

THE UNDERSIGNED HEREBY APPROVES THE ATTACHED (4) PAGES INCLUDING THE FOLLOWING:

- PIPE STORAGE = 5,003 CF
- MAINLINE PIPE GAGE = 16
- WALL TYPE = SOLID
- DIAMETER = 84"
- FINISH = ALT2
- CORRUIGATION = 5x1

CUSTOMER \_\_\_\_\_ DATE \_\_\_\_\_

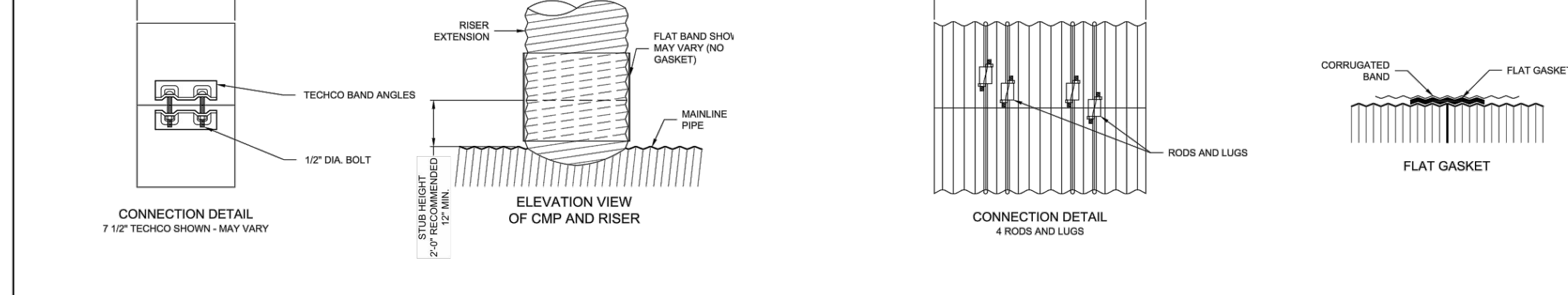
**ASSEMBLY**  
SCALE: 1" = 10'  
PIPE STORAGE: 5,003 CF  
LOADING: H2O  
PIPE INV. = 106.25'

**NOTES:**

- ALL RISER AND STUB DIMENSIONS ARE TO CENTERLINE.
- ALL ELEVATIONS, DIMENSIONS, AND LOCATIONS OF RISERS AND INLETS, SHALL BE VERIFIED BY THE ENGINEER OF RECORD PRIOR TO RELIABLE FABRICATION.
- ALL FITTINGS AND REINFORCEMENTS COMPLY WITH ASTM A999.
- ALL RISERS AND STUBS ARE 22" X 12" CORRUGATION AND 18 GAGE UNLESS OTHERWISE NOTED.
- RISERS TO BE FIELD TRIMMED TO GRADE AS REQUIRED, BY CONTRACTOR.
- QUANTITY OF PIPE SHOWN DOES NOT PROVIDE EXTRA PIPE FOR CONNECTING THE SYSTEM TO EXISTING PIPE OR DRAINAGE STRUCTURES. OUR SYSTEM AS DETAIL PROVIDES NORMAL INLET AND/OR OUTLET PIPE STUB FOR CONNECTION TO EXISTING DRAINAGE FACILITIES. IF ADDITIONAL PIPE IS NEEDED IT IS THE RESPONSIBILITY OF THE CONTRACTOR.
- ALL ACCESS CASTINGS ARE THE RESPONSIBILITY OF THE CONTRACTOR AND ARE NOT SUPPLIED BY CONTECH.

PROJECT NO.	DATE	REVISION DESCRIPTION	BY
641385-010	07/10/2020	ISSUE FOR PERMIT	NDG
		CONTRACTOR APPROVAL	NDG
		CONTECH PROPOSAL	NDG

84"Ø UNDERGROUND DETENTION SYSTEM - 641385-010  
KWIK TRIP #527  
PEWAUKEE, WI  
SITE DESIGNATION: UNDERGROUND STORM WATER TANK



**GENERAL NOTES:**

- DELIVERED BAND STYLE AND FASTENER TYPE MAY VARY BY FABRICATION PLANT.
- JOINT IS TO BE ASSEMBLED PER AASHTO BRIDGE CONSTRUCTION SPECIFICATION SEC 26.4.2.4.
- BAND MATERIAL AND GAGE TO BE SAME AS RISER MATERIAL.
- IF RISER HAS A HEIGHT OF COVER OF 10' OR MORE, USE A SLIP JOINT.
- BANDS ARE NORMALLY FURNISHED AS FOLLOWS:
  - 12" THRU 48" 1-PIECE
  - 54" THRU 96" 2-PIECES
  - 102" THRU 144" 3-PIECES
- ALL RISER JOINT COMPONENTS WILL BE FIELD ASSEMBLED.
- MANHOLE RISERS IN APPLICATIONS WHERE TRAFFIC LOADS ARE IMPOSED REQUIRE SPECIAL DESIGN CONSIDERATIONS.
- DIMENSIONS SUBJECT TO MANUFACTURING TOLERANCES.

**12" RISER BAND DETAIL**  
NOT TO SCALE

**10-C BAND DETAIL**  
NOT TO SCALE

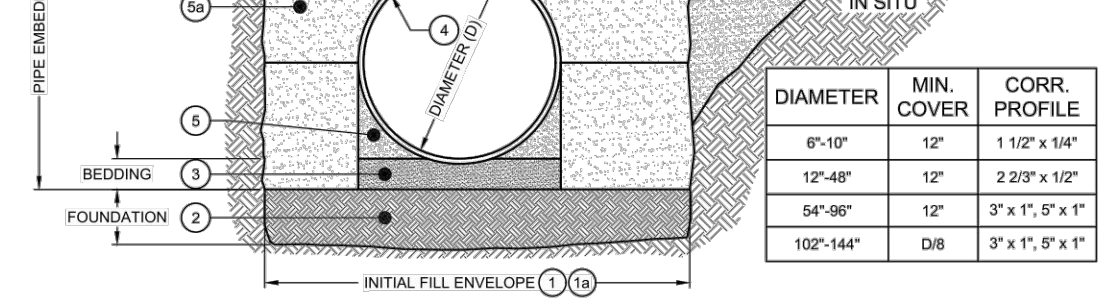
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**TYPICAL SECTION VIEW**  
NOT TO SCALE

**NOTE:** IF SALTING AGENTS FOR SNOW AND ICE REMOVAL ARE USED ON OR NEAR THE PROJECT, A GEOMEMBRANE BARRIER IS RECOMMENDED WITH THE SYSTEM. THE GEOMEMBRANE LINER IS INTENDED TO HELP PROTECT THE SYSTEM FROM THE POTENTIAL ADVERSE EFFECTS THAT MAY RESULT FROM A CHANGE IN THE SURROUNDING ENVIRONMENT OVER A PERIOD OF TIME. PLEASE REFER TO THE CORRUGATED METAL PIPE DETENTION DESIGN GUIDE FOR ADDITIONAL INFORMATION.



**BACKFILL REQUIREMENTS FOLLOW THE GUIDELINES OF AASHTO LRFD BRIDGE DESIGN (SEC 13) AND CONSTRUCTION (SEC 26)**

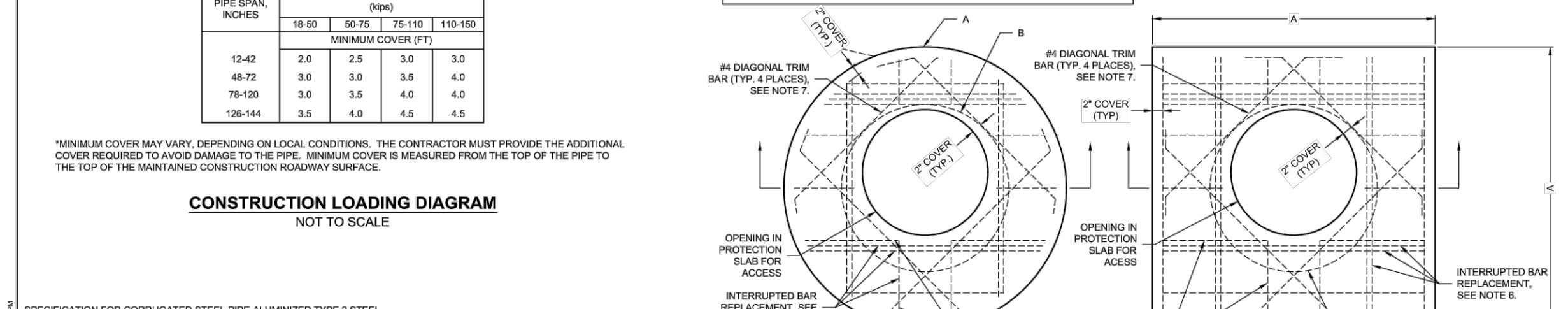
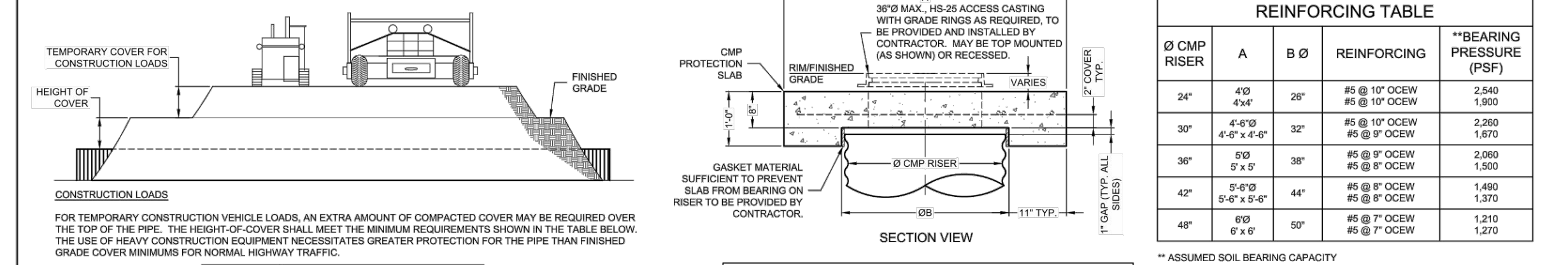
- MINIMUM TRENCH WIDTH MUST ALLOW ROOM FOR PROPER COMPACTION OF HAUNCH MATERIALS UNDER THE PIPE. THE MINIMUM TRENCH WIDTH (12.6.6.1):  
PIPE < 24" D + 18"  
PIPE > 24" D + 12"
- MINIMUM EMBANKMENT WIDTH (IN FEET) FOR INITIAL FILL ENVELOPE (12.6.6.2):  
PIPE < 24" D + 3.00  
PIPE < 24" D + 10"  
PIPE > 24" D + 10"
- THE FOUNDATION UNDER THE PIPE AND SIDE BACKFILL SHALL BE ADEQUATE TO SUPPORT THE LOADS ACTING UPON IT (26.5.2).
- ENGINEER TO DETERMINE IF BEDDING IS REQUIRED. BEDDING MATERIAL SHALL BE A RELATIVELY LOOSE MATERIAL THAT IS ROUGHLY SHAPED TO FIT THE BOTTOM OF THE PIPE AND A MINIMUM OF TWICE THE CORRUGATION DEPTH IN THICKNESS, WITH THE MAXIMUM PARTICLE SIZE OF ONE-HALF OF THE CORRUGATION DEPTH (26.5.3, 26.5.3).
- CORRUGATED STEEL PIPE (CSP / HEL-COR).
- HAUNCH ZONE MATERIAL SHALL BE HAND SHOVELED OR SHOVEL SLICED INTO PLACE TO ALLOW FOR PROPER COMPACTION (26.5.4).
- INITIAL BACKFILL FOR PIPE EMBEDMENT TO MEET AASHTO A-1, A-2 OR A-3 CLASSIFICATION, OR APPROVED EQUAL, COMPACTED TO 90% STANDARD PROCTOR (P) (90). MAXIMUM PARTICLE SIZE NOT TO EXCEED 3/4" (A-1, A-2). ALL LIFTS PLACED IN A CONTROLLED MANNER. IT IS RECOMMENDED THAT LIFTS NOT EXCEED AN UNCOMPACTED LIFT HEIGHT TO PREVENT UNEVEN LOADING, AND THE LESSER OF 1/3 THE DIAMETER OR 24" AS THE MAXIMUM DIFFERENTIAL, SIDE-TO-SIDE (26.5.4).
- TOTAL HEIGHT OF COMPACTED COVER FOR CONVENTIONAL HIGHWAY LOADS IS MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TOP OF RIGID PAVEMENT (12.6.5.3).
- FINAL BACKFILL MATERIAL SELECTION AND COMPACTION REQUIREMENTS SHALL FOLLOW THE PROJECT PLANS AND SPECIFICATIONS PER THE ENGINEER OF RECORD (26.5.1).

**NOTES:**

- ENGINEER TO DETERMINE IF GEOTEXTILE SHOULD BE USED TO PREVENT SOIL MIGRATION INTO VARYING SOIL TYPES (PROJECT SPECIFICATIONS).
- FOR MULTIPLE BARREL INSTALLATIONS THE RECOMMENDED STANDARD SPACING BETWEEN PARALLEL PIPE RUNS SHALL BE PIPE DIA. 2 BUT NO LESS THAN 12" OR 36" FOR PIPE DIAMETERS 12" AND LARGER.
- CONTACT YOUR CONTECH REPRESENTATIVE FOR NON-STANDARD SPACING (TABLE C12.6.7-1).

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**CONSTRUCTION LOADING DIAGRAM**  
NOT TO SCALE

**REINFORCING TABLE**  
\*\*ASSUMED SOIL BEARING CAPACITY

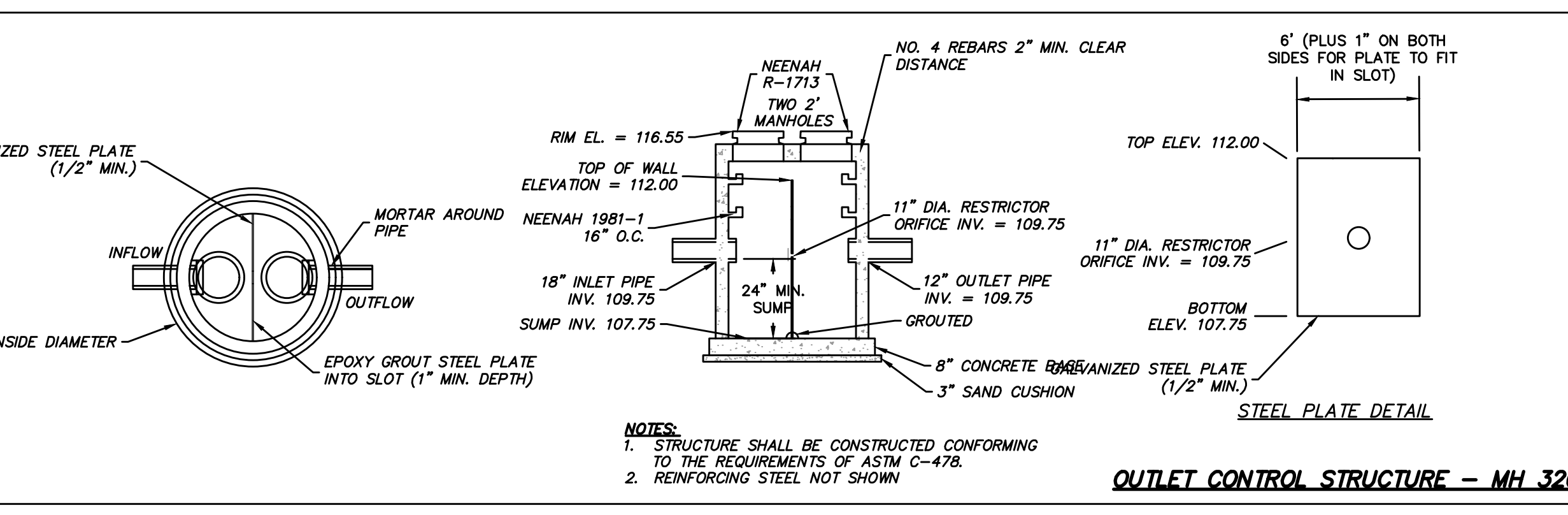
**CONCRETE STRENGTH** = 4,000 psi

**REINFORCING STEEL** = ASTM A615, GRADE 60.

**PROVIDE ADDITIONAL REINFORCING AROUND OPENINGS EQUAL TO THE BARS INTERRUPTED, HALF EACH SIDE. ADDITIONAL BARS TO BE IN THE SAME PLANE.**

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**raSmith**  
CREATIVITY BEYOND ENGINEERING  
16745 W. Blumond Road  
Brookfield, WI 53005-5938  
(262) 781-1000  
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SW BMP DETAILS  
 CONVENIENCE STORE #970  
 2106 S. WEST AVENUE  
 WAUKESHA, WI

#	DATE	DESCRIPTION

DRAWN BY: RAS  
SCALE: GRAPHIC  
PROJ. NO.: 3190495  
DATE: 2020-03-12  
SHEET: SWP5