Sum |
|----------------------------------------|----------|--------------------------------------------------------------------------------------------|-----------|-------|--------------------------------------------------------------------------------------------|-----------|-------|----------------------------------------------------------------------------------------------|-----------|-------|----------------------------------------------------------------------------------------------|-----------|-------|------------------|---------------|
|                                        |          | CTH F                                                                                      |           |       | Lindsay Road                                                                               |           |       | CTH F                                                                                        |           |       | Lindsay Road                                                                                 |           |       |                  |               |
|                                        |          | Pedestrian                                                                                 | Bicyclist | Total | Pedestrian                                                                                 | Bicyclist | Total | Pedestrian                                                                                   | Bicyclist | Total | Pedestrian                                                                                   | Bicyclist | Total |                  |               |
| AM Peak Period                         | 6:00 AM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                            | 0         | 0     | 0                                                                                            | 0         | 0     | 0                | 0             |
|                                        | 6:15 AM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                            | 0         | 0     | 0                                                                                            | 0         | 0     | 0                | 0             |
|                                        | 6:30 AM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                            | 0         | 0     | 0                                                                                            | 0         | 0     | 0                | 0             |
|                                        | 6:45 AM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                            | 0         | 0     | 0                                                                                            | 0         | 0     | 0                | 1             |
|                                        | 7:00 AM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                            | 0         | 0     | 0                                                                                            | 0         | 0     | 0                | 1             |
|                                        | 7:15 AM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 1     | 0                                                                                            | 0         | 0     | 0                                                                                            | 0         | 0     | 1                | 1             |
|                                        | 7:30 AM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 1         | 1     | 0                                                                                            | 0         | 0     | 0                                                                                            | 0         | 0     | 1                | 0             |
|                                        | 7:45 AM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                            | 0         | 0     | 0                                                                                            | 0         | 0     | 0                | 0             |
|                                        | 8:00 AM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                            | 0         | 0     | 0                                                                                            | 0         | 0     | 0                | 0             |
|                                        | 8:15 AM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                            | 0         | 0     | 0                                                                                            | 0         | 0     | 0                | 0             |
|                                        | 8:30 AM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                            | 0         | 0     | 0                                                                                            | 0         | 0     | 0                | 1             |
|                                        | 8:45 AM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                            | 0         | 0     | 0                                                                                            | 0         | 0     | 0                | 1             |
|                                        | 9:00 AM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                            | 0         | 0     | 0                                                                                            | 0         | 0     | 0                | 1             |
|                                        | 9:15 AM  | 0                                                                                          | 1         | 1     | 0                                                                                          | 0         | 0     | 0                                                                                            | 0         | 0     | 0                                                                                            | 0         | 0     | 1                | 1             |
| 9:30 AM                                | 0        | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                            | 0         | 0     | 0                                                                                            | 0         | 0     | 0                |               |
| 9:45 AM                                | 0        | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                            | 0         | 0     | 0                                                                                            | 0         | 0     | 0                |               |
| Midday Peak Period                     | 10:00 AM | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                            | 0         | 0     | 0                                                                                            | 0         | 0     | 0                | 1             |
|                                        | 10:15 AM | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                            | 0         | 0     | 0                                                                                            | 0         | 0     | 0                | 2             |
|                                        | 10:30 AM | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                            | 0         | 0     | 0                                                                                            | 0         | 0     | 0                | 2             |
|                                        | 10:45 AM | 0                                                                                          | 1         | 1     | 0                                                                                          | 0         | 0     | 0                                                                                            | 0         | 0     | 0                                                                                            | 0         | 0     | 1                | 2             |
|                                        | 11:00 AM | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                            | 1         | 1     | 0                                                                                            | 0         | 0     | 1                | 3             |
|                                        | 11:15 AM | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                            | 0         | 0     | 0                                                                                            | 0         | 0     | 0                | 2             |
|                                        | 11:30 AM | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                            | 0         | 0     | 0                                                                                            | 0         | 0     | 0                | 2             |
|                                        | 11:45 AM | 0                                                                                          | 2         | 2     | 0                                                                                          | 0         | 0     | 0                                                                                            | 0         | 0     | 0                                                                                            | 0         | 0     | 2                | 2             |
|                                        | 12:00 PM | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                            | 0         | 0     | 0                                                                                            | 0         | 0     | 0                | 1             |
|                                        | 12:15 PM | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                            | 0         | 0     | 0                                                                                            | 0         | 0     | 0                | 1             |
|                                        | 12:30 PM | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                            | 0         | 0     | 0                                                                                            | 0         | 0     | 0                | 1             |
|                                        | 12:45 PM | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                            | 1         | 1     | 0                                                                                            | 0         | 0     | 1                | 2             |
|                                        | 1:00 PM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                            | 0         | 0     | 0                                                                                            | 0         | 0     | 0                | 1             |
|                                        | 1:15 PM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                            | 0         | 0     | 0                                                                                            | 0         | 0     | 0                | 1             |
| 1:30 PM                                | 0        | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 1                                                                                            | 1         | 0     | 0                                                                                            | 0         | 1     | 2                |               |
| 1:45 PM                                | 0        | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                            | 0         | 0     | 0                                                                                            | 0         | 0     | 1                |               |
| PM Peak Period                         | 2:00 PM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                            | 0         | 0     | 0                                                                                            | 0         | 0     | 0                | 1             |
|                                        | 2:15 PM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                            | 1         | 1     | 0                                                                                            | 0         | 0     | 1                | 1             |
|                                        | 2:30 PM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                            | 0         | 0     | 0                                                                                            | 0         | 0     | 0                | 0             |
|                                        | 2:45 PM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                            | 0         | 0     | 0                                                                                            | 0         | 0     | 0                | 0             |
|                                        | 3:00 PM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                            | 0         | 0     | 0                                                                                            | 0         | 0     | 0                | 0             |
|                                        | 3:15 PM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                            | 0         | 0     | 0                                                                                            | 0         | 0     | 0                | 0             |
|                                        | 3:30 PM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                            | 0         | 0     | 0                                                                                            | 0         | 0     | 0                | 1             |
|                                        | 3:45 PM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                            | 0         | 0     | 0                                                                                            | 0         | 0     | 0                | 4             |
|                                        | 4:00 PM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                            | 0         | 0     | 0                                                                                            | 0         | 0     | 0                | 6             |
|                                        | 4:15 PM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                            | 1         | 1     | 0                                                                                            | 0         | 0     | 1                | 7             |
|                                        | 4:30 PM  | 0                                                                                          | 1         | 1     | 0                                                                                          | 0         | 0     | 0                                                                                            | 2         | 2     | 0                                                                                            | 0         | 0     | 3                | 6             |
|                                        | 4:45 PM  | 0                                                                                          | 1         | 1     | 0                                                                                          | 0         | 0     | 0                                                                                            | 1         | 1     | 0                                                                                            | 0         | 0     | 2                | 3             |
|                                        | 5:00 PM  | 0                                                                                          | 1         | 1     | 0                                                                                          | 0         | 0     | 0                                                                                            | 0         | 0     | 0                                                                                            | 0         | 0     | 1                | 3             |
|                                        | 5:15 PM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                            | 0         | 0     | 0                                                                                            | 0         | 0     | 0                | 2             |
|                                        | 5:30 PM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                            | 0         | 0     | 0                                                                                            | 0         | 0     | 0                | 2             |
|                                        | 5:45 PM  | 0                                                                                          | 2         | 2     | 0                                                                                          | 0         | 0     | 0                                                                                            | 0         | 0     | 0                                                                                            | 0         | 0     | 2                | 2             |
|                                        | 6:00 PM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                            | 0         | 0     | 0                                                                                            | 0         | 0     | 0                | 0             |
|                                        | 6:15 PM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                            | 0         | 0     | 0                                                                                            | 0         | 0     | 0                | 0             |
|                                        | 6:30 PM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                            | 0         | 0     | 0                                                                                            | 0         | 0     | 0                | 0             |
|                                        | 6:45 PM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                            | 0         | 0     | 0                                                                                            | 0         | 0     | 0                | 0             |
|                                        | 7:00 PM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                            | 0         | 0     | 0                                                                                            | 0         | 0     | 0                | 0             |
|                                        | 7:15 PM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                            | 0         | 0     | 0                                                                                            | 0         | 0     | 0                | 0             |
|                                        | 7:30 PM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                            | 0         | 0     | 0                                                                                            | 0         | 0     | 0                | 0             |
|                                        | 7:45 PM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                            | 0         | 0     | 0                                                                                            | 0         | 0     | 0                | 0             |
| 8:00 PM                                | 0        | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                            | 0         | 0     | 0                                                                                            | 0         | 0     | 0                |               |
| 8:15 PM                                | 0        | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                            | 0         | 0     | 0                                                                                            | 0         | 0     | 0                |               |
| 8:30 PM                                | 0        | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                            | 0         | 0     | 0                                                                                            | 0         | 0     | 0                |               |
| 8:45 PM                                | 0        | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                            | 0         | 0     | 0                                                                                            | 0         | 0     | 0                |               |
| 9:00 PM                                | 0        | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                            | 0         | 0     | 0                                                                                            | 0         | 0     | 0                |               |
| 9:15 PM                                | 0        | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                            | 0         | 0     | 0                                                                                            | 0         | 0     | 0                |               |
| 9:30 PM                                | 0        | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                            | 0         | 0     | 0                                                                                            | 0         | 0     | 0                |               |
| 9:45 PM                                | 0        | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                            | 0         | 0     | 0                                                                                            | 0         | 0     | 0                |               |
| Totals                                 |          | 0                                                                                          | 9         | 9     | 0                                                                                          | 1         | 1     | 0                                                                                            | 8         | 8     | 0                                                                                            | 0         | 0     | 18               |               |

#### Special Pedestrians

| Pedestrian Type                           | None | 1 or 2 | A Few | Several | Many | Unknown |
|-------------------------------------------|------|--------|-------|---------|------|---------|
| Pre-school Children                       | x    |        |       |         |      |         |
| Elementary School Age Children            | x    |        |       |         |      |         |
| Visually Impaired (white cane/helper dog) | x    |        |       |         |      |         |
| Elderly/Disabled (except wheelchairs)     | x    |        |       |         |      |         |
| Wheelchairs/Electric Scooters             | x    |        |       |         |      |         |
| Other (None)                              | x    |        |       |         |      |         |



# Intersection Traffic Volume Report

| Count Basics                   |                         | Version 2013.J4.1 | Page 1 of 13       |
|--------------------------------|-------------------------|-------------------|--------------------|
| Start Date:                    | Thursday, June 18, 2020 | Weekday           | Schools in Session |
| Total Number of Hours Counted: | 3                       | Non-Holiday       | No Special Events  |

## Base Information, Observed (3) Hour and Estimated (24) Hour Volume Summaries

Intersection of: Sports Complex and Lindsay Road

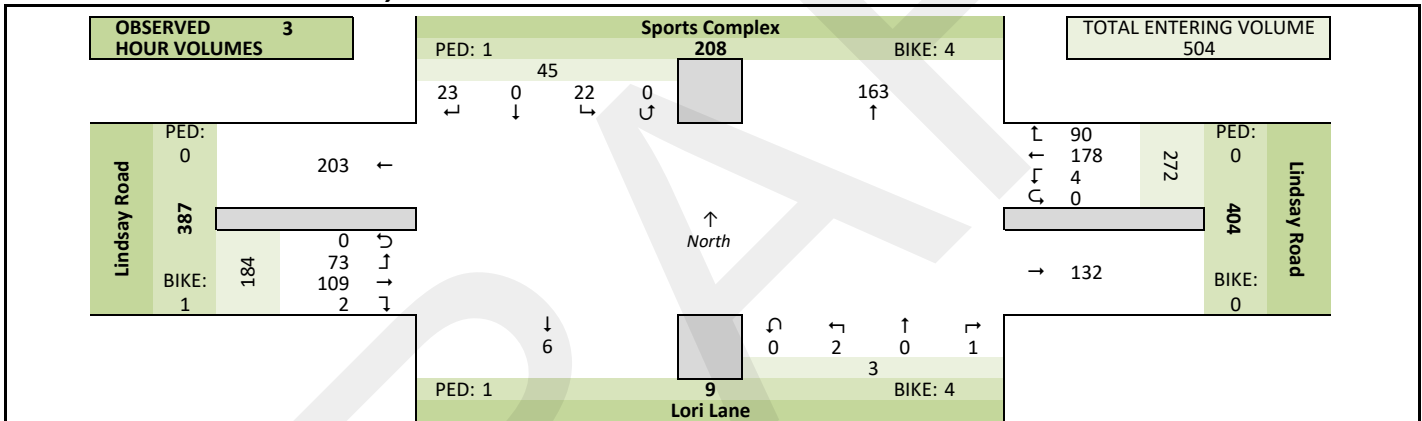
### Site Information

|                              |                                           |                 |    |
|------------------------------|-------------------------------------------|-----------------|----|
| Municipality                 | City of Pewaukee                          |                 |    |
| County                       | Waukesha                                  | WisDOT Region   | SE |
| Traffic Control              | Partial Stop Control                      |                 |    |
| Roadway Names                |                                           | North Direction | ↑  |
| North Leg                    | Sports Complex                            |                 |    |
| East Leg                     | Lindsay Road                              |                 |    |
| South Leg                    | Lori Lane                                 |                 |    |
| West Leg                     | Lindsay Road                              |                 |    |
| Special Considerations       |                                           |                 |    |
| Schools                      | In Session                                |                 |    |
| Holidays                     | None                                      |                 |    |
| Special Events               | None                                      |                 |    |
| Special Pedestrians Observed |                                           |                 |    |
|                              | Pre-school children                       | None            |    |
|                              | Elementry school age children             | None            |    |
|                              | Visually impaired (white cane/helper dog) | None            |    |
|                              | Elderly/disabled (except wheelchairs)     | None            |    |
|                              | Wheelchairs/electric scooters             | None            |    |
|                              | Other (describe)                          | None            |    |

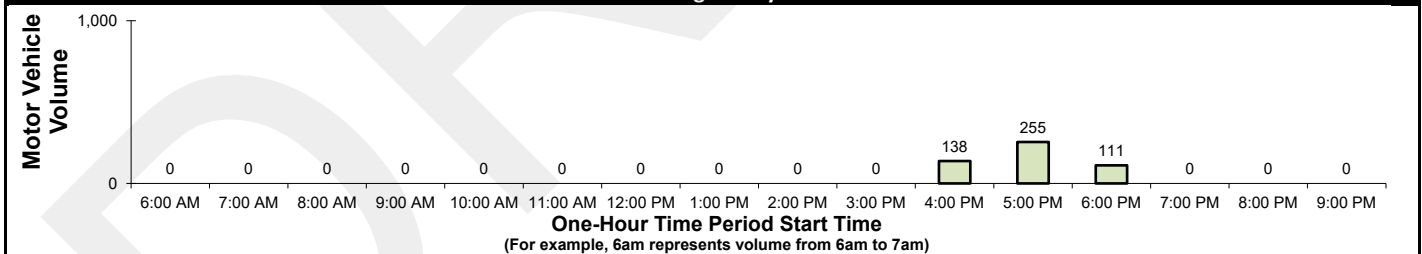
### Count Information

|                                  |                                           |                                  |                              |
|----------------------------------|-------------------------------------------|----------------------------------|------------------------------|
| Hrs Counted:                     |                                           | 4:00 PM-7:00 PM                  |                              |
| 1st Day of Count                 |                                           | Thursday, June 18, 2020          | Weather                      |
| AM Peak Period                   |                                           | Thursday, June 18, 2020          | Clear & Dry                  |
| Midday Peak Period               |                                           | Thursday, June 18, 2020          | Clear & Dry                  |
| PM Peak Period                   |                                           | Thursday, June 18, 2020          | Clear & Dry                  |
| Calculated Peak Hours            |                                           |                                  |                              |
|                                  | AM                                        | MD                               | PM 5:00-6:00pm               |
| Peak Hours Selected for Analysis |                                           |                                  |                              |
|                                  | AM                                        | MD                               | PM 4:30-5:30pm               |
| Daily/Seasonal Adjustment Group  |                                           | (2) Urban Arterials & Collectors |                              |
| Count Expansion Group            |                                           | (2) Urban Arterials & Collectors |                              |
| Daily/Seasonal Adjustment Factor |                                           | 0.840                            | Count Expansion Factor 3.970 |
| Company Name                     |                                           | TADI, Inc.                       | Manual Adj. 1.000            |
| Observers                        | AM Peak Period                            | None                             |                              |
|                                  | Midday Peak Period                        | None                             |                              |
|                                  | PM Peak Period                            | Wendy Picard                     |                              |
| Comments                         | 2018 DOT Seasonal Factors                 |                                  |                              |
|                                  | 2 baseball fields in use at time of count |                                  |                              |

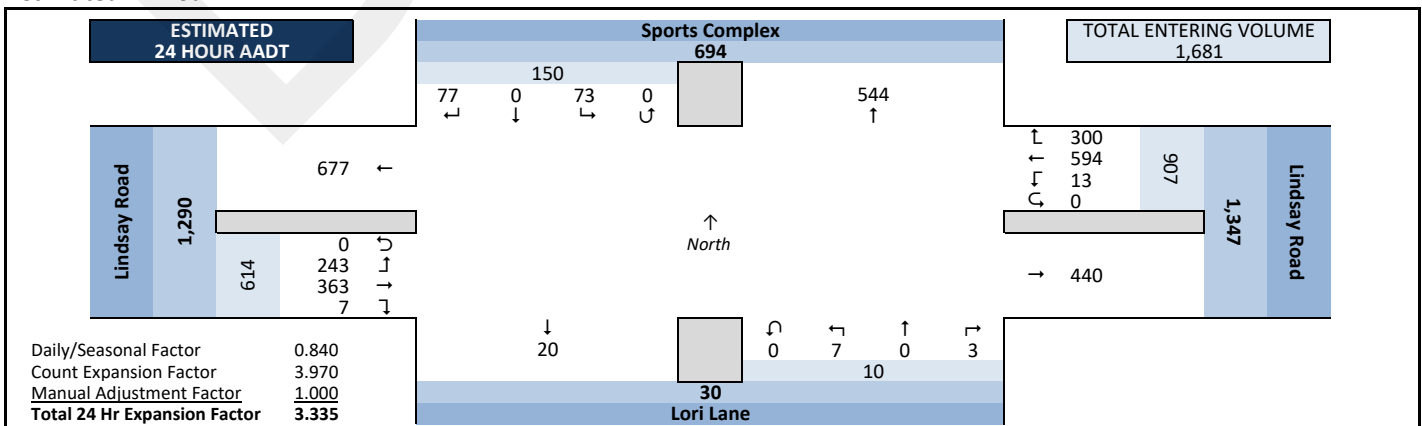
### Observed 3 Hour Volume Summary



### Total Entering Hourly Volume

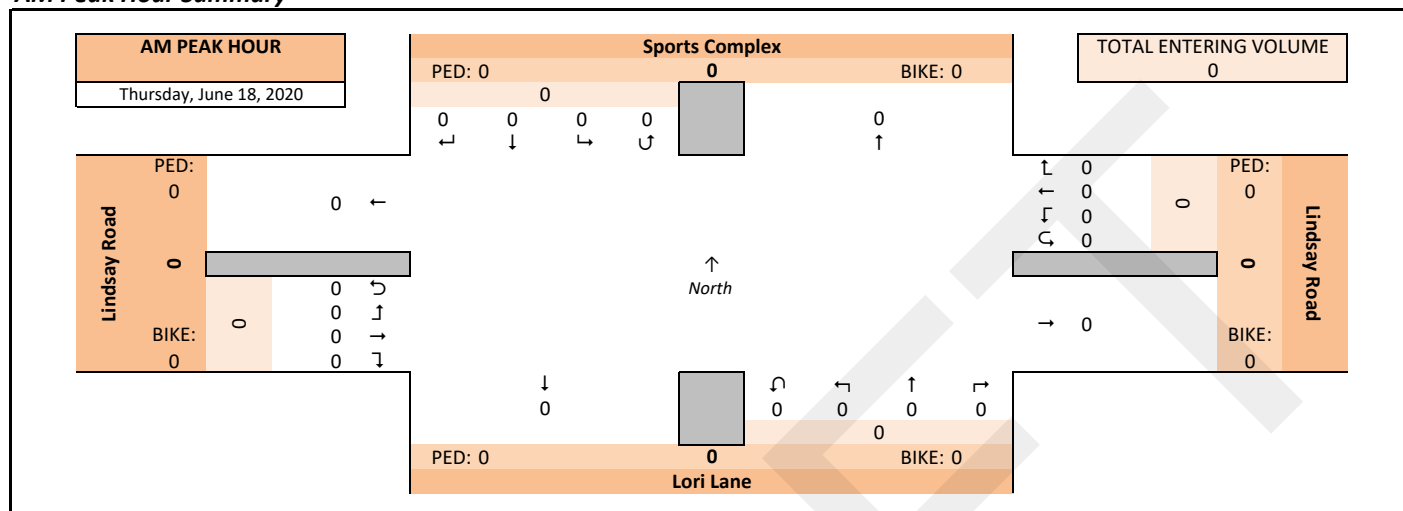


### Estimated 24 Hour AADT

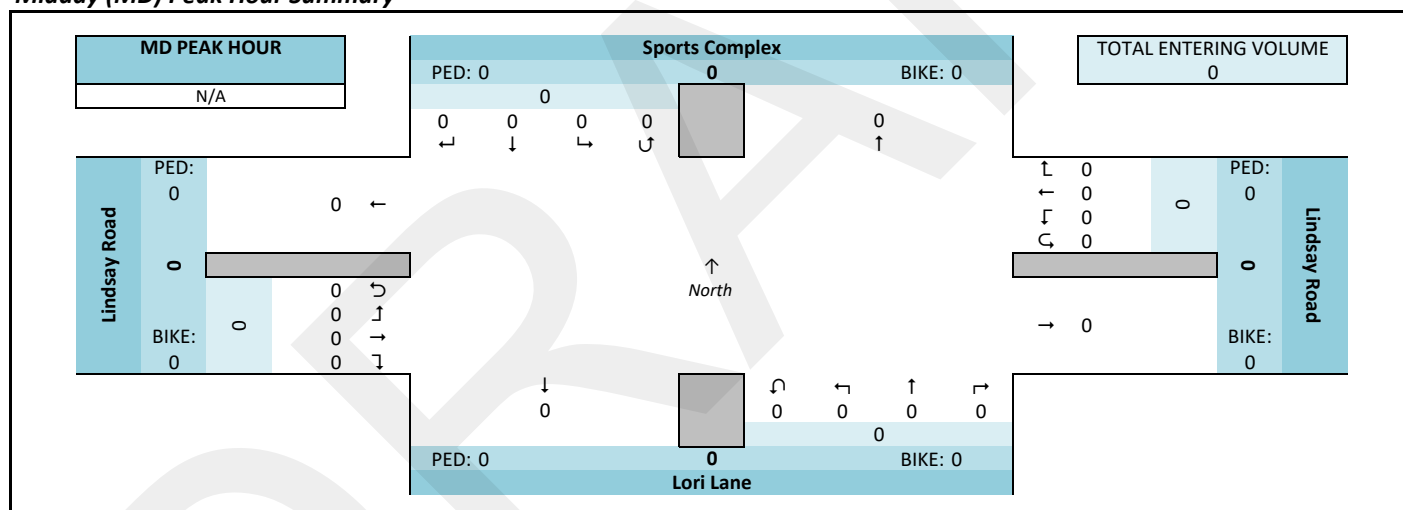


### Peak Hour Volume Graphical Summary

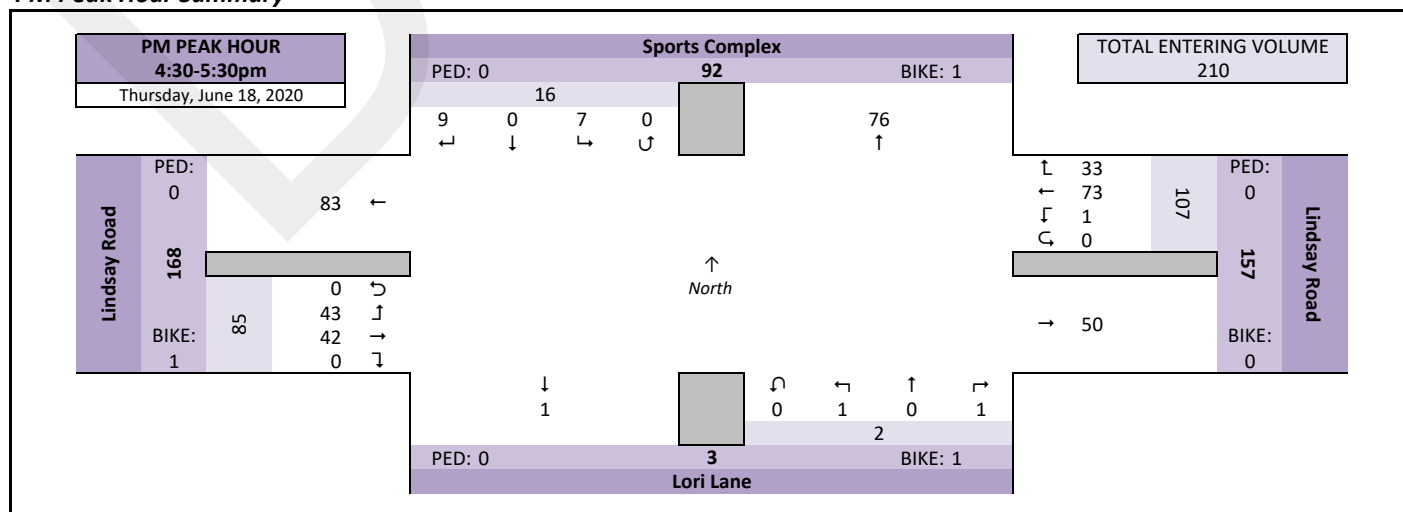
### AM Peak Hour Summary



### Midday (MD) Peak Hour Summary



### PM Peak Hour Summary





# Intersection Traffic Volume Report

|                                |                         |             |                    |
|--------------------------------|-------------------------|-------------|--------------------|
| Count Basics                   |                         |             | Page 3 of 13       |
| Start Date:                    | Thursday, June 18, 2020 | Weekday     | Schools in Session |
| Total Number of Hours Counted: | 3                       | Non-Holiday | No Special Events  |

## Peak Hour Volume Summary

### Sports Complex and Lindsay Road

#### Peak Hour Volumes, Truck Percentages, and PHFs

| Thursday, June 18, 2020 |                       | ↓<br>From North |      |      |      |       | ←<br>From East |      |      |      |       | ↑<br>From South |      |      |      |       | →<br>From West |      |      |      |       | Totals |
|-------------------------|-----------------------|-----------------|------|------|------|-------|----------------|------|------|------|-------|-----------------|------|------|------|-------|----------------|------|------|------|-------|--------|
|                         |                       | Sports Complex  |      |      |      |       | Lindsay Road   |      |      |      |       | Lori Lane       |      |      |      |       | Lindsay Road   |      |      |      |       |        |
|                         |                       | Right           | Thru | Left | U-Tn | Total | Right          | Thru | Left | U-Tn | Total | Right           | Thru | Left | U-Tn | Total | Right          | Thru | Left | U-Tn | Total |        |
| AM Peak Hour            | AM Peak Hour          |                 |      |      |      |       |                |      |      |      |       |                 |      |      |      |       |                |      |      |      |       |        |
|                         | Start Time            |                 |      |      |      |       |                |      |      |      |       |                 |      |      |      |       |                |      |      |      |       |        |
|                         | 8:00 AM               | 0               | 0    | 0    | 0    | 0     | 0              | 0    | 0    | 0    | 0     | 0               | 0    | 0    | 0    | 0     | 0              | 0    | 0    | 0    | 0     |        |
|                         | 8:15 AM               | 0               | 0    | 0    | 0    | 0     | 0              | 0    | 0    | 0    | 0     | 0               | 0    | 0    | 0    | 0     | 0              | 0    | 0    | 0    | 0     |        |
|                         | 8:30 AM               | 0               | 0    | 0    | 0    | 0     | 0              | 0    | 0    | 0    | 0     | 0               | 0    | 0    | 0    | 0     | 0              | 0    | 0    | 0    | 0     |        |
|                         | 8:45 AM               | 0               | 0    | 0    | 0    | 0     | 0              | 0    | 0    | 0    | 0     | 0               | 0    | 0    | 0    | 0     | 0              | 0    | 0    | 0    | 0     |        |
|                         | Peak Hour Volume      | 0               | 0    | 0    | 0    | 0     | 0              | 0    | 0    | 0    | 0     | 0               | 0    | 0    | 0    | 0     | 0              | 0    | 0    | 0    | 0     |        |
|                         | Rounded Hourly Volume | 0               | 0    | 0    | 0    | 0     | 0              | 0    | 0    | 0    | 0     | 0               | 0    | 0    | 0    | 0     | 0              | 0    | 0    | 0    | 0     |        |
|                         | % Single Unit Trucks  | 0.0             | 0.0  | 0.0  | 0.0  | 0.0   | 0.0            | 0.0  | 0.0  | 0.0  | 0.0   | 0.0             | 0.0  | 0.0  | 0.0  | 0.0   | 0.0            | 0.0  | 0.0  | 0.0  | 0.0   |        |
|                         | % Heavy Trucks        | 0.0             | 0.0  | 0.0  | 0.0  | 0.0   | 0.0            | 0.0  | 0.0  | 0.0  | 0.0   | 0.0             | 0.0  | 0.0  | 0.0  | 0.0   | 0.0            | 0.0  | 0.0  | 0.0  | 0.0   |        |
| % Trucks (Total)        | 0.0                   | 0.0             | 0.0  | 0.0  | 0.0  | 0.0   | 0.0            | 0.0  | 0.0  | 0.0  | 0.0   | 0.0             | 0.0  | 0.0  | 0.0  | 0.0   | 0.0            | 0.0  | 0.0  | 0.0  |       |        |
| Peak Hour Factor (PHF)  | 0.00                  | 0.00            | 0.00 | 0.00 | 0.00 | 0.00  | 0.00           | 0.00 | 0.00 | 0.00 | 0.00  | 0.00            | 0.00 | 0.00 | 0.00 | 0.00  | 0.00           | 0.00 | 0.00 | 0.00 |       |        |

| N/A                    |                       | From North     |      |      |      |       | From East    |      |      |      |       | From South |      |      |      |       | From West    |      |      |      |       | Totals |
|------------------------|-----------------------|----------------|------|------|------|-------|--------------|------|------|------|-------|------------|------|------|------|-------|--------------|------|------|------|-------|--------|
| Midday (MD) Peak Hour  | MD Peak Hour          | Sports Complex |      |      |      |       | Lindsay Road |      |      |      |       | Lori Lane  |      |      |      |       | Lindsay Road |      |      |      |       |        |
|                        | Start Time            | Right          | Thru | Left | U-Tn | Total | Right        | Thru | Left | U-Tn | Total | Right      | Thru | Left | U-Tn | Total | Right        | Thru | Left | U-Tn | Total |        |
|                        | 12:00 PM              | 0              | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     |        |
|                        | 12:15 PM              | 0              | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     |        |
|                        | 12:30 PM              | 0              | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     |        |
|                        | 12:45 PM              | 0              | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     |        |
|                        | Peak Hour Volume      | 0              | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     |        |
|                        | Rounded Hourly Volume | 0              | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     |        |
|                        | % Single Unit Trucks  | 0.0            | 0.0  | 0.0  | 0.0  | 0.0   | 0.0          | 0.0  | 0.0  | 0.0  | 0.0   | 0.0        | 0.0  | 0.0  | 0.0  | 0.0   | 0.0          | 0.0  | 0.0  | 0.0  | 0.0   |        |
|                        | % Heavy Trucks        | 0.0            | 0.0  | 0.0  | 0.0  | 0.0   | 0.0          | 0.0  | 0.0  | 0.0  | 0.0   | 0.0        | 0.0  | 0.0  | 0.0  | 0.0   | 0.0          | 0.0  | 0.0  | 0.0  | 0.0   |        |
| % Trucks (Total)       | 0.0                   | 0.0            | 0.0  | 0.0  | 0.0  | 0.0   | 0.0          | 0.0  | 0.0  | 0.0  | 0.0   | 0.0        | 0.0  | 0.0  | 0.0  | 0.0   | 0.0          | 0.0  | 0.0  | 0.0  |       |        |
| Peak Hour Factor (PHF) | 0.00                  | 0.00           | 0.00 | 0.00 | 0.00 | 0.00  | 0.00         | 0.00 | 0.00 | 0.00 | 0.00  | 0.00       | 0.00 | 0.00 | 0.00 | 0.00  | 0.00         | 0.00 | 0.00 | 0.00 |       |        |

| Thursday, June 18, 2020 |                       | From North     |      |      |      |       | From East    |      |      |      |       | From South |      |      |      |       | From West    |      |      |      |       |        |
|-------------------------|-----------------------|----------------|------|------|------|-------|--------------|------|------|------|-------|------------|------|------|------|-------|--------------|------|------|------|-------|--------|
| PM Peak Hour            | PM Peak Hour          | Sports Complex |      |      |      |       | Lindsay Road |      |      |      |       | Lori Lane  |      |      |      |       | Lindsay Road |      |      |      |       |        |
|                         | Start Time            | Right          | Thru | Left | U-Tn | Total | Right        | Thru | Left | U-Tn | Total | Right      | Thru | Left | U-Tn | Total | Right        | Thru | Left | U-Tn | Total | Totals |
|                         | 4:30 PM               | 0              |      | 0    | 0    | 0     | 1            | 14   | 0    | 0    | 15    | 1          | 0    | 0    | 0    | 1     | 0            | 12   | 1    | 0    | 13    | 29     |
|                         | 4:45 PM               | 2              | 0    | 1    | 0    | 3     | 5            | 17   | 1    | 0    | 23    | 0          | 0    | 1    | 0    | 1     | 0            | 13   | 15   | 0    | 28    | 55     |
|                         | 5:00 PM               | 4              | 0    | 4    | 0    | 8     | 18           | 19   | 0    | 0    | 37    | 0          | 0    | 0    | 0    | 0     | 0            | 11   | 18   | 0    | 29    | 74     |
|                         | 5:15 PM               | 3              | 0    | 2    | 0    | 5     | 9            | 23   | 0    | 0    | 32    | 0          | 0    | 0    | 0    | 0     | 0            | 6    | 9    | 0    | 15    | 52     |
|                         | Peak Hour Volume      | 9              | 0    | 7    | 0    | 16    | 33           | 73   | 1    | 0    | 107   | 1          | 0    | 1    | 0    | 2     | 0            | 42   | 43   | 0    | 85    | 210    |
|                         | Rounded Hourly Volume | 10             | 0    | 5    | 0    | 15    | 35           | 75   | 0    | 0    | 110   | 0          | 0    | 0    | 0    | 0     | 0            | 40   | 45   | 0    | 85    | 210    |
|                         | % Single Unit Trucks  | 0.0            | 0.0  | 0.0  | 0.0  | 0.0   | 0.0          | 0.0  | 0.0  | 0.0  | 0.0   | 0.0        | 0.0  | 0.0  | 0.0  | 0.0   | 0.0          | 2.4  | 0.0  | 0.0  | 1.2   | 0.5    |
|                         | % Heavy Trucks        | 0.0            | 0.0  | 0.0  | 0.0  | 0.0   | 0.0          | 0.0  | 0.0  | 0.0  | 0.0   | 0.0        | 0.0  | 0.0  | 0.0  | 0.0   | 0.0          | 0.0  | 0.0  | 0.0  | 0.0   | 0.0    |
| % Trucks (Total)        | 0.0                   | 0.0            | 0.0  | 0.0  | 0.0  | 0.0   | 0.0          | 0.0  | 0.0  | 0.0  | 0.0   | 0.0        | 0.0  | 0.0  | 0.0  | 0.0   | 2.4          | 0.0  | 0.0  | 1.2  | 0.5   |        |
| Peak Hour Factor (PHF)  | 0.56                  | 0.00           | 0.44 | 0.00 | 0.50 | 0.46  | 0.79         | 0.25 | 0.00 | 0.72 | 0.25  | 0.00       | 0.25 | 0.00 | 0.50 | 0.00  | 0.81         | 0.60 | 0.00 | 0.73 | 0.71  |        |

#### Peak Hour Pedestrian and Bicyclist Volumes

| Pedestrians and Bicyclists                                                          |          | Crossing  |           |       | Crossing  |           |       | Crossing  |           |       | Crossing  |           |       | Total<br>Ped &<br>Bike<br>Volume |
|-------------------------------------------------------------------------------------|----------|----------------------------------------------------------------------------------------------|-----------|-------|-----------------------------------------------------------------------------------------------|-----------|-------|------------------------------------------------------------------------------------------------|-----------|-------|------------------------------------------------------------------------------------------------|-----------|-------|----------------------------------|
|  |          | North Approach                                                                               |           |       | East Approach                                                                                 |           |       | South Approach                                                                                 |           |       | West Approach                                                                                  |           |       |                                  |
| 15-Minute Start Time                                                                |          | Sports Complex                                                                               |           |       | Lindsay Road                                                                                  |           |       | Lori Lane                                                                                      |           |       | Lindsay Road                                                                                   |           |       |                                  |
|                                                                                     |          | Pedestrian                                                                                   | Bicyclist | Total | Pedestrian                                                                                    | Bicyclist | Total | Pedestrian                                                                                     | Bicyclist | Total | Pedestrian                                                                                     | Bicyclist | Total |                                  |
| AM                                                                                  | 8:00 AM  | 0                                                                                            | 0         | 0     | 0                                                                                             | 0         | 0     | 0                                                                                              | 0         | 0     | 0                                                                                              | 0         | 0     | 0                                |
|                                                                                     | 8:15 AM  | 0                                                                                            | 0         | 0     | 0                                                                                             | 0         | 0     | 0                                                                                              | 0         | 0     | 0                                                                                              | 0         | 0     | 0                                |
|                                                                                     | 8:30 AM  | 0                                                                                            | 0         | 0     | 0                                                                                             | 0         | 0     | 0                                                                                              | 0         | 0     | 0                                                                                              | 0         | 0     | 0                                |
|                                                                                     | 8:45 AM  | 0                                                                                            | 0         | 0     | 0                                                                                             | 0         | 0     | 0                                                                                              | 0         | 0     | 0                                                                                              | 0         | 0     | 0                                |
|                                                                                     | Total    | 0                                                                                            | 0         | 0     | 0                                                                                             | 0         | 0     | 0                                                                                              | 0         | 0     | 0                                                                                              | 0         | 0     | 0                                |
| MD                                                                                  | 12:00 PM | 0                                                                                            | 0         | 0     | 0                                                                                             | 0         | 0     | 0                                                                                              | 0         | 0     | 0                                                                                              | 0         | 0     | 0                                |
|                                                                                     | 12:15 PM | 0                                                                                            | 0         | 0     | 0                                                                                             | 0         | 0     | 0                                                                                              | 0         | 0     | 0                                                                                              | 0         | 0     | 0                                |
|                                                                                     | 12:30 PM | 0                                                                                            | 0         | 0     | 0                                                                                             | 0         | 0     | 0                                                                                              | 0         | 0     | 0                                                                                              | 0         | 0     | 0                                |
|                                                                                     | 12:45 PM | 0                                                                                            | 0         | 0     | 0                                                                                             | 0         | 0     | 0                                                                                              | 0         | 0     | 0                                                                                              | 0         | 0     | 0                                |
|                                                                                     | Total    | 0                                                                                            | 0         | 0     | 0                                                                                             | 0         | 0     | 0                                                                                              | 0         | 0     | 0                                                                                              | 0         | 0     | 0                                |
| PM                                                                                  | 4:30 PM  | 0                                                                                            | 1         | 1     | 0                                                                                             | 0         | 0     | 0                                                                                              | 0         | 0     | 0                                                                                              | 0         | 0     | 1                                |
|                                                                                     | 4:45 PM  | 0                                                                                            | 0         | 0     | 0                                                                                             | 0         | 0     | 0                                                                                              | 0         | 0     | 0                                                                                              | 0         | 0     | 0                                |
|                                                                                     | 5:00 PM  | 0                                                                                            | 0         | 0     | 0                                                                                             | 0         | 0     | 0                                                                                              | 1         | 1     | 0                                                                                              | 1         | 1     | 2                                |
|                                                                                     | 5:15 PM  | 0                                                                                            | 0         | 0     | 0                                                                                             | 0         | 0     | 0                                                                                              | 0         | 0     | 0                                                                                              | 0         | 0     | 0                                |
|                                                                                     | Total    | 0                                                                                            | 1         | 1     | 0                                                                                             | 0         | 0     | 0                                                                                              | 1         | 1     | 0                                                                                              | 1         | 1     | 3                                |

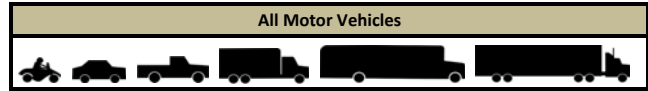
# Intersection Traffic Volume Report

|                                |                         |             |                     |
|--------------------------------|-------------------------|-------------|---------------------|
| <b>Count Basics</b>            |                         |             | <b>Page 4 of 13</b> |
| Start Date:                    | Thursday, June 18, 2020 | Weekday     | Schools in Session  |
| Total Number of Hours Counted: | 3                       | Non-Holiday | No Special Events   |

## Hourly Volume Summary - Motor Vehicle Data

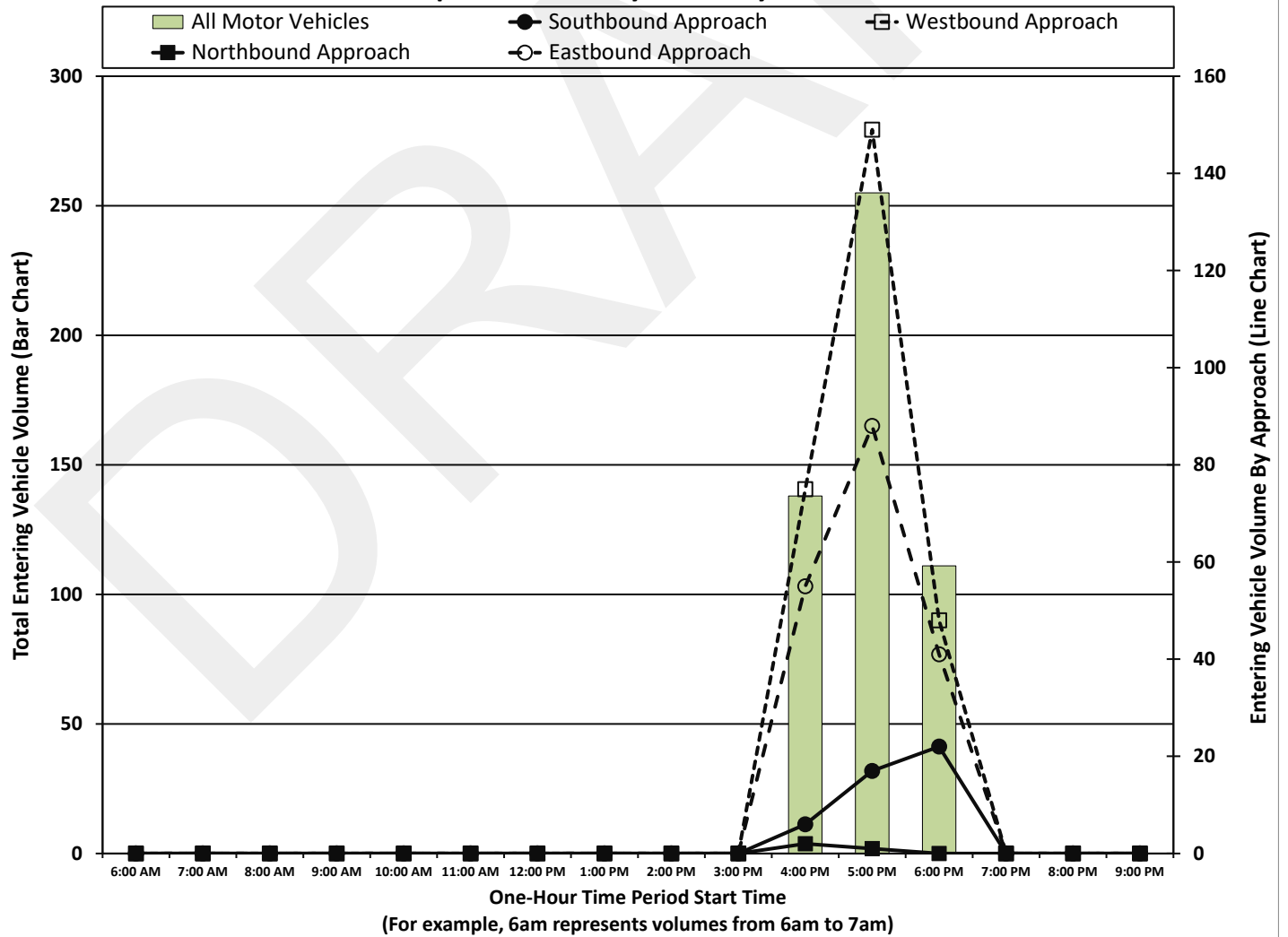
### Sports Complex and Lindsay Road

#### One-Hour Motor Vehicle Data



| One-Hour Time Period | Start Time | From North<br>Sports Complex |      |      |      |       | From East<br>Lindsay Road |      |      |      |       | From South<br>Lori Lane |      |      |      |       | From West<br>Lindsay Road |      |      |      |       | Total Vehicle Volume | Directional Volume Totals |     |
|----------------------|------------|------------------------------|------|------|------|-------|---------------------------|------|------|------|-------|-------------------------|------|------|------|-------|---------------------------|------|------|------|-------|----------------------|---------------------------|-----|
|                      |            | Right                        | Thru | Left | U-Tn | Total | Right                     | Thru | Left | U-Tn | Total | Right                   | Thru | Left | U-Tn | Total | Right                     | Thru | Left | U-Tn | Total |                      |                           |     |
|                      |            |                              |      |      |      |       |                           |      |      |      |       |                         |      |      |      |       |                           |      |      |      |       |                      | E/W                       | N/S |
| AM                   | 6:00 AM    | 0                            | 0    | 0    | 0    | 0     | 0                         | 0    | 0    | 0    | 0     | 0                       | 0    | 0    | 0    | 0     | 0                         | 0    | 0    | 0    | 0     | 0                    | 0                         | 0   |
|                      | 7:00 AM    | 0                            | 0    | 0    | 0    | 0     | 0                         | 0    | 0    | 0    | 0     | 0                       | 0    | 0    | 0    | 0     | 0                         | 0    | 0    | 0    | 0     | 0                    | 0                         | 0   |
|                      | 8:00 AM    | 0                            | 0    | 0    | 0    | 0     | 0                         | 0    | 0    | 0    | 0     | 0                       | 0    | 0    | 0    | 0     | 0                         | 0    | 0    | 0    | 0     | 0                    | 0                         | 0   |
|                      | 9:00 AM    | 0                            | 0    | 0    | 0    | 0     | 0                         | 0    | 0    | 0    | 0     | 0                       | 0    | 0    | 0    | 0     | 0                         | 0    | 0    | 0    | 0     | 0                    | 0                         | 0   |
| MD                   | 10:00 AM   | 0                            | 0    | 0    | 0    | 0     | 0                         | 0    | 0    | 0    | 0     | 0                       | 0    | 0    | 0    | 0     | 0                         | 0    | 0    | 0    | 0     | 0                    | 0                         | 0   |
|                      | 11:00 AM   | 0                            | 0    | 0    | 0    | 0     | 0                         | 0    | 0    | 0    | 0     | 0                       | 0    | 0    | 0    | 0     | 0                         | 0    | 0    | 0    | 0     | 0                    | 0                         | 0   |
|                      | 12:00 PM   | 0                            | 0    | 0    | 0    | 0     | 0                         | 0    | 0    | 0    | 0     | 0                       | 0    | 0    | 0    | 0     | 0                         | 0    | 0    | 0    | 0     | 0                    | 0                         | 0   |
|                      | 1:00 PM    | 0                            | 0    | 0    | 0    | 0     | 0                         | 0    | 0    | 0    | 0     | 0                       | 0    | 0    | 0    | 0     | 0                         | 0    | 0    | 0    | 0     | 0                    | 0                         | 0   |
| PM                   | 2:00 PM    | 0                            | 0    | 0    | 0    | 0     | 0                         | 0    | 0    | 0    | 0     | 0                       | 0    | 0    | 0    | 0     | 0                         | 0    | 0    | 0    | 0     | 0                    | 0                         | 0   |
|                      | 3:00 PM    | 0                            | 0    | 0    | 0    | 0     | 0                         | 0    | 0    | 0    | 0     | 0                       | 0    | 0    | 0    | 0     | 0                         | 0    | 0    | 0    | 0     | 0                    | 0                         | 0   |
|                      | 4:00 PM    | 2                            | 0    | 4    | 0    | 6     | 8                         | 63   | 4    | 0    | 75    | 1                       | 0    | 1    | 0    | 2     | 0                         | 38   | 17   | 0    | 55    | 138                  | 130                       | 8   |
|                      | 5:00 PM    | 7                            | 0    | 10   | 0    | 17    | 69                        | 80   | 0    | 0    | 149   | 0                       | 0    | 1    | 0    | 1     | 0                         | 46   | 42   | 0    | 88    | 255                  | 237                       | 18  |
|                      | 6:00 PM    | 14                           | 0    | 8    | 0    | 22    | 13                        | 35   | 0    | 0    | 48    | 0                       | 0    | 0    | 0    | 0     | 2                         | 25   | 14   | 0    | 41    | 111                  | 89                        | 22  |
|                      | 7:00 PM    | 0                            | 0    | 0    | 0    | 0     | 0                         | 0    | 0    | 0    | 0     | 0                       | 0    | 0    | 0    | 0     | 0                         | 0    | 0    | 0    | 0     | 0                    | 0                         | 0   |
|                      | 8:00 PM    | 0                            | 0    | 0    | 0    | 0     | 0                         | 0    | 0    | 0    | 0     | 0                       | 0    | 0    | 0    | 0     | 0                         | 0    | 0    | 0    | 0     | 0                    | 0                         | 0   |
|                      | 9:00 PM    | 0                            | 0    | 0    | 0    | 0     | 0                         | 0    | 0    | 0    | 0     | 0                       | 0    | 0    | 0    | 0     | 0                         | 0    | 0    | 0    | 0     | 0                    | 0                         | 0   |
| Totals               |            | 23                           | 0    | 22   | 0    | 45    | 90                        | 178  | 4    | 0    | 272   | 1                       | 0    | 2    | 0    | 3     | 2                         | 109  | 73   | 0    | 184   | 504                  | 456                       | 48  |

## Graphical Summary of Hourly Volumes





### ***Sports Complex and Lindsay Road***

|                                  |                         |                     |                    |
|----------------------------------|-------------------------|---------------------|--------------------|
| <b>Count Basics</b>              |                         | <b>Page 5 of 13</b> |                    |
| Start Date:                      | Thursday, June 18, 2020 | Weekday             | Schools in Session |
| Total Number of Hours Counted: 3 |                         | Non-Holiday         | No Special Events  |

### 15-Minute Motor Vehicle Data

All Motor Vehicles

| Simulated Motor Vehicle Data           |                |      |      |      |       |              |      |      |      |       |            |      |      |      |       |              |      |      |      |       |                  |               |     |      |  |  |  |
|----------------------------------------|----------------|------|------|------|-------|--------------|------|------|------|-------|------------|------|------|------|-------|--------------|------|------|------|-------|------------------|---------------|-----|------|--|--|--|
| 15-Minute<br>Time Period<br>Start Time | From North     |      |      |      |       | From East    |      |      |      |       | From South |      |      |      |       | From West    |      |      |      |       | 15-Min<br>Totals | Hourly<br>Sum | PHF |      |  |  |  |
|                                        | Sports Complex |      |      |      |       | Lindsay Road |      |      |      |       | Lori Lane  |      |      |      |       | Lindsay Road |      |      |      |       |                  |               |     |      |  |  |  |
|                                        | Right          | Thru | Left | U-Tn | Total | Right        | Thru | Left | U-Tn | Total | Right      | Thru | Left | U-Tn | Total | Right        | Thru | Left | U-Tn | Total |                  |               |     |      |  |  |  |
| AM Peak Period                         | 6:00 AM        | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                | 0             |     |      |  |  |  |
|                                        | 6:15 AM        | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                | 0             |     |      |  |  |  |
|                                        | 6:30 AM        | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                | 0             |     |      |  |  |  |
|                                        | 6:45 AM        | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                | 0             |     |      |  |  |  |
|                                        | 7:00 AM        | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                | 0             |     |      |  |  |  |
|                                        | 7:15 AM        | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                | 0             |     |      |  |  |  |
|                                        | 7:30 AM        | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                | 0             |     |      |  |  |  |
|                                        | 7:45 AM        | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                | 0             |     |      |  |  |  |
|                                        | 8:00 AM        | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                | 0             |     |      |  |  |  |
|                                        | 8:15 AM        | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                | 0             |     |      |  |  |  |
|                                        | 8:30 AM        | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                | 0             |     |      |  |  |  |
|                                        | 8:45 AM        | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                | 0             |     |      |  |  |  |
|                                        | 9:00 AM        | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                | 0             |     |      |  |  |  |
|                                        | 9:15 AM        | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                | 0             |     |      |  |  |  |
|                                        | 9:30 AM        | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                | 0             |     |      |  |  |  |
| 9:45 AM                                | 0              | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                |               |     |      |  |  |  |
| Midday Peak Period                     | 10:00 AM       | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                | 0             |     |      |  |  |  |
|                                        | 10:15 AM       | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                | 0             |     |      |  |  |  |
|                                        | 10:30 AM       | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                | 0             |     |      |  |  |  |
|                                        | 10:45 AM       | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                | 0             |     |      |  |  |  |
|                                        | 11:00 AM       | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                | 0             |     |      |  |  |  |
|                                        | 11:15 AM       | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                | 0             |     |      |  |  |  |
|                                        | 11:30 AM       | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                | 0             |     |      |  |  |  |
|                                        | 11:45 AM       | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                | 0             |     |      |  |  |  |
|                                        | 12:00 PM       | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                | 0             |     |      |  |  |  |
|                                        | 12:15 PM       | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                | 0             |     |      |  |  |  |
|                                        | 12:30 PM       | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                | 0             |     |      |  |  |  |
|                                        | 12:45 PM       | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                | 0             |     |      |  |  |  |
|                                        | 1:00 PM        | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                | 0             |     |      |  |  |  |
|                                        | 1:15 PM        | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                | 0             |     |      |  |  |  |
|                                        | 1:30 PM        | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                | 0             |     |      |  |  |  |
| 1:45 PM                                | 0              | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                |               |     |      |  |  |  |
| PM Peak Period                         | 2:00 PM        | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                | 0             |     |      |  |  |  |
|                                        | 2:15 PM        | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                | 0             |     |      |  |  |  |
|                                        | 2:30 PM        | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                | 0             |     |      |  |  |  |
|                                        | 2:45 PM        | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                | 0             |     |      |  |  |  |
|                                        | 3:00 PM        | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                | 0             |     |      |  |  |  |
|                                        | 3:15 PM        | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                | 0             |     |      |  |  |  |
|                                        | 3:30 PM        | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                | 0             |     |      |  |  |  |
|                                        | 3:45 PM        | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                | 0             |     |      |  |  |  |
|                                        | 4:00 PM        | 0    | 0    | 0    | 0     | 0            | 0    | 15   | 1    | 0     | 16         | 0    | 0    | 0    | 0     | 0            | 0    | 11   | 1    | 0     | 12               | 28            | 138 | 0.63 |  |  |  |
|                                        | 4:15 PM        | 0    | 0    | 3    | 0     | 3            | 2    | 17   | 2    | 0     | 21         | 0    | 0    | 0    | 0     | 0            | 0    | 2    | 0    | 0     | 2                | 26            | 184 | 0.62 |  |  |  |
|                                        | 4:30 PM        | 0    | 0    | 0    | 0     | 0            | 1    | 14   | 0    | 0     | 15         | 1    | 0    | 0    | 0     | 1            | 0    | 12   | 1    | 0     | 13               | 29            | 210 | 0.71 |  |  |  |
|                                        | 4:45 PM        | 2    | 0    | 1    | 0     | 3            | 5    | 17   | 1    | 0     | 23         | 0    | 0    | 1    | 0     | 1            | 0    | 13   | 15   | 0     | 28               | 55            | 237 | 0.80 |  |  |  |
|                                        | 5:00 PM        | 4    | 0    | 4    | 0     | 8            | 18   | 19   | 0    | 0     | 37         | 0    | 0    | 0    | 0     | 0            | 0    | 11   | 18   | 0     | 29               | 74            | 255 | 0.86 |  |  |  |
|                                        | 5:15 PM        | 3    | 0    | 2    | 0     | 5            | 9    | 23   | 0    | 0     | 32         | 0    | 0    | 0    | 0     | 0            | 0    | 6    | 9    | 0     | 15               | 52            | 210 | 0.72 |  |  |  |
|                                        | 5:30 PM        | 0    | 0    | 2    | 0     | 2            | 14   | 18   | 0    | 0     | 32         | 0    | 0    | 1    | 0     | 1            | 0    | 18   | 3    | 0     | 21               | 56            | 178 | 0.61 |  |  |  |
|                                        | 5:45 PM        | 0    | 0    | 2    | 0     | 2            | 28   | 20   | 0    | 0     | 48         | 0    | 0    | 0    | 0     | 0            | 0    | 11   | 12   | 0     | 23               | 73            | 144 | 0.49 |  |  |  |
|                                        | 6:00 PM        | 6    | 0    | 3    | 0     | 9            | 6    | 7    | 0    | 0     | 13         | 0    | 0    | 0    | 0     | 0            | 0    | 2    | 5    | 0     | 7                | 29            | 111 | 0.69 |  |  |  |
|                                        | 6:15 PM        | 0    | 0    | 0    | 0     | 0            | 2    | 8    | 0    | 0     | 10         | 0    | 0    | 0    | 0     | 0            | 0    | 9    | 1    | 0     | 10               | 20            |     |      |  |  |  |
|                                        | 6:30 PM        | 0    | 0    | 3    | 0     | 3            | 3    | 6    | 0    | 0     | 9          | 0    | 0    | 0    | 0     | 0            | 0    | 7    | 3    | 0     | 10               | 22            |     |      |  |  |  |
|                                        | 6:45 PM        | 8    | 0    | 2    | 0     | 10           | 2    | 14   | 0    | 0     | 16         | 0    | 0    | 0    | 0     | 0            | 2    | 7    | 5    | 0     | 14               | 40            |     |      |  |  |  |
|                                        | 7:00 PM        | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                | 0             |     |      |  |  |  |
|                                        | 7:15 PM        | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                | 0             |     |      |  |  |  |
|                                        | 7:30 PM        | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                | 0             |     |      |  |  |  |
|                                        | 7:45 PM        | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                | 0             |     |      |  |  |  |
| 8:00 PM                                | 0              | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                |               |     |      |  |  |  |
| 8:15 PM                                | 0              | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                |               |     |      |  |  |  |
| 8:30 PM                                | 0              | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                |               |     |      |  |  |  |
| 8:45 PM                                | 0              | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                |               |     |      |  |  |  |
| 9:00 PM                                | 0              | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                |               |     |      |  |  |  |
| 9:15 PM                                | 0              | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                |               |     |      |  |  |  |
| 9:30 PM                                | 0              | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                |               |     |      |  |  |  |
| 9:45 PM                                | 0              | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                |               |     |      |  |  |  |
| Totals                                 | 23             | 0    | 22   | 0    | 45    | 90           | 178  | 4    | 0    | 272   | 1          | 0    | 2    | 0    | 3     | 2            | 109  | 73   | 0    | 184   | 504              |               |     |      |  |  |  |

### Peak Hour All Vehicle Volume Summary

| Hourly<br>Time Period | From North     |      |      |      |       | From East    |      |      |      |       | From South |      |      |      |       | From West    |      |      |      |       | Total<br>Hourly<br>Volume | PHF  |
|-----------------------|----------------|------|------|------|-------|--------------|------|------|------|-------|------------|------|------|------|-------|--------------|------|------|------|-------|---------------------------|------|
|                       | Sports Complex |      |      |      |       | Lindsay Road |      |      |      |       | Lori Lane  |      |      |      |       | Lindsay Road |      |      |      |       |                           |      |
|                       | Right          | Thru | Left | U-Tn | Total | Right        | Thru | Left | U-Tn | Total | Right      | Thru | Left | U-Tn | Total | Right        | Thru | Left | U-Tn | Total |                           |      |
| AM 8:00 AM            | 0              | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                         | 0    |
| AM 12:00 PM           | 0              | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                         | 0    |
| PM 4:30 PM            | 9              | 0    | 7    | 0    | 16    | 33           | 73   | 1    | 0    | 107   | 1          | 0    | 1    | 0    | 2     | 0            | 42   | 43   | 0    | 85    | 210                       | 0.71 |

# Intersection Traffic Volume Report

## 15-Minute Automobile Data

### Sports Complex and Lindsay Road

| Count Basics                   |                         |             | Page 6 of 13       |
|--------------------------------|-------------------------|-------------|--------------------|
| Start Date:                    | Thursday, June 18, 2020 | Weekday     | Schools in Session |
| Total Number of Hours Counted: | 3                       | Non-Holiday | No Special Events  |



### 15-Minute Automobile Data

| 15-Minute<br>Time Period<br>Start Time | From North     |      |      |      |       |       | From East    |      |      |       |       | From South |      |      |       |       | From West    |      |      |       |     | 15-Min<br>Totals | Hourly<br>Sum |
|----------------------------------------|----------------|------|------|------|-------|-------|--------------|------|------|-------|-------|------------|------|------|-------|-------|--------------|------|------|-------|-----|------------------|---------------|
|                                        | Sports Complex |      |      |      |       |       | Lindsay Road |      |      |       |       | Lori Lane  |      |      |       |       | Lindsay Road |      |      |       |     |                  |               |
|                                        | Right          | Thru | Left | U-Tn | Total | Right | Thru         | Left | U-Tn | Total | Right | Thru       | Left | U-Tn | Total | Right | Thru         | Left | U-Tn | Total |     |                  |               |
| AM Peak Period                         | 6:00 AM        | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0          | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0   | 0                |               |
|                                        | 6:15 AM        | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0          | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0   | 0                |               |
|                                        | 6:30 AM        | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0          | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0   | 0                |               |
|                                        | 6:45 AM        | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0          | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0   | 0                |               |
|                                        | 7:00 AM        | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0          | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0   | 0                |               |
|                                        | 7:15 AM        | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0          | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0   | 0                |               |
|                                        | 7:30 AM        | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0          | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0   | 0                |               |
|                                        | 7:45 AM        | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0          | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0   | 0                |               |
|                                        | 8:00 AM        | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0          | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0   | 0                |               |
|                                        | 8:15 AM        | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0          | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0   | 0                |               |
|                                        | 8:30 AM        | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0          | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0   | 0                |               |
|                                        | 8:45 AM        | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0          | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0   | 0                |               |
|                                        | 9:00 AM        | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0          | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0   | 0                |               |
| 9:15 AM                                | 0              | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0          | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0   |                  |               |
| 9:30 AM                                | 0              | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0          | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0   |                  |               |
| 9:45 AM                                | 0              | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0          | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0   |                  |               |
| Midday Peak Period                     | 10:00 AM       | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0          | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0   | 0                |               |
|                                        | 10:15 AM       | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0          | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0   | 0                |               |
|                                        | 10:30 AM       | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0          | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0   | 0                |               |
|                                        | 10:45 AM       | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0          | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0   | 0                |               |
|                                        | 11:00 AM       | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0          | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0   | 0                |               |
|                                        | 11:15 AM       | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0          | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0   | 0                |               |
|                                        | 11:30 AM       | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0          | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0   | 0                |               |
|                                        | 11:45 AM       | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0          | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0   | 0                |               |
|                                        | 12:00 PM       | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0          | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0   | 0                |               |
|                                        | 12:15 PM       | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0          | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0   | 0                |               |
|                                        | 12:30 PM       | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0          | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0   | 0                |               |
|                                        | 12:45 PM       | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0          | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0   | 0                |               |
|                                        | 1:00 PM        | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0          | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0   | 0                |               |
| 1:15 PM                                | 0              | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0          | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0   |                  |               |
| 1:30 PM                                | 0              | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0          | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0   |                  |               |
| 1:45 PM                                | 0              | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0          | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0   |                  |               |
| PM Peak Period                         | 2:00 PM        | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0          | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0   | 0                |               |
|                                        | 2:15 PM        | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0          | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0   | 0                |               |
|                                        | 2:30 PM        | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0          | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0   | 0                |               |
|                                        | 2:45 PM        | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0          | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0   | 0                |               |
|                                        | 3:00 PM        | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0          | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0   | 0                |               |
|                                        | 3:15 PM        | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0          | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0   | 0                |               |
|                                        | 3:30 PM        | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0          | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0   | 0                |               |
|                                        | 3:45 PM        | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0          | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0   | 0                |               |
|                                        | 4:00 PM        | 0    | 0    | 0    | 0     | 0     | 0            | 14   | 1    | 15    | 0     | 0          | 0    | 0    | 0     | 0     | 0            | 10   | 1    | 0     | 11  | 26               |               |
|                                        | 4:15 PM        | 0    | 0    | 3    | 0     | 3     | 2            | 17   | 2    | 21    | 0     | 0          | 0    | 0    | 0     | 0     | 0            | 2    | 0    | 0     | 2   | 26               |               |
|                                        | 4:30 PM        | 0    | 0    | 0    | 0     | 0     | 1            | 14   | 0    | 15    | 1     | 0          | 0    | 0    | 1     | 0     | 11           | 1    | 0    | 12    | 28  |                  |               |
|                                        | 4:45 PM        | 2    | 0    | 1    | 0     | 3     | 5            | 17   | 1    | 23    | 0     | 0          | 1    | 0    | 1     | 0     | 13           | 15   | 0    | 28    | 55  |                  |               |
|                                        | 5:00 PM        | 4    | 0    | 4    | 0     | 8     | 18           | 19   | 0    | 37    | 0     | 0          | 0    | 0    | 0     | 0     | 11           | 18   | 0    | 29    | 74  |                  |               |
|                                        | 5:15 PM        | 3    | 0    | 2    | 0     | 5     | 9            | 23   | 0    | 32    | 0     | 0          | 0    | 0    | 0     | 0     | 6            | 9    | 0    | 15    | 52  |                  |               |
|                                        | 5:30 PM        | 0    | 0    | 2    | 0     | 2     | 14           | 18   | 0    | 32    | 0     | 0          | 1    | 0    | 1     | 0     | 18           | 3    | 0    | 21    | 56  |                  |               |
|                                        | 5:45 PM        | 0    | 0    | 2    | 0     | 2     | 28           | 19   | 0    | 47    | 0     | 0          | 0    | 0    | 0     | 0     | 11           | 12   | 0    | 23    | 72  |                  |               |
|                                        | 6:00 PM        | 6    | 0    | 3    | 0     | 9     | 6            | 6    | 0    | 12    | 0     | 0          | 0    | 0    | 0     | 0     | 2            | 5    | 0    | 7     | 28  |                  |               |
|                                        | 6:15 PM        | 0    | 0    | 0    | 0     | 0     | 2            | 8    | 0    | 10    | 0     | 0          | 0    | 0    | 0     | 0     | 9            | 1    | 0    | 10    | 20  |                  |               |
|                                        | 6:30 PM        | 0    | 0    | 3    | 0     | 3     | 3            | 6    | 0    | 9     | 0     | 0          | 0    | 0    | 0     | 0     | 7            | 3    | 0    | 10    | 22  |                  |               |
|                                        | 6:45 PM        | 8    | 0    | 2    | 0     | 10    | 2            | 14   | 0    | 16    | 0     | 0          | 0    | 0    | 0     | 2     | 7            | 5    | 0    | 14    | 40  |                  |               |
|                                        | 7:00 PM        | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0          | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0   | 0                |               |
|                                        | 7:15 PM        | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0          | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0   | 0                |               |
|                                        | 7:30 PM        | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0          | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0   | 0                |               |
| 7:45 PM                                | 0              | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0          | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0   |                  |               |
| 8:00 PM                                | 0              | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0          | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0   |                  |               |
| 8:15 PM                                | 0              | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0          | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0   |                  |               |
| 8:30 PM                                | 0              | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0          | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0   |                  |               |
| 8:45 PM                                | 0              | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0          | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0   |                  |               |
| 9:00 PM                                | 0              | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0          | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0   |                  |               |
| 9:15 PM                                | 0              | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0          | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0   |                  |               |
| 9:30 PM                                | 0              | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0          | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0   |                  |               |
| 9:45 PM                                | 0              | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0          | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0   |                  |               |
| Totals                                 |                | 23   | 0    | 22   | 0     | 45    | 90           | 175  | 4    | 0     | 269   | 1          | 0    | 2    | 0     | 3     | 2            | 107  | 73   | 0     | 182 | 499              |               |

### Peak Hour Automobile Volume Summary

| Hourly<br>Time Period<br>Start Time | ↓<br>From North |      |      |      |       | ←<br>From East |      |      |      |       | ↑<br>From South |      |      |      |       | →<br>From West |      |      |      |       | Total<br>Hourly<br>Volume |
|-------------------------------------|-----------------|------|------|------|-------|----------------|------|------|------|-------|-----------------|------|------|------|-------|----------------|------|------|------|-------|---------------------------|
|                                     | Sports Complex  |      |      |      |       | Lindsay Road   |      |      |      |       | Lori Lane       |      |      |      |       | Lindsay Road   |      |      |      |       |                           |
|                                     | Right           | Thru | Left | U-Tn | Total | Right          | Thru | Left | U-Tn | Total | Right           | Thru | Left | U-Tn | Total | Right          | Thru | Left | U-Tn | Total |                           |
|                                     | AM 8:00 AM      | 0    | 0    | 0    | 0     | 0              | 0    | 0    | 0    | 0     | 0               | 0    | 0    | 0    | 0     | 0              | 0    | 0    | 0    | 0     |                           |
| MD 12:00 PM                         | 0               | 0    | 0    | 0    | 0     | 0              | 0    | 0    | 0    | 0     | 0               | 0    | 0    | 0    | 0     | 0              | 0    | 0    | 0    | 0     |                           |
| PM 4:30 PM                          | 9               | 0    | 7    | 0    | 16    | 33             | 73   | 1    | 0    | 107   | 1               | 0    | 1    | 0    | 2     | 0              | 41   | 43   | 0    | 84    |                           |
|                                     |                 |      |      |      |       |                |      |      |      |       |                 |      |      |      |       |                |      |      |      | 209   |                           |

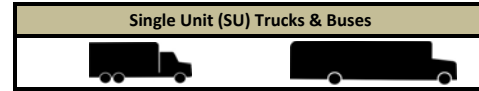


# Intersection Traffic Volume Report

## 15-Minute Single Unit (SU) Truck & Bus Data

### Sports Complex and Lindsay Road

| Count Basics                   |                         |             | Page 7 of 13       |
|--------------------------------|-------------------------|-------------|--------------------|
| Start Date:                    | Thursday, June 18, 2020 | Weekday     | Schools in Session |
| Total Number of Hours Counted: | 3                       | Non-Holiday | No Special Events  |



### 15-Minute Single Unit (SU) Truck & Bus Data

| 15-Minute<br>Time Period<br>Start Time | From North     |      |      |      |       |       |      | From East    |      |       |       |      | From South |      |       |       |      | From West    |      |       |   |   | 15-Min<br>Totals | Hourly<br>Sum |
|----------------------------------------|----------------|------|------|------|-------|-------|------|--------------|------|-------|-------|------|------------|------|-------|-------|------|--------------|------|-------|---|---|------------------|---------------|
|                                        | Sports Complex |      |      |      |       |       |      | Lindsay Road |      |       |       |      | Lori Lane  |      |       |       |      | Lindsay Road |      |       |   |   |                  |               |
|                                        | Right          | Thru | Left | U-Tn | Total | Right | Thru | Left         | U-Tn | Total | Right | Thru | Left       | U-Tn | Total | Right | Thru | Left         | U-Tn | Total |   |   |                  |               |
| AM Peak Period                         | 6:00 AM        | 0    | 0    | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0 | 0 |                  |               |
|                                        | 6:15 AM        | 0    | 0    | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0 | 0 |                  |               |
|                                        | 6:30 AM        | 0    | 0    | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0 | 0 |                  |               |
|                                        | 6:45 AM        | 0    | 0    | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0 | 0 |                  |               |
|                                        | 7:00 AM        | 0    | 0    | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0 | 0 |                  |               |
|                                        | 7:15 AM        | 0    | 0    | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0 | 0 |                  |               |
|                                        | 7:30 AM        | 0    | 0    | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0 | 0 |                  |               |
|                                        | 7:45 AM        | 0    | 0    | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0 | 0 |                  |               |
|                                        | 8:00 AM        | 0    | 0    | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0 | 0 |                  |               |
|                                        | 8:15 AM        | 0    | 0    | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0 | 0 |                  |               |
|                                        | 8:30 AM        | 0    | 0    | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0 | 0 |                  |               |
|                                        | 8:45 AM        | 0    | 0    | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0 | 0 |                  |               |
|                                        | 9:00 AM        | 0    | 0    | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0 | 0 |                  |               |
|                                        | 9:15 AM        | 0    | 0    | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0 | 0 |                  |               |
| 9:30 AM                                | 0              | 0    | 0    | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0 |   |                  |               |
| 9:45 AM                                | 0              | 0    | 0    | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0 |   |                  |               |
| Midday Peak Period                     | 10:00 AM       | 0    | 0    | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0 | 0 |                  |               |
|                                        | 10:15 AM       | 0    | 0    | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0 | 0 |                  |               |
|                                        | 10:30 AM       | 0    | 0    | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0 | 0 |                  |               |
|                                        | 10:45 AM       | 0    | 0    | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0 | 0 |                  |               |
|                                        | 11:00 AM       | 0    | 0    | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0 | 0 |                  |               |
|                                        | 11:15 AM       | 0    | 0    | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0 | 0 |                  |               |
|                                        | 11:30 AM       | 0    | 0    | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0 | 0 |                  |               |
|                                        | 11:45 AM       | 0    | 0    | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0 | 0 |                  |               |
|                                        | 12:00 PM       | 0    | 0    | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0 | 0 |                  |               |
|                                        | 12:15 PM       | 0    | 0    | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0 | 0 |                  |               |
|                                        | 12:30 PM       | 0    | 0    | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0 | 0 |                  |               |
|                                        | 12:45 PM       | 0    | 0    | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0 | 0 |                  |               |
|                                        | 1:00 PM        | 0    | 0    | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0 | 0 |                  |               |
|                                        | 1:15 PM        | 0    | 0    | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0 | 0 |                  |               |
| 1:30 PM                                | 0              | 0    | 0    | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0 |   |                  |               |
| 1:45 PM                                | 0              | 0    | 0    | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0 |   |                  |               |
| PM Peak Period                         | 2:00 PM        | 0    | 0    | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0 | 0 |                  |               |
|                                        | 2:15 PM        | 0    | 0    | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0 | 0 |                  |               |
|                                        | 2:30 PM        | 0    | 0    | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0 | 0 |                  |               |
|                                        | 2:45 PM        | 0    | 0    | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0 | 0 |                  |               |
|                                        | 3:00 PM        | 0    | 0    | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0 | 0 |                  |               |
|                                        | 3:15 PM        | 0    | 0    | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0 | 0 |                  |               |
|                                        | 3:30 PM        | 0    | 0    | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0 | 0 |                  |               |
|                                        | 3:45 PM        | 0    | 0    | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0 | 0 |                  |               |
|                                        | 4:00 PM        | 0    | 0    | 0    | 0     | 0     | 0    | 1            | 0    | 1     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 1            | 0    | 0     | 1 | 2 |                  |               |
|                                        | 4:15 PM        | 0    | 0    | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0 | 1 |                  |               |
|                                        | 4:30 PM        | 0    | 0    | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 1            | 0    | 0     | 1 | 1 |                  |               |
|                                        | 4:45 PM        | 0    | 0    | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0 | 0 |                  |               |
|                                        | 5:00 PM        | 0    | 0    | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0 | 1 |                  |               |
|                                        | 5:15 PM        | 0    | 0    | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0 | 2 |                  |               |
|                                        | 5:30 PM        | 0    | 0    | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0 | 2 |                  |               |
|                                        | 5:45 PM        | 0    | 0    | 0    | 0     | 0     | 0    | 1            | 0    | 1     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0 | 2 |                  |               |
|                                        | 6:00 PM        | 0    | 0    | 0    | 0     | 0     | 0    | 1            | 0    | 1     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0 | 1 |                  |               |
|                                        | 6:15 PM        | 0    | 0    | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0 | 0 |                  |               |
|                                        | 6:30 PM        | 0    | 0    | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0 | 0 |                  |               |
|                                        | 6:45 PM        | 0    | 0    | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0 | 0 |                  |               |
|                                        | 7:00 PM        | 0    | 0    | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0 | 0 |                  |               |
|                                        | 7:15 PM        | 0    | 0    | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0 | 0 |                  |               |
| 7:30 PM                                | 0              | 0    | 0    | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0 |   |                  |               |
| 7:45 PM                                | 0              | 0    | 0    | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0 |   |                  |               |
| 8:00 PM                                | 0              | 0    | 0    | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0 |   |                  |               |
| 8:15 PM                                | 0              | 0    | 0    | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0 |   |                  |               |
| 8:30 PM                                | 0              | 0    | 0    | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0 |   |                  |               |
| 8:45 PM                                | 0              | 0    | 0    | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0 |   |                  |               |
| 9:00 PM                                | 0              | 0    | 0    | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0 |   |                  |               |
| 9:15 PM                                | 0              | 0    | 0    | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0 |   |                  |               |
| 9:30 PM                                | 0              | 0    | 0    | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0 |   |                  |               |
| 9:45 PM                                | 0              | 0    | 0    | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0            | 0    | 0     | 0 |   |                  |               |
| Totals                                 |                | 0    | 0    | 0    | 0     | 0     | 0    | 3            | 0    | 0     | 3     | 0    | 0          | 0    | 0     | 0     | 0    | 2            | 0    | 0     | 2 | 5 |                  |               |

### Peak Hour Single Unit (SU) Truck & Buses Volume Summary

| Hourly<br>Time Period<br>Start Time | <div>↓</div><br>From North |      |      |      |       | <div>←</div><br>From East |      |      |      |       | <div>↑</div><br>From South |      |      |      |       | <div>→</div><br>From West |      |      |      |       | Total<br>Hourly<br>Volume |
|-------------------------------------|----------------------------|------|------|------|-------|---------------------------|------|------|------|-------|----------------------------|------|------|------|-------|---------------------------|------|------|------|-------|---------------------------|
|                                     | Sports Complex             |      |      |      |       | Lindsay Road              |      |      |      |       | Lori Lane                  |      |      |      |       | Lindsay Road              |      |      |      |       |                           |
|                                     | Right                      | Thru | Left | U-Tn | Total | Right                     | Thru | Left | U-Tn | Total | Right                      | Thru | Left | U-Tn | Total | Right                     | Thru | Left | U-Tn | Total |                           |
| AM 8:00 AM                          | 0                          | 0    | 0    | 0    | 0     | 0                         | 0    | 0    | 0    | 0     | 0                          | 0    | 0    | 0    | 0     | 0                         | 0    | 0    | 0    | 0     | 0                         |
| MD 12:00 PM                         | 0                          | 0    | 0    | 0    | 0     | 0                         | 0    | 0    | 0    | 0     | 0                          | 0    | 0    | 0    | 0     | 0                         | 0    | 0    | 0    | 0     | 0                         |
| PM 4:30 PM                          | 0                          | 0    | 0    | 0    | 0     | 0                         | 0    | 0    | 0    | 0     | 0                          | 0    | 0    | 0    | 0     | 0                         | 1    | 0    | 0    | 0     | 1                         |

## Intersection Traffic Volume Report

### 15-Minute Semi-Truck Data

### ***Sports Complex and Lindsay Road***

### 15-Minute Semi-Truck Data

|                                  |                         |                     |                    |
|----------------------------------|-------------------------|---------------------|--------------------|
| <b>Count Basics</b>              |                         | <b>Page 8 of 13</b> |                    |
| Start Date:                      | Thursday, June 18, 2020 | Weekday             | Schools in Session |
| Total Number of Hours Counted: 3 |                         | Non-Holiday         | No Special Events  |

|                                                                                     |
|-------------------------------------------------------------------------------------|
| Semi-Trucks                                                                         |
|  |

[illegible]

### Peak Hour Semi-Truck Volume Summary

[illegible]



# Intersection Traffic Volume Report

|                                |                         |             |                    |  |
|--------------------------------|-------------------------|-------------|--------------------|--|
| Count Basics                   |                         |             | Page 9 of 13       |  |
| Start Date:                    | Thursday, June 18, 2020 | Weekday     | Schools in Session |  |
| Total Number of Hours Counted: | 3                       | Non-Holiday | No Special Events  |  |

## 15-Minute Heavy Vehicle Data

### Sports Complex and Lindsay Road



### 15-Minute Heavy Vehicle Data

| 15-Minute<br>Time Period<br>Start Time | From North     |      |      |      |       |       | From East    |      |      |       |       |      | From South |      |       |       |      |      | From West    |       |   |   |  |  | 15-Min<br>Totals | Hourly<br>Sum |
|----------------------------------------|----------------|------|------|------|-------|-------|--------------|------|------|-------|-------|------|------------|------|-------|-------|------|------|--------------|-------|---|---|--|--|------------------|---------------|
|                                        | Sports Complex |      |      |      |       |       | Lindsay Road |      |      |       |       |      | Lori Lane  |      |       |       |      |      | Lindsay Road |       |   |   |  |  |                  |               |
|                                        | Right          | Thru | Left | U-Tn | Total | Right | Thru         | Left | U-Tn | Total | Right | Thru | Left       | U-Tn | Total | Right | Thru | Left | U-Tn         | Total |   |   |  |  |                  |               |
| AM Peak Period                         | 6:00 AM        | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0    | 0            | 0     | 0 | 0 |  |  |                  |               |
|                                        | 6:15 AM        | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0    | 0            | 0     | 0 | 0 |  |  |                  |               |
|                                        | 6:30 AM        | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0    | 0            | 0     | 0 | 0 |  |  |                  |               |
|                                        | 6:45 AM        | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0    | 0            | 0     | 0 | 0 |  |  |                  |               |
|                                        | 7:00 AM        | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0    | 0            | 0     | 0 | 0 |  |  |                  |               |
|                                        | 7:15 AM        | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0    | 0            | 0     | 0 | 0 |  |  |                  |               |
|                                        | 7:30 AM        | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0    | 0            | 0     | 0 | 0 |  |  |                  |               |
|                                        | 7:45 AM        | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0    | 0            | 0     | 0 | 0 |  |  |                  |               |
|                                        | 8:00 AM        | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0    | 0            | 0     | 0 | 0 |  |  |                  |               |
|                                        | 8:15 AM        | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0    | 0            | 0     | 0 | 0 |  |  |                  |               |
|                                        | 8:30 AM        | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0    | 0            | 0     | 0 | 0 |  |  |                  |               |
|                                        | 8:45 AM        | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0    | 0            | 0     | 0 | 0 |  |  |                  |               |
|                                        | 9:00 AM        | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0    | 0            | 0     | 0 | 0 |  |  |                  |               |
|                                        | 9:15 AM        | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0    | 0            | 0     | 0 | 0 |  |  |                  |               |
| 9:30 AM                                | 0              | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0    | 0            | 0     | 0 |   |  |  |                  |               |
| 9:45 AM                                | 0              | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0    | 0            | 0     | 0 |   |  |  |                  |               |
| Midday Peak Period                     | 10:00 AM       | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0    | 0            | 0     | 0 | 0 |  |  |                  |               |
|                                        | 10:15 AM       | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0    | 0            | 0     | 0 | 0 |  |  |                  |               |
|                                        | 10:30 AM       | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0    | 0            | 0     | 0 | 0 |  |  |                  |               |
|                                        | 10:45 AM       | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0    | 0            | 0     | 0 | 0 |  |  |                  |               |
|                                        | 11:00 AM       | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0    | 0            | 0     | 0 | 0 |  |  |                  |               |
|                                        | 11:15 AM       | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0    | 0            | 0     | 0 | 0 |  |  |                  |               |
|                                        | 11:30 AM       | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0    | 0            | 0     | 0 | 0 |  |  |                  |               |
|                                        | 11:45 AM       | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0    | 0            | 0     | 0 | 0 |  |  |                  |               |
|                                        | 12:00 PM       | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0    | 0            | 0     | 0 | 0 |  |  |                  |               |
|                                        | 12:15 PM       | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0    | 0            | 0     | 0 | 0 |  |  |                  |               |
|                                        | 12:30 PM       | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0    | 0            | 0     | 0 | 0 |  |  |                  |               |
|                                        | 12:45 PM       | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0    | 0            | 0     | 0 | 0 |  |  |                  |               |
|                                        | 1:00 PM        | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0    | 0            | 0     | 0 | 0 |  |  |                  |               |
|                                        | 1:15 PM        | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0    | 0            | 0     | 0 | 0 |  |  |                  |               |
| 1:30 PM                                | 0              | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0    | 0            | 0     | 0 |   |  |  |                  |               |
| 1:45 PM                                | 0              | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0    | 0            | 0     | 0 |   |  |  |                  |               |
| PM Peak Period                         | 2:00 PM        | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0    | 0            | 0     | 0 | 0 |  |  |                  |               |
|                                        | 2:15 PM        | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0    | 0            | 0     | 0 | 0 |  |  |                  |               |
|                                        | 2:30 PM        | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0    | 0            | 0     | 0 | 0 |  |  |                  |               |
|                                        | 2:45 PM        | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0    | 0            | 0     | 0 | 0 |  |  |                  |               |
|                                        | 3:00 PM        | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0    | 0            | 0     | 0 | 0 |  |  |                  |               |
|                                        | 3:15 PM        | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0    | 0            | 0     | 0 | 0 |  |  |                  |               |
|                                        | 3:30 PM        | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0    | 0            | 0     | 0 | 0 |  |  |                  |               |
|                                        | 3:45 PM        | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0    | 0            | 0     | 0 | 0 |  |  |                  |               |
|                                        | 4:00 PM        | 0    | 0    | 0    | 0     | 0     | 0            | 1    | 0    | 1     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 1    | 0            | 0     | 1 | 2 |  |  |                  |               |
|                                        | 4:15 PM        | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0    | 0            | 0     | 0 | 1 |  |  |                  |               |
|                                        | 4:30 PM        | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 1    | 0            | 0     | 1 | 1 |  |  |                  |               |
|                                        | 4:45 PM        | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0    | 0            | 0     | 0 | 0 |  |  |                  |               |
|                                        | 5:00 PM        | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0    | 0            | 0     | 0 | 1 |  |  |                  |               |
|                                        | 5:15 PM        | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0    | 0            | 0     | 0 | 2 |  |  |                  |               |
|                                        | 5:30 PM        | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0    | 0            | 0     | 0 | 2 |  |  |                  |               |
|                                        | 5:45 PM        | 0    | 0    | 0    | 0     | 0     | 0            | 1    | 0    | 1     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0    | 0            | 0     | 1 | 2 |  |  |                  |               |
|                                        | 6:00 PM        | 0    | 0    | 0    | 0     | 0     | 0            | 1    | 0    | 1     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0    | 0            | 0     | 1 | 1 |  |  |                  |               |
|                                        | 6:15 PM        | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0    | 0            | 0     | 0 | 0 |  |  |                  |               |
|                                        | 6:30 PM        | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0    | 0            | 0     | 0 | 0 |  |  |                  |               |
|                                        | 6:45 PM        | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0    | 0            | 0     | 0 | 0 |  |  |                  |               |
|                                        | 7:00 PM        | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0    | 0            | 0     | 0 | 0 |  |  |                  |               |
|                                        | 7:15 PM        | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0    | 0            | 0     | 0 | 0 |  |  |                  |               |
|                                        | 7:30 PM        | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0    | 0            | 0     | 0 | 0 |  |  |                  |               |
|                                        | 7:45 PM        | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0    | 0            | 0     | 0 | 0 |  |  |                  |               |
| 8:00 PM                                | 0              | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0    | 0            | 0     | 0 |   |  |  |                  |               |
| 8:15 PM                                | 0              | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0    | 0            | 0     | 0 |   |  |  |                  |               |
| 8:30 PM                                | 0              | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0    | 0            | 0     | 0 |   |  |  |                  |               |
| 8:45 PM                                | 0              | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0    | 0            | 0     | 0 |   |  |  |                  |               |
| 9:00 PM                                | 0              | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0    | 0            | 0     | 0 |   |  |  |                  |               |
| 9:15 PM                                | 0              | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0    | 0            | 0     | 0 |   |  |  |                  |               |
| 9:30 PM                                | 0              | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0    | 0            | 0     | 0 |   |  |  |                  |               |
| 9:45 PM                                | 0              | 0    | 0    | 0    | 0     | 0     | 0            | 0    | 0    | 0     | 0     | 0    | 0          | 0    | 0     | 0     | 0    | 0    | 0            | 0     | 0 |   |  |  |                  |               |
| Totals                                 |                | 0    | 0    | 0    | 0     | 0     | 0            | 3    | 0    | 0     | 3     | 0    | 0          | 0    | 0     | 0     | 0    | 2    | 0            | 0     | 2 | 5 |  |  |                  |               |

### Peak Hour Heavy Vehicle Volume Summary

| Hourly<br>Time Period<br>Start Time | ↓<br>From North |      |      |      |       | ←<br>From East |      |      |      |       | ↑<br>From South |      |      |      |       | →<br>From West |      |      |      |       | Total<br>Hourly<br>Volume |
|-------------------------------------|-----------------|------|------|------|-------|----------------|------|------|------|-------|-----------------|------|------|------|-------|----------------|------|------|------|-------|---------------------------|
|                                     | Sports Complex  |      |      |      |       | Lindsay Road   |      |      |      |       | Lori Lane       |      |      |      |       | Lindsay Road   |      |      |      |       |                           |
|                                     | Right           | Thru | Left | U-Tn | Total | Right          | Thru | Left | U-Tn | Total | Right           | Thru | Left | U-Tn | Total | Right          | Thru | Left | U-Tn | Total |                           |
| AM 8:00 AM                          | 0               | 0    | 0    | 0    | 0     | 0              | 0    | 0    | 0    | 0     | 0               | 0    | 0    | 0    | 0     | 0              | 0    | 0    | 0    | 0     | 0                         |
| MD 12:00 PM                         | 0               | 0    | 0    | 0    | 0     | 0              | 0    | 0    | 0    | 0     | 0               | 0    | 0    | 0    | 0     | 0              | 0    | 0    | 0    | 0     | 0                         |
| PM 4:30 PM                          | 0               | 0    | 0    | 0    | 0     | 0              | 0    | 0    | 0    | 0     | 0               | 0    | 0    | 0    | 0     | 0              | 1    | 0    | 0    | 1     | 1                         |

### 15-Minute Heavy Vehicle Percentages

| Heavy Vehicles (Single-Unit Trucks, Buses & Semi-Trucks) |                                                                                                                                                                                                                                                          |
|----------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| %                                                        |    |

### 15-Minute Heavy Vehicle Percentages

### Peak Hour Heavy Vehicle Percentages Summary

| Hourly<br>Time Period<br>Start Time | Peak Hour Heavy Vehicle Emissions Summary |      |      |      |       |              |      |      |      |       |            |      |      |      |       |              |      |      |      |       | Hourly<br>Heavy<br>Vehicle<br>Percent |
|-------------------------------------|-------------------------------------------|------|------|------|-------|--------------|------|------|------|-------|------------|------|------|------|-------|--------------|------|------|------|-------|---------------------------------------|
|                                     | From North                                |      |      |      |       | From East    |      |      |      |       | From South |      |      |      |       | From West    |      |      |      |       |                                       |
|                                     | Sports Complex                            |      |      |      |       | Lindsay Road |      |      |      |       | Lori Lane  |      |      |      |       | Lindsay Road |      |      |      |       |                                       |
|                                     | Right                                     | Thru | Left | U-Tn | Total | Right        | Thru | Left | U-Tn | Total | Right      | Thru | Left | U-Tn | Total | Right        | Thru | Left | U-Tn | Total |                                       |
| AM 8:00 AM                          | 0.0                                       | 0.0  | 0.0  | 0.0  | 0.0   | 0.0          | 0.0  | 0.0  | 0.0  | 0.0   | 0.0        | 0.0  | 0.0  | 0.0  | 0.0   | 0.0          | 0.0  | 0.0  | 0.0  | 0.0   | 0.0                                   |
| MD 12:00 PM                         | 0.0                                       | 0.0  | 0.0  | 0.0  | 0.0   | 0.0          | 0.0  | 0.0  | 0.0  | 0.0   | 0.0        | 0.0  | 0.0  | 0.0  | 0.0   | 0.0          | 0.0  | 0.0  | 0.0  | 0.0   | 0.0                                   |
| PM 4:30 PM                          | 0.0                                       | 0.0  | 0.0  | 0.0  | 0.0   | 0.0          | 0.0  | 0.0  | 0.0  | 0.0   | 0.0        | 0.0  | 0.0  | 0.0  | 0.0   | 0.0          | 2.4  | 0.0  | 0.0  | 1.2   | 0.5                                   |



# Intersection Traffic Volume Report

|                                |                         |             |                    |
|--------------------------------|-------------------------|-------------|--------------------|
| Count Basics                   |                         |             | Page 11 of 13      |
| Start Date:                    | Thursday, June 18, 2020 | Weekday     | Schools in Session |
| Total Number of Hours Counted: | 3                       | Non-Holiday | No Special Events  |

## 15-Minute Pedestrian and Bicyclist Data

### Sports Complex and Lindsay Road



### 15-Minute Pedestrian and Bicyclist Data

| 15-Minute<br>Time Period<br>Start Time |          | Crossing  |           |       | Crossing  |           |       | Crossing  |           |       | Crossing  |           |       | 15-Min<br>Totals | Hourly<br>Sum |
|----------------------------------------|----------|--------------------------------------------------------------------------------------------|-----------|-------|--------------------------------------------------------------------------------------------|-----------|-------|---------------------------------------------------------------------------------------------|-----------|-------|----------------------------------------------------------------------------------------------|-----------|-------|------------------|---------------|
|                                        |          | Sports Complex                                                                             |           |       | Lindsay Road                                                                               |           |       | Lori Lane                                                                                   |           |       | Lindsay Road                                                                                 |           |       |                  |               |
|                                        |          | Pedestrian                                                                                 | Bicyclist | Total | Pedestrian                                                                                 | Bicyclist | Total | Pedestrian                                                                                  | Bicyclist | Total | Pedestrian                                                                                   | Bicyclist | Total |                  |               |
| AM Peak Period                         | 6:00 AM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                           | 0         | 0     | 0                                                                                            | 0         | 0     | 0                |               |
|                                        | 6:15 AM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                           | 0         | 0     | 0                                                                                            | 0         | 0     | 0                |               |
|                                        | 6:30 AM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                           | 0         | 0     | 0                                                                                            | 0         | 0     | 0                |               |
|                                        | 6:45 AM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                           | 0         | 0     | 0                                                                                            | 0         | 0     | 0                |               |
|                                        | 7:00 AM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                           | 0         | 0     | 0                                                                                            | 0         | 0     | 0                |               |
|                                        | 7:15 AM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                           | 0         | 0     | 0                                                                                            | 0         | 0     | 0                |               |
|                                        | 7:30 AM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                           | 0         | 0     | 0                                                                                            | 0         | 0     | 0                |               |
|                                        | 7:45 AM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                           | 0         | 0     | 0                                                                                            | 0         | 0     | 0                |               |
|                                        | 8:00 AM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                           | 0         | 0     | 0                                                                                            | 0         | 0     | 0                |               |
|                                        | 8:15 AM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                           | 0         | 0     | 0                                                                                            | 0         | 0     | 0                |               |
|                                        | 8:30 AM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                           | 0         | 0     | 0                                                                                            | 0         | 0     | 0                |               |
|                                        | 8:45 AM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                           | 0         | 0     | 0                                                                                            | 0         | 0     | 0                |               |
|                                        | 9:00 AM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                           | 0         | 0     | 0                                                                                            | 0         | 0     | 0                |               |
|                                        | 9:15 AM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                           | 0         | 0     | 0                                                                                            | 0         | 0     | 0                |               |
|                                        | 9:30 AM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                           | 0         | 0     | 0                                                                                            | 0         | 0     | 0                |               |
|                                        | 9:45 AM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                           | 0         | 0     | 0                                                                                            | 0         | 0     | 0                |               |
| Midday Peak Period                     | 10:00 AM | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                           | 0         | 0     | 0                                                                                            | 0         | 0     | 0                |               |
|                                        | 10:15 AM | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                           | 0         | 0     | 0                                                                                            | 0         | 0     | 0                |               |
|                                        | 10:30 AM | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                           | 0         | 0     | 0                                                                                            | 0         | 0     | 0                |               |
|                                        | 10:45 AM | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                           | 0         | 0     | 0                                                                                            | 0         | 0     | 0                |               |
|                                        | 11:00 AM | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                           | 0         | 0     | 0                                                                                            | 0         | 0     | 0                |               |
|                                        | 11:15 AM | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                           | 0         | 0     | 0                                                                                            | 0         | 0     | 0                |               |
|                                        | 11:30 AM | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                           | 0         | 0     | 0                                                                                            | 0         | 0     | 0                |               |
|                                        | 11:45 AM | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                           | 0         | 0     | 0                                                                                            | 0         | 0     | 0                |               |
|                                        | 12:00 PM | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                           | 0         | 0     | 0                                                                                            | 0         | 0     | 0                |               |
|                                        | 12:15 PM | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                           | 0         | 0     | 0                                                                                            | 0         | 0     | 0                |               |
|                                        | 12:30 PM | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                           | 0         | 0     | 0                                                                                            | 0         | 0     | 0                |               |
|                                        | 12:45 PM | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                           | 0         | 0     | 0                                                                                            | 0         | 0     | 0                |               |
|                                        | 1:00 PM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                           | 0         | 0     | 0                                                                                            | 0         | 0     | 0                |               |
|                                        | 1:15 PM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                           | 0         | 0     | 0                                                                                            | 0         | 0     | 0                |               |
|                                        | 1:30 PM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                           | 0         | 0     | 0                                                                                            | 0         | 0     | 0                |               |
|                                        | 1:45 PM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                           | 0         | 0     | 0                                                                                            | 0         | 0     | 0                |               |
| PM Peak Period                         | 2:00 PM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                           | 0         | 0     | 0                                                                                            | 0         | 0     | 0                |               |
|                                        | 2:15 PM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                           | 0         | 0     | 0                                                                                            | 0         | 0     | 0                |               |
|                                        | 2:30 PM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                           | 0         | 0     | 0                                                                                            | 0         | 0     | 0                |               |
|                                        | 2:45 PM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                           | 0         | 0     | 0                                                                                            | 0         | 0     | 0                |               |
|                                        | 3:00 PM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                           | 0         | 0     | 0                                                                                            | 0         | 0     | 0                |               |
|                                        | 3:15 PM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                           | 0         | 0     | 0                                                                                            | 0         | 0     | 0                |               |
|                                        | 3:30 PM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                           | 0         | 0     | 0                                                                                            | 0         | 0     | 0                |               |
|                                        | 3:45 PM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                           | 0         | 0     | 0                                                                                            | 0         | 0     | 0                |               |
|                                        | 4:00 PM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                           | 0         | 0     | 0                                                                                            | 0         | 0     | 0                | 1             |
|                                        | 4:15 PM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                           | 0         | 0     | 0                                                                                            | 0         | 0     | 0                | 3             |
|                                        | 4:30 PM  | 0                                                                                          | 1         | 1     | 0                                                                                          | 0         | 0     | 0                                                                                           | 0         | 0     | 0                                                                                            | 0         | 1     | 3                |               |
|                                        | 4:45 PM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                           | 0         | 0     | 0                                                                                            | 0         | 0     | 0                | 2             |
|                                        | 5:00 PM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                           | 1         | 1     | 0                                                                                            | 1         | 1     | 2                | 2             |
|                                        | 5:15 PM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                           | 0         | 0     | 0                                                                                            | 0         | 0     | 0                | 2             |
|                                        | 5:30 PM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                           | 0         | 0     | 0                                                                                            | 0         | 0     | 0                | 3             |
|                                        | 5:45 PM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                           | 0         | 0     | 0                                                                                            | 0         | 0     | 0                | 8             |
|                                        | 6:00 PM  | 1                                                                                          | 0         | 1     | 0                                                                                          | 0         | 0     | 0                                                                                           | 1         | 1     | 0                                                                                            | 0         | 0     | 2                | 8             |
|                                        | 6:15 PM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 1                                                                                           | 0         | 1     | 0                                                                                            | 0         | 0     | 1                |               |
|                                        | 6:30 PM  | 0                                                                                          | 3         | 3     | 0                                                                                          | 0         | 0     | 0                                                                                           | 2         | 2     | 0                                                                                            | 0         | 0     | 5                |               |
|                                        | 6:45 PM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                           | 0         | 0     | 0                                                                                            | 0         | 0     | 0                |               |
|                                        | 7:00 PM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                           | 0         | 0     | 0                                                                                            | 0         | 0     | 0                |               |
|                                        | 7:15 PM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                           | 0         | 0     | 0                                                                                            | 0         | 0     | 0                |               |
|                                        | 7:30 PM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                           | 0         | 0     | 0                                                                                            | 0         | 0     | 0                |               |
|                                        | 7:45 PM  | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                           | 0         | 0     | 0                                                                                            | 0         | 0     | 0                |               |
| 8:00 PM                                | 0        | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                           | 0         | 0     | 0                                                                                            | 0         | 0     |                  |               |
| 8:15 PM                                | 0        | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                           | 0         | 0     | 0                                                                                            | 0         | 0     |                  |               |
| 8:30 PM                                | 0        | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                           | 0         | 0     | 0                                                                                            | 0         | 0     |                  |               |
| 8:45 PM                                | 0        | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                           | 0         | 0     | 0                                                                                            | 0         | 0     |                  |               |
| 9:00 PM                                | 0        | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                           | 0         | 0     | 0                                                                                            | 0         | 0     |                  |               |
| 9:15 PM                                | 0        | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                           | 0         | 0     | 0                                                                                            | 0         | 0     |                  |               |
| 9:30 PM                                | 0        | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                           | 0         | 0     | 0                                                                                            | 0         | 0     |                  |               |
| 9:45 PM                                | 0        | 0                                                                                          | 0         | 0     | 0                                                                                          | 0         | 0     | 0                                                                                           | 0         | 0     | 0                                                                                            | 0         | 0     |                  |               |
| Totals                                 |          | 1                                                                                          | 4         | 5     | 0                                                                                          | 0         | 0     | 1                                                                                           | 4         | 5     | 0                                                                                            | 1         | 1     | 11               |               |

### Special Pedestrians

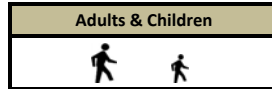
| Pedestrian Type                           | None | 1 or 2 | A Few | Several | Many | Unknown |
|-------------------------------------------|------|--------|-------|---------|------|---------|
| Pre-school Children                       | x    |        |       |         |      |         |
| Elementary School Age Children            | x    |        |       |         |      |         |
| Visually Impaired (white cane/helper dog) | x    |        |       |         |      |         |
| Elderly/Disabled (except wheelchairs)     | x    |        |       |         |      |         |
| Wheelchairs/Electric Scooters             | x    |        |       |         |      |         |
| Other (None)                              | x    |        |       |         |      |         |

# Intersection Traffic Volume Report

|                                |                         |             |                    |
|--------------------------------|-------------------------|-------------|--------------------|
| Count Basics                   |                         |             | Page 12 of 13      |
| Start Date:                    | Thursday, June 18, 2020 | Weekday     | Schools in Session |
| Total Number of Hours Counted: | 3                       | Non-Holiday | No Special Events  |

## 15-Minute Adult & Children Count (Manual Entry)

### Sports Complex and Lindsay Road



### 15-Minute Adult & Children Pedestrian Data

| 15-Minute<br>Time Period<br>Start Time |          | Crossing  |          |       | Crossing  |          |       | Crossing  |          |       | Crossing  |          |       | 15-Min<br>Totals | Hourly<br>Sum |
|----------------------------------------|----------|--------------------------------------------------------------------------------------------|----------|-------|--------------------------------------------------------------------------------------------|----------|-------|--------------------------------------------------------------------------------------------|----------|-------|----------------------------------------------------------------------------------------------|----------|-------|------------------|---------------|
|                                        |          | Sports Complex                                                                             |          |       | Lindsay Road                                                                               |          |       | Lori Lane                                                                                  |          |       | Lindsay Road                                                                                 |          |       |                  |               |
|                                        |          | Adults                                                                                     | Children | Total | Adults                                                                                     | Children | Total | Adults                                                                                     | Children | Total | Adults                                                                                       | Children | Total |                  |               |
| AM Peak Period                         | 6:00 AM  | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                            |          | 0     | 0                | 0             |
|                                        | 6:15 AM  | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                            |          | 0     | 0                | 0             |
|                                        | 6:30 AM  | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                            |          | 0     | 0                | 0             |
|                                        | 6:45 AM  | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                            |          | 0     | 0                | 0             |
|                                        | 7:00 AM  | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                            |          | 0     | 0                | 0             |
|                                        | 7:15 AM  | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                            |          | 0     | 0                | 0             |
|                                        | 7:30 AM  | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                            |          | 0     | 0                | 0             |
|                                        | 7:45 AM  | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                            |          | 0     | 0                | 0             |
|                                        | 8:00 AM  | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                            |          | 0     | 0                | 0             |
|                                        | 8:15 AM  | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                            |          | 0     | 0                | 0             |
|                                        | 8:30 AM  | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                            |          | 0     | 0                | 0             |
|                                        | 8:45 AM  | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                            |          | 0     | 0                | 0             |
|                                        | 9:00 AM  | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                            |          | 0     | 0                | 0             |
|                                        | 9:15 AM  | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                            |          | 0     | 0                | 0             |
|                                        | 9:30 AM  | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                            |          | 0     | 0                | 0             |
|                                        | 9:45 AM  | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                            |          | 0     | 0                | 0             |
| Midday Peak Period                     | 10:00 AM | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                            |          | 0     | 0                | 0             |
|                                        | 10:15 AM | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                            |          | 0     | 0                | 0             |
|                                        | 10:30 AM | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                            |          | 0     | 0                | 0             |
|                                        | 10:45 AM | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                            |          | 0     | 0                | 0             |
|                                        | 11:00 AM | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                            |          | 0     | 0                | 0             |
|                                        | 11:15 AM | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                            |          | 0     | 0                | 0             |
|                                        | 11:30 AM | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                            |          | 0     | 0                | 0             |
|                                        | 11:45 AM | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                            |          | 0     | 0                | 0             |
|                                        | 12:00 PM | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                            |          | 0     | 0                | 0             |
|                                        | 12:15 PM | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                            |          | 0     | 0                | 0             |
|                                        | 12:30 PM | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                            |          | 0     | 0                | 0             |
|                                        | 12:45 PM | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                            |          | 0     | 0                | 0             |
|                                        | 1:00 PM  | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                            |          | 0     | 0                | 0             |
|                                        | 1:15 PM  | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                            |          | 0     | 0                | 0             |
|                                        | 1:30 PM  | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                            |          | 0     | 0                | 0             |
|                                        | 1:45 PM  | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                            |          | 0     | 0                | 0             |
| PM Peak Period                         | 2:00 PM  | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                            |          | 0     | 0                | 0             |
|                                        | 2:15 PM  | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                            |          | 0     | 0                | 0             |
|                                        | 2:30 PM  | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                            |          | 0     | 0                | 0             |
|                                        | 2:45 PM  | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                            |          | 0     | 0                | 0             |
|                                        | 3:00 PM  | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                            |          | 0     | 0                | 0             |
|                                        | 3:15 PM  | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                            |          | 0     | 0                | 0             |
|                                        | 3:30 PM  | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                            |          | 0     | 0                | 0             |
|                                        | 3:45 PM  | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                            |          | 0     | 0                | 0             |
|                                        | 4:00 PM  | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                            |          | 0     | 0                | 0             |
|                                        | 4:15 PM  | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                            |          | 0     | 0                | 0             |
|                                        | 4:30 PM  | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                            |          | 0     | 0                | 0             |
|                                        | 4:45 PM  | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                            |          | 0     | 0                | 0             |
|                                        | 5:00 PM  | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                            |          | 0     | 0                | 0             |
|                                        | 5:15 PM  | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                            |          | 0     | 0                | 1             |
|                                        | 5:30 PM  | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                            |          | 0     | 0                | 2             |
|                                        | 5:45 PM  | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                            |          | 0     | 0                | 2             |
|                                        | 6:00 PM  | 1                                                                                          |          | 1     | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                            |          | 0     | 1                | 2             |
|                                        | 6:15 PM  | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 1                                                                                          |          | 1     | 0                                                                                            |          | 0     | 1                | 1             |
|                                        | 6:30 PM  | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                            |          | 0     | 0                | 0             |
|                                        | 6:45 PM  | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                            |          | 0     | 0                | 0             |
|                                        | 7:00 PM  | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                            |          | 0     | 0                | 0             |
|                                        | 7:15 PM  | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                            |          | 0     | 0                | 0             |
|                                        | 7:30 PM  | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                            |          | 0     | 0                | 0             |
|                                        | 7:45 PM  | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                            |          | 0     | 0                | 0             |
|                                        | 8:00 PM  | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                            |          | 0     | 0                | 0             |
|                                        | 8:15 PM  | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                            |          | 0     | 0                | 0             |
|                                        | 8:30 PM  | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                            |          | 0     | 0                | 0             |
|                                        | 8:45 PM  | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                            |          | 0     | 0                | 0             |
|                                        | 9:00 PM  | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                            |          | 0     | 0                | 0             |
|                                        | 9:15 PM  | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                            |          | 0     | 0                | 0             |
|                                        | 9:30 PM  | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                            |          | 0     | 0                | 0             |
|                                        | 9:45 PM  | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                          |          | 0     | 0                                                                                            |          | 0     | 0                | 0             |
| Totals                                 |          | 1                                                                                          | 0        | 1     | 0                                                                                          | 0        | 0     | 1                                                                                          | 0        | 1     | 0                                                                                            | 0        | 0     | 2                |               |



# Intersection Traffic Volume Report

| Count Basics                   |                         |             | Page 13 of 13      |
|--------------------------------|-------------------------|-------------|--------------------|
| Start Date:                    | Thursday, June 18, 2020 | Weekday     | Schools in Session |
| Total Number of Hours Counted: | 3                       | Non-Holiday | No Special Events  |

## 15-Minute Bicycle Turning Movement Count (Manual Entry)

Sports Complex and Lindsay Road



### 15-Minute Bicycle Data

| 15-Minute<br>Time Period<br>Start Time | From North     |      |      |      |       | From East    |      |      |      |       | From South |      |      |      |       | From West    |      |      |      |       | 15-Min<br>Totals | Hourly<br>Sum |   |
|----------------------------------------|----------------|------|------|------|-------|--------------|------|------|------|-------|------------|------|------|------|-------|--------------|------|------|------|-------|------------------|---------------|---|
|                                        | Sports Complex |      |      |      |       | Lindsay Road |      |      |      |       | Lori Lane  |      |      |      |       | Lindsay Road |      |      |      |       |                  |               |   |
|                                        | Right          | Thru | Left | U-Tn | Total | Right        | Thru | Left | U-Tn | Total | Right      | Thru | Left | U-Tn | Total | Right        | Thru | Left | U-Tn | Total |                  |               |   |
| AM Peak Period                         | 6:00 AM        |      |      |      |       | 0            |      |      |      |       | 0          |      |      |      |       | 0            |      |      |      |       | 0                | 0             | 0 |
|                                        | 6:15 AM        |      |      |      |       | 0            |      |      |      |       | 0          |      |      |      |       | 0            |      |      |      |       | 0                | 0             | 0 |
|                                        | 6:30 AM        |      |      |      |       | 0            |      |      |      |       | 0          |      |      |      |       | 0            |      |      |      |       | 0                | 0             | 0 |
|                                        | 6:45 AM        |      |      |      |       | 0            |      |      |      |       | 0          |      |      |      |       | 0            |      |      |      |       | 0                | 0             | 0 |
|                                        | 7:00 AM        |      |      |      |       | 0            |      |      |      |       | 0          |      |      |      |       | 0            |      |      |      |       | 0                | 0             | 0 |
|                                        | 7:15 AM        |      |      |      |       | 0            |      |      |      |       | 0          |      |      |      |       | 0            |      |      |      |       | 0                | 0             | 0 |
|                                        | 7:30 AM        |      |      |      |       | 0            |      |      |      |       | 0          |      |      |      |       | 0            |      |      |      |       | 0                | 0             | 0 |
|                                        | 7:45 AM        |      |      |      |       | 0            |      |      |      |       | 0          |      |      |      |       | 0            |      |      |      |       | 0                | 0             | 0 |
|                                        | 8:00 AM        |      |      |      |       | 0            |      |      |      |       | 0          |      |      |      |       | 0            |      |      |      |       | 0                | 0             | 0 |
|                                        | 8:15 AM        |      |      |      |       | 0            |      |      |      |       | 0          |      |      |      |       | 0            |      |      |      |       | 0                | 0             | 0 |
|                                        | 8:30 AM        |      |      |      |       | 0            |      |      |      |       | 0          |      |      |      |       | 0            |      |      |      |       | 0                | 0             | 0 |
|                                        | 8:45 AM        |      |      |      |       | 0            |      |      |      |       | 0          |      |      |      |       | 0            |      |      |      |       | 0                | 0             | 0 |
|                                        | 9:00 AM        |      |      |      |       | 0            |      |      |      |       | 0          |      |      |      |       | 0            |      |      |      |       | 0                | 0             | 0 |
|                                        | 9:15 AM        |      |      |      |       | 0            |      |      |      |       | 0          |      |      |      |       | 0            |      |      |      |       | 0                | 0             | 0 |
| 9:30 AM                                |                |      |      |      | 0     |              |      |      |      | 0     |            |      |      |      | 0     |              |      |      |      | 0     | 0                | 0             |   |
| 9:45 AM                                |                |      |      |      | 0     |              |      |      |      | 0     |            |      |      |      | 0     |              |      |      |      | 0     | 0                | 0             |   |
| Midday Peak Period                     | 10:00 AM       |      |      |      |       | 0            |      |      |      |       | 0          |      |      |      |       | 0            |      |      |      |       | 0                | 0             | 0 |
|                                        | 10:15 AM       |      |      |      |       | 0            |      |      |      |       | 0          |      |      |      |       | 0            |      |      |      |       | 0                | 0             | 0 |
|                                        | 10:30 AM       |      |      |      |       | 0            |      |      |      |       | 0          |      |      |      |       | 0            |      |      |      |       | 0                | 0             | 0 |
|                                        | 10:45 AM       |      |      |      |       | 0            |      |      |      |       | 0          |      |      |      |       | 0            |      |      |      |       | 0                | 0             | 0 |
|                                        | 11:00 AM       |      |      |      |       | 0            |      |      |      |       | 0          |      |      |      |       | 0            |      |      |      |       | 0                | 0             | 0 |
|                                        | 11:15 AM       |      |      |      |       | 0            |      |      |      |       | 0          |      |      |      |       | 0            |      |      |      |       | 0                | 0             | 0 |
|                                        | 11:30 AM       |      |      |      |       | 0            |      |      |      |       | 0          |      |      |      |       | 0            |      |      |      |       | 0                | 0             | 0 |
|                                        | 11:45 AM       |      |      |      |       | 0            |      |      |      |       | 0          |      |      |      |       | 0            |      |      |      |       | 0                | 0             | 0 |
|                                        | 12:00 PM       |      |      |      |       | 0            |      |      |      |       | 0          |      |      |      |       | 0            |      |      |      |       | 0                | 0             | 0 |
|                                        | 12:15 PM       |      |      |      |       | 0            |      |      |      |       | 0          |      |      |      |       | 0            |      |      |      |       | 0                | 0             | 0 |
|                                        | 12:30 PM       |      |      |      |       | 0            |      |      |      |       | 0          |      |      |      |       | 0            |      |      |      |       | 0                | 0             | 0 |
|                                        | 12:45 PM       |      |      |      |       | 0            |      |      |      |       | 0          |      |      |      |       | 0            |      |      |      |       | 0                | 0             | 0 |
|                                        | 1:00 PM        |      |      |      |       | 0            |      |      |      |       | 0          |      |      |      |       | 0            |      |      |      |       | 0                | 0             | 0 |
|                                        | 1:15 PM        |      |      |      |       | 0            |      |      |      |       | 0          |      |      |      |       | 0            |      |      |      |       | 0                | 0             | 0 |
| 1:30 PM                                |                |      |      |      | 0     |              |      |      |      | 0     |            |      |      |      | 0     |              |      |      |      | 0     | 0                | 0             |   |
| 1:45 PM                                |                |      |      |      | 0     |              |      |      |      | 0     |            |      |      |      | 0     |              |      |      |      | 0     | 0                | 0             |   |
| PM Peak Period                         | 2:00 PM        |      |      |      |       | 0            |      |      |      |       | 0          |      |      |      |       | 0            |      |      |      |       | 0                | 0             | 0 |
|                                        | 2:15 PM        |      |      |      |       | 0            |      |      |      |       | 0          |      |      |      |       | 0            |      |      |      |       | 0                | 0             | 0 |
|                                        | 2:30 PM        |      |      |      |       | 0            |      |      |      |       | 0          |      |      |      |       | 0            |      |      |      |       | 0                | 0             | 0 |
|                                        | 2:45 PM        |      |      |      |       | 0            |      |      |      |       | 0          |      |      |      |       | 0            |      |      |      |       | 0                | 0             | 0 |
|                                        | 3:00 PM        |      |      |      |       | 0            |      |      |      |       | 0          |      |      |      |       | 0            |      |      |      |       | 0                | 0             | 0 |
|                                        | 3:15 PM        |      |      |      |       | 0            |      |      |      |       | 0          |      |      |      |       | 0            |      |      |      |       | 0                | 0             | 0 |
|                                        | 3:30 PM        |      |      |      |       | 0            |      |      |      |       | 0          |      |      |      |       | 0            |      |      |      |       | 0                | 0             | 0 |
|                                        | 3:45 PM        |      |      |      |       | 0            |      |      |      |       | 0          |      |      |      |       | 0            |      |      |      |       | 0                | 0             | 0 |
|                                        | 4:00 PM        |      |      |      |       | 0            |      |      |      |       | 0          |      |      |      |       | 0            |      |      |      |       | 0                | 0             | 0 |
|                                        | 4:15 PM        |      |      |      |       | 0            |      |      |      |       | 0          |      |      |      |       | 0            |      |      |      |       | 0                | 0             | 0 |
|                                        | 4:30 PM        |      |      |      |       | 0            |      |      |      |       | 0          |      |      |      |       | 0            |      |      |      |       | 0                | 0             | 0 |
|                                        | 4:45 PM        |      |      |      |       | 0            |      |      |      |       | 0          |      |      |      |       | 0            |      |      |      |       | 0                | 0             | 0 |
|                                        | 5:00 PM        |      |      |      |       | 0            |      |      |      |       | 0          |      |      |      |       | 0            |      |      |      |       | 0                | 0             | 0 |
|                                        | 5:15 PM        |      |      |      |       | 0            |      |      |      |       | 0          |      |      |      |       | 0            |      |      |      |       | 0                | 0             | 0 |
|                                        | 5:30 PM        |      |      |      |       | 0            |      |      |      |       | 0          |      |      |      |       | 0            |      |      |      |       | 0                | 0             | 0 |
|                                        | 5:45 PM        |      |      |      |       | 0            |      |      |      |       | 0          |      |      |      |       | 0            |      |      |      |       | 0                | 0             | 0 |
|                                        | 6:00 PM        |      |      |      |       | 0            |      |      |      |       | 0          |      |      |      |       | 0            |      |      |      |       | 0                | 0             | 0 |
|                                        | 6:15 PM        |      |      |      |       | 0            |      |      |      |       | 0          |      |      |      |       | 0            |      |      |      |       | 0                | 0             | 0 |
|                                        | 6:30 PM        |      |      |      |       | 0            |      |      |      |       | 0          |      |      |      |       | 0            |      |      |      |       | 0                | 0             | 0 |
|                                        | 6:45 PM        |      |      |      |       | 0            |      |      |      |       | 0          |      |      |      |       | 0            |      |      |      |       | 0                | 0             | 0 |
|                                        | 7:00 PM        |      |      |      |       | 0            |      |      |      |       | 0          |      |      |      |       | 0            |      |      |      |       | 0                | 0             | 0 |
|                                        | 7:15 PM        |      |      |      |       | 0            |      |      |      |       | 0          |      |      |      |       | 0            |      |      |      |       | 0                | 0             | 0 |
|                                        | 7:30 PM        |      |      |      |       | 0            |      |      |      |       | 0          |      |      |      |       | 0            |      |      |      |       | 0                | 0             | 0 |
|                                        | 7:45 PM        |      |      |      |       | 0            |      |      |      |       | 0          |      |      |      |       | 0            |      |      |      |       | 0                | 0             | 0 |
| 8:00 PM                                |                |      |      |      | 0     |              |      |      |      | 0     |            |      |      |      | 0     |              |      |      |      | 0     | 0                | 0             |   |
| 8:15 PM                                |                |      |      |      | 0     |              |      |      |      | 0     |            |      |      |      | 0     |              |      |      |      | 0     | 0                | 0             |   |
| 8:30 PM                                |                |      |      |      | 0     |              |      |      |      | 0     |            |      |      |      | 0     |              |      |      |      | 0     | 0                | 0             |   |
| 8:45 PM                                |                |      |      |      | 0     |              |      |      |      | 0     |            |      |      |      | 0     |              |      |      |      | 0     | 0                | 0             |   |
| 9:00 PM                                |                |      |      |      | 0     |              |      |      |      | 0     |            |      |      |      | 0     |              |      |      |      | 0     | 0                | 0             |   |
| 9:15 PM                                |                |      |      |      | 0     |              |      |      |      | 0     |            |      |      |      | 0     |              |      |      |      | 0     | 0                | 0             |   |
| 9:30 PM                                |                |      |      |      | 0     |              |      |      |      | 0     |            |      |      |      | 0     |              |      |      |      | 0     | 0                | 0             |   |
| 9:45 PM                                |                |      |      |      | 0     |              |      |      |      | 0     |            |      |      |      | 0     |              |      |      |      | 0     | 0                | 0             |   |
| Totals                                 |                | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0          | 0    | 0    | 0    | 0     | 0            | 0    | 0    | 0    | 0     | 0                | 0             | 0 |

### Peak Hour Bicycle Turning Movement Volume Summary

| Hourly<br>Time Period<br>Start Time | <div>↓</div><br>From North |      |      |      |       | <div>←</div><br>From East |      |      |      |       | <div>↑</div><br>From South |      |      |      |       | <div>→</div><br>From West |      |      |      |       | Total<br>Hourly<br>Volume |
|-------------------------------------|----------------------------|------|------|------|-------|---------------------------|------|------|------|-------|----------------------------|------|------|------|-------|---------------------------|------|------|------|-------|---------------------------|
|                                     | Sports Complex             |      |      |      |       | Lindsay Road              |      |      |      |       | Lori Lane                  |      |      |      |       | Lindsay Road              |      |      |      |       |                           |
|                                     | Right                      | Thru | Left | U-Tn | Total | Right                     | Thru | Left | U-Tn | Total | Right                      | Thru | Left | U-Tn | Total | Right                     | Thru | Left | U-Tn | Total |                           |
| AM 8:00 AM                          | 0                          | 0    | 0    | 0    | 0     | 0                         | 0    | 0    | 0    | 0     | 0                          | 0    | 0    | 0    | 0     | 0                         | 0    | 0    | 0    | 0     | 0                         |
| MD 12:00 PM                         | 0                          | 0    | 0    | 0    | 0     | 0                         | 0    | 0    | 0    | 0     | 0                          | 0    | 0    | 0    | 0     | 0                         | 0    | 0    | 0    | 0     | 0                         |
| PM 4:30 PM                          | 0                          | 0    | 0    | 0    | 0     | 0                         | 0    | 0    | 0    | 0     | 0                          | 0    | 0    | 0    | 0     | 0                         | 0    | 0    | 0    | 0     | 0                         |

## Pewaukee Historical ADTs

CTH F

|      | Data for Graphs |              |
|------|-----------------|--------------|
|      | N of Lindsay    | S of Lindsay |
| 1985 |                 | 11,740       |
| 1988 |                 | 11,020       |
| 1991 |                 |              |
| 1994 |                 | 17,010       |
| 1997 |                 | 19,400       |
| 2000 |                 |              |
| 2003 |                 | 20,500       |
| 2009 | 19,100          | 16,900       |
| 2012 | 19,100          | 18,800       |
| 2015 | 27,600          | 20,400       |
| 2018 | 23,000          | 22,000       |

|                  |            |          |
|------------------|------------|----------|
| m =              | 673.33     | 265.22   |
| b =              | -1,333,557 | -513,524 |
| R <sup>2</sup> = | 0.416      | 0.680    |

|      |        |        |
|------|--------|--------|
| 2020 | 26,600 | 22,200 |
| 2030 | 33,300 | 24,900 |

|   |       |       |
|---|-------|-------|
| i | 2.52% | 1.22% |
|---|-------|-------|

| Site Code | Raw Data     |              |
|-----------|--------------|--------------|
|           | 672252       | 676114       |
|           | N of Lindsay | S of Lindsay |
| 1985      |              | 11,740       |
| 1988      |              | 11,020       |
| 1991      |              |              |
| 1994      |              | 17,010       |
| 1997      |              | 19,400       |
| 2000      |              | 11,200       |
| 2003      |              | 20,500       |
| 2009      | 19,100       | 16,900       |
| 2012      | 19,100       | 18,800       |
| 2015      | 27,600       | 20,400       |
| 2018      | 23,000       | 22,000       |

  = appears to be outlier

**USE 1.25% GROWTH RATE IN ANALYSIS**



# Intersection Collision Diagram

Location: CTH F & Lindsay Rd  
Municipality: Pewaukee  
County: Waukesha  
Traffic Control: Minor Street Stop

From: 1/1/2014 5 Years  
To: 9/17/2019 8 Months  
AADT: 23,826  
Area Type: Urban  
GPS Coordinates: 43.102288, -88.208759

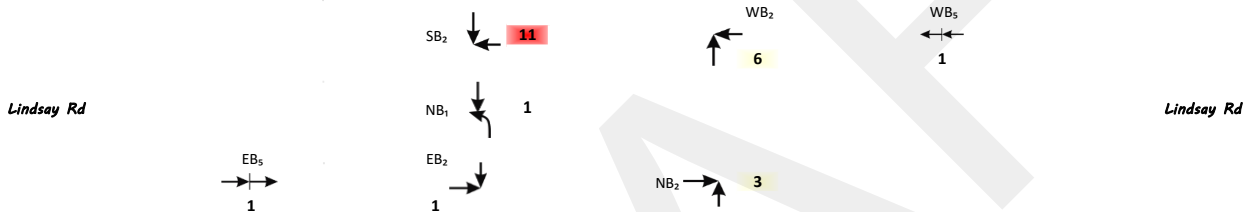
TOTAL CRASHES 27  
AVG. CRASHES/YEAR: 4.7  
CRASH RATE: 0.54 per MEV  
KAB CRASH RATE: 0.16 per MEV  
ECONOMIC LOSS\*: \$ 903,000

\*KAB = \$85K, C=\$25K, PDO=\$4K

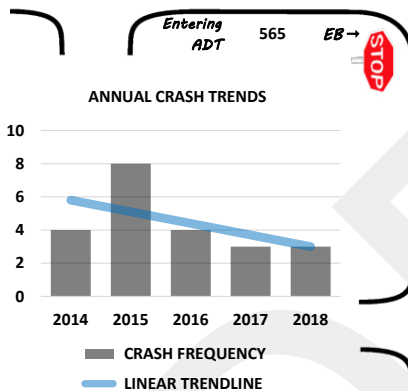
| YEAR         | K        | A        | B        | C        | PDO       | TOT.      | ECON. LOSS        |
|--------------|----------|----------|----------|----------|-----------|-----------|-------------------|
| 2014         | 0        | 0        | 1        | 2        | 1         | 4         | \$ 139,000        |
| 2015         | 0        | 0        | 3        | 2        | 3         | 8         | \$ 317,000        |
| 2016         | 0        | 1        | 1        | 1        | 1         | 4         | \$ 199,000        |
| 2017         | 0        | 0        | 0        | 0        | 3         | 3         | \$ 12,000         |
| 2018         | 0        | 0        | 2        | 0        | 1         | 3         | \$ 174,000        |
| 2019         | 0        | 0        | 0        | 2        | 3         | 5         | \$ 62,000         |
| <b>TOTAL</b> | <b>0</b> | <b>1</b> | <b>7</b> | <b>7</b> | <b>12</b> | <b>27</b> | <b>\$ 903,000</b> |

K = Fatal, A = Incapacitating Injury, B = Non-Incapacitating Injury, C = Possible Injury, PDO = Property Damage Only

M<sub>1</sub> Other Crashes  
1 Within Intersection



ECON. LOSS  
COLOR SCALE  
> \$500 K  
> \$400 K  
> \$300 K  
> \$200 K  
> \$100 K



| CRASH TYPE       | K        | A        | B        | C        | PDO       | TOT.      | ECON. LOSS        |
|------------------|----------|----------|----------|----------|-----------|-----------|-------------------|
| LT-ANGLE         | 0        | 0        | 0        | 0        | 1         | 1         | \$ 4,000          |
| RT-ANGLE         | 0        | 1        | 6        | 7        | 7         | 21        | \$ 798,000        |
| PEDESTRIAN       | 0        | 0        | 0        | 0        | 0         | 0         | \$ -              |
| RT-TURN REAR-END | 0        | 0        | 0        | 0        | 0         | 0         | \$ -              |
| REAR-END         | 0        | 0        | 0        | 0        | 2         | 2         | \$ 8,000          |
| SIDE-SWIPE-SAME  | 0        | 0        | 0        | 0        | 0         | 0         | \$ -              |
| BICYCLE-RELATED  | 0        | 0        | 0        | 0        | 0         | 0         | \$ -              |
| PARKED-VEHICLE   | 0        | 0        | 0        | 0        | 0         | 0         | \$ -              |
| FIXED-OBJECT     | 0        | 0        | 0        | 0        | 1         | 1         | \$ 4,000          |
| DRIVEWAY-RELATED | 0        | 0        | 0        | 0        | 0         | 0         | \$ -              |
| HEAD-ON          | 0        | 0        | 1        | 0        | 0         | 1         | \$ 85,000         |
| MISC. OTHER      | 0        | 0        | 0        | 0        | 1         | 1         | \$ 4,000          |
| <b>TOTAL</b>     | <b>0</b> | <b>1</b> | <b>7</b> | <b>7</b> | <b>12</b> | <b>27</b> | <b>\$ 903,000</b> |

| ROAD CONDITIONS |           |     |
|-----------------|-----------|-----|
| DRY             | 22        | 81% |
| WET             | 2         | 7%  |
| SNOW            | 2         | 7%  |
| ICE             | 1         | 4%  |
| OTH.            | 0         | 0%  |
| <b>TOT.</b>     | <b>27</b> |     |

| LIGHT CONDITIONS |           |     |
|------------------|-----------|-----|
| DAY              | 24        | 89% |
| DARK             | 3         | 11% |
| <b>TOT.</b>      | <b>27</b> |     |

| DRIVER BEHAVIOR |   |    |
|-----------------|---|----|
| ALCOHOL         | 0 | 0% |
| DRUGS           | 0 | 0% |
| SPEED           | 2 | 7% |

| SEASON      |           |     |
|-------------|-----------|-----|
| SPRING      | 8         | 30% |
| SUMMER      | 6         | 22% |
| FALL        | 7         | 26% |
| WINTER      | 6         | 22% |
| <b>TOT.</b> | <b>27</b> |     |

| FAILURE TO YIELD |           |     |
|------------------|-----------|-----|
| NB               | 1         | 4%  |
| SB               | 0         | 0%  |
| EB               | 3         | 11% |
| WB               | 12        | 44% |
| TBD              | 0         | 0%  |
| <b>TOT.</b>      | <b>16</b> |     |

| BLOWN CONTROL |          |    |
|---------------|----------|----|
| NB            | 0        | 0% |
| SB            | 0        | 0% |
| EB            | 0        | 0% |
| WB            | 0        | 0% |
| TBD           | 0        | 0% |
| <b>TOT.</b>   | <b>0</b> |    |

| VEHICLE DAMAGE        |           |     |
|-----------------------|-----------|-----|
| OTHER/UNK.            | 0         | 0%  |
| NONE                  | 2         | 4%  |
| VERY MINOR            | 0         | 0%  |
| MINOR                 | 5         | 11% |
| MODERATE              | 12        | 26% |
| SEVERE                | 26        | 55% |
| VERY SEVERE           | 2         | 4%  |
| <b>TOTAL VEHICLES</b> | <b>47</b> |     |

TBD = verification from crash report needed for direction

## DAY/TIME TRENDS

| Daily Time Trends |       |      |      |      |      |      |      |      |      |      |       |       |       |      |      |      |      |      |      |      |      |      |       |       |     |      |      |
|-------------------|-------|------|------|------|------|------|------|------|------|------|-------|-------|-------|------|------|------|------|------|------|------|------|------|-------|-------|-----|------|------|
|                   | 12 AM | 1 AM | 2 AM | 3 AM | 4 AM | 5 AM | 6 AM | 7 AM | 8 AM | 9 AM | 10 AM | 11 AM | 12 PM | 1 PM | 2 PM | 3 PM | 4 PM | 5 PM | 6 PM | 7 PM | 8 PM | 9 PM | 10 PM | 11 PM | UNK |      | TOT. |
| MON               | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 1     | 0     | 0    | 0    | 0    | 0    | 1    | 0    | 0    | 0    | 0    | 0     | 0     | 0   | MON  | 2    |
| TUE               | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 1    | 0    | 1    | 0     | 0     | 1     | 0    | 0    | 0    | 0    | 1    | 0    | 0    | 1    | 0    | 0     | 0     | 0   | TUE  | 5    |
| WED               | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 1    | 0     | 0     | 0     | 0    | 0    | 1    | 0    | 3    | 0    | 0    | 0    | 0    | 0     | 0     | 0   | WED  | 5    |
| THU               | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 2    | 0    | 2     | 0     | 0     | 0    | 0    | 0    | 0    | 0    | 1    | 1    | 0    | 0    | 0     | 0     | 0   | THU  | 6    |
| FRI               | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 1    | 0    | 1     | 1     | 0     | 0    | 0    | 2    | 0    | 2    | 0    | 0    | 0    | 0    | 0     | 0     | 0   | FRI  | 7    |
| SAT               | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0     | 0     | 0    | 0    | 1    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0     | 0   | SAT  | 1    |
| SUN               | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 1     | 0     | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0     | 0   | SUN  | 1    |
|                   | 12 AM | 1 AM | 2 AM | 3 AM | 4 AM | 5 AM | 6 AM | 7 AM | 8 AM | 9 AM | 10 AM | 11 AM | 12 PM | 1 PM | 2 PM | 3 PM | 4 PM | 5 PM | 6 PM | 7 PM | 8 PM | 9 PM | 10 PM | 11 PM | UNK |      | TOT. |
| TOT.              | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 1    | 3    | 2    | 4     | 2     | 1     | 0    | 0    | 4    | 0    | 7    | 1    | 1    | 1    | 0    | 0     | 0     | 0   | TOT. | 27   |

# ISD CALCULATIONS

Performed by: **DJL** Date: **6/19/2020**  
 Location: **CTH F @ Lindsay Road**

Mainline Name: **CTH F**  
 Sidestreet Name: **Lindsay Road**

T-Intersection (1=yes, 0=no): **1**  
 Design Speed from Left: **55 mph** 80.67 fps  
 Design Speed from Right: **55 mph** 80.67 fps  
 Median Width: **30 feet** 2.50 equivalent lanes  
 Near Side Right: **1 lane or taper**  
 Near Side Thru: **2 lane(s)**  
 Far Side Thru: **2 lane(s)**  
 Far Side Right: **1 lane or taper**

Design Vehicles: **P** **SU** **WB**  
**X** **X** **X** (place an "X")

## CASE B1: Left Turn from Minor Street or Median (driver looking right)

|                            | MINIMUM ISD |        |        | DESIRABLE ISD |        |        |
|----------------------------|-------------|--------|--------|---------------|--------|--------|
|                            | P           | SU     | WB     | P             | SU     | WB     |
| Base Time Gap, sec:        | 7.5         | 9.5    | 11.5   | 10.0          | 12.0   | 13.0   |
| Additional Time Gap, sec:  | 0.0         | 3.2    | 3.2    | 0.0           | 3.2    | 3.2    |
| Total Time Gap, sec:       | 7.5         | 12.7   | 14.7   | 10.0          | 15.2   | 16.2   |
| Case B1 ISD, feet:         | 605.0       | 1024.5 | 1185.8 | 806.7         | 1226.1 | 1306.8 |
| Rounded Case B1 ISD, feet: | 610         | 1025   | 1190   | 810           | 1230   | 1310   |

## CASE B2: Right Turn from Minor Street (driver looking left)

|                            | MINIMUM ISD |       |       | DESIRABLE ISD |       |        |
|----------------------------|-------------|-------|-------|---------------|-------|--------|
|                            | P           | SU    | WB    | P             | SU    | WB     |
| Base Time Gap, sec:        | 6.5         | 8.5   | 10.5  | 8.0           | 10.0  | 12.0   |
| Additional Time Gap, sec:  | 0.5         | 0.7   | 0.7   | 0.5           | 0.7   | 0.7    |
| Total Time Gap, sec:       | 7.0         | 9.2   | 11.2  | 8.5           | 10.7  | 12.7   |
| Case B2 ISD, feet:         | 564.7       | 742.1 | 903.5 | 685.7         | 863.1 | 1024.5 |
| Rounded Case B2 ISD, feet: | 565         | 745   | 905   | 690           | 865   | 1025   |

## CASE B3: Crossing from Minor Street (driver looking left)

|                            | MINIMUM ISD |       |       | DESIRABLE ISD |       |        |
|----------------------------|-------------|-------|-------|---------------|-------|--------|
|                            | P           | SU    | WB    | P             | SU    | WB     |
| Base Time Gap, sec:        | 6.5         | 8.5   | 10.5  | 7.0           | 10.0  | 13.0   |
| Additional Time Gap, sec:  | 0.5         | 0.7   | 0.7   | 0.5           | 0.7   | 0.7    |
| Total Time Gap, sec:       | 7.0         | 9.2   | 11.2  | 7.5           | 10.7  | 13.7   |
| Case B3 ISD, feet:         | 564.7       | 742.1 | 903.5 | 605.0         | 863.1 | 1105.1 |
| Rounded Case B3 ISD, feet: | 565         | 745   | 905   | 610           | 865   | 1110   |

## CASE B3: Crossing from Minor Street or Median (driver looking right)

|                            | MINIMUM ISD |      |       | DESIRABLE ISD |       |       |
|----------------------------|-------------|------|-------|---------------|-------|-------|
|                            | P           | SU   | WB    | P             | SU    | WB    |
| Base Time Gap, sec:        | 6.5         | 8.5  | 10.5  | 7.0           | 10.0  | 13.0  |
| Additional Time Gap, sec:  | -6.5        | -8.5 | -10.5 | -7.0          | -10.0 | -13.0 |
| Total Time Gap, sec:       | 0.0         | 0.0  | 0.0   | 0.0           | 0.0   | 0.0   |
| Case B3 ISD, feet:         | 0.0         | 0.0  | 0.0   | 0.0           | 0.0   | 0.0   |
| Rounded Case B3 ISD, feet: | 0           | 0    | 0     | 0             | 0     | 0     |

## CASE F: Left from Major to Minor (driver looking to left of access)

|                           | MINIMUM ISD |       |       | DESIRABLE ISD |       |       |
|---------------------------|-------------|-------|-------|---------------|-------|-------|
|                           | P           | SU    | WB    | P             | SU    | WB    |
| Base Time Gap, sec:       | 5.5         | 6.5   | 7.5   | 8.0           | 8.0   | 8.0   |
| Additional Time Gap, sec: | 1.0         | 1.4   | 1.4   | 1.0           | 1.4   | 1.4   |
| Total Time Gap, sec:      | 6.5         | 7.9   | 8.9   | 9.0           | 9.4   | 9.4   |
| Case F ISD, feet:         | 524.3       | 637.3 | 717.9 | 726.0         | 758.3 | 758.3 |
| Rounded Case F ISD, feet: | 525         | 640   | 720   | 730           | 760   | 760   |

## CONTROLLING DISTANCES:

|                          | MINIMUM ISD |      |      | DESIRABLE ISD |      |      |
|--------------------------|-------------|------|------|---------------|------|------|
|                          | P           | SU   | WB   | P             | SU   | WB   |
| To Left of Access:       | 565         | 745  | 905  | 690           | 865  | 1110 |
| To Right of Access:      | 610         | 1025 | 1190 | 810           | 1230 | 1310 |
| Left-Turn from Mainline: | 525         | 640  | 720  | 730           | 760  | 760  |

NOTES: A median width of 25' or more necessary for two-stage of 19' P-Vehicle  
 A median width of 36' or more necessary for two-stage of 30' SU-Vehicle  
 A median width of 71' or more necessary for two-stage of 65' WB-Vehicle

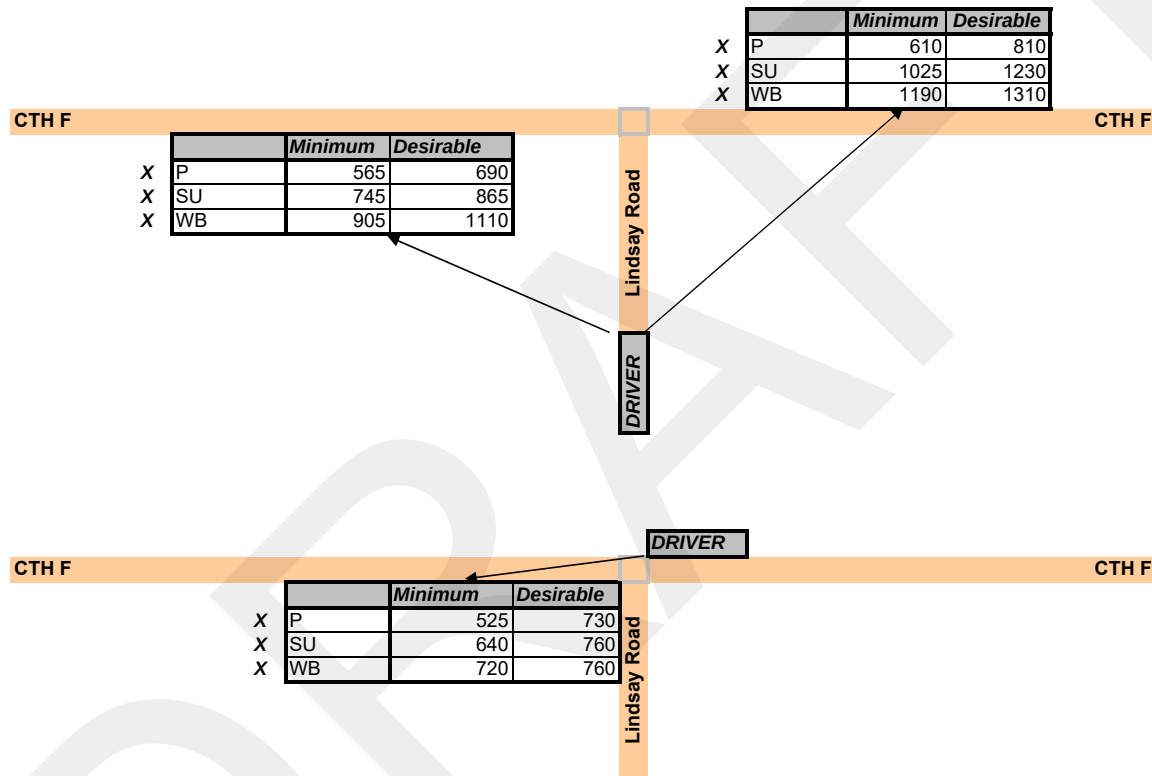


# ISD CALCULATIONS

Performed by: DJL Date: 6/19/2020  
 Location: CTH F @ Lindsay Road  
0

## SPECIAL INSTRUCTIONS:

North towards right of page  
 Check P- and SU- vehicle types.  
 Object Height = 3.5-feet; P-vehicle eye height = 3.5-feet; SU- & WB-vehicle eye height = 7.6-feet.  
 Take pictures 14.4-feet west of the curb-line.  
 Desirable photo distances are necessary; if not met, check distance to where the object is seen. Or move driveway location to the north to meet sight distance.  
 Please note any "blind" areas.



## **Appendix B**

### **Peak Hour Analysis Outputs**

*Year 2020 Background Traffic*



Lanes, Volumes, Timings  
100: CTH F & Lindsay Road

07/27/2020

|                            | ↔    | →     | ↘     | ↙    | ←     | ↖     | ↗     | ↘    | ↙     | ↔     | ↔    | ↔     |
|----------------------------|------|-------|-------|------|-------|-------|-------|------|-------|-------|------|-------|
| Lane Group                 | EBL  | EBT   | EBR   | WBL  | WBT   | WBR   | NBL   | NBT  | NBR   | SBL   | SBT  | SBR   |
| Lane Configurations        |      | ↔     |       |      | ↔     |       | ↔     | ↔    | ↔     | ↔     | ↔    | ↔     |
| Traffic Volume (vph)       | 20   | 30    | 30    | 35   | 15    | 15    | 10    | 975  | 40    | 15    | 1200 | 5     |
| Future Volume (vph)        | 20   | 30    | 30    | 35   | 15    | 15    | 10    | 975  | 40    | 15    | 1200 | 5     |
| Ideal Flow (vphpl)         | 1900 | 1900  | 1900  | 1900 | 1900  | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900  |
| Storage Length (ft)        | 0    | 0     | 0     | 0    | 0     | 0     | 200   | 200  | 200   | 200   | 200  | 200   |
| Storage Lanes              | 0    | 0     | 0     | 0    | 0     | 0     | 1     | 1    | 1     | 1     | 1    | 1     |
| Taper Length (ft)          | 25   |       |       | 25   |       |       | 25    |      |       | 25    |      |       |
| Lane Util. Factor          | 1.00 | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  | 0.95 | 1.00  | 1.00  | 0.95 | 1.00  |
| Frt                        |      | 0.949 |       |      | 0.969 |       |       |      | 0.850 |       |      | 0.850 |
| Flt Protected              |      | 0.988 |       |      | 0.974 |       | 0.950 |      |       | 0.950 |      |       |
| Satd. Flow (prot)          | 0    | 1747  | 0     | 0    | 1708  | 0     | 1671  | 3343 | 1495  | 1656  | 3312 | 1482  |
| Flt Permitted              |      | 0.988 |       |      | 0.974 |       | 0.950 |      |       | 0.950 |      |       |
| Satd. Flow (perm)          | 0    | 1747  | 0     | 0    | 1708  | 0     | 1671  | 3343 | 1495  | 1656  | 3312 | 1482  |
| Link Speed (mph)           |      | 35    |       |      | 35    |       |       | 55   |       |       | 55   |       |
| Link Distance (ft)         |      | 600   |       |      | 600   |       |       | 750  |       |       | 750  |       |
| Travel Time (s)            |      | 11.7  |       |      | 11.7  |       |       | 9.3  |       |       | 9.3  |       |
| Peak Hour Factor           | 0.92 | 0.92  | 0.92  | 0.92 | 0.92  | 0.92  | 0.92  | 0.92 | 0.92  | 0.92  | 0.92 | 0.92  |
| Heavy Vehicles (%)         | 2%   | 2%    | 2%    | 5%   | 5%    | 5%    | 8%    | 8%   | 8%    | 9%    | 9%   | 9%    |
| Adj. Flow (vph)            | 22   | 33    | 33    | 38   | 16    | 16    | 11    | 1060 | 43    | 16    | 1304 | 5     |
| Shared Lane Traffic (%)    |      |       |       |      |       |       |       |      |       |       |      |       |
| Lane Group Flow (vph)      | 0    | 88    | 0     | 0    | 70    | 0     | 11    | 1060 | 43    | 16    | 1304 | 5     |
| Enter Blocked Intersection | No   | No    | No    | No   | No    | No    | No    | No   | No    | No    | No   | No    |
| Lane Alignment             | Left | Left  | Right | Left | Left  | Right | Left  | Left | Right | Left  | Left | Right |
| Median Width(ft)           |      | 0     |       |      | 0     |       |       | 12   |       |       | 12   |       |
| Link Offset(ft)            |      | 0     |       |      | 0     |       |       | 0    |       |       | 0    |       |
| Crosswalk Width(ft)        |      | 16    |       |      | 16    |       |       | 16   |       |       | 16   |       |
| Two way Left Turn Lane     |      |       |       |      |       |       |       |      |       |       |      |       |
| Headway Factor             | 1.00 | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 | 1.00  |
| Turning Speed (mph)        | 15   |       | 9     | 15   |       | 9     | 15    |      | 9     | 15    |      | 9     |
| Sign Control               |      | Stop  |       |      | Stop  |       |       | Free |       |       | Free |       |

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 47.0%

ICU Level of Service A

Analysis Period (min) 15

TADI  
2020 Background AM Peak

Synchro 10 Report  
Page 1

HCM 6th TWSC  
100: CTH F & Lindsay Road

07/27/2020

Intersection

| Int Delay, s/veh         | 3.1  |      |      |      |      |      |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Movement                 | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations      |      | ↔    |      |      | ↔    |      | ↔    | ↔    | ↔    | ↔    | ↔    | ↔    |
| Traffic Vol, veh/h       | 20   | 30   | 30   | 35   | 15   | 15   | 10   | 975  | 40   | 15   | 1200 | 5    |
| Future Vol, veh/h        | 20   | 30   | 30   | 35   | 15   | 15   | 10   | 975  | 40   | 15   | 1200 | 5    |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control             | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized           | -    | -    | None | -    | -    | None | -    | -    | None | -    | -    | None |
| Storage Length           |      | -    | -    | -    | -    | -    | 200  | -    | 200  | 200  | -    | 200  |
| Veh in Median Storage, # | -    | 1    | -    | -    | 1    | -    | 0    | -    | 0    | -    | 0    | -    |
| Grade, %                 | -    | 0    | -    | -    | 0    | -    | 0    | -    | 0    | -    | 0    | -    |
| Peak Hour Factor         | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   |
| Heavy Vehicles, %        | 2    | 2    | 2    | 5    | 5    | 5    | 8    | 8    | 8    | 9    | 9    | 9    |
| Mvmt Flow                | 22   | 33   | 33   | 38   | 16   | 16   | 11   | 1060 | 43   | 16   | 1304 | 5    |

| Major/Minor          | Minor2 | Minor1 | Major1 | Major2 |      |      |      |   |   |      |   |   |
|----------------------|--------|--------|--------|--------|------|------|------|---|---|------|---|---|
| Conflicting Flow All | 1896   | 2461   | 652    | 1783   | 2423 | 530  | 1309 | 0 | 0 | 1103 | 0 | 0 |
| Stage 1              | 1336   | 1336   | -      | 1082   | 1082 | -    | -    | - | - | -    | - | - |
| Stage 2              | 560    | 1125   | -      | 701    | 1341 | -    | -    | - | - | -    | - | - |
| Critical Hdwy        | 7.54   | 6.54   | 6.94   | 7.6    | 6.6  | 7    | 4.26 | - | - | 4.28 | - | - |
| Critical Hdwy Stg 1  | 6.54   | 5.54   | -      | 6.6    | 5.6  | -    | -    | - | - | -    | - | - |
| Critical Hdwy Stg 2  | 6.54   | 5.54   | -      | 6.6    | 5.6  | -    | -    | - | - | -    | - | - |
| Follow-up Hdwy       | 3.52   | 4.02   | 3.32   | 3.55   | 4.05 | 3.35 | 2.28 | - | - | 2.29 | - | - |
| Pot Cap-1 Maneuver   | 42     | ~ 30   | 411    | 50     | 31   | 486  | 494  | - | - | 589  | - | - |
| Stage 1              | 162    | 221    | -      | 227    | 286  | -    | -    | - | - | -    | - | - |
| Stage 2              | 480    | 278    | -      | 389    | 214  | -    | -    | - | - | -    | - | - |
| Platoon blocked, %   |        |        |        |        |      |      |      |   |   |      |   |   |
| Mov Cap-1 Maneuver   | 35     | ~ 29   | 411    | ~ 35   | 30   | 486  | 494  | - | - | 589  | - | - |
| Mov Cap-2 Maneuver   | 117    | 120    | -      | 130    | 119  | -    | -    | - | - | -    | - | - |
| Stage 1              | 158    | 215    | -      | 222    | 280  | -    | -    | - | - | -    | - | - |
| Stage 2              | 427    | 272    | -      | 296    | 208  | -    | -    | - | - | -    | - | - |

| Approach             | EB   | WB   | NB  | SB  |
|----------------------|------|------|-----|-----|
| HCM Control Delay, s | 50.4 | 47.3 | 0.1 | 0.1 |
| HCM LOS              | F    | E    |     |     |

| Minor Lane/Major Mvmt | NBL   | NBT | NBR | EBLn1WBLn1 | SBL   | SBT   | SBR |
|-----------------------|-------|-----|-----|------------|-------|-------|-----|
| Capacity (veh/h)      | 494   | -   | -   | 162        | 153   | 589   | -   |
| HCM Lane V/C Ratio    | 0.022 | -   | -   | 0.537      | 0.462 | 0.028 | -   |
| HCM Control Delay (s) | 12.5  | -   | -   | 50.4       | 47.3  | 11.3  | -   |
| HCM Lane LOS          | B     | -   | -   | F          | E     | B     | -   |
| HCM 95th %tile Q(veh) | 0.1   | -   | -   | 2.7        | 2.1   | 0.1   | -   |

Notes

~: Volume exceeds capacity    \$: Delay exceeds 300s    +: Computation Not Defined    \*: All major volume in platoon

TADI  
2020 Background AM Peak

Synchro 10 Report  
Page 2

Lanes, Volumes, Timings  
100: CTH F & Lindsay Road

07/27/2020

|                            | ↖    | →     | ↗     | ↖    | ↖     | ↖     | ↖     | ↖     | ↖     | ↖     | ↖     | ↖     |
|----------------------------|------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Group                 | EBL  | EBT   | EBR   | WBL  | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations        |      | ↕     |       |      | ↕     |       | ↕     | ↕     | ↕     | ↕     | ↕     | ↕     |
| Traffic Volume (vph)       | 15   | 25    | 25    | 30   | 25    | 35    | 70    | 1550  | 55    | 10    | 1145  | 30    |
| Future Volume (vph)        | 15   | 25    | 25    | 30   | 25    | 35    | 70    | 1550  | 55    | 10    | 1145  | 30    |
| Ideal Flow (vphpl)         | 1900 | 1900  | 1900  | 1900 | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  |
| Storage Length (ft)        | 0    | 0     | 0     | 0    | 0     | 0     | 200   | 200   | 200   | 200   | 200   | 200   |
| Storage Lanes              | 0    | 0     | 0     | 0    | 0     | 0     | 1     | 1     | 1     | 1     | 1     | 1     |
| Taper Length (ft)          | 25   |       |       | 25   |       |       | 25    |       |       | 25    |       |       |
| Lane Util. Factor          | 1.00 | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 0.95  | 1.00  | 1.00  | 0.95  | 1.00  | 1.00  |
| Frt                        |      | 0.948 |       |      | 0.947 |       |       | 0.850 |       |       | 0.850 |       |
| Flt Protected              |      | 0.988 |       |      | 0.984 |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (prot)          | 0    | 1728  | 0     | 0    | 1736  | 0     | 1736  | 3471  | 1553  | 1719  | 3438  | 1538  |
| Flt Permitted              |      | 0.988 |       |      | 0.984 |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (perm)          | 0    | 1728  | 0     | 0    | 1736  | 0     | 1736  | 3471  | 1553  | 1719  | 3438  | 1538  |
| Link Speed (mph)           |      | 35    |       |      | 35    |       |       | 55    |       |       | 55    |       |
| Link Distance (ft)         |      | 600   |       |      | 600   |       |       | 750   |       |       | 750   |       |
| Travel Time (s)            |      | 11.7  |       |      | 11.7  |       |       | 9.3   |       |       | 9.3   |       |
| Peak Hour Factor           | 0.88 | 0.88  | 0.88  | 0.88 | 0.88  | 0.88  | 0.88  | 0.88  | 0.88  | 0.88  | 0.88  | 0.88  |
| Heavy Vehicles (%)         | 3%   | 3%    | 3%    | 2%   | 2%    | 2%    | 4%    | 4%    | 4%    | 5%    | 5%    | 5%    |
| Adj. Flow (vph)            | 17   | 28    | 28    | 34   | 28    | 40    | 80    | 1761  | 63    | 11    | 1301  | 34    |
| Shared Lane Traffic (%)    |      |       |       |      |       |       |       |       |       |       |       |       |
| Lane Group Flow (vph)      | 0    | 73    | 0     | 0    | 102   | 0     | 80    | 1761  | 63    | 11    | 1301  | 34    |
| Enter Blocked Intersection | No   | No    | No    | No   | No    | No    | No    | No    | No    | No    | No    | No    |
| Lane Alignment             | Left | Left  | Right | Left | Left  | Right | Left  | Left  | Right | Left  | Left  | Right |
| Median Width(ft)           |      | 0     |       |      | 0     |       |       | 12    |       |       | 12    |       |
| Link Offset(ft)            |      | 0     |       |      | 0     |       |       | 0     |       |       | 0     |       |
| Crosswalk Width(ft)        |      | 16    |       |      | 16    |       |       | 16    |       |       | 16    |       |
| Two way Left Turn Lane     |      |       |       |      |       |       |       |       |       |       |       |       |
| Headway Factor             | 1.00 | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Turning Speed (mph)        | 15   |       | 9     | 15   |       | 9     | 15    |       | 9     | 15    |       | 9     |
| Sign Control               |      | Stop  |       |      | Stop  |       |       | Free  |       |       | Free  |       |

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 64.1%

ICU Level of Service C

Analysis Period (min) 15

HCM 6th TWSC  
100: CTH F & Lindsay Road

07/27/2020

Intersection

Int Delay, s/veh 14.6

| Movement                 | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations      |      | ↕    |      |      | ↕    |      | ↕    | ↕    | ↕    | ↕    | ↕    | ↕    |
| Traffic Vol, veh/h       | 15   | 25   | 25   | 30   | 25   | 35   | 70   | 1550 | 55   | 10   | 1145 | 30   |
| Future Vol, veh/h        | 15   | 25   | 25   | 30   | 25   | 35   | 70   | 1550 | 55   | 10   | 1145 | 30   |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control             | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized           | -    | -    | None | -    | -    | None | -    | -    | None | -    | -    | None |
| Storage Length           | -    | -    | -    | -    | -    | -    | 200  | -    | 200  | 200  | -    | 200  |
| Veh in Median Storage, # | -    | 1    | -    | -    | 1    | -    | 0    | -    | 0    | -    | 0    | -    |
| Grade, %                 | -    | 0    | -    | -    | 0    | -    | 0    | -    | 0    | -    | 0    | -    |
| Peak Hour Factor         | 88   | 88   | 88   | 88   | 88   | 88   | 88   | 88   | 88   | 88   | 88   | 88   |
| Heavy Vehicles, %        | 3    | 3    | 3    | 2    | 2    | 2    | 4    | 4    | 4    | 5    | 5    | 5    |
| Mvmt Flow                | 17   | 28   | 28   | 34   | 28   | 40   | 80   | 1761 | 63   | 11   | 1301 | 34   |

| Major/Minor          | Minor2 | Minor1 | Major1 | Major2 |      |      |      |   |   |      |   |   |
|----------------------|--------|--------|--------|--------|------|------|------|---|---|------|---|---|
| Conflicting Flow All | 2378   | 3307   | 651    | 2608   | 3278 | 881  | 1335 | 0 | 0 | 1824 | 0 | 0 |
| Stage 1              | 1323   | 1323   | -      | 1921   | 1921 | -    | -    | - | - | -    | - | - |
| Stage 2              | 1055   | 1984   | -      | 687    | 1357 | -    | -    | - | - | -    | - | - |
| Critical Hdwy        | 7.56   | 6.56   | 6.96   | 7.54   | 6.54 | 6.94 | 4.18 | - | - | 4.2  | - | - |
| Critical Hdwy Stg 1  | 6.56   | 5.56   | -      | 6.54   | 5.54 | -    | -    | - | - | -    | - | - |
| Critical Hdwy Stg 2  | 6.56   | 5.56   | -      | 6.54   | 5.54 | -    | -    | - | - | -    | - | - |
| Follow-up Hdwy       | 3.53   | 4.03   | 3.33   | 3.52   | 4.02 | 3.32 | 2.24 | - | - | 2.25 | - | - |
| Pot Cap-1 Maneuver   | 18     | ~ 8    | 409    | ~ 12   | ~ 9  | 290  | 502  | - | - | 319  | - | - |
| Stage 1              | 163    | 222    | -      | 69     | 113  | -    | -    | - | - | -    | - | - |
| Stage 2              | 239    | 104    | -      | 403    | 215  | -    | -    | - | - | -    | - | - |
| Platoon blocked, %   |        |        |        |        |      |      |      |   |   |      |   |   |
| Mov Cap-1 Maneuver   | ~ 8    | ~ 6    | 409    | ~ 6    | ~ 7  | 290  | 502  | - | - | 319  | - | - |
| Mov Cap-2 Maneuver   | 60     | 53     | -      | 44     | 53   | -    | -    | - | - | -    | - | - |
| Stage 1              | 137    | 214    | -      | 58     | 95   | -    | -    | - | - | -    | - | - |
| Stage 2              | 122    | 87     | -      | 314    | 208  | -    | -    | - | - | -    | - | - |

| Approach             | EB    | WB       | NB  | SB  |
|----------------------|-------|----------|-----|-----|
| HCM Control Delay, s | 157.7 | \$ 361.4 | 0.6 | 0.1 |
| HCM LOS              | F     | F        |     |     |

| Minor Lane/Major Mvmt | NBL   | NBT | NBR | EBLn1WBLn1 | SBL   | SBT   | SBR |
|-----------------------|-------|-----|-----|------------|-------|-------|-----|
| Capacity (veh/h)      | 502   | -   | -   | 83         | 71    | 319   | -   |
| HCM Lane V/C Ratio    | 0.158 | -   | -   | 0.89       | 1.44  | 0.036 | -   |
| HCM Control Delay (s) | 13.5  | -   | -   | 157.7      | 361.4 | 16.7  | -   |
| HCM Lane LOS          | B     | -   | -   | F          | F     | C     | -   |
| HCM 95th %tile Q(veh) | 0.6   | -   | -   | 4.7        | 8.4   | 0.1   | -   |

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined \*: All major volume in platoon



## **Appendix C**

### **Improvement**

### **Peak Hour Analysis Outputs**

*Year 2020 (Partial Park Use) Traffic – With Modifications*

*Year 2020 (Full Park Use) Traffic – With Modifications*

*Year 2030 (Partial Park Use) Traffic – With Modifications*

*Year 2030 (Full Park Use) Traffic – With Modifications*

Lanes, Volumes, Timings  
110: CTH F & North Crossover

07/27/2020

|                         | EBL  | EBR  | NBU  | NBL   | NBT  | SBT  | SBR  |
|-------------------------|------|------|------|-------|------|------|------|
| Lane Configurations     |      | ↗    | ↘    | ↖     | ↗    | ↗    |      |
| Traffic Volume (vph)    | 0    | 0    | 0    | 65    | 1065 | 1275 | 0    |
| Future Volume (vph)     | 0    | 0    | 0    | 65    | 1065 | 1275 | 0    |
| Ideal Flow (vphpl)      | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 |
| Storage Length (ft)     | 0    | 0    |      | 200   |      |      | 0    |
| Storage Lanes           | 0    | 1    |      | 2     |      |      | 0    |
| Taper Length (ft)       | 25   |      |      | 25    |      |      |      |
| Lane Util. Factor       | 1.00 | 1.00 | 1.00 | 1.00  | 0.95 | 0.95 | 1.00 |
| Frt                     |      |      |      |       |      |      |      |
| Flt Protected           |      |      |      | 0.950 |      |      |      |
| Satd. Flow (prot)       | 0    | 1863 | 1759 | 1671  | 3343 | 3312 | 0    |
| Flt Permitted           |      |      |      | 0.950 |      |      |      |
| Satd. Flow (perm)       | 0    | 1863 | 1759 | 1671  | 3343 | 3312 | 0    |
| Link Speed (mph)        | 30   |      |      |       | 55   | 55   |      |
| Link Distance (ft)      | 600  |      |      |       | 560  | 500  |      |
| Travel Time (s)         | 13.6 |      |      |       | 6.9  | 6.2  |      |
| Peak Hour Factor        | 0.92 | 0.92 | 0.92 | 0.92  | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%)      | 2%   | 2%   | 8%   | 8%    | 8%   | 9%   | 9%   |
| Adj. Flow (vph)         | 0    | 0    | 0    | 71    | 1158 | 1386 | 0    |
| Shared Lane Traffic (%) |      |      |      |       |      |      |      |
| Lane Group Flow (vph)   | 0    | 0    | 0    | 71    | 1158 | 1386 | 0    |

Intersection Summary

Area Type: Other

HCM 6th TWSC  
110: CTH F & North Crossover

07/27/2020

| Intersection             |      |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|------|
| Int Delay, s/veh         | 0.4  |      |      |      |      |      |      |
| Movement                 | EBL  | EBR  | NBU  | NBL  | NBT  | SBT  | SBR  |
| Lane Configurations      |      | ↗    | ↘    | ↖    | ↗    | ↗    |      |
| Traffic Vol, veh/h       | 0    | 0    | 0    | 65   | 1065 | 1275 | 0    |
| Future Vol, veh/h        | 0    | 0    | 0    | 65   | 1065 | 1275 | 0    |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control             | Stop | Stop | Free | Free | Free | Free | Free |
| RT Channelized           | -    | Free | -    | -    | None | -    | None |
| Storage Length           | -    | 0    | -    | 200  | -    | -    | -    |
| Veh in Median Storage, # | 1    | -    | -    | -    | 0    | 0    | -    |
| Grade, %                 | 0    | -    | -    | -    | 0    | 0    | -    |
| Peak Hour Factor         | 92   | 92   | 92   | 92   | 92   | 92   | 92   |
| Heavy Vehicles, %        | 2    | 2    | 8    | 8    | 8    | 9    | 9    |
| Mvmt Flow                | 0    | 0    | 0    | 71   | 1158 | 1386 | 0    |

| Major/Minor          | Minor2 | Major1 | Major2          |
|----------------------|--------|--------|-----------------|
| Conflicting Flow All | -      | -      | 1386 1386 0 - 0 |
| Stage 1              | -      | -      | - - -           |
| Stage 2              | -      | -      | - - -           |
| Critical Hdwy        | -      | -      | 6.56 4.26 - - - |
| Critical Hdwy Stg 1  | -      | -      | - - -           |
| Critical Hdwy Stg 2  | -      | -      | - - -           |
| Follow-up Hdwy       | -      | -      | 2.58 2.28 - - - |
| Pot Cap-1 Maneuver   | 0      | 0      | 176 460 - - 0   |
| Stage 1              | 0      | 0      | - - - 0         |
| Stage 2              | 0      | 0      | - - - 0         |
| Platoon blocked, %   |        |        | - -             |
| Mov Cap-1 Maneuver   | -      | -      | 176 460 - - -   |
| Mov Cap-2 Maneuver   | -      | -      | - - -           |
| Stage 1              | -      | -      | - - -           |
| Stage 2              | -      | -      | - - -           |

| Approach             | EB | NB  | SB |
|----------------------|----|-----|----|
| HCM Control Delay, s | 0  | 0.8 | 0  |
| HCM LOS              | A  |     |    |

| Minor Lane/Major Mvmt | NBU | NBL   | NBT EBLn1 | SBT |
|-----------------------|-----|-------|-----------|-----|
| Capacity (veh/h)      | 176 | 460   | - - -     | -   |
| HCM Lane V/C Ratio    | -   | 0.154 | - - -     | -   |
| HCM Control Delay (s) | 0   | 14.2  | - 0 -     | -   |
| HCM Lane LOS          | A   | B     | - A -     | -   |
| HCM 95th %tile Q(veh) | 0   | 0.5   | - - -     | -   |



Lanes, Volumes, Timings  
120: CTH F & South Crossover

07/27/2020

|                         | WBL  | WBR  | NBT  | NBR  | SBU  | SBL   | SBT  |
|-------------------------|------|------|------|------|------|-------|------|
| Lane Configurations     |      | ↑↑   | ↑↑   |      | ↓    | ↓     | ↑↑   |
| Traffic Volume (vph)    | 0    | 0    | 1095 | 0    | 0    | 100   | 1310 |
| Future Volume (vph)     | 0    | 0    | 1095 | 0    | 0    | 100   | 1310 |
| Ideal Flow (vphpl)      | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Storage Length (ft)     | 0    | 0    |      | 0    |      | 200   |      |
| Storage Lanes           | 0    | 1    |      | 0    |      | 2     |      |
| Taper Length (ft)       | 25   |      |      |      |      | 25    |      |
| Lane Util. Factor       | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00  | 0.95 |
| Fr                      |      |      |      |      |      |       |      |
| Flt Protected           |      |      |      |      |      | 0.950 |      |
| Satd. Flow (prot)       | 0    | 1863 | 3343 | 0    | 1743 | 1656  | 3312 |
| Flt Permitted           |      |      |      |      |      | 0.950 |      |
| Satd. Flow (perm)       | 0    | 1863 | 3343 | 0    | 1743 | 1656  | 3312 |
| Link Speed (mph)        | 30   |      | 55   |      |      |       | 55   |
| Link Distance (ft)      | 600  |      | 500  |      |      |       | 790  |
| Travel Time (s)         | 13.6 |      | 6.2  |      |      |       | 9.8  |
| Peak Hour Factor        | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92  | 0.92 |
| Heavy Vehicles (%)      | 2%   | 2%   | 8%   | 8%   | 9%   | 9%    | 9%   |
| Adj. Flow (vph)         | 0    | 0    | 1190 | 0    | 0    | 109   | 1424 |
| Shared Lane Traffic (%) |      |      |      |      |      |       |      |
| Lane Group Flow (vph)   | 0    | 0    | 1190 | 0    | 0    | 109   | 1424 |

Intersection Summary

Area Type: Other

HCM 6th TWSC  
120: CTH F & South Crossover

07/27/2020

|                          |      |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|------|
| Intersection             |      |      |      |      |      |      |      |
| Int Delay, s/veh         | 0.5  |      |      |      |      |      |      |
| Movement                 | WBL  | WBR  | NBT  | NBR  | SBU  | SBL  | SBT  |
| Lane Configurations      |      | ↑↑   | ↑↑   |      | ↓    | ↓    | ↑↑   |
| Traffic Vol, veh/h       | 0    | 0    | 1095 | 0    | 0    | 100  | 1310 |
| Future Vol, veh/h        | 0    | 0    | 1095 | 0    | 0    | 100  | 1310 |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control             | Stop | Stop | Free | Free | Free | Free | Free |
| RT Channelized           | -    | Free | -    | None | -    | -    | None |
| Storage Length           | -    | 0    | -    | -    | -    | 200  | -    |
| Veh in Median Storage, # | 1    | -    | 0    | -    | -    | -    | 0    |
| Grade, %                 | 0    | -    | 0    | -    | -    | -    | 0    |
| Peak Hour Factor         | 92   | 92   | 92   | 92   | 92   | 92   | 92   |
| Heavy Vehicles, %        | 2    | 2    | 8    | 8    | 9    | 9    | 9    |
| Mvmt Flow                | 0    | 0    | 1190 | 0    | 0    | 109  | 1424 |

|                      |        |        |        |   |      |      |   |
|----------------------|--------|--------|--------|---|------|------|---|
| Major/Minor          | Minor1 | Major1 | Major2 |   |      |      |   |
| Conflicting Flow All | -      | -      | 0      | - | 1190 | 1190 | 0 |
| Stage 1              | -      | -      | -      | - | -    | -    | - |
| Stage 2              | -      | -      | -      | - | -    | -    | - |
| Critical Hdwy        | -      | -      | -      | - | 6.58 | 4.28 | - |
| Critical Hdwy Stg 1  | -      | -      | -      | - | -    | -    | - |
| Critical Hdwy Stg 2  | -      | -      | -      | - | -    | -    | - |
| Follow-up Hdwy       | -      | -      | -      | - | 2.59 | 2.29 | - |
| Pot Cap-1 Maneuver   | 0      | 0      | -      | 0 | 235  | 545  | - |
| Stage 1              | 0      | 0      | -      | 0 | -    | -    | - |
| Stage 2              | 0      | 0      | -      | 0 | -    | -    | - |
| Platoon blocked, %   | -      | -      | -      | - | -    | -    | - |
| Mov Cap-1 Maneuver   | -      | -      | -      | - | 235  | 545  | - |
| Mov Cap-2 Maneuver   | -      | -      | -      | - | -    | -    | - |
| Stage 1              | -      | -      | -      | - | -    | -    | - |
| Stage 2              | -      | -      | -      | - | -    | -    | - |

|                      |    |    |     |
|----------------------|----|----|-----|
| Approach             | WB | NB | SB  |
| HCM Control Delay, s | 0  | 0  | 0.9 |
| HCM LOS              | A  |    |     |

|                       |          |     |       |      |
|-----------------------|----------|-----|-------|------|
| Minor Lane/Major Mvmt | NBTWBLn1 | SBU | SBL   | SBT  |
| Capacity (veh/h)      | -        | -   | 235   | 545  |
| HCM Lane V/C Ratio    | -        | -   | 0.199 | -    |
| HCM Control Delay (s) | -        | 0   | 0     | 13.2 |
| HCM Lane LOS          | -        | A   | A     | B    |
| HCM 95th %tile Q(veh) | -        | -   | 0     | 0.7  |

Lanes, Volumes, Timings  
130: CTH F & Lindsay Road

07/27/2020

|                         | ↖    | →    | ↗     | ↖    | ←    | ↖     | ↖     | ↖    | ↖     | ↖     | ↖     | ↖    |
|-------------------------|------|------|-------|------|------|-------|-------|------|-------|-------|-------|------|
| Lane Group              | EBL  | EBT  | EBR   | WBL  | WBT  | WBR   | NBL   | NBT  | NBR   | SBL   | SBT   | SBR  |
| Lane Configurations     |      |      | ↖     |      |      | ↖     | ↖     | ↖    | ↖     | ↖     | ↖     | ↖    |
| Traffic Volume (vph)    | 0    | 0    | 160   | 0    | 0    | 65    | 20    | 1035 | 140   | 50    | 1250  | 40   |
| Future Volume (vph)     | 0    | 0    | 160   | 0    | 0    | 65    | 20    | 1035 | 140   | 50    | 1250  | 40   |
| Ideal Flow (vphpl)      | 1900 | 1900 | 1900  | 1900 | 1900 | 1900  | 1900  | 1900 | 1900  | 1900  | 1900  | 1900 |
| Storage Length (ft)     | 0    | 0    | 0     | 0    | 0    | 0     | 200   | 200  | 200   | 200   | 200   | 200  |
| Storage Lanes           | 0    | 0    | 1     | 0    | 0    | 1     | 1     | 1    | 1     | 1     | 1     | 1    |
| Taper Length (ft)       | 25   |      |       | 25   |      |       | 25    |      |       | 25    |       |      |
| Lane Util. Factor       | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 0.95 | 1.00  | 1.00  | 0.95  | 1.00 |
| Frt                     |      |      | 0.865 |      |      | 0.865 |       |      | 0.850 |       | 0.850 |      |
| Flt Protected           |      |      |       |      |      |       | 0.950 |      |       | 0.950 |       |      |
| Satd. Flow (prot)       | 0    | 0    | 1611  | 0    | 0    | 1565  | 1671  | 3343 | 1495  | 1656  | 3312  | 1482 |
| Flt Permitted           |      |      |       |      |      |       | 0.950 |      |       | 0.950 |       |      |
| Satd. Flow (perm)       | 0    | 0    | 1611  | 0    | 0    | 1565  | 1671  | 3343 | 1495  | 1656  | 3312  | 1482 |
| Link Speed (mph)        |      | 35   |       |      | 35   |       |       | 55   |       |       | 55    |      |
| Link Distance (ft)      |      | 600  |       |      | 600  |       |       | 710  |       |       | 940   |      |
| Travel Time (s)         |      | 11.7 |       |      | 11.7 |       |       | 8.8  |       |       | 11.7  |      |
| Peak Hour Factor        | 0.92 | 0.92 | 0.92  | 0.92 | 0.92 | 0.92  | 0.92  | 0.92 | 0.92  | 0.92  | 0.92  | 0.92 |
| Heavy Vehicles (%)      | 2%   | 2%   | 2%    | 5%   | 5%   | 5%    | 8%    | 8%   | 8%    | 9%    | 9%    | 9%   |
| Adj. Flow (vph)         | 0    | 0    | 174   | 0    | 0    | 71    | 22    | 1125 | 152   | 54    | 1359  | 43   |
| Shared Lane Traffic (%) |      |      |       |      |      |       |       |      |       |       |       |      |
| Lane Group Flow (vph)   | 0    | 0    | 174   | 0    | 0    | 71    | 22    | 1125 | 152   | 54    | 1359  | 43   |

Intersection Summary

Area Type: Other

Description: design has dual WBR lanes;

veh heading north to use outer freeflow R-turn lane (30 veh);

veh heading west/south to use inner stop-controlled R-turn lane (65 veh);

model only shows inner stop-controlled lane

HCM 6th TWSC  
130: CTH F & Lindsay Road

07/27/2020

Intersection

Int Delay, s/veh 1.8

| Movement                 | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR   | SBL  | SBT  | SBR   |
|--------------------------|------|------|------|------|------|------|------|------|-------|------|------|-------|
| Lane Configurations      |      |      | ↖    |      |      | ↖    | ↖    | ↖    | ↖     | ↖    | ↖    | ↖     |
| Traffic Vol, veh/h       | 0    | 0    | 160  | 0    | 0    | 65   | 20   | 1035 | 140   | 50   | 1250 | 40    |
| Future Vol, veh/h        | 0    | 0    | 160  | 0    | 0    | 65   | 20   | 1035 | 140   | 50   | 1250 | 40    |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0     |
| Sign Control             | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free  | Free | Free | Free  |
| RT Channelized           | -    | -    | None | -    | -    | None | -    | -    | Yield | -    | -    | Yield |
| Storage Length           | -    | -    | 0    | -    | -    | 0    | 200  | -    | 200   | 200  | -    | 200   |
| Veh in Median Storage, # | -    | 1    | -    | -    | 1    | -    | 0    | -    | 0     | -    | 0    | -     |
| Grade, %                 | -    | 0    | -    | -    | 0    | -    | -    | 0    | -     | -    | 0    | -     |
| Peak Hour Factor         | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92    | 92   | 92   | 92    |
| Heavy Vehicles, %        | 2    | 2    | 2    | 5    | 5    | 5    | 8    | 8    | 8     | 9    | 9    | 9     |
| Mvmt Flow                | 0    | 0    | 174  | 0    | 0    | 71   | 22   | 1125 | 152   | 54   | 1359 | 43    |

| Major/Minor          | Minor2 |   | Minor1 |   | Major1 |      |      | Major2 |   |      |   |   |
|----------------------|--------|---|--------|---|--------|------|------|--------|---|------|---|---|
| Conflicting Flow All | -      | - | 680    | - | -      | 563  | 1359 | 0      | 0 | 1125 | 0 | 0 |
| Stage 1              | -      | - | -      | - | -      | -    | -    | -      | - | -    | - | - |
| Stage 2              | -      | - | -      | - | -      | -    | -    | -      | - | -    | - | - |
| Critical Hdwy        | -      | - | 6.94   | - | -      | 7    | 4.26 | -      | - | 4.28 | - | - |
| Critical Hdwy Stg 1  | -      | - | -      | - | -      | -    | -    | -      | - | -    | - | - |
| Critical Hdwy Stg 2  | -      | - | -      | - | -      | -    | -    | -      | - | -    | - | - |
| Follow-up Hdwy       | -      | - | 3.32   | - | -      | 3.35 | 2.28 | -      | - | 2.29 | - | - |
| Pot Cap-1 Maneuver   | 0      | 0 | 393    | 0 | 0      | 462  | 472  | -      | - | 578  | - | - |
| Stage 1              | 0      | 0 | -      | 0 | 0      | -    | -    | -      | - | -    | - | - |
| Stage 2              | 0      | 0 | -      | 0 | 0      | -    | -    | -      | - | -    | - | - |
| Platoon blocked, %   | -      | - | -      | - | -      | -    | -    | -      | - | -    | - | - |
| Mov Cap-1 Maneuver   | -      | - | 393    | - | -      | 462  | 472  | -      | - | 578  | - | - |
| Mov Cap-2 Maneuver   | -      | - | -      | - | -      | -    | -    | -      | - | -    | - | - |
| Stage 1              | -      | - | -      | - | -      | -    | -    | -      | - | -    | - | - |
| Stage 2              | -      | - | -      | - | -      | -    | -    | -      | - | -    | - | - |

| Approach             | EB   | WB   | NB  | SB  |
|----------------------|------|------|-----|-----|
| HCM Control Delay, s | 21.2 | 14.2 | 0.2 | 0.4 |
| HCM LOS              | C    | B    |     |     |

| Minor Lane/Major Mvmt | NBL   | NBT | NBR | EBLn1 | WBLn1 | SBL   | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|-------|-----|-----|
| Capacity (veh/h)      | 472   | -   | -   | 393   | 462   | 578   | -   | -   |
| HCM Lane V/C Ratio    | 0.046 | -   | -   | 0.443 | 0.153 | 0.094 | -   | -   |
| HCM Control Delay (s) | 13    | -   | -   | 21.2  | 14.2  | 11.9  | -   | -   |
| HCM Lane LOS          | B     | -   | -   | C     | B     | B     | -   | -   |
| HCM 95th %tile Q(veh) | 0.1   | -   | -   | 2.2   | 0.5   | 0.3   | -   | -   |



Lanes, Volumes, Timings  
110: CTH F & North Crossover

07/27/2020

|                         | EBL  | EBR  | NBU  | NBL   | NBT  | SBT  | SBR  |
|-------------------------|------|------|------|-------|------|------|------|
| Lane Configurations     |      | ↗    | ↘    | ↖     | ↗↗   | ↗↗   |      |
| Traffic Volume (vph)    | 0    | 0    | 0    | 110   | 1660 | 1265 | 0    |
| Future Volume (vph)     | 0    | 0    | 0    | 110   | 1660 | 1265 | 0    |
| Ideal Flow (vphpl)      | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 |
| Storage Length (ft)     | 0    | 0    |      | 200   |      |      | 0    |
| Storage Lanes           | 0    | 1    |      | 2     |      |      | 0    |
| Taper Length (ft)       | 25   |      |      | 25    |      |      |      |
| Lane Util. Factor       | 1.00 | 1.00 | 1.00 | 1.00  | 0.95 | 0.95 | 1.00 |
| Frt                     |      |      |      |       |      |      |      |
| Flt Protected           |      |      |      | 0.950 |      |      |      |
| Satd. Flow (prot)       | 0    | 1863 | 1827 | 1736  | 3471 | 3438 | 0    |
| Flt Permitted           |      |      |      | 0.950 |      |      |      |
| Satd. Flow (perm)       | 0    | 1863 | 1827 | 1736  | 3471 | 3438 | 0    |
| Link Speed (mph)        | 30   |      |      |       | 55   | 55   |      |
| Link Distance (ft)      | 600  |      |      |       | 610  | 500  |      |
| Travel Time (s)         | 13.6 |      |      |       | 7.6  | 6.2  |      |
| Peak Hour Factor        | 0.88 | 0.88 | 0.88 | 0.88  | 0.88 | 0.88 | 0.88 |
| Heavy Vehicles (%)      | 2%   | 2%   | 4%   | 4%    | 4%   | 5%   | 5%   |
| Adj. Flow (vph)         | 0    | 0    | 0    | 125   | 1886 | 1438 | 0    |
| Shared Lane Traffic (%) |      |      |      |       |      |      |      |
| Lane Group Flow (vph)   | 0    | 0    | 0    | 125   | 1886 | 1438 | 0    |

Intersection Summary

Area Type: Other

HCM 6th TWSC  
110: CTH F & North Crossover

07/27/2020

| Intersection             |      |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|------|
| Int Delay, s/veh         | 0.6  |      |      |      |      |      |      |
| Movement                 | EBL  | EBR  | NBU  | NBL  | NBT  | SBT  | SBR  |
| Lane Configurations      |      | ↗    | ↘    | ↖    | ↗↗   | ↗↗   |      |
| Traffic Vol, veh/h       | 0    | 0    | 0    | 110  | 1660 | 1265 | 0    |
| Future Vol, veh/h        | 0    | 0    | 0    | 110  | 1660 | 1265 | 0    |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control             | Stop | Stop | Free | Free | Free | Free | Free |
| RT Channelized           | -    | Free | -    | -    | None | -    | None |
| Storage Length           | -    | 0    | -    | 200  | -    | -    | -    |
| Veh in Median Storage, # | 1    | -    | -    | -    | 0    | 0    | -    |
| Grade, %                 | 0    | -    | -    | -    | 0    | 0    | -    |
| Peak Hour Factor         | 88   | 88   | 88   | 88   | 88   | 88   | 88   |
| Heavy Vehicles, %        | 2    | 2    | 4    | 4    | 4    | 5    | 5    |
| Mvmt Flow                | 0    | 0    | 0    | 125  | 1886 | 1438 | 0    |

| Major/Minor          | Minor2 | Major1 | Major2     |
|----------------------|--------|--------|------------|
| Conflicting Flow All | -      | - 1438 | 1438 0 - 0 |
| Stage 1              | -      | - -    | - - -      |
| Stage 2              | -      | - -    | - - -      |
| Critical Hdwy        | -      | - 6.48 | 4.18 - - - |
| Critical Hdwy Stg 1  | -      | - -    | - - -      |
| Critical Hdwy Stg 2  | -      | - -    | - - -      |
| Follow-up Hdwy       | -      | - 2.54 | 2.24 - - - |
| Pot Cap-1 Maneuver   | 0      | 0 170  | 458 - - 0  |
| Stage 1              | 0      | 0 -    | - - - 0    |
| Stage 2              | 0      | 0 -    | - - - 0    |
| Platoon blocked, %   |        |        | - -        |
| Mov Cap-1 Maneuver   | -      | - 170  | 458 - - -  |
| Mov Cap-2 Maneuver   | -      | - -    | - - -      |
| Stage 1              | -      | - -    | - - -      |
| Stage 2              | -      | - -    | - - -      |

| Approach             | EB | NB | SB |
|----------------------|----|----|----|
| HCM Control Delay, s | 0  | 1  | 0  |
| HCM LOS              | A  |    |    |

| Minor Lane/Major Mvmt | NBU | NBL   | NBT EBLn1 | SBT |
|-----------------------|-----|-------|-----------|-----|
| Capacity (veh/h)      | 170 | 458   | - - -     | -   |
| HCM Lane V/C Ratio    | -   | 0.273 | - - -     | -   |
| HCM Control Delay (s) | 0   | 15.8  | - 0 -     | -   |
| HCM Lane LOS          | A   | C     | - A -     | -   |
| HCM 95th %tile Q(veh) | 0   | 1.1   | - - -     | -   |

Lanes, Volumes, Timings  
120: CTH F & South Crossover

07/27/2020

|                         | WBL  | WBR  | NBT  | NBR  | SBU  | SBL   | SBT  |
|-------------------------|------|------|------|------|------|-------|------|
| Lane Configurations     |      | ↑↑   | ↑↑   |      | ↓    | ↓     | ↑↑   |
| Traffic Volume (vph)    | 0    | 0    | 1755 | 0    | 0    | 70    | 1270 |
| Future Volume (vph)     | 0    | 0    | 1755 | 0    | 0    | 70    | 1270 |
| Ideal Flow (vphpl)      | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Storage Length (ft)     | 0    | 0    |      | 0    |      | 200   |      |
| Storage Lanes           | 0    | 1    |      | 0    |      | 2     |      |
| Taper Length (ft)       | 25   |      |      |      |      | 25    |      |
| Lane Util. Factor       | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00  | 0.95 |
| Flt Protected           |      |      |      |      |      | 0.950 |      |
| Satd. Flow (prot)       | 0    | 1863 | 3471 | 0    | 1810 | 1719  | 3438 |
| Flt Permitted           |      |      |      |      |      | 0.950 |      |
| Satd. Flow (perm)       | 0    | 1863 | 3471 | 0    | 1810 | 1719  | 3438 |
| Link Speed (mph)        | 30   |      | 55   |      |      |       | 55   |
| Link Distance (ft)      | 600  |      | 500  |      |      |       | 810  |
| Travel Time (s)         | 13.6 |      | 6.2  |      |      |       | 10.0 |
| Peak Hour Factor        | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88  | 0.88 |
| Heavy Vehicles (%)      | 2%   | 2%   | 4%   | 4%   | 5%   | 5%    | 5%   |
| Adj. Flow (vph)         | 0    | 0    | 1994 | 0    | 0    | 80    | 1443 |
| Shared Lane Traffic (%) |      |      |      |      |      |       |      |
| Lane Group Flow (vph)   | 0    | 0    | 1994 | 0    | 0    | 80    | 1443 |

Intersection Summary

Area Type: Other

HCM 6th TWSC  
120: CTH F & South Crossover

07/27/2020

| Intersection             |      |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|------|
| Int Delay, s/veh         | 0.5  |      |      |      |      |      |      |
| Movement                 | WBL  | WBR  | NBT  | NBR  | SBU  | SBL  | SBT  |
| Lane Configurations      |      | ↑↑   | ↑↑   |      | ↓    | ↓    | ↑↑   |
| Traffic Vol, veh/h       | 0    | 0    | 1755 | 0    | 0    | 70   | 1270 |
| Future Vol, veh/h        | 0    | 0    | 1755 | 0    | 0    | 70   | 1270 |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control             | Stop | Stop | Free | Free | Free | Free | Free |
| RT Channelized           | -    | Free | -    | None | -    | -    | None |
| Storage Length           | -    | 0    | -    | -    | -    | 200  | -    |
| Veh in Median Storage, # | 1    | -    | 0    | -    | -    | -    | 0    |
| Grade, %                 | 0    | -    | 0    | -    | -    | -    | 0    |
| Peak Hour Factor         | 88   | 88   | 88   | 88   | 88   | 88   | 88   |
| Heavy Vehicles, %        | 2    | 2    | 4    | 4    | 5    | 5    | 5    |
| Mvmt Flow                | 0    | 0    | 1994 | 0    | 0    | 80   | 1443 |

| Major/Minor          | Minor1 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | -      | -      | 0      |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |
| Critical Hdwy        | -      | -      | 6.5    |
| Critical Hdwy Stg 1  | -      | -      | -      |
| Critical Hdwy Stg 2  | -      | -      | -      |
| Follow-up Hdwy       | -      | -      | 2.55   |
| Pot Cap-1 Maneuver   | 0      | 0      | 72     |
| Stage 1              | 0      | 0      | -      |
| Stage 2              | 0      | 0      | -      |
| Platoon blocked, %   | -      | -      | -      |
| Mov Cap-1 Maneuver   | -      | -      | 72     |
| Mov Cap-2 Maneuver   | -      | -      | -      |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |

| Approach             | WB | NB | SB  |
|----------------------|----|----|-----|
| HCM Control Delay, s | 0  | 0  | 1.2 |
| HCM LOS              | A  |    |     |

| Minor Lane/Major Mvmt | NBTWBLn1 | SBU | SBL   | SBT |
|-----------------------|----------|-----|-------|-----|
| Capacity (veh/h)      | -        | 72  | 273   | -   |
| HCM Lane V/C Ratio    | -        | -   | 0.291 | -   |
| HCM Control Delay (s) | -        | 0   | 23.5  | -   |
| HCM Lane LOS          | -        | A   | C     | -   |
| HCM 95th %tile Q(veh) | -        | 0   | 1.2   | -   |



Lanes, Volumes, Timings  
130: CTH F & Lindsay Road

07/27/2020

|                         | ↗    | →    | ↘     | ↖    | ←    | ↙     | ↘     | ↖    | ↗     | ↘     | ↖    | ↗     |
|-------------------------|------|------|-------|------|------|-------|-------|------|-------|-------|------|-------|
| Lane Group              | EBL  | EBT  | EBR   | WBL  | WBT  | WBR   | NBL   | NBT  | NBR   | SBL   | SBT  | SBR   |
| Lane Configurations     |      |      | ↗     |      |      | ↗     | ↗     | ↗    | ↗     | ↗     | ↗    | ↗     |
| Traffic Volume (vph)    | 0    | 0    | 120   | 0    | 0    | 110   | 115   | 1590 | 120   | 35    | 1220 | 120   |
| Future Volume (vph)     | 0    | 0    | 120   | 0    | 0    | 110   | 115   | 1590 | 120   | 35    | 1220 | 120   |
| Ideal Flow (vphpl)      | 1900 | 1900 | 1900  | 1900 | 1900 | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900  |
| Storage Length (ft)     | 0    | 0    | 0     | 0    | 0    | 0     | 200   | 200  | 200   | 200   | 200  | 200   |
| Storage Lanes           | 0    | 1    | 0     | 0    | 1    | 1     | 1     | 1    | 1     | 1     | 1    | 1     |
| Taper Length (ft)       | 25   |      |       | 25   |      |       | 25    |      |       | 25    |      |       |
| Lane Util. Factor       | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 0.95 | 1.00  | 1.00  | 0.95 | 1.00  |
| Frt                     |      |      | 0.865 |      |      | 0.865 |       |      | 0.850 |       |      | 0.850 |
| Flt Protected           |      |      |       |      |      |       | 0.950 |      |       | 0.950 |      |       |
| Satd. Flow (prot)       | 0    | 0    | 1596  | 0    | 0    | 1611  | 1736  | 3471 | 1553  | 1719  | 3438 | 1538  |
| Flt Permitted           |      |      |       |      |      |       | 0.950 |      |       | 0.950 |      |       |
| Satd. Flow (perm)       | 0    | 0    | 1596  | 0    | 0    | 1611  | 1736  | 3471 | 1553  | 1719  | 3438 | 1538  |
| Link Speed (mph)        |      | 35   |       |      | 35   |       |       | 55   |       |       | 55   |       |
| Link Distance (ft)      |      | 600  |       |      | 600  |       |       | 690  |       |       | 890  |       |
| Travel Time (s)         |      | 11.7 |       |      | 11.7 |       |       | 8.6  |       |       | 11.0 |       |
| Peak Hour Factor        | 0.88 | 0.88 | 0.88  | 0.88 | 0.88 | 0.88  | 0.88  | 0.88 | 0.88  | 0.88  | 0.88 | 0.88  |
| Heavy Vehicles (%)      | 3%   | 3%   | 3%    | 2%   | 2%   | 2%    | 4%    | 4%   | 4%    | 5%    | 5%   | 5%    |
| Adj. Flow (vph)         | 0    | 0    | 136   | 0    | 0    | 125   | 131   | 1807 | 136   | 40    | 1386 | 136   |
| Shared Lane Traffic (%) |      |      |       |      |      |       |       |      |       |       |      |       |
| Lane Group Flow (vph)   | 0    | 0    | 136   | 0    | 0    | 125   | 131   | 1807 | 136   | 40    | 1386 | 136   |

Intersection Summary

Area Type: Other

Description: design has dual WBR lanes;

veh heading north to use outer freeflow R-turn lane (70 veh);

veh heading west/south to use inner stop-controlled R-turn lane (110 veh);

model only shows inner stop-controlled lane

HCM 6th TWSC  
130: CTH F & Lindsay Road

07/27/2020

Intersection

Int Delay, s/veh 2.3

| Movement                 | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR   | SBL  | SBT  | SBR   |
|--------------------------|------|------|------|------|------|------|------|------|-------|------|------|-------|
| Lane Configurations      |      |      | ↗    |      |      | ↗    | ↗    | ↗    | ↗     | ↗    | ↗    | ↗     |
| Traffic Vol, veh/h       | 0    | 0    | 120  | 0    | 0    | 110  | 115  | 1590 | 120   | 35   | 1220 | 120   |
| Future Vol, veh/h        | 0    | 0    | 120  | 0    | 0    | 110  | 115  | 1590 | 120   | 35   | 1220 | 120   |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0     |
| Sign Control             | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free  | Free | Free | Free  |
| RT Channelized           | -    | -    | None | -    | -    | None | -    | -    | Yield | -    | -    | Yield |
| Storage Length           | -    | -    | 0    | -    | -    | 0    | 200  | -    | 200   | 200  | -    | 200   |
| Veh in Median Storage, # | -    | 1    | -    | -    | 1    | -    | 0    | -    | 0     | -    | 0    | -     |
| Grade, %                 | -    | 0    | -    | -    | 0    | -    | 0    | -    | 0     | -    | 0    | -     |
| Peak Hour Factor         | 88   | 88   | 88   | 88   | 88   | 88   | 88   | 88   | 88    | 88   | 88   | 88    |
| Heavy Vehicles, %        | 3    | 3    | 3    | 2    | 2    | 2    | 4    | 4    | 4     | 5    | 5    | 5     |
| Mvmt Flow                | 0    | 0    | 136  | 0    | 0    | 125  | 131  | 1807 | 136   | 40   | 1386 | 136   |

| Major/Minor          | Minor2 |   | Minor1 |   | Major1 |      | Major2 |   |   |      |   |   |
|----------------------|--------|---|--------|---|--------|------|--------|---|---|------|---|---|
| Conflicting Flow All | -      | - | 693    | - | -      | 904  | 1386   | 0 | 0 | 1807 | 0 | 0 |
| Stage 1              | -      | - | -      | - | -      | -    | -      | - | - | -    | - | - |
| Stage 2              | -      | - | -      | - | -      | -    | -      | - | - | -    | - | - |
| Critical Hdwy        | -      | - | 6.96   | - | -      | 6.94 | 4.18   | - | - | 4.2  | - | - |
| Critical Hdwy Stg 1  | -      | - | -      | - | -      | -    | -      | - | - | -    | - | - |
| Critical Hdwy Stg 2  | -      | - | -      | - | -      | -    | -      | - | - | -    | - | - |
| Follow-up Hdwy       | -      | - | 3.33   | - | -      | 3.32 | 2.24   | - | - | 2.25 | - | - |
| Pot Cap-1 Maneuver   | 0      | 0 | 384    | 0 | 0      | 280  | 480    | - | - | 324  | - | - |
| Stage 1              | 0      | 0 | -      | 0 | 0      | -    | -      | - | - | -    | - | - |
| Stage 2              | 0      | 0 | -      | 0 | 0      | -    | -      | - | - | -    | - | - |
| Platoon blocked, %   | -      | - | -      | - | -      | -    | -      | - | - | -    | - | - |
| Mov Cap-1 Maneuver   | -      | - | 384    | - | -      | 280  | 480    | - | - | 324  | - | - |
| Mov Cap-2 Maneuver   | -      | - | -      | - | -      | -    | -      | - | - | -    | - | - |
| Stage 1              | -      | - | -      | - | -      | -    | -      | - | - | -    | - | - |
| Stage 2              | -      | - | -      | - | -      | -    | -      | - | - | -    | - | - |

| Approach             | EB   | WB   | NB | SB  |
|----------------------|------|------|----|-----|
| HCM Control Delay, s | 19.4 | 27.8 | 1  | 0.4 |
| HCM LOS              | C    | D    |    |     |

| Minor Lane/Major Mvmt | NBL   | NBT | NBR | EBLn1WBLn1 | SBL   | SBT   | SBR |
|-----------------------|-------|-----|-----|------------|-------|-------|-----|
| Capacity (veh/h)      | 480   | -   | -   | 384        | 280   | 324   | -   |
| HCM Lane V/C Ratio    | 0.272 | -   | -   | 0.355      | 0.446 | 0.123 | -   |
| HCM Control Delay (s) | 15.3  | -   | -   | 19.4       | 27.8  | 17.7  | -   |
| HCM Lane LOS          | C     | -   | -   | C          | D     | C     | -   |
| HCM 95th %tile Q(veh) | 1.1   | -   | -   | 1.6        | 2.2   | 0.4   | -   |

Lanes, Volumes, Timings  
110: CTH F & North Crossover

07/27/2020

|                         | EBL  | EBR  | NBU  | NBL   | NBT  | SBT  | SBR  |
|-------------------------|------|------|------|-------|------|------|------|
| Lane Configurations     |      | ↗    | ↘    | ↖     | ↗↗   | ↗↗   |      |
| Traffic Volume (vph)    | 0    | 0    | 0    | 65    | 1065 | 1275 | 0    |
| Future Volume (vph)     | 0    | 0    | 0    | 65    | 1065 | 1275 | 0    |
| Ideal Flow (vphpl)      | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 |
| Storage Length (ft)     | 0    | 0    |      | 200   |      |      | 0    |
| Storage Lanes           | 0    | 1    |      | 2     |      |      | 0    |
| Taper Length (ft)       | 25   |      |      | 25    |      |      |      |
| Lane Util. Factor       | 1.00 | 1.00 | 1.00 | 1.00  | 0.95 | 0.95 | 1.00 |
| Frt                     |      |      |      |       |      |      |      |
| Flt Protected           |      |      |      | 0.950 |      |      |      |
| Satd. Flow (prot)       | 0    | 1863 | 1759 | 1671  | 3343 | 3312 | 0    |
| Flt Permitted           |      |      |      | 0.950 |      |      |      |
| Satd. Flow (perm)       | 0    | 1863 | 1759 | 1671  | 3343 | 3312 | 0    |
| Link Speed (mph)        | 30   |      |      |       | 55   | 55   |      |
| Link Distance (ft)      | 600  |      |      |       | 560  | 500  |      |
| Travel Time (s)         | 13.6 |      |      |       | 6.9  | 6.2  |      |
| Peak Hour Factor        | 0.92 | 0.92 | 0.92 | 0.92  | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%)      | 2%   | 2%   | 8%   | 8%    | 8%   | 9%   | 9%   |
| Adj. Flow (vph)         | 0    | 0    | 0    | 71    | 1158 | 1386 | 0    |
| Shared Lane Traffic (%) |      |      |      |       |      |      |      |
| Lane Group Flow (vph)   | 0    | 0    | 0    | 71    | 1158 | 1386 | 0    |

Intersection Summary

Area Type: Other

HCM 6th TWSC  
110: CTH F & North Crossover

07/27/2020

| Intersection             |      |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|------|
| Int Delay, s/veh         | 0.4  |      |      |      |      |      |      |
| Movement                 | EBL  | EBR  | NBU  | NBL  | NBT  | SBT  | SBR  |
| Lane Configurations      |      | ↗    | ↘    | ↖    | ↗↗   | ↗↗   |      |
| Traffic Vol, veh/h       | 0    | 0    | 0    | 65   | 1065 | 1275 | 0    |
| Future Vol, veh/h        | 0    | 0    | 0    | 65   | 1065 | 1275 | 0    |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control             | Stop | Stop | Free | Free | Free | Free | Free |
| RT Channelized           | -    | Free | -    | -    | None | -    | None |
| Storage Length           | -    | 0    | -    | 200  | -    | -    | -    |
| Veh in Median Storage, # | 1    | -    | -    | -    | 0    | 0    | -    |
| Grade, %                 | 0    | -    | -    | -    | 0    | 0    | -    |
| Peak Hour Factor         | 92   | 92   | 92   | 92   | 92   | 92   | 92   |
| Heavy Vehicles, %        | 2    | 2    | 8    | 8    | 8    | 9    | 9    |
| Mvmt Flow                | 0    | 0    | 0    | 71   | 1158 | 1386 | 0    |

| Major/Minor          | Minor2 | Major1 | Major2          |
|----------------------|--------|--------|-----------------|
| Conflicting Flow All | -      | -      | 1386 1386 0 - 0 |
| Stage 1              | -      | -      | - - -           |
| Stage 2              | -      | -      | - - -           |
| Critical Hdwy        | -      | -      | 6.56 4.26 - - - |
| Critical Hdwy Stg 1  | -      | -      | - - -           |
| Critical Hdwy Stg 2  | -      | -      | - - -           |
| Follow-up Hdwy       | -      | -      | 2.58 2.28 - - - |
| Pot Cap-1 Maneuver   | 0      | 0      | 176 460 - - 0   |
| Stage 1              | 0      | 0      | - - - 0         |
| Stage 2              | 0      | 0      | - - - 0         |
| Platoon blocked, %   |        |        | - -             |
| Mov Cap-1 Maneuver   | -      | -      | 176 460 - - -   |
| Mov Cap-2 Maneuver   | -      | -      | - - -           |
| Stage 1              | -      | -      | - - -           |
| Stage 2              | -      | -      | - - -           |

| Approach             | EB | NB  | SB |
|----------------------|----|-----|----|
| HCM Control Delay, s | 0  | 0.8 | 0  |
| HCM LOS              | A  |     |    |

| Minor Lane/Major Mvmt | NBU | NBL   | NBT EBLn1 | SBT |
|-----------------------|-----|-------|-----------|-----|
| Capacity (veh/h)      | 176 | 460   | - - -     |     |
| HCM Lane V/C Ratio    | -   | 0.154 | - - -     |     |
| HCM Control Delay (s) | 0   | 14.2  | - 0 -     |     |
| HCM Lane LOS          | A   | B     | - A -     |     |
| HCM 95th %tile Q(veh) | 0   | 0.5   | - - -     |     |



Lanes, Volumes, Timings  
120: CTH F & South Crossover

07/27/2020

|                         | WBL  | WBR  | NBT  | NBR  | SBU  | SBL   | SBT  |
|-------------------------|------|------|------|------|------|-------|------|
| Lane Configurations     |      | ↑↑   | ↑↑   |      | ↓    | ↓     | ↑↑   |
| Traffic Volume (vph)    | 0    | 0    | 1095 | 0    | 0    | 100   | 1310 |
| Future Volume (vph)     | 0    | 0    | 1095 | 0    | 0    | 100   | 1310 |
| Ideal Flow (vphpl)      | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Storage Length (ft)     | 0    | 0    |      | 0    |      | 200   |      |
| Storage Lanes           | 0    | 1    |      | 0    |      | 2     |      |
| Taper Length (ft)       | 25   |      |      |      |      | 25    |      |
| Lane Util. Factor       | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00  | 0.95 |
| Fr                      |      |      |      |      |      |       |      |
| Flt Protected           |      |      |      |      |      | 0.950 |      |
| Satd. Flow (prot)       | 0    | 1863 | 3343 | 0    | 1743 | 1656  | 3312 |
| Flt Permitted           |      |      |      |      |      | 0.950 |      |
| Satd. Flow (perm)       | 0    | 1863 | 3343 | 0    | 1743 | 1656  | 3312 |
| Link Speed (mph)        | 30   |      | 55   |      |      |       | 55   |
| Link Distance (ft)      | 600  |      | 500  |      |      |       | 790  |
| Travel Time (s)         | 13.6 |      | 6.2  |      |      |       | 9.8  |
| Peak Hour Factor        | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92  | 0.92 |
| Heavy Vehicles (%)      | 2%   | 2%   | 8%   | 8%   | 9%   | 9%    | 9%   |
| Adj. Flow (vph)         | 0    | 0    | 1190 | 0    | 0    | 109   | 1424 |
| Shared Lane Traffic (%) |      |      |      |      |      |       |      |
| Lane Group Flow (vph)   | 0    | 0    | 1190 | 0    | 0    | 109   | 1424 |

Intersection Summary

Area Type: Other

HCM 6th TWSC  
120: CTH F & South Crossover

07/27/2020

|                          |      |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|------|
| Intersection             |      |      |      |      |      |      |      |
| Int Delay, s/veh         | 0.5  |      |      |      |      |      |      |
| Movement                 | WBL  | WBR  | NBT  | NBR  | SBU  | SBL  | SBT  |
| Lane Configurations      |      | ↑↑   | ↑↑   |      | ↓    | ↓    | ↑↑   |
| Traffic Vol, veh/h       | 0    | 0    | 1095 | 0    | 0    | 100  | 1310 |
| Future Vol, veh/h        | 0    | 0    | 1095 | 0    | 0    | 100  | 1310 |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control             | Stop | Stop | Free | Free | Free | Free | Free |
| RT Channelized           | -    | Free | -    | None | -    | -    | None |
| Storage Length           | -    | 0    | -    | -    | -    | 200  | -    |
| Veh in Median Storage, # | 1    | -    | 0    | -    | -    | -    | 0    |
| Grade, %                 | 0    | -    | 0    | -    | -    | -    | 0    |
| Peak Hour Factor         | 92   | 92   | 92   | 92   | 92   | 92   | 92   |
| Heavy Vehicles, %        | 2    | 2    | 8    | 8    | 9    | 9    | 9    |
| Mvmt Flow                | 0    | 0    | 1190 | 0    | 0    | 109  | 1424 |

|                      |        |        |        |   |      |      |   |
|----------------------|--------|--------|--------|---|------|------|---|
| Major/Minor          | Minor1 | Major1 | Major2 |   |      |      |   |
| Conflicting Flow All | -      | -      | 0      | - | 1190 | 1190 | 0 |
| Stage 1              | -      | -      | -      | - | -    | -    | - |
| Stage 2              | -      | -      | -      | - | -    | -    | - |
| Critical Hdwy        | -      | -      | -      | - | 6.58 | 4.28 | - |
| Critical Hdwy Stg 1  | -      | -      | -      | - | -    | -    | - |
| Critical Hdwy Stg 2  | -      | -      | -      | - | -    | -    | - |
| Follow-up Hdwy       | -      | -      | -      | - | 2.59 | 2.29 | - |
| Pot Cap-1 Maneuver   | 0      | 0      | -      | 0 | 235  | 545  | - |
| Stage 1              | 0      | 0      | -      | 0 | -    | -    | - |
| Stage 2              | 0      | 0      | -      | 0 | -    | -    | - |
| Platoon blocked, %   | -      | -      | -      | - | -    | -    | - |
| Mov Cap-1 Maneuver   | -      | -      | -      | - | 235  | 545  | - |
| Mov Cap-2 Maneuver   | -      | -      | -      | - | -    | -    | - |
| Stage 1              | -      | -      | -      | - | -    | -    | - |
| Stage 2              | -      | -      | -      | - | -    | -    | - |

|                      |    |    |     |
|----------------------|----|----|-----|
| Approach             | WB | NB | SB  |
| HCM Control Delay, s | 0  | 0  | 0.9 |
| HCM LOS              | A  |    |     |

|                       |          |     |       |      |
|-----------------------|----------|-----|-------|------|
| Minor Lane/Major Mvmt | NBTWBLn1 | SBU | SBL   | SBT  |
| Capacity (veh/h)      | -        | -   | 235   | 545  |
| HCM Lane V/C Ratio    | -        | -   | 0.199 | -    |
| HCM Control Delay (s) | -        | 0   | 0     | 13.2 |
| HCM Lane LOS          | -        | A   | A     | B    |
| HCM 95th %tile Q(veh) | -        | -   | 0     | 0.7  |

Lanes, Volumes, Timings  
130: CTH F & Lindsay Road

07/27/2020

|                         | ↗    | →    | ↘     | ↖    | ←    | ↙     | ↘     | ↖    | ↗     | ↘     | ↖     | ↗    |
|-------------------------|------|------|-------|------|------|-------|-------|------|-------|-------|-------|------|
| Lane Group              | EBL  | EBT  | EBR   | WBL  | WBT  | WBR   | NBL   | NBT  | NBR   | SBL   | SBT   | SBR  |
| Lane Configurations     |      |      | ↗     |      |      | ↗     | ↗     | ↗    | ↗     | ↗     | ↗     | ↗    |
| Traffic Volume (vph)    | 0    | 0    | 160   | 0    | 0    | 65    | 20    | 1035 | 140   | 50    | 1250  | 40   |
| Future Volume (vph)     | 0    | 0    | 160   | 0    | 0    | 65    | 20    | 1035 | 140   | 50    | 1250  | 40   |
| Ideal Flow (vphpl)      | 1900 | 1900 | 1900  | 1900 | 1900 | 1900  | 1900  | 1900 | 1900  | 1900  | 1900  | 1900 |
| Storage Length (ft)     | 0    | 0    | 0     | 0    | 0    | 0     | 200   | 200  | 200   | 200   | 200   | 200  |
| Storage Lanes           | 0    | 0    | 1     | 0    | 0    | 1     | 1     | 1    | 1     | 1     | 1     | 1    |
| Taper Length (ft)       | 25   |      |       | 25   |      |       | 25    |      |       | 25    |       |      |
| Lane Util. Factor       | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 0.95 | 1.00  | 1.00  | 0.95  | 1.00 |
| Frt                     |      |      | 0.865 |      |      | 0.865 |       |      | 0.850 |       | 0.850 |      |
| Flt Protected           |      |      |       |      |      |       | 0.950 |      |       | 0.950 |       |      |
| Satd. Flow (prot)       | 0    | 0    | 1611  | 0    | 0    | 1565  | 1671  | 3343 | 1495  | 1656  | 3312  | 1482 |
| Flt Permitted           |      |      |       |      |      |       | 0.950 |      |       | 0.950 |       |      |
| Satd. Flow (perm)       | 0    | 0    | 1611  | 0    | 0    | 1565  | 1671  | 3343 | 1495  | 1656  | 3312  | 1482 |
| Link Speed (mph)        |      | 35   |       |      | 35   |       |       | 55   |       |       | 55    |      |
| Link Distance (ft)      |      | 600  |       |      | 600  |       |       | 710  |       |       | 940   |      |
| Travel Time (s)         |      | 11.7 |       |      | 11.7 |       |       | 8.8  |       |       | 11.7  |      |
| Peak Hour Factor        | 0.92 | 0.92 | 0.92  | 0.92 | 0.92 | 0.92  | 0.92  | 0.92 | 0.92  | 0.92  | 0.92  | 0.92 |
| Heavy Vehicles (%)      | 2%   | 2%   | 2%    | 5%   | 5%   | 5%    | 8%    | 8%   | 8%    | 9%    | 9%    | 9%   |
| Adj. Flow (vph)         | 0    | 0    | 174   | 0    | 0    | 71    | 22    | 1125 | 152   | 54    | 1359  | 43   |
| Shared Lane Traffic (%) |      |      |       |      |      |       |       |      |       |       |       |      |
| Lane Group Flow (vph)   | 0    | 0    | 174   | 0    | 0    | 71    | 22    | 1125 | 152   | 54    | 1359  | 43   |

Intersection Summary

Area Type: Other

Description: design has dual WBR lanes;

veh heading north to use outer freeflow R-turn lane (30 veh);

veh heading west/south to use inner stop-controlled R-turn lane (65 veh);

model only shows inner stop-controlled lane

HCM 6th TWSC  
130: CTH F & Lindsay Road

07/27/2020

Intersection

Int Delay, s/veh 1.8

| Movement                 | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR   | SBL  | SBT  | SBR   |
|--------------------------|------|------|------|------|------|------|------|------|-------|------|------|-------|
| Lane Configurations      |      |      | ↗    |      |      | ↗    | ↗    | ↗    | ↗     | ↗    | ↗    | ↗     |
| Traffic Vol, veh/h       | 0    | 0    | 160  | 0    | 0    | 65   | 20   | 1035 | 140   | 50   | 1250 | 40    |
| Future Vol, veh/h        | 0    | 0    | 160  | 0    | 0    | 65   | 20   | 1035 | 140   | 50   | 1250 | 40    |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0     |
| Sign Control             | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free  | Free | Free | Free  |
| RT Channelized           | -    | -    | None | -    | -    | None | -    | -    | Yield | -    | -    | Yield |
| Storage Length           | -    | -    | 0    | -    | -    | 0    | 200  | -    | 200   | 200  | -    | 200   |
| Veh in Median Storage, # | -    | 1    | -    | -    | 1    | -    | 0    | -    | 0     | -    | 0    | -     |
| Grade, %                 | -    | 0    | -    | -    | 0    | -    | 0    | -    | 0     | -    | 0    | -     |
| Peak Hour Factor         | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92    | 92   | 92   | 92    |
| Heavy Vehicles, %        | 2    | 2    | 2    | 5    | 5    | 5    | 8    | 8    | 8     | 9    | 9    | 9     |
| Mvmt Flow                | 0    | 0    | 174  | 0    | 0    | 71   | 22   | 1125 | 152   | 54   | 1359 | 43    |

| Major/Minor          | Minor2 |   | Minor1 |   | Major1 |      | Major2 |   |   |      |   |   |
|----------------------|--------|---|--------|---|--------|------|--------|---|---|------|---|---|
| Conflicting Flow All | -      | - | 680    | - | -      | 563  | 1359   | 0 | 0 | 1125 | 0 | 0 |
| Stage 1              | -      | - | -      | - | -      | -    | -      | - | - | -    | - | - |
| Stage 2              | -      | - | -      | - | -      | -    | -      | - | - | -    | - | - |
| Critical Hdwy        | -      | - | 6.94   | - | -      | 7    | 4.26   | - | - | 4.28 | - | - |
| Critical Hdwy Stg 1  | -      | - | -      | - | -      | -    | -      | - | - | -    | - | - |
| Critical Hdwy Stg 2  | -      | - | -      | - | -      | -    | -      | - | - | -    | - | - |
| Follow-up Hdwy       | -      | - | 3.32   | - | -      | 3.35 | 2.28   | - | - | 2.29 | - | - |
| Pot Cap-1 Maneuver   | 0      | 0 | 393    | 0 | 0      | 462  | 472    | - | - | 578  | - | - |
| Stage 1              | 0      | 0 | -      | 0 | 0      | -    | -      | - | - | -    | - | - |
| Stage 2              | 0      | 0 | -      | 0 | 0      | -    | -      | - | - | -    | - | - |
| Platoon blocked, %   | -      | - | -      | - | -      | -    | -      | - | - | -    | - | - |
| Mov Cap-1 Maneuver   | -      | - | 393    | - | -      | 462  | 472    | - | - | 578  | - | - |
| Mov Cap-2 Maneuver   | -      | - | -      | - | -      | -    | -      | - | - | -    | - | - |
| Stage 1              | -      | - | -      | - | -      | -    | -      | - | - | -    | - | - |
| Stage 2              | -      | - | -      | - | -      | -    | -      | - | - | -    | - | - |

| Approach             | EB   | WB   | NB  | SB  |
|----------------------|------|------|-----|-----|
| HCM Control Delay, s | 21.2 | 14.2 | 0.2 | 0.4 |
| HCM LOS              | C    | B    |     |     |

| Minor Lane/Major Mvmt | NBL   | NBT | NBR | EBLn1 | WBLn1 | SBL   | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|-------|-----|-----|
| Capacity (veh/h)      | 472   | -   | -   | 393   | 462   | 578   | -   | -   |
| HCM Lane V/C Ratio    | 0.046 | -   | -   | 0.443 | 0.153 | 0.094 | -   | -   |
| HCM Control Delay (s) | 13    | -   | -   | 21.2  | 14.2  | 11.9  | -   | -   |
| HCM Lane LOS          | B     | -   | -   | C     | B     | B     | -   | -   |
| HCM 95th %tile Q(veh) | 0.1   | -   | -   | 2.2   | 0.5   | 0.3   | -   | -   |



Lanes, Volumes, Timings  
110: CTH F & North Crossover

07/27/2020

|                         | EBL  | EBR  | NBU  | NBL   | NBT  | SBT  | SBR  |
|-------------------------|------|------|------|-------|------|------|------|
| Lane Configurations     |      | ↗    | ↘    | ↗     | ↗↗   | ↗↗   |      |
| Traffic Volume (vph)    | 0    | 0    | 0    | 135   | 1680 | 1385 | 0    |
| Future Volume (vph)     | 0    | 0    | 0    | 135   | 1680 | 1385 | 0    |
| Ideal Flow (vphpl)      | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 |
| Storage Length (ft)     | 0    | 0    |      | 200   |      |      | 0    |
| Storage Lanes           | 0    | 1    |      | 2     |      |      | 0    |
| Taper Length (ft)       | 25   |      |      | 25    |      |      |      |
| Lane Util. Factor       | 1.00 | 1.00 | 1.00 | 1.00  | 0.95 | 0.95 | 1.00 |
| Frt                     |      |      |      |       |      |      |      |
| Frt Protected           |      |      |      | 0.950 |      |      |      |
| Satd. Flow (prot)       | 0    | 1863 | 1827 | 1736  | 3471 | 3438 | 0    |
| Frt Permitted           |      |      |      | 0.950 |      |      |      |
| Satd. Flow (perm)       | 0    | 1863 | 1827 | 1736  | 3471 | 3438 | 0    |
| Link Speed (mph)        | 30   |      |      |       | 55   | 55   |      |
| Link Distance (ft)      | 600  |      |      |       | 610  | 500  |      |
| Travel Time (s)         | 13.6 |      |      |       | 7.6  | 6.2  |      |
| Peak Hour Factor        | 0.88 | 0.88 | 0.88 | 0.88  | 0.88 | 0.88 | 0.88 |
| Heavy Vehicles (%)      | 2%   | 2%   | 4%   | 4%    | 4%   | 5%   | 5%   |
| Adj. Flow (vph)         | 0    | 0    | 0    | 153   | 1909 | 1574 | 0    |
| Shared Lane Traffic (%) |      |      |      |       |      |      |      |
| Lane Group Flow (vph)   | 0    | 0    | 0    | 153   | 1909 | 1574 | 0    |

Intersection Summary

Area Type: Other

HCM 6th TWSC  
110: CTH F & North Crossover

07/27/2020

|                          |      |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|------|
| Intersection             |      |      |      |      |      |      |      |
| Int Delay, s/veh         | 0.8  |      |      |      |      |      |      |
| Movement                 | EBL  | EBR  | NBU  | NBL  | NBT  | SBT  | SBR  |
| Lane Configurations      |      | ↗    | ↘    | ↗    | ↗↗   | ↗↗   |      |
| Traffic Vol, veh/h       | 0    | 0    | 0    | 135  | 1680 | 1385 | 0    |
| Future Vol, veh/h        | 0    | 0    | 0    | 135  | 1680 | 1385 | 0    |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control             | Stop | Stop | Free | Free | Free | Free | Free |
| RT Channelized           | -    | Free | -    | -    | None | -    | None |
| Storage Length           | -    | 0    | -    | 200  | -    | -    | -    |
| Veh in Median Storage, # | 1    | -    | -    | -    | 0    | 0    | -    |
| Grade, %                 | 0    | -    | -    | -    | 0    | 0    | -    |
| Peak Hour Factor         | 88   | 88   | 88   | 88   | 88   | 88   | 88   |
| Heavy Vehicles, %        | 2    | 2    | 4    | 4    | 4    | 5    | 5    |
| Mvmt Flow                | 0    | 0    | 0    | 153  | 1909 | 1574 | 0    |

|                      |        |        |        |
|----------------------|--------|--------|--------|
| Major/Minor          | Minor2 | Major1 | Major2 |
| Conflicting Flow All | -      | -      | 1574   |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |
| Critical Hdwy        | -      | -      | 6.48   |
| Critical Hdwy Stg 1  | -      | -      | -      |
| Critical Hdwy Stg 2  | -      | -      | -      |
| Follow-up Hdwy       | -      | -      | 2.54   |
| Pot Cap-1 Maneuver   | 0      | 0      | 138    |
| Stage 1              | 0      | 0      | -      |
| Stage 2              | 0      | 0      | -      |
| Platoon blocked, %   | -      | -      | -      |
| Mov Cap-1 Maneuver   | -      | -      | 138    |
| Mov Cap-2 Maneuver   | -      | -      | -      |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |

|                      |    |     |    |
|----------------------|----|-----|----|
| Approach             | EB | NB  | SB |
| HCM Control Delay, s | 0  | 1.4 | 0  |
| HCM LOS              | A  |     |    |

|                       |     |       |     |       |     |
|-----------------------|-----|-------|-----|-------|-----|
| Minor Lane/Major Mvmt | NBU | NBL   | NBT | EBLn1 | SBT |
| Capacity (veh/h)      | 138 | 405   | -   | -     | -   |
| HCM Lane V/C Ratio    | -   | 0.379 | -   | -     | -   |
| HCM Control Delay (s) | 0   | 19.2  | -   | 0     | -   |
| HCM Lane LOS          | A   | C     | -   | A     | -   |
| HCM 95th %tile Q(veh) | 0   | 1.7   | -   | -     | -   |

Lanes, Volumes, Timings  
120: CTH F & South Crossover

07/27/2020

|                         | WBL  | WBR  | NBT  | NBR  | SBU  | SBL   | SBT  |
|-------------------------|------|------|------|------|------|-------|------|
| Lane Configurations     |      | ↑↑   | ↑↑   |      | ↓    | ↓     | ↑↑   |
| Traffic Volume (vph)    | 0    | 0    | 1875 | 0    | 0    | 95    | 1285 |
| Future Volume (vph)     | 0    | 0    | 1875 | 0    | 0    | 95    | 1285 |
| Ideal Flow (vphpl)      | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Storage Length (ft)     | 0    | 0    |      | 0    |      | 200   |      |
| Storage Lanes           | 0    | 1    |      | 0    |      | 2     |      |
| Taper Length (ft)       | 25   |      |      |      |      | 25    |      |
| Lane Util. Factor       | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00  | 0.95 |
| Flt Protected           |      |      |      |      |      | 0.950 |      |
| Satd. Flow (prot)       | 0    | 1863 | 3471 | 0    | 1810 | 1719  | 3438 |
| Flt Permitted           |      |      |      |      |      | 0.950 |      |
| Satd. Flow (perm)       | 0    | 1863 | 3471 | 0    | 1810 | 1719  | 3438 |
| Link Speed (mph)        | 30   |      | 55   |      |      | 55    |      |
| Link Distance (ft)      | 600  |      | 500  |      |      | 810   |      |
| Travel Time (s)         | 13.6 |      | 6.2  |      |      | 10.0  |      |
| Peak Hour Factor        | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88  | 0.88 |
| Heavy Vehicles (%)      | 2%   | 2%   | 4%   | 4%   | 5%   | 5%    | 5%   |
| Adj. Flow (vph)         | 0    | 0    | 2131 | 0    | 0    | 108   | 1460 |
| Shared Lane Traffic (%) |      |      |      |      |      |       |      |
| Lane Group Flow (vph)   | 0    | 0    | 2131 | 0    | 0    | 108   | 1460 |

Intersection Summary

Area Type: Other

HCM 6th TWSC  
120: CTH F & South Crossover

07/27/2020

| Intersection             |      |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|------|
| Int Delay, s/veh         | 0.9  |      |      |      |      |      |      |
| Movement                 | WBL  | WBR  | NBT  | NBR  | SBU  | SBL  | SBT  |
| Lane Configurations      |      | ↑↑   | ↑↑   |      | ↓    | ↓    | ↑↑   |
| Traffic Vol, veh/h       | 0    | 0    | 1875 | 0    | 0    | 95   | 1285 |
| Future Vol, veh/h        | 0    | 0    | 1875 | 0    | 0    | 95   | 1285 |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control             | Stop | Stop | Free | Free | Free | Free | Free |
| RT Channelized           | -    | Free | -    | None | -    | -    | None |
| Storage Length           | -    | 0    | -    | -    | -    | 200  | -    |
| Veh in Median Storage, # | 1    | -    | 0    | -    | -    | -    | 0    |
| Grade, %                 | 0    | -    | 0    | -    | -    | -    | 0    |
| Peak Hour Factor         | 88   | 88   | 88   | 88   | 88   | 88   | 88   |
| Heavy Vehicles, %        | 2    | 2    | 4    | 4    | 5    | 5    | 5    |
| Mvmt Flow                | 0    | 0    | 2131 | 0    | 0    | 108  | 1460 |

| Major/Minor          | Minor1 | Major1 | Major2 |   |      |      |
|----------------------|--------|--------|--------|---|------|------|
| Conflicting Flow All | -      | -      | 0      | - | 2131 | 2131 |
| Stage 1              | -      | -      | -      | - | -    | -    |
| Stage 2              | -      | -      | -      | - | -    | -    |
| Critical Hdwy        | -      | -      | -      | - | 6.5  | 4.2  |
| Critical Hdwy Stg 1  | -      | -      | -      | - | -    | -    |
| Critical Hdwy Stg 2  | -      | -      | -      | - | -    | -    |
| Follow-up Hdwy       | -      | -      | -      | - | 2.55 | 2.25 |
| Pot Cap-1 Maneuver   | 0      | 0      | -      | 0 | 58   | 241  |
| Stage 1              | 0      | 0      | -      | 0 | -    | -    |
| Stage 2              | 0      | 0      | -      | 0 | -    | -    |
| Platoon blocked, %   | -      | -      | -      | - | -    | -    |
| Mov Cap-1 Maneuver   | -      | -      | -      | - | 58   | 241  |
| Mov Cap-2 Maneuver   | -      | -      | -      | - | -    | -    |
| Stage 1              | -      | -      | -      | - | -    | -    |
| Stage 2              | -      | -      | -      | - | -    | -    |

| Approach             | WB | NB | SB  |
|----------------------|----|----|-----|
| HCM Control Delay, s | 0  | 0  | 2.2 |
| HCM LOS              | A  |    |     |

| Minor Lane/Major Mvmt | NBTWBLn1 | SBU | SBL   | SBT  |
|-----------------------|----------|-----|-------|------|
| Capacity (veh/h)      | -        | -   | 58    | 241  |
| HCM Lane V/C Ratio    | -        | -   | 0.448 | -    |
| HCM Control Delay (s) | -        | 0   | 0     | 31.5 |
| HCM Lane LOS          | -        | A   | A     | D    |
| HCM 95th %tile Q(veh) | -        | -   | 0     | 2.2  |



Lanes, Volumes, Timings  
130: CTH F & Lindsay Road

07/27/2020

|                         | EBL  | EBT  | EBR   | WBL  | WBT  | WBR   | NBL   | NBT  | NBR   | SBL   | SBT  | SBR   |
|-------------------------|------|------|-------|------|------|-------|-------|------|-------|-------|------|-------|
| Lane Configurations     |      |      | ↗     |      |      | ↖     | ↗     | ↖    | ↗     | ↖     | ↗    | ↖     |
| Traffic Volume (vph)    | 0    | 0    | 160   | 0    | 0    | 135   | 235   | 1610 | 125   | 35    | 1220 | 265   |
| Future Volume (vph)     | 0    | 0    | 160   | 0    | 0    | 135   | 235   | 1610 | 125   | 35    | 1220 | 265   |
| Ideal Flow (vphpl)      | 1900 | 1900 | 1900  | 1900 | 1900 | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900  |
| Storage Length (ft)     | 0    | 0    | 0     | 0    | 0    | 0     | 200   | 200  | 200   | 200   | 200  | 200   |
| Storage Lanes           | 0    | 1    | 0     | 1    | 0    | 1     | 1     | 1    | 1     | 1     | 1    | 1     |
| Taper Length (ft)       | 25   |      |       | 25   |      |       | 25    |      |       | 25    |      |       |
| Lane Util. Factor       | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 0.95 | 1.00  | 1.00  | 0.95 | 1.00  |
| Frt                     |      |      | 0.865 |      |      | 0.865 |       |      | 0.850 |       |      | 0.850 |
| Flt Protected           |      |      |       |      |      |       | 0.950 |      |       | 0.950 |      |       |
| Satd. Flow (prot)       | 0    | 0    | 1596  | 0    | 0    | 1611  | 1736  | 3471 | 1553  | 1719  | 3438 | 1538  |
| Flt Permitted           |      |      |       |      |      |       | 0.950 |      |       | 0.950 |      |       |
| Satd. Flow (perm)       | 0    | 0    | 1596  | 0    | 0    | 1611  | 1736  | 3471 | 1553  | 1719  | 3438 | 1538  |
| Link Speed (mph)        |      | 35   |       |      | 35   |       |       | 55   |       |       | 55   |       |
| Link Distance (ft)      |      | 600  |       |      | 600  |       |       | 690  |       |       | 890  |       |
| Travel Time (s)         |      | 11.7 |       |      | 11.7 |       |       | 8.6  |       |       | 11.0 |       |
| Peak Hour Factor        | 0.88 | 0.88 | 0.88  | 0.88 | 0.88 | 0.88  | 0.88  | 0.88 | 0.88  | 0.88  | 0.88 | 0.88  |
| Heavy Vehicles (%)      | 3%   | 3%   | 3%    | 2%   | 2%   | 2%    | 4%    | 4%   | 4%    | 5%    | 5%   | 5%    |
| Adj. Flow (vph)         | 0    | 0    | 182   | 0    | 0    | 153   | 267   | 1830 | 142   | 40    | 1386 | 301   |
| Shared Lane Traffic (%) |      |      |       |      |      |       |       |      |       |       |      |       |
| Lane Group Flow (vph)   | 0    | 0    | 182   | 0    | 0    | 153   | 267   | 1830 | 142   | 40    | 1386 | 301   |

Intersection Summary

Area Type: Other

Description: design has dual WBR lanes;

veh heading north to use outer freeflow R-turn lane (70 veh);

veh heading west/south to use inner stop-controlled R-turn lane (135 veh);

model only shows inner stop-controlled lane

HCM 6th TWSC  
130: CTH F & Lindsay Road

07/27/2020

| Intersection             |      |      |      |      |      |      |      |      |       |      |      |       |
|--------------------------|------|------|------|------|------|------|------|------|-------|------|------|-------|
| Int Delay, s/veh         | 3.7  |      |      |      |      |      |      |      |       |      |      |       |
| Movement                 | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR   | SBL  | SBT  | SBR   |
| Lane Configurations      |      |      | ↗    |      |      | ↖    | ↗    | ↖    | ↗     | ↖    | ↗    | ↖     |
| Traffic Vol, veh/h       | 0    | 0    | 160  | 0    | 0    | 135  | 235  | 1610 | 125   | 35   | 1220 | 265   |
| Future Vol, veh/h        | 0    | 0    | 160  | 0    | 0    | 135  | 235  | 1610 | 125   | 35   | 1220 | 265   |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0     |
| Sign Control             | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free  | Free | Free | Free  |
| RT Channelized           | -    | -    | None | -    | -    | None | -    | -    | Yield | -    | -    | Yield |
| Storage Length           |      |      | 0    |      |      | 0    | 200  |      | 200   | 200  |      | 200   |
| Veh in Median Storage, # | -    | 1    | -    | -    | 1    | -    | 0    | -    | 0     | -    | 0    | -     |
| Grade, %                 | -    | 0    | -    | -    | 0    | -    | 0    | -    | 0     | -    | 0    | -     |
| Peak Hour Factor         | 88   | 88   | 88   | 88   | 88   | 88   | 88   | 88   | 88    | 88   | 88   | 88    |
| Heavy Vehicles, %        | 3    | 3    | 3    | 2    | 2    | 2    | 4    | 4    | 4     | 5    | 5    | 5     |
| Mvmt Flow                | 0    | 0    | 182  | 0    | 0    | 153  | 267  | 1830 | 142   | 40   | 1386 | 301   |

| Major/Minor          | Minor2 |   | Minor1 |   | Major1 |      |      | Major2 |   |      |   |   |
|----------------------|--------|---|--------|---|--------|------|------|--------|---|------|---|---|
| Conflicting Flow All | -      | - | 693    | - | -      | 915  | 1386 | 0      | 0 | 1830 | 0 | 0 |
| Stage 1              | -      | - | -      | - | -      | -    | -    | -      | - | -    | - | - |
| Stage 2              | -      | - | -      | - | -      | -    | -    | -      | - | -    | - | - |
| Critical Hdwy        | -      | - | 6.96   | - | -      | 6.94 | 4.18 | -      | - | 4.2  | - | - |
| Critical Hdwy Stg 1  | -      | - | -      | - | -      | -    | -    | -      | - | -    | - | - |
| Critical Hdwy Stg 2  | -      | - | -      | - | -      | -    | -    | -      | - | -    | - | - |
| Follow-up Hdwy       | -      | - | 3.33   | - | -      | 3.32 | 2.24 | -      | - | 2.25 | - | - |
| Pot Cap-1 Maneuver   | 0      | 0 | 384    | 0 | 0      | 275  | 480  | -      | - | 318  | - | - |
| Stage 1              | 0      | 0 | -      | 0 | 0      | -    | -    | -      | - | -    | - | - |
| Stage 2              | 0      | 0 | -      | 0 | 0      | -    | -    | -      | - | -    | - | - |
| Platoon blocked, %   |        |   |        |   |        |      |      |        |   |      |   |   |
| Mov Cap-1 Maneuver   | -      | - | 384    | - | -      | 275  | 480  | -      | - | 318  | - | - |
| Mov Cap-2 Maneuver   | -      | - | -      | - | -      | -    | -    | -      | - | -    | - | - |
| Stage 1              | -      | - | -      | - | -      | -    | -    | -      | - | -    | - | - |
| Stage 2              | -      | - | -      | - | -      | -    | -    | -      | - | -    | - | - |

| Approach             | EB   | WB   | NB  | SB  |
|----------------------|------|------|-----|-----|
| HCM Control Delay, s | 22.5 | 33.4 | 2.6 | 0.4 |
| HCM LOS              | C    | D    |     |     |

| Minor Lane/Major Mvmt | NBL   | NBT | NBR | EBLn1 | WBLn1 | SBL   | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|-------|-----|-----|
| Capacity (veh/h)      | 480   | -   | -   | 384   | 275   | 318   | -   | -   |
| HCM Lane V/C Ratio    | 0.556 | -   | -   | 0.473 | 0.558 | 0.125 | -   | -   |
| HCM Control Delay (s) | 21.5  | -   | -   | 22.5  | 33.4  | 17.9  | -   | -   |
| HCM Lane LOS          | C     | -   | -   | C     | D     | C     | -   | -   |
| HCM 95th %tile Q(veh) | 3.3   | -   | -   | 2.5   | 3.1   | 0.4   | -   | -   |

Lanes, Volumes, Timings  
110: CTH F & North Crossover

07/27/2020

|                         | EBL  | EBR  | NBU  | NBL   | NBT  | SBT  | SBR  |
|-------------------------|------|------|------|-------|------|------|------|
| Lane Configurations     |      | ↗    | ↘    | ↖     | ↗↗   | ↗↗   |      |
| Traffic Volume (vph)    | 0    | 0    | 0    | 75    | 1205 | 1440 | 0    |
| Future Volume (vph)     | 0    | 0    | 0    | 75    | 1205 | 1440 | 0    |
| Ideal Flow (vphpl)      | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 |
| Storage Length (ft)     | 0    | 0    |      | 200   |      |      | 0    |
| Storage Lanes           | 0    | 1    |      | 2     |      |      | 0    |
| Taper Length (ft)       | 25   |      |      | 25    |      |      |      |
| Lane Util. Factor       | 1.00 | 1.00 | 1.00 | 1.00  | 0.95 | 0.95 | 1.00 |
| Frt                     |      |      |      |       |      |      |      |
| Frt Protected           |      |      |      | 0.950 |      |      |      |
| Satd. Flow (prot)       | 0    | 1863 | 1759 | 1671  | 3343 | 3312 | 0    |
| Frt Permitted           |      |      |      | 0.950 |      |      |      |
| Satd. Flow (perm)       | 0    | 1863 | 1759 | 1671  | 3343 | 3312 | 0    |
| Link Speed (mph)        | 30   |      |      |       | 55   | 55   |      |
| Link Distance (ft)      | 600  |      |      |       | 560  | 500  |      |
| Travel Time (s)         | 13.6 |      |      |       | 6.9  | 6.2  |      |
| Peak Hour Factor        | 0.92 | 0.92 | 0.92 | 0.92  | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%)      | 2%   | 2%   | 8%   | 8%    | 8%   | 9%   | 9%   |
| Adj. Flow (vph)         | 0    | 0    | 0    | 82    | 1310 | 1565 | 0    |
| Shared Lane Traffic (%) |      |      |      |       |      |      |      |
| Lane Group Flow (vph)   | 0    | 0    | 0    | 82    | 1310 | 1565 | 0    |

Intersection Summary

Area Type: Other

HCM 6th TWSC  
110: CTH F & North Crossover

07/27/2020

| Intersection             |      |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|------|
| Int Delay, s/veh         | 0.5  |      |      |      |      |      |      |
| Movement                 | EBL  | EBR  | NBU  | NBL  | NBT  | SBT  | SBR  |
| Lane Configurations      |      | ↗    | ↘    | ↖    | ↗↗   | ↗↗   |      |
| Traffic Vol, veh/h       | 0    | 0    | 0    | 75   | 1205 | 1440 | 0    |
| Future Vol, veh/h        | 0    | 0    | 0    | 75   | 1205 | 1440 | 0    |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control             | Stop | Stop | Free | Free | Free | Free | Free |
| RT Channelized           | -    | Free | -    | -    | None | -    | None |
| Storage Length           | -    | 0    | -    | 200  | -    | -    | -    |
| Veh in Median Storage, # | 1    | -    | -    | -    | 0    | 0    | -    |
| Grade, %                 | 0    | -    | -    | -    | 0    | 0    | -    |
| Peak Hour Factor         | 92   | 92   | 92   | 92   | 92   | 92   | 92   |
| Heavy Vehicles, %        | 2    | 2    | 8    | 8    | 8    | 9    | 9    |
| Mvmt Flow                | 0    | 0    | 0    | 82   | 1310 | 1565 | 0    |

| Major/Minor          | Minor2 | Major1 | Major2 |      |   |   |
|----------------------|--------|--------|--------|------|---|---|
| Conflicting Flow All | -      | -      | 1565   | 1565 | 0 | - |
| Stage 1              | -      | -      | -      | -    | - | - |
| Stage 2              | -      | -      | -      | -    | - | - |
| Critical Hdwy        | -      | -      | 6.56   | 4.26 | - | - |
| Critical Hdwy Stg 1  | -      | -      | -      | -    | - | - |
| Critical Hdwy Stg 2  | -      | -      | -      | -    | - | - |
| Follow-up Hdwy       | -      | -      | 2.58   | 2.28 | - | - |
| Pot Cap-1 Maneuver   | 0      | 0      | 134    | 391  | - | - |
| Stage 1              | 0      | 0      | -      | -    | - | 0 |
| Stage 2              | 0      | 0      | -      | -    | - | 0 |
| Platoon blocked, %   |        |        |        |      | - | - |
| Mov Cap-1 Maneuver   | -      | -      | 134    | 391  | - | - |
| Mov Cap-2 Maneuver   | -      | -      | -      | -    | - | - |
| Stage 1              | -      | -      | -      | -    | - | - |
| Stage 2              | -      | -      | -      | -    | - | - |

| Approach             | EB | NB | SB |
|----------------------|----|----|----|
| HCM Control Delay, s | 0  | 1  | 0  |
| HCM LOS              | A  |    |    |

| Minor Lane/Major Mvmt | NBU | NBL   | NBT EBLn1 | SBT |
|-----------------------|-----|-------|-----------|-----|
| Capacity (veh/h)      | 134 | 391   | -         | -   |
| HCM Lane V/C Ratio    | -   | 0.208 | -         | -   |
| HCM Control Delay (s) | 0   | 16.6  | -         | 0   |
| HCM Lane LOS          | A   | C     | -         | A   |
| HCM 95th %tile Q(veh) | 0   | 0.8   | -         | -   |



Lanes, Volumes, Timings  
120: CTH F & South Crossover

07/27/2020

|                         | WBL  | WBR  | NBT  | NBR  | SBU  | SBL   | SBT  |
|-------------------------|------|------|------|------|------|-------|------|
| Lane Configurations     |      | ↑↑   | ↑↑   |      | ↓    | ↓     | ↑↑   |
| Traffic Volume (vph)    | 0    | 0    | 1230 | 0    | 0    | 110   | 1485 |
| Future Volume (vph)     | 0    | 0    | 1230 | 0    | 0    | 110   | 1485 |
| Ideal Flow (vphpl)      | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Storage Length (ft)     | 0    | 0    |      | 0    |      | 200   |      |
| Storage Lanes           | 0    | 1    |      | 0    |      | 2     |      |
| Taper Length (ft)       | 25   |      |      |      |      | 25    |      |
| Lane Util. Factor       | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00  | 0.95 |
| Frt                     |      |      |      |      |      |       |      |
| Flt Protected           |      |      |      |      |      | 0.950 |      |
| Satd. Flow (prot)       | 0    | 1863 | 3343 | 0    | 1743 | 1656  | 3312 |
| Flt Permitted           |      |      |      |      |      | 0.950 |      |
| Satd. Flow (perm)       | 0    | 1863 | 3343 | 0    | 1743 | 1656  | 3312 |
| Link Speed (mph)        | 30   |      | 55   |      |      |       | 55   |
| Link Distance (ft)      | 600  |      | 500  |      |      |       | 790  |
| Travel Time (s)         | 13.6 |      | 6.2  |      |      |       | 9.8  |
| Peak Hour Factor        | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92  | 0.92 |
| Heavy Vehicles (%)      | 2%   | 2%   | 8%   | 8%   | 9%   | 9%    | 9%   |
| Adj. Flow (vph)         | 0    | 0    | 1337 | 0    | 0    | 120   | 1614 |
| Shared Lane Traffic (%) |      |      |      |      |      |       |      |
| Lane Group Flow (vph)   | 0    | 0    | 1337 | 0    | 0    | 120   | 1614 |

Intersection Summary

Area Type: Other

HCM 6th TWSC  
120: CTH F & South Crossover

07/27/2020

|                          |      |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|------|
| Intersection             |      |      |      |      |      |      |      |
| Int Delay, s/veh         | 0.6  |      |      |      |      |      |      |
| Movement                 | WBL  | WBR  | NBT  | NBR  | SBU  | SBL  | SBT  |
| Lane Configurations      |      | ↑↑   | ↑↑   |      | ↓    | ↓    | ↑↑   |
| Traffic Vol, veh/h       | 0    | 0    | 1230 | 0    | 0    | 110  | 1485 |
| Future Vol, veh/h        | 0    | 0    | 1230 | 0    | 0    | 110  | 1485 |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control             | Stop | Stop | Free | Free | Free | Free | Free |
| RT Channelized           | -    | Free | -    | None | -    | -    | None |
| Storage Length           | -    | 0    | -    | -    | -    | 200  | -    |
| Veh in Median Storage, # | 1    | -    | 0    | -    | -    | -    | 0    |
| Grade, %                 | 0    | -    | 0    | -    | -    | -    | 0    |
| Peak Hour Factor         | 92   | 92   | 92   | 92   | 92   | 92   | 92   |
| Heavy Vehicles, %        | 2    | 2    | 8    | 8    | 9    | 9    | 9    |
| Mvmt Flow                | 0    | 0    | 1337 | 0    | 0    | 120  | 1614 |

|                      |        |        |        |   |      |      |
|----------------------|--------|--------|--------|---|------|------|
| Major/Minor          | Minor1 | Major1 | Major2 |   |      |      |
| Conflicting Flow All | -      | -      | 0      | - | 1337 | 1337 |
| Stage 1              | -      | -      | -      | - | -    | -    |
| Stage 2              | -      | -      | -      | - | -    | -    |
| Critical Hdwy        | -      | -      | -      | - | 6.58 | 4.28 |
| Critical Hdwy Stg 1  | -      | -      | -      | - | -    | -    |
| Critical Hdwy Stg 2  | -      | -      | -      | - | -    | -    |
| Follow-up Hdwy       | -      | -      | -      | - | 2.59 | 2.29 |
| Pot Cap-1 Maneuver   | 0      | 0      | -      | 0 | 188  | 476  |
| Stage 1              | 0      | 0      | -      | 0 | -    | -    |
| Stage 2              | 0      | 0      | -      | 0 | -    | -    |
| Platoon blocked, %   | -      | -      | -      | - | -    | -    |
| Mov Cap-1 Maneuver   | -      | -      | -      | - | 188  | 476  |
| Mov Cap-2 Maneuver   | -      | -      | -      | - | -    | -    |
| Stage 1              | -      | -      | -      | - | -    | -    |
| Stage 2              | -      | -      | -      | - | -    | -    |

|                      |    |    |    |
|----------------------|----|----|----|
| Approach             | WB | NB | SB |
| HCM Control Delay, s | 0  | 0  | 1  |
| HCM LOS              | A  |    |    |

|                       |          |     |       |      |
|-----------------------|----------|-----|-------|------|
| Minor Lane/Major Mvmt | NBTWBLn1 | SBU | SBL   | SBT  |
| Capacity (veh/h)      | -        | -   | 188   | 476  |
| HCM Lane V/C Ratio    | -        | -   | 0.251 | -    |
| HCM Control Delay (s) | -        | 0   | 0     | 15.1 |
| HCM Lane LOS          | -        | A   | A     | C    |
| HCM 95th %tile Q(veh) | -        | -   | 0     | 1    |

Lanes, Volumes, Timings  
130: CTH F & Lindsay Road

07/27/2020

|                         | ↗    | →    | ↘     | ↖    | ←    | ↙     | ↘     | ↖    | ↗     | ↘     | ↖    | ↗     |
|-------------------------|------|------|-------|------|------|-------|-------|------|-------|-------|------|-------|
| Lane Group              | EBL  | EBT  | EBR   | WBL  | WBT  | WBR   | NBL   | NBT  | NBR   | SBL   | SBT  | SBR   |
| Lane Configurations     |      |      | ↗     |      |      | ↗     | ↗     | ↗    | ↗     | ↗     | ↗    | ↗     |
| Traffic Volume (vph)    | 0    | 0    | 175   | 0    | 0    | 75    | 20    | 1170 | 150   | 55    | 1420 | 40    |
| Future Volume (vph)     | 0    | 0    | 175   | 0    | 0    | 75    | 20    | 1170 | 150   | 55    | 1420 | 40    |
| Ideal Flow (vphpl)      | 1900 | 1900 | 1900  | 1900 | 1900 | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900  |
| Storage Length (ft)     | 0    | 0    | 0     | 0    | 0    | 0     | 200   | 200  | 200   | 200   | 200  | 200   |
| Storage Lanes           | 0    | 0    | 1     | 0    | 0    | 1     | 1     | 1    | 1     | 1     | 1    | 1     |
| Taper Length (ft)       | 25   |      |       | 25   |      |       | 25    |      |       | 25    |      |       |
| Lane Util. Factor       | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 0.95 | 1.00  | 1.00  | 0.95 | 1.00  |
| Frt                     |      |      | 0.865 |      |      | 0.865 |       |      | 0.850 |       |      | 0.850 |
| Flt Protected           |      |      |       |      |      |       | 0.950 |      |       | 0.950 |      |       |
| Satd. Flow (prot)       | 0    | 0    | 1611  | 0    | 0    | 1565  | 1671  | 3343 | 1495  | 1656  | 3312 | 1482  |
| Flt Permitted           |      |      |       |      |      |       | 0.950 |      |       | 0.950 |      |       |
| Satd. Flow (perm)       | 0    | 0    | 1611  | 0    | 0    | 1565  | 1671  | 3343 | 1495  | 1656  | 3312 | 1482  |
| Link Speed (mph)        |      |      | 35    |      |      | 35    |       |      | 55    |       |      | 55    |
| Link Distance (ft)      |      |      | 600   |      |      | 600   |       |      | 710   |       |      | 940   |
| Travel Time (s)         |      |      | 11.7  |      |      | 11.7  |       |      | 8.8   |       |      | 11.7  |
| Peak Hour Factor        | 0.92 | 0.92 | 0.92  | 0.92 | 0.92 | 0.92  | 0.92  | 0.92 | 0.92  | 0.92  | 0.92 | 0.92  |
| Heavy Vehicles (%)      | 2%   | 2%   | 2%    | 5%   | 5%   | 5%    | 8%    | 8%   | 8%    | 9%    | 9%   | 9%    |
| Adj. Flow (vph)         | 0    | 0    | 190   | 0    | 0    | 82    | 22    | 1272 | 163   | 60    | 1543 | 43    |
| Shared Lane Traffic (%) |      |      |       |      |      |       |       |      |       |       |      |       |
| Lane Group Flow (vph)   | 0    | 0    | 190   | 0    | 0    | 82    | 22    | 1272 | 163   | 60    | 1543 | 43    |

Intersection Summary

Area Type: Other

Description: design has dual WBR lanes;

veh heading north to use outer freeflow R-turn lane (35 veh);

veh heading west/south to use inner stop-controlled R-turn lane (75 veh);

model only shows inner stop-controlled lane

HCM 6th TWSC  
130: CTH F & Lindsay Road

07/27/2020

Intersection

Int Delay, s/veh 2.3

| Movement                 | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR   | SBL  | SBT  | SBR   |
|--------------------------|------|------|------|------|------|------|------|------|-------|------|------|-------|
| Lane Configurations      |      |      | ↗    |      |      | ↗    | ↗    | ↗    | ↗     | ↗    | ↗    | ↗     |
| Traffic Vol, veh/h       | 0    | 0    | 175  | 0    | 0    | 75   | 20   | 1170 | 150   | 55   | 1420 | 40    |
| Future Vol, veh/h        | 0    | 0    | 175  | 0    | 0    | 75   | 20   | 1170 | 150   | 55   | 1420 | 40    |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0     |
| Sign Control             | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free  | Free | Free | Free  |
| RT Channelized           | -    | -    | None | -    | -    | None | -    | -    | Yield | -    | -    | Yield |
| Storage Length           |      |      | 0    |      |      | 0    | 200  |      | 200   | 200  |      | 200   |
| Veh in Median Storage, # | -    | 1    | -    | -    | 1    | -    | 0    | -    | 0     | -    | 0    | -     |
| Grade, %                 | -    | 0    | -    | -    | 0    | -    | 0    | -    | 0     | -    | 0    | -     |
| Peak Hour Factor         | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92    | 92   | 92   | 92    |
| Heavy Vehicles, %        | 2    | 2    | 2    | 5    | 5    | 5    | 8    | 8    | 8     | 9    | 9    | 9     |
| Mvmt Flow                | 0    | 0    | 190  | 0    | 0    | 82   | 22   | 1272 | 163   | 60   | 1543 | 43    |

| Major/Minor          | Minor2 |   | Minor1 |   | Major1 |      |      | Major2 |   |      |   |   |
|----------------------|--------|---|--------|---|--------|------|------|--------|---|------|---|---|
| Conflicting Flow All | -      | - | 772    | - | -      | 636  | 1543 | 0      | 0 | 1272 | 0 | 0 |
| Stage 1              | -      | - | -      | - | -      | -    | -    | -      | - | -    | - | - |
| Stage 2              | -      | - | -      | - | -      | -    | -    | -      | - | -    | - | - |
| Critical Hdwy        | -      | - | 6.94   | - | -      | 7    | 4.26 | -      | - | 4.28 | - | - |
| Critical Hdwy Stg 1  | -      | - | -      | - | -      | -    | -    | -      | - | -    | - | - |
| Critical Hdwy Stg 2  | -      | - | -      | - | -      | -    | -    | -      | - | -    | - | - |
| Follow-up Hdwy       | -      | - | 3.32   | - | -      | 3.35 | 2.28 | -      | - | 2.29 | - | - |
| Pot Cap-1 Maneuver   | 0      | 0 | 342    | 0 | 0      | 413  | 399  | -      | - | 505  | - | - |
| Stage 1              | 0      | 0 | -      | 0 | 0      | -    | -    | -      | - | -    | - | - |
| Stage 2              | 0      | 0 | -      | 0 | 0      | -    | -    | -      | - | -    | - | - |
| Platoon blocked, %   |        |   |        |   |        |      |      |        |   |      |   |   |
| Mov Cap-1 Maneuver   | -      | - | 342    | - | -      | 413  | 399  | -      | - | 505  | - | - |
| Mov Cap-2 Maneuver   | -      | - | -      | - | -      | -    | -    | -      | - | -    | - | - |
| Stage 1              | -      | - | -      | - | -      | -    | -    | -      | - | -    | - | - |
| Stage 2              | -      | - | -      | - | -      | -    | -    | -      | - | -    | - | - |

| Approach             | EB   | WB   | NB  | SB  |
|----------------------|------|------|-----|-----|
| HCM Control Delay, s | 27.9 | 15.8 | 0.2 | 0.5 |
| HCM LOS              | D    | C    |     |     |

| Minor Lane/Major Mvmt | NBL   | NBT | NBR | EBLn1 | WBLn1 | SBL   | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|-------|-----|-----|
| Capacity (veh/h)      | 399   | -   | -   | 342   | 413   | 505   | -   | -   |
| HCM Lane V/C Ratio    | 0.054 | -   | -   | 0.556 | 0.197 | 0.118 | -   | -   |
| HCM Control Delay (s) | 14.5  | -   | -   | 27.9  | 15.8  | 13.1  | -   | -   |
| HCM Lane LOS          | B     | -   | -   | D     | C     | B     | -   | -   |
| HCM 95th %tile Q(veh) | 0.2   | -   | -   | 3.2   | 0.7   | 0.4   | -   | -   |



Lanes, Volumes, Timings  
110: CTH F & North Crossover

07/27/2020

|                         | EBL  | EBR  | NBU  | NBL   | NBT  | SBT  | SBR  |
|-------------------------|------|------|------|-------|------|------|------|
| Lane Configurations     |      | ↗    | ↘    | ↗     | ↗↗   | ↗↗   |      |
| Traffic Volume (vph)    | 0    | 0    | 0    | 125   | 1875 | 1425 | 0    |
| Future Volume (vph)     | 0    | 0    | 0    | 125   | 1875 | 1425 | 0    |
| Ideal Flow (vphpl)      | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 |
| Storage Length (ft)     | 0    | 0    |      | 200   |      |      | 0    |
| Storage Lanes           | 0    | 1    |      | 2     |      |      | 0    |
| Taper Length (ft)       | 25   |      |      | 25    |      |      |      |
| Lane Util. Factor       | 1.00 | 1.00 | 1.00 | 1.00  | 0.95 | 0.95 | 1.00 |
| Frt                     |      |      |      |       |      |      |      |
| Frt Protected           |      |      |      | 0.950 |      |      |      |
| Satd. Flow (prot)       | 0    | 1863 | 1827 | 1736  | 3471 | 3438 | 0    |
| Frt Permitted           |      |      |      | 0.950 |      |      |      |
| Satd. Flow (perm)       | 0    | 1863 | 1827 | 1736  | 3471 | 3438 | 0    |
| Link Speed (mph)        | 30   |      |      |       | 55   | 55   |      |
| Link Distance (ft)      | 600  |      |      |       | 610  | 500  |      |
| Travel Time (s)         | 13.6 |      |      |       | 7.6  | 6.2  |      |
| Peak Hour Factor        | 0.88 | 0.88 | 0.88 | 0.88  | 0.88 | 0.88 | 0.88 |
| Heavy Vehicles (%)      | 2%   | 2%   | 4%   | 4%    | 4%   | 5%   | 5%   |
| Adj. Flow (vph)         | 0    | 0    | 0    | 142   | 2131 | 1619 | 0    |
| Shared Lane Traffic (%) |      |      |      |       |      |      |      |
| Lane Group Flow (vph)   | 0    | 0    | 0    | 142   | 2131 | 1619 | 0    |

Intersection Summary

Area Type: Other

HCM 6th TWSC  
110: CTH F & North Crossover

07/27/2020

| Intersection             |      |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|------|
| Int Delay, s/veh         | 0.7  |      |      |      |      |      |      |
| Movement                 | EBL  | EBR  | NBU  | NBL  | NBT  | SBT  | SBR  |
| Lane Configurations      |      | ↗    | ↘    | ↗    | ↗↗   | ↗↗   |      |
| Traffic Vol, veh/h       | 0    | 0    | 0    | 125  | 1875 | 1425 | 0    |
| Future Vol, veh/h        | 0    | 0    | 0    | 125  | 1875 | 1425 | 0    |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control             | Stop | Stop | Free | Free | Free | Free | Free |
| RT Channelized           | -    | Free | -    | -    | None | -    | None |
| Storage Length           | -    | 0    | -    | 200  | -    | -    | -    |
| Veh in Median Storage, # | 1    | -    | -    | -    | 0    | 0    | -    |
| Grade, %                 | 0    | -    | -    | -    | 0    | 0    | -    |
| Peak Hour Factor         | 88   | 88   | 88   | 88   | 88   | 88   | 88   |
| Heavy Vehicles, %        | 2    | 2    | 4    | 4    | 4    | 5    | 5    |
| Mvmt Flow                | 0    | 0    | 0    | 142  | 2131 | 1619 | 0    |

| Major/Minor          | Minor2 | Major1 | Major2          |
|----------------------|--------|--------|-----------------|
| Conflicting Flow All | -      | -      | 1619 1619 0 - 0 |
| Stage 1              | -      | -      | - - -           |
| Stage 2              | -      | -      | - - -           |
| Critical Hdwy        | -      | -      | 6.48 4.18 - - - |
| Critical Hdwy Stg 1  | -      | -      | - - -           |
| Critical Hdwy Stg 2  | -      | -      | - - -           |
| Follow-up Hdwy       | -      | -      | 2.54 2.24 - - - |
| Pot Cap-1 Maneuver   | 0      | 0      | 129 389 - - 0   |
| Stage 1              | 0      | 0      | - - - 0         |
| Stage 2              | 0      | 0      | - - - 0         |
| Platoon blocked, %   |        |        | - -             |
| Mov Cap-1 Maneuver   | -      | -      | 129 389 - - -   |
| Mov Cap-2 Maneuver   | -      | -      | - - -           |
| Stage 1              | -      | -      | - - -           |
| Stage 2              | -      | -      | - - -           |

| Approach             | EB | NB  | SB |
|----------------------|----|-----|----|
| HCM Control Delay, s | 0  | 1.2 | 0  |
| HCM LOS              | A  |     |    |

| Minor Lane/Major Mvmt | NBU | NBL   | NBT EBLn1 | SBT |
|-----------------------|-----|-------|-----------|-----|
| Capacity (veh/h)      | 129 | 389   | - - -     | -   |
| HCM Lane V/C Ratio    | -   | 0.365 | - - -     | -   |
| HCM Control Delay (s) | 0   | 19.5  | - 0 -     | -   |
| HCM Lane LOS          | A   | C     | - A -     | -   |
| HCM 95th %tile Q(veh) | 0   | 1.6   | - - -     | -   |

Lanes, Volumes, Timings  
120: CTH F & South Crossover

07/27/2020

|                         | WBL  | WBR  | NBT  | NBR  | SBU  | SBL   | SBT  |
|-------------------------|------|------|------|------|------|-------|------|
| Lane Configurations     |      | ↑↑   | ↑↑   |      | ↓    | ↓     | ↑↑   |
| Traffic Volume (vph)    | 0    | 0    | 1980 | 0    | 0    | 75    | 1435 |
| Future Volume (vph)     | 0    | 0    | 1980 | 0    | 0    | 75    | 1435 |
| Ideal Flow (vphpl)      | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Storage Length (ft)     | 0    | 0    |      | 0    |      | 200   |      |
| Storage Lanes           | 0    | 1    |      | 0    |      | 2     |      |
| Taper Length (ft)       | 25   |      |      |      |      | 25    |      |
| Lane Util. Factor       | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00  | 0.95 |
| Frt                     |      |      |      |      |      |       |      |
| Flt Protected           |      |      |      |      |      | 0.950 |      |
| Satd. Flow (prot)       | 0    | 1863 | 3471 | 0    | 1810 | 1719  | 3438 |
| Flt Permitted           |      |      |      |      |      | 0.950 |      |
| Satd. Flow (perm)       | 0    | 1863 | 3471 | 0    | 1810 | 1719  | 3438 |
| Link Speed (mph)        | 30   |      | 55   |      |      |       | 55   |
| Link Distance (ft)      | 600  |      | 500  |      |      |       | 810  |
| Travel Time (s)         | 13.6 |      | 6.2  |      |      |       | 10.0 |
| Peak Hour Factor        | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88  | 0.88 |
| Heavy Vehicles (%)      | 2%   | 2%   | 4%   | 4%   | 5%   | 5%    | 5%   |
| Adj. Flow (vph)         | 0    | 0    | 2250 | 0    | 0    | 85    | 1631 |
| Shared Lane Traffic (%) |      |      |      |      |      |       |      |
| Lane Group Flow (vph)   | 0    | 0    | 2250 | 0    | 0    | 85    | 1631 |

Intersection Summary

Area Type: Other

HCM 6th TWSC  
120: CTH F & South Crossover

07/27/2020

| Intersection             |      |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|------|
| Int Delay, s/veh         | 0.7  |      |      |      |      |      |      |
| Movement                 | WBL  | WBR  | NBT  | NBR  | SBU  | SBL  | SBT  |
| Lane Configurations      |      | ↑↑   | ↑↑   |      | ↓    | ↓    | ↑↑   |
| Traffic Vol, veh/h       | 0    | 0    | 1980 | 0    | 0    | 75   | 1435 |
| Future Vol, veh/h        | 0    | 0    | 1980 | 0    | 0    | 75   | 1435 |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control             | Stop | Stop | Free | Free | Free | Free | Free |
| RT Channelized           | -    | Free | -    | None | -    | -    | None |
| Storage Length           | -    | 0    | -    | -    | -    | 200  | -    |
| Veh in Median Storage, # | 1    | -    | 0    | -    | -    | -    | 0    |
| Grade, %                 | 0    | -    | 0    | -    | -    | -    | 0    |
| Peak Hour Factor         | 88   | 88   | 88   | 88   | 88   | 88   | 88   |
| Heavy Vehicles, %        | 2    | 2    | 4    | 4    | 5    | 5    | 5    |
| Mvmt Flow                | 0    | 0    | 2250 | 0    | 0    | 85   | 1631 |

| Major/Minor          | Minor1 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | -      | -      | 0      |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |
| Critical Hdwy        | -      | -      | -      |
| Critical Hdwy Stg 1  | -      | -      | -      |
| Critical Hdwy Stg 2  | -      | -      | -      |
| Follow-up Hdwy       | -      | -      | -      |
| Pot Cap-1 Maneuver   | 0      | 0      | -      |
| Stage 1              | 0      | 0      | -      |
| Stage 2              | 0      | 0      | -      |
| Platoon blocked, %   | -      | -      | -      |
| Mov Cap-1 Maneuver   | -      | -      | -      |
| Mov Cap-2 Maneuver   | -      | -      | -      |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |

| Approach             | WB | NB | SB  |
|----------------------|----|----|-----|
| HCM Control Delay, s | 0  | 0  | 1.6 |
| HCM LOS              | A  |    |     |

| Minor Lane/Major Mvmt | NBTWBLn1 | SBU | SBL   | SBT  |
|-----------------------|----------|-----|-------|------|
| Capacity (veh/h)      | -        | -   | 49    | 216  |
| HCM Lane V/C Ratio    | -        | -   | 0.395 | -    |
| HCM Control Delay (s) | -        | 0   | 0     | 32.1 |
| HCM Lane LOS          | -        | A   | A     | D    |
| HCM 95th %tile Q(veh) | -        | -   | 0     | 1.8  |



Lanes, Volumes, Timings  
130: CTH F & Lindsay Road

07/27/2020

|                         | ↖    | →    | ↗     | ↖    | ←    | ↖     | ↖     | ↖    | ↖     | ↖     | ↖    | ↖     |
|-------------------------|------|------|-------|------|------|-------|-------|------|-------|-------|------|-------|
| Lane Group              | EBL  | EBT  | EBR   | WBL  | WBT  | WBR   | NBL   | NBT  | NBR   | SBL   | SBT  | SBR   |
| Lane Configurations     |      |      | ↖     |      |      | ↖     | ↖     | ↖    | ↖     | ↖     | ↖    | ↖     |
| Traffic Volume (vph)    | 0    | 0    | 130   | 0    | 0    | 125   | 125   | 1795 | 135   | 40    | 1380 | 130   |
| Future Volume (vph)     | 0    | 0    | 130   | 0    | 0    | 125   | 125   | 1795 | 135   | 40    | 1380 | 130   |
| Ideal Flow (vphpl)      | 1900 | 1900 | 1900  | 1900 | 1900 | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900  |
| Storage Length (ft)     | 0    | 0    | 0     | 0    | 0    | 0     | 200   | 200  | 200   | 200   | 200  | 200   |
| Storage Lanes           | 0    | 1    | 0     | 0    | 1    | 1     | 1     | 1    | 1     | 1     | 1    | 1     |
| Taper Length (ft)       | 25   |      |       | 25   |      |       | 25    |      |       | 25    |      |       |
| Lane Util. Factor       | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 0.95 | 1.00  | 1.00  | 0.95 | 1.00  |
| Frt                     |      |      | 0.865 |      |      | 0.865 |       |      | 0.850 |       |      | 0.850 |
| Flt Protected           |      |      |       |      |      |       | 0.950 |      |       | 0.950 |      |       |
| Satd. Flow (prot)       | 0    | 0    | 1596  | 0    | 0    | 1611  | 1736  | 3471 | 1553  | 1719  | 3438 | 1538  |
| Flt Permitted           |      |      |       |      |      |       | 0.950 |      |       | 0.950 |      |       |
| Satd. Flow (perm)       | 0    | 0    | 1596  | 0    | 0    | 1611  | 1736  | 3471 | 1553  | 1719  | 3438 | 1538  |
| Link Speed (mph)        |      | 35   |       |      | 35   |       |       | 55   |       |       | 55   |       |
| Link Distance (ft)      |      | 600  |       |      | 600  |       |       | 690  |       |       | 890  |       |
| Travel Time (s)         |      | 11.7 |       |      | 11.7 |       |       | 8.6  |       |       | 11.0 |       |
| Peak Hour Factor        | 0.88 | 0.88 | 0.88  | 0.88 | 0.88 | 0.88  | 0.88  | 0.88 | 0.88  | 0.88  | 0.88 | 0.88  |
| Heavy Vehicles (%)      | 3%   | 3%   | 3%    | 2%   | 2%   | 2%    | 4%    | 4%   | 4%    | 5%    | 5%   | 5%    |
| Adj. Flow (vph)         | 0    | 0    | 148   | 0    | 0    | 142   | 142   | 2040 | 153   | 45    | 1568 | 148   |
| Shared Lane Traffic (%) |      |      |       |      |      |       |       |      |       |       |      |       |
| Lane Group Flow (vph)   | 0    | 0    | 148   | 0    | 0    | 142   | 142   | 2040 | 153   | 45    | 1568 | 148   |

Intersection Summary

Area Type: Other

Description: design has dual WBR lanes;

veh heading north to use outer freeflow R-turn lane (80 veh);

veh heading west/south to use inner stop-controlled R-turn lane (125 veh);

model only shows inner stop-controlled lane

HCM 6th TWSC  
130: CTH F & Lindsay Road

07/27/2020

| Intersection             |      |      |      |      |      |      |      |      |       |      |      |       |
|--------------------------|------|------|------|------|------|------|------|------|-------|------|------|-------|
| Int Delay, s/veh         | 3    |      |      |      |      |      |      |      |       |      |      |       |
| Movement                 | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR   | SBL  | SBT  | SBR   |
| Lane Configurations      |      |      | ↖    |      |      | ↖    | ↖    | ↖    | ↖     | ↖    | ↖    | ↖     |
| Traffic Vol, veh/h       | 0    | 0    | 130  | 0    | 0    | 125  | 125  | 1795 | 135   | 40   | 1380 | 130   |
| Future Vol, veh/h        | 0    | 0    | 130  | 0    | 0    | 125  | 125  | 1795 | 135   | 40   | 1380 | 130   |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0     |
| Sign Control             | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free  | Free | Free | Free  |
| RT Channelized           | -    | -    | None | -    | -    | None | -    | -    | Yield | -    | -    | Yield |
| Storage Length           | -    | -    | 0    | -    | -    | 0    | 200  | -    | 200   | 200  | -    | 200   |
| Veh in Median Storage, # | -    | 1    | -    | -    | 1    | -    | 0    | -    | 0     | -    | 0    | -     |
| Grade, %                 | -    | 0    | -    | -    | 0    | -    | 0    | -    | 0     | -    | 0    | -     |
| Peak Hour Factor         | 88   | 88   | 88   | 88   | 88   | 88   | 88   | 88   | 88    | 88   | 88   | 88    |
| Heavy Vehicles, %        | 3    | 3    | 3    | 2    | 2    | 2    | 4    | 4    | 4     | 5    | 5    | 5     |
| Mvmt Flow                | 0    | 0    | 148  | 0    | 0    | 142  | 142  | 2040 | 153   | 45   | 1568 | 148   |

| Major/Minor          | Minor2 |   | Minor1 |   | Major1 |      | Major2 |   |   |      |   |   |
|----------------------|--------|---|--------|---|--------|------|--------|---|---|------|---|---|
| Conflicting Flow All | -      | - | 784    | - | -      | 1020 | 1568   | 0 | 0 | 2040 | 0 | 0 |
| Stage 1              | -      | - | -      | - | -      | -    | -      | - | - | -    | - | - |
| Stage 2              | -      | - | -      | - | -      | -    | -      | - | - | -    | - | - |
| Critical Hdwy        | -      | - | 6.96   | - | -      | 6.94 | 4.18   | - | - | 4.2  | - | - |
| Critical Hdwy Stg 1  | -      | - | -      | - | -      | -    | -      | - | - | -    | - | - |
| Critical Hdwy Stg 2  | -      | - | -      | - | -      | -    | -      | - | - | -    | - | - |
| Follow-up Hdwy       | -      | - | 3.33   | - | -      | 3.32 | 2.24   | - | - | 2.25 | - | - |
| Pot Cap-1 Maneuver   | 0      | 0 | 334    | 0 | 0      | 234  | 408    | - | - | 262  | - | - |
| Stage 1              | 0      | 0 | -      | 0 | 0      | -    | -      | - | - | -    | - | - |
| Stage 2              | 0      | 0 | -      | 0 | 0      | -    | -      | - | - | -    | - | - |
| Platoon blocked, %   | -      | - | -      | - | -      | -    | -      | - | - | -    | - | - |
| Mov Cap-1 Maneuver   | -      | - | 334    | - | -      | 234  | 408    | - | - | 262  | - | - |
| Mov Cap-2 Maneuver   | -      | - | -      | - | -      | -    | -      | - | - | -    | - | - |
| Stage 1              | -      | - | -      | - | -      | -    | -      | - | - | -    | - | - |
| Stage 2              | -      | - | -      | - | -      | -    | -      | - | - | -    | - | - |

| Approach             | EB   | WB   | NB  | SB  |
|----------------------|------|------|-----|-----|
| HCM Control Delay, s | 24.1 | 41.6 | 1.1 | 0.6 |
| HCM LOS              | C    | E    |     |     |

| Minor Lane/Major Mvmt | NBL   | NBT | NBR | EBLn1 | WBLn1 | SBL   | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|-------|-----|-----|
| Capacity (veh/h)      | 408   | -   | -   | 334   | 234   | 262   | -   | -   |
| HCM Lane V/C Ratio    | 0.348 | -   | -   | 0.442 | 0.607 | 0.173 | -   | -   |
| HCM Control Delay (s) | 18.5  | -   | -   | 24.1  | 41.6  | 21.6  | -   | -   |
| HCM Lane LOS          | C     | -   | -   | C     | E     | C     | -   | -   |
| HCM 95th %tile Q(veh) | 1.5   | -   | -   | 2.2   | 3.5   | 0.6   | -   | -   |

Lanes, Volumes, Timings  
110: CTH F & North Crossover

07/27/2020

|                         | EBL  | EBR  | NBU  | NBL   | NBT  | SBT  | SBR  |
|-------------------------|------|------|------|-------|------|------|------|
| Lane Configurations     |      | ↖    | ↗    | ↖     | ↖↗   | ↖↗   |      |
| Traffic Volume (vph)    | 0    | 0    | 0    | 75    | 1205 | 1440 | 0    |
| Future Volume (vph)     | 0    | 0    | 0    | 75    | 1205 | 1440 | 0    |
| Ideal Flow (vphpl)      | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 |
| Storage Length (ft)     | 0    | 0    |      | 200   |      |      | 0    |
| Storage Lanes           | 0    | 1    |      | 2     |      |      | 0    |
| Taper Length (ft)       | 25   |      |      | 25    |      |      |      |
| Lane Util. Factor       | 1.00 | 1.00 | 1.00 | 1.00  | 0.95 | 0.95 | 1.00 |
| Frt                     |      |      |      |       |      |      |      |
| Flt Protected           |      |      |      | 0.950 |      |      |      |
| Satd. Flow (prot)       | 0    | 1863 | 1759 | 1671  | 3343 | 3312 | 0    |
| Flt Permitted           |      |      |      | 0.950 |      |      |      |
| Satd. Flow (perm)       | 0    | 1863 | 1759 | 1671  | 3343 | 3312 | 0    |
| Link Speed (mph)        | 30   |      |      |       | 55   | 55   |      |
| Link Distance (ft)      | 600  |      |      |       | 560  | 500  |      |
| Travel Time (s)         | 13.6 |      |      |       | 6.9  | 6.2  |      |
| Peak Hour Factor        | 0.92 | 0.92 | 0.92 | 0.92  | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles (%)      | 2%   | 2%   | 8%   | 8%    | 8%   | 9%   | 9%   |
| Adj. Flow (vph)         | 0    | 0    | 0    | 82    | 1310 | 1565 | 0    |
| Shared Lane Traffic (%) |      |      |      |       |      |      |      |
| Lane Group Flow (vph)   | 0    | 0    | 0    | 82    | 1310 | 1565 | 0    |

Intersection Summary

Area Type: Other

HCM 6th TWSC  
110: CTH F & North Crossover

07/27/2020

|                          |      |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|------|
| Intersection             |      |      |      |      |      |      |      |
| Int Delay, s/veh         | 0.5  |      |      |      |      |      |      |
| Movement                 | EBL  | EBR  | NBU  | NBL  | NBT  | SBT  | SBR  |
| Lane Configurations      |      | ↖    | ↗    | ↖    | ↖↗   | ↖↗   |      |
| Traffic Vol, veh/h       | 0    | 0    | 0    | 75   | 1205 | 1440 | 0    |
| Future Vol, veh/h        | 0    | 0    | 0    | 75   | 1205 | 1440 | 0    |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control             | Stop | Stop | Free | Free | Free | Free | Free |
| RT Channelized           | -    | Free | -    | -    | None | -    | None |
| Storage Length           | -    | 0    | -    | 200  | -    | -    | -    |
| Veh in Median Storage, # | 1    | -    | -    | -    | 0    | 0    | -    |
| Grade, %                 | 0    | -    | -    | -    | 0    | 0    | -    |
| Peak Hour Factor         | 92   | 92   | 92   | 92   | 92   | 92   | 92   |
| Heavy Vehicles, %        | 2    | 2    | 8    | 8    | 8    | 9    | 9    |
| Mvmt Flow                | 0    | 0    | 0    | 82   | 1310 | 1565 | 0    |

|                      |        |        |        |      |   |   |
|----------------------|--------|--------|--------|------|---|---|
| Major/Minor          | Minor2 | Major1 | Major2 |      |   |   |
| Conflicting Flow All | -      | -      | 1565   | 1565 | 0 | - |
| Stage 1              | -      | -      | -      | -    | - | - |
| Stage 2              | -      | -      | -      | -    | - | - |
| Critical Hdwy        | -      | -      | 6.56   | 4.26 | - | - |
| Critical Hdwy Stg 1  | -      | -      | -      | -    | - | - |
| Critical Hdwy Stg 2  | -      | -      | -      | -    | - | - |
| Follow-up Hdwy       | -      | -      | 2.58   | 2.28 | - | - |
| Pot Cap-1 Maneuver   | 0      | 0      | 134    | 391  | - | - |
| Stage 1              | 0      | 0      | -      | -    | - | 0 |
| Stage 2              | 0      | 0      | -      | -    | - | 0 |
| Platoon blocked, %   |        |        |        |      | - | - |
| Mov Cap-1 Maneuver   | -      | -      | 134    | 391  | - | - |
| Mov Cap-2 Maneuver   | -      | -      | -      | -    | - | - |
| Stage 1              | -      | -      | -      | -    | - | - |
| Stage 2              | -      | -      | -      | -    | - | - |

|                      |    |    |    |
|----------------------|----|----|----|
| Approach             | EB | NB | SB |
| HCM Control Delay, s | 0  | 1  | 0  |
| HCM LOS              | A  |    |    |

|                       |     |       |           |     |
|-----------------------|-----|-------|-----------|-----|
| Minor Lane/Major Mvmt | NBU | NBL   | NBT EBLn1 | SBT |
| Capacity (veh/h)      | 134 | 391   | -         | -   |
| HCM Lane V/C Ratio    | -   | 0.208 | -         | -   |
| HCM Control Delay (s) | 0   | 16.6  | -         | 0   |
| HCM Lane LOS          | A   | C     | -         | A   |
| HCM 95th %tile Q(veh) | 0   | 0.8   | -         | -   |



Lanes, Volumes, Timings  
120: CTH F & South Crossover

07/27/2020

|                         | WBL  | WBR  | NBT  | NBR  | SBU  | SBL   | SBT  |
|-------------------------|------|------|------|------|------|-------|------|
| Lane Configurations     |      | ↑↑   | ↑↑   |      | ↓    | ↓     | ↑↑   |
| Traffic Volume (vph)    | 0    | 0    | 1230 | 0    | 0    | 110   | 1485 |
| Future Volume (vph)     | 0    | 0    | 1230 | 0    | 0    | 110   | 1485 |
| Ideal Flow (vphpl)      | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Storage Length (ft)     | 0    | 0    |      | 0    |      | 200   |      |
| Storage Lanes           | 0    | 1    |      | 0    |      | 2     |      |
| Taper Length (ft)       | 25   |      |      |      |      | 25    |      |
| Lane Util. Factor       | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00  | 0.95 |
| Frt                     |      |      |      |      |      |       |      |
| Flt Protected           |      |      |      |      |      | 0.950 |      |
| Satd. Flow (prot)       | 0    | 1863 | 3343 | 0    | 1743 | 1656  | 3312 |
| Flt Permitted           |      |      |      |      |      | 0.950 |      |
| Satd. Flow (perm)       | 0    | 1863 | 3343 | 0    | 1743 | 1656  | 3312 |
| Link Speed (mph)        | 30   |      | 55   |      |      |       | 55   |
| Link Distance (ft)      | 600  |      | 500  |      |      |       | 790  |
| Travel Time (s)         | 13.6 |      | 6.2  |      |      |       | 9.8  |
| Peak Hour Factor        | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92  | 0.92 |
| Heavy Vehicles (%)      | 2%   | 2%   | 8%   | 8%   | 9%   | 9%    | 9%   |
| Adj. Flow (vph)         | 0    | 0    | 1337 | 0    | 0    | 120   | 1614 |
| Shared Lane Traffic (%) |      |      |      |      |      |       |      |
| Lane Group Flow (vph)   | 0    | 0    | 1337 | 0    | 0    | 120   | 1614 |

Intersection Summary

Area Type: Other

HCM 6th TWSC  
120: CTH F & South Crossover

07/27/2020

| Intersection             |      |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|------|
| Int Delay, s/veh         | 0.6  |      |      |      |      |      |      |
| Movement                 | WBL  | WBR  | NBT  | NBR  | SBU  | SBL  | SBT  |
| Lane Configurations      |      | ↑↑   | ↑↑   |      | ↓    | ↓    | ↑↑   |
| Traffic Vol, veh/h       | 0    | 0    | 1230 | 0    | 0    | 110  | 1485 |
| Future Vol, veh/h        | 0    | 0    | 1230 | 0    | 0    | 110  | 1485 |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control             | Stop | Stop | Free | Free | Free | Free | Free |
| RT Channelized           | -    | Free | -    | None | -    | -    | None |
| Storage Length           | -    | 0    | -    | -    | -    | 200  | -    |
| Veh in Median Storage, # | 1    | -    | 0    | -    | -    | -    | 0    |
| Grade, %                 | 0    | -    | 0    | -    | -    | -    | 0    |
| Peak Hour Factor         | 92   | 92   | 92   | 92   | 92   | 92   | 92   |
| Heavy Vehicles, %        | 2    | 2    | 8    | 8    | 9    | 9    | 9    |
| Mvmt Flow                | 0    | 0    | 1337 | 0    | 0    | 120  | 1614 |

| Major/Minor          | Minor1 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | -      | -      | 0      |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |
| Critical Hdwy        | -      | -      | -      |
| Critical Hdwy Stg 1  | -      | -      | -      |
| Critical Hdwy Stg 2  | -      | -      | -      |
| Follow-up Hdwy       | -      | -      | -      |
| Pot Cap-1 Maneuver   | 0      | 0      | -      |
| Stage 1              | 0      | 0      | -      |
| Stage 2              | 0      | 0      | -      |
| Platoon blocked, %   | -      | -      | -      |
| Mov Cap-1 Maneuver   | -      | -      | -      |
| Mov Cap-2 Maneuver   | -      | -      | -      |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |

| Approach             | WB | NB | SB |
|----------------------|----|----|----|
| HCM Control Delay, s | 0  | 0  | 1  |
| HCM LOS              | A  |    |    |

| Minor Lane/Major Mvmt | NBTWBLn1 | SBU | SBL   | SBT  |
|-----------------------|----------|-----|-------|------|
| Capacity (veh/h)      | -        | -   | 188   | 476  |
| HCM Lane V/C Ratio    | -        | -   | 0.251 | -    |
| HCM Control Delay (s) | -        | 0   | 0     | 15.1 |
| HCM Lane LOS          | -        | A   | A     | C    |
| HCM 95th %tile Q(veh) | -        | -   | 0     | 1    |

Lanes, Volumes, Timings  
130: CTH F & Lindsay Road

07/27/2020

|                         | ↗    | →    | ↘     | ↖    | ←    | ↙     | ↘     | ↖    | ↗     | ↘     | ↖    | ↗     |
|-------------------------|------|------|-------|------|------|-------|-------|------|-------|-------|------|-------|
| Lane Group              | EBL  | EBT  | EBR   | WBL  | WBT  | WBR   | NBL   | NBT  | NBR   | SBL   | SBT  | SBR   |
| Lane Configurations     |      |      | ↗     |      |      | ↗     | ↗     | ↗    | ↗     | ↗     | ↗    | ↗     |
| Traffic Volume (vph)    | 0    | 0    | 175   | 0    | 0    | 75    | 20    | 1170 | 150   | 55    | 1420 | 40    |
| Future Volume (vph)     | 0    | 0    | 175   | 0    | 0    | 75    | 20    | 1170 | 150   | 55    | 1420 | 40    |
| Ideal Flow (vphpl)      | 1900 | 1900 | 1900  | 1900 | 1900 | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900  |
| Storage Length (ft)     | 0    | 0    | 0     | 0    | 0    | 0     | 200   | 200  | 200   | 200   | 200  | 200   |
| Storage Lanes           | 0    | 0    | 1     | 0    | 0    | 1     | 1     | 1    | 1     | 1     | 1    | 1     |
| Taper Length (ft)       | 25   |      |       | 25   |      |       | 25    |      |       | 25    |      |       |
| Lane Util. Factor       | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 0.95 | 1.00  | 1.00  | 0.95 | 1.00  |
| Frt                     |      |      | 0.865 |      |      | 0.865 |       |      | 0.850 |       |      | 0.850 |
| Flt Protected           |      |      |       |      |      |       | 0.950 |      |       | 0.950 |      |       |
| Satd. Flow (prot)       | 0    | 0    | 1611  | 0    | 0    | 1565  | 1671  | 3343 | 1495  | 1656  | 3312 | 1482  |
| Flt Permitted           |      |      |       |      |      |       | 0.950 |      |       | 0.950 |      |       |
| Satd. Flow (perm)       | 0    | 0    | 1611  | 0    | 0    | 1565  | 1671  | 3343 | 1495  | 1656  | 3312 | 1482  |
| Link Speed (mph)        |      | 35   |       |      | 35   |       |       | 55   |       |       | 55   |       |
| Link Distance (ft)      |      | 600  |       |      | 600  |       |       | 710  |       |       | 940  |       |
| Travel Time (s)         |      | 11.7 |       |      | 11.7 |       |       | 8.8  |       |       | 11.7 |       |
| Peak Hour Factor        | 0.92 | 0.92 | 0.92  | 0.92 | 0.92 | 0.92  | 0.92  | 0.92 | 0.92  | 0.92  | 0.92 | 0.92  |
| Heavy Vehicles (%)      | 2%   | 2%   | 2%    | 5%   | 5%   | 5%    | 8%    | 8%   | 8%    | 9%    | 9%   | 9%    |
| Adj. Flow (vph)         | 0    | 0    | 190   | 0    | 0    | 82    | 22    | 1272 | 163   | 60    | 1543 | 43    |
| Shared Lane Traffic (%) |      |      |       |      |      |       |       |      |       |       |      |       |
| Lane Group Flow (vph)   | 0    | 0    | 190   | 0    | 0    | 82    | 22    | 1272 | 163   | 60    | 1543 | 43    |

Intersection Summary

Area Type: Other

Description: design has dual WBR lanes;

veh heading north to use outer freeflow R-turn lane (35 veh);

veh heading west/south to use inner stop-controlled R-turn lane (75 veh);

model only shows inner stop-controlled lane

HCM 6th TWSC  
130: CTH F & Lindsay Road

07/27/2020

Intersection

Int Delay, s/veh 2.3

| Movement                 | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR   | SBL  | SBT  | SBR   |
|--------------------------|------|------|------|------|------|------|------|------|-------|------|------|-------|
| Lane Configurations      |      |      | ↗    |      |      | ↗    | ↗    | ↗    | ↗     | ↗    | ↗    | ↗     |
| Traffic Vol, veh/h       | 0    | 0    | 175  | 0    | 0    | 75   | 20   | 1170 | 150   | 55   | 1420 | 40    |
| Future Vol, veh/h        | 0    | 0    | 175  | 0    | 0    | 75   | 20   | 1170 | 150   | 55   | 1420 | 40    |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0     |
| Sign Control             | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free  | Free | Free | Free  |
| RT Channelized           | -    | -    | None | -    | -    | None | -    | -    | Yield | -    | -    | Yield |
| Storage Length           |      |      | 0    |      |      | 0    | 200  |      | 200   | 200  |      | 200   |
| Veh in Median Storage, # | -    | 1    | -    | -    | 1    | -    | 0    | -    | 0     | -    | 0    | -     |
| Grade, %                 | -    | 0    | -    | -    | 0    | -    | 0    | -    | 0     | -    | 0    | -     |
| Peak Hour Factor         | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92   | 92    | 92   | 92   | 92    |
| Heavy Vehicles, %        | 2    | 2    | 2    | 5    | 5    | 5    | 8    | 8    | 8     | 9    | 9    | 9     |
| Mvmt Flow                | 0    | 0    | 190  | 0    | 0    | 82   | 22   | 1272 | 163   | 60   | 1543 | 43    |

| Major/Minor          | Minor2 |   | Minor1 |   | Major1 |      |      | Major2 |   |      |   |   |
|----------------------|--------|---|--------|---|--------|------|------|--------|---|------|---|---|
| Conflicting Flow All | -      | - | 772    | - | -      | 636  | 1543 | 0      | 0 | 1272 | 0 | 0 |
| Stage 1              | -      | - | -      | - | -      | -    | -    | -      | - | -    | - | - |
| Stage 2              | -      | - | -      | - | -      | -    | -    | -      | - | -    | - | - |
| Critical Hdwy        | -      | - | 6.94   | - | -      | 7    | 4.26 | -      | - | 4.28 | - | - |
| Critical Hdwy Stg 1  | -      | - | -      | - | -      | -    | -    | -      | - | -    | - | - |
| Critical Hdwy Stg 2  | -      | - | -      | - | -      | -    | -    | -      | - | -    | - | - |
| Follow-up Hdwy       | -      | - | 3.32   | - | -      | 3.35 | 2.28 | -      | - | 2.29 | - | - |
| Pot Cap-1 Maneuver   | 0      | 0 | 342    | 0 | 0      | 413  | 399  | -      | - | 505  | - | - |
| Stage 1              | 0      | 0 | -      | 0 | 0      | -    | -    | -      | - | -    | - | - |
| Stage 2              | 0      | 0 | -      | 0 | 0      | -    | -    | -      | - | -    | - | - |
| Platoon blocked, %   |        |   |        |   |        |      |      |        |   |      |   |   |
| Mov Cap-1 Maneuver   | -      | - | 342    | - | -      | 413  | 399  | -      | - | 505  | - | - |
| Mov Cap-2 Maneuver   | -      | - | -      | - | -      | -    | -    | -      | - | -    | - | - |
| Stage 1              | -      | - | -      | - | -      | -    | -    | -      | - | -    | - | - |
| Stage 2              | -      | - | -      | - | -      | -    | -    | -      | - | -    | - | - |

| Approach             | EB   | WB   | NB  | SB  |
|----------------------|------|------|-----|-----|
| HCM Control Delay, s | 27.9 | 15.8 | 0.2 | 0.5 |
| HCM LOS              | D    | C    |     |     |

| Minor Lane/Major Mvmt | NBL   | NBT | NBR | EBLn1 | WBLn1 | SBL   | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|-------|-----|-----|
| Capacity (veh/h)      | 399   | -   | -   | 342   | 413   | 505   | -   | -   |
| HCM Lane V/C Ratio    | 0.054 | -   | -   | 0.556 | 0.197 | 0.118 | -   | -   |
| HCM Control Delay (s) | 14.5  | -   | -   | 27.9  | 15.8  | 13.1  | -   | -   |
| HCM Lane LOS          | B     | -   | -   | D     | C     | B     | -   | -   |
| HCM 95th %tile Q(veh) | 0.2   | -   | -   | 3.2   | 0.7   | 0.4   | -   | -   |



Lanes, Volumes, Timings  
110: CTH F & North Crossover

07/27/2020

|                         | EBL  | EBR  | NBU  | NBL   | NBT  | SBT  | SBR  |
|-------------------------|------|------|------|-------|------|------|------|
| Lane Configurations     |      | ↖    | ↗    | ↖     | ↖↗   | ↖↗   |      |
| Traffic Volume (vph)    | 0    | 0    | 0    | 150   | 1895 | 1545 | 0    |
| Future Volume (vph)     | 0    | 0    | 0    | 150   | 1895 | 1545 | 0    |
| Ideal Flow (vphpl)      | 1900 | 1900 | 1900 | 1900  | 1900 | 1900 | 1900 |
| Storage Length (ft)     | 0    | 0    |      | 200   |      |      | 0    |
| Storage Lanes           | 0    | 1    |      | 2     |      |      | 0    |
| Taper Length (ft)       | 25   |      |      | 25    |      |      |      |
| Lane Util. Factor       | 1.00 | 1.00 | 1.00 | 1.00  | 0.95 | 0.95 | 1.00 |
| Frt                     |      |      |      |       |      |      |      |
| Flt Protected           |      |      |      | 0.950 |      |      |      |
| Satd. Flow (prot)       | 0    | 1863 | 1827 | 1736  | 3471 | 3438 | 0    |
| Flt Permitted           |      |      |      | 0.950 |      |      |      |
| Satd. Flow (perm)       | 0    | 1863 | 1827 | 1736  | 3471 | 3438 | 0    |
| Link Speed (mph)        | 30   |      |      |       | 55   | 55   |      |
| Link Distance (ft)      | 600  |      |      |       | 610  | 500  |      |
| Travel Time (s)         | 13.6 |      |      |       | 7.6  | 6.2  |      |
| Peak Hour Factor        | 0.88 | 0.88 | 0.88 | 0.88  | 0.88 | 0.88 | 0.88 |
| Heavy Vehicles (%)      | 2%   | 2%   | 4%   | 4%    | 4%   | 5%   | 5%   |
| Adj. Flow (vph)         | 0    | 0    | 0    | 170   | 2153 | 1756 | 0    |
| Shared Lane Traffic (%) |      |      |      |       |      |      |      |
| Lane Group Flow (vph)   | 0    | 0    | 0    | 170   | 2153 | 1756 | 0    |

Intersection Summary

Area Type: Other

HCM 6th TWSC  
110: CTH F & North Crossover

07/27/2020

| Intersection             |      |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|------|
| Int Delay, s/veh         | 1.1  |      |      |      |      |      |      |
| Movement                 | EBL  | EBR  | NBU  | NBL  | NBT  | SBT  | SBR  |
| Lane Configurations      |      | ↖    | ↗    | ↖    | ↖↗   | ↖↗   |      |
| Traffic Vol, veh/h       | 0    | 0    | 0    | 150  | 1895 | 1545 | 0    |
| Future Vol, veh/h        | 0    | 0    | 0    | 150  | 1895 | 1545 | 0    |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control             | Stop | Stop | Free | Free | Free | Free | Free |
| RT Channelized           | -    | Free | -    | -    | None | -    | None |
| Storage Length           | -    | 0    | -    | 200  | -    | -    | -    |
| Veh in Median Storage, # | 1    | -    | -    | -    | 0    | 0    | -    |
| Grade, %                 | 0    | -    | -    | -    | 0    | 0    | -    |
| Peak Hour Factor         | 88   | 88   | 88   | 88   | 88   | 88   | 88   |
| Heavy Vehicles, %        | 2    | 2    | 4    | 4    | 4    | 5    | 5    |
| Mvmt Flow                | 0    | 0    | 0    | 170  | 2153 | 1756 | 0    |

| Major/Minor          | Minor2 | Major1 | Major2          |
|----------------------|--------|--------|-----------------|
| Conflicting Flow All | -      | -      | 1756 1756 0 - 0 |
| Stage 1              | -      | -      | - - -           |
| Stage 2              | -      | -      | - - -           |
| Critical Hdwy        | -      | -      | 6.48 4.18 - - - |
| Critical Hdwy Stg 1  | -      | -      | - - -           |
| Critical Hdwy Stg 2  | -      | -      | - - -           |
| Follow-up Hdwy       | -      | -      | 2.54 2.24 - - - |
| Pot Cap-1 Maneuver   | 0      | 0      | 105 344 - - 0   |
| Stage 1              | 0      | 0      | - - - 0         |
| Stage 2              | 0      | 0      | - - - 0         |
| Platoon blocked, %   |        |        | - -             |
| Mov Cap-1 Maneuver   | -      | -      | 105 344 - - -   |
| Mov Cap-2 Maneuver   | -      | -      | - - -           |
| Stage 1              | -      | -      | - - -           |
| Stage 2              | -      | -      | - - -           |

| Approach             | EB | NB  | SB |
|----------------------|----|-----|----|
| HCM Control Delay, s | 0  | 1.9 | 0  |
| HCM LOS              | A  |     |    |

| Minor Lane/Major Mvmt | NBU | NBL   | NBT EBLn1 | SBT |
|-----------------------|-----|-------|-----------|-----|
| Capacity (veh/h)      | 105 | 344   | - - -     | -   |
| HCM Lane V/C Ratio    | -   | 0.496 | - - -     | -   |
| HCM Control Delay (s) | 0   | 25.3  | - 0 -     | -   |
| HCM Lane LOS          | A   | D     | - A -     | -   |
| HCM 95th %tile Q(veh) | 0   | 2.6   | - - -     | -   |

Lanes, Volumes, Timings  
120: CTH F & South Crossover

07/27/2020

|                         | WBL  | WBR  | NBT  | NBR  | SBU  | SBL   | SBT  |
|-------------------------|------|------|------|------|------|-------|------|
| Lane Configurations     |      | ↗    | ↗    |      | ↘    | ↘     | ↗    |
| Traffic Volume (vph)    | 0    | 0    | 2100 | 0    | 0    | 100   | 1450 |
| Future Volume (vph)     | 0    | 0    | 2100 | 0    | 0    | 100   | 1450 |
| Ideal Flow (vphpl)      | 1900 | 1900 | 1900 | 1900 | 1900 | 1900  | 1900 |
| Storage Length (ft)     | 0    | 0    |      | 0    |      | 200   |      |
| Storage Lanes           | 0    | 1    |      | 0    |      | 2     |      |
| Taper Length (ft)       | 25   |      |      |      |      | 25    |      |
| Lane Util. Factor       | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00  | 0.95 |
| Fr                      |      |      |      |      |      |       |      |
| Flt Protected           |      |      |      |      |      | 0.950 |      |
| Satd. Flow (prot)       | 0    | 1863 | 3471 | 0    | 1810 | 1719  | 3438 |
| Flt Permitted           |      |      |      |      |      | 0.950 |      |
| Satd. Flow (perm)       | 0    | 1863 | 3471 | 0    | 1810 | 1719  | 3438 |
| Link Speed (mph)        | 30   |      | 55   |      |      | 55    |      |
| Link Distance (ft)      | 600  |      | 500  |      |      | 810   |      |
| Travel Time (s)         | 13.6 |      | 6.2  |      |      | 10.0  |      |
| Peak Hour Factor        | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88  | 0.88 |
| Heavy Vehicles (%)      | 2%   | 2%   | 4%   | 4%   | 5%   | 5%    | 5%   |
| Adj. Flow (vph)         | 0    | 0    | 2386 | 0    | 0    | 114   | 1648 |
| Shared Lane Traffic (%) |      |      |      |      |      |       |      |
| Lane Group Flow (vph)   | 0    | 0    | 2386 | 0    | 0    | 114   | 1648 |

Intersection Summary

Area Type: Other

HCM 6th TWSC  
120: CTH F & South Crossover

07/27/2020

| Intersection             |      |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|------|
| Int Delay, s/veh         | 1.3  |      |      |      |      |      |      |
| Movement                 | WBL  | WBR  | NBT  | NBR  | SBU  | SBL  | SBT  |
| Lane Configurations      |      | ↗    | ↗    |      | ↘    | ↘    | ↗    |
| Traffic Vol, veh/h       | 0    | 0    | 2100 | 0    | 0    | 100  | 1450 |
| Future Vol, veh/h        | 0    | 0    | 2100 | 0    | 0    | 100  | 1450 |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control             | Stop | Stop | Free | Free | Free | Free | Free |
| RT Channelized           | -    | Free | -    | None | -    | -    | None |
| Storage Length           | -    | 0    | -    | -    | -    | 200  | -    |
| Veh in Median Storage, # | 1    | -    | 0    | -    | -    | -    | 0    |
| Grade, %                 | 0    | -    | 0    | -    | -    | -    | 0    |
| Peak Hour Factor         | 88   | 88   | 88   | 88   | 88   | 88   | 88   |
| Heavy Vehicles, %        | 2    | 2    | 4    | 4    | 5    | 5    | 5    |
| Mvmt Flow                | 0    | 0    | 2386 | 0    | 0    | 114  | 1648 |

| Major/Minor          | Minor1 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | -      | -      | 0      |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |
| Critical Hdwy        | -      | -      | 6.5    |
| Critical Hdwy Stg 1  | -      | -      | -      |
| Critical Hdwy Stg 2  | -      | -      | -      |
| Follow-up Hdwy       | -      | -      | 2.55   |
| Pot Cap-1 Maneuver   | 0      | 0      | 39     |
| Stage 1              | 0      | 0      | -      |
| Stage 2              | 0      | 0      | -      |
| Platoon blocked, %   | -      | -      | -      |
| Mov Cap-1 Maneuver   | -      | -      | 39     |
| Mov Cap-2 Maneuver   | -      | -      | -      |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |

| Approach             | WB | NB | SB  |
|----------------------|----|----|-----|
| HCM Control Delay, s | 0  | 0  | 3.1 |
| HCM LOS              | A  |    |     |

| Minor Lane/Major Mvmt | NBTWBLn1 | SBU | SBL   | SBT |
|-----------------------|----------|-----|-------|-----|
| Capacity (veh/h)      | -        | 39  | 190   | -   |
| HCM Lane V/C Ratio    | -        | -   | 0.598 | -   |
| HCM Control Delay (s) | -        | 0   | 48.7  | -   |
| HCM Lane LOS          | -        | A   | E     | -   |
| HCM 95th %tile Q(veh) | -        | 0   | 3.3   | -   |



Lanes, Volumes, Timings  
130: CTH F & Lindsay Road

07/27/2020

|                         | ↗    | →    | ↘     | ↖    | ←    | ↙     | ↘     | ↖    | ↗     | →     | ↘     | ↖    |
|-------------------------|------|------|-------|------|------|-------|-------|------|-------|-------|-------|------|
| Lane Group              | EBL  | EBT  | EBR   | WBL  | WBT  | WBR   | NBL   | NBT  | NBR   | SBL   | SBT   | SBR  |
| Lane Configurations     |      |      | ↗     |      |      | ↗     | ↗     | ↗    | ↗     | ↗     | ↗     | ↗    |
| Traffic Volume (vph)    | 0    | 0    | 170   | 0    | 0    | 150   | 245   | 1815 | 140   | 40    | 1380  | 275  |
| Future Volume (vph)     | 0    | 0    | 170   | 0    | 0    | 150   | 245   | 1815 | 140   | 40    | 1380  | 275  |
| Ideal Flow (vphpl)      | 1900 | 1900 | 1900  | 1900 | 1900 | 1900  | 1900  | 1900 | 1900  | 1900  | 1900  | 1900 |
| Storage Length (ft)     | 0    | 0    | 0     | 0    | 0    | 0     | 200   | 200  | 200   | 200   | 200   | 200  |
| Storage Lanes           | 0    | 1    | 0     | 0    | 1    | 1     | 1     | 1    | 1     | 1     | 1     | 1    |
| Taper Length (ft)       | 25   |      |       | 25   |      |       | 25    |      |       | 25    |       |      |
| Lane Util. Factor       | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 0.95 | 1.00  | 1.00  | 0.95  | 1.00 |
| Frt                     |      |      | 0.865 |      |      | 0.865 |       |      | 0.850 |       | 0.850 |      |
| Flt Protected           |      |      |       |      |      |       | 0.950 |      |       | 0.950 |       |      |
| Satd. Flow (prot)       | 0    | 0    | 1596  | 0    | 0    | 1611  | 1736  | 3471 | 1553  | 1719  | 3438  | 1538 |
| Flt Permitted           |      |      |       |      |      |       | 0.950 |      |       | 0.950 |       |      |
| Satd. Flow (perm)       | 0    | 0    | 1596  | 0    | 0    | 1611  | 1736  | 3471 | 1553  | 1719  | 3438  | 1538 |
| Link Speed (mph)        |      | 35   |       |      | 35   |       |       | 55   |       |       | 55    |      |
| Link Distance (ft)      |      | 600  |       |      | 600  |       |       | 690  |       |       | 890   |      |
| Travel Time (s)         |      | 11.7 |       |      | 11.7 |       |       | 8.6  |       |       | 11.0  |      |
| Peak Hour Factor        | 0.88 | 0.88 | 0.88  | 0.88 | 0.88 | 0.88  | 0.88  | 0.88 | 0.88  | 0.88  | 0.88  | 0.88 |
| Heavy Vehicles (%)      | 3%   | 3%   | 3%    | 2%   | 2%   | 2%    | 4%    | 4%   | 4%    | 5%    | 5%    | 5%   |
| Adj. Flow (vph)         | 0    | 0    | 193   | 0    | 0    | 170   | 278   | 2063 | 159   | 45    | 1568  | 313  |
| Shared Lane Traffic (%) |      |      |       |      |      |       |       |      |       |       |       |      |
| Lane Group Flow (vph)   | 0    | 0    | 193   | 0    | 0    | 170   | 278   | 2063 | 159   | 45    | 1568  | 313  |

Intersection Summary

Area Type: Other

Description: design has dual WBR lanes;

veh heading north to use outer freeflow R-turn lane (80 veh);

veh heading west/south to use inner stop-controlled R-turn lane (150 veh);

model only shows inner stop-controlled lane

HCM 6th TWSC  
130: CTH F & Lindsay Road

07/27/2020

Intersection

| Int Delay, s/veh         | 5.1  |      |      |      |      |      |      |      |       |      |      |       |
|--------------------------|------|------|------|------|------|------|------|------|-------|------|------|-------|
| Movement                 | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR   | SBL  | SBT  | SBR   |
| Lane Configurations      |      |      | ↗    |      |      | ↗    | ↗    | ↗    | ↗     | ↗    | ↗    | ↗     |
| Traffic Vol, veh/h       | 0    | 0    | 170  | 0    | 0    | 150  | 245  | 1815 | 140   | 40   | 1380 | 275   |
| Future Vol, veh/h        | 0    | 0    | 170  | 0    | 0    | 150  | 245  | 1815 | 140   | 40   | 1380 | 275   |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0     | 0    | 0    | 0     |
| Sign Control             | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free  | Free | Free | Free  |
| RT Channelized           | -    | -    | None | -    | -    | None | -    | -    | Yield | -    | -    | Yield |
| Storage Length           |      |      | 0    |      |      | 0    | 200  |      | 200   | 200  |      | 200   |
| Veh in Median Storage, # | -    | 1    | -    | -    | 1    | -    | 0    | -    | 0     | -    | 0    | -     |
| Grade, %                 | -    | 0    | -    | -    | 0    | -    | 0    | -    | 0     | -    | 0    | -     |
| Peak Hour Factor         | 88   | 88   | 88   | 88   | 88   | 88   | 88   | 88   | 88    | 88   | 88   | 88    |
| Heavy Vehicles, %        | 3    | 3    | 3    | 2    | 2    | 2    | 4    | 4    | 4     | 5    | 5    | 5     |
| Mvmt Flow                | 0    | 0    | 193  | 0    | 0    | 170  | 278  | 2063 | 159   | 45   | 1568 | 313   |

| Major/Minor          | Minor2 |   | Minor1 |   | Major1 |      | Major2 |   |   |      |   |   |
|----------------------|--------|---|--------|---|--------|------|--------|---|---|------|---|---|
| Conflicting Flow All | -      | - | 784    | - | -      | 1032 | 1568   | 0 | 0 | 2063 | 0 | 0 |
| Stage 1              | -      | - | -      | - | -      | -    | -      | - | - | -    | - | - |
| Stage 2              | -      | - | -      | - | -      | -    | -      | - | - | -    | - | - |
| Critical Hdwy        | -      | - | 6.96   | - | -      | 6.94 | 4.18   | - | - | 4.2  | - | - |
| Critical Hdwy Stg 1  | -      | - | -      | - | -      | -    | -      | - | - | -    | - | - |
| Critical Hdwy Stg 2  | -      | - | -      | - | -      | -    | -      | - | - | -    | - | - |
| Follow-up Hdwy       | -      | - | 3.33   | - | -      | 3.32 | 2.24   | - | - | 2.25 | - | - |
| Pot Cap-1 Maneuver   | 0      | 0 | 334    | 0 | 0      | 230  | 408    | - | - | 257  | - | - |
| Stage 1              | 0      | 0 | -      | 0 | 0      | -    | -      | - | - | -    | - | - |
| Stage 2              | 0      | 0 | -      | 0 | 0      | -    | -      | - | - | -    | - | - |
| Platoon blocked, %   |        |   |        |   |        |      |        |   |   |      |   |   |
| Mov Cap-1 Maneuver   | -      | - | 334    | - | -      | 230  | 408    | - | - | 257  | - | - |
| Mov Cap-2 Maneuver   | -      | - | -      | - | -      | -    | -      | - | - | -    | - | - |
| Stage 1              | -      | - | -      | - | -      | -    | -      | - | - | -    | - | - |
| Stage 2              | -      | - | -      | - | -      | -    | -      | - | - | -    | - | - |

| Approach             | EB   | WB   | NB  | SB  |
|----------------------|------|------|-----|-----|
| HCM Control Delay, s | 29.6 | 55.2 | 3.4 | 0.5 |
| HCM LOS              | D    | F    |     |     |

| Minor Lane/Major Mvmt | NBL   | NBT | NBR | EBLn1 | WBLn1 | SBL   | SBT | SBR |
|-----------------------|-------|-----|-----|-------|-------|-------|-----|-----|
| Capacity (veh/h)      | 408   | -   | -   | 334   | 230   | 257   | -   | -   |
| HCM Lane V/C Ratio    | 0.682 | -   | -   | 0.578 | 0.741 | 0.177 | -   | -   |
| HCM Control Delay (s) | 30.8  | -   | -   | 29.6  | 55.2  | 22    | -   | -   |
| HCM Lane LOS          | D     | -   | -   | D     | F     | C     | -   | -   |
| HCM 95th %tile Q(veh) | 4.9   | -   | -   | 3.4   | 5.1   | 0.6   | -   | -   |

Lanes, Volumes, Timings  
100: CTH F & Lindsay Road

07/27/2020

|                         | ←     | →     | ↙    | ↘     | ↖     | ↗    | ↖     | ↗     | ↖     | ↗     | ↖     | ↗     |
|-------------------------|-------|-------|------|-------|-------|------|-------|-------|-------|-------|-------|-------|
| Lane Group              | EBL   | EBT   | EBR  | WBL   | WBT   | WBR  | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations     | ↖     | ↖     |      | ↖     | ↖     |      | ↖     | ↖     | ↖     | ↖     | ↖     | ↖     |
| Traffic Volume (vph)    | 65    | 45    | 65   | 60    | 15    | 35   | 20    | 1105  | 105   | 55    | 1360  | 25    |
| Future Volume (vph)     | 65    | 45    | 65   | 60    | 15    | 35   | 20    | 1105  | 105   | 55    | 1360  | 25    |
| Ideal Flow (vphpl)      | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  |
| Storage Length (ft)     | 0     |       | 0    | 0     |       | 0    | 200   |       | 200   | 200   |       | 200   |
| Storage Lanes           | 1     |       | 0    | 1     |       | 0    | 1     |       | 1     | 1     |       | 1     |
| Taper Length (ft)       | 25    |       |      | 25    |       |      | 25    |       |       | 25    |       |       |
| Lane Util. Factor       | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 | 1.00  | 0.95  | 1.00  | 1.00  | 0.95  | 1.00  |
| Frt                     |       | 0.911 |      |       | 0.894 |      |       |       | 0.850 |       |       | 0.850 |
| Flt Protected           | 0.950 |       |      | 0.950 |       |      | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (prot)       | 1770  | 1697  | 0    | 1719  | 1618  | 0    | 1671  | 3343  | 1495  | 1656  | 3312  | 1482  |
| Flt Permitted           | 0.722 |       |      | 0.680 |       |      | 0.112 |       |       | 0.234 |       |       |
| Satd. Flow (perm)       | 1345  | 1697  | 0    | 1230  | 1618  | 0    | 197   | 3343  | 1495  | 408   | 3312  | 1482  |
| Right Turn on Red       |       |       | Yes  |       |       | Yes  |       |       | Yes   |       |       | Yes   |
| Satd. Flow (RTOR)       |       | 71    |      |       | 38    |      |       |       | 114   |       |       | 102   |
| Link Speed (mph)        | 35    |       |      | 35    |       |      | 55    |       |       | 55    |       |       |
| Link Distance (ft)      | 600   |       |      | 600   |       |      | 750   |       |       | 750   |       |       |
| Travel Time (s)         | 11.7  |       |      | 11.7  |       |      | 9.3   |       |       | 9.3   |       |       |
| Peak Hour Factor        | 0.92  | 0.92  | 0.92 | 0.92  | 0.92  | 0.92 | 0.92  | 0.92  | 0.92  | 0.92  | 0.92  | 0.92  |
| Heavy Vehicles (%)      | 2%    | 2%    | 2%   | 5%    | 5%    | 5%   | 8%    | 8%    | 8%    | 9%    | 9%    | 9%    |
| Adj. Flow (vph)         | 71    | 49    | 71   | 65    | 16    | 38   | 22    | 1201  | 114   | 60    | 1478  | 27    |
| Shared Lane Traffic (%) |       |       |      |       |       |      |       |       |       |       |       |       |
| Lane Group Flow (vph)   | 71    | 120   | 0    | 65    | 54    | 0    | 22    | 1201  | 114   | 60    | 1478  | 27    |
| Turn Type               | Perm  | NA    |      | Perm  | NA    |      | D.P+P | NA    | Perm  | Perm  | NA    | Perm  |
| Protected Phases        |       | 4     |      |       | 8     |      | 5     | 2     |       |       | 6     |       |
| Permitted Phases        | 4     |       |      | 8     |       |      | 6     |       | 2     | 6     |       | 6     |
| Detector Phase          | 4     | 4     |      | 8     | 8     |      | 5     | 2     | 2     | 6     | 6     | 6     |
| Switch Phase            |       |       |      |       |       |      |       |       |       |       |       |       |
| Minimum Initial (s)     | 10.0  | 10.0  |      | 10.0  | 10.0  |      | 7.0   | 15.0  | 15.0  | 15.0  | 15.0  | 15.0  |
| Minimum Split (s)       | 16.0  | 16.0  |      | 16.0  | 16.0  |      | 11.5  | 21.0  | 21.0  | 21.0  | 21.0  | 21.0  |
| Total Split (s)         | 16.0  | 16.0  |      | 16.0  | 16.0  |      | 11.5  | 64.0  | 64.0  | 52.5  | 52.5  | 52.5  |
| Total Split (%)         | 20.0% | 20.0% |      | 20.0% | 20.0% |      | 14.4% | 80.0% | 80.0% | 65.6% | 65.6% | 65.6% |
| Maximum Green (s)       | 10.0  | 10.0  |      | 10.0  | 10.0  |      | 7.0   | 58.0  | 58.0  | 46.5  | 46.5  | 46.5  |
| Yellow Time (s)         | 4.0   | 4.0   |      | 4.0   | 4.0   |      | 3.5   | 4.0   | 4.0   | 4.0   | 4.0   | 4.0   |
| All-Red Time (s)        | 2.0   | 2.0   |      | 2.0   | 2.0   |      | 1.0   | 2.0   | 2.0   | 2.0   | 2.0   | 2.0   |
| Lost Time Adjust (s)    | 0.0   | 0.0   |      | 0.0   | 0.0   |      | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)     | 6.0   | 6.0   |      | 6.0   | 6.0   |      | 4.5   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   |
| Lead/Lag                |       |       |      |       |       |      | Lead  |       |       | Lag   | Lag   | Lag   |
| Lead-Lag Optimize?      |       |       |      |       |       |      |       |       |       |       |       |       |
| Vehicle Extension (s)   | 3.0   | 3.0   |      | 3.0   | 3.0   |      | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   |
| Recall Mode             | None  | None  |      | None  | None  |      | None  | Min   | Min   | Min   | Min   | Min   |
| 90th %ile Green (s)     | 10.0  | 10.0  |      | 10.0  | 10.0  |      | 7.0   | 58.0  | 58.0  | 46.5  | 46.5  | 46.5  |
| 90th %ile Term Code     | Max   | Max   |      | Max   | Max   |      | Max   | Hold  | Hold  | Max   | Max   | Max   |
| 70th %ile Green (s)     | 10.0  | 10.0  |      | 10.0  | 10.0  |      | 7.0   | 58.0  | 58.0  | 46.5  | 46.5  | 46.5  |
| 70th %ile Term Code     | Max   | Max   |      | Max   | Max   |      | Max   | Hold  | Hold  | Max   | Max   | Max   |
| 50th %ile Green (s)     | 10.0  | 10.0  |      | 10.0  | 10.0  |      | 0.0   | 32.2  | 32.2  | 32.2  | 32.2  | 32.2  |
| 50th %ile Term Code     | Max   | Max   |      | Max   | Max   |      | Skip  | Hold  | Hold  | Gap   | Gap   | Gap   |
| 30th %ile Green (s)     | 10.0  | 10.0  |      | 10.0  | 10.0  |      | 0.0   | 27.2  | 27.2  | 27.2  | 27.2  | 27.2  |
| 30th %ile Term Code     | Max   | Max   |      | Max   | Max   |      | Skip  | Hold  | Hold  | Gap   | Gap   | Gap   |

TADI  
2030 Full Park AM Peak w/ traffic signal

Synchro 10 Report  
Page 1

Lanes, Volumes, Timings  
100: CTH F & Lindsay Road

07/27/2020

|                      | ←    | →    | ↙   | ↘    | ↖    | ↗   | ↖    | ↗     | ↖     | ↗     | ↖     | ↗     |
|----------------------|------|------|-----|------|------|-----|------|-------|-------|-------|-------|-------|
| Lane Group           | EBL  | EBT  | EBR | WBL  | WBT  | WBR | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| 10th %ile Green (s)  | 0.0  | 0.0  |     | 0.0  | 0.0  |     | 0.0  | 30.0  | 30.0  | 30.0  | 30.0  | 30.0  |
| 10th %ile Term Code  | Skip | Skip |     | Skip | Skip |     | Skip | Dwell | Dwell | Dwell | Dwell | Dwell |
| Stops (vph)          | 56   | 47   |     | 52   | 21   |     | 5    | 447   | 6     | 27    | 831   | 0     |
| Fuel Used(gal)       | 1    | 1    |     | 1    | 1    |     | 0    | 15    | 1     | 1     | 25    | 0     |
| CO Emissions (g/hr)  | 79   | 85   |     | 73   | 38   |     | 14   | 1042  | 44    | 61    | 1758  | 8     |
| NOx Emissions (g/hr) | 15   | 17   |     | 14   | 7    |     | 3    | 203   | 9     | 12    | 342   | 2     |
| VOC Emissions (g/hr) | 18   | 20   |     | 17   | 9    |     | 3    | 241   | 10    | 14    | 407   | 2     |
| Dilemma Vehicles (#) | 0    | 8    |     | 0    | 3    |     | 0    | 64    | 0     | 0     | 84    | 0     |

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 59.9

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

90th %ile Actuated Cycle: 80

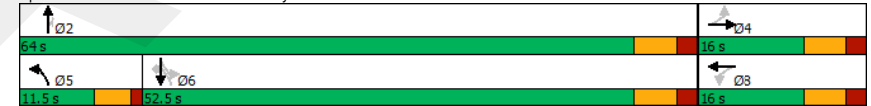
70th %ile Actuated Cycle: 80

50th %ile Actuated Cycle: 54.2

30th %ile Actuated Cycle: 49.2

10th %ile Actuated Cycle: 36

Splits and Phases: 100: CTH F & Lindsay Road



TADI  
2030 Full Park AM Peak w/ traffic signal

Synchro 10 Report  
Page 2



Queues  
100: CTH F & Lindsay Road

07/27/2020

|                         | EBL  | EBT  | WBL  | WBT  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-------------------------|------|------|------|------|------|------|------|------|------|------|
| Lane Group              | EBL  | EBT  | WBL  | WBT  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Group Flow (vph)   | 71   | 120  | 65   | 54   | 22   | 1201 | 114  | 60   | 1478 | 27   |
| v/c Ratio               | 0.29 | 0.33 | 0.29 | 0.17 | 0.07 | 0.50 | 0.10 | 0.22 | 0.67 | 0.03 |
| Control Delay           | 32.0 | 17.5 | 32.5 | 16.4 | 3.5  | 6.0  | 1.0  | 10.3 | 11.7 | 0.0  |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 32.0 | 17.5 | 32.5 | 16.4 | 3.5  | 6.0  | 1.0  | 10.3 | 11.7 | 0.0  |
| Queue Length 50th (ft)  | 20   | 13   | 18   | 4    | 2    | 110  | 0    | 8    | 156  | 0    |
| Queue Length 95th (ft)  | 74   | 71   | 70   | 39   | 7    | 145  | 11   | 37   | 356  | 0    |
| Internal Link Dist (ft) |      | 520  |      | 520  |      | 670  |      |      | 670  |      |
| Turn Bay Length (ft)    |      |      |      |      | 200  |      | 200  | 200  |      | 200  |
| Base Capacity (vph)     | 246  | 368  | 225  | 327  | 324  | 2975 | 1343 | 323  | 2627 | 1196 |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.29 | 0.33 | 0.29 | 0.17 | 0.07 | 0.40 | 0.08 | 0.19 | 0.56 | 0.02 |
| Intersection Summary    |      |      |      |      |      |      |      |      |      |      |

HCM 6th Signalized Intersection Summary  
100: CTH F & Lindsay Road

07/27/2020

|                              | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Movement                     | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations          | ↔    | ↔    | ↔    | ↔    | ↔    | ↔    | ↔    | ↔    | ↔    | ↔    | ↔    | ↔    |
| Traffic Volume (veh/h)       | 65   | 45   | 65   | 60   | 15   | 35   | 20   | 1105 | 105  | 55   | 1360 | 25   |
| Future Volume (veh/h)        | 65   | 45   | 65   | 60   | 15   | 35   | 20   | 1105 | 105  | 55   | 1360 | 25   |
| Initial Q (Qb), veh          | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Ped-Bike Adj(A_pbT)          | 1.00 |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 |
| Parking Bus, Adj             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach        | No   | No   | No   | No   | No   | No   | No   | No   | No   | No   | No   | No   |
| Adj Sat Flow, veh/h/ln       | 1870 | 1870 | 1870 | 1826 | 1826 | 1826 | 1781 | 1781 | 1781 | 1767 | 1767 | 1767 |
| Adj Flow Rate, veh/h         | 71   | 49   | 71   | 65   | 16   | 38   | 22   | 1201 | 114  | 60   | 1478 | 27   |
| Peak Hour Factor             | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, %         | 2    | 2    | 2    | 5    | 5    | 5    | 8    | 8    | 8    | 9    | 9    | 9    |
| Cap, veh/h                   | 279  | 106  | 153  | 221  | 74   | 175  | 240  | 2240 | 999  | 299  | 1870 | 834  |
| Arrive On Green              | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 | 0.15 | 0.04 | 0.66 | 0.66 | 0.56 | 0.56 | 0.56 |
| Sat Flow, veh/h              | 1350 | 690  | 1000 | 1241 | 480  | 1140 | 1697 | 3385 | 1510 | 395  | 3357 | 1497 |
| Grp Volume(v), veh/h         | 71   | 0    | 120  | 65   | 0    | 54   | 22   | 1201 | 114  | 60   | 1478 | 27   |
| Grp Sat Flow(s), veh/h/ln    | 1350 | 0    | 1690 | 1241 | 0    | 1621 | 1697 | 1692 | 1510 | 395  | 1678 | 1497 |
| Q Serve(g_s), s              | 3.2  | 0.0  | 4.2  | 3.3  | 0.0  | 1.9  | 0.3  | 12.1 | 1.8  | 6.1  | 22.6 | 0.5  |
| Cycle Q Clear(g_c), s        | 5.1  | 0.0  | 4.2  | 7.5  | 0.0  | 1.9  | 0.3  | 12.1 | 1.8  | 11.4 | 22.6 | 0.5  |
| Prop In Lane                 | 1.00 |      | 0.59 | 1.00 |      | 0.70 | 1.00 |      | 1.00 | 1.00 |      | 1.00 |
| Lane Grp Cap(c), veh/h       | 279  | 0    | 259  | 221  | 0    | 249  | 240  | 2240 | 999  | 299  | 1870 | 834  |
| V/C Ratio(X)                 | 0.25 | 0.00 | 0.46 | 0.29 | 0.00 | 0.22 | 0.09 | 0.54 | 0.11 | 0.20 | 0.79 | 0.03 |
| Avail Cap(c_a), veh/h        | 279  | 0    | 260  | 222  | 0    | 250  | 363  | 3023 | 1348 | 361  | 2404 | 1072 |
| HCM Platoon Ratio            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(l)           | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh     | 26.3 | 0.0  | 25.0 | 28.5 | 0.0  | 24.1 | 9.7  | 5.8  | 4.0  | 10.5 | 11.4 | 6.5  |
| Incr Delay (d2), s/veh       | 0.5  | 0.0  | 1.3  | 0.7  | 0.0  | 0.4  | 0.2  | 0.2  | 0.1  | 0.3  | 1.4  | 0.0  |
| Initial Q Delay(d3),s/veh    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| %ile BackOfQ(50%),veh/ln     | 1.0  | 0.0  | 1.7  | 1.0  | 0.0  | 0.7  | 0.1  | 2.0  | 0.3  | 0.4  | 5.6  | 0.1  |
| Unsig. Movement Delay, s/veh |      |      |      |      |      |      |      |      |      |      |      |      |
| LnGrp Delay(d),s/veh         | 26.8 | 0.0  | 26.3 | 29.2 | 0.0  | 24.5 | 9.8  | 6.0  | 4.1  | 10.8 | 12.8 | 6.5  |
| LnGrp LOS                    | C    | A    | C    | C    | A    | C    | A    | A    | A    | B    | B    | A    |
| Approach Vol, veh/h          | 191  |      |      | 119  |      |      | 1337 |      |      |      | 1565 |      |
| Approach Delay, s/veh        | 26.5 |      |      | 27.1 |      |      | 5.9  |      |      |      | 12.6 |      |
| Approach LOS                 | C    |      |      | C    |      |      | A    |      |      |      | B    |      |
| Timer - Assigned Phs         | 2    |      | 4    | 5    | 6    |      | 8    |      |      |      |      |      |
| Phs Duration (G+Y+Rc), s     | 49.0 |      | 16.0 | 6.8  | 42.2 |      | 16.0 |      |      |      |      |      |
| Change Period (Y+Rc), s      | 6.0  |      | 6.0  | 4.5  | 6.0  |      | 6.0  |      |      |      |      |      |
| Max Green Setting (Gmax), s  | 58.0 |      | 10.0 | 7.0  | 46.5 |      | 10.0 |      |      |      |      |      |
| Max Q Clear Time (g_c+I1), s | 14.1 |      | 7.1  | 2.3  | 24.6 |      | 9.5  |      |      |      |      |      |
| Green Ext Time (p_c), s      | 10.3 |      | 0.2  | 0.0  | 11.6 |      | 0.0  |      |      |      |      |      |
| Intersection Summary         |      |      |      |      |      |      |      |      |      |      |      |      |
| HCM 6th Ctrl Delay           | 11.2 |      |      |      |      |      |      |      |      |      |      |      |
| HCM 6th LOS                  | B    |      |      |      |      |      |      |      |      |      |      |      |

Lanes, Volumes, Timings  
100: CTH F & Lindsay Road

07/27/2020

|                         | ←     | →     | ↖    | ↗     | ↙     | ↘    | ↖     | ↗     | ↙     | ↘     | ↖     | ↗     | ↙ | ↘ |
|-------------------------|-------|-------|------|-------|-------|------|-------|-------|-------|-------|-------|-------|---|---|
| Lane Group              | EBL   | EBT   | EBR  | WBL   | WBT   | WBR  | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |   |   |
| Lane Configurations     | ↖     | ↗     | ↘    | ↖     | ↗     | ↘    | ↖     | ↗     | ↘     | ↖     | ↗     | ↘     |   |   |
| Traffic Volume (vph)    | 60    | 40    | 70   | 85    | 65    | 80   | 245   | 1755  | 100   | 40    | 1295  | 210   |   |   |
| Future Volume (vph)     | 60    | 40    | 70   | 85    | 65    | 80   | 245   | 1755  | 100   | 40    | 1295  | 210   |   |   |
| Ideal Flow (vphpl)      | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  |   |   |
| Storage Length (ft)     | 0     |       | 0    | 0     |       | 0    | 200   |       | 200   | 200   |       | 200   |   |   |
| Storage Lanes           | 1     |       | 0    | 1     |       | 0    | 1     |       | 1     | 1     |       | 1     |   |   |
| Taper Length (ft)       | 25    |       |      | 25    |       |      | 25    |       |       | 25    |       |       |   |   |
| Lane Util. Factor       | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 | 1.00  | 0.95  | 1.00  | 1.00  | 0.95  | 1.00  |   |   |
| Frt                     |       | 0.904 |      |       | 0.917 |      |       |       | 0.850 |       |       | 0.850 |   |   |
| Flt Protected           | 0.950 |       |      | 0.950 |       |      | 0.950 |       |       | 0.950 |       |       |   |   |
| Satd. Flow (prot)       | 1752  | 1668  | 0    | 1770  | 1708  | 0    | 1736  | 3471  | 1553  | 1719  | 3438  | 1538  |   |   |
| Flt Permitted           | 0.613 |       |      | 0.677 |       |      | 0.107 |       |       | 0.107 |       |       |   |   |
| Satd. Flow (perm)       | 1131  | 1668  | 0    | 1261  | 1708  | 0    | 195   | 3471  | 1553  | 194   | 3438  | 1538  |   |   |
| Right Turn on Red       |       |       | Yes  |       |       | Yes  |       |       | Yes   |       |       | Yes   |   |   |
| Satd. Flow (RTOR)       |       | 80    |      |       | 26    |      |       |       | 114   |       |       | 239   |   |   |
| Link Speed (mph)        |       | 35    |      |       | 35    |      |       | 55    |       |       | 55    |       |   |   |
| Link Distance (ft)      |       | 600   |      |       | 600   |      |       | 750   |       |       | 750   |       |   |   |
| Travel Time (s)         |       | 11.7  |      |       | 11.7  |      |       | 9.3   |       |       | 9.3   |       |   |   |
| Peak Hour Factor        | 0.88  | 0.88  | 0.88 | 0.88  | 0.88  | 0.88 | 0.88  | 0.88  | 0.88  | 0.88  | 0.88  | 0.88  |   |   |
| Heavy Vehicles (%)      | 3%    | 3%    | 3%   | 2%    | 2%    | 2%   | 4%    | 4%    | 4%    | 5%    | 5%    | 5%    |   |   |
| Adj. Flow (vph)         | 68    | 45    | 80   | 97    | 74    | 91   | 278   | 1994  | 114   | 45    | 1472  | 239   |   |   |
| Shared Lane Traffic (%) |       |       |      |       |       |      |       |       |       |       |       |       |   |   |
| Lane Group Flow (vph)   | 68    | 125   | 0    | 97    | 165   | 0    | 278   | 1994  | 114   | 45    | 1472  | 239   |   |   |
| Turn Type               | Perm  | NA    |      | Perm  | NA    |      | D.P+P | NA    | Perm  | Perm  | NA    | Perm  |   |   |
| Protected Phases        |       | 4     |      |       | 8     |      | 5     | 2     |       |       | 6     |       |   |   |
| Permitted Phases        | 4     |       |      | 8     |       |      | 6     |       | 2     | 6     |       | 6     |   |   |
| Detector Phase          | 4     | 4     |      | 8     | 8     |      | 5     | 2     | 2     | 6     | 6     | 6     |   |   |
| Switch Phase            |       |       |      |       |       |      |       |       |       |       |       |       |   |   |
| Minimum Initial (s)     | 10.0  | 10.0  |      | 10.0  | 10.0  |      | 7.0   | 15.0  | 15.0  | 15.0  | 15.0  | 15.0  |   |   |
| Minimum Split (s)       | 16.0  | 16.0  |      | 16.0  | 16.0  |      | 11.5  | 21.0  | 21.0  | 21.0  | 21.0  | 21.0  |   |   |
| Total Split (s)         | 16.0  | 16.0  |      | 16.0  | 16.0  |      | 17.6  | 64.0  | 64.0  | 46.4  | 46.4  | 46.4  |   |   |
| Total Split (%)         | 20.0% | 20.0% |      | 20.0% | 20.0% |      | 22.0% | 80.0% | 80.0% | 58.0% | 58.0% | 58.0% |   |   |
| Maximum Green (s)       | 10.0  | 10.0  |      | 10.0  | 10.0  |      | 13.1  | 58.0  | 58.0  | 40.4  | 40.4  | 40.4  |   |   |
| Yellow Time (s)         | 4.0   | 4.0   |      | 4.0   | 4.0   |      | 3.5   | 4.0   | 4.0   | 4.0   | 4.0   | 4.0   |   |   |
| All-Red Time (s)        | 2.0   | 2.0   |      | 2.0   | 2.0   |      | 1.0   | 2.0   | 2.0   | 2.0   | 2.0   | 2.0   |   |   |
| Lost Time Adjust (s)    | 0.0   | 0.0   |      | 0.0   | 0.0   |      | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |   |   |
| Total Lost Time (s)     | 6.0   | 6.0   |      | 6.0   | 6.0   |      | 4.5   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   |   |   |
| Lead/Lag                |       |       |      |       |       |      | Lead  |       |       | Lag   | Lag   | Lag   |   |   |
| Lead-Lag Optimize?      |       |       |      |       |       |      |       |       |       |       |       |       |   |   |
| Vehicle Extension (s)   | 3.0   | 3.0   |      | 3.0   | 3.0   |      | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   |   |   |
| Recall Mode             | None  | None  |      | None  | None  |      | None  | Min   | Min   | Min   | Min   | Min   |   |   |
| 90th %ile Green (s)     | 10.0  | 10.0  |      | 10.0  | 10.0  |      | 13.1  | 58.0  | 58.0  | 40.4  | 40.4  | 40.4  |   |   |
| 90th %ile Term Code     | Max   | Max   |      | Max   | Max   |      | Max   | Max   | Max   | Max   | Max   | Max   |   |   |
| 70th %ile Green (s)     | 10.0  | 10.0  |      | 10.0  | 10.0  |      | 13.1  | 58.0  | 58.0  | 40.4  | 40.4  | 40.4  |   |   |
| 70th %ile Term Code     | Max   | Max   |      | Max   | Max   |      | Max   | Max   | Max   | Max   | Max   | Max   |   |   |
| 50th %ile Green (s)     | 10.0  | 10.0  |      | 10.0  | 10.0  |      | 13.1  | 58.0  | 58.0  | 40.4  | 40.4  | 40.4  |   |   |
| 50th %ile Term Code     | Max   | Max   |      | Max   | Max   |      | Max   | Hold  | Hold  | Max   | Max   | Max   |   |   |
| 30th %ile Green (s)     | 10.0  | 10.0  |      | 10.0  | 10.0  |      | 11.0  | 54.0  | 54.0  | 38.5  | 38.5  | 38.5  |   |   |
| 30th %ile Term Code     | Max   | Max   |      | Max   | Max   |      | Gap   | Hold  | Hold  | Gap   | Gap   | Gap   |   |   |

TADI  
2030 Full Park PM Peak w/ traffic signal

Synchro 10 Report  
Page 1

Lanes, Volumes, Timings  
100: CTH F & Lindsay Road

07/27/2020

|                      | ←    | →    | ↖   | ↗    | ↙    | ↘   | ↖   | ↗    | ↙    | ↘    | ↖    | ↗    | ↙ | ↘ |
|----------------------|------|------|-----|------|------|-----|-----|------|------|------|------|------|---|---|
| Lane Group           | EBL  | EBT  | EBR | WBL  | WBT  | WBR | NBL | NBT  | NBR  | SBL  | SBT  | SBR  |   |   |
| 10th %ile Green (s)  | 10.0 | 10.0 |     | 10.0 | 10.0 |     | 7.7 | 40.5 | 40.5 | 28.3 | 28.3 | 28.3 |   |   |
| 10th %ile Term Code  | Hold | Hold |     | Max  | Max  |     | Gap | Hold | Hold | Gap  | Gap  | Gap  |   |   |
| Stops (vph)          | 56   | 45   |     | 74   | 106  |     | 133 | 1079 | 6    | 31   | 1056 | 17   |   |   |
| Fuel Used(gal)       | 1    | 1    |     | 2    | 3    |     | 5   | 32   | 1    | 1    | 32   | 1    |   |   |
| CO Emissions (g/hr)  | 84   | 87   |     | 124  | 187  |     | 362 | 2256 | 42   | 72   | 2238 | 99   |   |   |
| NOx Emissions (g/hr) | 16   | 17   |     | 24   | 36   |     | 70  | 439  | 8    | 14   | 436  | 19   |   |   |
| VOC Emissions (g/hr) | 20   | 20   |     | 29   | 43   |     | 84  | 523  | 10   | 17   | 519  | 23   |   |   |
| Dilemma Vehicles (#) | 0    | 7    |     | 0    | 9    |     | 0   | 106  | 0    | 0    | 80   | 0    |   |   |

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 75.7

Natural Cycle: 70

Control Type: Actuated-Uncoordinated

90th %ile Actuated Cycle: 80

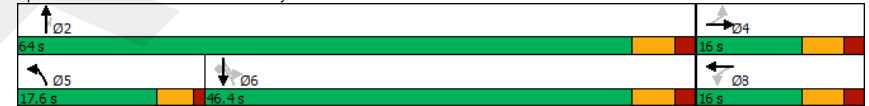
70th %ile Actuated Cycle: 80

50th %ile Actuated Cycle: 80

30th %ile Actuated Cycle: 76

10th %ile Actuated Cycle: 62.5

Splits and Phases: 100: CTH F & Lindsay Road



TADI  
2030 Full Park PM Peak w/ traffic signal

Synchro 10 Report  
Page 2



Queues  
100: CTH F & Lindsay Road

07/27/2020

|                         | EBL  | EBT  | WBL  | WBT  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-------------------------|------|------|------|------|------|------|------|------|------|------|
| Lane Group              | EBL  | EBT  | WBL  | WBT  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Group Flow (vph)   | 68   | 125  | 97   | 165  | 278  | 1994 | 114  | 45   | 1472 | 239  |
| v/c Ratio               | 0.45 | 0.43 | 0.58 | 0.66 | 0.77 | 0.81 | 0.10 | 0.47 | 0.87 | 0.27 |
| Control Delay           | 43.0 | 19.3 | 48.8 | 42.3 | 30.8 | 10.9 | 0.9  | 33.1 | 23.7 | 2.5  |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 43.0 | 19.3 | 48.8 | 42.3 | 30.8 | 10.9 | 0.9  | 33.1 | 23.7 | 2.5  |
| Queue Length 50th (ft)  | 32   | 21   | 47   | 67   | 73   | 274  | 0    | 14   | 316  | 0    |
| Queue Length 95th (ft)  | 71   | 67   | #108 | #149 | #170 | 347  | 11   | #59  | 398  | 31   |
| Internal Link Dist (ft) |      | 520  |      | 520  |      | 670  |      |      | 670  |      |
| Turn Bay Length (ft)    |      |      |      |      | 200  |      | 200  | 200  |      | 200  |
| Base Capacity (vph)     | 150  | 291  | 167  | 250  | 403  | 2683 | 1226 | 104  | 1851 | 938  |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.45 | 0.43 | 0.58 | 0.66 | 0.69 | 0.74 | 0.09 | 0.43 | 0.80 | 0.25 |

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary  
100: CTH F & Lindsay Road

07/27/2020

|                              | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Movement                     | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations          | ↰    | ↱    | ↲    | ↰    | ↱    | ↲    | ↰    | ↱    | ↲    | ↰    | ↱    | ↲    |
| Traffic Volume (veh/h)       | 60   | 40   | 70   | 85   | 65   | 80   | 245  | 1755 | 100  | 40   | 1295 | 210  |
| Future Volume (veh/h)        | 60   | 40   | 70   | 85   | 65   | 80   | 245  | 1755 | 100  | 40   | 1295 | 210  |
| Initial Q (Qb), veh          | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Ped-Bike Adj(A_pbT)          | 1.00 |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 1.00 |
| Parking Bus, Adj             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach        | No   |      |      | No   |      |      | No   |      |      | No   |      |      |
| Adj Sat Flow, veh/h/ln       | 1856 | 1856 | 1856 | 1870 | 1870 | 1870 | 1841 | 1841 | 1841 | 1826 | 1826 | 1826 |
| Adj Flow Rate, veh/h         | 68   | 45   | 80   | 97   | 74   | 91   | 278  | 1994 | 114  | 45   | 1472 | 239  |
| Peak Hour Factor             | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 | 0.88 |
| Percent Heavy Veh, %         | 3    | 3    | 3    | 2    | 2    | 2    | 4    | 4    | 4    | 5    | 5    | 5    |
| Cap, veh/h                   | 151  | 82   | 145  | 182  | 104  | 128  | 330  | 2447 | 1091 | 155  | 1865 | 832  |
| Arrive On Green              | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 | 0.14 | 0.10 | 0.70 | 0.70 | 0.54 | 0.54 | 0.54 |
| Sat Flow, veh/h              | 1211 | 599  | 1065 | 1266 | 763  | 938  | 1753 | 3497 | 1560 | 189  | 3469 | 1547 |
| Grp Volume(v), veh/h         | 68   | 0    | 125  | 97   | 0    | 165  | 278  | 1994 | 114  | 45   | 1472 | 239  |
| Grp Sat Flow(s),veh/h/ln     | 1211 | 0    | 1664 | 1266 | 0    | 1701 | 1753 | 1749 | 1560 | 189  | 1735 | 1547 |
| Q Serve(g_s), s              | 3.2  | 0.0  | 5.1  | 4.9  | 0.0  | 6.8  | 5.0  | 29.2 | 1.7  | 16.0 | 25.0 | 6.2  |
| Cycle Q Clear(g_c), s        | 10.0 | 0.0  | 5.1  | 10.0 | 0.0  | 6.8  | 5.0  | 29.2 | 1.7  | 33.3 | 25.0 | 6.2  |
| Prop In Lane                 | 1.00 |      | 0.64 | 1.00 |      | 0.55 | 1.00 |      | 1.00 | 1.00 |      | 1.00 |
| Lane Grp Cap(c), veh/h       | 151  | 0    | 227  | 182  | 0    | 232  | 330  | 2447 | 1091 | 155  | 1865 | 832  |
| V/C Ratio(X)                 | 0.45 | 0.00 | 0.55 | 0.53 | 0.00 | 0.71 | 0.84 | 0.81 | 0.10 | 0.29 | 0.79 | 0.29 |
| Avail Cap(c_a), veh/h        | 151  | 0    | 227  | 182  | 0    | 232  | 467  | 2769 | 1235 | 158  | 1913 | 853  |
| HCM Platoon Ratio            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I)           | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh     | 35.4 | 0.0  | 29.5 | 34.5 | 0.0  | 30.2 | 14.8 | 7.7  | 3.6  | 23.5 | 13.6 | 9.3  |
| Incr Delay (d2), s/veh       | 2.1  | 0.0  | 2.8  | 2.9  | 0.0  | 9.7  | 9.4  | 1.8  | 0.0  | 1.0  | 2.3  | 0.2  |
| Initial Q Delay(d3),s/veh    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| %ile BackOfQ(50%),veh/ln     | 1.3  | 0.0  | 2.1  | 1.8  | 0.0  | 3.3  | 2.8  | 5.5  | 0.3  | 0.6  | 7.5  | 1.6  |
| Unsig. Movement Delay, s/veh |      |      |      |      |      |      |      |      |      |      |      |      |
| LnGrp Delay(d),s/veh         | 37.5 | 0.0  | 32.3 | 37.5 | 0.0  | 39.9 | 24.3 | 9.5  | 3.6  | 24.5 | 15.9 | 9.4  |
| LnGrp LOS                    | D    | A    | C    | D    | A    | D    | C    | A    | A    | C    | B    | A    |
| Approach Vol, veh/h          | 193  |      |      | 262  |      |      | 2386 |      |      |      | 1756 |      |
| Approach Delay, s/veh        | 34.1 |      |      | 39.0 |      |      | 10.9 |      |      |      | 15.2 |      |
| Approach LOS                 | C    |      |      | D    |      |      | B    |      |      |      | B    |      |
| Timer - Assigned Phs         | 2    |      | 4    | 5    | 6    |      | 8    |      |      |      |      |      |
| Phs Duration (G+Y+Rc), s     | 57.2 |      | 16.0 | 11.9 | 45.4 |      | 16.0 |      |      |      |      |      |
| Change Period (Y+Rc), s      | 6.0  |      | 6.0  | 4.5  | 6.0  |      | 6.0  |      |      |      |      |      |
| Max Green Setting (Gmax), s  | 58.0 |      | 10.0 | 13.1 | 40.4 |      | 10.0 |      |      |      |      |      |
| Max Q Clear Time (g_c+I1), s | 31.2 |      | 12.0 | 7.0  | 35.3 |      | 12.0 |      |      |      |      |      |
| Green Ext Time (p_c), s      | 17.6 |      | 0.0  | 0.4  | 4.1  |      | 0.0  |      |      |      |      |      |

Intersection Summary

HCM 6th Ctrl Delay 15.1  
HCM 6th LOS B

## **Appendix D**

### **ICE Analysis**





## PHASE I: ICE MEMORANDUM

To: [DOT ICE Review](#)  
From: John Campbell, P.E.; Don Lee, P.E.  
Date: 7/27/2020  
RE: TIA  
CTH F (Redford Boulevard) at Lindsay Road  
City of Pewaukee, Waukesha County  
Traffic Impact Analysis (TIA)

### Project Description:

Project is a planning level TIA for modifications to the CTH F intersection with Lindsay Road to improve operations and safety at the intersection.

CTH F is a north/south four-lane divided arterial highway. The posted speed limit on CTH F is 55-mph within the limits of the study area. Lindsay Road is an east-west two-lane undivided minor arterial with a posted speed limit of 35-mph within the limits of the study area. The east and west legs of the intersection provide access to light industrial uses, residential uses and the local Pewaukee Sports Complex which includes 13 soccer fields and 4 baseball fields.

### Alternatives:

See Phase I ICE Brainstorming Guide (attached)

### Safety Considerations:

Crash diagram and statistics included as attachment. Twenty-seven (27) non-deer crashes occurred at the intersection over the past 5 years (2014-2019). Seventy eight percent (78%) of the crashes were right-angle crashes. Drivers appear to have difficulty crossing CTH F from Lindsay Road, particularly in the westbound direction where 17 right-angle crashes occurred (11 struck by southbound vehicles and 6 by northbound vehicles).

Most concerning at this location is the severity of the crashes observed. Seven (7) crashes resulted in Type C injury, another seven (7) resulted in Type B injury, and one (1) resulted in Type A injury. The remaining crashes (12) resulted in property damage only.

### Operational Analysis:

All movements at the intersection are expected to operate acceptably at LOS D or better under the year 2020 full build traffic volumes and the design year 2030 full build traffic volumes under traffic signal control (Synchro outputs attached).

Under the RCUT alternative, operational deficiencies (LOS E/F) are expected for some movements; specifically, the northbound left-turn movements and the southbound U-turn movements (LOS F) during the future year 2030 full build traffic volumes.

### Other Considerations:

An existing traffic signal (at CTH K) is located approximately 3/4 mile north of Lindsay Road. In addition, a traffic signal controlled partial cloverleaf interchange exists approximately 1-1/4 mile to the south at Capitol Drive (STH 190).



### Feasibility of Alternatives:

See Phase I ICE Brainstorming Guide (attached)

### Conclusion:

There are pros and cons to both intersection types analyzed in this report. The RCUT reduces conflict points and maintains a high level of mobility for CTH F traffic while minor street through and left-turn traffic would have a longer (but safer) maneuver. The traffic signal is a more familiar improvement that offers flexibility to handle fluctuations in traffic but is potentially susceptible to high-speed crashes, including right-angle crashes that can result when motorists run a red-light. Traffic signals also require continual maintenance and updates to their timings.

The intent of this analysis was to analyze projected traffic volumes at the intersection of CTH F and Lindsay Road and determine feasible solutions to mitigate the existing severe right-angle crash issue. A traffic signal or a RCUT intersection appear to be feasible alternatives based on assumptions and analysis in this study.

### Attachments:

See attachment checklist attached.



## Phase I: ICE Brainstorming Guide

Date: 7/27/2020

Intersection: CTH F at Lindsay Road

Project ID: TIA

Reason for ICE: Operational and safety issues currently being expericened at intersection which are expected to worsen as planned development occurs in the next few years.

Control: Stop Control

Major Road AADT: 22,000 (2019)

Minor Road AADT: 1,600 (2018)

### List of Alternatives:

| Alt. # | Control Type                       | Viable Alternative? | Addresses reason for ICE? | Performance measures acceptable? | ROW impacts acceptable? | Meets Warrants? (If Applicable) | Manually Exclude? | Manually Accept? | Explanation/Comments                                                                                                                                                                             |
|--------|------------------------------------|---------------------|---------------------------|----------------------------------|-------------------------|---------------------------------|-------------------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1      | Minor Road Stop Control            | No                  | No                        |                                  |                         |                                 | Yes               |                  | Existing Two-way stop control not expected to provide adequate operation under existing nor full build traffic volumes.                                                                          |
| 2      | All-Way Stop Control               | No                  | No                        |                                  |                         |                                 | Yes               |                  | All-way stop control not appropriate for mainline volumes on CTH F.                                                                                                                              |
| 3      | Traffic Signal                     | Yes                 | Yes                       | Yes                              | Yes                     | Yes                             |                   | Yes              | Provides acceptable operation with minimal right-of-way impacts.                                                                                                                                 |
| 4      | Roundabout                         | No                  | Yes                       | Yes                              | No                      | N/A                             | Yes               |                  | Provides acceptable operation with some right-of-way impacts however, located on a high speed arterial; therefore excluded.                                                                      |
| 5      | Right-In/Right-Out                 | No                  | No                        |                                  |                         |                                 | Yes               |                  | Restricting left-in movements at this intersection is not acceptable for the local jurisdiction - minor street provides access to residential and highly utilized sports (soccer/baseball) park. |
| 6      | Right-In/Right-Out/Left-In         | Yes                 | No                        |                                  |                         |                                 |                   | Yes              | Provides unacceptable operation for some movements with some right-of-way impacts.                                                                                                               |
| 7      | J-turn                             | No                  | No                        |                                  |                         |                                 | Yes               |                  | Not applicable                                                                                                                                                                                   |
| 8      | Median U-Turn                      | Yes                 | Yes                       | No                               | Yes                     | N/A                             |                   | Yes              | Provides unacceptable operation for some movements with some right-of-way impacts.                                                                                                               |
| 9      | Displaced left Turn                | No                  | No                        |                                  |                         |                                 | Yes               |                  | Not applicable                                                                                                                                                                                   |
| 10     | Continuous Green-T                 | No                  | No                        |                                  |                         |                                 | Yes               |                  | Not applicable                                                                                                                                                                                   |
| 11     | Echelon                            | No                  | No                        |                                  |                         |                                 | Yes               |                  | Not applicable                                                                                                                                                                                   |
| 12     | Diamond                            | No                  | No                        |                                  |                         |                                 | Yes               |                  | Not applicable                                                                                                                                                                                   |
| 13     | Cloverleaf/<br>Partrial Cloverleaf | No                  | No                        |                                  |                         |                                 | Yes               |                  | Not applicable                                                                                                                                                                                   |
| 14     | Diverging Diamond                  | No                  | No                        |                                  |                         |                                 | Yes               |                  | Not applicable                                                                                                                                                                                   |
| 15     | Single Point                       | No                  | No                        |                                  |                         |                                 | Yes               |                  | Not applicable                                                                                                                                                                                   |
| 16     | [Add more as needed]               | -                   |                           |                                  |                         |                                 |                   |                  |                                                                                                                                                                                                  |
|        |                                    |                     |                           |                                  |                         |                                 |                   |                  |                                                                                                                                                                                                  |
|        |                                    |                     |                           |                                  |                         |                                 |                   |                  |                                                                                                                                                                                                  |
|        |                                    |                     |                           |                                  |                         |                                 |                   |                  |                                                                                                                                                                                                  |
|        |                                    |                     |                           |                                  |                         |                                 |                   |                  |                                                                                                                                                                                                  |

## **Appendix E**

# **Traffic Signal Warrant Analysis**

*Year 2020 Background Traffic – Park at Partial Use*

*Year 2020 Background Traffic – Park at Partial Use & Western Developments at 45%  
Build Out*



# TRAFFIC SIGNAL WARRANT VOLUME CALCULATIONS: CTH F at Lindsay Road

Page 1

## 2019 Existing Traffic

| Start Time | ↓                |      |      | ←                      |      |      | ↑                |      |      | →                      |      |      | Intersection Totals | --- |     | 0%        |            | 0% |    | Notes | 0% | 0% | ← % Reduction, Sensitivity Test |
|------------|------------------|------|------|------------------------|------|------|------------------|------|------|------------------------|------|------|---------------------|-----|-----|-----------|------------|----|----|-------|----|----|---------------------------------|
|            | CTH F from North |      |      | Lindsay Road from East |      |      | CTH F from South |      |      | Lindsay Road from West |      |      |                     | 0   |     | 0         |            |    |    |       |    |    |                                 |
|            | Right            | Thru | Left | Right                  | Thru | Left | Right            | Thru | Left | Right                  | Thru | Left |                     | IN  | OUT | % AADT IN | % AADT OUT |    |    |       |    |    |                                 |
| 6-7am      | 3                | 794  | 7    | 9                      | 6    | 19   | 52               | 731  | 2    | 26                     | 11   | 11   | 1671                | 0   | 0   | 0.0%      | 0.0%       |    |    |       |    |    |                                 |
| 7-8am      | 4                | 1198 | 13   | 16                     | 13   | 34   | 42               | 975  | 8    | 30                     | 28   | 20   | 2381                | 0   | 0   | 0.0%      | 0.0%       |    |    |       |    |    |                                 |
| 8-9am      | 5                | 893  | 4    | 11                     | 9    | 28   | 17               | 707  | 6    | 15                     | 18   | 13   | 1726                | 0   | 0   | 0.0%      | 0.0%       |    |    |       |    |    |                                 |
| 9-10am     | 6                | 589  | 5    | 8                      | 4    | 23   | 21               | 495  | 5    | 14                     | 8    | 5    | 1183                | 0   | 0   | 0.0%      | 0.0%       |    |    |       |    |    |                                 |
| 10-11am    | 3                | 543  | 4    | 5                      | 11   | 27   | 24               | 481  | 9    | 11                     | 13   | 1    | 1132                | 0   | 0   | 0.0%      | 0.0%       |    |    |       |    |    |                                 |
| 11am-12pm  | 5                | 520  | 4    | 8                      | 10   | 26   | 23               | 522  | 12   | 11                     | 11   | 2    | 1154                | 0   | 0   | 0.0%      | 0.0%       |    |    |       |    |    |                                 |
| 12-1pm     | 6                | 583  | 6    | 6                      | 21   | 18   | 19               | 543  | 12   | 11                     | 16   | 3    | 1244                | 0   | 0   | 0.0%      | 0.0%       |    |    |       |    |    |                                 |
| 1-2pm      | 9                | 485  | 2    | 5                      | 10   | 11   | 20               | 553  | 20   | 14                     | 8    | 6    | 1143                | 0   | 0   | 0.0%      | 0.0%       |    |    |       |    |    |                                 |
| 2-3pm      | 15               | 683  | 7    | 5                      | 9    | 17   | 25               | 762  | 14   | 6                      | 11   | 7    | 1561                | 0   | 0   | 0.0%      | 0.0%       |    |    |       |    |    |                                 |
| 3-4pm      | 11               | 789  | 10   | 13                     | 9    | 23   | 31               | 953  | 27   | 14                     | 13   | 8    | 1901                | 0   | 0   | 0.0%      | 0.0%       |    |    |       |    |    |                                 |
| 4-5pm      | 23               | 1143 | 13   | 24                     | 23   | 30   | 40               | 1328 | 51   | 17                     | 19   | 9    | 2720                | 0   | 0   | 0.0%      | 0.0%       |    |    |       |    |    |                                 |
| 5-6pm      | 29               | 1079 | 17   | 30                     | 18   | 32   | 60               | 1414 | 65   | 28                     | 17   | 13   | 2802                | 0   | 0   | 0.0%      | 0.0%       |    |    |       |    |    |                                 |
| 6-7pm      | 15               | 577  | 10   | 10                     | 16   | 18   | 32               | 691  | 23   | 17                     | 26   | 12   | 1447                | 0   | 0   | 0.0%      | 0.0%       |    |    |       |    |    |                                 |
|            |                  |      |      |                        |      |      |                  |      |      |                        |      |      |                     |     |     |           |            |    |    |       |    |    |                                 |
|            |                  |      |      |                        |      |      |                  |      |      |                        |      |      |                     |     |     |           |            |    |    |       |    |    |                                 |
|            |                  |      |      |                        |      |      |                  |      |      |                        |      |      |                     |     |     |           |            |    |    |       |    |    |                                 |
|            |                  |      |      |                        |      |      |                  |      |      |                        |      |      |                     |     |     |           |            |    |    |       |    |    |                                 |
|            |                  |      |      |                        |      |      |                  |      |      |                        |      |      |                     |     |     |           |            |    |    |       |    |    |                                 |
|            |                  |      |      |                        |      |      |                  |      |      |                        |      |      |                     |     |     |           |            |    |    |       |    |    |                                 |
|            |                  |      |      |                        |      |      |                  |      |      |                        |      |      |                     |     |     |           |            |    |    |       |    |    |                                 |
|            |                  |      |      |                        |      |      |                  |      |      |                        |      |      |                     |     |     |           |            |    |    |       |    |    |                                 |
|            |                  |      |      |                        |      |      |                  |      |      |                        |      |      |                     |     |     |           |            |    |    |       |    |    |                                 |
|            |                  |      |      |                        |      |      |                  |      |      |                        |      |      |                     |     |     |           |            |    |    |       |    |    |                                 |
|            |                  |      |      |                        |      |      |                  |      |      |                        |      |      |                     |     |     |           |            |    |    |       |    |    |                                 |
|            |                  |      |      |                        |      |      |                  |      |      |                        |      |      |                     |     |     |           |            |    |    |       |    |    |                                 |
|            |                  |      |      |                        |      |      |                  |      |      |                        |      |      |                     |     |     |           |            |    |    |       |    |    |                                 |
|            |                  |      |      |                        |      |      |                  |      |      |                        |      |      |                     |     |     |           |            |    |    |       |    |    |                                 |
|            |                  |      |      |                        |      |      |                  |      |      |                        |      |      |                     |     |     |           |            |    |    |       |    |    |                                 |
|            |                  |      |      |                        |      |      |                  |      |      |                        |      |      |                     |     |     |           |            |    |    |       |    |    |                                 |
|            |                  |      |      |                        |      |      |                  |      |      |                        |      |      |                     |     |     |           |            |    |    |       |    |    |                                 |
|            |                  |      |      |                        |      |      |                  |      |      |                        |      |      |                     |     |     |           |            |    |    |       |    |    |                                 |
|            |                  |      |      |                        |      |      |                  |      |      |                        |      |      |                     |     |     |           |            |    |    |       |    |    |                                 |
|            |                  |      |      |                        |      |      |                  |      |      |                        |      |      |                     |     |     |           |            |    |    |       |    |    |                                 |
|            |                  |      |      |                        |      |      |                  |      |      |                        |      |      |                     |     |     |           |            |    |    |       |    |    |                                 |
|            |                  |      |      |                        |      |      |                  |      |      |                        |      |      |                     |     |     |           |            |    |    |       |    |    |                                 |
|            |                  |      |      |                        |      |      |                  |      |      |                        |      |      |                     |     |     |           |            |    |    |       |    |    |                                 |
|            |                  |      |      |                        |      |      |                  |      |      |                        |      |      |                     |     |     |           |            |    |    |       |    |    |                                 |
|            |                  |      |      |                        |      |      |                  |      |      |                        |      |      |                     |     |     |           |            |    |    |       |    |    |                                 |
|            |                  |      |      |                        |      |      |                  |      |      |                        |      |      |                     |     |     |           |            |    |    |       |    |    |                                 |
|            |                  |      |      |                        |      |      |                  |      |      |                        |      |      |                     |     |     |           |            |    |    |       |    |    |                                 |
|            |                  |      |      |                        |      |      |                  |      |      |                        |      |      |                     |     |     |           |            |    |    |       |    |    |                                 |
|            |                  |      |      |                        |      |      |                  |      |      |                        |      |      |                     |     |     |           |            |    |    |       |    |    |                                 |
|            |                  |      |      |                        |      |      |                  |      |      |                        |      |      |                     |     |     |           |            |    |    |       |    |    |                                 |
|            |                  |      |      |                        |      |      |                  |      |      |                        |      |      |                     |     |     |           |            |    |    |       |    |    |                                 |
|            |                  |      |      |                        |      |      |                  |      |      |                        |      |      |                     |     |     |           |            |    |    |       |    |    |                                 |
|            |                  |      |      |                        |      |      |                  |      |      |                        |      |      |                     |     |     |           |            |    |    |       |    |    |                                 |
|            |                  |      |      |                        |      |      |                  |      |      |                        |      |      |                     |     |     |           |            |    |    |       |    |    |                                 |
|            |                  |      |      |                        |      |      |                  |      |      |                        |      |      |                     |     |     |           |            |    |    |       |    |    |                                 |
|            |                  |      |      |                        |      |      |                  |      |      |                        |      |      |                     |     |     |           |            |    |    |       |    |    |                                 |
|            |                  |      |      |                        |      |      |                  |      |      |                        |      |      |                     |     |     |           |            |    |    |       |    |    |                                 |
|            |                  |      |      |                        |      |      |                  |      |      |                        |      |      |                     |     |     |           |            |    |    |       |    |    |                                 |
|            |                  |      |      |                        |      |      |                  |      |      |                        |      |      |                     |     |     |           |            |    |    |       |    |    |                                 |
|            |                  |      |      |                        |      |      |                  |      |      |                        |      |      |                     |     |     |           |            |    |    |       |    |    |                                 |
|            |                  |      |      |                        |      |      |                  |      |      |                        |      |      |                     |     |     |           |            |    | </ |       |    |    |                                 |

By: DJL  
Date: 7/2/20

<- % Reduction, Sensitivity Test

## 2020 Background Growth

| 1                    |  |      |      |  |      |      |  |      |      |  |      |      | Intersection |  |        | 0%   | 0%   | <- % Reduction, Sensitivity Test |
|----------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|------|------|--------------|-------------------------------------------------------------------------------------|--------|------|------|----------------------------------|
|                      | CTH F from North                                                                  |      |      | Lindsay Road from East                                                            |      |      | CTH F from South                                                                  |      |      | Lindsay Road from West                                                            |      |      |              | % AADT                                                                              | % AADT |      |      |                                  |
|                      | Right                                                                             | Thru | Left | Right                                                                             | Thru | Left | Right                                                                             | Thru | Left | Right                                                                             | Thru | Left |              | Totals                                                                              | IN     | OUT  | IN   |                                  |
| 6-7am                | 0                                                                                 | 10   | 0    | 0                                                                                 | 0    | 0    | 1                                                                                 | 9    | 0    | 0                                                                                 | 0    | 0    | 20           | 0                                                                                   | 0      | 0.0% | 0.0% |                                  |
| 7-8am                | 0                                                                                 | 15   | 0    | 0                                                                                 | 0    | 0    | 1                                                                                 | 12   | 0    | 0                                                                                 | 0    | 0    | 28           | 0                                                                                   | 0      | 0.0% | 0.0% |                                  |
| 8-9am                | 0                                                                                 | 11   | 0    | 0                                                                                 | 0    | 0    | 0                                                                                 | 9    | 0    | 0                                                                                 | 0    | 0    | 20           | 0                                                                                   | 0      | 0.0% | 0.0% |                                  |
| 9-10am               | 0                                                                                 | 7    | 0    | 0                                                                                 | 0    | 0    | 0                                                                                 | 6    | 0    | 0                                                                                 | 0    | 0    | 13           | 0                                                                                   | 0      | 0.0% | 0.0% |                                  |
| 10-11am              | 0                                                                                 | 7    | 0    | 0                                                                                 | 0    | 0    | 0                                                                                 | 6    | 0    | 0                                                                                 | 0    | 0    | 13           | 0                                                                                   | 0      | 0.0% | 0.0% |                                  |
| 11am-12pm            | 0                                                                                 | 7    | 0    | 0                                                                                 | 0    | 0    | 0                                                                                 | 7    | 0    | 0                                                                                 | 0    | 0    | 14           | 0                                                                                   | 0      | 0.0% | 0.0% |                                  |
| 12-1pm               | 0                                                                                 | 7    | 0    | 0                                                                                 | 0    | 0    | 0                                                                                 | 7    | 0    | 0                                                                                 | 0    | 0    | 14           | 0                                                                                   | 0      | 0.0% | 0.0% |                                  |
| 1-2pm                | 0                                                                                 | 6    | 0    | 0                                                                                 | 0    | 0    | 0                                                                                 | 7    | 0    | 0                                                                                 | 0    | 0    | 13           | 0                                                                                   | 0      | 0.0% | 0.0% |                                  |
| 2-3pm                | 0                                                                                 | 9    | 0    | 0                                                                                 | 0    | 0    | 0                                                                                 | 10   | 0    | 0                                                                                 | 0    | 0    | 19           | 0                                                                                   | 0      | 0.0% | 0.0% |                                  |
| 3-4pm                | 0                                                                                 | 10   | 0    | 0                                                                                 | 0    | 0    | 0                                                                                 | 12   | 0    | 0                                                                                 | 0    | 0    | 22           | 0                                                                                   | 0      | 0.0% | 0.0% |                                  |
| 4-5pm                | 0                                                                                 | 14   | 0    | 0                                                                                 | 0    | 0    | 1                                                                                 | 17   | 1    | 0                                                                                 | 0    | 0    | 33           | 0                                                                                   | 0      | 0.0% | 0.0% |                                  |
| 5-6pm                | 0                                                                                 | 13   | 0    | 0                                                                                 | 0    | 0    | 1                                                                                 | 18   | 1    | 0                                                                                 | 0    | 0    | 33           | 0                                                                                   | 0      | 0.0% | 0.0% |                                  |
|                      |                                                                                   |      |      |                                                                                   |      |      |                                                                                   |      |      |                                                                                   |      |      |              |                                                                                     |        |      |      |                                  |
| 12:00 AM             | 0                                                                                 | 0    | 0    | 0                                                                                 | 0    | 0    | 0                                                                                 | 0    | 0    | 0                                                                                 | 0    | 0    | 0            | 0                                                                                   | 0      | 0.0% | 0.0% |                                  |
| 12:00 AM             | 0                                                                                 | 0    | 0    | 0                                                                                 | 0    | 0    | 0                                                                                 | 0    | 0    | 0                                                                                 | 0    | 0    | 0            | 0                                                                                   | 0      | 0.0% | 0.0% |                                  |
| IN or OUT PERCENTAGE |                                                                                   |      |      |                                                                                   |      |      |                                                                                   |      |      |                                                                                   |      |      |              |                                                                                     |        | 0.0% | 0.0% |                                  |

## Sports Fields (Partial Use - 4 baseball fields)

| Start Time           | ↓                |      |      | ←                      |      |      | ↑                |       |      | →                      |      |      | Intersection Totals | --- |     | 0%     |        | 0%                                        |  | <- % Reduction, Sensitivity Test |
|----------------------|------------------|------|------|------------------------|------|------|------------------|-------|------|------------------------|------|------|---------------------|-----|-----|--------|--------|-------------------------------------------|--|----------------------------------|
|                      | CTH F from North |      |      | Lindsay Road from East |      |      | CTH F from South |       |      | Lindsay Road from West |      |      |                     | IN  | OUT | % AADT | % AADT |                                           |  |                                  |
|                      | Right            | Thru | Left | Right                  | Thru | Left | Right            | Thru  | Left | Right                  | Thru | Left |                     |     |     |        |        |                                           |  |                                  |
| 6-7am                | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0     | 0    | 0                      | 0    | 0    | 0                   | 0   | 0   | 0.0%   | 0.0%   |                                           |  |                                  |
| 7-8am                | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0     | 0    | 0                      | 0    | 0    | 0                   | 0   | 0   | 0.0%   | 0.0%   |                                           |  |                                  |
| 8-9am                | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0     | 0    | 0                      | 0    | 0    | 0                   | 0   | 0   | 0.0%   | 0.0%   |                                           |  |                                  |
| 9-10am               | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0     | 0    | 0                      | 0    | 0    | 0                   | 0   | 0   | 0.0%   | 0.0%   |                                           |  |                                  |
| 10-11am              | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0     | 0    | 0                      | 0    | 0    | 0                   | 0   | 0   | 0.0%   | 0.0%   |                                           |  |                                  |
| 11am-12pm            | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0     | 0    | 0                      | 0    | 0    | 0                   | 0   | 0   | 0.0%   | 0.0%   |                                           |  |                                  |
| 12-1pm               | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0     | 0    | 0                      | 0    | 0    | 0                   | 0   | 0   | 0.0%   | 0.0%   |                                           |  |                                  |
| 1-2pm                | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0     | 0    | 0                      | 0    | 0    | 0                   | 0   | 0   | 0.0%   | 0.0%   |                                           |  |                                  |
| 2-3pm                | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0     | 0    | 0                      | 0    | 0    | 0                   | 0   | 0   | 0.0%   | 0.0%   |                                           |  |                                  |
| 3-4pm                | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0     | 0    | 0                      | 0    | 0    | 0                   | 0   | 0   | 0.0%   | 0.0%   |                                           |  |                                  |
| 4-5pm                | 10               | 0    | 0    | 0                      | 0    | 0    | 0                | 0     | 0    | 10                     | 5    | 0    | 25                  | 0   | 0   | 0.0%   | 0.0%   | Based on May 2020 count (2x for 4 fields) |  |                                  |
| 5-6pm                | 30               | 0    | 0    | 0                      | 10   | 0    | 0                | 0     | 0    | 30                     | 5    | 0    | 80                  | 0   | 0   | 0.0%   | 0.0%   | 20 in, 5 out                              |  |                                  |
| 6-7pm                | 10               | 0    | 0    | 0                      | 0    | 0    | 0                | 0     | 0    | 10                     | 5    | 0    | 25                  | 0   | 0   | 0.0%   | 0.0%   | 20 in, 5 out                              |  |                                  |
| IN or OUT PERCENTAGE | IN               |      |      | IN                     |      |      | IN               | OUT   | OUT  | OUT                    |      |      |                     |     |     | 8.5    |        |                                           |  |                                  |
|                      | 25.0%            |      |      | 5.0%                   |      |      | 25.0%            | 25.0% | 5.0% | 25.0%                  |      |      |                     | 35  |     | 297.5  |        |                                           |  |                                  |

TRAFFIC SIGNAL WARRANT VOLUME SUMMARY: CTH F at Lindsay Road

2020 Background (Partial use at Park) Traffic

| Start Time | <div><div><div>MAJOR</div><div>MINOR</div></div><div>↓</div></div> |      |      | <div>←</div>           |      |      | <div>↑</div>     |      |      | <div>→</div>           |      |      | Intersection Totals |
|------------|--------------------------------------------------------------------|------|------|------------------------|------|------|------------------|------|------|------------------------|------|------|---------------------|
|            | CTH F from North                                                   |      |      | Lindsay Road from East |      |      | CTH F from South |      |      | Lindsay Road from West |      |      |                     |
|            | Right                                                              | Thru | Left | Right                  | Thru | Left | Right            | Thru | Left | Right                  | Thru | Left |                     |
| 6-7am      | 3                                                                  | 804  | 7    | 9                      | 6    | 19   | 53               | 740  | 2    | 26                     | 11   | 11   | 1691                |
| 7-8am      | 4                                                                  | 1213 | 13   | 16                     | 13   | 34   | 43               | 987  | 8    | 30                     | 28   | 20   | 2409                |
| 8-9am      | 5                                                                  | 904  | 4    | 11                     | 9    | 28   | 17               | 716  | 6    | 15                     | 18   | 13   | 1746                |
| 9-10am     | 6                                                                  | 596  | 5    | 8                      | 4    | 23   | 21               | 501  | 5    | 14                     | 8    | 5    | 1196                |
| 10-11am    | 3                                                                  | 550  | 4    | 5                      | 11   | 27   | 24               | 487  | 9    | 11                     | 13   | 1    | 1145                |
| 11am-12pm  | 5                                                                  | 527  | 4    | 8                      | 10   | 26   | 23               | 529  | 12   | 11                     | 11   | 2    | 1168                |
| 12-1pm     | 6                                                                  | 590  | 6    | 6                      | 21   | 18   | 19               | 550  | 12   | 11                     | 16   | 3    | 1258                |
| 1-2pm      | 9                                                                  | 491  | 2    | 5                      | 10   | 11   | 20               | 560  | 20   | 14                     | 8    | 6    | 1156                |
| 2-3pm      | 15                                                                 | 692  | 7    | 5                      | 9    | 17   | 25               | 772  | 14   | 6                      | 11   | 7    | 1580                |
| 3-4pm      | 11                                                                 | 799  | 10   | 13                     | 9    | 23   | 31               | 965  | 27   | 14                     | 13   | 8    | 1923                |
| 4-5pm      | 33                                                                 | 1157 | 13   | 24                     | 23   | 30   | 41               | 1345 | 62   | 22                     | 19   | 9    | 2778                |
| 5-6pm      | 59                                                                 | 1092 | 17   | 30                     | 28   | 32   | 61               | 1432 | 96   | 33                     | 17   | 18   | 2915                |
| 6-7pm      | 25                                                                 | 577  | 10   | 10                     | 16   | 18   | 32               | 691  | 33   | 22                     | 26   | 12   | 1472                |
| 12:00 AM   | 0                                                                  | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   |
| 12:00 AM   | 0                                                                  | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   |
| 12:00 AM   | 0                                                                  | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   |

CONDITIONS

|                         |             |
|-------------------------|-------------|
| < 10,000 Population     | No          |
| Major Street Speed > 40 | Yes         |
| Major Street Lanes      | Two or more |
| Minor Street Lanes      | One         |
| 1.5 x Minor Thresholds  | No          |

HOURLY VOLUME SUMMARY

| Start Time | MAJOR | MINOR |
|------------|-------|-------|
| 6-7am      | 1609  | 48    |
| 7-8am      | 2268  | 78    |
| 8-9am      | 1652  | 48    |
| 9-10am     | 1134  | 35    |
| 10-11am    | 1077  | 43    |
| 11am-12pm  | 1100  | 44    |
| 12-1pm     | 1183  | 45    |
| 1-2pm      | 1102  | 28    |
| 2-3pm      | 1525  | 31    |
| 3-4pm      | 1843  | 45    |
| 4-5pm      | 2651  | 77    |
| 5-6pm      | 2757  | 90    |
| 6-7pm      | 1368  | 60    |
| 12:00 AM   | 0     | 0     |
| 12:00 AM   | 0     | 0     |
| 12:00 AM   | 0     | 0     |

WARRANT 1: EIGHT HOUR WARRANT:

MAJOR vs. MINOR

| Start Time | 1A (70%) |       | 1B (70%) |       | 1A (56%) |       | 1B (56%) |       |
|------------|----------|-------|----------|-------|----------|-------|----------|-------|
|            | MAJOR    | MINOR | MAJOR    | MINOR | MAJOR    | MINOR | MAJOR    | MINOR |
|            | YES      | NO    | YES      | NO    | YES      | NO    | YES      | YES   |
| 7-8am      | YES      | NO    | YES      | YES   | YES      | NO    | YES      | YES   |
| 8-9am      | YES      | NO    | YES      | NO    | YES      | NO    | YES      | YES   |
| 9-10am     | YES      | NO    | YES      | NO    | YES      | NO    | YES      | NO    |
| 10-11am    | YES      | NO    | YES      | NO    | YES      | NO    | YES      | YES   |
| 11am-12pm  | YES      | NO    | YES      | NO    | YES      | NO    | YES      | YES   |
| 12-1pm     | YES      | NO    | YES      | NO    | YES      | NO    | YES      | YES   |
| 1-2pm      | YES      | NO    | YES      | NO    | YES      | NO    | YES      | NO    |
| 2-3pm      | YES      | NO    | YES      | NO    | YES      | NO    | YES      | NO    |
| 3-4pm      | YES      | NO    | YES      | NO    | YES      | NO    | YES      | YES   |
| 4-5pm      | YES      | NO    | YES      | YES   | YES      | NO    | YES      | YES   |
| 5-6pm      | YES      | NO    | YES      | YES   | YES      | YES   | YES      | YES   |
| 6-7pm      | YES      | NO    | YES      | YES   | YES      | NO    | YES      | YES   |
| 12:00 AM   | NO       | NO    | NO       | NO    | NO       | NO    | NO       | NO    |
| 12:00 AM   | NO       | NO    | NO       | NO    | NO       | NO    | NO       | NO    |
| 12:00 AM   | NO       | NO    | NO       | NO    | NO       | NO    | NO       | NO    |

|                      |     |     |     |    |     |    |     |    |
|----------------------|-----|-----|-----|----|-----|----|-----|----|
| Threshold Volume     | 420 | 105 | 630 | 53 | 336 | 84 | 504 | 42 |
| # that Meet Criteria | 0   |     | 4   |    |     | 1  |     |    |
| Condition Met        | NO  |     | NO  |    |     | NO |     |    |

HOURLY VOLUME SUMMARY

| Start Time | SB Th+Rt | NB Lt |
|------------|----------|-------|
| 6-7am      | 807      | 2     |
| 7-8am      | 1217     | 8     |
| 8-9am      | 909      | 6     |
| 9-10am     | 602      | 5     |
| 10-11am    | 553      | 9     |
| 11am-12pm  | 532      | 12    |
| 12-1pm     | 596      | 12    |
| 1-2pm      | 500      | 20    |
| 2-3pm      | 707      | 14    |
| 3-4pm      | 810      | 27    |
| 4-5pm      | 1190     | 62    |
| 5-6pm      | 1151     | 96    |
| 6-7pm      | 602      | 33    |
| 12:00 AM   | 0        | 0     |
| 12:00 AM   | 0        | 0     |
| 12:00 AM   | 0        | 0     |

WARRANT 1: EIGHT HOUR WARRANT:

NB Lt vs. SB Th+Rt

| Start Time | 1A (70%) |       | 1B (70%) |       | 1A (56%) |       | 1B (56%) |       | LEFT-TURN CONFLICT |
|------------|----------|-------|----------|-------|----------|-------|----------|-------|--------------------|
|            | MAJOR    | MINOR | MAJOR    | MINOR | MAJOR    | MINOR | MAJOR    | MINOR |                    |
|            | YES      | NO    | YES      | NO    | YES      | NO    | YES      | NO    |                    |
| 7-8am      | YES      | NO    | YES      | NO    | YES      | NO    | YES      | NO    | NO                 |
| 8-9am      | YES      | NO    | YES      | NO    | YES      | NO    | YES      | NO    | NO                 |
| 9-10am     | YES      | NO    | NO       | NO    | YES      | NO    | YES      | NO    | NO                 |
| 10-11am    | YES      | NO    | NO       | NO    | YES      | NO    | YES      | NO    | NO                 |
| 11am-12pm  | YES      | NO    | NO       | NO    | YES      | NO    | YES      | NO    | NO                 |
| 12-1pm     | YES      | NO    | NO       | NO    | YES      | NO    | YES      | NO    | NO                 |
| 1-2pm      | YES      | NO    | NO       | NO    | YES      | NO    | NO       | NO    | NO                 |
| 2-3pm      | YES      | NO    | YES      | NO    | YES      | NO    | YES      | NO    | NO                 |
| 3-4pm      | YES      | NO    | YES      | NO    | YES      | NO    | YES      | NO    | NO                 |
| 4-5pm      | YES      | NO    | YES      | YES   | YES      | NO    | YES      | YES   | NO                 |
| 5-6pm      | YES      | NO    | YES      | YES   | YES      | YES   | YES      | YES   | YES                |
| 6-7pm      | YES      | NO    | NO       | NO    | YES      | NO    | YES      | NO    | NO                 |
| 12:00 AM   | NO       | NO    | NO       | NO    | NO       | NO    | NO       | NO    | NO                 |
| 12:00 AM   | NO       | NO    | NO       | NO    | NO       | NO    | NO       | NO    | NO                 |
| 12:00 AM   | NO       | NO    | NO       | NO    | NO       | NO    | NO       | NO    | NO                 |

|                      |     |     |     |    |     |    |     |    |         |
|----------------------|-----|-----|-----|----|-----|----|-----|----|---------|
| Threshold Volume     | 420 | 105 | 630 | 53 | 336 | 84 | 504 | 42 | 100,000 |
| # that Meet Criteria | 0   |     | 2   |    |     | 1  |     |    |         |
| Condition Met        | NO  |     | NO  |    |     | NO |     |    | YES     |

HOURLY VOLUME SUMMARY

| Start Time | NB Th+Rt | SB Lt |
|------------|----------|-------|
| 6-7am      | 793      | 7     |
| 7-8am      | 1030     | 13    |
| 8-9am      | 733      | 4     |
| 9-10am     | 522      | 5     |
| 10-11am    | 511      | 4     |
| 11am-12pm  | 552      | 4     |
| 12-1pm     | 569      | 6     |
| 1-2pm      | 580      | 2     |
| 2-3pm      | 797      | 7     |
| 3-4pm      | 996      | 10    |
| 4-5pm      | 1386     | 13    |
| 5-6pm      | 1493     | 17    |
| 6-7pm      | 723      | 10    |
| 12:00 AM   | 0        | 0     |
| 12:00 AM   | 0        | 0     |
| 12:00 AM   | 0        | 0     |

WARRANT 1: EIGHT HOUR WARRANT:

SB Lt vs. NB Th+Rt

| Start Time | 1A (70%) |       | 1B (70%) |       | 1A (56%) |       | 1B (56%) |       | LEFT-TURN CONFLICT |
|------------|----------|-------|----------|-------|----------|-------|----------|-------|--------------------|
|            | MAJOR    | MINOR | MAJOR    | MINOR | MAJOR    | MINOR | MAJOR    | MINOR |                    |
|            | YES      | NO    | YES      | NO    | YES      | NO    | YES      | NO    |                    |
| 7-8am      | YES      | NO    | YES      | NO    | YES      | NO    | YES      | NO    | NO                 |
| 8-9am      | YES      | NO    | YES      | NO    | YES      | NO    | YES      | NO    | NO                 |
| 9-10am     | YES      | NO    | NO       | NO    | YES      | NO    | YES      | NO    | NO                 |
| 10-11am    | YES      | NO    | NO       | NO    | YES      | NO    | YES      | NO    | NO                 |
| 11am-12pm  | YES      | NO    | NO       | NO    | YES      | NO    | YES      | NO    | NO                 |
| 12-1pm     | YES      | NO    | NO       | NO    | YES      | NO    | YES      | NO    | NO                 |
| 1-2pm      | YES      | NO    | NO       | NO    | YES      | NO    | YES      | NO    | NO                 |
| 2-3pm      | YES      | NO    | YES      | NO    | YES      | NO    | YES      | NO    | NO                 |
| 3-4pm      | YES      | NO    | YES      | NO    | YES      | NO    | YES      | NO    | NO                 |
| 4-5pm      | YES      | NO    | YES      | NO    | YES      | NO    | YES      | NO    | NO                 |
| 5-6pm      | YES      | NO    | YES      | NO    | YES      | NO    | YES      | NO    | NO                 |
| 6-7pm      | YES      | NO    | YES      | NO    | YES      | NO    | YES      | NO    | NO                 |
| 12:00 AM   | NO       | NO    | NO       | NO    | NO       | NO    | NO       | NO    | NO                 |
| 12:00 AM   | NO       | NO    | NO       | NO    | NO       | NO    | NO       | NO    | NO                 |
| 12:00 AM   | NO       | NO    | NO       | NO    | NO       | NO    | NO       | NO    | NO                 |

|                      |     |     |     |    |     |    |     |    |         |
|----------------------|-----|-----|-----|----|-----|----|-----|----|---------|
| Threshold Volume     | 420 | 105 | 630 | 53 | 336 | 84 | 504 | 42 | 100,000 |
| # that Meet Criteria | 0   |     | 0   |    |     | 0  |     |    |         |
| Condition Met        | NO  |     | NO  |    |     | NO |     |    | NO      |

By: DJL  
Date: 7/2/20



# TRAFFIC SIGNAL WARRANT ANALYSIS SUMMARY (WARRANTS 1 - 3)

## 2020 Background (Partial use at Park) Traffic

CTH F at Lindsay Road

| VOLUME SUMMARY          |       |       |
|-------------------------|-------|-------|
| For Warrant 1           |       |       |
| Percent Right Turns --> |       | 100%  |
| START TIME              | MAJOR | MINOR |
| 6-7am                   | 1609  | 48    |
| 7-8am                   | 2268  | 78    |
| 8-9am                   | 1652  | 48    |
| 9-10am                  | 1134  | 35    |
| 10-11am                 | 1077  | 43    |
| 11am-12pm               | 1100  | 44    |
| 12-1pm                  | 1183  | 45    |
| 1-2pm                   | 1102  | 28    |
| 2-3pm                   | 1525  | 31    |
| 3-4pm                   | 1843  | 45    |
| 4-5pm                   | 2651  | 77    |
| 5-6pm                   | 2757  | 90    |
| 6-7pm                   | 1368  | 60    |
| 12:00 AM                | 0     | 0     |
| 12:00 AM                | 0     | 0     |
| 12:00 AM                | 0     | 0     |

### Warrant 1 (Eight Hour Volume - 70% Factor)

| Conditions  | Major | Minor | Met? | Hours Met? |
|-------------|-------|-------|------|------------|
| Condition A | 420   | 105   | NO   | 0          |
| Condition B | 630   | 53    | NO   | 4          |
| Condition C |       |       | NO   | 1          |
| 1A          | 336   | 84    |      |            |
| 1B          | 504   | 42    |      |            |

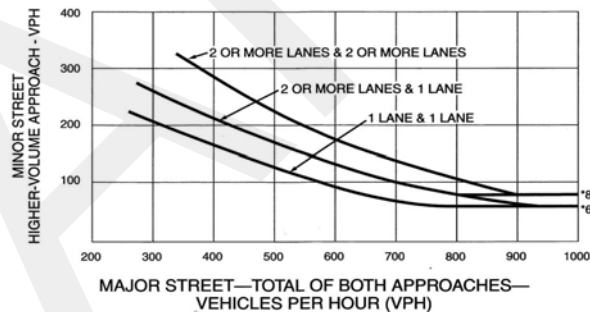
| Volumes | Major    | Minor |
|---------|----------|-------|
|         | NB/SB    | EB/WB |
|         | SB Th+Rt | NB Lt |
|         | NB Th+Rt | SB Lt |

### Warrant 2 (Four Hour Volume) (70% Factor)

| Met? |
|------|
| YES  |

Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)



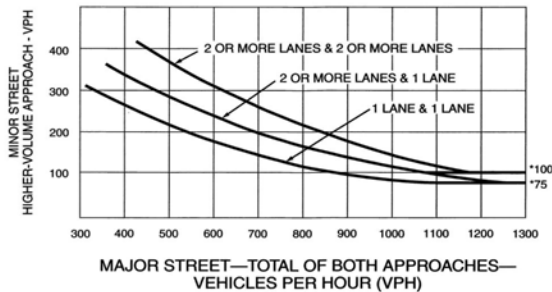
| VOLUME SUMMARY          |       |       |
|-------------------------|-------|-------|
| For Warrants 2 and 3    |       |       |
| Percent Right Turns --> |       | 100%  |
| Start Time              | MAJOR | MINOR |
| 6-7am                   | 1609  | 48    |
| 7-8am                   | 2268  | 78    |
| 8-9am                   | 1652  | 48    |
| 9-10am                  | 1134  | 35    |
| 10-11am                 | 1077  | 43    |
| 11am-12pm               | 1100  | 44    |
| 12-1pm                  | 1183  | 45    |
| 1-2pm                   | 1102  | 28    |
| 2-3pm                   | 1525  | 31    |
| 3-4pm                   | 1843  | 45    |
| 4-5pm                   | 2651  | 77    |
| 5-6pm                   | 2757  | 90    |
| 6-7pm                   | 1368  | 60    |
| 12:00 AM                | 0     | 0     |
| 12:00 AM                | 0     | 0     |
| 12:00 AM                | 0     | 0     |

### Warrant 3 (Peak Hour Volume) (70% Factor)

| Met? |
|------|
| NO   |

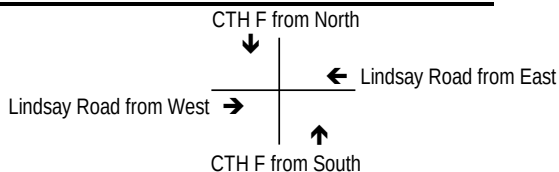
Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)



### CONDITIONS

|                             |             |
|-----------------------------|-------------|
| < 10,000 Population         | No          |
| Major Street Speed > 40 mph | Yes         |
| Major Street Lanes          | Two or more |
| Minor Street Lanes          | One         |
| T-Intersection (Y/N)        | No          |



### Left-Turn Conflict Analysis

| Opp. Thru | x | Lt Turn | Threshold | Met? | Hours Met |
|-----------|---|---------|-----------|------|-----------|
| SB Th+Rt  |   | NB Lt   | 100,000   | YES  | 1         |
| NB Th+Rt  |   | SB Lt   | 100,000   | NO   | 0         |

**2019 Existing Traffic**

| Start Time | CTH F from North |      |      | Lindsay Road from East |      |      | CTH F from South |      |      | Lindsay Road from West |      |      | Intersection Totals | IN | OUT | % AADT IN | % AADT OUT | Notes |
|------------|------------------|------|------|------------------------|------|------|------------------|------|------|------------------------|------|------|---------------------|----|-----|-----------|------------|-------|
|            | Right            | Thru | Left | Right                  | Thru | Left | Right            | Thru | Left | Right                  | Thru | Left |                     |    |     |           |            |       |
| 6-7am      | 0                | 19   | 0    | 0                      | 19   | 0    | 0                | 19   | 0    | 0                      | 19   | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 7-8am      | 4                | 198  | 10   | 10                     | 19   | 34   | 42               | 875  | 8    | 39                     | 28   | 20   | 2381                | 0  | 0   | 0.0%      | 0.0%       |       |
| 8-9am      | 0                | 80   | 0    | 0                      | 0    | 28   | 17               | 101  | 0    | 0                      | 18   | 13   | 1126                | 0  | 0   | 0.0%      | 0.0%       |       |
| 9-10am     | 0                | 388  | 0    | 0                      | 0    | 23   | 21               | 460  | 0    | 14                     | 8    | 8    | 1183                | 0  | 0   | 0.0%      | 0.0%       |       |
| 10-11am    | 0                | 324  | 0    | 0                      | 0    | 0    | 0                | 102  | 0    | 0                      | 0    | 0    | 1152                | 0  | 0   | 0.0%      | 0.0%       |       |
| 11am-12pm  | 0                | 328  | 0    | 0                      | 0    | 10   | 28               | 822  | 10   | 11                     | 11   | 2    | 1154                | 0  | 0   | 0.0%      | 0.0%       |       |
| 12-1pm     | 0                | 388  | 0    | 0                      | 0    | 10   | 10               | 561  | 10   | 11                     | 10   | 3    | 1161                | 0  | 0   | 0.0%      | 0.0%       |       |
| 1-2pm      | 0                | 482  | 0    | 0                      | 0    | 11   | 20               | 383  | 10   | 4                      | 8    | 6    | 1151                | 0  | 0   | 0.0%      | 0.0%       |       |
| 2-3pm      | 10               | 883  | 0    | 0                      | 0    | 17   | 25               | 762  | 14   | 11                     | 7    | 7    | 1581                | 0  | 0   | 0.0%      | 0.0%       |       |
| 3-4pm      | 11               | 798  | 10   | 10                     | 0    | 23   | 21               | 393  | 27   | 14                     | 13   | 8    | 1581                | 0  | 0   | 0.0%      | 0.0%       |       |
| 4-5pm      | 23               | 1140 | 10   | 10                     | 28   | 39   | 38               | 48   | 1038 | 37                     | 19   | 9    | 2729                | 0  | 0   | 0.0%      | 0.0%       |       |
| 5-6pm      | 28               | 1079 | 17   | 10                     | 0    | 32   | 40               | 1414 | 83   | 29                     | 17   | 13   | 2883                | 0  | 0   | 0.0%      | 0.0%       |       |
| 6-7pm      | 18               | 877  | 10   | 10                     | 18   | 18   | 32               | 891  | 23   | 17                     | 28   | 12   | 1447                | 0  | 0   | 0.0%      | 0.0%       |       |
| 7-8pm      | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 8-9pm      | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 9-10pm     | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 10-11pm    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 11pm-12pm  | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 12-1pm     | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 1-2pm      | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 2-3pm      | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 3-4pm      | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 4-5pm      | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 5-6pm      | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 6-7pm      | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 7-8pm      | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 8-9pm      | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 9-10pm     | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 10-11pm    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 11pm-12pm  | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 12-1pm     | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 1-2pm      | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 2-3pm      | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 3-4pm      | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 4-5pm      | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 5-6pm      | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 6-7pm      | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 7-8pm      | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 8-9pm      | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 9-10pm     | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 10-11pm    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 11pm-12pm  | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 12-1pm     | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 1-2pm      | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 2-3pm      | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 3-4pm      | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 4-5pm      | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 5-6pm      | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 6-7pm      | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 7-8pm      | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 8-9pm      | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 9-10pm     | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 10-11pm    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 11pm-12pm  | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 12-1pm     | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 1-2pm      | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 2-3pm      | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 3-4pm      | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 4-5pm      | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 5-6pm      | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 6-7pm      | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 7-8pm      | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 8-9pm      | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 9-10pm     | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 10-11pm    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 11pm-12pm  | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 12-1pm     | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 1-2pm      | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 2-3pm      | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 3-4pm      | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 4-5pm      | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 5-6pm      | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 6-7pm      | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 7-8pm      | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 8-9pm      | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 9-10pm     | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 10-11pm    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 11pm-12pm  | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 12-1pm     | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 1-2pm      | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 2-3pm      | 0                | 0    | 0    | 0                      | 0    | 0    | 0                | 0    | 0    | 0                      | 0    | 0    | 0                   | 0  | 0   | 0.0%      | 0.0%       |       |
| 3-4pm      |                  |      |      |                        |      |      |                  |      |      |                        |      |      |                     |    |     |           |            |       |



## TRAFFIC SIGNAL WARRANT VOLUME SUMMARY:

CTH F at Lindsay Road

## 2020 Partial Build Traffic (West Residential at 45%)

| Start Time | <div><div><div>MAJOR</div><div>MINOR</div></div><div>↓</div></div> |      |      | <div>←</div>           |      |      | <div>↑</div>     |      |      | <div>→</div>           |      |      | Totals |
|------------|--------------------------------------------------------------------|------|------|------------------------|------|------|------------------|------|------|------------------------|------|------|--------|
|            | CTH F from North                                                   |      |      | Lindsay Road from East |      |      | CTH F from South |      |      | Lindsay Road from West |      |      |        |
|            | Right                                                              | Thru | Left | Right                  | Thru | Left | Right            | Thru | Left | Right                  | Thru | Left |        |
| 6-7am      | 8                                                                  | 804  | 7    | 9                      | 6    | 19   | 53               | 740  | 7    | 36                     | 11   | 21   | 1721   |
| 7-8am      | 4                                                                  | 1213 | 13   | 16                     | 13   | 34   | 43               | 987  | 8    | 45                     | 33   | 35   | 2444   |
| 8-9am      | 10                                                                 | 904  | 4    | 11                     | 9    | 28   | 17               | 716  | 11   | 25                     | 18   | 23   | 1776   |
| 9-10am     | 11                                                                 | 596  | 5    | 8                      | 4    | 23   | 21               | 501  | 10   | 19                     | 8    | 10   | 1216   |
| 10-11am    | 8                                                                  | 550  | 4    | 5                      | 11   | 27   | 24               | 487  | 14   | 21                     | 13   | 11   | 1175   |
| 11am-12pm  | 15                                                                 | 527  | 4    | 8                      | 10   | 26   | 23               | 529  | 22   | 16                     | 11   | 7    | 1198   |
| 12-1pm     | 16                                                                 | 590  | 6    | 6                      | 21   | 18   | 19               | 550  | 22   | 21                     | 16   | 13   | 1298   |
| 1-2pm      | 19                                                                 | 491  | 2    | 5                      | 10   | 11   | 20               | 560  | 30   | 19                     | 8    | 11   | 1186   |
| 2-3pm      | 25                                                                 | 692  | 7    | 5                      | 9    | 17   | 25               | 772  | 24   | 16                     | 11   | 17   | 1620   |
| 3-4pm      | 26                                                                 | 799  | 10   | 13                     | 14   | 23   | 31               | 965  | 42   | 24                     | 13   | 18   | 1978   |
| 4-5pm      | 48                                                                 | 1157 | 13   | 24                     | 28   | 30   | 41               | 1345 | 77   | 32                     | 19   | 19   | 2833   |
| 5-6pm      | 74                                                                 | 1092 | 17   | 30                     | 33   | 32   | 61               | 1432 | 111  | 43                     | 17   | 28   | 2970   |
| 6-7pm      | 35                                                                 | 584  | 10   | 10                     | 16   | 18   | 32               | 700  | 43   | 27                     | 26   | 17   | 1518   |
|            |                                                                    |      |      |                        |      |      |                  |      |      |                        |      |      |        |
|            |                                                                    |      |      |                        |      |      |                  |      |      |                        |      |      |        |
|            |                                                                    |      |      |                        |      |      |                  |      |      |                        |      |      |        |

## CONDITIONS

|                         |             |
|-------------------------|-------------|
| < 10,000 Population     | No          |
| Major Street Speed > 40 | Yes         |
| Major Street Lanes      | Two or more |
| Minor Street Lanes      | One         |
| 1.5 x Minor Thresholds  | No          |

## HOULY VOLUME SUMMARY

| Start Time | MAJOR | MINOR |
|------------|-------|-------|
| 6-7am      | 1619  | 68    |
| 7-8am      | 2268  | 113   |
| 8-9am      | 1662  | 66    |
| 9-10am     | 1144  | 37    |
| 10-11am    | 1087  | 45    |
| 11am-12pm  | 1120  | 44    |
| 12-1pm     | 1203  | 50    |
| 1-2pm      | 1122  | 38    |
| 2-3pm      | 1545  | 44    |
| 3-4pm      | 1873  | 55    |
| 4-5pm      | 2681  | 82    |
| 5-6pm      | 2787  | 95    |
| 6-7pm      | 1404  | 70    |
| 12:00 AM   | 0     | 0     |
| 12:00 AM   | 0     | 0     |
| 12:00 AM   | 0     | 0     |

## WARRANT 1: EIGHT HOUR WARRANT: MAJOR vs. MINOR

| Start Time | 1A (70%) |       | 1B (70%) |       | 1C (56%) |       | 1B (56%) |       |
|------------|----------|-------|----------|-------|----------|-------|----------|-------|
|            | MAJOR    | MINOR | MAJOR    | MINOR | MAJOR    | MINOR | MAJOR    | MINOR |
| 6-7am      | YES      | NO    | YES      | YES   | YES      | NO    | YES      | YES   |
| 7-8am      | YES      | YES   | YES      | YES   | YES      | YES   | YES      | YES   |
| 8-9am      | YES      | NO    | YES      | YES   | YES      | NO    | YES      | YES   |
| 9-10am     | YES      | NO    | YES      | NO    | YES      | NO    | YES      | NO    |
| 10-11am    | YES      | NO    | YES      | NO    | YES      | NO    | YES      | YES   |
| 11am-12pm  | YES      | NO    | YES      | NO    | YES      | NO    | YES      | YES   |
| 12-1pm     | YES      | NO    | YES      | NO    | YES      | NO    | YES      | YES   |
| 1-2pm      | YES      | NO    | YES      | NO    | YES      | NO    | YES      | NO    |
| 2-3pm      | YES      | NO    | YES      | NO    | YES      | NO    | YES      | YES   |
| 3-4pm      | YES      | NO    | YES      | YES   | YES      | NO    | YES      | YES   |
| 4-5pm      | YES      | NO    | YES      | YES   | YES      | NO    | YES      | YES   |
| 5-6pm      | YES      | NO    | YES      | YES   | YES      | YES   | YES      | YES   |
| 6-7pm      | YES      | NO    | YES      | YES   | YES      | NO    | YES      | YES   |
|            |          |       |          |       |          |       |          |       |
|            |          |       |          |       |          |       |          |       |

|                      |     |     |     |    |     |    |     |    |
|----------------------|-----|-----|-----|----|-----|----|-----|----|
| Threshold Volume     | 420 | 105 | 630 | 53 | 336 | 84 | 504 | 42 |
| # that Meet Criteria | 2   |     | 8   |    | 3   |    |     |    |
| Condition Met        | NO  |     | YES |    | NO  |    |     |    |

## HOURLY VOLUME SUMMARY

| Start Time | SB Th+Rt | NB Lt |
|------------|----------|-------|
| 6-7am      | 812      | 7     |
| 7-8am      | 1217     | 8     |
| 8-9am      | 914      | 11    |
| 9-10am     | 607      | 10    |
| 10-11am    | 558      | 14    |
| 11am-12pm  | 542      | 22    |
| 12-1pm     | 606      | 22    |
| 1-2pm      | 510      | 30    |
| 2-3pm      | 717      | 24    |
| 3-4pm      | 825      | 42    |
| 4-5pm      | 1205     | 77    |
| 5-6pm      | 1166     | 111   |
| 6-7pm      | 619      | 43    |
| 12:00 AM   | 0        | 0     |
| 12:00 AM   | 0        | 0     |
| 12:00 AM   | 0        | 0     |

## WARRANT 1: EIGHT HOUR WARRANT: NB Lt vs. SB Th+Rt

| Start Time | 1A (70%) |       | 1B (70%) |       | 1C (56%) |       | 1B (56%) |       | LEFT-TURN CONFLICT |
|------------|----------|-------|----------|-------|----------|-------|----------|-------|--------------------|
|            | MAJOR    | MINOR | MAJOR    | MINOR | MAJOR    | MINOR | MAJOR    | MINOR |                    |
| 6-7am      | YES      | NO    | YES      | NO    | YES      | NO    | YES      | NO    | NO                 |
| 7-8am      | YES      | NO    | YES      | NO    | YES      | NO    | YES      | NO    | NO                 |
| 8-9am      | YES      | NO    | YES      | NO    | YES      | NO    | YES      | NO    | NO                 |
| 9-10am     | YES      | NO    | NO       | NO    | YES      | NO    | YES      | NO    | NO                 |
| 10-11am    | YES      | NO    | NO       | NO    | YES      | NO    | YES      | NO    | NO                 |
| 11am-12pm  | YES      | NO    | NO       | NO    | YES      | NO    | YES      | NO    | NO                 |
| 12-1pm     | YES      | NO    | NO       | NO    | YES      | NO    | YES      | NO    | NO                 |
| 1-2pm      | YES      | NO    | NO       | NO    | YES      | NO    | YES      | NO    | NO                 |
| 2-3pm      | YES      | NO    | YES      | NO    | YES      | NO    | YES      | NO    | NO                 |
| 3-4pm      | YES      | NO    | YES      | NO    | YES      | NO    | YES      | NO    | NO                 |
| 4-5pm      | YES      | NO    | YES      | YES   | YES      | NO    | YES      | YES   | NO                 |
| 5-6pm      | YES      | YES   | YES      | YES   | YES      | YES   | YES      | YES   | YES                |
| 6-7pm      | YES      | NO    | NO       | NO    | YES      | NO    | YES      | YES   | NO                 |
|            |          |       |          |       |          |       |          |       |                    |
|            |          |       |          |       |          |       |          |       |                    |

|                      |     |     |     |    |     |    |     |    |         |
|----------------------|-----|-----|-----|----|-----|----|-----|----|---------|
| Threshold Volume     | 420 | 105 | 630 | 53 | 336 | 84 | 504 | 42 | 100,000 |
| # that Meet Criteria | 2   |     | 3   |    | 2   |    |     |    |         |
| Condition Met        | NO  |     | NO  |    | NO  |    |     |    | YES     |

## HOULY VOLUME SUMMARY

| Start Time | NB Th+Rt | SB Lt |
|------------|----------|-------|
| 6-7am      | 793      | 7     |
| 7-8am      | 1030     | 13    |
| 8-9am      | 733      | 4     |
| 9-10am     | 522      | 5     |
| 10-11am    | 511      | 4     |
| 11am-12pm  | 552      | 4     |
| 12-1pm     | 569      | 6     |
| 1-2pm      | 580      | 2     |
| 2-3pm      | 797      | 7     |
| 3-4pm      | 996      | 10    |
| 4-5pm      | 1386     | 13    |
| 5-6pm      | 1493     | 17    |
| 6-7pm      | 732      | 10    |
| 12:00 AM   | 0        | 0     |
| 12:00 AM   | 0        | 0     |
| 12:00 AM   | 0        | 0     |

## WARRANT 1: EIGHT HOUR WARRANT: SB Lt vs. NB Th+Rt

| Start Time | 1A (70%) |       | 1B (70%) |       | 1C (56%) |       | 1B (56%) |       | LEFT-TURN CONFLICT |
|------------|----------|-------|----------|-------|----------|-------|----------|-------|--------------------|
|            | MAJOR    | MINOR | MAJOR    | MINOR | MAJOR    | MINOR | MAJOR    | MINOR |                    |
| 6-7am      | YES      | NO    | YES      | NO    | YES      | NO    | YES      | NO    | NO                 |
| 7-8am      | YES      | NO    | YES      | NO    | YES      | NO    | YES      | NO    | NO                 |
| 8-9am      | YES      | NO    | YES      | NO    | YES      | NO    | YES      | NO    | NO                 |
| 9-10am     | YES      | NO    | NO       | NO    | YES      | NO    | YES      | NO    | NO                 |
| 10-11am    | YES      | NO    | NO       | NO    | YES      | NO    | YES      | NO    | NO                 |
| 11am-12pm  | YES      | NO    | NO       | NO    | YES      | NO    | YES      | NO    | NO                 |
| 12-1pm     | YES      | NO    | NO       | NO    | YES      | NO    | YES      | NO    | NO                 |
| 1-2pm      | YES      | NO    | NO       | NO    | YES      | NO    | YES      | NO    | NO                 |
| 2-3pm      | YES      | NO    | YES      | NO    | YES      | NO    | YES      | NO    | NO                 |
| 3-4pm      | YES      | NO    | YES      | NO    | YES      | NO    | YES      | NO    | NO                 |
| 4-5pm      | YES      | NO    | YES      | NO    | YES      | NO    | YES      | NO    | NO                 |
| 5-6pm      | YES      | NO    | YES      | NO    | YES      | NO    | YES      | NO    | NO                 |
| 6-7pm      | YES      | NO    | YES      | NO    | YES      | NO    | YES      | NO    | NO                 |
| 12:00 AM   | NO       | NO    | NO       | NO    | NO       | NO    | NO       | NO    | NO                 |
| 12:00 AM   | NO       | NO    | NO       | NO    | NO       | NO    | NO       | NO    | NO                 |
| 12:00 AM   | NO       | NO    | NO       | NO    | NO       | NO    | NO       | NO    | NO                 |

|                      |     |     |     |    |     |    |     |    |         |
|----------------------|-----|-----|-----|----|-----|----|-----|----|---------|
| Threshold Volume     | 420 | 105 | 630 | 53 | 336 | 84 | 504 | 42 | 100,000 |
| # that Meet Criteria | 0   |     | 0   |    | 0   |    |     |    |         |
| Condition Met        | NO  |     | NO  |    | NO  |    |     |    | NO      |

By: DJL

Date: 7/2/20

# TRAFFIC SIGNAL WARRANT ANALYSIS SUMMARY (WARRANTS 1 - 3)

## 2020 Partial Build Traffic (West Residential at 45%)

CTH F at Lindsay Road

| VOLUME SUMMARY          |       |       |
|-------------------------|-------|-------|
| For Warrant 1           |       |       |
| Percent Right Turns --> |       | 100%  |
| START TIME              | MAJOR | MINOR |
| 6-7am                   | 1619  | 68    |
| 7-8am                   | 2268  | 113   |
| 8-9am                   | 1662  | 66    |
| 9-10am                  | 1144  | 37    |
| 10-11am                 | 1087  | 45    |
| 11am-12pm               | 1120  | 44    |
| 12-1pm                  | 1203  | 50    |
| 1-2pm                   | 1122  | 38    |
| 2-3pm                   | 1545  | 44    |
| 3-4pm                   | 1873  | 55    |
| 4-5pm                   | 2681  | 82    |
| 5-6pm                   | 2787  | 95    |
| 6-7pm                   | 1404  | 70    |
| 12:00 AM                | 0     | 0     |
| 12:00 AM                | 0     | 0     |
| 12:00 AM                | 0     | 0     |

### Warrant 1 (Eight Hour Volume - 70% Factor)

| Conditions  | Major | Minor | Met? | Hours Met? |
|-------------|-------|-------|------|------------|
| Condition A | 420   | 105   | NO   | 2          |
| Condition B | 630   | 53    | YES  | 8          |
| Condition C |       |       | NO   | 3          |
| 1A          | 336   | 84    |      |            |
| 1B          | 504   | 42    |      |            |

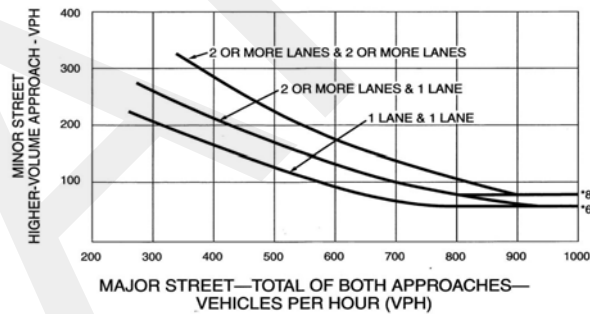
| Volumes | Major    | Minor |
|---------|----------|-------|
|         | NB/SB    | EB/WB |
|         | SB Th+Rt | NB Lt |
|         | NB Th+Rt | SB Lt |

### Warrant 2 (Four Hour Volume) (70% Factor)

| Met? |
|------|
| YES  |

Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)



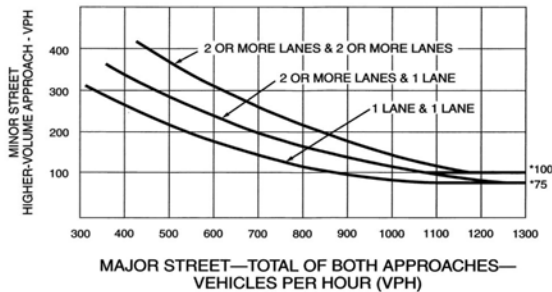
| VOLUME SUMMARY          |       |       |
|-------------------------|-------|-------|
| For Warrants 2 and 3    |       |       |
| Percent Right Turns --> |       | 100%  |
| Start Time              | MAJOR | MINOR |
| 6-7am                   | 1619  | 68    |
| 7-8am                   | 2268  | 113   |
| 8-9am                   | 1662  | 66    |
| 9-10am                  | 1144  | 37    |
| 10-11am                 | 1087  | 45    |
| 11am-12pm               | 1120  | 44    |
| 12-1pm                  | 1203  | 50    |
| 1-2pm                   | 1122  | 38    |
| 2-3pm                   | 1545  | 44    |
| 3-4pm                   | 1873  | 55    |
| 4-5pm                   | 2681  | 82    |
| 5-6pm                   | 2787  | 95    |
| 6-7pm                   | 1404  | 70    |
| 12:00 AM                | 0     | 0     |
| 12:00 AM                | 0     | 0     |
| 12:00 AM                | 0     | 0     |

### Warrant 3 (Peak Hour Volume) (70% Factor)

| Met? |
|------|
| NO   |

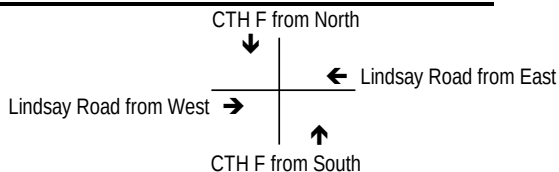
Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)



### CONDITIONS

|                             |             |
|-----------------------------|-------------|
| < 10,000 Population         | No          |
| Major Street Speed > 40 mph | Yes         |
| Major Street Lanes          | Two or more |
| Minor Street Lanes          | One         |
| T-Intersection (Y/N)        | No          |

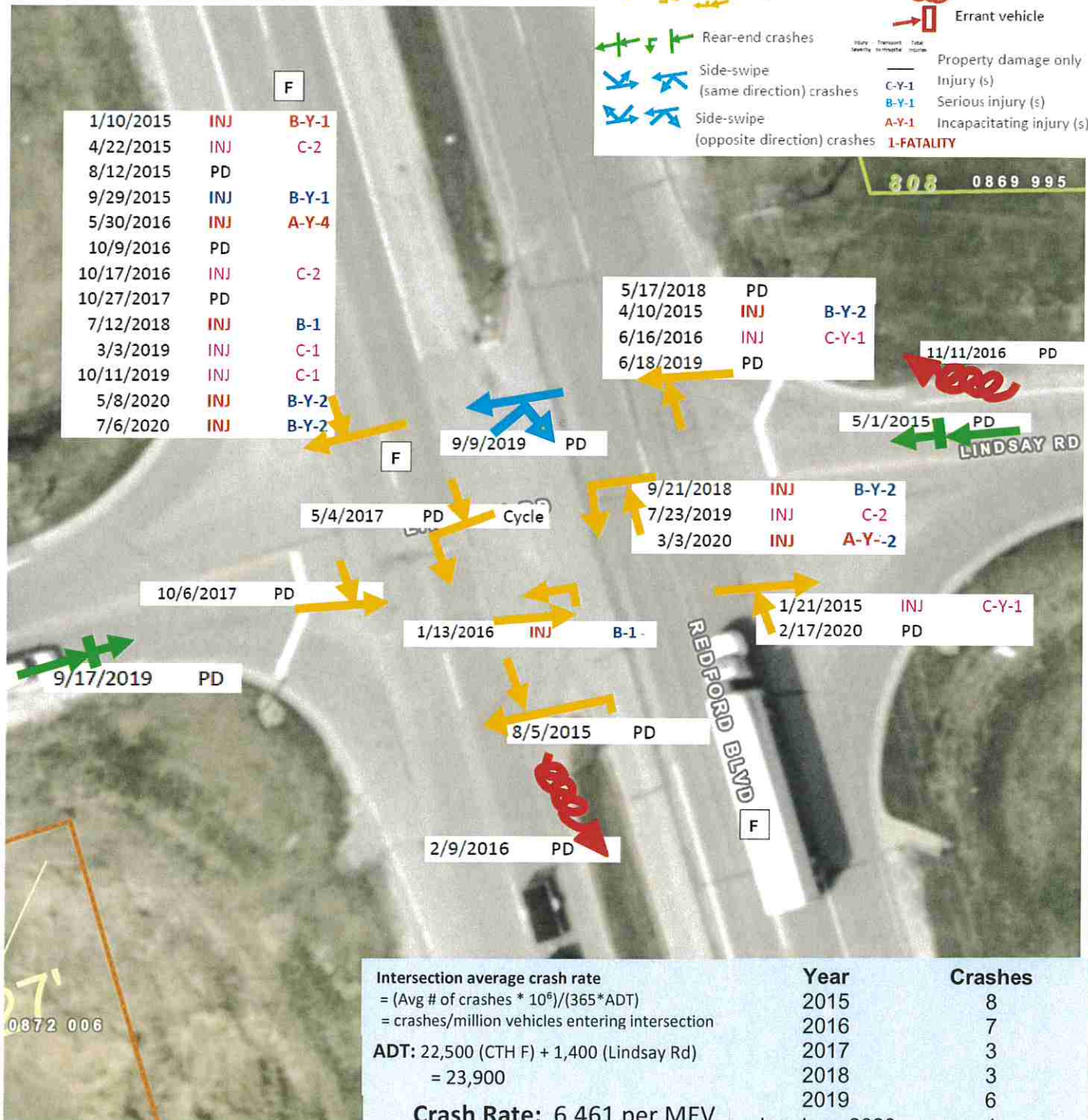
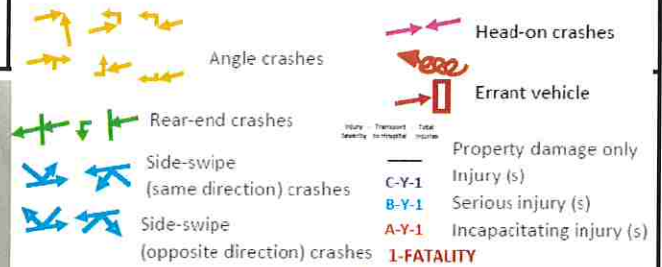


### Left-Turn Conflict Analysis

| Opp. Thru | x | Lt Turn | Threshold | Met? | Hours Met |
|-----------|---|---------|-----------|------|-----------|
| SB Th+Rt  |   | NB Lt   | 100,000   | YES  | 1         |
| NB Th+Rt  |   | SB Lt   | 100,000   | NO   | 0         |



# CTH F - Lindsay Rd collision locations: Jan 2015 - June 2020



Intersection average crash rate  
 = (Avg # of crashes \* 10<sup>6</sup>) / (365 \* ADT)  
 = crashes/million vehicles entering intersection  
 ADT: 22,500 (CTH F) + 1,400 (Lindsay Rd)  
 = 23,900

**Crash Rate: 6.461 per MEV**

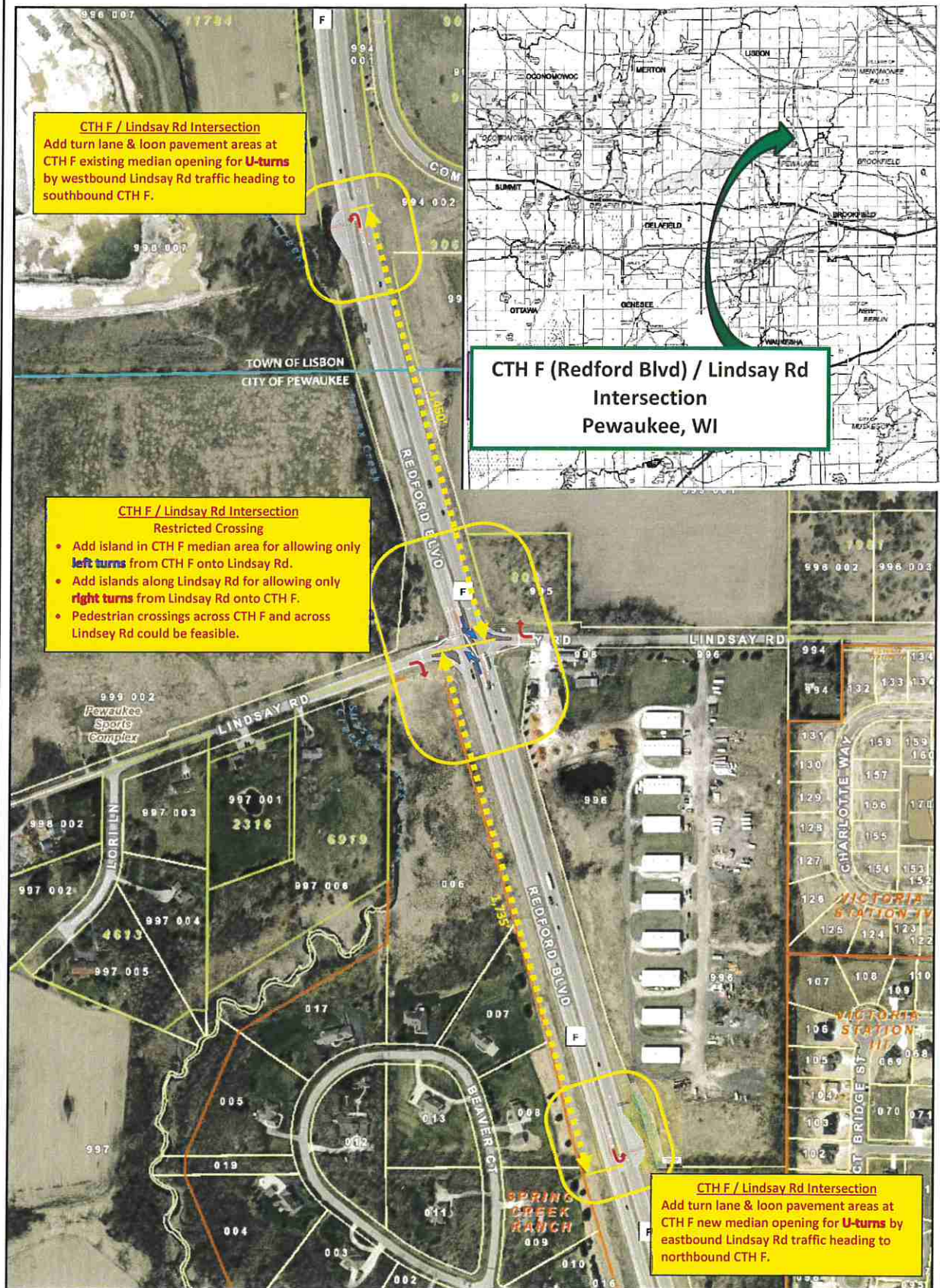
**% Fatal/Injury: 0.0 %**

| Year                  | Crashes     |
|-----------------------|-------------|
| 2015                  | 8           |
| 2016                  | 7           |
| 2017                  | 3           |
| 2018                  | 3           |
| 2019                  | 6           |
| Jan-June 2020         | 4           |
| <b>TOTAL</b>          | <b>31</b>   |
| <b>Annual Average</b> | <b>5.64</b> |

Exhibit 6C  
**Intersection Area Collisions**  
 CTH F (Redford Blvd) at Lindsay Rd



# CTH F (Redford Blvd) - Lindsay Rd: Restricted Crossing U-Turn (RCUT) Intersection



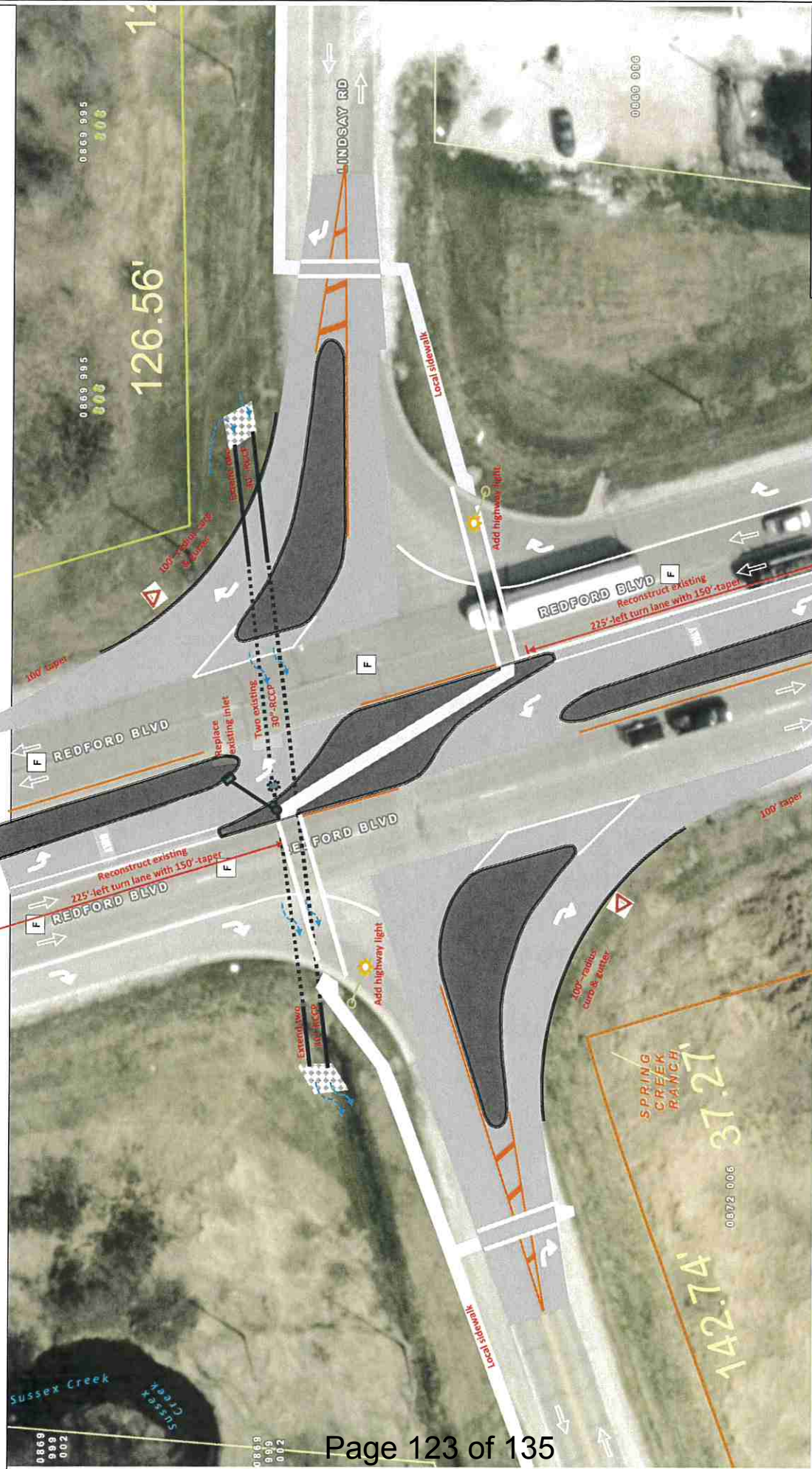
0 300 Feet

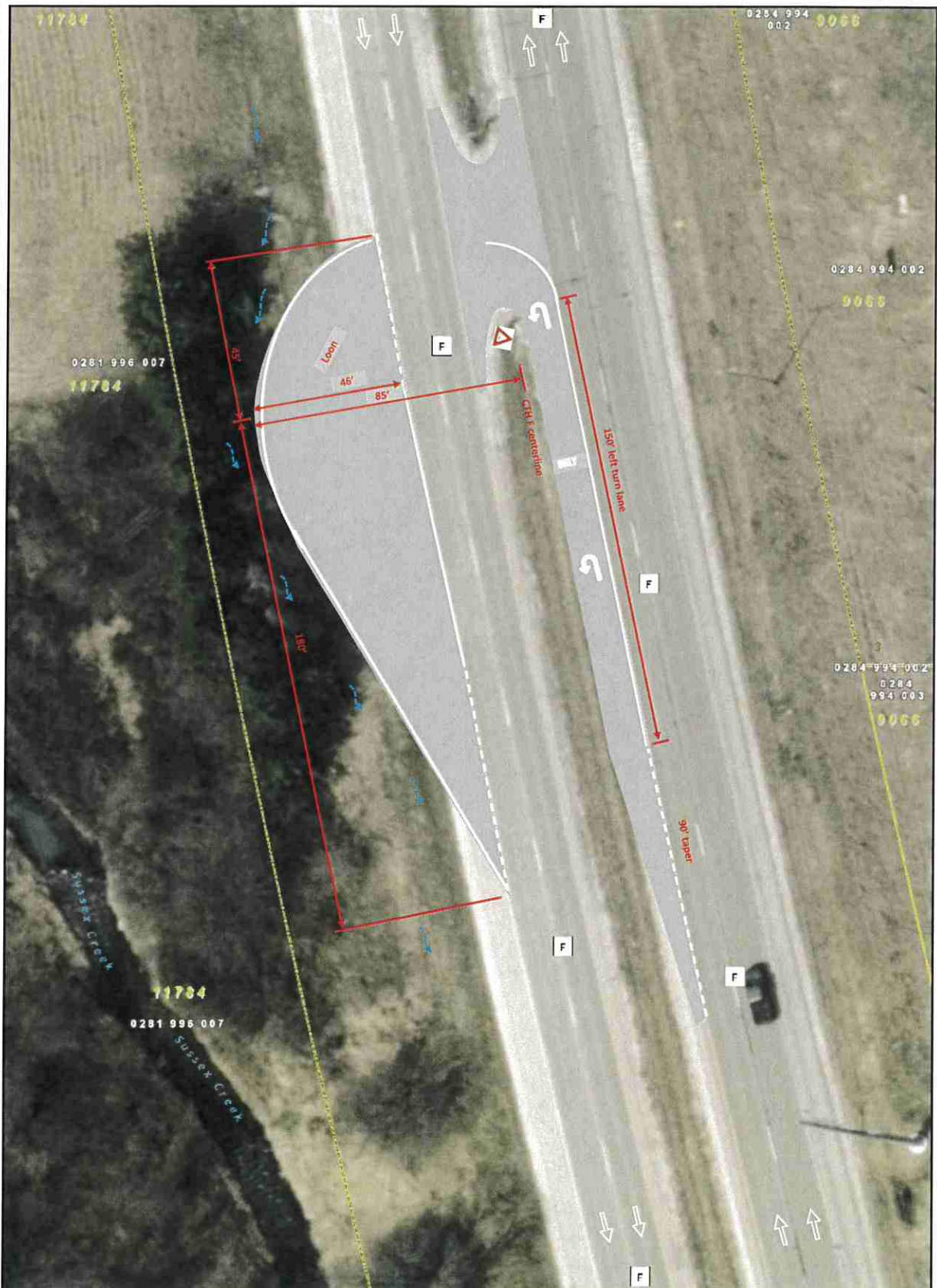
Printed: 7/8/2020



Exhibit 6A  
Intersection Proposed Improvements  
CTH F (Redford Blvd) at Lindsay Rd







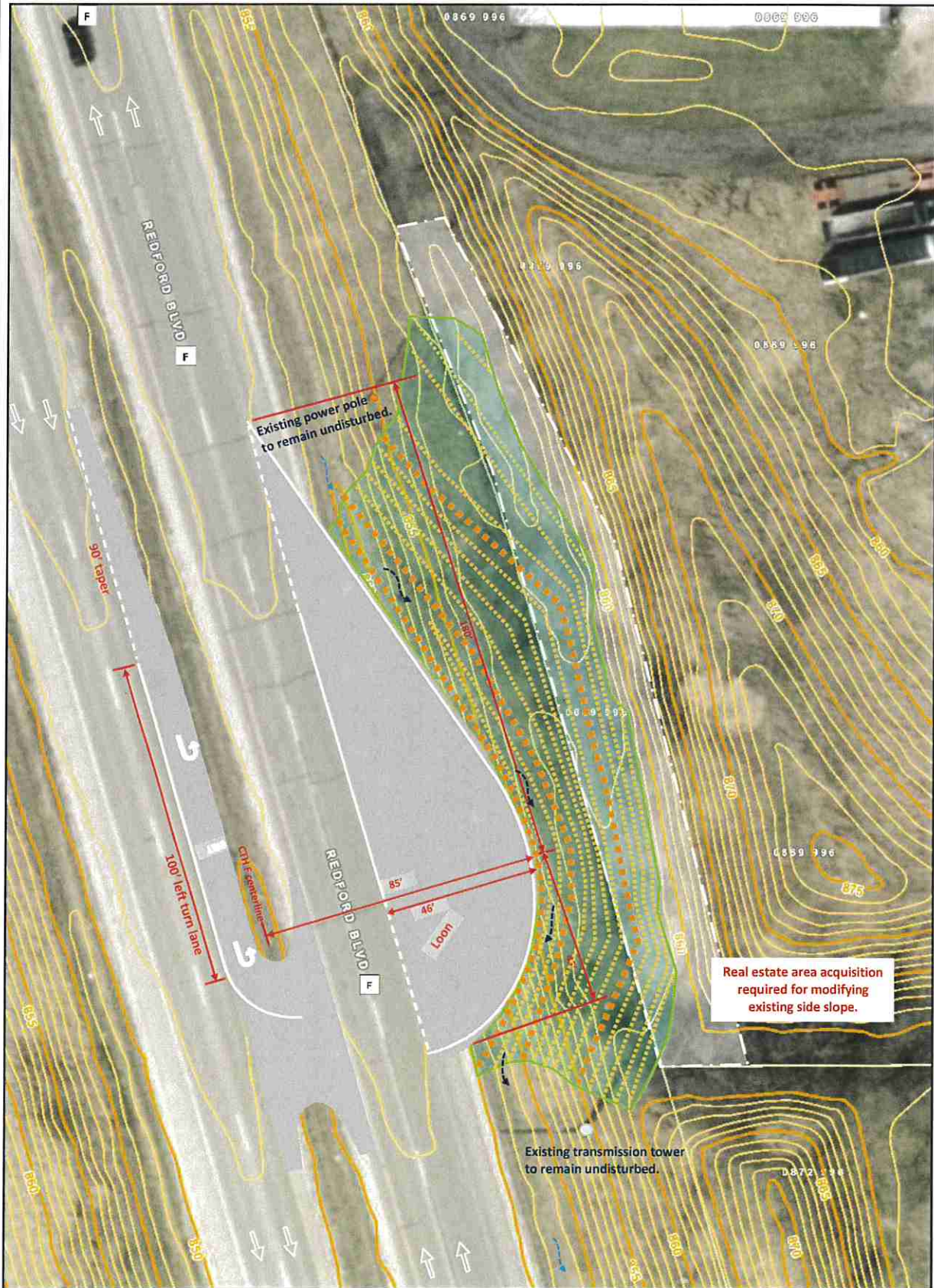
0 30.00 Feet

Printed: 7/8/2020



Exhibit 6C  
Intersection Proposed Improvements  
CTH F (Redford Blvd) at Lindsay Rd





0 30.00 Feet

Printed: 7/17/2020



Exhibit 6D  
Intersection Proposed Improvements  
CTH F (Redford Blvd) at Lindsay Rd



- land acquisition is not included in HSIP funding

CONCEPT LAYOUT PLAN COST ESTIMATE (August 2020)

CTH F (Redford Blvd) / Lindsay Rd Intersection

~1400-feet / ~350 feet

Waukesha County Project

Inflated cost

3.5%/year  
to Yr 2024

| ITEM NO. | Bid Item            | DESCRIPTION                                                  | UNIT | ESTIMATED QUANTITY | UNIT COST       | TOTAL COST        |
|----------|---------------------|--------------------------------------------------------------|------|--------------------|-----------------|-------------------|
| 1        | 201.0105 & 201.0205 | CLEARING & GRUBBING                                          | STA  | 4                  | \$800.00        | \$ 3,200          |
| 2        | 204.0100            | REMOVE PAVEMENT                                              | SY   | 2,300              | \$5.00          | \$ 11,500         |
| 3        | 204.0150            | REMOVE CURB & GUTTER                                         | LF   | 760                | \$4             | \$ 3,040          |
| 4        | 205.0100            | EXCAVATION COMMON - BORROW                                   | CY   | 8,800              | \$17.00         | \$ 149,600        |
| 5        | 305.0110            | BASE AGGREGATE DENSE 1-1/4" (10"-section)                    | TON  | 2,200              | \$18.00         | \$ 39,600         |
| 6        | 455.0115            | ASPHALTIC MATERIAL PG64-22                                   | TON  | 65                 | \$5.00          | \$ 325            |
| 7        | 460.1100            | HMA PAVEMENT TYPE E-3 (5.5"-section)                         | TON  | 1,180              | \$65.00         | \$ 76,700         |
| 8        | 465.0305            | ASPHALTIC SURFACE SAFETY ISLANDS (Rt turns, Median-Lt turns) | TON  | 220                | \$75.00         | \$ 16,500         |
| 9        | 465.0315            | ASPHALTIC FLUMES                                             | SY   | 10                 | \$60.00         | \$ 600            |
| 10       | 520.1030            | APRON ENDWALLS, 30-IN                                        | EA   | 4                  | \$1,100.00      | \$ 4,400          |
| 11       | 602.0410            | CONCRETE SIDEWALK - 5" (6'-wide sidewalk)                    | SF   | 2,300              | \$6.50          | \$ 14,950         |
| 12       | 608.0430            | STORM SEWER PIPE REINFORCED CONCRETE CLASS IV, 30-IN         | LF   | 140                | \$120.00        | \$ 16,800         |
| 13       |                     | MANHOLE, 5-FT DIAMETER & COVER                               | EA   | 1                  | \$3,300.00      | \$ 3,300          |
| 14       |                     | INLET 2X3-FT & COVER                                         | EA   | 1                  | \$2,050.00      | \$ 2,050          |
| 15       | 601.0411            | CONCRETE CURB & GUTTER 30-INCH TYPE D                        | LF   | 1,910              | \$26.00         | \$ 49,660         |
| 16       | 619.0000            | MOBILIZATION                                                 | LS   | 1                  | \$35,000.00     | \$ 35,000         |
| 17       | 625.0500            | SALVAGED TOPSOIL                                             | SY   | 1,850              | \$3.00          | \$ 5,550          |
| 18       | 628.1504            | SILT FENCE                                                   | LF   | 1,500              | \$2.50          | \$ 3,750          |
| 19       | 628.2006            | EROSION MAT URBAN CLASS I TYPE A                             | SY   | 2,600              | \$2             | \$ 5,200          |
| 20       |                     | REMOVE, RE-INSTALL, ADD SIGNS                                | LS   | 1                  | \$6,000.00      | \$ 6,000          |
| 21       |                     | TRAFFIC CONTROL (Shift CTH F lanes, close Lindsey Rd)        | LS   | 1                  | \$20,000.00     | \$ 20,000         |
| 22       | 642.5201            | FIELD OFFICE C                                               | LS   | 1                  | \$9,000.00      | \$ 9,000          |
| 23       | 646.0106            | PAVEMENT MARKINGS EPOXY 4"                                   | LF   | 3,120              | \$1.50          | \$ 4,680          |
| 24       | 646.7420            | PAVEMENT MARKINGS EPOXY 6" (CROSSWALK)                       | LF   | 330                | \$8.00          | \$ 2,640          |
| 25       |                     | PAVEMENT MARKINGS WORDS & ARROWS                             | EA   | 16                 | \$300.00        | \$ 4,800          |
| 26       | 647.0726            | PAVEMENT MARKINGS 12" DIAGONALS                              | LF   | 50                 | \$9.50          | \$ 475            |
| 27       |                     | HYDROSEEDING                                                 | SY   | 1,700              | \$2.00          | \$ 3,400          |
| 28       |                     | REMOVE EXISTING HIGHWAY LIGHTING                             | EA   | 1                  | \$700           | \$ 700            |
| 29       |                     | NEW HIGHWAY LIGHTING                                         | EA   | 2                  | \$3,000.00      | \$ 6,000          |
| 30       | 690.0150            | SAWING ASPHALT                                               | LF   | 3,260              | \$2.50          | \$ 8,150          |
|          |                     |                                                              |      |                    | <b>SUBTOTAL</b> | <b>\$ 507,570</b> |

ABOVE MAJOR ITEMS REPRESENT 85% OF COSTS OF SIMILAR PROJECTS

0.85

TOTAL CONSTRUCTION COST FOR ALL BID ITEMS

\$ 597,141

15% Allowance for Construction Engineering & Contingencies

\$ 89,571

**TOTAL CONSTRUCTION**

**\$686,712**

\$772,900

| REAL ESTATE ACQUISITION / EASEMENTS |             |                 |           |      |           |                           |            |
|-------------------------------------|-------------|-----------------|-----------|------|-----------|---------------------------|------------|
| ITEM                                | DESCRIPTION |                 |           |      | AREA (SF) |                           | TOTAL COST |
| 1                                   | SE          | Parcel 86995996 | FEE & TLE | 6.25 |           |                           | \$15,000   |
|                                     |             |                 |           |      |           |                           |            |
|                                     |             |                 |           |      |           | Acquisition               | \$6,000    |
|                                     |             |                 |           |      |           | Land/TLE                  | \$6,000    |
|                                     |             |                 |           |      |           | Misc/Incidental           | \$3,000    |
|                                     |             |                 |           |      |           | Title Searches (1 parcel) | \$400      |
|                                     |             |                 |           |      |           | Utilities & Miscellaneous | \$0        |

**TOTAL REAL ESTATE**

**\$30,400**

\$34,215

**DESIGN CONSULTANT** (11.0% of total construction) + **DESIGN REVIEW** (8.5% of total construction)

**\$133,909**

\$150,716

**GRAND TOTAL**

**\$851,020**

**\$957,831**

Exhibit 7  
Cost Estimate  
CTH F (Redford Blvd) / Lindsay Rd Intersection



**TWO-PARTY PROJECT AGREEMENT**  
**Between**  
**WAUKESHA COUNTY by the DEPARTMENT OF PUBLIC WORKS**  
**And**  
**THE CITY OF PEWAUKEE**

This Agreement is made and entered into between Waukesha County by the Department of Public Works (hereinafter called the DEPARTMENT) and the City of Pewaukee (hereinafter called the CITY) to designate the responsibility for design, real estate acquisition, construction, and payment of certain costs associated with roadway safety improvements at the County Trunk Highway F (CTH F, also known as Redford Boulevard) and Lindsay Road intersection.

WHEREAS, the DEPARTMENT is planning to submit an application to the Wisconsin Department of Transportation (WisDOT) during August 2020 for Highway Safety Improvement Program (HSIP) federal-funding to modify the existing CTH F/Lindsay Road full-turn intersection to a 'Restricted Crossing U-Turn Intersection' (RCUT) in the City of Pewaukee.

WHEREAS, the CITY has requested that the DEPARTMENT prioritize safety improvements at the CTH F and Lindsay Road intersection more quickly than other DEPARTMENT projects.

WHEREAS, the CITY agrees to pay the actual costs associated with the local-share for completing the design, real estate acquisition and construction items listed in the cost estimate, attached hereto as Attachment 2, necessary to convert the CTH F/Lindsay Road intersection to a RCUT intersection.

NOW, THEREFORE BE IT RESOLVED, that the parties do mutually agree to the responsibilities related to the design, real estate acquisition and construction funding of said items as described below:

**RESPONSIBILITIES:**

The DEPARTMENT shall:

1. Complete design, real estate acquisition, contract plans, specifications and estimates for modifying the CTH F/Lindsay Road full-turn intersection to a RCUT intersection. Work directly with WisDOT design and real estate staff as part of preparing construction bid documents.
2. Monitor progress of ongoing field inspection and contract administration performed by WisDOT during construction for HSIP-funded projects. WisDOT would publicly bid said roadway improvement in accordance with all federal and state laws.

3. Make available to the City, with reasonable notice, bidding documents, bid results, notice of award, and copies of all records recommendations of awards, reports, engineer findings, and WisDOT's correspondence regarding said roadway improvements.
4. Review WisDOT's accounts of construction activities, changes in work, construction costs, and any delays or additional work necessary to complete the project. Assess any incremental increases or decreases in quantities or costs.
5. Provide copies of WisDOT's possible work change directives, change orders, or other appropriate documents to the contractor, as contract or construction changes dictate, to expedite the progress of the construction work. Any document that would increase the CITY's costs shall be provided before execution by WisDOT and the DEPARTMENT, via email, to the CITY'S Representative for review, and the CITY'S comments thereon considered if received by the DEPARTMENT within two business days of the time it is emailed to the CITY'S Representative.
6. Furnish to the CITY a detailed breakdown of all actual construction costs including all change orders and work change directives upon completion of the project.
7. Invoice the CITY on a quarterly basis.

The CITY shall:

1. Pay the actual costs of items estimated in Attachment 2, beyond the federal funding amount of a HSIP-project to be sought by Waukesha County. Project costs estimated at time this Agreement is signed, are anticipated to include:

|                               | <b>Federal-funded<br/>share</b> | <b>County<br/>share</b> | <b>City<br/>share</b> | <b><u>TOTAL</u></b> |
|-------------------------------|---------------------------------|-------------------------|-----------------------|---------------------|
| Design & WisDOT-design review | \$135,700                       | \$ 0                    | \$ 15,100             | \$150,800           |
| Construction                  | 677,500                         | 0                       | 95,500                | 773,000             |
| Real estate                   | <u>0</u>                        | <u>0</u>                | <u>34,200</u>         | <u>34,200</u>       |
| <b>TOTAL</b>                  | <b>\$813,200</b>                | <b>\$ 0</b>             | <b>\$144,800</b>      | <b>\$958,000</b>    |

Any additional costs that may be incurred in association with these items shall be paid for by the CITY. The CITY shall pay the total **actual costs** for these items when they are invoiced by the DEPARTMENT.

2. Pay the entire actual design/construction/real estate acquisition costs for items which are the responsibility of the CITY within 30 days of receipt of an invoice from the DEPARTMENT.



3. Accept all future cost responsibilities for operating intersection area highway lighting and maintaining sidewalk(s) located outside the CTH F pavement, upon completion of project construction.
4. Donate to Waukesha County the adjacent City-owned lands necessary for project construction.
5. Designate a representative to act for the CITY under this Agreement. The representative shall be:

Magdelene Wagner, P.E.  
Director of Public Works/City Engineer  
City of Pewaukee  
W240 N3065 Pewaukee Road  
Pewaukee, WI 53072  
262-691-0804 Office

#### OTHER TERMS

1. Assignment: The parties agree that there shall be no assignment or transfer of this Agreement nor of any interests, rights or responsibilities contained herein without a written amendment agreed to by both parties.
2. Amendment: The parties, by mutual consent, may amend this Agreement in writing at any time.
3. Severability: If any provision of this Agreement is held invalid under any applicable law, such invalidity shall not affect any other provision of this Agreement that can be given effect without the invalid provision and, to this end, the provisions hereof are severable.
4. If approved as a HSIP-funded project by WisDOT, then construction is currently anticipated to occur during 2024, subject to the terms of this Agreement.
5. If NOT approved as a HSIP-funded project by WisDOT, then this two party agreement becomes void between the DEPARTMENT and CITY.

Attachment 1: Intersection Proposed Improvements, CTH F at Lindsay Rd

Attachment 2: Concept Layout Plan Cost Estimate (August 2020)

APPROVAL

This Agreement will be effective on the date of the DEPARTMENT'S signature.

CITY:  
City of Pewaukee

DEPARTMENT:  
Waukesha County

|              |                                       |
|--------------|---------------------------------------|
| By: _____    | By: _____                             |
| Title: _____ | Title: <u>Allison Bussler</u>         |
| Date: _____  | Date: <u>Director of Public Works</u> |

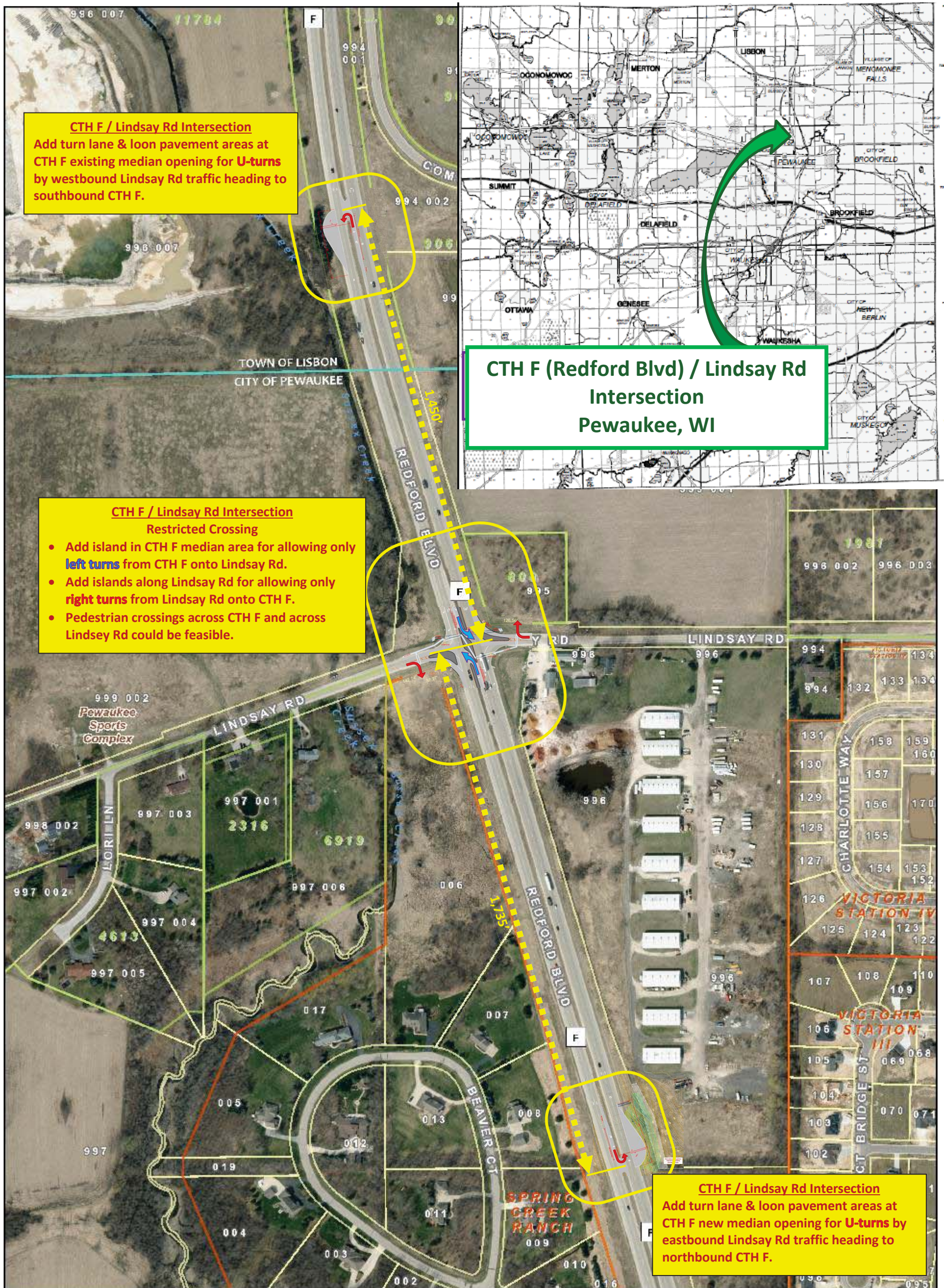
Address for CITY:

City of Pewaukee  
W240 N3065 Pewaukee Road  
Pewaukee, WI 53072

Address for DEPARTMENT:

Waukesha County Department of  
Public Works  
515 W. Moreland Blvd., Room AC 210  
Waukesha, WI 53188





0 300 Feet

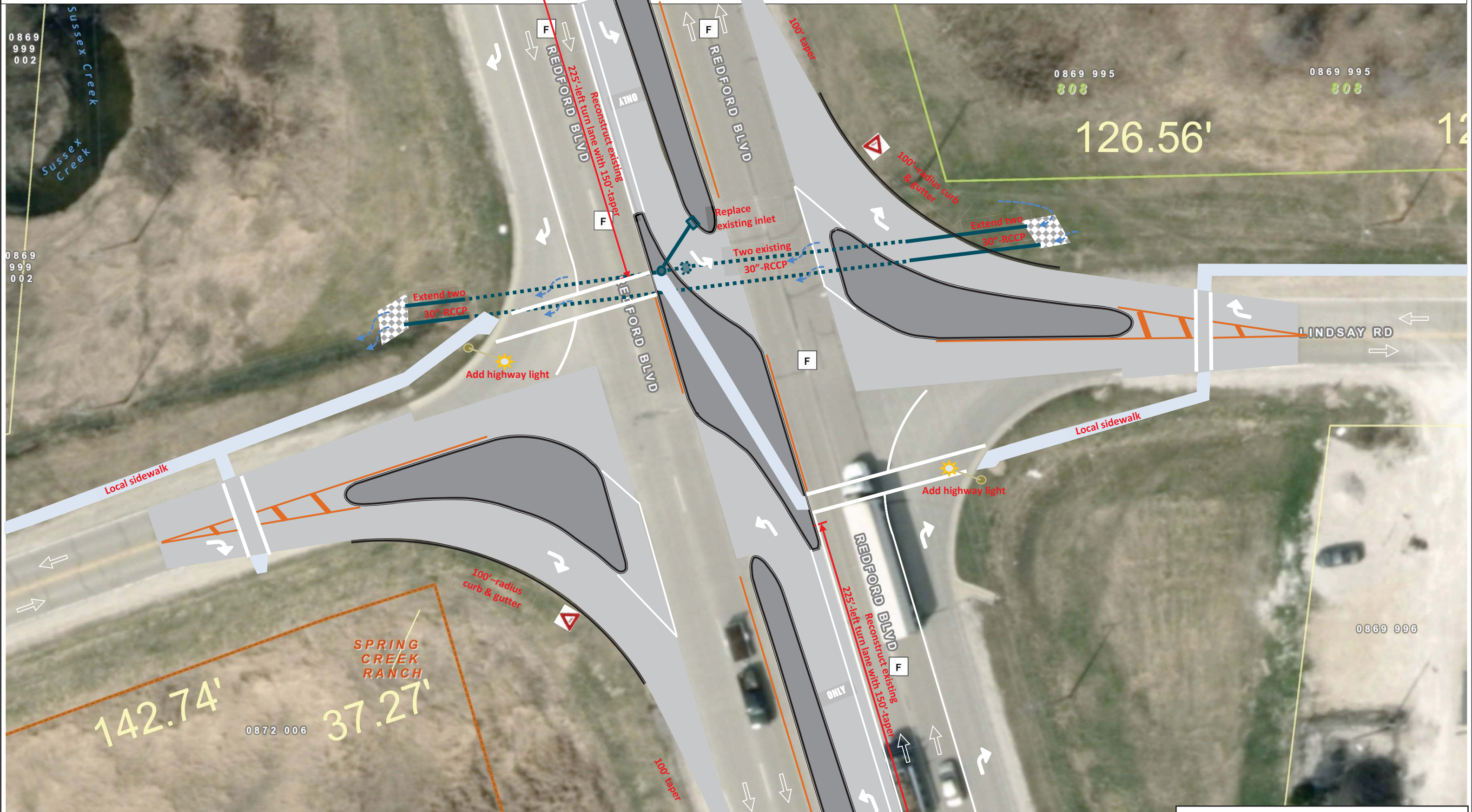
Printed: 7/8/2020



Exhibit 6A  
Intersection Proposed Improvements  
CTH F (Redford Blvd) at Lindsay Rd



CTH F (Redford Blvd) - Lindsay Rd: *Restricted Crossing U-Turn (RCUT) Intersection*





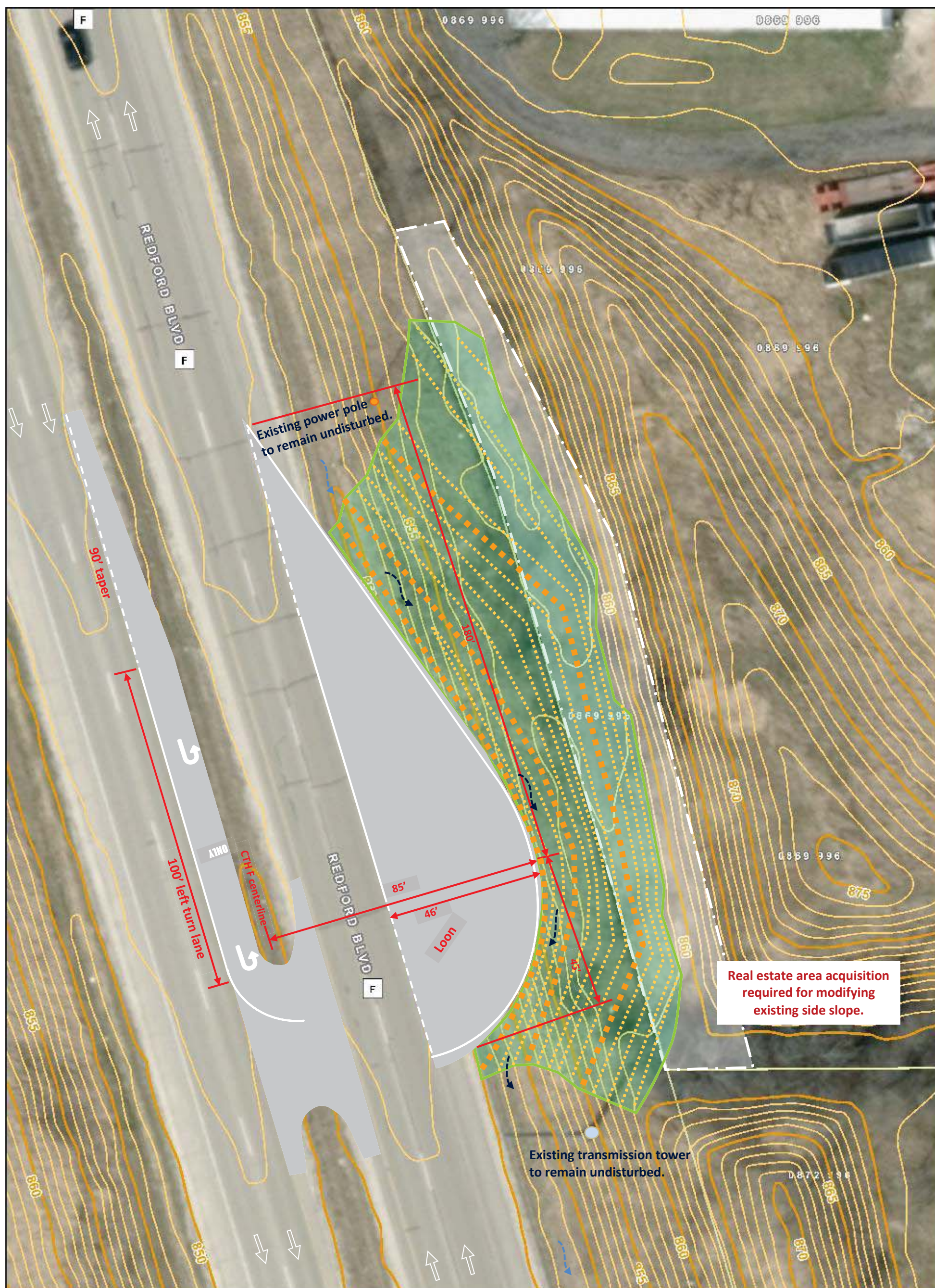


0 30.00 Feet

Printed: 7/8/2020







**Real estate area acquisition  
required for modifying  
existing side slope.**

**Existing transmission tower to remain undisturbed.**

0 30.00 Feet

Printed: 7/17/2020



Exhibit 6D  
**Intersection Proposed Improvements**  
CTH F (Redford Blvd) at Lindsay Rd



# CONCEPT LAYOUT PLAN COST ESTIMATE (August 2020)

## CTH F (Redford Blvd) / Lindsay Rd Intersection

~1400-feet / ~350 feet

Waukesha County Project

Inflated cost

3.5%/year  
to Yr 2024

| ITEM NO. | Bid Item            | DESCRIPTION                                                  | UNIT | ESTIMATED QUANTITY | UNIT COST       | TOTAL COST        |
|----------|---------------------|--------------------------------------------------------------|------|--------------------|-----------------|-------------------|
| 1        | 201.0105 & 201.0205 | CLEARING & GRUBBING                                          | STA  | 4                  | \$800.00        | \$ 3,200          |
| 2        | 204.0100            | REMOVE PAVEMENT                                              | SY   | 2,300              | \$5.00          | \$ 11,500         |
| 3        | 204.0150            | REMOVE CURB & GUTTER                                         | LF   | 760                | \$4             | \$ 3,040          |
| 4        | 205.0100            | EXCAVATION COMMON - BORROW                                   | CY   | 8,800              | \$17.00         | \$ 149,600        |
| 5        | 305.0110            | BASE AGGREGATE DENSE 1-1/4" (10"-section)                    | TON  | 2,200              | \$18.00         | \$ 39,600         |
| 6        | 455.0115            | ASPHALTIC MATERIAL PG64-22                                   | TON  | 65                 | \$5.00          | \$ 325            |
| 7        | 460.1100            | HMA PAVEMENT TYPE E-3 (5.5"-section)                         | TON  | 1,180              | \$65.00         | \$ 76,700         |
| 8        | 465.0305            | ASPHALTIC SURFACE SAFETY ISLANDS (Rt turns, Median-Lt turns) | TON  | 220                | \$75.00         | \$ 16,500         |
| 9        | 465.0315            | ASPHALTIC FLUMES                                             | SY   | 10                 | \$60.00         | \$ 600            |
| 10       | 520.1030            | APRON ENDWALLS, 30-IN                                        | EA   | 4                  | \$1,100.00      | \$ 4,400          |
| 11       | 602.0410            | CONCRETE SIDEWALK - 5' (6'-wide sidewalk)                    | SF   | 2,300              | \$6.50          | \$ 14,950         |
| 12       | 608.0430            | STORM SEWER PIPE REINFORCED CONCRETE CLASS IV, 30-IN         | LF   | 140                | \$120.00        | \$ 16,800         |
| 13       |                     | MANHOLE, 5-FT DIAMETER & COVER                               | EA   | 1                  | \$3,300.00      | \$ 3,300          |
| 14       |                     | INLET 2X3-FT & COVER                                         | EA   | 1                  | \$2,050.00      | \$ 2,050          |
| 15       | 601.0411            | CONCRETE CURB & GUTTER 30-INCH TYPE D                        | LF   | 1,910              | \$26.00         | \$ 49,660         |
| 16       | 619.0000            | MOBILIZATION                                                 | LS   | 1                  | \$35,000.00     | \$ 35,000         |
| 17       | 625.0500            | SALVAGED TOPSOIL                                             | SY   | 1,850              | \$3.00          | \$ 5,550          |
| 18       | 628.1504            | SILT FENCE                                                   | LF   | 1,500              | \$2.50          | \$ 3,750          |
| 19       | 628.2006            | EROSION MAT URBAN CLASS I TYPE A                             | SY   | 2,600              | \$2             | \$ 5,200          |
| 20       |                     | REMOVE, RE-INSTALL, ADD SIGNS                                | LS   | 1                  | \$6,000.00      | \$ 6,000          |
| 21       |                     | TRAFFIC CONTROL (Shift CTH F lanes, close Lindsey Rd)        | LS   | 1                  | \$20,000.00     | \$ 20,000         |
| 22       | 642.5201            | FIELD OFFICE C                                               | LS   | 1                  | \$9,000.00      | \$ 9,000          |
| 23       | 646.0106            | PAVEMENT MARKINGS EPOXY 4"                                   | LF   | 3,120              | \$1.50          | \$ 4,680          |
| 24       | 646.7420            | PAVEMENT MARKINGS EPOXY 6" (CROSSWALK)                       | LF   | 330                | \$8.00          | \$ 2,640          |
| 25       |                     | PAVEMENT MARKINGS WORDS & ARROWS                             | EA   | 16                 | \$300.00        | \$ 4,800          |
| 26       | 647.0726            | PAVEMENT MARKINGS 12" DIAGONALS                              | LF   | 50                 | \$9.50          | \$ 475            |
| 27       |                     | HYDROSEEDING                                                 | SY   | 1,700              | \$2.00          | \$ 3,400          |
| 28       |                     | REMOVE EXISTING HIGHWAY LIGHTING                             | EA   | 1                  | \$700           | \$ 700            |
| 29       |                     | NEW HIGHWAY LIGHTING                                         | EA   | 2                  | \$3,000.00      | \$ 6,000          |
| 30       | 690.0150            | SAWING ASPHALT                                               | LF   | 3,260              | \$2.50          | \$ 8,150          |
|          |                     |                                                              |      |                    | <b>SUBTOTAL</b> | <b>\$ 507,570</b> |

ABOVE MAJOR ITEMS REPRESENT 85% OF COSTS OF SIMILAR PROJECTS

0.85

TOTAL CONSTRUCTION COST FOR ALL BID ITEMS

\$ 597,141

15% Allowance for Construction Engineering & Contingencies

\$ 89,571

**TOTAL CONSTRUCTION**

**\$686,712**

\$772,900

| REAL ESTATE ACQUISITION / EASEMENTS |             |                 |           |           |                           |
|-------------------------------------|-------------|-----------------|-----------|-----------|---------------------------|
| ITEM                                | DESCRIPTION |                 |           | AREA (SF) | TOTAL COST                |
| 1                                   | SE          | Parcel 86995996 | FEE & TLE | 6.25      | \$15,000                  |
|                                     |             |                 |           |           |                           |
|                                     |             |                 |           |           | Acquisition               |
|                                     |             |                 |           |           | \$6,000                   |
|                                     |             |                 |           |           | Land/TLE                  |
|                                     |             |                 |           |           | \$6,000                   |
|                                     |             |                 |           |           | Misc/incidental           |
|                                     |             |                 |           |           | \$3,000                   |
|                                     |             |                 |           |           | Title Searches (1 parcel) |
|                                     |             |                 |           |           | \$400                     |
|                                     |             |                 |           |           | Utilities & Miscellaneous |
|                                     |             |                 |           |           | \$0                       |

**TOTAL REAL ESTATE**

**\$30,400**

\$34,215

**DESIGN CONSULTANT** (11.0% of total construction) + **DESIGN REVIEW** (8.5% of total construction)

**\$133,909**

\$150,716

**GRAND TOTAL**

**\$851,020**

**\$957,831**

Exhibit 7  
**Cost Estimate**  
CTH F (Redford Blvd) / Lindsay Rd Intersection

**CITY OF PEWAUKEE  
COMMON COUNCIL AGENDA ITEM 12.**

**DATE:** August 3, 2020

**DEPARTMENT:** Clerk/Treasurer

**PROVIDED BY:**

***SUBJECT:***

Discussion Regarding Governor Evers Emergency Order #1 Relating to Preventing the Spread of COVID-19 by Requiring Face Coverings in Certain Situations - NO ACTION WILL BE TAKEN [Mayor Bierce]

***BACKGROUND:***

***FINANCIAL IMPACT:***

***RECOMMENDED MOTION:***

**ATTACHMENTS:**

Description

Emergency Order #1





### **EMERGENCY ORDER #1**

#### **Relating to preventing the spread of COVID-19 by requiring face coverings in certain situations**

**WHEREAS**, on July 30, 2020, I issued Executive Order #82, declaring a public health emergency to combat the uncontrolled spread of COVID-19 throughout the State of Wisconsin;

**WHEREAS**, on July 26, 2020, the President's COVID-19 task force recommended that Wisconsin consider adopting a statewide face covering requirement due to the increasing number of confirmed COVID-19 cases;

**WHEREAS**, face coverings are a proven, effective way to slow the spread of COVID-19 without having a significant impact on people's day-to-day lives;

**WHEREAS**, the Centers for Disease Control (CDC) has called on Americans to wear face coverings, with the CDC director stating, "[c]loth face coverings are one of the most powerful weapons we have to slow and stop the spread of the virus – particularly when used universally within a community setting. All Americans have a responsibility to protect themselves, their families, and their communities";

**WHEREAS**, published scientific research has shown that the probability of transmission during exposure between a person infected with COVID-19 to an uninfected person is 17.4 percent if face coverings are not worn, and 3.1 percent if face coverings are worn;

**WHEREAS**, modeling by the University of Washington's Institute for Health Metrics and Evaluation estimates that a face covering requirement in Wisconsin could save more than 500 lives by October 1 if 95 percent of Wisconsinites wear a face covering in public;

**WHEREAS**, states across the nation have recognized the importance and effectiveness of face coverings, with 31 states implementing requirements for face coverings in different settings, including: Alabama, Arkansas, California, Colorado, Connecticut, Delaware, Hawaii, Illinois, Indiana, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Montana, Nevada, New Jersey, New Mexico, New York, North Carolina, Ohio, Oregon, Pennsylvania, Rhode Island, Texas, Vermont, Virginia, Washington, and West Virginia;

**WHEREAS**, Wisconsin must do its part to stop the spread of COVID-19 in the United States, which is leading the world in COVID-19 cases and deaths;

**WHEREAS**, COVID-19 is not only a threat to public health, but also to our economy;

**WHEREAS**, widespread use of face coverings will slow the spread of COVID-19, allowing Wisconsin's economy to move forward by making sure businesses can stay open and jobs are available;



**WHEREAS**, all Wisconsinites are called upon to join in the collective effort to stop the devastating impact of COVID-19 by wearing a face covering, not harassing or threatening Wisconsinites who wear a face covering, and showing patience and compassion for those who are unable to wear a face covering safely;

**WHEREAS**, “Our Constitution principally entrusts ‘[t]he safety and the health of the people’ to the politically accountable officials of the States ‘to guard and protect.’” *S. Bay United Pentecostal Church v Newsom*, 140 S. Ct. 1613, (Mem)-1614 (2020) (quoting *Jacobson v. Massachusetts*, 197 U.S. 11, 38 (1905));

**WHEREAS**, Section 323.12(4)(b) of the Wisconsin Statutes authorizes the Governor to issue “such orders as he or she deems necessary for the security of persons and property” during an emergency; and

**WHEREAS**, based on input from state and local public health officials, medical professionals, and business leaders, I have determined that a statewide face covering requirement is necessary to protect persons throughout the State of Wisconsin from COVID-19.

**NOW, THEREFORE, I, TONY EVERS**, Governor of the State of Wisconsin, by the authority vested in me by the Constitution and the laws of this state, and specifically Section 323.12 of the Wisconsin Statutes, hereby order the following:

### **1. DEFINITIONS.**

- a. “Enclosed space” means a confined space open to the public where individuals congregate, including but not limited to outdoor bars, outdoor restaurants, taxis, public transit, ride-share vehicles, and outdoor park structures.
- b. “Face covering” means a piece of cloth or other material that is worn to cover the nose and mouth completely. A “face covering” includes but is not limited to a bandana, a cloth face mask, a disposable or paper mask, a neck gaiter, or a religious face covering. A “face covering” does not include face shields, mesh masks, masks with holes or openings, or masks with vents.
- c. “Physical distancing” means maintaining at least six feet of distance from other individuals who are not members of your household or living unit.

### **2. FACE COVERING REQUIRED.** Every individual, age five and older, in Wisconsin shall wear a face covering if both of the following apply:

- a. The individual is indoors or in an enclosed space, other than at a private residence; and
- b. Another person or persons who are not members of individual’s household or living unit are present in the same room or enclosed space.

Face coverings are strongly recommended in all other settings, including outdoors when it is not possible to maintain physical distancing.

### **3. EXCEPTIONS.**

- a. Individuals who are otherwise required to wear a face covering may remove the face covering in the following situations:
  - i. While eating or drinking.
  - ii. When communicating with an individual who is deaf or hard of hearing and communication cannot be achieved through other means.



- iii. While obtaining a service that requires the temporary removal of the face covering, such as dental services.
  - iv. While sleeping.
  - v. While swimming or on duty as a lifeguard.
  - vi. While a single individual is giving a religious, political, media, educational, artistic, cultural, musical, or theatrical presentation for an audience, the single speaker may remove the face covering when actively speaking. While the face covering is removed, the speaker must remain at least 6 feet away from all other individuals at all times.
  - vii. When engaging in work where wearing a face covering would create a risk to the individual, as determined by government safety guidelines.
  - viii. When necessary to confirm the individual's identity, including when entering a bank, credit union, or other financial institution.
  - ix. When federal or state law or regulations prohibit wearing a face covering.
- b. In accordance with [CDC guidance](#), the following individuals are exempt from the face covering requirement in Section 2:
- i. Children between the ages of 2 and 5 are encouraged to wear a mask when physical distancing is not possible. The CDC does not recommend masks for children under the age of 2.
  - ii. Individuals who have trouble breathing.
  - iii. Individuals who are unconscious, incapacitated, or otherwise unable to remove the face covering without assistance.
  - iv. Individuals with medical conditions, intellectual or developmental disabilities, mental health conditions, or other sensory sensitivities that prevent the individual from wearing a face covering.
  - v. Incarcerated individuals. The Wisconsin Department of Corrections shall continue to comply with COVID-19 protocols to ensure the health and safety of its staff and individuals in its care. Local governments are strongly encouraged to continue or create COVID-19 protocols to ensure the health and safety of their staff and individuals in their care.

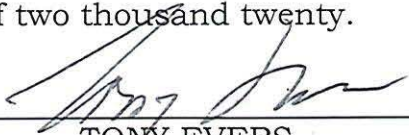
**4. LEGISLATURE AND JUDICIARY.** State facilities or offices under the control of the Wisconsin State Legislature or the Wisconsin Supreme Court are exempt from this Order. The Wisconsin State Legislature and the Wisconsin Supreme Court may establish guidelines for face coverings that are consistent with the specific needs of their respective branches of government.

**5. PRESERVATION OF MEDICAL SUPPLIES.** To conserve limited supplies of N95 masks and other medical-grade supplies, individuals are discouraged from using such supplies as face coverings.

**6. LOCAL ORDERS.** This Order supersedes any local order that is less restrictive. Local governments may issue orders more restrictive than this Order.

- 7. ENFORCEMENT.** This order is enforceable by civil forfeiture of not more than \$200. Wis. Stat. § 323.28.
- 8. SEVERABILITY.** If any provision of this Order or its application to any person or circumstances is held to be invalid, the remainder of the Order, including the application of such part or provision to other individuals or circumstances, shall not be affected and shall continue in full force and effect. To this end, the provisions of this Order are severable.
- 9. DURATION.** This Order shall enter into effect at 12:01 am on Saturday, August 1, 2020. This Order shall expire on September 28, 2020, or by a subsequent superseding emergency order.

**IN TESTIMONY WHEREOF,** I have hereunto set my hand and caused the Great seal of the State of Wisconsin to be affixed. Done at the Capitol in the City of Madison this thirtieth day of July in the year of two thousand twenty.



---

TONY EVERS  
Governor



**CITY OF PEWAUKEE  
COMMON COUNCIL AGENDA ITEM 13.**

**DATE:** August 3, 2020

**DEPARTMENT:** Clerk/Treasurer

**PROVIDED BY:**

***SUBJECT:***

Discussion and Possible Action to Set the 2021 Budget Schedule [Klein]

***BACKGROUND:***

***FINANCIAL IMPACT:***

***RECOMMENDED MOTION:***

**ATTACHMENTS:**

Description

Proposed 2021 Budget Schedule

# \*\*\*\*\* 2021 BUDGET PLANNING SCHEDULE \*\*\*\*\*

|                                                          |                                                                                                                                                                         |
|----------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Friday, July 24 <sup>th</sup> , 2020                     | Budget Worksheets Distributed to<br>Department Heads                                                                                                                    |
| Friday, August 7, 2020                                   | Budgets Due                                                                                                                                                             |
| <b>Week of August 17<sup>th</sup>, 2020</b>              | <b>Mayor, Administrator,<br/>Clerk/Treasurer &amp; City Accountant to<br/>meet with Department Heads</b>                                                                |
| Week of August 31 <sup>st</sup> , 2020                   | Last Minute Tweaks to the Budget &<br>Distribute to Common Council &<br>Finance Committee                                                                               |
| Monday, September 7 <sup>th</sup> , 2020                 | LABOR DAY                                                                                                                                                               |
| Tuesday, September 8 <sup>th</sup> , 2020 – 7:00 p.m.    | Common Council Meeting                                                                                                                                                  |
| <b>Week of September 14<sup>th</sup>, 2020</b>           | <b>Meet with Finance Committee</b>                                                                                                                                      |
| Monday, September 21 <sup>st</sup> , 2020 – 7:00 p.m.    | Common Council Meeting                                                                                                                                                  |
| Monday, September 27 <sup>th</sup> , 2020<br>@ 6:00 p.m. | Budget Workshop                                                                                                                                                         |
| Monday, October 5 <sup>th</sup> , 2020 @ 7:15 p.m.       | Common Council Meeting<br> <b>New Orleans Saints Green Bay Packers<br/>7:15 p.m.</b> |
| <b>Monday, October 12, 2020 – 6:00 p.m.</b>              | <b>Budget Workshop (If Needed)</b>                                                                                                                                      |
| Monday, October 19, 2020 – 7:00 p.m.                     | Common Council Meeting                                                                                                                                                  |
| Tuesday, October 13 <sup>th</sup> , 2020 – 3:00 p.m.     | Deadline to Get Budget to Paper                                                                                                                                         |
| Saturday, October 17 <sup>th</sup> , 2020                | Publish Notice of Public Hearing<br><i>Class 1 Notice at least 15 days before the<br/>Public Hearing</i>                                                                |
| Monday, November 2, 2020 – 6:00 p.m.                     | Common Council Meeting<br><b>Budget Public Hearing</b><br><i>(Hopefully Approval of 2021 Budget)</i>                                                                    |
| Tuesday, November 3 <sup>rd</sup> , 2020                 | <b>PRESIDENTIAL ELECTION</b>                                                                                                                                            |



Monday, November 9<sup>th</sup>, 2020 – 6:00 p.m.

Special Common Council Meeting to  
Approve the 2021 Budget (*If Needed*)

**CITY OF PEWAUKEE  
COMMON COUNCIL AGENDA ITEM 14.**

**DATE:** August 3, 2020

**DEPARTMENT:** Clerk/Treasurer

**PROVIDED BY:**

***SUBJECT:***

Discussion and Possible Action to Set the 2020 Trick or Treat Date and Time [Mayor Bierce]

***BACKGROUND:***

***FINANCIAL IMPACT:***

***RECOMMENDED MOTION:***

**ATTACHMENTS:**

Description

2020 October Calendar



# OCTOBER 2020

| SUNDAY                                                     | MONDAY                                                                                                   | TUESDAY                      | WEDNESDAY                                                             | THURSDAY                                                  | FRIDAY | SATURDAY               |
|------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|------------------------------|-----------------------------------------------------------------------|-----------------------------------------------------------|--------|------------------------|
|                                                            |                                                                                                          |                              |                                                                       | 1                                                         | 2      | 3                      |
| 4                                                          | 5<br><b>Common<br/>Council Meeting</b><br>7:00 p.m.<br><br><i>Green Bay vs.<br/>Falcons</i><br>7:15 p.m. | 6                            | 7                                                                     | 8                                                         | 9      | 10                     |
| 11                                                         | 12                                                                                                       | 13<br><b>Court</b> 7:30 a.m. | 14<br><b>Joint Park &amp;<br/>Recreation<br/>Meeting</b><br>7:00 p.m. | 15<br><b>Plan<br/>Commission<br/>Meeting</b><br>7:00 p.m. | 16     | 17                     |
| 18<br><br><i>Buccaneers vs.<br/>Green Bay</i><br>3:25 p.m. | 19<br><b>Common<br/>Council Meeting</b><br>7:00 p.m.                                                     | 20                           | 21<br><b>Joint Library<br/>Board Meeting</b><br>6:30 p.m.             | 22                                                        | 23     | 24                     |
| 25<br><br><i>Texans vs.<br/>Green Bay</i><br>12:00 p.m.    | 26                                                                                                       | 27<br><b>Court</b> 7:30 a.m. | 28                                                                    | 29                                                        | 30     | 31<br><b>HALLOWEEN</b> |