

WASTEWATER AND RECLAIM CONSTRUCTION DETAILS

APPENDIX C

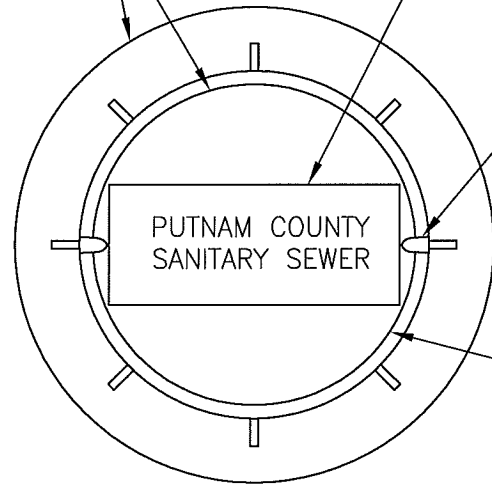
WASTEWATER AND RECLAIM CONSTRUCTION DETAILS
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CAST IRON FRAME
AND COVER, US
FOUNDRY 655-U, OR
APPROVED EQUAL

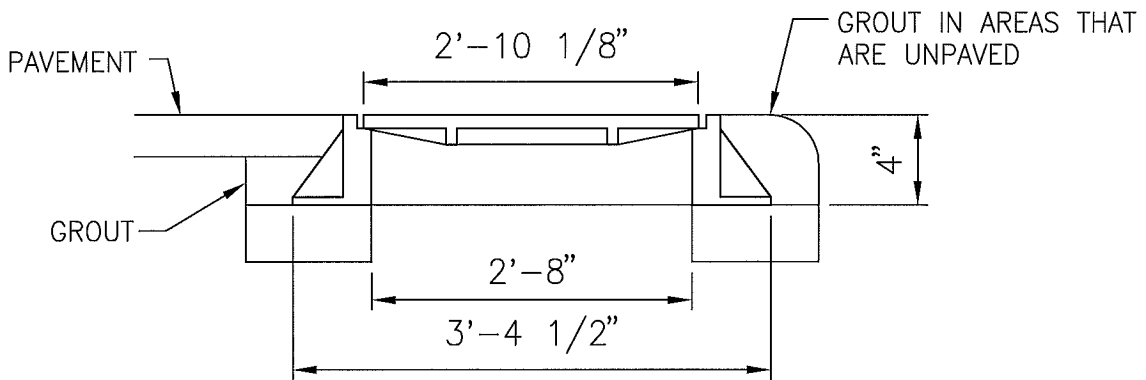
RAISED LETTERS (SANITARY
SEWER), 1" HIGH, FLUSH
WITH TOP OF COVER

2-CONCEALED PICK
HOLES REQUIRED



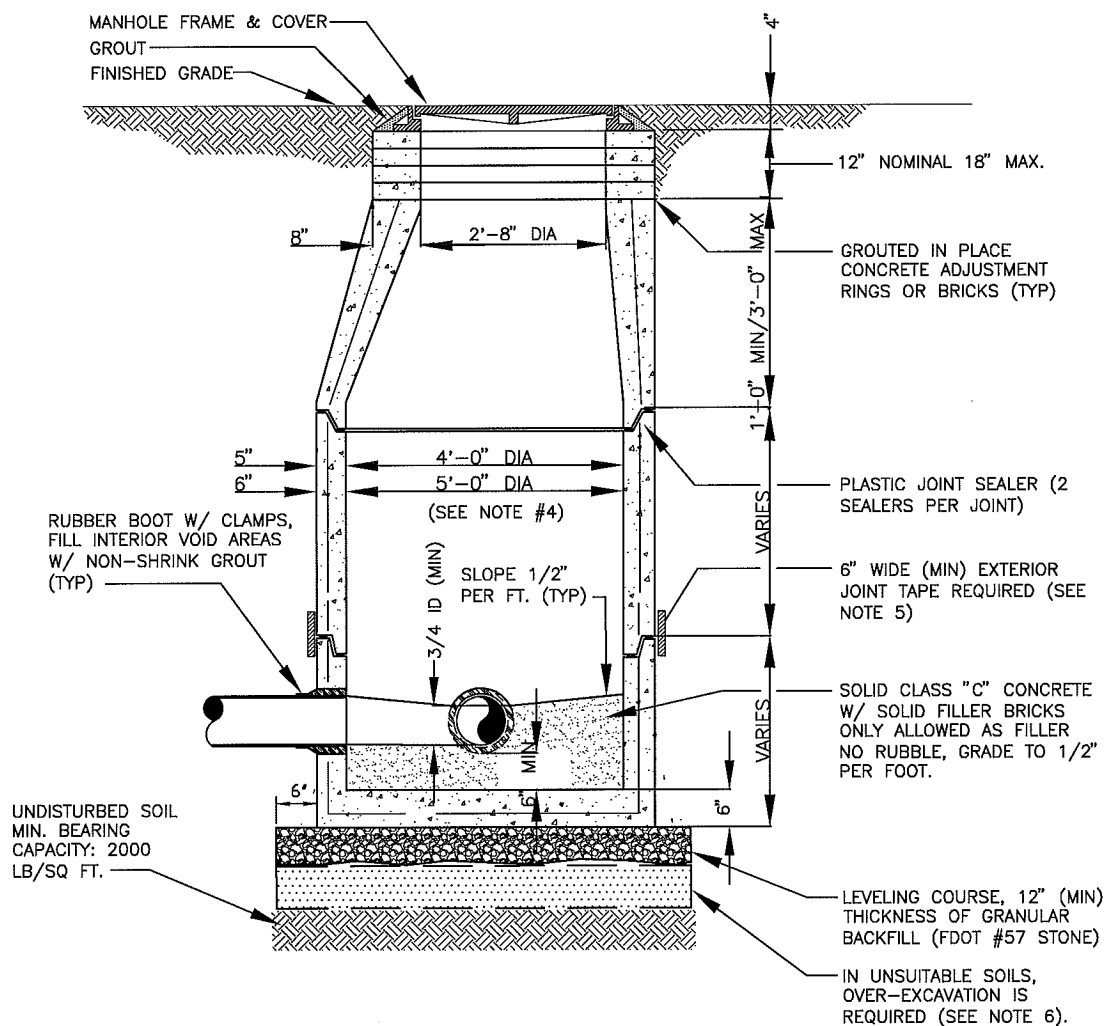
FRAME AND COVER SHALL
BE MACHINED OR GROUND
AT ALL BEARING SURFACES
SO AS TO SEAT FIRMLY
AND PREVENT ROCKING

PLAN



SECTION

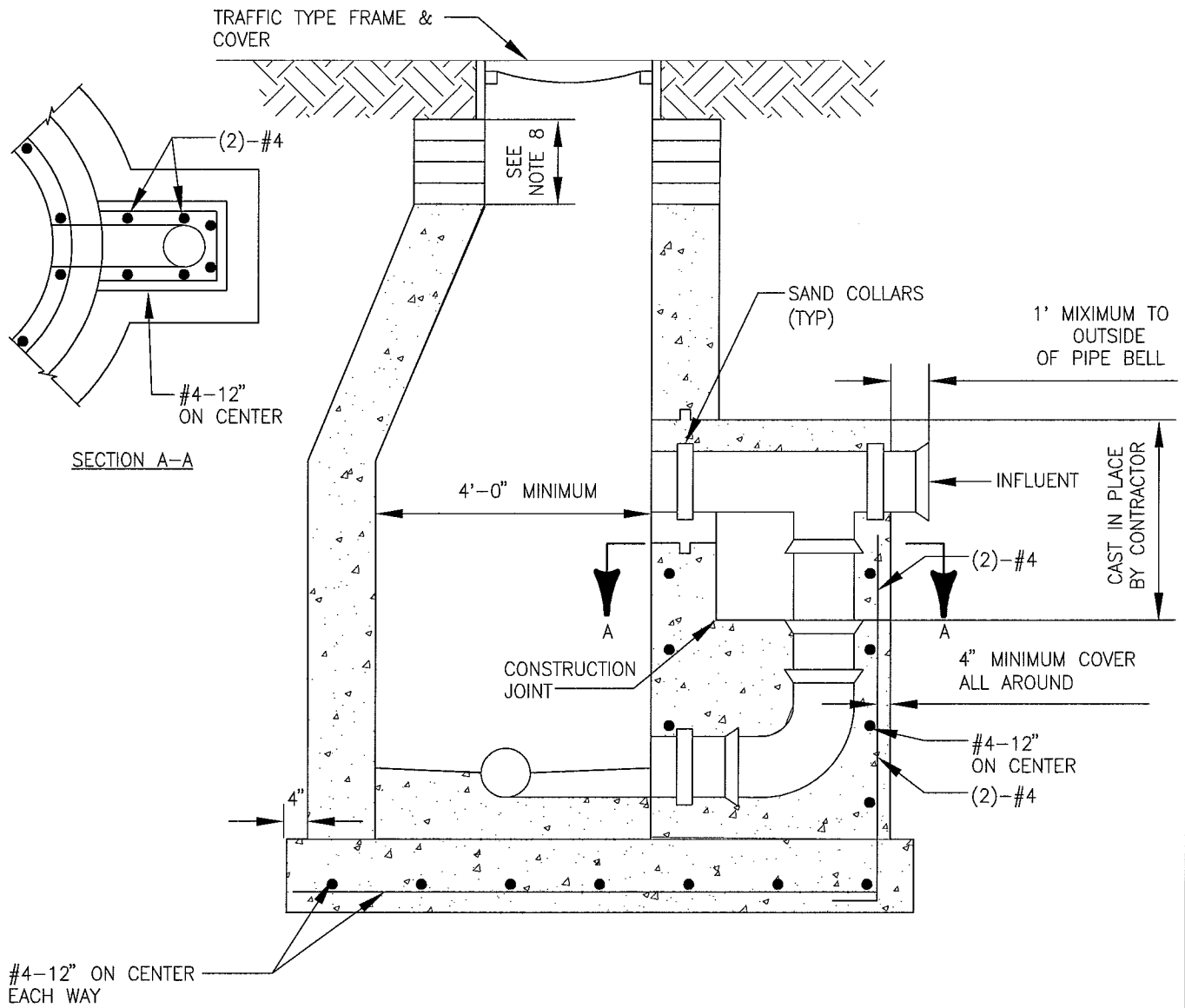
S-1
MANHOLE FRAME AND COVER



NOTES:

- 1) PRECAST MANHOLE SECTIONS TO BE MANUFACTURED IN ACCORDANCE WITH THE LATEST EDITIONS OF A.S.T.M. C-478 WITH 4000 LB. CONC., TYPE II CEMENT. ALL LIFTING HOLES AND OUTSIDE INSERTS SHALL BE FILLED WITH NON-SHRINK GROUT AND COATED WITH BITUMINOUS WATERPROOFING MATERIAL.
- 2) THE INTERIOR AND EXTERIOR OF MANHOLE AND INTERIOR OF ADJUSTING RINGS SHALL BE GIVEN TWO COATS (16 MILS DRY THICKNESS TOTAL FOR BOTH INTERIOR & EXTERIOR) OF BITUMINOUS WATERPROOFING MATERIAL.
- 3) IF SPECIALTY LINER IS TO BE INSTALLED ON INSIDE SURFACE OF MANHOLE, THE BITUMINOUS WATERPROOFING SHALL BE OMITTED ON INSIDE.
- 4) JUNCTION MANHOLE (CLOSEST MANHOLE TO WETWELL) SHALL BE 5' DIA WITH SPECIALTY INTERIOR PVC OR HDPE LINER.
- 5) ALL M/H JOINTS BELOW THE TOP CONE SECTION SHALL INCLUDE A 6" WIDE (MIN) EXTERIOR JOINT TAPE (W/PRIMER). TAPE ON THE CONE SECTION IS OPTIONAL.
- 6) IN SILTS, CLAY OR HIGHLY ORGANIC SOILS (FINE-GRAINED SOILS INCLUDING SOIL GROUPS ML, CL, OL, MH, CH, OH AND PT) THE SOILS SHALL BE OVER-EXCAVATED AN ADDITIONAL 24" (AT A MIN.) AND BACKFILLED WITH AASHTO CLASS A-3 SOIL (COMPACTED TO 98%, ASTM D1557) OR OVER-EXCAVATE AN ADDITIONAL 12" (AT A MIN.) AND BACKFILL WITH GRANULAR BACKFILL (FDOT #57 STONE).

S-2
SANITARY SEWER TYPE "A" MANHOLE 8"-21" SEWERS

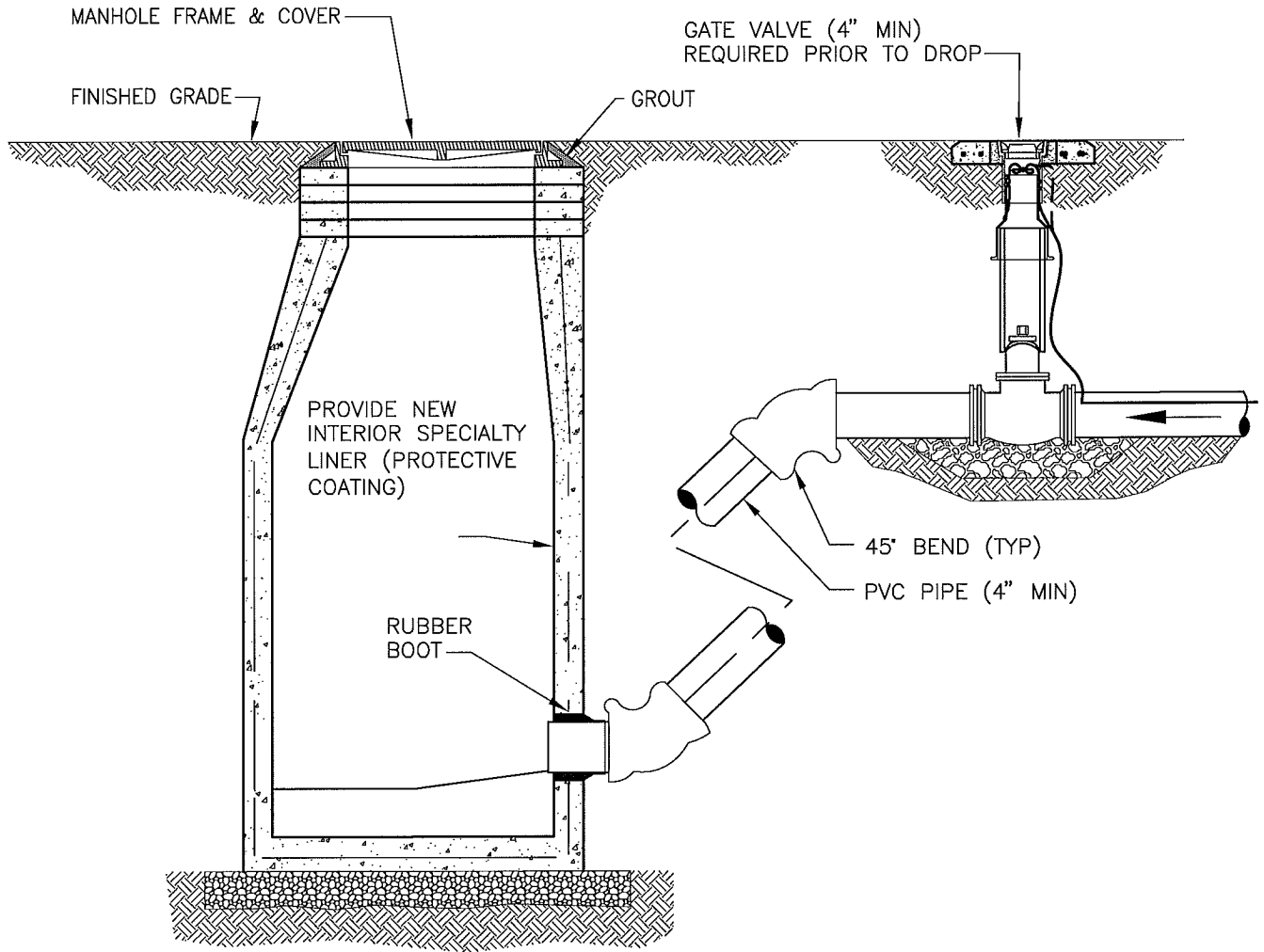
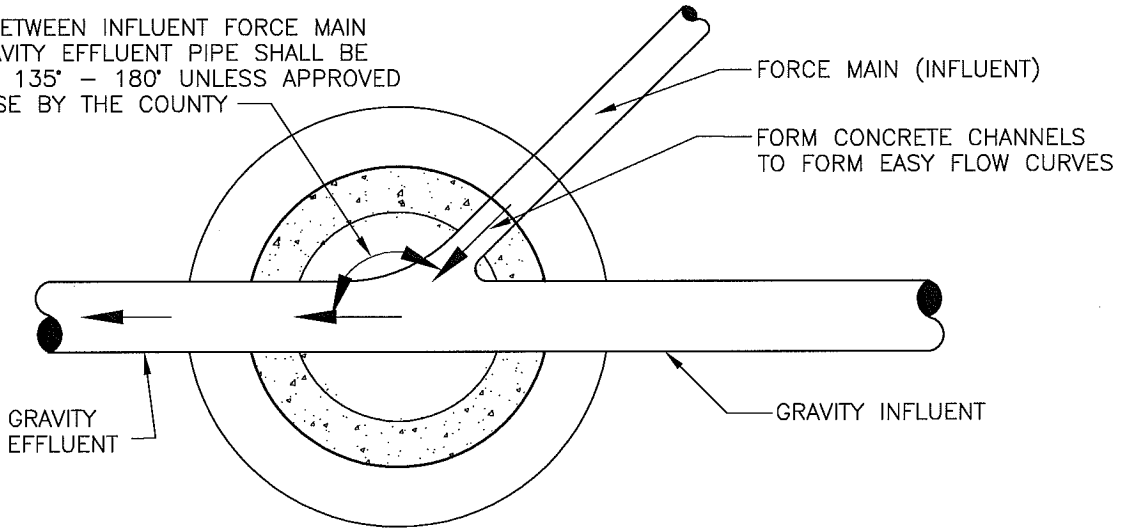


NOTES:

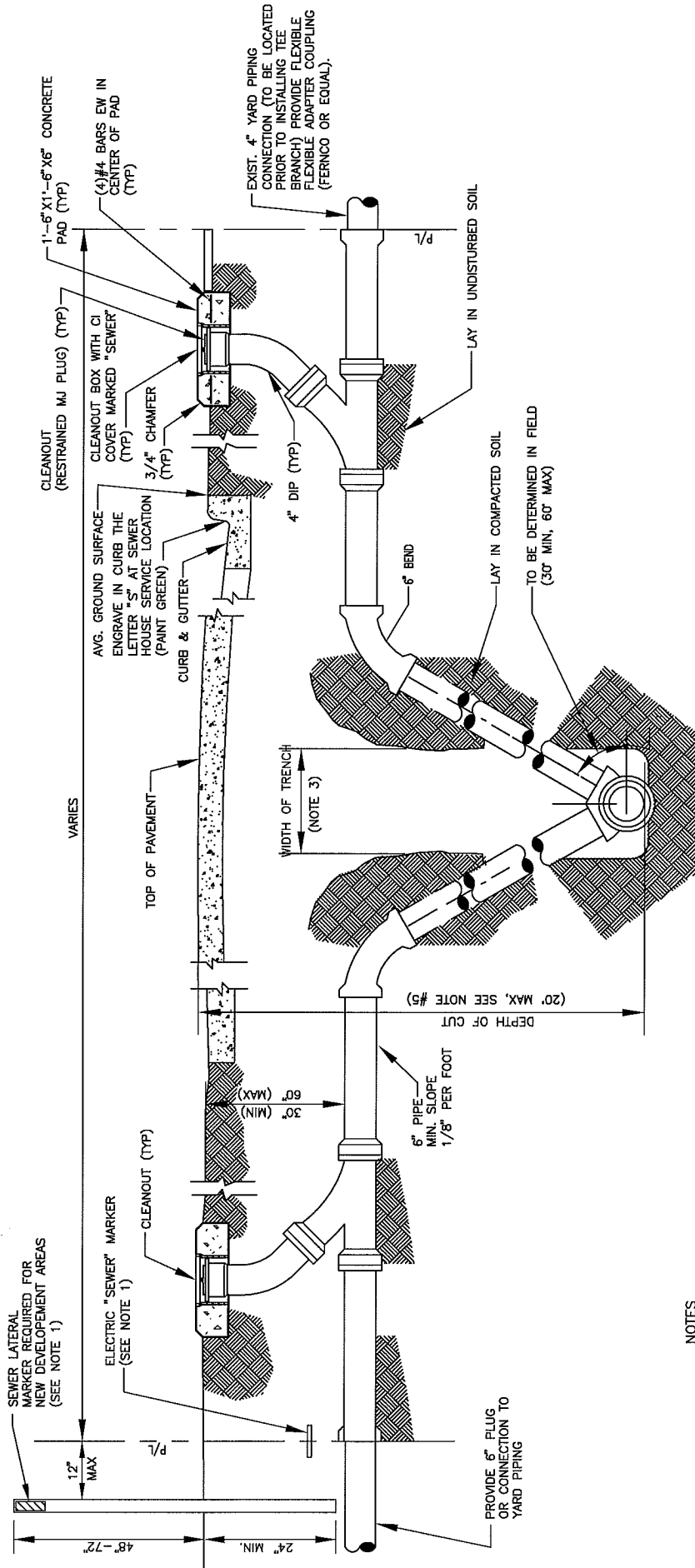
1. THE MANUFACTURER'S PORTION OF THE CONCRETE ENCASEMENT FOR THE DROP CONNECTION SHOULD BE Poured INTEGRALLY WITH BOTH THE MAINTENANCE ACCESS STRUCTURE SLAB & WALL.
2. DROP CONNECTIONS SHALL BE REQUIRED WHENEVER AN INFLUENT SEWER IS LOCATED TWO (2) FEET OR MORE ABOVE THE MAIN INVERT CHANNEL.
3. A FLOW CHANNEL SHALL BE CONSTRUCTED INSIDE MAINTENANCE ACCESS STRUCTURE TO DIRECT INFLUENT INTO FLOW STREAM.
4. ALL REQUIREMENTS FOR PRECAST MAINTENANCE ACCESS STRUCTURE WITHOUT DROP CONNECTIONS WILL ALSO APPLY TO PRECAST MAINTENANCE ACCESS STRUCTURES WITH DROP CONNECTIONS.
5. ALL PIPE WORK & ENCASED FITTINGS SHALL BE PVC (SDR 26).
6. ALL PIPE TO BE SAME DIAMETER AS INFLUENT SEWER MAIN.
7. SEE PRECAST MAINTENANCE ACCESS STRUCTURE STANDARD DETAIL FOR OTHER REQUIREMENTS.
8. THE CHIMNEY ARE SHALL BE A MINIMUM OF 4" & A MAXIMUM OF 12" IN HEIGHT. A MINIMUM OF 3 CONCRETE GRADE RINGS SHALL BE INSTALLED. SET IN 2 STRIPS OF SEALANT/ADHESIVE COMPOUND ON EACH SEALING FACE.
9. SET MAS FRAME ON 2 STRIPS OF SEALANT PLUS A BED OF PORTLAND CEMENT & SILICA SAND. BRING MORTAR UP OVER FRAME.

**S-3
PRECAST MAINTENANCE ACCESS STRUCTURE DROP CONNECTION**

ANGLE BETWEEN INFLUENT FORCE MAIN AND GRAVITY EFFLUENT PIPE SHALL BE BETWEEN 135° - 180° UNLESS APPROVED OTHERWISE BY THE COUNTY



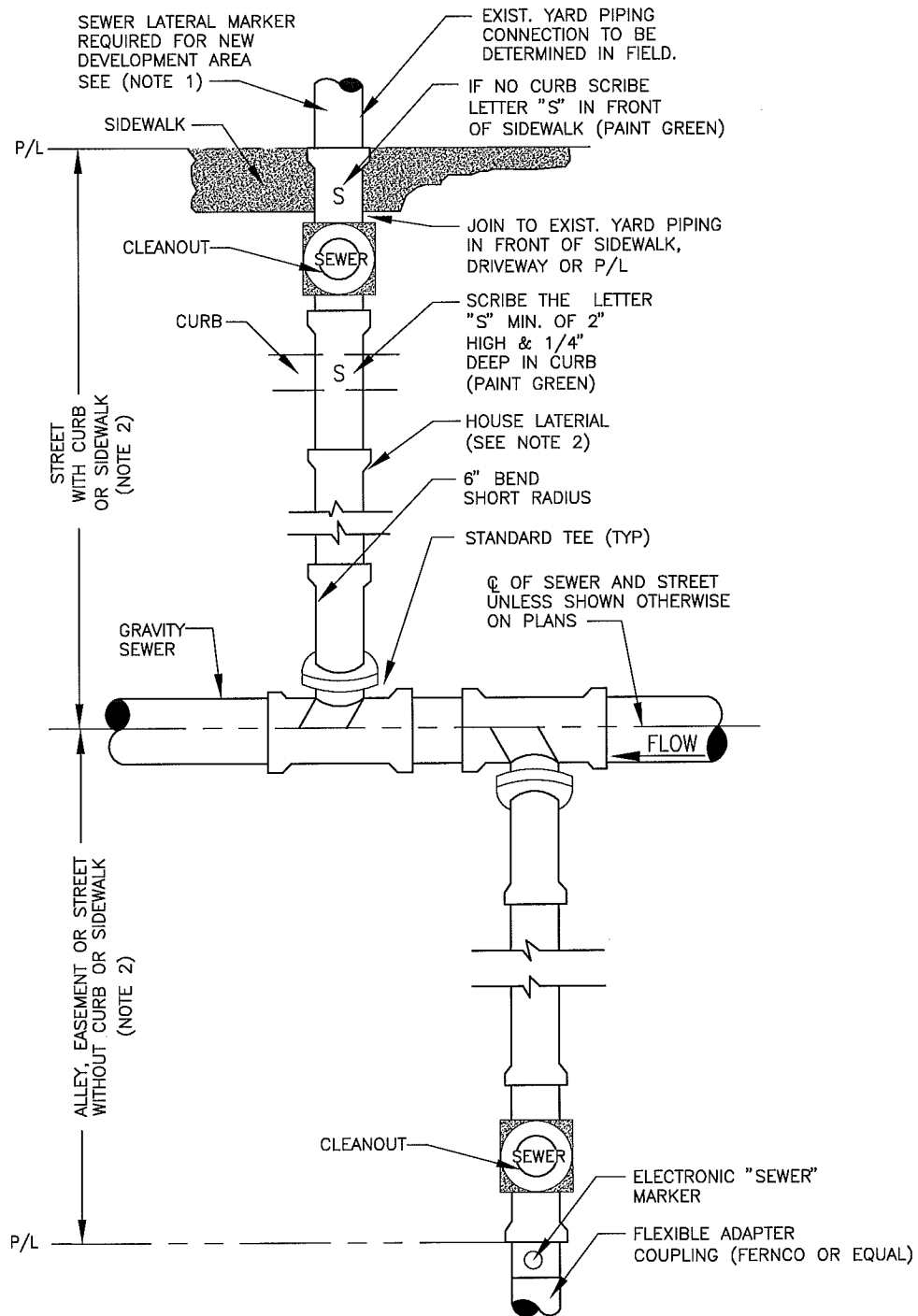
S-4
TYPICAL FORCE MAIN CONNECTION TO MANHOLE



NOTES

1. THE MINIMUM SIZE OF ALL HOUSE LATERALS SHALL BE 6 INCHES. THE MAXIMUM LENGTH OF A HOUSE LATERAL SHALL BE 60 FEET (LENGTH BETWEEN SEWER MAIN OR MANHOLE TO CUSTOMERS PROPERTY LINE).
2. ALL GRAVITY SEWER MAINS AND ASSOCIATED SEWER LATERALS WITH A "DEPTH OF CUT" EQUAL OR GREATER THAN 12 FEET, SHALL BE PVC SDR-26.
3. UNLESS APPROVED OTHERWISE BY THE COUNTY, NO GRAVITY SEWER MAIN WITH SEWER SERVICE LATERALS SHALL BE CONSTRUCTED WITH A "DEPTH OF CUT" GREATER THAN 20 FEET. SEWER SERVICE LATERALS ASSOCIATED WITH GRAVITY SEWER MAINS WHICH ARE DEEPER THAN 20 FEET, MUST BE ROUTED TO A GRAVITY SEWER HIGH-LINE, A MANHOLE OR OTHER COUNTY APPROVED METHOD.

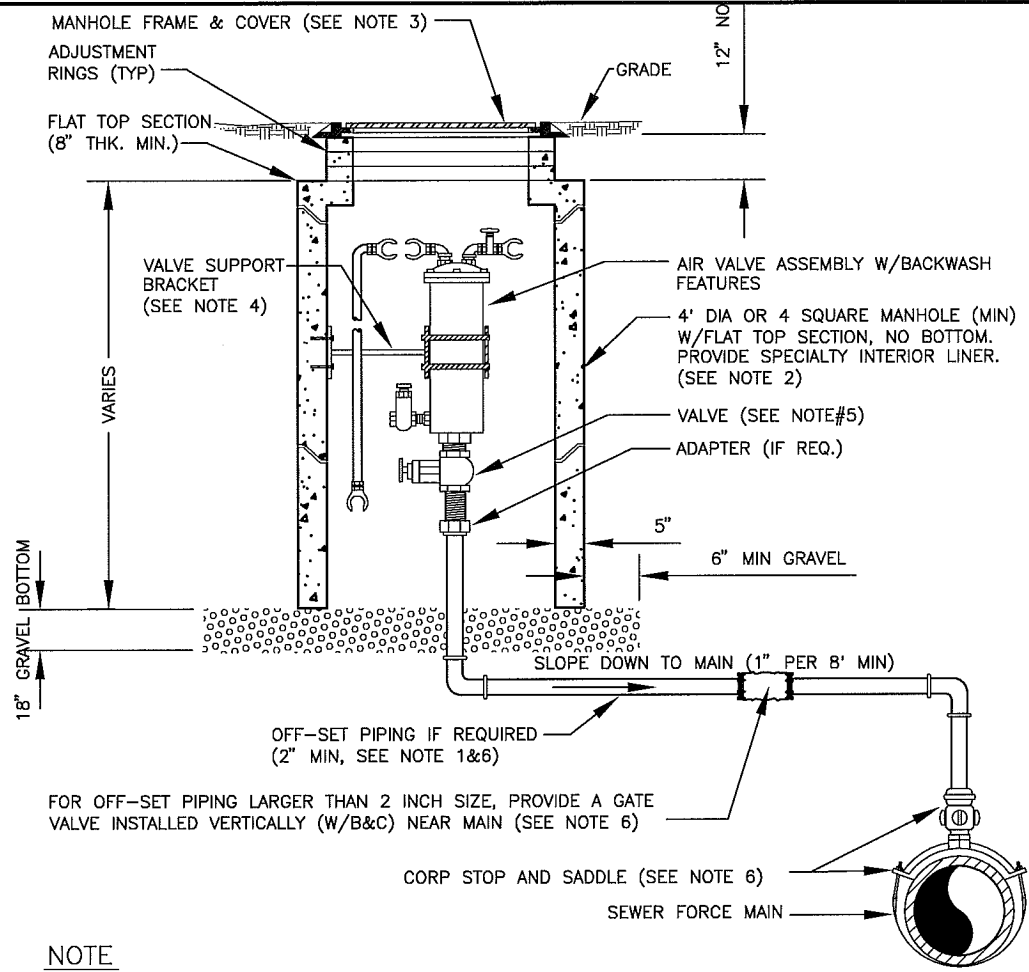
**S-5
SERVICE LATERAL DETAIL**



NOTES

1. THE MINIMUM SIZE OF ALL HOUSE LATERALS SHALL BE 6 INCHES. THE MAXIMUM LENGTH OF A HOUSE LATERAL SHALL BE 60 FEET (LENGTH BETWEEN SEWER MAIN OR MANHOLE TO CUSTOMERS PROPERTY LINE).
2. NO SEWER SERVICE CONNECTIONS PERMITTED ON GRAVITY SEWER PIPE WHICH ARE 16" AND LARGER.

**S-6
HOUSE LATERAL PLAN VIEW**

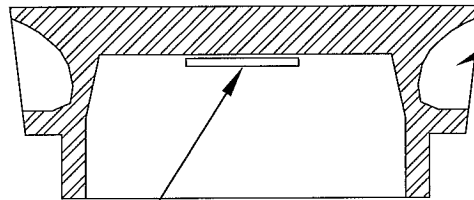
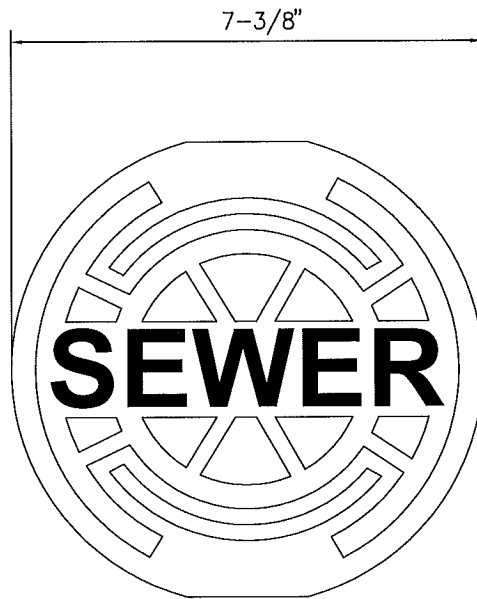


FOR OFF-SET PIPING LARGER THAN 2 INCH SIZE, PROVIDE A GATE VALVE INSTALLED VERTICALLY (W/B&C) NEAR MAIN (SEE NOTE 6)

NOTE

1. THE AIR ASSEMBLY MANHOLE SHALL BE LOCATED OUTSIDE OF THE ROADWAY PAVEMENT AREA (I.E. LOCATED IN NON-TRAFFIC AREAS). IF OFF-SET PIPING IS REQUIRED, THE PIPING SHALL BE 2 INCH MINIMUM, (SAME SIZE AS AIR VALVE INLET). FOR PIPE SIZES 3 INCH AND SMALLER: PIPING SHALL BE 316 STAINLESS STEEL SCH.40, STD GRADE, THREADED. FOR PIPE SIZES 4 INCH AND LARGER: PIPING SHALL BE 316 STAINLESS STEEL SCH. 10 (MIN), WELDED OR PVC DR-18 PIPE AND FITTINGS-RESTRAINED.
2. THE CONCRETE MANHOLE SHALL INCLUDE A POLYURETHANE SPECIALTY LINER TO BE INSTALLED ON THE INTERIOR SURFACES INCLUDING THE RISER SECTION TOP AND THE ADJUSTMENT RINGS. A BITUMINOUS WATERPROOFING MATERIAL SHALL BE PROVIDED ON THE OUTSIDE SURFACES OF THE MANHOLE.
3. FRAME AND COVER SHALL BE COUNTY STANDARD. THE COVER SHALL HAVE NO GASKET TO ALLOW AIR TO EXIT VAULT (REMOVE GASKET IF NECESSARY FROM THE UNDER SIDE OF STANDARD COUNTY COVER). THE COVER (WHEN FLIPPED OPEN) MUST CLEAR THE AIR VALVE ASSEMBLY AT ALL TIMES OR A SQUARE TOP WITH ALUMINUM DOOR SHALL BE PROVIDED (NON-TRAFFIC LOCATIONS ONLY).
4. A VALVE SUPPORT BRACKET IS ONLY REQUIRED FOR ASSEMBLIES WHICH INCLUDE OFF-SET PIPING. THE BRACKET SHALL BE WELDED AND FABRICATED FROM ALL 316 STAINLESS STEEL MATERIALS AND INCLUDE 6" x 6" x 3/8" THICK END PLATES (CONTOURED TO MATCH ATTACHING SURFACES), 3" ANGLE IRON FOR SUPPORT ARM AND TWO U-BOLTS 3/8" DIA TO ATTACH AROUND AIR VALVE. SECURE TO CONCRETE MANHOLE WITH FOUR 1/2" DIA X 2" LONG S/S ANCHOR (MIN). MODIFY THE ABOVE AS REQUIRED TO FIT SPECIFIC AIR VALVE AND TO ASSURE A SOLID SUPPORT BRACKET.
5. FOR PIPE SIZES 3 INCH AND SMALLER, PROVIDE A STAINLESS STEEL BALL VALVE (2" MIN). FOR PIPE SIZES 4 INCH AND LARGER, PROVIDE A FLANGE GATE VALVE OR PLUG VALVE.
6. FOR A 2" AIR VALVE, PROVIDE 2" CORP STOP AND SADDLE AT THE MAIN. FOR AIR VALVES LARGER THAN 2" SIZE, PROVIDE A TAPPING SLEEVE OR DUCTILE IRON TEE FITTING. ALSO, FOR OFF-SET PIPING LARGER THAN 2 INCH SIZE, PROVIDE A GATE VALVE (INSTALLED VERTICALLY NEAR MAIN).

S-7
AIR VALVE ASSEMBLY INSIDE MANHOLE



(2) 1" DIA. PICKHOLES

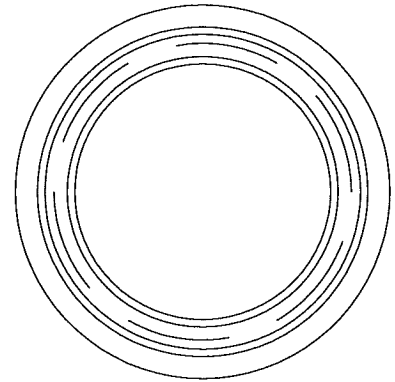
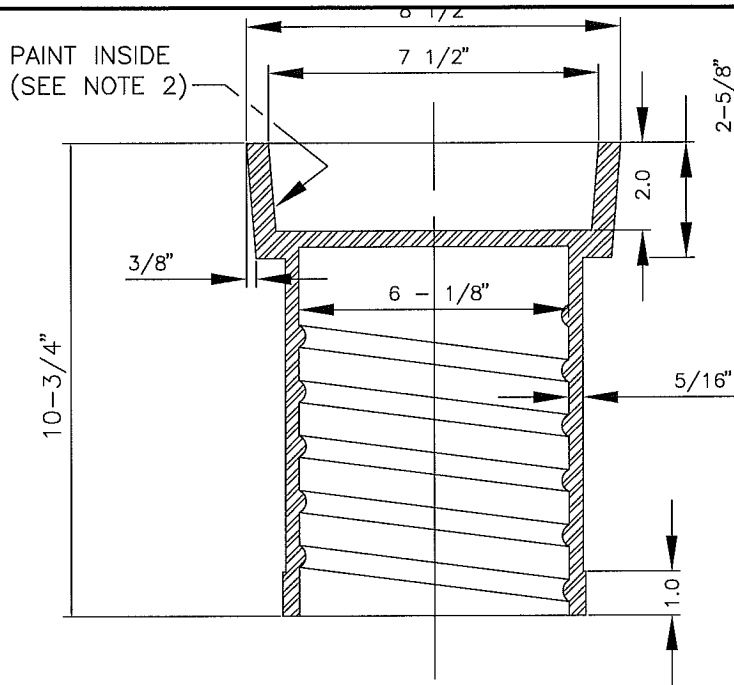
VALVE TAG
(BRASS, NOTE 1)

NOTE
LID WEIGHT: APPROX. 10 LBS

NOTES:

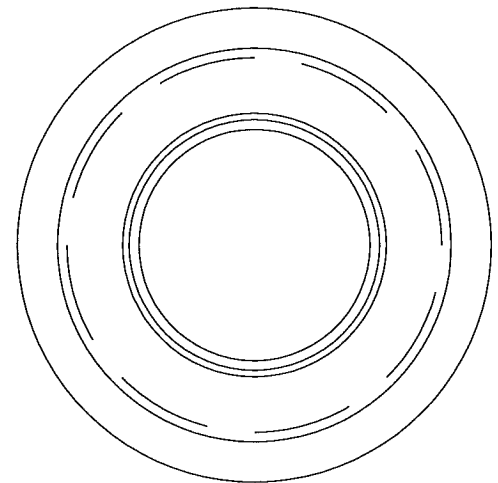
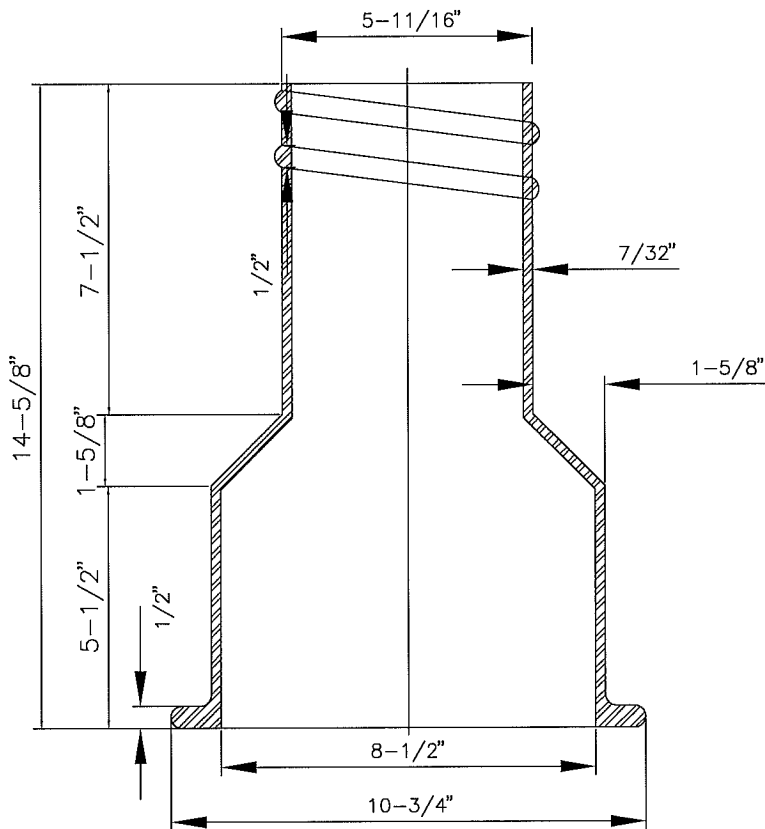
1. THE INSIDE SURFACE SHALL BE AS SMOOTH AS POSSIBLE SO THAT THE VALVE TAG MAY BE EPOXYED DIRECTLY TO THE INSIDE COVER. PRIOR TO APPLYING THE EPOXY, THE COVER SURFACE CONTACT AREA SHALL BE CLEANED WITH A RAG AND ALCOHOL SOLUTION TO REMOVE OIL FILM.
2. PAINT TOP OF THE COVER WITH ENAMEL PAINT (GREEN COLOR).
3. BRASS IDENTIFICATION TAG ($2''\phi$, $\frac{1}{8}''$ THICK) SHALL INDICATE THE SPECIFIC SERVICE (SEWER), VALVE TYPE (GATE PLUG), VALVE SIZE AND NUMBER OF TURNS TO OPEN, AT A MIN.

S-8
SEWER SYSTEM VALVE BOX COVER



TOP SECTION VIEW

(23 LBS. APPROX.)



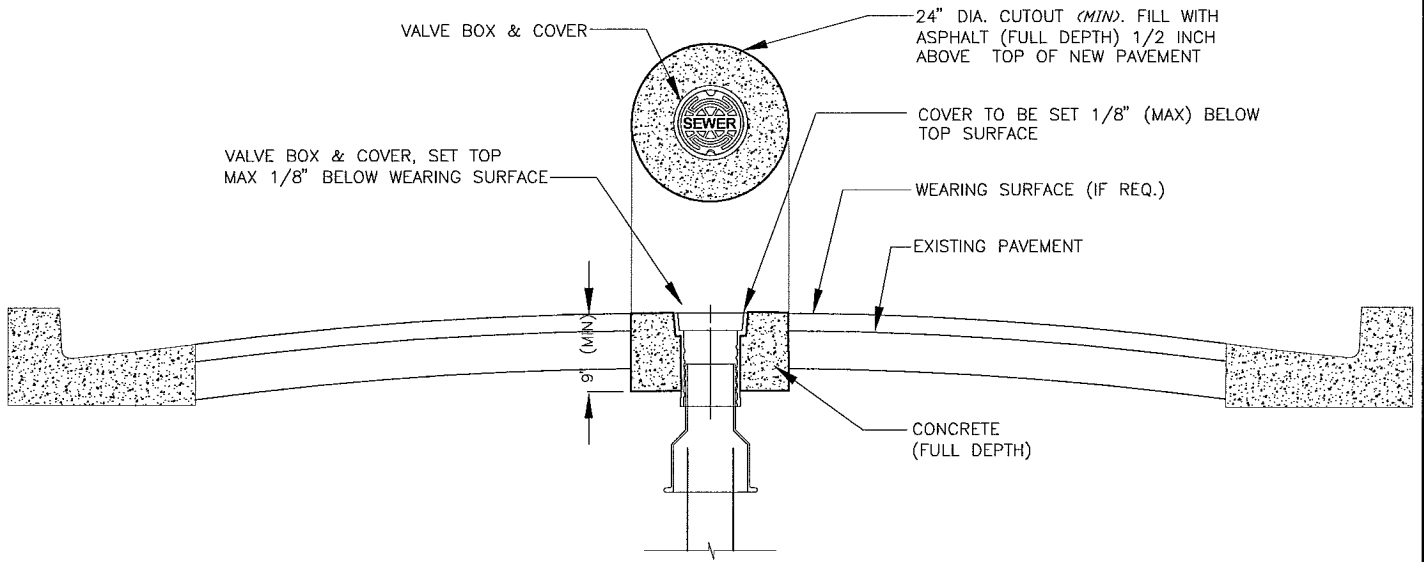
BOTTOM SECTION VIEW

(26 LBS. APPROX.)

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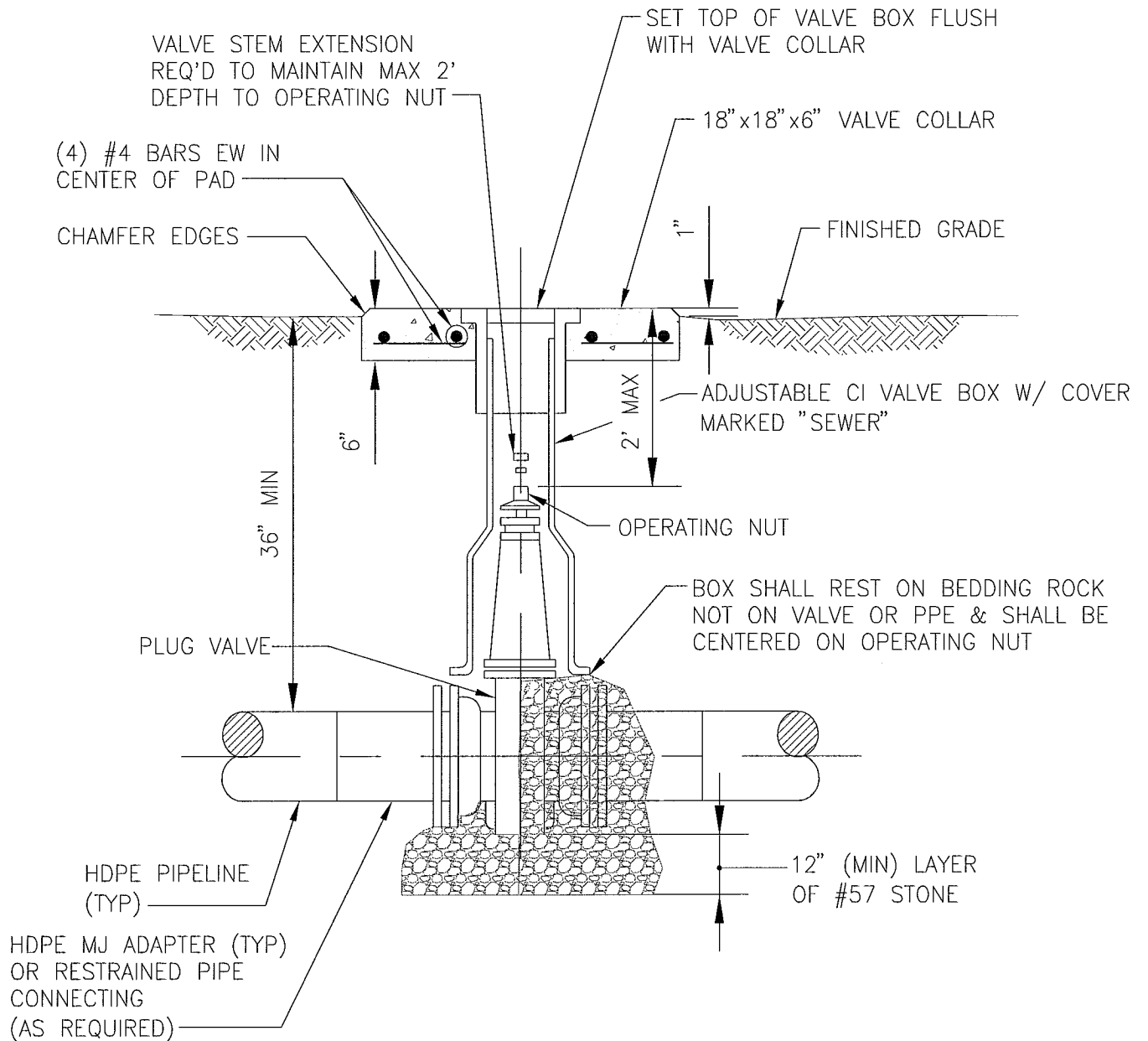
- 1) THREE SECTION VALVE BOXES ALSO ACCEPTABLE.
- 2) PAINT THE INSIDE OF THE TOP SECTION OF THE BOX GREEN COLOR.

**S-9
SEWER SYSTEM VALVE BOX**



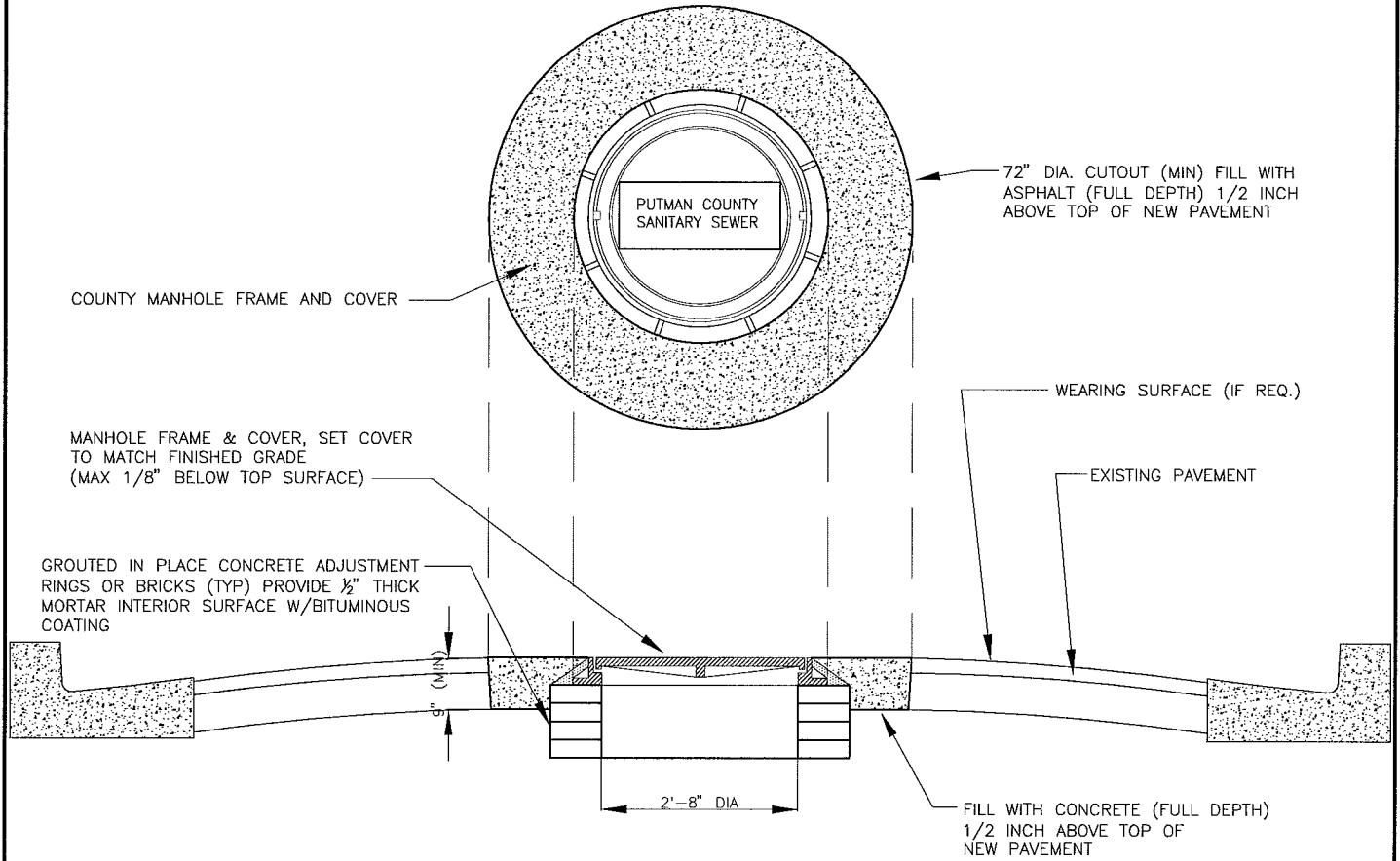
1. PROVIDE FULL DEPTH ASPHALT 1/2 INCH ABOVE TOP OF NEW PAVEMENT LEVEL, TO ALLOW FOR FUTURE ASPHALT MATERIAL COMPACTION. PLACE AND COMPACT ASPHALT IN 2" (MAX) LIFTS.

S-10
SEWER VALVE JACKET ADJUSTED AFTER ROADWAY RE-SURFACING



NOTE:
INSTALLATION LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE. ACTUAL
INSTALLATION LOCATIONS SHALL BE AS DIRECTED BY THE ENGINEER.

S-11
VALVE DETAIL



1) PROVIDE FULL DEPTH ASPHALT 1/2 INCH ABOVE TOP OF NEW PAVEMENT LEVEL, TO ALLOW FOR FUTURE ASPHALT MATERIAL COMPACTION. PLACE AND COMPACT ASPHALT IN 2" (MAX) LIFTS.

S-12
MANHOLE FRAME AND COVER ADJUSTMENT AFTER ROADWAY RE-SURFACING