

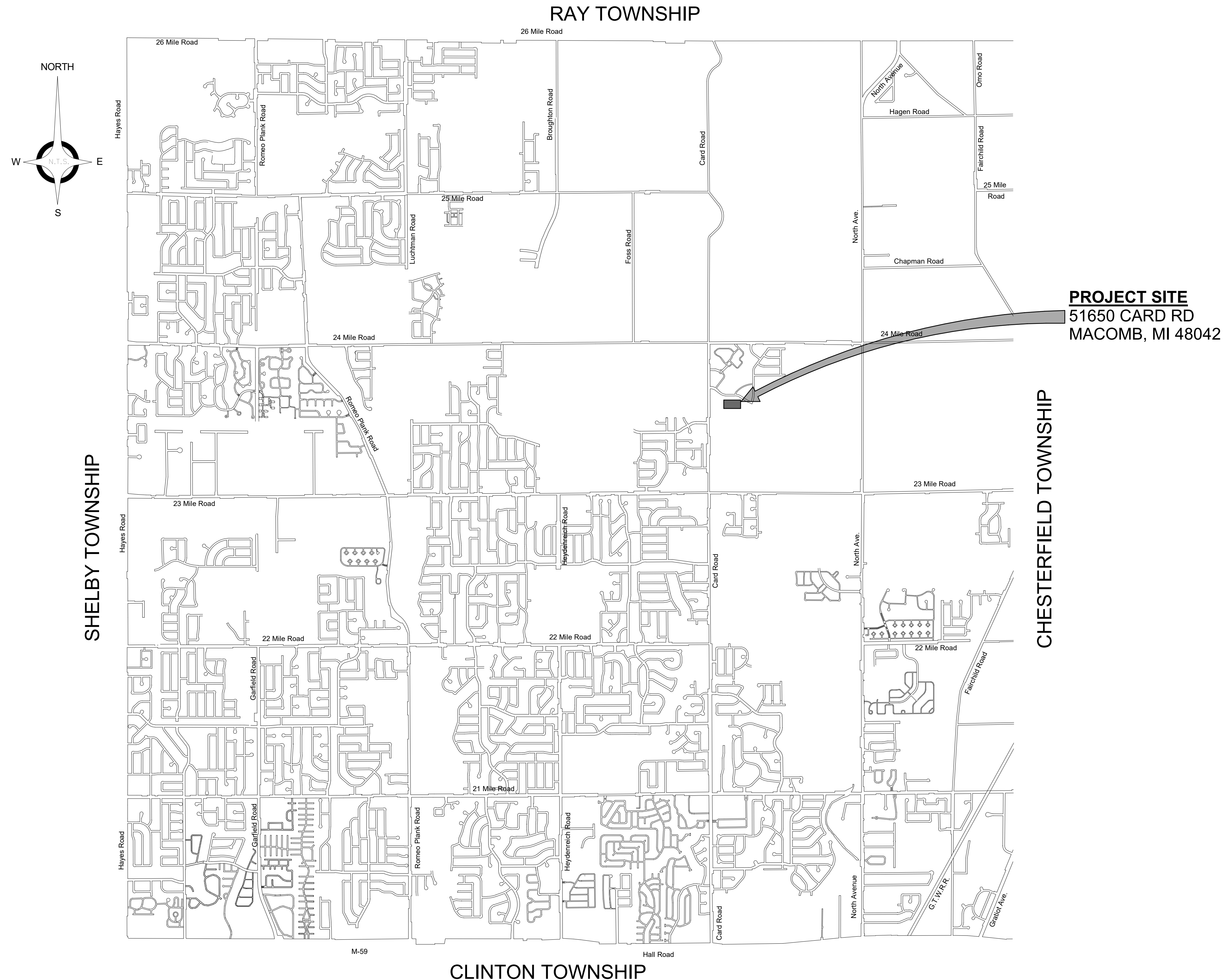


# Macomb Township



Macomb County, Michigan

## MACOMB TOWNSHIP DEPARTMENT OF PUBLIC WORKS ADDITION



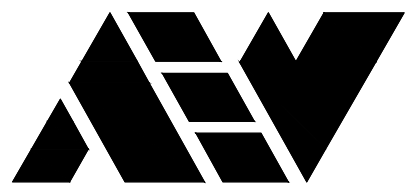
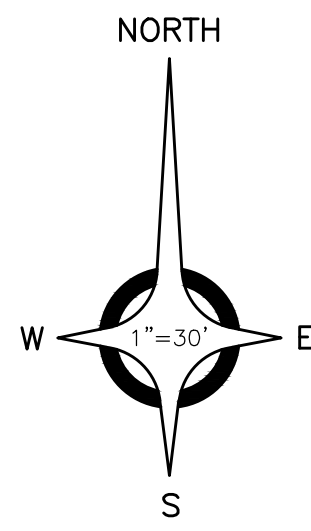
### INDEX TO SHEETS

|   |       |
|---|-------|
| <b>CIVIL</b>                                |       |
| CONSTRUCTION PLAN                           | 1     |
| CONSTRUCTION DETAILS                        | 2     |
| SOIL EROSION AND SEDIMENTATION CONTROL PLAN | 3     |
| PAVING STANDARD DETAILS                     | P1    |
| PAVING STANDARD DETAILS                     | P2    |
| SANITARY SEWER STANDARD DETAILS             | OF    |
| STORM SEWER STANDARD DETAILS                | STM1  |
| <b>ARCHITECTURAL</b>                        |       |
| GENERAL PROJECT INFORMATION                 | A011  |
| ADA   | A021  |
| SPECIFICATIONS                              | A031  |
| FIRST FLOOR DEMOLITION PLAN                 | AD101 |
| FIRST FLOOR PLAN                            | A101  |
| REFLECTED CEILING PLAN                      | A111  |
| ROOF PLAN                                   | A121  |
| EXTERIOR ELEVATIONS                         | A201  |
| ALTERNATE 1 EXTERIOR ELEVATIONS AND DETAILS | A202  |
| BUILDING SECTIONS                           | A301  |
| WALL SECTIONS                               | A311  |
| WALL SECTIONS                               | A312  |
| PLAN DETAILS                                | A501  |
| SECTIONS & MISCELLANEOUS DETAILS            | A511  |
| DOOR SCHEDULE AND ELEVATIONS                | A601  |
| <b>STRUCTURAL</b>                           |       |
| SPECIFICATIONS & DESIGN CRITERIA            | S011  |
| FOUNDATION PLAN & DETAILS                   | S101  |
| ROOF AND LINTEL FRAMING PLAN                | S102  |
| <b>MECHANICAL</b>                           |       |
| MECHANICAL SPECIFICATIONS                   | M011  |
| MECHANICAL PLAN                             | M101  |
| <b>PLUMBING</b>                             |       |
| PLUMBING PLAN                               | P101  |
| <b>ELECTRICAL</b>                           |       |
| ELECTRICAL GENERAL INFORMATION              | E100  |
| FIRST FLOOR POWER PLAN                      | E101  |
| COMPOSITE POWER PLAN                        | E102  |
| FLOOR LIGHTING PLAN                         | E201  |
| ONE-LINE DIAGRAM AND DETAILS                | E300  |
| ELECTRICAL SPECIFICATIONS                   | E400  |

"I HEREBY CERTIFY THESE PLANS HAVE BEEN PREPARED UNDER MY DIRECT SUPERVISION IN ACCORDANCE WITH ACT 240, PUBLIC ACTS OF 1937 AS AMENDED- STATE OF MICHIGAN."

JASON ARLOW, AIA # 1301054547

DATE



ANDERSON, ECKSTEIN AND WESTRICK, INC.

CIVIL ENGINEERS SURVEYORS ARCHITECTS

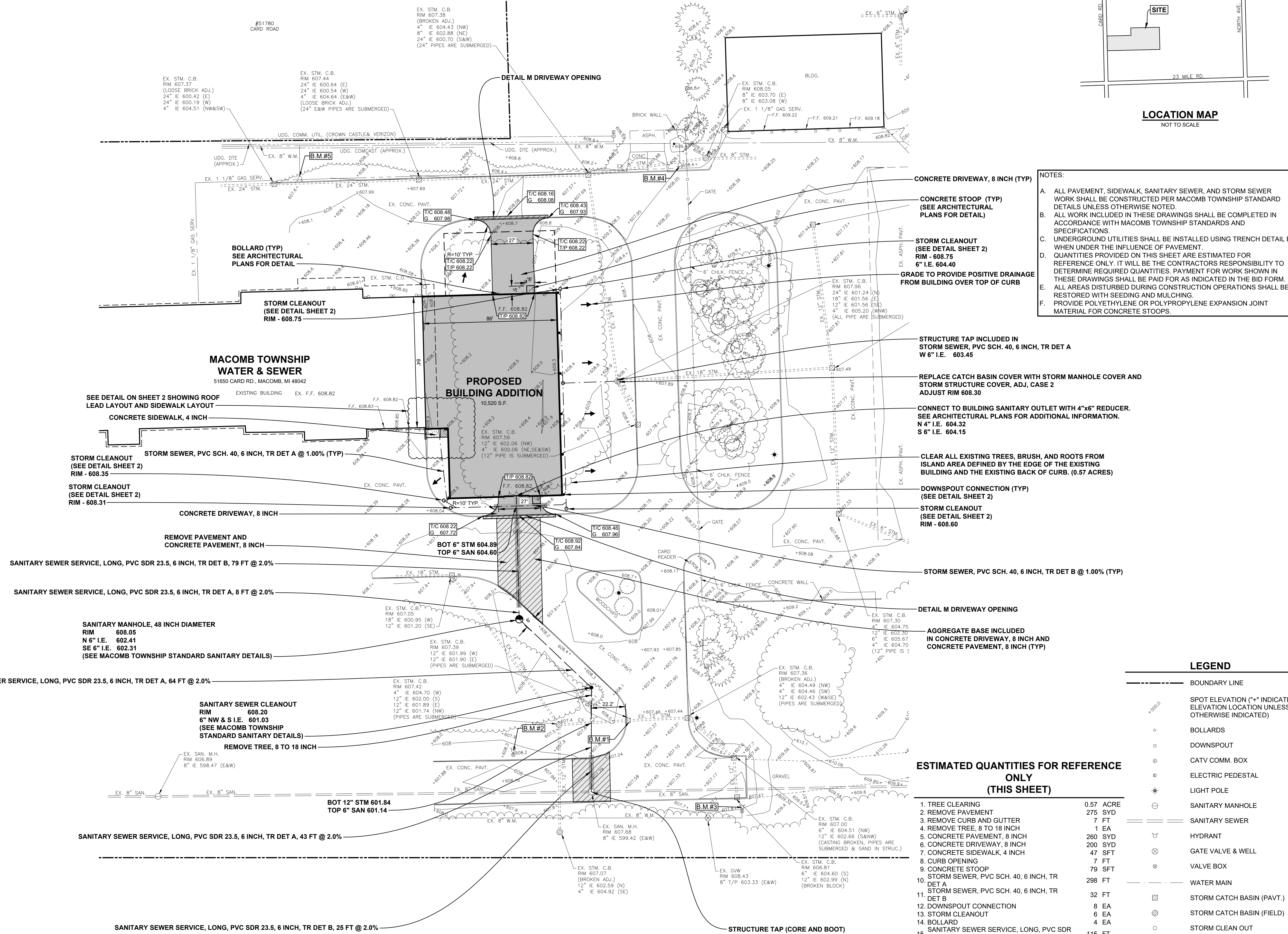
51301 Schoenherr Road Phone 586 726 1234  
Shelby Township Michigan 48315 Fax 586 726 8780

www.aewinc.com

ENGINEERING STRONG COMMUNITIES



LOCATION MAP  
NOT TO SCALE



- NOTES:
- ALL PAVEMENT, SIDEWALK, SANITARY SEWER, AND STORM SEWER WORK SHALL BE CONSTRUCTED PER MACOMB TOWNSHIP STANDARD DETAILS UNLESS OTHERWISE NOTED.
  - ALL WORK INCLUDED IN THESE DRAWINGS SHALL BE COMPLETED IN ACCORDANCE WITH MACOMB TOWNSHIP STANDARDS AND SPECIFICATIONS.
  - UNDERGROUND UTILITIES SHALL BE INSTALLED USING TRENCH DETAIL B WHEN UNDER THE INFLUENCE OF PAVEMENT.
  - QUANTITIES PROVIDED ON THIS SHEET ARE ESTIMATED FOR REFERENCE ONLY. IT WILL BE THE CONTRACTORS RESPONSIBILITY TO DETERMINE REQUIRED QUANTITIES. PAYMENT FOR WORK SHOWN IN THESE DRAWINGS SHALL BE PAID FOR AS INDICATED IN THE BID FORM.
  - ALL AREAS DISTURBED DURING CONSTRUCTION OPERATIONS SHALL BE RESTORED WITH SEEDING AND MULCHING.
  - PROVIDE POLYETHYLENE OR POLYPROPYLENE EXPANSION JOINT MATERIAL FOR CONCRETE STOOPS.

|   |   |
|---|---|
| 2/13/2025   | PROPOSAL ISSUE                                      |
| DATE  | SUBMITTALS/REVISIONS                                |
| PROJECT NAME:   |   |
| <b>MACOMB TOWNSHIP DPW ADDITION</b>   |   |
| 51650 CARD ROAD   |   |
| SHEET TITLE:  |   |
| <b>CONSTRUCTION PLAN</b>  |   |
| CLIENT:   |   |
| MACOMB TOWNSHIP   |   |
| <input type="checkbox"/> PRELIMINARY<br><input checked="" type="checkbox"/> CONSTRUCTION<br><input type="checkbox"/> RECORD | DRAWN BY: JEF<br>CHECKED BY: MDS<br>DATE: FEB. 2025 |
| SCALE:  | 1" = 30'  |
|   |   |

LEGEND

- BOUNDARY LINE
- o SPOT ELEVATION (\* INDICATES ELEVATION LOCATION UNLESS OTHERWISE INDICATED)
- o BOLLARDS
- o DOWNSPOUT
- o CATV COMM. BOX
- o ELECTRIC PEDESTAL
- \* LIGHT POLE
- o SANITARY MANHOLE
- o SANITARY SEWER
- o HYDRANT
- o GATE VALVE & WELL
- o VALVE BOX
- o WATER MAIN
- o STORM CATCH BASIN (PAVT.)
- o STORM CATCH BASIN (FIELD)
- o STORM CLEANOUT
- o STORM SEWER
- o GAS MAIN
- o UNDERGROUND UTILITIES

ESTIMATED QUANTITIES FOR REFERENCE ONLY (THIS SHEET)

|  |           |
|--|-----------|
| 1. TREE CLEARING   | 0.57 ACRE |
| 2. REMOVE PAVEMENT   | 275 SYD   |
| 3. REMOVE CURB AND GUTTER  | 7 FT      |
| 4. REMOVE TREE, 8 TO 18 INCH                                     | 1 EA      |
| 5. CONCRETE PAVEMENT, 8 INCH                                     | 260 SYD   |
| 6. CONCRETE DRIVEWAY, 8 INCH                                     | 200 SYD   |
| 7. CONCRETE SIDEWALK, 4 INCH                                     | 47 SFT    |
| 8. CURB OPENING  | 7 FT      |
| 9. CONCRETE STOOP  | 79 SFT    |
| 10. STORM SEWER, PVC SCH. 40, 6 INCH, TR DET A                   | 298 FT    |
| 11. STORM SEWER, PVC SCH. 40, 6 INCH, TR DET B                   | 32 FT     |
| 12. DOWNSPOUT CONNECTION   | 8 EA      |
| 13. STORM CLEANOUT   | 6 EA      |
| 14. BOLLARD  | 4 EA      |
| 15. SANITARY SEWER SERVICE, LONG, PVC SDR 23.5, 6 INCH, TR DET A | 115 FT    |
| 16. SANITARY SEWER SERVICE, LONG, PVC SDR 23.5, 6 INCH, TR DET B | 104 FT    |
| 17. SANITARY SEWER CLEANOUT                                      | 1 EA      |
| 18. SANITARY MANHOLE   | 1 EA      |

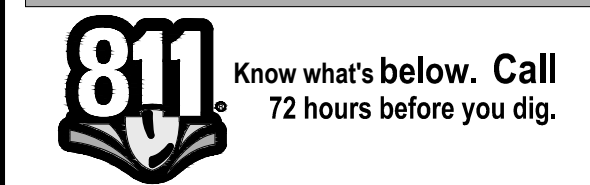
- BENCH MARKS (NAVD88 DATUM)**
- BENCH MARK NO. 1  
THIS "X" SOUTHEAST CORNER OF ROAD BASIN  
RIM ELEVATION: 607.45
  - BENCH MARK NO. 2  
TOP OF HYDRANT  
SOUTHWEST OF PROPERTY  
ELEVATION: 610.53
  - BENCH MARK NO. 3  
TOP OF HYDRANT  
SOUTHEAST OF PROPERTY  
ELEVATION: 610.48
  - BENCH MARK NO. 4  
TOP OF HYDRANT  
NORTHWEST OF PROPERTY  
ELEVATION: 611.09
  - BENCH MARK NO. 5  
TOP OF HYDRANT  
NORTHWEST OF PROPERTY  
ELEVATION: 610.43

MACOMB TOWNSHIP DPW ADDITION  
51650 CARD ROAD

CONSTRUCTION PLAN

CLIENT: MACOMB TOWNSHIP

|                                      |  |                                 |
|--------------------------------------|--|---------------------------------|
| <input type="checkbox"/> PRELIMINARY | <input checked="" type="checkbox"/> CONSTRUCTION | <input type="checkbox"/> RECORD |
| DRAWN BY: JEF                        | CHECKED BY: MDS                                  | DATE: FEB. 2025                 |
| SCALE: 1" = 30'                      |  |                                 |



UTILITY INFORMATION, AS SHOWN, INDICATES APPROXIMATE LOCATIONS AND TYPES OF EXISTING FACILITIES ONLY. AS DISCLOSED BY RECORDS PROVIDED TO THIS FIRM FROM THE VARIOUS UTILITY COMPANIES. NO GUARANTEE IS GIVEN OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF.

PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING OVERHEAD AND UNDERGROUND UTILITIES (IN CONFLICT WITH THE CONSTRUCTION OF THESE PROPOSED IMPROVEMENTS) SHALL BE VERIFIED IN THE FIELD. DURING THE CONSTRUCTION, THE CONTRACTOR SHALL PROTECT AND SUPPORT ALL UTILITIES THAT ARE ENCOUNTERED. (ALL COSTS FOR UTILITY LOCATION VERIFICATION, SUPPORT AND PROTECTION SHALL BE INCLUDED IN THE PROPOSED PAY ITEM CONFLICTING WITH THAT UTILITY).

DURING CONSTRUCTION, THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN OPERATING NEAR ANY AND ALL OVERHEAD AND / OR BURIED UTILITIES.

PROJECT NO. 0249-0322

M:\0249\0249-0322\CAD\DRAWINGS\CONSTRUCTION\CONSTRUCTION PLAN\DWG 01\_CONSTRUCTION-21132025 8.06.19 AM

SHEET NO.



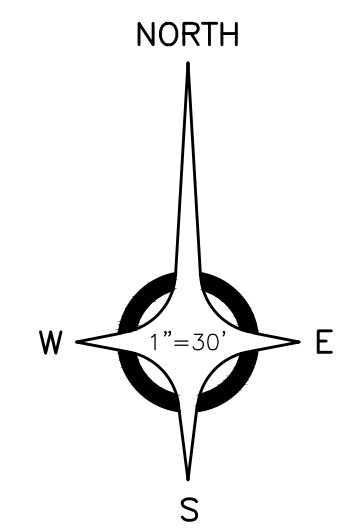
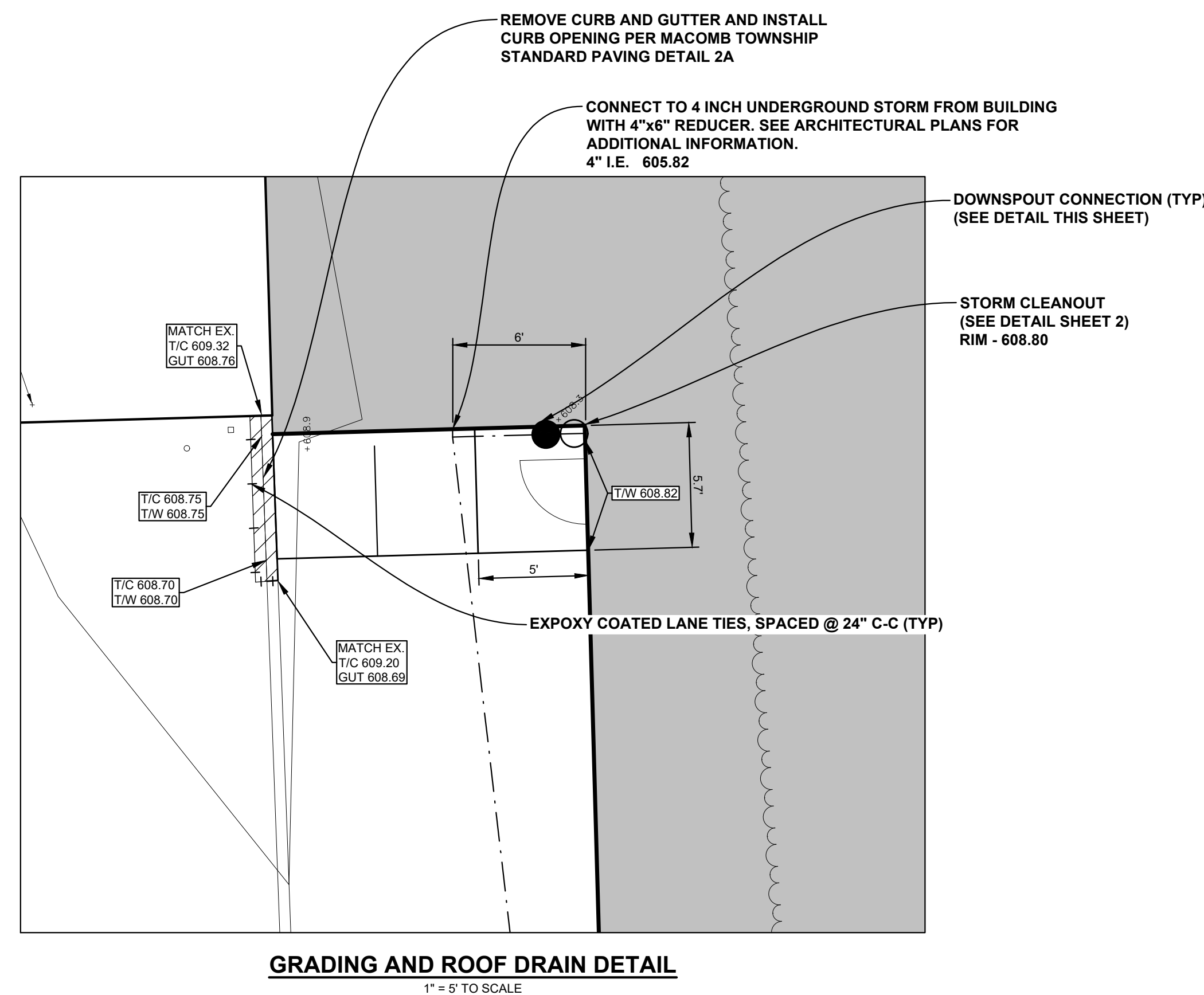
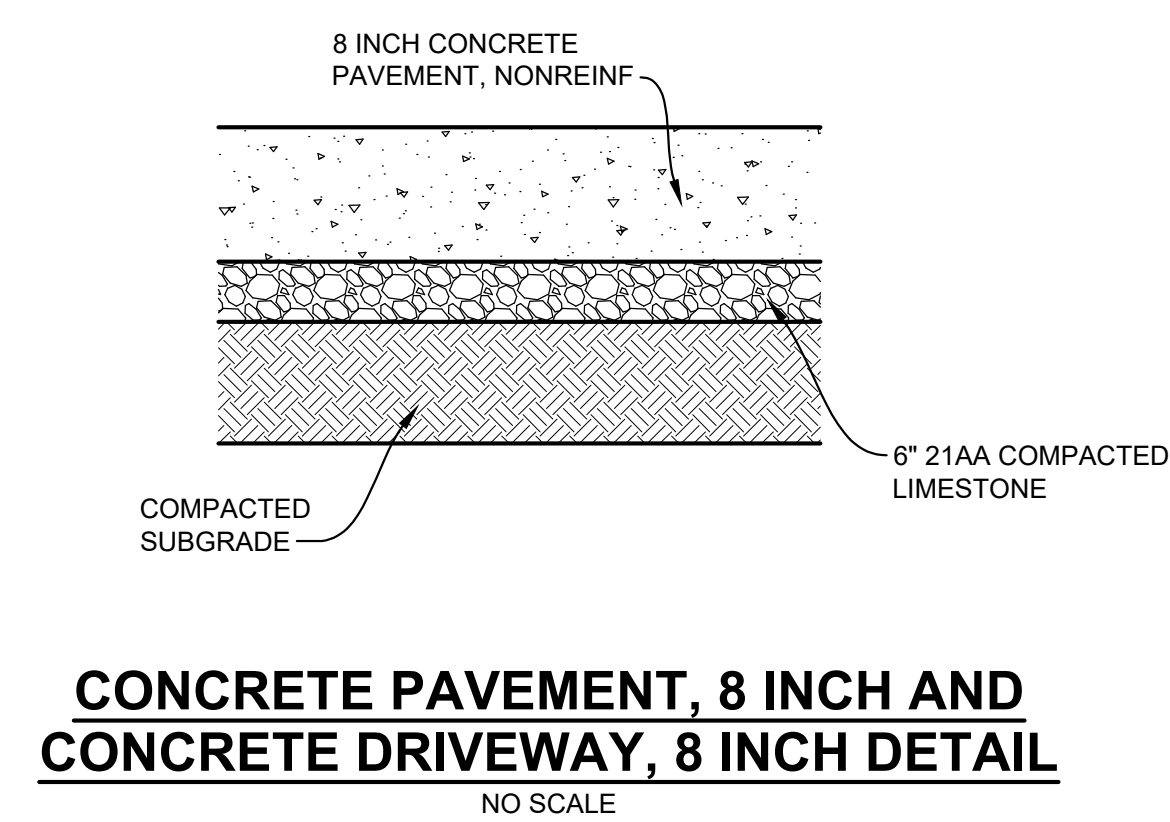
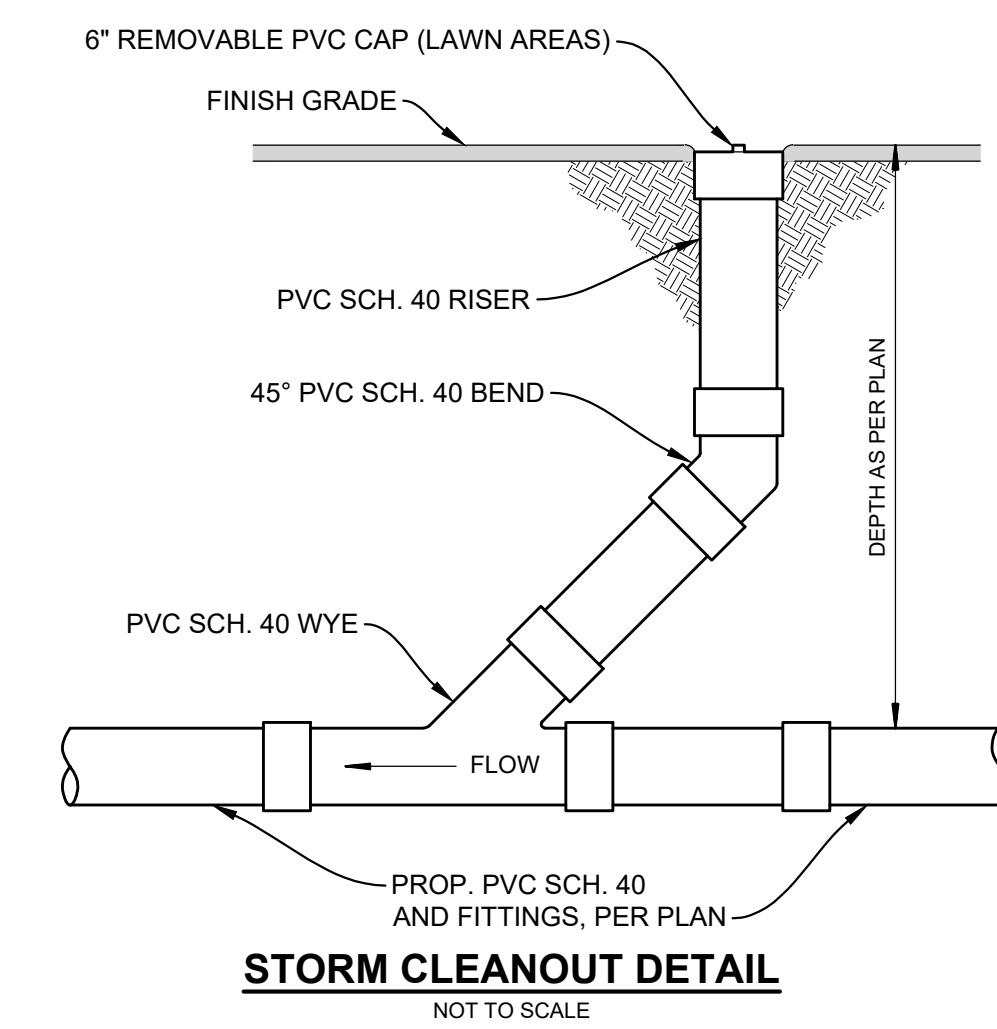
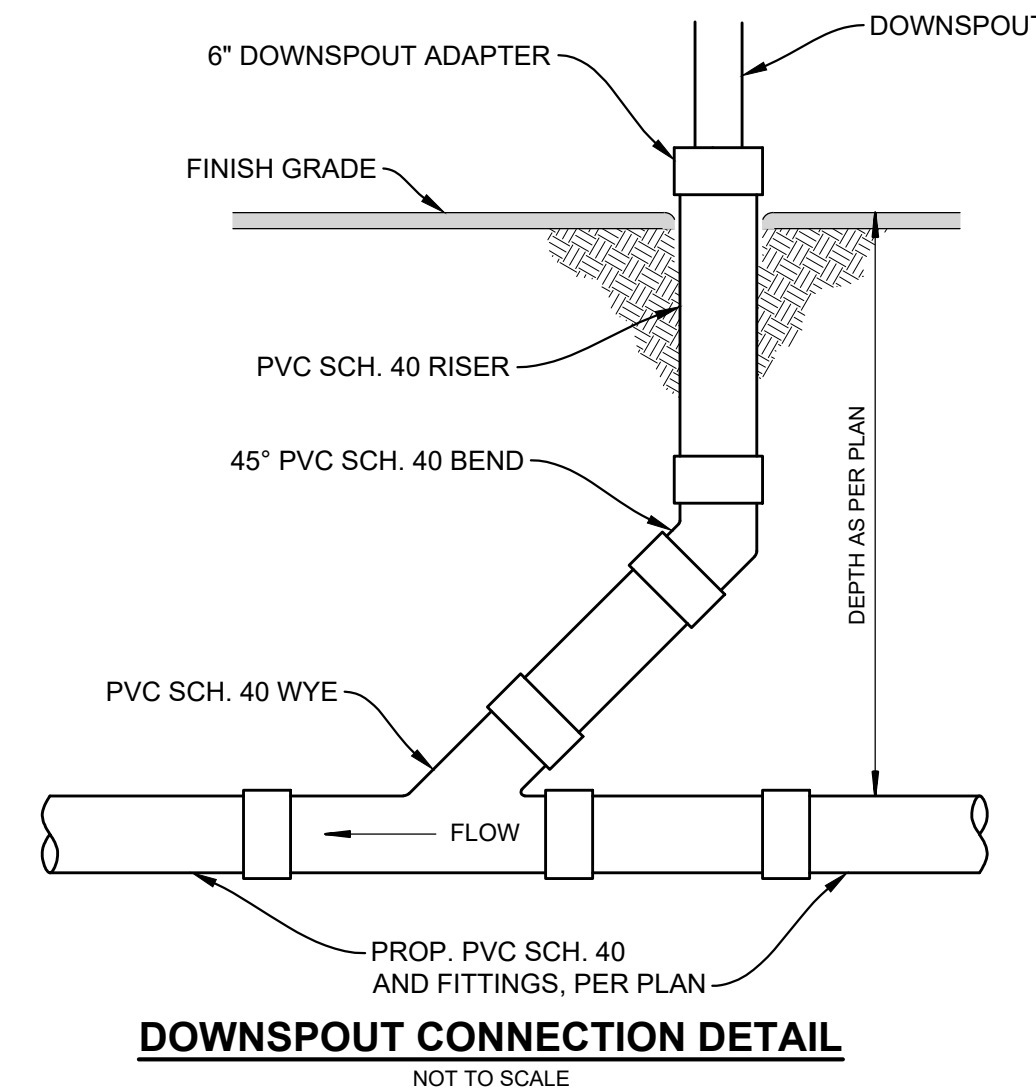
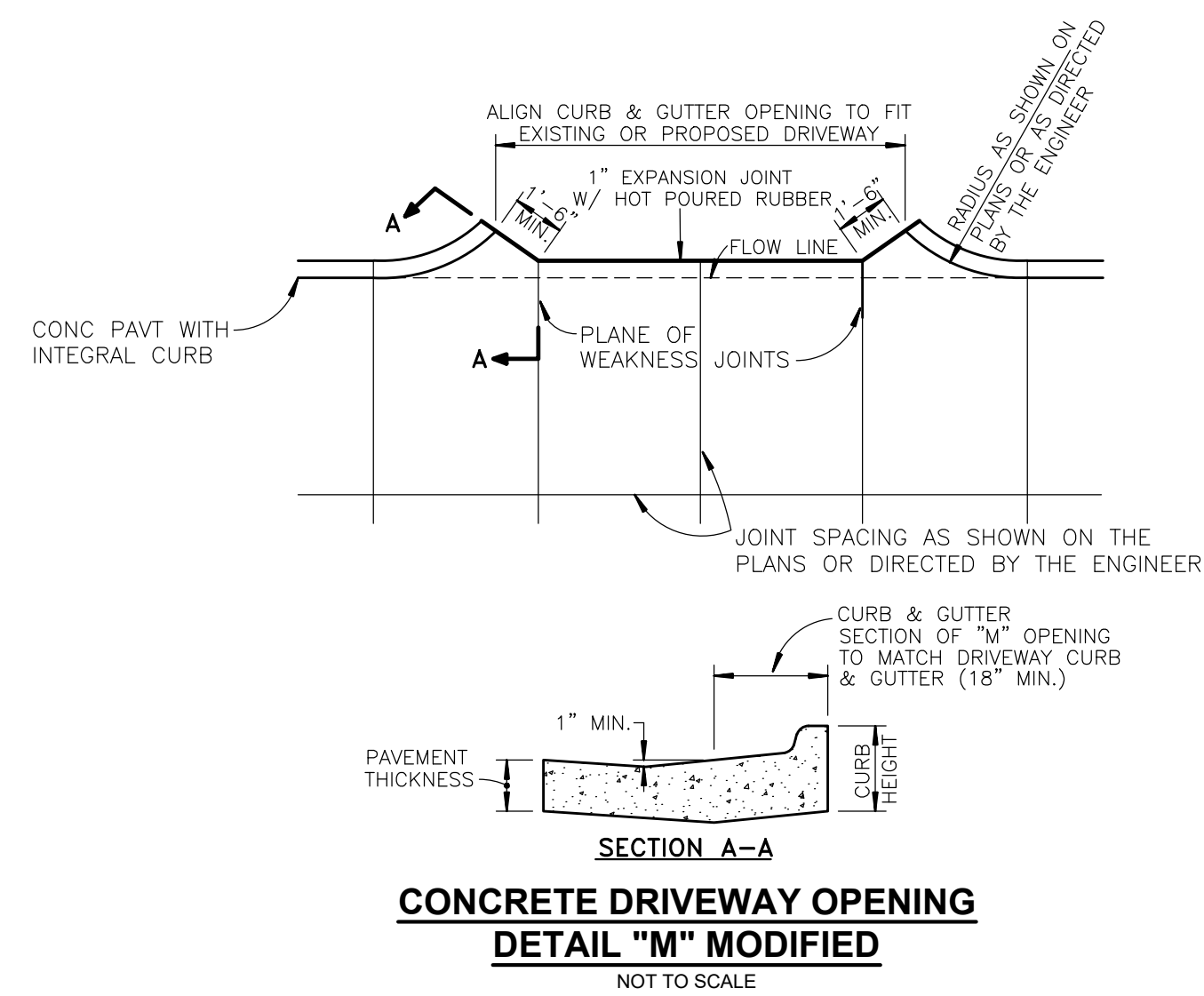
ANDERSON, ECKSTEIN AND WESTRICK, INC.

CIVIL ENGINEERS SURVEYORS ARCHITECTS

51301 Schoenherr Road Phone 586 726 1234  
Shelby Township Michigan 48315 Fax 586 726 8780

www.aewinc.com

ENGINEERING STRONG COMMUNITIES



**LEGEND**

|       |   |
|-------|---|
| ---   | BOUNDARY LINE   |
| ○     | SPOT ELEVATION (*" INDICATES ELEVATION LOCATION UNLESS OTHERWISE INDICATED) |
| ○     | BOLLARDS  |
| ○     | DOWNSPOUT   |
| ⊙     | CATV COMM. BOX  |
| ⊞     | ELECTRIC PEDESTAL   |
| *     | LIGHT POLE  |
| ⊖     | SANITARY MANHOLE  |
| ====  | SANITARY SEWER  |
| ⊕     | HYDRANT   |
| ⊗     | GATE VALVE & WELL   |
| ⊙     | VALVE BOX   |
| ---   | WATER MAIN  |
| ⊞     | STORM CATCH BASIN (PAVT.)   |
| ⊞     | STORM CATCH BASIN (FIELD)   |
| ○     | STORM CLEAN OUT   |
| ----- | STORM SEWER   |
| ----- | GAS MAIN  |
| ----- | UNDERGROUND UTILITIES   |

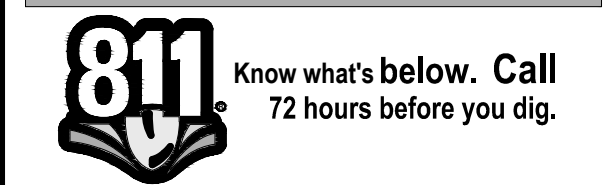
|           |                      |
|-----------|----------------------|
| 2/13/2025 | PROPOSAL ISSUE       |
| DATE      | SUBMITTALS/REVISIONS |

PROJECT NAME:  
**MACOMB TOWNSHIP DPW ADDITION**  
51650 CARD ROAD

SHEET TITLE:  
**CONSTRUCTION DETAILS**

CLIENT:  
MACOMB TOWNSHIP

|                          |             |                                     |              |                          |        |
|--------------------------|-------------|-------------------------------------|--------------|--------------------------|--------|
| <input type="checkbox"/> | PRELIMINARY | <input checked="" type="checkbox"/> | CONSTRUCTION | <input type="checkbox"/> | RECORD |
| DRAWN BY:                | CHECKED BY: | DATE:                               |              |                          |        |
| JEF                      | MDS         | FEB. 2025                           |              |                          |        |
| SCALE: 1" = 30'          |             |                                     |              |                          |        |
| 0 15 30 60               |             |                                     |              |                          |        |



UTILITY INFORMATION, AS SHOWN, INDICATES APPROXIMATE LOCATIONS AND TYPES OF EXISTING FACILITIES ONLY. AS DISCLOSED BY RECORDS PROVIDED TO THIS FIRM FROM THE VARIOUS UTILITY COMPANIES. NO GUARANTEE IS GIVEN OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF.

PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING OVERHEAD AND UNDERGROUND UTILITIES (IN CONFLICT WITH THE CONSTRUCTION OF THESE PROPOSED IMPROVEMENTS) SHALL BE VERIFIED IN THE FIELD. DURING THE CONSTRUCTION, THE CONTRACTOR SHALL PROTECT AND SUPPORT ALL UTILITIES THAT ARE ENCOUNTERED. (ALL COSTS FOR UTILITY LOCATION VERIFICATION, SUPPORT AND PROTECTION SHALL BE INCLUDED IN THE PROPOSED PAY ITEM CONFLICTING WITH THAT UTILITY).

DURING CONSTRUCTION, THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN OPERATING NEAR ANY AND ALL OVERHEAD AND / OR BURIED UTILITIES.

PROJECT NO. 0249-0322

M:\0249\0249-0322\CAD\DRAWINGS\CONSTRUCTION\CONSTRUCTION\02\_DETAILS-2132025 8:00:46 AM

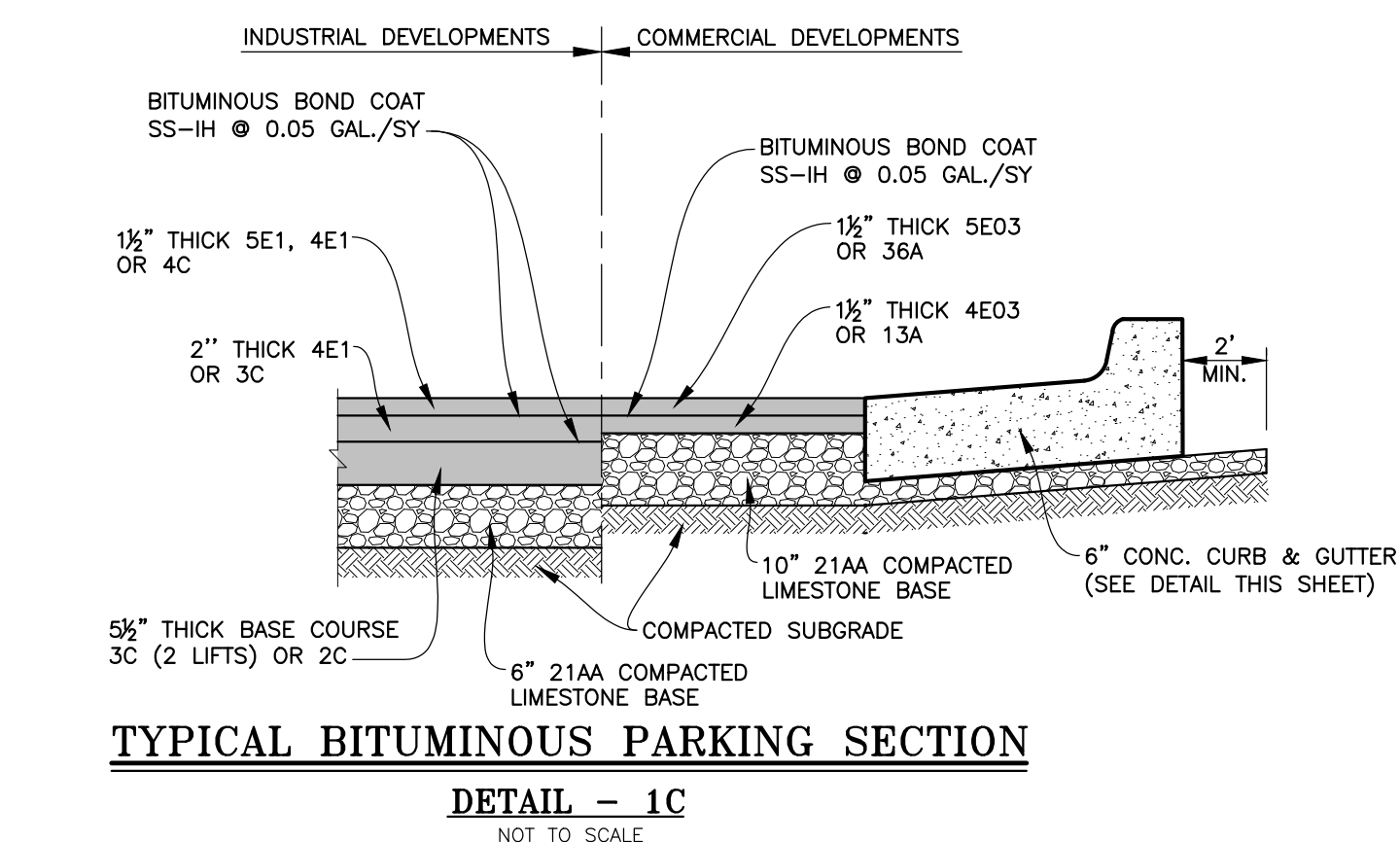
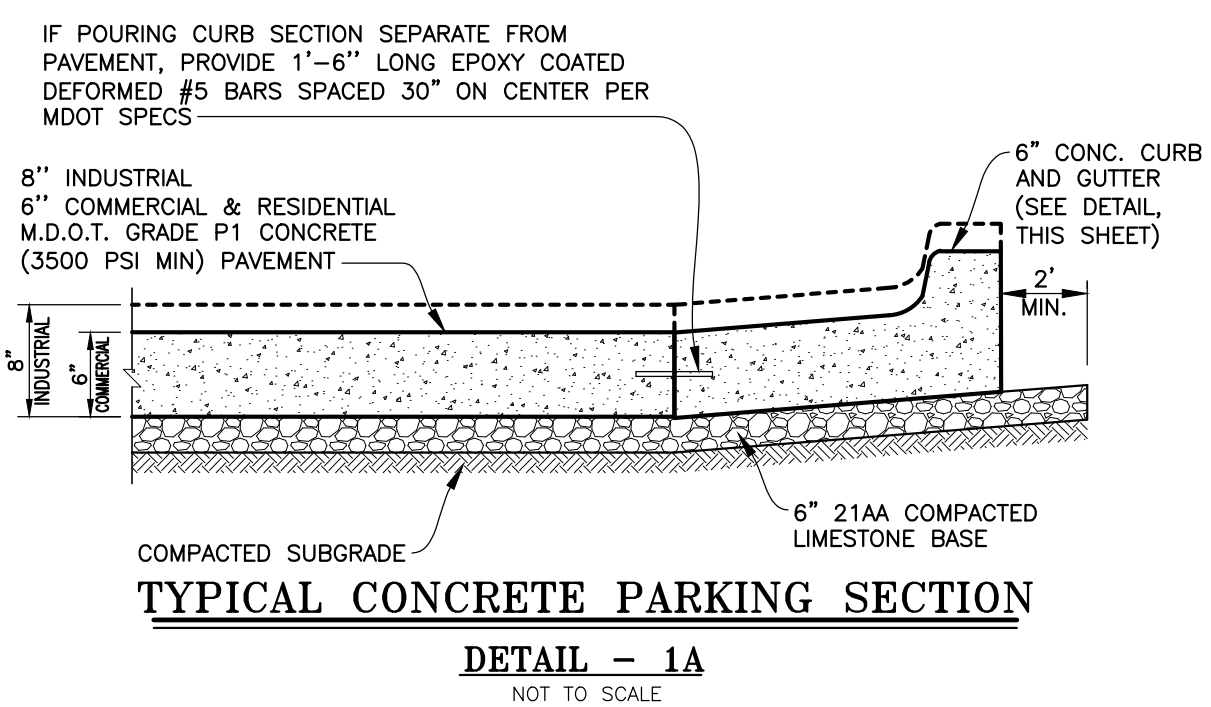
SHEET NO.



# PAVING NOTES

## GENERAL NOTES

- EXISTING TOPSOIL, VEGETATION AND ORGANIC MATERIALS SHALL BE STRIPPED AND REMOVED FROM PROPOSED PAVEMENT AREA PRIOR TO PLACEMENT OF BASE MATERIALS. TREE ROOTS SHALL BE COMPLETELY REMOVED.
- EXCAVATE TO THE DEPTH OF THE FINAL SUBGRADE ELEVATION TO ALLOW FOR GRADE CHANGES AND THE PLACEMENT OF THE RECOMMENDED PAVEMENT SYSTEM.
- THE PAVEMENT SUBGRADE SHALL BE COMPACTED TO 95% OF THE MAXIMUM DRY DENSITY (MODIFIED PROCTOR) PRIOR TO PLACEMENT OF PROPOSED PAVEMENT. THE FINAL SUBGRADE SHALL BE THOROUGHLY PROOF-ROLLED IN THE PRESENCE OF A GEOTECHNICAL/PAVEMENT ENGINEER TO DETERMINE STABILITY. LOOSE OR YIELDING AREAS WHICH CANNOT BE MECHANICALLY STABILIZED SHALL BE REMOVED AND REPLACED WITH CLASS II SAND OR AS DIRECTED BY THE ENGINEER. ALL FILL MATERIAL AND BASE MATERIAL SHALL BE TESTED AND ITS COMPACTION AND SUITABILITY FOR ACCEPTANCE OF THE BASE MATERIAL AND PAVEMENT SHALL BE CERTIFIED BY SAID TESTING FIRM. THE OWNER SHALL SUPPLY THREE COPIES OF GEOTECHNICAL REPORTS TO MACOMB TOWNSHIP.
- IF IN THE OPINION OF THE INSPECTOR/ENGINEER, FIELD CONDITIONS WARRANT ADDITIONAL TESTING, THE DEVELOPER SHALL ARRANGE FOR AND PAY FOR ALL REQUIRED ADDITIONAL TESTING.
- 21AA AGGREGATE BASE SHALL BE COMPACTED TO ACHIEVE A 95% COMPACTION LEVEL (MODIFIED PROCTOR - ASTM D 1557-91) (98% COMPACTION REQUIRED BELOW HMA PAVEMENTS). THE BASE SHALL EXTEND A MINIMUM OF 2 FEET BEYOND THE BACK OF CURB OR THE PAVED EDGE.
- CONCRETE AND ASPHALT PAVEMENT TESTING SHALL BE REQUIRED FOR ALL PROJECTS.
- ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CURRENT STANDARDS AND SPECIFICATIONS OF MACOMB TOWNSHIP, THE MACOMB COUNTY DEPARTMENT OF ROADS (MCDOR), AND THE MICHIGAN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, CURRENT EDITION.
- FOR ANY WORK WITHIN THE PUBLIC RIGHT-OF-WAY, THE CONTRACTOR SHALL PAY FOR AND SECURE ALL NECESSARY PERMITS AND LIKewise ARRANGE FOR ALL INSPECTION.
- 1.0 INCH AND 2.0 INCH EXPANSION JOINTS SHALL BE INSTALLED PER MCDOR STANDARDS.
- FILL AREAS SHALL BE MACHINE COMPACTED IN UNIFORM LIFTS NOT EXCEEDING 9 INCHES THICK TO 95% OF THE MAXIMUM DRY DENSITY (MODIFIED PROCTOR) PRIOR TO PLACEMENT OF PROPOSED PAVEMENT.
- 6" UNDER DRAIN WRAPPED IN GEOTEXTILE FABRIC FILTER SHALL BE INSTALLED ON BOTH SIDES OF ALL ROADWAYS. ALSO, PLACE UNDER DRAINS AT ALL DRAINAGE STRUCTURES WITHIN PARKING AREAS (SEE UNDERDRAIN DETAILS SHEET 2 OF 2).
- CONSTRUCTION TRAFFIC SHALL BE MINIMIZED ON THE NEW BITUMINOUS PAVEMENT. IF CONSTRUCTION TRAFFIC IS ANTICIPATED ON THE PAVEMENT STRUCTURE, SUBJECT TO MACOMB TOWNSHIP AND MCDOR APPROVAL, THE PLACEMENT OF THE FINAL LIFT SHALL BE DELAYED UNTIL THE MAJORITY OF THE CONSTRUCTION ACTIVITIES HAVE BEEN COMPLETED BY THE DEVELOPER. PAVEMENT SHALL BE OF THE TYPE, THICKNESS AND CROSS SECTION AS INDICATED ON THE PLANS.
- THESE DETAILS ARE SUPPLEMENTAL TO THE MACOMB COUNTY DEPARTMENT OF ROADS (MCDOR) ROAD PAVING STANDARD DETAILS SHEETS 1 & 2.
- ALL ROAD PAVING WITHIN THE TOWNSHIP SHALL COMPLY WITH THE MCDOR PAVING STANDARD DETAILS UNLESS OTHERWISE NOTED ON THE PLANS OR ON THIS SUPPLEMENTAL DETAIL SHEET.
- NO BITUMINOUS PAVEMENT IS PERMITTED FOR ROADS WITHIN PLATTED SUBDIVISIONS OR SITE CONDOMINIUMS (MCDOR PAVING STANDARD DETAILS 1B & 2B).



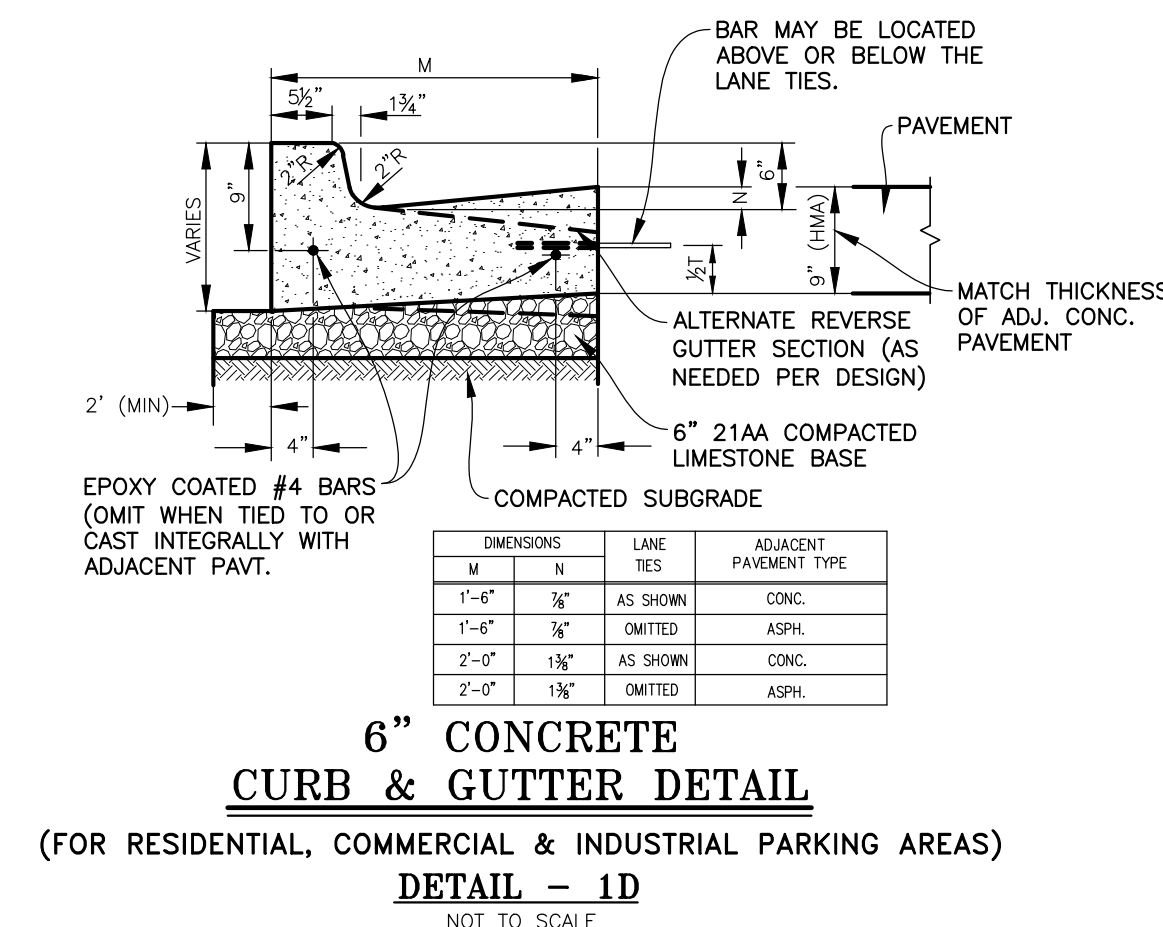
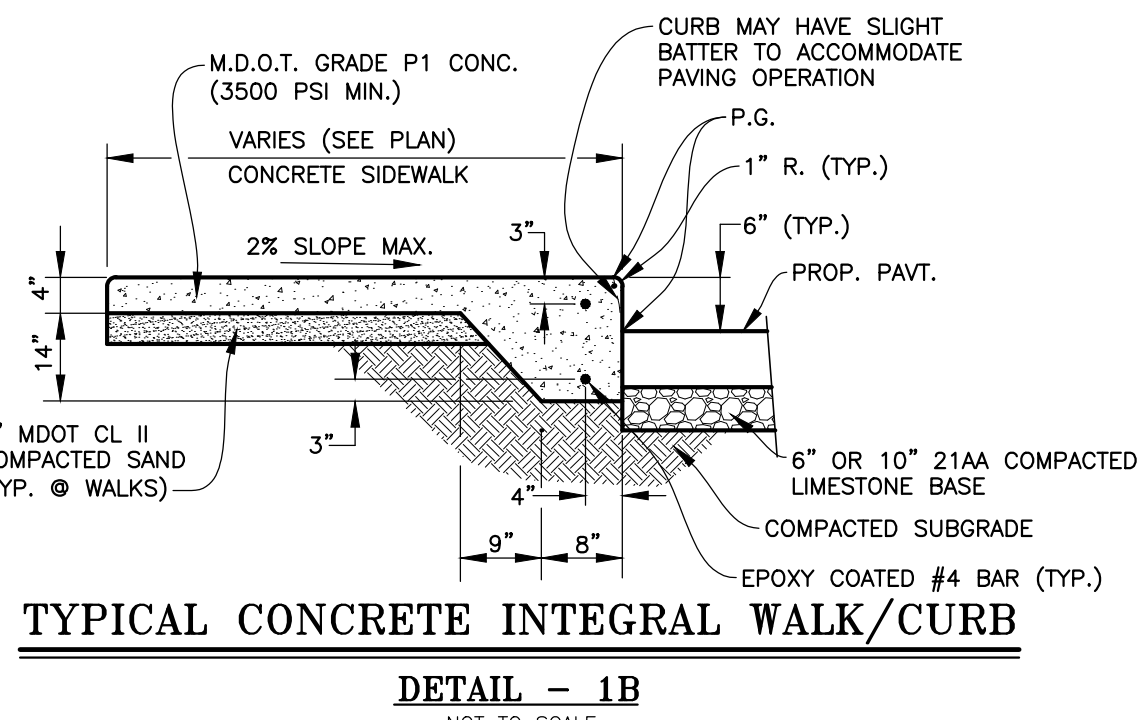
## TYPICAL PARKING AREA PAVEMENT & CURB DETAILS - 1

## CONCRETE PAVEMENT

- CONCRETE SHALL CONSIST OF: PORTLAND CEMENT TYPE IA (AIR-ENTRAINED) WITH A MAXIMUM CEMENT CONTENT OF SIX SACKS PER CUBIC YARD, MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3500 PSI AND A SLUMP OF 1 1/2 TO 3 INCHES. PAVEMENT SHALL CONFORM TO M.D.O.T. GRADE P1. CONCRETE MIXES SHALL BE DESIGNED TO MITIGATE ASR IN ACCORDANCE WITH ASTM 1260, ASTM 1293, OR ASTM 1567.
- ALL CONCRETE PAVEMENT, DRIVEWAYS, CURB & GUTTER, ETC., SHALL BE SPRAY CURED WITH WHITE MEMBRANE CURING COMPOUND IMMEDIATELY FOLLOWING FINISHING OPERATION.
- THE CONCRETE BATCH PLANT SHALL BE M.D.O.T. CERTIFIED WITH LOCATION APPROVED BY THE TOWNSHIP BOARD AND MCDOR.
- NO CONCRETE PAVING SHALL BE ALLOWED PRIOR TO MAY 1, OR AFTER NOVEMBER 1 (UNLESS APPROVED BY MDOT, MCDOR OR MACOMB TOWNSHIP).
- AIR TEMPERATURE AT POINT OF PLACEMENT, AWAY FROM ARTIFICIAL HEAT SHALL BE MINIMUM 25° F AND RISING.
- TEMPERATURE OF CONCRETE AT TIME OF PLACEMENT SHALL BE BETWEEN 45° F AND 90° F.

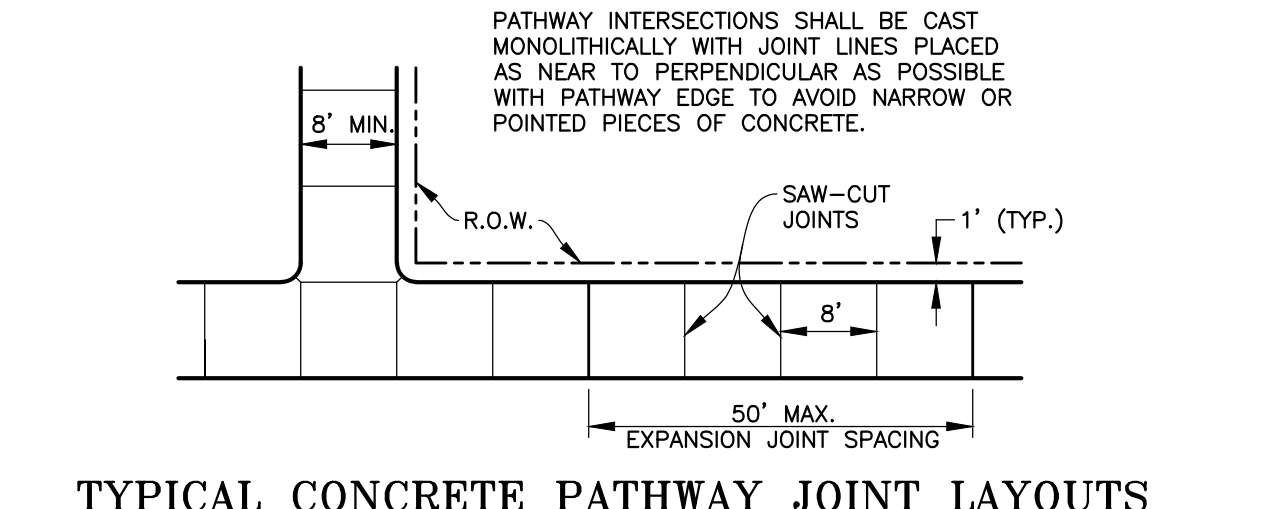
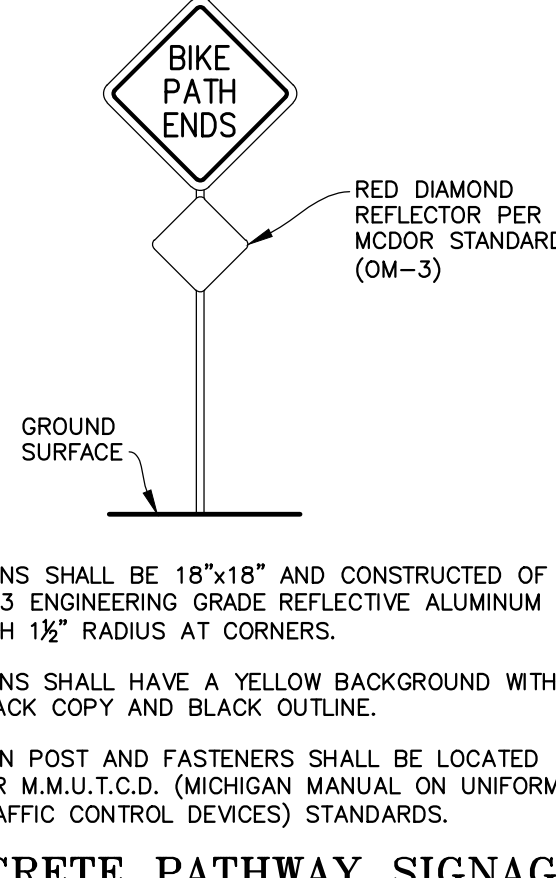
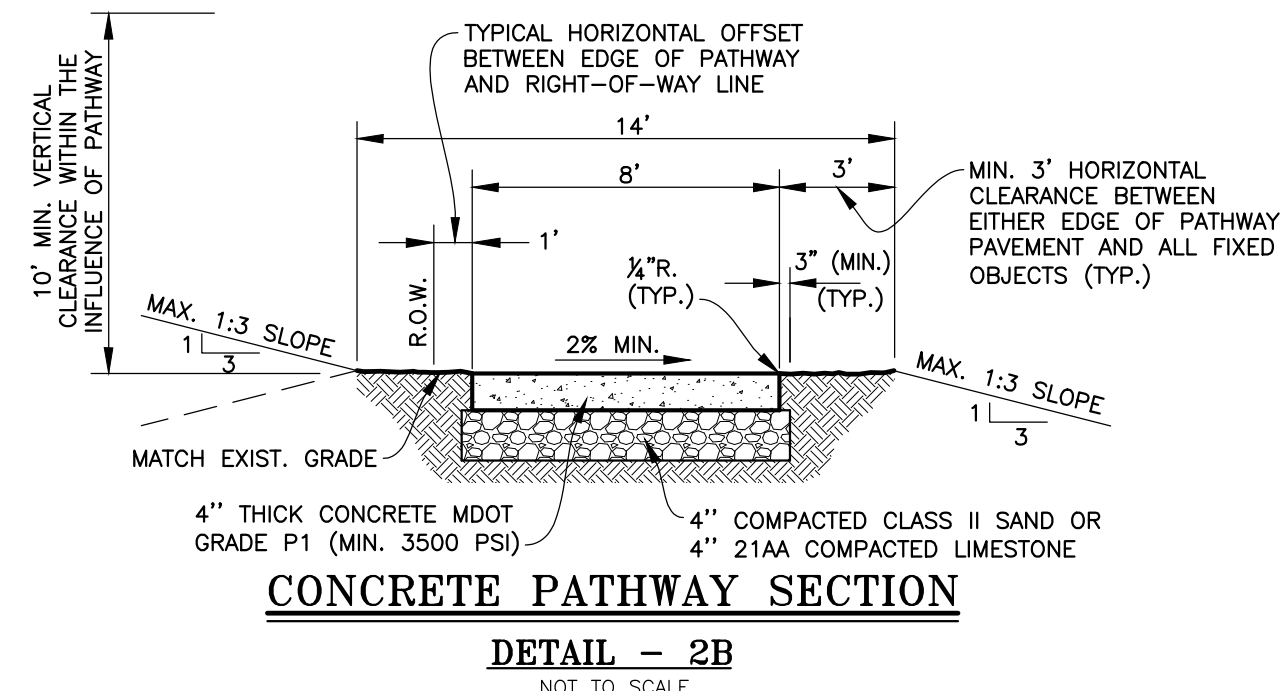
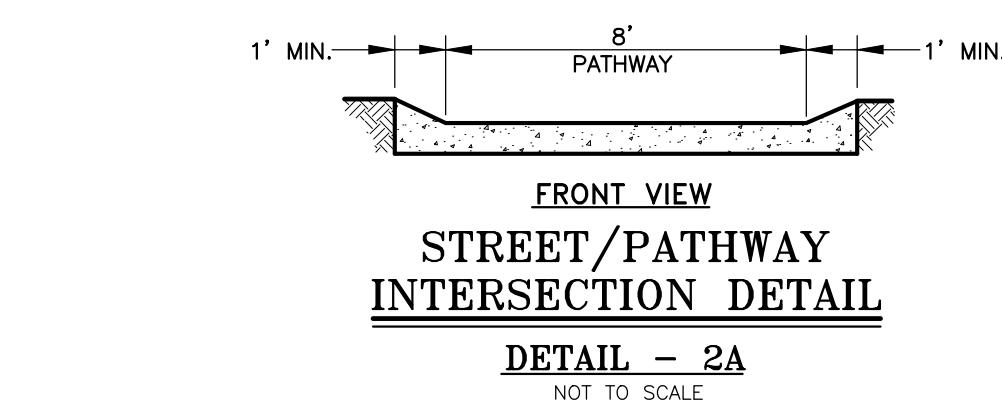
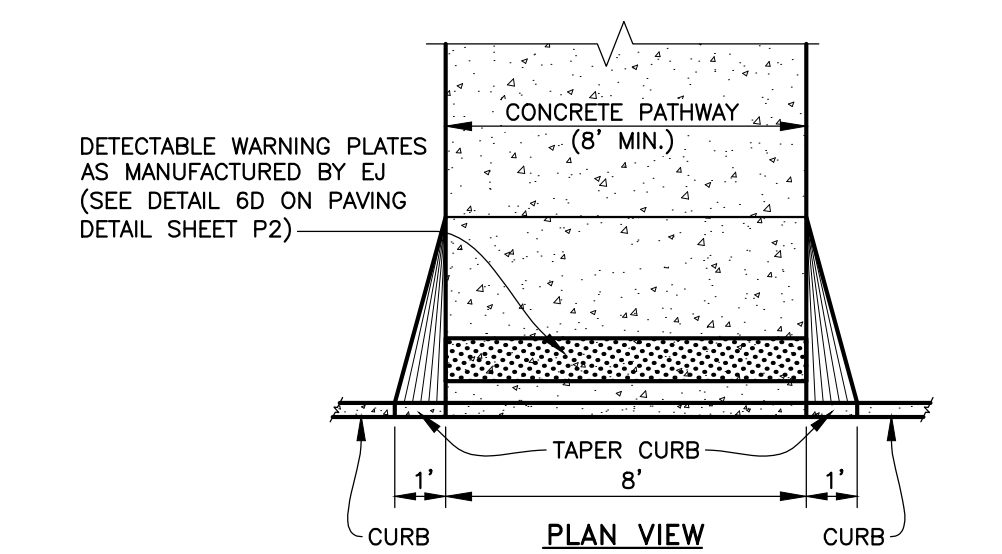
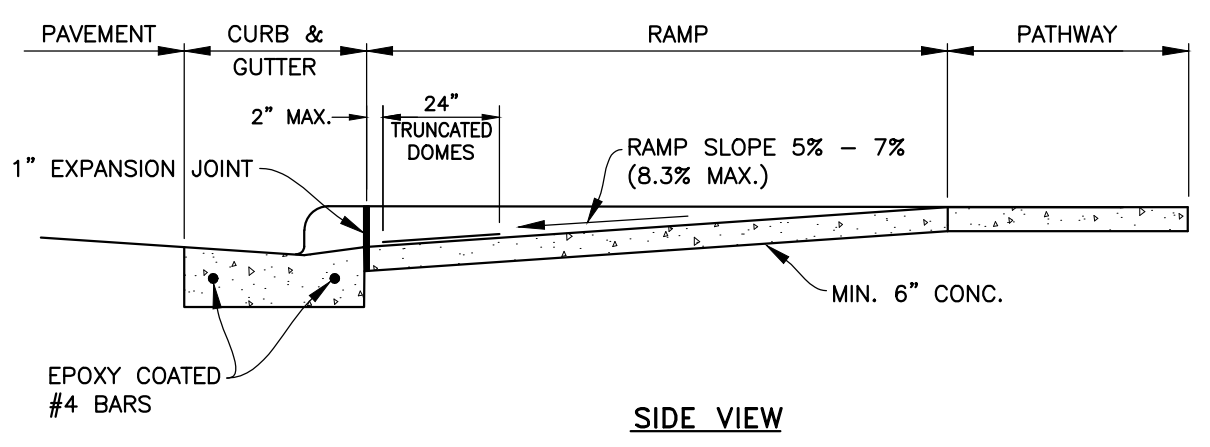
## BITUMINOUS PAVEMENT

- BITUMINOUS MIXTURE FOR INDUSTRIAL PARKING LOTS SHALL CONSIST OF: BASE COURSE - MDOT BITUMINOUS MIXTURE NO. 2C; LEVELING COURSE - MDOT BITUMINOUS MIXTURE NO. 3C OR 4E1; WEARING COURSE - MDOT BITUMINOUS MIXTURE NO. 4C OR 5E1; ASPHALT PERFORMANCE GRADE PG 64-22 RECLAIMED ASPHALT PAVEMENT (RAP) SHALL NOT BE ALLOWED IN THE TOP COURSE.
- FOR PRIVATE RESIDENTIAL ROADWAYS MDOT BITUMINOUS MIXTURE 5E1/4E1, AND/OR 36A/13A MAY BE USED, WITH APPROVAL FROM THE TOWNSHIP ENGINEER.
- ALL BITUMINOUS MATERIAL SHALL BE COMPACTED TO A DENSITY OF 97% OF THE FIELD CONTROL DENSITY AS DETERMINED BY THE MARSHALL METHOD.
- A BOND COAT OF SS-1H EMULSION IS REQUIRED BETWEEN THE BASE COURSE AND LEVELING COURSE AND BETWEEN THE LEVELING COURSE AND WEARING COURSE WHEN EITHER 48 HOURS HAVE ELAPSED BETWEEN PLACEMENT OF THE BITUMINOUS COURSES OR THE SURFACE OF THE PAVEMENT HAS BEEN CONTAMINATED WITH DIRT, DUST, OR FOREIGN MATERIAL. THE BOND COAT SHALL BE APPLIED IN A UNIFORM MANNER OVER THE SURFACE AT A RATE OF 0.10 GALLON/S.Y. (BETWEEN LEVELING COURSE AND BASE COURSE & 0.05 GALLON/SY BETWEEN WEARING COURSE AND LEVELING COURSE) THE COATS MAY DIFFER. IN THE EVENT A BOND COAT IS NOT REQUIRED, THE LEVELING COURSE MAY REQUIRE LOCALIZED BROOM CLEANING.
- DO NOT PLACE HMA OR APPLY BOND COAT WHEN PRECIPITATION IS IMMINENT OR WHEN MOISTURE ON THE EXISTING SURFACE WILL PREVENT SATISFACTORY CURING. UNLESS OTHERWISE APPROVED BY THE ENGINEER IN WRITING, TEMPERATURE AND SEASONAL REQUIREMENTS FOR PLACING HMA WILL BE ACCORDING TO SECTION 5.01.03.I OF THE CURRENT MDOT SPECIFICATIONS. PAVING WILL NOT BE ALLOWED BELOW THESE MINIMUM TEMPERATURES, NOR WHEN FROST IS ON OR IN THE GRADE OR ON THE EXISTING SURFACE.

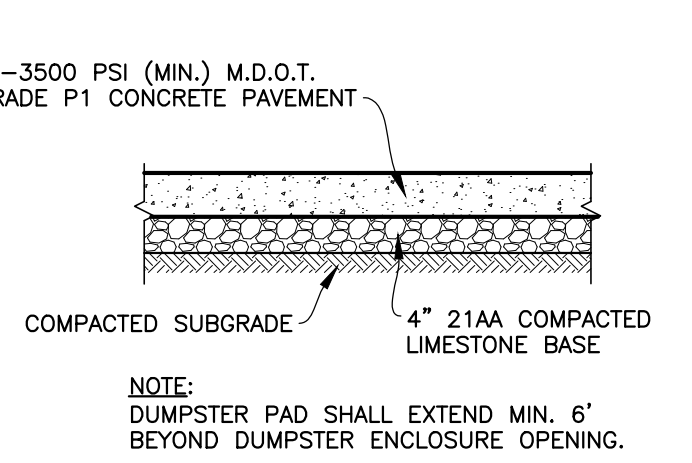
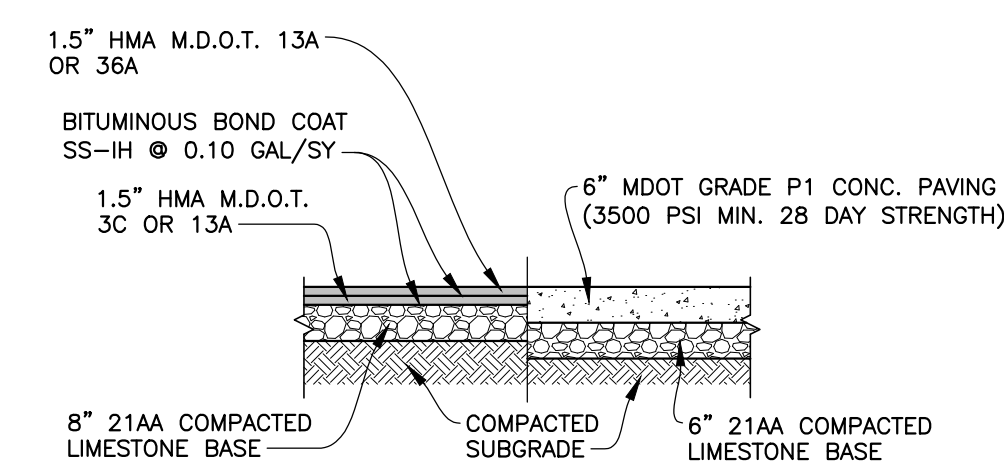


## CONCRETE PATHWAY NOTES

- FOR CONCRETE PATHWAY PROVIDE TRANSVERSE PLANE OF WEAKNESS SAW CUT JOINTS AT APPROXIMATELY 8' INTERVALS. SAW 3/4" WIDE x 1" DEEP JOINTS AND DO NOT SEAL THE JOINTS. TOOLED JOINTS ARE NOT ACCEPTABLE.
- PROVIDE FULL DEPTH TRANSVERSE EXPANSION JOINTS, BY INSTALLING 3/4" THICK PREMOULDED JOINT FILLER SET 1/4" BELOW THE SURFACE OF THE CONCRETE IN THE JOINTS AT 50' INTERVALS (MAX.).
- PLACE 3/8" FIBER EXPANSION JOINT FILLERS AT EACH SIDE OF DRIVE.
- PROVIDE 1" FIBER EXPANSION JOINT FILLERS AT CURB AND BUILDING OR R.O.W. LINE.
- AT DRIVEWAYS WITH CURB & GUTTER, PROVIDE CURB DROP PER MDOT STANDARDS.
- AT UNPAVED DRIVE OR PAVED DRIVE WITH POOR CONDITION, INCREASE THE SLAB THICKNESS TO 6" OR EXISTING SLAB THICKNESS WHICHEVER IS GREATER.
- PROVIDE 10' BETWEEN EDGE OF PATHWAY TO TOP OF BANK FOR DETENTION BASINS, OPEN DRAINS, ETC.
- ADJACENT FINISHED GRADE SHALL BE SET 2" BELOW TO ACCOMMODATE SOD.
- THE MAXIMUM GRADE ALONG PATHWAY SHALL NOT EXCEED 1 ON 12.
- PROVIDE 2% MAXIMUM CROSS SLOPE FOR DRAINAGE OFF AND AWAY FROM PATHWAY AND GRADED SHOULDERS.
- PROVIDE 95' MINIMUM CENTER LINE RADII FOR PATHWAY HORIZONTAL ALIGNMENT.
- PROVIDE A MINIMUM OF 3' HORIZONTAL CLEARANCE AND 10' VERTICAL CLEARANCE FROM ALL FIXED OBJECTS AND THE EDGE OF PATHWAY SURFACE. RELOCATE EXISTING OBJECTS (I.E. MAIL BOXES, SIGNS, ETC.), IF REQUIRED.
- PROVIDE HANDICAP ACCESSIBLE RAMPS AT EXISTING PAVED DRIVEWAYS IN GOOD CONDITION AND AT STREET INTERSECTIONS.
- PATHWAY RAMPS SHALL BE CONSTRUCTED IN ACCORDANCE WITH MDOT STANDARDS AND SHALL BE A MINIMUM OF 8' WIDE.
- A CLEAN SAW CUT JOINT SHALL BE PROVIDED WHEREVER NEW PAVEMENT MATCHES EXISTING PAVEMENT.
- UTILITY STRUCTURES SHALL BE ADJUSTED IN ACCORDANCE WITH MACOMB TOWNSHIP STANDARDS AND SHALL MATCH THE PROPOSED GRADE OF THE PATHWAY.



## CONCRETE PATHWAY DETAILS - 2



**MACOMB TOWNSHIP**  
54111 BROUGHTON ROAD  
MACOMB, MI 48042  
586-992-0710



NOTE: UTILITY INFORMATION ON THIS DRAWING MAY BE FROM INFORMATION DISCLOSED TO THIS FIRM BY THE VARIOUS UTILITY COMPANIES, CITY/COUNTY AGENCIES AND OTHER VARIOUS SOURCES. UNDERGROUND UTILITIES WHICH ARE ON PRIVATE PROPERTY ARE USUALLY NOT DELINEATED UPON A UTILITY COMPANY'S PUBLISHED PLANS. THEIR LOCATION, IF SHOWN UPON THIS SURVEY, ARE APPROXIMATED FROM FOUND PAINT MARKS/STAKES, ETC. AS LOCATED BY THIS FIRM FROM SOURCES WHICH ARE UNKNOWN. NO GUARANTEE IS GIVEN AS TO THE COMPLETENESS OR ACCURACY THEREOF.

PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING UTILITIES (IN CONFLICT WITH PROPOSED IMPROVEMENTS) SHALL BE VERIFIED IN THE FIELD. CALL MISS DIG 3 WORKING DAYS PRIOR TO CONSTRUCTION.

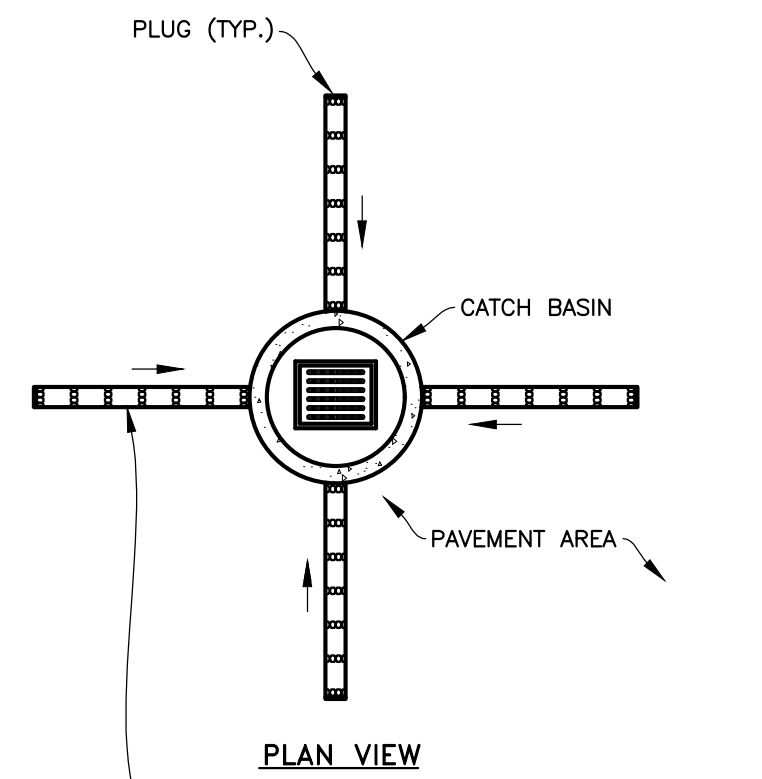
## TOWNSHIP OF MACOMB

### PAVING STANDARD DETAILS (1 OF 2)

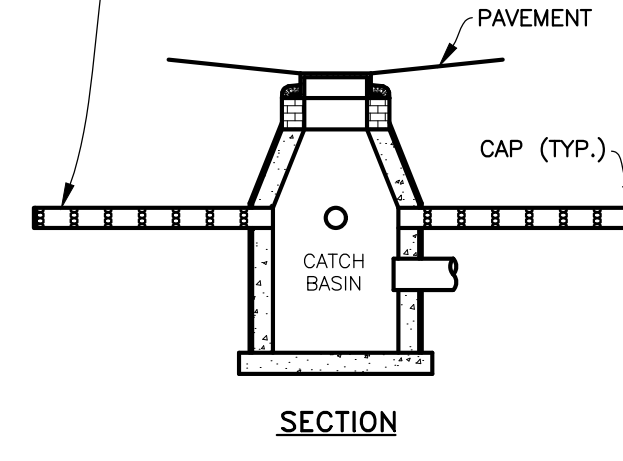
| NO. | DATE     | REVISION     |
|-----|----------|--------------|
| 1   | 10-15-14 | SHEET UPDATE |
| 2   | 11-08-15 | SHEET UPDATE |
| 3   | 03-28-16 | SHEET UPDATE |
| 4   | 10-14-16 | SHEET UPDATE |
| 5   | 01-24-17 | SHEET UPDATE |
| 6   | 08-20-18 | SHEET UPDATE |

| TOWN 3 NORTH RANGE 13 EAST                               |             |              |
|--|-------------|--------------|
| MACOMB TOWNSHIP  |             |              |
| MACOMB COUNTY  |             |              |
| NO.  | DATE        | REVISION     |
| 1  | 10-15-14    | SHEET UPDATE |
| 2  | 11-08-15    | SHEET UPDATE |
| 3  | 03-28-16    | SHEET UPDATE |
| 4  | 10-14-16    | SHEET UPDATE |
| 5  | 01-24-17    | SHEET UPDATE |
| 6  | 08-20-18    | SHEET UPDATE |
| VERIFY SCALES  |             |              |
| BAR IS ONE INCH ON ORIGINAL DRAWING                      |             |              |
| IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY |             |              |
| JOB NO.  | DRAWING NO. | MA-DET-PAV   |
| SCALE:   | SHEET NO.   | P1           |
| N.T.S.   |             |              |

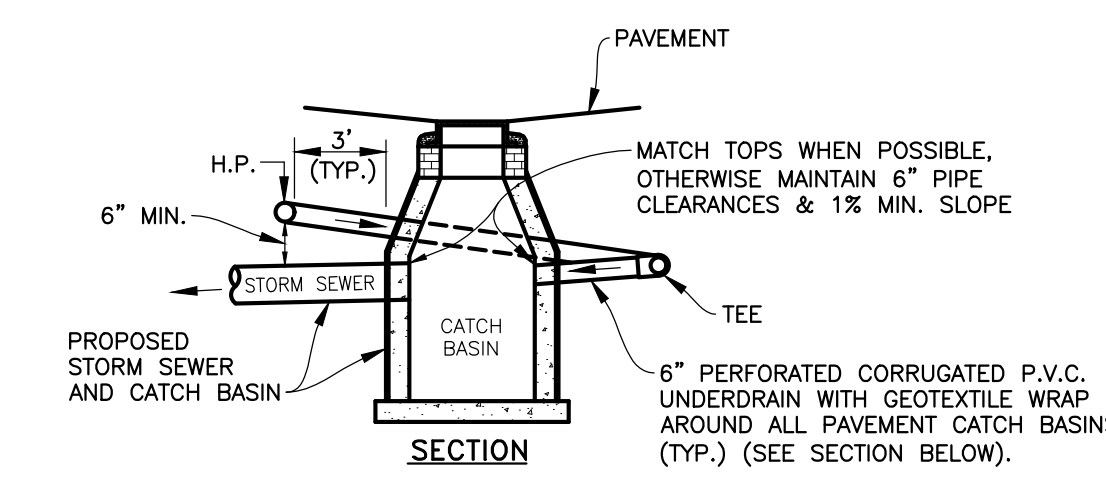
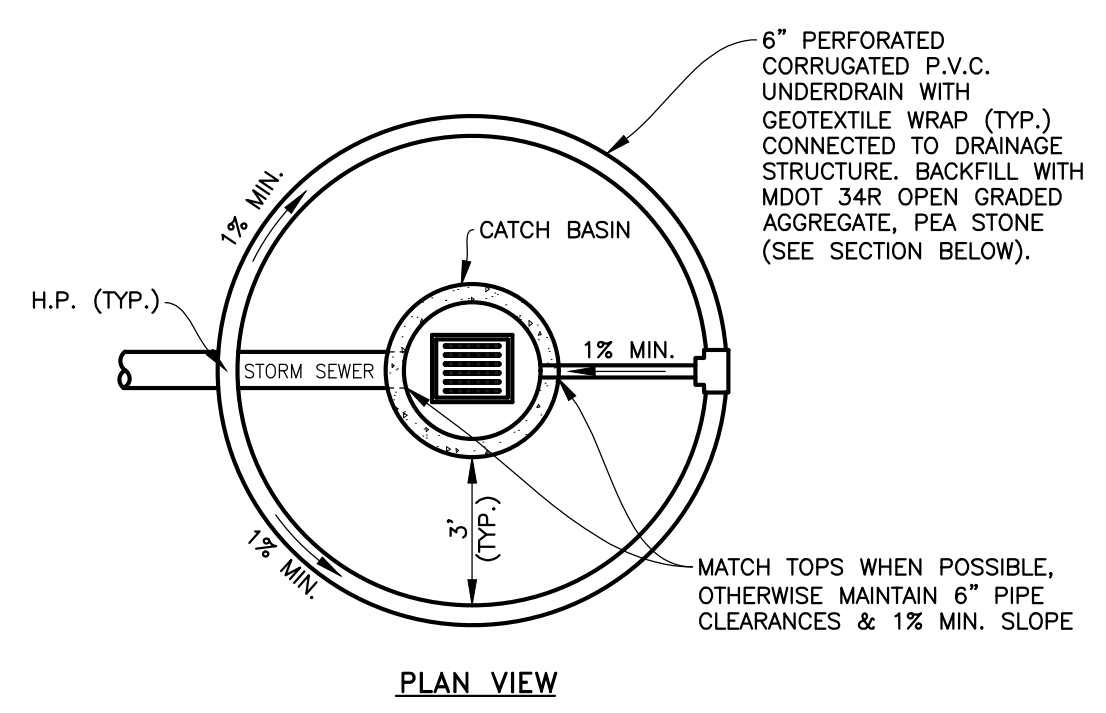
PAVING STANDARD DETAILS (1 OF 2) TYP. PAV. DET. 01.DWG Legend: Mshel 8/20/2018 3:48:54 PM



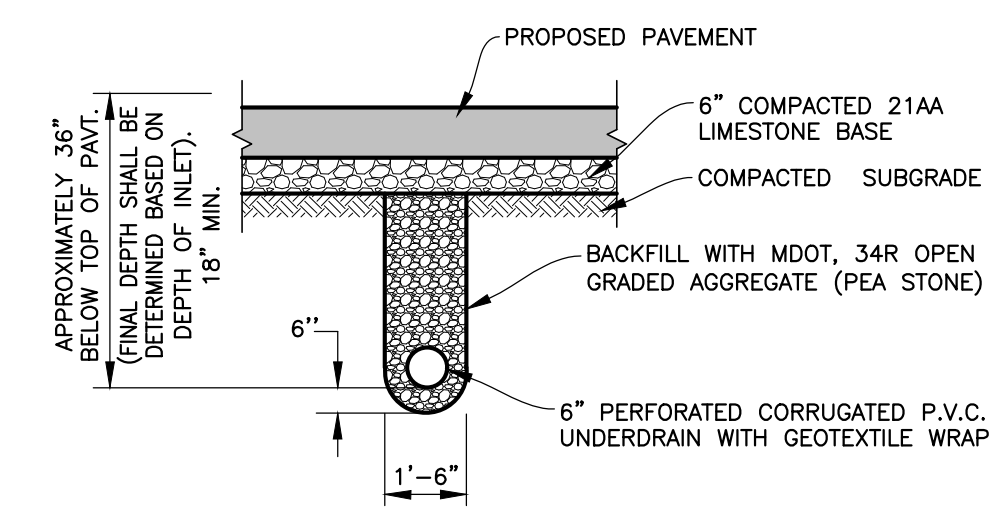
10 LF. OF 6" PERFORATED CORRUGATED P.V.C. UNDERDRAIN WITH GEOTEXTILE WRAP (TYP.) CONNECTED TO DRAINAGE STRUCTURE. BACKFILL WITH MDOT 34R OPEN GRADED AGGREGATE, PEA STONE (SEE DETAIL BELOW).



**TYPICAL 6" FINGER TYPE UNDERDRAIN DETAIL**  
(WITHIN PARKING LOTS OUTSIDE CURB LINES)  
**DETAIL - 5A**  
NOT TO SCALE



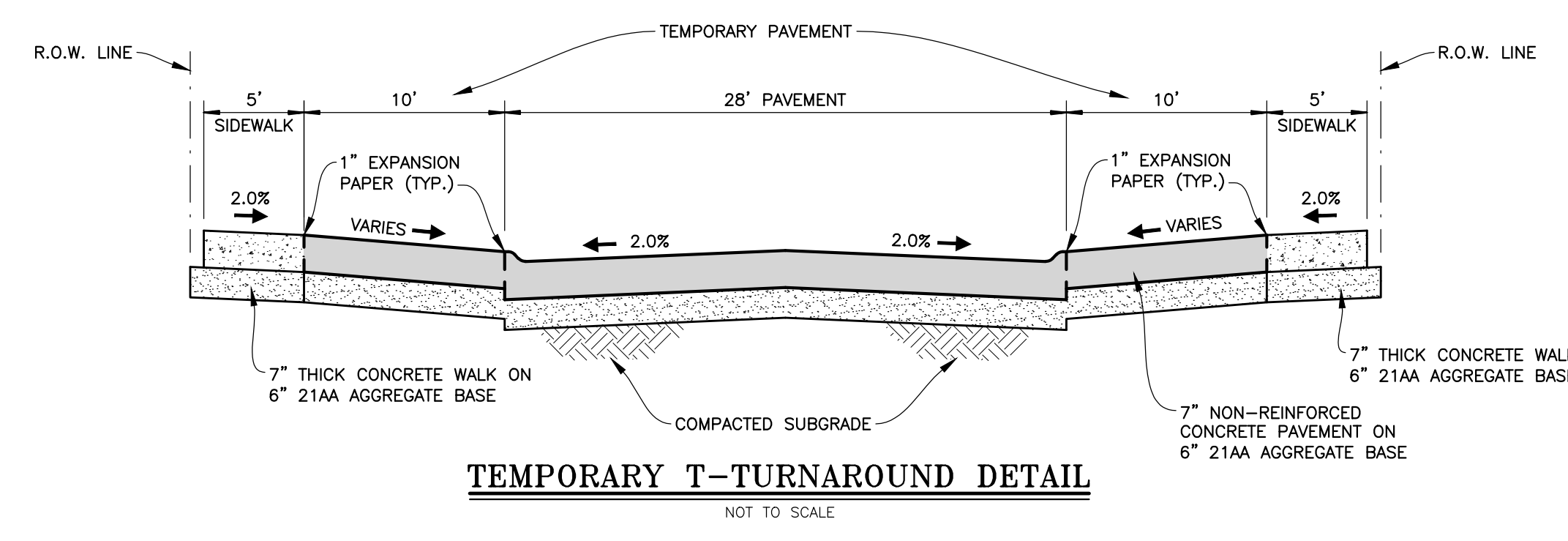
**TYPICAL 6" CIRCULAR UNDERDRAIN DETAIL**  
(WITHIN PARKING LOTS OUTSIDE CURB LINES)  
**DETAIL - 5B**  
NOT TO SCALE



**UNDERDRAIN DETAIL**  
**DETAIL - 5C**  
NOT TO SCALE

- UNDERDRAIN NOTES**
- UNDERDRAIN TO BE 6" PVC AASHTO M 252 SDR-35 WITH PERFORATIONS MEETING AASHTO M 278 OR M 252.
  - ALL UNDERDRAIN SHALL BE INSTALLED AT A MIN. SLOPE OF 1%.
  - PIPE SHALL BE INSTALLED WITH THE PERFORATIONS PLACED DOWN.
  - PROPOSED UNDERDRAIN PIPE LAYOUT, FLOW LINE ELEVATION AND DETAILS SHALL BE APPROVED PRIOR TO CONSTRUCTION.

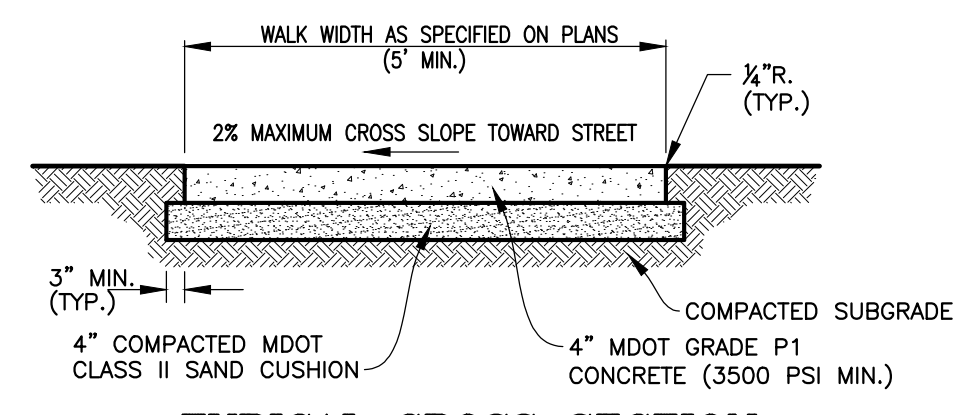
**TYPICAL UNDERDRAIN DETAILS - 5**



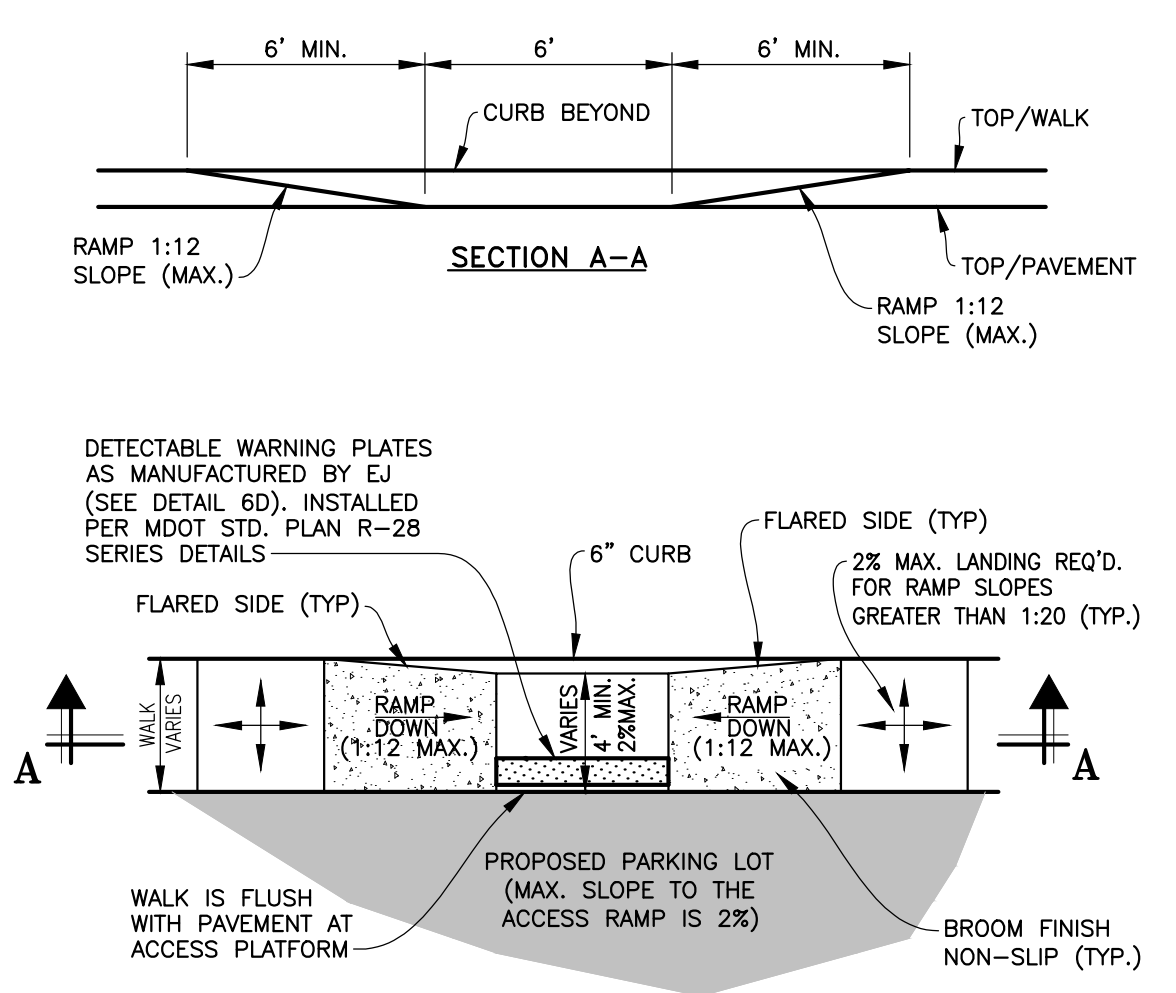
**TEMPORARY T-TURNAROUND DETAIL**  
NOT TO SCALE

**TEMPORARY T-TURNAROUND NOTES**

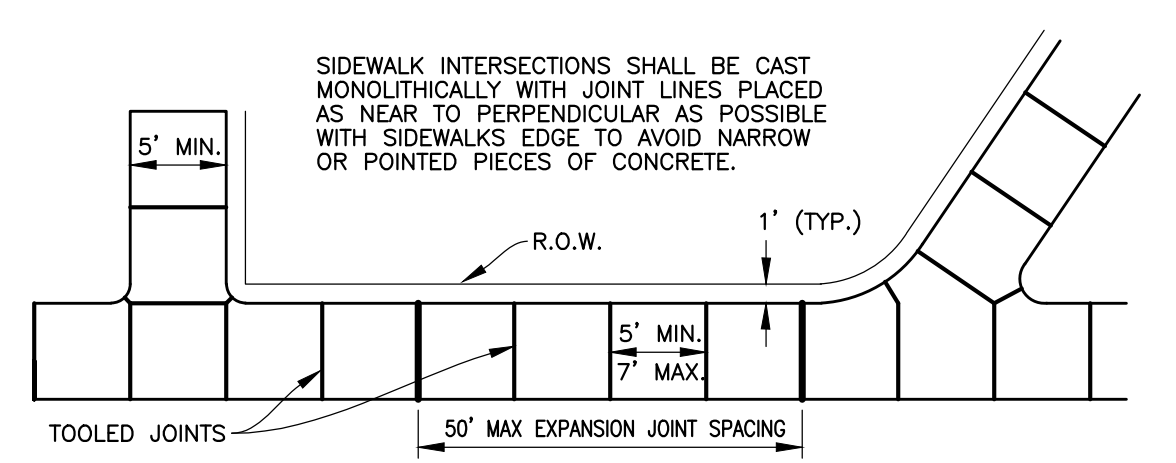
- PROVIDE TEMPORARY T-TURNAROUND PER FIGURE 2-02 OF THE MACOMB COUNTY SUBDIVISION DEVELOPMENT PROCEDURES, STANDARDS AND SPECIFICATIONS.
- CONSTRUCT TEMPORARY T-TURNAROUND CROSS SECTION PER THE DETAIL TO THE LEFT.
- PROVIDE THE STANDARD "ROAD ENDS" TREATMENTS PER FIGURE 4-13 OF THE MACOMB COUNTY SUBDIVISION DEVELOPMENT PROCEDURES, STANDARDS AND SPECIFICATIONS.



**TYPICAL CROSS SECTION 4" CONCRETE SIDEWALK**  
**DETAIL - 6A**  
NOT TO SCALE



**TYPICAL PARKING LOT SIDEWALK RAMP DETAIL**  
**DETAIL - 6B**  
NOT TO SCALE

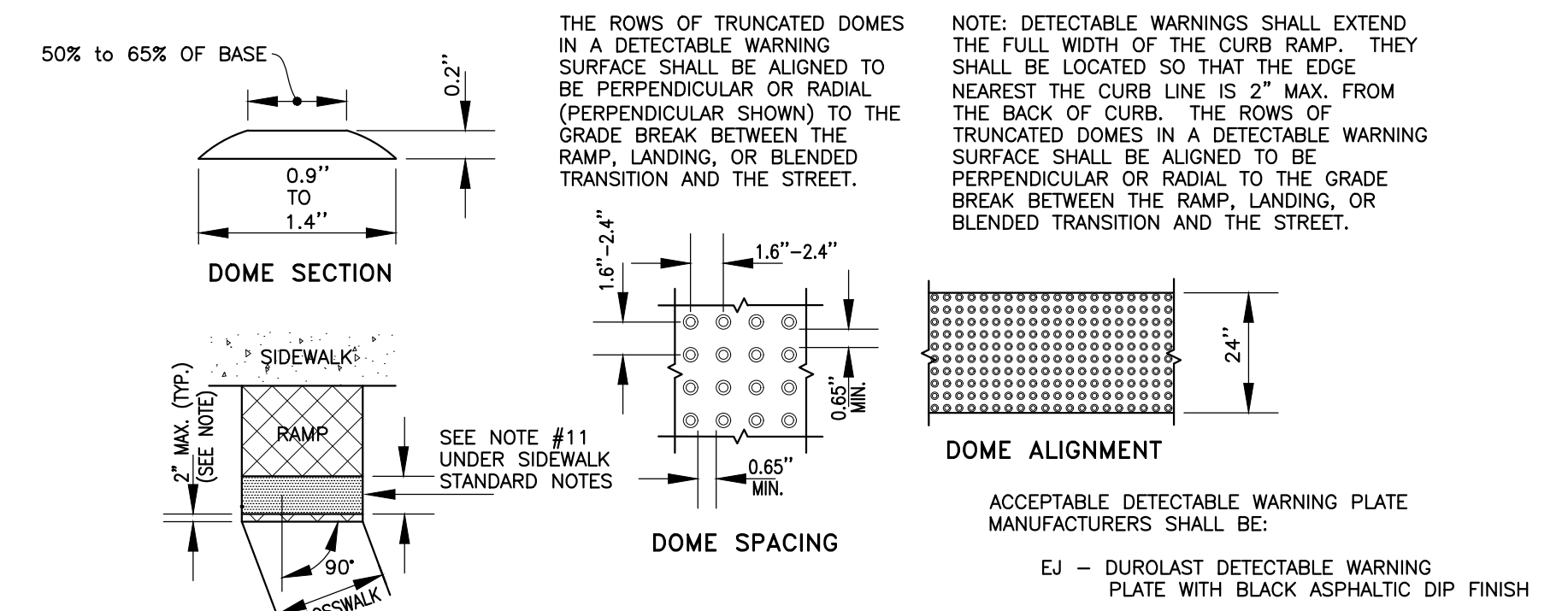


**TYPICAL SIDEWALK JOINT LAYOUTS**  
**DETAIL - 6C**  
NOT TO SCALE

**SIDEWALK JOINTS NOTES**

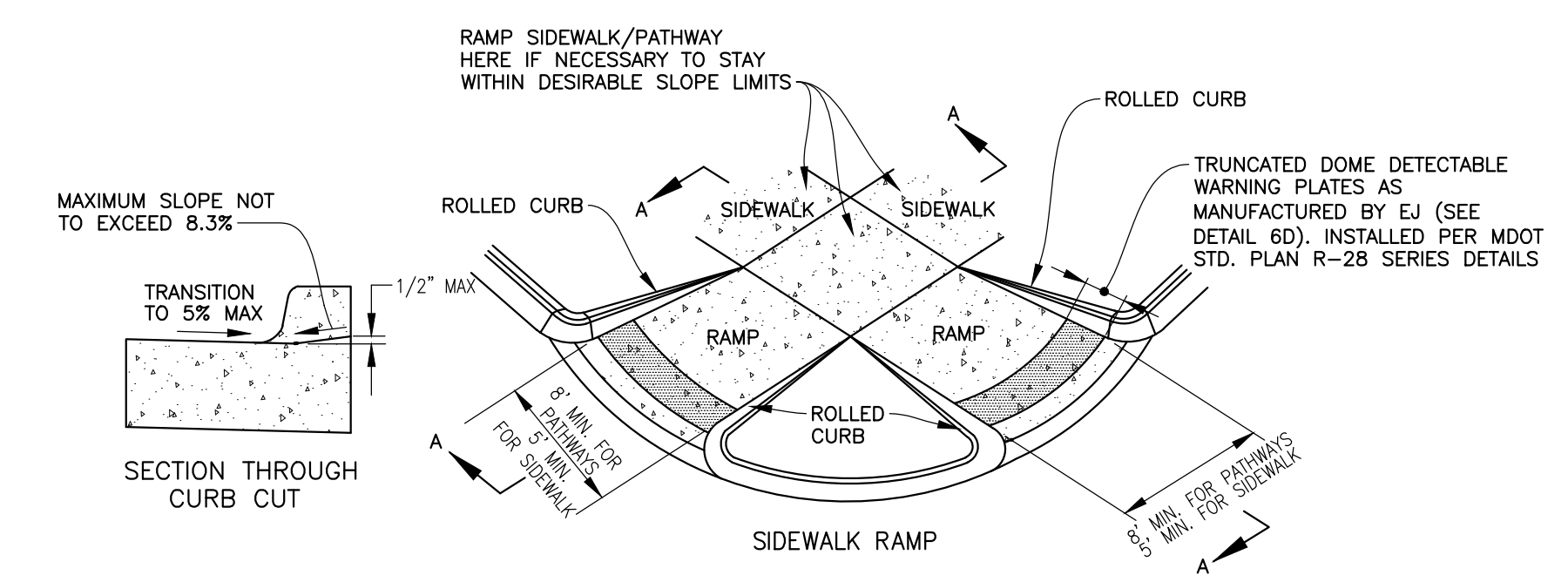
- CONSTRUCT TRANSVERSE AND LONGITUDINAL EXPANSION AND PLANE OF WEAKNESS JOINTS AT INTERVALS AND LOCATIONS SHOWN ON THE PLANS. ALSO TRANSVERSE JOINTS WITH LIKE JOINTS IN ANY ADJACENT SLAB.
- CONSTRUCT JOINTS WITH FACES PERPENDICULAR TO THE SIDEWALK SURFACE.
- PLACE CONTRACTION JOINTS AT 5' MINIMUM AND 7' MAXIMUM INTERVALS. JOINTS ARE TO BE FULL WIDTH OF THE WALK AND MINIMUM 1/4 SLAB THICKNESS DEEP AND 1/8 INCH TO 1/4 INCH WIDE.
- PLACE 1" FIBER EXPANSION JOINT FILLERS AT MAX. 50' INTERVALS. EXTEND EXPANSION JOINT FILLER THE FULL DEPTH OF THE JOINT WITH THE TOP SLIGHTLY BELOW THE FINISHED SURFACE OF THE SIDEWALK.
- PLACE 1" FIBER EXPANSION JOINT FILLERS AT EACH SIDE OF DRIVE.
- PROVIDE 1" FIBER EXPANSION JOINT FILLERS AT CURB AND BUILDING OR R.O.W. LINE.

**TYPICAL CONCRETE SIDEWALK DETAILS - 6**



**DETECTABLE WARNING DETAILS**

**M.D.O.T. STANDARD PLAN R-28 SERIES**  
**DETAIL - 6D**  
NOT TO SCALE



**TYPICAL SIDEWALK RAMP DETAILS AT ROAD INTERSECTION**  
**M.D.O.T. TYPE 4**  
**STANDARD PLAN R-28 SERIES**  
**DETAIL - 6E**  
NOT TO SCALE

**SIDEWALK STANDARD NOTES**

- SIDEWALK RAMP, CONFORMING TO PUBLIC ACT NO. 8, 1973, SHALL BE INSTALLED AS SHOWN ON THE PLAN AT ALL STREET INTERSECTIONS AND AT ALL BARRIER FREE PARKING AREAS AS INDICATED ON THE PLANS.
- SIDEWALK AND PATHWAY RAMP ARE TO BE LOCATED AS SPECIFIED ON THE PLANS OR AS DIRECTED BY THE ENGINEER. DETAILS RC, RD, & RE SHOW SIDEWALK RAMP DETAILS AT PARKING LOT AND ROADWAY INTERSECTION. HANDICAP RAMP SHALL MEET A.D.A. BARRIER FREE REQUIREMENTS.
- RAMP SHALL BE PROVIDED AT CORNERS OF AN INTERSECTION WHERE THERE IS EXISTING OR PROPOSED SIDEWALK AND CURB.
- SURFACE TEXTURE OF THE RAMP SHALL BE THAT OBTAINED BY A COARSE BROOMING, TRANSVERSE TO THE SLOPE OF RAMP.
- SIDEWALK SHALL BE RAMPED WHERE THE DRIVEWAY CURB IS EXTENDED ACROSS THE WALK.
- CARE SHALL BE TAKEN TO ASSURE A UNIFORM GRADE ON THE RAMP, FREE OF SAGS AND SHORT GRADE CHANGES. WHERE CONDITIONS PERMIT, IT IS DESIRABLE THAT THE SLOPE OF THE RAMP BE IN ONLY ONE DIRECTION, PARALLEL TO THE DIRECTION OF TRAVEL.
- IF POSSIBLE, DRAINAGE STRUCTURES SHOULD NOT BE PLACED IN LINE WITH RAMP, EXCEPT WHERE EXISTING DRAINAGE STRUCTURES ARE BEING UTILIZED IN THE NEW CONSTRUCTION. LOCATION OF THE RAMP SHOULD TAKE PRECEDENCE OVER LOCATION OF DRAINAGE STRUCTURE.
- THE NORMAL GUTTER LINE PROFILE SHALL BE MAINTAINED THROUGH THE AREA OF THE RAMP.
- THE TOP OF THE JOINT FILLER FOR ALL RAMP TYPES SHALL BE FLUSH WITH THE ADJACENT CONCRETE.
- CROSSWALK AND STOP LINE MARKINGS, IF USED, SHALL BE SO LOCATED AS TO STOP TRAFFIC SHORT OF RAMP CROSSINGS. SPECIFIC DETAILS FOR MARKING APPLICATIONS ARE GIVEN IN THE "MICHIGAN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".
- DETECTABLE WARNING SHALL EXTEND THE FULL WIDTH OF THE CURB RAMP. THEY SHALL BE LOCATED AND INSTALLED AS INDICATED ON MDOT STANDARD PLAN R-28 SERIES DETAILS.



**MACOMB TOWNSHIP**  
54111 BROUGHTON ROAD  
MACOMB, MI 48042

586-992-0710



NOTE: UTILITY INFORMATION ON THIS DRAWING MAY BE FROM INFORMATION DISCLOSED TO THIS FIRM BY THE VARIOUS UTILITY COMPANIES, CITY/COUNTY AGENCIES AND OTHER VARIOUS SOURCES. UNDERGROUND UTILITIES WHICH ARE ON PRIVATE PROPERTY ARE USUALLY NOT DELINEATED UPON A UTILITY COMPANY'S PUBLISHED PLANS. THEIR LOCATION, IF SHOWN UPON THIS SURVEY, ARE APPROXIMATED FROM FOUND PAINT MARKS/STAKES, ETC. AS LOCATED BY THIS FIRM FROM SOURCES WHICH ARE UNKNOWN. NO GUARANTEE IS GIVEN AS TO THE COMPLETENESS OR ACCURACY THEREOF.

PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING UTILITIES (IN CONFLICT WITH PROPOSED IMPROVEMENTS) SHALL BE VERIFIED IN THE FIELD. CALL MISS DIG 3 WORKING DAYS PRIOR TO CONSTRUCTION.

**TOWNSHIP OF MACOMB**

**PAVING STANDARD DETAILS (2 OF 2)**

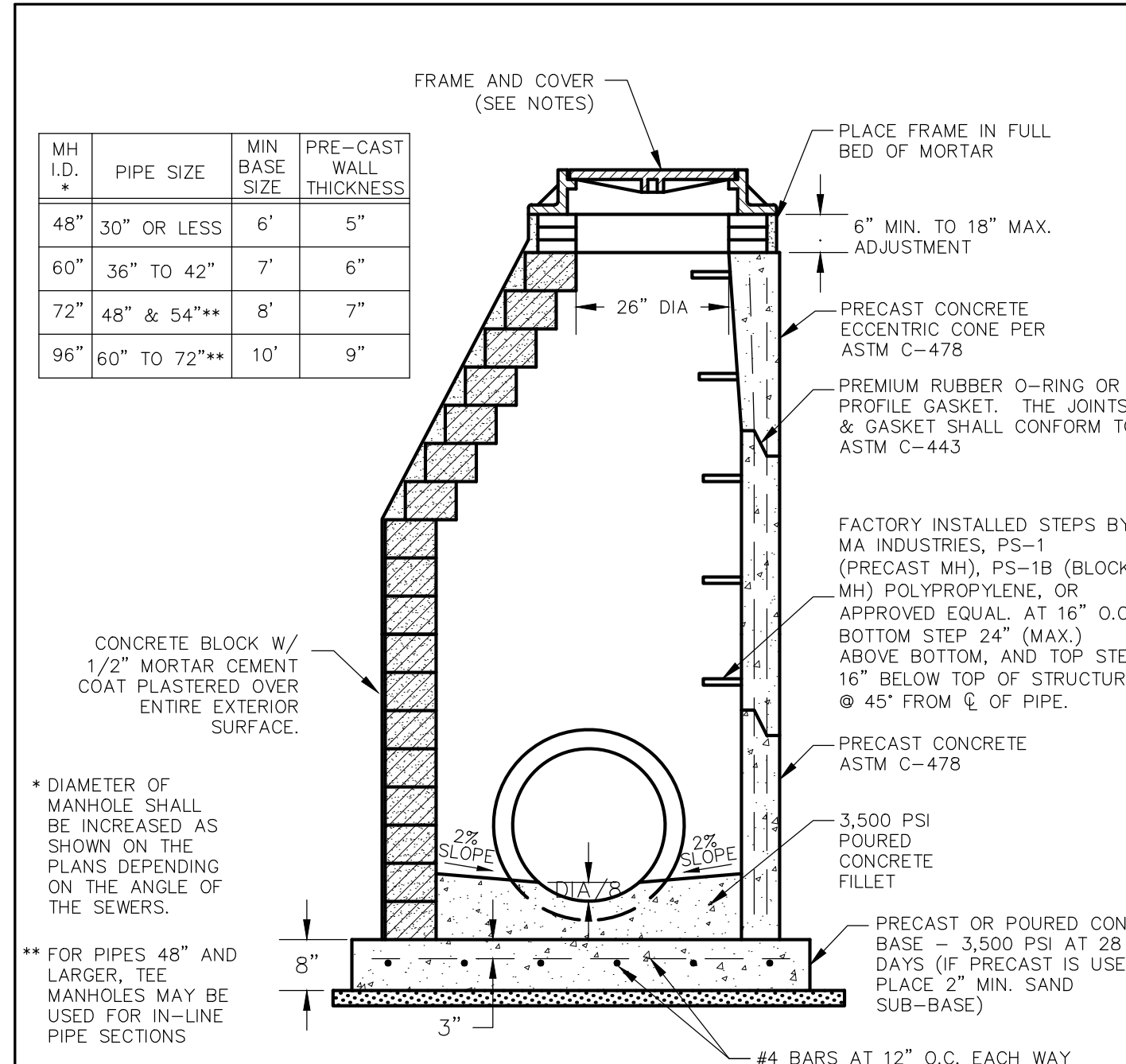
TOWN 3 NORTH RANGE 13 EAST  
MACOMB TOWNSHIP  
MACOMB COUNTY

| NO. | DATE     | REVISION                |
|-----|----------|-------------------------|
| 1   | 10-15-14 | SHEET UPDATE            |
| 2   | 11-08-15 | SHEET UPDATE            |
| 3   | 01-04-16 | SIDEWALK RAMP THICKNESS |
| 4   | 01-24-17 | SHEET UPDATE            |
| 5   | 08-20-18 | SHEET UPDATE            |
| 6   | 09-26-19 | TEMP. T-TURNAROUND      |

| VERIFY SCALES  |              |
|--|--------------|
| BAR IS ONE INCH ON ORIGINAL DRAWING                      |              |
| IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY |              |
| JOB NO.  | DRAWING NO.  |
| SCALE:   | MA-DET-PAV   |
| N.T.S.   | SHEET NO. P2 |

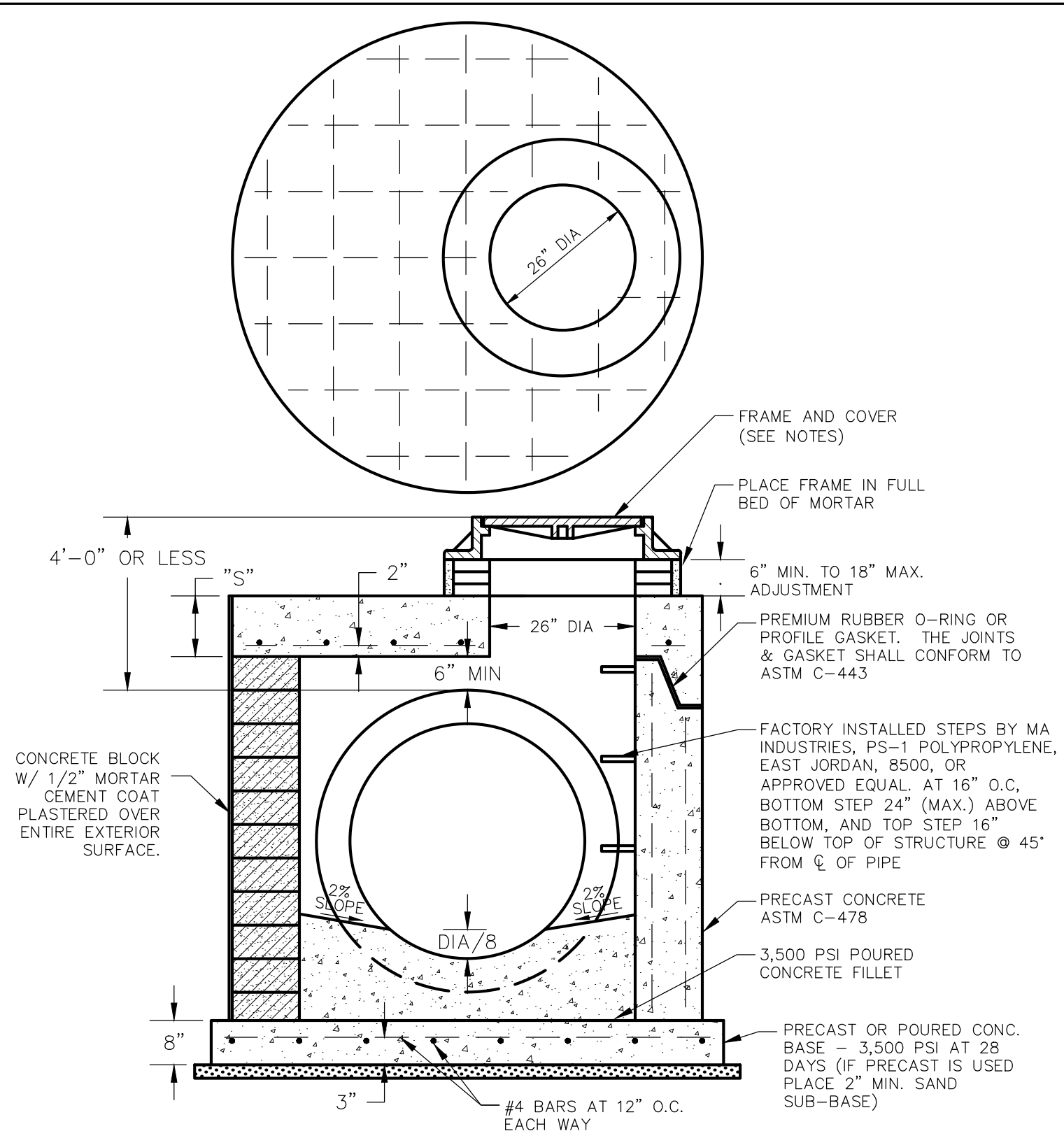
P:\COMMUNITIES\MACOMB\PLANS\STREET\DETAILS\CURRENT\CAD\MACOMB TWP PAV DET\_02.DWG Layout: Macomb 9/26/2019 9:41:50 PM





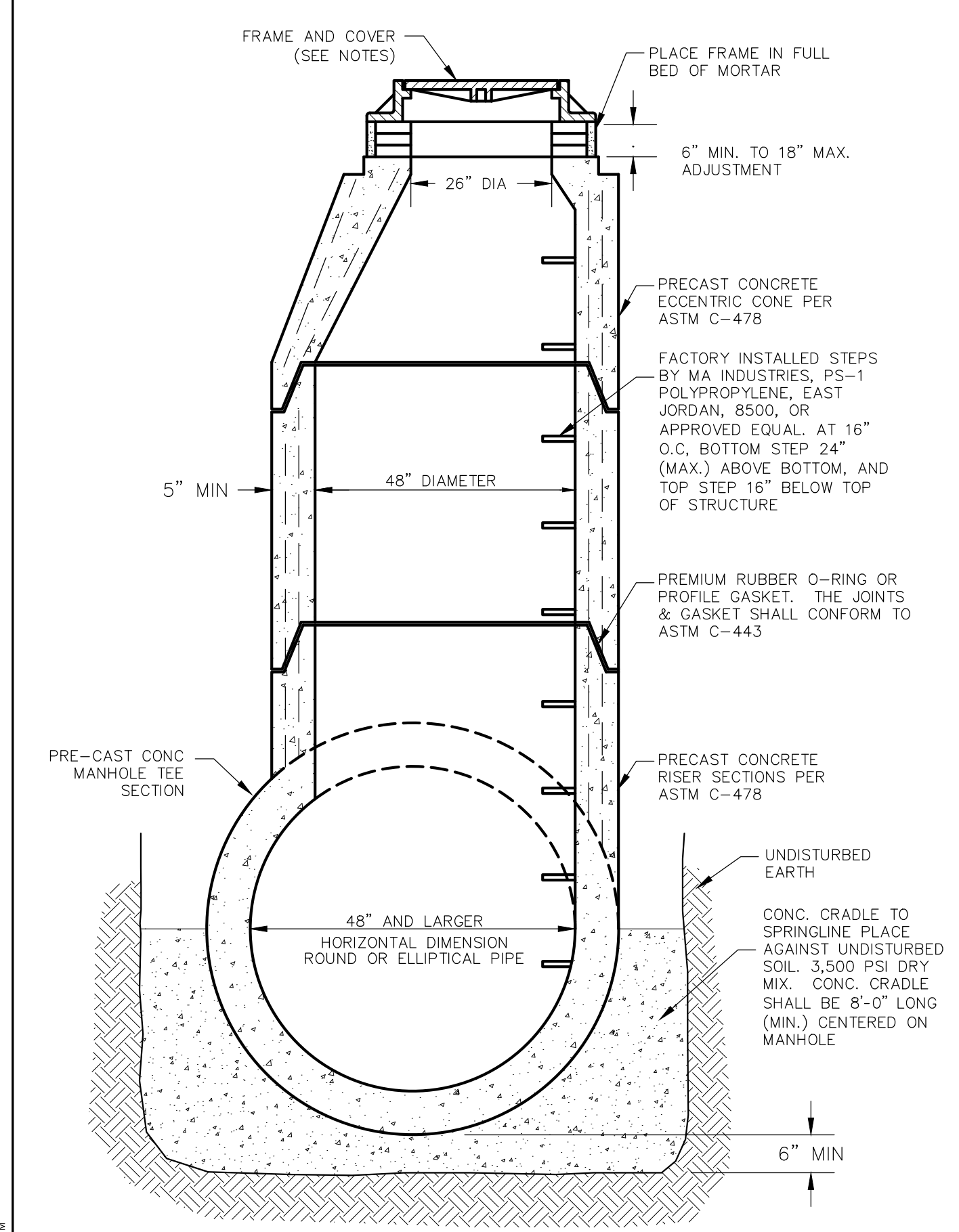
**STANDARD STORM SEWER MANHOLE**

SCALE: NONE



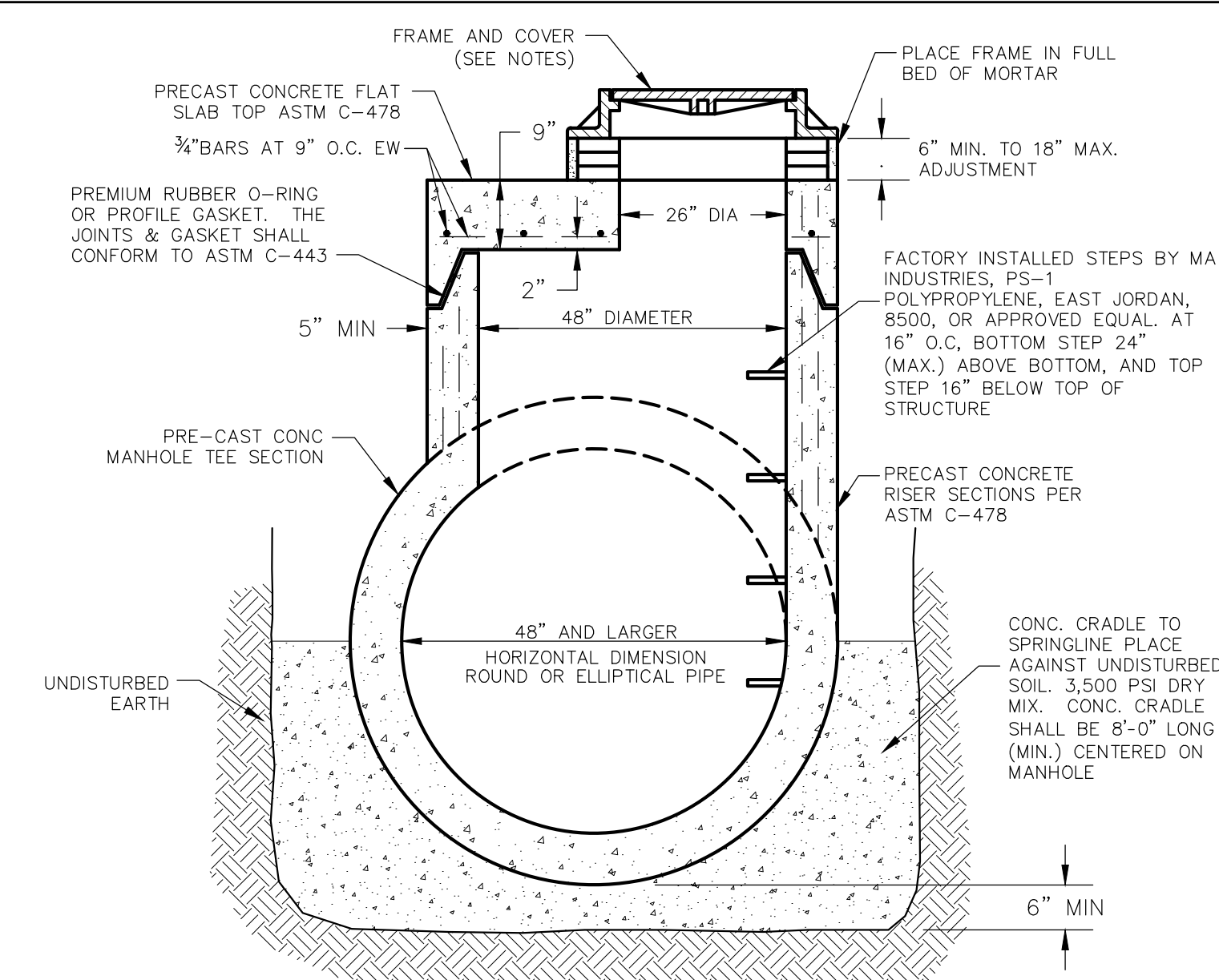
**STORM SEWER MANHOLE W/ FLAT TOP**

SCALE: NONE



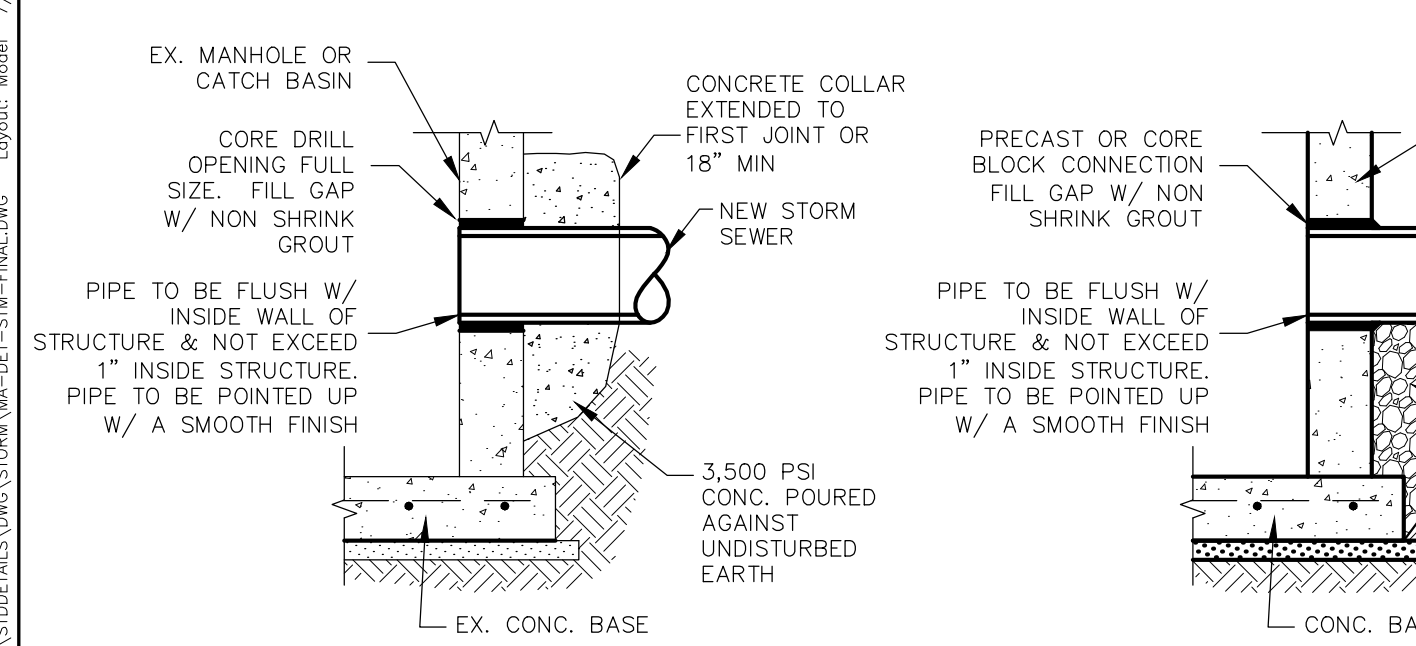
**TEE STORM SEWER MANHOLE**

SCALE: NONE



**TEE STORM SEWER MANHOLE W/ FLAT TOP**

SCALE: NONE

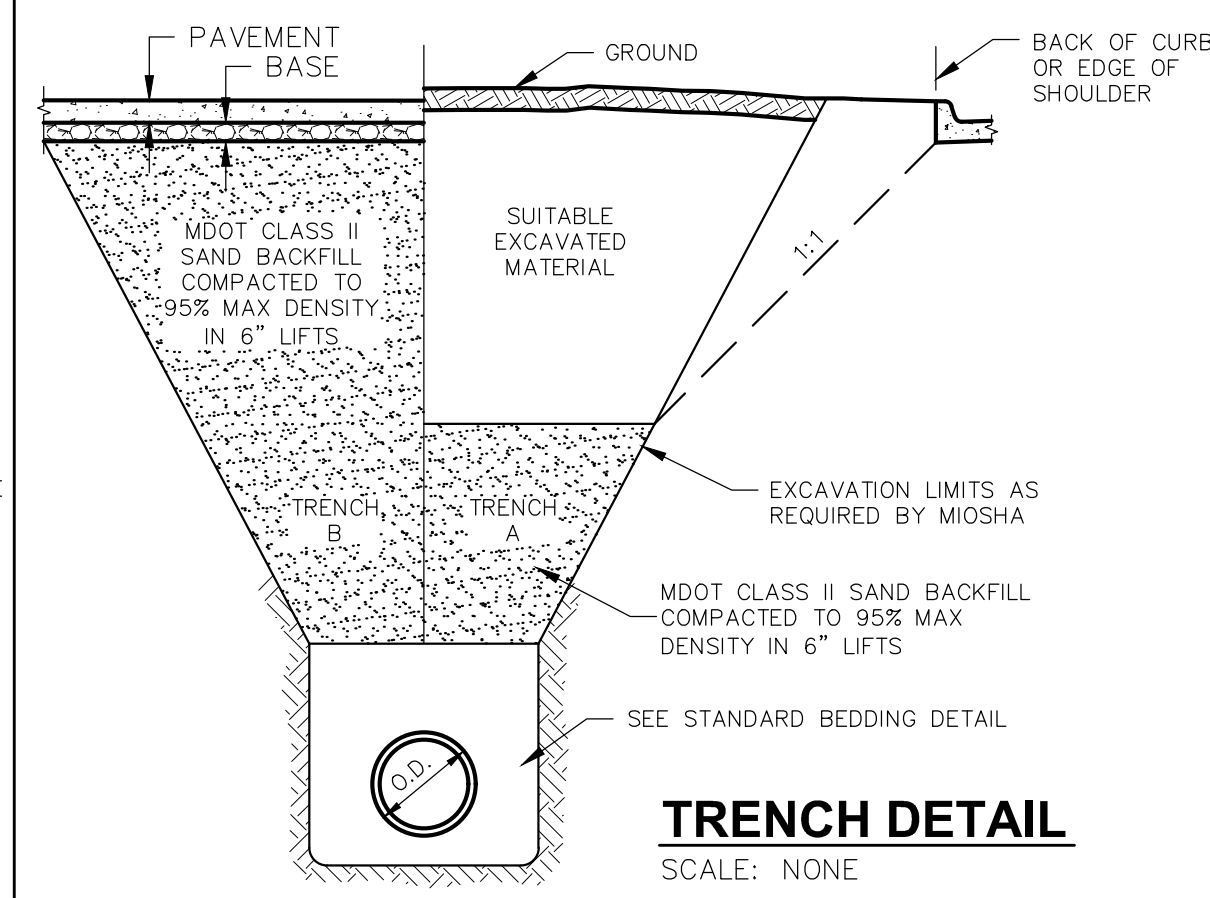


**EX. STORM STRUCTURE**

**NEW STORM STRUCTURE**

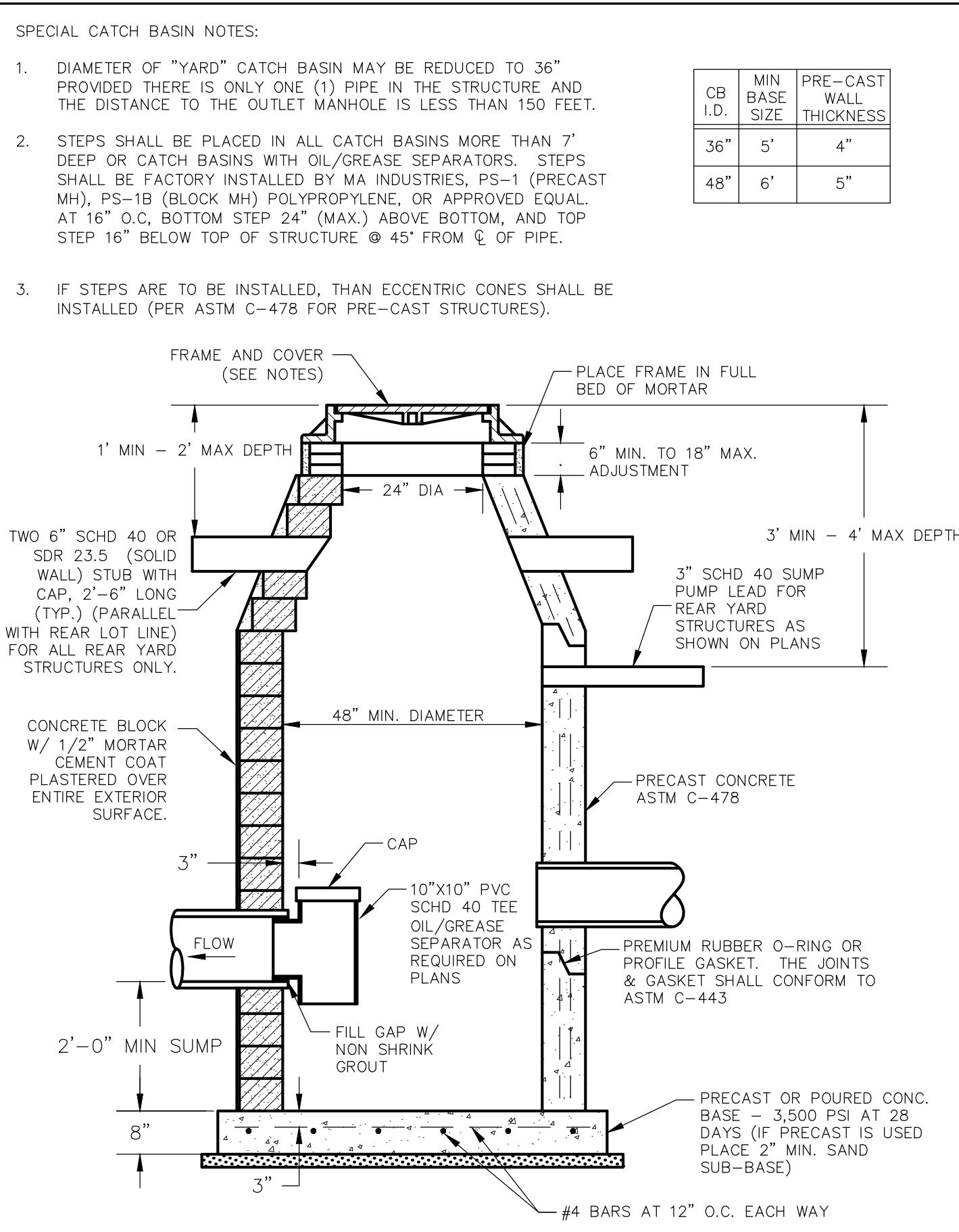
**PIPE SUPPORT DETAIL**

SCALE: NONE



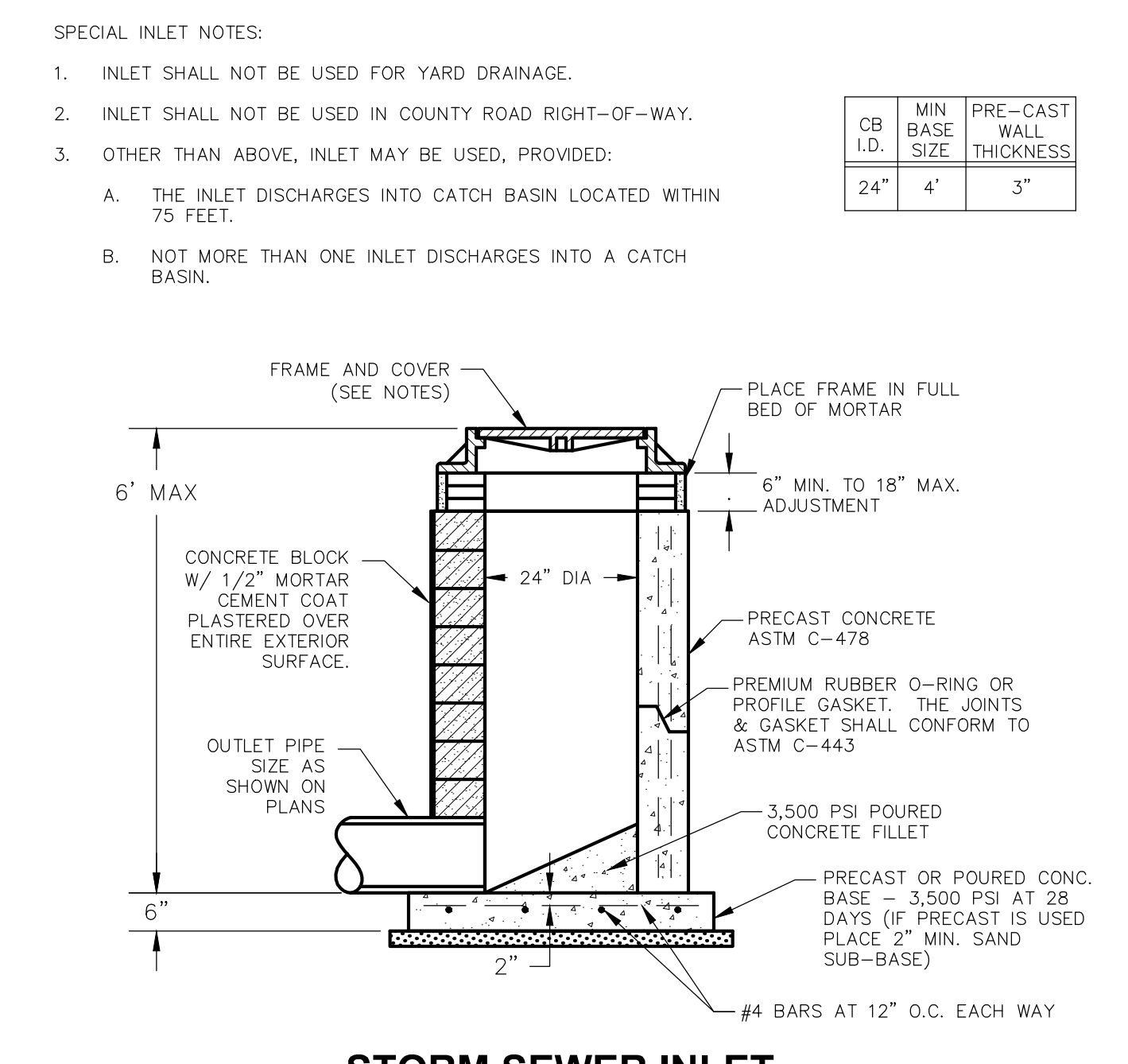
**TRENCH DETAIL**

SCALE: NONE



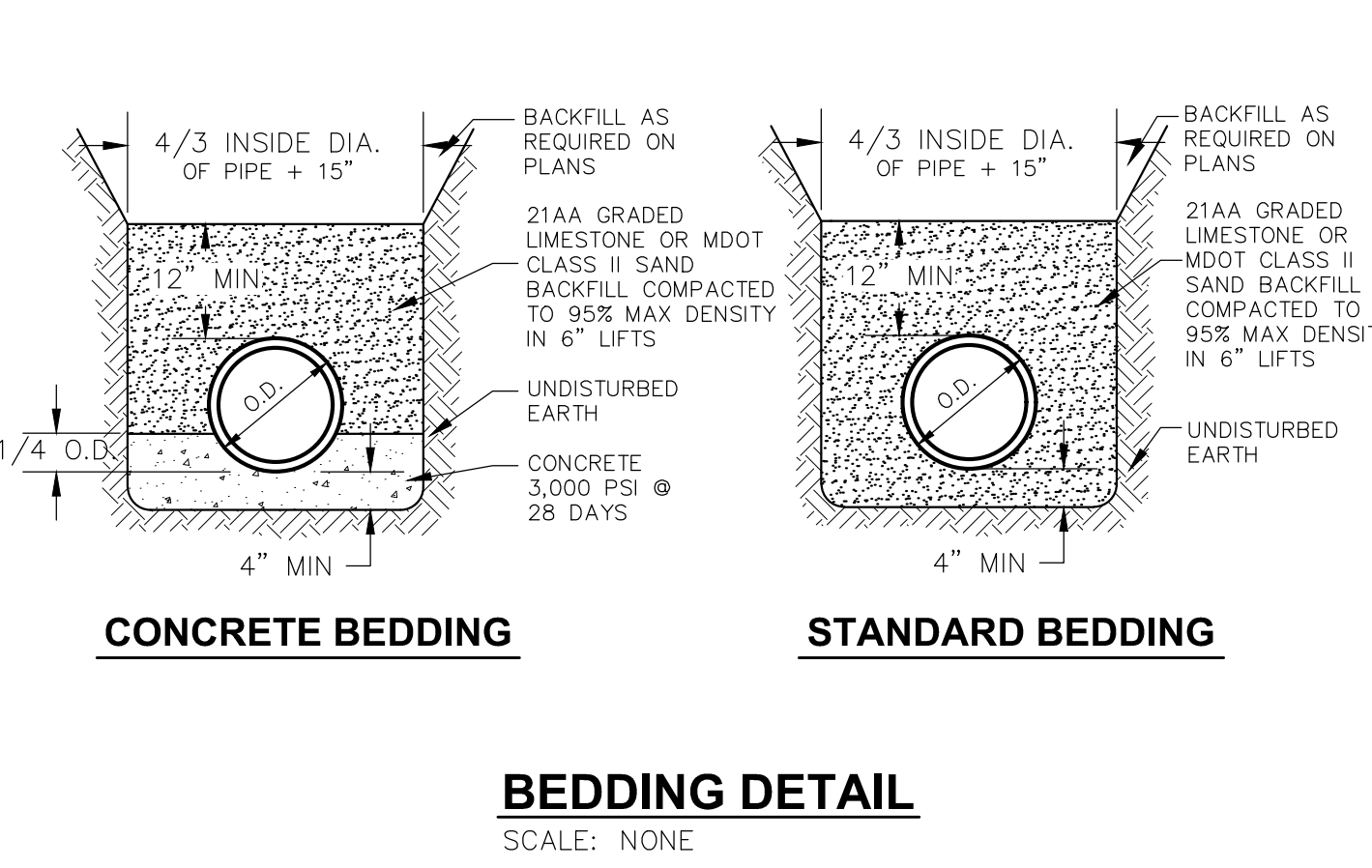
**STORM SEWER CATCH BASIN**

SCALE: NONE



**STORM SEWER INLET**

SCALE: NONE

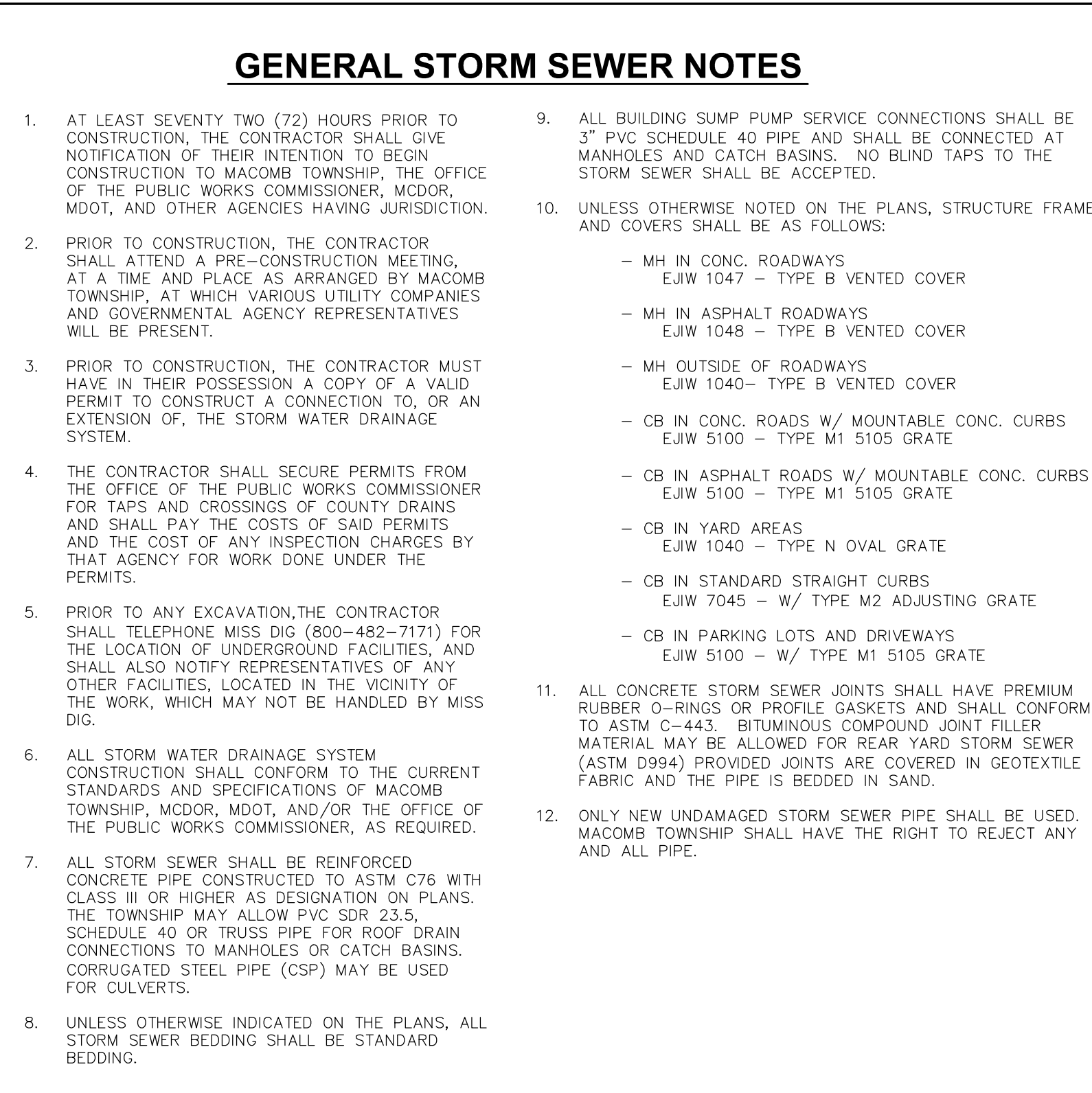


**CONCRETE BEDDING**

**STANDARD BEDDING**

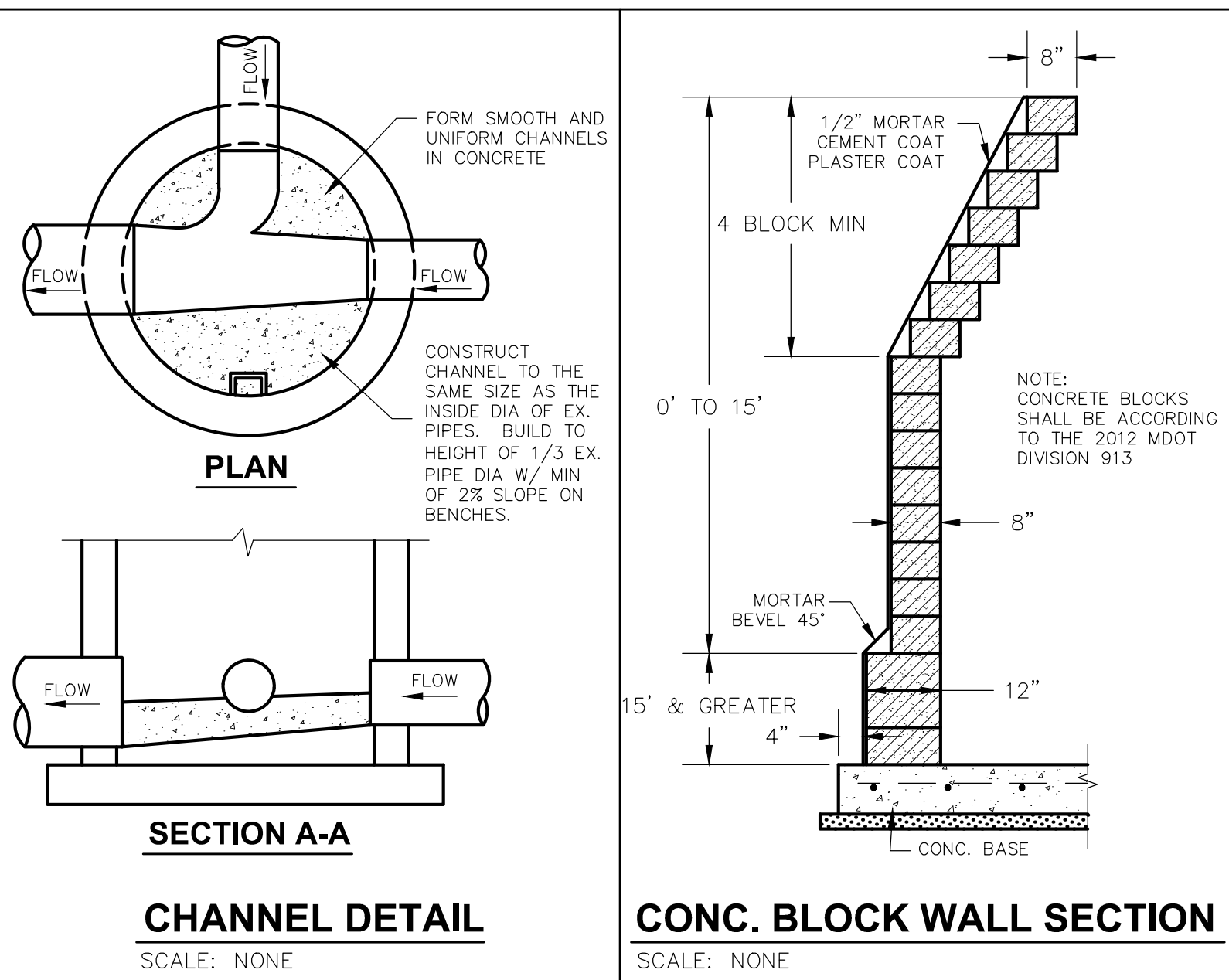
**BEDDING DETAIL**

SCALE: NONE



**STORM SEWER OUTLET END SECTION DETAIL**

SCALE: NONE



**CHANNEL DETAIL**

SCALE: NONE

**CONC. BLOCK WALL SECTION**

SCALE: NONE

**GENERAL STORM SEWER NOTES**

- AT LEAST SEVENTY TWO (72) HOURS PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL GIVE NOTIFICATION OF THEIR INTENTION TO BEGIN CONSTRUCTION TO MACOMB TOWNSHIP, THE OFFICE OF THE PUBLIC WORKS COMMISSIONER, MCDOR, MDOT, AND OTHER AGENCIES HAVING JURISDICTION.
- PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL ATTEND A PRE-CONSTRUCTION MEETING, AT A TIME AND PLACE AS ARRANGED BY MACOMB TOWNSHIP, AT WHICH VARIOUS UTILITY COMPANIES AND GOVERNMENTAL AGENCY REPRESENTATIVES WILL BE PRESENT.
- PRIOR TO CONSTRUCTION, THE CONTRACTOR MUST HAVE IN THEIR POSSESSION A COPY OF A VALID PERMIT TO CONSTRUCT A CONNECTION TO, OR AN EXTENSION OF, THE STORM WATER DRAINAGE SYSTEM.
- THE CONTRACTOR SHALL SECURE PERMITS FROM THE OFFICE OF THE PUBLIC WORKS COMMISSIONER AND SHALL PAY THE COSTS OF SAID PERMITS AND THE COST OF ANY INSPECTION CHARGES BY THAT AGENCY FOR WORK DONE UNDER THE PERMITS.
- PRIOR TO ANY EXCAVATION, THE CONTRACTOR SHALL TELEPHONE MISS DIG (800-482-7171) FOR THE LOCATION OF UNDERGROUND FACILITIES, AND SHALL ALSO NOTIFY REPRESENTATIVES OF ANY OTHER FACILITIES, LOCATED IN THE VICINITY OF THE WORK, WHICH MAY NOT BE HANDLED BY MISS DIG.
- ALL STORM WATER DRAINAGE SYSTEM CONSTRUCTION SHALL CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS OF MACOMB TOWNSHIP, MCDOR, MDOT, AND/OR THE OFFICE OF THE PUBLIC WORKS COMMISSIONER, AS REQUIRED.
- ALL STORM SEWER SHALL BE REINFORCED CONCRETE PIPE CONSTRUCTED TO ASTM C76 WITH CLASS III OR HIGHER AS DESIGNATION ON PLANS. THE TOWNSHIP MAY ALLOW PVC SDR 23.5, SCHEDULE 40 OR TRUSS PIPE FOR ROOF DRAIN CONNECTIONS TO MANHOLES OR CATCH BASINS. CORRUGATED STEEL PIPE (CSP) MAY BE USED FOR CULVERTS.
- UNLESS OTHERWISE INDICATED ON THE PLANS, ALL STORM SEWER BEDDING SHALL BE STANDARD BEDDING.
- ALL BUILDING SUMP PUMP SERVICE CONNECTIONS SHALL BE 3" PVC SCHEDULE 40 PIPE AND SHALL BE CONNECTED AT MANHOLES AND CATCH BASINS. NO BLIND TAPS TO THE STORM SEWER SHALL BE ACCEPTED.
- UNLESS OTHERWISE NOTED ON THE PLANS, STRUCTURE FRAME AND COVERS SHALL BE AS FOLLOWS:
  - MH IN CONC. ROADWAYS EJV 1047 - TYPE B VENTED COVER
  - MH IN ASPHALT ROADWAYS EJV 1048 - TYPE B VENTED COVER
  - MH OUTSIDE OF ROADWAYS EJV 1040 - TYPE B VENTED COVER
  - CB IN CONC. ROADS W/ MOUNTABLE CONC. CURBS EJV 5100 - TYPE M1 5105 GRATE
  - CB IN ASPHALT ROADS W/ MOUNTABLE CONC. CURBS EJV 5100 - TYPE M1 5105 GRATE
  - CB IN YARD AREAS EJV 1040 - TYPE N OVAL GRATE
  - CB IN STANDARD STRAIGHT CURBS EJV 7045 - W/ TYPE M2 ADJUSTING GRATE
  - CB IN PARKING LOTS AND DRIVEWAYS EJV 5100 - W/ TYPE M1 5105 GRATE
- ALL CONCRETE STORM SEWER JOINTS SHALL HAVE PREMIUM RUBBER O-RINGS OR PROFILE GASKETS AND SHALL CONFORM TO ASTM C-443. BITUMINOUS COMPOUND JOINT FILLER MATERIAL MAY BE ALLOWED FOR REAR YARD STORM SEWER (ASTM D994) PROVIDED JOINTS ARE COVERED IN GEOTEXTILE FABRIC AND THE PIPE IS BEDDED IN SAND.
- ONLY NEW UNDAMAGED STORM SEWER PIPE SHALL BE USED. MACOMB TOWNSHIP SHALL HAVE THE RIGHT TO REJECT ANY AND ALL PIPE.



**MACOMB TOWNSHIP**  
 54111 BROUGHTON ROAD  
 MACOMB, MI 48042  
 586-992-0710



NOTE: UTILITY INFORMATION ON THIS DRAWING MAY BE FROM INFORMATION DISCLOSED TO THIS FIRM BY THE VARIOUS UTILITY COMPANIES, CITY/COUNTY AGENCIES AND OTHER VARIOUS SOURCES. UNDERGROUND UTILITIES WHICH ARE ON PRIVATE PROPERTY ARE USUALLY NOT DELINEATED UPON A UTILITY COMPANY'S PUBLISHED PLANS. THEIR LOCATION, IF SHOWN UPON THIS SURVEY, ARE APPROXIMATED FROM FOUND PAINT MARKS/STAKES, ETC. AS LOCATED BY THIS FIRM FROM SOURCES WHICH ARE UNKNOWN. NO GUARANTEE IS GIVEN AS TO THE COMPLETENESS OR ACCURACY THEREOF.

**TOWNSHIP OF MACOMB**

**STORM SEWER STANDARD DETAILS**

TOWN 3 NORTH RANGE 13 EAST  
 MACOMB TOWNSHIP  
 MACOMB COUNTY

| NO. | DATE     | REVISION     |
|-----|----------|--------------|
| 1   | 10-15-14 | SHEET UPDATE |
| 2   | 11-06-15 | SHEET UPDATE |
| 3   | 05-10-16 | SHEET UPDATE |
| 4   | 01-24-17 | SHEET UPDATE |
| 5   | 07-11-17 | SHEET UPDATE |

VERIFY SCALES  
 IF NOT ONE INCH ON ORIGINAL DRAWING  
 ADJUST SCALES ACCORDINGLY

| JOB NO.    | DRAWING NO. |
|------------|-------------|
| MA-DET-STM | STM1        |

SCALE: N.T.S.

P:\COMMUNITIES\MACOMB\STANDARD DETAILS\DWG\STORM\MA-DET-STM-FINAL.DWG Layout: Mosh 7/12/2017 4:45:43 PM

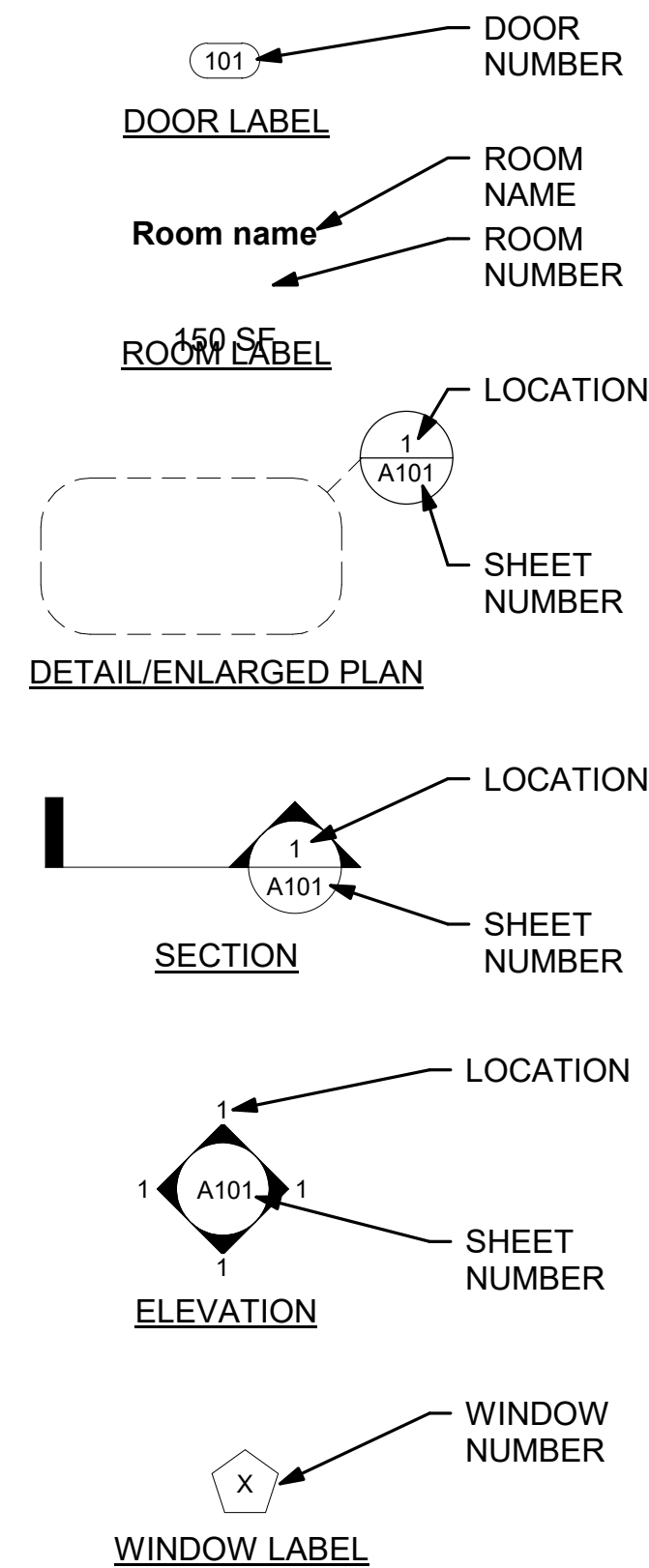


**ABBREVIATIONS**

NOTE: NOT ALL ABBREVIATIONS USED. ABBREVIATIONS INCLUDE BUT NOT LIMITED TO THIS LIST.

|  |                                 |
|--|---------------------------------|
| A.F.F. ABOVE FINISH FLOOR                        | LHR LEFT HAND REVERSE           |
| ACCOM ACCOMMODATE                                | MFR MANUFACTURER                |
| ACCORD ACCORDANCE                                | MAX MAXIMUM                     |
| A.C.P. ACOUSTICAL PANEL                          | MECH MECHANICAL                 |
| ACOUS ACOUSTICAL CONTRACT (OR)                   | MECH PLUMBING, ELECTRICAL       |
| AD ACCESS DOOR                                   | M.P.E. MET                      |
| ALT ALTERNATE                                    | MIN MINIMUM                     |
| ALUM ALUMINUM                                    | MISC MISCELLANEOUS              |
| ARCH ARCHITECT                                   | NA NOT APPLICABLE               |
| @ AT   | NIC NOT IN CONTRACT             |
| BRG BEARING                                      | NIS NOT TO SCALE                |
| B PL BEARING PLATE                               | NRG NOISE REDUCTION COEFFICIENT |
| BIT BITUMINOUS                                   | NO OR # NUMBER                  |
| BLK BLOCK  | OC ON CENTER                    |
| BRD BOARD  | OPP OPPOSITE                    |
| BOTT BOTTOM                                      | OD OUTSIDE DIAMETER             |
| BRKT BRACKET                                     | OH OVERHEAD                     |
| BLDG BUILDINGS                                   | PLAS PLASTIC                    |
| CAB CABINET                                      | PL PLATE                        |
| CLG CEILING                                      | PLYWD PLYWOOD                   |
| CIRC CENTER LINE                                 | PO POLYETHYLENE                 |
| CIRCULATION CIRCULATION                          | PSI POUNDS PER SQ. INCH         |
| CLO CLOSET                                       | PSF POUNDS PER SQ. FOOT         |
| COL COLUMN                                       | PVC POLYVINYL CHLORIDE          |
| COMP COMPUTER                                    | RWC RAIN WATER CONDUCTOR        |
| CONC CONCRETE                                    | RECP RECEPTION                  |
| CMU CONCRETE MASONRY UNIT                        | REC RECESSED                    |
| CONF CONFERENCE                                  | REF REFLECTED                   |
| CONST CONSTRUCTION                               | REINF REINFORCING               |
| CONT CONTINUOUS                                  | RE-BAR REINFORCING BARS         |
| COORD COORDINATE                                 | REP REPRESENTATIVE              |
| COAT COAT RACK                                   | REQ REQUIRED                    |
| CRS COURSES                                      | RF ROOF FAN                     |
| DEMO DEMOLISH, DEMOLITION                        | RFM RECESSED FLOOR MAT          |
| DIA DIAMETER                                     | RH RIGHT HAND                   |
| DIM DIMENSION                                    | RHR RIGHT HAND REVERSE          |
| DIV DIVISION                                     | RHW RIGHT HAND WAY              |
| DR DOOR  | RD ROOF DRAIN                   |
| DN DOWN  | RM ROOM                         |
| DS DOWN SPOUT                                    | ROU ROUGH OPENING               |
| ELEC ELECTRICAL                                  | RO SCHEDULE                     |
| EWC ELECTRICAL WATER COOLER                      | SIM SIMILAR                     |
| EC ELECTRICAL CONTRACTOR                         | SPEC SPECIFICATION              |
| ELEV ELEVATION, ELEVATOR                         | SPKLR SPRINKLER                 |
| ENG ENGINEER                                     | SS STAINLESS STEEL              |
| EQ EQUAL   | STD STANDARD                    |
| EX EXISTING                                      | STL STEEL                       |
| EXP EXPANSION, EXPOSED                           | STL JST STEEL JOIST             |
| EJ EXPANSION JOINT                               | STL STD STEEL STUD              |
| EXT EXTERIOR                                     | STOR STORAGE                    |
| EF EXHAUST FAN                                   | STRUCT. STRUCTURE               |
| FWC FABRIC WALL COVERING                         | STR STL STRUCTURAL STEEL        |
| F.V. FIELD VERIFY                                | SUSP SUSPENDED                  |
| F.R.P. FIBERGLASS REINFORCED PANEL               | SYS SYSTEM                      |
| FIN FINISH                                       | TEL TELEPHONE                   |
| FF FINISHED FLOOR                                | TEMP TEMPERED                   |
| FE FIRE EXTINGUISHER                             | TEMPERED GLAZED                 |
| FEC FIRE EXTINGUISHER CABINET                    | T & G TONGUE AND GROOVE         |
| FLR FLOOR  | TOP OF CURB                     |
| FD FLOOR DRAIN                                   | TOF TOP OF FOOTER               |
| FTG FOOTING                                      | TOS TOP OF STEEL                |
| GA GAGE, GAUGE                                   | TOW TOP OF WALL                 |
| GALV GALVANIZED                                  | TOM TOP OF MASONRY              |
| GC GENERAL CONTRACTOR                            | TYP TYPICAL                     |
| GWB GYPSUM DRYWALL (WALLBOARD)                   | UNO UNLESS NOTED OTHERWISE      |
| GWB-X GIB TYPE-X (FIRE RESISTIVE CLASSIFICATION) | UR URINAL                       |
| HC HANDICAP                                      | VB VAPOR BARRIER                |
| HVAC HEATING, VENTILATION, AND AIR CONDITIONING  | VF VERIFY IN FIELD              |
| HT, / HGT. HEIGHT                                | VERT VERTICAL                   |
| H.M. HOLLOW METAL STEEL                          | VCT VINYL COMPOSITE TILE        |
| HOR HORIZONTAL                                   | VWB VINYL WALL BASE             |
| ID INSIDE DIAMETER                               | VWC VINYL WALL COVERING         |
| INS INCHES                                       | WAIT WAITING                    |
| JT JOINT   | WC WATER CLOSET                 |
| JST JOIST  | WT WEIGHT                       |
| KSF KIPS PER SQUARE FOOT                         | WWF WELDED WIRE FABRIC          |
| LAM LAMINATE                                     | W/O WITH OUT                    |
| LIN FT LINEAR FOOT                               | WD. WITH                        |
| LLV LONG LEG VERTICAL                            | WOOD WOOD                       |
| LAV LAVATORY                                     | WOOT. FEET                      |
| LH LEFT HAND                                     | INCH. INCHES                    |
|  | # POUNDS                        |

**SYMBOL KEY**



**SITE CONDITIONS**

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PROTECTING EXISTING UNDERGROUND UTILITIES IN THE AREA OF CONSTRUCTION.
2. THE CONTRACTOR SHALL COORDINATE HIS WORK ACTIVITIES WITH THE OWNER TO MINIMIZE DISRUPTION TO THE OWNER'S OPERATION OF THE FACILITY.
3. FOUNDATIONS SHALL BEAR ON COMPACTED SOIL FREE OF VEGETATION AND ORGANIC MATERIALS WITH A MINIMUM ALLOWABLE BEARING CAPACITY OF 2500 PSF. THE CONTRACTOR SHALL RETAIN THE SERVICES OF A GEOTECHNICAL ENGINEER, REGISTERED IN THE STATE OF MICHIGAN, TO VERIFY PERMISSIBLE BEARING CAPACITY VALUES. SUBMIT A REPORT OF THE SOIL CONDITIONS AND CAPACITIES ENCOUNTERED TO THE ENGINEER FOR RECORD.

**THERMAL AND MOISTURE PROTECTION**

1. REFER TO "MATERIAL AND INSTALLATION NOTES" ON DRAWINGS.
2. BASE DAMPPROOFING SHALL BE 20 MIL FLEXIBLE PLASTIC.
3. LINTEL FLASHING SHALL BE 2 OUNCE COPPER BONDED TO 3 OUNCE WATER-PROOFED KRAFT PAPER OR EQUAL BY AN APPROVED MANUFACTURER.
4. CAULK DOOR AND WINDOW FRAMES AT MASONRY WALLS. CAULK COMPOUND SHALL BE AN ELASTIC, WATERPROOF ADHESIVE FROM AN APPROVED MANUFACTURER. COLOR SELECTION BY ARCHITECT.
5. TYVEK AIR INFILTRATION BARRIER BEHIND ALL VENEERS.

**GENERAL DEMOLITION CONSTRUCTION NOTES**

1. REMOVE ALL ABANDONED MISC. HARDWARE, ACCESSORIES, SUPPORTS, BRACKETS, ANCHORS ETC. IN AREAS OF DEMOLITION (TYPICAL).
2. REMOVE ALL ABANDONED WIRING, CABLES, RACEWAYS, SWITCHES AND OUTLETS AS REQUIRED.
3. CUT AND CAP ALL ABANDONED PLUMBING BEHIND WALL.
4. REMOVE ALL MISC. ATTACHMENTS THAT INTERFERE WITH NEW CONSTRUCTION OR AS SHOWN ON PLANS.
5. OWNER HAS FIRST SALVAGE RIGHTS ON ALL ITEMS AND EQUIPMENT. VERIFY SALVAGE OF ITEMS AND EQUIPMENT WITH OWNER.
6. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS BEFORE DEMOLITION AND/OR CONSTRUCTION. CONTRACTOR SHALL COORDINATE DEMOLITION AND CONSTRUCTION TO COMPLETE WORK AS DEFINED ON PLAN, ELEVATIONS AND DETAILS.
7. COORDINATE ALL DIMENSIONS WITH PROPOSED CONSTRUCTION.
8. CONTRACTOR SHALL MAINTAIN ALL EXISTING UTILITIES DURING DEMOLITION & CONSTRUCTION. (WATER, SEWER, ELECTRICAL, GAS) VERIFY ALL EXISTING LOCATIONS.
9. CONTRACTOR SHALL PROTECT ALL BUILDING ELEMENTS DURING CONSTRUCTION, RESTORE AS REQUIRED.
10. ELEMENTS LABELED AS EXISTING ARE TO REMAIN UNLESS NOTED OTHERWISE.
11. DASHED LINES INDICATE ITEMS TO BE REMOVED AS NOTED.
12. REMOVE ALL EXISTING ELECTRICAL LIGHTING FIXTURES AS INDICATED ON PLAN OR THAT INTERFERE WITH CONSTRUCTION.
13. REMOVE ALL EXISTING OUTLETS, SWITCHES AND COVER PLATES AS SHOWN ON PLANS OR THAT INTERFERE WITH CONSTRUCTION.
14. REMOVE ALL MECHANICAL GRILLES, LOUVERS AND DIFFUSERS AS SHOWN ON PLAN OR THAT INTERFERE WITH CONSTRUCTION.
15. COORDINATE AND VERIFY ALL DEMOLITION DIMENSIONS WITH ARCHITECTURAL DIMENSIONS.
16. COORDINATE ALL DEMOLITION WITH MECHANICAL AND ELECTRICAL.
17. CONTRACTOR SHALL REMOVE ALL ITEMS (ATTACHED OR OTHERWISE) WHICH REQUIRE REMOVAL OR ARE AFFECTED BY THE PROPOSED NEW CONSTRUCTION. THE CONTRACTOR SHALL FAMILIARIZE WITH THE EXISTING CONDITIONS AND SHALL COMPLETE ALL REQUIRED DEMOLITION (REGARDLESS WEATHER EACH INDIVIDUAL ITEM HAS BEEN IDENTIFIED).
18. THE CONTRACTOR SHALL LEVEL / ADJUST SUBFLOOR AND OR CONCRETE FLOOR SLAB AS REQUIRED FOR FLOOR FINISH.

**GENERAL NOTES**

1. THE CONTRACTOR IS RESPONSIBLE FOR ALL CONSTRUCTION PERMITS AND INSPECTION FEES BY TOWNSHIP.
2. ALL CONTRACTORS SHALL COORDINATE THE LOCATION OF DUCTS, PIPING, BOXES, CHASES, CONDUITS, ETC... WITH THE MECHANICAL, ELECTRICAL AND ALL OTHER TRADES.
3. PITCH ALL GRADES AND EXTERIOR SLABS AWAY FROM BUILDING TOWARDS DRAINAGE.
4. SEAL MORTAR ALL OPENINGS AROUND PIPES, CONDUITS, ETC... WHICH PASS THROUGH FLOORS AND WALLS.
5. CAULK ALL JOINTS BETWEEN DOOR FRAMES, WINDOW FRAMES, MASONRY WALLS AND ALL DISSIMILAR MATERIALS.
6. PROVIDE ALL NECESSARY BLOCKING AS REQUIRED TO SUPPORT LIGHTING, SIGNS, BRACKETS, ACCESSORIES, ETC....
7. ALL DIMENSIONS ARE FROM FACE OF STUD TO FACE OF STUD OR FACE OF BLOCK TO FACE OF BLOCK.
8. ALL ITEMS NOTED "BY OWNER" OR "N.I.C." ARE NOT IN CONTRACT.
9. ALL BLOCK CORNERS SHALL BE BULLNOSE.
10. CONTRACTOR TO INSTALL ONLY TYPE "X" FIRECODE GYPSUM BOARD BOTH SIDES OF STUD WALL FULL HEIGHT OF PARTITION TO UNDERSIDE OF STRUCTURE (TIGHT) AT RATED WALLS I.E. STORAGE ROOM AND ELEC. / MECHANICAL.
11. CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS EXISTING AND PROPOSED ON THE JOB. REPORT ALL DEVIATIONS FROM DRAWINGS PRIOR TO START OF CONSTRUCTION.
12. ALL CONTRACTORS SHALL CONSTRUCT THIS PROJECT IN ACCORDANCE WITH ALL STATE, FEDERAL AND LOCAL CODES.
13. ALL CONTRACTORS SHALL REPAIR ANY DAMAGES OR DISTURBANCES TO THE EXISTING BUILDING AND SITE. PATCH / REPAIR AND PAINT ANY WALLS DISTURBED FROM DEMOLITION.
14. ALL WOOD AND MISC. BLOCKING MUST BE NON-COMBUSTIBLE MATERIAL.
15. ALL INTERIOR CONTROL JOINTS SHALL BE CONSTRUCTED AT 20'-0" O.C. MAXIMUM UNLESS NOTED OTHERWISE.
16. ALL MATERIALS USED ARE REQUIRED TO BE OF GOOD QUALITY AND MEET OR EXCEED ALL APPLICABLE INDUSTRY STANDARDS.
17. ALL WORK IS TO BE DONE WITH THE APPROPRIATE TOOLS AND MATERIALS. THE ARCHITECT HAS THE RIGHT TO REJECT ANY WORK NOT DONE APPROPRIATELY.
18. REMOVE ALL TRASH AND DEBRIS FROM THE SITE. WASH ALL SURFACES DUST AND SWEEP TO REMOVE ALL DIRT. REMOVE ALL TEMPORARY LABELS.
19. REPLACE ALL CONCRETE FLOOR WHICH WAS REMOVED AND OR DAMAGED FOR / DURING CONSTRUCTION. PREPARATION FOR FLOOR FINISH.
20. ALL 2 HR. FIRE WALLS TO BE MIN. 8" CMU BLOCK TIGHT TO BOTTOM OF METAL DECKING. PROVIDE ALL FIRE DAMPERS AS INDICATED ON MECHANICAL DRAWINGS. FIRE CAULK ALL WALL PENETRATIONS AND FILL ALL Voids WITH FIRE SAFING BETWEEN TOP OF WALL AND DECKING AS REQUIRED.
21. ALL CONTRACTORS AND SUBCONTRACTORS SHALL PROVIDE ALL WORK SHOWN IN ANY PART OF THE DOCUMENTS, I.E. HAND DRYER SHOWN ON ARCHITECTURAL DRAWINGS MUST BE WIRED BY THE ELECTRICIAN WHETHER IT IS OR IS NOT SHOWN ON THE ELECTRICAL DRAWINGS.
22. THE GENERAL CONTRACTOR SHALL PROVIDE A MIN. 2 YEAR (U.N.O.) WARRANTY ON ALL MATERIAL, EQUIPMENT AND WORK PERFORMED.
23. CONSTRUCTION STAKIN GAND SPECIAL INSPECTIONS WILL BE PROVIDED BY THE OWNER. GENERAL CONTRACTOR TO COORDIANTE STAKING AND INSPECTIONS.

**2015 MICHIGAN BUILDING CODE**

ALL ITEMS REFERENCE 2015 MICHIGAN BUILDING CODE UNLESS NOTED OTHERWISE

USE GROUP (SECTION 302)

|  |  |
|--|--|
| 'S-2' GARAGE (ADDITION)                    |  |
| 'B' BUSINESS (EXISTING)                    |  |
| 'S-1' MODERATE - HAZARD STORAGE (EXISTING) |  |

TYPE OF CONSTRUCTION (SECTION 601)

TYPE V-B

BUILDING AREA (503)

ALLOWABLE AREA (TABLE 506.2)

|                                 |             |
|---------------------------------|-------------|
| 'S-2' GARAGE                    | 13,500 S.F. |
| 'B' BUSINESS                    | 36,000 S.F. |
| 'S-1' MODERATE - HAZARD STORAGE | 36,000 S.F. |

PROPOSED AREA

|  |             |
|--|-------------|
| 'S-2' GARAGE   | 10,304 S.F. |
| 'S-2' DEFINED AS SEPERATE BUILDING DETERMINED BY TABLE 602 |             |

BUILDING HEIGHT (SECTION 503)

ALLOWABLE HEIGHT (TABLE 504.3 AND 504.4)

|                                 |                 |
|---------------------------------|-----------------|
| 'S-2' GARAGE                    | 40'-0", 2 STORY |
| 'B' BUSINESS                    | 60'-0", 3 STORY |
| 'S-1' MODERATE - HAZARD STORAGE | 60'-0", 2 STORY |

PROPOSED BUILDING HEIGHT

|              |                 |
|--------------|-----------------|
| 'S-2' GARAGE | 30'-6", 1 STORY |
|--------------|-----------------|

OCCUPANT LOAD (TABLE 1004.1.2)

|                                      |           |                                  |
|--------------------------------------|-----------|----------------------------------|
| GARAGE (PROPOSED)                    | 200 GROSS | 10,304 S.F. / 200 = 52 OCCUPANTS |
| BUSINESS (EXISTING)                  | 100 GROSS | 7,077 S.F. / 100 = 70 OCCUPANTS  |
| MODERATE - HAZARD STORAGE (EXISTING) | 300 GROSS | 9,710 S.F. / 300 = 32 OCCUPANTS  |
| TOTAL BUILDING LOAD                  |           | 154 OCCUPANTS                    |

REQUIRED PLUMBING FIXTURES (MICHIGAN PLUMBING CODE TABL E403.1) (EXISTING TO REMAIN)

WATERCLOSETS

|                                      |                        |                                  |
|--------------------------------------|------------------------|----------------------------------|
| GARAGE (PROPOSED)                    | 1 PER 100              | = 1 REQUIRED                     |
| BUSINESS (EXISTING)                  | 1 PER 25               | = 1 REQUIRED                     |
| MODERATE - HAZARD STORAGE (EXISTING) | 1 PER 50 FOR REMAINDER | = 1 EA MENS & WOMENS REQ         |
|                                      | 1 PER 100              | = 1 REQUIRED                     |
| TOTAL                                |                        | 4 REQUIRED, EXISTING 5 REMAINING |

LAVATORIES

|                                      |           |                                  |
|--------------------------------------|-----------|----------------------------------|
| GARAGE (PROPOSED)                    | 1 PER 100 | = 1 REQUIRED                     |
| BUSINESS (EXISTING)                  | 1 PER 40  | = 2 REQUIRED                     |
| MODERATE - HAZARD STORAGE (EXISTING) | 1 PER 100 | = 1 REQUIRED                     |
| TOTAL                                |           | 4 REQUIRED, EXISTING 5 REMAINING |

DRINKING FOUNTAIN

1 REQUIRED, 1 EXISTING PROVIDED

SERVICE SINKS:

1 REQUIRED, 1 EXISTING PROVIDED

NUMBER OF EXITS (TABLE 1006.3.1)

|                      |                       |                        |
|----------------------|-----------------------|------------------------|
| PROPOSED GARAGE      | = 1 PER 500 OCCUPANTS | 1 REQUIRED, 3 PROVIDED |
| EXISTING 6 TO REMAIN |                       |                        |

FIRE RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (TABLE 601)

STRUCTURAL FRAME - 0

BEARING WALLS

|          |     |
|----------|-----|
| EXTERIOR | - 0 |
| INTERIOR | - 0 |

NONBEARING WALLS (EXTERIOR/INTERIOR) - 0

FLOOR CONSTRUCTION - 0

ROOF CONSTRUCTION - 0

FIRE RESISTANCE RATING REQUIREMENTS FOR BUILDING EXTERIOR WALLS (TABLE 602)

LESS THAN 5' - 1 HOUR REQUIRED, 2 HOURS PROVIDED

FIRE ALARM (SECTION 907)

GROUP 'S' NOT REQUIRED, PROVIDED

FIRE SUPPRESSION (SECTION 903)

GROUP 'S-2' NOT REQUIRED, LESS THAN 12,000 S.F.

EXIT WIDTH (TABLE 1020.2)

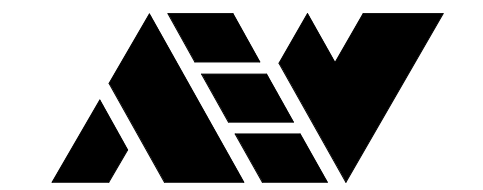
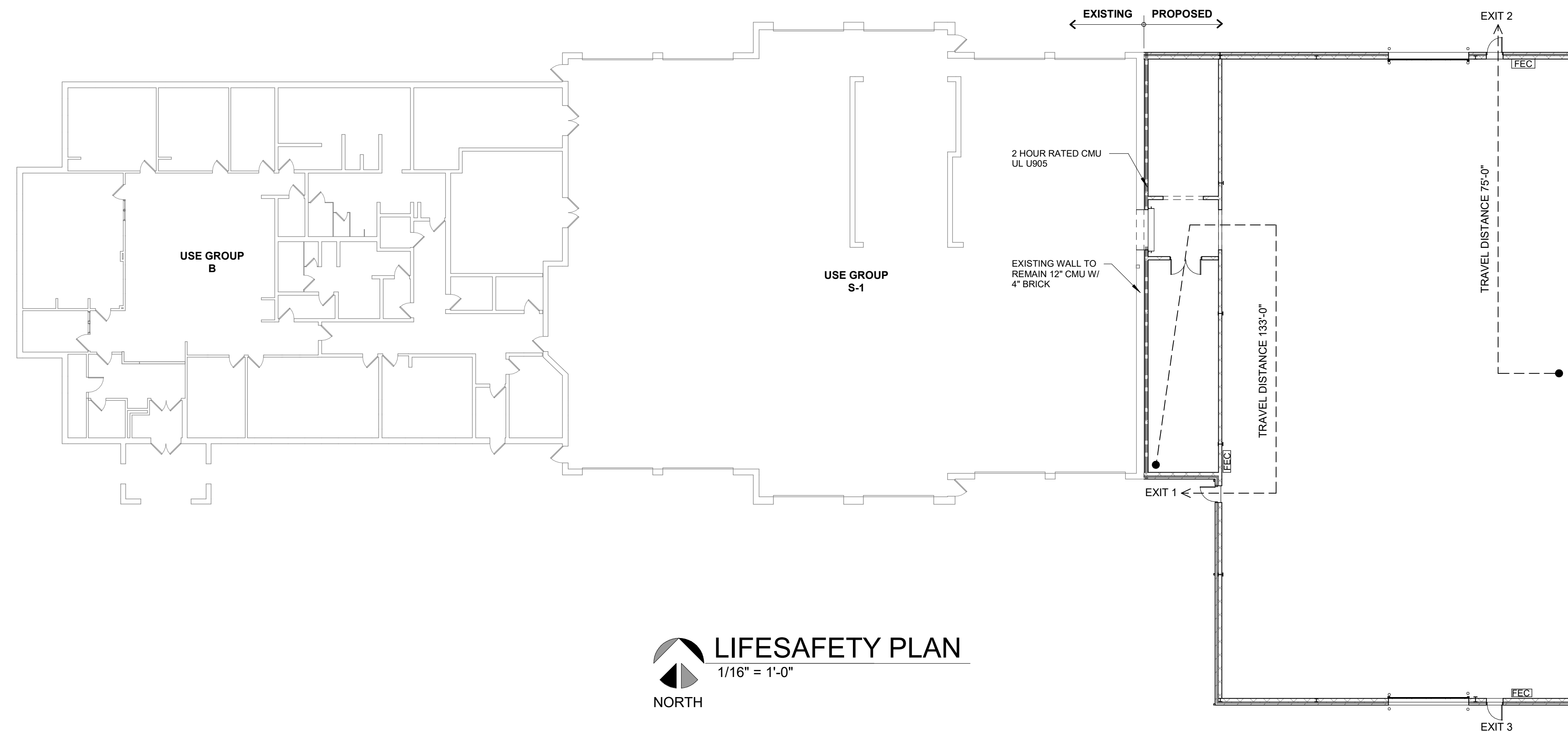
MINIMUM 44", 96" PROVIDED

EXIST TRAVEL DISTANCE (TABLE 1017.2)

MAXIMUM 350', 170' PROVIDED

UL RATINGS

2 HOUR CMU PARTITION UL U905



**ANDERSON, ECKSTEIN AND WESTRICK, INC.**

CIVIL ENGINEERS SURVEYORS ARCHITECTS  
 51301 Schoenherr Road Phone 586 726 1234  
 Shelby Township Fax 586 726 8780  
 Michigan 48315  
 www.aewinc.com

ENGINEERING STRONG COMMUNITIES

|           |                      |
|-----------|----------------------|
| 2/13/2025 | PROPOSAL ISSUE       |
| DATE      | SUBMITTALS/REVISIONS |

PROJECT NAME:

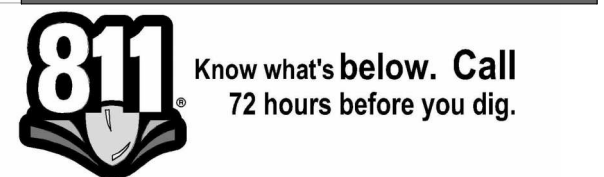
**MACOMB TOWNSHIP DPV ADDITION**

SHEET TITLE:

**GENERAL PROJECT INFORMATION**

CLIENT: **MACOMB TOWNSHIP**

|   |                                       |                                 |
|---|---------------------------------------|---------------------------------|
| <input checked="" type="checkbox"/> PRELIMINARY | <input type="checkbox"/> CONSTRUCTION | <input type="checkbox"/> RECORD |
| DRAWN BY: NMA                                   | CHECKED BY: JRA                       | DATE: 2/13/2025                 |
| SCALE: AS NOTED                                 |                                       |                                 |



UTILITY INFORMATION, AS SHOWN, INDICATES APPROXIMATE LOCATIONS AND TYPES OF EXISTING FACILITIES ONLY, AS DISCLOSED BY RECORDS PROVIDED TO THIS FIRM FROM THE VARIOUS UTILITY COMPANIES. NO GUARANTEE IS GIVEN OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF.

PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING OVERHEAD AND UNDERGROUND UTILITIES IN CONFLICT WITH THE CONSTRUCTION OF THESE PROPOSED IMPROVEMENTS SHALL BE VERIFIED IN THE FIELD. DURING THE CONSTRUCTION, THE CONTRACTOR SHALL PROTECT AND SUPPORT ALL UTILITIES THAT ARE ENCOUNTERED. (ALL COSTS FOR UTILITY LOCATION, VERIFICATION, SUPPORT AND PROTECTION SHALL BE INCLUDED IN THE PROPOSED PAY ITEM CONFLICTING WITH THAT UTILITY).

DURING CONSTRUCTION, THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN OPERATING NEAR ANY AND ALL OVERHEAD AND / OR BURIED UTILITIES.

PROJECT NO. **0249-0322**

C:\Users\namstong\Documents\DPV Addition\811\811.dwg

SHEET NO.

**A011**



ANDERSON, ECKSTEIN AND WESTRICK, INC.

CIVIL ENGINEERS SURVEYORS ARCHITECTS  
 51301 Schoenherr Road Phone 586 726 1234  
 Shelby Township Fax 586 726 8780  
 Michigan 48315  
 www.aewinc.com

ENGINEERING STRONG COMMUNITIES

2/13/2025 PROPOSAL ISSUE  
 DATE SUBMITTALS/REVISIONS

PROJECT NAME:

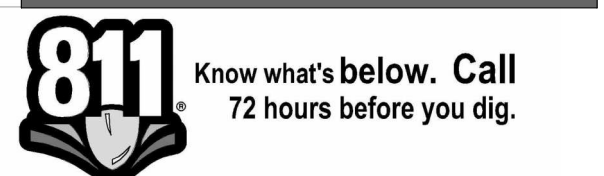
**MACOMB TOWNSHIP DPW ADDITION**

SHEET TITLE:

**ADA**

CLIENT: **MACOMB TOWNSHIP**

|                                      |                                       |                                 |
|--------------------------------------|---------------------------------------|---------------------------------|
| <input type="checkbox"/> PRELIMINARY | <input type="checkbox"/> CONSTRUCTION | <input type="checkbox"/> RECORD |
| DRAWN BY: NMA                        | CHECKED BY: JRA                       | DATE: 2/13/2024                 |
| SCALE: AS NOTED                      |                                       |                                 |



UTILITY INFORMATION, AS SHOWN, INDICATES APPROXIMATE LOCATIONS AND TYPES OF EXISTING FACILITIES ONLY, AS DISCLOSED BY RECORDS PROVIDED TO THIS FIRM FROM THE VARIOUS UTILITY COMPANIES. NO GUARANTEE IS GIVEN OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF.

PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING OVERHEAD AND UNDERGROUND UTILITIES IN CONFLICT WITH THE CONSTRUCTION OF THESE PROPOSED IMPROVEMENTS SHALL BE VERIFIED IN THE FIELD. DURING THE CONSTRUCTION, THE CONTRACTOR SHALL PROTECT AND SUPPORT ALL UTILITIES THAT ARE ENCOUNTERED. (ALL COSTS FOR UTILITY LOCATION, VERIFICATION, SUPPORT AND PROTECTION SHALL BE INCLUDED IN THE PROPOSED PAY ITEM CONFLICTING WITH THAT UTILITY).

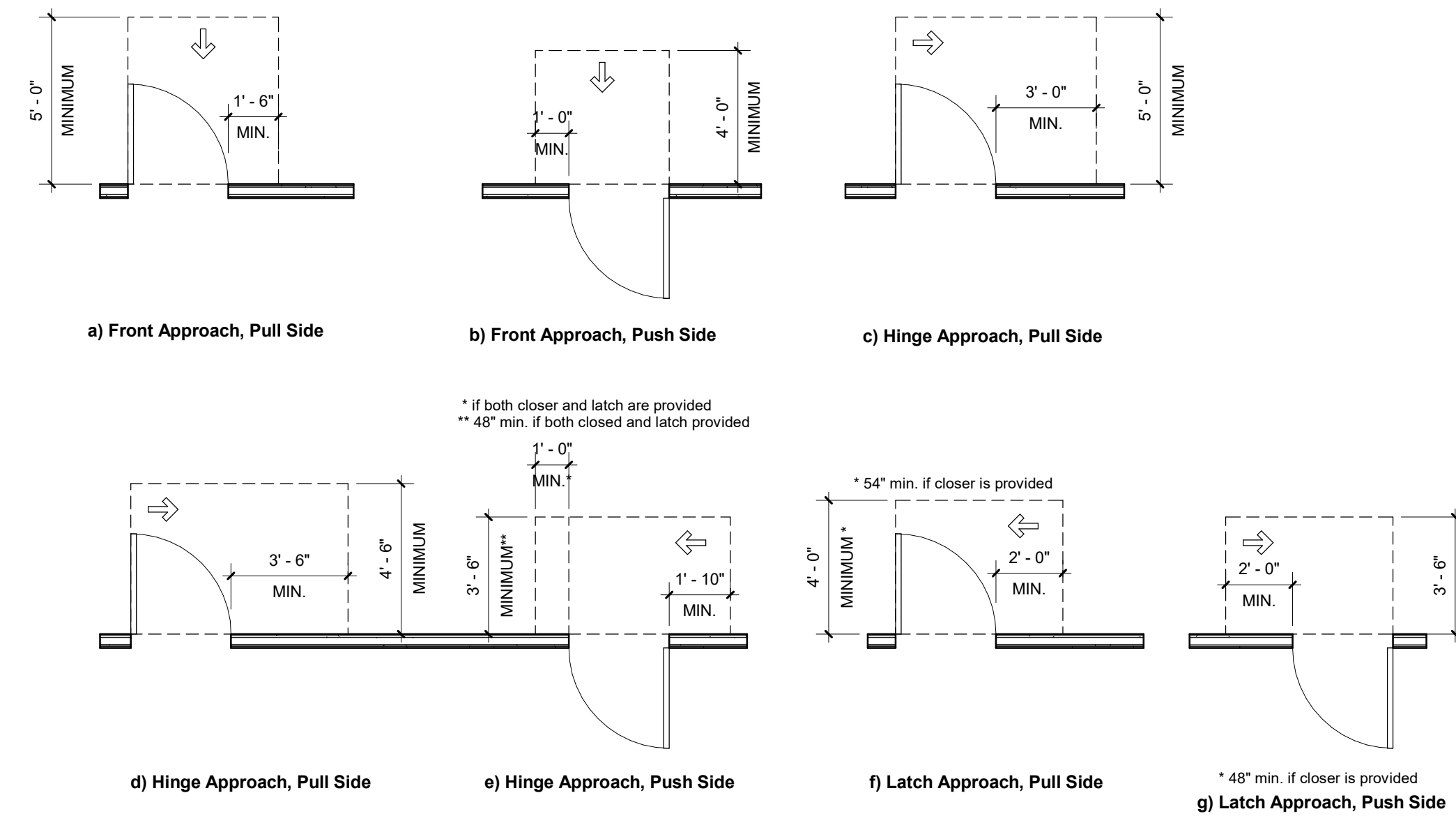
DURING CONSTRUCTION, THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN OPERATING NEAR ANY AND ALL OVERHEAD AND / OR BURIED UTILITIES.

PROJECT NO. **0249-0322**

C:\Users\marmstrong\Documents\DPW Addition  
 3/13/2025 5:07 PM aew\chertw\mwf.rvt

SHEET NO.

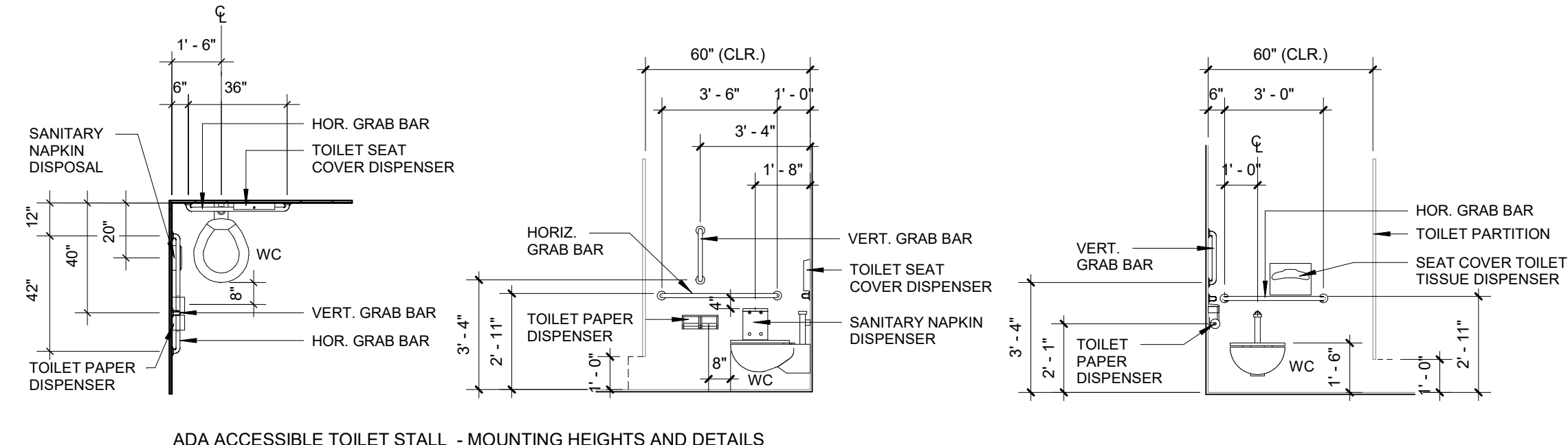
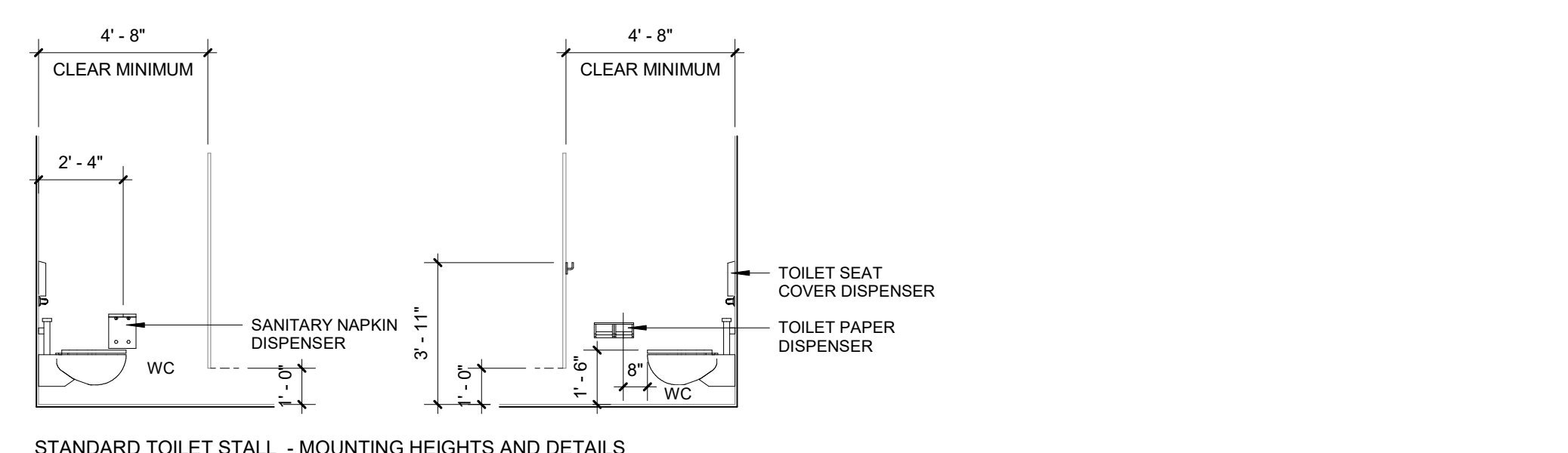
**A021**



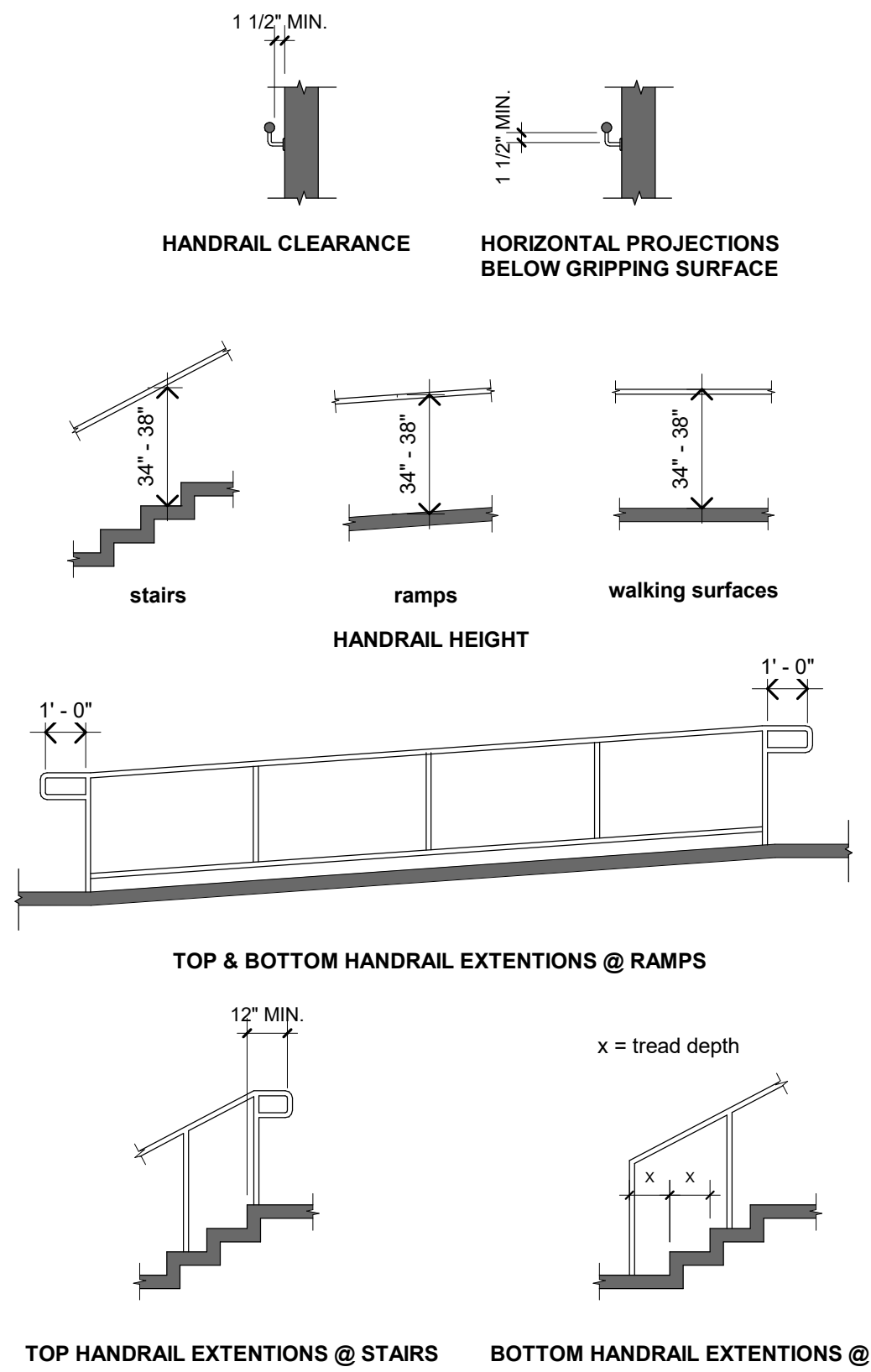
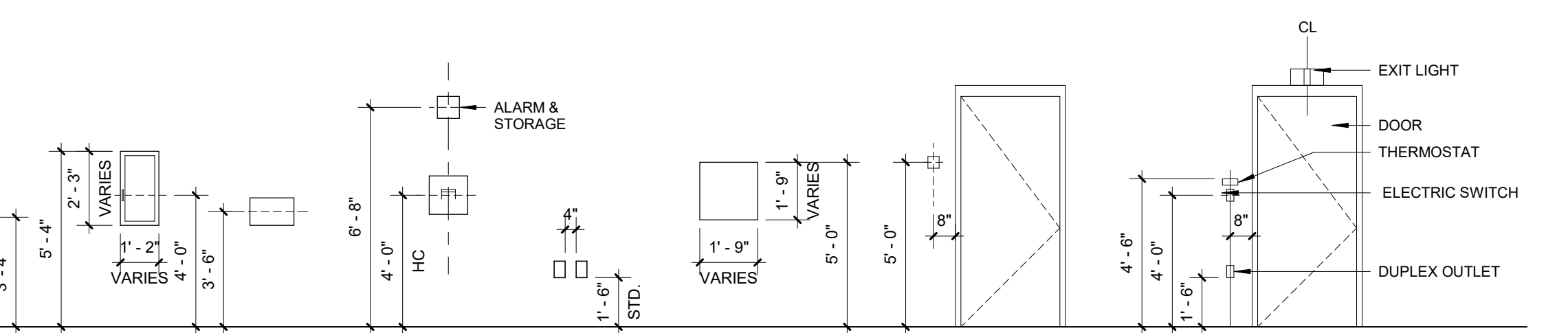
**SPECIFICATIONS OF WATER CLOSETS SERVING CHILDREN AGES 3 THROUGH 12**

|                          | AGES 3 AND 4    | AGES 5 THROUGH 8 | AGES 9 THROUGH 12 |
|--------------------------|-----------------|------------------|-------------------|
| WATER CLOSET CENTER LINE | 12 INCHES       | 12 TO 15 INCHES  | 15 TO 18 INCHES   |
| TOILET SEAT HEIGHT       | 11 TO 12 INCHES | 12 TO 15 INCHES  | 15 TO 17 INCHES   |
| GRAB BAR HEIGHT          | 18 TO 20 INCHES | 20 TO 25 INCHES  | 25 TO 27 INCHES   |
| DISPENSER HEIGHT         | 12 INCHES       | 14 TO 17 INCHES  | 17 TO 19 INCHES   |

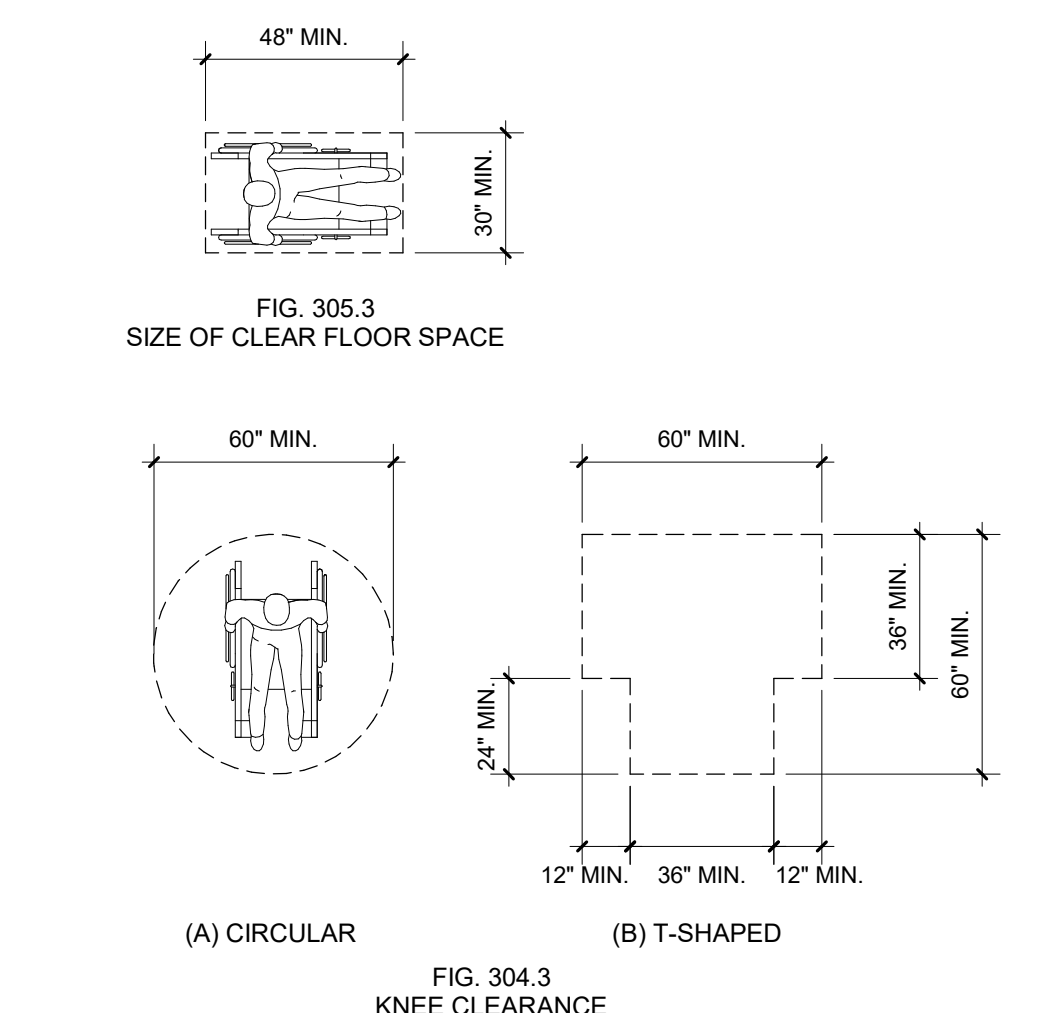
ADA Advisory 604.9 Water Closets and Toilet Compartments for Children's Use



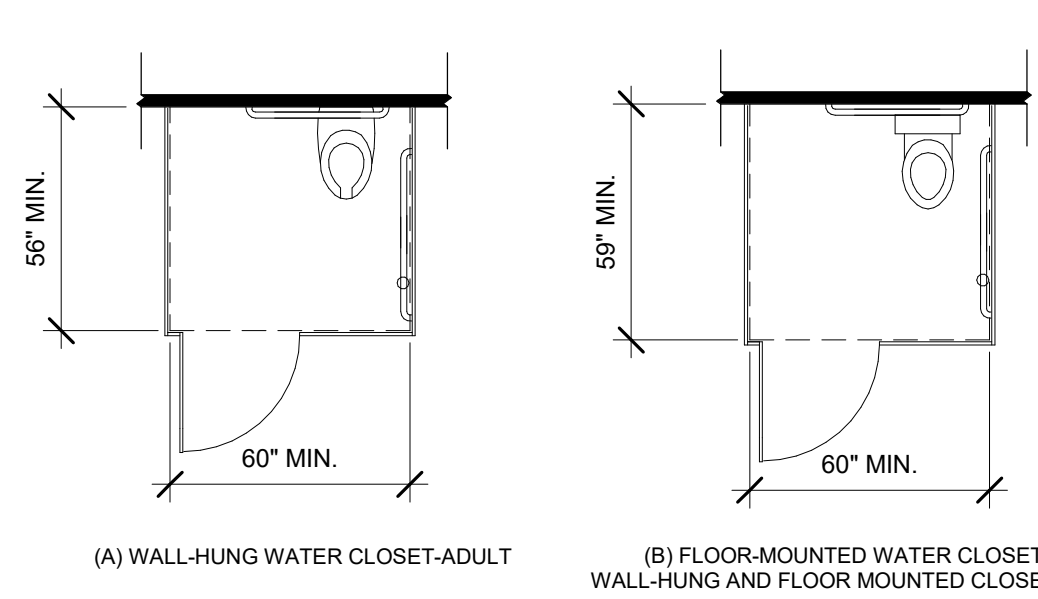
**TOILET STALLS MOUNTING HEIGHTS**



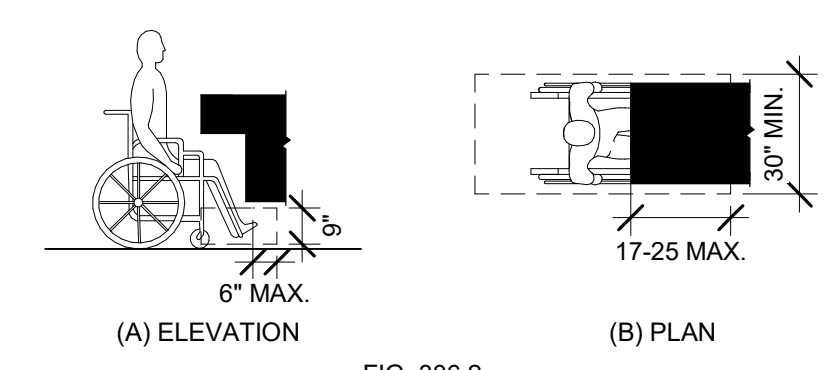
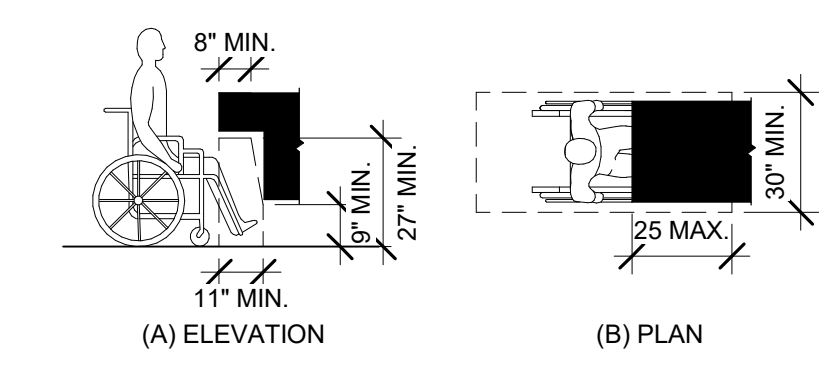
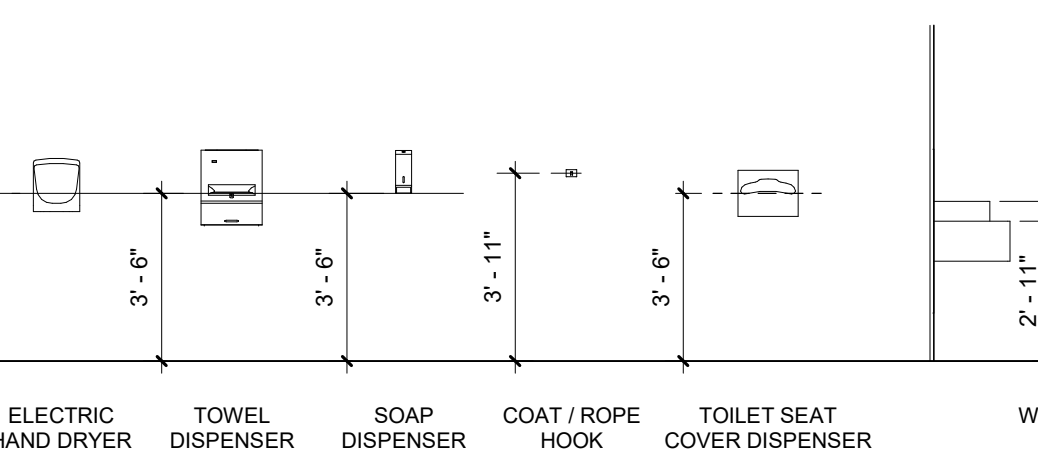
**ADA REFERENCE - HANDRAIL DETAILS**



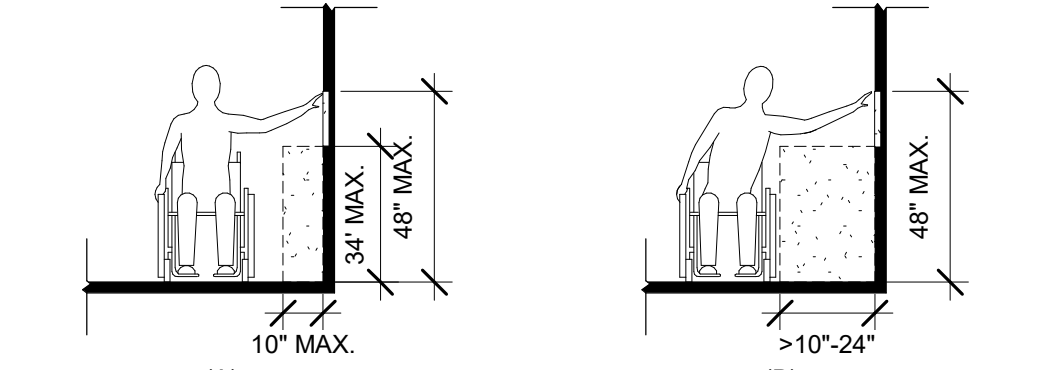
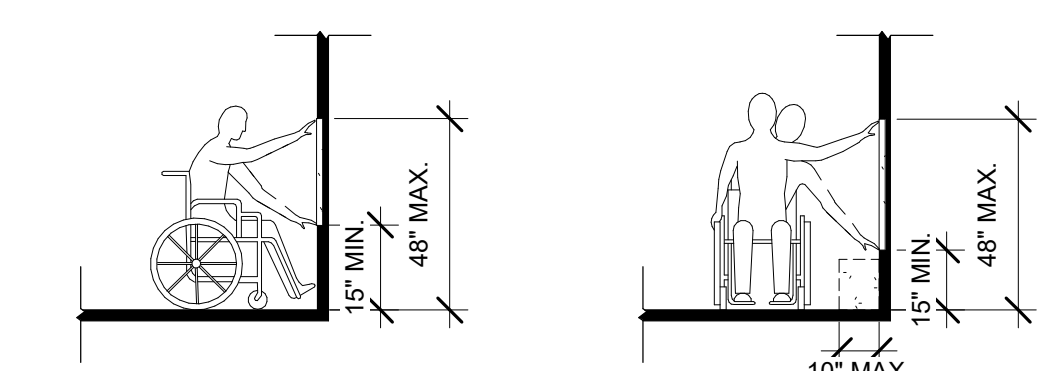
**TURNING SPACE & CLEARANCE SPACE**



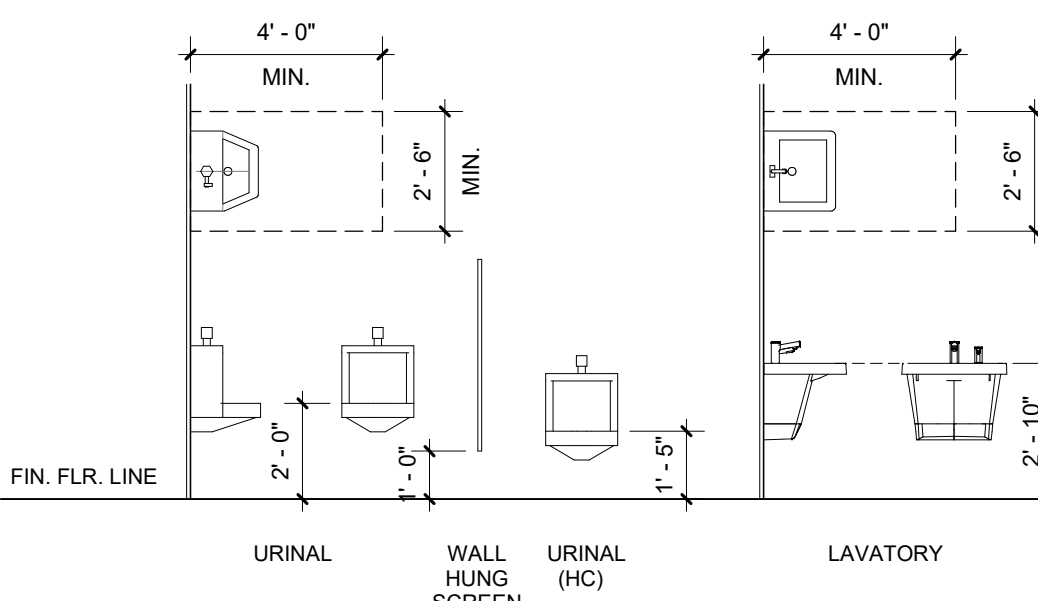
**WHEELCHAIR ACCESSIBLE TOILET COMPARTMENTS**



**KNEE CLEARANCE**



**REACH RANGES**



**GENERAL INFO. - STANDARD MOUNTING HEIGHTS**

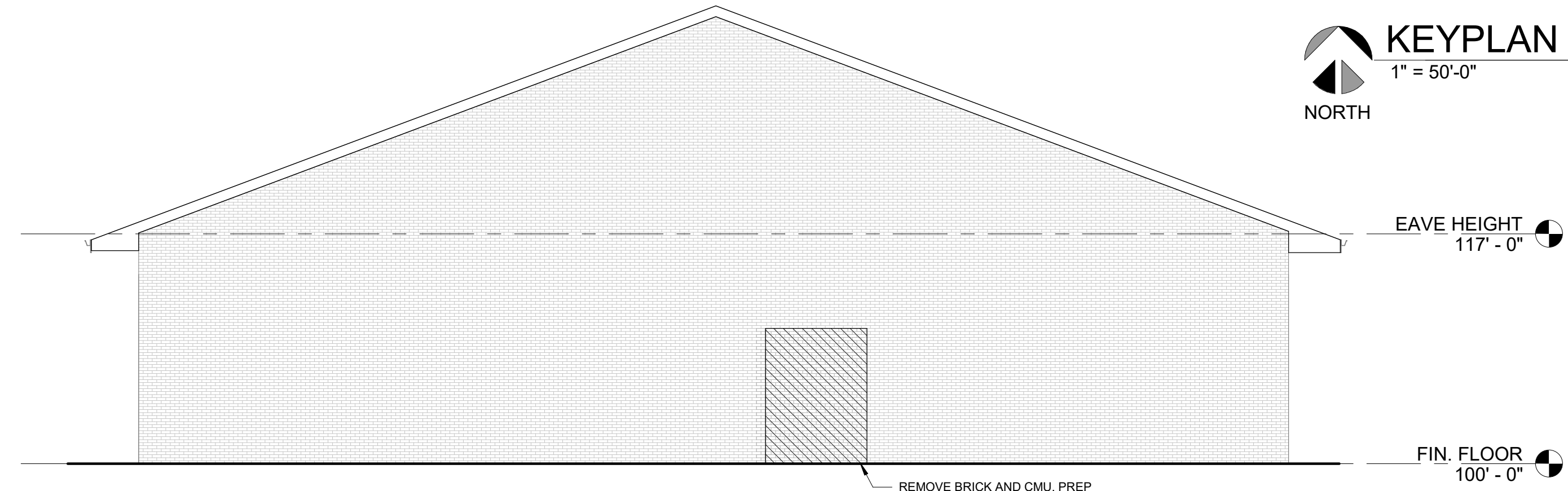
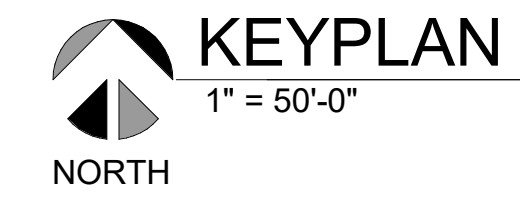


**GENERAL NOTES :**

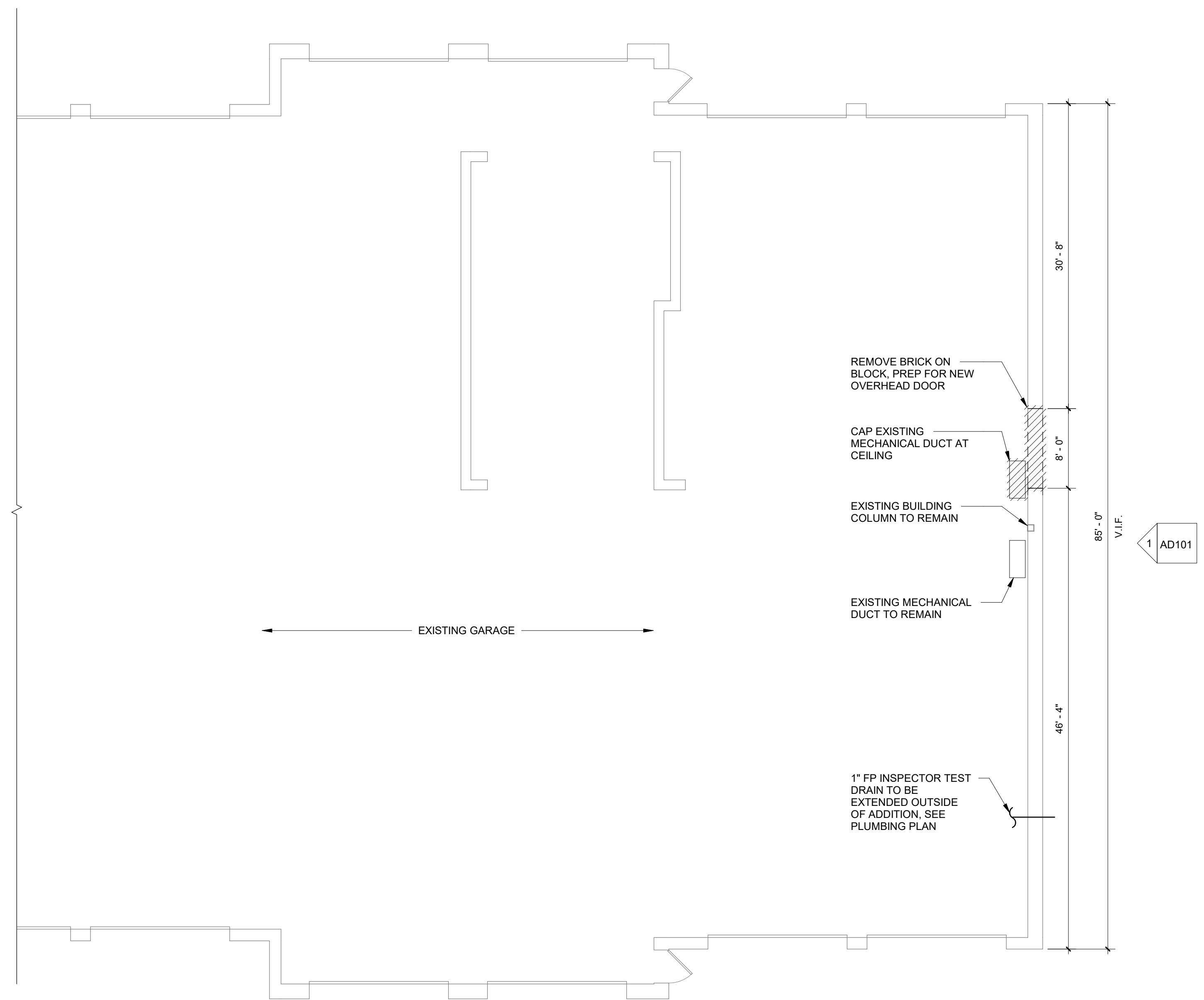
1. VERIFY ALL EXISTING DIMENSION IN FIELD. NOTIFY ARCHITECT OF ANY DISCREPANCY.
2. REFER TO DEMOLITION EXTERIOR ELEVATIONS FOR EXTENT OF DEMOLITION.
3. SEE MECHANICAL AND ELECTRICAL DEMOLITION DWGS.

**DEMOLITION PLAN LEGEND :**

- EXISTING WALL TO REMAIN (W/ EXISTING WINDOWS)
- //// EXISTING WALL TO BE REMOVED (SEE DEMO PLAN & EXTERIOR ELEVATIONS)



**1**  
AD101  
**EXISTING EAST ELEVATION**  
1/8" = 1'-0"



**FIRST FLOOR DEMOLITION PLAN**  
1/8" = 1'-0"  
NORTH



**ANDERSON, ECKSTEIN AND WESTRICK, INC.**  
CIVIL ENGINEERS SURVEYORS ARCHITECTS  
51301 Schoenherr Road Phone 586 726 1234  
Shelby Township Fax 586 726 8780  
Michigan 48315  
www.aewinc.com

ENGINEERING STRONG COMMUNITIES

|   |                                       |
|---|---------------------------------------|
| 2/13/2025                                       | PROPOSAL ISSUE                        |
| DATE  | SUBMITTALS/REVISIONS                  |
| PROJECT NAME:                                   |                                       |
| <b>MACOMB TOWNSHIP DPW ADDITION</b>             |                                       |
| SHEET TITLE:                                    |                                       |
| <b>FIRST FLOOR DEMOLITION PLAN</b>              |                                       |
| CLIENT:   |                                       |
| <b>MACOMB TOWNSHIP</b>                          |                                       |
| <input checked="" type="checkbox"/> PRELIMINARY | <input type="checkbox"/> CONSTRUCTION |
| <input type="checkbox"/> RECORD                 |                                       |
| DRAWN BY: NMA                                   | CHECKED BY: JRA                       |
| DATE: 2/13/2025                                 |                                       |
| SCALE: AS NOTED                                 |                                       |

**MACOMB TOWNSHIP DPW ADDITION**

**FIRST FLOOR DEMOLITION PLAN**

CLIENT: **MACOMB TOWNSHIP**

|   |                                       |                                 |
|---|---------------------------------------|---------------------------------|
| <input checked="" type="checkbox"/> PRELIMINARY | <input type="checkbox"/> CONSTRUCTION | <input type="checkbox"/> RECORD |
| DRAWN BY: NMA                                   | CHECKED BY: JRA                       | DATE: 2/13/2025                 |
| SCALE: AS NOTED                                 |                                       |                                 |



UTILITY INFORMATION, AS SHOWN, INDICATES APPROXIMATE LOCATIONS AND TYPES OF EXISTING FACILITIES ONLY, AS DISCLOSED BY RECORDS PROVIDED TO THIS FIRM FROM THE VARIOUS UTILITY COMPANIES. NO GUARANTEE IS GIVEN OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF.

PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING OVERHEAD AND UNDERGROUND UTILITIES IN CONFLICT WITH THE CONSTRUCTION OF THESE PROPOSED IMPROVEMENTS SHALL BE VERIFIED IN THE FIELD. DURING THE CONSTRUCTION, THE CONTRACTOR SHALL PROTECT AND SUPPORT ALL UTILITIES THAT ARE ENCOUNTERED. (ALL COSTS FOR UTILITY LOCATION, VERIFICATION, SUPPORT AND PROTECTION SHALL BE INCLUDED IN THE PROPOSED PAY ITEM CONFLICTING WITH THAT UTILITY).

DURING CONSTRUCTION, THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN OPERATING NEAR ANY AND ALL OVERHEAD AND / OR BURIED UTILITIES.

PROJECT NO. 0249-0322

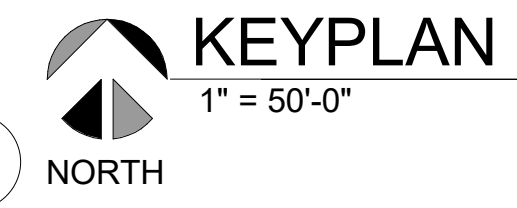
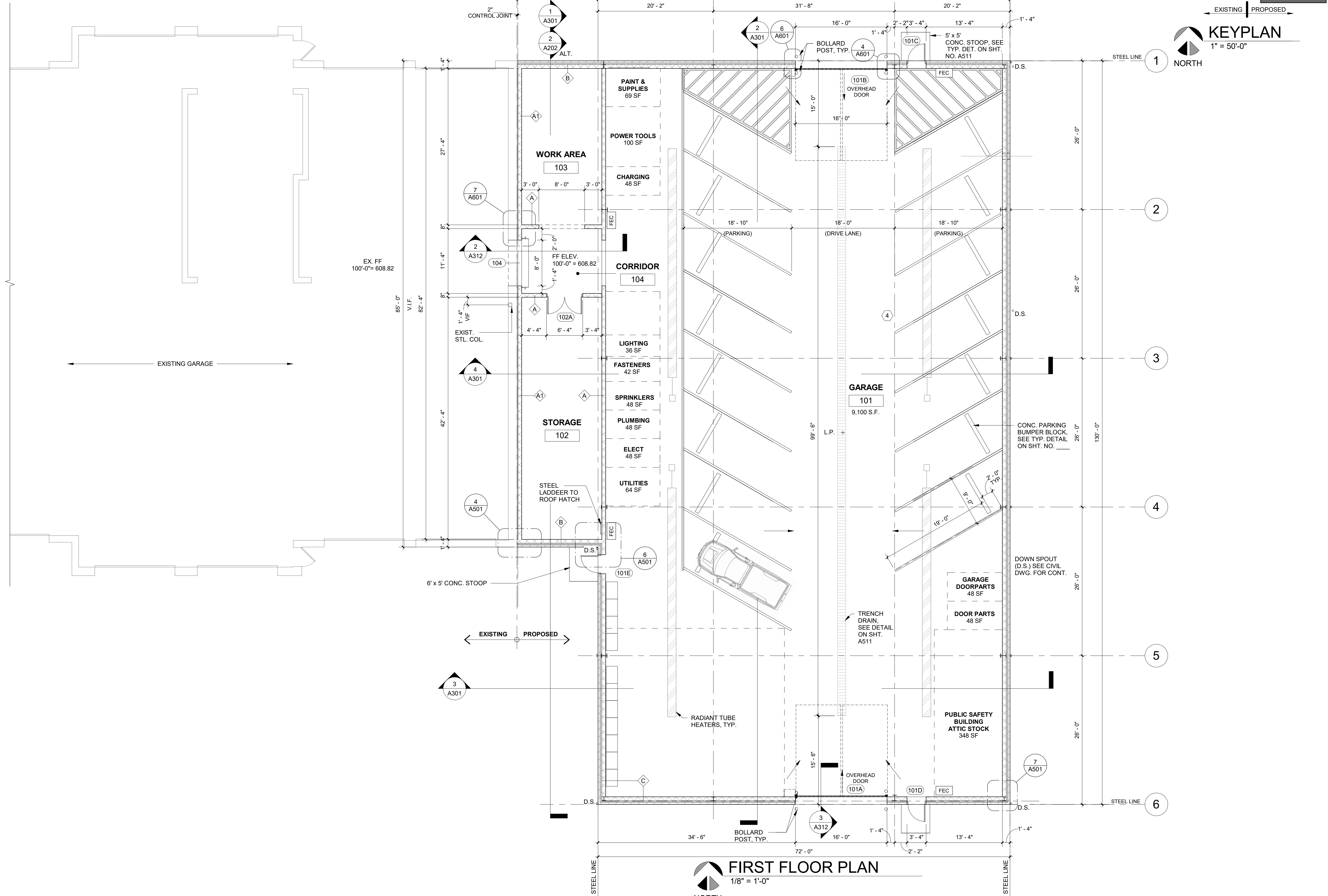
C:\Users\namastorg\Documents\DPW Addition\811\811-2025-02-13.dwg  
2/13/2025 10:00 AM JRA

SHEET NO.

**AD101**

**PARTITION TYPES :**

- A** NOM. 8" CMU W/ #5 VERT. AND HOIZ. GALV. TIES
- A1** NOM. 8" CMU, 2 HOUR RATED, UL U905
- B** 4" BRICK VENEER OVER 2" AIR GAP, 2" RIGID INSULATION WITH AIR BARRIER ON 8" CMU W/ #5 VERT. AND HOIZ. GALV. TIES
- C** 4" BRICK VENEER OVER 2" AIR GAP, 2" RIGID INSULATION WITH AIR BARRIER ON 8" CMU W/ #5 VERT. AND HOIZ. GALV. TIES, TO 12'-8" AFF., W/ TRANSITION TO PEMB SIDING AND INSULATION



**FIRST FLOOR PLAN**  
1/8" = 1'-0"  
NORTH

ENGINEERING STRONG COMMUNITIES

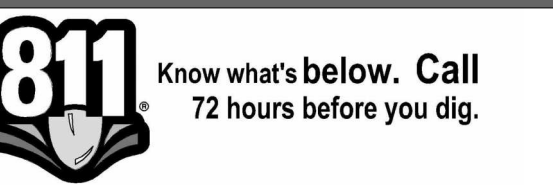
|            |                            |
|------------|----------------------------|
| 2/13/2025  | PROPOSAL ISSUE             |
| 11/11/2024 | PLANNING COMMISSION REVIEW |
| DATE       | SUBMITTALS/REVISIONS       |

**MACOMB TOWNSHIP DPW ADDITION**

**FIRST FLOOR PLAN**

CLIENT: **MACOMB TOWNSHIP**

|                                      |                                       |                                 |
|--------------------------------------|---------------------------------------|---------------------------------|
| <input type="checkbox"/> PRELIMINARY | <input type="checkbox"/> CONSTRUCTION | <input type="checkbox"/> RECORD |
| DRAWN BY: NMA                        | CHECKED BY: JRA                       | DATE: 2/13/2025                 |
| SCALE: AS NOTED                      |                                       |                                 |



UTILITY INFORMATION, AS SHOWN, INDICATES APPROXIMATE LOCATIONS AND TYPES OF EXISTING FACILITIES ONLY, AS DISCLOSED BY RECORDS PROVIDED TO THIS FIRM FROM THE VARIOUS UTILITY COMPANIES. NO GUARANTEE IS GIVEN OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF.

PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING OVERHEAD AND UNDERGROUND UTILITIES (IN CONFLICT WITH THE CONSTRUCTION OF THESE PROPOSED IMPROVEMENTS) SHALL BE VERIFIED IN THE FIELD. DURING THE CONSTRUCTION, THE CONTRACTOR SHALL PROTECT AND SUPPORT ALL UTILITIES THAT ARE ENCOUNTERED. (ALL COSTS FOR UTILITY LOCATION, VERIFICATION, SUPPORT AND PROTECTION SHALL BE INCLUDED IN THE PROPOSED PAY ITEM CONFLICTING WITH THAT UTILITY).

DURING CONSTRUCTION, THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN OPERATING NEAR ANY AND ALL OVERHEAD AND / OR BURIED UTILITIES.

PROJECT NO. **0249-0322**

C:\Users\mstoring\Documents\DPW Addition  
3/10/2025 5:17:17 PM  
3/10/2025 5:17:17 PM

**A101**



ANDERSON, ECKSTEIN AND WESTRICK, INC.

CIVIL ENGINEERS SURVEYORS ARCHITECTS  
51301 Schoenherr Road Phone 586 726 1234  
Shelby Township Fax 586 726 8780  
Michigan 48315  
www.aewinc.com

ENGINEERING STRONG COMMUNITIES

|   |                      |
|---|----------------------|
| 2/13/2025   | PROPOSAL ISSUE       |
| DATE  | SUBMITTALS/REVISIONS |
| PROJECT NAME:   |                      |
| <b>MACOMB TOWNSHIP DPW ADDITION</b>   |                      |
| SHEET TITLE:  |                      |
| <b>REFLECTED CEILING PLAN</b>   |                      |
| CLIENT:   |                      |
| <b>MACOMB TOWNSHIP</b>  |                      |
| <input checked="" type="checkbox"/> PRELIMINARY <input type="checkbox"/> CONSTRUCTION <input type="checkbox"/> RECORD |                      |
| DRAWN BY:   | CHECKED BY:          |
| NMA   | JRA                  |
| SCALE:  | DATE:                |
| AS NOTED  | 2/13/2025            |

**MACOMB TOWNSHIP DPW ADDITION**

**REFLECTED CEILING PLAN**

CLIENT: **MACOMB TOWNSHIP**

|   |                                       |                                 |
|---|---------------------------------------|---------------------------------|
| <input checked="" type="checkbox"/> PRELIMINARY | <input type="checkbox"/> CONSTRUCTION | <input type="checkbox"/> RECORD |
| DRAWN BY:                                       | CHECKED BY:                           | DATE:                           |
| NMA   | JRA                                   | 2/13/2025                       |
| SCALE:  | AS NOTED                              |                                 |



UTILITY INFORMATION, AS SHOWN, INDICATES APPROXIMATE LOCATIONS AND TYPES OF EXISTING FACILITIES ONLY, AS DISCLOSED BY RECORDS PROVIDED TO THIS FIRM FROM THE VARIOUS UTILITY COMPANIES. NO GUARANTEE IS GIVEN OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF.

PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING OVERHEAD AND UNDERGROUND UTILITIES (IN CONFLICT WITH THE CONSTRUCTION OF THESE PROPOSED IMPROVEMENTS) SHALL BE VERIFIED IN THE FIELD. DURING THE CONSTRUCTION, THE CONTRACTOR SHALL PROTECT AND SUPPORT ALL UTILITIES THAT ARE ENCOUNTERED. (ALL COSTS FOR UTILITY LOCATION, VERIFICATION, SUPPORT AND PROTECTION SHALL BE INCLUDED IN THE PROPOSED PAY ITEM CONFLICTING WITH THAT UTILITY).

DURING CONSTRUCTION, THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN OPERATING NEAR ANY AND ALL OVERHEAD AND / OR BURIED UTILITIES.

PROJECT NO. 0249-0322

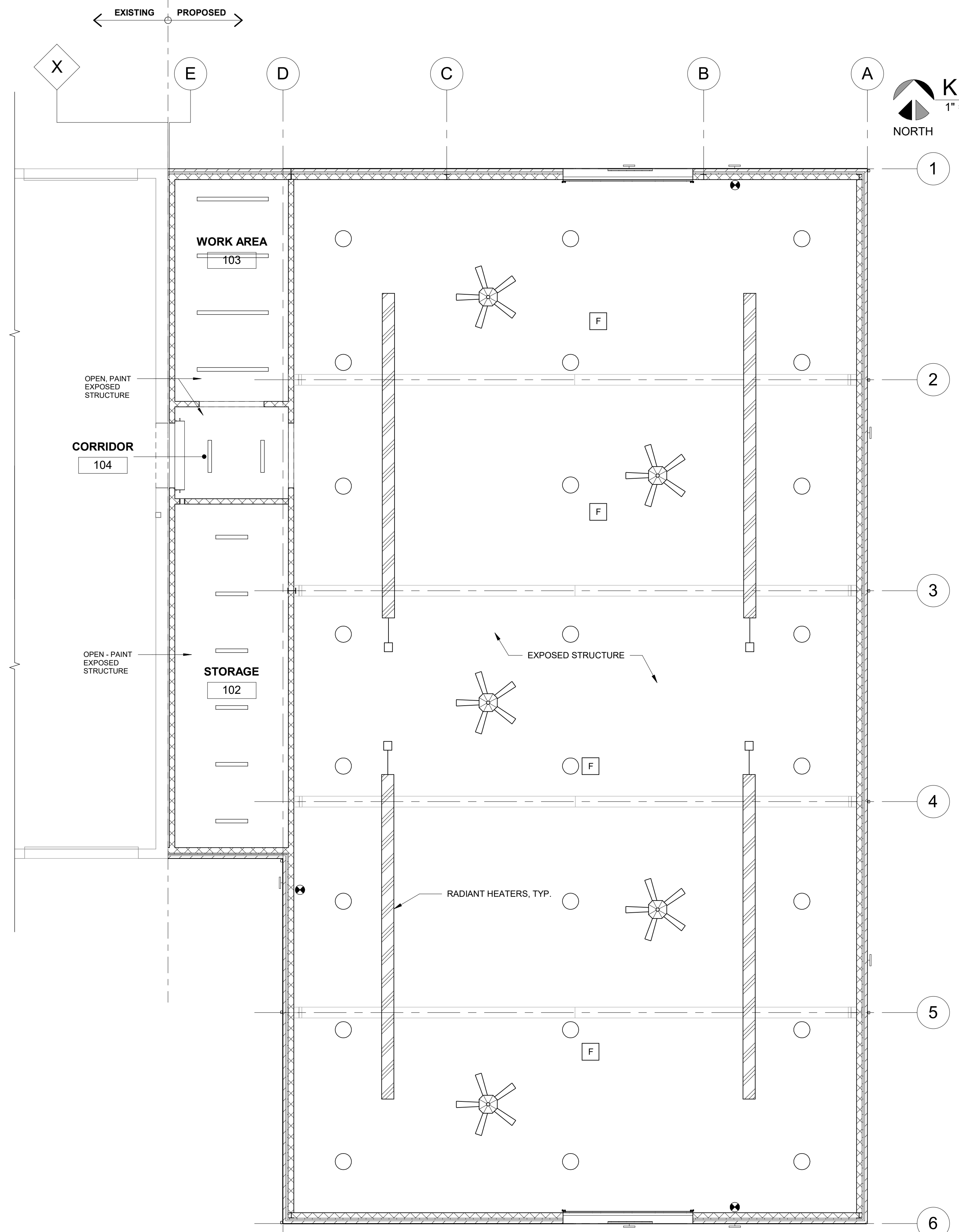
C:\Users\marmstrong\Documents\DPW Addition\811\811.dwg  
811.dwg  
811.dwg

SHEET NO.

**A111**

**CEILING LEGEND :**

- LED EXTERIOR
- ADDITIONAL LIGHT FIXTURE
- EXIT SIGN
- CEILING FAN
- BAY LIGHTING
- FIRE ALARM



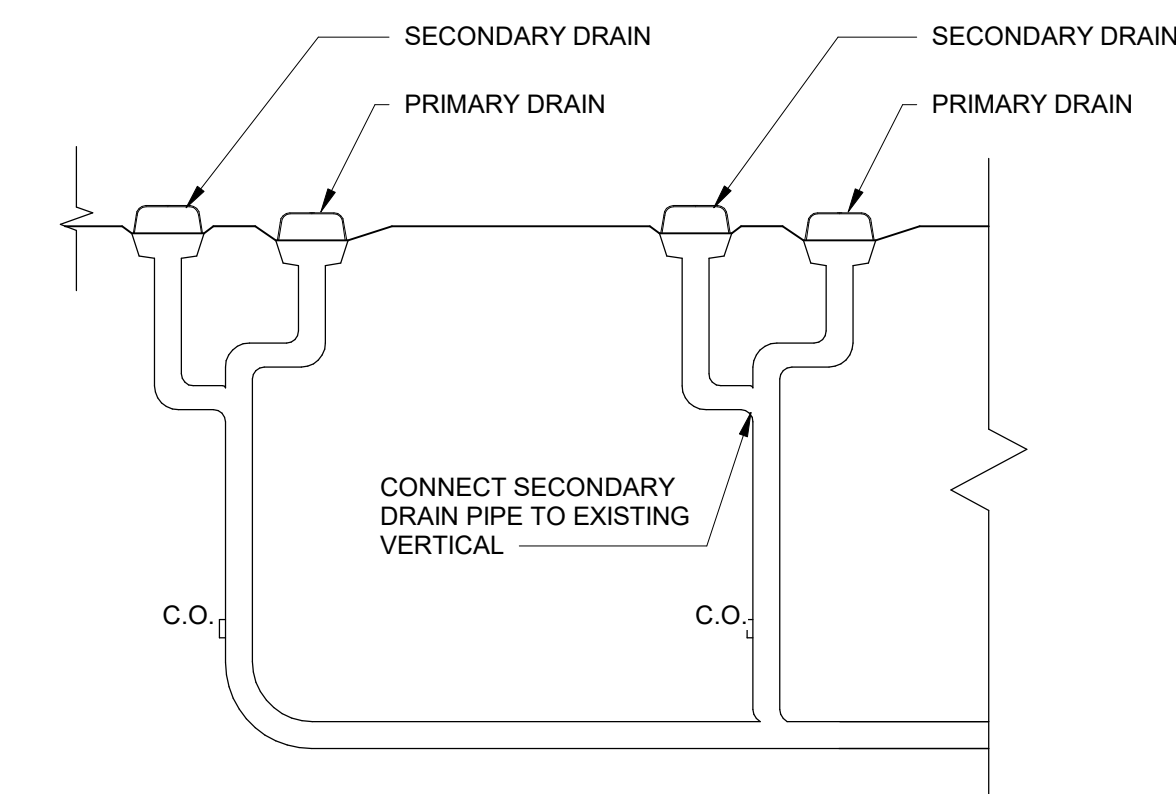
**REFLECTED CEILING PLAN**  
1/8" = 1'-0"  
NORTH

**ROOF PLAN LEGEND :**

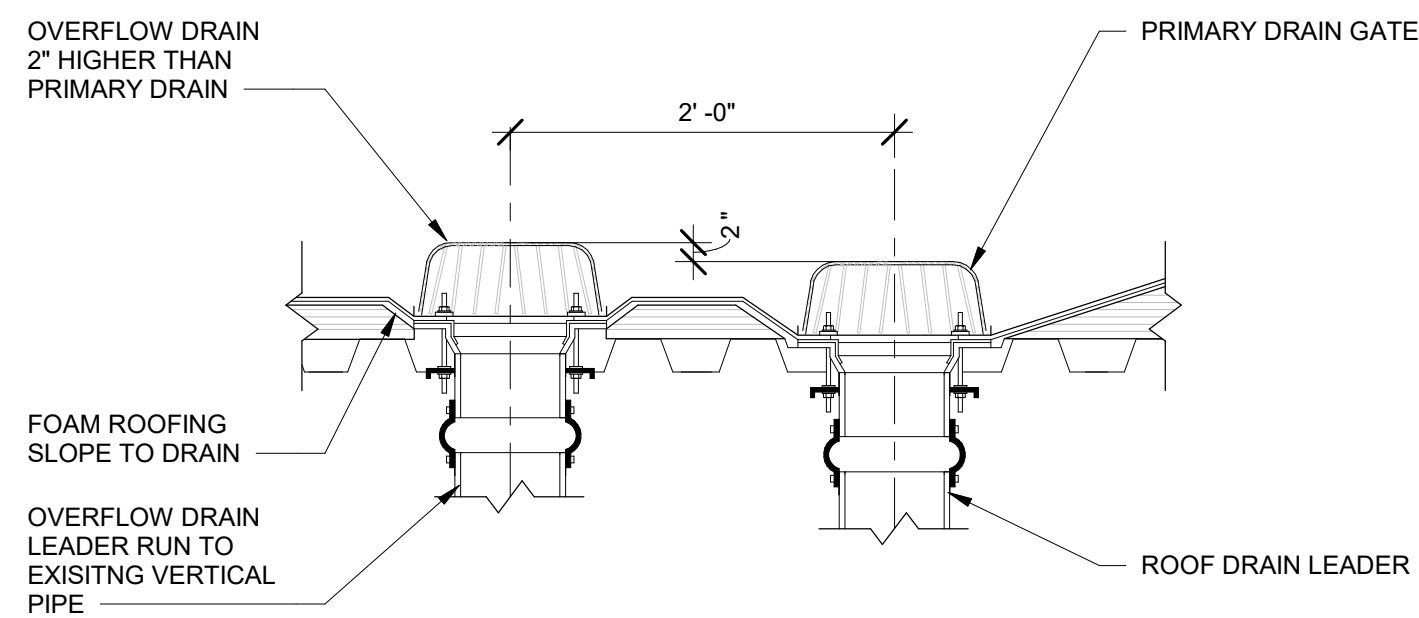
- D.S. DOWN SPOUT
- R.D. ROOF DRAIN
- VTR VENT-THRU ROOF (REFER TO PLUMBING DWG.)



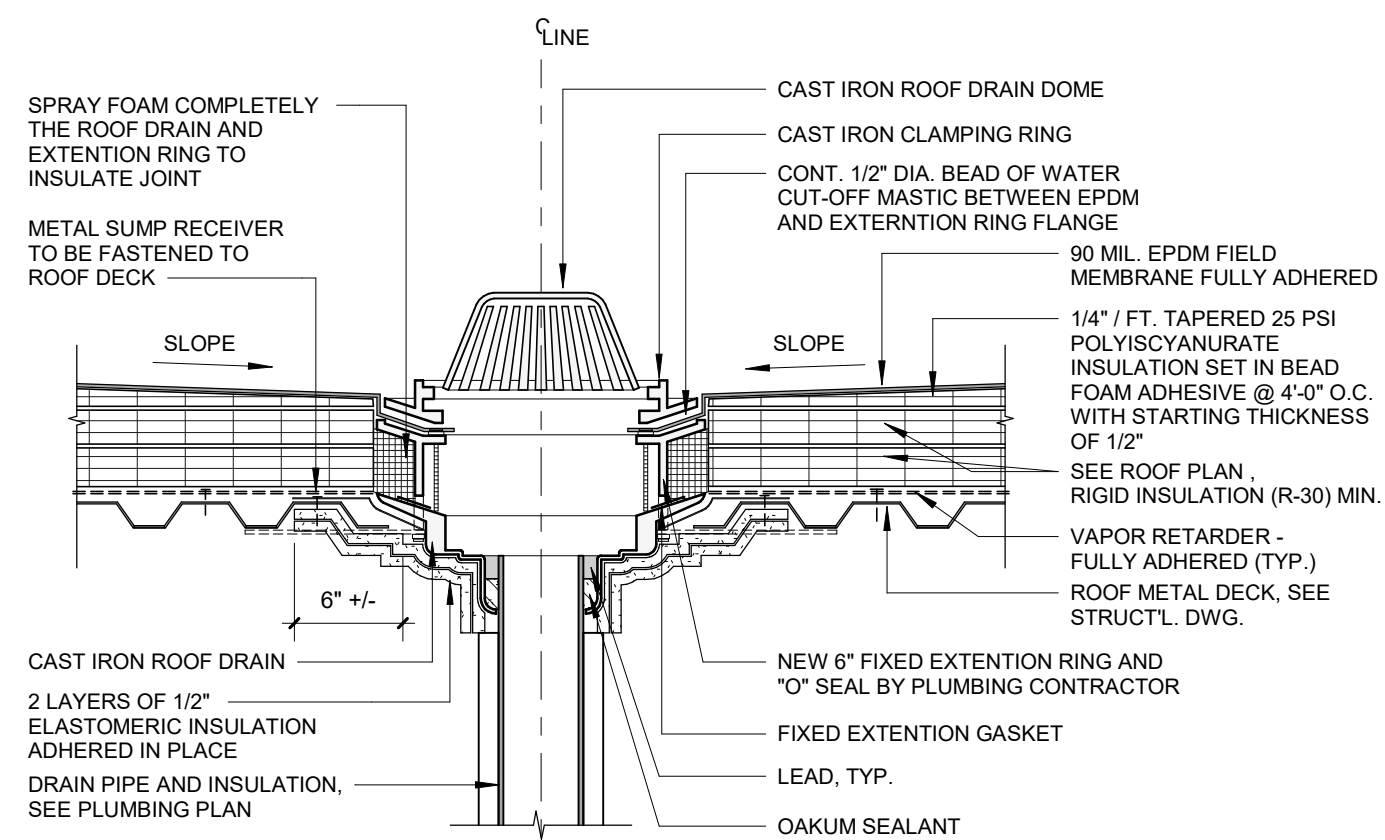
**KEYPLAN**  
1" = 50'-0"  
NORTH



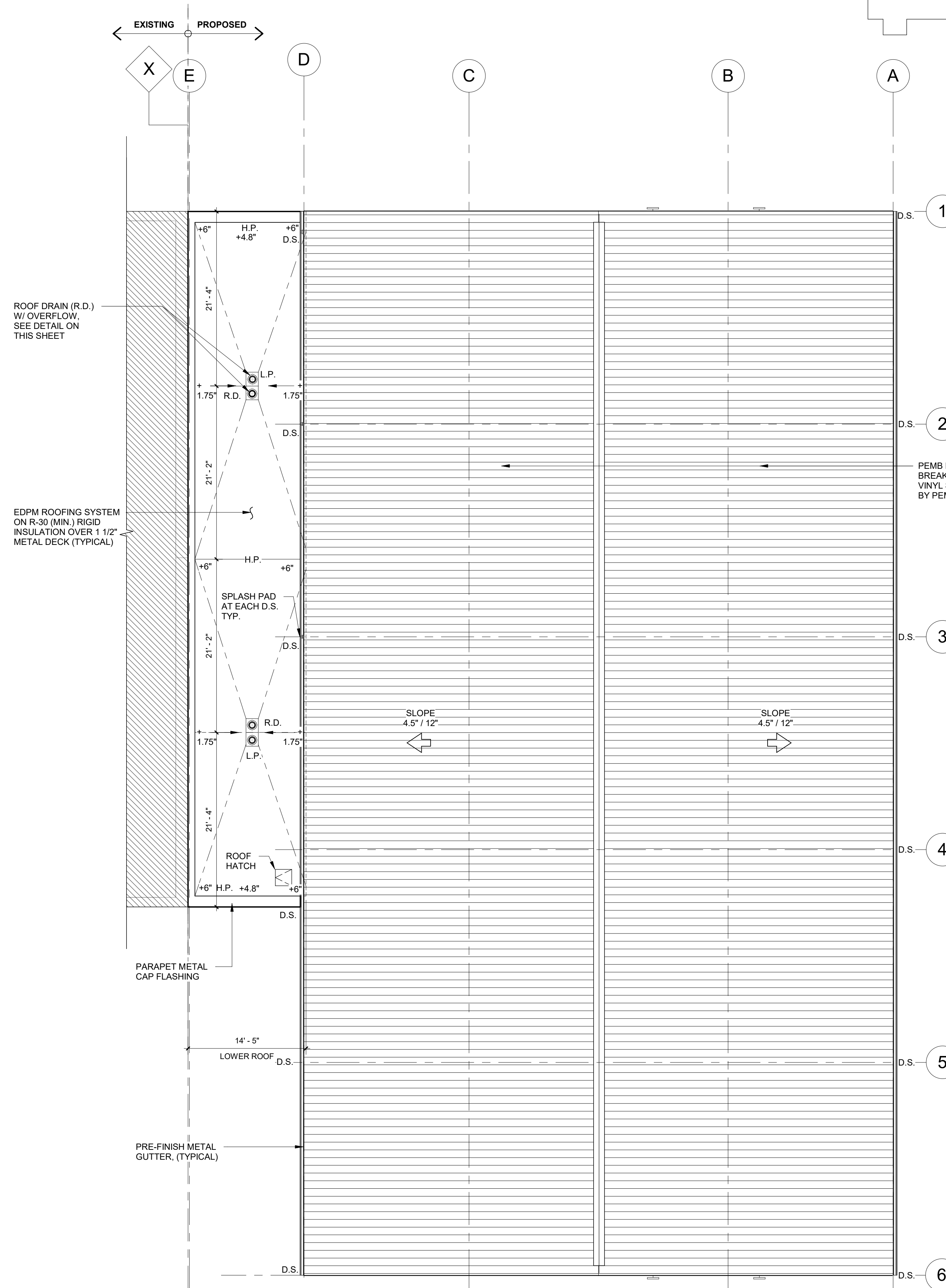
**3 SECONDARY DRAIN PIPING DETAIL**  
A121 3/8" = 1'-0"



**2 SECONDARY DRAIN DETAIL**  
A121 1" = 1'-0"



**1 TYP. ROOF DRAIN DETAIL**  
A121 1/2" = 1'-0"



**UPPER ROOF PLAN**  
1/8" = 1'-0"  
NORTH

ENGINEERING STRONG COMMUNITIES

|               |                      |
|---------------|----------------------|
| 2/13/2025     | PROPOSAL ISSUE       |
| DATE          | SUBMITTALS/REVISIONS |
| PROJECT NAME: |                      |

**MACOMB TOWNSHIP DPW ADDITION**

SHEET TITLE:

**ROOF PLAN**

CLIENT: **MACOMB TOWNSHIP**

|   |                                       |                                 |
|---|---------------------------------------|---------------------------------|
| <input checked="" type="checkbox"/> PRELIMINARY | <input type="checkbox"/> CONSTRUCTION | <input type="checkbox"/> RECORD |
| DRAWN BY: NMA                                   | CHECKED BY: JRA                       | DATE: 2/13/2025                 |
| SCALE: AS NOTED                                 |                                       |                                 |



UTILITY INFORMATION, AS SHOWN, INDICATES APPROXIMATE LOCATIONS AND TYPES OF EXISTING FACILITIES ONLY, AS DISCLOSED BY RECORDS PROVIDED TO THIS FIRM FROM THE VARIOUS UTILITY COMPANIES. NO GUARANTEE IS GIVEN OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF.

PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING OVERHEAD AND UNDERGROUND UTILITIES IN CONFLICT WITH THE CONSTRUCTION OF THESE PROPOSED IMPROVEMENTS SHALL BE VERIFIED IN THE FIELD. DURING THE CONSTRUCTION, THE CONTRACTOR SHALL PROTECT AND SUPPORT ALL UTILITIES THAT ARE ENCOUNTERED. (ALL COSTS FOR UTILITY LOCATION, VERIFICATION, SUPPORT AND PROTECTION SHALL BE INCLUDED IN THE PROPOSED PAY ITEM CONFLICTING WITH THAT UTILITY).

DURING CONSTRUCTION, THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN OPERATING NEAR ANY AND ALL OVERHEAD AND / OR BURIED UTILITIES.

PROJECT NO. 0249-0322

C:\Users\namastong\Documents\DPW Addition\818249-0322.dwg  
3/18/2025 1:14:58 PM  
3/18/2025 1:14:58 PM

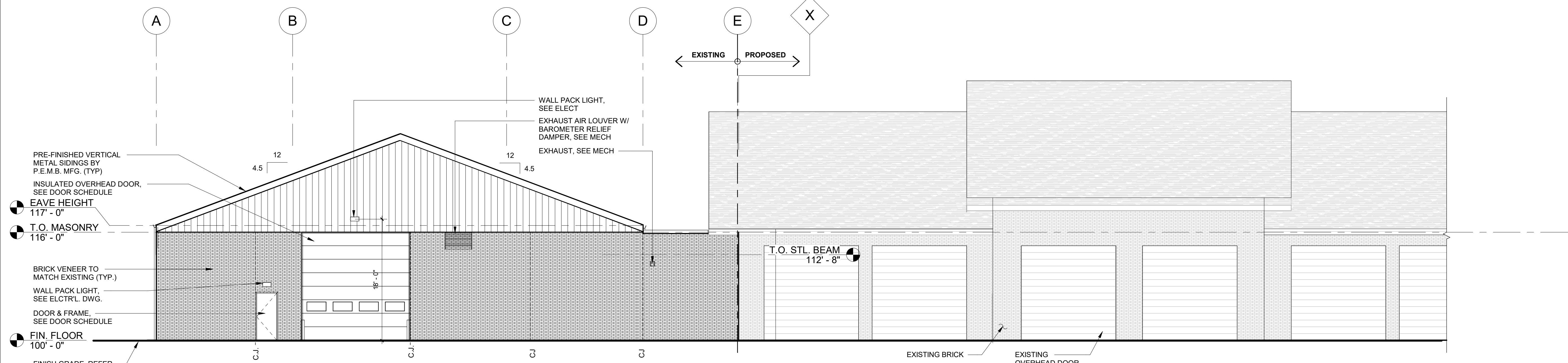
SHEET NO.



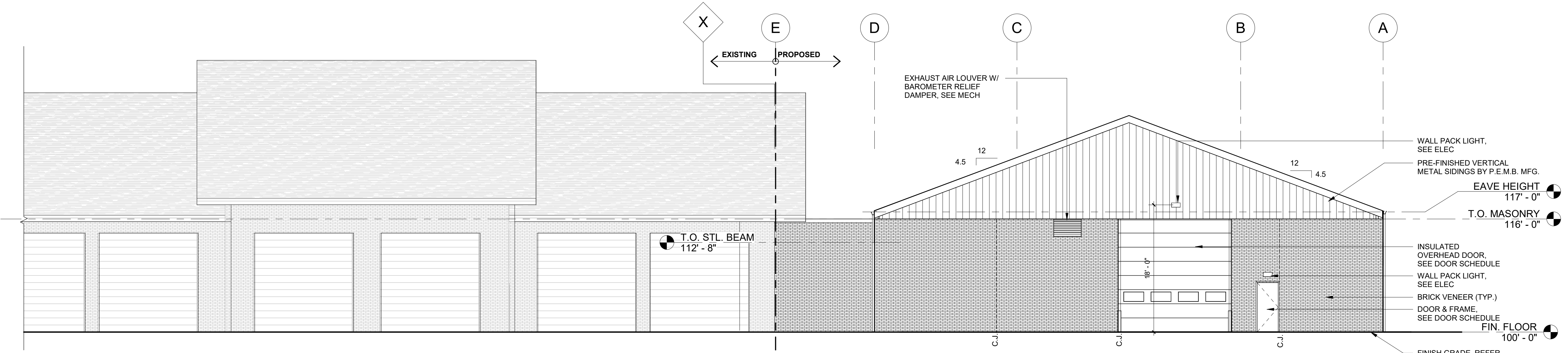
ANDERSON, ECKSTEIN AND WESTRICK, INC.

CIVIL ENGINEERS SURVEYORS ARCHITECTS  
 51301 Schoenherr Road Phone 586 726 1234  
 Shelby Township Michigan 48315 Fax 586 726 8780  
 www.aewinc.com

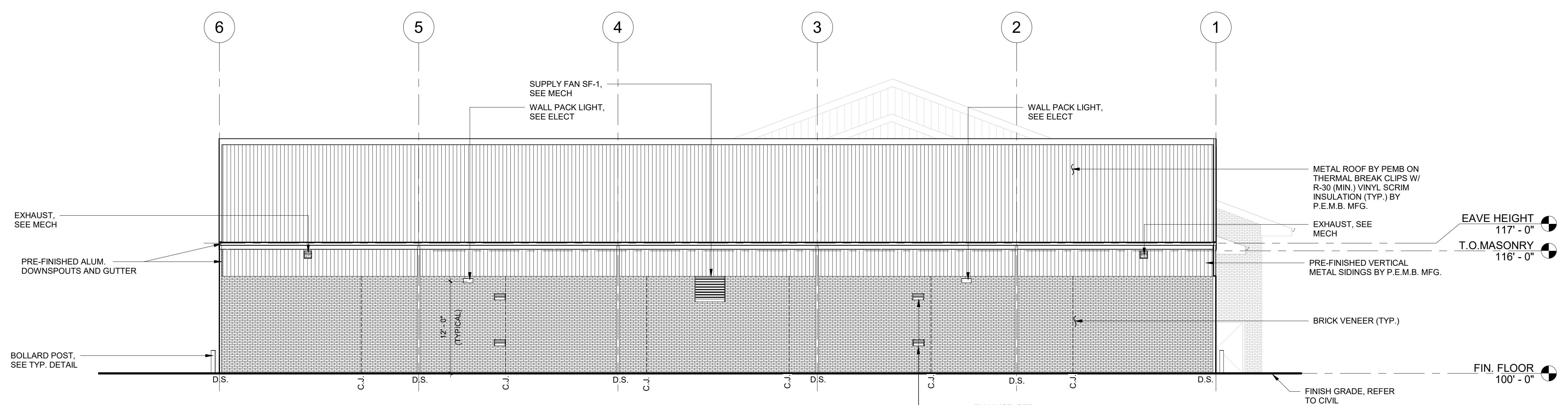
ENGINEERING STRONG COMMUNITIES



3 NORTH ELEVATION  
 A201 1/8" = 1'-0"



2 SOUTH ELEVATION  
 A201 1/8" = 1'-0"



1 EAST ELEVATION  
 A201 1/8" = 1'-0"

|            |                            |
|------------|----------------------------|
| 2/13/2025  | PROPOSAL ISSUE             |
| 11/11/2024 | PLANNING COMMISSION REVIEW |
| DATE       | SUBMITTALS/REVISIONS       |

PROJECT NAME:

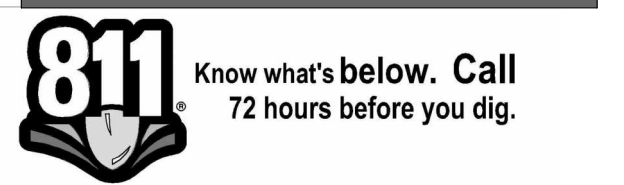
**MACOMB TOWNSHIP DPW ADDITION**

SHEET TITLE:

**EXTERIOR ELEVATIONS**

CLIENT: **MACOMB TOWNSHIP**

|                                      |                                       |                                 |
|--------------------------------------|---------------------------------------|---------------------------------|
| <input type="checkbox"/> PRELIMINARY | <input type="checkbox"/> CONSTRUCTION | <input type="checkbox"/> RECORD |
| DRAWN BY: NMA                        | CHECKED BY: JRA                       | DATE: 2/13/2025                 |
| SCALE: AS NOTED                      |                                       |                                 |



UTILITY INFORMATION, AS SHOWN, INDICATES APPROXIMATE LOCATIONS AND TYPES OF EXISTING FACILITIES ONLY, AS DISCLOSED BY RECORDS PROVIDED TO THIS FIRM FROM THE VARIOUS UTILITY COMPANIES. NO GUARANTEE IS GIVEN OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF.

PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING OVERHEAD AND UNDERGROUND UTILITIES IN CONFLICT WITH THE CONSTRUCTION OF THESE PROPOSED IMPROVEMENTS SHALL BE VERIFIED IN THE FIELD. DURING THE CONSTRUCTION, THE CONTRACTOR SHALL PROTECT AND SUPPORT ALL UTILITIES THAT ARE ENCOUNTERED. (ALL COSTS FOR UTILITY LOCATION, VERIFICATION, SUPPORT AND PROTECTION SHALL BE INCLUDED IN THE PROPOSED PAY ITEM CONFLICTING WITH THAT UTILITY).

DURING CONSTRUCTION, THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN OPERATING NEAR ANY AND ALL OVERHEAD AND / OR BURIED UTILITIES.

PROJECT NO. 0249-0322

C:\Users\marmstrong\Documents\DPW Addition\811\811.dwg  
 3/10/2025 10:58 AM  
 SHEET NO.

**A201**





ANDERSON, ECKSTEIN AND WESTRICK, INC.

CIVIL ENGINEERS SURVEYORS ARCHITECTS  
 51301 Schoenherr Road Phone 586 726 1234  
 Shelby Township Fax 586 726 8780  
 Michigan 48315  
 www.aewinc.com

ENGINEERING STRONG COMMUNITIES

|  |                      |
|--|----------------------|
| 2/13/2025  | PROPOSAL ISSUE       |
| DATE   | SUBMITTALS/REVISIONS |
| PROJECT NAME:  |                      |
| MACOMB TOWNSHIP DPV ADDITION   |                      |
| SHEET TITLE:   |                      |
| ALTERNATE 1 EXTERIOR ELEVATIONS AND DETAILS  |                      |
| CLIENT:  |                      |
| MACOMB TOWNSHIP  |                      |
| <input type="checkbox"/> PRELIMINARY <input type="checkbox"/> CONSTRUCTION <input type="checkbox"/> RECORD |                      |
| DRAWN BY:  | CHECKED BY:   DATE:  |
| NMA  | JRA   2/13/2024      |
| SCALE:   | AS NOTED             |

**MACOMB TOWNSHIP DPV ADDITION**

**ALTERNATE 1 EXTERIOR ELEVATIONS AND DETAILS**

CLIENT: MACOMB TOWNSHIP

|  |             |           |
|--|-------------|-----------|
| <input type="checkbox"/> PRELIMINARY <input type="checkbox"/> CONSTRUCTION <input type="checkbox"/> RECORD |             |           |
| DRAWN BY:  | CHECKED BY: | DATE:     |
| NMA  | JRA         | 2/13/2024 |
| SCALE:   | AS NOTED    |           |



UTILITY INFORMATION, AS SHOWN, INDICATES APPROXIMATE LOCATIONS AND TYPES OF EXISTING UTILITIES ONLY. AS DISCLOSED BY RECORDS PROVIDED TO THIS FIRM FROM THE VARIOUS UTILITY COMPANIES. NO GUARANTEE IS GIVEN OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF.

PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING OVERHEAD AND UNDERGROUND UTILITIES IN CONFLICT WITH THE CONSTRUCTION OF THESE PROPOSED IMPROVEMENTS SHALL BE VERIFIED IN THE FIELD. DURING THE CONSTRUCTION, THE CONTRACTOR SHALL PROTECT AND SUPPORT ALL UTILITIES THAT ARE ENCOUNTERED. (ALL COSTS FOR UTILITY LOCATION, VERIFICATION, SUPPORT AND PROTECTION SHALL BE INCLUDED IN THE PROPOSED PAY ITEM CONFLICTING WITH THAT UTILITY).

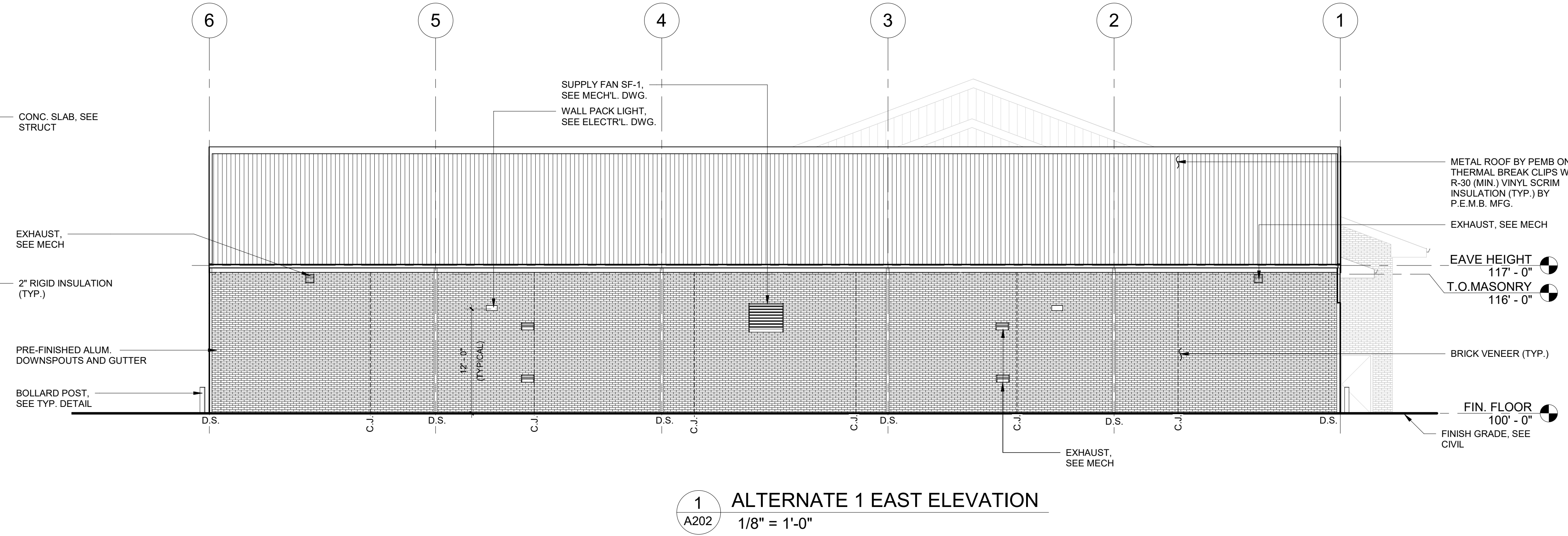
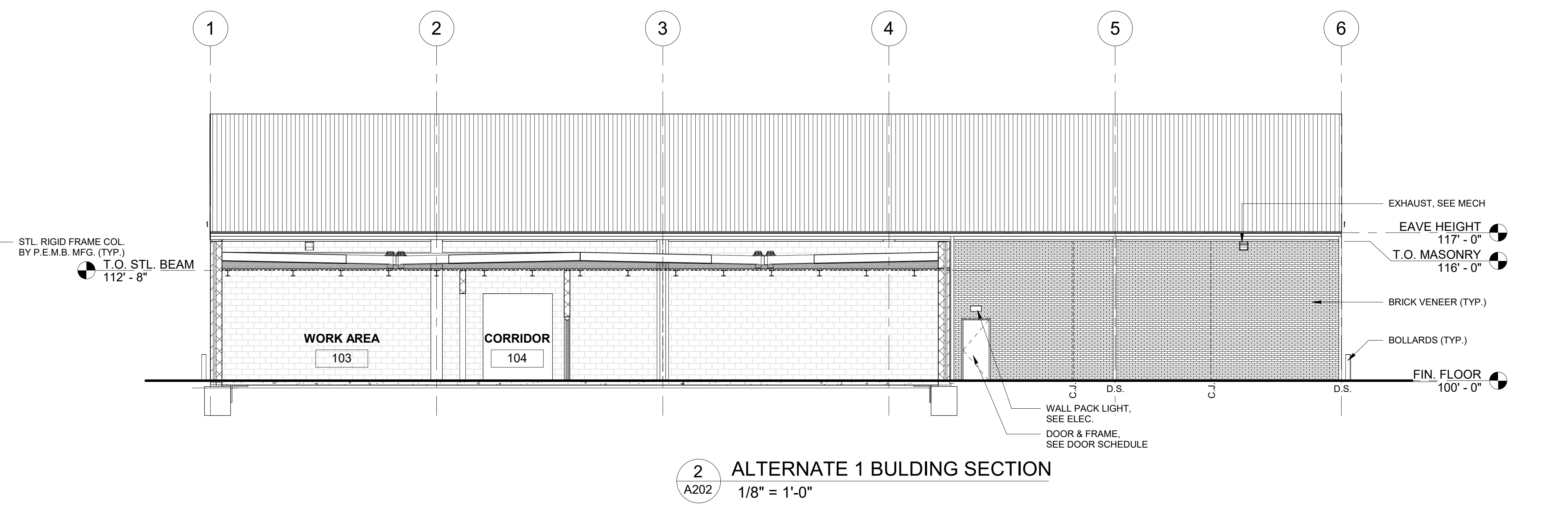
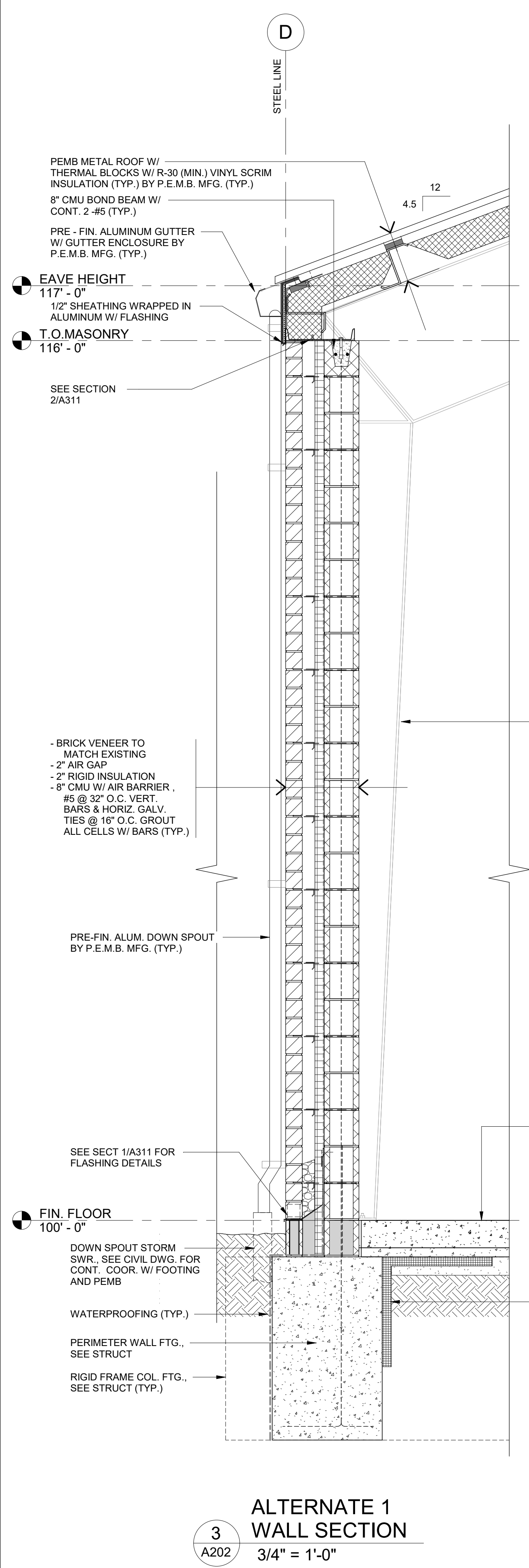
DURING CONSTRUCTION, THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN OPERATING NEAR ANY AND ALL OVERHEAD AND / OR BURIED UTILITIES.

PROJECT NO. 0249-0322

C:\Users\marmstrong\Documents\DPV Addition  
 2/13/2025 1:29:55 PM  
 811.dwg

SHEET NO.

**A202**

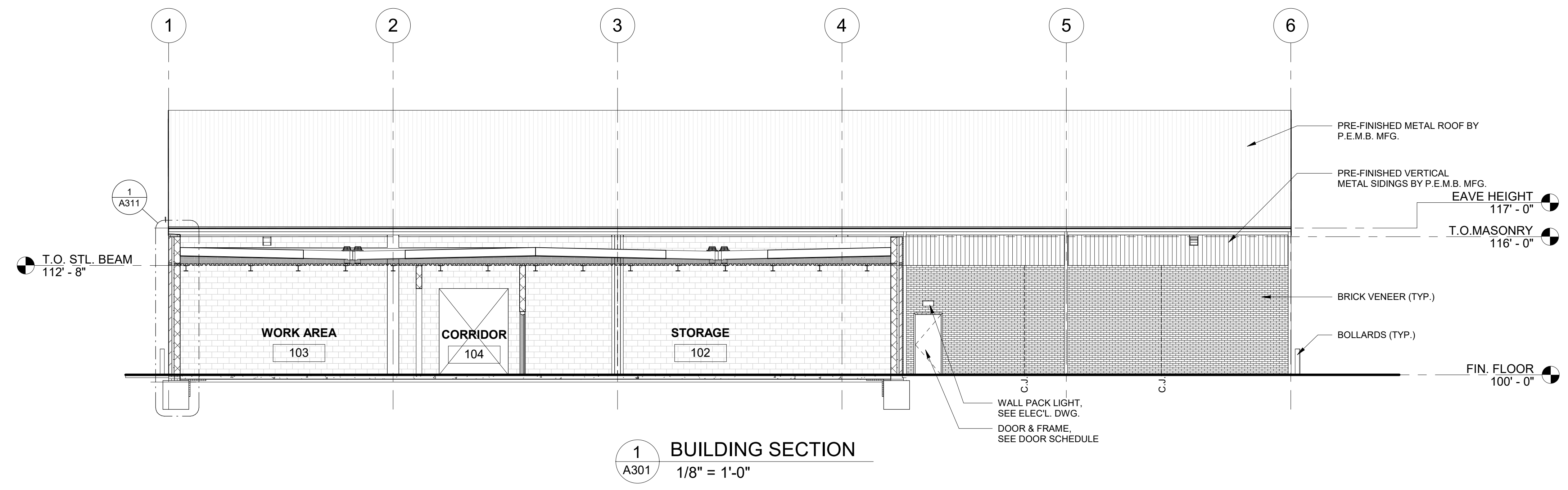




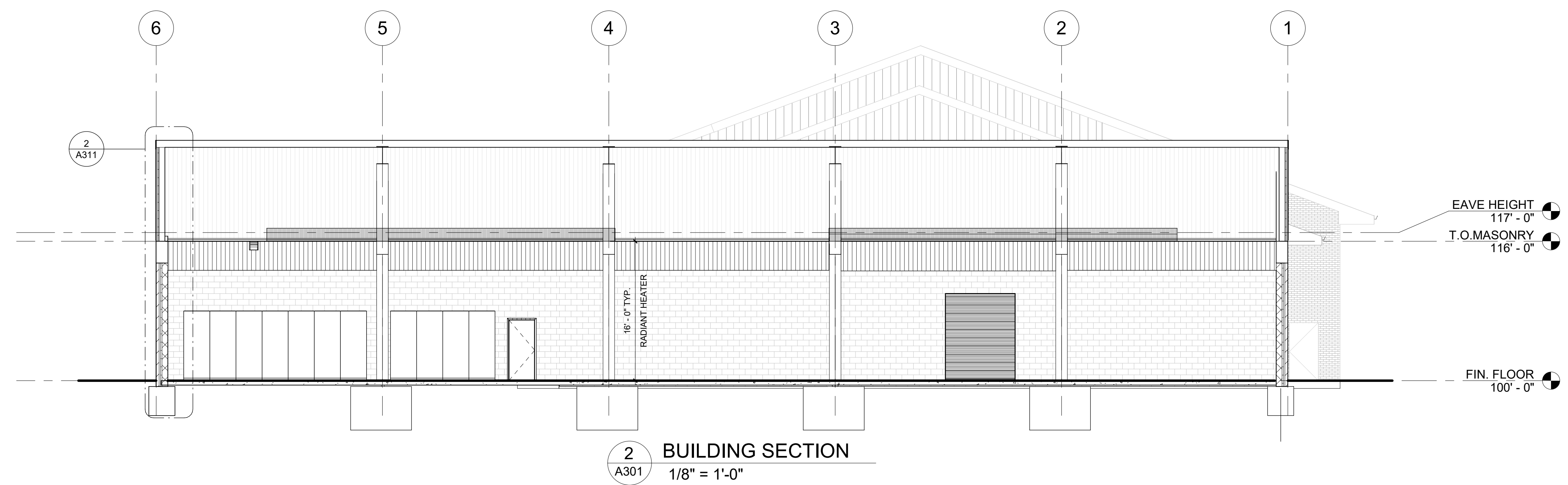
ANDERSON, ECKSTEIN AND WESTRICK, INC.

CIVIL ENGINEERS SURVEYORS ARCHITECTS  
 51301 Schoenherr Road Phone 586 726 1234  
 Shelby Township Fax 586 726 8780  
 Michigan 48315  
 www.aewinc.com

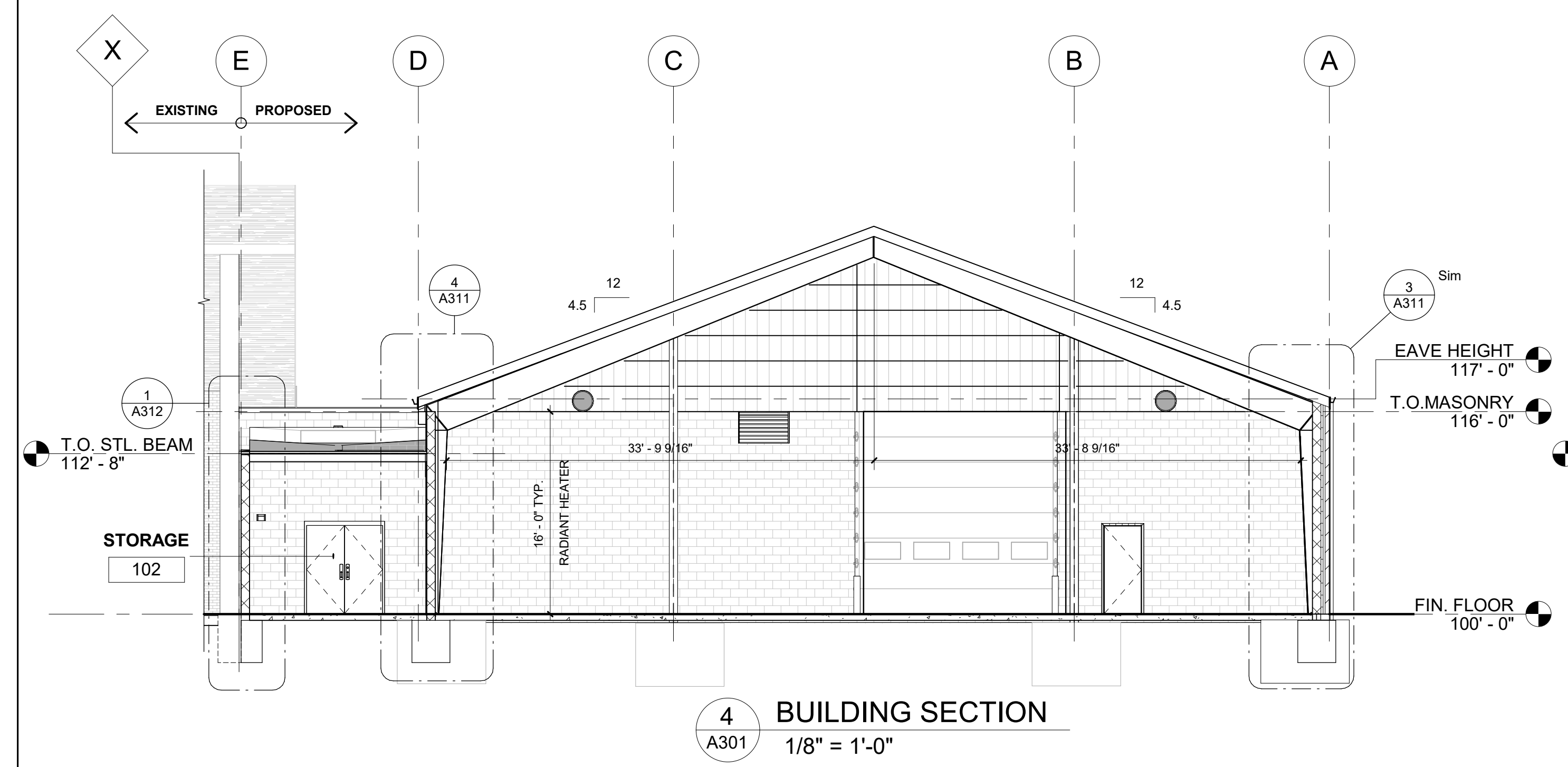
ENGINEERING STRONG COMMUNITIES



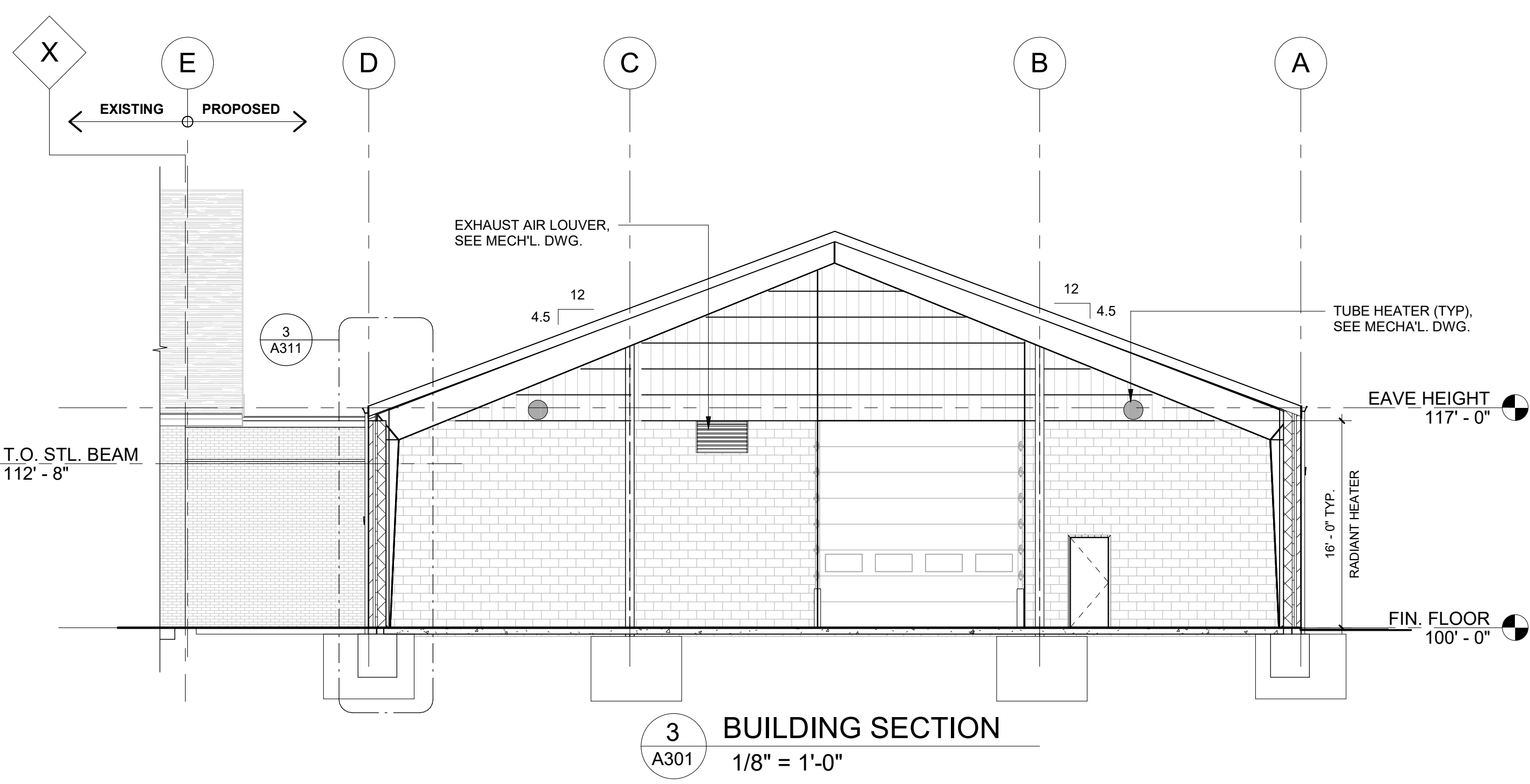
1 BUILDING SECTION  
 A301 1/8" = 1'-0"



2 BUILDING SECTION  
 A301 1/8" = 1'-0"



4 BUILDING SECTION  
 A301 1/8" = 1'-0"



3 BUILDING SECTION  
 A301 1/8" = 1'-0"

|           |                      |
|-----------|----------------------|
| 2/13/2025 | PROPOSAL ISSUE       |
| DATE      | SUBMITTALS/REVISIONS |

PROJECT NAME:

**MACOMB TOWNSHIP DPW ADDITION**

SHEET TITLE:

**BUILDING SECTIONS**

CLIENT: **MACOMB TOWNSHIP**

|                                      |                                       |                                 |
|--------------------------------------|---------------------------------------|---------------------------------|
| <input type="checkbox"/> PRELIMINARY | <input type="checkbox"/> CONSTRUCTION | <input type="checkbox"/> RECORD |
| DRAWN BY: NMA                        | CHECKED BY: JRA                       | DATE: 2/13/2025                 |
| SCALE: AS NOTED                      |                                       |                                 |



UTILITY INFORMATION, AS SHOWN, INDICATES APPROXIMATE LOCATIONS AND TYPES OF EXISTING FACILITIES ONLY, AS DISCLOSED BY RECORDS PROVIDED TO THIS FIRM FROM THE VARIOUS UTILITY COMPANIES. NO GUARANTEE IS GIVEN OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF.

PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING OVERHEAD AND UNDERGROUND UTILITIES IN CONFLICT WITH THE CONSTRUCTION OF THESE PROPOSED IMPROVEMENTS SHALL BE VERIFIED IN THE FIELD. DURING THE CONSTRUCTION, THE CONTRACTOR SHALL PROTECT AND SUPPORT ALL UTILITIES THAT ARE ENCOUNTERED. (ALL COSTS FOR UTILITY LOCATION, VERIFICATION, SUPPORT AND PROTECTION SHALL BE INCLUDED IN THE PROPOSED PAY ITEM CONFLICTING WITH THAT UTILITY).

DURING CONSTRUCTION, THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN OPERATING NEAR ANY AND ALL OVERHEAD AND / OR BURIED UTILITIES.

PROJECT NO. 0249-0322

C:\Users\marmstrong\Documents\DPW Addition\811\811.dwg  
 2/13/2025 10:00 AM

SHEET NO.

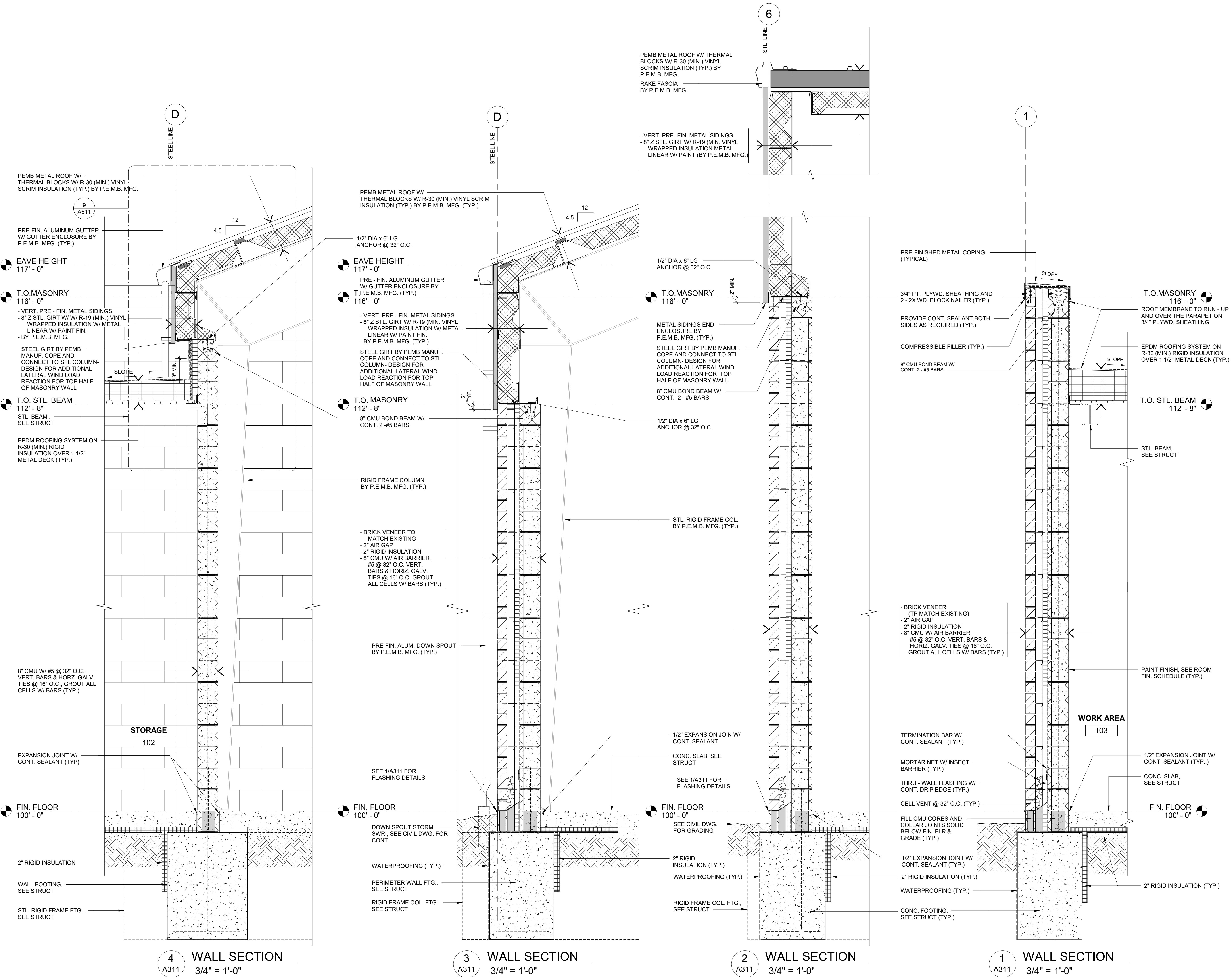
**A301**



ANDERSON, ECKSTEIN AND WESTRICK, INC.

CIVIL ENGINEERS SURVEYORS ARCHITECTS  
51301 Schoenherr Road Phone 586 726 1234  
Shelby Township Fax 586 726 8780  
Michigan 48315  
www.aewinc.com

ENGINEERING STRONG COMMUNITIES



|                                      |                                       |                                 |
|--------------------------------------|---------------------------------------|---------------------------------|
| 2/13/2025                            | PROPOSAL ISSUE                        |                                 |
| DATE                                 | SUBMITTALS/REVISIONS                  |                                 |
| PROJECT NAME:                        |                                       |                                 |
| <b>MACOMB TOWNSHIP DPW ADDITION</b>  |                                       |                                 |
| SHEET TITLE:                         |                                       |                                 |
| <b>WALL SECTIONS</b>                 |                                       |                                 |
| CLIENT:                              |                                       |                                 |
| <b>MACOMB TOWNSHIP</b>               |                                       |                                 |
| <input type="checkbox"/> PRELIMINARY | <input type="checkbox"/> CONSTRUCTION | <input type="checkbox"/> RECORD |
| DRAWN BY: AGP                        | CHECKED BY: JRA                       | DATE: 2/14/2025                 |
| SCALE: AS NOTED                      |                                       |                                 |

**MACOMB TOWNSHIP DPW ADDITION**

**WALL SECTIONS**

|                                      |                                       |                                 |
|--------------------------------------|---------------------------------------|---------------------------------|
| CLIENT: <b>MACOMB TOWNSHIP</b>       |                                       |                                 |
| <input type="checkbox"/> PRELIMINARY | <input type="checkbox"/> CONSTRUCTION | <input type="checkbox"/> RECORD |
| DRAWN BY: AGP                        | CHECKED BY: JRA                       | DATE: 2/14/2025                 |
| SCALE: AS NOTED                      |                                       |                                 |



UTILITY INFORMATION, AS SHOWN, INDICATES APPROXIMATE LOCATIONS AND TYPES OF EXISTING FACILITIES ONLY, AS DISCLOSED BY RECORDS PROVIDED TO THIS FIRM FROM THE VARIOUS UTILITY COMPANIES. NO GUARANTEE IS GIVEN OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF.

PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING OVERHEAD AND UNDERGROUND UTILITIES IN CONFLICT WITH THE CONSTRUCTION OF THESE PROPOSED IMPROVEMENTS SHALL BE VERIFIED IN THE FIELD. DURING THE CONSTRUCTION, THE CONTRACTOR SHALL PROTECT AND SUPPORT ALL UTILITIES THAT ARE ENCOUNTERED. (ALL COSTS FOR UTILITY LOCATION, VERIFICATION, SUPPORT AND PROTECTION SHALL BE INCLUDED IN THE PROPOSED PAY ITEM CONFLICTING WITH THAT UTILITY).

DURING CONSTRUCTION, THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN OPERATING NEAR ANY AND ALL OVERHEAD AND/OR BURIED UTILITIES.

PROJECT NO. 0249-0322

C:\Users\marmstrong\Documents\DPW Addition\811\811.dwg  
3/13/2025 1:28:15 PM  
SHEET NO.

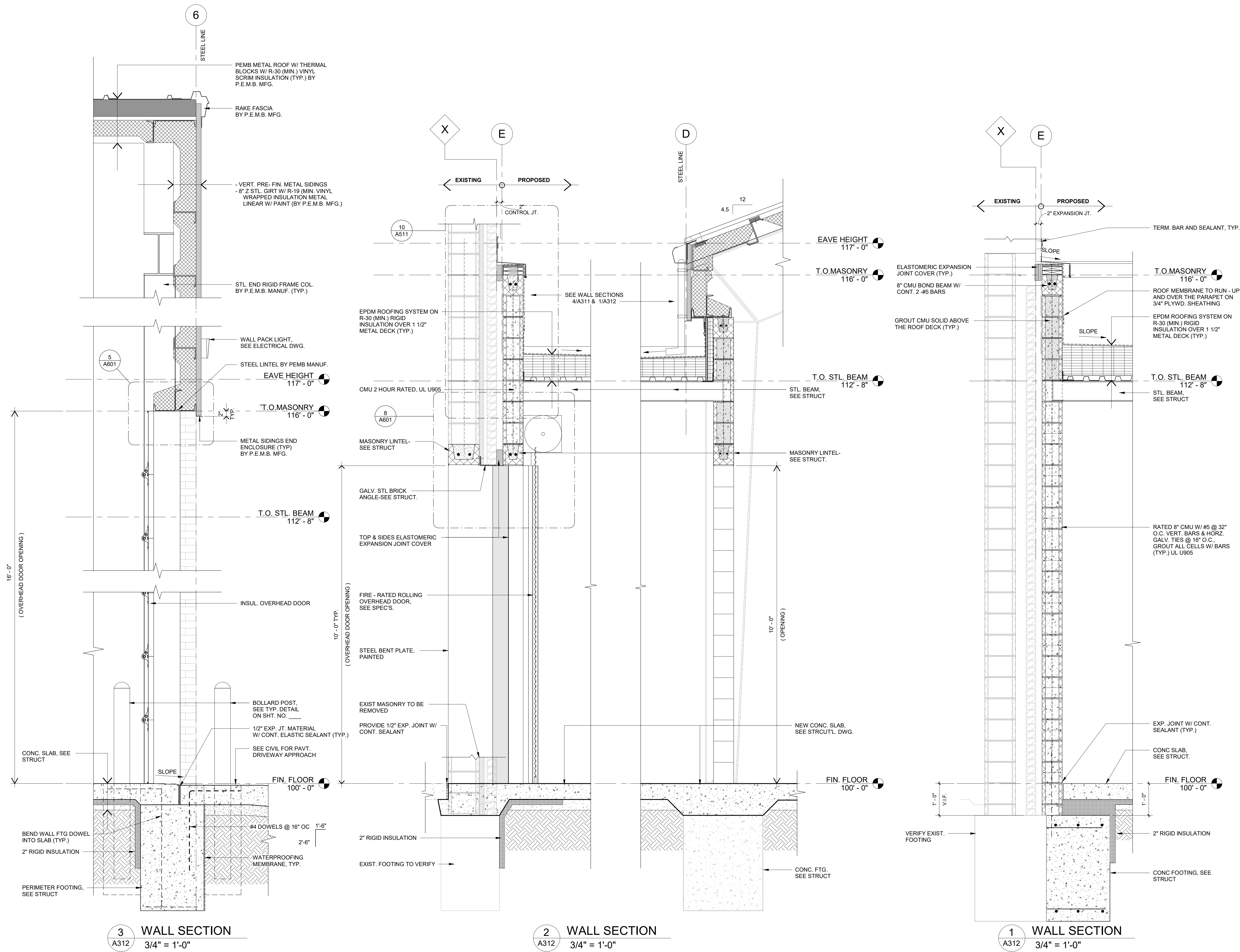
**A311**



ANDERSON, ECKSTEIN AND WESTRICK, INC.

CIVIL ENGINEERS SURVEYORS ARCHITECTS  
 51301 Schoenherr Road Phone 586 726 1234  
 Shelby Township Fax 586 726 8780  
 Michigan 48315  
 www.aewinc.com

ENGINEERING STRONG COMMUNITIES



3 WALL SECTION  
 A312 3/4" = 1'-0"

2 WALL SECTION  
 A312 3/4" = 1'-0"

1 WALL SECTION  
 A312 3/4" = 1'-0"

|           |                      |
|-----------|----------------------|
| 2/13/2025 | PROPOSAL ISSUE       |
| DATE      | SUBMITTALS/REVISIONS |

PROJECT NAME:

**MACOMB TOWNSHIP DPW ADDITION**

SHEET TITLE:

**WALL SECTIONS**

CLIENT: **MACOMB TOWNSHIP**

|   |                                       |                                 |
|---|---------------------------------------|---------------------------------|
| <input checked="" type="checkbox"/> PRELIMINARY | <input type="checkbox"/> CONSTRUCTION | <input type="checkbox"/> RECORD |
| DRAWN BY: AGP                                   | CHECKED BY: JRA                       | DATE: 2/13/2025                 |
| SCALE: AS NOTED                                 |                                       |                                 |



UTILITY INFORMATION, AS SHOWN, INDICATES APPROXIMATE LOCATIONS AND TYPES OF EXISTING FACILITIES ONLY, AS DISCLOSED BY RECORDS PROVIDED TO THIS FIRM FROM THE VARIOUS UTILITY COMPANIES. NO GUARANTEE IS GIVEN OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF.

PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING OVERHEAD AND UNDERGROUND UTILITIES IN CONFLICT WITH THE CONSTRUCTION OF THESE PROPOSED IMPROVEMENTS SHALL BE VERIFIED IN THE FIELD. DURING THE CONSTRUCTION, THE CONTRACTOR SHALL PROTECT AND SUPPORT ALL UTILITIES THAT ARE ENCOUNTERED. (ALL COSTS FOR UTILITY LOCATION, VERIFICATION, SUPPORT AND PROTECTION SHALL BE INCLUDED IN THE PROPOSED PAY ITEM CONFLICTING WITH THAT UTILITY).

DURING CONSTRUCTION, THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN OPERATING NEAR ANY AND ALL OVERHEAD AND/OR BURIED UTILITIES.

PROJECT NO. 0249-0322

C:\Users\armstrong\Documents\DPW Addition  
 2/13/2025 1:28:55 PM agp@cherutwvf.rvt

SHEET NO.

**A312**

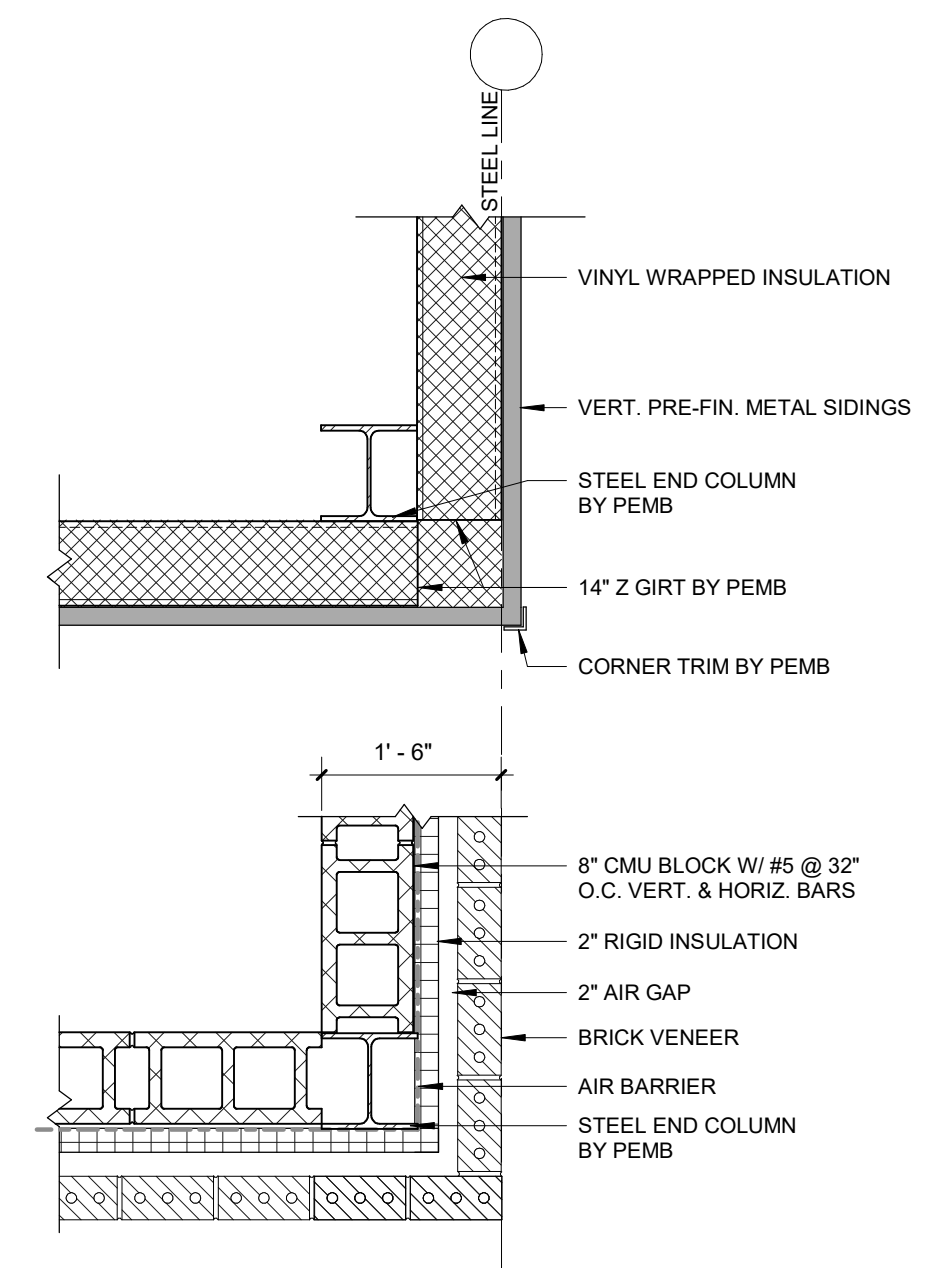


ANDERSON, ECKSTEIN AND WESTRICK, INC.

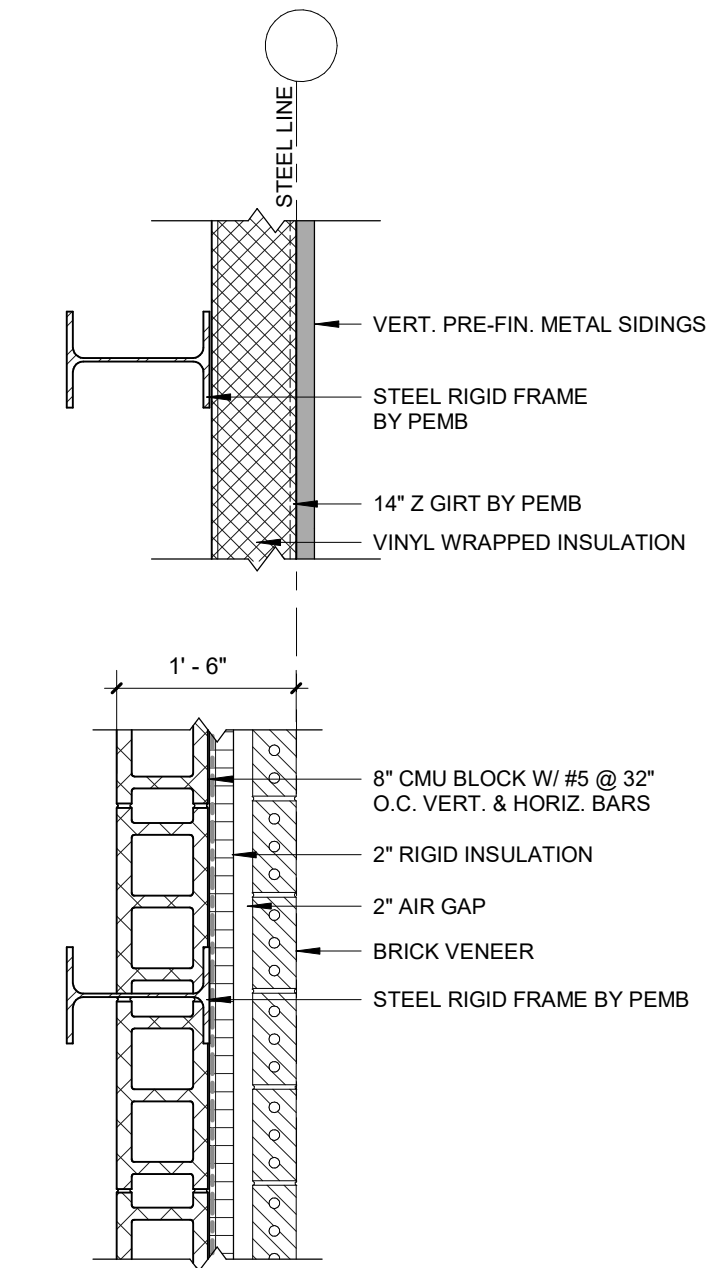
CIVIL ENGINEERS SURVEYORS ARCHITECTS

51301 Schoenherr Road Phone 586 726 1234  
Shelby Township Fax 586 726 8780  
Michigan 48315  
www.aewinc.com

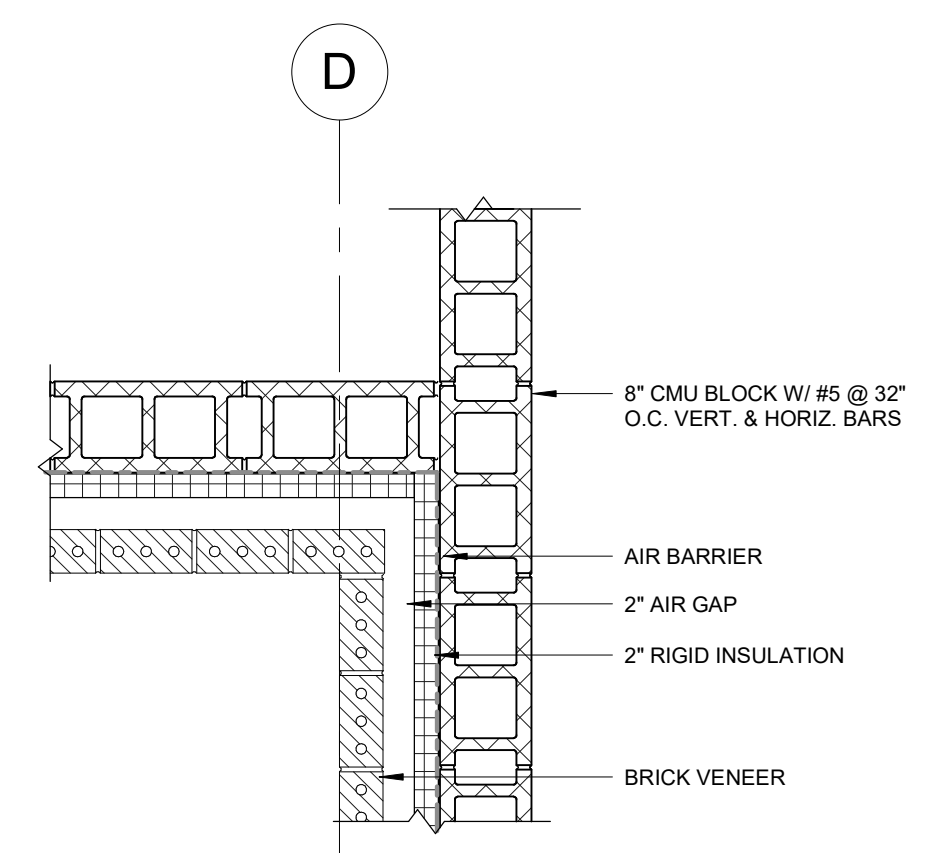
ENGINEERING STRONG COMMUNITIES



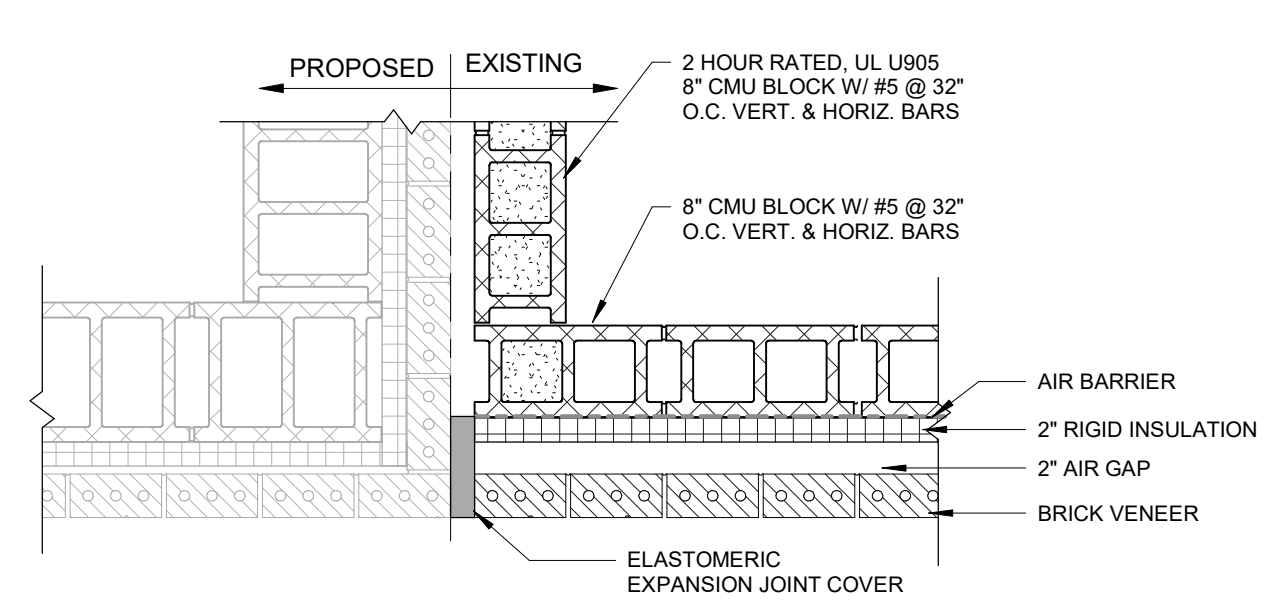
7 END COLUMN DETAIL  
A501 3/4" = 1'-0"



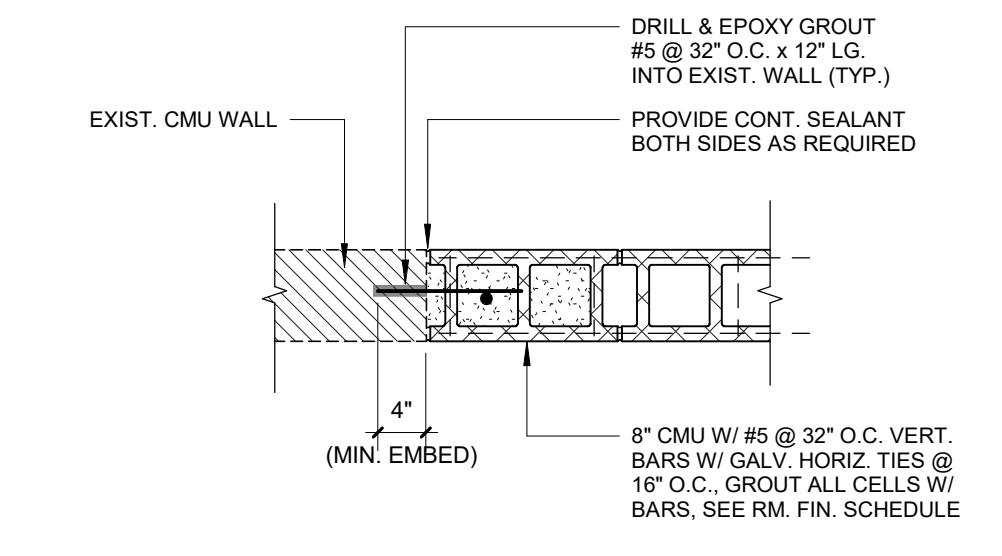
8 RIGID FRAME WALL DETAIL  
A501 3/4" = 1'-0"



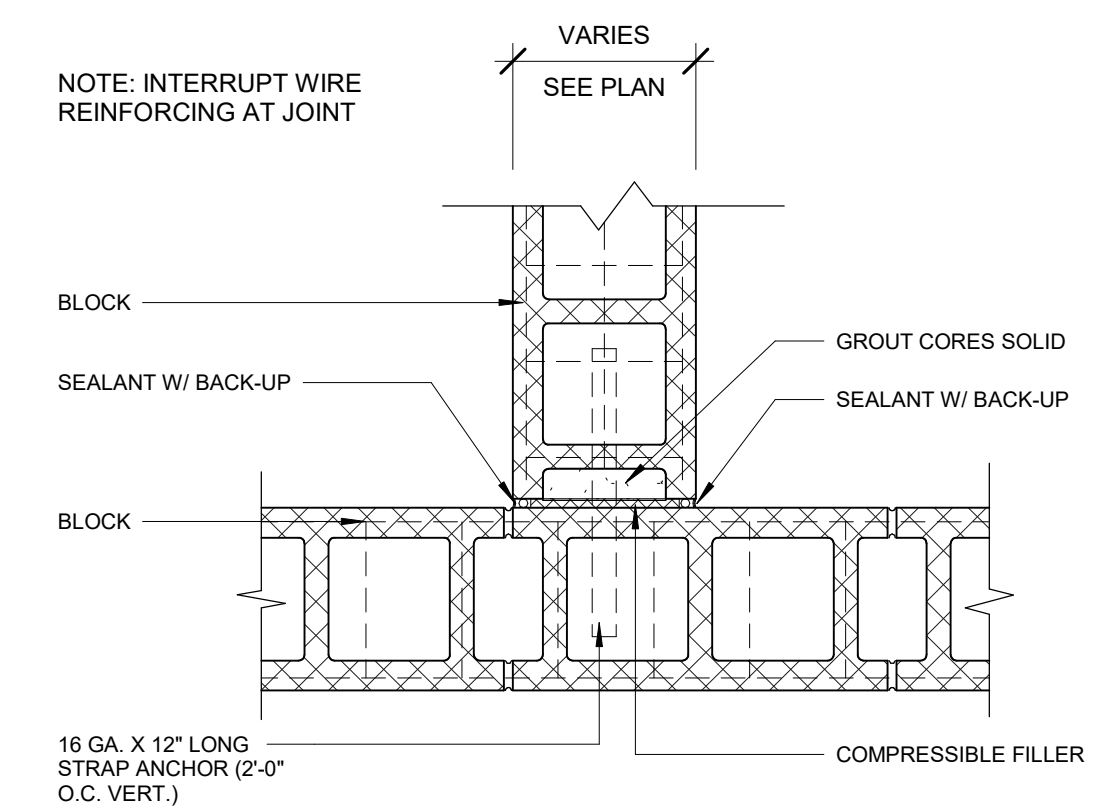
6 CORNER CONNECTION DETAIL  
A501 3/4" = 1'-0"



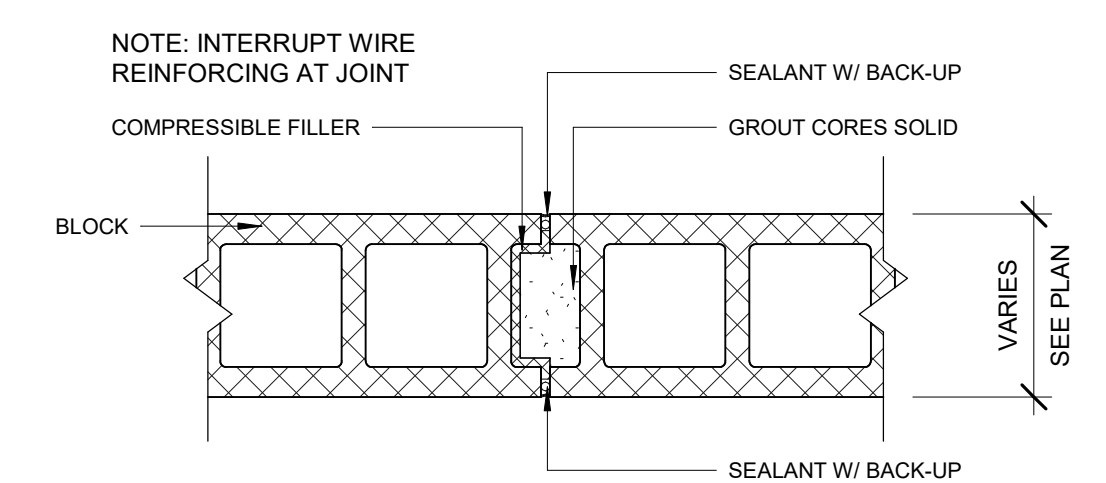
4 EXIST TO ADDITION CONNECTION DETAIL  
A501 3/4" = 1'-0"



5 TYPICAL WALL DETAIL (ADD'N.)  
A501 3/4" = 1'-0"



2 CONTROL JOINT AT INTERSECTING WALL  
A501 1 1/2" = 1'-0"



1 CMU CONTROL JOINT  
A501 1 1/2" = 1'-0"

|               |                      |
|---------------|----------------------|
| 2/13/2025     | PROPOSAL ISSUE       |
| DATE          | SUBMITTALS/REVISIONS |
| PROJECT NAME: |                      |

MACOMB TOWNSHIP DPW ADDITION

SHEET TITLE:

PLAN DETAILS

CLIENT: MACOMB TOWNSHIP

|                                      |                                       |                                 |
|--------------------------------------|---------------------------------------|---------------------------------|
| <input type="checkbox"/> PRELIMINARY | <input type="checkbox"/> CONSTRUCTION | <input type="checkbox"/> RECORD |
| DRAWN BY: NMA                        | CHECKED BY: JRA                       | DATE: 2/13/2025                 |
| SCALE: AS NOTED                      |                                       |                                 |



UTILITY INFORMATION, AS SHOWN, INDICATES APPROXIMATE LOCATIONS AND TYPES OF EXISTING FACILITIES ONLY, AS DISCLOSED BY RECORDS PROVIDED TO THIS FIRM FROM THE VARIOUS UTILITY COMPANIES. NO GUARANTEE IS GIVEN OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF.

PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING OVERHEAD AND UNDERGROUND UTILITIES IN CONFLICT WITH THE CONSTRUCTION OF THESE PROPOSED IMPROVEMENTS SHALL BE VERIFIED IN THE FIELD. DURING THE CONSTRUCTION, THE CONTRACTOR SHALL PROTECT AND SUPPORT ALL UTILITIES THAT ARE ENCOUNTERED. (ALL COSTS FOR UTILITY LOCATION, VERIFICATION, SUPPORT AND PROTECTION SHALL BE INCLUDED IN THE PROPOSED PAY ITEM CONFLICTING WITH THAT UTILITY).

DURING CONSTRUCTION, THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN OPERATING NEAR ANY AND ALL OVERHEAD AND / OR BURIED UTILITIES.

PROJECT NO. 0249-0322

C:\Users\marmstrong\Documents\DPW Addition\810249-0322.dwg  
3/13/2025 1:27:11 PM  
A501

SHEET NO.

A501

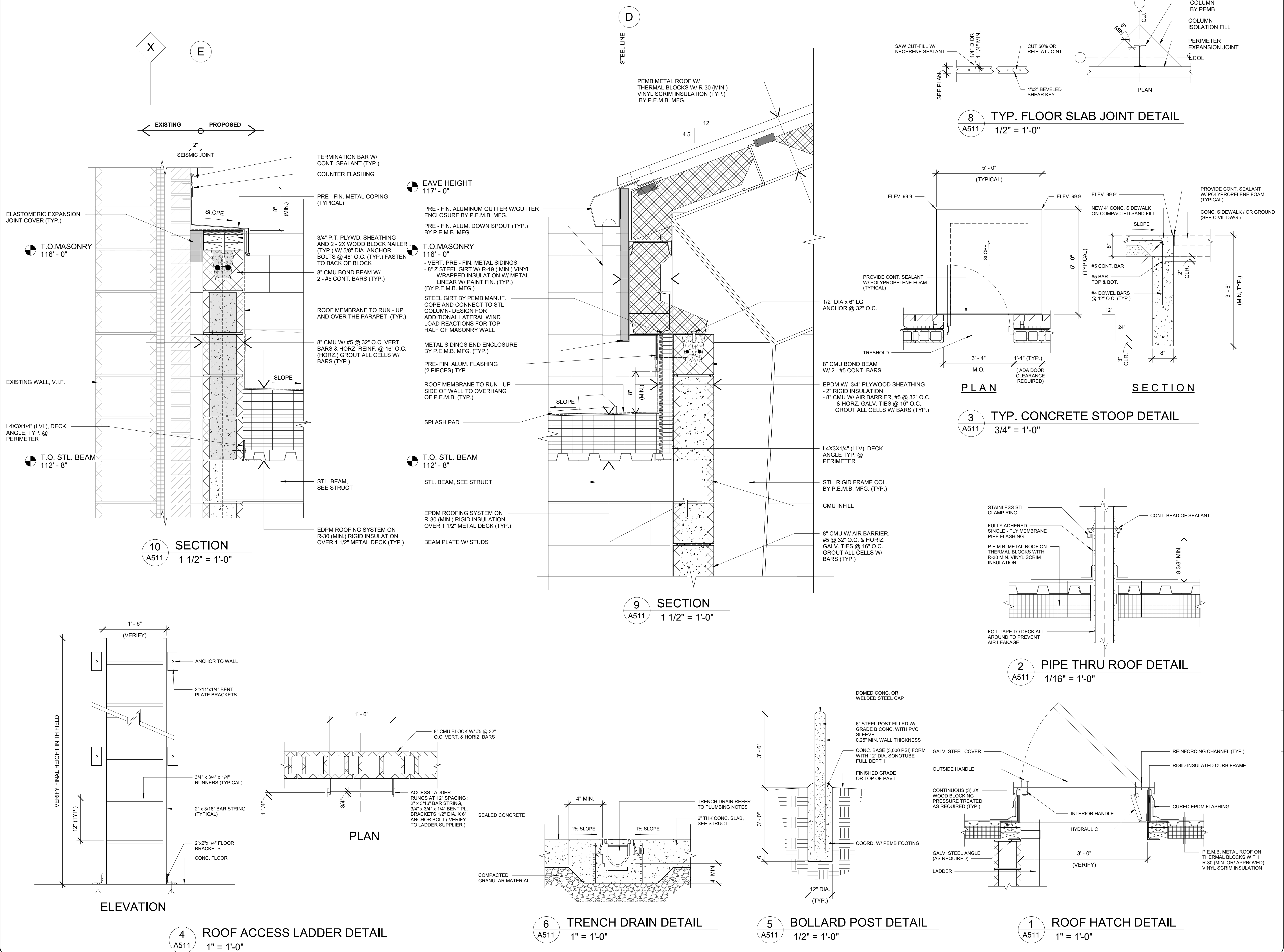


ANDERSON, ECKSTEIN AND WESTRICK, INC.

CIVIL ENGINEERS SURVEYORS ARCHITECTS  
51301 Schoenherr Road Phone 586 726 1234  
Shelby Township Fax 586 726 8780  
Michigan 48315

www.aewinc.com

ENGINEERING STRONG COMMUNITIES



|           |                      |
|-----------|----------------------|
| 2/13/2025 | PROPOSAL ISSUE       |
| DATE      | SUBMITTALS/REVISIONS |

PROJECT NAME:

**MACOMB TOWNSHIP DPW ADDITION**

SHEET TITLE:

**SECTIONS & MISCELLANEOUS DETAILS**

CLIENT: **MACOMB TOWNSHIP**

|                                      |                                       |                                 |
|--------------------------------------|---------------------------------------|---------------------------------|
| <input type="checkbox"/> PRELIMINARY | <input type="checkbox"/> CONSTRUCTION | <input type="checkbox"/> RECORD |
| DRAWN BY: NMA                        | CHECKED BY: JRA                       | DATE: 2/13/2025                 |
| SCALE: AS NOTED                      |                                       |                                 |



UTILITY INFORMATION, AS SHOWN, INDICATES APPROXIMATE LOCATIONS AND TYPES OF EXISTING FACILITIES ONLY, AS DISCLOSED BY RECORDS PROVIDED TO THIS FIRM FROM THE VARIOUS UTILITY COMPANIES. NO GUARANTEE IS GIVEN OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF.

PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING OVERHEAD AND UNDERGROUND UTILITIES IN CONTACT WITH THE CONSTRUCTION OF THESE PROPOSED IMPROVEMENTS SHALL BE VERIFIED IN THE FIELD. DURING THE CONSTRUCTION, THE CONTRACTOR SHALL PROTECT AND SUPPORT ALL UTILITIES THAT ARE ENCOUNTERED. (ALL COSTS FOR UTILITY LOCATION, VERIFICATION, SUPPORT AND PROTECTION SHALL BE INCLUDED IN THE PROPOSED PAY ITEM CONFLICTING WITH THAT UTILITY).

DURING CONSTRUCTION, THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN OPERATING NEAR ANY AND ALL OVERHEAD AND/OR BURIED UTILITIES.

PROJECT NO. 0249-0322

C:\Users\marmstrong\Documents\DPW Addition  
2/13/2025 5:17:45 PM  
S:\Projects\2025\0249-0322\DWG\A511.dwg

SHEET NO.

**A511**



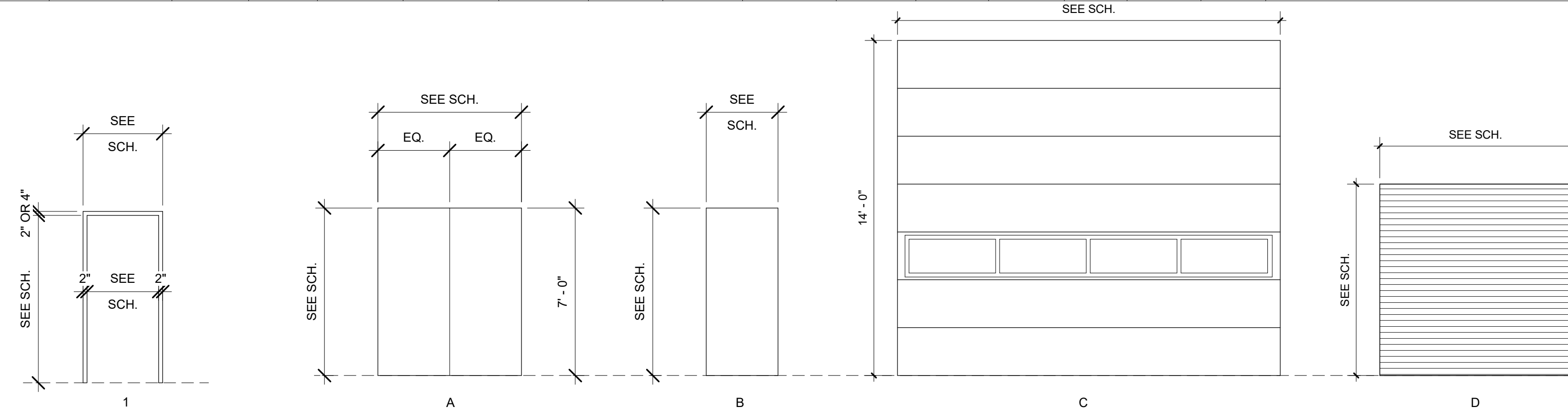
ANDERSON, ECKSTEIN AND WESTRICK, INC.

CIVIL ENGINEERS SURVEYORS ARCHITECTS  
 51301 Schoenherr Road Phone 586 726 1234  
 Shelby Township Fax 586 726 8780  
 Michigan 48315  
 www.aewinc.com

ENGINEERING STRONG COMMUNITIES

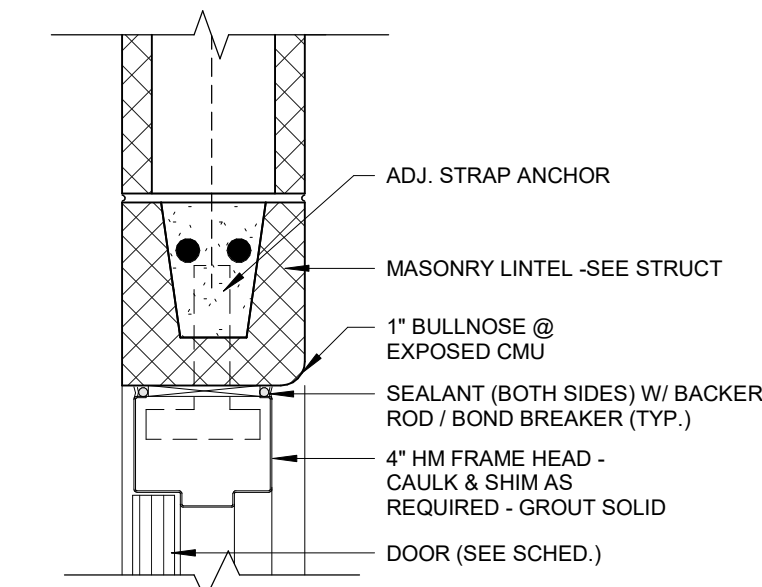
| ROOM FINISH SCHEDULE |           |            |             |           |             |           |             |           |             |           |                  |           |          |              |                |
|----------------------|-----------|------------|-------------|-----------|-------------|-----------|-------------|-----------|-------------|-----------|------------------|-----------|----------|--------------|----------------|
| RM. NUMBER           | LOCATION  | FLOOR FIN. | WALLS       |           |             |           |             |           | CEILING     |           |                  | ROOM SIGN | COMMENTS |              |                |
|                      |           |            | N. MATERIAL | N. FINISH | E. MATERIAL | E. FINISH | S. MATERIAL | S. FINISH | W. MATERIAL | W. FINISH | CEILING MATERIAL |           |          | CEILING FIN. | CEILING HEIGHT |
| 101                  | GARAGE    |            |             |           |             |           |             |           |             |           |                  |           |          | VARIABLES    |                |
| 102                  | STORAGE   | SC         | CMU         | PT-1      | CMU         | PT-1      | CMU         | PT-1      | CMU         | PT-1      | EXPOSED          | PT-2      | 12' - 0" | Y            |                |
| 103                  | WORK AREA | SC         | CMU         | PT-1      | CMU         | PT-1      | CMU         | PT-1      | CMU         | PT-1      | EXPOSED          | PT-2      | 12' - 0" | Y            |                |
| 104                  | CORRIDOR  | SC         | CMU         | PT-1      | CMU         | PT-1      | CMU         | PT-1      | CMU         | PT-1      | EXPOSED          | PT-2      | 12' - 0" | N            |                |

| DOOR SCHEDULE |          |         |          |           |           |              |           |            |                |           |        |                  |        |             |        |              |
|---------------|----------|---------|----------|-----------|-----------|--------------|-----------|------------|----------------|-----------|--------|------------------|--------|-------------|--------|--------------|
| Rm. No.       | Location | Width   | Height   | Thickness | Door      |              |           | Frame      |                |           | Detail |                  |        | Fire Rating | HW Set | Comments     |
|               |          |         |          |           | DR. Elev. | DR. Material | Finish    | Frame Type | Frame Material | Finish    | Head   | Jamb             | Sill   |             |        |              |
| 101A          | GARAGE   | 16'-0"  | 16'-0"   | 2"        | C         | STEEL        | PRE. FIN. | -          | STEEL          | PAINT     | 5/A601 | 4/A601<br>6/A601 | -      | -           | -      | INSULATED    |
| 101B          | GARAGE   | 16'-0"  | 16'-0"   | 2"        | C         | STEEL        | PRE. FIN. | -          | STEEL          | PAINT     | 5/A601 | 4/A601<br>6/A601 | -      | -           | -      | INSULATED    |
| 101C          | GARAGE   | 3' - 0" | 7' - 0"  | 1 3/4"    | B         | FRP          | PRE. FIN. | 1          | ALUM.          | PRE. FIN. | 3/A601 | 2/A601           | 1/A601 | -           | 1      |              |
| 101D          | GARAGE   | 3' - 0" | 7' - 0"  | 1 3/4"    | B         | FRP          | PRE. FIN. | 1          | ALUM.          | PRE. FIN. | 3/A601 | 2/A601           | 1/A601 | -           | 1      |              |
| 101E          | GARAGE   | 3' - 0" | 7' - 0"  | 1 3/4"    | B         | FRP          | PRE. FIN. | 1          | ALUM.          | PRE. FIN. | 3/A601 | 2/A601           | 1/A601 | -           | 1      |              |
| 102A          | STORAGE  | 6' - 0" | 7' - 0"  | 1 3/4"    | A         | HM           | PAINT     | 1          | HM             | PAINT     | 3/A601 | 2/A601           | 1/A601 | -           | 2      |              |
| 104           | CORRIDOR | 8' - 0" | 10' - 0" | 2"        | D         | STEEL        | PRE. FIN. | -          | STEEL          | PAINT     | 8/A601 | 7/A601           | -      | 2 HR        | -      | ROLL UP DOOR |

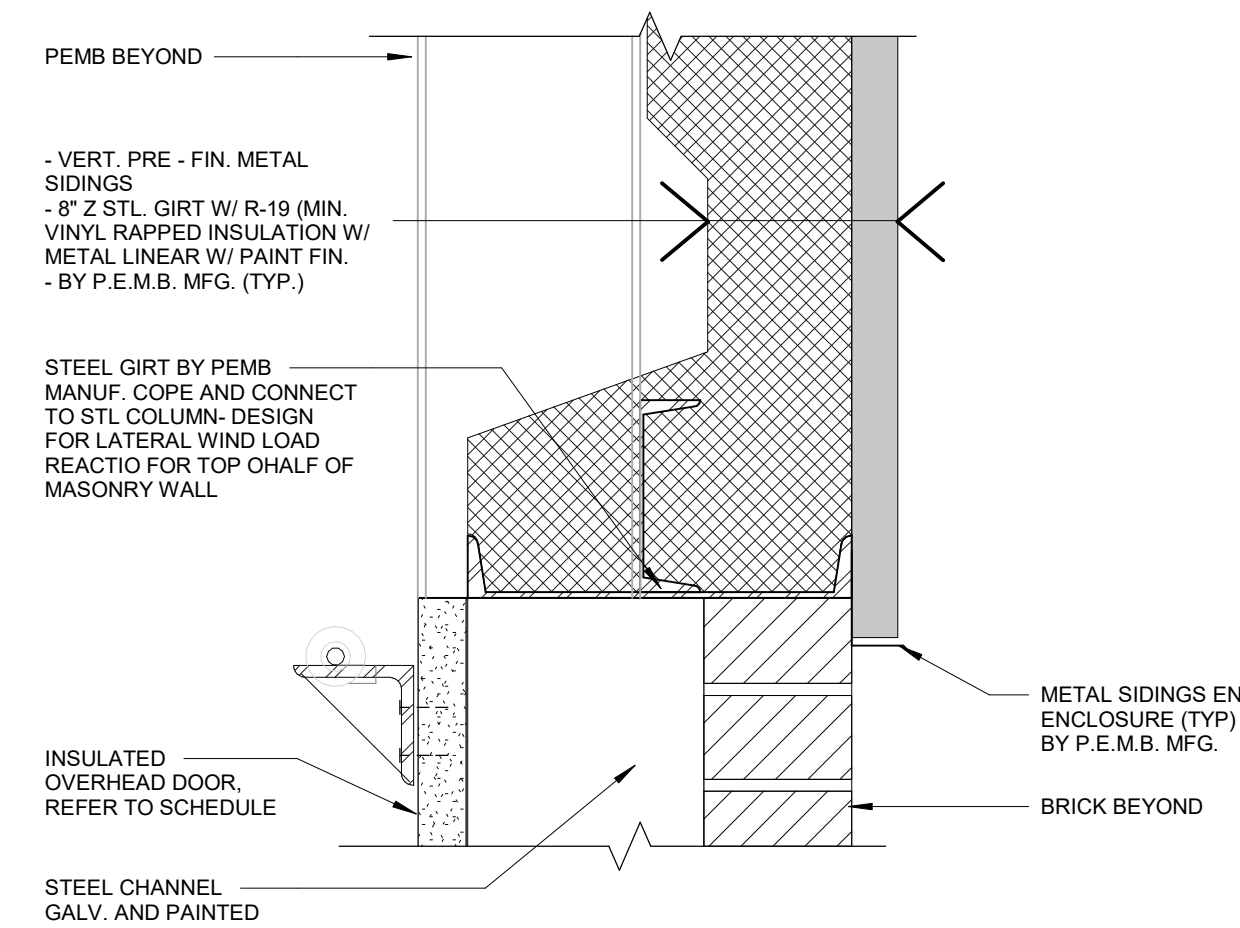


**FRAME TYPES**  
 SCALE: 1/4"=1'-0"  
 T = TEMPERED GLASS  
 1" INSULATED, LOW E, TINTED GLASS (EXTERIOR)

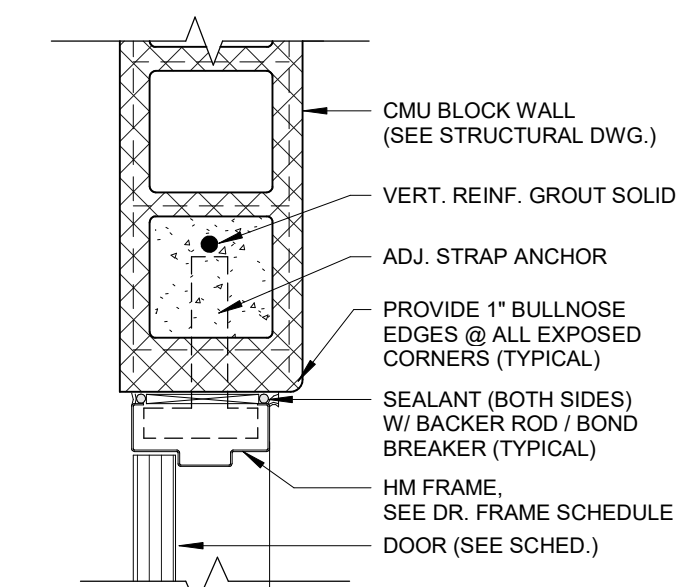
**DOOR ELEVATIONS**  
 SCALE: 1/4"=1'-0"



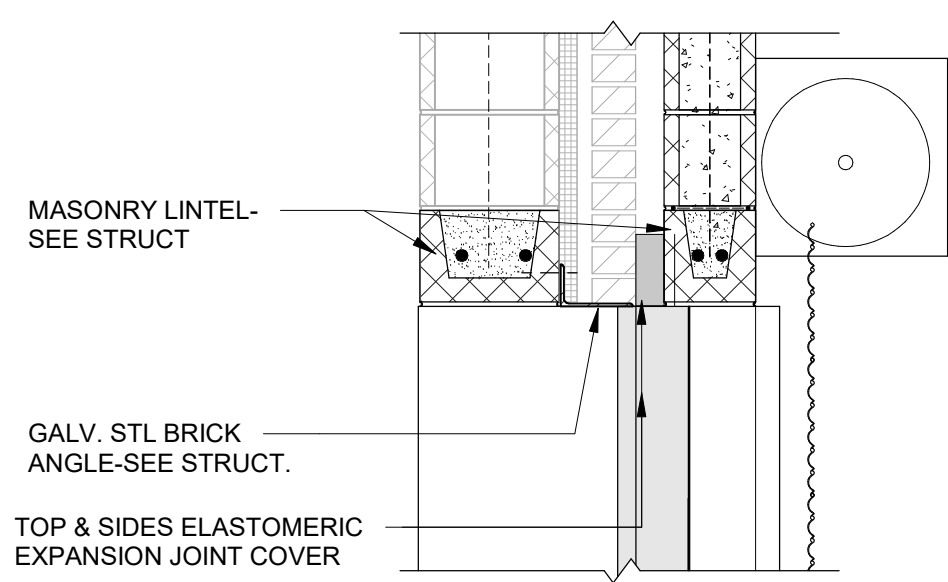
**HM DR FRAME @ CMU BLOCK WALL HEAD DETAIL**  
 1 1/2" = 1'-0"



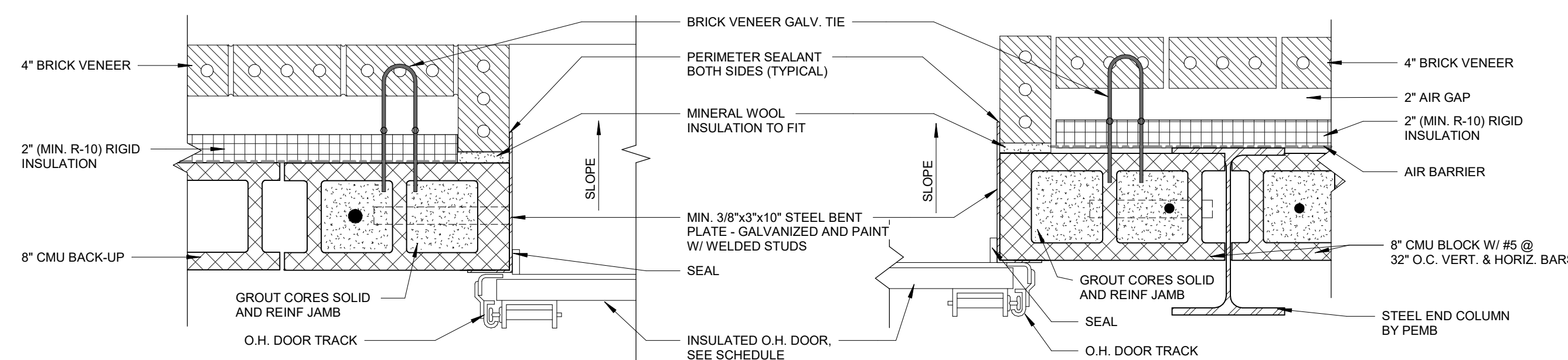
**OVERHEAD DOOR FRAME @ PEMB GIRTS DETAIL**  
 1 1/2" = 1'-0"



**HM DR FRAME @ CMU BLOCK WALL JAMB DETAIL**  
 1 1/2" = 1'-0"

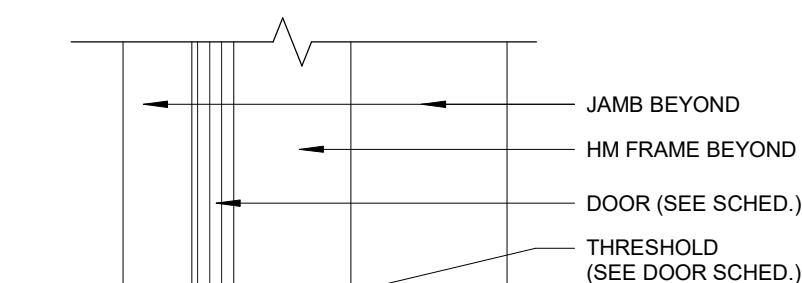


**ROLLING OVERHEAD DOOR HEADER DETAIL**  
 3/4" = 1'-0"

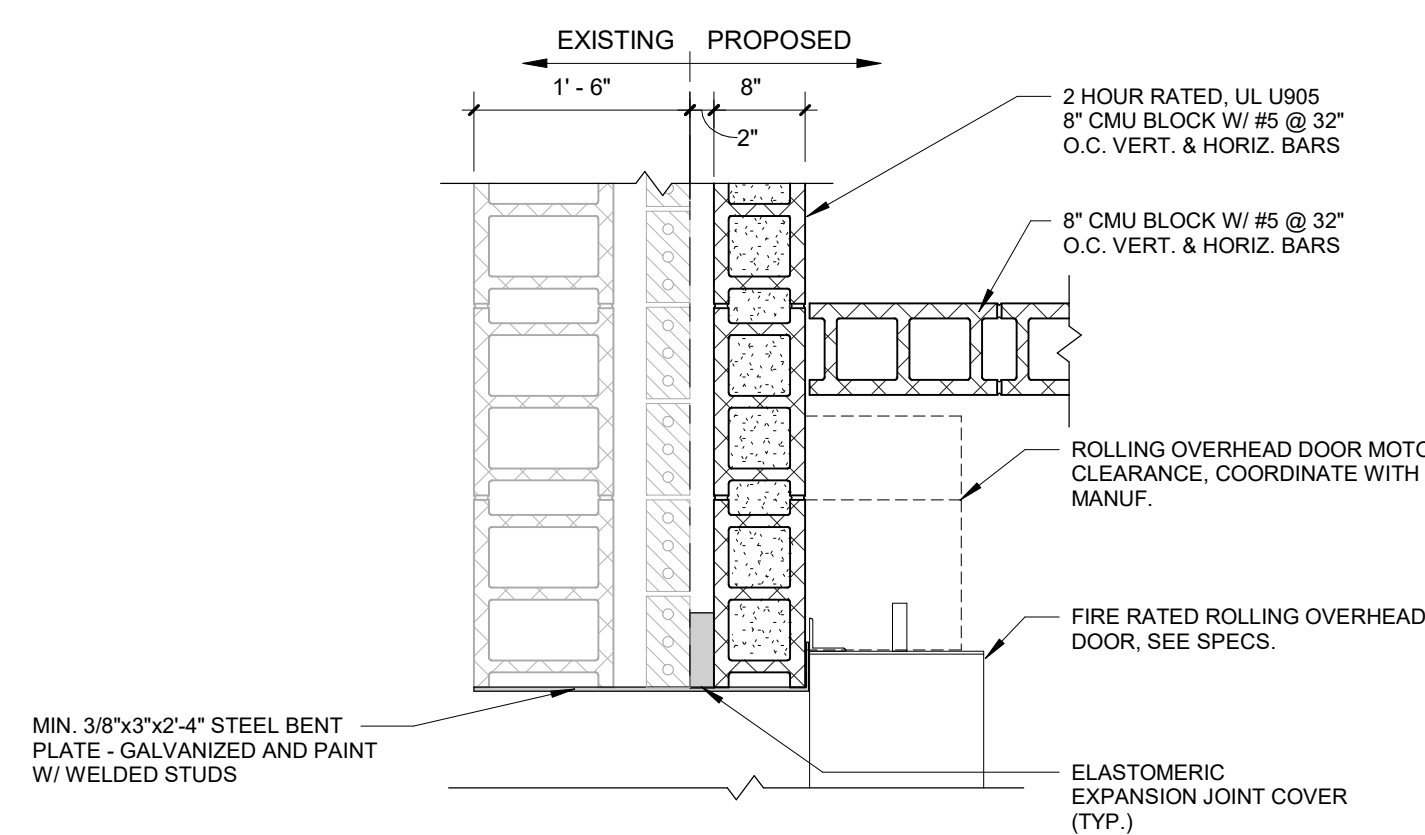


**OVERHEAD DOOR FRAME @ BRICK/BLOCK WALL JAMB DETAIL**  
 1 1/2" = 1'-0"

**OVERHEAD DOOR FRAME @ BRICK/BLOCK WALL JAMB AT PEMB DETAIL**  
 1 1/2" = 1'-0"



**HM DR FRAME @ BRICK / BLOCK WALL SILL DETAIL**  
 1 1/2" = 1'-0"



**ROLLING OVERHEAD DOOR JAMB DETAIL**  
 3/4" = 1'-0"

2/13/2025 PROPOSAL ISSUE  
 DATE SUBMITTALS/REVISIONS

PROJECT NAME:

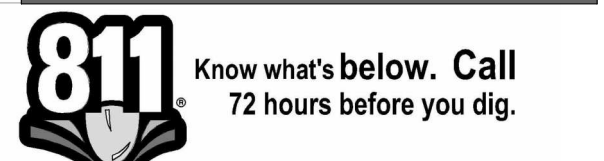
**MACOMB TOWNSHIP DPW ADDITION**

SHEET TITLE:

**DOOR SCHEDULE AND ELEVATIONS**

CLIENT: **MACOMB TOWNSHIP**

|                                      |                                       |                                 |
|--------------------------------------|---------------------------------------|---------------------------------|
| <input type="checkbox"/> PRELIMINARY | <input type="checkbox"/> CONSTRUCTION | <input type="checkbox"/> RECORD |
| DRAWN BY: NMA                        | CHECKED BY: Checker                   | DATE: 01/28/25                  |
| SCALE: AS NOTED                      |                                       |                                 |



UTILITY INFORMATION, AS SHOWN, INDICATES APPROXIMATE LOCATIONS AND TYPES OF EXISTING FACILITIES ONLY. AS DISCLOSED BY RECORDS PROVIDED TO THIS FIRM FROM THE VARIOUS UTILITY COMPANIES. NO GUARANTEE IS GIVEN OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF.

PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING OVERHEAD AND UNDERGROUND UTILITIES IN CONFLICT WITH THE CONSTRUCTION OF THESE PROPOSED IMPROVEMENTS SHALL BE VERIFIED IN THE FIELD. DURING THE CONSTRUCTION, THE CONTRACTOR SHALL PROTECT AND SUPPORT ALL UTILITIES THAT ARE ENCOUNTERED. (ALL COSTS FOR UTILITY LOCATION, VERIFICATION, SUPPORT AND PROTECTION SHALL BE INCLUDED IN THE PROPOSED PAY ITEM CONFLICTING WITH THAT UTILITY).

DURING CONSTRUCTION, THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN OPERATING NEAR ANY AND ALL OVERHEAD AND / OR BURIED UTILITIES.

PROJECT NO. **0249-0322**

C:\Users\marmstrong\Documents\DWG Addition 3/18/2025 1:29:55 PM  
 3/18/2025 1:29:55 PM  
 3/18/2025 1:29:55 PM

SHEET NO.

**A601**

# STRUCTURE SPECIFICATIONS

## SITE CONDITIONS

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PROTECTING EXISTING UNDERGROUND UTILITIES IN THE AREA OF CONSTRUCTION.
- THE CONTRACTOR SHALL COORDINATE HIS WORK ACTIVITIES WITH THE OWNER TO MINIMIZE DISRUPTION TO THE OWNER'S OPERATION OF THE FACILITY.
- THE CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS, BEFORE COMMENCING WITH SHOP DRAWING PREPARATION. REPORT EXISTING CONDITIONS WHICH DO NOT CONFORM WITH THE DETAILS PROVIDED BY THE ARCHITECT.

## MASONRY NOTES

- MASONRY CONSTRUCTION SHALL COMPLY WITH ACI 530-13 – BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES, ACI 530.1-13 – SPECIFICATION FOR MASONRY STRUCTURES, AND NCMA SPECIFICATIONS.
- LOAD BEARING CONCRETE MASONRY SHALL CONFORM TO ASTM C90, MEDIUM WEIGHT WITH NET AREA COMPRESSIVE STRENGTH OF CONCRETE MASONRY UNITS = 1900 PSI (MIN).
- MORTAR SHALL BE TYPE N OR S AND CONFORM TO ASTM C270 AND NCMA TEK NOTES 9-1 OR 9-2. NET AREA COMPRESSIVE STRENGTH OF MORTAR (fm) = 1500 PSI (MIN).
- MASONRY GROUT SHALL CONFORM TO ASTM C 476 WITH PEA GRAVEL AGGREGATE AND A MINIMUM STRENGTH OF 2000 PSI.
- UNLESS OTHERWISE NOTED, PROVIDE HORIZONTAL WIRE TYPE REINFORCING WITH 9 GAUGE SIDE AND CROSS MEMBERS IN EVERY SECOND COURSE (16" O.C.), IN ALL MASONRY WALLS.
- REINFORCING BARS, DOWELS AND TIES SHALL CONFORM TO ASTM A615, GRADE 60.
- INSTALL 8" DEEP CONCRETE MASONRY LINTELS OVER OPENINGS 4'-0" WIDE OR LESS, OR AS INDICATED ON DRAWINGS. GROUT MASONRY LINTELS SOLID AND REINFORCE W/ 2-#5 BARS (BOTTOM). MAINTAIN MINIMUM 8 INCH BEARING ON EACH SIDE OF OPENING. SOLID GROUT WALL FOR BEARING LENGTH AND REINFORCE W/ 4-#5 VERTICAL BARS FULL HEIGHT.
- INSTALL 16" DEEP CONCRETE MASONRY LINTELS OVER OPENINGS GREATER THAN 4'-0" WIDE, OR AS INDICATED ON DRAWINGS. GROUT MASONRY LINTELS SOLID AND REINFORCE W/ 2-#5 BARS (TOP & BOTTOM). MAINTAIN MINIMUM 16 INCH BEARING ON EACH SIDE OF OPENING. SOLID GROUT WALL FOR BEARING LENGTH AND REINFORCE W/ 4-#5 VERTICAL BARS FULL HEIGHT.
- GROUT MASONRY LINTELS SOLID, REINFORCE W/ 2-#5 BARS (MINIMUM) AND MAINTAIN BEARING ON EACH SIDE OF OPENING AS INDICATED IN LINTEL SCHEDULE. SOLID GROUT WALL FOR BEARING LENGTH AND REINFORCE W/ 2-#5 VERTICAL BARS (MINIMUM EACH CELL) FULL HEIGHT.
- ALL MASONRY BELOW GRADE SHALL BE GROUTED SOLID.
- UNLESS OTHERWISE NOTED, REINFORCE BOND BEAMS WITH 2-#5 BARS. REFER TO ARCHITECTURAL DRAWING FOR WALL SECTIONS.
- USE "ACME SHIELD" INTEGRAL WATER REPELLENT FOR ALL EXTERIOR CONCRETE MASONRY AND MORTAR.

## REINFORCED CONCRETE AND FOUNDATION NOTES

- CONCRETE CONSTRUCTION SHALL COMPLY WITH ACI 301-16 - SPECIFICATIONS FOR STRUCTURAL CONCRETE, ACI 318-14 - BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE AND COMMENTARY, AND ACI 302.1R-15 - GUIDE TO CONCRETE FLOOR AND SLAB CONSTRUCTION.
- REINFORCING STEEL SHALL BE DETAILED, FABRICATED AND PLACED IN COMPLIANCE WITH ACI 315-09 - DETAILS AND DETAILING OF CONCRETE REINFORCEMENT, AND THE CRSI - MANUAL OF STANDARD PRACTICE (28TH EDITION). SUBMIT REINFORCING STEEL SHOP DRAWINGS FOR THE ENGINEER'S REVIEW. SUBMITTAL SHALL INCLUDE TWO (2) BLACKLINES (MINIMUM).
- CONCRETE USED IN SLAB ON GROUND SHALL BE NORMAL WEIGHT CONCRETE AND DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS. CEMENT SHALL COMPLY WITH ASTM C150, TYPE I. MINIMUM CEMENT CONTENT SHALL BE 611 POUNDS PER CUBIC YARD.
- CONCRETE USED IN BUILDING FOUNDATIONS, AND ALL OTHER CONCRETE UNLESS NOTED OTHERWISE, SHALL BE NORMAL WEIGHT CONCRETE AND DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS. CEMENT SHALL COMPLY WITH ASTM C150, TYPE I. MINIMUM CEMENT CONTENT SHALL BE 517 POUNDS PER CUBIC YARD.
- SUBMIT CONCRETE MIX DESIGNS FOR EACH CONCRETE MIX FOR THE ENGINEER'S REVIEW. SUBMITTAL SHALL INCLUDE, AT A MINIMUM, MIX PROPORTIONS, CEMENT TYPE AND SOURCE, AGGREGATE GRADATIONS AND SOURCE, AGGREGATE ASR COMPATIBILITY TEST RESULTS, ADMIXTURE CATALOG INFORMATION, CYLINDER STRENGTH TEST RESULTS ON SPECIMENS FOR IDENTICAL MIX DESIGN, OR OTHER PROOF OF STRENGTH PER ACI 301.
- CONCRETE AGGREGATES SHALL COMPLY WITH ASTM C33 AND SHALL BE FREE OF CLAY, LOAM, LUMPS OR OTHER DELETERIOUS SUBSTANCES.
- REINFORCING SHALL BE DEFORMED BARS CONFORMING TO ASTM A615 OR ASTM A616 (GRADE 60) AND SHALL HAVE A MINIMUM YIELD STRENGTH OF 60 KSI.
- WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185, BE FURNISHED IN FLAT SHEETS, AND HAVE MINIMUM SIDE AND END LAP OF 8 INCHES.
- FIBER REINFORCING IN SLAB ON GROUND SHALL BE TUF-STRAND SF, AS MANUFACTURED BY 'EUCLID CHEMICAL', OR APPROVED SUBSTITUTE, UNLESS OTHERWISE NOTED. DOSAGE SHALL BE 1.5 LBS PER CUBIC YARD.
- EXTERIOR CONCRETE, PERIMETER FOUNDATIONS AND INTERIOR CONCRETE SUBJECTED TO FREEZE/THAW CYCLES SHALL BE AIR ENTRAINED WITH 6% AVERAGE AIR CONTENT WITH A 1% TOLERANCE. AIR ENTRAINMENT SHALL COMPLY WITH ASTM C260.
- REINFORCING SHALL HAVE EITHER TENSION EMBEDMENT OR TENSION CLASS "B" LAP SPLICE UNLESS OTHERWISE NOTED.
- PROVIDE HORIZONTAL BENT BARS AT CORNERS AND INTERSECTIONS OF CONCRETE WALLS, TRENCH FOOTINGS AND STRIP FOOTINGS USING THE SAME SIZE AND SPACING AS FOR THE HORIZONTAL REINFORCING DETAILED UNLESS OTHERWISE NOTED.
- PROVIDE SMOOTH FORMED FINISH ON EXPOSED CONCRETE WALLS AND FOUNDATIONS.
- PROVIDE 3/4" X 3/4" BEVELED EDGES AT CORNERS OF EXPOSED CONCRETE MEMBERS, UNLESS NOTED OTHERWISE.
- CONSTRUCTION JOINTS SHALL HAVE A FORMED KEY CENTERED ON MEMBER. WHERE THE SIZE OF KEY IS NOT SHOWN ON THE DRAWINGS, THE KEY SHALL BE ONE FOURTH OF THE CROSS SECTION MEMBER AND MINIMUM 1 1/2 INCHES INTO THE FIRST POUR OF CONCRETE.
- DO NOT PROCEED WITH DETAILING, FABRICATION, OR CONSTRUCTION OF ANY WORK CONNECTED WITH OR DEPENDENT ON EQUIPMENT FURNISHED BY OWNER OR OTHER CONTRACTORS UNTIL DIMENSIONS AND DETAILS ARE VERIFIED WITH CERTIFIED OR APPROVED EQUIPMENT DRAWINGS.
- BEFORE PLACING CONCRETE, REFER TO OTHER TRADE DRAWINGS AND COORDINATE THE LOCATION AND SIZE OF ITEMS SUCH AS OPENINGS, SLEEVES, EQUIPMENT PADS, PIPING, CONDUIT, DRAINS, DERESSED FLOORS, DOOR HOLDDOWNS IN GRADE WALLS, EMBEDDED ITEMS, ETC.
- DRILL-IN ANCHOR BOLTS SHALL BE HVA ADHESIVE ANCHORING SYSTEM AS MANUFACTURED BY HILTI. ANCHOR BOLTS SHALL BE 304 STAINLESS STEEL.
- NON-SHRINK GROUT SHALL BE SURE GRIP HIGH PERFORMANCE GROUT, OR APPROVED EQUAL, AS MANUFACTURED BY DAYTON SUPERIOR CORPORATION.
- CONCRETE CONSTRUCTION SHALL INCLUDE PROVISIONS FOR COLD WEATHER CONCRETING, IN COMPLIANCE WITH ACI 306R-10 – GUIDE TO COLD WEATHER CONCRETING, AND PROVISIONS FOR HOT WEATHER CONCRETING, IN COMPLIANCE WITH ACI 305R-10 – GUIDE TO HOT WEATHER CONCRETING.
- CONCRETE FORMS SHALL REMAIN IN PLACE A MIN. OF 48 HOURS OR UNTIL THE CONCRETE HAS ATTAINED 75 PERCENT OF ITS DESIGN STRENGTH.
- CONCRETE SHALL ATTAIN ITS 28 DAY DESIGN STRENGTH BEFORE COMMENCING WITH BACK FILLING OPERATIONS.
- CONTROL OR CONSTRUCTION JOINTS, REQUIRED BY THE CONTRACTOR, IN ADDITION TO THE JOINTS SHOWN ON THE DRAWINGS, SHALL BE SUBJECT TO THE REVIEW OF THE ENGINEER. THE CONTRACTOR SHALL SUBMIT A PLAN OF THE PROPOSED JOINTING BEFORE PROCEEDING WITH THE AFFECTED WORK.
- PLACE TWO ADDITIONAL #5 BARS AROUND ALL OPENINGS LARGER THAN ONE FOOT SQUARE OR DIAMETER. EXTEND BARS A MINIMUM 24 INCHES BEYOND OPENINGS, UNLESS OTHERWISE NOTED.
- SIDES OF FOUNDATIONS SHALL BE FORMED.
- STRUCTURE BACKFILL SHALL CONSIST OF CLEAN, WELL GRADED GRANULAR SOILS, FREE OF ORGANIC MATERIAL, SILT AND CLAY. PLACE BACKFILL IN LAYERS, NOT MORE THAN 6 INCHES IN DEPTH, AND COMPACTED TO NOT LESS THAN 95 PERCENT OF THE MAXIMUM UNIT WEIGHT, AS DETERMINED BY THE MODIFIED PROCTOR METHOD (ASTM D1557) AND VERIFIED BY A GEOTECHNICAL ENGINEER REGISTERED IN THE STATE OF MICHIGAN. PLACE BACKFILL ALTERNATING EACH FACE OF WALLS TO BALANCE PRESSURE TO WALLS.
- FOUNDATIONS SHALL BEAR ON UNDISTURBED VIRGIN SOIL, FREE OF VEGETATION AND ORGANIC MATERIALS, WITH A MINIMUM ALLOWABLE BEARING CAPACITY OF 2500 PSF, VERIFIED BY A GEOTECHNICAL ENGINEER REGISTERED IN THE STATE OF MICHIGAN.
- SAMPLES FOR STRENGTH TESTS OF EACH CLASS OF CONCRETE PLACED EACH DAY SHALL BE TAKEN BY A QUALIFIED TESTING AGENCY NOT LESS THAN ONCE PER DAY, NOR LESS THAN ONCE FOR EACH 100 CUBIC YARDS OF CONCRETE. SAMPLE CONCRETE IN ACCORDANCE WITH ASTM C172. PERFORM THE FOLLOWING TESTS IN ACCORDANCE WITH THE INDICATED STANDARD:
  - SLUMP – ASTM C143
  - AIR CONTENT – ASTM C173
  - COMPRESSIVE STRENGTH – ASTM C39 (WITH 1 CYLINDER AT 7 DAYS, 2 CYLINDERS AT 28 DAYS AND 1 CYLINDER HELD IN RESERVE

## STRUCTURAL STEEL NOTES

- DESIGN, DETAILING, FABRICATION, AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING PUBLICATIONS EXCEPT AS SPECIFICALLY INDICATED IN THE CONTRACT DOCUMENTS:
  - AISC STEEL CONSTRUCTION MANUAL, (14TH EDITION) INCLUDING:
    - ANSI 360-10 - SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS, ALLOWABLE STRESS DESIGN
    - ANSI 348-10 - SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS (RSCC)
    - ANSI 303-10 - CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES
  - ANSI 326-09 - DETAILINGS FOR STEEL CONSTRUCTION
  - AWS D1.1-15 - STRUCTURAL WELDING CODE - STEEL
- WIDE FLANGE SHAPES SHALL BE ASTM A992, Fy = 50,000 PSI.
- MISCELLANEOUS SHAPES AND PLATE SHALL BE ASTM A36, Fy = 36,000 PSI.
- HSS STEEL SHALL BE ASTM A500, GRADE B, Fy = 46,000 PSI.
- ANCHOR BOLTS SHALL BE ASTM F1554, GRADE 55, Fy = 55,000 PSI.
- COMPOSITE SHEAR STUDS SHALL BE NELSON "FLUXED SHEAR CONNECTOR STUDS" OR APPROVED SUBSTITUTE AND WELDED AS PER MANUFACTURER'S WRITTEN INSTRUCTIONS.
- SHEAR STUDS SHALL BE EQUALLY SPACED ALONG THE LENGTH OF THE BEAM UNLESS NOTED OTHERWISE.
- STEEL ELEVATIONS SHALL BE AS INDICATED ON PLANS AND DETAILS.
- PRIOR TO FABRICATION THE FABRICATOR SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR REVIEW. SHOP DRAWINGS SHALL CONSIST OF TWO SETS OF BLACKLINE DRAWINGS (MIN).
- INSTALL ASTM A325 BOLTS IN ACCORDANCE WITH THE SPECIFICATION FOR STRUCTURAL JOINTS, USING ONE HARDENED WASHER UNDER THE TURNED ELEMENT, AND AN IMPACT WRENCH TO ACHIEVE FIRM CONTACT BETWEEN CONNECTED PLIES AND A SMUG TIGHT CONDITION.
- SHOP AND FIELD WELDS SHALL BE MADE BY APPROVED CERTIFIED WELDERS. PERFORM ALL WELDING BY THE ELECTRIC ARC METHOD IN ACCORDANCE WITH THE AWS D1.1 STRUCTURAL WELDING CODE.
- PERFORM WELDING WITH SPECIFIED ELECTRODES AND QUALIFIED WELDERS, WELDING OPERATORS, AND TACKERS AS APPROPRIATE, PER SPECIFIED REFERENCE STANDARDS. PROVIDE NECESSARY JIGS AND HOLDING DEVICES FOR SHOP WELDING. CONTROL WELDING SEQUENCE TO MINIMIZE RESIDUAL STRESSES AND MEMBER DISTORTION.
- MAKE BOLTED CONNECTIONS WITH 3/4 INCH DIAMETER ASTM A325N BEARING TYPE BOLTS (WITH THREADS ASSUMED IN THE SHEAR PLANE) UNLESS OTHERWISE NOTED.
- CONNECTIONS SHALL BE A MINIMUM OF TWO 3/4 INCH DIAMETER ASTM A325N BOLTS OR A WELD DEVELOPING A MINIMUM OF 10 KIPS.
- SUBMIT DRAWINGS AND CALCULATIONS OF TYPICAL CONNECTION DETAILS FOR APPROVAL PRIOR TO PROCEEDING WITH DETAILING.
- DESIGN BEAM CONNECTIONS FOR MINIMUM ONE-HALF OF THE TOTAL ALLOWABLE UNIFORM LOAD PER AISC BEAM LOAD TABLES, UNLESS NOTED OTHERWISE. CONNECTIONS FOR COMPOSITE BEAMS SHALL BE DESIGNED FOR END REACTIONS NOTED ON THE DRAWINGS OR A MINIMUM TWO-THIRDS OF THE TOTAL ALLOWABLE UNIFORM LOAD PER AISC BEAM LOAD TABLES, WHICHEVER IS GREATER.
- PROVIDE ADEQUATE LATERAL BRACING AND VERTICAL SUPPORT FOR THE SAFE ERECTION AND ALIGNMENT OF THE STRUCTURAL STEEL.
- FURNISH MEMBERS OF PROPER LENGTH AND ASSEMBLE WITHOUT EXCESSIVE USE OF FILLERS – FIELD VERIFY DIMENSIONS BEFORE FABRICATION WHEN CONNECTING TO EXISTING STRUCTURE. JOIN AND ASSEMBLE MEMBERS WITHOUT SHARP PROJECTIONS, SERRATED EDGES, SHARP EDGES OR SHARP CORNERS AT JOINTS. COPE, BLOCK, MITER AND GRIND EDGES WITH CARE. FURNISH MEMBERS FREE FROM TWISTS, BENDS, DISTORTIONS AND OPEN JOINTS.
- GROUT PADS SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI IN SEVEN DAYS.
- ANCHOR BOLTS AND SETTING PLANS SHALL BE FURNISHED BY THE STRUCTURAL STEEL FABRICATOR AND SET BY THE FOUNDATION CONTRACTOR.
- ALL WELDED CONNECTIONS SHALL BE VISUALLY INSPECTED, WITH 15% MEASURED AT RANDOM, VISUALLY SET THAT ALL BOLTED CONNECTIONS ARE PROPERLY FABRICATED, WITH PROPER COMPONENTS, AND THE JOINT IS DRAWN INTO FIRM CONTACT.
- ELEVATIONS ARE REFERENCED FROM FINISH FLOOR ELEVATION = 100'-0". ACTUAL FINISH FLOOR ELEVATION 608.82 = 100'-0".
- COUPLER NUTS MAY BE PROVIDED AT ANCHOR BOLTS SO THAT ANCHOR BOLTS CAN BE INSTALLED IN TWO PIECES TO MAXIMIZE VERTICAL CLEARANCE FOR COLUMN ERECTION.
- THE USE OF A GAS-CUTTING TORCH IN THE FIELD FOR CUTTING HOLES OR FOR CORRECTING FABRICATION ERRORS WILL NOT BE PERMITTED ON STRUCTURAL FRAMING MEMBERS EXCEPT WITH THE WRITTEN APPROVAL OF THE ENGINEER FOR EACH SPECIFIC CONDITION.
- ALL STRUCTURAL STEEL SHALL BE SHOP PAINTED WITH AN APPROVED CORROSION RESISTANT PRIMER SUCH AS "TNEMC PRIMER 10-99" OR APPROVED EQUIVALENT. ALL STEEL SHALL BE PAINTED IN STRICT ACCORDANCE WITH THE AISC SPECIFICATIONS AND MANUFACTURER'S RECOMMENDATIONS. PRIOR TO PAINTING, ALL STEEL SURFACES SHALL BE PREPARED IN ACCORDANCE WITH SSPC-SP3. REMOVE LOOSE RUST, LOOSE MILL SCALE AND SPLATTER SLAG OR FLUX DEPOSITS. ALL PAINTS SHALL BE APPROVED BY THE ENGINEER PRIOR TO THEIR USE.
- SHOP PRIME AND PAINT STRUCTURAL STEEL. FIELD TOUCH-UP FINISH COAT AFTER ERECTION.
- STEEL ABOVE THE ROOF AND OUTSIDE THE BUILDING ENVELOPE (EXPOSED TO WEATHER) SHALL BE CLEANED PER SSPC-SP8 AND HOT DIP GALVANIZED.
- REFERENCE ARCHITECTURAL DRAWINGS FOR MISCELLANEOUS SHAPES AND PLATES NOT SHOWN ON THE STRUCTURAL DRAWINGS. THESE ITEMS SHALL BE SHOP WELDED TO THE STRUCTURAL FRAMING TO MINIMIZE FIELD WELDING.
- ROOF OPENINGS SHALL BE FRAMED WITH L4X3X1/4 LLV, UNLESS NOTED OTHERWISE. VERIFY SIZE AND LOCATION OF ALL OPENINGS WITH THE TRADES INVOLVED.

## METAL DECK NOTES

- METAL ROOF DECK SHALL BE 20 GAGE, G60 GALVANIZED, TYPE 1.5B AS MANUFACTURED BY "VULCRAFT", OR APPROVED SUBSTITUTE, UNLESS OTHERWISE NOTED.
- PERMANENT METAL FORM AT SECOND FLOOR SHALL BE 20 GAGE, G60 GALVANIZED, TYPE 1.5C AS MANUFACTURED BY "VULCRAFT", OR APPROVED SUBSTITUTE, UNLESS OTHERWISE NOTED.
- METAL DECK SHALL BE CONTINUOUS OVER A MINIMUM OF THREE SPANS.
- METAL DECK SHALL BE FASTENED TO PERIMETER EDGE ANGLES WITH PNEUMATIC OR POWDER ACTUATED FASTENERS. MATCH SIDE LAP AND BEARING FASTENER SPACING. PROVIDE 20 GAGE, G60 GALVANIZED BENT PLATES AT LONGITUDINAL EDGES AS REQUIRED TO MAKE CONNECTION.
- METAL DECK FUNCTIONS AS A HORIZONTAL DIAPHRAGM. FASTENER LAYOUT SHALL BE 36/7 WITH A MINIMUM OF 2 SIDE LAP FASTENER AT INTERIOR LOCATIONS AND 5 SIDE FASTENERS TO EDGE ANGLES AND EDGE CHANNELS.
- PROVIDE 20 GAGE GALVANIZED RIDGE AND VALLEY PLATES. FASTEN RIDGE AND VALLEY PLATES TO THE TOP SURFACE OF THE METAL ROOF DECK LAP END JOINTS NOT LESS THAN 3 INCHES.
- FASTEN ROOF SUMP PANS TO ROOF DECK WITH NO. 10 SELFTAPPING SCREWS AT 6 INCH CENTERS AROUND PERIMETER OF PAN.

## SPECIAL INSPECTION NOTES

- SPECIAL STRUCTURAL INSPECTIONS SHALL COMPLY WITH CHAPTER 17 OF THE MICHIGAN BUILDING CODE.
- SPECIAL STRUCTURAL INSPECTION IS REQUIRED IN ADDITION TO ANY INSPECTIONS REQUIRED BY THE LOCAL BUILDING DEPARTMENT OR GOVERNING OFFICIAL.
- SPECIAL STRUCTURAL INSPECTIONS SHALL BE PERFORMED ON, BUT ARE NOT LIMITED TO, THE FOLLOWING ITEMS:
  - STRUCTURAL WELDING: PER SECTION 1705.2.2.1.
    - ALL WELDING INSPECTIONS SHALL BE COMPLETED BY AN AWS CERTIFIED INSPECTOR.
    - ALL WELDS SHALL BE VISUALLY INSPECTED. 100% OF ALL GROOVE WELDS SHALL RECEIVE RADIOGRAPHIC OR ULTRASONIC TESTING. MAGNETIC PARTICLE TEST 20% OF ALL FILLET WELDS.
    - NON-DESTRUCTIVE TESTING OF ALL COMPLETE PENETRATION WELDS.
    - VERIFICATION OF CURRENT WELDER'S CERTIFICATION.
    - WELD INSPECTION OF SHOP FABRICATIONS.
  - HIGH STRENGTH BOLTING: PER SECTION 1705.2.1.
    - VERIFICATION OF SMUG TIGHT OR SLIP-CRITICAL INSTALLATION AS PER PLANS.
    - VERIFICATION IN PLANS WHERE/IF A325-X BOLTS ARE REQUIRED.
  - CONCRETE: PER SECTION 1705.3.
    - DURING THE TAKING OF TEST SPECIMENS.
    - DURING THE PLACEMENT OF REINFORCED CONCRETE.
    - POSITION OF ALL REINFORCING STEEL, ANCHOR BOLTS, AND EMBED PLATES PRIOR TO AND DURING THE PLACEMENT OF THE CONCRETE.
    - ERECTION OF PRECAST CONCRETE MEMBERS.
  - STRUCTURAL MASONRY: PER SECTION 1705.4.
    - SPECIAL INSPECTION SHALL BE PERFORMED ON ALL STRUCTURAL MASONRY IN ACCORDANCE WITH THE REQUIREMENTS OF ACI 530.1.
    - DURING THE PREPARATION OF PRISMS.
    - DURING THE PLACEMENT OF MASONRY UNITS.
    - DURING THE PLACEMENT OF REINFORCING STEEL AND STEEL EMBEDS.
    - IMMEDIATELY PRIOR TO THE CLOSING OF ALL CLEANOUTS.
    - ALL CELLS TO BE GROUTED SHALL BE INSPECTED PRIOR TO GROUT PLACEMENT TO INSURE THE GROUT CELLS ARE FREE OF EXCESS MORTAR AND CONSTRUCTION DEBRIS.
  - EXPANSION, EPOXY AND ADHESIVE ANCHORS:
    - DURING THE PLACEMENT OF ALL ANCHORS.
    - ALL ANCHORS TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS AND APPLICABLE ICBO REPORTS.
  - SOILS: PER SECTION 1705.6.
    - VERIFICATION OF ADEQUATE DESIGN BEARING CAPACITY.
    - DURING THE PLACEMENT OF COMPACTED FILL MATERIALS.
    - TESTING OF COMPACTED FILL MATERIALS.
- DUTIES AND RESPONSIBILITIES OF THE SPECIAL STRUCTURAL INSPECTOR:
  - THE SPECIAL STRUCTURAL INSPECTOR SHALL OBSERVE THE WORK ASSIGNED FOR CONFORMANCE TO THE APPROVED DESIGN DRAWINGS AND SPECIFICATIONS.
  - THE SPECIAL STRUCTURAL INSPECTOR SHALL REPORT TO THE CONTRACTOR UPON ARRIVING ON SITE TO DETERMINE WHETHER ANY DESIGN TEAM COMMUNICATIONS TO THE CONTRACTOR AFFECT THE WORK TO BE REVIEWED. THE SPECIAL STRUCTURAL INSPECTOR SHALL LEAVE A COPY OF EACH OF HIS REPORTS WITH THE CONTRACTOR UPON LEAVING SITE.
  - THE SPECIAL STRUCTURAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, THE ENGINEER OR ARCHITECT OF RECORD, AND OTHER DESIGNATED PERSONS WITHIN 24 HOURS. ALL DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION, THEN, IF UNCORRECTED, TO THE PROPER DESIGN AUTHORITY AND TO THE BUILDING OFFICIAL.
  - THE SPECIAL STRUCTURAL INSPECTOR IS NOT AUTHORIZED TO APPROVE ANY CHANGES TO THE CONTRACT DOCUMENTS. ANY VARIATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE CONTRACTOR AND ENGINEER OR ARCHITECT OF RECORDS.
  - THE CONTRACTOR SHALL PROVIDE SAFE ACCESS TO ALL ITEMS REQUIRING SPECIAL STRUCTURAL INSPECTION. THIS SHALL INCLUDE, BUT IS NOT LIMITED TO, LADDERS, SCAFFOLDING, AND MAN LIFTS.
  - THE SPECIAL STRUCTURAL INSPECTOR SHALL SUBMIT A FINAL SIGNED REPORT STATING WHETHER THE WORK REQUIRING SPECIAL INSPECTION WAS, TO THE BEST OF THE INSPECTOR'S KNOWLEDGE, IN CONFORMANCE TO THE APPROVED PLANS AND SPECIFICATIONS AND THE APPLICABLE WORKMANSHIP PROVISIONS OF THE CODE.

## DESIGN CRITERIA

CODE: MICHIGAN BUILDING CODE 2015 (MBC)

## ROOF DESIGN LOAD

|                  |          |
|------------------|----------|
| DEAD LOAD        | 1.0 PSF  |
| ROOFING          | 6.5 PSF  |
| INSULATION       | 2.5 PSF  |
| METAL DECK       | 4.0 PSF  |
| FRAMING          | 3.0 PSF  |
| UTILITIES        | 3.0 PSF  |
| CEILING          | 3.0 PSF  |
| TOTAL DEAD LOAD: | 20.0 PSF |

|                                     |          |
|-------------------------------------|----------|
| LIVE LOAD                           | 20.0 PSF |
| GROUND SNOW LOAD, Pg=25.0 PSF       |          |
| FLAT-ROOF SNOW LOAD, Pf=18.0 PSF    |          |
| SNOW EXPOSURE FACTOR, Ce=1.0        |          |
| THERMAL FACTOR, Ct=1.0              |          |
| SNOW LOAD IMPORTANCE FACTOR, Is=1.0 |          |

## WIND DESIGN CRITERIA

|  |  |
|--|--|
| RISK CATEGORY: II  |  |
| ULTIMATE WIND SPEED Vult=115 MPH                                 |  |
| NOMINAL WIND SPEED Vult=89 MPH                                   |  |
| EXPOSURE CATEGORY B  |  |
| INTERNAL PRESSURE COMPONENT, GCPI = +/- 0.18                     |  |
| MINWRS: ENVELOPE PROCEDURE, PART 1, TABLE 28.2-1, 16.0 PSF (MIN) |  |
| COMPONENT AND CLADDING: PART 2, TABLE 30.5-1, 20.0 PSF (MIN)     |  |

## SEISMIC DESIGN CRITERIA

|  |  |
|--|--|
| RISK CATEGORY: II  |  |
| SEISMIC IMPORTANCE FACTOR, Is=1.0                              |  |
| MAPPED SPECTRAL RESPONSE ACCELERATION, Ss=0.087                |  |
| MAPPED SPECTRAL RESPONSE ACCELERATION, S1=0.045                |  |
| SITE CLASS: D  |  |
| SPECTRAL RESPONSE COEFFICIENT, Sds=0.093                       |  |
| SPECTRAL RESPONSE COEFFICIENT, Sd1=0.071                       |  |
| SEISMIC DESIGN CATEGORY: B                                     |  |
| BASIC SEISMIC-FORCE-RESISTING SYSTEM:                          |  |
| STEEL SYSTEMS NOT SPECIFICALLY DETAILED FOR SEISMIC RESISTANCE |  |
| SEISMIC RESPONSE COEFFICIENT, Cse=0.045                        |  |
| RESPONSE MODIFICATION COEFFICIENT, R=3                         |  |
| DESIGN BASE SHEAR: F = 0.045W                                  |  |

ANALYSIS PROCEDURE USED:  
EQUIVALENT LATERAL FORCE PROCEDURE, SECTION 12.8



ANDERSON, ECKSTEIN AND  
WESTRICK, INC.

CIVIL ENGINEERS SURVEYORS ARCHITECTS

51301 Schoenherr Road Phone 586 726 1234  
Shelby Township Fax 586 726 8780  
Michigan 48315

www.aewinc.com

ENGINEERING STRONG COMMUNITIES

|           |                      |
|-----------|----------------------|
| 2/13/2025 | PROPOSAL ISSUE       |
| DATE      | SUBMITTALS/REVISIONS |

PROJECT NAME:

## MACOMB TOWNSHIP DPW ADDITION

SHEET TITLE:

## SPECIFICATIONS & DESIGN CRITERIA

CLIENT:

MACOMB TOWNSHIP

|   |                                       |                                 |
|---|---------------------------------------|---------------------------------|
| <input checked="" type="checkbox"/> PRELIMINARY | <input type="checkbox"/> CONSTRUCTION | <input type="checkbox"/> RECORD |
| DRAWN BY: NMA                                   | CHECKED BY: KEZ                       | DATE: 2/13/2025                 |
| SCALE: AS NOTED                                 |                                       |                                 |



Know what's below. Call  
72 hours before you dig.

UTILITY INFORMATION, AS SHOWN, INDICATES APPROXIMATE LOCATIONS AND TYPES OF EXISTING FACILITIES ONLY, AS DISCLOSED BY RECORDS PROVIDED TO THIS FIRM FROM THE VARIOUS UTILITY COMPANIES. NO GUARANTEE IS GIVEN OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF.

PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING OVERHEAD AND UNDERGROUND UTILITIES IN CONFORMANCE WITH THE CONSTRUCTION OF THESE PROPOSED IMPROVEMENTS) SHALL BE VERIFIED IN THE FIELD DURING THE CONSTRUCTION. THE CONTRACTOR SHALL PROTECT AND SUPPORT ALL UTILITIES THAT ARE ENCOUNTERED. (ALL COSTS FOR UTILITY LOCATION, VERIFICATION, SUPPORT AND PROTECTION SHALL BE INCLUDED IN THE PROPOSED PAY ITEM CONFLICTING WITH THAT UTILITY).

DURING CONSTRUCTION, THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN OPERATING NEAR ANY AND ALL OVERHEAD AND / OR BURIED UTILITIES.

PROJECT NO.

0249-0322

C:\Users\marmstrong\Documents\DPW Addition  
3/13/2025 5:17:59 AM chertur\TWMP.rvt

SHEET NO.

# S011



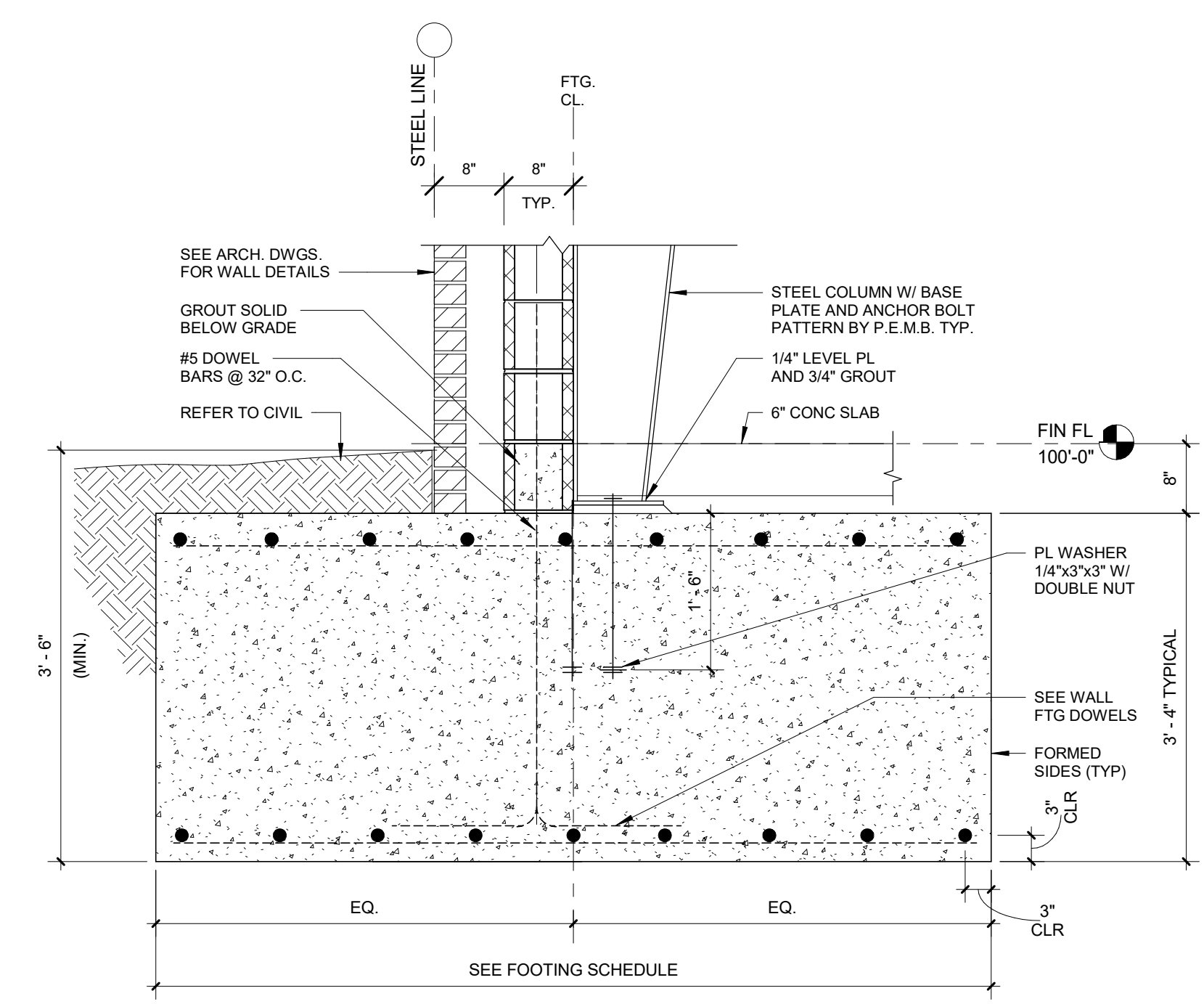
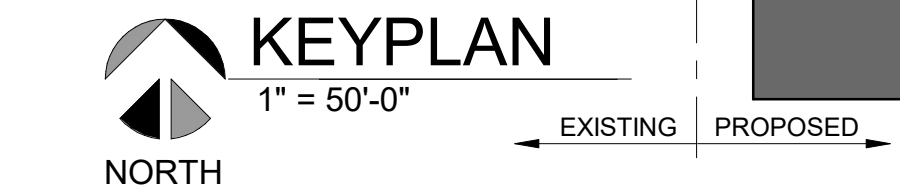


ANDERSON, ECKSTEIN AND WESTRICK, INC.

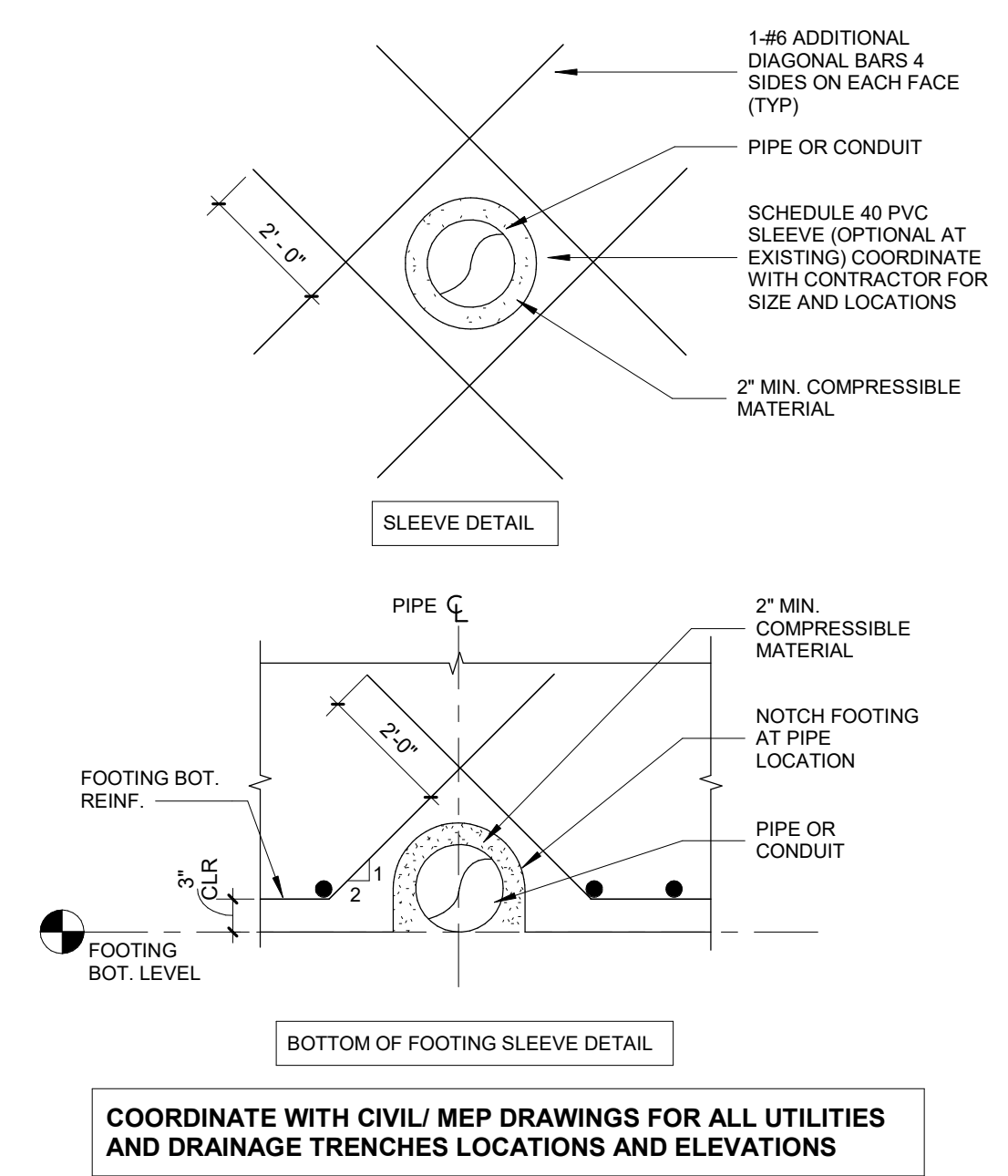
CIVIL ENGINEERS SURVEYORS ARCHITECTS  
51301 Schoenherr Road Phone 586 726 1234  
Shelby Township Fax 586 726 8780  
Michigan 48315  
www.aewinc.com

ENGINEERING STRONG COMMUNITIES

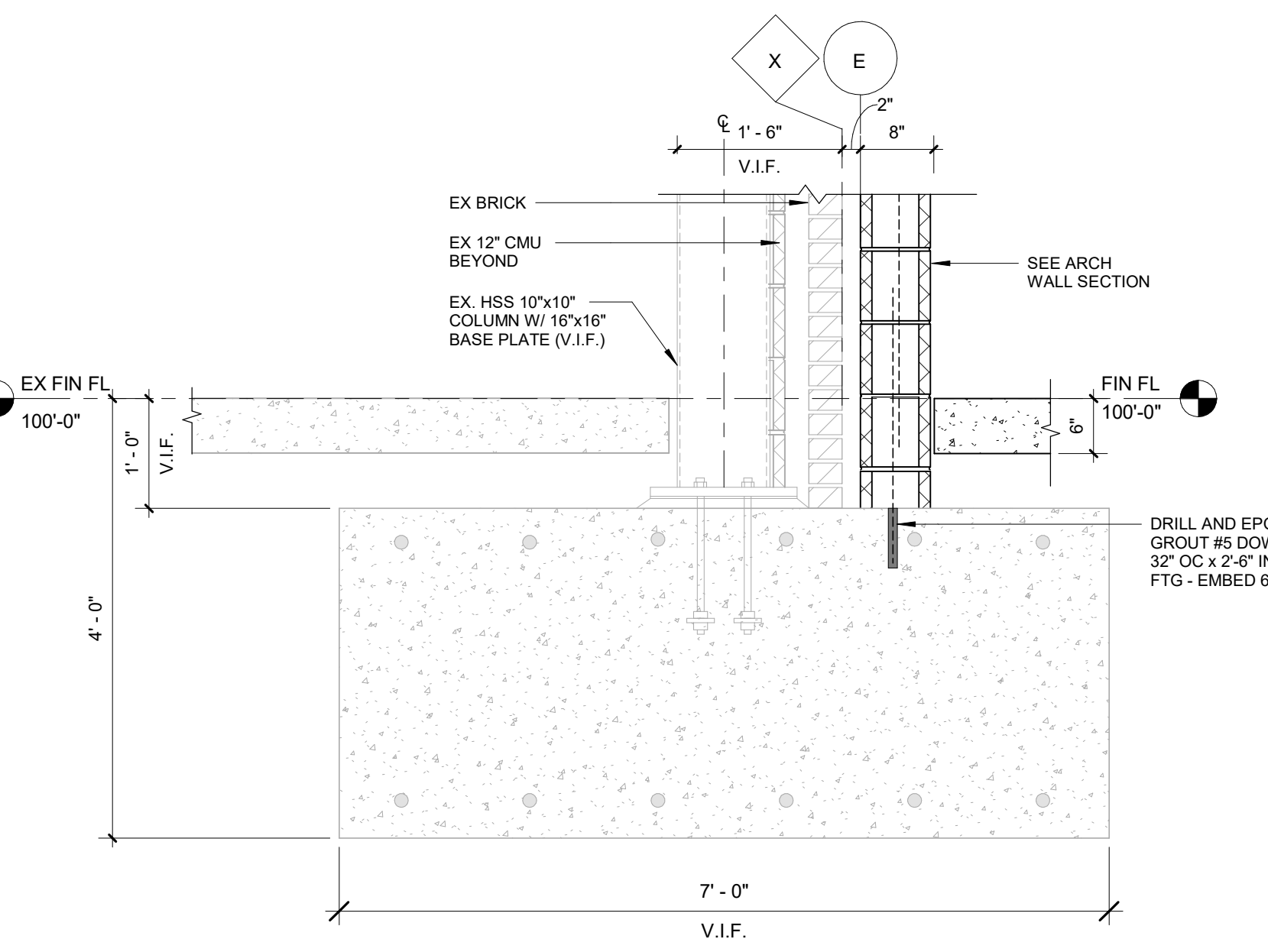
| FOOTING SCHEDULE |                       |                      |                        |
|------------------|-----------------------|----------------------|------------------------|
| MARK             | SIZE LxWxD            | REINFORCING          | REMARKS                |
| F1               | 7'-0" x 7'-0" x 3'-4" | 8 - #6 BARS, EW, T&B | BOT/ FTG ELEV (-4'-0") |
| F2               | 5'-0" x 5'-0" x 3'-4" | 6 - #6 BARS, EW, T&B | BOT/ FTG ELEV (-4'-0") |



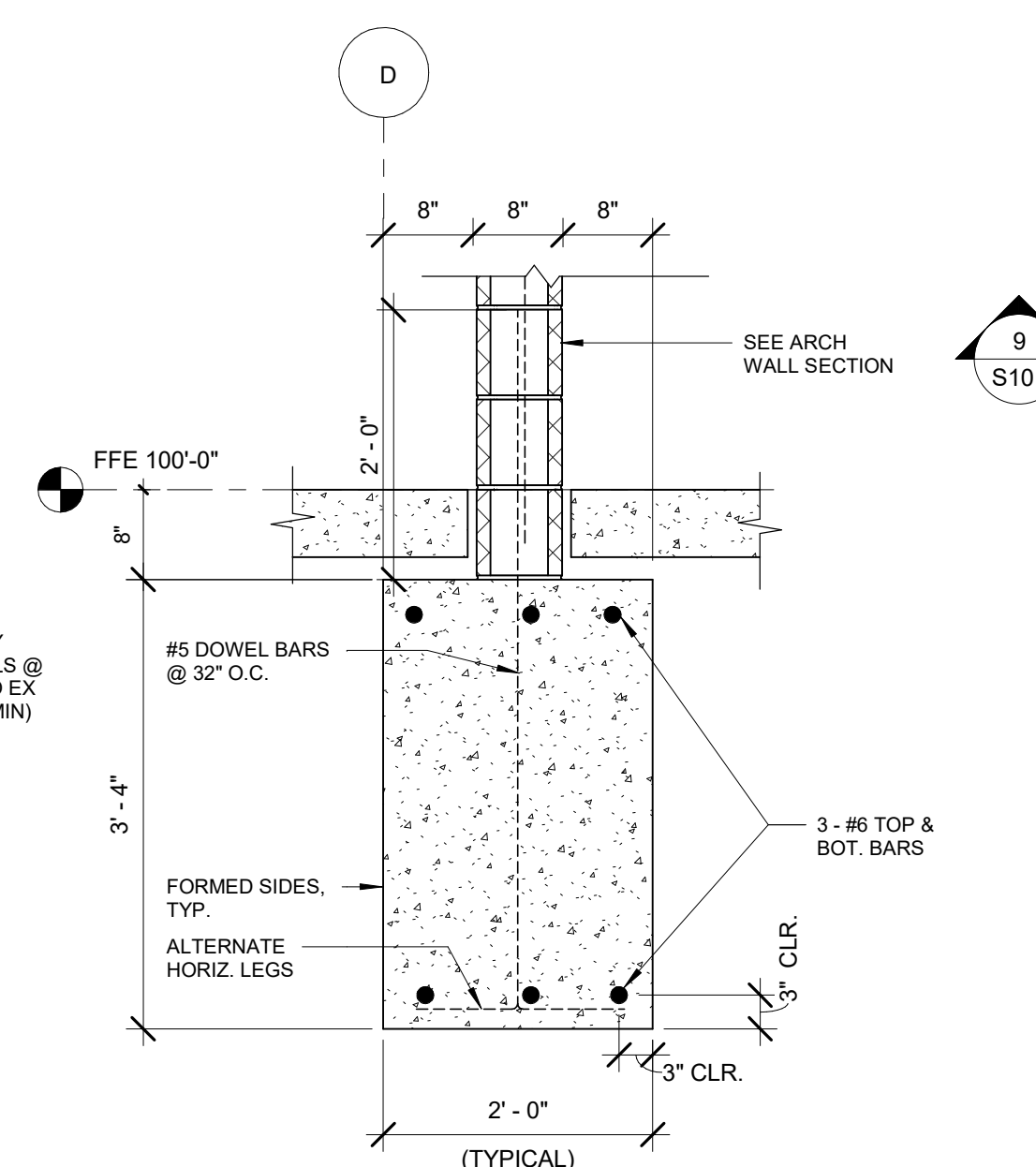
TYP. PEMB COLUMN FOOTING  
3/4" = 1'-0"



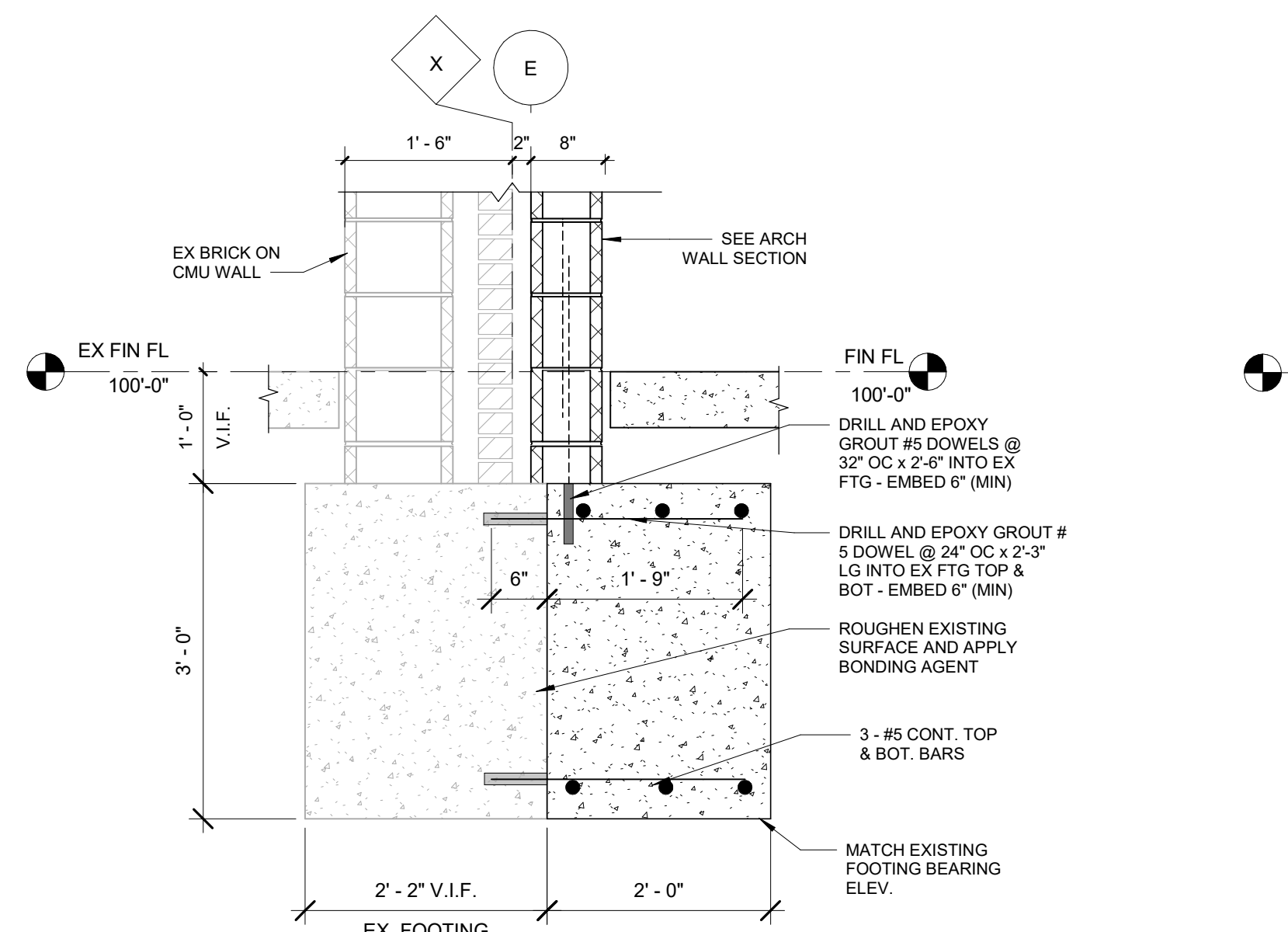
UTILITY FOUNDATION SLEEVE DETAIL  
3/4" = 1'-0"



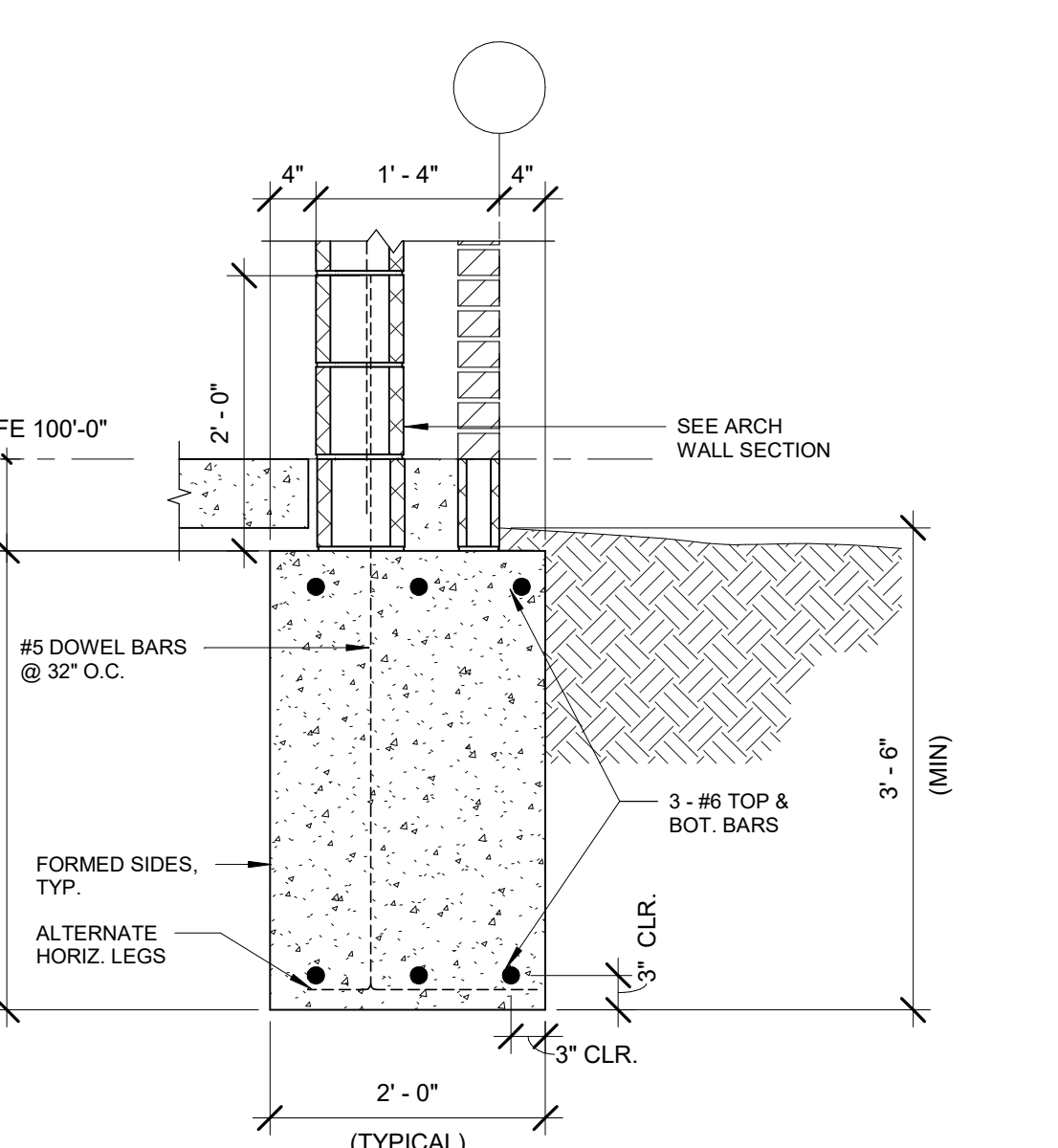
SECTION  
3/4" = 1'-0"



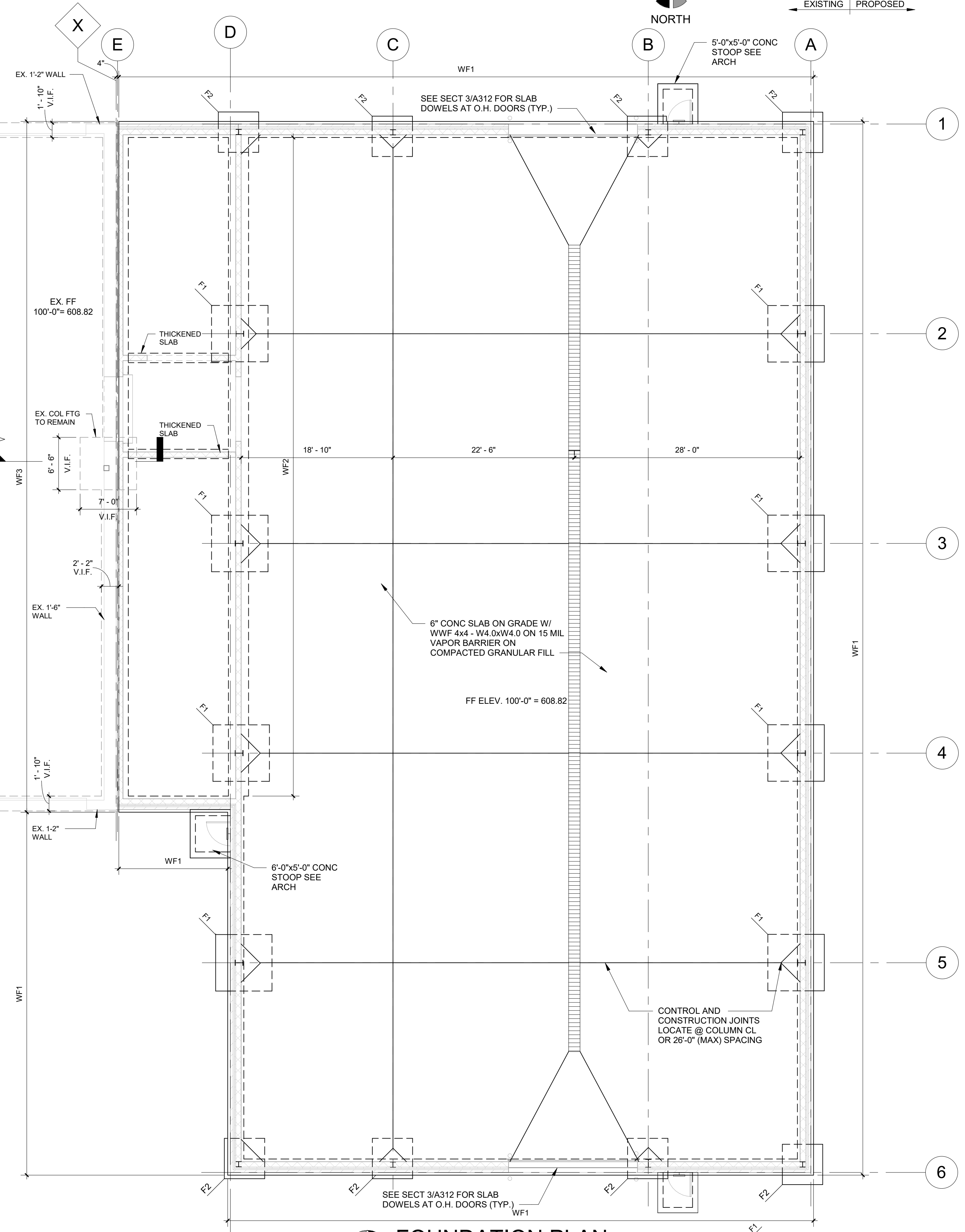
WF2 WALL FOOTING  
3/4" = 1'-0"



WF3 WALL FOOTING  
3/4" = 1'-0"



WF1 WALL FOOTING  
3/4" = 1'-0"



FOUNDATION PLAN  
1/8" = 1'-0"

|           |                      |
|-----------|----------------------|
| 2/13/2025 | PROPOSAL ISSUE       |
| DATE      | SUBMITTALS/REVISIONS |

PROJECT NAME:

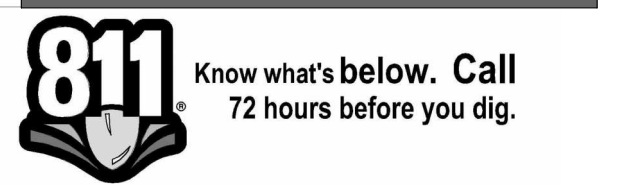
MACOMB TOWNSHIP DPW ADDITION

SHEET TITLE:

FOUNDATION PLAN & DETAILS

CLIENT: MACOMB TOWNSHIP

|   |                                       |                                 |
|---|---------------------------------------|---------------------------------|
| <input checked="" type="checkbox"/> PRELIMINARY | <input type="checkbox"/> CONSTRUCTION | <input type="checkbox"/> RECORD |
| DRAWN BY: NMA                                   | CHECKED BY: KEZ                       | DATE: 2/13/2025                 |
| SCALE: AS NOTED                                 |                                       |                                 |



UTILITY INFORMATION, AS SHOWN, INDICATES APPROXIMATE LOCATIONS AND TYPES OF EXISTING FACILITIES ONLY, AS DISCLOSED BY RECORDS PROVIDED TO THIS FIRM FROM THE VARIOUS UTILITY COMPANIES. NO GUARANTEE IS GIVEN OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF.

PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING OVERHEAD AND UNDERGROUND UTILITIES IN CONFLICT WITH THE CONSTRUCTION OF THESE PROPOSED IMPROVEMENTS SHALL BE VERIFIED IN THE FIELD. DURING THE CONSTRUCTION, THE CONTRACTOR SHALL PROTECT AND SUPPORT ALL UTILITIES THAT ARE ENCOUNTERED. (ALL COSTS FOR UTILITY LOCATION, VERIFICATION, SUPPORT AND PROTECTION SHALL BE INCLUDED IN THE PROPOSED PAY ITEM CONFLICTING WITH THAT UTILITY).

DURING CONSTRUCTION, THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN OPERATING NEAR ANY AND ALL OVERHEAD AND/OR BURIED UTILITIES.

PROJECT NO. 0249-0322

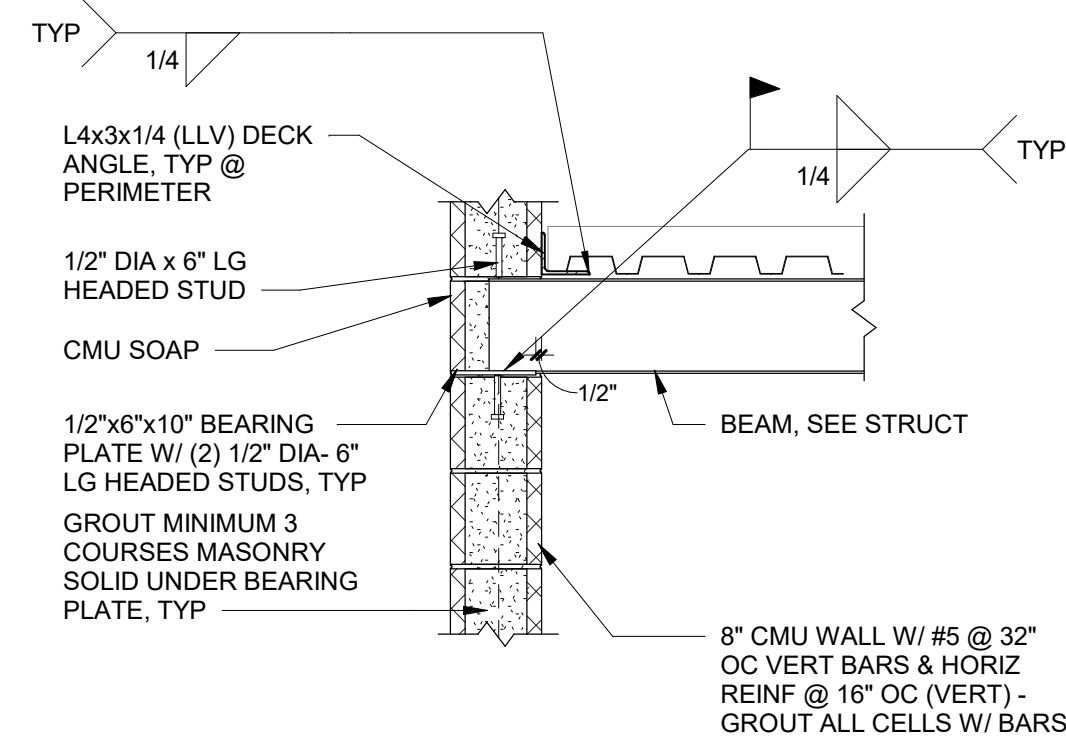
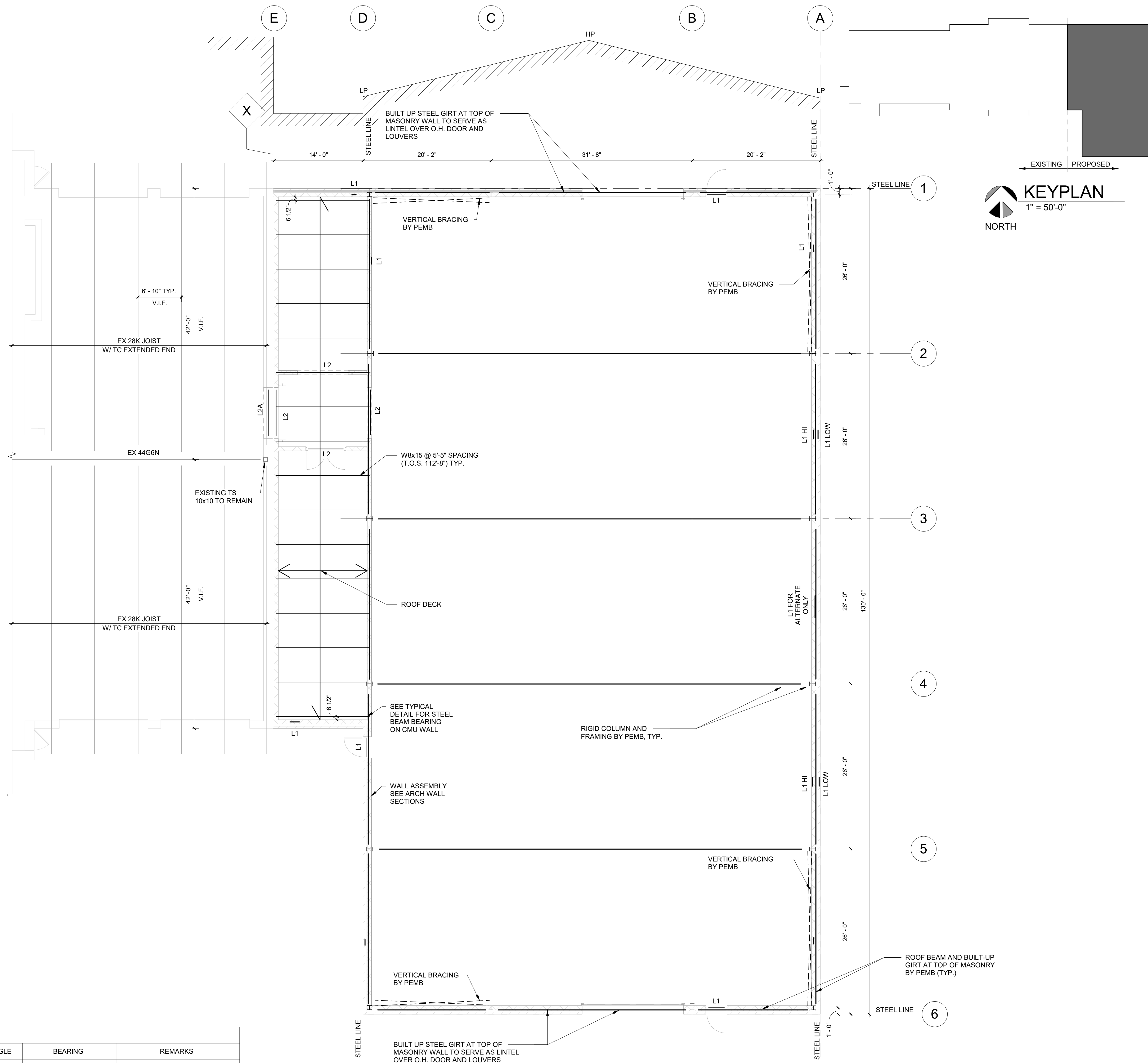
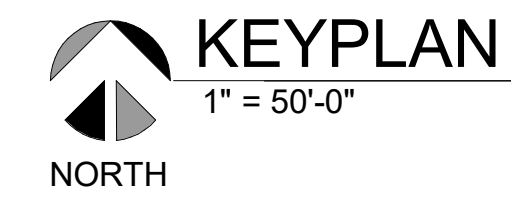
SHEET NO. S101



ANDERSON, ECKSTEIN AND WESTRICK, INC.

CIVIL ENGINEERS SURVEYORS ARCHITECTS  
51301 Schoenherr Road Phone 586 726 1234  
Shelby Township Michigan 48315 Fax 586 726 8780  
www.aewinc.com

ENGINEERING STRONG COMMUNITIES



TYPICAL STEEL BEAM BEARING DETAIL

3/4" = 1'-0"

| MARK    | LINTEL                                     | BRICK ANGLE        | BEARING   | REMARKS                |
|---------|--|--------------------|-----------|------------------------|
| L1      | 8" DEEP MASONRY LINTEL W/2-#5 BOTTOM BARS  | L5x3 1/2x1/2 (LLH) | 8" MIN.   |                        |
| L2, L2A | 16" DEEP MASONRY LINTEL W/2-#5 BOTTOM BARS | L5x5x5/8           | 8" (MIN.) | BRICK ANGLE @ L2A ONLY |

NOTE:  
1. REFER TO MASONRY NOTES ON SH S011 FOR ADD'L REQUIREMENTS



ROOF AND LINTEL FRAMING PLAN

1/8" = 1'-0"

- NOTE:  
1. ALL MEMBERS ARE EQUALLY SPACED, UNLESS NOTED OTHERWISE.  
2. ALL ROOF DECK IS 1 1/2" WIDE RIB, 20 GAGE GALVANIZED AND CONTINUOUS OVER A MINIMUM OF THREE SPANS.  
3. REFER TO MASONRY NOTES ON SH S011 FOR MASONRY BOND BEAM AND TYP WALL REINF REQUIREMENTS. CMU WALLS SHALL BE REINFORCED W/ #5 VERT. BARS @ 32 O.C. UNO.  
4. PROVIDE L4x3x1/4 (LLV) FOR MISC. ROOF OPENING FRAMING, UNO.  
5. PROVIDE L4x3x1/4 PERIMETER DECK ANGLE (TYP), (UNO)

|           |                      |
|-----------|----------------------|
| 2/13/2025 | PROPOSAL ISSUE       |
| DATE      | SUBMITTALS/REVISIONS |

PROJECT NAME:

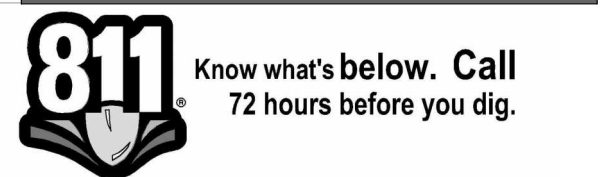
MACOMB TOWNSHIP DPW ADDITION

SHEET TITLE:

ROOF AND LINTEL FRAMING PLAN

CLIENT: MACOMB TOWNSHIP

|                                      |                                       |                                 |
|--------------------------------------|---------------------------------------|---------------------------------|
| <input type="checkbox"/> PRELIMINARY | <input type="checkbox"/> CONSTRUCTION | <input type="checkbox"/> RECORD |
| DRAWN BY: NMA                        | CHECKED BY: KEZ                       | DATE: 2/13/2025                 |
| SCALE: AS NOTED                      |                                       |                                 |



UTILITY INFORMATION, AS SHOWN, INDICATES APPROXIMATE LOCATIONS AND TYPES OF EXISTING FACILITIES ONLY, AS DISCLOSED BY RECORDS PROVIDED TO THIS FIRM FROM THE VARIOUS UTILITY COMPANIES. NO GUARANTEE IS GIVEN OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF.

PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING OVERHEAD AND UNDERGROUND UTILITIES IN CONFLICT WITH THE CONSTRUCTION OF THESE PROPOSED IMPROVEMENTS SHALL BE VERIFIED IN THE FIELD. DURING THE CONSTRUCTION, THE CONTRACTOR SHALL PROTECT AND SUPPORT ALL UTILITIES THAT ARE ENCOUNTERED. (ALL COSTS FOR UTILITY LOCATION, VERIFICATION, SUPPORT AND PROTECTION SHALL BE INCLUDED IN THE PROPOSED PAY ITEM CONFLICTING WITH THAT UTILITY).

DURING CONSTRUCTION, THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN OPERATING NEAR ANY AND ALL OVERHEAD AND / OR BURIED UTILITIES.

PROJECT NO. 0249-0322

C:\Users\armstrong\Documents\DPW Addition

SHEET NO.

S102

## MECHANICAL SPECIFICATIONS

### GENERAL REQUIREMENTS:

Read and be bound by the architectural specifications.

These specifications, all other documents attached hereto, all addenda issued and the accompanying plans are intended to provide for the complete furnishing and installing of the entire mechanical system.

The work shall be done in accordance with best practice so as to contribute to efficiency of operation and minimum maintenance and shall be installed with proper accessibility. The materials and equipment, including all necessary accessories, shall be put into proper adjustment so that the component parts function together as a workable system. The mechanical contractor shall provide all equipment, materials and operations as indicated either on the drawings or contained herein or as may be reasonably implied by either to accomplish complete mechanical systems.

### GOVERNING AGENCIES:

The contractor shall be fully informed of all laws, ordinances and codes, and shall, in the performance of the contract, comply with all applicable Federal, State and Local aforesaid regulations. Any deviation from the plans or specifications and any additional work necessary to meet code requirements shall be made by the contractor without extra cost to the owner.

### DAMAGE TO OTHER WORK:

Repair and pay for all damage done to the existing and new work by mechanical trades workmen.

### CUTTING AND PATCHING:

All cutting and patching required for installation shall be by mechanical trades and included in expense to aforementioned.

### CLEANING:

Premises shall be cleaned upon completion of mechanical work.

### COOPERATION WITH OTHER TRADES:

Coordinate work with other trades to avoid interference and present a neat appearance. Interference with result from poor coordination will not be considered as extra work.

### INTERFERENCE:

All minor deviations required due to interference with the work of others shall be made by mechanical contractor at no additional cost. Verify locations of existing piping, ducts and building structural beams in the project area for connections to same and to avoid possible interference.

### DRAWINGS:

The design drawings show the general arrangement and extent of the work. The drawings are diagrammatic and may not be drawn to scale in certain areas for purposes of clarity and legibility. It is intended that all apparatus be located symmetrical with architectural elements and be installed to avoid obstructions and preserve headroom. The contractor shall review the plans of other trades with his own work to avoid conflicts and interference's; he shall make use of all sources of data, including shop drawings and drawings of equipment furnished by others.

### ACCESS TO EQUIPMENT:

All control devices, equipment, dampers, etc., shall be so located so as to provide for each access of operation, repairs and maintenance, if concealed, access panels or extended operators shall be provided.

### SUPPORTS:

Provide all supports, framing, etc., for the proper installation of pipe, equipment, etc., fabricated from structural steel shapes and to prevent sagging, vibration and strain, and to provide for expansion and contraction.

### SYSTEM BALANCING:

The heating and ventilating systems shall be tested and balanced to demonstrate that specified capacities of the various parts of all systems as indicated in the contract documents can be met and all controls are functioning properly.

### GUARANTEE:

All material and workmanship shall be guaranteed for a period of one year from the date of acceptance, and the contractor shall make good any defects within that period at no additional cost to the owner.

### PLUMBING

#### SANITARY AND VENT PIPING:

All 2" and larger piping above ground shall be service weight cast iron soil pipe with no-hub fittings.

All 1 1/2" and smaller piping above ground shall be galvanized steel with threaded black cast iron drainage fittings.

Option: Pipe and Fittings, shall be plastic PVC: Type DWV, per; ASTM D2665.  
Joints shall be plastic PVC solvent welded, per; ASTM D2665.

All piping below grade shall be service weight cast iron soil pipe with compression type fittings.

#### TRENCH DRAIN (TD-1)

Zurn No. Z874-12-HD-DGF-E1-CUT, 17" wide reveal and 12" wide throat, high density polyethylene body, slotted grate, ductile iron grate.  
Zurn

#### TRENCH CATCH BASIN (TD-2)

Zurn No Z874-1B-DGF-HD-E\_Y, 24" long x 36" deep inline catch basin, high density polyethylene body, slotted grate, ductile iron grate with sediment bucket. Provide trap primer for all floor drains as required per code to maintain trap water seal.

#### OIL INTERCEPTOR OI-1

Greenturtle "Proceptor" OMC 750 oil interceptor, 750-gallon storage capacity, fiberglass construction. Provide with FCH G 4 round manhole frame and cover assembly. Install per manufactures installation manual.

#### CLEANOUTS AND ACCESS COVERS (CO):

Provide cleanouts at the foot or base of each vertical waste or soil stack, in drainage lines at all changes in direction and at 100'-0" intervals having no changes in direction.

#### ROOF SUMP (RS-1 & RS-2)

Zurn Z-163 15" diameter combination main roof drain and overflow roof drain with low silhouette domes and double top-set deck plate, "Dura-Coated" cast iron body with plastic dome strainer. Provide adjustable extension sleeve, combination roof sump receiver, and under deck clamp.

#### PIPE INSULATION

Insulation shall be low pressure molded section fibrous glass pipe insulated with factory-applied all service jacket. Fittings and valve bodies shall be insulated with fibrous glass blanket built-up to the thickness of the adjacent insulation and secured with insulating tape and jacked to match insulation, or with molded fibrous glass fittings installed with both longitudinal and circumferential joints fully buttressed with proper adhesive. Laps shall be fastened with outward clinching staples. All joints shall be properly lapped and sealed. Staples, hangers, etc., shall not penetrate vapor barrier. In lieu of built-up insulation on fittings, Zeston fitting covers may be used.

All insulation shall be Class A in accordance with ASTM standard No. E-84 NFPA No. 255, and UL standard No. 723 as follows:

All material shall be manufactured by one of the listed approved manufacturer's instructions, except where these instructions conflict with the specification hereinafter stated, in which case the specifications shall govern. All adhesives, binds and other fastening materials and devices shall be supplied as required to properly install the insulation materials being furnished.

Approved Manufacturers: Armstrong Co., Certain-Teed, Johns-Manville Co., Owens-Corning Fiberglas.

#### Pipe Insulation Schedule:

Pipe insulation thickness shall comply with the minimum requirements of ASHRAE 90-75 and the following:

Pipe diameter 2-1/2" - 4"

Rain conductors .5"

Rain Conductors: Insulate non-vertical pipe and fittings including first vertical connection to roof or area sump.

Roof Drain Sumps and Drain Pans: Armstrong "Armaflexl" cellular elastomer, 3/8" thick with vapor tight junction between drain sump/drain pan and rain conductor piping insulation.

#### GAS PIPING:

Standard weight schedule 40, ASTM 1-20 black steel pipe with class 150 screwed malleable iron fittings.

#### GAS VALVE:

Gas valve shall be non-lubricated plug valves; ACF or Dezurik. Provide plug valves at all connections to equipment.

#### DOMESTIC WATER PIPING:

Above ground: Type L, hard temper copper tube with wrought copper fittings and non-lead solder joints.

#### DOMESTIC WATER VALVES:

A. Ball valve: Jenkins 901-A bronze ball valve, screwed ends, or approved equal.

#### FLUSHING AND STERILIZATION:

Upon completion of water distribution piping system and prior to being placed into service, the system, including fittings and pumps, shall be flushed and disinfected as follows:

A. System shall be flushed with water at maximum system pressure.

B. Open all drains and fixture valves in the building, starting with the valve nearest the water service line and permit the water to run clear for ten (10) minutes.

C. Disinfecting shall be accomplished by introducing liquid chlorine into the system.

D. The chlorination agent shall be applied at the beginning of the water main to be disinfected.

#### GRILLES AND REGISTERS

(SR-1) Supply Register. Price 520D, 1/2" blade spacing, adjustable, double def. with volume damper. See dwg. for neck size.

(SG-2) Supply Grille. Price 520, 1/4" blade spacing, adjustable, double def.

(RG) Return Grille Price 535, fixed louver, 1/2" blade spacing, 45 deg. def. See dwg. for neck (NK).

#### SUPPLY FAN SF- 1

Greenheck AER-36, sidewall direct drive fan mounted, 7,000 CFM @ .75 S.P., 2 HP, 208 V, 1 phase. Interlock CO/NOx monitor. Provide with wall housing, filter, barometric relief damper and weather hood.

#### EXHAUST AIR LOUVER (EAL-1 & 2)

Greenheck ESD-435, 48" x 30" drainable blade louver with bird screen, 5 sq. ft. free area. Provide with barometric relief air damper.

#### OUTSIDE AIR INTAKE HOOD OAH-1

Greenheck GRSI-8, 150 CFM @ .04" S.P., .37 sq. ft. throat area, bird screen and 12" insulated prefab pitched roof curb.

#### RELIEF AIR HOOD RAH-1

Greenheck GRSR-8, 150 CFM @ .04" S.P., .37 sq. ft. throat area, bird screen and 12" insulated prefab pitched roof curb.

#### CARBON MONOXIDE CO/NO2 MONITOR

Armstrong AMC-1BVC series standalone vehicle exhaust monitor package. Install per mfg. Installation manual.

When 25 PPM CO/1 PPM NO2 is detected by the sensors, SF-1 shall go to 100% outside air. If the CO/NOx rises to 100/3 PPM for 15 min. (adjustable) an alarm will sound.

#### ENERGY RECOVERY VENTILATOR ERV-1 & 2

Renew Aire EV Premium M, 250 CFM @ .375" S.P., total EFF summer/winter 68%/54%, 115 volts, 1 phase, 19.4 MCA & 25 MOP with speed control. Unit housing shall be insulated with 1/2" insulation. Outdoor air and exhaust air discharges shall have integral backdraft dampers. Outdoor air shall be filtered with a 1-inch, 30% eff. disposable filter. Ventilator shall run continuously.

#### ENERGY RECOVERY VENTILATOR ERV-3

Renew Aire EV Premium M, 130 CFM @ .375" S.P., total EFF summer/winter 68%/54%, 115 volts, 1 phase, 19.4 MCA & 25 MOP with speed control. Unit housing shall be insulated with 1/2" insulation. Outdoor air and exhaust air discharges shall have integral backdraft dampers. Outdoor air shall be filtered with a 1-inch, 30% eff. disposable filter. Ventilator shall run continuously.

#### UNIT HEATER UH-1 & 2

Reznor UDXC30, gas-fired sealed combustion, power vented unit, 450 CFM @ 30 MBH input, 24.6 MBH output, 2 stage heating, aluminized steel heat exchanger, aluminized steel burner and drip pan, spark ignited, remote thermostat, 1.9 AMP, 115 volts. Install per mfg. installation manual.

#### GAS INFRA-RED TUBE HEATER RH- 1, 2, 3, & 4

Solaronics Suntube GQG, 65 MBH output, 40' long, gas fired, 1/24 hp motor, 120 volts, single phase, Remote thermostat. Install per mfg. installation manual with clearances from combustible materials.



## ANDERSON, ECKSTEIN AND WESTRICK, INC.

CIVIL ENGINEERS SURVEYORS ARCHITECTS

51301 Schoenherr Road Phone 586 726 1234  
Shelby Township Fax 586 726 8780  
Michigan 48315

www.aewinc.com

ENGINEERING STRONG COMMUNITIES

|           |                      |
|-----------|----------------------|
| 2/13/2025 | PROPOSAL ISSUE       |
| DATE      | SUBMITTALS/REVISIONS |

PROJECT NAME:

## MACOMB TOWNSHIP DPW ADDITION

SHEET TITLE:

## MECHANICAL SPECIFICATIONS

CLIENT:

MACOMB TOWNSHIP

|   |                                       |                                 |
|---|---------------------------------------|---------------------------------|
| <input checked="" type="checkbox"/> PRELIMINARY | <input type="checkbox"/> CONSTRUCTION | <input type="checkbox"/> RECORD |
| DRAWN BY: NMA                                   | CHECKED BY: JRA                       | DATE: 2/13/2025                 |
| SCALE: AS NOTED                                 |                                       |                                 |



Know what's below. Call 72 hours before you dig.

UTILITY INFORMATION, AS SHOWN, INDICATES APPROXIMATE LOCATIONS AND TYPES OF EXISTING FACILITIES ONLY, AS DISCLOSED BY RECORDS PROVIDED TO THIS FIRM FROM THE VARIOUS UTILITY COMPANIES. NO GUARANTEE IS GIVEN OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF.

PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING OVERHEAD AND UNDERGROUND UTILITIES IN CONFLICT WITH THE CONSTRUCTION OF THESE PROPOSED IMPROVEMENTS SHALL BE VERIFIED IN THE FIELD. DURING THE CONSTRUCTION, THE CONTRACTOR SHALL PROTECT AND SUPPORT ALL UTILITIES THAT ARE ENCOUNTERED. (ALL COSTS FOR UTILITY LOCATION, VERIFICATION, SUPPORT AND PROTECTION SHALL BE INCLUDED IN THE PROPOSED PAY ITEM CONFLICTING WITH THAT UTILITY).

DURING CONSTRUCTION, THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN OPERATING NEAR ANY AND ALL OVERHEAD AND / OR BURIED UTILITIES.

PROJECT NO.

0249-0322

C:\Users\marmstrong\Documents\DPW Addition  
3/13/2025 5:17:23 PM  
3/13/2025 5:17:23 PM

SHEET NO.

# M011

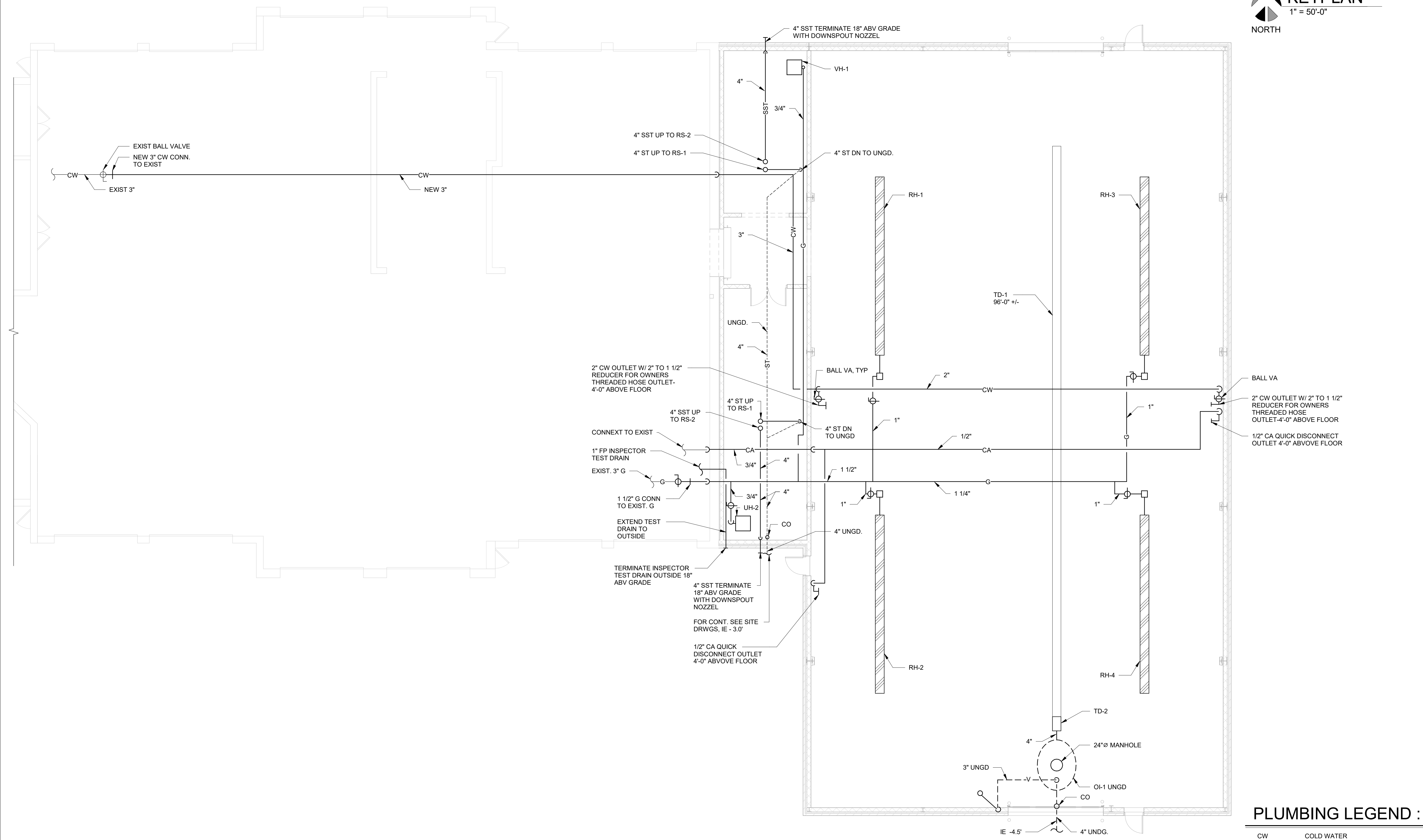
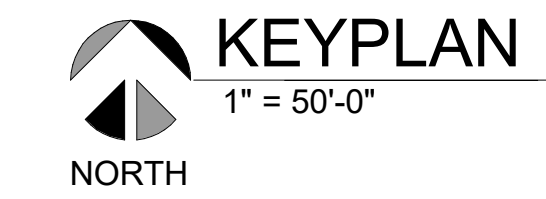




ANDERSON, ECKSTEIN AND WESTRICK, INC.

CIVIL ENGINEERS SURVEYORS ARCHITECTS  
51301 Schoenherr Road Phone 586 726 1234  
Shelby Township Fax 586 726 8780  
Michigan 48315  
www.aewinc.com

ENGINEERING STRONG COMMUNITIES



**PLUMBING PLAN**  
1/8" = 1'-0"  
NORTH

**PLUMBING LEGEND :**

|     |                 |
|-----|-----------------|
| CW  | COLD WATER      |
| G   | GAS             |
| CA  | COMPRESSED AIR  |
| ST  | STORM DRAIN     |
| SST | SECONDARY STORM |

|  |                      |
|--|----------------------|
| 2/13/2025  | PROPOSAL ISSUE       |
| DATE   | SUBMITTALS/REVISIONS |
| PROJECT NAME:  |                      |
| <b>MACOMB TOWNSHIP DPW ADDITION</b>  |                      |
| SHEET TITLE:   |                      |
| <b>PLUMBING PLAN</b>   |                      |
| CLIENT:  |                      |
| <b>MACOMB TOWNSHIP</b>   |                      |
| <input type="checkbox"/> PRELIMINARY <input type="checkbox"/> CONSTRUCTION <input type="checkbox"/> RECORD |                      |
| DRAWN BY:  | CHECKED BY:          |
| NMA  | JRA                  |
| DATE:  | 2/13/2025            |
| SCALE:   | AS NOTED             |



UTILITY INFORMATION, AS SHOWN, INDICATES APPROXIMATE LOCATIONS AND TYPES OF EXISTING FACILITIES ONLY, AS DISCLOSED BY RECORDS PROVIDED TO THIS FIRM FROM THE VARIOUS UTILITY COMPANIES. NO GUARANTEE IS GIVEN OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF.

PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING OVERHEAD AND UNDERGROUND UTILITIES IN CONFLICT WITH THE CONSTRUCTION OF THESE PROPOSED IMPROVEMENTS SHALL BE VERIFIED IN THE FIELD. DURING THE CONSTRUCTION, THE CONTRACTOR SHALL PROTECT AND SUPPORT ALL UTILITIES THAT ARE ENCOUNTERED. (ALL COSTS FOR UTILITY LOCATION, VERIFICATION, SUPPORT AND PROTECTION SHALL BE INCLUDED IN THE PROPOSED PAY ITEM CONFLICTING WITH THAT UTILITY).

DURING CONSTRUCTION, THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN OPERATING NEAR ANY AND ALL OVERHEAD AND / OR BURIED UTILITIES.

PROJECT NO. 0249-0322

C:\Users\armstrong\Documents\DPW Addition  
2/13/2025 1:29:59 PM  
811\2025-02-13\0249-0322.dwg

SHEET NO.

**P101**

| LUMINAIRE SCHEDULE |             |  |   |   |       |
|--------------------|-------------|--|---|---|-------|
| FIXTURE SYMBOL     | FIXTURE TAG | DESCRIPTION  | MANUFACTURER(S)   | LAMP SOURCE                               | WATTS |
| ○                  | (A)         | 12.8"R X 8"H LOW PROFILE INDUSTRIAL LED HIGH BAY FIXTURE. STEEL CHANNEL AND END CAPS, WITH ALUMINUM HEAT SINK. PENDANT MOUNTED, WIDE DISTRIBUTION. 0-10V DIMMING DOWN TO 10%. GLOSS WHITE FINISH, WITH POLYCARBONATE LENS, IMPACT RATED. 24750 LUMENS, ELECTRONIC DIMMING DRIVER 0-10V, 4000K, 80CRI, UVOLT 120-277V. BLACK COLOR. | 1. TCP LIGHTING UFO FAMILY CAT# UFO U ZD SW6 CCT<br>2. LITHONIA REBL LED HIGH BAY SERIES CAT# REBL AL013 WD UVOLT SWW9 80CRI DWH.<br>3. COOPER LIGHTING | LP840<br>80CRI<br>24750<br>LUMENS         | 150   |
| ○                  | (B)         | 12.8"R X 8"H LOW PROFILE INDUSTRIAL LED HIGH BAY FIXTURE. STEEL CHANNEL AND END CAPS, WITH ALUMINUM HEAT SINK. PENDANT MOUNTED, WIDE DISTRIBUTION. 0-10V DIMMING DOWN TO 10%. GLOSS WHITE FINISH, WITH POLYCARBONATE LENS, IMPACT RATED. 33000 LUMENS, ELECTRONIC DIMMING DRIVER 0-10V, 4000K, 80CRI, UVOLT 120-277V. BLACK COLOR. | 1. TCP LIGHTING UFO FAMILY CAT# UFO U ZD SW6 CCT<br>2. LITHONIA REBL LED HIGH BAY SERIES CAT# REBL AL013 WD UVOLT SWW9 80CRI DWH.<br>3. COOPER LIGHTING | LP840<br>80CRI<br>33000<br>LUMENS         | 200   |
| —                  | (C)         | 4'L X 3.4"W X 2.7" D LED LINEAR STRIP FIXTURE. ROLLED STEEL HOUSING, END CAPS, WHITE FINISH, FLAT DIFFUSED LENS, LED ELECTRONIC DRIVER 0-10V DIMMING DOWN TO 10%. 4000 LUMENS, 4000K, 80 CRI. CABLE HUNG, 120V OPERATION.  | 1. LITHONIA CLX L48 4000L SEF FDL MVOLT GZ10 40K 80CRI HC36<br>2. EATON LIGHTING<br>3. COLUMBIA LIGHTING  | LED<br>4000K<br>4000LM<br>80CRI           | 27.6W |
| —                  | (D)         | 8'L X 3.4"W X 2.7" D LED LINEAR STRIP FIXTURE. ROLLED STEEL HOUSING, END CAPS, WHITE FINISH, FLAT DIFFUSED LENS, LED ELECTRONIC DRIVER 0-10V DIMMING DOWN TO 10%. 8000 LUMENS, 4000K, 80 CRI. CABLE HUNG, 120V OPERATION.  | 1. LITHONIA CLX L96 8000L SEF FDL MVOLT GZ10 40K 80CRI HC36<br>2. EATON LIGHTING<br>3. COLUMBIA LIGHTING  | LED<br>4000K<br>8000LM<br>80CRI           | 48.6W |
| ⊕                  | (E)         | 13.75"WX10"Dx6-3/8"H WALL MOUNTED STYLISH LED LUMINAIR. DIE CAST ALUMINUM HOUSING, POWDER COAT FINISH, ACRYLIC LENS, TYPE III DISTRIBUTION. 4000K, 20LED (TWO ENGINES) 208V. COLOR TO BE SELECTED BY ARCH.   | 1. LITHONIA LIGHTING DSXW1 LED 20C 700 40K T3M MVOLT DF COLOR.<br>2. EATON LIGHTING<br>3. COLUMBIA LIGHTING   | LED<br>4000K<br>MVOLT<br>80CRI<br>5454 LM | 46.0  |
| ⊕                  | (F)         | 18.5"WX10"Dx7-5/8"H WALL MOUNTED STYLISH LED LUMINAIR. DIE CAST ALUMINUM HOUSING, POWDER COAT FINISH, ACRYLIC LENS, FORWARD THROW DISTRIBUTION. 4000K, 30LED (THREE ENGINES) 208V. COLOR TO BE SELECTED BY ARCH.   | 1. LITHONIA LIGHTING DSXW2 LED 30C 700 40K T3M MVOLT DF COLOR.<br>2. EATON LIGHTING<br>3. COLUMBIA LIGHTING   | LED<br>4000K<br>MVOLT<br>80CRI<br>8082 LM | 71.0  |
| ●                  | (#E)        | SAME AS TYPE # EXCEPT WITH A BUILT-IN EMERGENCY BATTERY PACK. WIRE SUCH THAT IT OPERATES NORMALLY WITH OTHER FIXTURES AND OPERATES AS AN EM FIXTURE UPON LOSS OF NORMAL POWER, AND SWITCH TO GENERATOR POWER AS POWER IS LOST FOR LONG PERIOD.   |   |   |       |
| ⊕                  | (X)         | EXIT LIGHT EMERGENCY LIGHT SHALL BE UNIVERSAL MOUNT, DIECAST ALUMINUM, HIGH OUTPUT LED DIFFUSE LIGHT PANEL, RED LETTERS WITH MAINTENANCE FREE NICKEL CADMIUM BATTERY CAPABLE OF PROVIDING 90 MINUTE FULL LIGHT OPERATION.  | 1. LITEALARMS GRANDE SERIES CAT# 1 XDPC N W RW<br>2. LITHONIA CAT # LE S 1 W  | 120-277V                                  | 2.3   |
| ⊕                  | (X1)        | EMERGENCY LIGHT REMOTE HEAD TO BE CONNECTED TO EXIT SIGN WITH HIGH OUTPUT BATTERY..  | 1. LITEALARMS CAT # SAF2 LD1 B 6  | 120-277V                                  | 2.3   |

### LUMINAIRE SCHEDULE GENERAL NOTES

- REFER TO ELECTRICAL SPECIFICATIONS FOR MORE INFORMATION.
- ALL LIGHT FIXTURES SHALL BE UL LABELED.
- FIRST MANUFACTURER LISTED IS BASIS OF DESIGN. OTHER MANUFACTURERS LISTED ARE APPROVED MANUFACTURERS.
- ELECTRICAL TRADES SHALL PROVIDE COMPLETE SUBMITTALS (SHOP DRAWINGS) ON ALL LIGHT FIXTURES, LAMPS, CONTROLS AND ACCESSORIES, ETC. REFER TO SPECIFICATION FOR SUBMITTAL FORMAT AND PROCESS.
- ALL LUMINAIRES AND CONTROLS SHALL COMPLY WITH THE MICHIGAN UNIFORM ENERGY CODE AND ASHRAE 90.1.

### LIGHTING SYMBOL LIST

| SYMBOL | DESCRIPTION   |
|--------|---|
|        | LIGHT FIXTURE - CEILING/GRID MOUNT  |
|        | LIGHT FIXTURE - INTERIOR WALL MOUNT LINEAR  |
|        | LIGHT FIXTURE - DOWNLIGHT WITH WALLWASH DIST.   |
|        | LIGHT FIXTURE - INTERIOR WALL SCONCE  |
|        | LIGHT FIXTURE - INTERIOR SURFACE MOUNT  |
|        | LIGHT FIXTURE - INTERIOR WALL MOUNTED   |
|        | LIGHT FIXTURE - INTERIOR PENDANT MOUNT  |
|        | EXIT LIGHT - CEILING MOUNTED - ARROWS AS INDICATED ON PLAN (SHADED AREA INDICATES FACE(S) OF FIXTURE) |
|        | EXIT LIGHT - WALL MOUNTED - ARROWS AS INDICATED ON PLAN (SHADED AREA INDICATES FACE(S) OF FIXTURE)    |
|        | EMERGENCY LIGHT FIXTURE - EMERGENCY BATTERY UNIT  |
|        | EMERGENCY LIGHT FIXTURE - BATTERY UNIT/EXIT SIGN  |
|        | LIGHT FIXTURE - EXTERIOR POLE MOUNT TYPE  |
|        | LIGHT FIXTURE - EXTERIOR WALL MOUNT TYPE  |
|        | LIGHT FIXTURE - EXTERIOR POST TOP TYPE  |
|        | LIGHT FIXTURE - EXTERIOR BOLLARD TYPE   |

- NOTES:  
1. LIGHTING SYMBOLS AS INDICATED ON PLANS ARE NOT DRAWN TO SCALE UNLESS NOTED OTHERWISE.

### LIGHTING CONTROLS LEGEND

| SYMBOL | DESCRIPTION                      |
|--------|----------------------------------|
|        | SWITCH SINGLE POLE               |
|        | OCCUPANCY SENSOR SWITCH          |
|        | VACANCY SENSOR SWITCH            |
|        | LOW VOLTAGE DIMMER SWITCH        |
|        | VACANCY DIMMER SENSOR SWITCH     |
|        | CEILING MOUNTED OCCUPANCY SENSOR |
|        | CEILING MOUNTED VACANCY SENSOR   |
|        | SWITCH THREE-WAY                 |
|        | SINGLE POLE KEY SWITCH           |

- NOTES:  
1. ALL DEVICE RATINGS/SIZES SHALL BE COORDINATED WITH PLANS AND SCHEDULES.

### AUXILIARY SYST. SYMBOL LIST

| SYMBOL | DESCRIPTION                                 |
|--------|---|
|        | CAMERA                                      |
|        | MONITOR LOCATION- DETAIL DETAIL SHEET E-500 |
|        | CARD READER                                 |
|        | COMMUNICATIONS DEVICE - 6" ABOVE COUNTER    |
|        | COMMUNICATIONS DEVICE - FLOOR               |
|        | COMMUNICATIONS DEVICE - WALL                |
|        | MAGNETIC DOOR HOLDER                        |
|        | PUSH BUTTON                                 |
|        | SPEAKER                                     |
|        | WALL CLOCK - SINGLE FACE                    |
|        | WALL CLOCK AND SPEAKER UNIT                 |

- NOTES:  
1. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR BOX AND CONDUIT FOR ALL DEVICES INDICATED.  
2. LOW VOLTAGE CONTRACTOR SHALL PROVIDE EXACT SPECIFICATIONS AND LOCATIONS OF ALL DEVICES.

### FIRE ALARM SYMBOL LIST

| SYMBOL | DESCRIPTION                           |
|--------|---------------------------------------|
|        | DETECTION DEVICE                      |
|        | DETECTION DEVICE - DUCT MOUNTED       |
|        | DETECTION DEVICE - FLOW SWITCH        |
|        | DETECTION DEVICE - TAMPER SWITCH      |
|        | FIRE ALARM ANNUCIATOR PANEL           |
|        | FIRE ALARM CONTROL PANEL              |
|        | FIRE DEPARTMENT COMMUNICATION OUTLET  |
|        | MANUAL DEVICE - PULL STATION          |
|        | NOTIFICATION DEVICE - WALL MOUNTED    |
|        | NOTIFICATION DEVICE - CEILING MOUNTED |

- NOTES:  
1. DRAWINGS INDICATE DESIGN INTENT ONLY. FINAL LOCATIONS AND DEVICE SPECIFICATIONS SHALL BE PROVIDED BY FIRE ALARM MANUFACTURER. REFER TO PROJECT SPECIFICATIONS FOR APPROVED MANUFACTURERS.

### POWER SYMBOL LIST

| SYMBOL | DESCRIPTION                                      |
|--------|--|
|        | CONDUIT DOWN                                     |
|        | CONDUIT UP                                       |
|        | CONTACTOR  |
|        | DISCONNECT SWITCH - NON FUSED                    |
|        | DISCONNECT SWITCH - FUSED                        |
|        | DISCONNECT SWITCH - COMB. MOTOR STARTER          |
|        | ELECTRICAL PANEL - 208/240 VOLTS                 |
|        | ELECTRICAL PANEL - 480 VOLTS                     |
|        | GROUNDING ROD                                    |
|        | GROUND   |
|        | GROUNDING BAR                                    |
|        | JUNCTION BOX                                     |
|        | JUNCTION BOX WITH HARDWIRED CONNECTION           |
|        | METER  |
|        | MOTOR - SINGLE PHASE                             |
|        | MOTOR - THREE PHASE                              |
|        | MOTOR RATED SWITCH                               |
|        | POWER RECEPTACLE - SIMPLEX TYPE                  |
|        | POWER RECEPTACLE - DUPLEX TYPE                   |
|        | POWER RECEPTACLE - DUPLEX 6" ABOVE COUNTER       |
|        | POWER RECEPTACLE - R-REEL TYPE                   |
|        | POWER RECEPTACLE - QUADRUPLX TYPE                |
|        | POWER RECEPTACLE - RECESSED FLOOR TYPE           |
|        | POWER AND DATA RECEPTACLES - RECESSED FLOOR TYPE |
|        | POWER RECEPTACLE - SPECIALTY TYPE                |
|        | TRANSFORMER (REFER TO SCHEDULES FOR INFO)        |
|        | VARIABLE SPEED DRIVE                             |

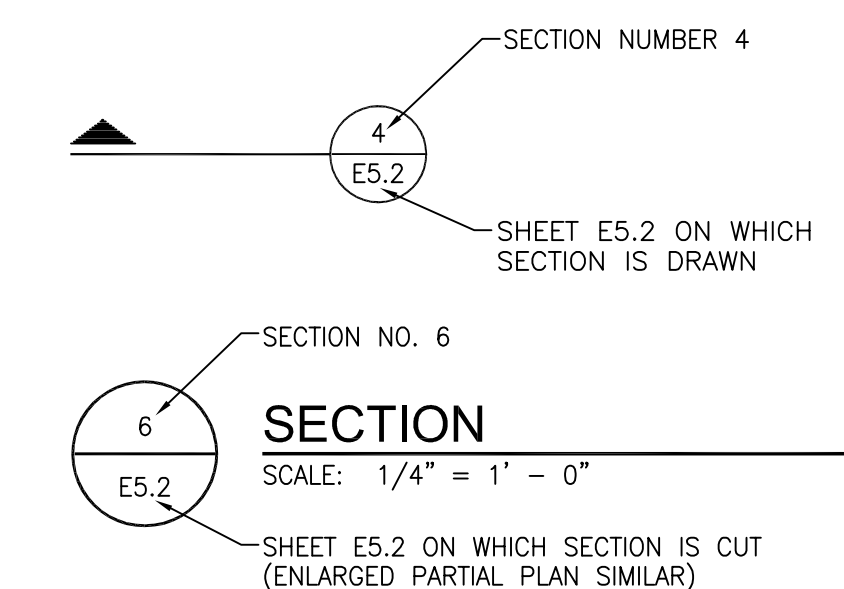
### ELECTRICAL ABBREVIATIONS

| ABBREV.    | DESCRIPTION                                   |
|------------|---|
| AFF        | ABOVE FINISHED FLOOR                          |
| A          | AMPERE  |
| AF         | AMPERE FUSE/AMPERE FRAME                      |
| AWG        | AMERICAN WIRE GAUGE                           |
| AT         | AMPERE TRIP                                   |
| ATS        | AUTOMATIC TRANSFER SWITCH                     |
| AIC        | AVAILABLE INTERRUPTING CURRENT (AMPS)         |
| C          | CONDUIT OR CEILING MOUNTED                    |
| CB         | CIRCUIT BREAKER                               |
| CU         | COPPER  |
| CT         | CURRENT TRANSFORMER                           |
| DIA        | DIAMETER                                      |
| DISC       | DISCONNECT                                    |
| EMT        | ELECTRICAL METALLIC TUBING                    |
| EW         | ELECTRIC WATER COOLER                         |
| EPO        | EMERGENCY POWER OFF                           |
| (E)        | EXISTING ELECTRICAL EQUIPMENT OR WORK         |
| FA         | FIRE ALARM                                    |
| FACP       | FIRE ALARM CONTROL PANEL                      |
| FLA        | FULL LOAD AMPS                                |
| F          | FUSE  |
| G/GRD      | GROUND  |
| GFCI/GFI   | GROUND FAULT CIRCUIT INTERRUPTER              |
| HOA        | HAND-OFF-AUTO                                 |
| HP         | HORSEPOWER                                    |
| IG         | ISOLATED GROUND                               |
| KV         | KILOVOLT                                      |
| KVA        | KILOVOLT AMPERE                               |
| KW         | KILOWATT                                      |
| KWH        | KILOWATT HOUR                                 |
| LP         | LIGHTING PANEL                                |
| MCB        | MAIN CIRCUIT BREAKER                          |
| MDP        | MAIN DISTRIBUTION PANEL                       |
| MLO        | MAIN LUG ONLY                                 |
| MAX        | MAXIMUM                                       |
| MIN        | MINIMUM                                       |
| NEC        | NATIONAL ELECTRICAL CODE                      |
| NEMA       | NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION |
| N/NEU      | NEUTRAL                                       |
| NF         | NON-FUSIBLE                                   |
| NC         | NORMALLY CLOSED                               |
| NO         | NORMALLY OPEN                                 |
| NIC        | NOT IN CONTRACT                               |
| OF/CI      | OWNER FURNISHED / CONTRACTOR INSTALLED        |
| OF/OI      | OWNER FURNISHED / OWNER INSTALLED             |
| PH. OR Ø   | PHASE   |
| P          | POLE  |
| PF         | POWER FACTOR                                  |
| PVC        | POLYVINYL CHLORIDE (PLASTIC)                  |
| (R)        | RELOCATED EXISTING ELECTRICAL EQUIPMENT       |
| (RR)       | REMOVE AND REINSTALL                          |
| RMC        | RIGID METALLIC CONDUIT                        |
| RP         | RECEPTACLE PANEL                              |
| SPEC/SPECS | SPECIFICATIONS                                |
| TBB        | TELEPHONE BACKBOARD                           |
| TYP.       | TYPICAL                                       |
| UC         | UNDER COUNTER                                 |
| UL         | UNDERWRITERS LABORATORIES                     |
| UPS        | UNINTERRUPTIBLE POWER SUPPLY                  |
| USB        | UNIVERSAL SERIAL BUS                          |
| V          | VOLT  |
| VA         | VOLT AMPERE                                   |
| W          | WATT  |
| WG         | WIRE GUARD                                    |
| WP         | WEATHERPROOF                                  |
| XFMR       | TRANSFORMER                                   |

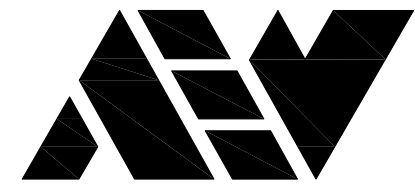
| DRAWING INDEX |                                |
|---------------|--------------------------------|
| SHEET #       | DESCRIPTION                    |
| E100          | ELECTRICAL GENERAL INFORMATION |
| E101          | FIRST FLOOR POWER PLAN         |
| E102          | COMPOSITE POWER PLAN           |
| E201          | FIRST FLOOR LIGHTING PLAN      |
| E300          | ONE-LINE DIAGRAM AND SCHEDULES |
| E400          | ELECTRICAL SPECIFICATIONS      |

### DRAWING NOTATION

| SYMBOL | DESCRIPTION  |
|--------|--|
|        | LIGHTING FIXTURE TAG                                     |
|        | CONSTRUCTION KEY NOTE NUMBER 1                           |
|        | DEMOLITION KEY NOTE NUMBER 1                             |
|        | FEEDER SIZE TAG (REFER TO FEEDER SCHEDULE ON THIS SHEET) |
|        | EQUIPMENT DESIGNATION (I.E. EXHAUST FAN NUMBER 1)        |
|        | EXISTING DEVICES OR EQUIPMENT                            |
|        | NEW OR MODIFIED DEVICES OR EQUIPMENT                     |
|        | NEW OR MODIFIED UNDERGROUND WIRING                       |
|        | EXISTING SYSTEM COMPONENT TO BE REMOVED                  |



| APPLICABLE CODES AND REGULATIONS |   |
|----------------------------------|---|
| YEAR                             | CODE  |
| 2015                             | MICHIGAN BUILDING CODE                                  |
| 2015                             | MICHIGAN ENERGY CODE                                    |
| 2023                             | MICHIGAN ELECTRICAL CODE RULES, PART 8                  |
| 2023                             | NATIONAL ELECTRICAL CODE (NFPA 70)                      |
| 2013                             | NFPA 20   |
| 2013                             | NFPA 72   |
| 2012                             | NFPA 101  |
| 2013                             | NFPA 110  |
| 2009                             | ICC A117.1 ACCESSIBLE AND USABLE BUILDINGS & FACILITIES |



ANDERSON, ECKSTEIN AND WESTRICK, INC.

CIVIL ENGINEERS SURVEYORS ARCHITECTS  
51301 Schoenherr Road Phone 586 726 1234  
Shelby Township Fax 586 726 8780  
Michigan 48315  
www.aewinc.com

ENGINEERING STRONG COMMUNITIES

| DRAWING INDEX |                                |
|---------------|--------------------------------|
| SHEET #       | DESCRIPTION                    |
| E100          | ELECTRICAL GENERAL INFORMATION |
| E101          | FIRST FLOOR POWER PLAN         |
| E102          | COMPOSITE POWER PLAN           |
| E201          | FIRST FLOOR LIGHTING PLAN      |
| E300          | ONE-LINE DIAGRAM AND SCHEDULES |
| E400          | ELECTRICAL SPECIFICATIONS      |

2/19/2025 PROPOSAL ISSUE

DATE SUBMITTALS/REVISIONS

### MACOMB TOWNSHIP DPW ADDITION

SHEET TITLE:

### ELECTRICAL GENERAL INFORMATION

CLIENT: MACOMB TOWNSHIP

| PRELIMINARY CONSTRUCTION RECORD |             |           |
|---------------------------------|-------------|-----------|
| DRAWN BY:                       | CHECKED BY: | DATE:     |
| FA                              | FA          | 2/19/2025 |
| SCALE: AS NOTED                 |             |           |

UTILITY INFORMATION, AS SHOWN, INDICATES APPROXIMATE LOCATIONS AND TYPES OF EXISTING FACILITIES ONLY, AS DISCLOSED BY RECORDS PROVIDED TO THIS FIRM FROM THE VARIOUS UTILITY COMPANIES. NO GUARANTEE IS GIVEN OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF.

PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING OVERHEAD AND UNDERGROUND UTILITIES IN CONFLICT WITH THE CONSTRUCTION OF THESE PROPOSED IMPROVEMENTS SHALL BE VERIFIED IN THE FIELD. DURING THE CONSTRUCTION, THE CONTRACTOR SHALL PROTECT AND SUPPORT ALL UTILITIES THAT ARE ENCOUNTERED. (ALL COSTS FOR UTILITY LOCATION, VERIFICATION, SUPPORT AND PROTECTION SHALL BE INCLUDED IN THE PROPOSED PAY ITEM CONFLICTING WITH THAT UTILITY).

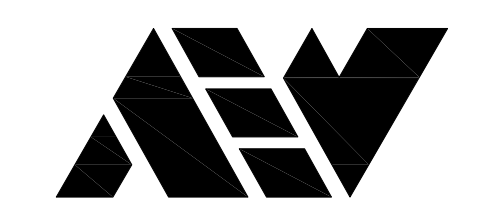
DURING CONSTRUCTION, THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN OPERATING NEAR ANY AND ALL OVERHEAD AND/OR BURIED UTILITIES.

PROJECT NO. 0249-0322

M:\0249\0249-0322\CAD\Drawings\Construction\Arch\DPW Addition 2/19/2025.dwg

SHEET NO.

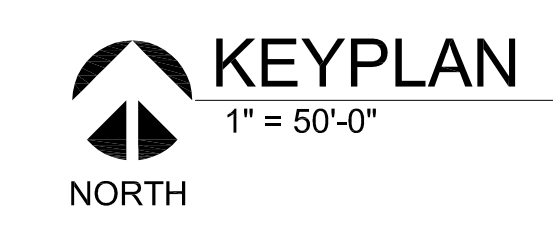
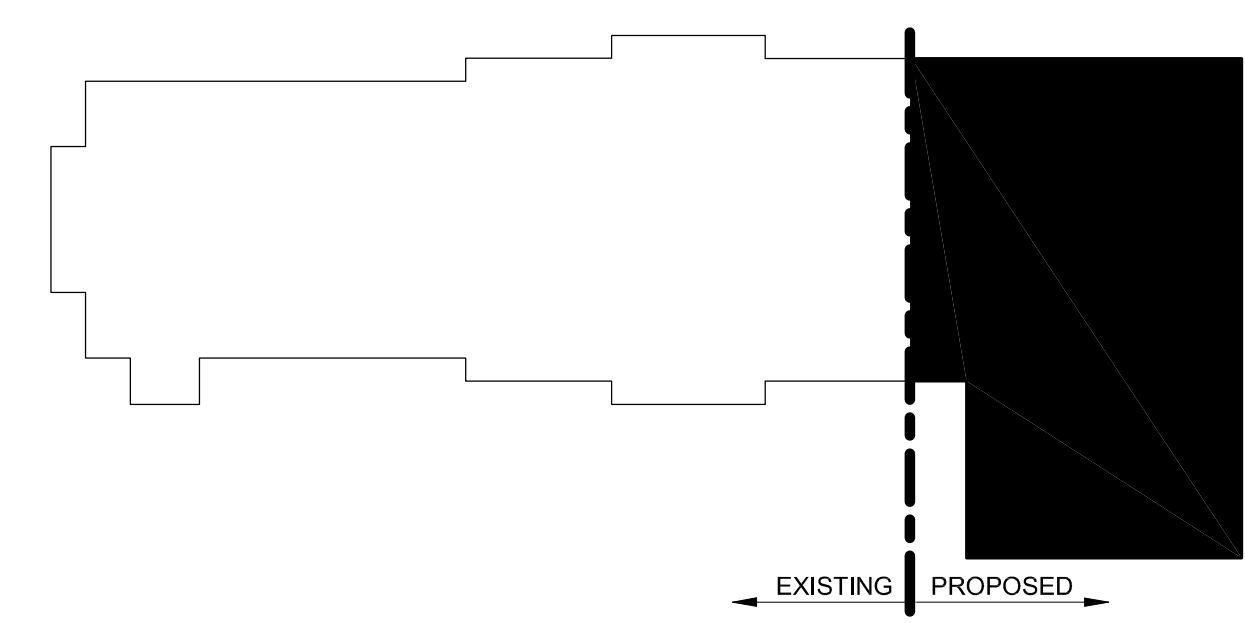
E100



ANDERSON, ECKSTEIN AND WESTRICK, INC.

CIVIL ENGINEERS SURVEYORS ARCHITECTS  
51301 Schoenherr Road Phone 586 726 1234  
Shelby Township Michigan 48315 Fax 586 726 8780  
www.aewinc.com

ENGINEERING STRONG COMMUNITIES



**ELECTRICAL GENERAL NOTES**

|   |  |
|---|--|
| A | THESE DRAWINGS ARE DIAGNOSTIC AND REPRESENT THE GENERAL EXTENT OF THE WORK TO BE PERFORMED. PROVIDE AND EXECUTE ALL HVAC SYSTEMS PER ENGINEER'S SPECIFICATION, AND LOCAL APPLICABLE CODES INCLUDING AMENDMENTS, BULLETINS, ETC. AS WELL AS THE STANDARDS OF INSTALLATION AND EQUIPMENT ESTABLISHED FOR THE BUILDINGS, AND REQUIREMENTS OF THE OWNER. |
| B | EXCEPT FOR CHANGES AS MAY BE SPECIFICALLY APPROVED BY THE ENGINEER OF RECORD, IN ACCORDANCE WITH ALTERNATES OF OPTIONS AS STATED HEREINAFTER, ALL WORK MUST BE IN FULL ACCORDANCE WITH THE INTENT OF THE PLANS AND SPECIFICATIONS. SYSTEMS ARE TO BE COMPLETE, EFFICIENT, AND SATISFACTORY OPERATION WHEN PROJECT IS DELIVERED TO THE OWNER.         |
| D | CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND APPROVAL FROM GOVERNING AUTHORITIES AND FILE NECESSARY FORMS, PAY ALL INSPECTION FEES.   |
| E | ELECTRICAL CONTRACTOR SHALL COMPLY WITH THE LATEST NATIONAL ELECTRICAL CODE, LIFE SAFETY CODE AND APPLICABLE STATE AND LOCAL CODES AND ORDINANCES.   |
| F | ELECTRICAL EQUIPMENT AND WIRING SHALL BE NEW AND SHALL BE FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR, UNLESS OTHERWISE NOTED.  |
| G | WIRING SHALL BE IN CONDUIT. CONDUIT SHALL BE 3/4" C ONDUIT MINIMUM. CONDUITS IN FINISHED AREAS SHALL BE CONCEALED.   |
| H | NEW WIRES SHALL BE TYPE THHN. MINIMUM SIZE SHALL BE #12 AWG, UNLESS OTHERWISE NOTED. FINAL CONNECTIONS TO EQUIPMENT, FURNISHED AND INSTALLED BY OTHERS, SHALL BE PROVIDED BY THIS CONTRACTOR.  |

**NEW WORK KEYED NOTES**

|   |   |
|---|---|
| # | NOTE  |
| 1 | PROVIDE A 100A 240V 3P GENERATOR OUTLET BY "APPLETON" OR "HUBBELL". VERIFY EXACT TYPE WITH OWNER PROVIDED PORTABLE GENERATOR PRIOR TO PURCHASE.   |
| 2 | PROVIDE 100A 240V 3P MANUAL TRANSFER SWITCH, REFER TO ONE LINE DIAGRAM FOR MORE DETAILS.  |
| 3 | PROPOSED LOCATION OF NEW FIRE ALARM CONTROL PANEL (FACP), REFER TO SHEET E300 FOR ADDITIONAL INFORMATION AND REQUIREMENTS.                        |
| 4 | VERIFY EXACT MOUNTING HEIGHT OF FANS WITH ARCHITECT AND MECHANICAL ENGINEER PRIOR TO INSTALLATION. CONTROLLER TO BE PROVIDED BY FAN MANUFACTURER. |

|           |                      |
|-----------|----------------------|
| 2/19/2025 | PROPOSAL ISSUE       |
| DATE      | SUBMITTALS/REVISIONS |

PROJECT NAME:

**MACOMB TOWNSHIP DPW ADDITION**

SHEET TITLE:

**FIRST FLOOR POWER PLAN**

CLIENT: **MACOMB TOWNSHIP**

|                                     |             |                          |              |                          |           |
|-------------------------------------|-------------|--------------------------|--------------|--------------------------|-----------|
| <input checked="" type="checkbox"/> | PRELIMINARY | <input type="checkbox"/> | CONSTRUCTION | <input type="checkbox"/> | RECORD    |
| DRAWN BY:                           | FA          | CHECKED BY:              | FA           | DATE:                    | 2/19/2025 |
| SCALE:                              | AS NOTED    |                          |              |                          |           |

UTILITY INFORMATION, AS SHOWN, INDICATES APPROXIMATE LOCATIONS AND TYPES OF EXISTING FACILITIES ONLY. AS DISCLOSED BY RECORDS PROVIDED TO THIS FIRM FROM THE VARIOUS UTILITY COMPANIES. NO GUARANTEE IS GIVEN OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF.

PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING OVERHEAD AND UNDERGROUND UTILITIES IN CONFLICT WITH THE CONSTRUCTION OF THESE PROPOSED IMPROVEMENTS SHALL BE VERIFIED IN THE FIELD. DURING THE CONSTRUCTION, THE CONTRACTOR SHALL PROTECT AND SUPPORT ALL UTILITIES THAT ARE ENCOUNTERED. (ALL COSTS FOR UTILITY LOCATION, VERIFICATION, SUPPORT AND PROTECTION SHALL BE INCLUDED IN THE PROPOSED PAY ITEM CONFLICTING WITH THAT UTILITY).

DURING CONSTRUCTION, THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN OPERATING NEAR ANY AND ALL OVERHEAD AND/OR BURIED UTILITIES.

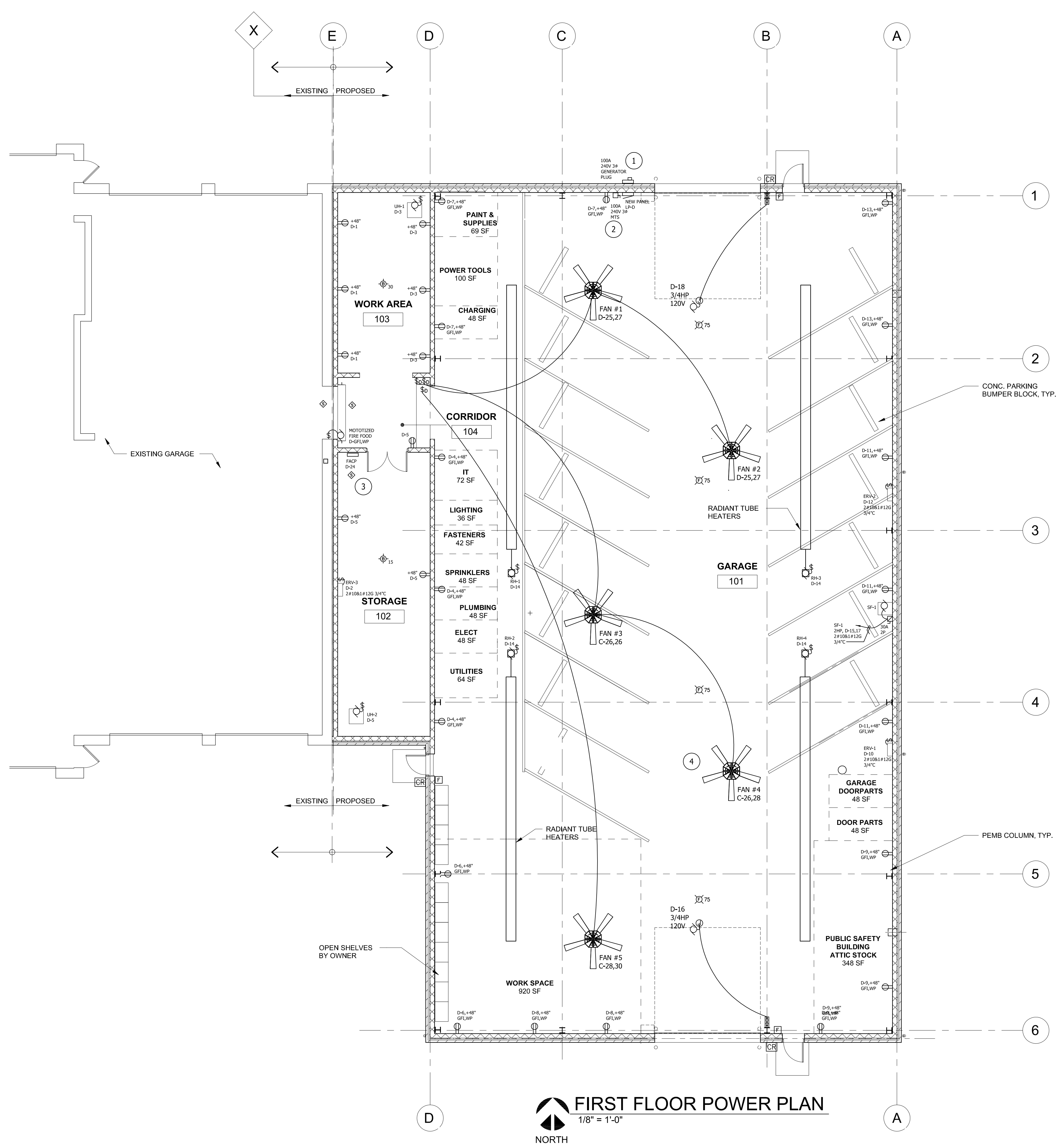
PROJECT NO. **0249-0322**

M:\0249\0249-0322\CAD\Drawings\Construction\Arch\EPW Addition  
P:\Projects\0249-0322.dwg

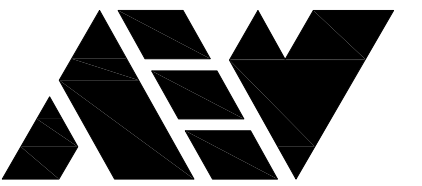
SHEET NO.

**E101**

COPYRIGHT: 2025, ANDERSON, ECKSTEIN AND WESTRICK, INC.



**FIRST FLOOR POWER PLAN**  
1/8" = 1'-0"  
NORTH



ANDERSON, ECKSTEIN AND WESTRICK, INC.

CIVIL ENGINEERS SURVEYORS ARCHITECTS  
51301 Schoenherr Road Phone 586 726 1234  
Shelby Township Fax 586 726 8780  
Michigan 48315 www.aewinc.com

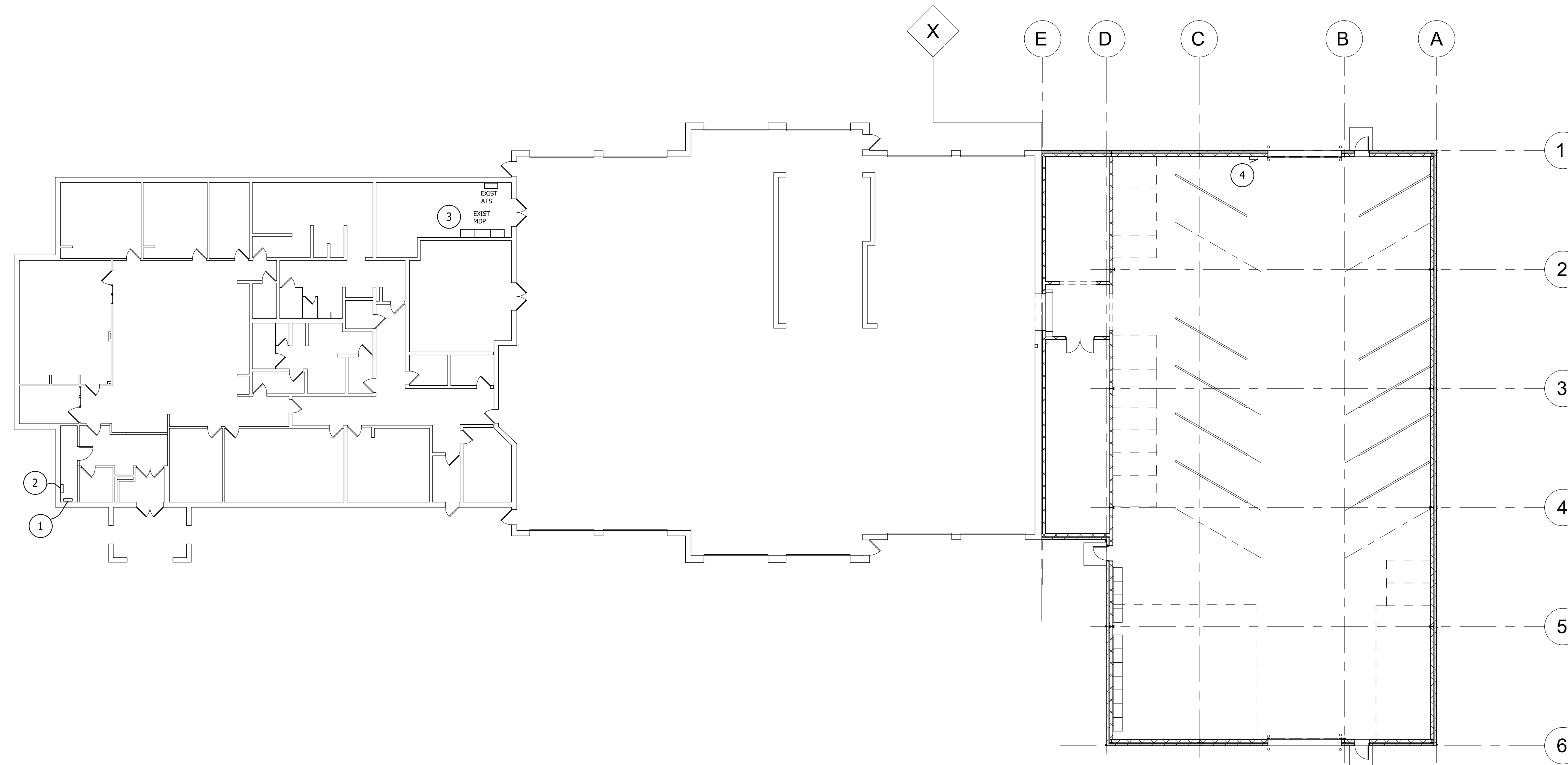
ENGINEERING STRONG COMMUNITIES

### ELECTRICAL GENERAL NOTES

|   |  |
|---|--|
| A | THESE DRAWINGS ARE DIAGRAMMATIC AND REPRESENT THE GENERAL EXTENT OF THE WORK TO BE PERFORMED. PROVIDE AND EXECUTE ALL HVAC SYSTEMS PER ENGINEER'S SPECIFICATION, AND LOCAL APPLICABLE CODES INCLUDING AMENDMENTS, BULLETINS, ETC. AS WELL AS THE STANDARDS OF INSTALLATION AND EQUIPMENT ESTABLISHED FOR THE BUILDINGS, AND REQUIREMENTS OF THE OWNER. |
| B | EXCEPT FOR CHANGES AS MAY BE SPECIFICALLY APPROVED BY THE ENGINEER OF RECORD, IN ACCORDANCE WITH ALTERNATES OF OPTIONS AS STATED HEREINAFTER, ALL WORK MUST BE IN FULL ACCORDANCE WITH THE INTENT OF THE PLANS AND SPECIFICATIONS. SYSTEMS ARE TO BE COMPLETE, EFFICIENT, AND SATISFACTORY OPERATION WHEN PROJECT IS DELIVERED TO THE OWNER.           |
| D | CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND APPROVAL FROM GOVERNING AUTHORITIES AND FILE NECESSARY FORMS, PAY ALL INSPECTION FEES.   |
| E | ELECTRICAL CONTRACTOR SHALL COMPLY WITH THE LATEST NATIONAL ELECTRICAL CODE, LIFE SAFETY CODE AND APPLICABLE STATE AND LOCAL CODES AND ORDINANCES.   |
| F | ELECTRICAL EQUIPMENT AND WIRING SHALL BE NEW AND SHALL BE FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR, UNLESS OTHERWISE NOTED.  |
| G | WIRING SHALL BE IN CONDUIT. CONDUIT SHALL BE 3/4" C ONDUIT MINIMUM. CONDUITS IN FINISHED AREAS SHALL BE CONCEALED.   |
| H | NEW WIRES SHALL BE TYPE THHN. MINIMUM SIZE SHALL BE #12 AWG, UNLESS OTHERWISE NOTED. FINAL CONNECTIONS TO EQUIPMENT, FURNISHED AND INSTALLED BY OTHERS, SHALL BE PROVIDED BY THIS CONTRACTOR.  |

### NEW WORK KEYED NOTES

| # | DESCRIPTION   |
|---|---|
| 1 | LOCATION OF EXISTING FIRE ALARM OPERATION SYSTEM BY "PARTNER PREMIER SERIES" MODEL-P-16128CF.                           |
| 2 | LOCATION OF EXISTING CARD READER OPERATION SYSTEM TO BE RE-USED FOR NEW CARD READERS, REFER TO SHEET E101 FOR LOCATION. |
| 3 | LOCATION OF EXISTING MAIN DISTRIBUTION SYSTEM (MDP), REFER TO ONE-LINE DIAGRAM SHEET E300 FOR ADDITIONAL INFORMATION.   |
| 4 | LOCATION OF NEW PANEL "LP-0", AND MANUAL TRANSFER SWITCH. REFER TO SHEET E-300 FOR ADDITIONAL INFORMATION.              |



**1** COMPOSITE POWER PLAN  
E102 1/16" = 1'-0"

|           |                      |
|-----------|----------------------|
| 2/19/2025 | PROPOSAL ISSUE       |
| DATE      | SUBMITTALS/REVISIONS |

PROJECT NAME:

## MACOMB TOWNSHIP DPW ADDITION

SHEET TITLE:

## COMPOSITE POWER PLAN

CLIENT: MACOMB TOWNSHIP

|   |                                       |                                 |
|---|---------------------------------------|---------------------------------|
| <input checked="" type="checkbox"/> PRELIMINARY | <input type="checkbox"/> CONSTRUCTION | <input type="checkbox"/> RECORD |
| DRAWN BY: FA                                    | CHECKED BY: FA                        | DATE: 02/13/25                  |
| SCALE: AS NOTED                                 |                                       |                                 |



UTILITY INFORMATION, AS SHOWN, INDICATES APPROXIMATE LOCATIONS AND TYPES OF EXISTING FACILITIES ONLY, AS DISCLOSED BY RECORDS PROVIDED TO THIS FIRM FROM THE VARIOUS UTILITY COMPANIES. NO GUARANTEE IS GIVEN OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF.

PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING OVERHEAD AND UNDERGROUND UTILITIES IN CONFLICT WITH THE CONSTRUCTION OF THESE PROPOSED IMPROVEMENTS SHALL BE VERIFIED IN THE FIELD. DURING THE CONSTRUCTION, THE CONTRACTOR SHALL PROTECT AND SUPPORT ALL UTILITIES THAT ARE ENCOUNTERED. (ALL COSTS FOR UTILITY LOCATION, VERIFICATION, SUPPORT AND PROTECTION SHALL BE INCLUDED IN THE PROPOSED PAY ITEM CONFLICTING WITH THAT UTILITY).

DURING CONSTRUCTION, THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN OPERATING NEAR ANY AND ALL OVERHEAD AND/OR BURIED UTILITIES.

PROJECT NO. 0249-0322

C:\Users\armstrong\Documents\DPW Addition  
8/18/2025 2:29:08 PM\proj\kch\UTWPF.plt

SHEET NO.

# E102

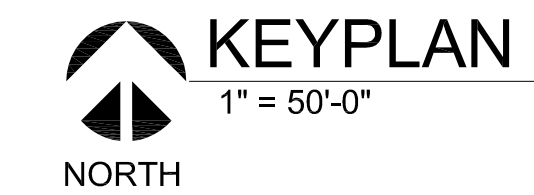
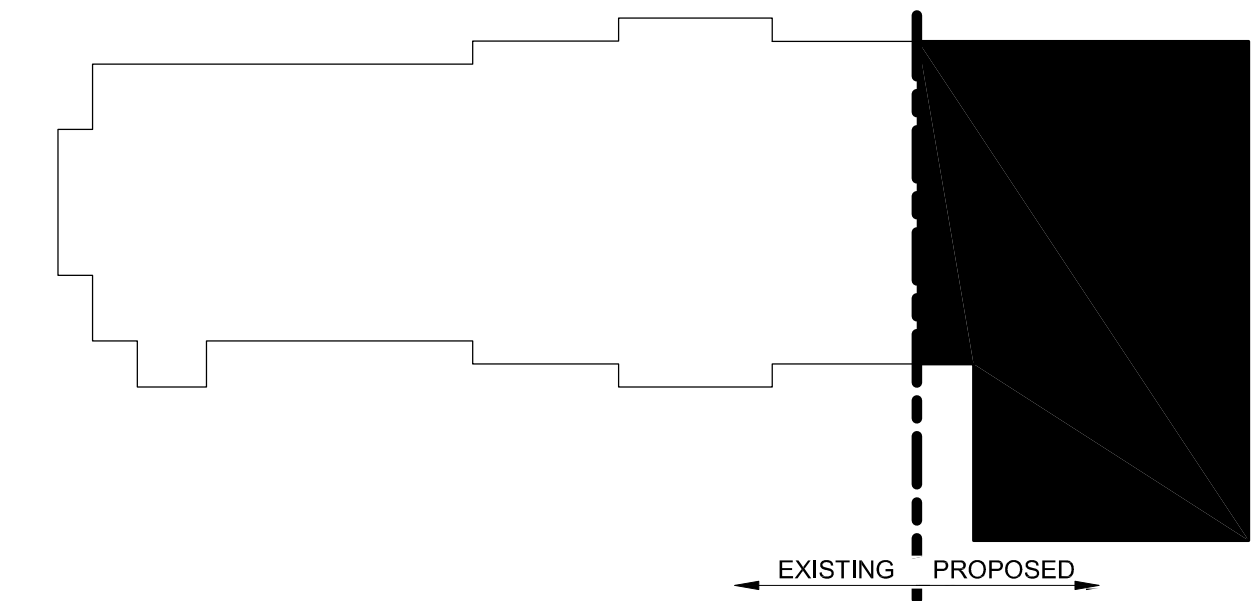




ANDERSON, ECKSTEIN AND WESTRICK, INC.

CIVIL ENGINEERS SURVEYORS ARCHITECTS  
51301 Schoenherr Road Phone 586 726 1234  
Shelby Township Fax 586 726 8780  
Michigan 48315  
www.aewinc.com

ENGINEERING STRONG COMMUNITIES



**LIGHTING GENERAL NOTES**

|   |   |
|---|---|
| A | REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT LOCATION OF ALL LIGHTING FIXTURES UNLESS OTHERWISE NOTED.   |
| B | ANY 120 VOLT BRANCH CIRCUIT FEEDER LONGER THAN 120'-0" TO LAST DEVICE SHALL BE SIZED TO THE NEXT LARGER STANDARD AWG SIZE. E.C. SHALL FIELD VERIFY ALL LENGTHS OF FEEDERS |
| C | SEE LIGHT FIXTURE SCHEDULE SHEET E00. ALL ELECTRICAL DEVICES ON THIS SHEET SHALL BE NEW UNLESS OTHERWISE NOTED.   |
| D | WHERE MORE THEN ONE LIGHT SWITCH IS INDICATED TO BE INSTALLED AT THE SAME LOCATION, THEY SHALL BE GROUPED UNDER ONE COMMON FACEPLATE.                                     |
| E | ELECTRICAL CONTRACTOR SHALL COMPLY WITH THE LATEST NATIONAL ELECTRICAL CODE, LIFE SAFETY CODE AND APPLICABLE STATE AND LOCAL CODES AND ORDINANCES.                        |
| F | ELECTRICAL EQUIPMENT AND WIRING SHALL BE NEW AND SHALL BE FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR, UNLESS OTHERWISE NOTED.                                       |
| G | WIRING SHALL BE IN CONDUIT. CONDUIT SHALL BE 3/4" C ONDUIT MINIMUM. CONDUITS IN FINISHED AREAS SHALL BE CONCEALED   |

**NEW WORK KEYED NOTES**

|   |   |
|---|---|
| # | NEW WORK KEYED NOTES  |
| 1 | ALL BUILDING MOUNTED LIGHT FIXTURES TO BE CONNECTED TOGETHER TO CIRCUIT SHOWN, CONTROL THROUGH BUILDING MOUNTED PHOTOCELL DIRECTED NORTH AND TIME CLOCK LOCATED IN UTILITY ROOM. REFER TO ARCHITECTURAL ELEVATIONS FOR MOUNTING HEIGHT.     |
| 2 | FIXTURES TYPE "A" IN THIS COLUMN OF FIXTURES TO BE PENDANT MOUNTED AT 16 FT AFF, AND CONTROLLED THROUGH CEILING MOUNTED VACANCY SENSOR AND DIMMER WALL SWITCHES AS SHOWN.   |
| 3 | FIXTURES TYPE "B" IN THIS COLUMN OF FIXTURES TO BE PENDANT MOUNTED AT 20 FT AFF, AND CONTROLLED THROUGH CEILING MOUNTED VACANCY SENSOR AND DIMMER WALL SWITCHES AS SHOWN.   |
| 4 | ALL HALF HASHED FIXTURES TO HAVE INTERNAL BACKUP EMERGENCY BATTERY. FIXTURE TO BE WIRED SUCH THAT BATTERY COMES ON UPON LOSS OF POWER AND TRANSFERS TO GENERATOR POWER ONCE GENERATOR IS ON. RETURN TO NORMAL POWER ONCE POWER IS RESTORED. |

|  |                      |
|--|----------------------|
| 2/19/2025  | PROPOSAL ISSUE       |
| DATE   | SUBMITTALS/REVISIONS |
| PROJECT NAME:  |                      |
| <b>MACOMB TOWNSHIP DPW ADDITION</b>  |                      |
| SHEET TITLE:   |                      |
| <b>FIRST FLOOR LIGHTING PLAN</b>   |                      |
| CLIENT:  |                      |
| <b>MACOMB TOWNSHIP</b>   |                      |
| <input type="checkbox"/> PRELIMINARY <input type="checkbox"/> CONSTRUCTION <input type="checkbox"/> RECORD<br>DRAWN BY:   CHECKED BY:   DATE:<br>FA   FA   2/19/2025<br>SCALE:<br>AS NOTED |                      |

UTILITY INFORMATION, AS SHOWN, INDICATES APPROXIMATE LOCATIONS AND TYPES OF EXISTING FACILITIES ONLY. AS DISCLOSED BY RECORDS PROVIDED TO THIS FIRM FROM THE VARIOUS UTILITY COMPANIES. NO GUARANTEE IS GIVEN OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF.

PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING OVERHEAD AND UNDERGROUND UTILITIES IN CONFLICT WITH THE CONSTRUCTION OF THESE PROPOSED IMPROVEMENTS SHALL BE VERIFIED IN THE FIELD. DURING THE CONSTRUCTION, THE CONTRACTOR SHALL PROTECT AND SUPPORT ALL UTILITIES THAT ARE ENCOUNTERED. (ALL COSTS FOR UTILITY LOCATION VERIFICATION, SUPPORT AND PROTECTION SHALL BE INCLUDED IN THE PROPOSED PAY ITEM CONFLICTING WITH THAT UTILITY).

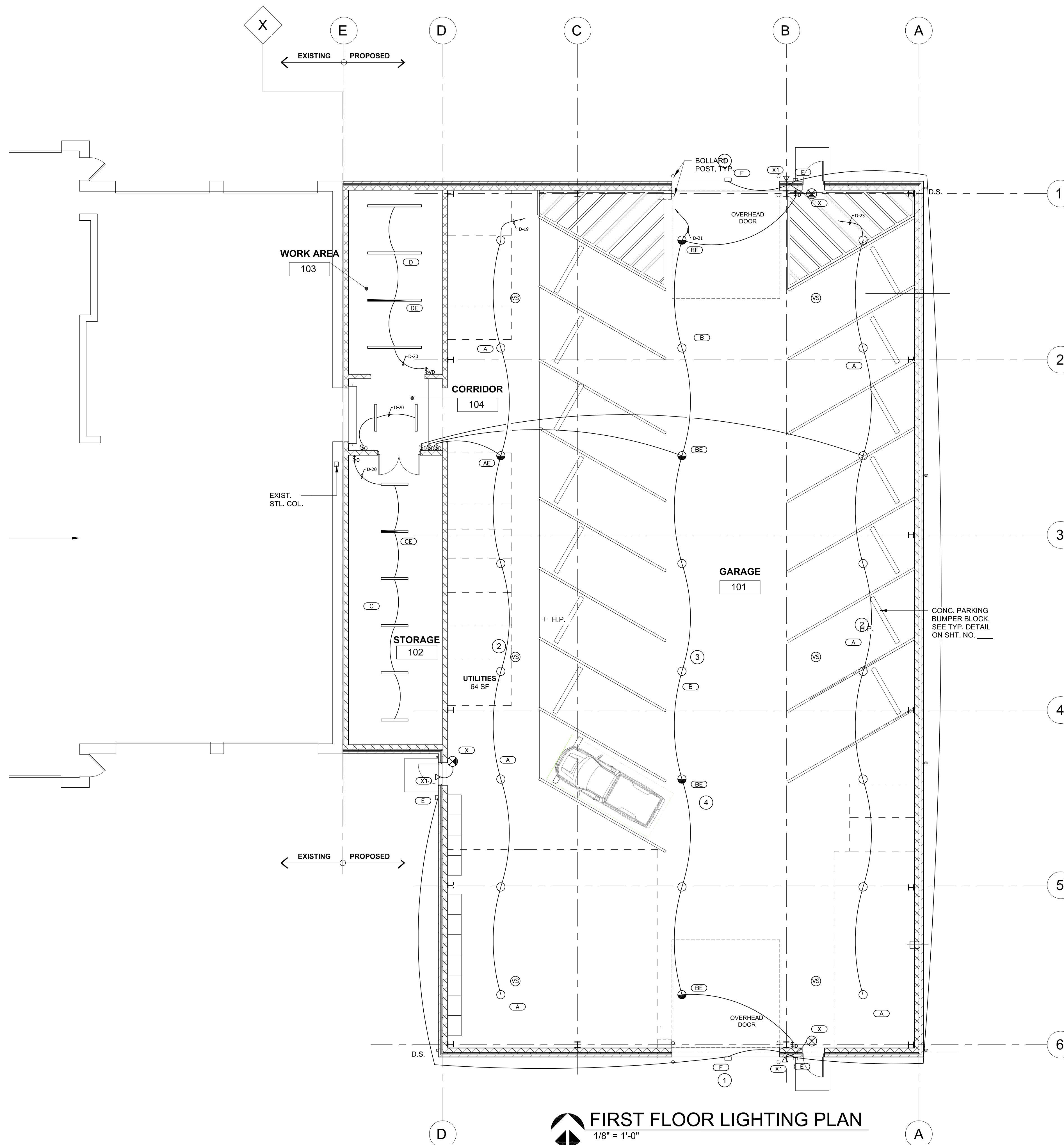
DURING CONSTRUCTION, THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN OPERATING NEAR ANY AND ALL OVERHEAD AND / OR BURIED UTILITIES.

PROJECT NO. 0249-0322

M:\0249\0249-0322\CAD\Drawings\Construction\Arch\DPW Addition\PRR\0249-0322-03.dwg

SHEET NO.

**E201**



**FIRST FLOOR LIGHTING PLAN**  
1/8" = 1'-0"  
NORTH



## ELECTRICAL — GENERAL REQUIREMENTS

### GENERAL:

CONTRACTOR SHALL FURNISH ALL MATERIALS AND LABOR AS INDICATED ON THE PLANS AND AS REQUIRED FOR A COMPLETE LIGHTING AND POWER SYSTEM.

### EXAMINATION OF PREMISES:

CONTRACTOR SHALL VISIT THE JOB SITE AND BE AWARE OF CONDITIONS UNDER WHICH HE MUST WORK.

### PERMIT AND FEES:

CONTRACTOR SHALL OBTAIN ALL PERMITS AND PAY ALL FEES.

### CODES:

ALL WORK SHALL BE EXECUTED AND INSPECTED IN ACCORDANCE WITH THE LATEST APPROVED EDITION OF THE NATIONAL ELECTRIC CODE, THE CODES OF O.S.H.A., BARRIER FREE, A.D.A. AND ALL LOCAL AUTHORITIES HAVING JURISDICTION.

### UTILITY COMPANY REQUIREMENTS:

COMPLY WITH CONSTRUCTION STANDARDS AND RULES OF LOCAL UTILITY COMPANIES.

CONTRACTOR SHALL CONTACT UTILITY COMPANIES AND VERIFY ALL SERVICE REQUIREMENTS, INCLUDE IN BASE BID, ALL UTILITY COMPANY CHARGES.

### GROUNDING:

CABINETS, MOTOR FRAMES, STARTERS, CONDUIT SYSTEMS, PANELS, ETC., SHALL BE GROUNDED IN ACCORDANCE WITH THE LATEST N.E.C. AND LOCAL CODES. PROVIDE SERVICE GROUND AND GROUND MAT AT PAD MOUNTED TRANSFORMER.

### MATERIALS:

MATERIAL SHALL BE NEW AND BEAR THE U.L. LABEL OR LISTING, WHEREVER STANDARDS HAVE BEEN ESTABLISHED.

### AS-BUILT DRAWINGS:

CONTRACTOR SHALL PREPARE AND MAINTAIN ACCURATE RECORD DRAWINGS OF ALL UNDERGROUND AND CONCEALED WORK AND SHALL SUBMIT THESE DRAWINGS TO THE OWNER UPON FINAL ACCEPTANCE OF THE WORK OR UPON THE OWNERS REQUEST.

### DRAWINGS AND MEASUREMENTS:

THE DRAWINGS ARE PARTLY DIAGRAMMATIC AND ARE NOT INTENDED TO BE SCALED FOR ROUGH-IN MEASUREMENTS NOR TO SERVE AS SHOP DRAWINGS. FIELD MEASUREMENTS NECESSARY FOR ORDERING MATERIALS AND FITTING THE INSTALLATION TO THE BUILDING CONSTRUCTION AND ARRANGEMENT SHALL BE TAKEN BY THIS CONTRACTOR.

### SHOP DRAWINGS:

COMPLETE SHOP DRAWINGS FOR ALL ELECTRICAL WORK SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW BEFORE FABRICATION OF THE WORK. FIVE (5) COPIES OF THE SHOP DRAWINGS SHALL BE SUBMITTED ON ALL ITEMS OF ELECTRICAL EQUIPMENT, PANELS, LIGHT FIXTURES, SPECIALTIES, ETC.

### CLEANING AND FINISHING:

AFTER ALL TEST HAVE BEEN MADE, THE CONTRACTOR SHALL CAREFULLY MAKE A THOROUGH INSPECTION OF THE ENTIRE INSTALLATION AND HAVE THE ENTIRE WORK THOROUGHLY CLEANED, ALL RUBBISH REMOVED, AND LEAVE ALL WORK SATISFACTORY TO THE ARCHITECT AND THE OWNER.

### COORDINATION WITH OTHER WORK:

CONSULT THE PLANS COVERING THE WORK FOR THE VARIOUS OTHER TRADES, THE FIELD LAYOUTS OF THE CONTRACTORS FOR THESE TRADES, AND THEIR SHOP DRAWINGS. THE CONTRACTOR SHALL BE AWARE AND RESPONSIBLE IN LAYING OUT THE ELECTRICAL WORK.

### DAMAGE TO OTHER WORK:

THE ELECTRICAL CONTRACTOR WILL BE HELD RESPONSIBLE FOR DAMAGED TO WORK CAUSED BY HIS WORK OR THROUGH THE NEGLIGENCE OF HIS WORKMEN. ALL PATCHING AND REPAIRING OF DAMAGED WORK SHALL BE DONE BY THE GENERAL CONTRACTOR, BUT THE COST OF SAME SHALL BE PAID BY THE CONTRACTOR RESPONSIBLE FOR THE DAMAGE.

### TESTING:

AFTER ALL ELECTRICAL WORK HAS BEEN COMPLETED, THE CONTRACTOR SHALL DEMONSTRATE TO THE ARCHITECT OR ENGINEER THAT THE ENTIRE INSTALLATION IS IN WORKING ORDER. ANY DEFECTIVE WORK OR EQUIPMENT, OR ANY WORK THAT IS NOT IN COMPLIANCE WITH THE SPECIFICATIONS, SHALL BE PROMPTLY CORRECTED BY THE CONTRACTOR.

### CUTTING AND PATCHING:

CUTTING, CORE DRILLING, INSERTS AND CONDUIT OR CABLE SLEEVES AND PATCHING REQUIRED IN THE GENERAL CONSTRUCTION FOR COMPLETION OF THE WORK, SPECIFIED HEREIN, SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR.

### CONDUIT SLEEVES:

PROVIDE CONDUIT SLEEVES WHERE CONDUIT PASS THRU FLOORS, WALLS, ETC. AS REQUIRED.

ALL VOIDS BETWEEN SLEEVES OR HOLES AND CONDUITS PASSING THRU SHALL BE FIRE-STOPPED. SPECSEAL 100 FIRE STOP SEALANT OR EQUAL.

### EXCAVATION AND BACK FILLING:

ALL EXCAVATING, TRENCHING AND BACK FILLING TO INSTALL ELECTRICAL WORK SHALL BE BY THE ELECTRICAL CONTRACTOR.

### MOUNTING HEIGHTS:

|                             |                     |
|-----------------------------|---------------------|
| LIGHTING SWITCHES           | 4'-0" TO CENTERLINE |
| RECEPTACLES                 | 1'-6" TO BOTTOM     |
| TELEPHONE/DATA              | 1'-6" TO BOTTOM     |
| LIGHTING/RECEPTACLES PANELS | 6'-6" TO TOP        |
| MOTOR STARTERS/DISCONNECTS  | 5'-6" TO TOP        |

### CERTIFICATE OF APPROVAL:

WHEN THE JOB IS COMPLETED, THE CONTRACTOR SHALL PROVIDE THE ARCHITECT WITH CERTIFICATE OF APPROVAL FROM THE LOCAL

ELECTRICAL INSPECTION AUTHORITY. THE CONTRACTOR SHALL GIVE THE OWNER A WRITTEN GUARANTEE THAT HE WILL MAKE GOOD, AT HIS OWN EXPENSE, ANY DEFECTS IN MATERIALS OR WORKMANSHIP WHICH MAY DEVELOP WITHIN (1) ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE.

## ELECTRICAL — BASIC MATERIALS

### WIRING:

FEEDERS SHALL BE TYPE "THHN" OR "XHHW". BRANCH CIRCUIT WIRING SHALL BE TYPE "THWN/THHN", #12 MINIMUM. ALL WIRE SHALL BE COPPER, HAVE 600 VOLT INSULATION AND BE INSTALLED IN CONDUIT.

### GROUNDING:

CABINETS, MOTOR FRAMES, STARTERS, CONDUIT SYSTEMS, PANELS, ETC., SHALL BE GROUNDED IN ACCORDANCE WITH THE LATEST N.E.C. AND LOCAL CODES.

PROVIDE SEPARATE GROUND WIRE IN ALL CONDUITS SERVING ALL PANELS, LIGHTING, MOTORS, AND RECEPTACLES.

PROVIDE GROUND RODS AT SERVICE ENTRANCE (3-3/4"x10' LG.) AND CONNECT TO COLD WATER SERVICE. USE #3/Ø CU. GRD. CONDUCTOR

### CONDUIT:

CONDUIT SHALL BE MC, THINWALL (EMT) R.G.S. OR PVC CONDUIT INSTALLED IN OR UNDER FLOOR SHALL BE 3/4" MINIMUM, R.G.S. OR PVC. CONDUIT INSTALLED IN FINISHED AREAS SHALL BE CONCEALED.

FLEXIBLE METAL CONDUIT WITH GROUND WIRE SHALL BE USED FOR FINAL CONNECTION TO LIGHTING FIXTURES, MOTORS, ETC., 1/2" MINIMUM.

MC CABLE MAY BE USED IN PARTITION WALL OR ABOVE ACCESSIBLE CEILINGS.

NO PVC CONDUIT WILL BE ALLOWED IN BUILDING. ALL CONDUITS TURNING UP FROM UNDERGROUND SHALL BE STEEL ELLS.

### SWITCHES:

SWITCHES SHALL BE 20A., 120/277V., 1 POLE, 3 AND 4 WAY AS INDICATED. IVORY FINISH, HUBBELL #1221-1 SERIES, COOPER WIRING DEVICES, OR LEVITON.

### MOTION SENSORS:

WALL BOX MOUNTED MOTION SENSORS SHALL BE INFRARED COMMERCIAL GRADE, 120/277V SELECTABLE AUDIO AND/OR VISUAL ALERTS, TIME DELAY (5-30 MINUTES) WALK THRU AND TEST MODE, 1000 SQ. FT. COVERAGE, FINISH AS SELECTED, WATT STOPPER #PW-301 OR EQUAL.

WALL BOX MOUNTED MOTION SENSOR/DIMMERS SHALL BE INFRARED COMMERCIAL GRADE, 120/277V, TIME DELAY (2-30 MINUTES) WALK THRU AND TEST MODE, 1000 SQ. FT. COVERAGE, 0-10 VOLT ENABLED DIMMING CONTROL, FINISH AS SELECTED, WATT STOPPER PW-311 OR EQUAL.

CEILING MOUNTED MOTION SENSORS SHALL BE ULTRASONIC COMMERCIAL GRADE, SOLID STATE, 24V, TIME DELAY (15 SECONDS TO 30 MINUTES) 7 UNIT POWER PACK, 500/1000/2000 SQ. FT. COVERAGE AS NOTED, CORRIDOR UNIT 90 LINEAR FEET, WATT STOPPER W-500A/ W-1000A/ W-2000A/ W-2000H, OR EQUAL.

UNIVERSAL VOLTAGE POWER PACKS FOR CEILING MOTION SENSORS SHALL BE 120/277/24 VOLT, 225 MA. PLENUM RATED WITH OVER CURRENT PROTECTION, WATT STOPPER #BZ-150 OR EQUAL.

### RECEPTACLES:

RECEPTACLES SHALL BE DUPLEX GROUNDING TYPE 20A., 125V, IVORY FINISH, HUBBELL #5362-1 OR EQUAL. SPECIAL PURPOSE RECEPTACLES 30A., 40A., 50A., 2P. OR 3P., ETC., SHALL BE SPECIFICATION GRADE, HUBBELL, COOPER WIRING DEVICES, OR LEVITON.

GFI RECEPTACLES SHALL BE DUPLEX GROUNDING TYPE 20A., 125V., HUBBELL #GF5362-1, COOPER WIRING DEVICES, OR LEVITON.

WEATHERPROOF GFI RECEPTACLES SHALL HAVE POLYCARBONATE WEATHERPROOF COVER. THE ENCLOSURE SHALL HAVE CORD PORTS CAPABLE OF ALLOWING AN ELECTRICAL CORD TO PASS THROUGH WHEN COVER IS CLOSED, TAYMAC # 20310 OR EQUAL.

### WALL PLATES:

WALL PLATES FOR SWITCHES, AND RECEPTACLE OUTLETS SHALL BE SUPER STAINLESS STEEL, ANSI 302, HUBBELL #97000 SERIES, COOPER WIRING DEVICES, OR LEVITON.

### OUTLETS:

OUTLET BOXES FOR CONCEALED WORK SHALL BE PRESSED STEEL BOXES, GALVANIZED, #12 GAUGE. WALL OR CEILING BOXES SHALL BE 4" ROUND OR OCTAGONAL AS REQUIRED. SURFACE MOUNTED BOXES SHALL BE CAST TYPE "FS" OR "FD".

### MOTOR STARTERS:

SINGLE PHASE MOTOR STARTERS SHALL HAVE MANUAL TOGGLE SWITCH WITH THERMAL OVERLOADS, FLUSH MOUNTED WITH PILOT LIGHT, SQUARE D, CLASS 2510, CUTLER HAMMER, G.E., OR SIEMENS I.T.E.

SINGLE PHASE MOTOR STARTERS WITH AUTO-OFF-HAND SPDT SELECTOR SWITCH, SHALL BE FLUSH MOUNTED WITH PILOT LIGHT, SQUARE D CLASS 2510-FF71P CUTLER HAMMER, G.E. OR SIEMENS I.T.E.

THREE PHASE MOTOR STARTERS SHALL BE MAGNETIC TYPE, WITH FUSED CONTROL TRANSFORMER WITH 3 OVERLOADS, HAND-OFF AUTO SWITCH, AUXILIARY CONTACTS AND PILOT LIGHT AS REQUIRED, SQUARE D, CLASS 8536, CUTLER HAMMER, G.E., OR SIEMENS I.T.E.

COMBINATION THREE PHASE MOTOR STARTERS SHALL BE THE SAME AS ABOVE EXCEPT WITH FUSED DISCONNECT AND CLASS R FUSES.

### DISCONNECT SWITCHES:

DISCONNECT SWITCHES SHALL BE HEAVY DUTY, 250V OR 480V, FUSED OR NON-FUSED AS INDICATED, IN A NEMA I ENCLOSURE. DISCONNECT SWITCHES INSTALLED OUTDOORS SHALL BE IN A NEMA 3R ENCLOSURE. SQUARE D, CUTLER HAMMER, G.E., OR SIEMENS I.T.E.

### FUSES:

601 AMPERE AND LARGER SHALL BE PROTECTED BY CURRENT LIMITING BUSSMANN HI-CAP TIME DELAY FUSES KRP-C, 250 OR 480 VOLTS.

0 TO 600 AMPERE SHALL BE PROTECTED BY CURRENT LIMITING BUSSMAN LOW-PEAK DUAL ELEMENT FUSES LPN/LPS, 250 OR 480 VOLTS.

MOTOR CIRCUITS SHALL BE PROTECTED BY BUSSMANN LOW-PEAK DUAL-ELEMENT FUSES LPN/LPS, 250 OR 480 VOLTS.

CIRCUIT BREAKER PANELS SHALL BE PROTECTED BY BUSSMANN LOW-PEAK DUAL-ELEMENT FUSES LPN/LPS, 250 OR 480 VOLTS.

### MAIN DISTRIBUTION PANEL:

MAIN DISTRIBUTION PANEL SHALL BE 208/120V, 3 PHASE, 4 WIRE SWITCH AND FUSE TYPE, CLASS 1 CONSTRUCTION, BRACED FOR 65,000 A.I.C., SERVICE ENTRANCE LABELED, WITH PROVISIONS FOR UTILITY COMPANY C/T'S, SQUARE D, CUTLER HAMMER, G.E. OR SIEMENS I.T.E.

### RECEPTACLE PANEL:

PANELS SHALL BE 120/208V, 3 PHASE, 4 WIRE, WITH BOLT-ON CIRCUIT BREAKERS, RATED 10,000 A.I.C. SWITCH DUTY RATED, 20" WIDE CABINET MINIMUM. SQUARE D "NQOD," EATON, G.E. OR SIEMENS. PROVIDE TYPEWRITTEN DIRECTORY INDICATING EACH ITEM SERVED.

### NAMEPLATES:

PROVIDE NAMEPLATES ON EACH INDIVIDUAL SAFETY SWITCH, CONTROL STATION, PANEL BOARD, MOTOR STARTER, ETC. NAMEPLATES SHALL BE WHITE LAMINATED PLASTIC WITH BLACK ENGRAVED LETTERS AND A SELF-ADHESIVE BACK.

## LIGHTING

### LAMPS:

L.E.D. LAMPS SHALL BE ENERGY SAVING TYPE, 4000K COLOR TEMPERATURE AND 80 COLOR RENDERING INDEX.

### TIME SWITCHES:

TIME SWITCHES SHALL BE 7 DAY ASTRONOMIC, 120-277V, SUNSET ON AND SUNRISE OFF, 2 CIRCUIT CONTROL, BATTERY BACK-UP, INTERMATIC #ET8000 SERIES, OR TORK.

### PHOTOCONTROL:

PHOTOCONTROL SHALL BE RATED 2000 WATTS AT 120 VOLT AND 3600 WATTS AT 240 VOLT, INTERMATIC #K4121M AND #K4122, OR TORK.

## SYSTEMS

### TELEPHONE SERVICE:

PROVIDE TELEPHONE SERVICE AS REQUIRED, PLYWOOD BACKBOARD, OUTLETS, COVERPLATES, CONDUITS WITH PULL WIRES, ETC., FOR A COMPLETE INSTALLATION.

TELEPHONE AND DATA OUTLETS SHALL CONSIST OF A SINGLE GANG BOX WITH A 3/4" CONDUIT STUBBED INTO AN ACCESSIBLE CEILING SPACE.

PROVIDE AND INSTALL BLANK STAINLESS STEEL COVERPLATES FOR ALL FUTURE TELEPHONE AND DATA OUTLETS NOT USED.

## MISCELLANEOUS ELECTRICAL

### DEMOLITION:

ALL ELECTRICAL DEMOLITION WORK SHALL INCLUDE REMOVING AND/OR RELOCATION OF EXISTING PANELS, LIGHTING FIXTURES, RECEPTACLES, WIRE, CONDUIT, BOXES, ETC., AS INDICATED ON THE DRAWINGS AND SHALL BE BY THE ELECTRICAL TRADE THAT WOULD NORMALLY INSTALL THIS WORK.

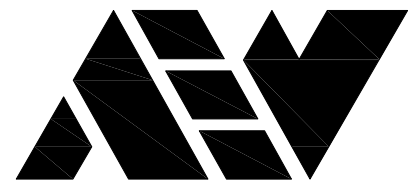
REMOVE ALL CONDUIT, WIRE, HANGERS, CLAMPS, ETC., THAT ARE NOT BEING REUSED, UNLESS CONCEALED ABOVE CEILINGS OR IN WALLS, WHICH MAY BE ABANDONED AND LEFT IN PLACE.

REMOVE ALL WIRE IN EXISTING CONCEALED ABANDONED CONDUITS. EXISTING CONCEALED CONDUITS (IF APPLICABLE) MAY BE REUSED FOR NEW WIRING.

ALL EXISTING PANELS SHALL REMAIN IN THEIR EXISTING LOCATIONS, UNLESS OTHERWISE NOTED.

REMOVE EXISTING WIRING DEVICES, PULL ALL WIRES OUT AND INSTALL A BLANK STAINLESS STEEL COVER PLATE OVER THE EXISTING OUTLET.

ALL MATERIALS THAT ARE REMOVED, LIGHTING FIXTURES, WIRING DEVICES, CONDUIT, WIRE, ETC., SHALL BECOME THE PROPERTY OF THE CONTRACTOR, UNLESS OTHERWISE NOTED ON THE DRAWINGS.



ANDERSON, ECKSTEIN AND  
WESTRICK, INC.

CIVIL ENGINEERS SURVEYORS ARCHITECTS

51301 Schoenherr Road Phone 586 726 1234  
Shelby Township Fax 586 726 8780  
Michigan 48315

www.aewinc.com

ENGINEERING STRONG COMMUNITIES

|           |                      |
|-----------|----------------------|
| 2/19/2025 | PROPOSAL ISSUE       |
| DATE      | SUBMITTALS/REVISIONS |

PROJECT NAME:

## MACOMB TOWNSHIP DPW ADDITION

SHEET TITLE:

## ELECTRICAL SPECIFICATIONS

CLIENT:

MACOMB TOWNSHIP

|   |                                       |                                 |
|---|---------------------------------------|---------------------------------|
| <input checked="" type="checkbox"/> PRELIMINARY | <input type="checkbox"/> CONSTRUCTION | <input type="checkbox"/> RECORD |
| DRAWN BY:                                       | CHECKED BY:                           | DATE:                           |
| FA  | FA                                    | 2/19/2025                       |
| SCALE:  | AS NOTED                              |                                 |

UTILITY INFORMATION, AS SHOWN, INDICATES APPROXIMATE LOCATIONS AND TYPES OF EXISTING FACILITIES ONLY, AS DISCLOSED BY RECORDS PROVIDED TO THIS FIRM FROM THE VARIOUS UTILITY COMPANIES. NO GUARANTEE IS GIVEN OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF.

PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING OVERHEAD AND UNDERGROUND UTILITIES IN CONFLICT WITH THE CONSTRUCTION OF THESE PROPOSED IMPROVEMENTS SHALL BE VERIFIED IN THE FIELD. DURING THE CONSTRUCTION, THE CONTRACTOR SHALL PROTECT AND SUPPORT ALL UTILITIES THAT ARE ENCOUNTERED. (ALL COSTS FOR UTILITY LOCATION VERIFICATION, SUPPORT AND PROTECTION SHALL BE INCLUDED IN THE PROPOSED PAY ITEM CONFLICTING WITH THAT UTILITY).

DURING CONSTRUCTION, THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN OPERATING NEAR ANY AND ALL OVERHEAD AND / OR BURIED UTILITIES.

PROJECT NO.

0249-0322

M:\0249\0249-0322\CAD\Drawings\Construction\Arch\DPW Addition  
#P&R#E#25.03.dwg

SHEET NO.

# E400

COPYRIGHT, 2025, ANDERSON, ECKSTEIN AND WESTRICK, INC.