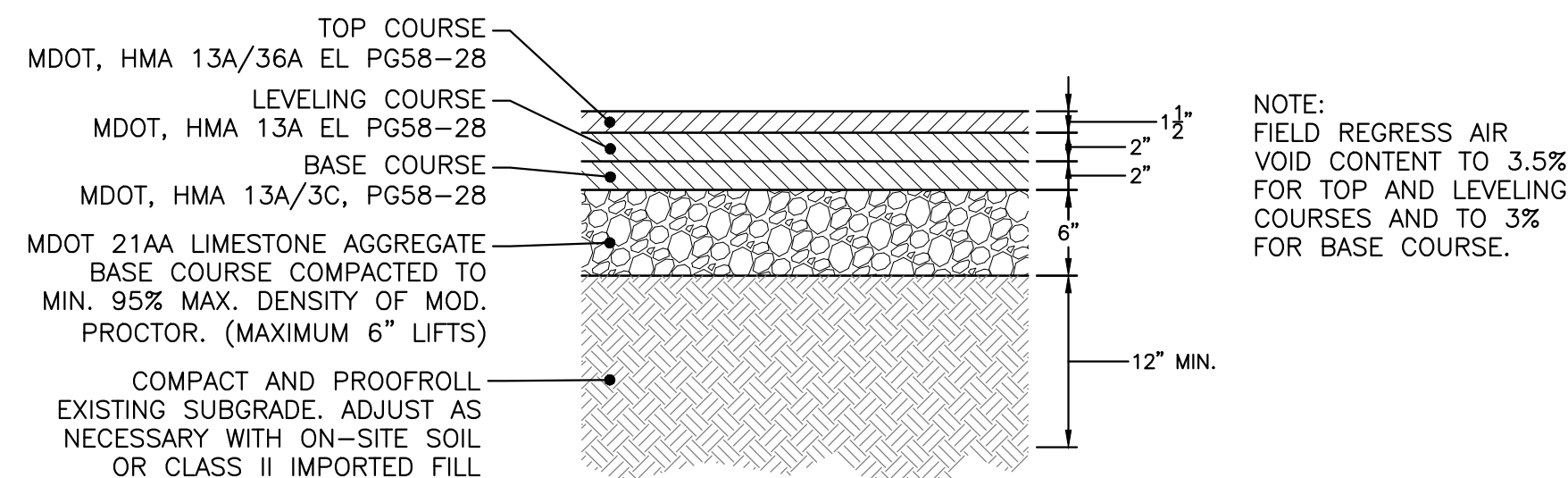
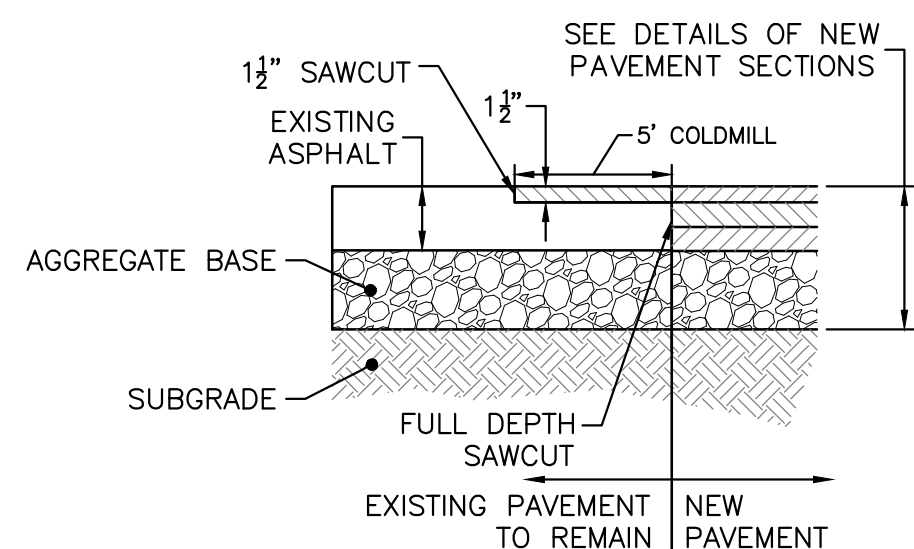


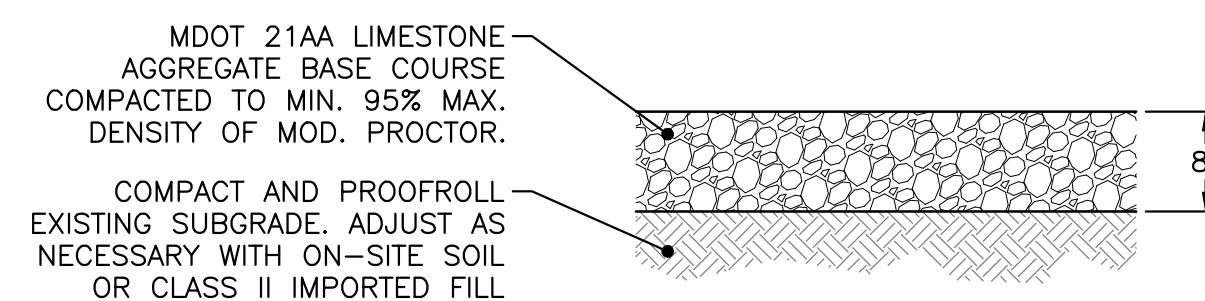
1 FULL DEPTH ASPHALT REMOVAL DETAIL
NOT TO SCALE



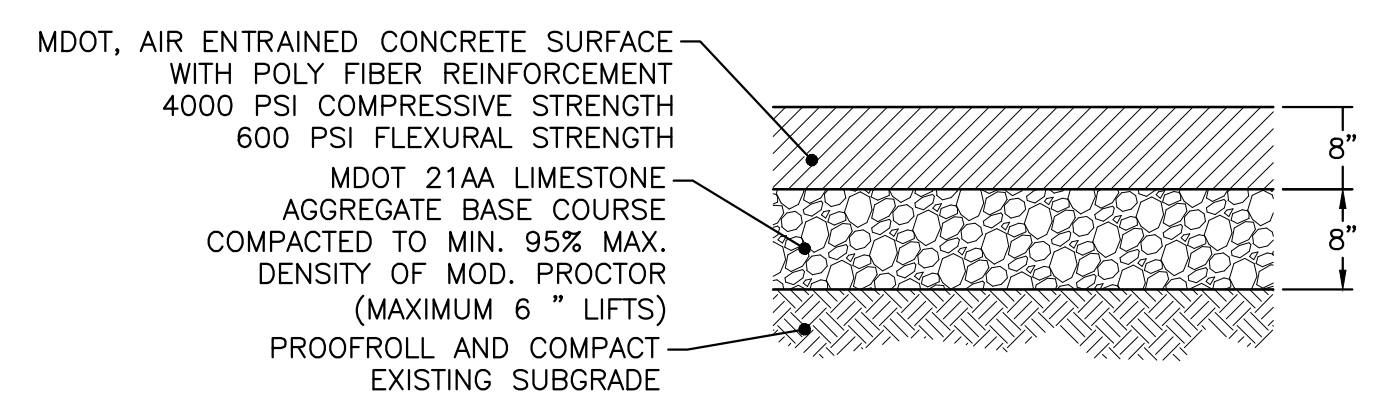
2 HEAVY DUTY ASPHALT PAVEMENT DETAIL
NOT TO SCALE



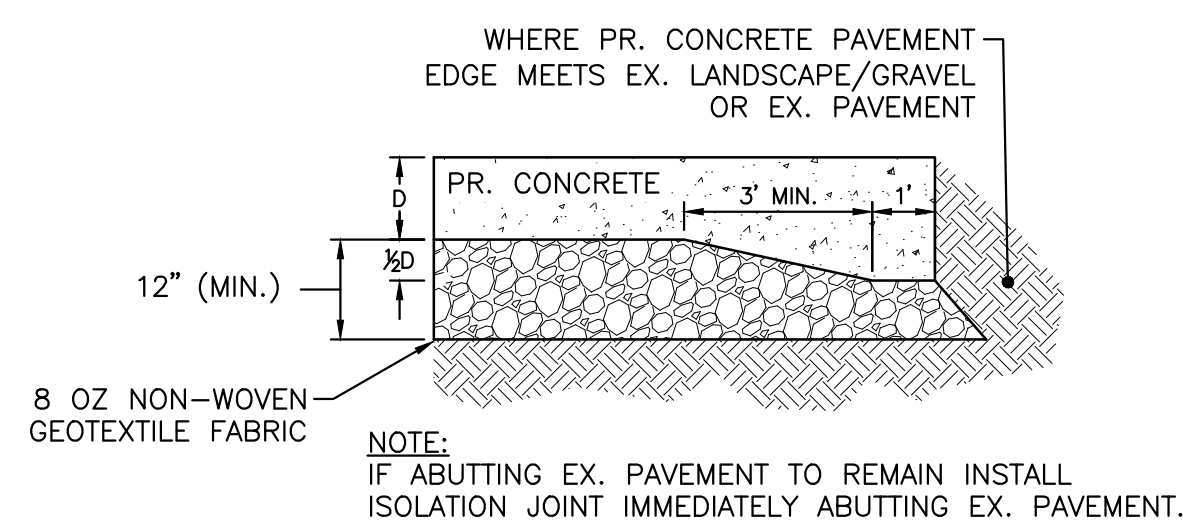
3 ASPHALT BUTT JOINT
NOT TO SCALE



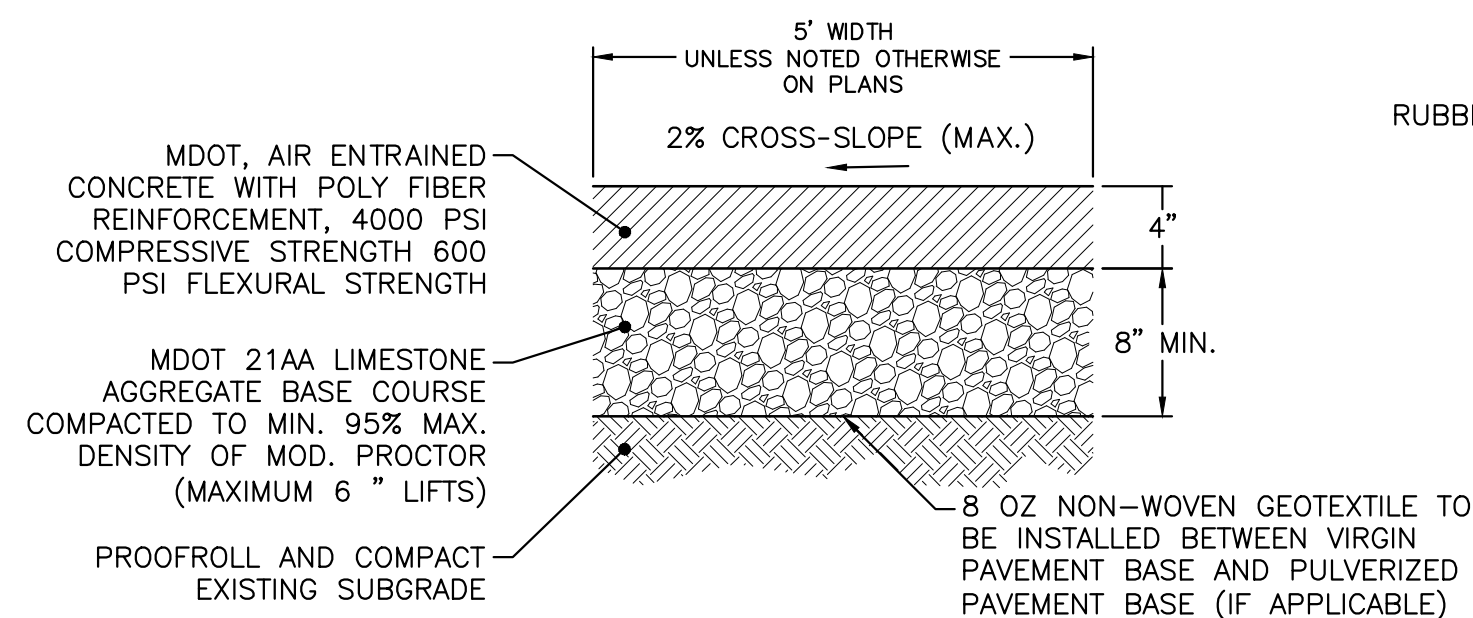
4 GRAVEL DETAIL
NOT TO SCALE



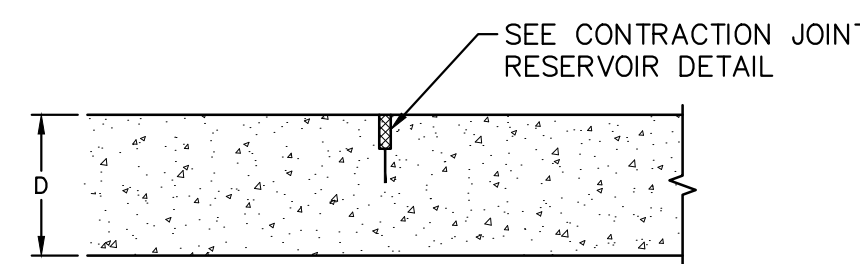
5 CONCRETE PAVEMENT DETAIL
NOT TO SCALE



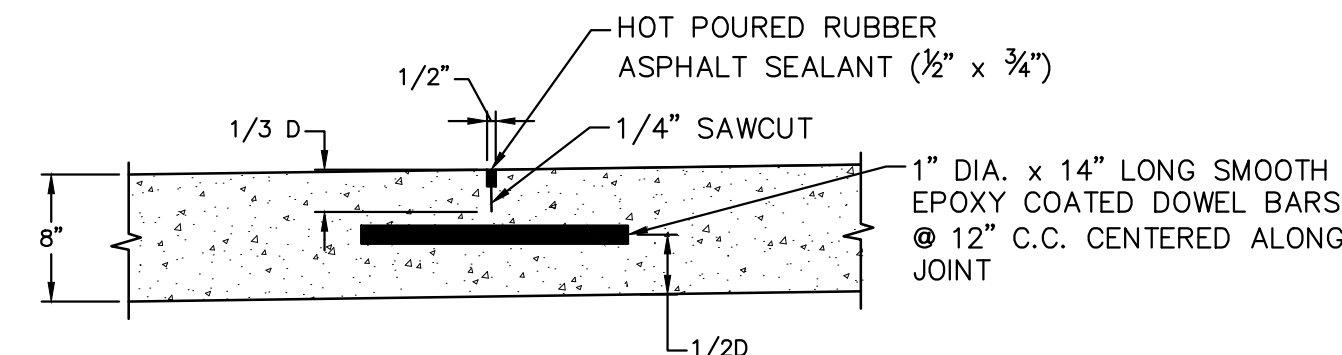
6 THICKENED CONCRETE EDGE
NOT TO SCALE



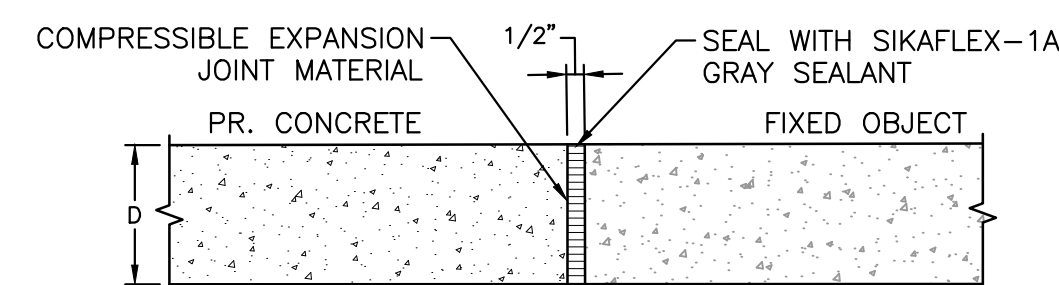
7 SIDEWALK PAVEMENT DETAIL
NOT TO SCALE



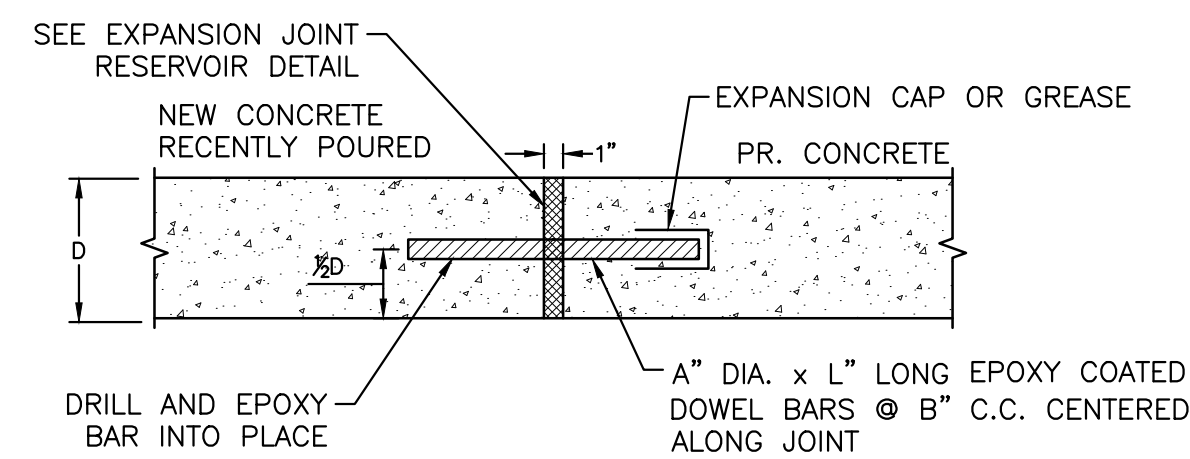
8 CONTRACTION JOINT
NOT TO SCALE



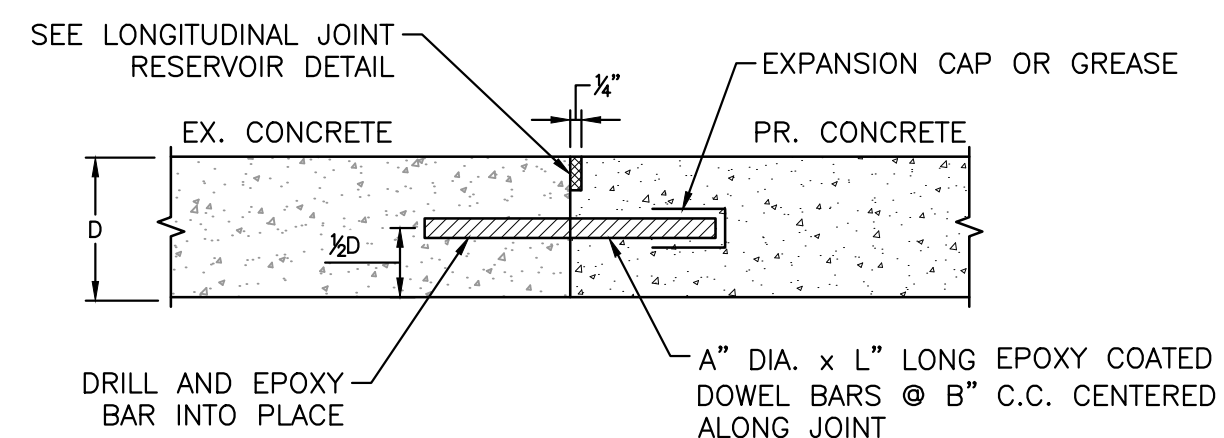
9 DOWELED CONTRACTION JOINT
NOT TO SCALE



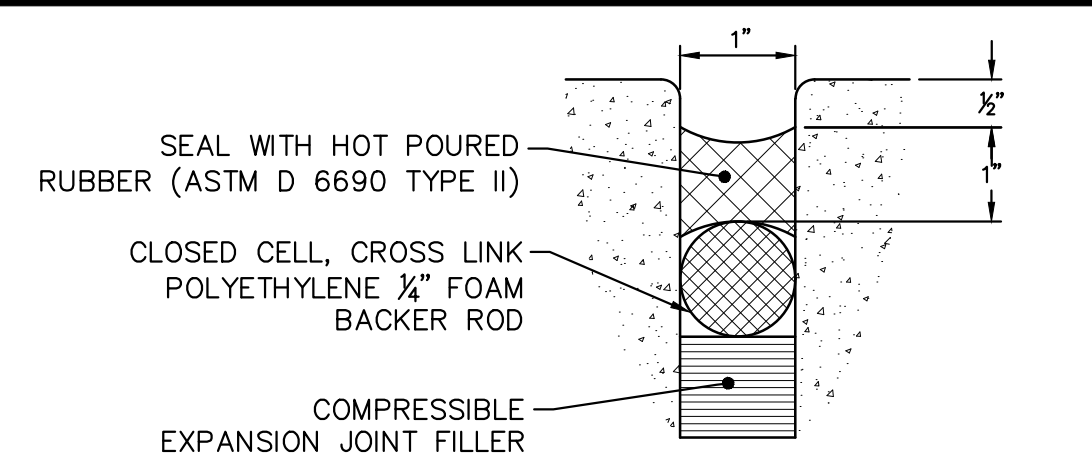
10 ISOLATION JOINT
NOT TO SCALE



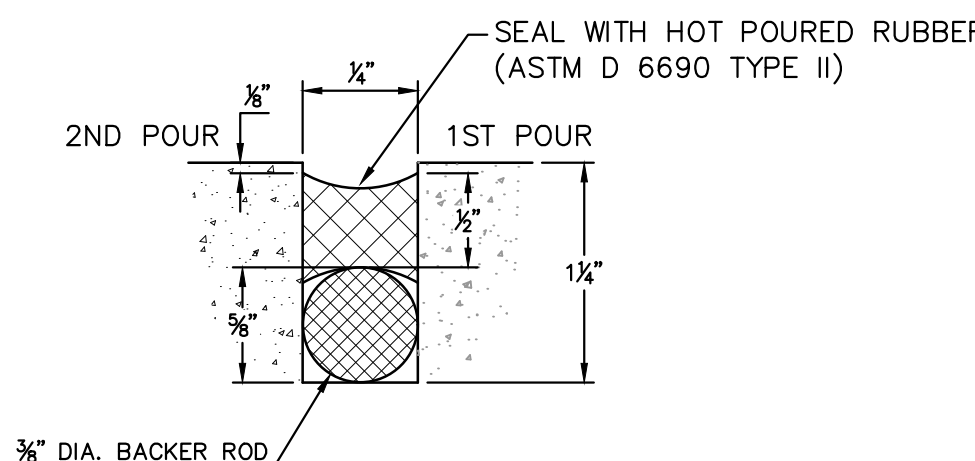
11 EXPANSION JOINT
NOT TO SCALE



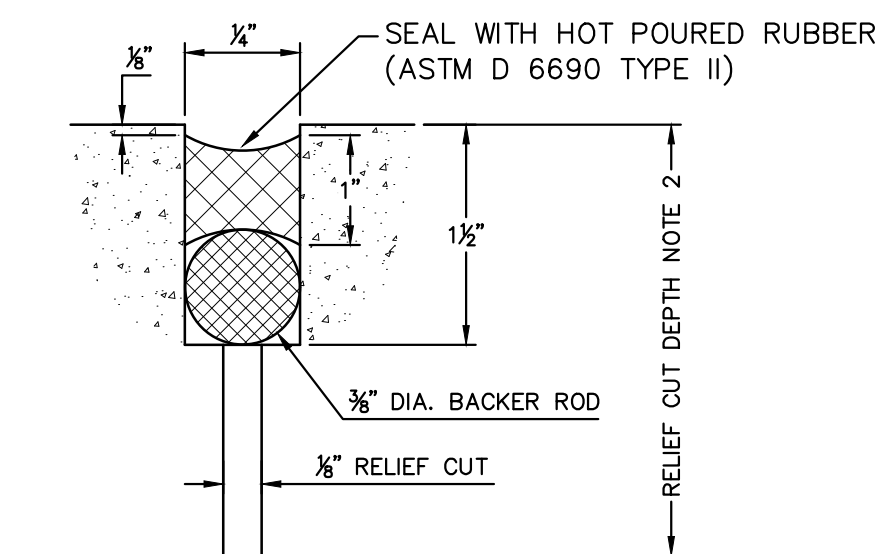
12 DOWELED JOINT
NOT TO SCALE



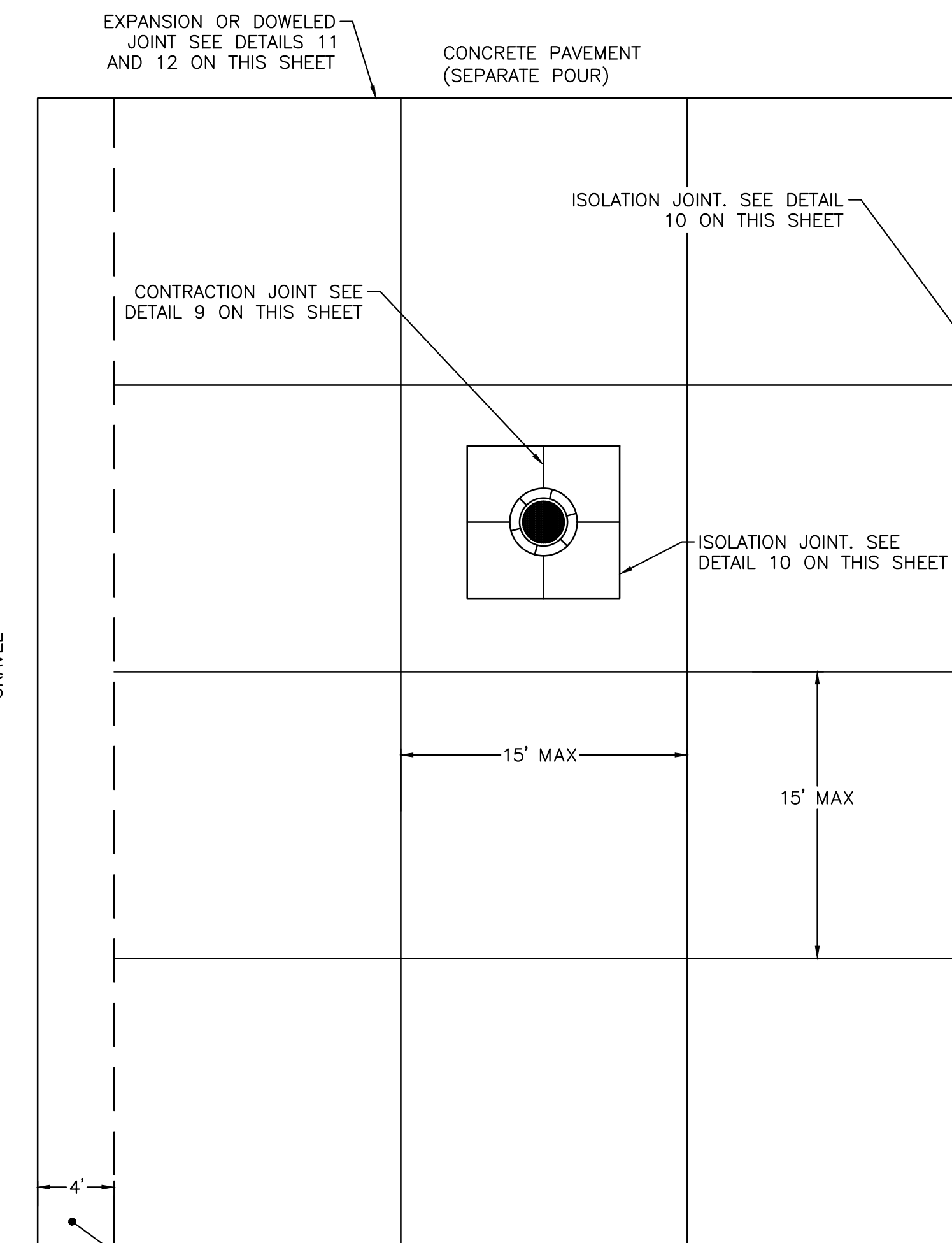
13A EXPANSION JOINT RESERVOIR
NOT TO SCALE



13B LONGITUDINAL JOINT RESERVOIR
NOT TO SCALE



13C CONTRACTION JOINT RESERVOIR
NOT TO SCALE



SLAB DEPTH (IN.) (D)	DOWEL SIZE AND SPACING					
	DOWEL DIMENSIONS (IN.) (A x L)			DOWEL SPACING CENTER-TO-CENTER (IN.) (B)		
	ROUND	SQUARE	RECTANGULAR	ROUND	SQUARE	RECTANGULAR
5 TO 6	3/4 X 14	3/4 X 14	3/4 X 2 X 12	12	14	19
7 TO 8	1 X 16	1 X 16	1/2 X 2-1/2 X 12	12	14	18
9 TO 11	1-1/2 X 18	1-1/2 X 32	3/4 X 2-1/2 X 12	12	12	18

- NOTES:**
- APPLICATION OF DOWEL BAR SIZE AND SPACING DIMENSIONS NOTED IN JOINTING DETAILS.
 - CONTRACTOR SHALL SUBMIT A SITE-SPECIFIC PROPOSED JOINTING PLAN TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.

14 GENERIC JOINTING DETAIL PLAN
NOT TO SCALE

BEFORE YOU DIG
CALL MISS DIG
1-800-482-7171
For the location of public utility lines.
ALTERNATE NUMBER (811)
TOLL FREE FOR UTILITY LOCATING

SEAL/STAMP:



REVISION BLOCK	
REV	DATE DESCRIPTION

SUBMITTAL LOG	
DATE	PACKAGE NAME
2023-12-19	75% DRAWINGS
2024-03-06	90% DRAWINGS
2025-01-31	ISSUED FOR BID

PROJECT NAME:
**MDOT DETROIT GARAGE
STORM SEWER
RECONSTRUCTION**

PROJECT LOCATION:
**1500 E. FERRY STREET
DETROIT, MICHIGAN**

DESIGNED BY: KBH	NTH PROJECT NO.: 23001451
DRAWN BY: KBH	SHEET SIZE: ARCH D (24"x36")
CHECKED BY: SLG, DRL	DATE: 1/31/2025
CAD FILE NAME: 23001451-DET	

SHEET TITLE:
**CIVIL DETAILS (SHEET 1
OF 6)**

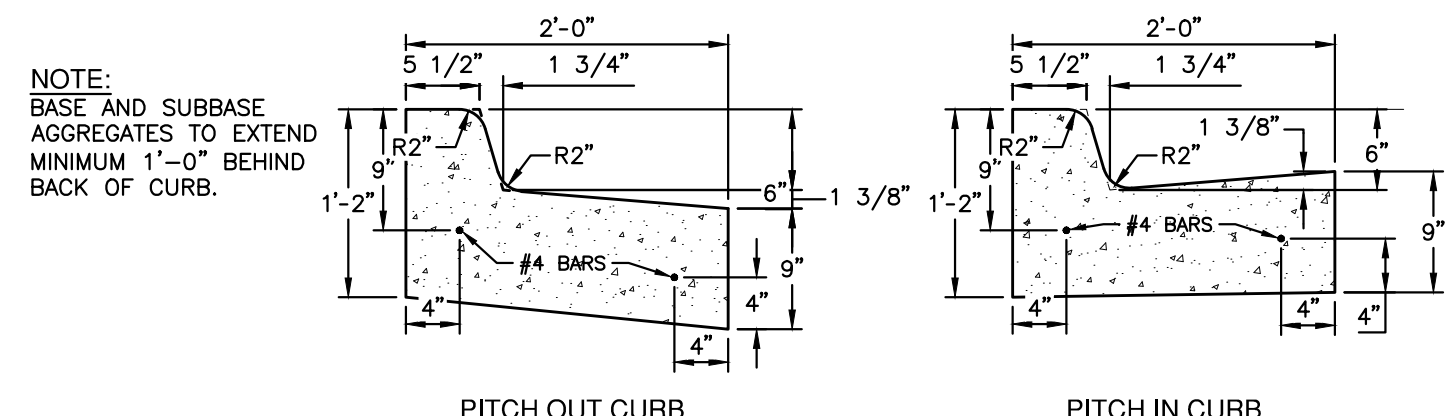
SHEET NUMBER:
C-501

BID

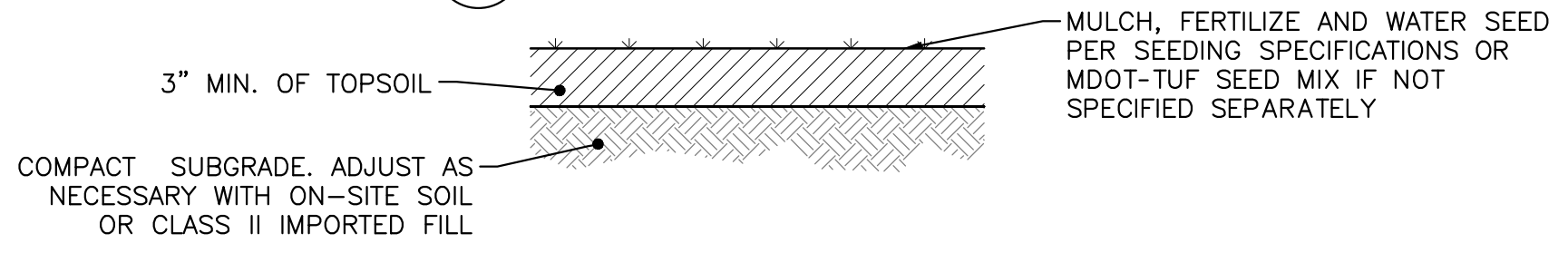
DTMB FILE NO. 591 22274.MNB



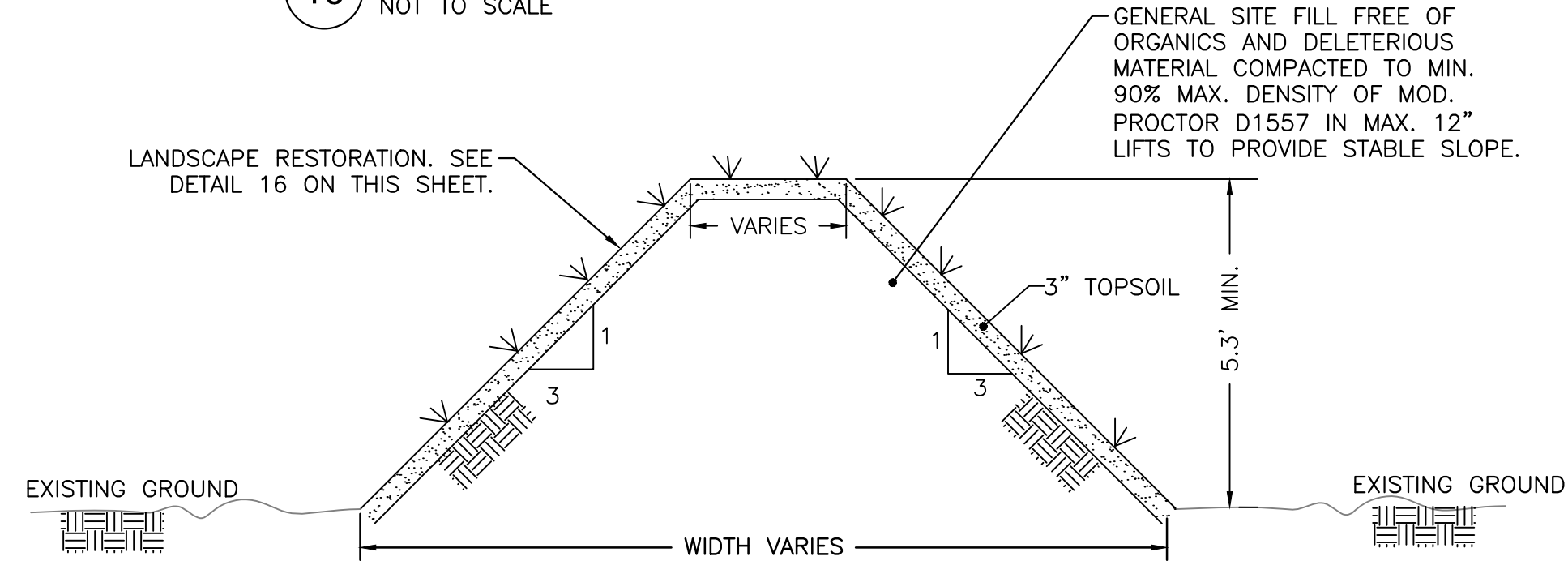
STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
STATE FACILITIES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LACH, RA, DIRECTOR



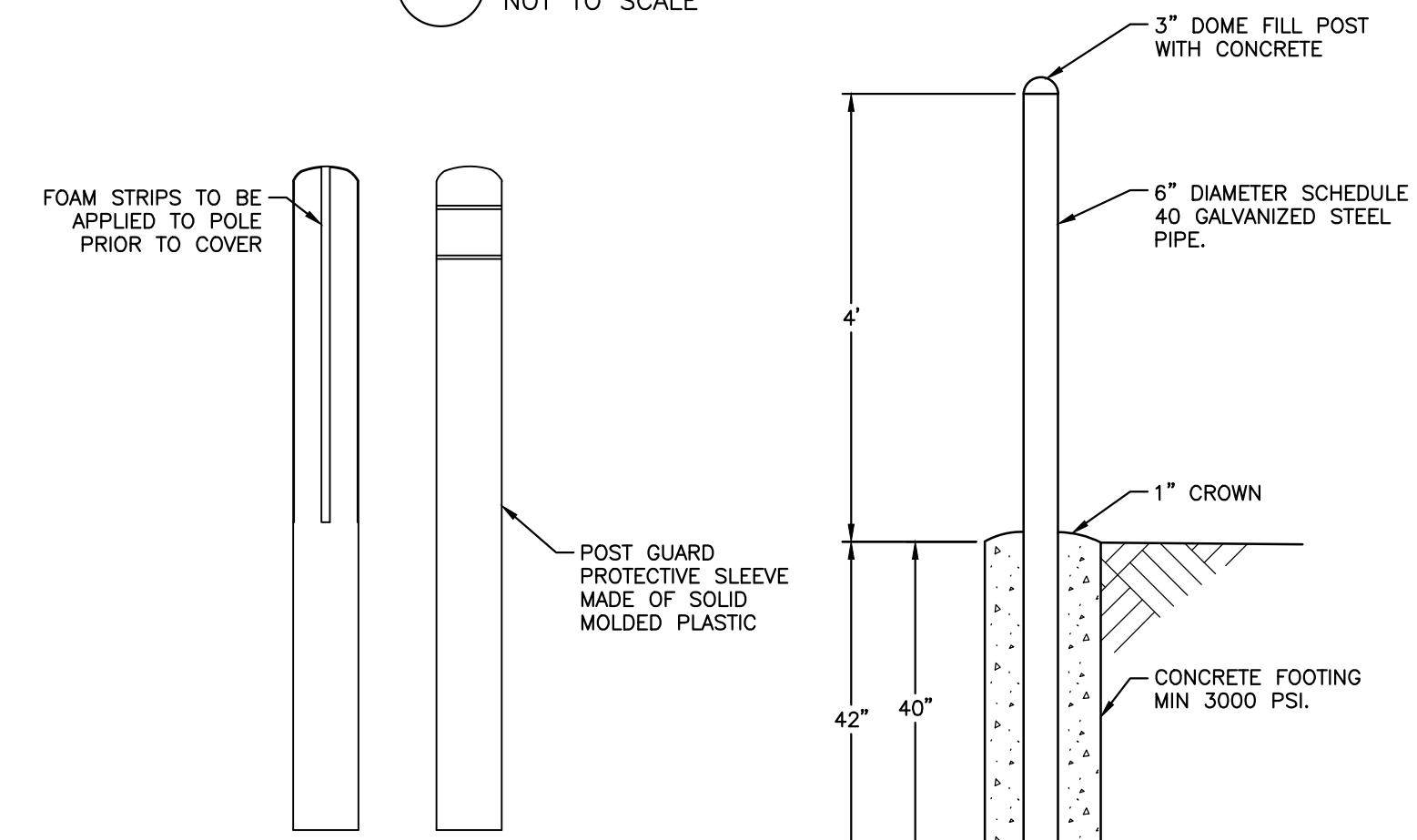
15 6" CURB DETAIL
NOT TO SCALE



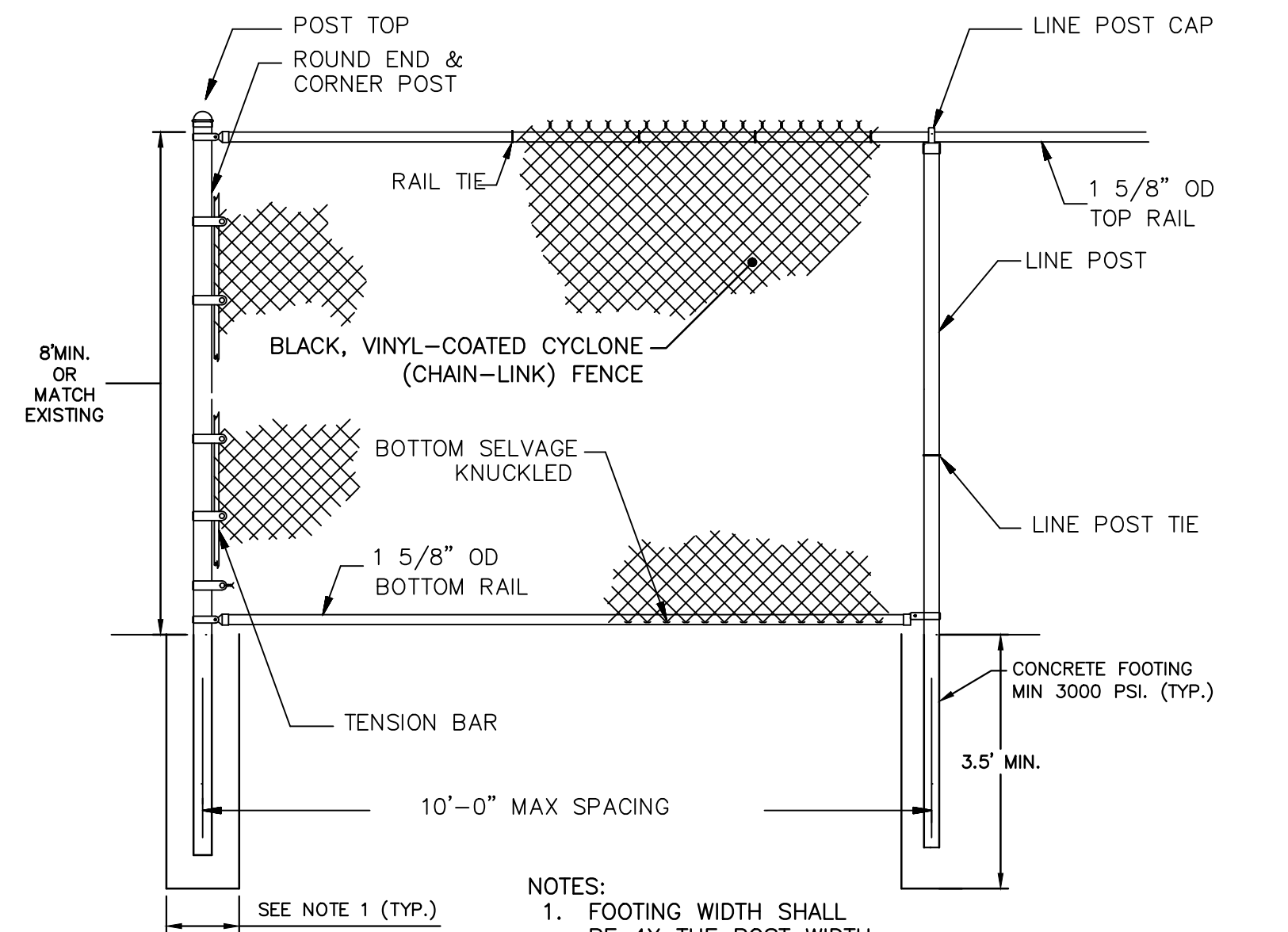
16 LANDSCAPE RESTORATION DETAIL
NOT TO SCALE



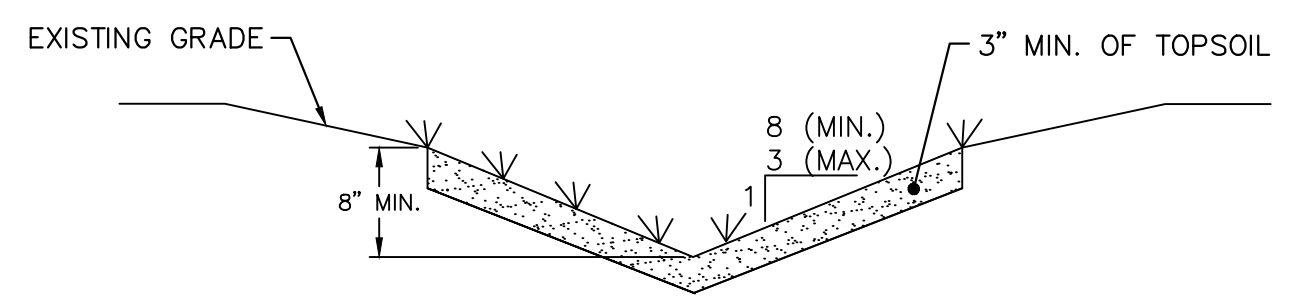
17 PERIMETER BERM DETAIL
NOT TO SCALE



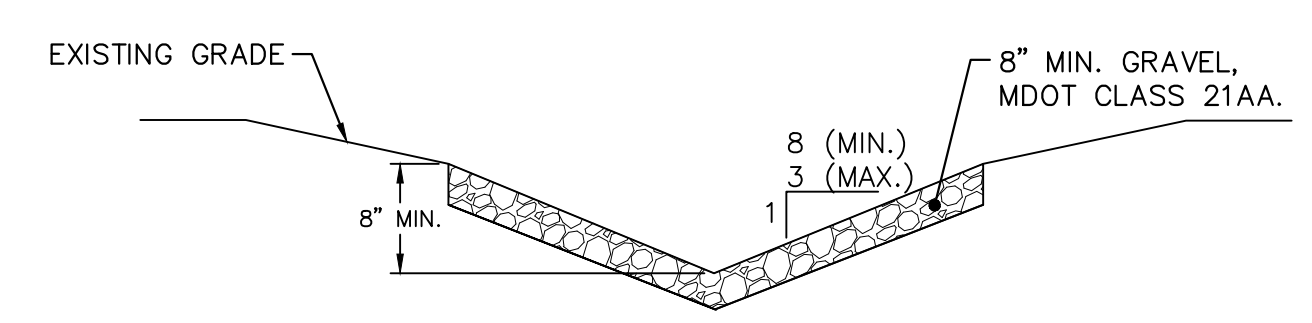
18 BOLLARD AND SLEEVE
NOT TO SCALE



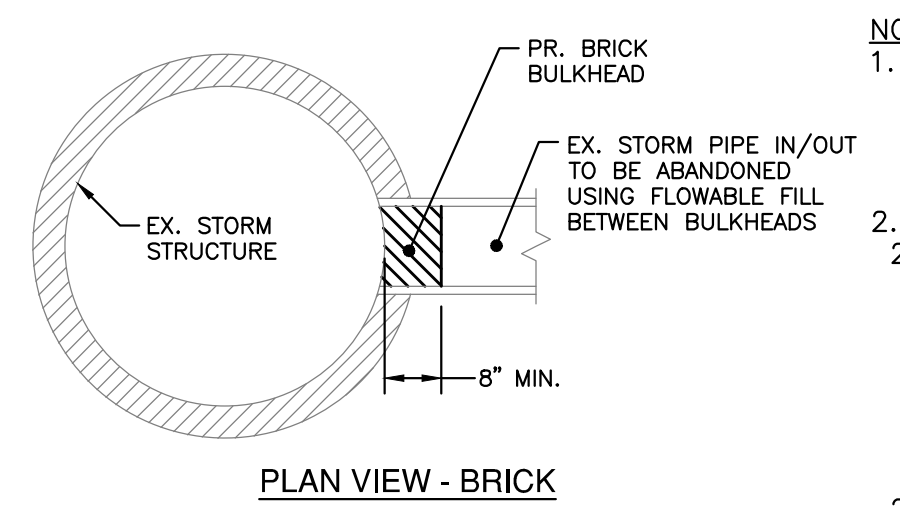
19 CHAINLINK FENCE DETAIL
NOT TO SCALE



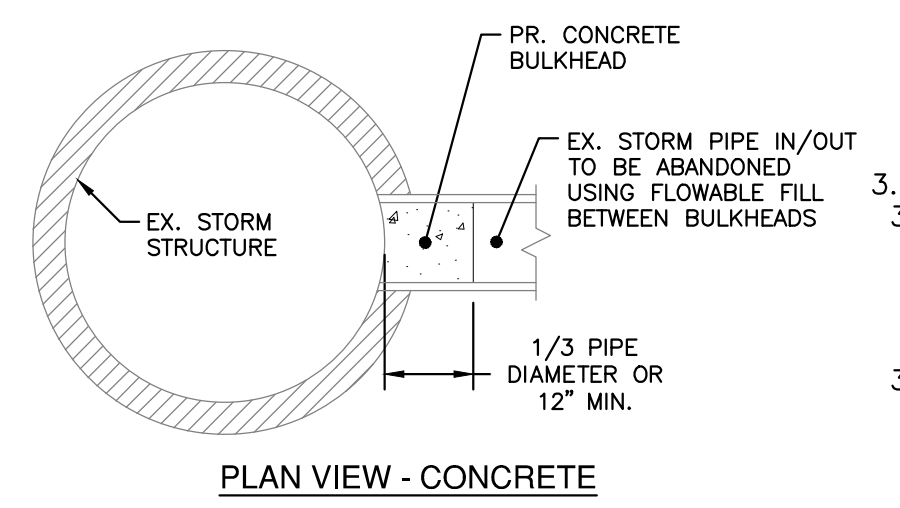
20A DRAINAGE SWALE
NOT TO SCALE



20B DRAINAGE SWALE
NOT TO SCALE



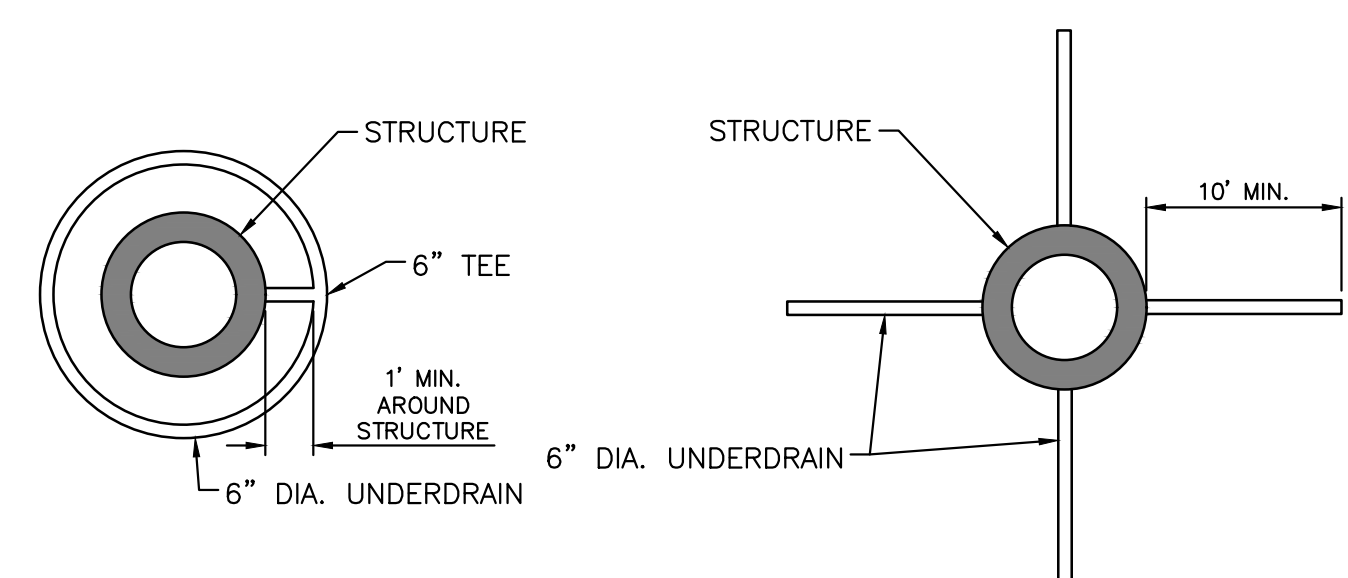
PLAN VIEW - BRICK



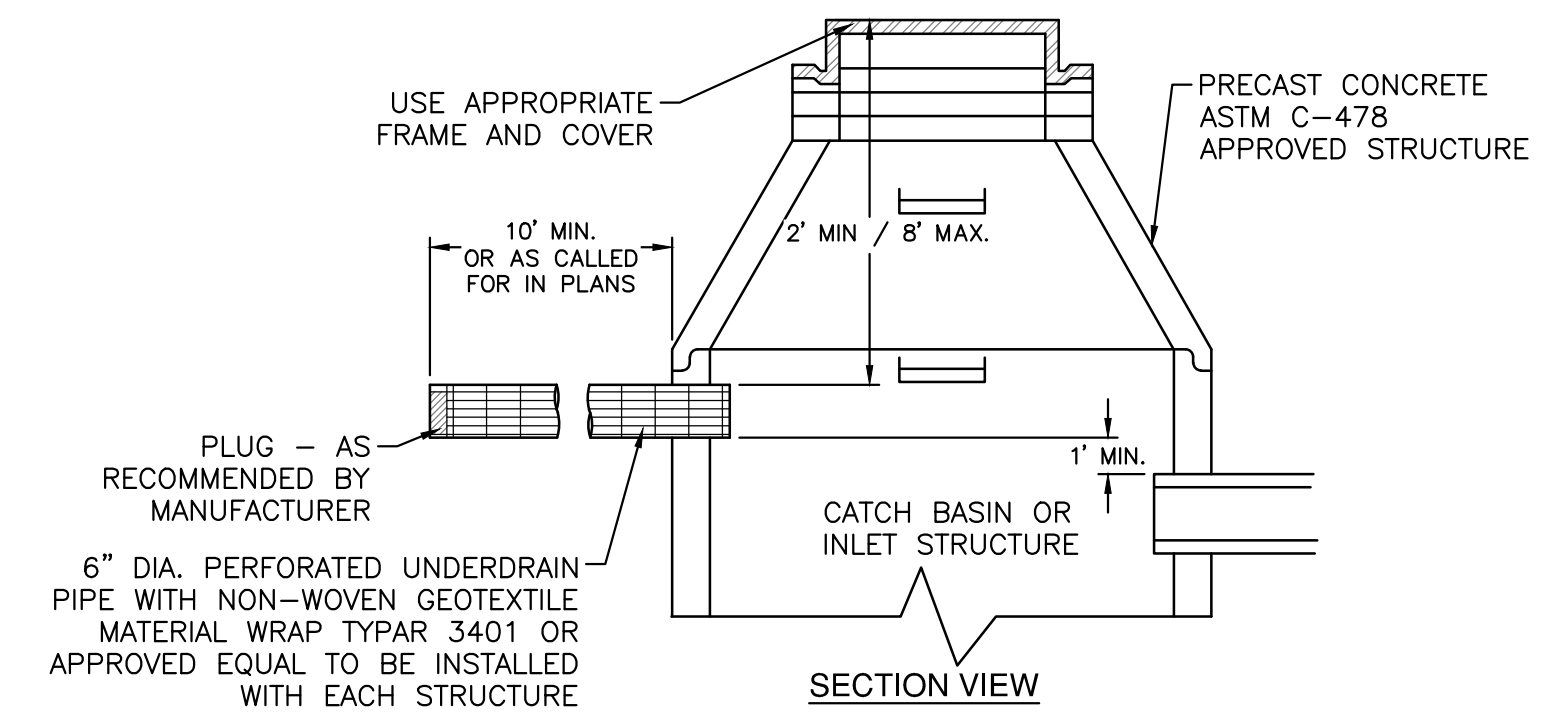
PLAN VIEW - CONCRETE

- NOTES**
- SEWER BULKHEADS SHALL BE CONSTRUCTED OF BRICK OR CONCRETE TO THE SPECIFIED THICKNESS AS SHOWN ON THE PLANS OR AS INDICATED BELOW.
 - BRICK BULKHEADS
 - THE SURFACE CONTACT OF THE SEWER WALL WITH THE BULKHEAD SHALL BE ROUGHENED BY BRUSH, HAMMERING, OR CHISELING AND THEN CLEANED JUST PRIOR TO BULKHEAD CONSTRUCTION. SUCH BULKHEADS SHALL BE VERTICAL WITH ALTERNATE HEADER AND STRETCHER COURSES LAID IN MORTAR.
 - VERTICAL JOINTS IN ADJACENT COURSE SHALL BE STAGGERED. BRICK SHALL BE LAID WITH FULL MORTAR JOINTS. ALL AVAILABLE BEARING AREAS SHALL BE COVER WITH MORTAR SPREAD IN AN EVEN LAYER WITHOUT SPLITTING OR FURROWING, AND ALL VERTICAL AND INTERIOR JOINTS SHALL ALSO BE SOLIDLY FILLED WITH MORTAR. BULKHEADS SHALL BE CONSTRUCTION AS PLUMB AS IS PRACTICAL.
 - CONCRETE BULKHEADS
 - ALL BULKHEADS SHALL BE CONSTRUCTED WITH CONCRETE PER PROJECT SPECIFICATION TO A THICKNESS OF AT LEAST ONE-THIRD THE DIAMETER OF THE PIPE BUT IN NO CASE LESS THAN 12". ALL SLUDGE AND DEBRIS SHALL BE REMOVED BEFORE BULKHEAD CONSTRUCTION. SEWER WALLS SHOULD BE BRUSH-CLEANED BEFORE CONCRETE BULKHEADS ARE PLACED.

21 SEWER BULKHEAD DETAIL
NOT TO SCALE



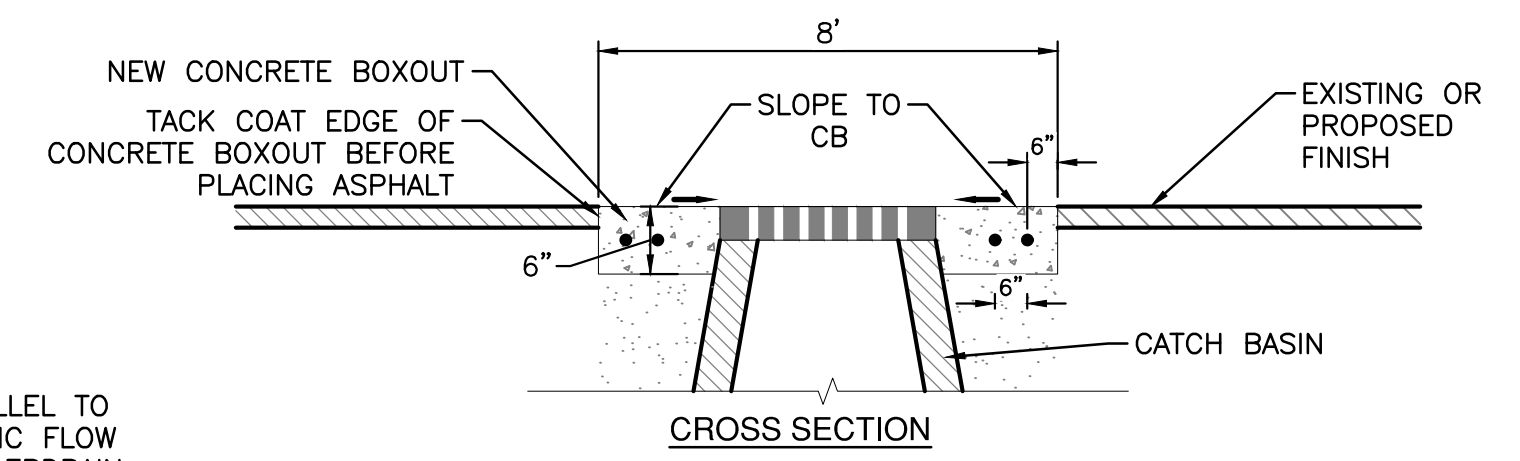
ACCEPTABLE UNDERDRAIN CONFIGURATIONS
PLAN VIEW



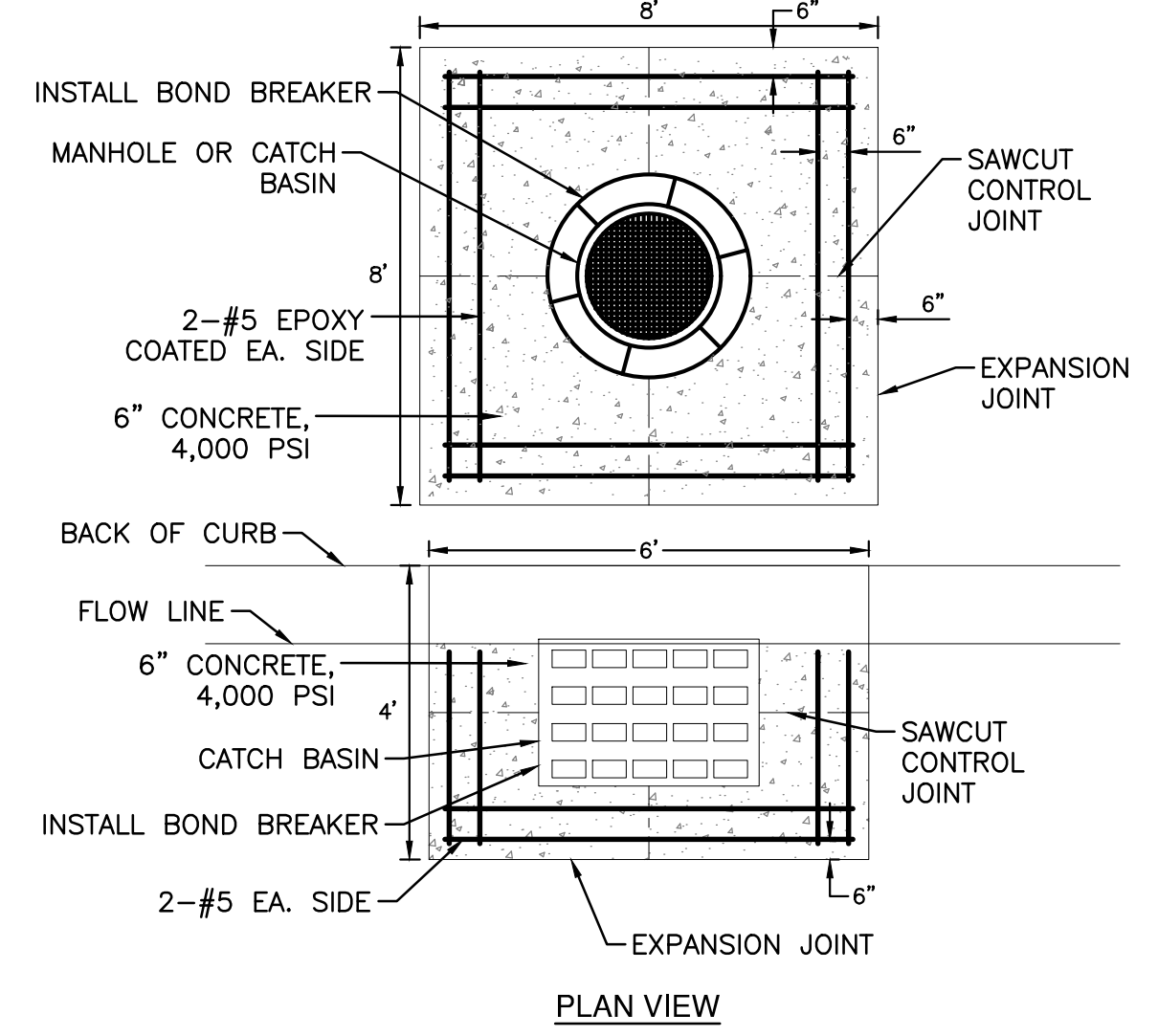
SECTION VIEW

NOTE: UNDERDRAIN BACKFILL SHALL MEET MDOT REQUIREMENTS FOR 34R OPEN GRADED DRAINAGE COURSE AGGREGATES. THIS BACKFILL SHALL EXTEND 4" BELOW PIPE TO LEVEL OF 21AA LIMESTONE, AND FOR FULL WIDTH OF TRENCH.

22 STRUCTURE UNDERDRAIN
NOT TO SCALE



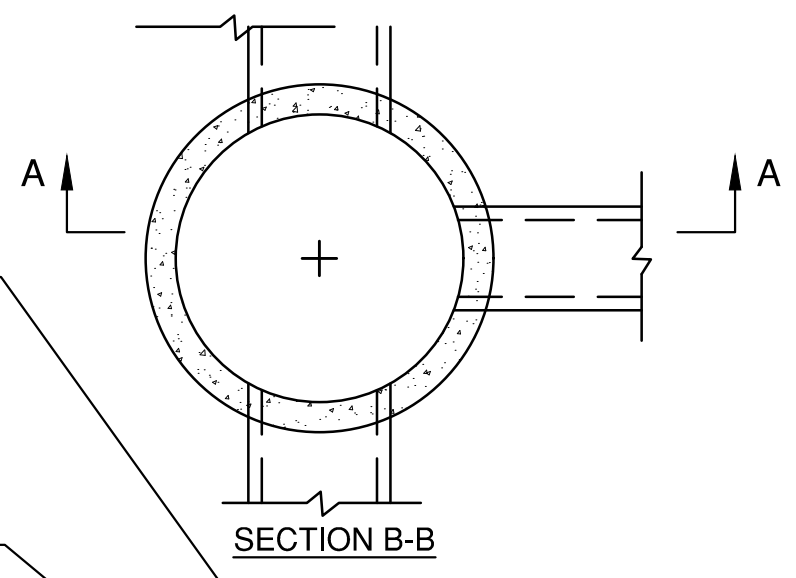
CROSS SECTION



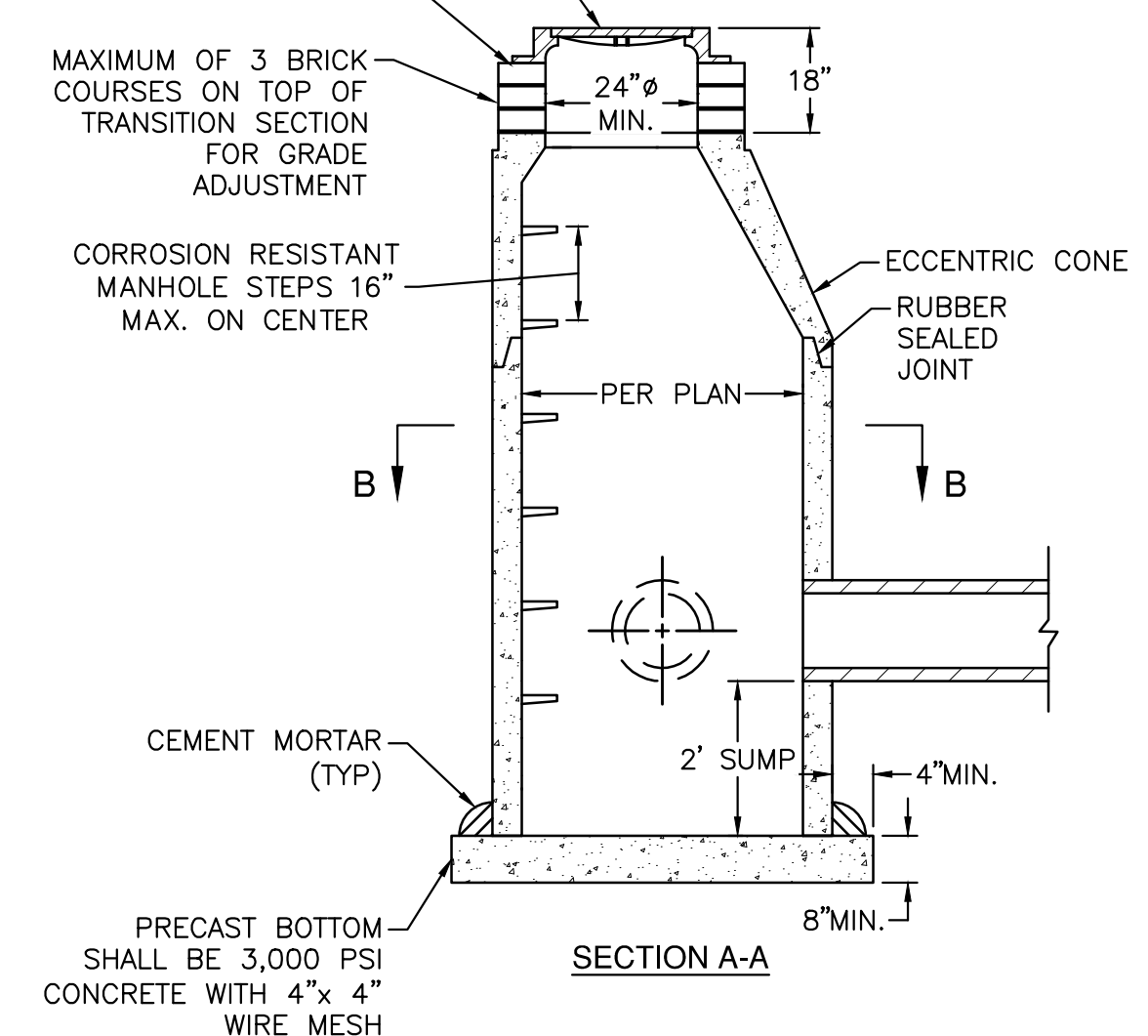
PLAN VIEW

23 CONCRETE COLLAR DETAIL
NOT TO SCALE

- EJRW HEAVY DUTY FRAME AND COVER (AS STATED BELOW OR ENGINEER-APPROVED EQUAL):
- YARD BASIN (YB): 1040 TYPE O2
 - CATCH BASIN (CB): 1040 TYPE M1
 - MANHOLE (MH): 1040 TYPE B, (16 HOLES FOR STORM MH, SOLID COVER FOR NON STORM MH)



SECTION B-B



SECTION A-A

- NOTES:**
- MANHOLE SECTIONS SHALL MEET ASTM C478.
 - PIPE JOINTS SHALL BE RUBBER GASKET ASTM C-443-T2 WITH INSIDE CEMENT POINTING.
 - MANHOLE SHALL BEAR ON FIRM SUBGRADE (NOT SITE FILL) OR MIN. 3" OF COMPACTED MDOT CLASS II SAND.

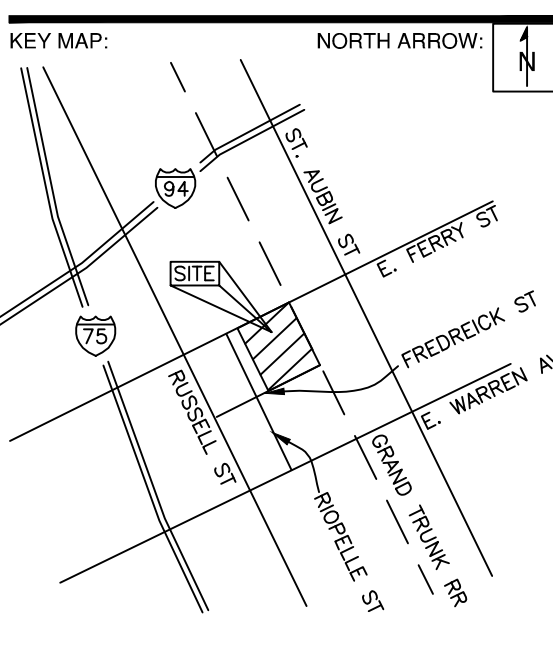
24 PRE-CAST CONCRETE STRUCTURE WITH SUMP
NOT TO SCALE

BID

DTMB FILE NO. 591 22274.MNB

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
STATE FACILITIES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LACH, RA, DIRECTOR

SEAL/STAMP:



REVISION BLOCK	
REV	DATE/DESCRIPTION

SUBMITTAL LOG	
DATE	PACKAGE NAME
2023-12-19	75% DRAWINGS
2024-03-06	90% DRAWINGS
2025-01-31	ISSUED FOR BID

PROJECT NAME:
**MDOT DETROIT GARAGE
STORM SEWER
RECONSTRUCTION**

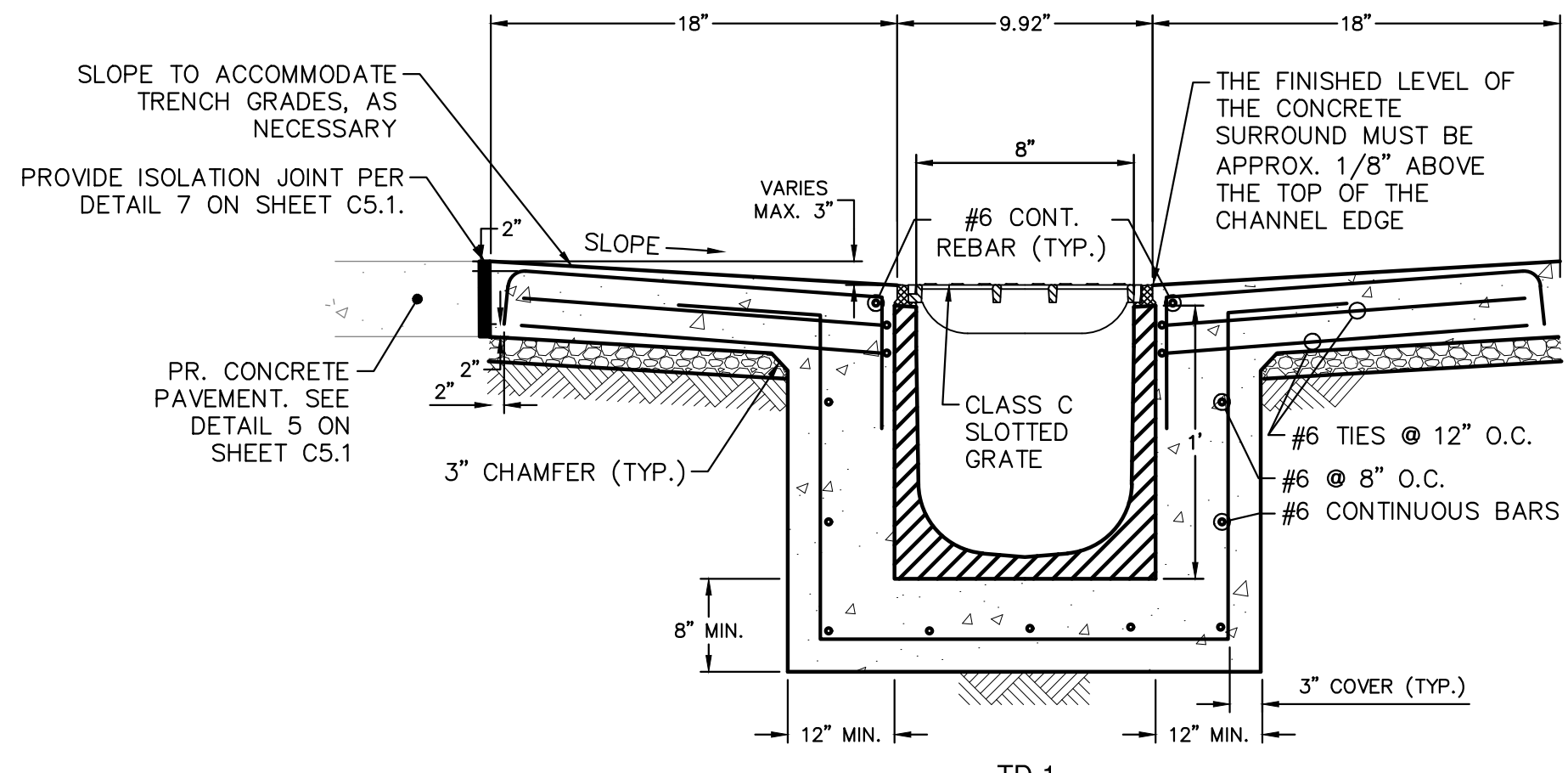
PROJECT LOCATION:
**1500 E. FERRY STREET
DETROIT, MICHIGAN**

DESIGNED BY: KBH	NTH PROJECT NO.: 23001451
DRAWN BY: KBH	SHEET SIZE: ARCH D (24"x36")
CHECKED BY: SLG, DRL	DATE: 1/31/2025
CAD FILE NAME: 23001451-DET	

SHEET TITLE:
**CIVIL DETAILS (SHEET 2
OF 6)**

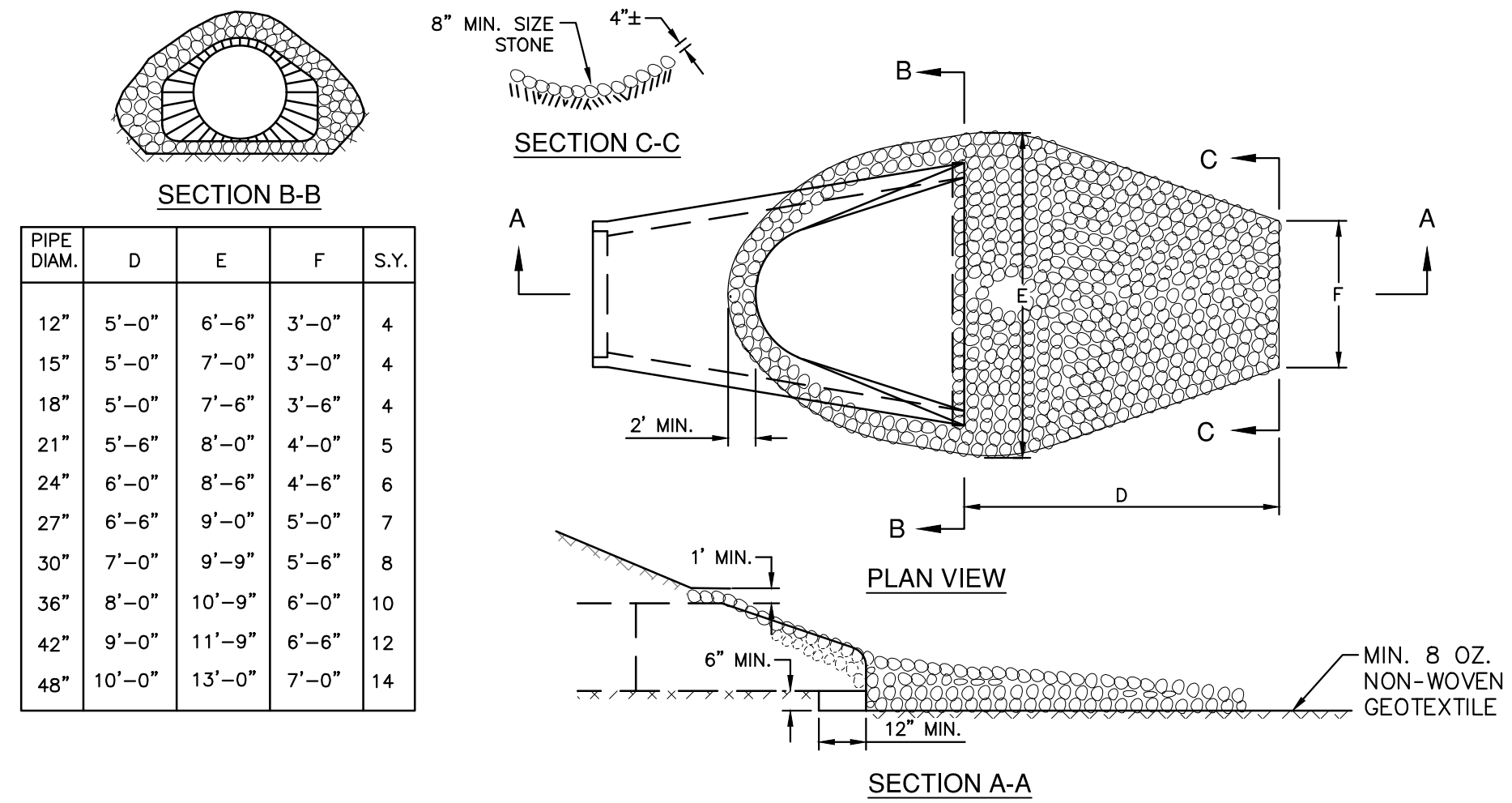
SHEET NUMBER:
C-502

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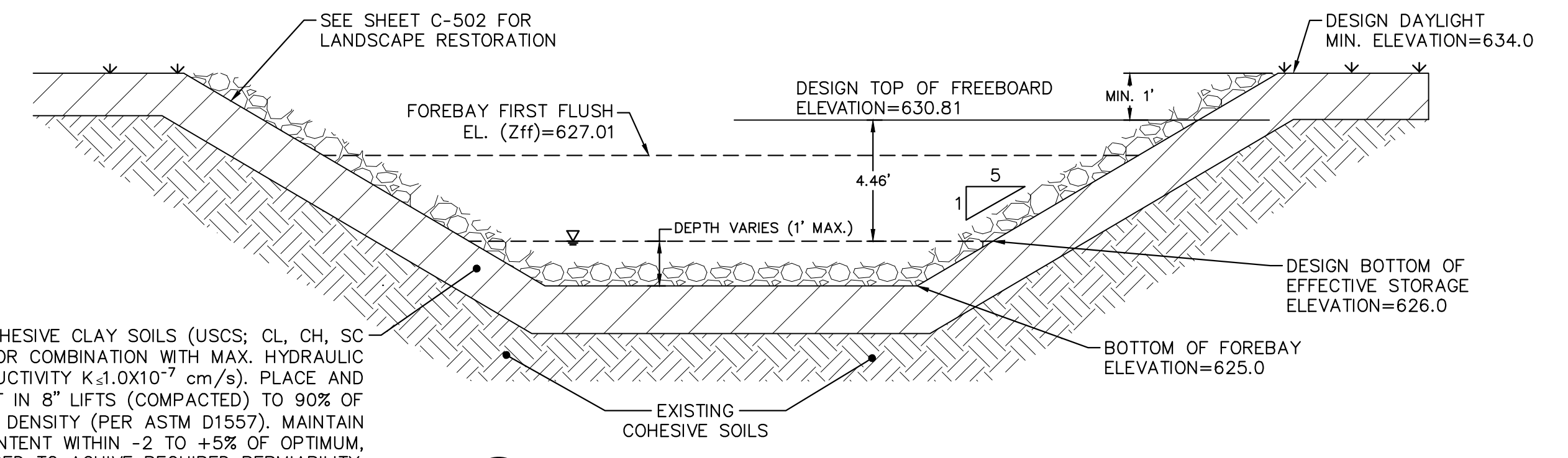


25 TRENCH DRAIN
NOT TO SCALE

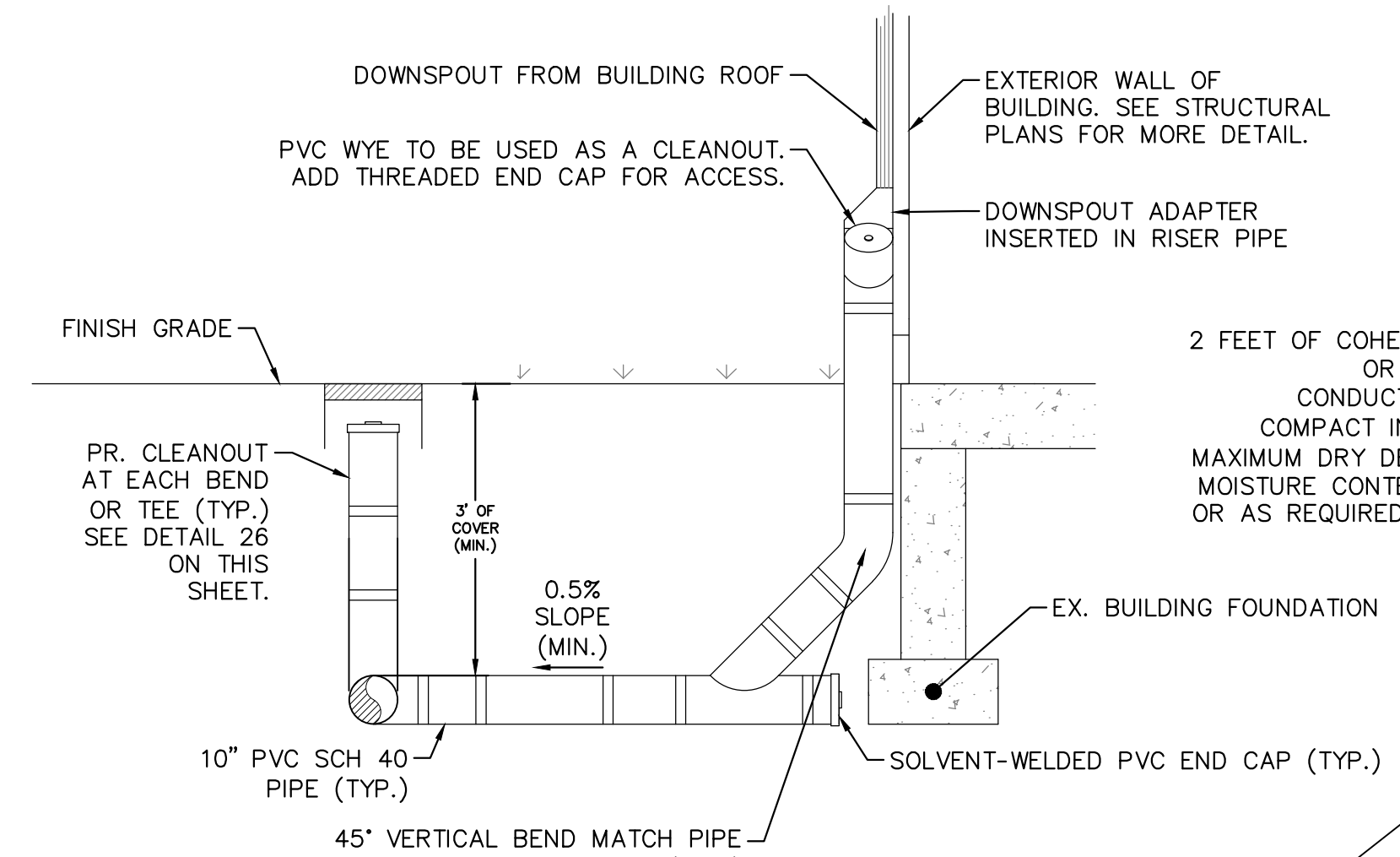
- TRENCH DRAIN AND CATCH BASIN NOTES:**
- THE SURFACE DRAINAGE SYSTEM SHALL BE K200 SLOPED-CHANNEL TRENCH DRAIN SYSTEM WITH GALVANIZED STEEL EDGE RAIL AND GRATE AS MANUFACTURED BY ACO POLYMER PRODUCTS, INC. (OR ENGINEER-APPROVED EQUIVALENT).
 - TRENCH DRAIN CHANNEL SHALL BE SLOPED TOWARD THE OUTLET PIPE.
 - TD-1: ADD ACO K2-902 INLINE CATCH BASIN AT DEEPEST EDGE OF TRENCH DRAIN AND CONNECT 10" PVC PIPE BETWEEN TRENCH DRAIN AND DOWNSTREAM STORM STRUCTURE.
 - SEE STORM SEWER PROFILES ON SHEET C-111 FOR MORE INFORMATION.
 - TD-1: GRATE SHALL BE ACO CLASS C LONGITUDINAL IRON.
 - THE SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.
 - PROVIDE CAST-IN PLACE CONCRETE WITH A 28 DAY MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI.
 - PROVIDE ASTM A615 GRADE 60 REINFORCEMENT (EPOXY COATED).
 - PROVIDE 3" CONCRETE COVER TO REBAR UNLESS SHOWN OTHERWISE.
 - PREVENT CONCRETE FROM ENTERING TRENCH DRAIN CHANNEL DURING CONSTRUCTION.
 - PREVENT DRAIN FLOATATION DURING CONCRETE PLACEMENT. MAINTAIN DESIGN SLOPE.
 - LAP SPLICE LENGTH PER ACI 318 (#6 BAR EQUALS 48")



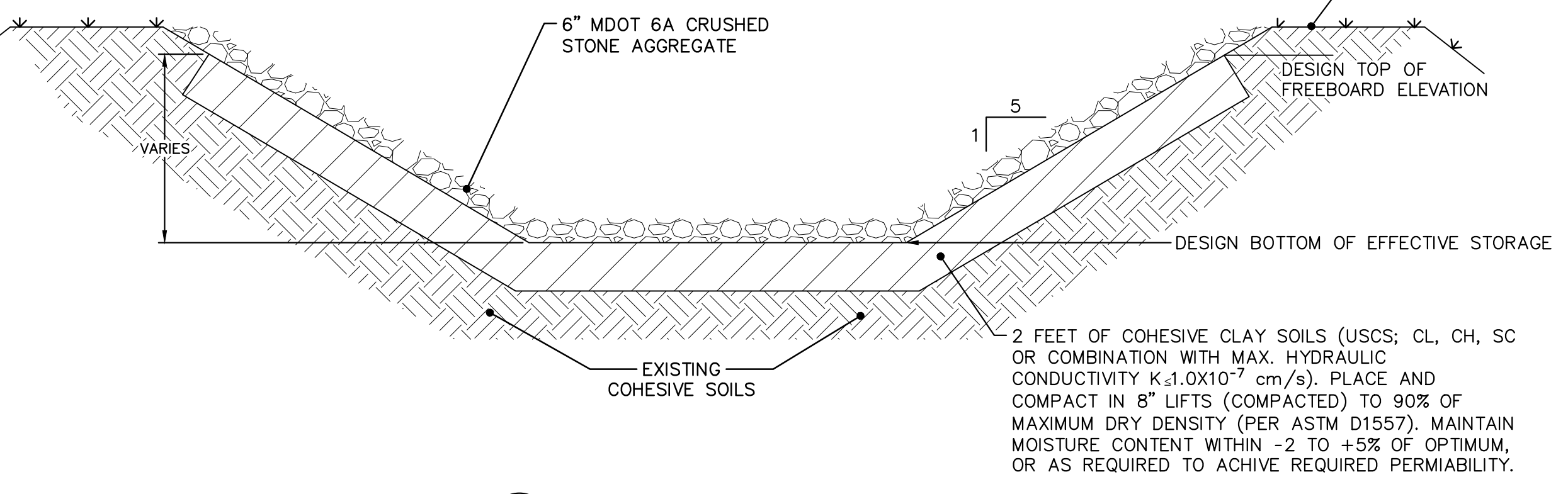
28 STONE RIP-RAP
NOT TO SCALE



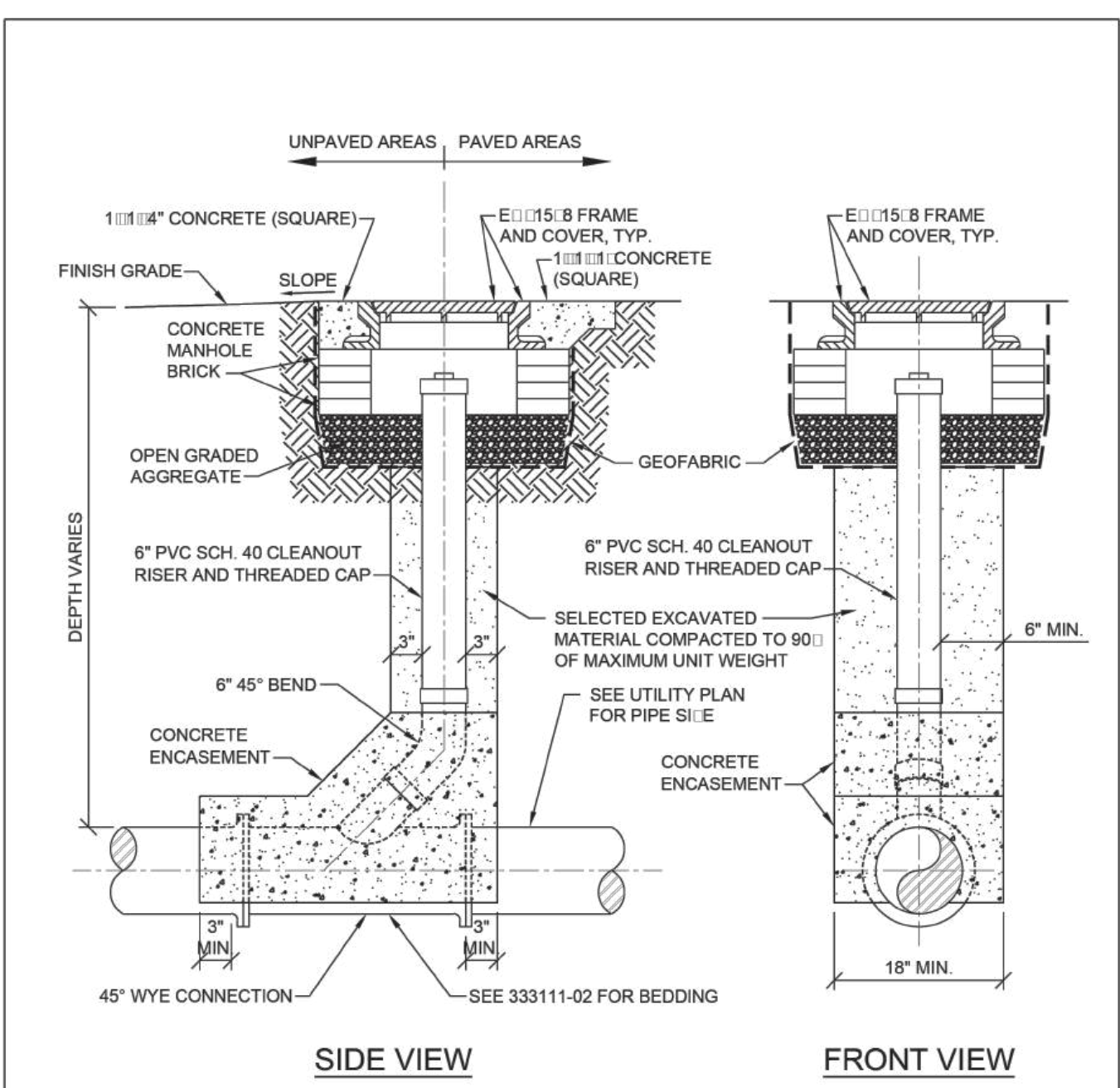
29 GENERAL FOREBAY CROSS-SECTION DETAIL
NOT TO SCALE



27 DOWNSPOUT CONNECTION DETAIL
NOT TO SCALE



30 GENERAL POND CROSS-SECTION
NOT TO SCALE



- NOTES:**
- MINIMUM SEPARATION DISTANCE BETWEEN LATERALS: 5 FT
 - MINIMUM DEPTH OF COVER OVER PIPE: 2 FT

CLEANOUT		CITY OF DETROIT WATER AND SEWERAGE DEPARTMENT ENGINEERING DIVISION	
REV	DESCRIPTION	DATE	DWG. No.
1	UPDATED	06/2020	
SCALE	NONE	SHEET	1 OF 1
DATE	9/2018		333111-03

26 CLEANOUT DETAIL
NOT TO SCALE

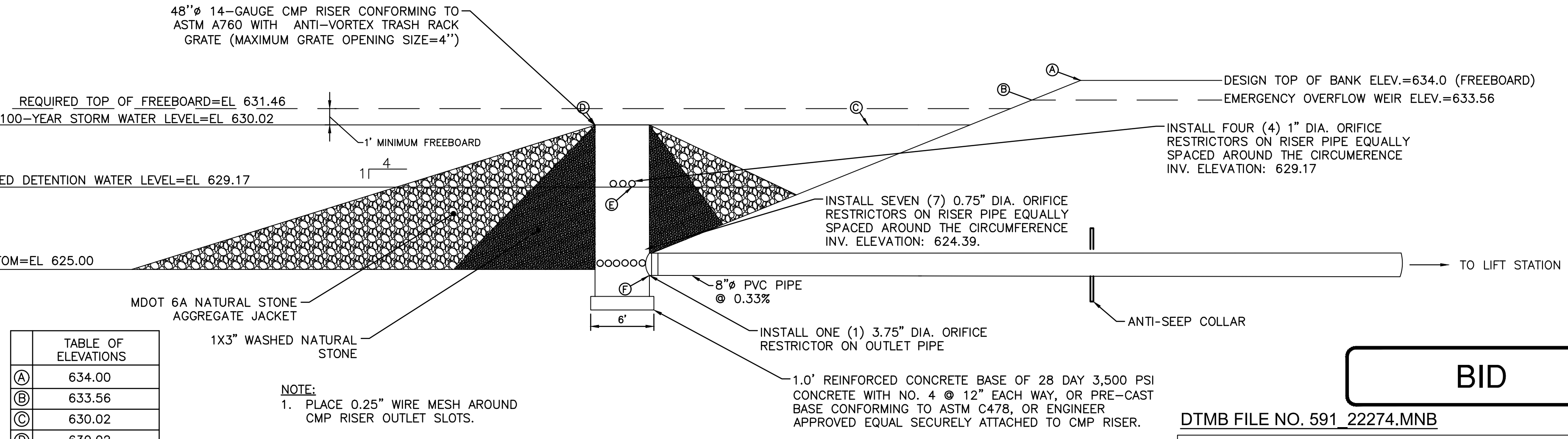
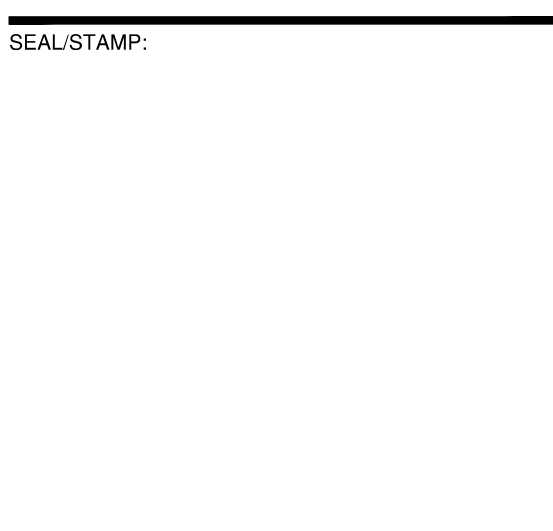


TABLE OF ELEVATIONS

(A)	634.00
(B)	633.56
(C)	630.02
(D)	630.02
(E)	629.17
(F)	625.00

31 PROPOSED POND OUTLET
NOT TO SCALE

3 WORKING DAYS BEFORE YOU DIG CALL MISS DIG
1-800-482-7171
For the location of public utility lines, call MISS DIG.
ALTERNATE NUMBER (811) 482-7171
FOR THE LOCATION OF PUBLIC UTILITY LINES.
Color Drop: Yellow
Gas: Red
Water: Blue
Sewer: Green
Electric: Orange
Fire: Purple
If you are going to work near overhead wires - CALL MISS DIG



REVISION BLOCK

REV	DATE	DESCRIPTION

SUBMITTAL LOG

DATE	PACKAGE NAME
2023-12-19	75% DRAWINGS
2024-03-06	90% DRAWINGS
2025-01-31	ISSUED FOR BID

PROJECT NAME:
MDOT DETROIT GARAGE STORM SEWER RECONSTRUCTION

PROJECT LOCATION:
1500 E. FERRY STREET DETROIT, MICHIGAN

DESIGNED BY: KBH	NTH PROJECT NO.: 23001451
DRAWN BY: KBH	SHEET SIZE: ARCH D (24"x36")
CHECKED BY: SLG	DATE: 1/31/2025
CAD FILE NAME: 23001451-DET	

SHEET TITLE:
CIVIL DETAILS (SHEET 3 OF 6)

BID

DTMB FILE NO. 591 22274.MNB

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
STATE FACILITIES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LACH, RA, DIRECTOR

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Livonia, MI (Laboratory)

3 WORKING DAYS
BEFORE YOU DIG
CALL MISS DIG
1-800-482-7171

For the location of public utility lines,
ALTERNATE NUMBER (811)
CALL CODES FOR UTILITY LOCATING:

Yellow	Gas	Blue	Water
Orange	Electric	Green	Storm Drain
Red	Electric	Black	Sewer
White	Electric	Pink	Sprinkler

IF YOU ARE GOING TO WORK NEAR OVERHEAD WIRES - CALL MISS DIG



SEAL/STAMP:



REVISION BLOCK	
REV	DATE DESCRIPTION

SUBMITTAL LOG	
DATE	PACKAGE NAME
2023-12-19	75% DRAWINGS
2024-03-06	90% DRAWINGS
2025-01-31	ISSUED FOR BID

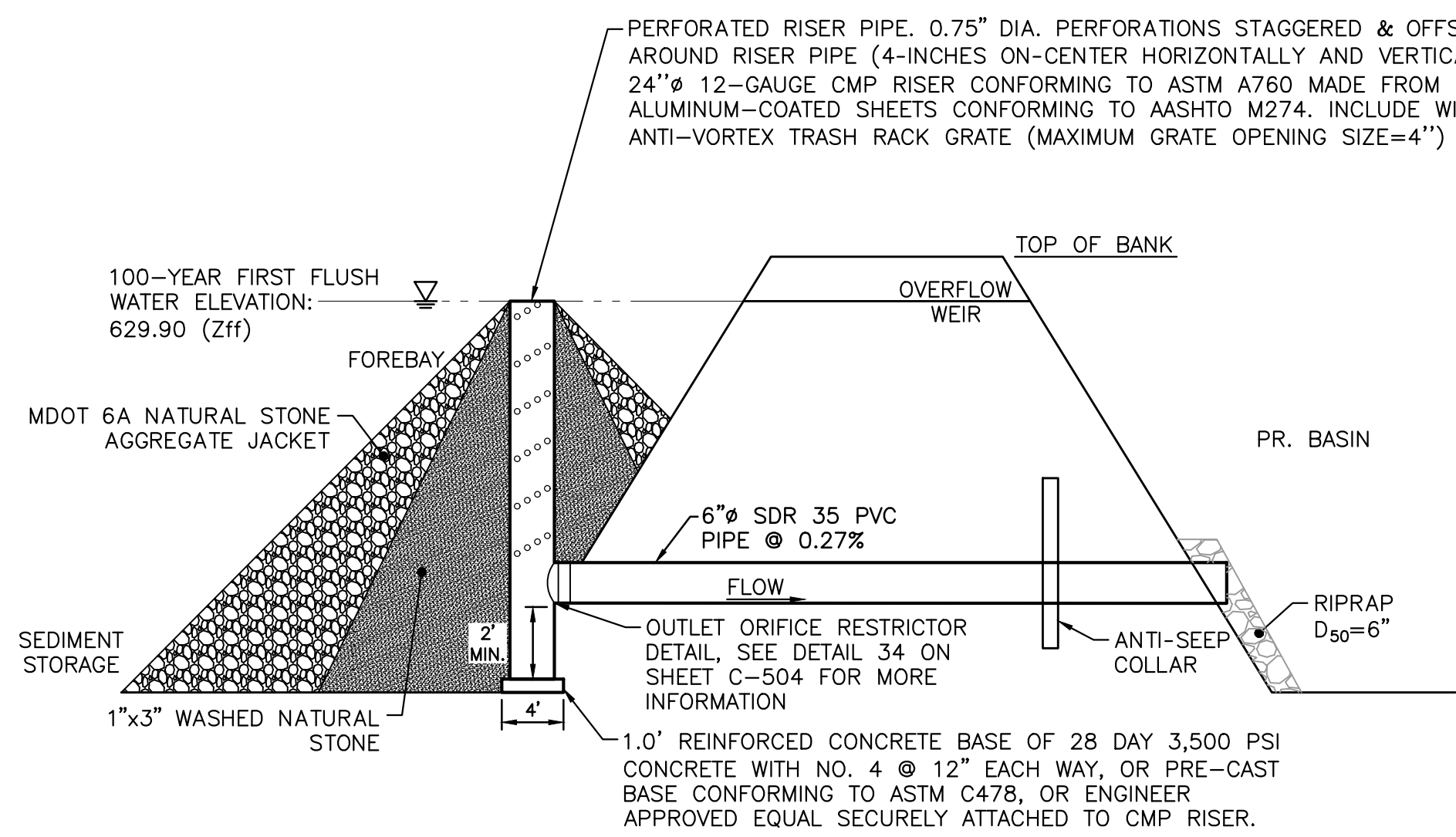
PROJECT NAME:
**MDOT DETROIT GARAGE
STORM SEWER
RECONSTRUCTION**

PROJECT LOCATION:
**1500 E. FERRY STREET
DETROIT, MICHIGAN**

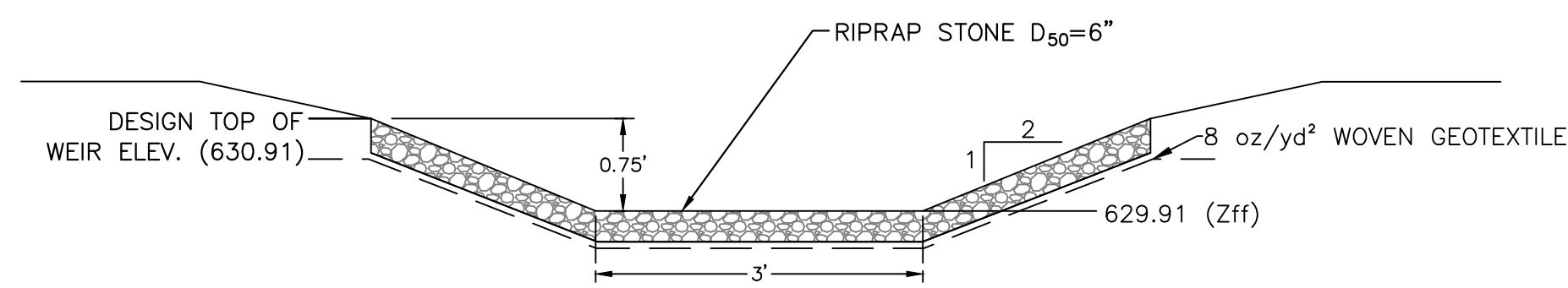
DESIGNED BY:	NTH PROJECT NO.:
KBH	23001451
DRAWN BY:	SHEET SIZE:
KBH	ARCH D (24"x36")
CHECKED BY:	DATE:
SLG	1/31/2025
CAD FILE NAME:	
23001451-DET	

SHEET TITLE:
**CIVIL DETAILS (SHEET 4
OF 6)**

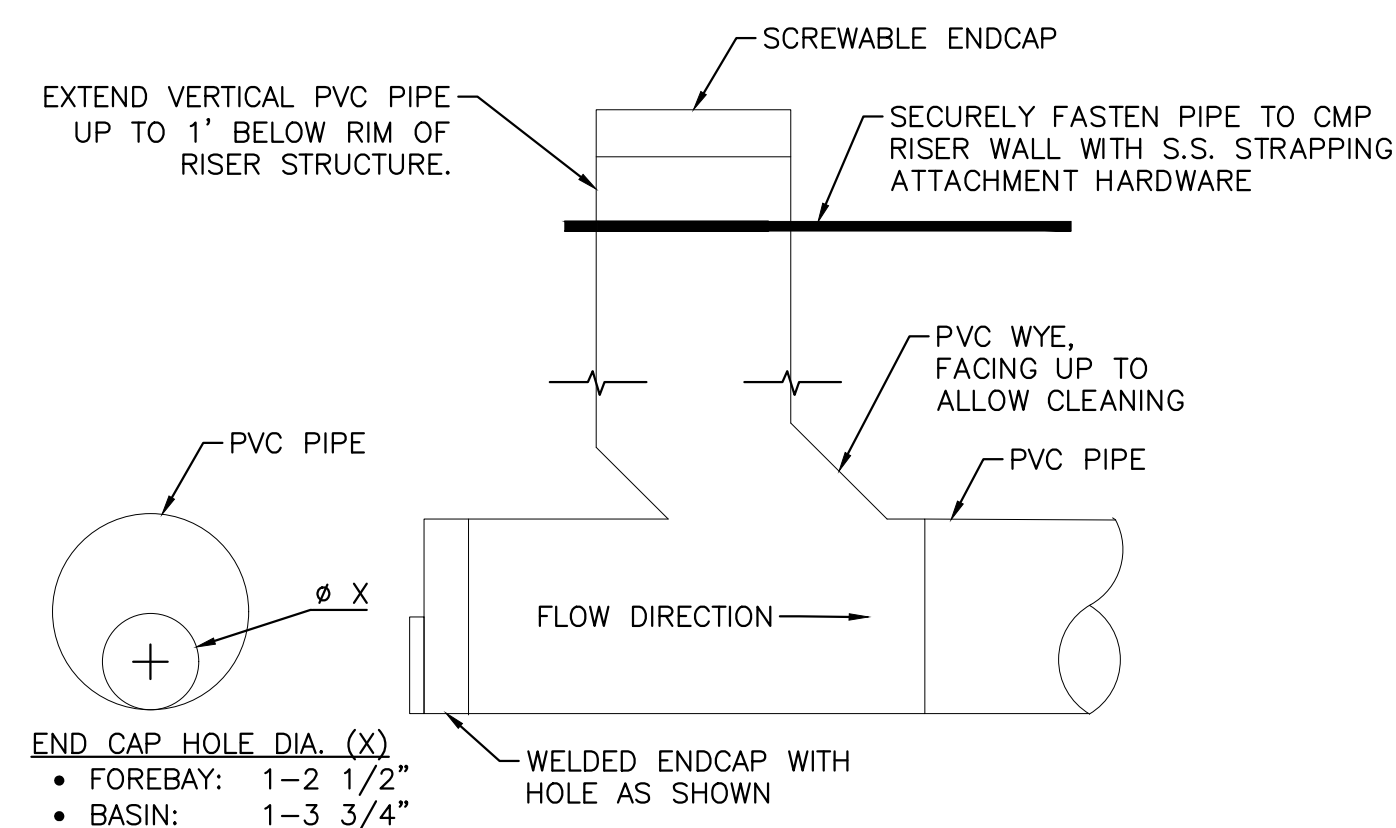
SHEET NUMBER:
C-504



32 FOREBAY OUTLET DETAIL
NOT TO SCALE



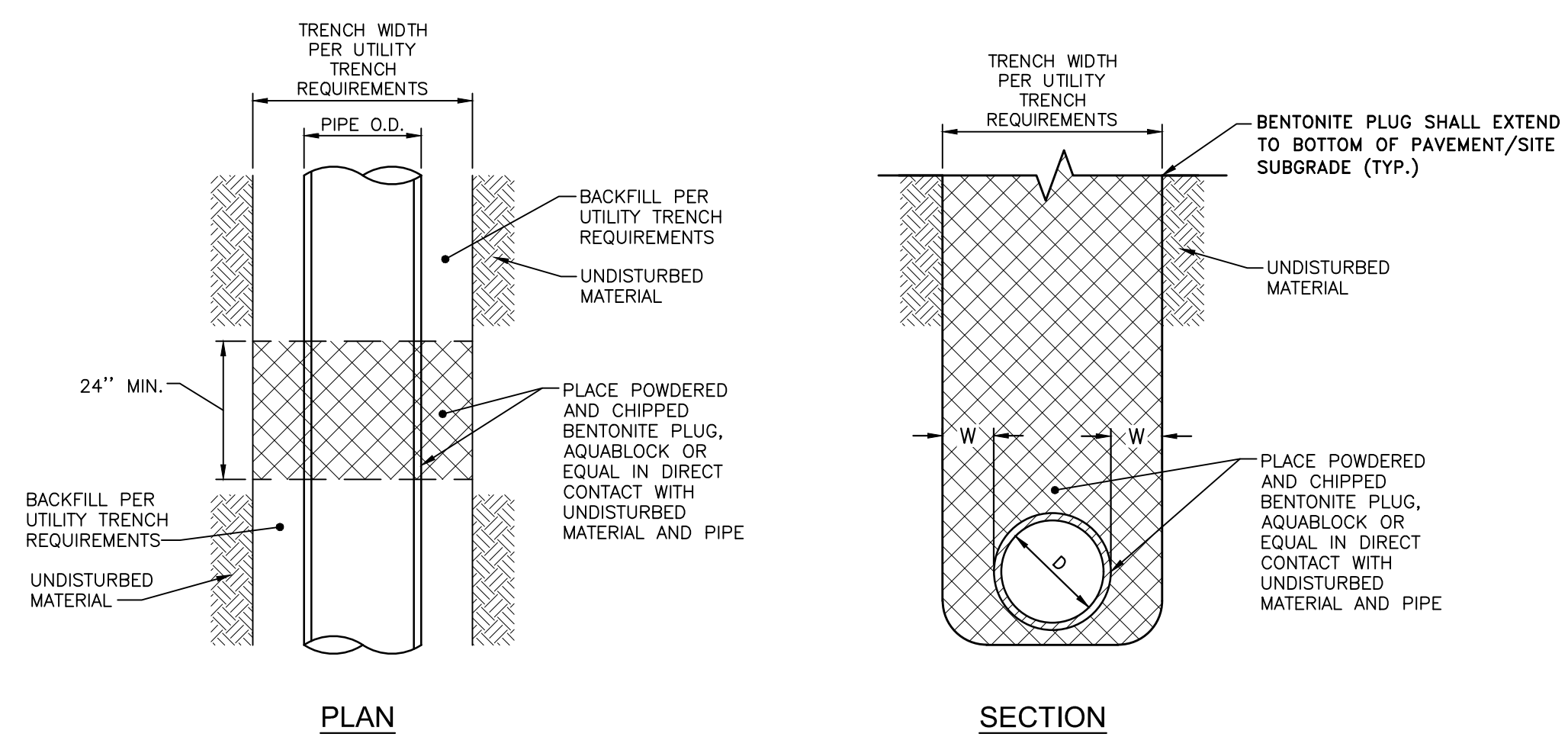
33 FOREBAY SPILLWAY DETAIL
NOT TO SCALE



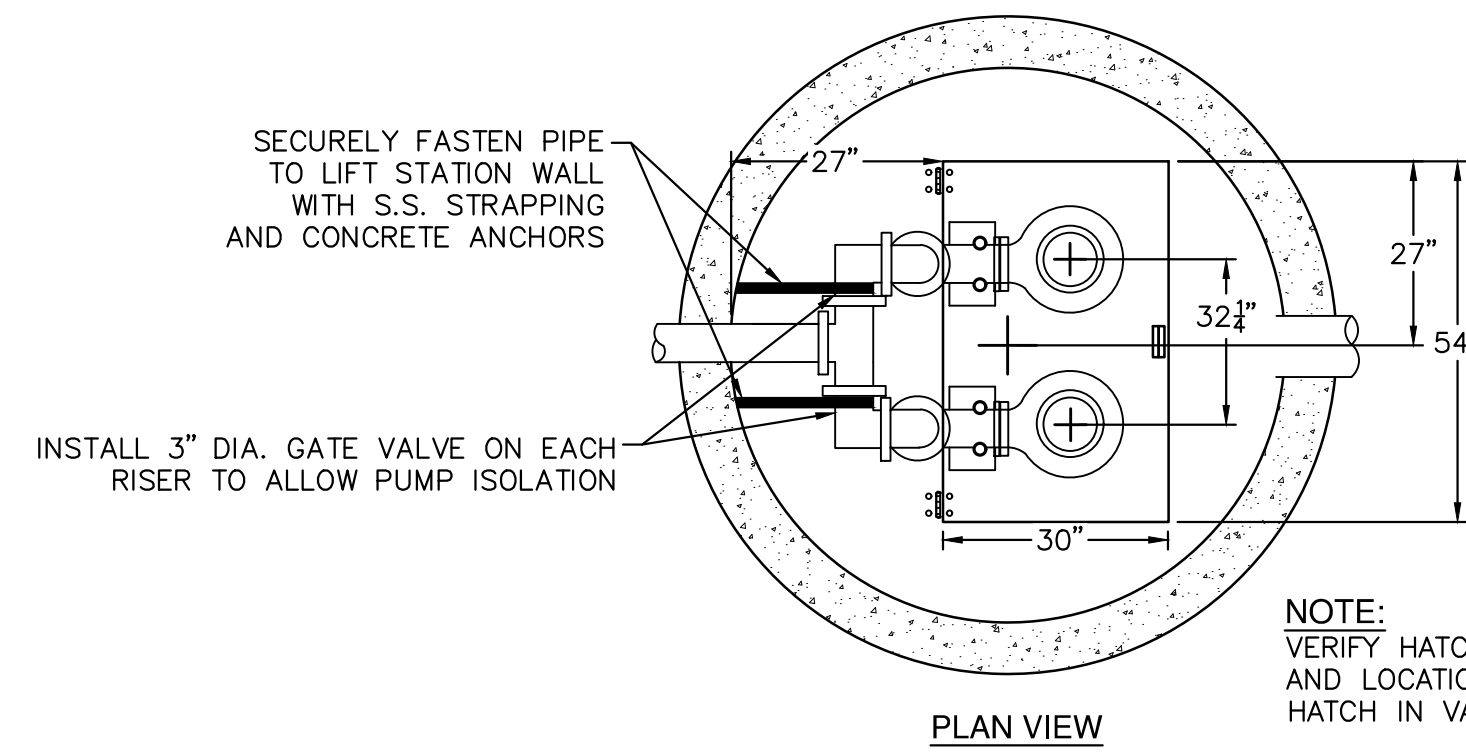
SEE STORMWATER MANAGEMENT CALCULATIONS ON SHEET C-115 FOR MORE INFORMATION.

34 OUTLET ORIFICE RESTRICTOR DETAIL
NOT TO SCALE

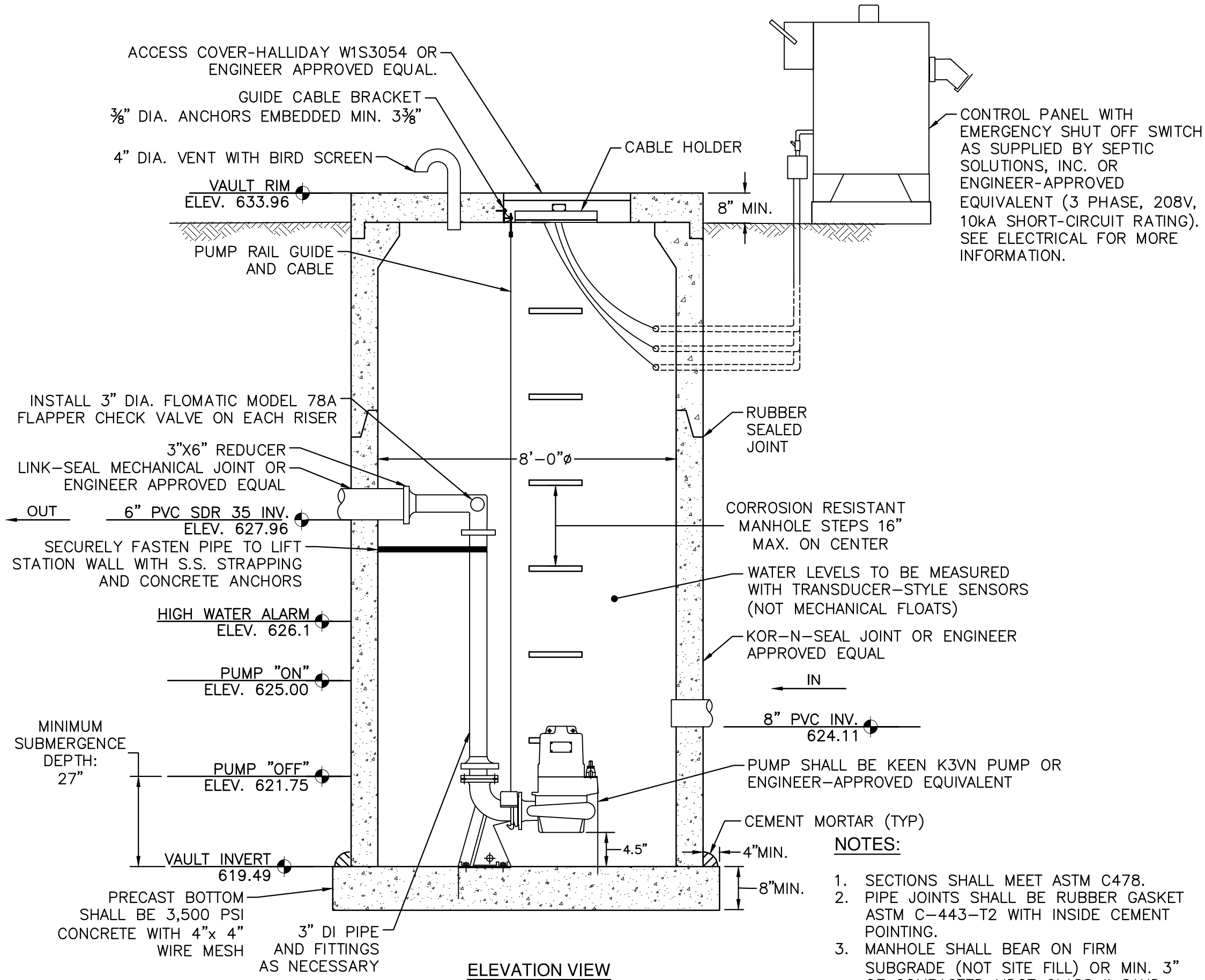
PIPE	D	W
HDPE/PVC	0"-12"	12" MIN. 18" MAX.
CONC.	ALL	6" MIN. 12" MAX.
CSP	ALL	D/2 12" MIN.



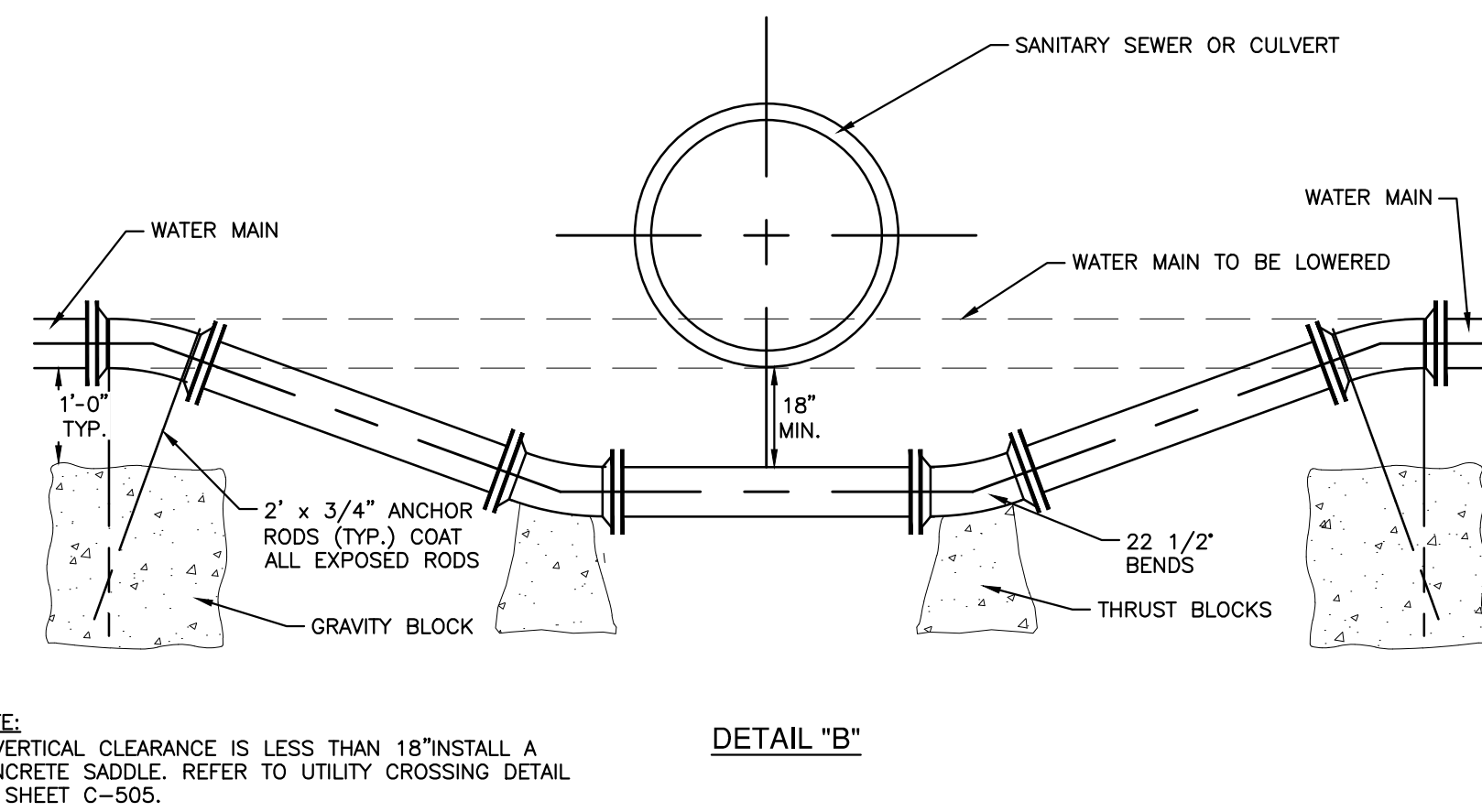
36 UTILITY TRENCH PLUG DETAIL
NOT TO SCALE



NOTE:
VERIFY HATCH PLACEMENT WITH PUMP SUPPLIER AND LOCATION IN MANHOLE PRIOR TO CASTING HATCH IN VAULT LID.



35 LIFT STATION DETAIL
NOT TO SCALE



NOTE:
IF VERTICAL CLEARANCE IS LESS THAN 18"INSTALL A CONCRETE SADDLE. REFER TO UTILITY CROSSING DETAIL ON SHEET C-505.

37 TYPICAL WATER MAIN CROSSING OBSTRUCTION DETAIL
NOT TO SCALE

DTMB FILE NO. 591.22274.MNB



STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
STATE FACILITIES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
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Detroit, MI Grand Rapids, MI
Livonia, MI (Laboratory)

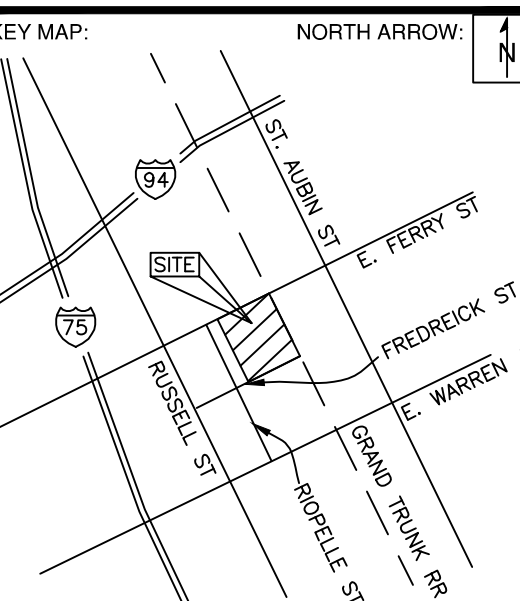
3 WORKING DAYS
BEFORE YOU DIG
CALL MISS DIG
1-800-482-7171
For the location of public utility lines.
ALTERNATE NUMBER (811)
OUR CODES FOR UTILITY LOCATING:

Yellow	Gas	Blue	Water
Orange	Electric	Green	Storm Drain
Red	Telephone	Brown	Sewer
Black	Other	Pink	Sanitary

IF YOU ARE GOING TO WORK NEAR OVERHEAD WIRES - CALL MISS DIG



SEAL/STAMP:



REVISION BLOCK	
REV	DATE: DESCRIPTION

SUBMITTAL LOG	
DATE	PACKAGE NAME
2023-12-19	75% DRAWINGS
2024-03-06	90% DRAWINGS
2025-01-31	ISSUED FOR BID

PROJECT NAME:
**MDOT DETROIT GARAGE
STORM SEWER
RECONSTRUCTION**

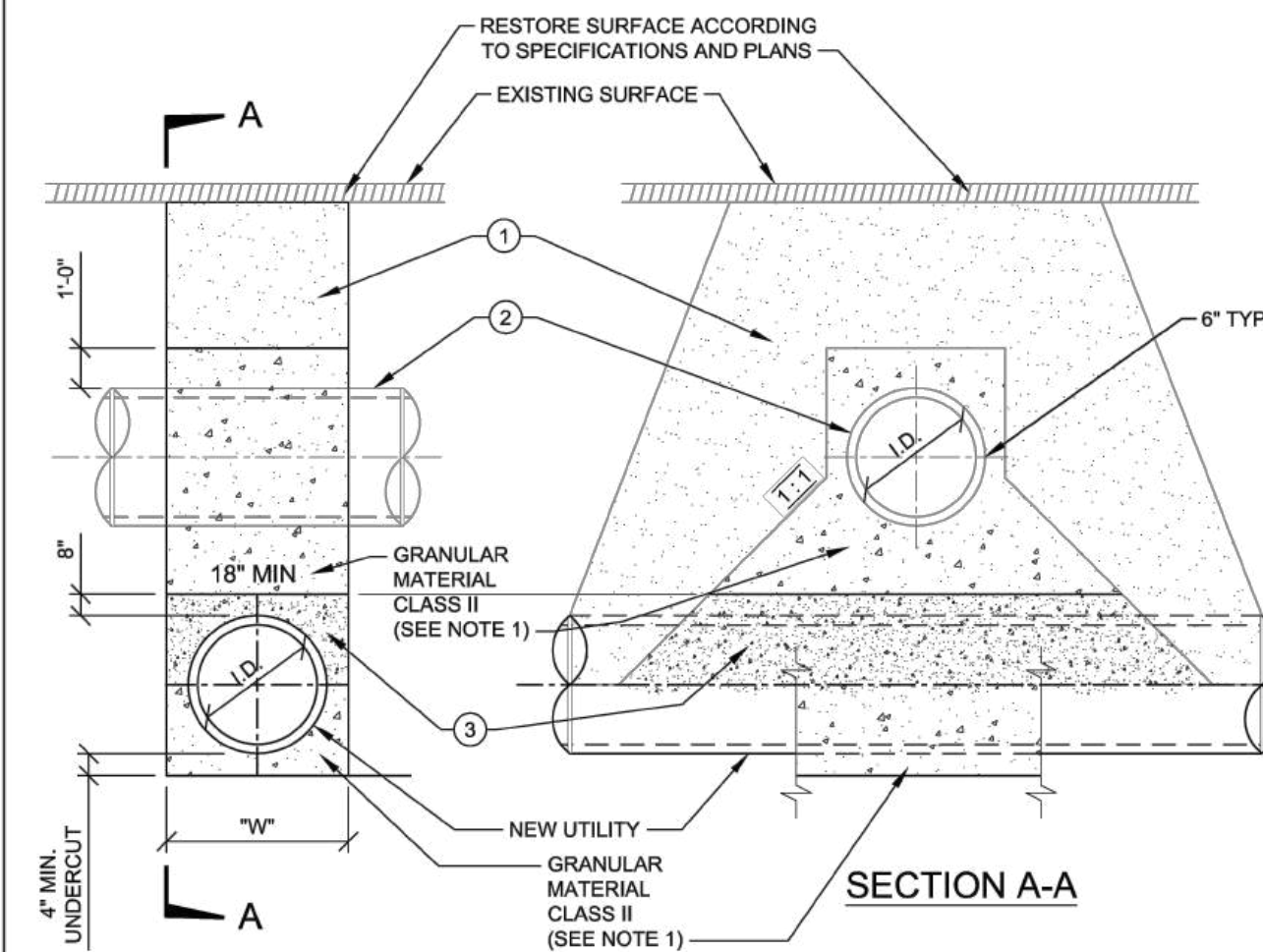
PROJECT LOCATION:
**1500 E. FERRY STREET
DETROIT, MICHIGAN**

DESIGNED BY:	NTH PROJECT NO.:
KBH	23001451
DRAWN BY:	SHEET SIZE:
KBH	ARCH D (24"x36")
CHECKED BY:	DATE:
SLG, DRL	1/31/2025
CAD FILE NAME:	
23001451-DET	

SHEET TITLE:
**CIVIL DETAILS (SHEET 5
OF 6)**

SHEET NUMBER:
C-505

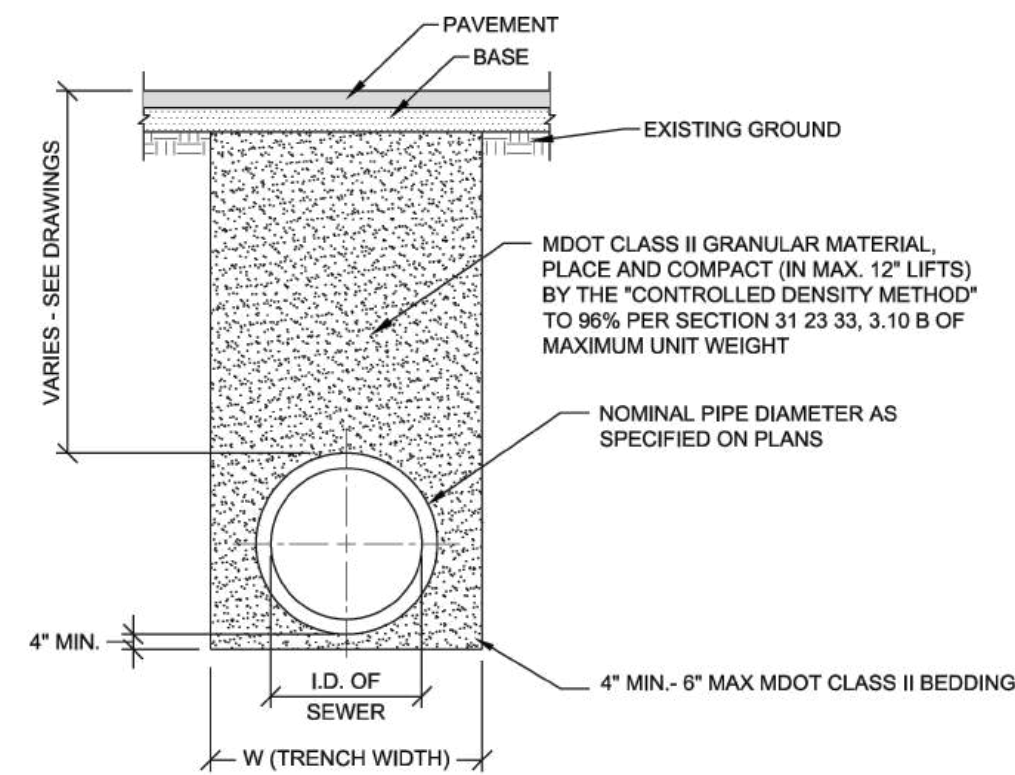
- CODED NOTES:**
- BACKFILL ACCORDING TO SPECIFICATIONS AND TYPICAL TRENCH SECTION.
 - EXISTING CATCH BASIN DRAIN, SEWER OR OTHER UNDERGROUND UTILITY CROSSING NEW OPEN CUT CONSTRUCTION.
 - BACKFILL WITH A DRY MIX OF ONE BAG CEMENT PER ONE BAG OF GRANULAR MATERIAL CLASS II.



- NOTES:**
- ALL MDOT CLASS II GRANULAR MATERIAL, PLACE AND COMPACT (IN MAX. 12" LIFTS) BY "CONTROLLED DENSITY METHOD" TO 96% PER SPECIFICATION 31 23 33, 3.10 B OF MAXIMUM UNIT WEIGHT.
 - WATERMAINS CROSSING UNDER SEWERS - WHEN IT IS IMPOSSIBLE TO OBTAIN THE MINIMUM 18-INCH CLEARANCE, REPLACE THE SEWER PIPE (MINIMUM OF 10 FT. ON BOTH SIDES OF WATERMAIN) WITH WATER WORKS GRADE 150PSI PRESSURE TESTED TO ENSURE WATER TIGHTNESS.
 - "W" - SEE TRENCH DETAILS FOR TRENCH WIDTH.
 - TRENCHING SHALL BE PER OSHA 29 CFR, SUBPART P

TYPICAL DETAIL AT CROSSING UNDER EXISTING UTILITIES

UTILITY CROSSING		CITY OF DETROIT WATER AND SEWERAGE DEPARTMENT ENGINEERING DIVISION	
1	UPDATED	06/2020	1 OF 1
REV	DESCRIPTION	DATE	SHEET
		09/2018	312333-07
REVISIONS		DATE	DWG. No.



I.D. PIPE SIZE (INCHES)	18 OR LESS	21	24	30	36	42	48	54	60	66	72
MAXIMUM TRENCH WIDTH (FEET)	5.00	5.75	6.00	6.50	7.00	7.50	8.00	8.50	9.00	9.50	10.00

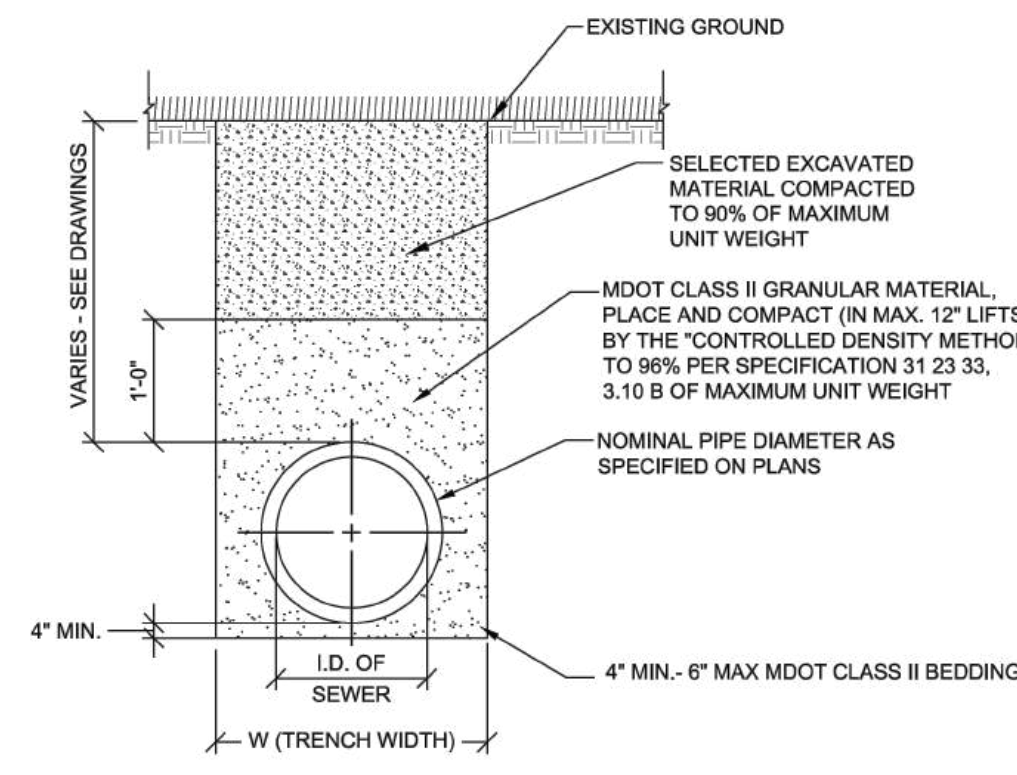
W (TRENCH WIDTH) = 5 FEET, WHEN PIPE I.D. IS 18" OR LESS
W (TRENCH WIDTH) = I.D. + 4 FEET, WHEN PIPE I.D. IS GREATER THAN 18"

NOTES:

- NO EXTRA PAYMENT WILL BE MADE FOR BASE AND PAVEMENT RESTORATION ITEMS DUE TO ADDITIONAL EXCAVATION BEYOND THE MAXIMUM TRENCH WIDTH LISTED ABOVE.
- REFER TO PAVEMENT RESTORATION DETAILS FOR BASE AND PAVEMENT WIDTH.
- TRENCHING SHALL BE PER OSHA 29 CFR, SUBPART P AND SHALL BE PERFORMED TO MINIMIZE THE SURFACE DISRUPTION.

**STANDARD TRENCH DETAIL FOR SEWER
UNDER ROAD BED, PARKING LOTS, SIDEWALKS, DRIVEWAYS,
CURBS, GRAVEL ROADS AND ALLEYS**

SANITARY SEWER TRENCH DETAIL		CITY OF DETROIT WATER AND SEWERAGE DEPARTMENT ENGINEERING DIVISION	
1	UPDATED	06/2020	1 OF 3
REV	DESCRIPTION	DATE	SHEET
		09/2018	312333-01
REVISIONS		DATE	DWG. No.



I.D. PIPE SIZE (INCHES)	18 OR LESS	21	24	30	36	42	48	54	60	66	72
MAXIMUM TRENCH WIDTH (FEET)	5.00	5.75	6.00	6.50	7.00	7.50	8.00	8.50	9.00	9.50	10.00

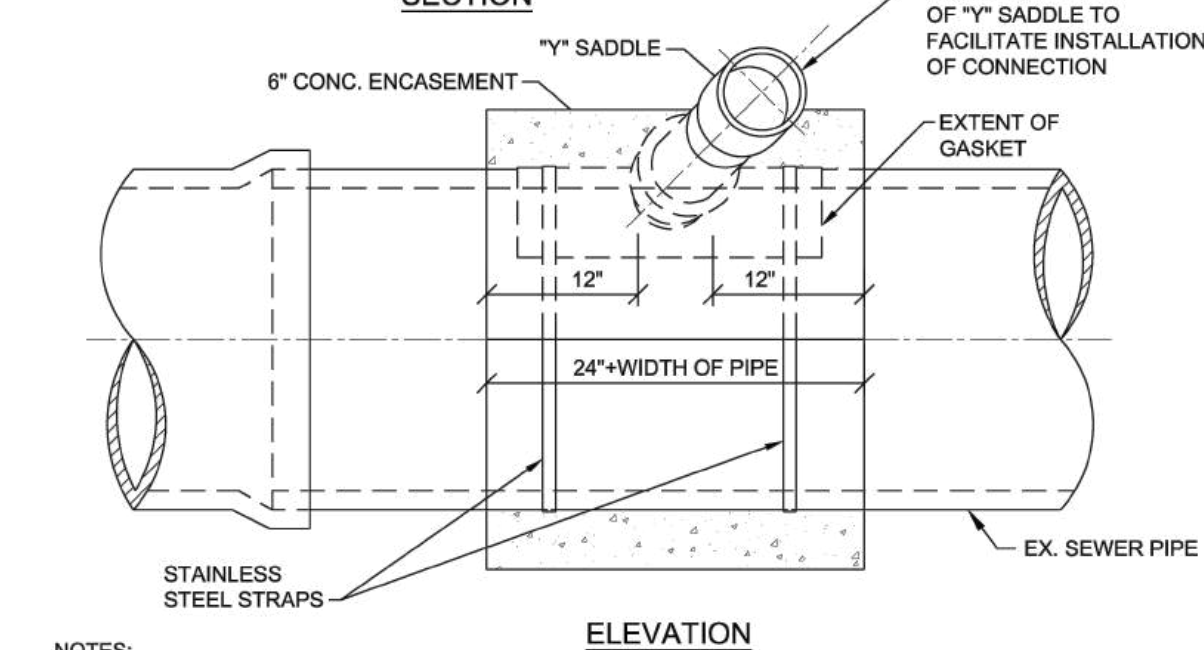
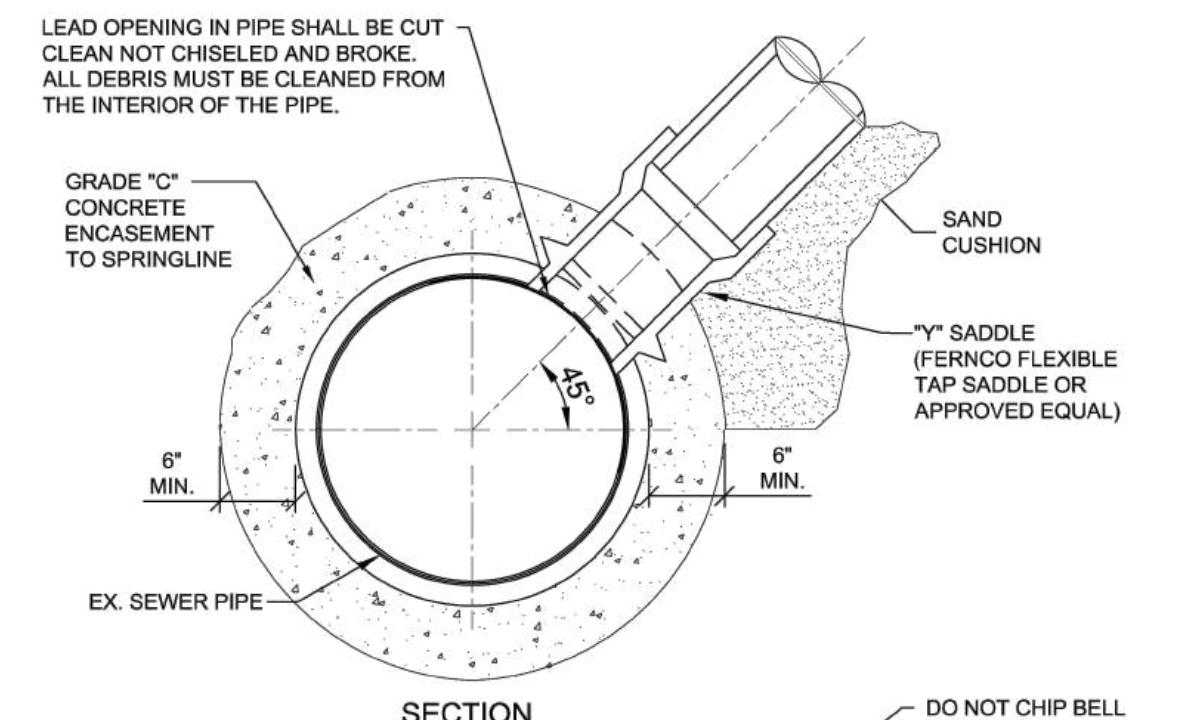
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W (TRENCH WIDTH) = I.D. + 4 FEET, WHEN PIPE I.D. IS GREATER THAN 18"

NOTES:

- NO EXTRA PAYMENT WILL BE MADE FOR BASE AND PAVEMENT RESTORATION ITEMS DUE TO ADDITIONAL EXCAVATION BEYOND THE MAXIMUM TRENCH WIDTH LISTED ABOVE.
- TRENCHING SHALL BE PER OSHA 29 CFR, SUBPART P AND SHALL BE PERFORMED TO MINIMIZE THE SURFACE DISRUPTION.

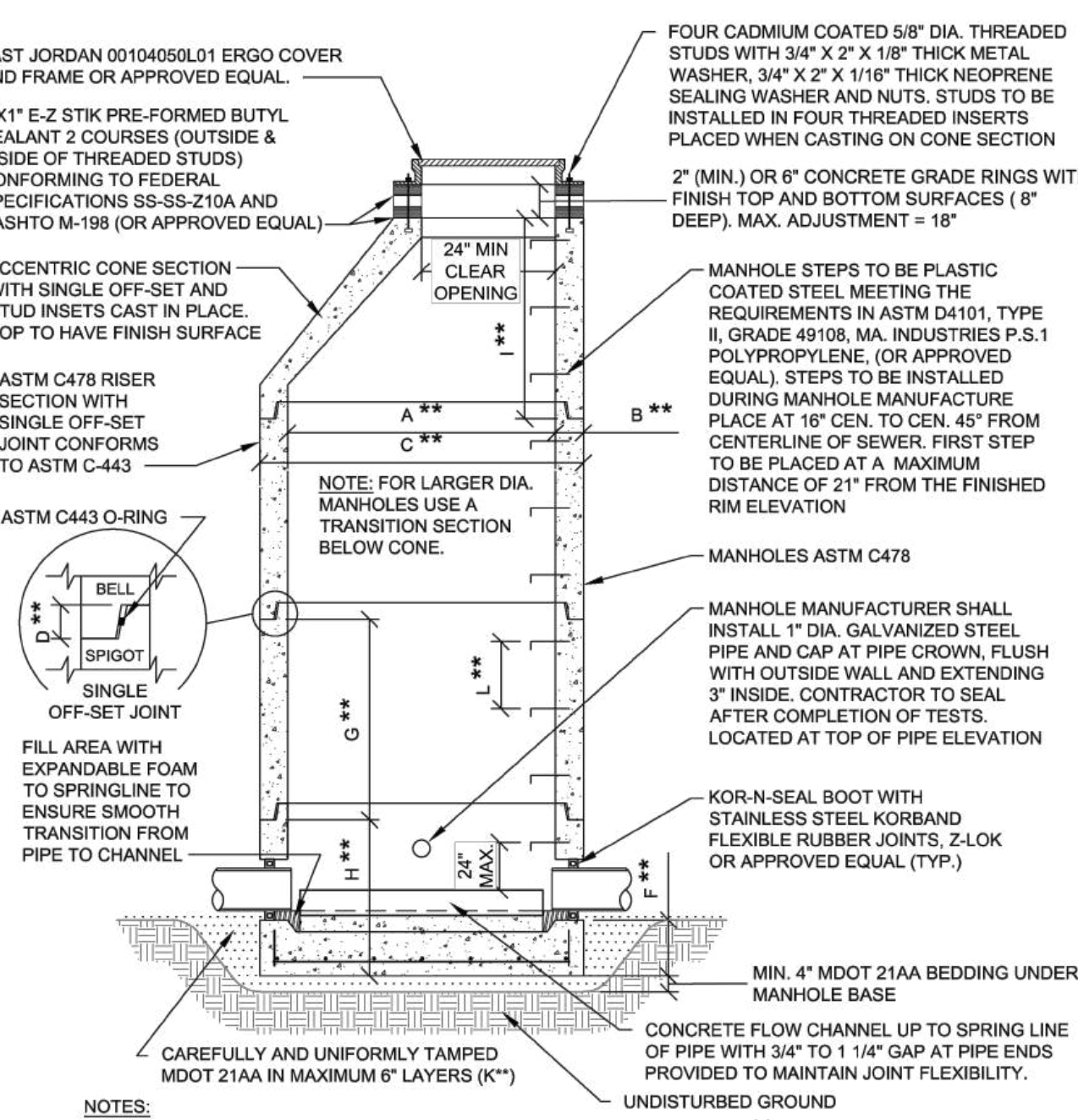
**STANDARD TRENCH DETAIL FOR SEWER
UNDER BERMS, LAWNS, GRASSY AREAS,
(OUTSIDE PAVEMENT INFLUENCE)**

SANITARY SEWER TRENCH DETAIL		CITY OF DETROIT WATER AND SEWERAGE DEPARTMENT ENGINEERING DIVISION	
1	UPDATED	06/2020	2 OF 3
REV	DESCRIPTION	DATE	SHEET
		09/2018	312333-02
REVISIONS		DATE	DWG. No.



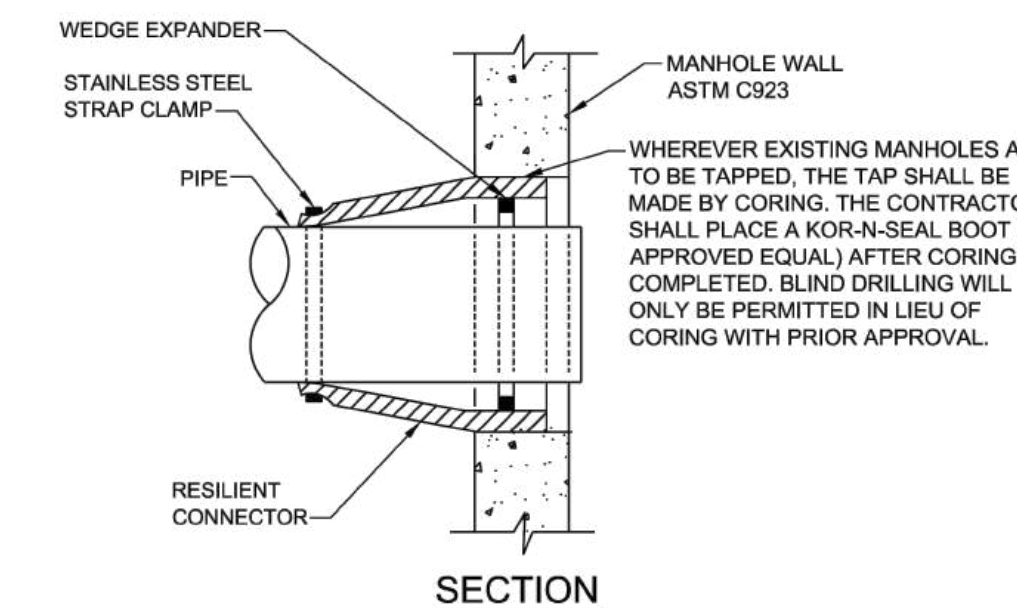
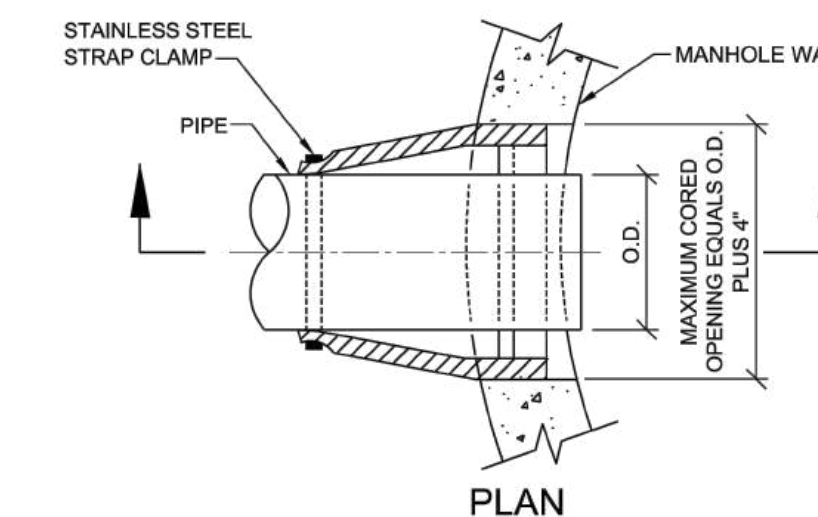
- NOTES:**
- FOR SEWERS 18" OR LESS A "Y" SADDLE MAY BE USED IF THE OUTSIDE DIA. OF THE TAP IS LESS THAN ONE HALF THE DIA. OF THE SEWER BEING TAPPED.
 - PROVIDE EXTENSION CLAMPS FOR 15" SEWERS AND LARGER.
 - CONCRETE BELOW PIPE IS ONLY REQUIRED FOR 15" SEWERS AND LARGER WITH STRAPS.

CONNECTION, SADDLE TO LATERAL SEWER		CITY OF DETROIT WATER AND SEWERAGE DEPARTMENT ENGINEERING DIVISION	
1	UPDATED	06/2020	1 OF 1
REV	DESCRIPTION	DATE	SHEET
		09/2018	333111-01
REVISIONS		DATE	DWG. No.



- NOTES:**
- REFER TO DETAIL SHEET 330561-05 FOR MANHOLE ASSEMBLY TABLE **
 - PRECAST CONCRETE MANHOLE SECTIONS SHALL CONFORM TO ALL THE REQUIREMENTS OF "SPECIFICATIONS FOR PRECAST REINFORCED CONCRETE MANHOLE RISERS AND TOPS" ASTM C-478 WITH SINGLE OFF-SET JOINT CONFORMS TO ASTM C-443.
 - EACH SECTION SHALL HAVE NOT MORE THAN TWO HOLES FOR HANDLING PURPOSES. THESE HOLES SHALL BE SATISFACTORILY PLUGGED WITH GROUT AFTER INSTALLATION.

STANDARD MANHOLE PRECAST		CITY OF DETROIT WATER AND SEWERAGE DEPARTMENT ENGINEERING DIVISION	
1	UPDATED	06/2020	1 OF 1
REV	DESCRIPTION	DATE	SHEET
		09/2018	330561-02
REVISIONS		DATE	DWG. No.



- NOTES:**
- ALL NEW PIPE OPENINGS FOR PROPOSED MANHOLES SHALL BE MADE BY MANHOLE MANUFACTURER.
- WATERTIGHT RESILIENT CONNECTOR
FOR CONNECTING PROPOSED PIPES TO EXISTING MANHOLES
AND EXISTING PIPES TO PROPOSED MANHOLES**

SEWER PIPE CONNECTION WITH MANHOLE		CITY OF DETROIT WATER AND SEWERAGE DEPARTMENT ENGINEERING DIVISION	
1	UPDATED	06/2020	1 OF 1
REV	DESCRIPTION	DATE	SHEET
		09/2018	333111-05
REVISIONS		DATE	DWG. No.

BID

DTMB FILE NO. 591 22274.MNB



STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
STATE FACILITIES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LACH, RA, DIRECTOR



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TOLL FREE FOR UTILITY LOCATING

Yellow: Gas & Oil
Orange: Electric
Blue: Water
Green: Storm Drain
Red: Sewer
Purple: Surveying

IF YOU ARE GOING TO WORK NEAR OVERHEAD WIRES - CALL MISS DIG



Michigan Department of Transportation

SEAL/STAMP:



REVISION BLOCK	
REV	DATE/DESCRIPTION

SUBMITTAL LOG	
DATE	PACKAGE NAME
2023-12-19	75% DRAWINGS
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2025-01-31	ISSUED FOR BID

PROJECT NAME:
**MDOT DETROIT GARAGE
STORM SEWER
RECONSTRUCTION**

PROJECT LOCATION:
**1500 E. FERRY STREET
DETROIT, MICHIGAN**

DESIGNED BY: NTH PROJECT NO.:
KBH 23001451

DRAWN BY: SHEET SIZE:
KBH ARCH D (24"x36")

CHECKED BY: DATE:
SLG 1/31/2025

CAD FILE NAME:
23001451-DET

SHEET TITLE:
**CIVIL DETAILS (SHEET 6
OF 6)**

SHEET NUMBER:

C-506

EXPANSION JOINTS

- ALL EXPANSION JOINT PAPER SHALL EXTEND 1" BELOW THE BOTTOM OF THE THINNER OF ADJOINING PAVEMENT SECTIONS.
- PLACE 1/2" PAPER EXPANSION JOINTS AT LOT LINES WHEN LOT LINES ARE BETWEEN 25' AND 50' APART.
 - PLACE ADDITIONAL 1/2" PAPER EXPANSION JOINTS SO THAT THE DISTANCE BETWEEN JOINTS DOES NOT EXCEED 15.2 m WHEN LOT LINES ARE OVER 15.240 m APART.
 - PLACE 1/2" PAPER EXPANSION JOINTS AT EVERY SECOND LOT LINE AND CONTRACTION JOINT AT INTERVENING LOT LINE WHEN LOT LINES ARE LESS THAN 25' APART.
 - PLACE 1" PAPER EXPANSION JOINTS AT CURB AND BUILDING OR PROPERTY LINE OR AT ALTERNATE POSITION (A) AS SHOWN FOR DRIVEWAY.
 - PLACE 1" PAPER EXPANSION JOINTS AT CURB AND BUILDING OR PROPERTY LINE FOR FULL WIDTH SIDEWALK EXCEEDING 7' IN WIDTH.
 - PLACE 1" PAPER EXPANSION JOINTS AT CURB CIRCLES OR AT ALTERNATE POSITION (A) AS SHOWN.
 - PLACE 1" PAPER EXPANSION JOINTS AT INTERSECTIONS OF SERVICE WALKS AND SIDEWALKS AND SERVICE WALKS AND CURBS.
 - PLACE 1" PAPER EXPANSION JOINTS AT MARGIN FLAGS AT CROSSWALKS.
 - PLACE 1" PAPER EXPANSION JOINTS AT ALLEY APRONS.
 - PLACE 1/2" PAPER EXPANSION JOINT BOTH SIDES OF SIDEWALK FLAG ABUTTING TREE AND ON CENTERLINE JOINT.
- CONTRACTION JOINTS
- PLACE CONTRACTION JOINTS AT INTERVALS OF NOT LESS THAN 5' NOR MORE THAN 7' ON WALKS 5' WIDE OR WIDER, INCLUDING FULL WIDTH WALKS.
 - PLACE CONTRACTION JOINTS AT INTERVALS OF NOT LESS THAN 4' NOR MORE THAN 7' ON WALKS 4' WIDE.
 - PLACE CONTRACTION JOINTS AT THE MARGIN LINE ON FULL WIDTH WALKS (OPTIONAL).
- DRIVEWAYS
- PLACE CONTRACTION JOINTS IN DRIVEWAYS SO THAT NO SLAB WILL EXCEED THE DIMENSIONS OF 15' BY 15'.
 - PLACE 1" PAPER EXPANSION JOINTS ON ALL SIDES OF COMMERCIAL DRIVES.
 - PLACE CONTRACTION OR CONTRACTION JOINT ON CENTERLINE WHEN WIDTH OF DRIVEWAY EXCEEDS 15'.
 - PLACE 1/2" PAPER EXPANSION JOINTS ON BOTH SIDES OF RESIDENTIAL DRIVEWAYS. IF DRIVEWAY EDGE IS WITHIN 2' OF LOT LINE, PLACE THIS EXPANSION PAPER AT PROPERTY LINE.

CITY OF DETROIT
CITY ENGINEERING DIVISION, D.P.W.
STANDARD PLAN FOR
SIDEWALK JOINTING
STANDARD

DATE: 08/29/18
DRAWN BY: WLV
CHECKED BY: KSM
APPROVED BY: SRB

DRAWING NO. 9
DETAIL STANDARD NO. C-4462
SHEET 2 OF 2

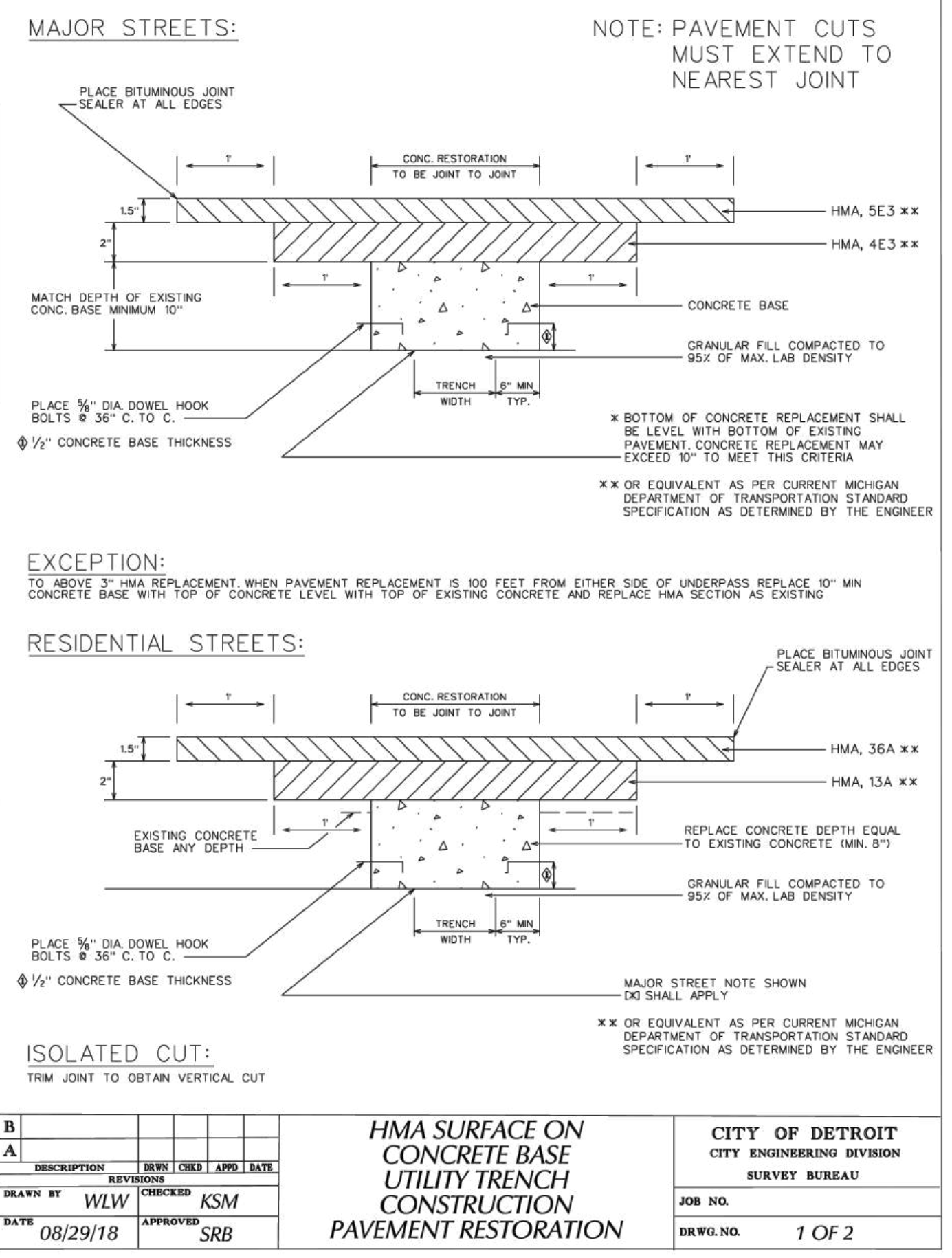
CITY OF DETROIT NOTES

- MILL (REMOVE) HMA PAVEMENT WITHIN AND BEYOND THE AREA OF TRENCH PAVEMENT REMOVAL IN ORDER TO DETERMINE LOCATION OF UNDERLYING CONCRETE BASE PAVEMENT JOINTS. MILL MINIMUM TO 1' BEYOND NEAREST CONCRETE JOINTS.
- EXTEND UTILITY TRENCH CONCRETE PAVEMENT REMOVAL TO ALL CONCRETE PAVEMENT JOINTS AND / OR CURBS ADJACENT TO THE TRENCH AREA. REMOVAL SHALL BE "JOINT TO JOINT".
- CONCRETE PAVEMENT CUTS SHALL BE MINIMUM 3' WIDE.
- ALL PAVEMENT CUTS SHALL BE MINIMUM 1' WIDER THAN TRENCH WIDTH.
- ALL REMOVALS SHALL BE SAWCUT STRAIGHT AND SQUARE (90 DEGREES).
- CONCRETE RESTORATION PAVEMENT SHALL BE MDOT P1 MIX (3,500 PSI).
- RESTORED CONCRETE PAVEMENT SHALL MATCH THICKNESS OF EXISTING CONCRETE PAVEMENT IN CONFORMANCE WITH MDOT STANDARDS DETAIL R-44-F.
- RESTORED CONCRETE SHALL BE ANCHORED TO EXISTING CONCRETE PAVEMENT IN CONFORMANCE WITH MDOT STANDARD DETAIL R-44-F.
- APPLY HMA TACK COAT PER MDOT STANDARD SPECIFICATIONS SECTION 904.
- RESTORE HMA PAVEMENT 3/2" TO MATCH EXISTING, IN 2 LIFTS:
1ST LIFT - 2" MDOT HMA 4E3 (13A RESIDENTIAL), COMPACTED, EXTENDED 1' BEYOND BASE CONCRETE REPAIR.
2ND LIFT - 1/2" MDOT HMA 5E3 (36A RESIDENTIAL), COMPACTED, EXTENDED 1' BEYOND 1ST LIFT.
- BITUMINOUS JOINT SEALER SHALL BE PLACED AT ALL FINISHED HMA JOINTS.
- ALL DISTURBED PAVEMENT MARKINGS AND OTHER ASSETS, INCLUDING BIKE LANE DELINEATORS, WILL HAVE TO BE REPLACED AT THE COST OF THE PERMIT HOLDER, AND SHALL CONFORM TO THE LATEST CED / TED STANDARDS.
- FOR OTHER RELATED SPECIFICATIONS (BACKFILL COMPACTION, MATERIALS, ETC...), REFER TO DIVISION 15 OF THE STANDARD SPECIFICATIONS FOR PAVING AND RELATED CONSTRUCTION.
- NOTIFY THE CITY OF DETROIT ENGINEERING DEPARTMENT 24 HOURS PRIOR TO STARTING CONSTRUCTION.
- ANY OPEN EXCAVATIONS ARE TO BE STEEL PLATED. IF EXCAVATIONS ARE IN THE PAVEMENT, THE PLATES ARE TO BE SPIKED AND RAMPED WITH COLD PATCH. CONTACT THE CITY WITH LOCATION OF THE STEEL PLATE.
- THE CITY OF DETROIT REQUIRES ALL CONCRETE WORK TO BE STAMPED WITH A CONTRACTORS IDENTIFICATION STAMP.

HMA SURFACE ON CONCRETE BASE UTILITY TRENCH CONSTRUCTION PAVEMENT RESTORATION

CITY OF DETROIT
CITY ENGINEERING DIVISION
SURVEY BUREAU

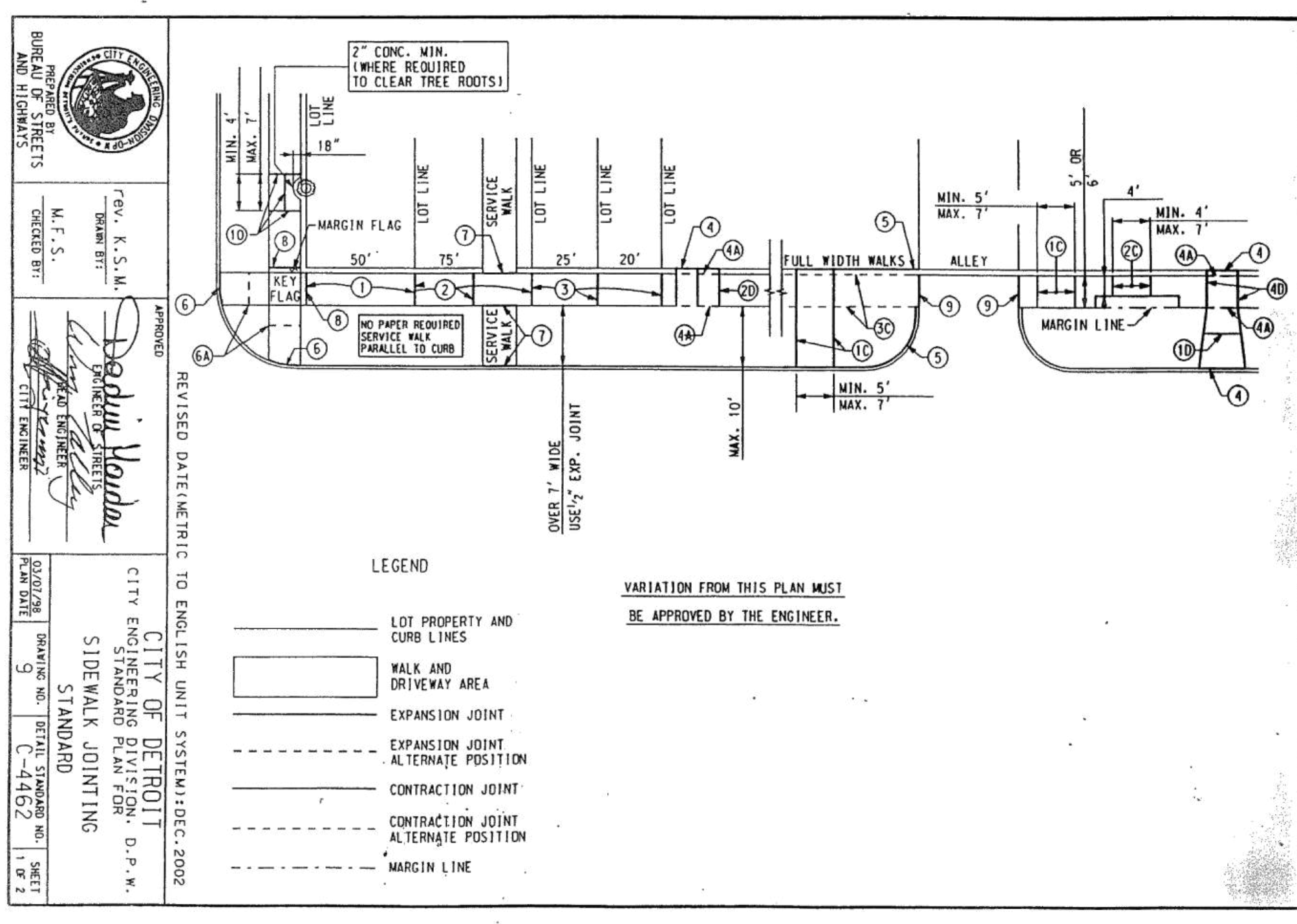
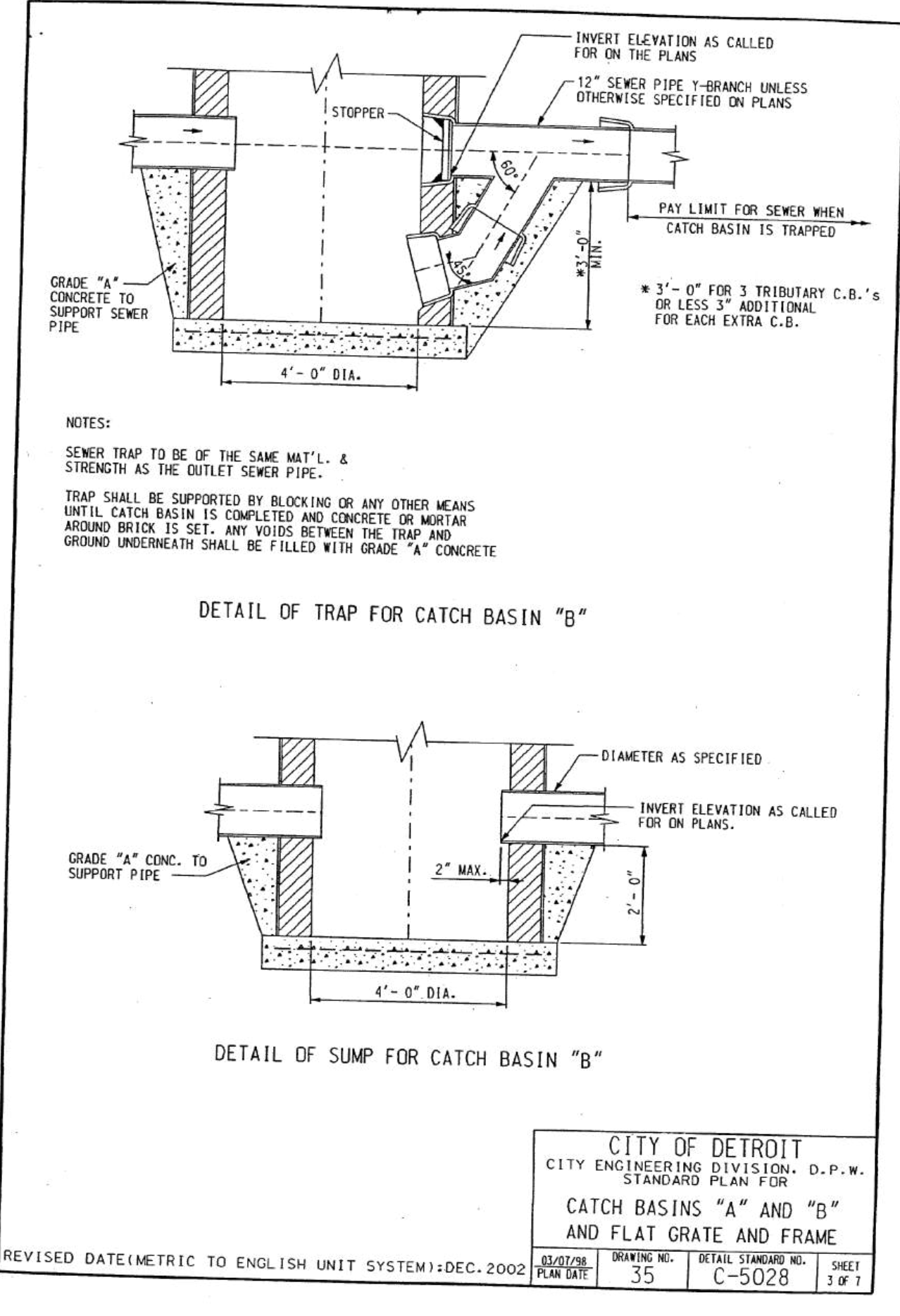
JOB NO. 1 OF 2
DRAWING NO. 1 OF 2



HMA SURFACE ON CONCRETE BASE UTILITY TRENCH CONSTRUCTION PAVEMENT RESTORATION

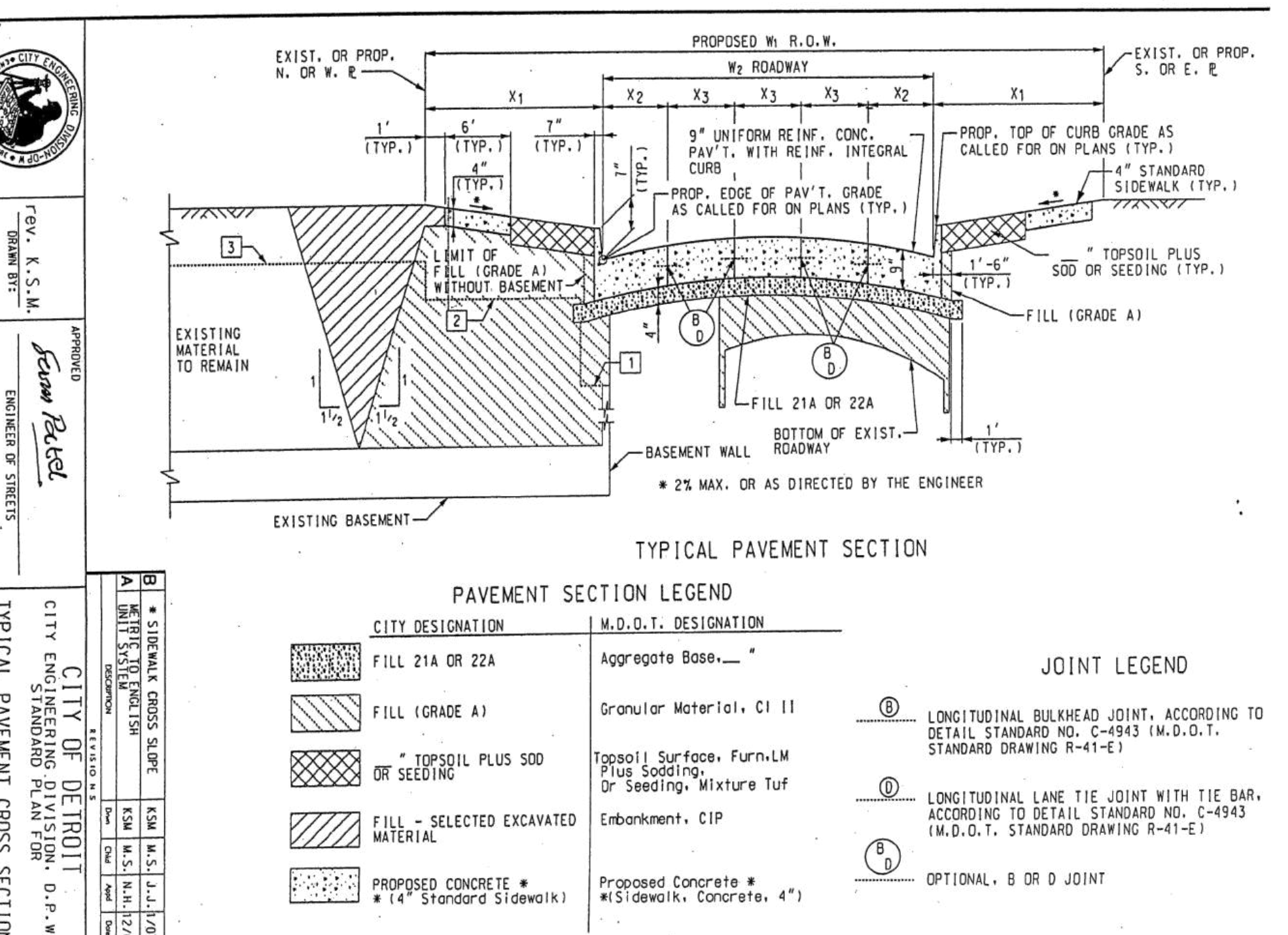
CITY OF DETROIT
CITY ENGINEERING DIVISION
SURVEY BUREAU

JOB NO. 1 OF 2
DRAWING NO. 1 OF 2



CITY OF DETROIT
CITY ENGINEERING DIVISION
STANDARD PLAN FOR
SIDEWALK JOINTING

DATE: 08/29/18
DRAWN BY: WLV
CHECKED BY: KSM
APPROVED BY: SRB



CITY OF DETROIT
CITY ENGINEERING DIVISION, D.P.W.
STANDARD PLAN FOR
FOR STREET CONSTRUCTION

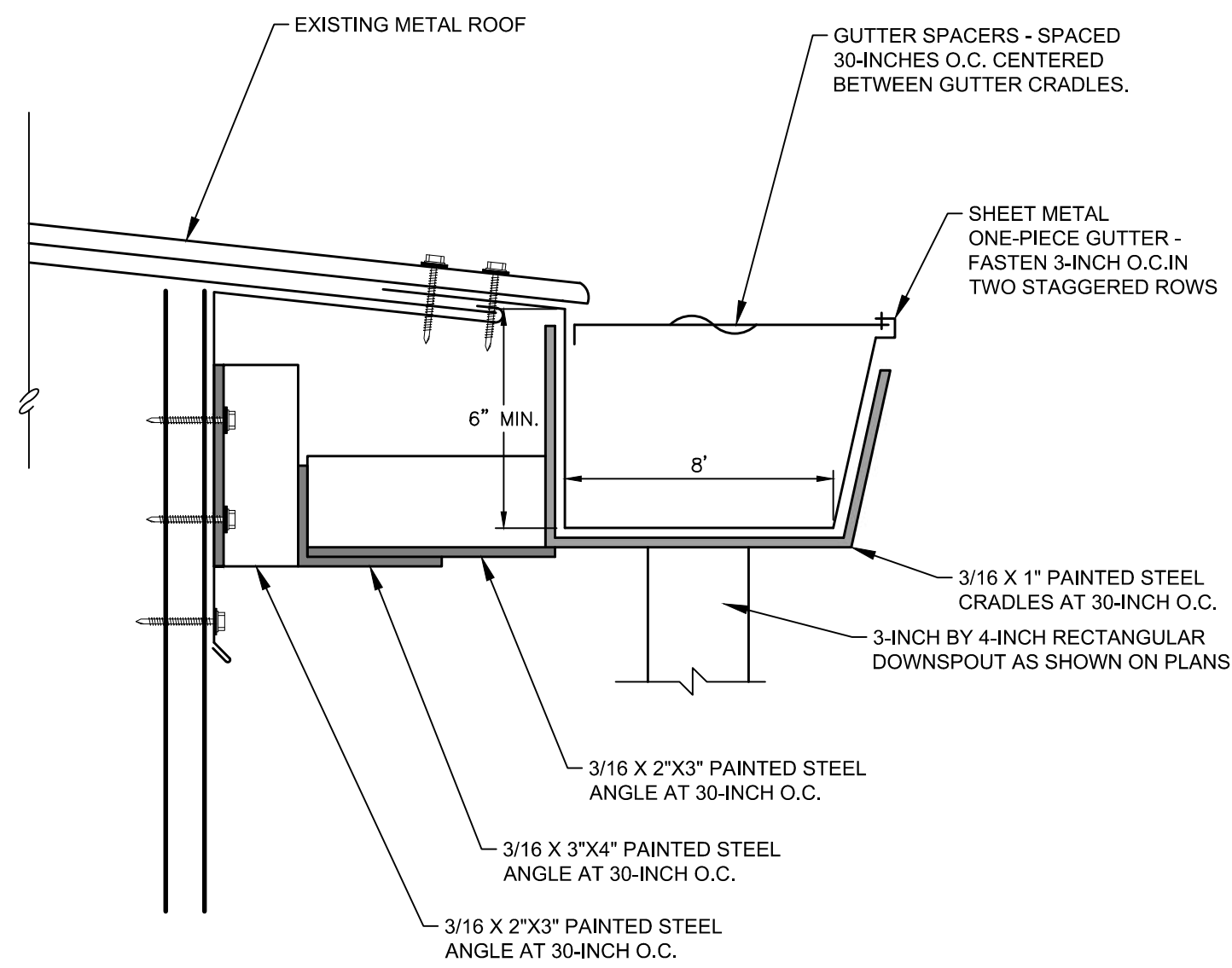
DATE: 08/29/18
DRAWN BY: WLV
CHECKED BY: KSM
APPROVED BY: SRB

BID

DTMB FILE NO. 591 22274.MNB

STATE OF MICHIGAN
DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
STATE FACILITIES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LACH, RA, DIRECTOR

1/21/2025 4:38 PM by Kera Houston



NOTES:

1. REMOVE EXISTING GUTTER AND ASSOCIATED BRACKET
2. WELD ALL STEEL ANGLES TO STEEL CRADLE; PAINT TO MATCH EXISTING SIDING

1 GUTTER INSTALLATION DETAIL
NOT TO SCALE

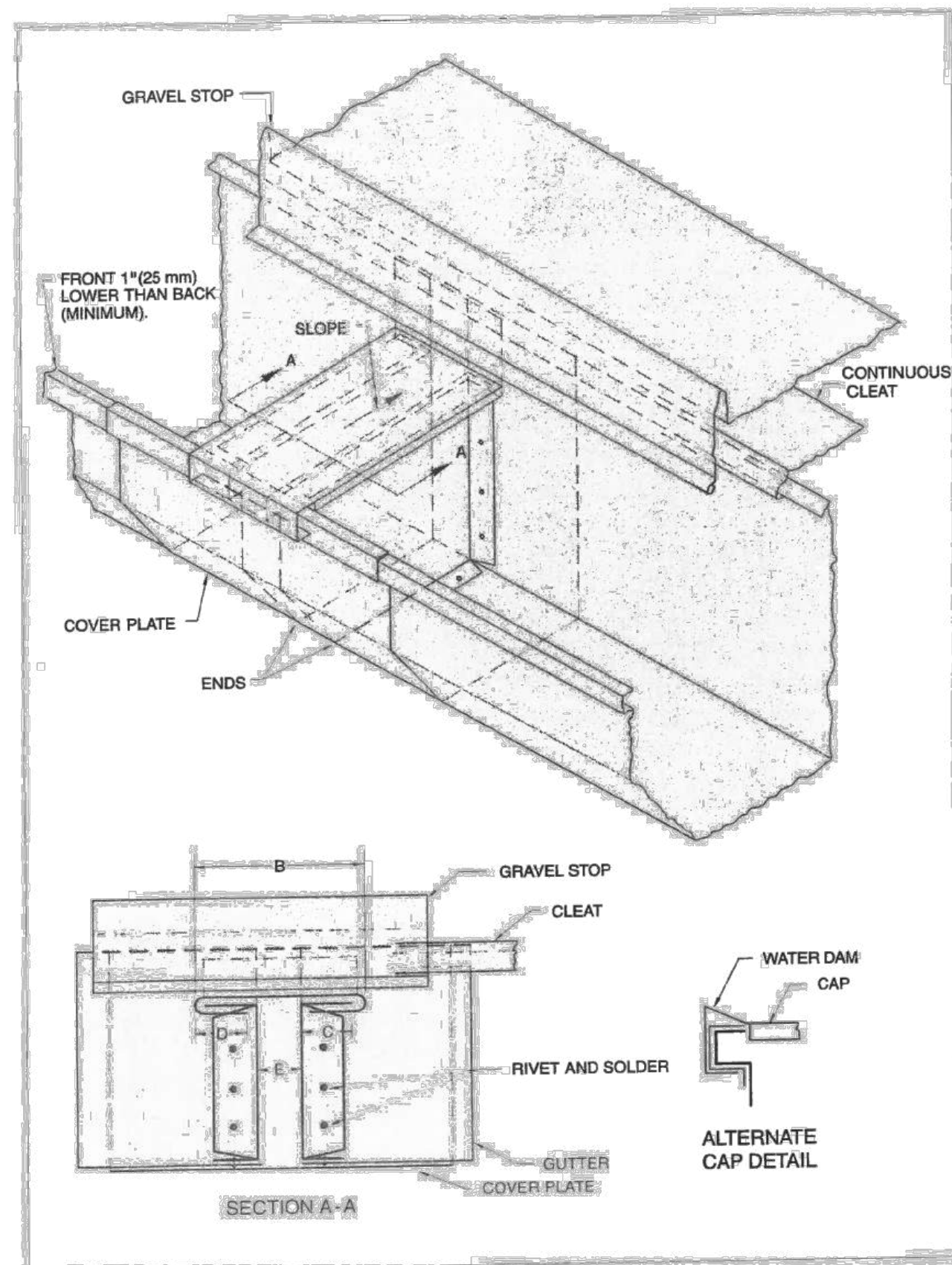


FIGURE 1-7 BUTT TYPE GUTTER EXPANSION JOINT

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1.25

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PROJECT LOCATION:
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DETROIT, MICHIGAN**

DESIGNED BY: KBH	NTH PROJECT NO.: 23001451
DRAWN BY: KBH	SHEET SIZE: ARCH D (24"x36")
CHECKED BY: SLG	DATE: 1/31/2025
CAD FILE NAME: 23001451-DET	

SHEET TITLE:
**ROOFING DETAILS -
ALTERNATE 2**

SHEET NUMBER:
C-507

ALTERNATE 2

DTMB FILE NO. 591 22274.MNB

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ABBREVIATIONS			
ABBREV	DESCRIPTION	ABBREV	DESCRIPTION
A	AMPERES	LCS	LOCAL CONTROL STATION
A.C.	ALTERNATING CURRENT	LCP	LOCAL CONTROL PANEL
ACCU	AIR COOLED CONDENSING UNIT	LS	LIMIT SWITCH
AFF	ABOVE FINISH FLOOR	LP	LIGHTING PANEL
APPROX	APPROXIMATE	LT	LIGHTING TRANSFORMER
ATS	AUTOMATIC TRANSFER SWITCH	LTG.	LIGHTING
AUX	AUXILIARY	MAU	MAKE-UP AIR UNIT
		MAX	MAXIMUM
BE	BOTTOM ELEVATION	MCC	MOTOR CONTROL CENTER
BLDG	BUILDING	MCP	MOTOR CIRCUIT PROTECTION
BRKR	BREAKER	MECH	MECHANICAL
		MFR'S.	MANUFACTURERS
C	CONDUIT	MH	MANHOLE
CAB	CABINET	M.H.	MOUNTING HEIGHT
CAT	CATALOG	MIN	MINIMUM
CFP	CHEMICAL FEED PUMP	MISC	MISCELLANEOUS
CKT	CIRCUIT	MOV	MOTORIZED OPERATED VALVE
COL.	COLUMN	MTD	MOUNTED
COMM	COMMUNICATION	MTG	MOUNTING
COMP.	COMPARTMENT	MPZ	MINI POWER ZONE
CONC.	CONCRETE	NC	NORMALLY CLOSED
CONT	CONTINUATION/CONTROL	NF	NON-FUSED
CP	CONTROL PANEL	NL	NIGHT LIGHT
		N.O.	NORMALLY OPEN
D.C.	DIRECT CURRENT	NO.	NUMBER
DIA.	DIAMETER	NTS	NOT TO SCALE
DISC	DISCONNECT	OH	OVER HEAT
DN	DOWN	OL	OVER LOAD
DPS	DIFFERENTIAL PRESSURE SWITCH	P	PUMP
DWG(S)	DRAWING(S)	PB	PUSHBUTTON
		PP	POWER PANEL
E	EMERGENCY	PH OR Ø	PHASE
EC	EMPTY CONDUIT	PNL	PANEL
EF	EXHAUST FAN	POS	POSITION
ELEC.	ELECTRICAL	PP	POWER PANEL
EL.	ELEVATION	PS	PRESSURE SWITCH
EMER.	EMERGENCY	PRI	PRIMARY
EO	ELECTRICALLY OPERATED	PT	POTENTIAL TRANSFORMER
EQUIPT.	EQUIPMENT	PWR	POWER
EUH	ELECTRIC UNIT HEATER	PV	PRESSURE VALVE
EWC	ELECTRIC WATER COOLER	QTY	QUANTITY
EXIST	EXISTING	RECEPT	RECEPTACLE
		RM	ROOM
		RVSS	REDUCED VOLTAGE SOFT STARTER
FDR	FEEDER	SF	SUPPLY FAN
FIN	FINISH	SP	SUMP PUMP
FIXT	FIXTURE	SQ	SQUARE
FL	FLOOR	SW/SWS	SWITCH/SWITCHES
FLA	FULL LOAD AMPERES	SWBD	SWITCHBOARD
FT	FEET	SYS	SYSTEM
GFI	GROUND FAULT INTERRUPTER	TC	TERMINAL CABINET
GEN	GENERATOR	TERM	TERMINAL CABINET
GND	GROUND	TEL	TELEPHONE
GUH	GAS FIRED UNIT HEATER	XFMR	TRANSFORMER
		TRFR	TRANSFER
HOA	HAND-OFF-AUTOMATIC	TYP	TYPICAL
HP	HORSEPOWER	UON	UNLESS OTHERWISE NOTED
HTR.	HEATER	V	VOLTS
IH	INTAKE HOOD	VA	VOLT-AMPERES
INSTR.	INSTRUMENTATION	VFD	VARIABLE FREQUENCY DRIVE
JB	JUNCTION BOX	VSC	VARIABLE SPEED CONTROL
KV	KILOVOLTS	W	WIRE
KVA	KILOVOLTS-AMPERES	W/	WITH
KW	KILOWATTS	WP	WEATHERPROOF

SYMBOLS	
SYMBOL	DESCRIPTION
	DRY-TYPE TRANSFORMER - KVA AS INDICATED
	SWITCH SIZE/FUSE SIZE
	DRAWOUT CIRCUIT BREAKER
	DISCONNECT SWITCH NON-FUSED - SIZE AS INDICATED
	MANUAL STARTER (SINGLE PHASE)
	COMBINATION THREE PHASE FULL VOLTAGE MAGNETIC MOTOR STARTER
	PUMP CONTROL PANEL
	PACKAGE CONTROL
	EXIST. LIGHTING AND/OR RECEPTACLE PANEL (LP/RP)
	POWER PANEL
	LIGHTING PANEL
	TELEPHONE OUTLET
	DATA OUTLET
	JUNCTION BOX OR PULLBOX - AS INDICATED
	MOTOR - 1 PHASE / MOTOR - 3 PHASE
	INDICATES NEW CABLE OR WIRE NUMBER
	INDICATES EXIST. CABLE OR WIRE
	DENOTES EXIST. ELECTRICAL EQUIPMENT TO BE REMOVED - LIGHTING, RECEPTACLES ETC. (UON)
	LIGHT "LINEWORK/OUTLINE" INDICATES "EXISTING" (UON)
	DARK "LINEWORK/OUTLINE" INDICATES "NEW" (UON)
	CONDUIT RUN - EXPOSED
	CONDUIT RUN CONCEALED IN FLOOR, SLAB OR WALL
	CONDUIT - DOWN
	EXIST. CONDUIT - DOWN
	CONDUIT - UP
	EXIST. CONDUIT - UP
	HOMERUN TO PANEL AS INDICATED
	EXIST. HOMERUN TO PANEL AS INDICATED
	GROUND ROD
	GROUND CONDUCTOR - SIZE AS INDICATED
	GROUND BUS - SIZE AS REQUIRED
	GROUND ROD WITH TEST WELL
	KEY INTERLOCK
	SELECTOR SWITCH
	PUSHBUTTON STATION
	CONTACTOR
	INTERCOM
	CAMERA
	DOOR SWITCH
	CARD READER

SYMBOLS	
SYMBOL	DESCRIPTION
	INDICATES CIRCUIT BREAKER FRAME SIZE
	INDICATES CIRCUIT BREAKER TRIP SETTING
	INDICATES THREE POLE
	CONTACT - NORMALLY OPEN
	CONTACT - NORMALLY CLOSED
	FUSE - SIZE AS INDICATED
	MOLDED CASE CIRCUIT BREAKER
	LIMIT SWITCH - NORMALLY OPEN
	LIMIT SWITCH - NORMALLY CLOSED
	THERMOSTAT/TEMPERATURE SWITCH - NORMALLY OPEN
	MOMENTARY PUSHBUTTON - NORMALLY CLOSED (MUSHROOM HEAD)
	MOMENTARY PUSHBUTTON - NORMALLY OPEN
	MOMENTARY PUSHBUTTON - NORMALLY CLOSED
	GROUND
	OVERLOAD RELAY
	'CR'-CONTROL RELAY, RELAY - TYPE AS INDICATED: 'M'-STARTER COIL, 'TD'-TIME DELAY RELAY, 'F'-FORWARD, 'R'-REVERSE, 'SS'-SLOW SPEED, 'FS'-FAST SPEED
	'PUSH-TO-TEST' PILOT LIGHT - LETTER DENOTES COLOR, SEE "STANDARDS" THIS DWG.
	INDICATES ELECTRICAL CONNECTION
	INDICATES NO ELECTRICAL CONNECTION
	DRAWOUT CIRCUIT BREAKER
	VIBRATION SENSOR
	RECEPTACLE
	PENDANT HIGH BAY FIXTURE
	PENDANT HIGH BAY FIXTURE UNSWITCHED
	4' OR 8' LINEAR FIXTURE
	4' OR 8' LINEAR FIXTURE UNSWITCHED
	EMERGENCY LIGHTING UNIT
	WALL MOUNTED EXIT SIGN
	CEILING MOUNTED EXIT SIGN
	WALL MOUNTED FIXTURE UNSWITCHED
	WALL MOUNTED LIGHTS FIXTURE
MOUNTING HEIGHTS	
EQUIP/OUTLETS	
TOGGLE SWITCHES - GENERAL	4'-0" AFF
RECEPTACLES - OUTDOOR	4'-0" AFF/GRADE
RECEPTACLES - GENERAL USE	1'-6" AFF
PUSHBUTTONS	4'-6" AFF
DISCONNECT SWITCHES/CONTACTORS	5'-6" AFF
MOTOR STARTERS	5'-6" AFF
PANELS AND/OR CABINETS	6'-0" TO TOP AFF
DEVICES/OUTLETS - NOT LISTED	SEE PLANS
FIRE ALARM PULL STATION	4'-0" AFF
FIRE ALARM HORN/STROBE	7'-0" AFF
MTG HEIGHTS	
TOGGLE SWITCHES - GENERAL	4'-0" AFF
RECEPTACLES - OUTDOOR	4'-0" AFF/GRADE
RECEPTACLES - GENERAL USE	1'-6" AFF
PUSHBUTTONS	4'-6" AFF
DISCONNECT SWITCHES/CONTACTORS	5'-6" AFF
MOTOR STARTERS	5'-6" AFF
PANELS AND/OR CABINETS	6'-0" TO TOP AFF
DEVICES/OUTLETS - NOT LISTED	SEE PLANS
FIRE ALARM PULL STATION	4'-0" AFF
FIRE ALARM HORN/STROBE	7'-0" AFF
NOTES:	
1. ALL ELEVATIONS ARE TO "CENTERLINE" OF DEVICE INDICATED, UNLESS OTHERWISE NOTED.	
2. WHERE ELECTRICAL DEVICES WITH DIFFERENT MOUNTING HEIGHTS ARE LOCATED IN THE SAME AREA(S)-ALIGN DEVICES VERTICALLY THRU THE "CENTERLINES" OF THE DEVICES.	

ELECTRICAL	
SHEET NO	SHEET NAME
GE-001	DRAWING INDEX, NOTES, SYMBOLS AND ABBREVIATIONS
E-001	ELECTRICAL SITE PLAN
E-002	ONE LINE DIAGRAMS
E-003	SCHEDULES
E-004	PUMP STATION CONTROL PANEL SCHEMATIC
E-005	DETAILS

- GENERAL ELECTRICAL NOTES:**
- ALL RACEWAYS AND EQUIPMENT SHALL BE INSTALLED AND GROUNDED IN ACCORDANCE WITH THE LATEST STATE ADOPTED EDITION OF THE NATIONAL ELECTRICAL CODE (2023) AND APPLICABLE LOCAL CODES.
 - THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF TERMINAL BOXES AND CONDUIT ENTRANCES OF ALL EQUIPMENT AGAINST APPROVED SHOP DRAWINGS BEFORE STUBBING UP CONDUITS.
 - CONDUIT RUNS, WHERE SHOWN, ARE DIAGRAMMATICAL ONLY. ALL CONDUITS SHALL BE INSTALLED IN A MANNER TO PREVENT CONFLICTS WITH EQUIPMENT OR STRUCTURAL CONDITIONS. EXPOSED CONDUIT SHALL BE INSTALLED PARALLEL OR PERPENDICULAR TO BEAMS AND WALLS.
 - IN THE EVENT OF INTERFERENCE BETWEEN ELECTRICAL EQUIPMENT SHOWN ON THE DRAWINGS AND OTHER EQUIPMENT, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING AND THE ENGINEER SHALL APPROVE PROPOSED CHANGES BEFORE THEY ARE MADE.
 - LOCATION OF PULL BOXES ARE APPROXIMATE. THE CONTRACTOR SHALL COORDINATE EXACT LOCATION WITH MECHANICAL PIPING AND SHALL BE 6 INCHES (MINIMUM) AWAY FROM MECHANICAL PIPING FLOW LINES.
 - ONLY MAJOR PULL BOXES ARE SHOWN. THE CONTRACTOR SHALL PROVIDE ADDITIONAL PULL BOXES WHERE REQUIRED TO MAKE A WORKABLE INSTALLATION.
 - THE WIRING DIAGRAMS, QUANTITY AND SIZE OF WIRES AND CONDUIT REPRESENT ARRANGEMENT BASED UPON SELECTED STANDARD COMPONENTS OF ELECTRICAL EQUIPMENT. MODIFICATIONS ACCEPTABLE TO THE ENGINEER MAY BE MADE BY THE CONTRACTOR TO ACCOMMODATE EQUIPMENT ACTUALLY PURCHASED. THE BASIC SEQUENCE AND METHOD OF CONTROL MUST BE MAINTAINED AS INDICATED ON THE DRAWINGS.
 - LOCATIONS OF ALL EQUIPMENT ARE PRELIMINARY. CONTRACTOR SHALL FIELD DETERMINE FINAL LOCATION PRIOR TO STARTING WORK. ANY ADJUSTMENTS INCLUDING ADDITIONAL SERVICES AND MATERIAL SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE CONTRACT.
 - ALL WORK SHALL BE COORDINATED WITH OTHER TRADES AND OWNER'S FACILITY OPERATION REQUIREMENTS. ANY SHUTDOWN OF EXISTING FACILITY SERVICES SHALL BE MINIMIZED. WHEN ANY SHUTDOWN IS NECESSARY, IT SHALL BE AS PERMITTED BY OWNER'S REPRESENTATIVE AND FACILITY INTERRUPTION SHALL BE MINIMIZED.
 - ALL WORK TO BE PROVIDED IN A SAFE MANNER. CONTRACTOR SHALL FOLLOW ALL FACILITY SAFETY PROTOCOLS AND ANY OSHA REQUIREMENTS ALL THE TIME INCLUDING ANY LOCKOUT, TAGOUT PROCEDURES.

- GENERAL ELECTRICAL REQUIREMENTS:**
- CODES AND STANDARDS: ALL ELECTRICAL WORK SHALL BE DONE IN STRICT ACCORDANCE WITH THE LATEST STATE ADOPTED EDITION OF NATIONAL ELECTRICAL CODE (2023), NATIONAL ELECTRICAL SAFETY CODE (NEC), AND MDTOT GUIDELINES AND REGULATIONS.
 - BRANCH CIRCUITS AND FEEDERS (SIZES #12 AWG THRU #500 KCMIL): TYPE THHN/THWN STRANDED COPPER IN CONDUIT. ALL BRANCH CIRCUITS SHALL HAVE SEPARATE NEUTRALS. MINIMUM SIZE FOR LIGHTING AND POWER BRANCH CIRCUITS SHALL BE #12 AWG STRANDED.
 - GROUNING AND BONDING: ALL EQUIPMENT AND NON-CURRENT CARRYING METAL COMPONENTS OF THE ELECTRICAL SYSTEM SHALL BE GROUNDED. ALL ELECTRICAL EQUIPMENT GROUNDING SHALL COMPLY WITH THE NEC.
 - HANGERS AND SUPPORTS: ELECTRICAL EQUIPMENT SHALL BE ADEQUATELY SUPPORTED FROM ELEMENTS OF THE BUILDING. STRAPS AND HANGERS SHALL BE HEAVY-DUTY AND COMPATIBLE WITH CONDUITS SUPPORTED.
 - RIGID CONDUIT: MINIMUM CONDUIT SIZE SHALL BE 3/4-INCH. UNLESS NOTED OTHERWISE, PROVIDE RIGID, GALV. STEEL, CONDUITS FOR ALL INDOOR AND OUTDOOR EXPOSED CONDUIT RUNS AND PROVIDE RIGID, PVC-80 CONDUITS IN DUCTBANKS.
 - FLEXIBLE CONDUIT: FLEXIBLE CONDUIT MAY BE USED ONLY FOR FINAL CONNECTIONS. MAXIMUM LENGTHS SHALL NOT EXCEED 72".
 - ELECTRICAL IDENTIFICATION: PROVIDE IDENTIFICATION LABELS AND NAMEPLATES AS PER MDTOT ELECTRICAL IDENTIFICATION AND LABELING STANDARD.
 - DISCONNECT SWITCH: PROVIDE HEAVY DUTY FUSED OR NON-FUSIBLE DISCONNECT AS SHOWN ON DRAWINGS. DISCONNECT SWITCH SHALL BE CAPABLE OF BEING 'PADLOCKED' IN THE 'OFF' POSITION AND NEMA-12 RATED FOR INDOOR USE.
 - MANUAL TRANSFER SWITCH: PROVIDE HEAVY DUTY FUSED MTS AS SHOWN ON DRAWINGS. UNLESS OTHERWISE NOTED, PROVIDE FUSES FOR POWER 'SOURCE 1' AND 'SOURCE 2'. MTS SHALL BE CAPABLE OF BEING 'PADLOCKED' IN 'SOURCE 1', 'SOURCE 2' OR 'OFF' POSITION AND NEMA-3R RATED FOR OUTDOOR USE.

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For the location of public utility lines.
ACTIVATE NUMBER 8111
COLOR CODES FOR UTILITY LOCATING:
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Orange PHONE & CABLE
Blue WATER
Green SEWER
Red FIRE
Purple SURVEYING
If you are going to work near overhead wires - CALL MISS DIG

MDOT
Michigan Department of Transportation



REVISION BLOCK	
REV	DATE: DESCRIPTION

SUBMITTAL LOG	
DATE	PACKAGE NAME
2023-12-19	75% DRAWINGS
2024-03-06	90% DRAWINGS
2025-01-31	ISSUED FOR BID

PROJECT NAME:
MDOT DETROIT MAINTENANCE GARAGE SEWER RECONSTRUCTION

PROJECT LOCATION:
**1500 E. FERRY STREET
DETROIT, MICHIGAN**

DESIGNED BY: SP	NTH PROJECT NO.: 23001451
DRAWN BY: CH	SHEET SIZE: ARCH D (24"x36")
CHECKED BY: SG	DATE: 1/30/2025
CAD FILE NAME: GE-001	

SHEET TITLE:
**DRAWING INDEX, NOTES,
SYMBOLS AND
ABBREVIATIONS**

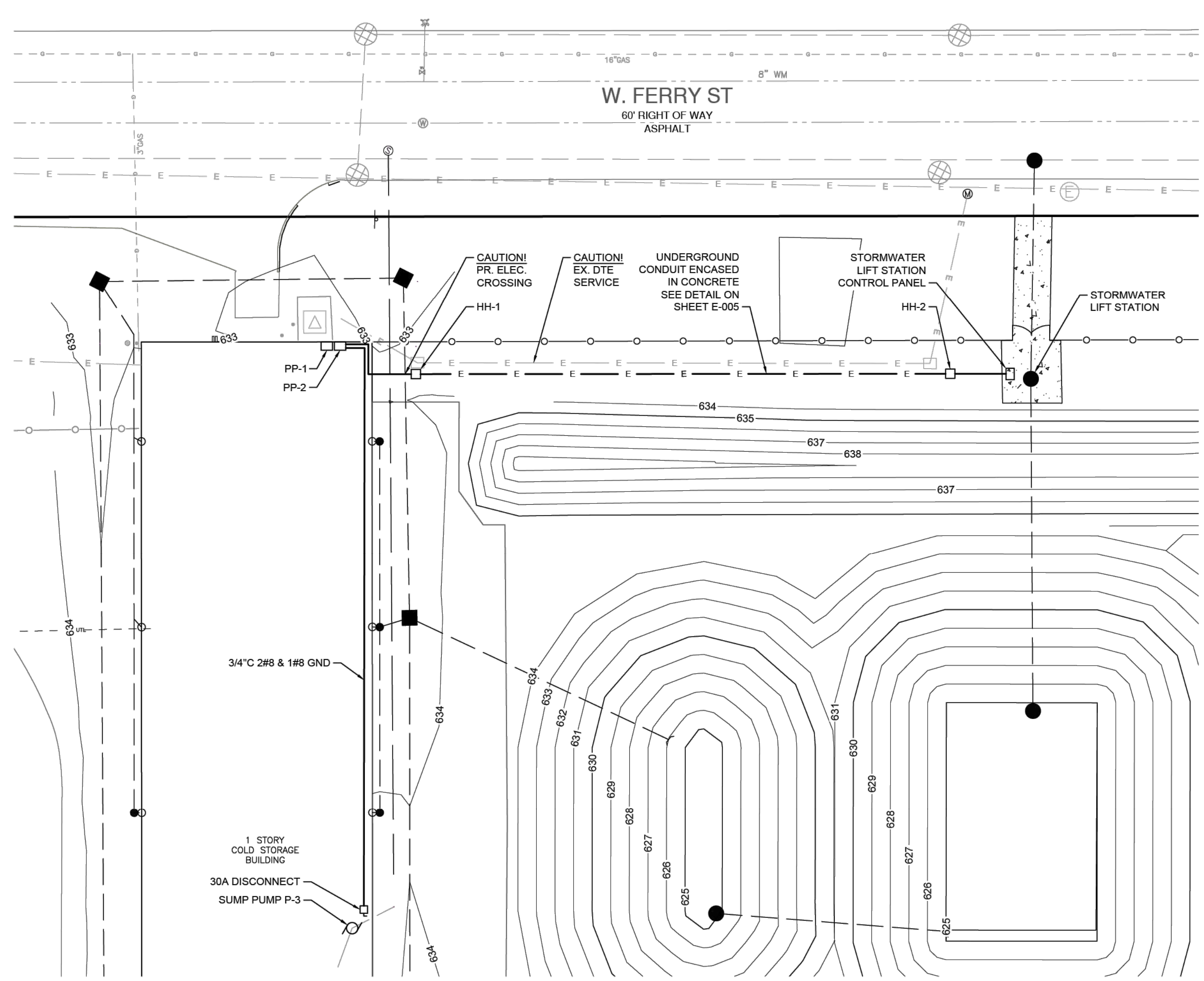
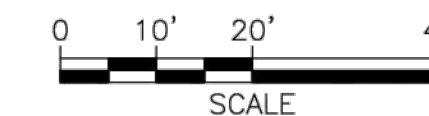
SHEET NUMBER:
GE-001

BID

DTMB FILE NO. 591 22274.MNB

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DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
STATE FACILITIES ADMINISTRATION
DESIGN AND CONSTRUCTION DIVISION
ADAM P. LACH, RA, DIRECTOR

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LEGEND

- EXISTING PROPERTY BOUNDARY
- EXISTING CONTOURS
- EXISTING FENCE
- EXISTING RAILROAD
- EXISTING BOLLARD POST
- EXISTING LIGHT POLE
- EXISTING HYDRANT
- EXISTING WATERMAIN
- EXISTING STORM STRUCTURE
- EXISTING STORM SEWER
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY SEWER
- EXISTING FLOOR DRAINS
- EXISTING ELECTRICAL STRUCTURES
- EXISTING ELECTRICAL UNDERGROUND
- EXISTING GAS LINE
- PROPOSED CONCRETE PAVEMENT
- PROPOSED FENCE
- PROPOSED BOLLARD
- PROPOSED CONTOURS
- PROPOSED CONDUIT RUN - EXPOSED
- PROPOSED UNDERGROUND ELECTRIC
- PROPOSED FORCE MAIN
- PROPOSED STORM SEWER
- PROPOSED STORM STRUCTURES

GENERAL SHEET NOTES

1. REFER TO SHEET GE-001 FOR GENERAL ELECTRICAL NOTES AND SYMBOLS.
2. LOCATIONS OF ALL UNDERGROUND ELEMENTS ARE APPROXIMATE ONLY AND SHALL BE FIELD VERIFIED PRIOR TO STARTING WORK.
3. CONTRACTOR SHALL LOCATE ALL EXISTING UNDERGROUND UTILITIES NEAR WORK AREA AND PROTECT THEM FROM DAMAGE.
4. DRAWINGS ARE PREPARED BASED ON LIMITED FIELD OBSERVATIONS. ACTUAL FIELD CONDITIONS MAY BE DIFFERENT THAN WHAT IS SHOWN ON THE DRAWINGS. IN ANY EVENT, THE CONTRACTOR SHALL PROVIDE ALL ADJUSTMENTS IN FIELD, AND ANY ADDITIONAL EQUIPMENT AND SERVICES TO MAKE A COMPLETE AND FUNCTIONAL RACEWAY SYSTEM.
5. CONDUIT ROUTING AND EQUIPMENT LOCATIONS SHOWN ARE DIAGRAMMATIC ONLY. EXACT LOCATIONS SHALL BE FIELD DETERMINED BY THE CONTRACTOR PRIOR TO CONSTRUCTION OF ANY NEW WORK.
6. ALL WORK NEAR, OR UNDER ROADWAYS SHALL BE IN ACCORDANCE WITH DOT REQUIREMENTS.
7. ALL WORK NEAR UTILITY SERVICES, INCLUDING POWER, FIBER, WATER, GAS, TELEPHONE, ETC. SHALL BE IN ACCORDANCE WITH THE UTILITY COMPANY'S REQUIREMENTS.
8. ALL AREAS OF EARTH DISTURBANCE CAUSED BY CONSTRUCTION ACTIVITIES SHALL BE SEEDED AND MULCHED WITH 3" TOPSOIL AND MDOT CLASS A SEED WHERE FINAL EARTH STABILIZATION MEASURES ARE NOT SPECIFICALLY DESIGNATED.
9. TOPOGRAPHIC SURVEY WAS PERFORMED BY KEM-TEC DATED AUGUST 25, 2023. ALL EXISTING INFORMATION SHOWN IS FROM THIS SURVEY OF RECORD OR WAS SUPPLEMENTED BY INFORMATION FROM SITE VISITS, PREVIOUSLY-SUBMITTED SITE PLANS, OR HISTORICAL DRAWINGS.

BID

DTMB FILE NO. 591 22274.MNB

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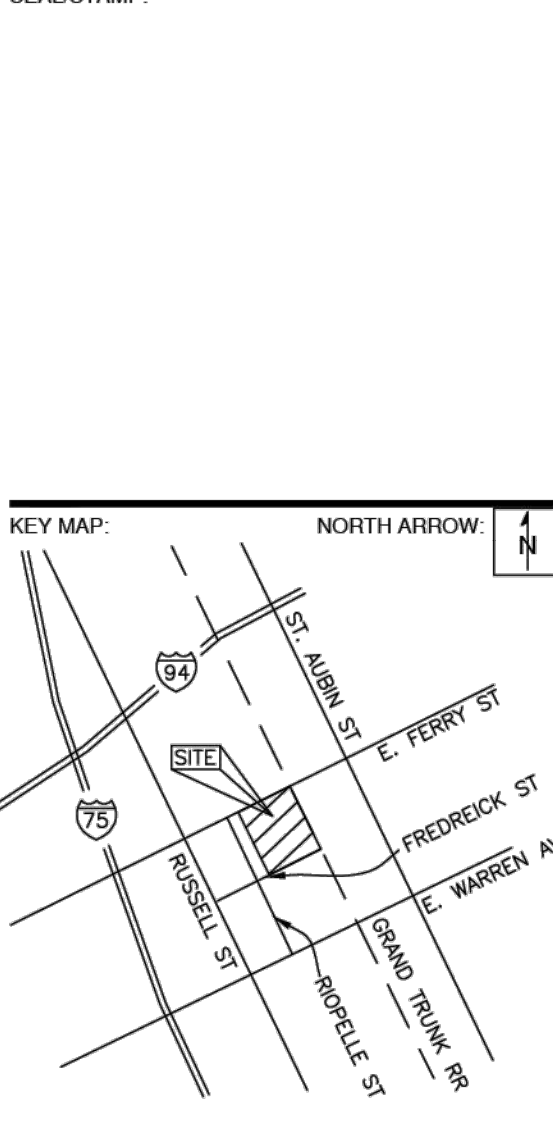
3 WORKING DAYS
BEFORE YOU DIG
 CALL MISS DIG
 1-800-482-7171

For the location of public utility lines.
 ATTENTION: NUMBER 811!

Color Codes for Utility Location:
 Yellow: GAS & DIESEL
 Orange: PHONE & CABLE
 Red: ELECTRIC
 Blue: WATER
 Green: SEWER
 Purple: TELEPHONE

IF YOU ARE GOING TO WORK NEAR OVERHEAD WIRES - CALL MISS DIG

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DESIGNED BY: SP	NTH PROJECT NO.: 23001451
DRAWN BY: CH	SHEET SIZE: ARCH D (24"x36")
CHECKED BY: SG	DATE: 1/30/2025
CAD FILE NAME: E-001	

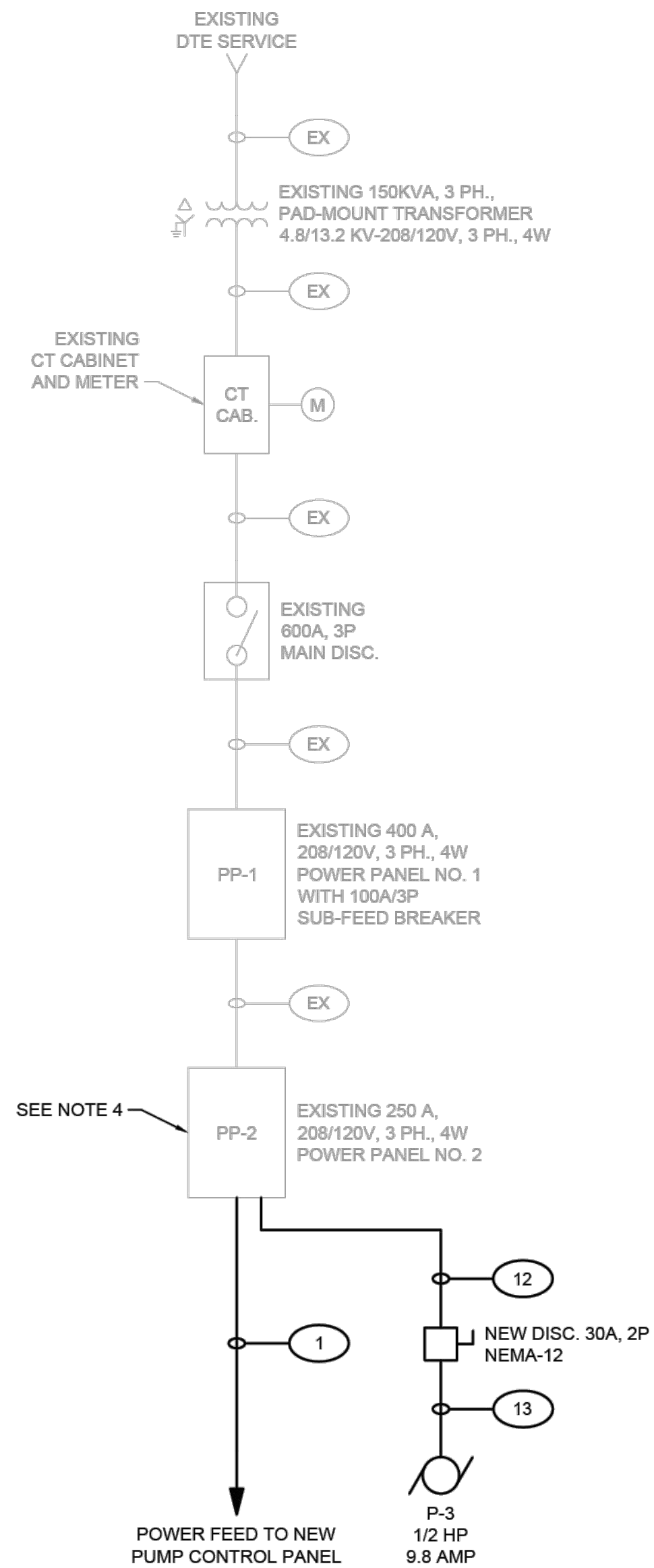
SHEET TITLE:
ELECTRICAL SITE PLAN

SHEET NUMBER:
E-001

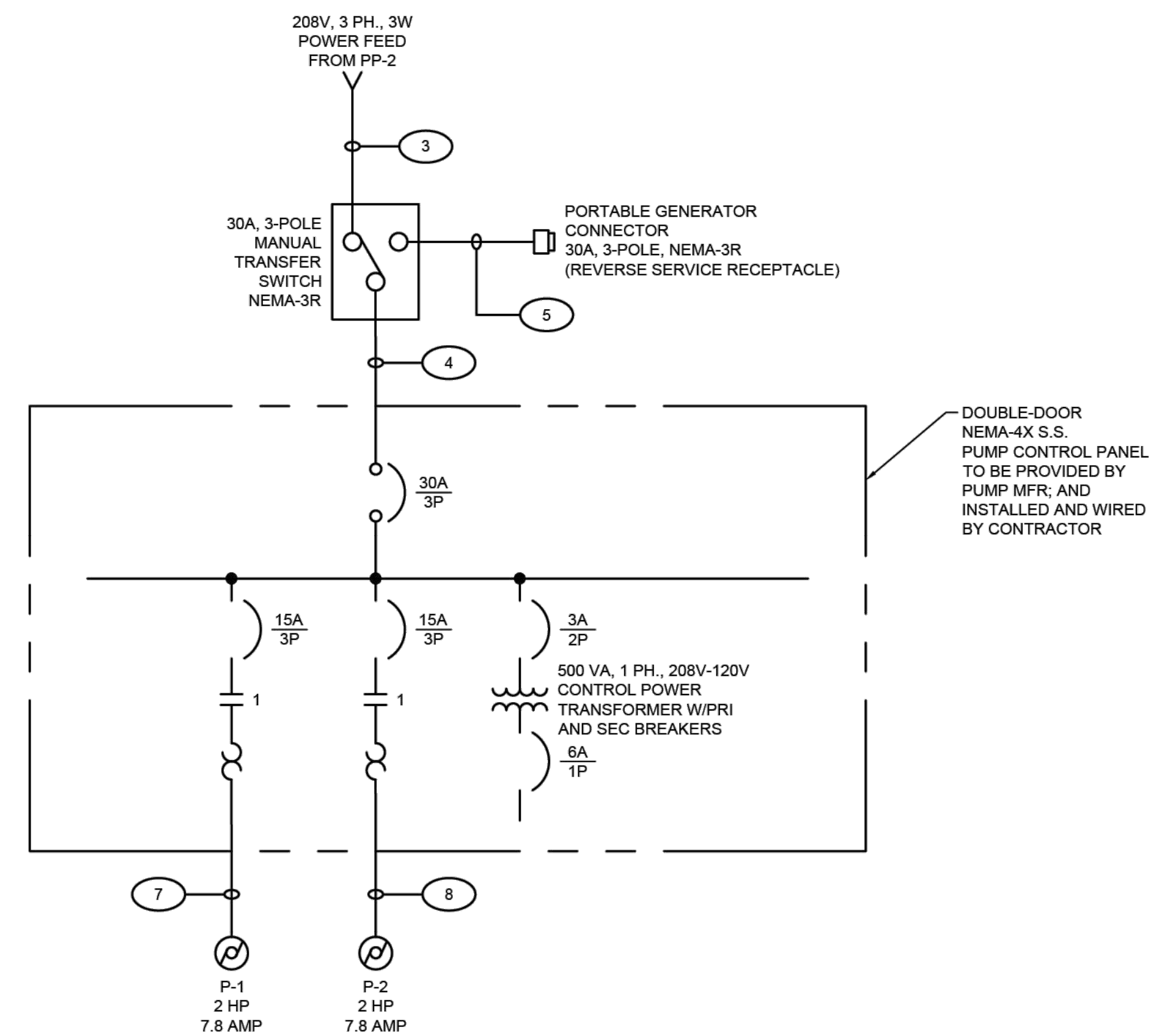
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GENERAL SHEET NOTES:

1. REFER TO SHEET GE-001 FOR GENERAL ELECTRICAL NOTES, SYMBOLS AND ABBREVIATIONS.
2. REFER TO SHEET E-003 FOR SCHEDULES.
3. REFER TO SHEET E-005 FOR DETAILS.
4. MODIFY EXISTING PP-2 AS SHOWN ON SHEET E-003.



**ONE LINE DIAGRAM
EXISTING DTE SERVICE**

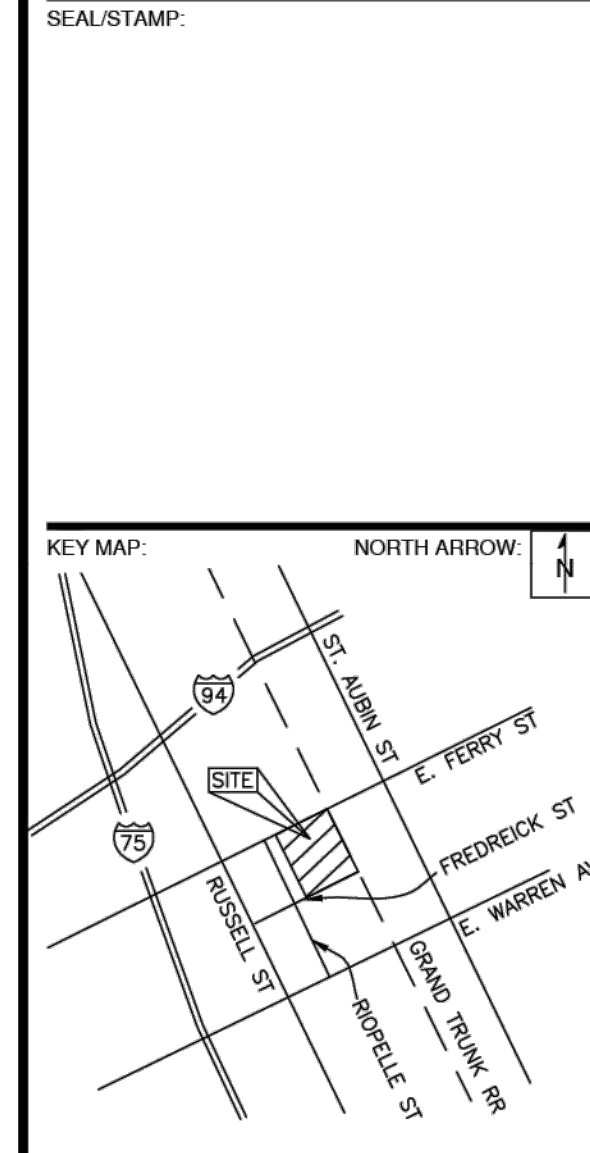


**ONE LINE DIAGRAM
NEW PUMP CONTROL PANEL**

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 For the location of public utility lines.
 ALTERNATE NUMBER (811)
 COLOR CODES FOR UTILITY LOCATING:
 Yellow GAS & DIESEL Blue WATER
 Orange PHONE & CABLE Green STORM DRAIN
 Red ELECTRIC Brown SLOPE
 Pink SURVEYING
 IF YOU ARE GOING TO WORK NEAR OVERHEAD WIRES - CALL MISS DIG

MDOT
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DESIGNED BY: SP	NTH PROJECT NO.: 23001451
DRAWN BY: CH	SHEET SIZE: ARCH D (24"x36")
CHECKED BY: SG	DATE: 1/30/2025
CAD FILE NAME: E-002	

SHEET TITLE:
ONE LINE DIAGRAMS

SHEET NUMBER:
E-002

BID

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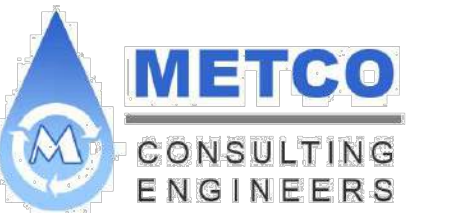


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REV	DATE-DESCRIPTION

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DESIGNED BY: SP	NTH PROJECT NO.: 23001451
DRAWN BY: CH	SHEET SIZE: ARCH D (24"x36")
CHECKED BY: SG	DATE: 1/30/2025
CAD FILE NAME: E-003	

SHEET TITLE:
SCHEDULES

SHEET NUMBER:
E-003

CONDUIT AND WIRE SCHEDULE

CONDUIT NO.	CONDUIT SIZE	WIRE/CABLE	FROM	TO	REMARK
1	1" C	3#8 & 1#8 GND	EXISTING POWER PANEL NO. 2	NEW HAND HOLE NO. 1	NEW
2	1" C	3#8 & 1#8 GND	NEW HAND HOLE NO. 1	NEW HAND HOLE NO. 2	NEW
3	1" C	3#8 & 1#8 GND	NEW HAND HOLE NO. 2	NEW MANUAL TRANSFER SWITCH	NEW
4	1" C	3#8 & 1#8 GND	NEW MANUAL TRANSFER SWITCH	NEW PUMP CONTROL PANEL	NEW
5	3/4" C	3#10 & 1#10 GND	NEW GEN. RECEPTACLE	NEW MANUAL TRANSFER SWITCH	NEW
6	1" C	SPARE	NEW HAND HOLE NO. 1	NEW HAND HOLE NO. 2	NEW
7	1" C	PUMP CABLE	NEW PUMP CONTROL PANEL	NEW PUMP NO. 1	MFR. SUPPLIED CABLE
8	1" C	PUMP CABLE	NEW PUMP CONTROL PANEL	NEW PUMP NO. 2	MFR. SUPPLIED CABLE
9	1" C	FS CABLES	NEW PUMP CONTROL PANEL	NEW FLOAT SWITCHES	MFR. SUPPLIED CABLE
10	1" C	SPARE	NEW PUMP CONTROL PANEL	NEW LS WETWELL	NEW
11	3/4" C	BARE CU	NEW PUMP CONTROL PANEL	NEW GROUND ROD	NEW
12	3/4" C	2#8 & 1#8 GND	EXISTING POWER PANEL NO. 2	NEW SUMP PUMP DISCONNECT	NEW
13	3/4" C	PUMP CABLE	NEW SUMP PUMP DISCONNECT	NEW SUMP PUMP	MFR. SUPPLIED CABLE
EX	EXISTING	EXISTING	AS SHOWN ON DRAWINGS	AS SHOWN ON DRAWINGS	EXISTING CONDUIT AND WIRES

NEW PCP SERVICE CALCS @ 208V, 3PH.

LOAD DESCRIPTION	CONNECTED LOAD			CONT. (AMPS)	REMARKS
	HP/KW	VOLTAGE	PHASE		
P-1	2 HP	208 V	3	7.8	
P-2	2 HP	208 V	3	7.8	
CPT	0.5 KW	208 V	1	3.0	
SUB-TOTAL				18.6	
NEC (25%)				4.7	
NEC MIN. AMPACITY				23.3	

MAIN OCPD SETTING (NEC):
LARGEST BKR/FUSE + FLA1 + FLA2 = 20 + 7.8 + 3 = 30.8; SELECT NEXT SIZE DOWN
PROVIDE 30 A BKR AND 30 A SERVICE TO COORDINATE W/ BKR AND EXCEED MIN. AMPACITY.

EXISTING PP-2

CIR. NO.		BKR SIZE	LOAD (VA)			DESCRIPTION	CIR. NO.	BKR SIZE	LOAD (VA)			DESCRIPTION	
			A	B	C			A	B	C			
1	20/1	100				PHOTO EYE	2		500				
3			500			WEST GATE MOTOR	4	15/3		500		EAST GATE MOTOR	
5	15/3				500		6				500		
7		500					8		1000				
9			1000			ROOF LIGHTS	10	20/3		1000		AIR COMP.	
11	30/2				1000		12				1000		
13		750				CONT. AREA FAN WEST	14	20/1	100			EXT SIGNLIGHT	
15	20/2		750				16	20/1		500			ACCESS CONTROL
17	20/1			200		N. OUTSIDE LIGHTS	18	20/1			1127	SUMP PUMP	
19	20/1					SPARE	20	20/1				SPARE	
21			1000			FAN	22	20/1				SPARE	
23	30/2				1000		24	20/1					SPARE
25		1500					26	20/1					SPARE
27	30/3		1500			NEW PUMP CONTROL PANEL	28	20/1				SPARE	
29				1500			30	20/1				SPARE	
TOTAL		2850	4750	4200			TOTAL	1600	2000	2827			

EXISTING PP-2 MODIFIED LOADS

TOTAL CONNECTED (VA) 4450 6750 6827
TOTAL CONNECTED (KVA) 18.0 (50.9 Amps)

BID

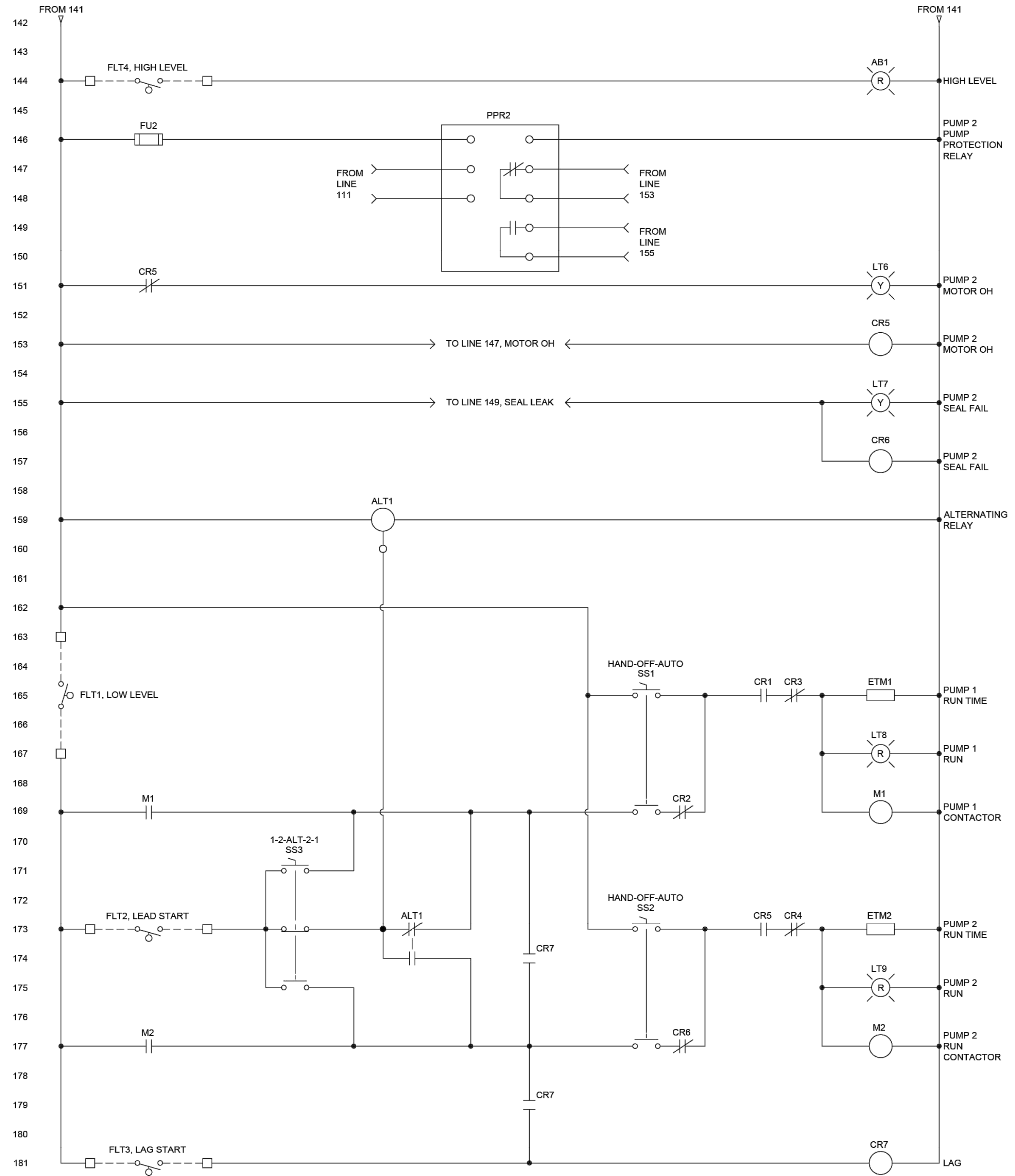
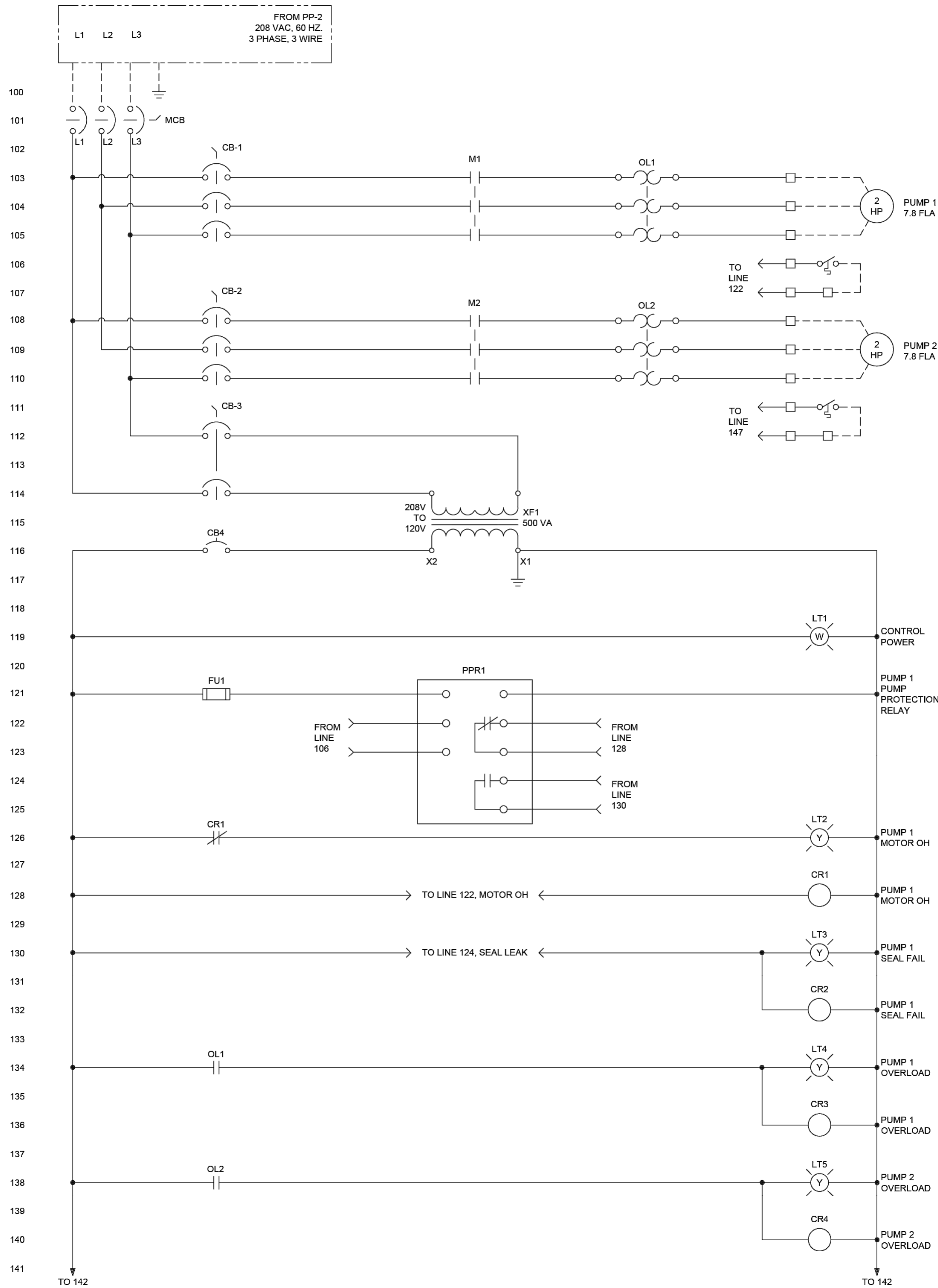
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GENERAL SHEET NOTES:

1. REFER TO SHEET GE-001 FOR GENERAL ELECTRICAL NOTES, SYMBOLS AND ABBREVIATIONS.
2. THE SCHEMATIC DIAGRAM IS PRELIMINARY. THE CONTRACTOR SHALL MODIFY BASED ON FINAL SELECTED/APPROVED PUMPS AND SUBMIT FINAL WIRING DIAGRAM.

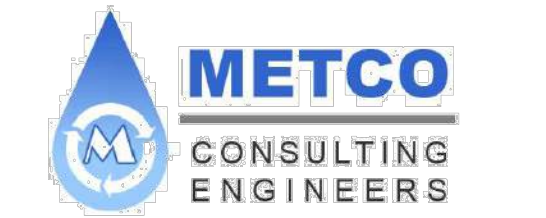


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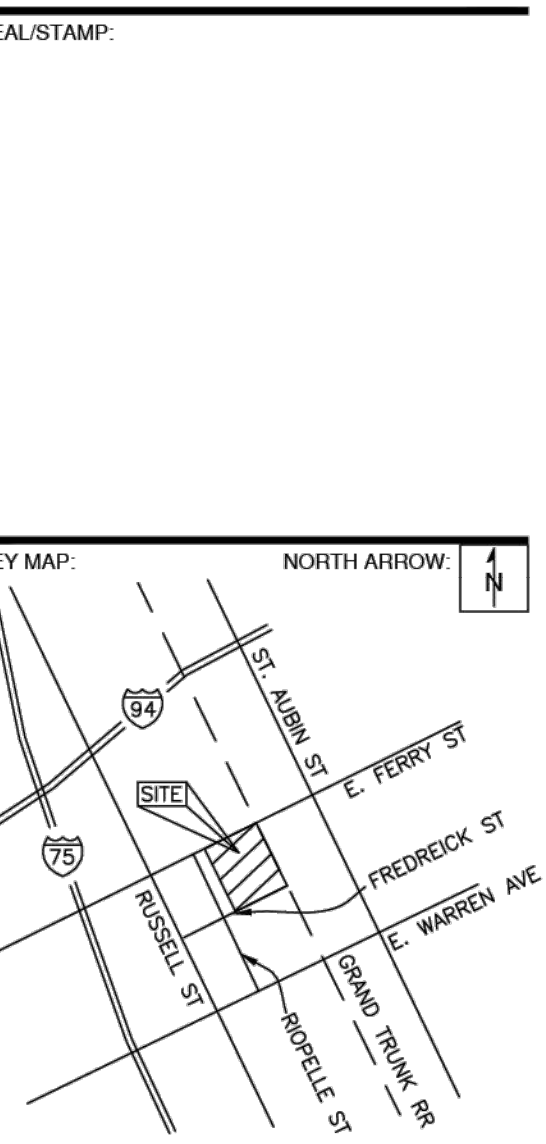
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PROJECT NAME:
MDOT DETROIT MAINTENANCE GARAGE SEWER RECONSTRUCTION

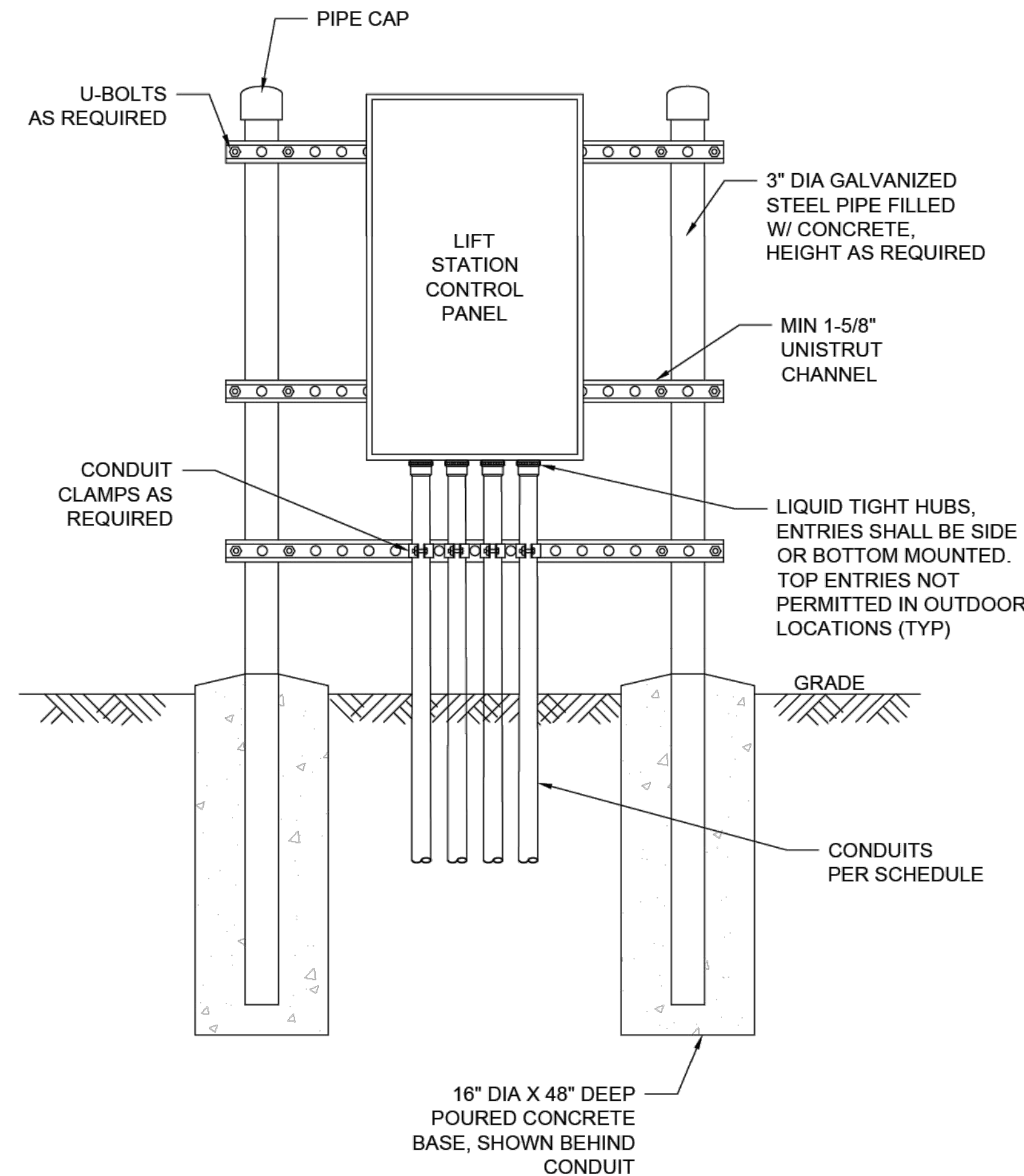
PROJECT LOCATION:
**1500 E. FERRY STREET
DETROIT, MICHIGAN**

DESIGNED BY: SP	NTH PROJECT NO.: 23001451
DRAWN BY: CH	SHEET SIZE: ARCH D (24"x36")
CHECKED BY: SG	DATE: 1/30/2025
CAD FILE NAME: E-004	

SHEET TITLE:
PUMP STATION CONTROL PANEL SCHEMATIC

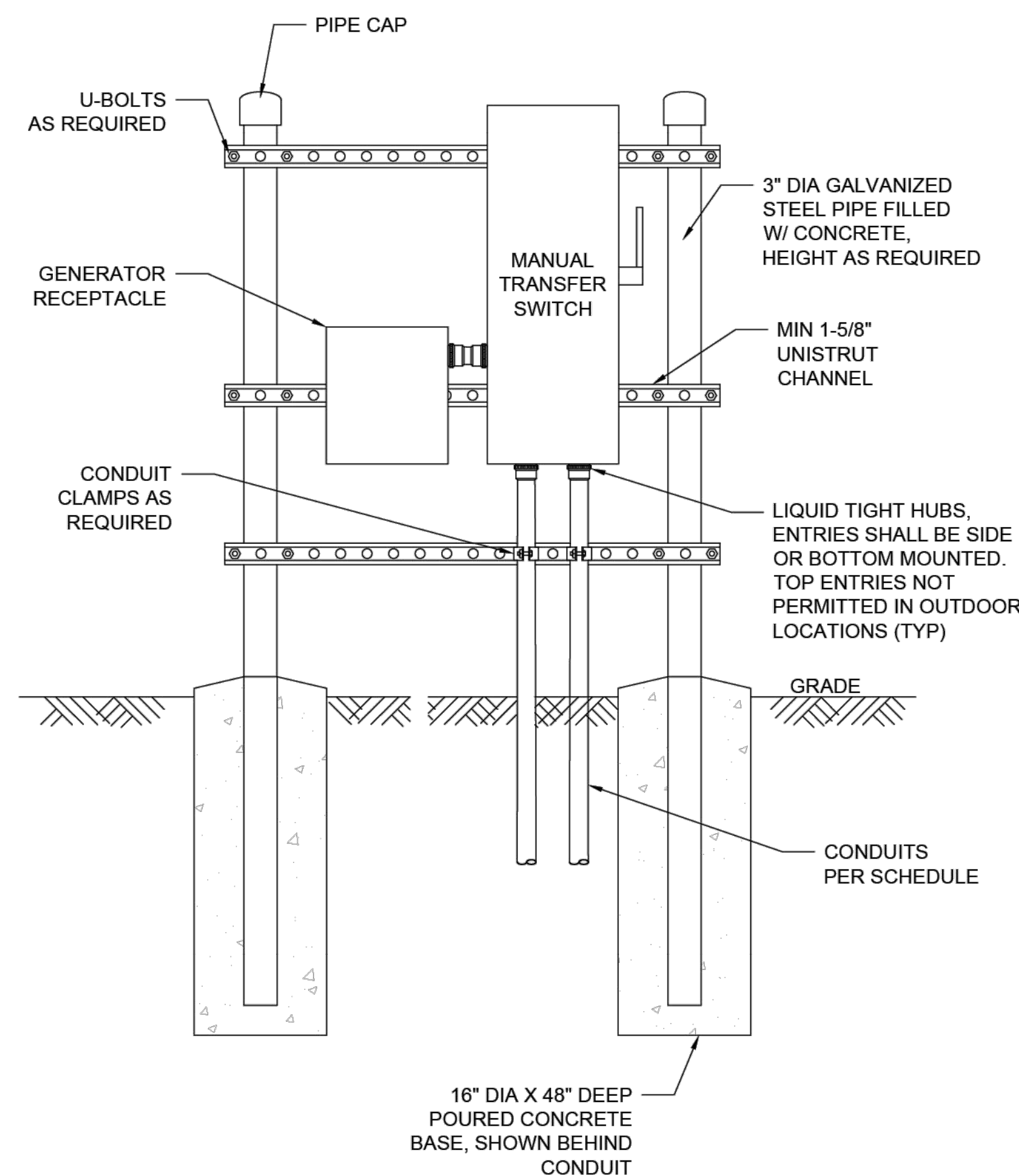
SHEET NUMBER:
E-004

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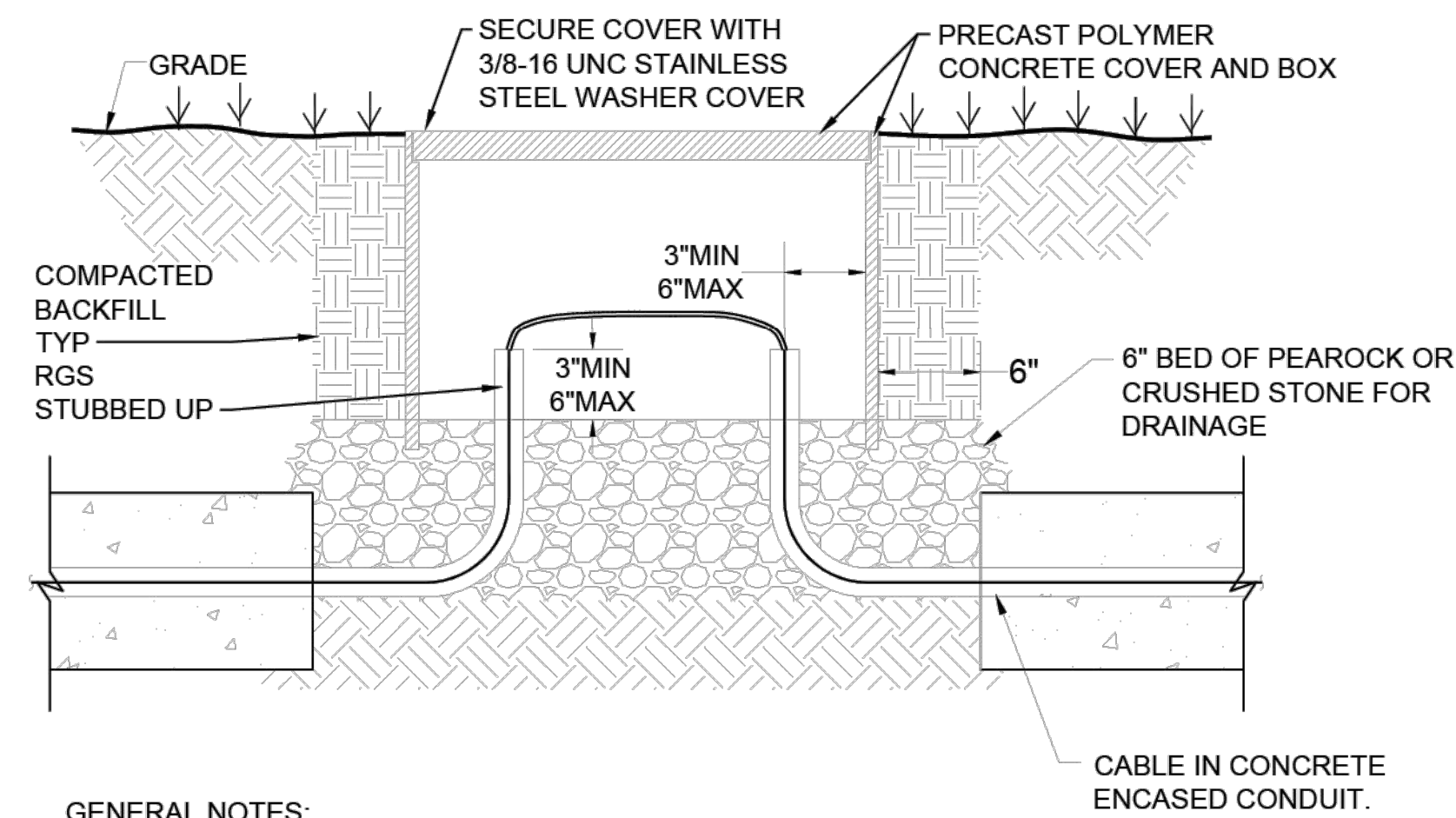
OUTDOOR ELECTRICAL EQUIPMENT RACK (FRONT)

SCALE: NONE



OUTDOOR ELECTRICAL EQUIPMENT RACK (BACK)

SCALE: NONE

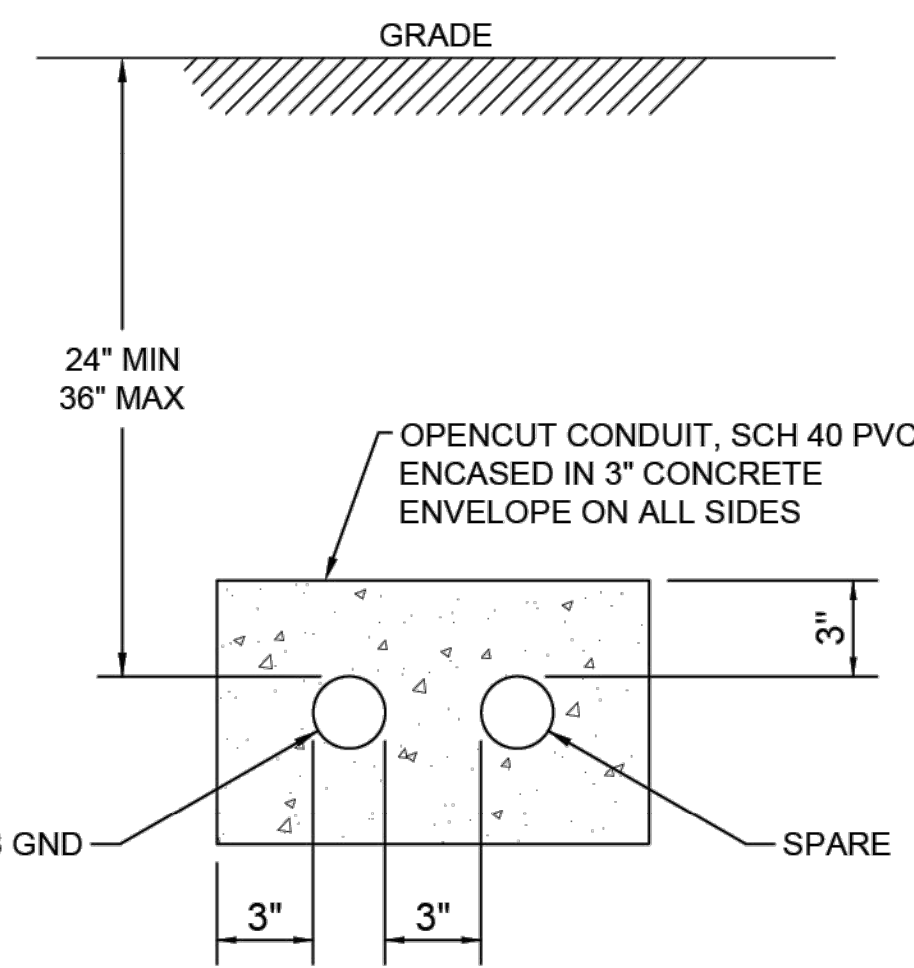


GENERAL NOTES:

- HAND HOLES SHALL NOT BE INSTALLED IN AREAS WHICH MIGHT BE SUBJECT TO WATER POOLING OR DRAINAGE.
- HAND HOLES SHALL BE PRECAST POLYMER CONCRETE.
- HAND HOLES SHALL BE SIZED TO ACCOMMODATE INCOMING AND OUTGOING CONDUIT AND CABLE AS INDICATED IN ELECTRICAL PLAN.

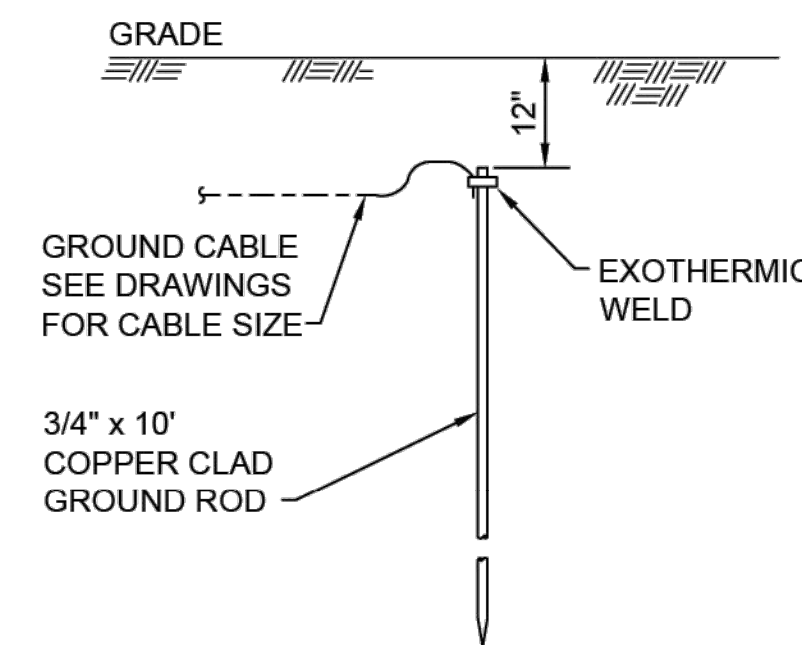
PRE-CAST POLYMER HAND HOLE

SCALE: NONE



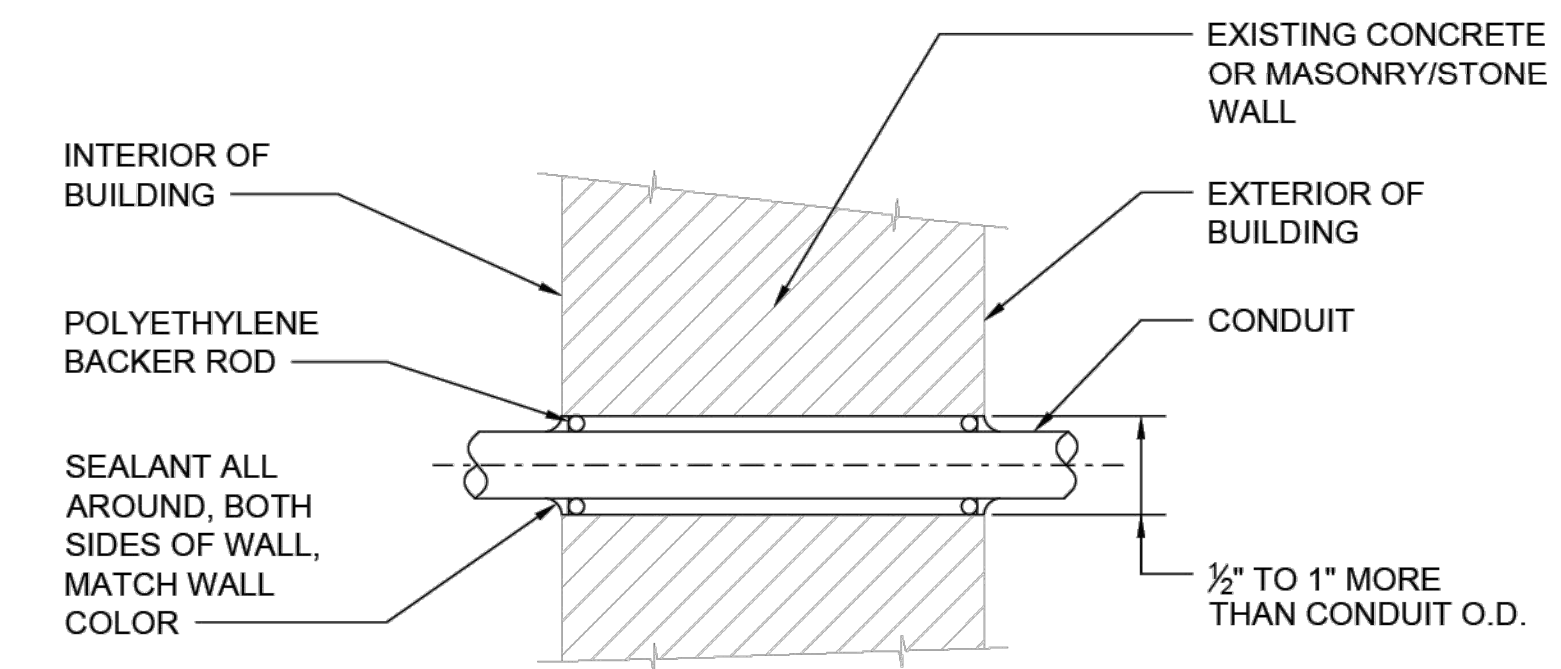
UNDERGROUND CONDUIT

SCALE: NONE



BURIED GROUND ROD

SCALE: NONE

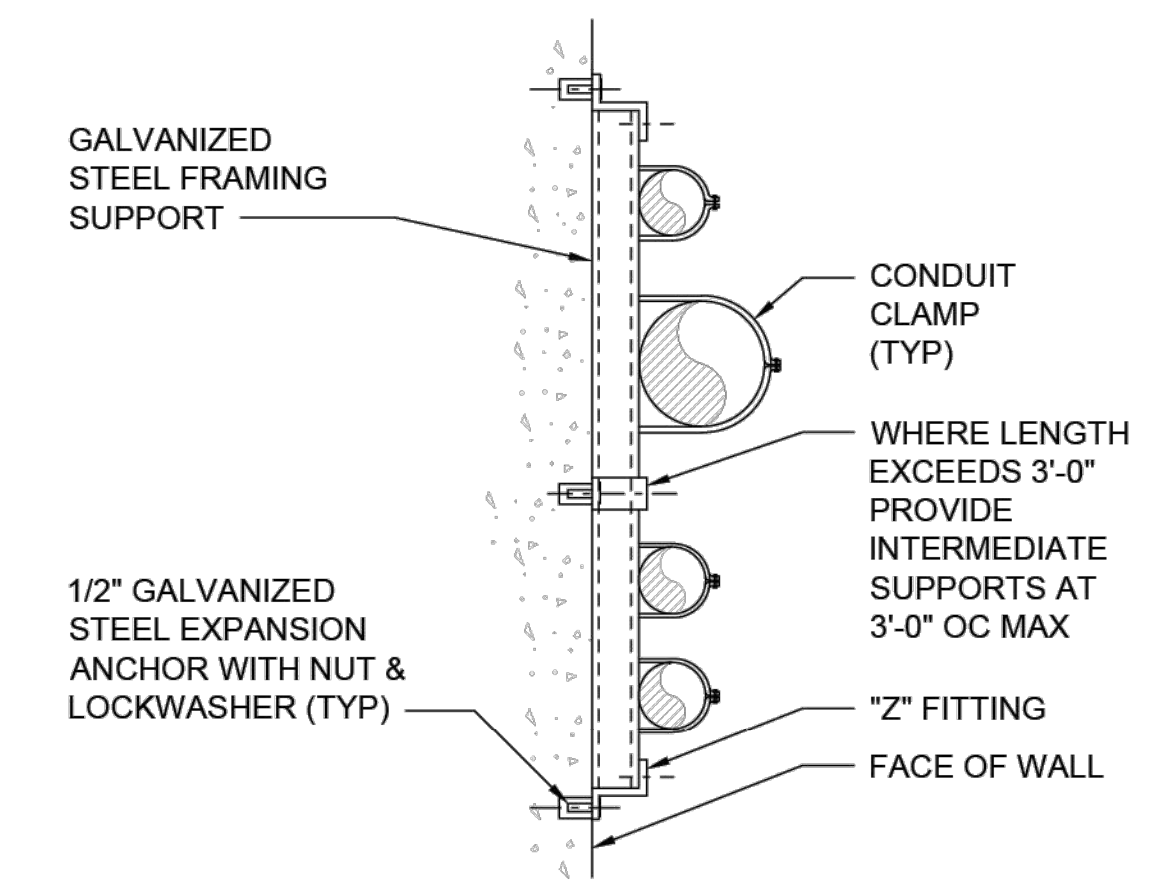


NOTE:

- DRILL HOLE THROUGH EXISTING WALL USING METHODS TO PREVENT SPALLING OR DAMAGE TO WALL.

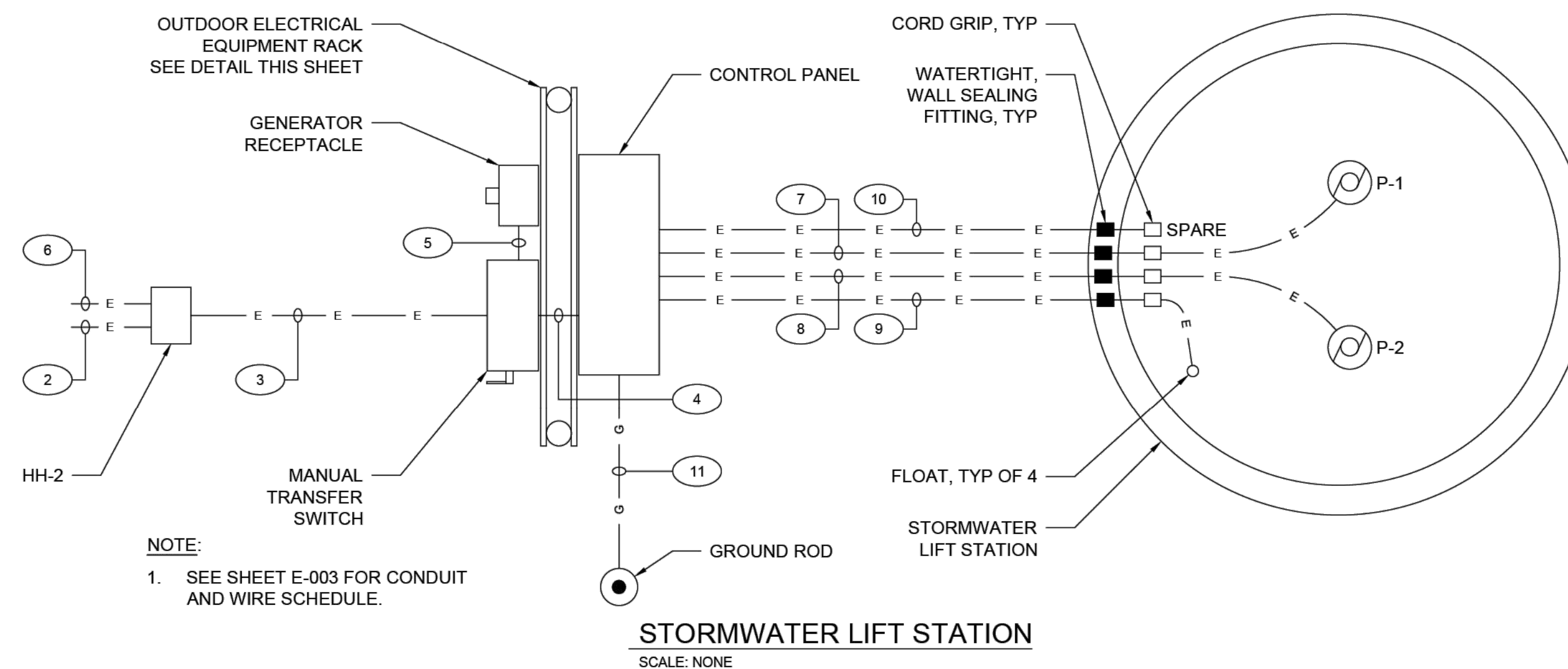
CONDUIT PENETRATION THRU EXIST. WALL

SCALE: NONE



CONDUIT SUPPORT

SCALE: NONE

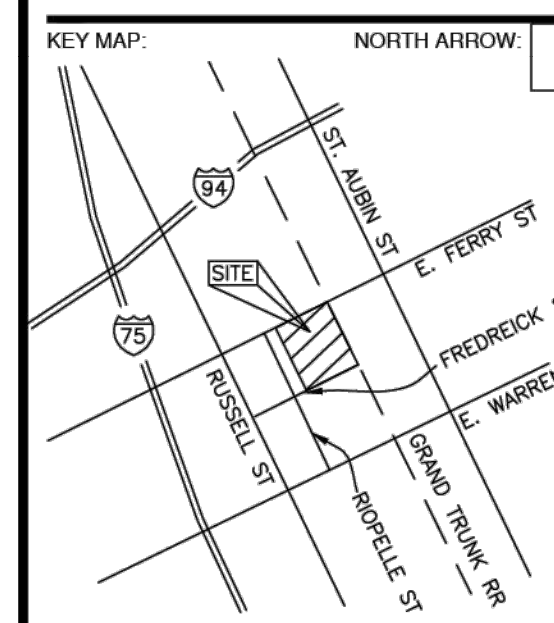


NOTE:

- SEE SHEET E-003 FOR CONDUIT AND WIRE SCHEDULE.

STORMWATER LIFT STATION

SCALE: NONE



REVISION BLOCK	
REV	DATE: DESCRIPTION

SUBMITTAL LOG	
DATE	PACKAGE NAME
2023-12-19	75% DRAWINGS
2024-03-06	90% DRAWINGS
2025-01-31	ISSUED FOR BID

PROJECT NAME:
MDOT DETROIT MAINTENANCE GARAGE SEWER RECONSTRUCTION

PROJECT LOCATION:
**1500 E. FERRY STREET
DETROIT, MICHIGAN**

DESIGNED BY: SP	NTH PROJECT NO.: 23001451
DRAWN BY: CH	SHEET SIZE: ARCH D (24"x36")
CHECKED BY: SG	DATE: 1/30/2025
CAD FILE NAME: E-005	

SHEET TITLE:
DETAILS

SHEET NUMBER:
E-005

BID

DTMB FILE NO. 591_22274.MNB

STATE OF MICHIGAN
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ABBREVIATIONS					
ABBREV	DESCRIPTION	ABBREV	DESCRIPTION	ABBREV	DESCRIPTION
A	SERVICE AIR	EFF	EFFICIENCY	P	PUMP
a	INSTRUMENT AIR	EHC	ELECTRIC HEATING COIL	PD	PRESSURE DIFFERENTIAL
ABBREV	ABBREVIATIONS	ELEV	ELEVATION	PH	PHASE
AC	ALTERNATING CURRENT	ELECT	ELECTRICAL	PS	PUMP STATION
AF	AIR FILTER	ESP	EXTERNAL STATIC PRESSURE	PSI	POUNDS PER SQUARE INCH
AFF	ABOVE FINISH FLOOR	EUH	ELECTRIC UNIT HEATER	PW	POTABLE WATER
APD	AIR PRESSURE DROP	EW	ELECTRIC WATER COOLER	SAN	SANITARY
ARV	AIR RELEASE VALVE	EWT	ENTERING WATER TEMPERATURE	SH	---
AVV	AIR VACUUM VALVE	EWS	EMERGENCY EYE WASH/SHOWER	SS	STAINLESS STEEL
BFV	BUTTERFLY VALVE	*F	DEGREES FAHRENHEIT	SV	SOLENOID VALVE
BFV-R	BUTTERFLY VALVE RESERVOIR PUMP	F	FLANGE	SWR	---
BHP	BRAKE HORSEPOWER	FA	FLANGE ADAPTER	SWSI	SINGLE WIDTH SINGLE INLET
BOD	BOTTOM OF DUCT	FD	FLOOR DRAIN	TDH	TOTAL DYNAMIC HEAD
BOP	BOTTOM OF PIPE	FPM	FEET PER MINUTE	TM	MIXING TEMPERATURE
BOTT	BOTTOM	FP	FIRE PROTECTION	TO	OUTSIDE AIR TEMPERATURE
BTU	BRITISH THERMAL UNIT	FPP	FIRE PROTECTION PUMP	TP	TOTAL PRESSURE
BV	BALL VALVE	FT	FEET	TR	ROOM TEMPERATURE
BV-F	BALL VALVE - FILL	FUD	FUNNEL DRAIN	TRANS	TRANSITION
*C	DEGREES CENTIGRADE	FV	FACE VELOCITY	TRD	TRANSITION DISCHARGE
CAP	CAPACITY	G	NATURAL GAS	TRS	TRANSITION SUCTION
CAV	COMBINATION AIR VALVE	GS	GALVANIZED STEEL	TYP	TYPICAL
CC	COOLING COIL	GUH	GAS UNIT HEATER	TW	TEMPERED WATER
C	COUPLING	GV	GATE VALVE	UON	UNLESS OTHERWISE NOTED
CFM	CUBIC FEET PER MINUTE	H	HEAD IN FEET	W	WATER
CI	CAST IRON	HB	HOSE BIB	W/	WITH
CL	CENTERLINE	HP	HORSEPOWER	WBT	WET BULB TEMPERATURE
CP	CONTROL PANEL	HPW	HIGH PRESSURE WATER	WC	WATER CLOSET
CNV	CONE VALVE	HW	HOT WATER	WH	WATER HEATER
CO	CLEANOUT	HZ	HERTZ	WHP	WATER HORSEPOWER
CONN	CONNECTION	I.D.	INSIDE DIAMETER	WS	WATER SAMPLE
CONT	CONTINUATION	IE	INVERT ELEVATION	WTP	WATER TREATMENT PLANT
CV	CONTROL VALVE	IN	INCHES	WW	WASTE WATER
CW	COLD WATER	LAV	LAVATORY		
CWS	COLD WATER SUPPLY	LBS	POUNDS		
CWR	COLD WATER RETURN	LCP	LOCAL CONTROL PANEL		
d	DIAMETER	LWT	LEAVING WATER TEMPERATURE		
DBT	DRY BULB TEMPERATURE	M	MOTOR		
DC	DIRECT CURRENT	MAX	MAXIMUM		
DEG	DEGREES	MG	MILLION GALLONS		
DG	DIESEL GENERATOR	MGD	MILLION GALLONS PER DAY		
DF	DIESEL FUEL FILL	MH	MOUNTING HEIGHT		
DFR	DIESEL FUEL RETURN	MIN	MINIMUM		
DFS	DIESEL FUEL SUPPLY	MO	MODULATING		
DFT	DIESEL FUEL TANK	MVCP	MASTER VENTILATION CONTROL PANEL		
DPS	DIFFERENTIAL PRESSURE SWITCH	NC	NORMALLY CLOSED		
DPT	DIFFERENTIAL PRESSURE TRANSMITTER	NIC	NOT IN CONTRACT		
DR	DRAIN	NO	NORMALLY OPEN		
DT	DAY TANK	NO.	NUMBER		
EA	EXHAUST AIR	NPSHA	NET POSITIVE SUCTION HEAD AVAILABLE		
EAD	EXHAUST AIR DAMPER	NPSHR	NET POSITIVE SUCTION HEAD REQUIRED		
EAT	ENTERING AIR TEMPERATURE	NPW	NON-POTABLE WATER		

SYMBOLS			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	GATE VALVE		CONCENTRIC REDUCER
	GLOBE VALVE		ECCENTRIC REDUCER
	BALL VALVE		PIPE TURNING DOWN
	BUTTERFLY VALVE		PIPE TURNING UP
	SWING CHECK VALVE		TEE OFF TOP
	CONE VALVE		TEE OFF BOTTOM
	PLUG VALVE		DIRECTION OF FLOW
	SLUICE GATE		BLIND FLANGE
	NEEDLE VALVE		END CAP
	DIAPHRAGM VALVE		UNION
	TWO-WAY CONTROL VALVE		PIPE BREAK OR CONTINUITY
	THREE-WAY CONTROL VALVE		STRAINER
	PRESSURE REDUCING VALVE		STRAINER W/ DRAIN VALVE
	MOTOR OPERATOR		OPEN FUNNEL
	HYDRAULIC OPERATOR		FUNNEL DRAIN (PLAN)
	SOLENOID OPERATOR		FLOOR DRAIN
	MOTOR OPERATED GATE VALVE		FLOOR DRAIN
	SOLENOID OPERATED GATE VALVE		ROOF DRAIN
	MOTOR OPERATED BUTTERFLY VALVE		VENT
	HYDRAULIC OPERATED CONE VALVE		CLEAN OUT
	MOTOR OPERATED CONE VALVE		POINT OF CONNECTION BETWEEN NEW AND EXISTING
	PRESSURE RELIEF VALVE		BACKFLOW PREVENTOR
	AIR RELEASE AND VACUUM VALVE		FIRE DAMPER (HORIZONTAL)
	VALVE WELL		FIRE DAMPER (VERTICAL)
	VALVE INSTALLED VERTICALLY		ROOM PRESSURE SENSOR WITH GAUGE
	PRESSURE GAUGE		INTERLOCK
	WATER PUMP		ROOF CONDUCTOR PIPING
	FLEXIBLE CONNECTION		SANITARY WASTE PIPING
	CONTROL PANEL		STORM SEWER PIPING
	FLUSHING HOSE BIB (1 1/2")		SERVICE AIR PIPING
	FLUSHING HOSE/REEL		INSTRUMENT AIR PIPING
	HOSE BIB (3/4")		COLD WATER PIPING
			DRAIN PIPING
			NATURAL GAS PIPING
			HIGH PRESSURE WATER PIPING
			HOT WATER SUPPLY PIPING
			HOT WATER RETURN PIPING
			SANITARY VENT PIPING
			WATER SAMPLE PIPING
			FIRE PROTECTION PIPING

PLUMBING	
SHEET NO	SHEET NAME
GP-001	DRAWING INDEX, NOTES, SYMBOLS AND ABBREVIATIONS
P-001	PLUMBING SITE PLAN
P-002	SCHEDULE AND DETAILS

GENERAL PLUMBING NOTES:

- THE ENTIRE PLUMBING SYSTEM SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL STANDARD PLUMBING CODE REGULATIONS, MICHIGAN PLUMBING CODE 2021 AND LOCAL PLUMBING INSPECTOR.
- THE PIPING INDICATED ON THESE PLANS ARE DIAGRAMMATIC. ALL WORK SHALL BE COORDINATED WITH ALL OTHER TRADES PRIOR TO INSTALLATION. SUBCONTRACTOR SHALL COORDINATE ROUTING OF ALL PIPING WITH EXISTING CONDITIONS AND SHALL PROVIDE ANY NECESSARY OFFSETS, REROUTING, TEES, ELBOWS, ETC., REQUIRED FOR A COMPLETE AND COORDINATED INSTALLATION.
- CONTRACTOR SHALL COORDINATE ANY PLUMBING OR PIPING SYSTEM SHUTDOWN WITH THE OWNER 48 HOURS IN ADVANCE.
- CONTRACTOR SHALL COORDINATE AND PROVIDE ALL NECESSARY PIPING AND PLUMBING FITTINGS, PIPING, MISCELLANEOUS ITEMS REQUIRED FOR A COMPLETE INSTALLATION.
- ALL PLUMBING AND PIPING SYSTEMS SHALL BE SUPPORTED AS REQUIRED BY THE LOCAL CODE REQUIREMENTS AND PER MANUFACTURER'S RECOMMENDATIONS.
- THE PLUMBING SYSTEM SHALL BE TESTED AS REQUIRED BY LOCAL CODE OR BY THE REQUIREMENTS OF THE LOCAL PLUMBING INSPECTOR.
- EQUIPMENT SIZES AND LOCATIONS ARE APPROXIMATE. ACTUAL DIMENSIONS TO BE DETERMINED BY EQUIPMENT FURNISHED.
- FINAL SIZES OF PIPING CONNECTIONS TO ALL EQUIPMENT SHALL BE DETERMINED BY EQUIPMENT FURNISHED.
- THE SYMBOLS AND ABBREVIATIONS LIST ON THIS SHEET IS A COMPREHENSIVE STANDARD GUIDE INTENDED FOR GENERAL USE ON ALL PROJECTS. THEREFORE, NOT ALL THE SYMBOLS AND ABBREVIATIONS CONTAINED IN THIS LIST ARE NECESSARILY USED ON THIS PARTICULAR PROJECT AND SHOULD BE USED FOR CLARIFICATION ONLY.

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 For the location of public utility lines, COLOR CODES FOR UTILITY LOCATING: ALTERNATE NUMBER (B/U)
 Yellow: GAS & DIESEL Blue: WATER
 Orange: PHONE & CABLE Green: STORM DRAIN
 Red: ELECTRIC Brown: SEWER
 Purple: SURVEYING
 If you are going to work near overhead wires - CALL MISS DIG

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 Michigan Department of Transportation

SEAL/STAMP:

REVISION BLOCK	
REV	DATE-DESCRIPTION

SUBMITTAL LOG	
DATE	PACKAGE NAME
2023-12-19	75% DRAWINGS
2024-03-06	90% DRAWINGS
2025-01-31	ISSUED FOR BID

PROJECT NAME:
MDOT DETROIT MAINTENANCE GARAGE SEWER RECONSTRUCTION

PROJECT LOCATION:
**1500 E. FERRY STREET
 DETROIT, MICHIGAN**

DESIGNED BY: SG	NTH PROJECT NO.: 23001451
DRAWN BY: CH	SHEET SIZE: ARCH D (24"x36")
CHECKED BY: SG	DATE: 1/30/2025
CAD FILE NAME: GP-001	

SHEET TITLE:
DRAWING INDEX, NOTES, SYMBOLS AND ABBREVIATIONS

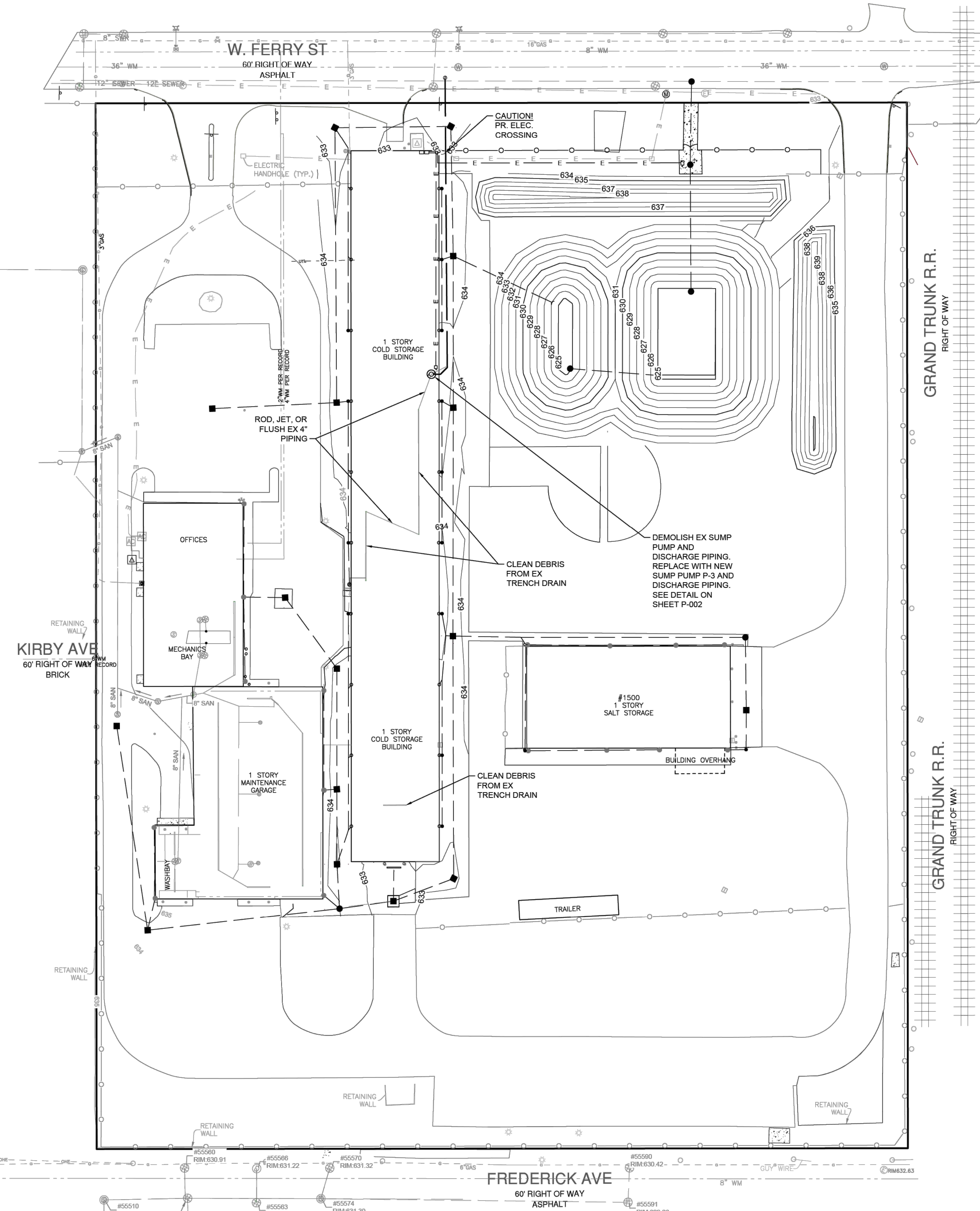
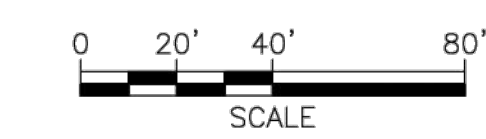
SHEET NUMBER:
GP-001

BID

DTMB FILE NO. 591_22274.MNB

STATE OF MICHIGAN
 DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
 STATE FACILITIES ADMINISTRATION
 DESIGN AND CONSTRUCTION DIVISION
 ADAM P. LACH, RA, DIRECTOR

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LEGEND

	EXISTING PROPERTY BOUNDARY
	EXISTING CONTOURS
	EXISTING FENCE
	EXISTING RAILROAD
	EXISTING BOLLARD POST
	EXISTING LIGHT POLE
	EXISTING HYDRANT
	EXISTING WATERMAIN
	EXISTING STORM STRUCTURE
	EXISTING STORM SEWER
	EXISTING SANITARY MANHOLE
	EXISTING SANITARY SEWER
	EXISTING FLOOR DRAINS
	EXISTING ELECTRICAL STRUCTURES
	EXISTING ELECTRICAL UNDERGROUND
	EXISTING GAS LINE
	PROPOSED CONCRETE PAVEMENT
	PROPOSED FENCE
	PROPOSED BOLLARD
	PROPOSED CONTOURS
	PROPOSED UNDERGROUND ELECTRIC
	PROPOSED FORCE MAIN
	PROPOSED STORM SEWER
	PROPOSED STORM STRUCTURES

- GENERAL SHEET NOTES**
- REFER TO SHEET GP-001 FOR GENERAL PLUMBING NOTES AND SYMBOLS.
 - LOCATIONS OF ALL UNDERGROUND ELEMENTS ARE APPROXIMATE ONLY AND SHALL BE FIELD VERIFIED PRIOR TO STARTING WORK.
 - CONTRACTOR SHALL LOCATE ALL EXISTING UNDERGROUND UTILITIES NEAR WORK AREA AND PROTECT THEM FROM DAMAGE.
 - DRAWINGS ARE PREPARED BASED ON LIMITED FIELD OBSERVATIONS. ACTUAL FIELD CONDITIONS MAY BE DIFFERENT THAN WHAT IS SHOWN ON THE DRAWINGS. IN ANY EVENT, THE CONTRACTOR SHALL PROVIDE ALL ADJUSTMENTS IN FIELD, AND ANY ADDITIONAL EQUIPMENT AND SERVICES TO MAKE A COMPLETE AND FUNCTIONAL RACEWAY SYSTEM.
 - CONDUIT ROUTING AND EQUIPMENT LOCATIONS SHOWN ARE DIAGRAMMATIC ONLY. EXACT LOCATIONS SHALL BE FIELD DETERMINED BY THE CONTRACTOR PRIOR TO CONSTRUCTION OF ANY NEW WORK.
 - ALL WORK NEAR, OR UNDER ROADWAYS SHALL BE IN ACCORDANCE WITH DOT REQUIREMENTS.
 - ALL WORK NEAR UTILITY SERVICES, INCLUDING POWER, FIBER, WATER, GAS, TELEPHONE, ETC. SHALL BE IN ACCORDANCE WITH THE UTILITY COMPANY'S REQUIREMENTS.
 - ALL AREAS OF EARTH DISTURBANCE CAUSED BY CONSTRUCTION ACTIVITIES SHALL BE SEEDED AND MULCHED WITH 3" TOPSOIL AND MDOT CLASS A SEED WHERE FINAL EARTH STABILIZATION MEASURES ARE NOT SPECIFICALLY DESIGNATED.
 - TOPOGRAPHIC SURVEY WAS PERFORMED BY KEM-TEC DATED AUGUST 25, 2023. ALL EXISTING INFORMATION SHOWN IS FROM THIS SURVEY OF RECORD OR WAS SUPPLEMENTED BY INFORMATION FROM SITE VISITS, PREVIOUSLY-SUBMITTED SITE PLANS, OR HISTORICAL DRAWINGS.

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For the location of public utility lines. ALTERNATE NUMBER (B11) COLOR CODES FOR UTILITY LOCATING:

Yellow	Gas & Gas	Blue	Water
Orange	Phone & Data	Green	Storm Drain
Red	Electric	Black	Sanitary Sewer
White	None	Pink	Surfing

If you are going to work near overhead wires - CALL MISS DIG

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REVISION BLOCK

REV	DATE	DESCRIPTION

SUBMITTAL LOG

DATE	PACKAGE NAME
2023-12-19	75% DRAWINGS
2024-03-06	90% DRAWINGS
2025-01-31	ISSUED FOR BID

PROJECT NAME:
MDOT DETROIT MAINTENANCE GARAGE SEWER RECONSTRUCTION

PROJECT LOCATION:
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 DETROIT, MICHIGAN**

DESIGNED BY: SG	NTH PROJECT NO.: 23001451
DRAWN BY: CH	SHEET SIZE: ARCH D (24"x36")
CHECKED BY: SG	DATE: 1/30/2025
CAD FILE NAME: P-001	

SHEET TITLE:
PLUMBING SITE PLAN

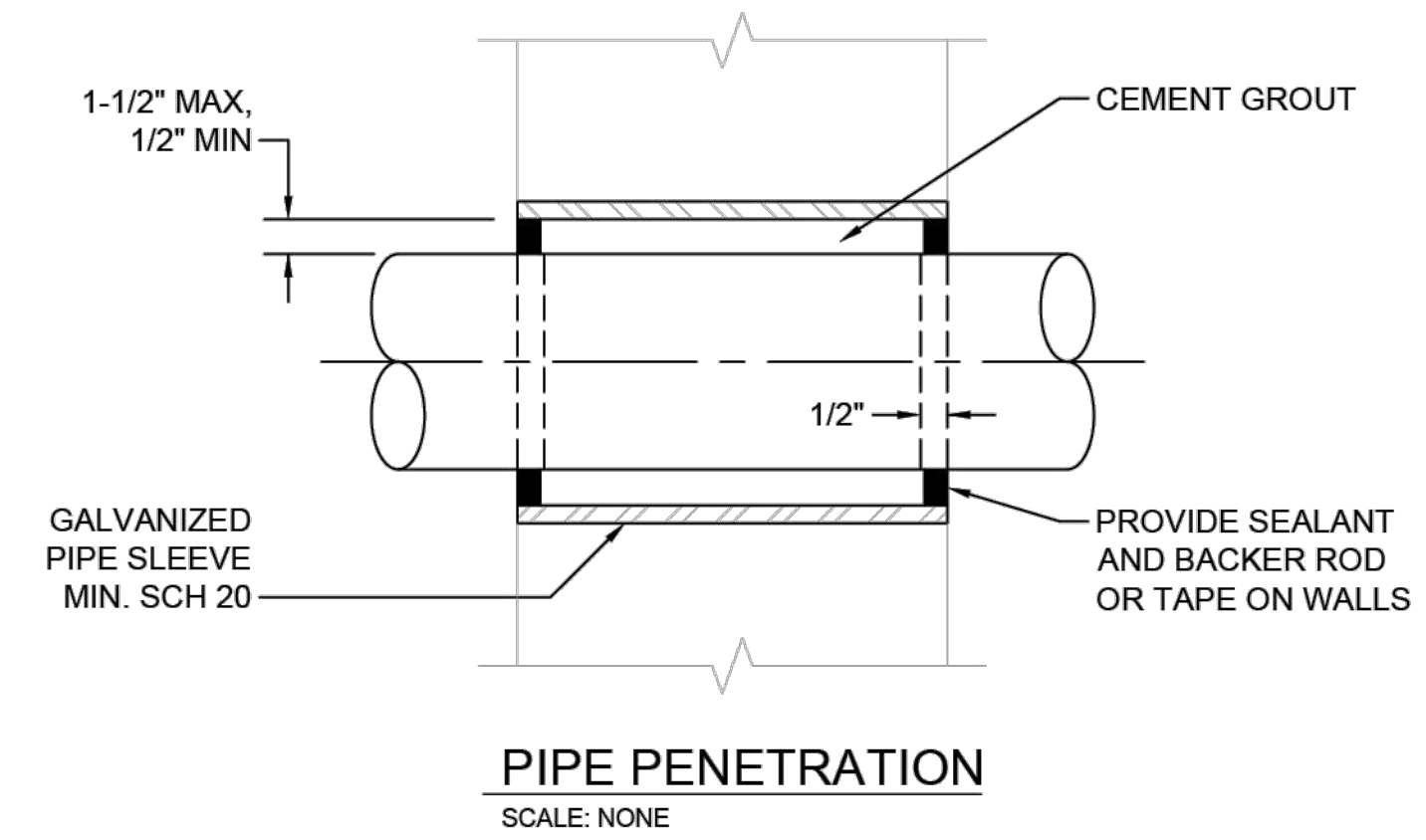
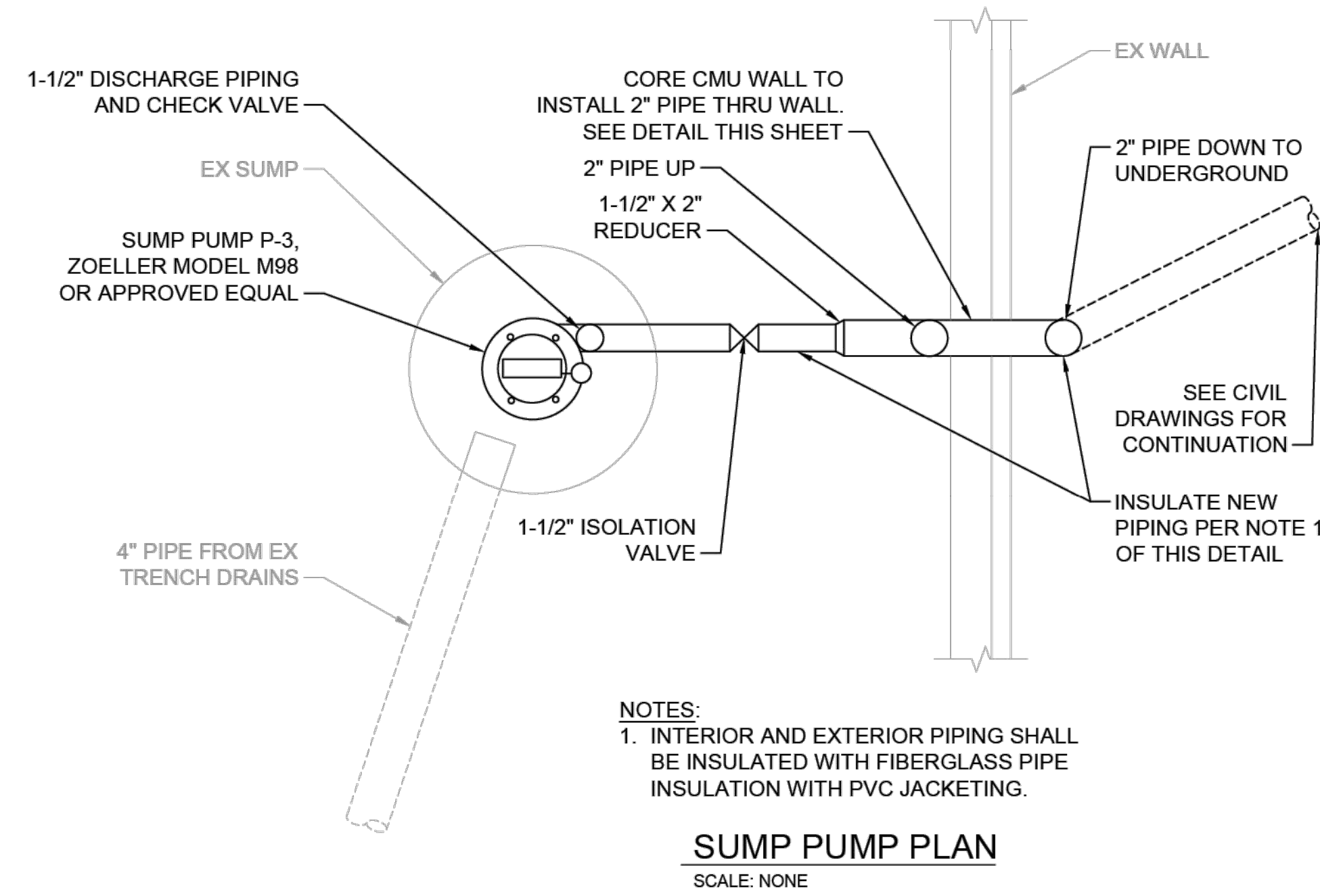
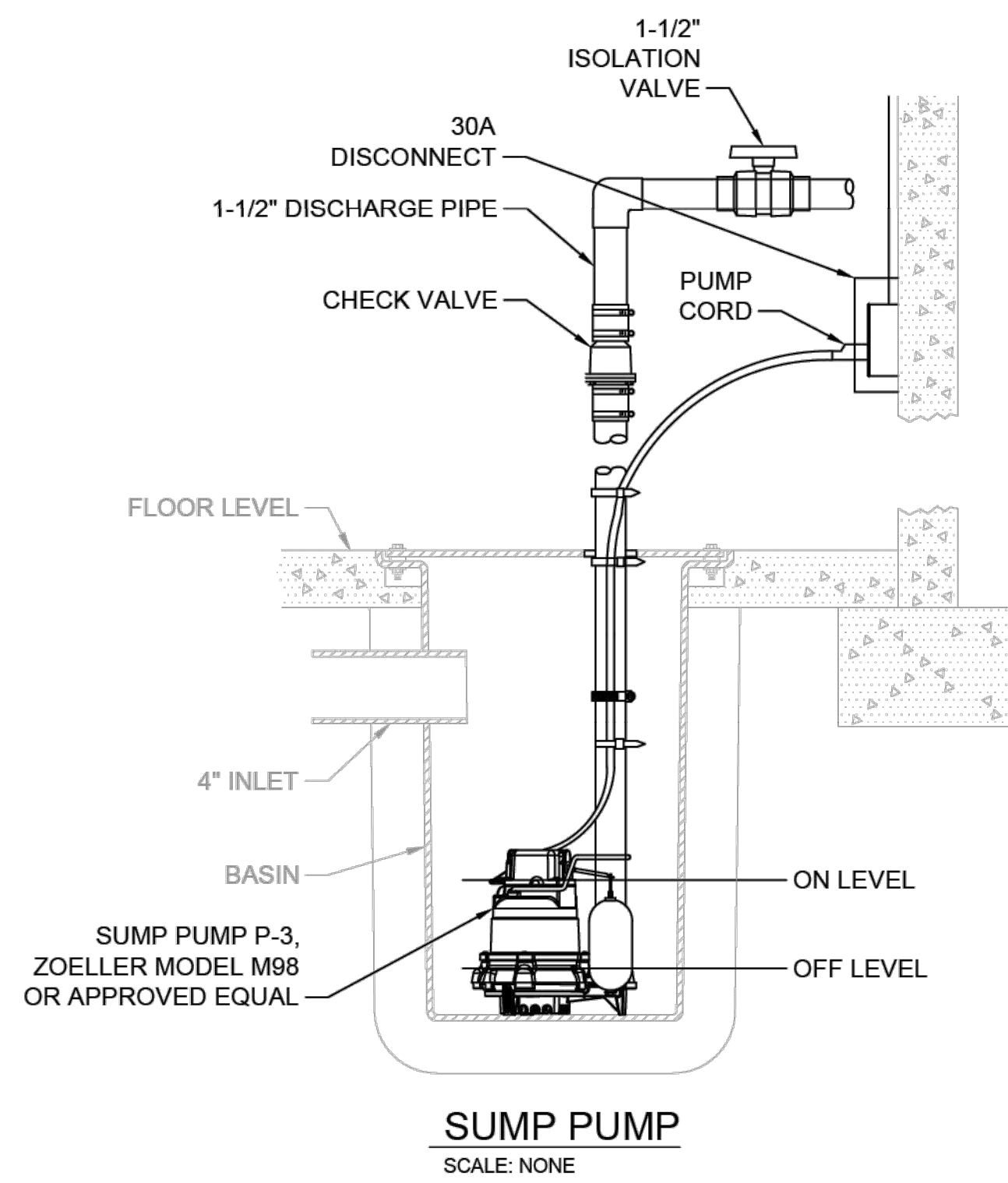
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NOTES:
1. INTERIOR AND EXTERIOR PIPING SHALL BE INSULATED WITH FIBERGLASS PIPE INSULATION WITH PVC JACKETING.

SUMP PUMP SCHEDULE													
MARK	LOCATION	TYPE	CIRCULATING FLUID			ELECTRICAL				DESIGN BASIS			REMARKS
			FLUID	FLOW (GPM)	HEAD (FT)	HP	PHASE	VOLT	FULL LOAD AMPS	MAKE	MODEL	PUMP DISCHARGE SIZE	
P-3	COLD STORAGE BUILDING SUMP	SPHERICAL SOLID HANDLING	WASTE	45	15	1/2	1	115	9.8	ZOELLER	Model M98	1-1/2"	FURNISH WITH FLOAT SWITCH. ORDER WITH APPROPRIATE LENGTH POWER CORD.

BID

DTMB FILE NO. 591_22274.MNB



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DEPARTMENT OF TECHNOLOGY, MANAGEMENT AND BUDGET
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COLOR CODES FOR UTILITY LOCATING:
Blue WATER
Green GAS
Red ELECTRIC
Yellow PHONE & CABLE
Orange SLOPE
Purple SLOPE

IF YOU ARE GOING TO WORK NEAR OVERHEAD WIRES - CALL MISS DIG

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DESIGNED BY: SG	NTH PROJECT NO.: 23001451
DRAWN BY: CH	SHEET SIZE: ARCH D (24"x36")
CHECKED BY: SG	DATE: 1/30/2025
CAD FILE NAME: P-002	

SHEET TITLE:
SCHEDULE AND DETAILS

SHEET NUMBER:
P-002