



**FARGO PUBLIC  
SCHOOLS**

**ICON**  
ARCHITECTURAL GROUP

4000 GARDEN VIEW DRIVE, SUITE 101  
GRAND FORKS, ND 58201  
(701) 772.4266 OFFICE  
WWW.ICONARCHITECTS.COM

**STRUCTURAL**

HEYER ENGINEERING  
4180 24TH AVENUE S  
FARGO, ND 58104  
(701) 280.0949 OFFICE

**MECHANICAL**

MARTIN MECHANICAL DESIGN  
1201 25TH AVE N  
FARGO, ND 58102  
(701) 293.7957 OFFICE

**ELECTRICAL**

CMTA  
2201 12TH ST N STE E  
FARGO, ND 58102  
(701) 280.0500 OFFICE

**CIVIL**

LOWRY ENGINEERING  
5306 51ST AVE S STE A  
FARGO, ND 58104  
(701) 235.0199 OFFICE



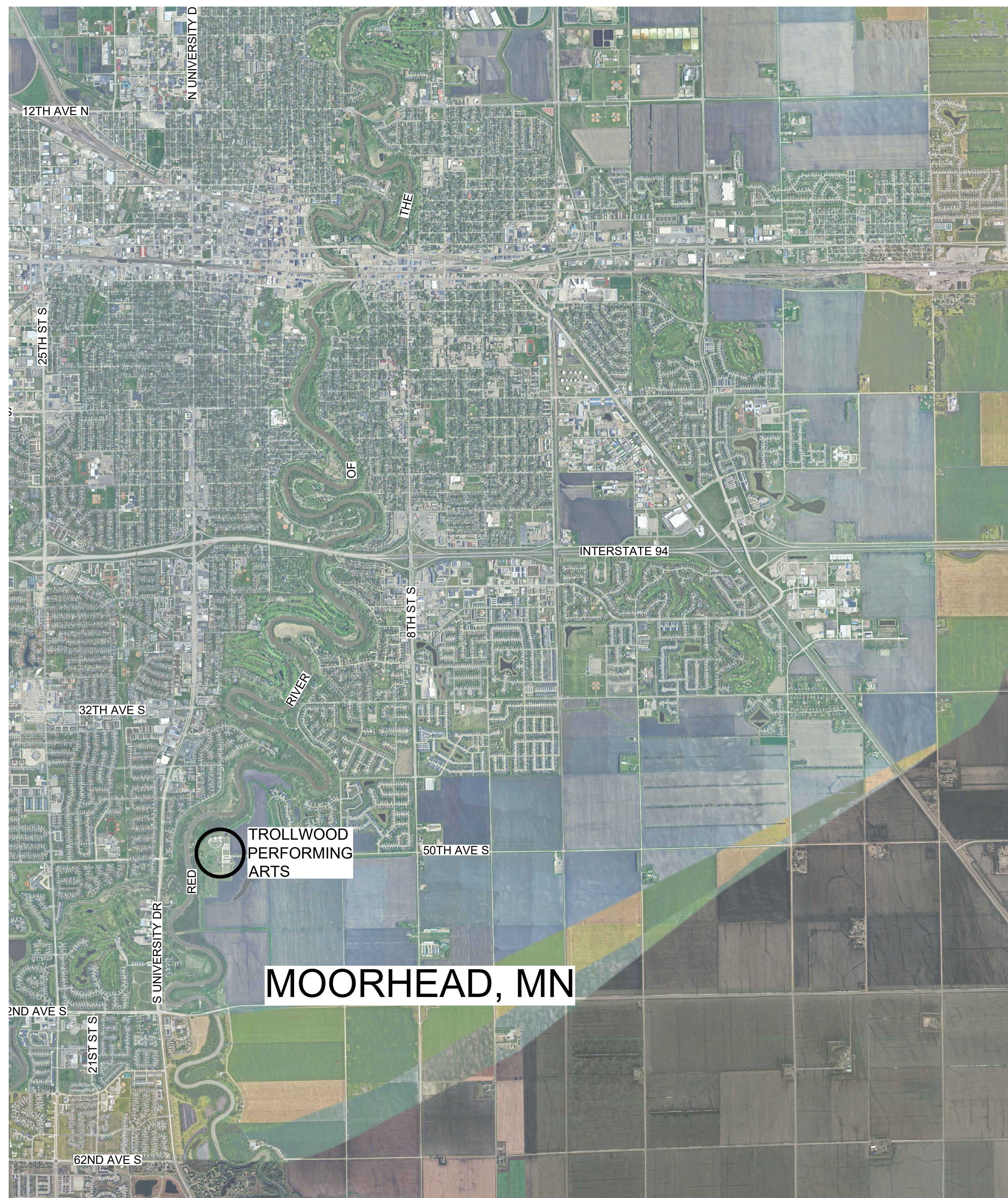
ARCHITECT:  
I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION,  
OR REPORT WAS PREPARED BY ME OR UNDER MY  
DIRECT SUPERVISION AND THAT I AM A DULY  
LICENSED ARCHITECT UNDER THE LAWS OF THE  
STATE OF MINNESOTA.  
SIGNATURE: *TODD BLIXT*  
PRINTED NAME: TODD BLIXT  
DATE: 12/18/24  
LICENSE NUMBER: 62763

**DRAWING HISTORY**

NO.	DESCRIPTION	DATE
	CONSTRUCTION DOCUMENTS	12/18/24

**Locations Included In This Package:**

**Trollwood Performing Arts**  
801 50th Ave S, Moorhead, MN 56560



**MOORHEAD, MN**

# FPS Maintenance Projects

## 12/18/2024



**FARGO PUBLIC  
SCHOOLS**





# TROLLWOOD PERFORMING ARTS SITE IMPROVEMENTS

801 50TH AVENUE SOUTH  
MOORHEAD, MINNESOTA 56560

**OWNER'S REPRESENTATIVE**  
ICON ARCHITECTURAL GROUP  
ALYSSA OMMEN, PROJECT ARCHITECT  
3187 BLUESTEM DRIVE, SUITE 2  
WEST FARGO, ND 58078  
PH: 701-364-4007  
EMAIL: alyssa.ommen@iconarchitects.com

**CIVIL ENGINEER**  
LOWRY ENGINEERING  
DREW MESSMER, P.E.  
5306 51ST AVENUE SOUTH, SUITE A  
FARGO, ND 58104  
PH: 701-235-0199  
EMAIL: dmessmer@lowryeng.com



4000 GARDEN VIEW DRIVE, SUITE 101  
GRAND FORKS, ND 58201  
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**FARGO PUBLIC SCHOOLS**

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VICINITY MAP



SITE INFORMATION	
SURVEY INFORMATION	
DATE OF SURVEY	NOVEMBER 18, 2024
COORDINATE SYSTEM	CITY OF FARGO
DRAWING UNITS	US SURVEY FEET
VERTICAL DATUM	NAVD 88

**BENCHMARK #1:**  
THE TOP NUT OF EX. HYDRANT WEST OF THE PARKING LOT IMPROVEMENTS.  
ELEV.=908.04 (NAVD88)

**BENCHMARK #2:**  
THE EX. STORM INLET RIM EAST OF THE PARKING LOT IMPROVEMENTS.  
ELEV.=903.06 (NAVD88)

**BASIS OF BEARING:** CITY OF FARGO COORDINATE SYSTEM (NAD83)

SHEET INDEX	
T-C1	COVER SHEET
T-C2	GENERAL NOTES & LEGEND
T-C3	SURVEY OVERLAY & DEMOLITION PLAN
T-C4	OVERALL SITE PLAN
T-C5	GRADING & UTILITY PLAN
T-C6	EROSION & SEDIMENT CONTROL PLAN
T-C7	DETAILS
T-C8	DETAILS

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

*Drew Messmer*  
DREW MESSMER  
DATE: 12/18/24  
LICENSE #: 62823

**DRAWING HISTORY**

NO.	DESCRIPTION	DATE
	CONSTRUCTION DOCUMENTS	12/18/24

DRAWN BY: JT / KD JN: 24-060

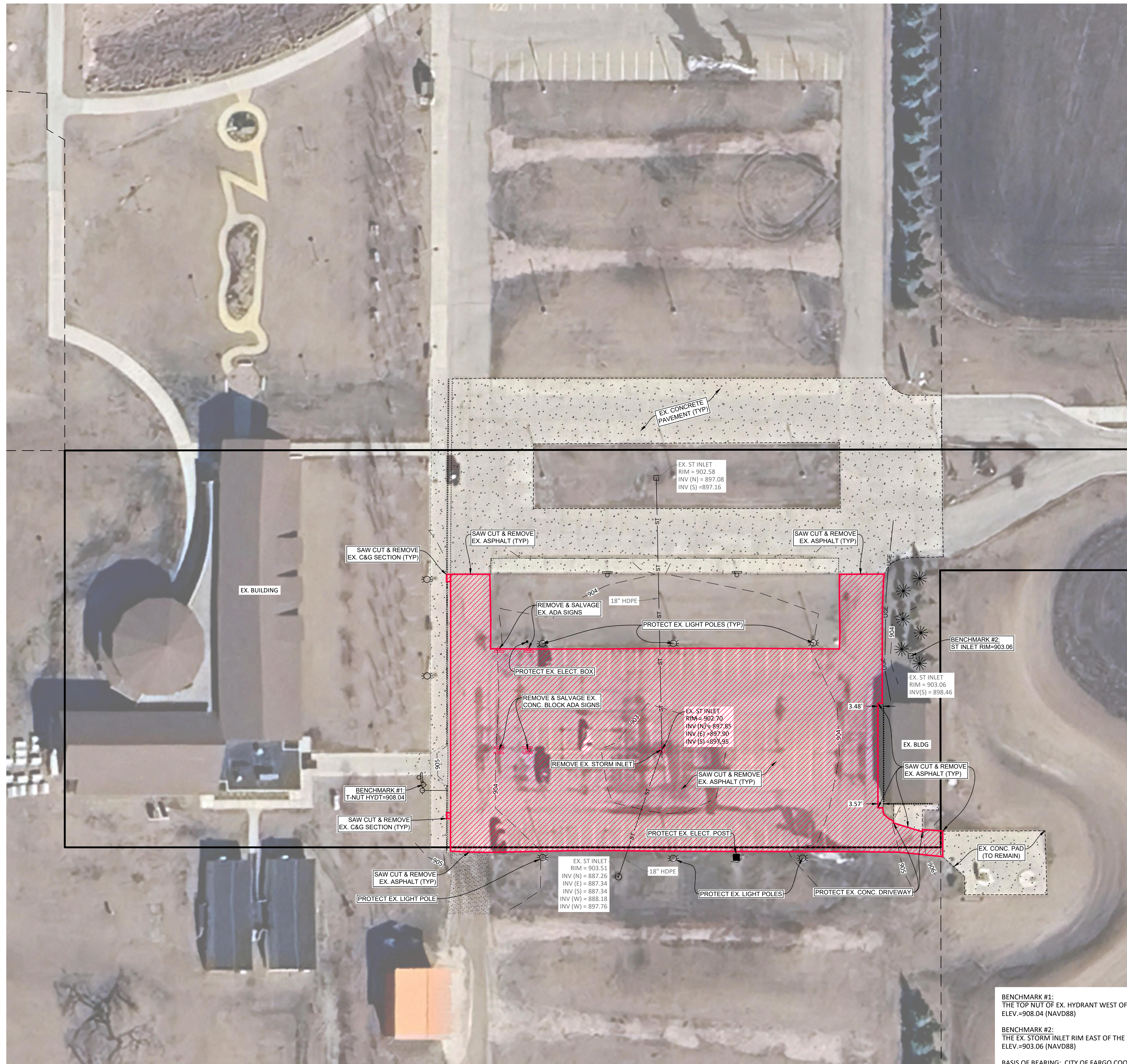
**COVER SHEET  
TROLLWOOD**

SHEET  
**T-C1**

**LOWRY**  
ENGINEERING  
5306 51ST AVENUE SOUTH - SUITE A  
FARGO, NORTH DAKOTA 58104  
LE #24007.13.6

**CALL BEFORE YOU DIG  
MINNESOTA**  
UTILITIES UNDERGROUND LOCATION SERVICE  
1-800-252-1166





DEMOLITION CALLOUTS**		
ITEM	QUANTITY	UNIT
REMOVE EX. CURB & GUTTER	12	LF
REMOVE EX. ASPHALT PAVEMENT	4,070	SY
REMOVE EX. ADA SIGN	6	EA
REMOVE EX. STORM INLET	1	EA

\*\* EACH SY OF PAVEMENT REMOVALS SHALL INCLUDE REMOVAL OF EXISTING BASE, GEOTEXTILE, AND SUBGRADE OF UP TO 12" BELOW FINISHED DESIGN GRADE OF NEW PAVEMENT AREAS.



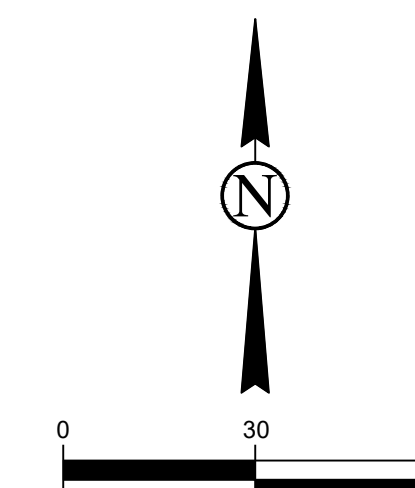
**NOTES:**

- EXISTING CONDITIONS SHOWN ARE BASED ON OBSERVATIONS AT THE TIME THE SURVEY WAS COMPLETED. THE CONTRACTOR IS ENCOURAGED TO VISIT THE SITE IN ORDER TO BID APPROPRIATELY. QUANTITIES SHOWN AS ESTIMATES.
- DEPTH OF EXISTING DRY UTILITIES ARE UNKNOWN. CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANIES FOR CROSSINGS AND IMPACTS.
- EXISTING PAVEMENT DEPTHS ARE UNKNOWN. CONTRACTOR SHALL SAW CUT AND REMOVE EXISTING PAVEMENT AREAS IN FULL SECTIONS AND REPORT ANY DISCREPANCIES TO THE ENGINEER IMMEDIATELY TO EVALUATE OR RESOLVE THE ISSUE.
- PRIOR TO CONSTRUCTION, CONTRACTOR SHALL COORDINATE WITH THE ENGINEER TO DETERMINE THE EXACT AMOUNT AND LOCATIONS OF THE EXISTING CURBING/SIDEWALK/PAVEMENT TO BE REMOVED AND REPLACED/PATCHED NECESSARY FOR THE PROJECT IMPROVEMENTS.
- CONTRACTOR SHALL SAW CUT AND REPLACE ANY EXISTING PAVEMENT DAMAGED DURING CONSTRUCTION AT NO ADDITIONAL COST.
- IN THE EVENT THAT THE CITY REQUIRES ACCESS TO BE MAINTAINED TO THE ADJACENT LIFT STATION, CONTRACTOR TO PROVIDE TEMPORARY RAMP ACCESS UNTIL PAVED PARKING LOT IMPROVEMENTS ARE REPLACED/FULLY ESTABLISHED.
- TOPOGRAPHIC SURVEY WAS CONDUCTED BY LOWRY ENGINEERING ON NOVEMBER 18, 2024.
- TOPOGRAPHIC SURVEY WAS COMPLETED DURING WINTER MONTHS. UTILITY LOCATES AND OTHER FEATURES THAT ARE INACCESSIBLE DUE TO WINTER CONDITIONS MAY HAVE LIMITED ACCURACY. CONTRACTOR SHALL VERIFY LOCATIONS/INVERTS PRIOR TO CONSTRUCTION.

BENCHMARK #1:  
THE TOP NUT OF EX. HYDRANT WEST OF THE PARKING LOT IMPROVEMENTS.  
ELEV.=908.04 (NAVD88)

BENCHMARK #2:  
THE EX. STORM INLET RIM EAST OF THE PARKING LOT IMPROVEMENTS.  
ELEV.=903.06 (NAVD88)

BASIS OF BEARING: CITY OF FARGO COORDINATE SYSTEM (NAD83)



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MOORHEAD, MN 56560

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*Steven Messmer*  
DREW MESSMER  
DATE: 12/18/24  
LICENSE #: 62823

**DRAWING HISTORY**

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DRAWN BY: JT / KD JN: 24-060

**SURVEY OVERLAY & DEMOLITION PLAN**  
**TROLLWOOD**

SHEET

**T-C3**



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ESTIMATED SITE QUANTITIES*		
ITEM	QUANTITY	UNIT
SUBGRADE PREPARATION	4,100	SY
MNDOT TYPE V GEOSYNTHETIC FABRIC	4,100	SY
MNDOT CLASS 5 AGGREGATE	690	CY
CONCRETE PAVEMENT - FLATWORK 6"	4,015	SY
CURB & GUTTER - MATCH EXISTING TYPE	12	LF
PAVEMENT MARKING - PAINTED PARKING LOT STRIPING	2,270	LF
PAVEMENT MARKING - PAINTED ADA SYMBOL	6	EA

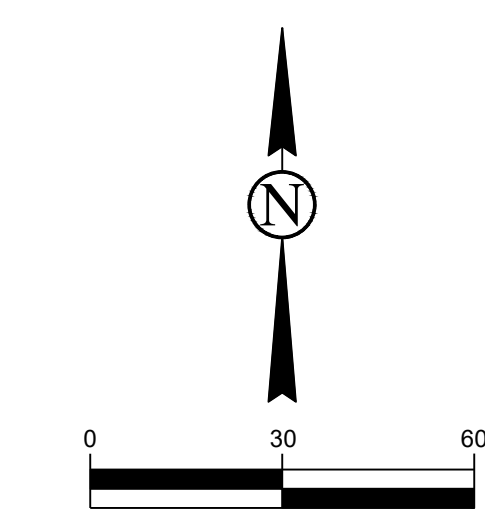
\* ALL BLACK DIRT/SEEDING/GRADING BEHIND NEW CURBING AND PAVEMENT AREAS ARE INCIDENTAL TO THE PROJECT. WATERING THE SEEDING UNTIL IT IS FULLY ESTABLISHED IS INCIDENTAL TO THE PROJECT.

- BASE BID NOTES:
- QUANTITIES ARE ENGINEERS ESTIMATES ONLY. CONTRACTOR SHALL DETERMINE THEIR OWN QUANTITIES AND BID ACCORDINGLY.
  - AGGREGATE BASE QUANTITY ASSUMES IT EXTENDS TO 1' BEYOND BACK OF CURB OR EDGE OF PAVEMENT UNLESS ADJACENT TO STRUCTURE OR EXISTING PAVEMENT SAW CUT SECTIONS.
  - NO COMPACTION WAS ASSUMED ON AGGREGATE BASE QUANTITIES.
  - GEOTEXTILE FABRIC PANELS SHALL BE A MINIMUM OF 12' WIDE AND INSTALLED WITH A MINIMUM OVERLAP OF 18" WITH JOINTS ORIENTATED TO FOLLOW TRAFFIC MOVEMENT. GEOTEXTILE FABRIC SHALL EXTENDS TO 1' BEYOND THE BACK OF CURB OR EDGE OF PAVEMENT UNLESS ADJACENT TO STRUCTURE OR EXISTING PAVEMENT SAW CUT SECTIONS.
  - PRIOR TO CONSTRUCTION, CONTRACTOR SHALL COORDINATE WITH THE ENGINEER TO DETERMINE THE EXACT AMOUNT AND LOCATIONS OF THE EXISTING CURBING/SIDEWALK/PAVEMENT TO BE REMOVED AND REPLACED/PATCHED NECESSARY FOR THE PROJECT IMPROVEMENTS.

ALTERNATE #1 - ESTIMATED SITE QUANTITIES*		
ITEM	QUANTITY	UNIT
MNDOT CLASS 5 AGGREGATE	115	CY
CONCRETE PAVEMENT - FLATWORK 6"	-4,015	SY
5" ASPHALT PAVEMENT	4,015	SY

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- ALTERNATE #1 NOTES:
- IF THE ALTERNATIVE ASPHALT PAVEMENT IS CHOSEN, THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER ON THE EXACT LOCATIONS FOR ANY NEW VALLEY GUTTER SECTIONS TO BE INSTALLED.
  - QUANTITIES ARE ENGINEERS ESTIMATES ONLY. CONTRACTOR SHALL DETERMINE THEIR OWN QUANTITIES AND BID ACCORDINGLY.
  - AGGREGATE BASE QUANTITY ASSUMES IT EXTENDS TO 1' BEYOND BACK OF CURB OR EDGE OF PAVEMENT UNLESS ADJACENT TO STRUCTURE OR EXISTING PAVEMENT SAW CUT SECTIONS.
  - NO COMPACTION WAS ASSUMED ON AGGREGATE BASE QUANTITIES.
  - PRIOR TO CONSTRUCTION, CONTRACTOR SHALL COORDINATE WITH THE ENGINEER TO DETERMINE THE EXACT AMOUNT AND LOCATIONS OF THE EXISTING CURBING/SIDEWALK/PAVEMENT TO BE REMOVED AND REPLACED/PATCHED NECESSARY FOR THE PROJECT IMPROVEMENTS.



CALL BEFORE YOU DIG  
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1-800-252-1166



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**TROLLWOOD PERFORMING ARTS**  
801 50TH AVE S  
MOORHEAD, MN 56560

**STRUCTURAL**  
HEYER ENGINEERING  
4180 24TH AVENUE S  
FARGO, ND 58104  
(701) 280.0949 OFFICE

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DRAWN BY: JT / KD JN: 24-060

**OVERALL SITE PLAN**  
**TROLLWOOD**

SHEET  
**T-C4**



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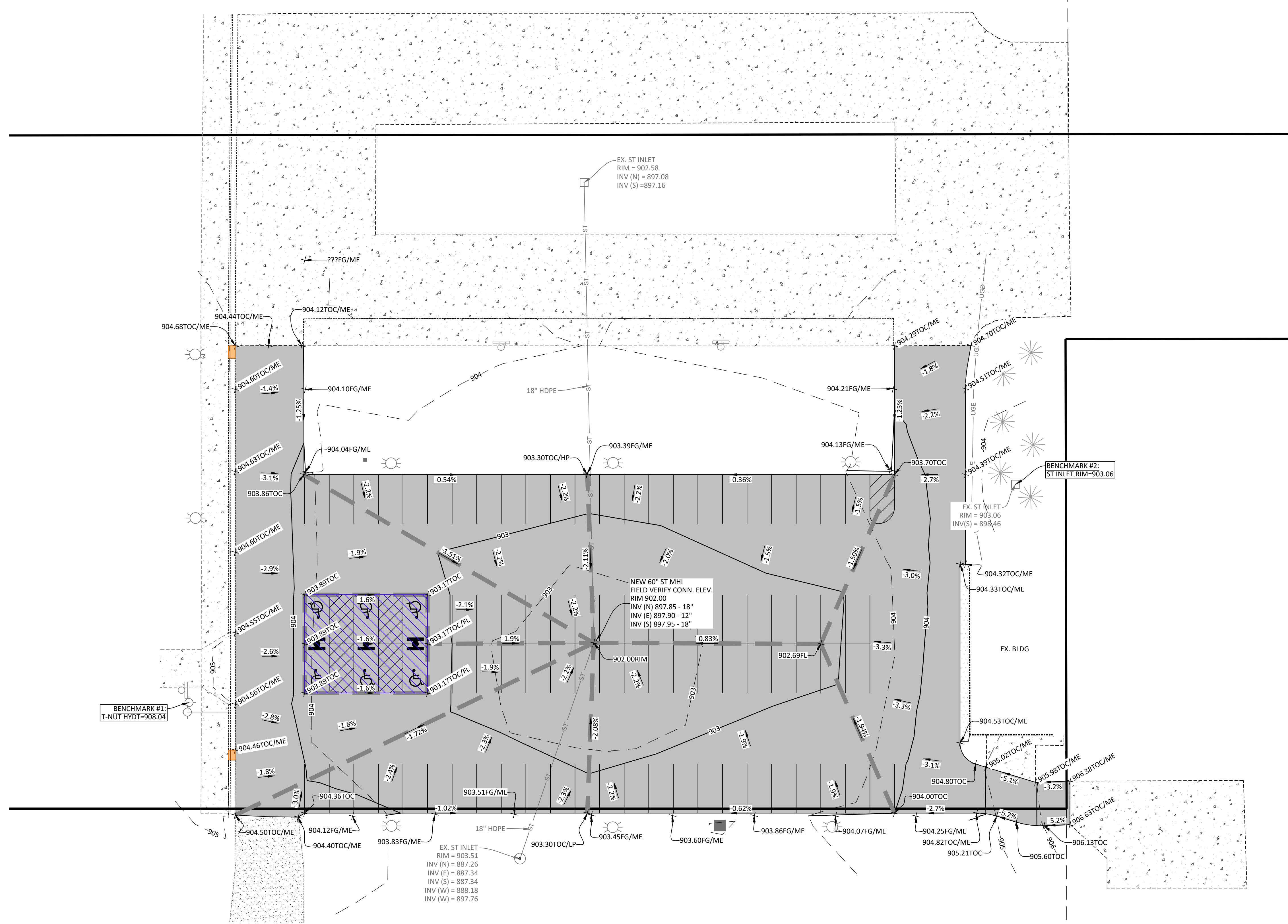
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5306 51ST AVE S STE A  
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(701) 235.0199 OFFICE

- NOTES:
- CONTRACTOR IS RESPONSIBLE FOR CALCULATING THEIR OWN EARTHWORK/GRADING TAKEOFF QUANTITIES FOR THE PROPOSED SITE.
  - PRIOR TO CONSTRUCTION, THE CONTRACTOR IS ENCOURAGED TO VISIT THE SITE TO BETTER DETERMINE THE NECESSARY AMOUNT OF STRIPPING TO OCCUR THROUGHOUT THE SITE.
  - TOPSOIL SHALL NOT BE USED AS FILL UNDER THE PAVEMENT AREAS.
  - NEW INLET CASTING WITHIN PAVED PARKING LOT SHALL BE EIJJW 1205 TYPE M GRATE OR APPROVED EQUAL.

- ADA ACCESSIBLE ROUTE  
MEET ADA GRADING REQUIREMENTS

- CONTRACTOR TO MATCH EX. C&G  
SECTION SIZE & GRADE ELEVATIONS.

- GRADE BREAK / FLOW PATH
- FG FINISH GROUND
  - FL FLOWLINE
  - HP HIGH POINT
  - LP LOW POINT
  - ME MATCH EXISTING GROUND
  - RIM STRUCTURE RIM ELEVATION
  - TC TOP OF CURB/THICKENED EDGE
  - TW TOP OF WALK



BENCHMARK #1:  
T-NUT HYDT=908.04

BENCHMARK #2:  
ST INLET RIM=903.06

EX. ST INLET  
RIM = 902.58  
INV (N) = 897.08  
INV (S) = 897.16

EX. ST INLET  
RIM = 903.06  
INV (S) = 898.46

NEW 60" ST MHI  
FIELD VERIFY CONN. ELEV.  
RIM 902.00  
INV (N) 897.85 - 18"  
INV (E) 897.90 - 12"  
INV (S) 897.95 - 18"

EX. ST INLET  
RIM = 903.51  
INV (N) = 887.26  
INV (E) = 887.34  
INV (S) = 887.34  
INV (W) = 888.18  
INV (W) = 897.76

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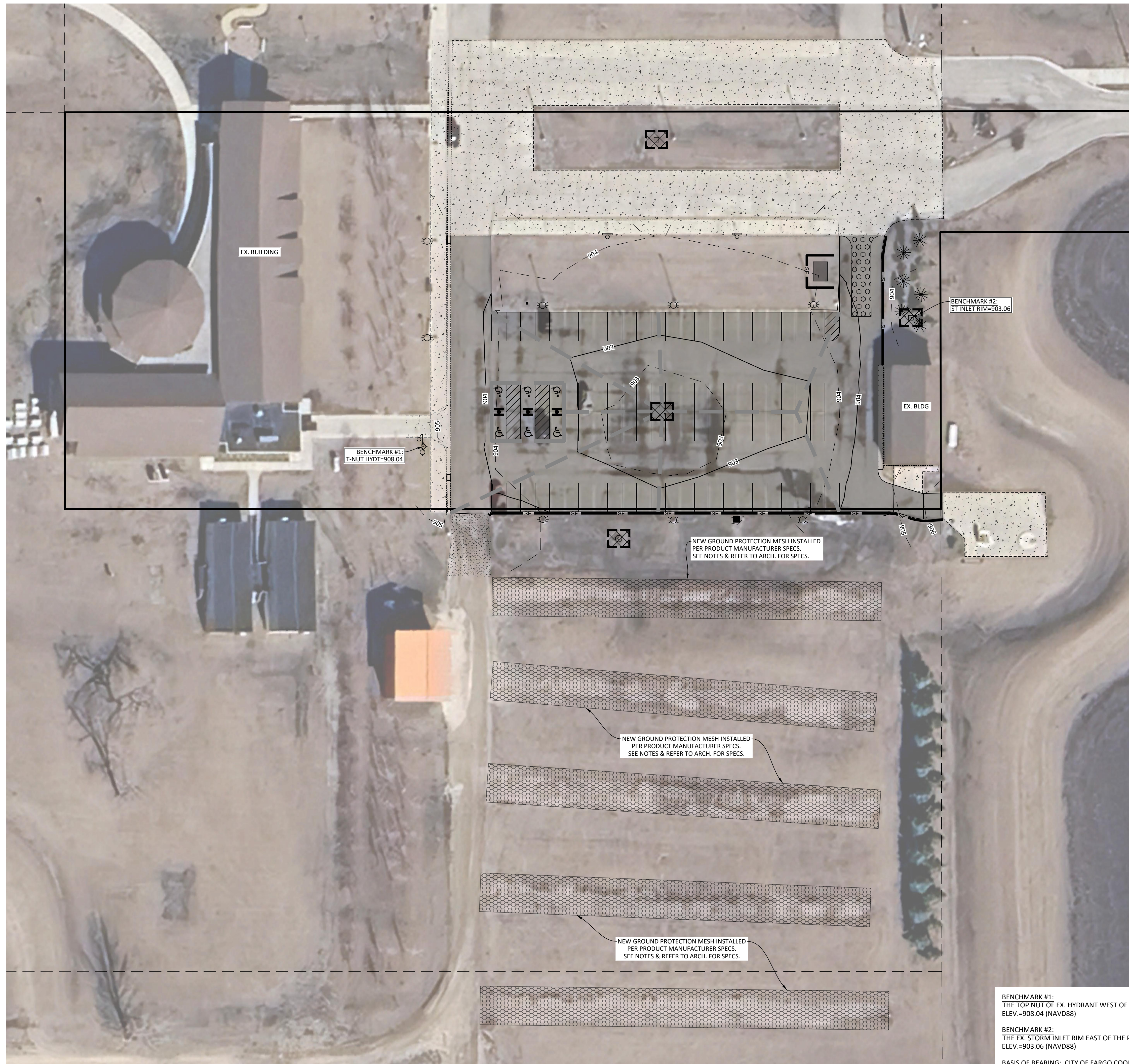
NO.	DESCRIPTION	DATE
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DRAWN BY: JT / KD JN: 24-060

**GRADING & UTILITY PLAN**  
**TROLLWOOD**

SHEET  
**T-C5**





EROSION CONTROL LEGEND			
— SF —	SILT FENCE	420	LF
	STANDARD INLET PROTECTION	4	EA
	VEHICLE TRACKING PAD	1	EA
	CONCRETE WASHOUT	1	EA
	GROUND PROTECTION MESH	3,260	SY

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**NOTES:**

1. QUANTITIES ARE ENGINEERS ESTIMATES ONLY. CONTRACTOR SHALL DETERMINE THEIR OWN QUANTITIES AND BID ACCORDINGLY.
2. CONTRACTOR SHALL FOLLOW MPCA STORMWATER POLLUTION PREVENTION STANDARDS FOR ALL EROSION CONTROL DURING CONSTRUCTION.
3. CONTRACTOR SHALL PREP GROUND TO INSTALL NEW GROUND PROTECTION MESH PER GRASS MATS USA LLC PRODUCT SPECIFICATIONS.
4. A FODS TRACKOUT CONTROL MAT MAY BE USED AS AN APPROVED EQUAL TO THE VEHICLE TRACKING PAD. CONTRACTOR SHALL SUBMIT PROPOSED MAT LAYOUT TO ENGINEER FOR REVIEW PRIOR TO INSTALLING.
5. CONTRACTOR SHALL INSTALL PERIMETER EROSION AND SEDIMENT CONTROLS PRIOR TO ANY LAND DISTURBING ACTIVITY.
6. IF CONCRETE WASHOUT WILL OCCUR ONSITE, CONTRACTOR SHALL COORDINATE LOCATION WITH OWNER AND ENGINEER.
7. INLET PROTECTION SHALL BE BY DANDY PRODUCTS, ERTEC, FLEXSTORM, OR APPROVED EQUAL AND INSTALLED PER MANUFACTURERS RECOMMENDATIONS.
8. CONTRACTOR IS RESPONSIBLE FOR SWEEPING AND CLEANING ADJACENT STREETS DURING CONSTRUCTION TO PREVENT SEDIMENT RUNOFF TO CITY STORM SYSTEM.
9. CONTRACTOR SHALL LEAVE TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES IN PLACE UNTIL ALL DISTURBED AREAS ARE PERMANENTLY STABILIZED.
10. CONTRACTOR IS RESPONSIBLE FOR ALL INSTALLATION, MAINTENANCE, REPLACEMENT IF NECESSARY, REMOVAL, ETC OF ANY AND ALL PROTECTION MEASURES NEEDED FROM THE START OF CONSTRUCTION UNTIL FINAL PERMANENT STABILIZATION IS ACHIEVED.



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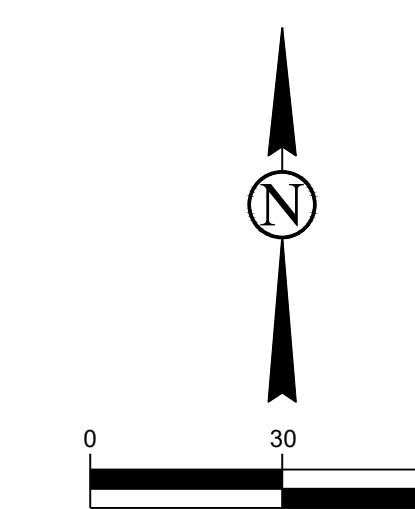
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**EROSION & SEDIMENT CONTROL PLAN**  
**TROLLWOOD**

SHEET

**T-C6**



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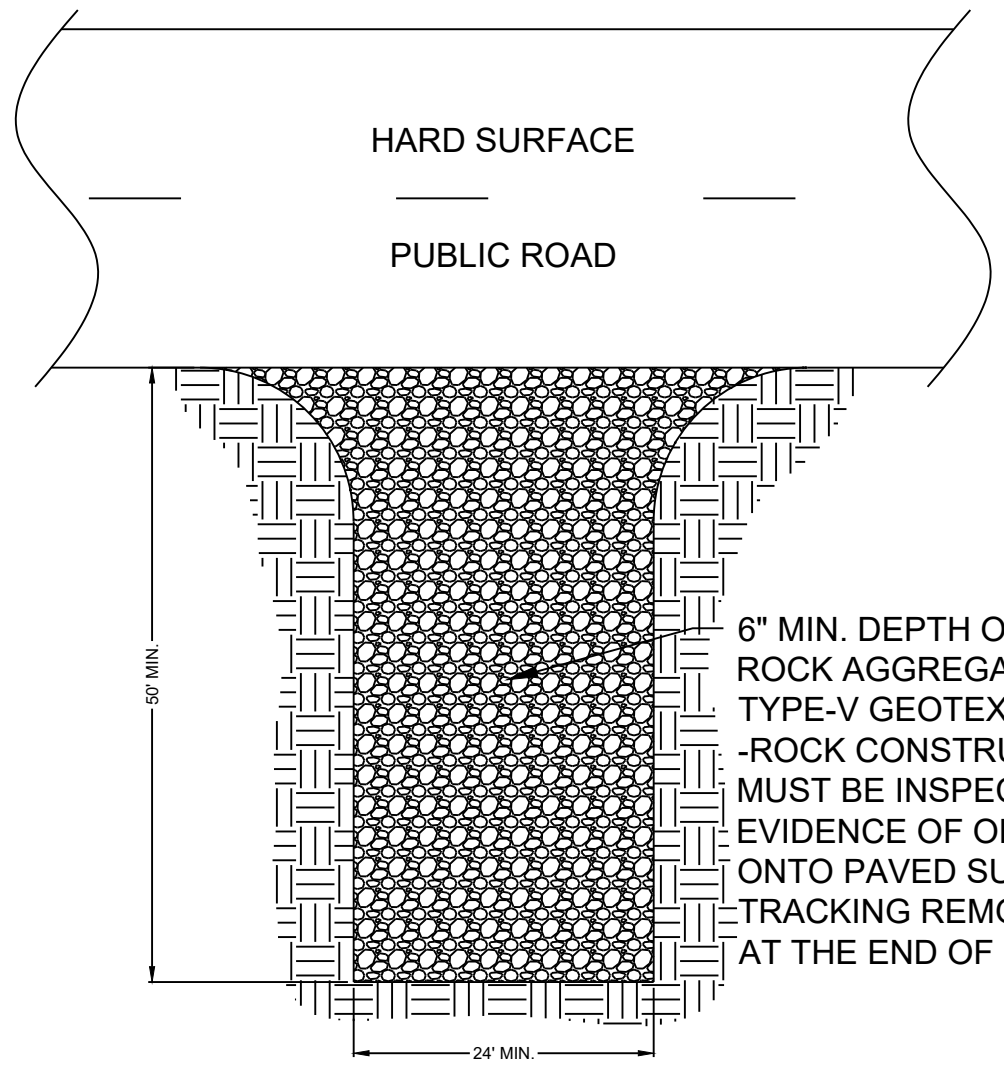
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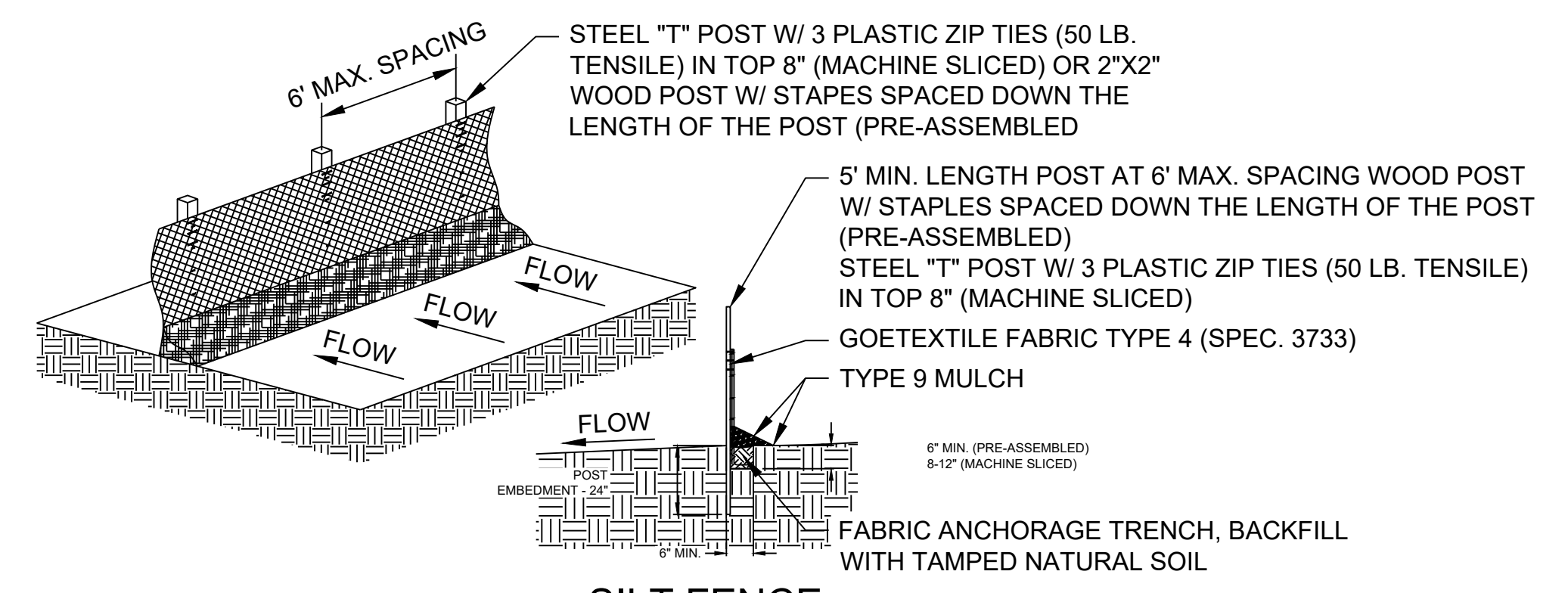
**DETAILS TROLLWOOD**

SHEET  
**T-C7**

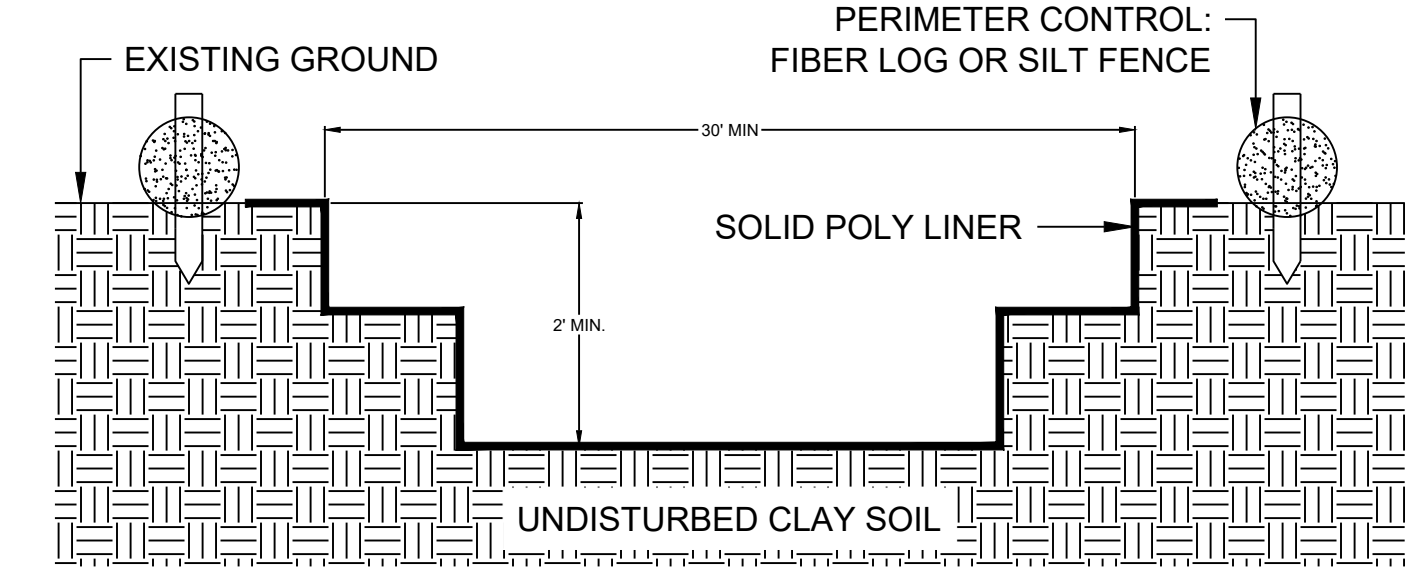


6" MIN. DEPTH OF 1-2" WASHED ROCK AGGREGATE PLACED OVER TYPE-V GEOTEXTILE FABRIC  
-ROCK CONSTRUCTION EXITS MUST BE INSPECTED DAILY FOR EVIDENCE OF OFF-SITE TRACKING ONTO PAVED SURFACES WITH TRACKING REMOVAL PERFORMED AT THE END OF EACH DAYS WORK.

**TEMPORARY ROCK CONSTRUCTION ENTRANCE**  
NOT TO SCALE



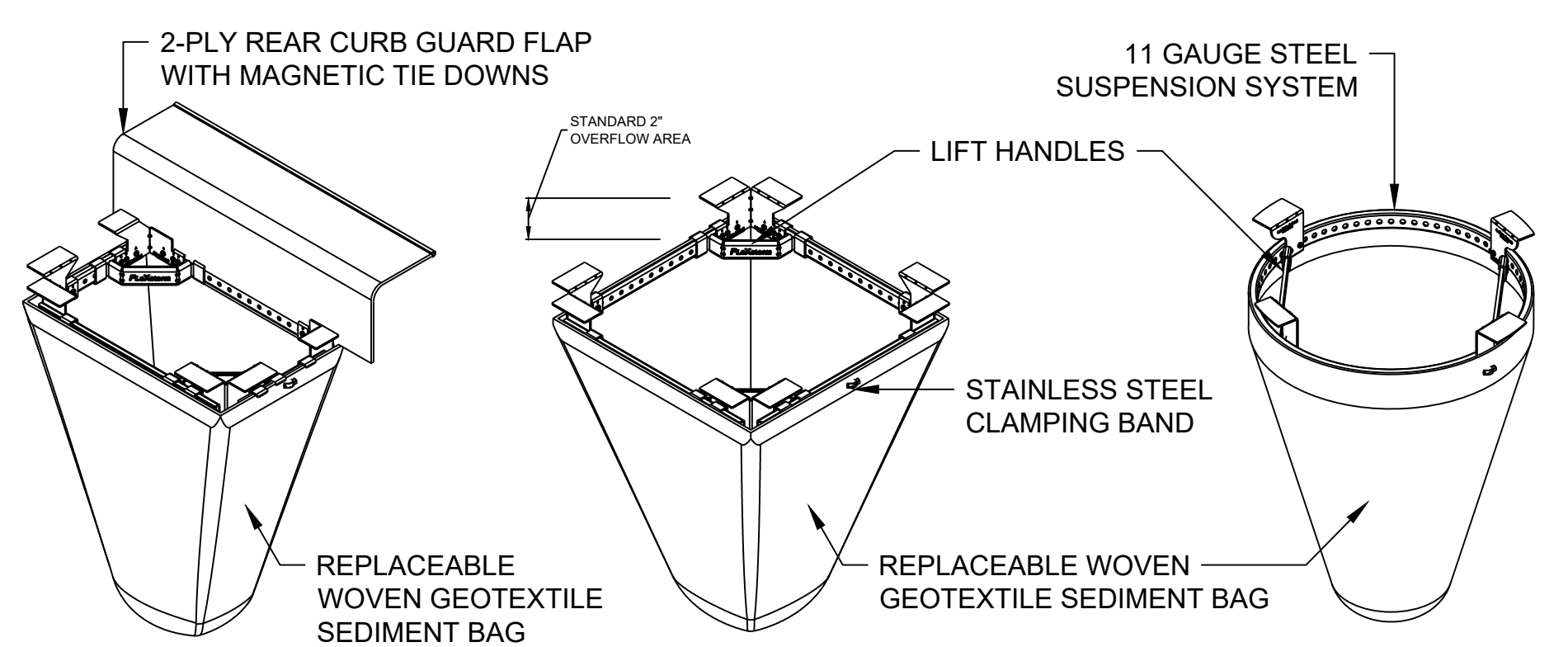
**SILT FENCE**  
NOT TO SCALE



**NOTES:**  
1. WASHOUT SHALL BE 15' BY 30'  
2. PERIMETER CONTROL SHALL BE INSTALLED ON THREE SIDES NOT ABUTTING DUMP ENTRANCE  
3. ALL LIQUID AND SOLID WASTES GENERATED BY CONCRETE WASHOUT OPERATIONS MUST BE CONTAINED IN A LEAK PROOF CONTAINMENT FACILITY OR CLAY SOIL PIT WITH POLY LINER (AS SHOWN). INSTALLATION, MAINTENANCE, AND REMOVAL OF CONCRETE WASHOUT SHALL BE INCIDENTAL TO CONSTRUCTION

**TYPICAL CONCRETE WASHOUT**  
NOT TO SCALE

NOTE: CAN SLIDE 2 x 4 THROUGH FLAP IF IRON CURB BACK IS NOT AVAILABLE FOR MAGNETS.

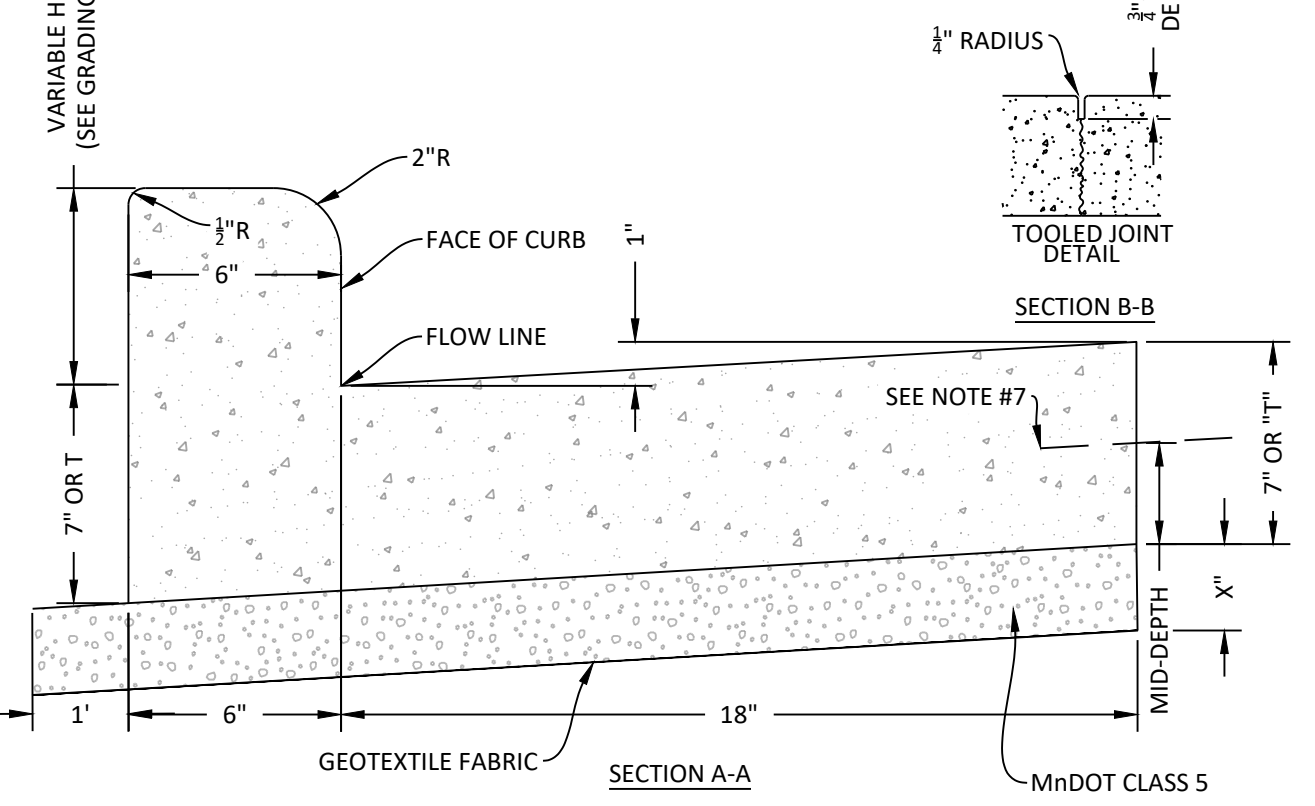
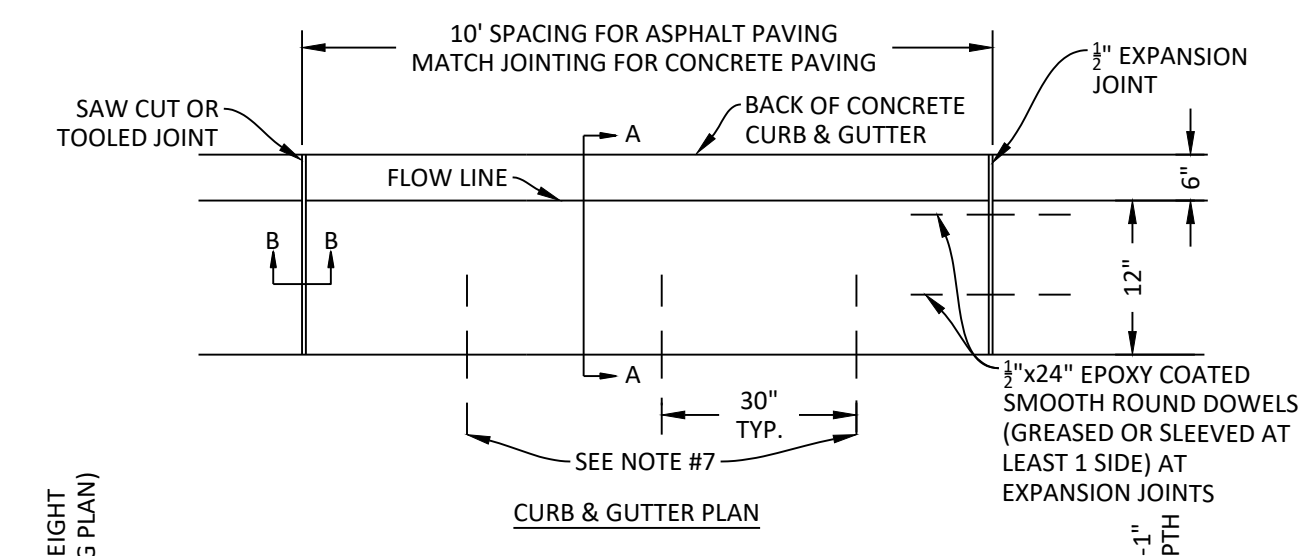


**TYPICAL CURB BOX INLET FILTER (TYPE C WITH CURB BOX)**  
**TYPICAL FLAT/RECTANGULAR/ROLLED CURB INLET FILTER (TYPES A, B, C, & D)**  
**TYPICAL ROUND INLET FILTER**

- MATERIALS:**
- FRAMING - 11 GAUGE STEEL; CORROSION RESISTANT
  - SEDIMENT BAG - WOVEN GEOTEXTILE (TYPE FF OR APPROVED EQUAL); 2 C.F. TYPICAL VOLUME; STAINLESS STEEL LOCKING BAND SECURING BAG TO FRAME

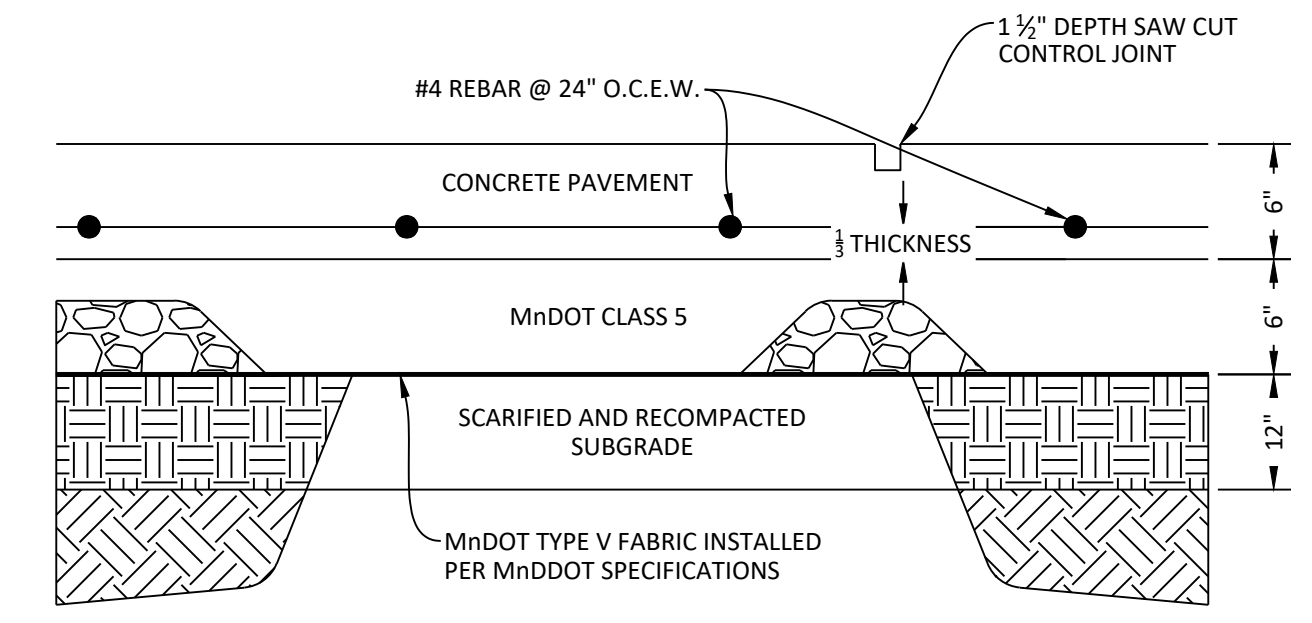
- INSTALLATION**
- REMOVE GRATE FROM DRAINAGE STRUCTURE
  - CLEAN SOIL AND DEBRIS FROM LEDGE (LIP) OF DRAINAGE STRUCTURE
  - DROP FLEXSTORM INLET FILTER ONTO LOAD BEARING LIP OF CASTING OR CONCRETE STRUCTURE
  - REPLACE GRATE AND CONFIRM IT IS NOT ELEVATED MORE THAN 1/8", THE THICKNESS OF THE STEEL HANGARS

**TYPE "C" INLET PROTECTION**  
(SILT FENCE TO PROTECT DROP INLETS)  
USE WHERE INLET DRAINS AN AREA WITH SLOPES AT 1:3 OR LESS  
TYPE A SPEC. 3891 NOT TO SCALE



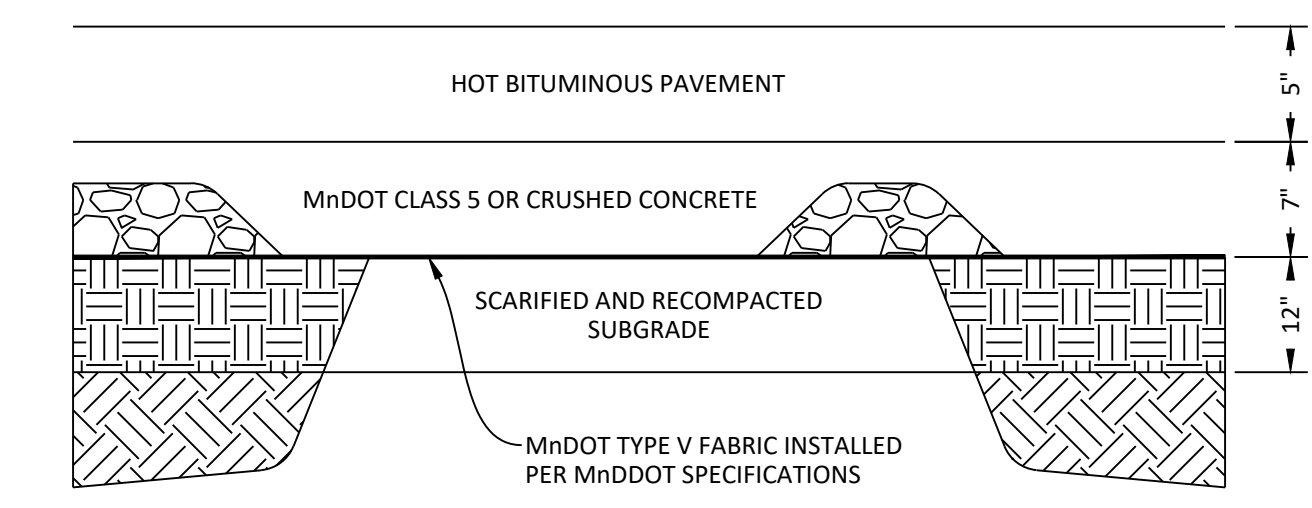
- NOTES:**
- DIMENSION "T" SHALL MATCH THE THICKNESS OF THE ADJOINING CONCRETE SLAB WITH EITHER INTEGRAL OR SEPARATE CURB. CONTRACTOR SHALL INSTALL AS 7" OR "T", WHICHEVER IS GREATER.
  - WHEN OUTFLOW CURB IS SPECIFIED, SLOPE SHALL BE 1/4" PER FOOT.
  - PROVIDE FULL DEPTH EXPANSION JOINT WITH 1/2" EXPANSION MATERIAL AT P.C.'S, HIGH POINTS, AND 60' INTERVALS FOR ASPHALT PAVING OR MATCH ADJACENT PAVEMENT IF CONCRETE.
  - PROVIDE 2 - 1/2" x 24" SMOOTH DOWELS AT ALL EXPANSION JOINTS AND CONSTRUCTION JOINTS.
  - WHITE CONCRETE CURING COMPOUND SHALL BE APPLIED PER MANUFACTURERS SPECIFICATIONS ON ALL EXTERIOR CONCRETE SURFACES.
  - CONCRETE SHALL BE 4,000 (OR HIGHER) PSI AND PER MnDOT SPECIFICATIONS.
  - WHEN ADJACENT PAVEMENT IS CONCRETE, CONTRACTOR SHALL INSTALL 18" EPOXY COATED #4 REBAR @ 30" ON CENTER.

**6 HIGH BACK CURB & GUTTER - 24"**  
N.T.S.



- NOTES:**
- PROVIDE SAWCUT CONTROL JOINTS AT 12" MAXIMUM SPACING EACH WAY.
  - PROVIDE 18" 1/2" DOWELS @ 24" O.C. AT CONNECTION TO CURB & GUTTER, THICKENED EDGE SIDEWALK, EXISTING CONCRETE, AND CONSTRUCTION JOINTS.
  - WHITE CONCRETE CURING COMPOUND SHALL BE APPLIED PER MANUFACTURERS INSTRUCTIONS ON ALL EXTERIOR CONCRETE SURFACES.
  - PROVIDE 1/2" EXPANSION MATERIAL ADJACENT TO BUILDINGS AND ANY OTHER FIXED OBJECTS SUCH AS LIGHT POLE BASES, SIGN FOUNDATIONS, ETC. AND AT CONNECTIONS TO EXISTING CONCRETE.
  - MnDOT TYPE V FABRIC SHALL BE PLACED UNDER AGGREGATE BASE PER MnDOT SPECIFICATIONS.
  - REBAR SHALL BE SUPPORTED BY CHAIRS.

**7 REINFORCED CONCRETE CROSS SECTION**  
N.T.S.



- NOTES:**
- ASPHALT SHALL BE PLACED IN TWO EQUAL LIFTS.
  - ASPHALT MIX SHALL BE PER MnDOT STANDARD SPECIFICATIONS OR APPROVED EQUAL.
  - PG 58-28 OR APPROVED EQUAL SHALL BE USED.

**8 ASPHALT CROSS SECTION [ALT-1]**  
N.T.S.



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*Drew Messmer*  
DREW MESSMER  
DATE: 12/18/24  
LICENSE #: 62823

**DRAWING HISTORY**

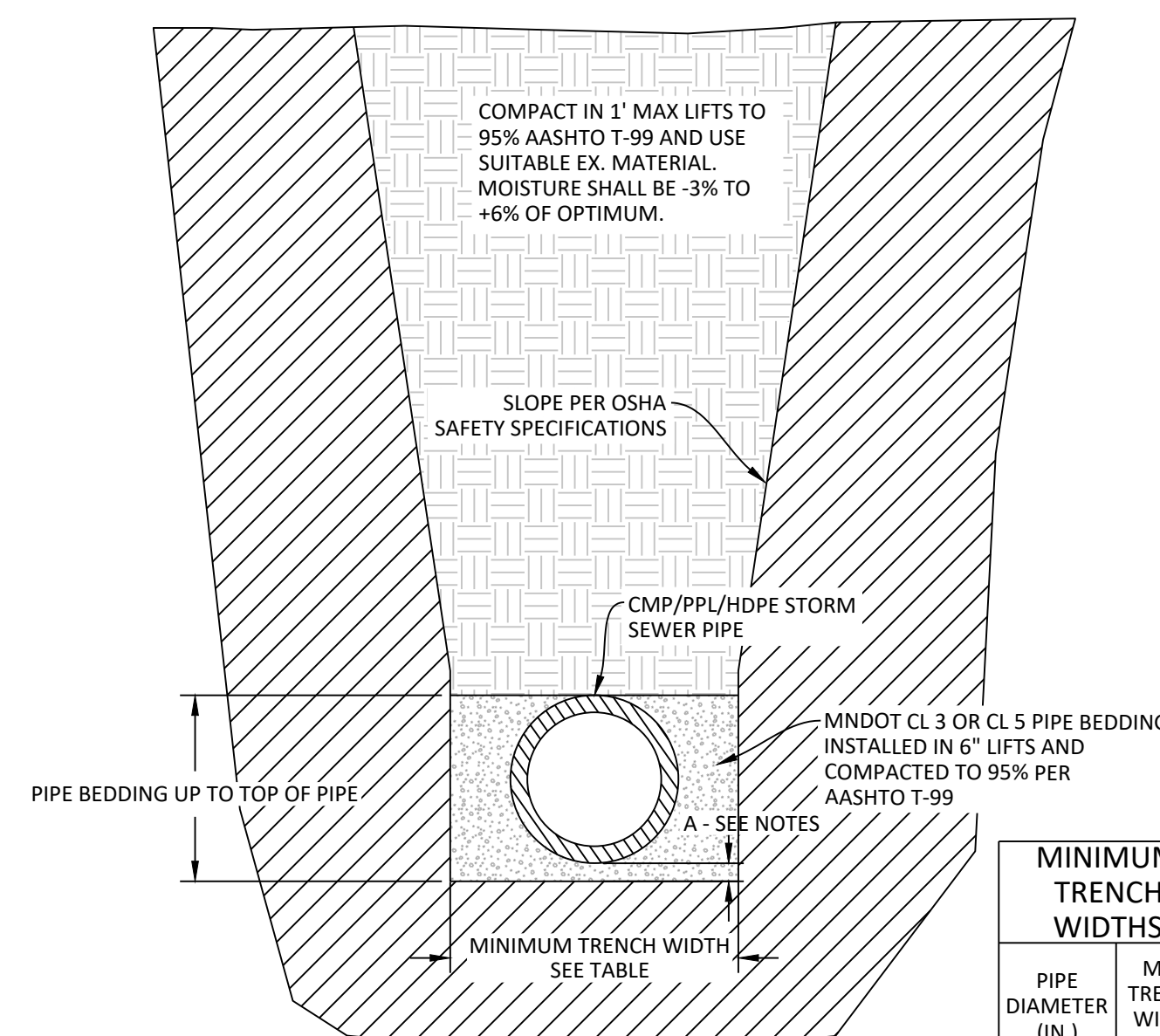
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	CONSTRUCTION DOCUMENTS	12/18/24

DRAWN BY: JT / KD JN: 24-060

**DETAILS TROLLWOOD**

SHEET

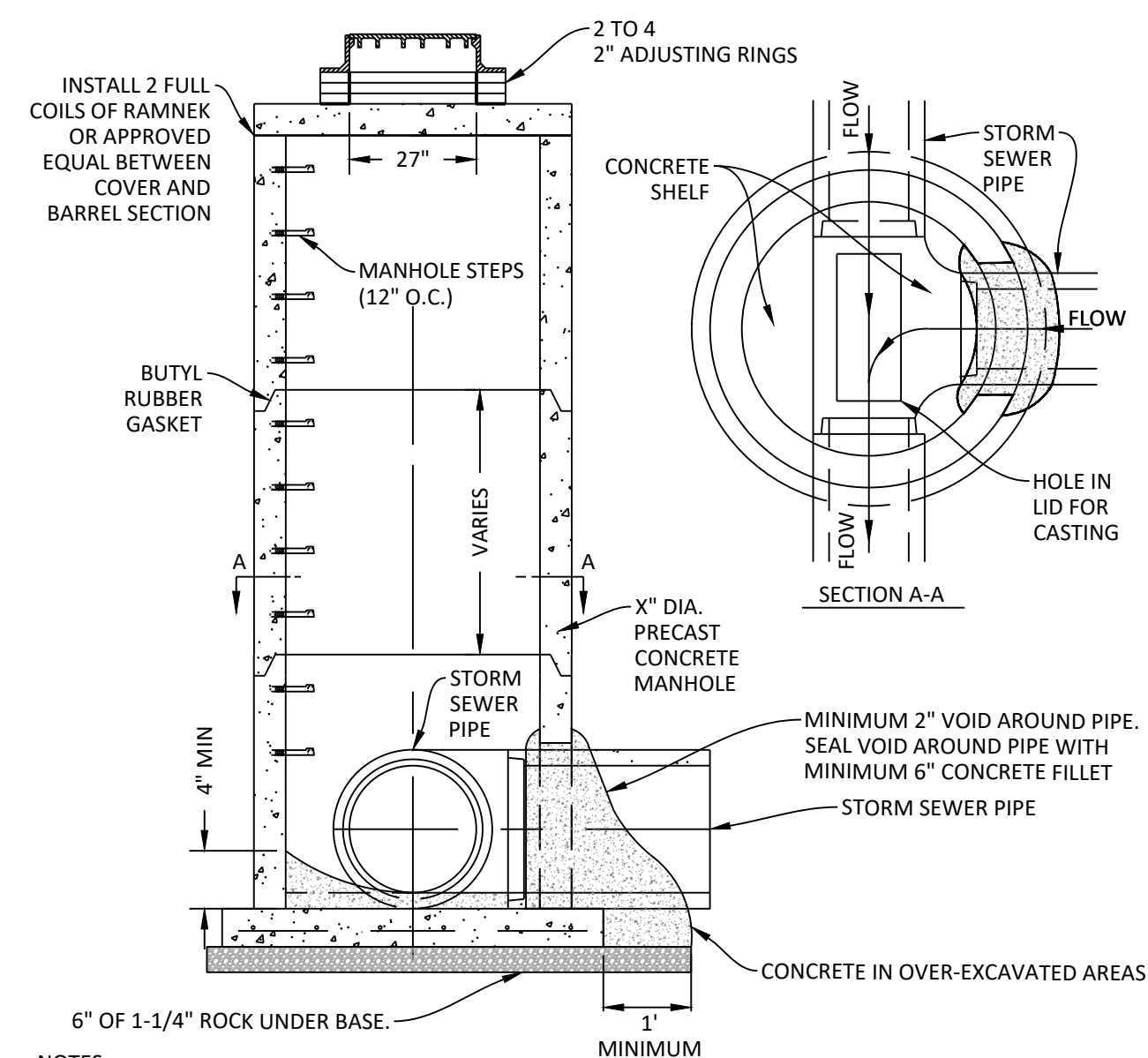
**T-C8**



- NOTES:
- BEDDING DEPTH BELOW PIPE (DIMENSION A ABOVE) SHALL BE 4" FOR 4"-36" PIPE AND 6" FOR 42"-60" PIPE.
  - IN CLAY SOILS, LAST 3' OF PIPE MEASURED FROM BACK OF FLARED END SECTION TO BE BEDDED IN CLAY AND NOT CLASS 5 OR CLASS 3 TO PREVENT SCOUR.

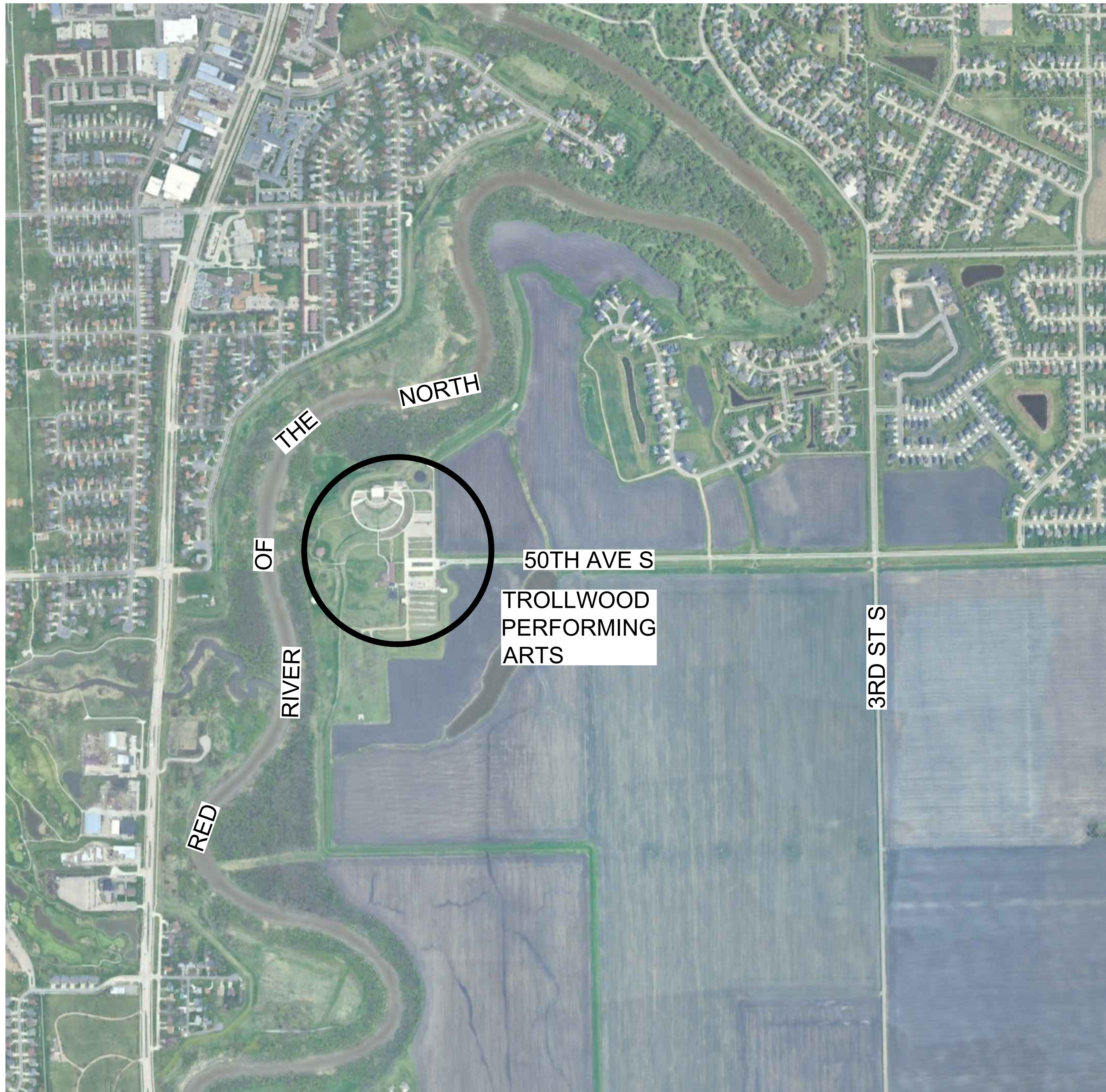
**1** CMP/PPL/HDPE PIPE AND CULVERT TRENCH BACKFILL  
N.T.S.

MINIMUM TRENCH WIDTHS	
PIPE DIAMETER (IN.)	MIN. TRENCH WIDTH (IN.)
4	21
6	23
8	26
10	28
12	30
15	34
18	39
24	47
30	56
36	63
42	72
48	80
60	96



- NOTES:
- ALL ROUND MANHOLES SHALL MEET REQUIREMENTS OF ASTM C478.
  - LIFT HOLES TO BE MANUFACTURED WATER PROOF.
  - BACKFILL AROUND MANHOLE IN 1' MAX LIFTS TO 95% PER AASHTO T-99. USE EXISTING MATERIAL UNLESS NOTED OTHERWISE. MOISTURE SHALL BE -3% TO +6% OF OPTIMUM.
  - CASTING TYPE PER MANHOLE SCHEDULE.
  - SOLID COVERS SHALL BE CAST WITH THE WORD "STORM" IN THE CENTER OF THE COVER IN LETTERS 2" HIGH.
  - CONTRACTOR MAY USE CONCRETE OR HDPE RINGS. IF HDPE RINGS ARE UTILIZED, SILICONE SEAL SHALL BE USED BETWEEN RINGS PER MANUFACTURER RECOMMENDATIONS. IF CONCRETE RINGS ARE USED, GROUT SHALL BE USED BETWEEN, OUTSIDE, AND INSIDE OF RINGS. GROUT SHALL MEET REQUIREMENTS OF ASTM C270.
  - REBAR AND WALL THICKNESS PER MANUFACTURERS RECOMMENDATION.
  - IF MANHOLE IS USED AS A CURB & GUTTER INLET, THE MANHOLE SHALL HAVE HOLE AVAILABLE FOR CONNECTION TO CURB & GUTTER DRAIN TILE AS REQUIRED.
  - BUTYL RUBBER GASKET ON ALL JOINTS. GASKET SHALL MEET ASTM C443 REQUIREMENTS.
  - DOGHOUSE TO BE CONCRETED INSIDE AND OUT WITH 3,000 PSI CONCRETE. CONCRETE SHALL BE VIBRATED AND TROWL FINISHED.
  - WHEN STRUCTURE IS INSTALLED IN THE CURB LINE, THE CONTRACTOR SHALL SET MANHOLE SO THAT BACK OF CASTING ALIGNS WITH CURB FLOW LINE.
  - ALL ROUND MANHOLES/INLETS SHALL HAVE A MINIMUM HEIGHT OF SIX (6) FEET FROM RIM TO BOTTOM OF STRUCTURE. IF LOWEST INVERT IS ABOVE THIS, CONTRACTOR SHALL FILL BOTTOM VOID WITH 4,000 PSI CONCRETE AND FORM INVERTS ACCORDINGLY.

**2** ROUND STORM MANHOLE/INLET  
N.T.S.



**SCOPE OF WORK**

- REPLACE SOUTH PAVED LOT
- REINFORCE DRIVE LANES OF GRASS PARKING LOT
- REPLACE HANDRAILS AT PORTABLE CLASSROOMS
- REPLACE FLUORESCENT LIGHTING FIXTURES AT PORTABLE CLASSROOMS
- REPLACE DOMESTIC WATER HEATER AT PORTABLE CLASSROOM
- REPLACE CARPET AT PORTABLE CLASSROOMS
- REFINISH WOOD LAMINATE ARCHES



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SIGNATURE: *Todd Blunt*  
PRINTED NAME: TODD BLUNT  
DATE: 12/18/24  
LICENSE NUMBER: 62763

**DRAWING HISTORY**

NO.	DESCRIPTION	DATE
	CONSTRUCTION DOCUMENTS	12/18/24

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**Trollwood Performing Arts Overall Site Plan**

SHEET  
**T-A000**



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**Trollwood Performing Arts**  
**Site Plan - Enlarged**

SHEET  
**T-A001**

**GENERAL NOTES - SITE PLAN**

CONTRACTOR TO SAND AND PREPARE EXISTING GLULAM ARCHES AS NECESSARY AT EACH END OF THE FOUR (4) EXISTING ARCHES. CRACKS GREATER THAN OR EQUAL TO 1/8" THICKNESS TO BE FILLED WITH EPOXY. REMOVAL OF (E) STEEL STRUTS NOT REQUIRED. PROVIDE CAULK AROUND TOP AND SIDES OF (E) STRUTS. BOTTOM OF STRUTS TO REMAIN UNCALKED. CONTRACTOR TO RESTAIN AND RESEAL ARCH AS NECESSARY ONCE CRACK INFILL HAS OCCURRED. SUBMIT PROPOSED EPOXY MATERIALS FOR APPROVAL PRIOR TO COMMENCING WORK. NOTIFY ARCHITECT/ENGINEER OF ANY DISCREPANCIES DISCOVERED.

**KEYNOTES - SITE PLAN**

- ① REPLACE ASPHALT PARKING LOT AND EXISTING DRAINAGE  
- SEE CIVIL
  - ② REPLACE ASPHALT WITH CONCRETE PAVEMENT, CURB & GUTTER  
- SEE CIVIL
  - ③ REMOVE ADA PARKING SIGN AND BASE  
- SEE CIVIL FOR NEW SIGN LOCATIONS
  - ④ INSTALL GROUND PROTECTION MESH AT DRIVE LANES  
- SEE SPECIFICATIONS FOR MORE INFORMATION.
  - ⑤ SAND AND REMOVE EXISTING STAIN & VARNISH FROM WOOD LAMINATE ARCH. FILL CRACKS & WOOD CHECKS GREATER THAN 1/4" IN WIDTH. APPLY STAIN & CLEAR COAT FINISH.
    - USE AN EPOXY WITH A VISCOUS, TOOTHPASTE-LIKE CONSISTENCY. AS THINNER, WATERY EPOXIES CAN BE DIFFICULT TO CONTROL, AND MAY SEEP EXCESSIVELY.
    - APPLY TAPE TO THE TOP AND BOTTOM OF THE CRACKS (CHECKS) TO PROTECT THE WOOD AND PREVENT THE EPOXY FROM SPREADING.
    - TROWEL THE VISCOUS EPOXY INTO THE CRACKS CAREFULLY FOR BETTER CONTAINMENT AND A CLEANER APPLICATION.
- SEE SPECIFICATIONS FOR DETAILS



REPLACE DOMESTIC WATER HEATER LOCATED IN PORTABLE CLASSROOM  
REPLACE FLUORESCENT LIGHTING FIXTURES LOCATED IN PORTABLE CLASSROOMS  
- SEE ELECTRICAL  
REPLACE HAND RAILS AT PORTABLE CLASSROOMS  
REPLACE CARPET AT PORTABLE CLASSROOMS  
- SEE SPECIFICATIONS  
REPLACE EXTERIOR WOOD TRIM AT PORTABLE CLASSROOMS



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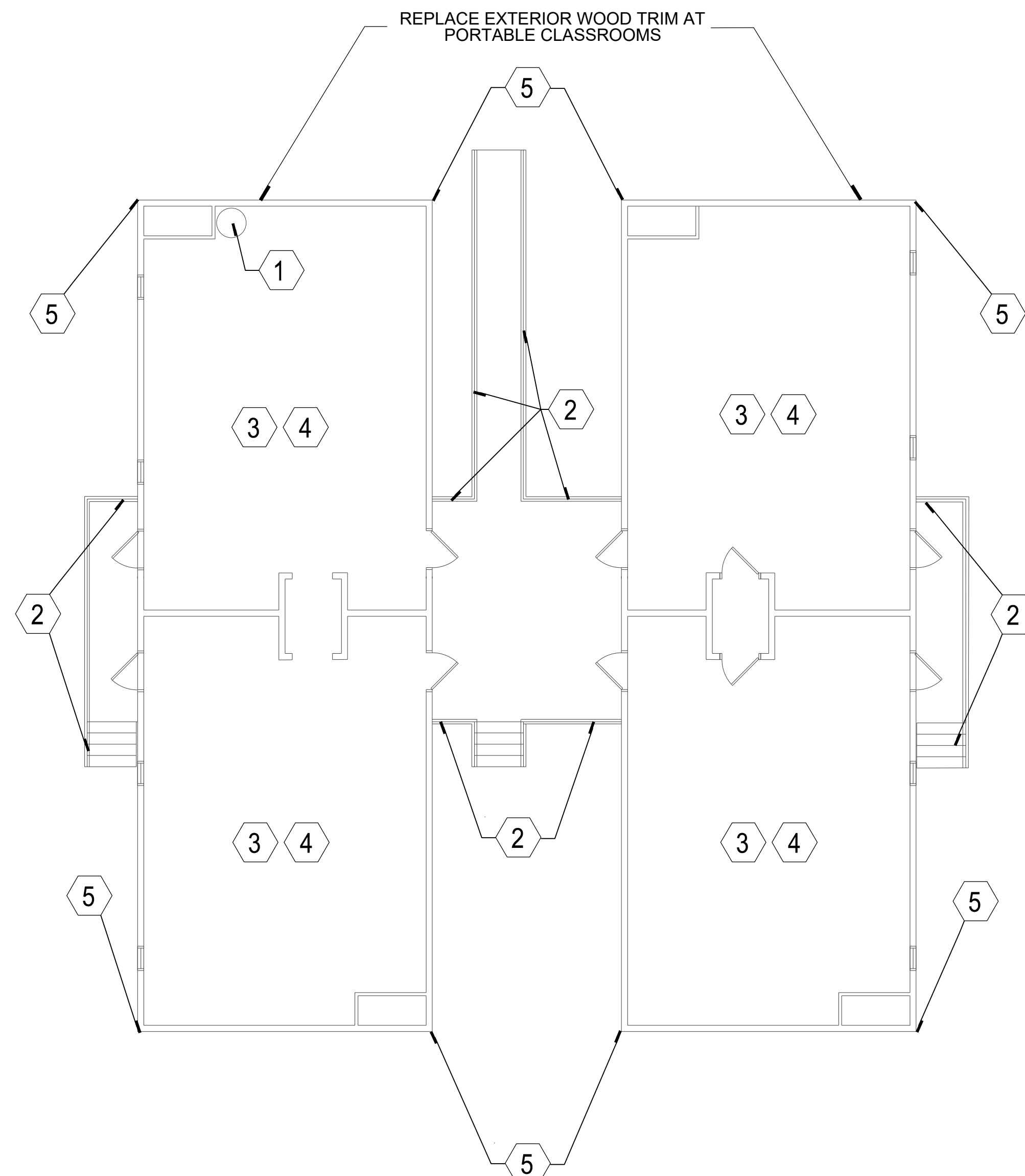
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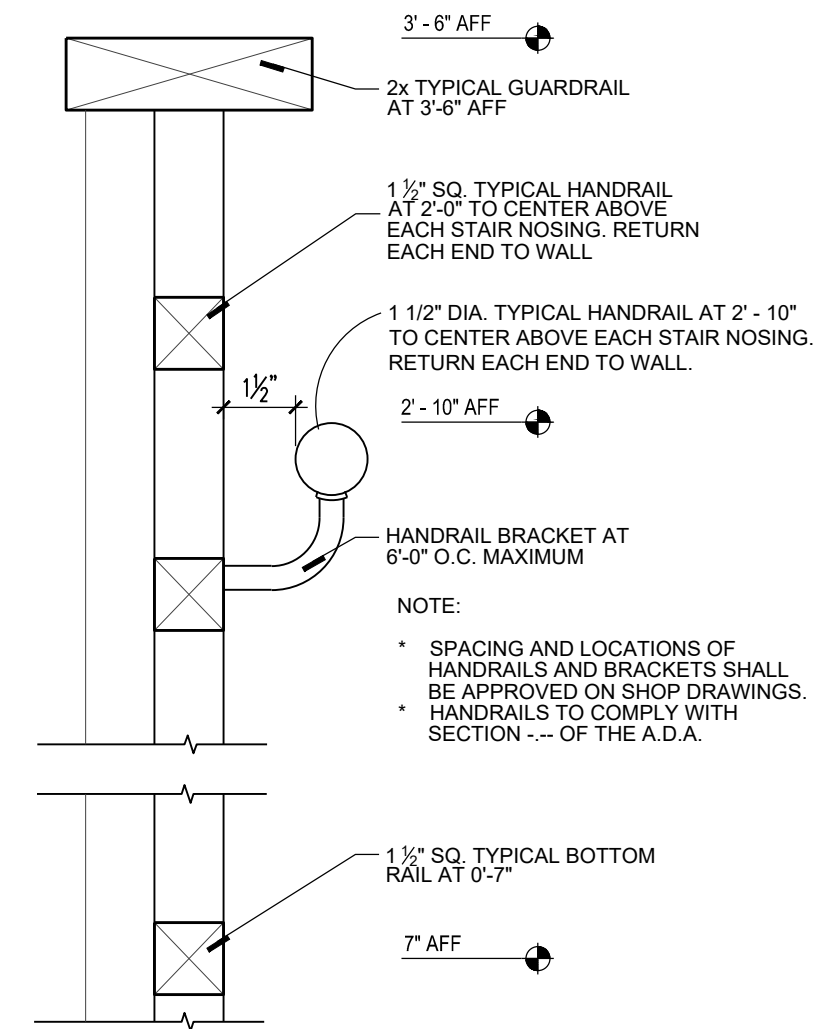
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**KEYNOTES - FLOOR PLAN**

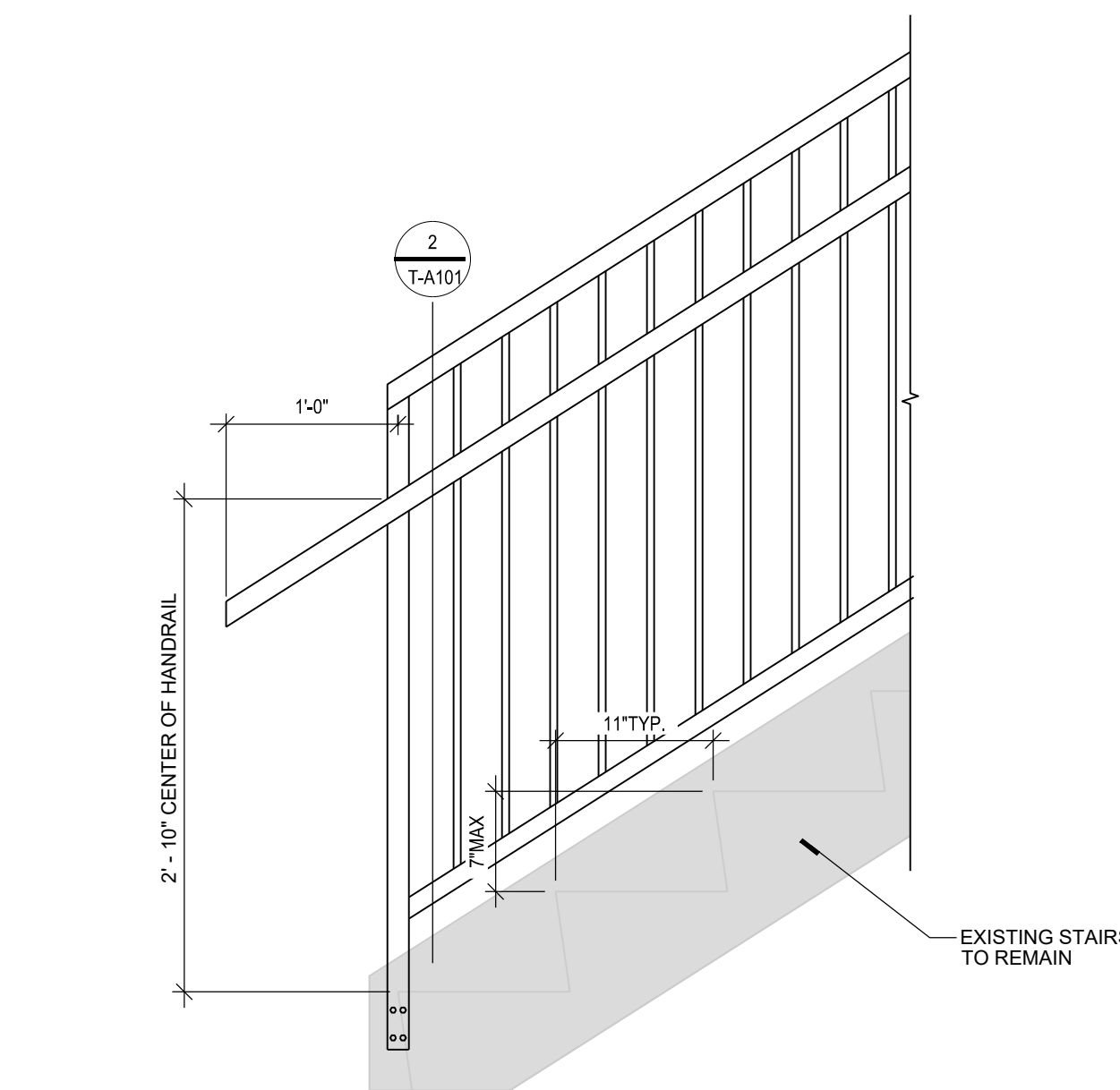
- 1 REPLACE DOMESTIC WATER HEATER LOCATED IN PORTABLE CLASSROOM - SEE MECHANICAL AND ELECTRICAL
- 2 REPLACE HANDRAILS AND GUARDRAILS AT PORTABLE CLASSROOMS
- 3 REPLACE FLUORESCENT LIGHTING FIXTURES LOCATED IN PORTABLE CLASSROOMS - SEE ELECTRICAL
- 4 REPLACE CARPET AT PORTABLE CLASSROOMS - SEE SPECIFICATIONS FOR MORE DETAILS.
- 5 REPLACE TRIM ON CORNERS OF PORTABLE CLASSROOM. COLOR AND MATERIAL TO MATCH EXISTING.



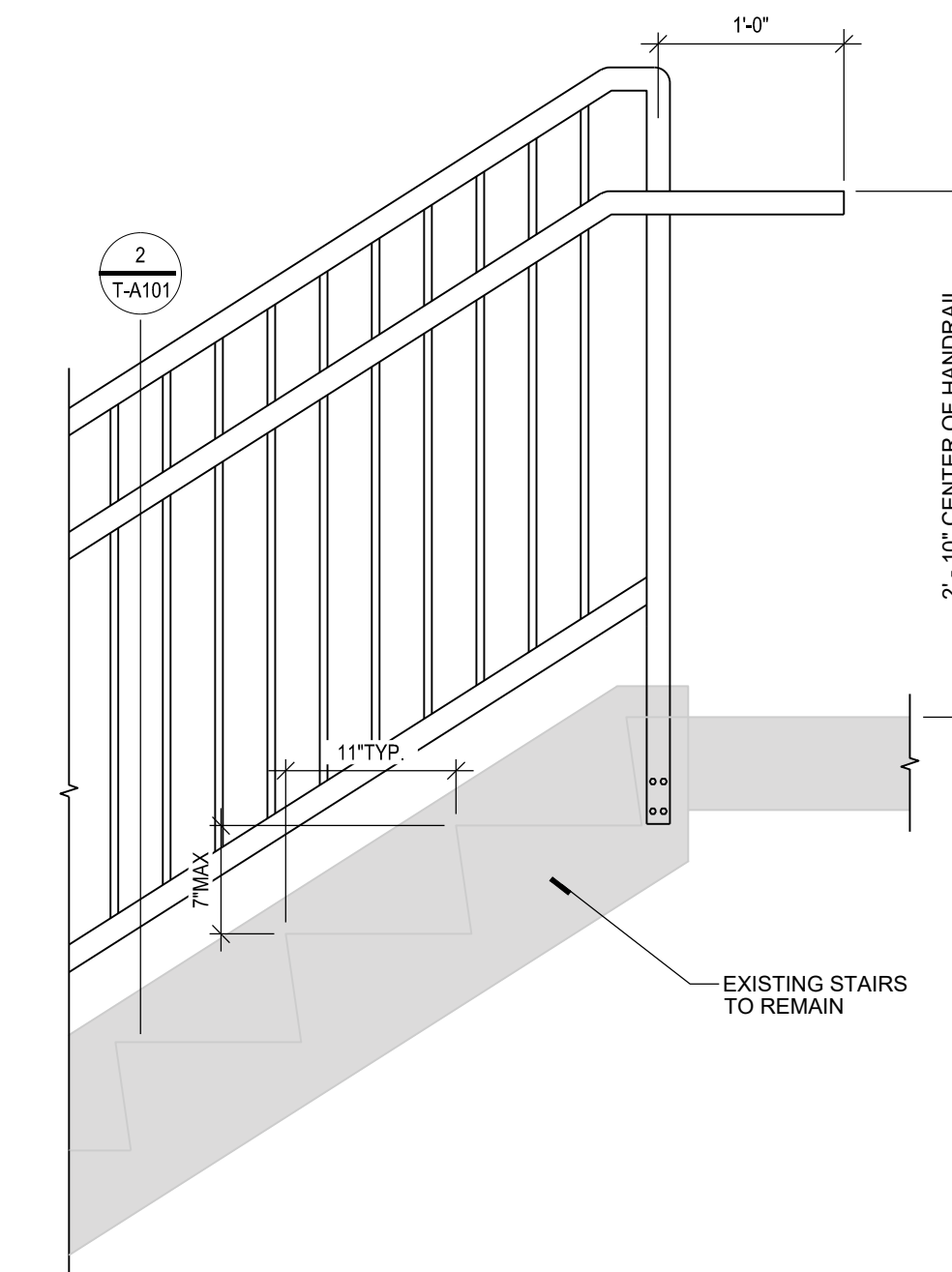
1 T-A101 Trollwood Perform - Portable Classroom Plans  
1" = 1'-0"



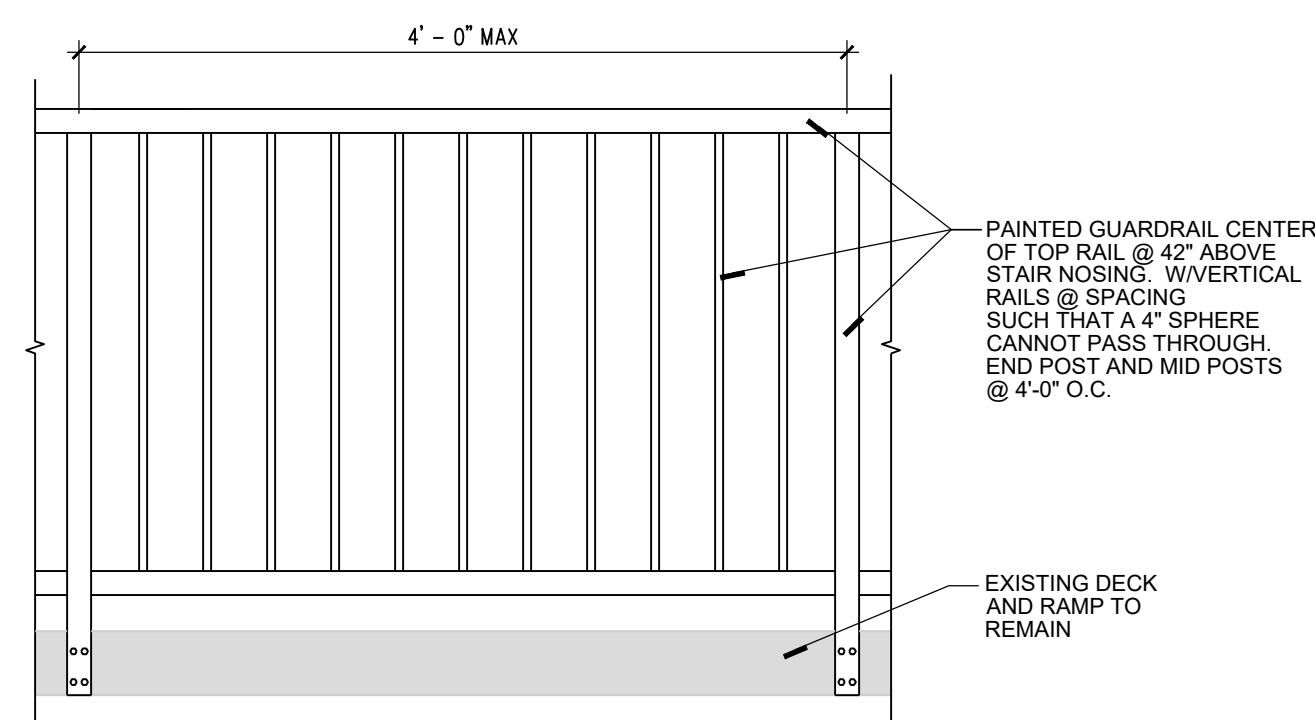
2 T-A101 Vertical Rail Detail  
3" = 1'-0"



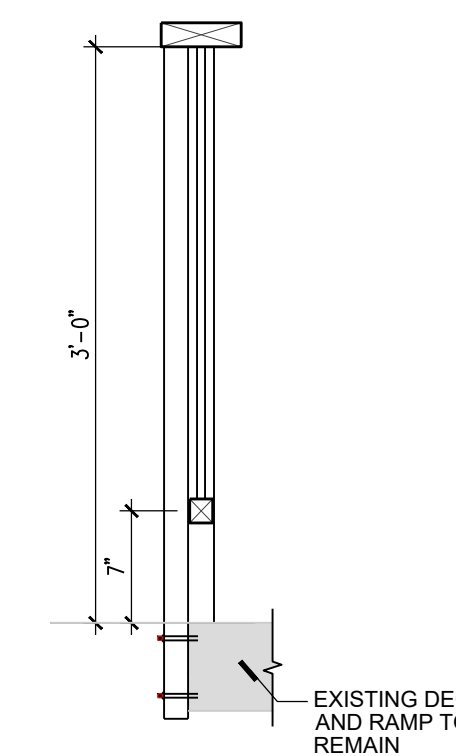
3 T-A101 Bottom Landing - Vertical Pipe  
1" = 1'-0"



4 T-A101 Bottom Landing - Vertical Pipe  
1" = 1'-0"



5 T-A101 Guardrail Detail - Vertical 36"  
1" = 1'-0"



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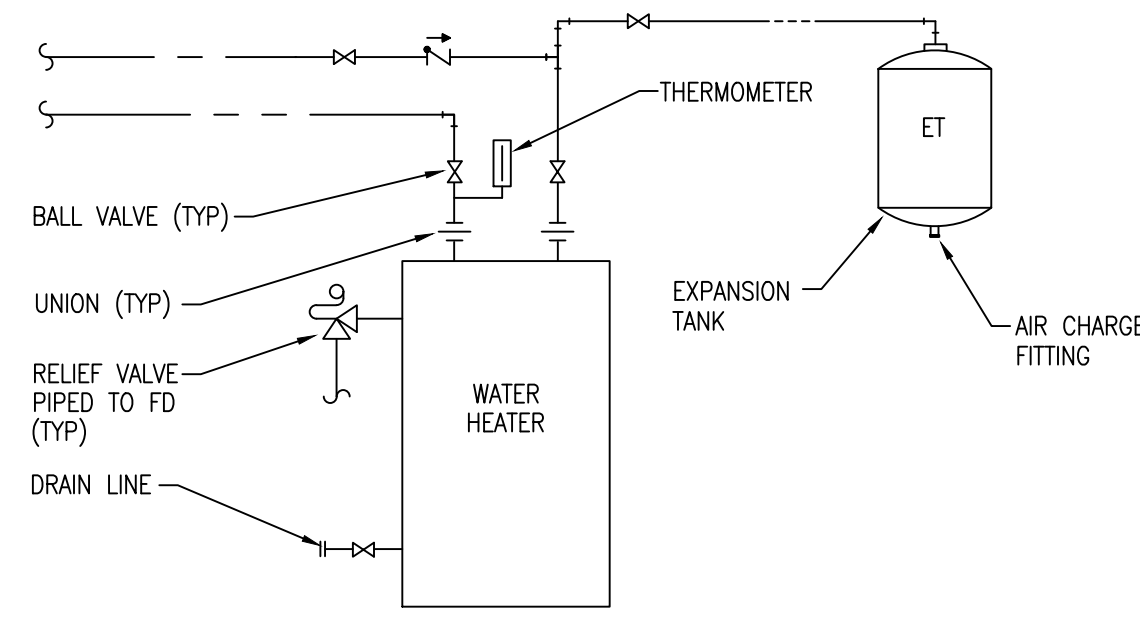
**DRAWING HISTORY**

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DRAWN BY: TA/AO/AF/KD JN: 24-060

**Trollwood Performing Arts Portable Classroom Plans**

SHEET  
**T-A101**



3 WATER HEATER PIPING DIAGRAM  
NO SCALE

WATER HEATER SCHEDULE	
TAG	WH-1
FUEL SOURCE	ELECTRIC
MANUFACTURER	A.O. SMITH
MODEL NAME	DURA
MODEL NUMBER	DEL-40
TANK CAPACITY	40 GAL
GALLONS/HOUR	92 @ 100°F RISE
TANK TEMP. SETPOINT	140°F
INPUT	6 KW
VOLTAGE	230/180
NOTES	2,6,8,10,12,13

NOTES:  
 1. ASME  
 2. 3/4" T&P RELIEF VALVE.  
 3. GAS SHUTOFF DEVICE.  
 4. ELECTRONIC LOW WATER CUTOFF.  
 5. MANUAL RESET HIGH LIMIT.  
 6. BUILDING AUTOMATION SYSTEM CONNECTION.  
 7. AQUAPLEX STORAGE TANK AND FIRE TUBES FOR BOTH WATER HEATERS.  
 8. STANDARD WARRANTY.  
 9. NO ANODE RODS REQUIRED.  
 10. ASHRAEIES801b-1992.  
 11. 9% THERMAL EFFICIENT.  
 12. W/DIGITAL DISPLAY PANEL.  
 13. FIRST YEAR COST FREE SERVICE POLICY AND FACTORY AUTHORIZED STARTUP.

MECHANICAL SYMBOLS			
---	COLD WATER PIPING	⊗	GATE OR BALL VALVE
----	HOT WATER PIPING	⊕	CHECK VALVE
---	CIRCULATING HOT WATER PIPING	⊘	BACKFLOW PREVENTER
RO	REVERSE OSMOSIS WATER PIPING	⊘	CIRCUIT SOLVER
SAN	SANITARY PIPING	⊘	CONCENTRIC REDUCER
---	UNDERGROUND SANITARY PIPING	⊘	ECCENTRIC REDUCER
---	CONDENSATE PIPING	⊘	UNION
---	VENT PIPE ABOVE GRADE	⊘	SAFETY VALVE
HWS	HEATING WATER SUPPLY	⊘	2-WAY MODULATING C.V.
HW	HEATING WATER RETURN	⊘	3-WAY MODULATING C.V.
CWS	CHILLED WATER SUPPLY	⊘	WTR FLOW MEASURING DEV.
CWR	CHILLED WATER RETURN	⊘	STRAINER
HP STM	HIGH PRESSURE STEAM	⊘	PRESSURE GAUGE
LP STM	LOW PRESSURE STEAM	⊘	IN LINE PUMP
STM	STEAM	⊘	FLEX CONNECTION
A	COMPRESSED AIR	⊘	THERMOSTAT
G	GAS	⊘	NIGHT THERMOSTAT
OX	OXYGEN	⊘	FLOAT SWITCH
V	VACUUM	⊘	FLOOR DRAIN
RD	ROOF DRAIN	⊘	POINT OF CONNECTION (POC)
FOS	FUEL OIL SUPPLY	⊘	POINT OF DISCONNECTION (PODC)
FOR	FUEL OIL RETURN	⊘	
⊘	PUMP		
⊘	PIPE DOWN		
⊘	PIPE UP		
⊘	BOTTOM PIPE TAKE-OFF		
⊘	TOP PIPE TAKE-OFF		
⊘	CAPPED PIPE		

**GENERAL MECHANICAL DEMOLITION NOTES**

THE FOLLOWING NOTES APPLY TO ALL MECHANICAL SHEETS:

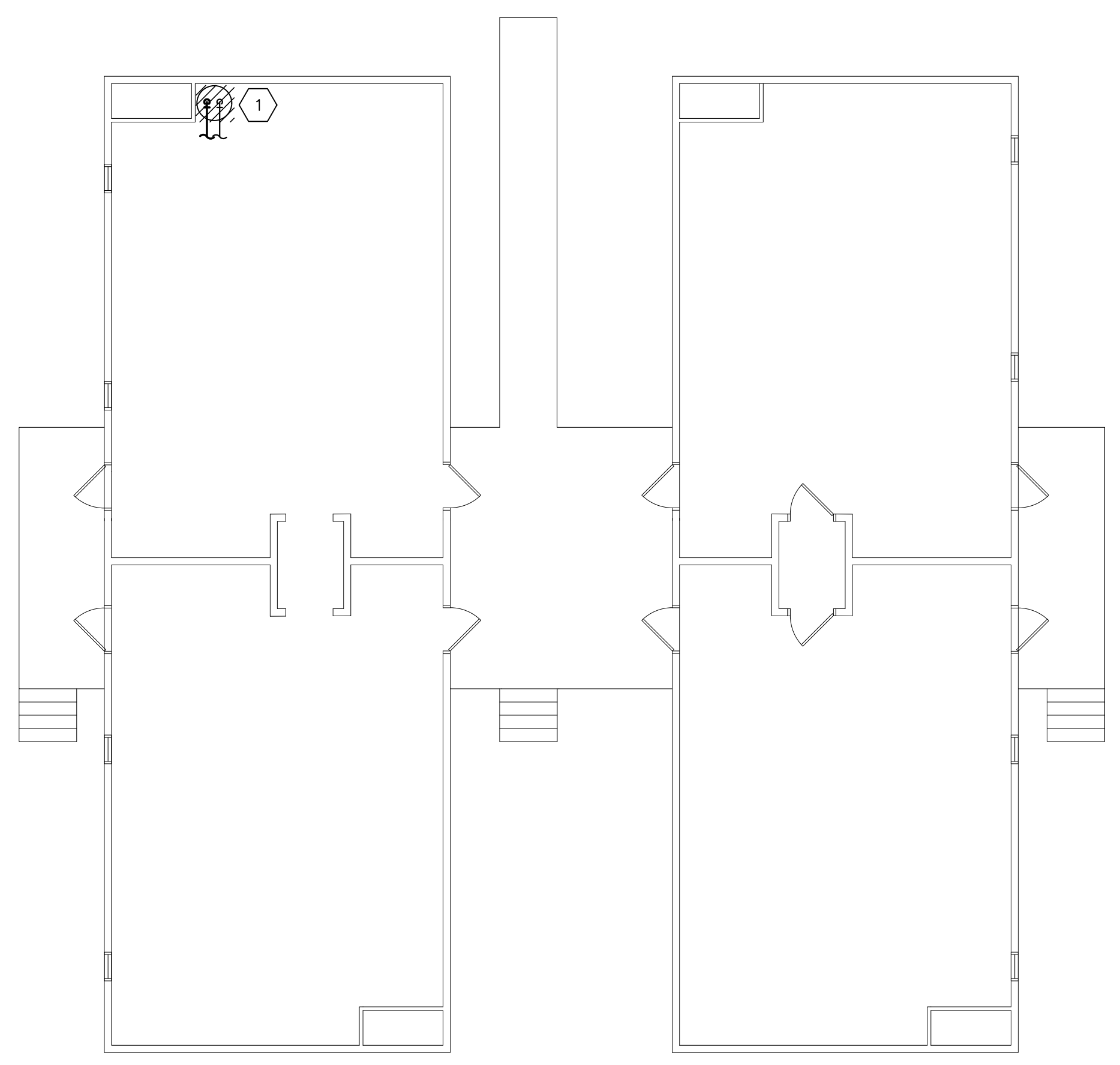
- OWNER HAS FIRST POSSESSION OF ANY AND ALL MECHANICAL EQUIPMENT AND ITEMS BEING REMOVED. IF OWNER DESIRES TO KEEP FIXTURE OR ANY ITEMS THAT HAVE BEEN REMOVED, STORE WHERE DIRECTED BY OWNER. DISPOSE OF ANY ITEMS PROPERLY THAT OWNER DOES NOT DESIRE TO KEEP.
- DEMOLITION DRAWINGS ARE COOPERATIVE IN NATURE. DRAWINGS WERE DEVELOPED USING RECORD DRAWINGS AND ON SITE INVESTIGATIONS. THE MECHANICAL CONTRACTOR (M.C.) IS RESPONSIBLE TO VISIT THE SITE TO VERIFY AND INVESTIGATE ALL CONDITIONS APPLICABLE FOR COMPLETION OF THE CONSTRUCTION WORK. A THOROUGH ON-SITE ANALYSIS OF THE EXISTING CONDITIONS PRIOR TO STARTING WORK TO ASCERTAIN THE FULL SCOPE OF THE DEMOLITION WORK IS REQUIRED.
- THE M.C. IS TO REPORT TO THE ENGINEER IMMEDIATELY IF ANY DISCREPANCIES OR DISCOVERIES ARE MADE DURING THE DEMOLITION PROCESS THAT CONFLICT WITH THE DRAWINGS.
- M.C. SHALL CONTACT THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES, ERRORS, OR OMISSIONS DISCOVERED IN THE DRAWINGS OR SPECIFICATIONS BEFORE PROCEEDING WITH THE WORK. OTHERWISE CORRECTION OF SUCH ITEMS IS THE RESPONSIBILITY OF THE CONTRACTOR.
- ANY WALLS, SURFACES, DOORS, FINISHES, ETC. TO REMAIN THAT ARE DAMAGED BY THE M.C. DURING CONSTRUCTION MUST BE PATCHED, REPAIRED, OR REPLACED TO MATCH THE ADJACENT SURFACES.
- M.C. TO PATCH HOLES IN WALLS AND/OR CEILINGS LEFT BY DEMOD MECHANICAL EQUIPMENT AND PIPING TO MATCH ADJACENT SURFACES.
- ALL WORK REQUIRING EXTENDED INCONVENIENCE TO THE OWNER SHALL BE COORDINATED WITH OWNER 7 DAYS IN ADVANCE OF THE WORK.
- REMOVE ALL ABANDONED OR UNUSED PIPE AND MATERIAL FROM PROJECT AND DISPOSE OF PROPERLY.

**PRIOR APPROVAL SPECIFICATION**

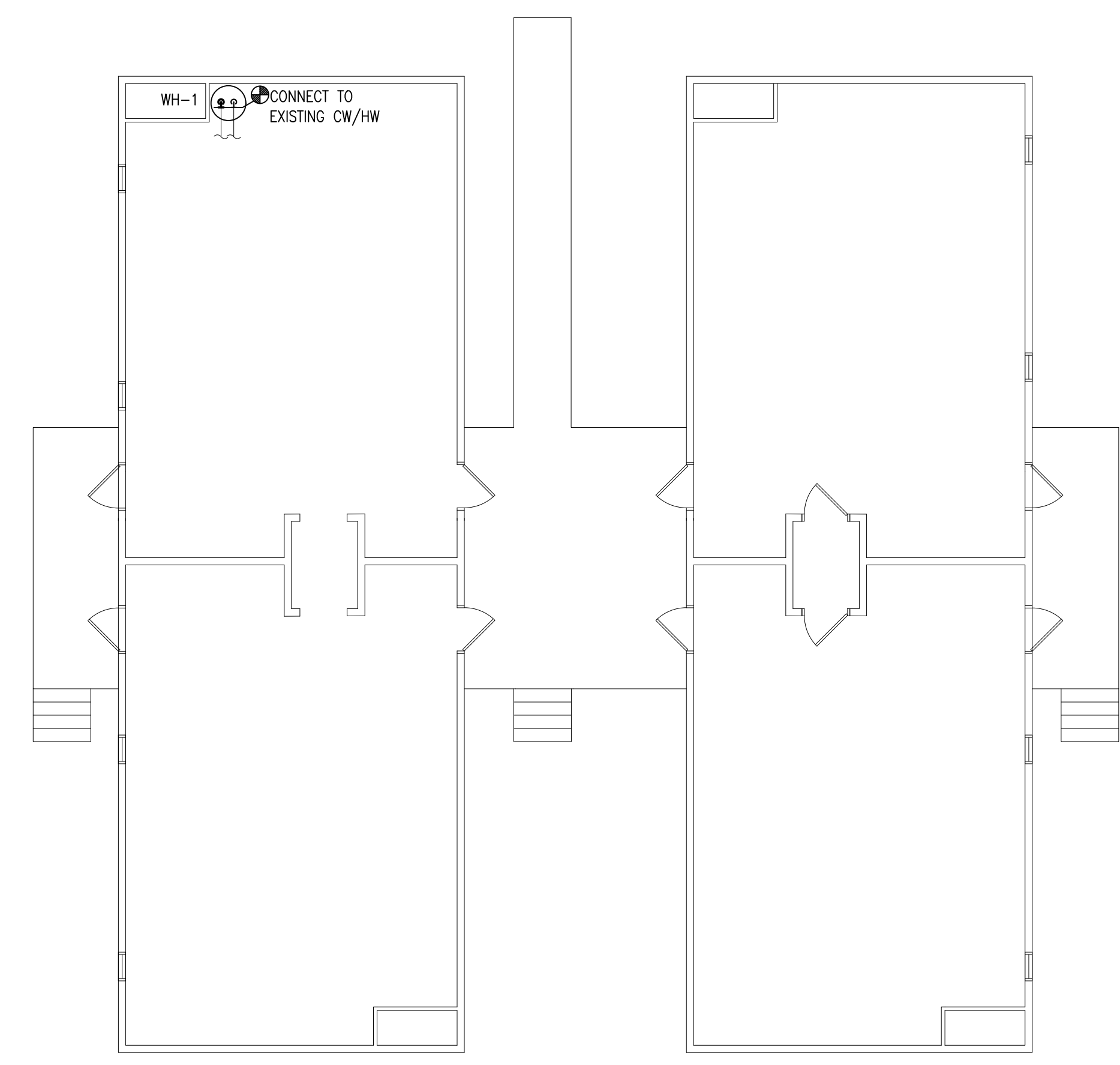
MANUFACTURERS' TRADE NAMES AND CATALOG NUMBERS LISTED ARE INTENDED TO INDICATE THE QUALITY OF EQUIPMENT OR MATERIALS DESIRED. MANUFACTURERS NOT LISTED MUST HAVE PRIOR APPROVAL. WRITTEN PRIOR APPROVAL MUST BE OBTAINED FROM THE ARCHITECT/ENGINEER PRIOR TO BID OPENING. REQUESTS ARE TO BE SUBMITTED SUFFICIENTLY AHEAD OF THE DEADLINE TO GIVE AMPLE TIME FOR EXAMINATION. THE ITEMS APPROVED WILL BE LISTED IN AN ADDENDUM AND ONLY THIS LIST OF EQUIPMENT WILL BE ACCEPTED IN LIEU OF SPECIFIED PRODUCTS. SUBMITTALS MUST INDICATE THE SPECIFIC ITEM OR ITEMS TO BE FURNISHED IN LIEU OF THOSE SPECIFIED, TOGETHER WITH COMPLETE TECHNICAL AND COMPARATIVE DATA ON SPECIFIED ITEMS AND PROPOSED ITEMS.

**KEYED PLUMBING DEMOLITION NOTES**

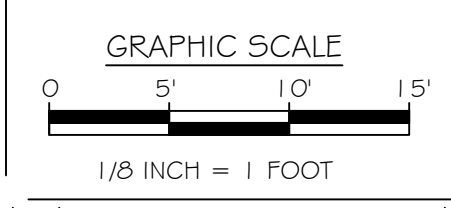
1 REMOVE AND DEMOLISH EXISTING HOT WATER HEATER.



1 MAIN FLOOR PLUMBING DEMO PLAN  
SCALE: 1/8" = 1'-0"



2 MAIN FLOOR PLUMBING REMODEL PLAN  
SCALE: 1/8" = 1'-0"



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**STRUCTURAL**  
HEYER ENGINEERING  
4180 24TH AVENUE S  
FARGO, ND 58104  
(701) 280.0949 OFFICE

**MECHANICAL**  
MARTIN MECHANICAL DESIGN  
1201 25TH AVE N  
FARGO, ND 58102  
(701) 293.7957 OFFICE

**ELECTRICAL**  
CMTA  
2201 12TH ST N STE E  
FARGO, ND 58102  
(701) 280.0500 OFFICE

**CIVIL**  
LOWRY ENGINEERING  
5306 51ST AVE S STE A  
FARGO, ND 58104  
(701) 235.0199 OFFICE

I hereby certify that this drawing, specification or report was prepared by me or under my direct supervision and that I am a duly registered Engineer under the laws of the State of Minnesota.

Date: 12/17/24 Reg. No. 59611

Signed: *Matthew Krueger*  
MATTHEW KRUEGER

DRAWING HISTORY		
NO.	DESCRIPTION	DATE
	CONSTRUCTION DOCUMENTS	12/18/24

DRAWN BY: CJW JN: 2024-105

**MAIN FLOOR PLUMBING DEMO & REMODEL - TROLLWOOD**

SHEET  
**T-M100**



**FARGO PUBLIC SCHOOLS**

**TROLLWOOD PERFORMING ARTS**  
801 50TH AVE S  
MOORHEAD, MN 56560

**STRUCTURAL**  
HEYER ENGINEERING  
4180 24TH AVENUE S  
FARGO, ND 58104  
(701) 280.0949 OFFICE

**ELECTRICAL**  
CMTA  
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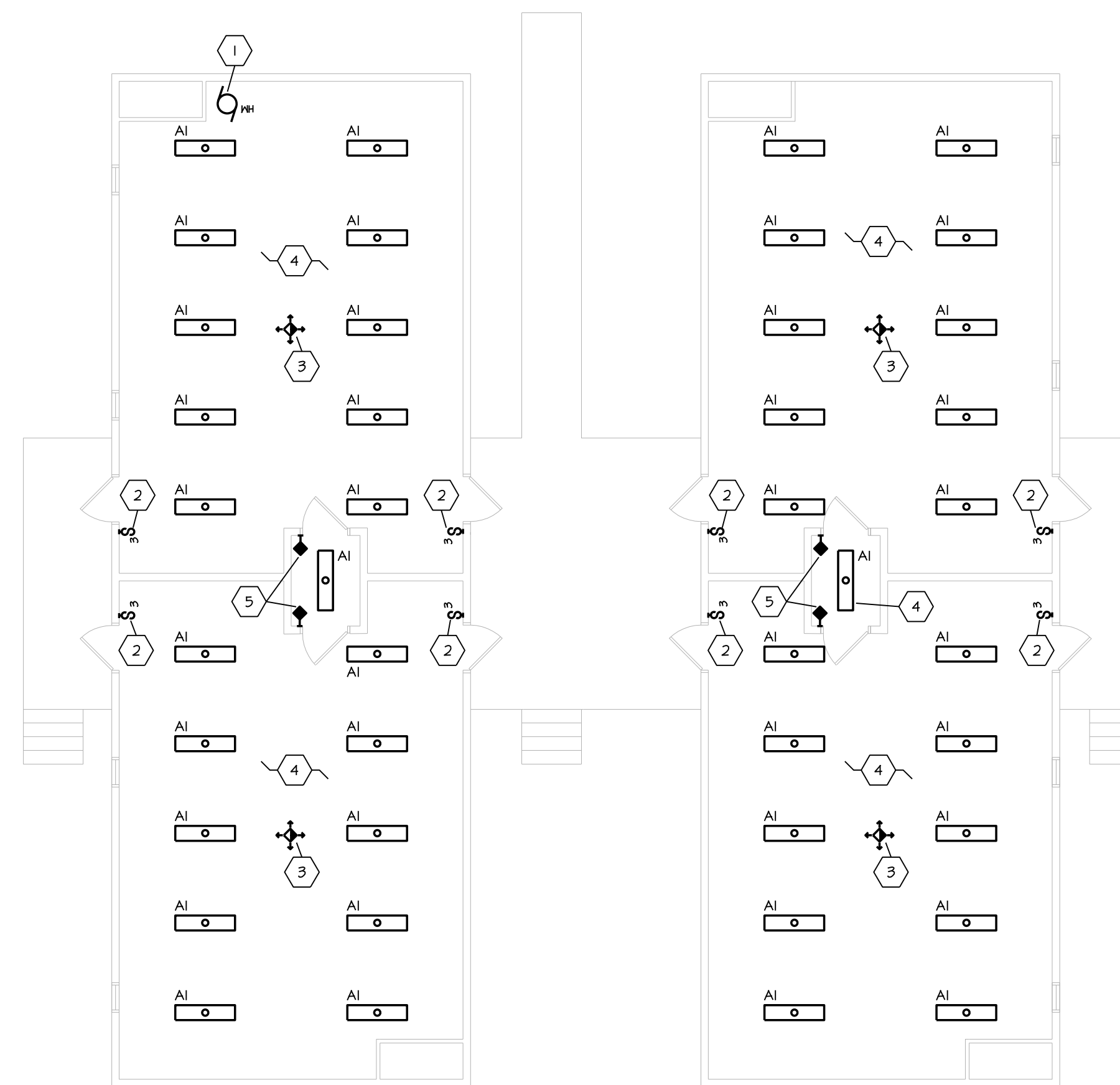
**CIVIL**  
LOWRY ENGINEERING  
1111 WESTRAC DR STE 108  
FARGO, ND 58103  
(701) 235.0199 OFFICE

**GENERAL SHEET NOTES:**

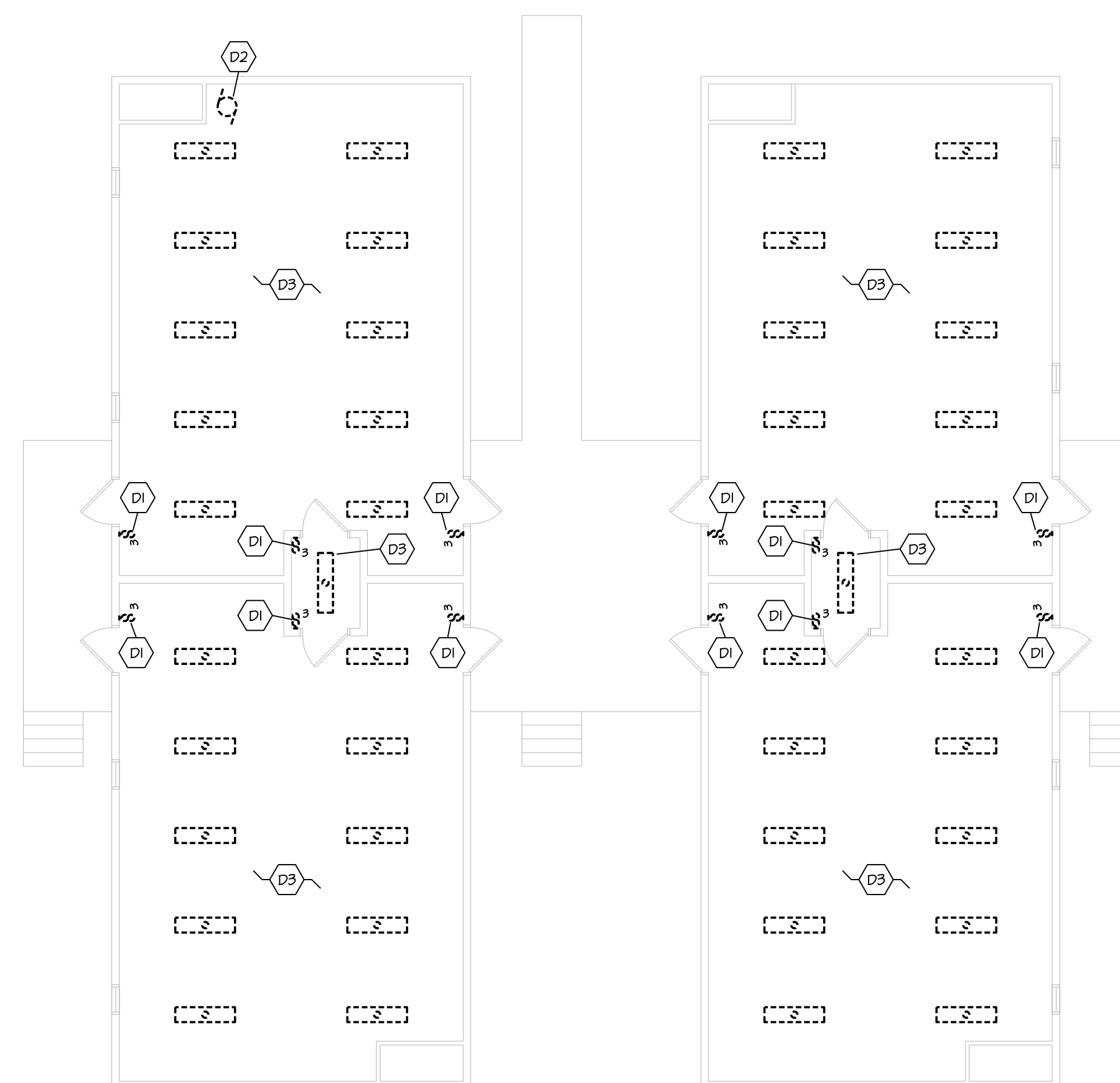
- EG SHALL REPLACE ALL SURFACE CEILING FLUORESCENT LAMPED LIGHT FIXTURES WITH NEW LED SURFACE MOUNT WRAPS, EXTEND / REROUTE CIRCUITING AS REQUIRED FOR NEW LIGHT FIXTURE INSTALLATION. REMOVED FIXTURE ARE TO BE DEMOLISHED.
- FIELD VERIFY VOLTAGE AT LIGHT FIXTURES PRIOR TO ORDERING FIXTURES.
- EQUAL TO: WHERE MATERIALS ARE SPECIFICALLY IDENTIFIED AS "EQUAL TO" AN IDENTIFIED MANUFACTURER'S NAME, MODEL, OR CATALOGUE NUMBERS, MANUFACTURER'S COMPLYING WITH THE REQUIREMENTS OF THE SPECIFICATIONS NOT LISTED MAY BE INCORPORATED IN THE WORK. SUCH MATERIALS MUST BE EQUAL TO OR SUPERIOR, IN ENGINEER'S OPINION, TO THAT SPECIFIED IN CONSTRUCTION, EFFICIENCY, APPEARANCE, AND UTILITY.
- A TYPE A1 - IXX4 SURFACE WRAP LIGHT FIXTURE - EQUAL TO LITHONIA 4INLED, FROSTED ACRYLIC LENS WITH PRISMS ON BOTTOM AND SIDES OF LENS, 150VLT, 3000LM, 3500K COLOR TEMP, DIE FORMED STEEL HOUSING, WHITE REFLECTOR.

**SHEET NOTES:**

- (D1) DISCONNECT, REMOVE AND DEMO LIGHT SWITCH. EG SHALL PREPARE CIRCUIT / SWITCH LEG FOR NEW LIGHT SWITCH.
- (D2) DISCONNECT WATER HEATER FOR REMOVAL BY MC. EG SHALL PREPARE CIRCUITING FOR NEW WATER HEATER.
- (D3) DISCONNECT, REMOVE AND DEMO LIGHT FIXTURES IN ROOM. EG SHALL PREPARE CIRCUITING FOR NEW LED FIXTURE.
- (1) PROVIDE ELECTRICAL CONNECTION TO WATER HEATER, EXTEND / REROUTE CIRCUITING AS REQUIRED FOR NEW ELECTRICAL CONNECTION TO WATER HEATER, WATER HEATER BY MC.
- (2) NEW 3-WAY SWITCH AT EXISTING LOCATION. SWITCH LEG TO BE RECONFIGURED, EXTENDED/REROUTE FOR INSTALLATION OF OCCUPANCY SENSOR.
- (3) PROVIDE DUAL TECH OCCUPANCY SENSOR. SENSOR EQUAL TO WATTSTOPPER DT-355, ROOM OPERATION, MANUAL ON/OFF 3-WAY SWITCHES, AUTO-OFF DIAL TECH CEILING SENSOR.
- (4) EG SHALL EXTEND / REROUTE CIRCUITS IN ROOM AS REQUIRED FOR CONNECTION TO NEW LIGHT FIXTURES.
- (5) MULTI-WAY PIR WALL SENSOR AT EXISTING LOCATION. WALL SENSOR EQUAL TO WATTSTOPPER PIR-301, FINISH TO MATCH EXISTING WALL DEVICES.



**2 PORTABLE CLASSROOM FLOOR PLAN - ELECTRICAL NEW**  
SCALE: 1/8" = 1'-0"



**1 PORTABLE CLASSROOM FLOOR PLAN - ELECTRICAL DEMOLITION**  
SCALE: 1/8" = 1'-0"

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision, and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

REG. NO. 48775 SIGNATURE: *Andrew B. Bartsch*  
DATE: 12/18/24 PRINTED NAME: Andrew B. Bartsch

**DRAWING HISTORY**

NO.	DESCRIPTION	DATE
1	CONSTRUCTION DOCUMENTS	12/18/24

DRAWN BY: DAC/DPH AAB

**Trollwood Performing Arts**  
Portable Classroom Plans -  
Electrical

SHEET  
**T-E101**