

SECTION 2724
Engineered Surface Drainage Products

General

PVC surface drainage inlets shall be of the road and highway structure type as indicated on the contract drawings and referenced within the contract specifications. The **ductile iron frame and grate** for each of these structures is to be considered an integral part of the surface drainage inlet and shall be furnished by the same manufacturer. The road and highway structure shall be as manufactured by Nyloplast a division of Advanced Drainage Systems, Inc. or prior approved equal.

Materials

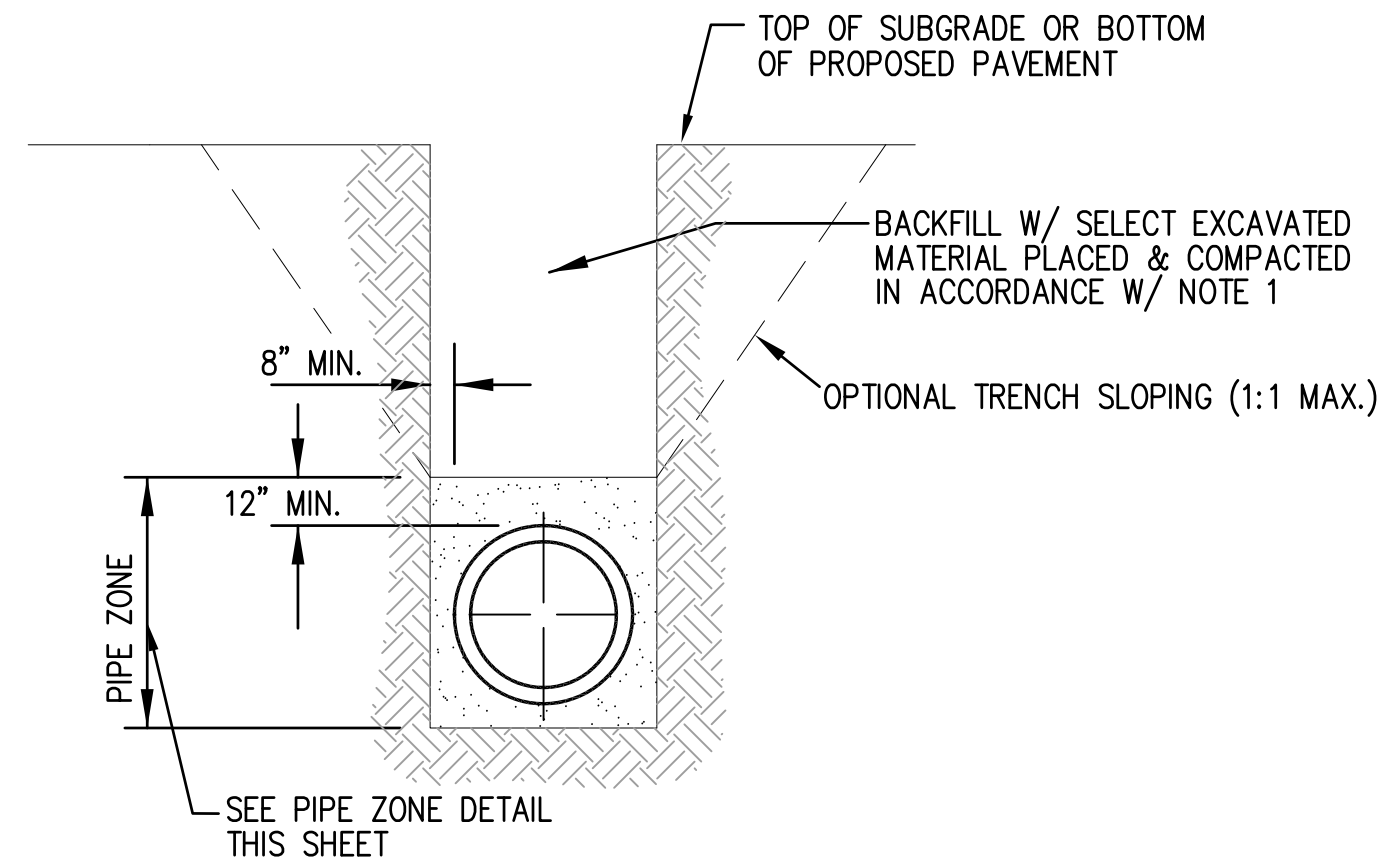
The road and highway structure required for this contract shall be manufactured from PVC pipe stock, utilizing a thermo-molding process to reform the pipe stock to the specified configuration. The drainage pipe connection stubs shall be manufactured from PVC pipe stock and formed to provide a watertight connection with the specified pipe system. This joint tightness shall conform to ASTM D3212 for joints for drain and sewer plastic pipe using flexible elastomeric seals. The flexible elastomeric seals shall conform to ASTM F477. The bell spigot shall be joined to the main body of the structure. The raw material used to manufacture the pipe stock that is used to manufacture the main body and pipe stubs of the surface drainage inlets shall conform to ASTM D1784 cell class 12454.

The grate and frame for all road and highway structures shall be ductile iron and shall be made specifically for each so as to provide a round bottom flange that closely matches the diameter of the PVC basin body. The grate and frame shall be capable of supporting H-20 wheel loading for traffic areas. The metal used in the manufacture of the castings shall conform to ASTM A536 grade 70-50-05 for ductile iron.

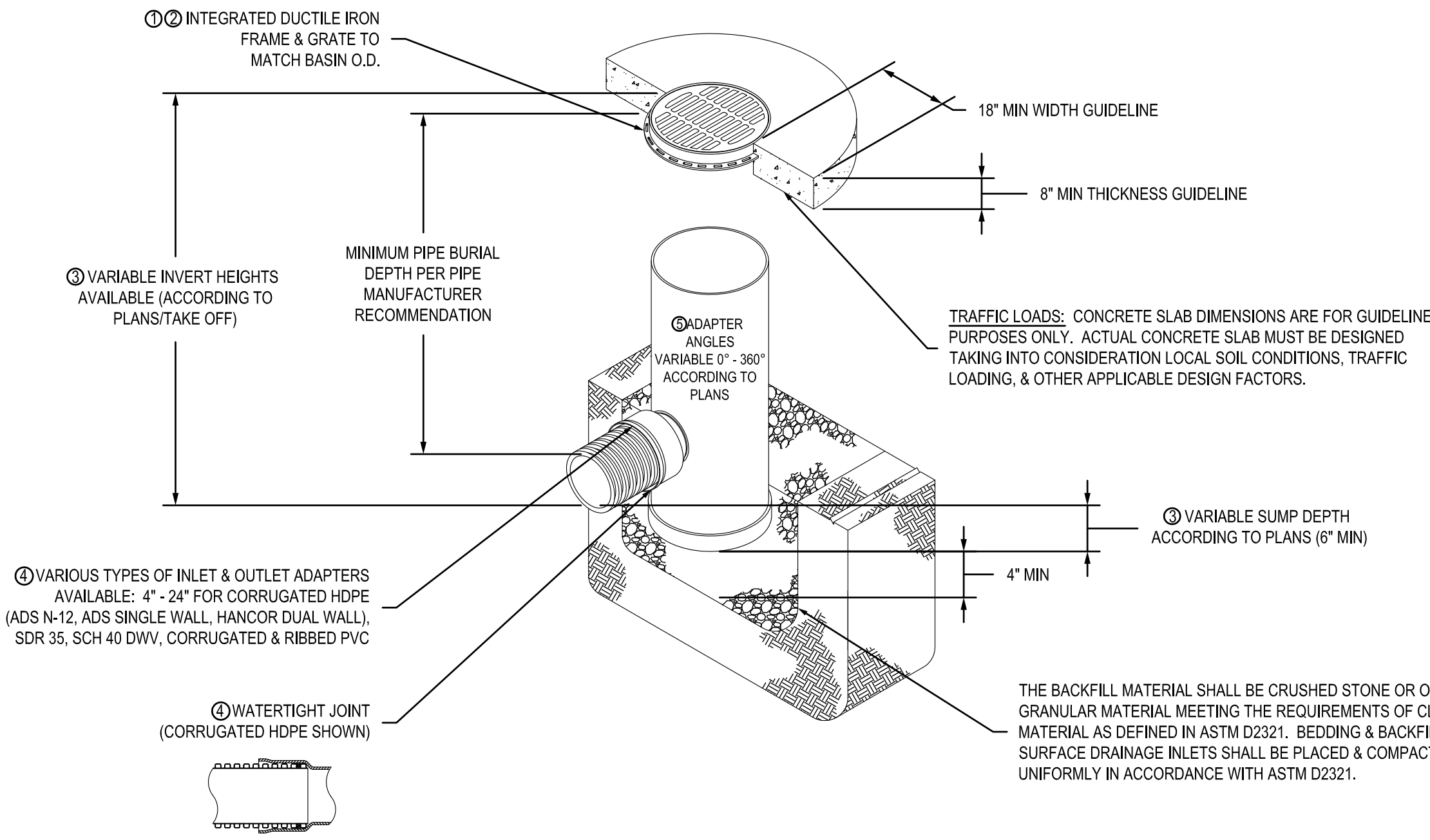
Installation

The specified PVC road and highway structure shall be installed using conventional flexible pipe backfill materials and procedures. The backfill material shall be crushed stone or other granular material meeting the requirements of class 2 material as defined in ASTM D2321. Bedding and backfill for the road and highway structure shall be placed and compacted uniformly in accordance with ASTM D2321. The road and highway structure body will be cut at the time of the final grade. No brick, stone or concrete block will be required to set the grate to the final grade height. For H-20 load rated installations, a concrete ring will be poured under and around the grate and frame. The concrete slab must be designed taking into consideration local soil conditions, traffic loading, and other applicable design factors. For other installation considerations such as migration of fines, ground water, and soft foundations refer to ASTM D2321 guidelines.

NYLOPLAST SPECIFICATIONS
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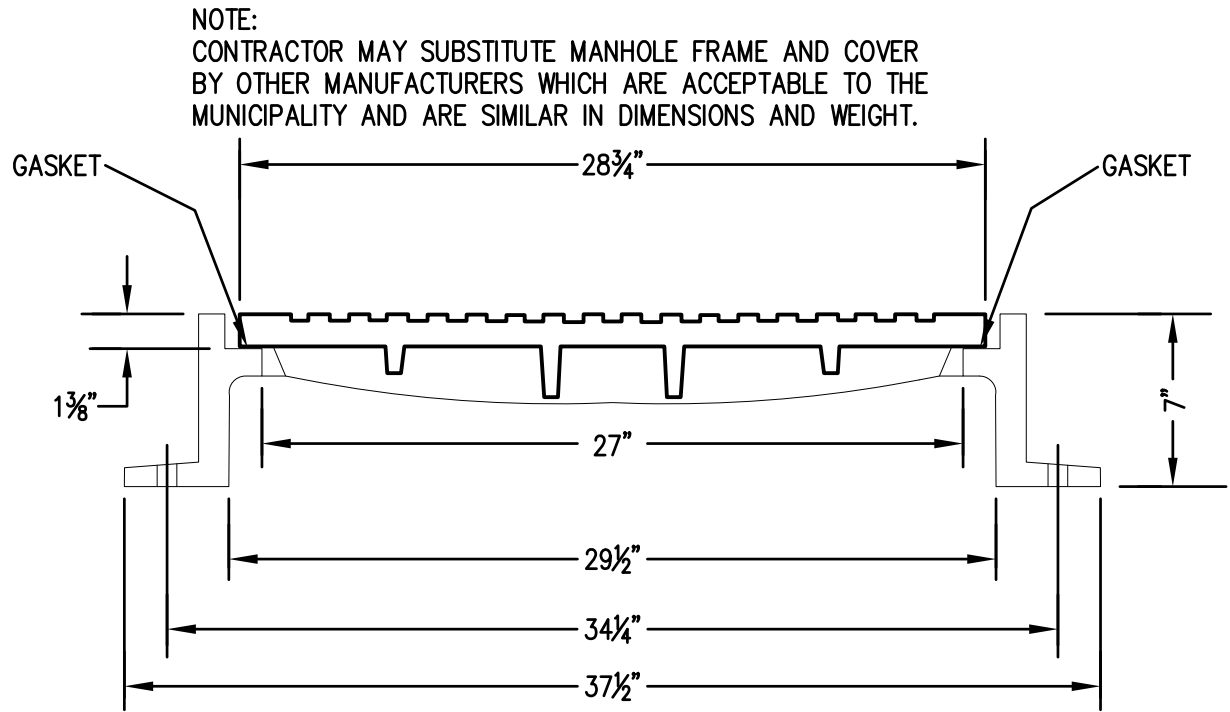
TRENCH SECTION - STORM
NOT TO SCALE



GRATE OPTIONS	LOAD RATING	PART #	DRAWING #
PEDESTRIAN	MEETS H-10	2490GCP	7001-110-216
STANDARD	MEETS H-20	2490GGS	7001-110-217
SOLID COVER	MEETS H-20	2490GDC	7001-110-218
DOVE	N/A	2490GDD	7001-110-219
DROP IN GRATE	LIGHT DUTY	2401DI	7001-110-075

- ① GRATES/SOLID COVER SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
② FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
③ DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS. RISERS ARE NEEDED FOR BASINS OVER 84" DUE TO SHIPPING RESTRICTIONS. SEE DRAWING NO. 7001-110-065.
④ DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS & HANCOR DUAL WALL) & SDR 35 PVC.
⑤ ADAPTERS CAN BE MOUNTED ON ANY ANGLE 0° TO 360°, TO DETERMINE MINIMUM ANGLE BETWEEN ADAPTERS SEE DRAWING NO. 7001-110-013.

NYLOPLAST 24" DRAIN BASIN DETAIL
NOT TO SCALE



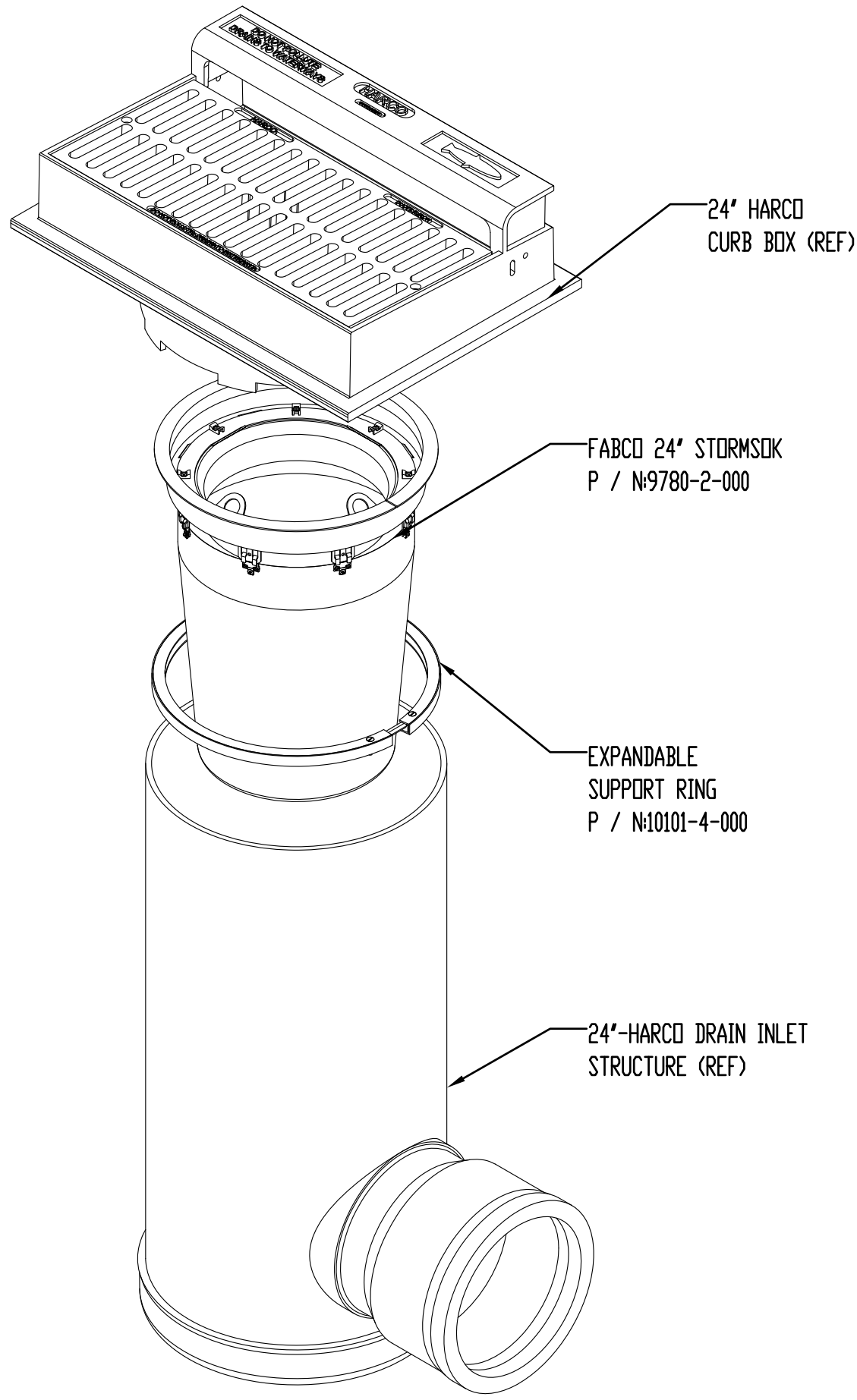
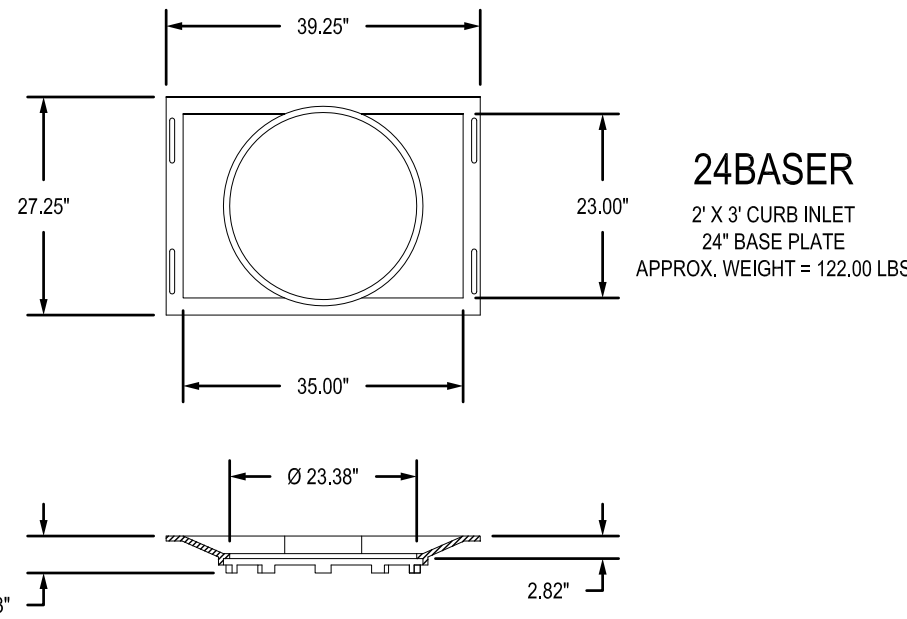
NOTE: CONTRACTOR MAY SUBSTITUTE MANHOLE FRAME AND COVER BY OTHER MANUFACTURERS WHICH ARE ACCEPTABLE TO THE MUNICIPALITY AND ARE SIMILAR IN DIMENSIONS AND WEIGHT.

TYPE: MANHOLE FRAME, SOLID LID DETAIL (NEENAH R-1753-A, EAST JORDAN IRON WORKS, EQUIVALENT) (SELF-SEALING)

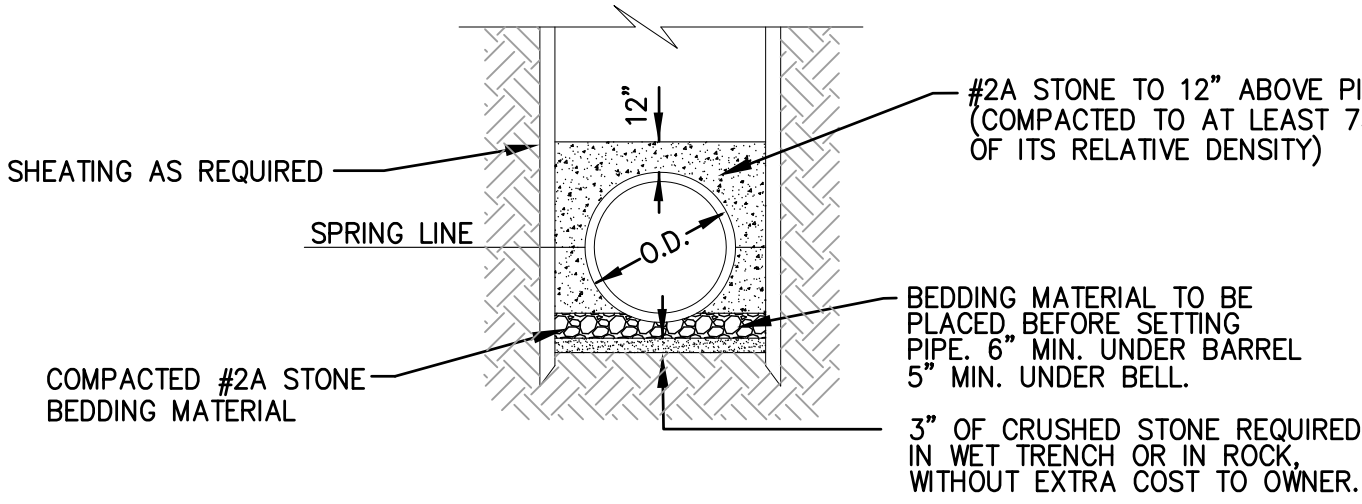
*HEAVY DUTY
Total Weight 455 Pounds
With 4 - 3/4" Anchor Bolt Holes

MANHOLE LID DETAIL
NOT TO SCALE

2'x3' TO 24" Ø GRATE BASE PLATE
NOT TO SCALE

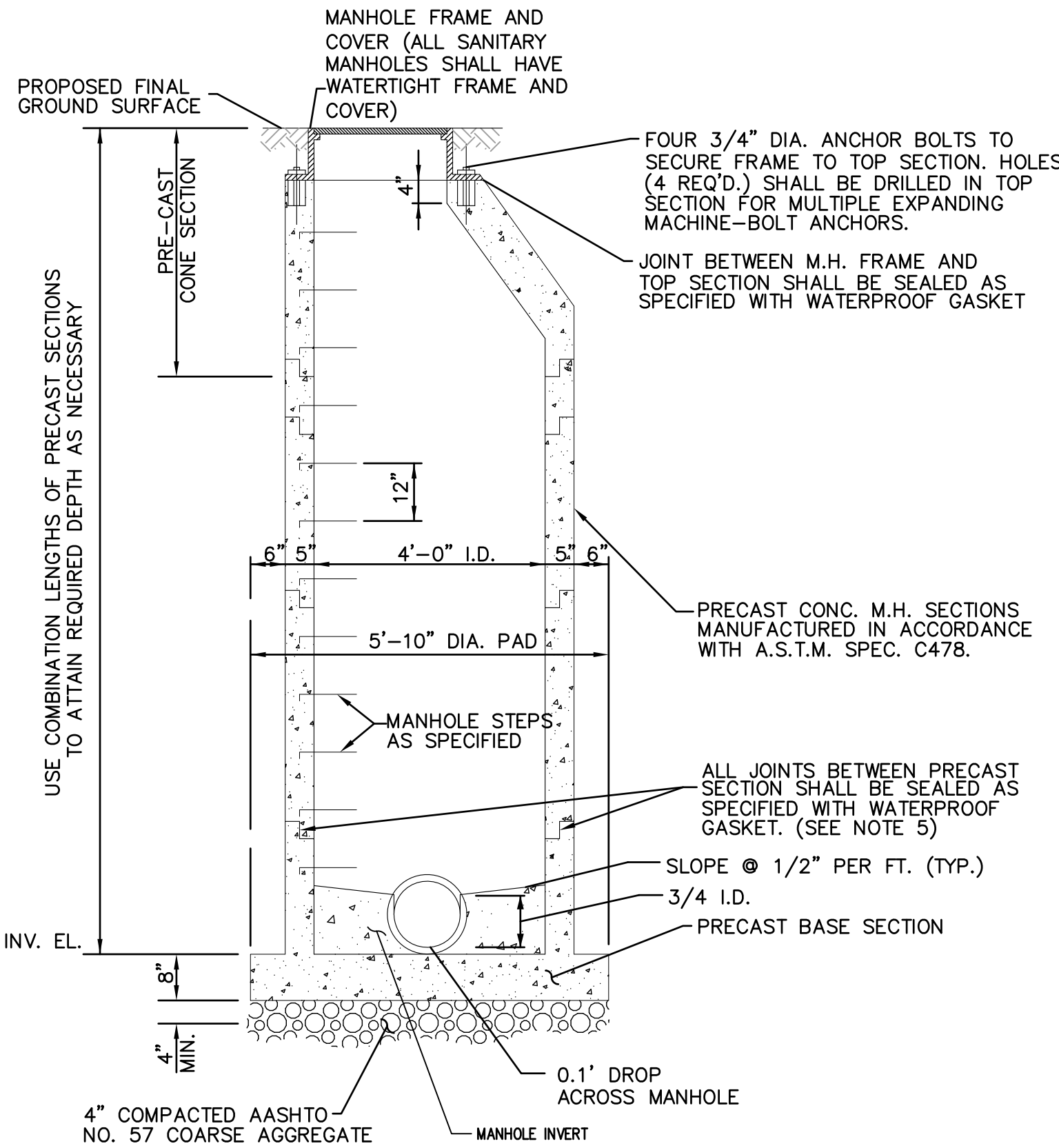


STORMSOK DETAIL
NOT TO SCALE



- NOTE:
1) THE TRENCH WALL SHALL BE SUBSTANTIALLY VERTICAL IN THE PIPE ZONE. MAXIMUM TRENCH WIDTH SHALL BE OD + 24 INCHES AND MINIMUM TRENCH WIDTH SHALL BE OD + 16 INCHES.

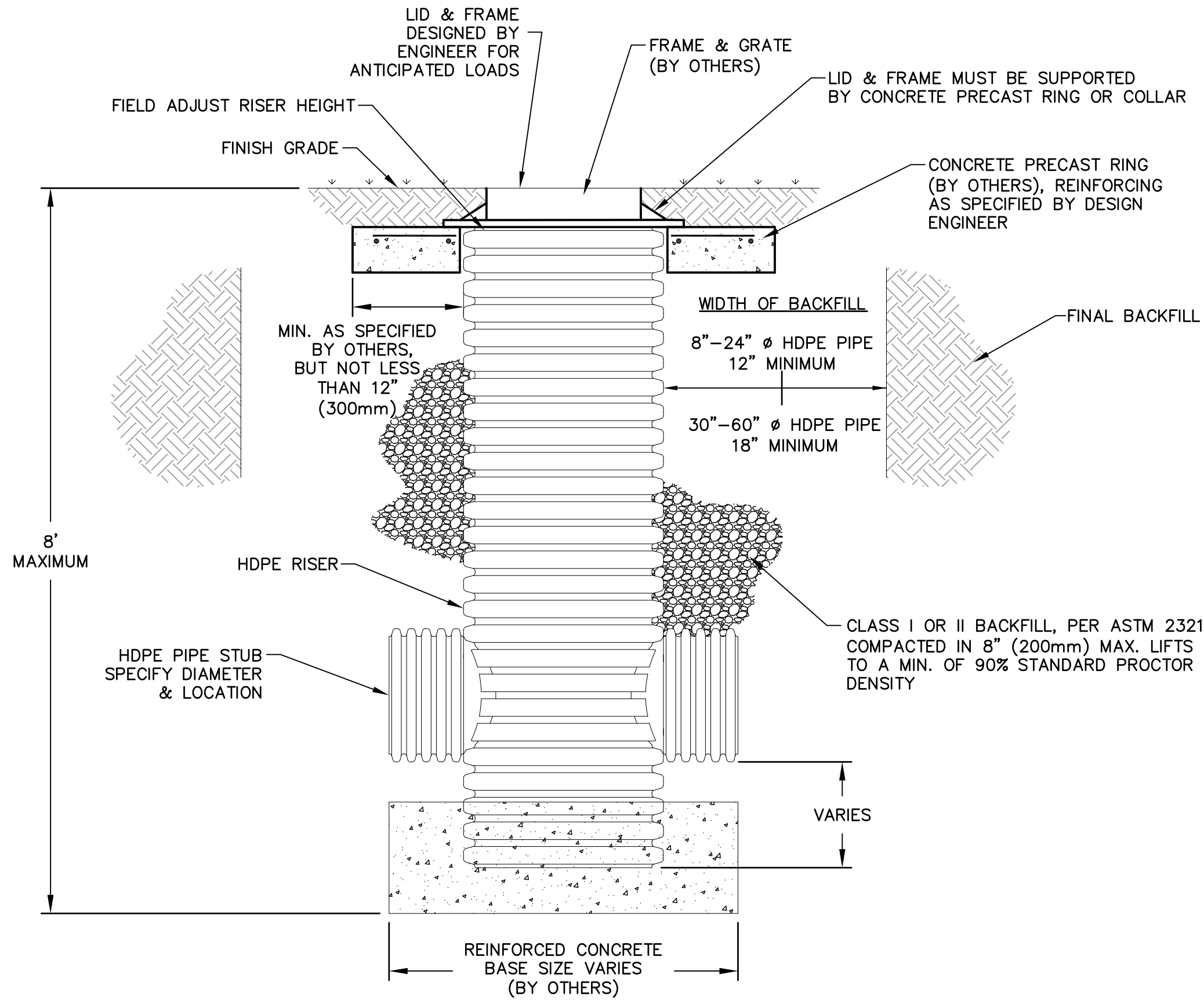
PIPE ZONE DETAIL - STORM
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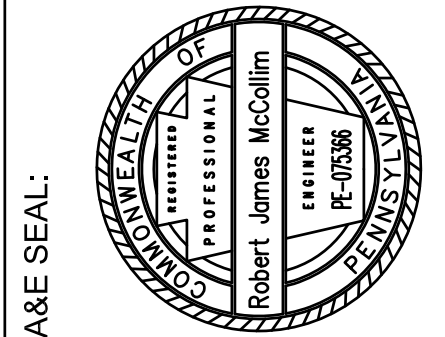
- NOTES:
1. USE PRECAST CONCRETE GRADE ADJUSTMENT RINGS BETWEEN TOP SECTION AND FRAME TO RAISE MANHOLE TOP HEIGHT IF NECESSARY.
2. USE ANCHOR BOLTS AND WATERPROOF GASKET AS SPECIFIED.
3. EACH SECTION TO BE SUPPLIED WITH LIFTING HOLES WHICH ARE TO BE GROUTED WITH WATERPROOF GROUT.
4. SUBMIT SHOP DRAWINGS TO ENGINEER FOR APPROVAL.
5. MAXIMUM RISER HEIGHT SHALL BE LIMITED TO 1 FOOT.
6. JOINTS SHALL BE SEALED AT BOTH THE TOP AND BOTTOM LIPS OF THE JOINT.

MANHOLE DIAMETER BASED ON MAXIMUM PIPE SIZE			
MANHOLE DIAMETER	IF STRAIGHT THRU PIPE	IF 90° ANGLE PIPE	IF 180° ANGLE PIPE
48"	24"	18"	24"
60"	33"	27"	33"
72"	36"	33"	36"
84"	48"	36"	48"
96"	54"	42"	54"

STANDARD PRE-CAST MANHOLE
NOT TO SCALE



NYLOPLAST DRAIN BASIN INSTALLATION DETAIL
NOT TO SCALE



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BAIR BOULEVARD
NEW STANTON, PA 15672
WESTMORELAND COUNTY, PENNSYLVANIA

REVISIONS:	DATE	REVISION PER MUNICIPAL COMMENTS	DESCRIPTION
1	7/11/2016		

PROJ NO: 1511
SCALE: AS SHOWN
DATE: 5/18/2016
DESIGNED BY: RJM
DRAWN BY: MJN
CHECKED BY: CKM

SHEET TITLE:
STORMWATER MANAGEMENT DETAILS
SHEET 1 OF 2

SHEET NO.
C4.2