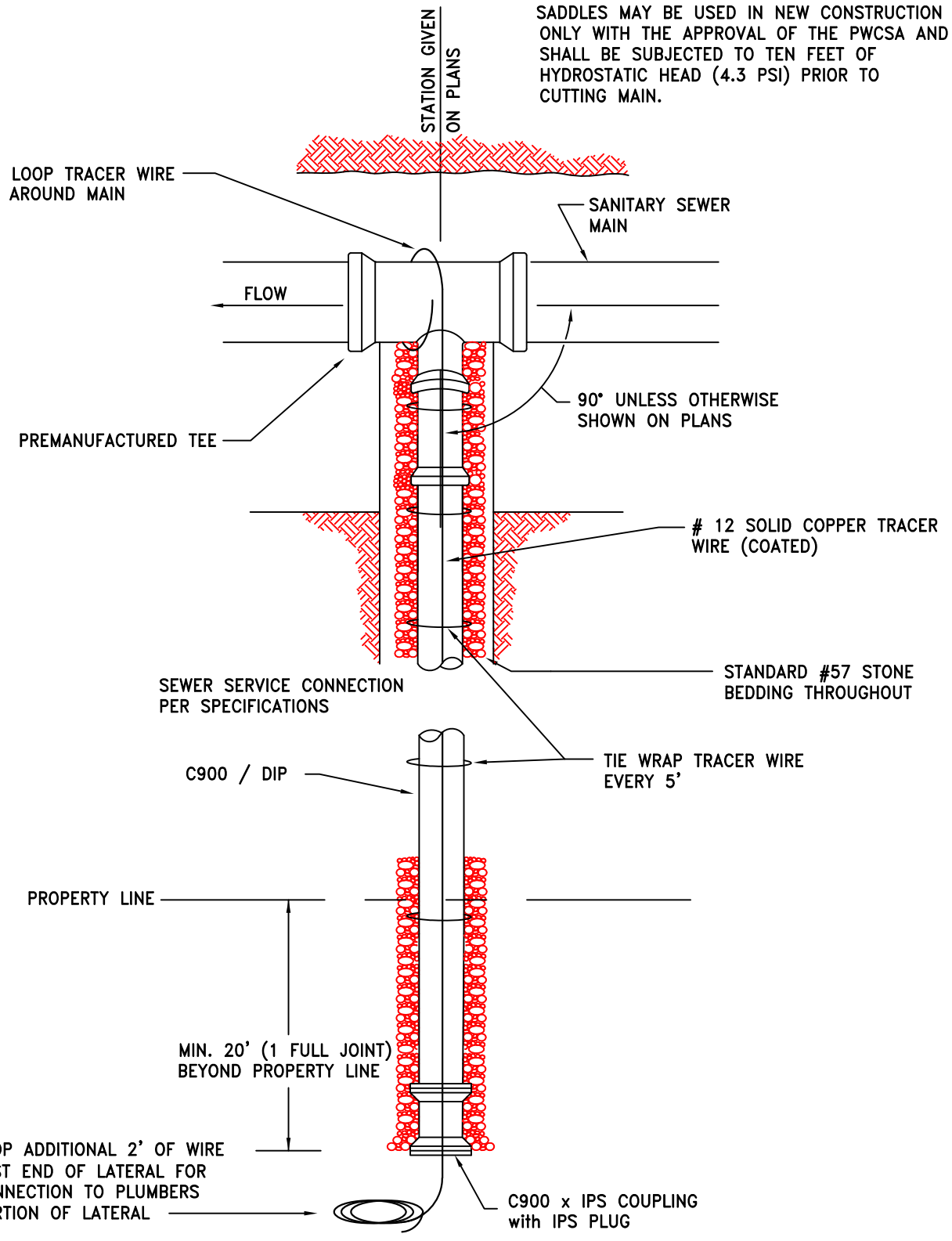
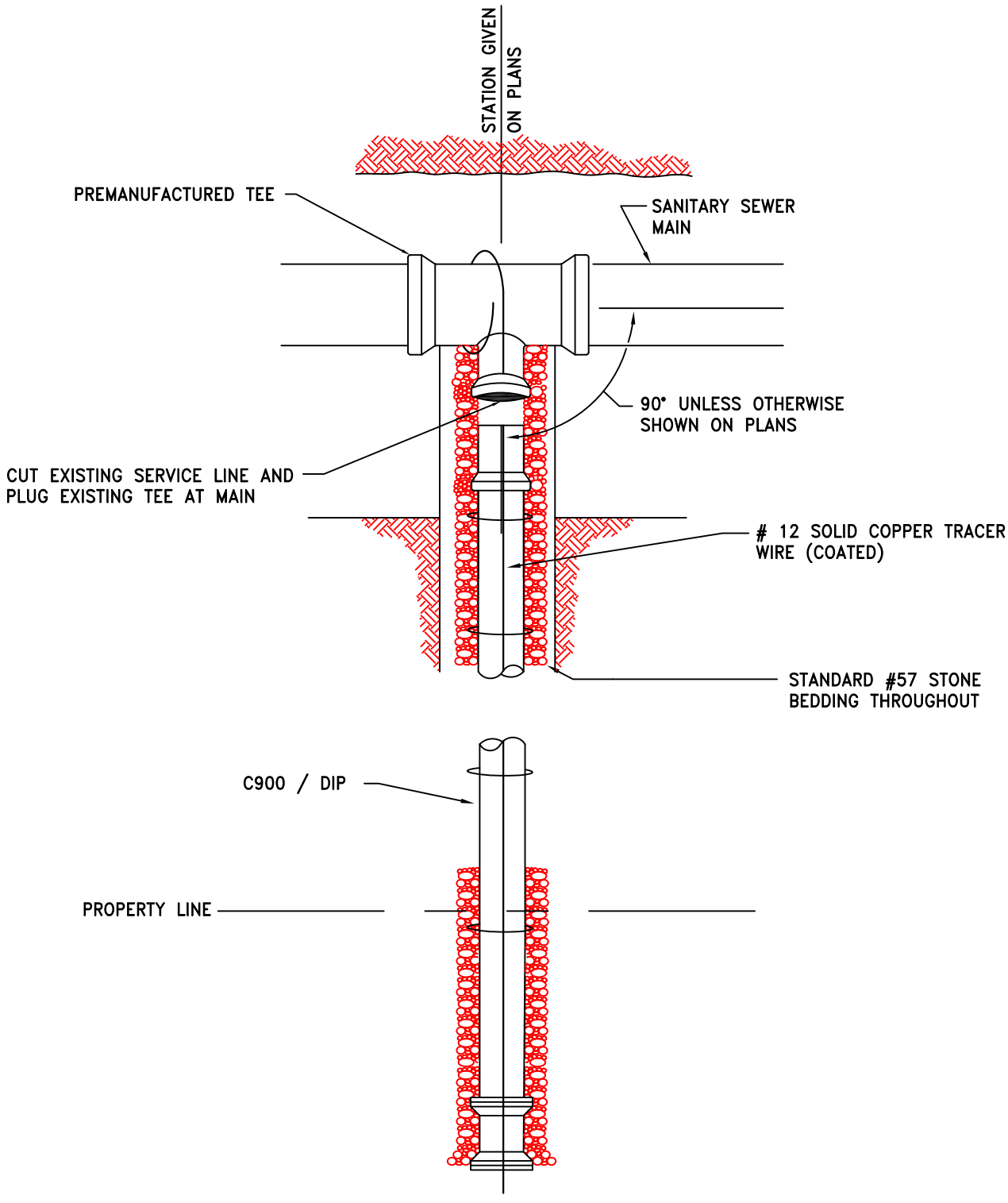


SEWER SERVICE CONNECTION PLAN VIEW FOR NON-PUBLIC RIGHT-OF-WAY

N.T.S.

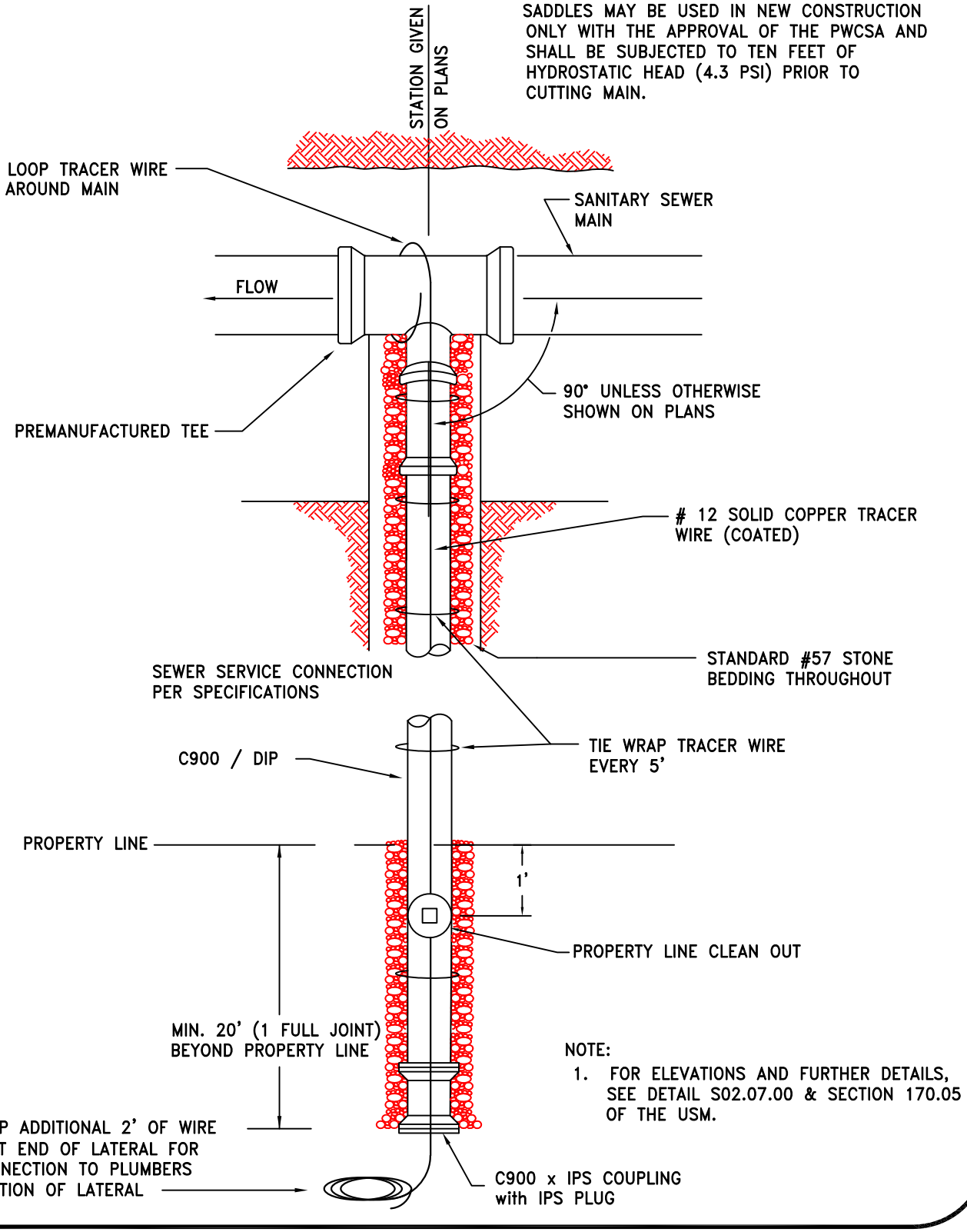
S-1
REV-2018



SEWER SERVICE CONNECTION TERMINATION

N.T.S.

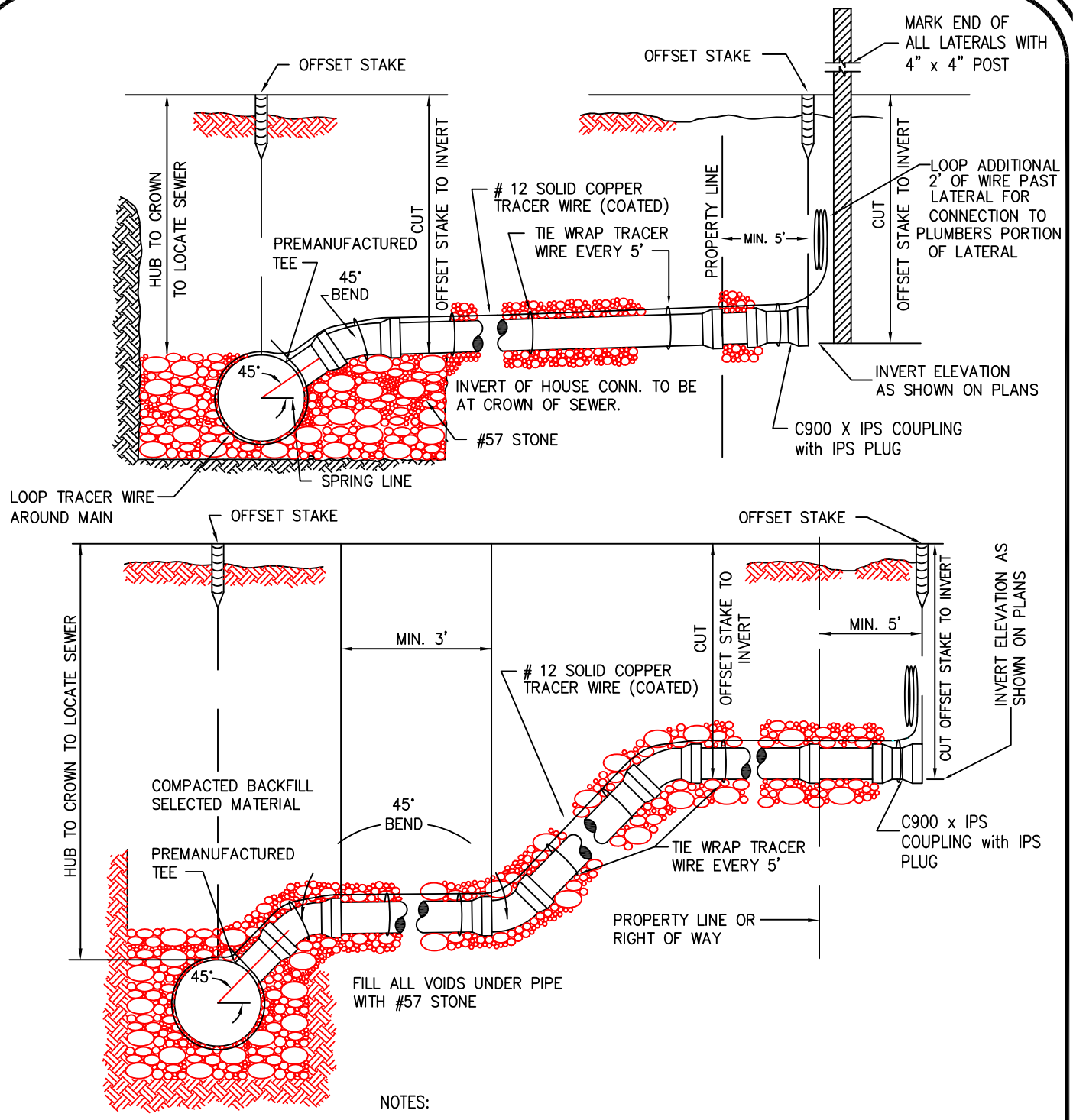
S-2
REV-2018



SEWER SERVICE CONNECTION/REPLACEMENT PLAN VIEW FOR PUBLIC RIGHT-OF-WAY

N.T.S.

S-3
REV-2018



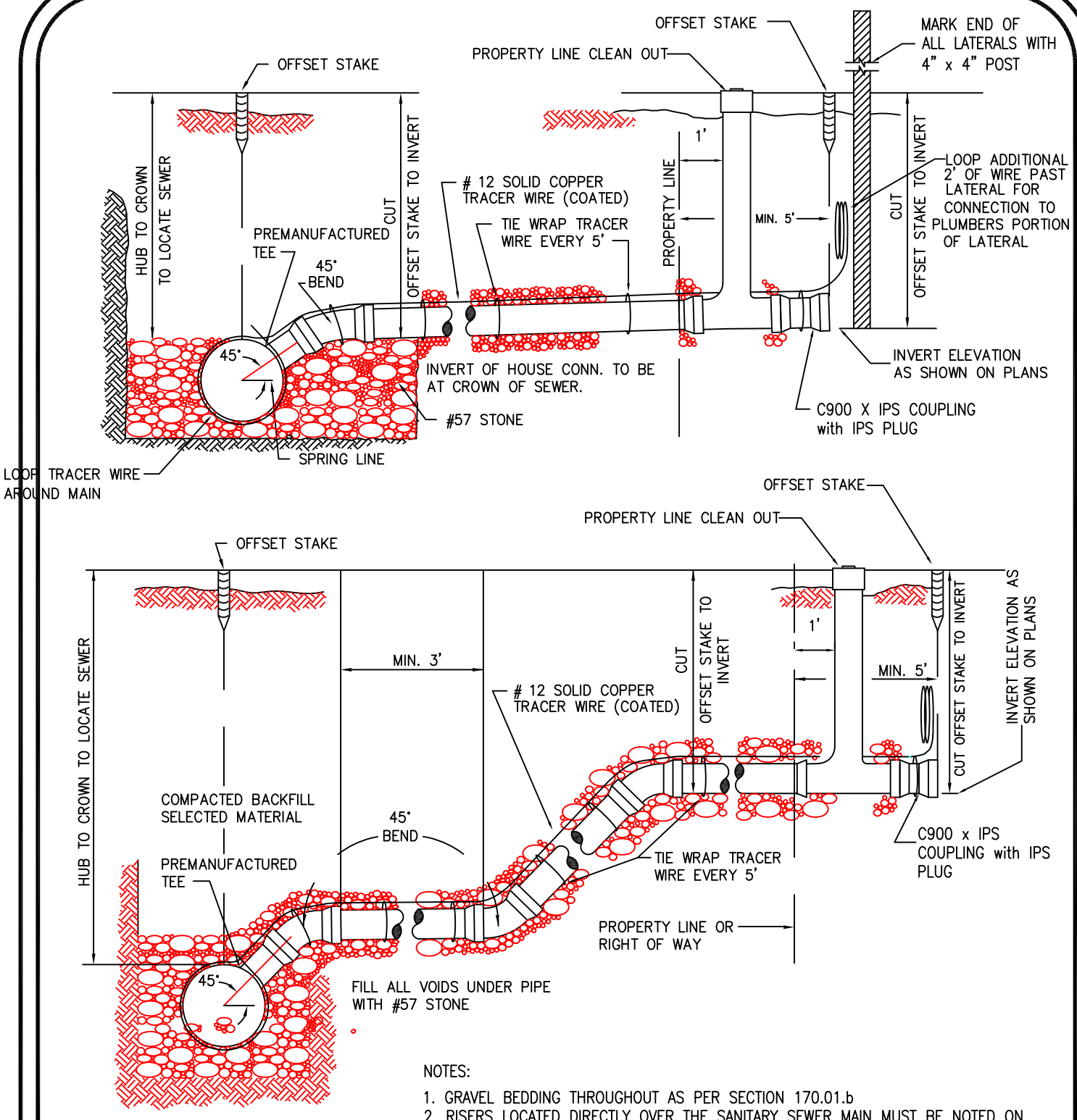
NOTES:

1. GRAVEL BEDDING THROUGHOUT AS PER SECTION 170.01.b
2. RISERS LOCATED DIRECTLY OVER THE SANITARY SEWER MAIN MUST BE NOTED ON THE PLANS.
3. 4" LATERALS MUST HAVE A MINIMUM GRADE OF 2.08%. 6" LATERALS MUST HAVE A MINIMUM GRADE OF 1.00%.
4. MARK ALL ENDS OF LATERAL WITH 4"x 4" WOODEN POST.

SEWER SERVICE CONNECTION PROFILE VIEW FOR NON-PUBLIC RIGHT-OF-WAY

N.T.S.

S-4
REV-2018



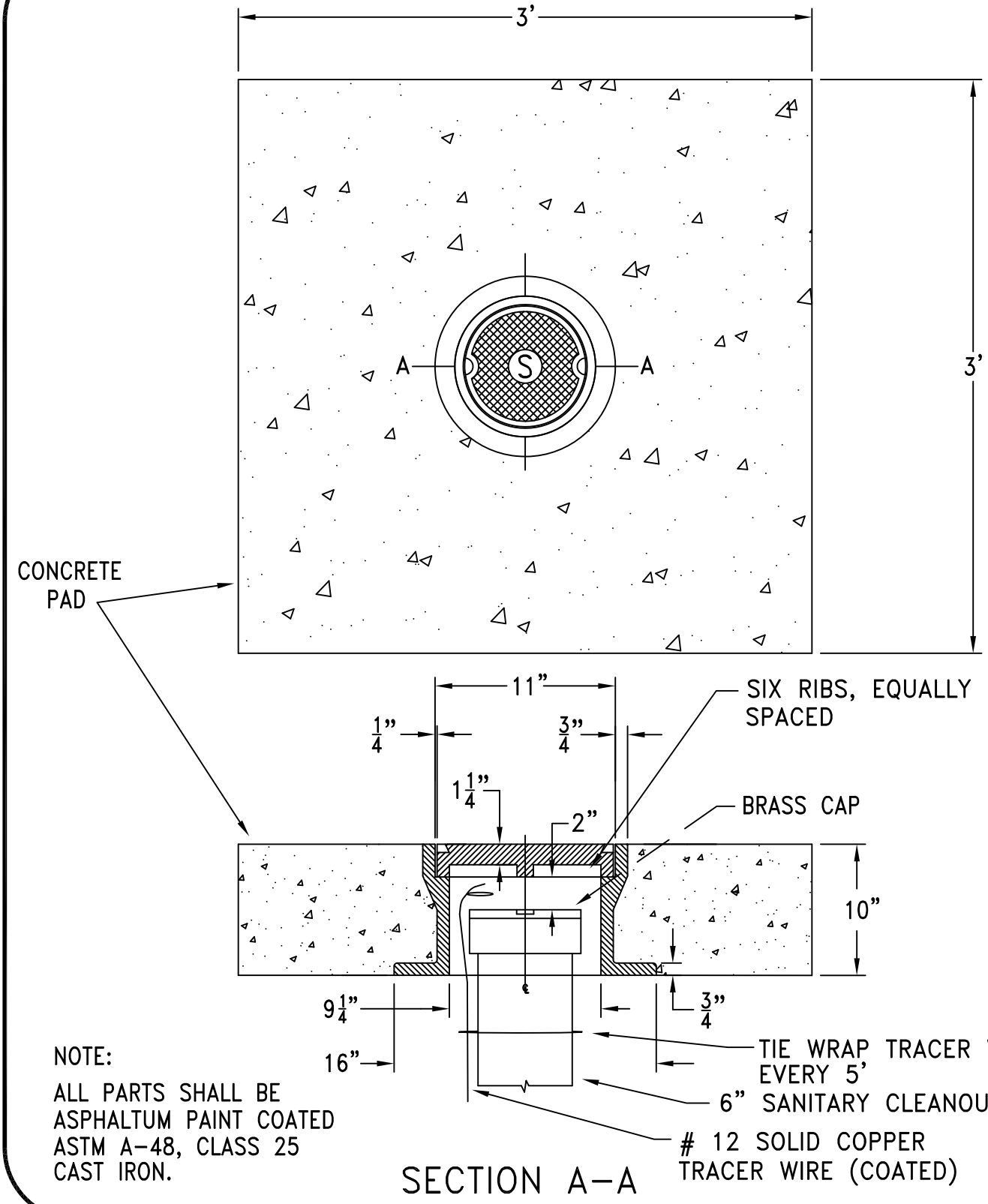
NOTES:

1. GRAVEL BEDDING THROUGHOUT AS PER SECTION 170.01.b
2. RISERS LOCATED DIRECTLY OVER THE SANITARY SEWER MAIN MUST BE NOTED ON THE PLANS.
3. 4" LATERALS MUST HAVE A MINIMUM GRADE OF 2.08%. 6" LATERALS MUST HAVE A MINIMUM GRADE OF 1.00%.
4. MARK ALL ENDS OF LATERAL WITH 4"x 4" WOODEN POST.

SEWER SERVICE CONNECTION/REPLACEMENT PROFILE VIEW FOR PUBLIC RIGHT-OF-WAY

N.T.S.

S-5
REV-2018



NOTE:

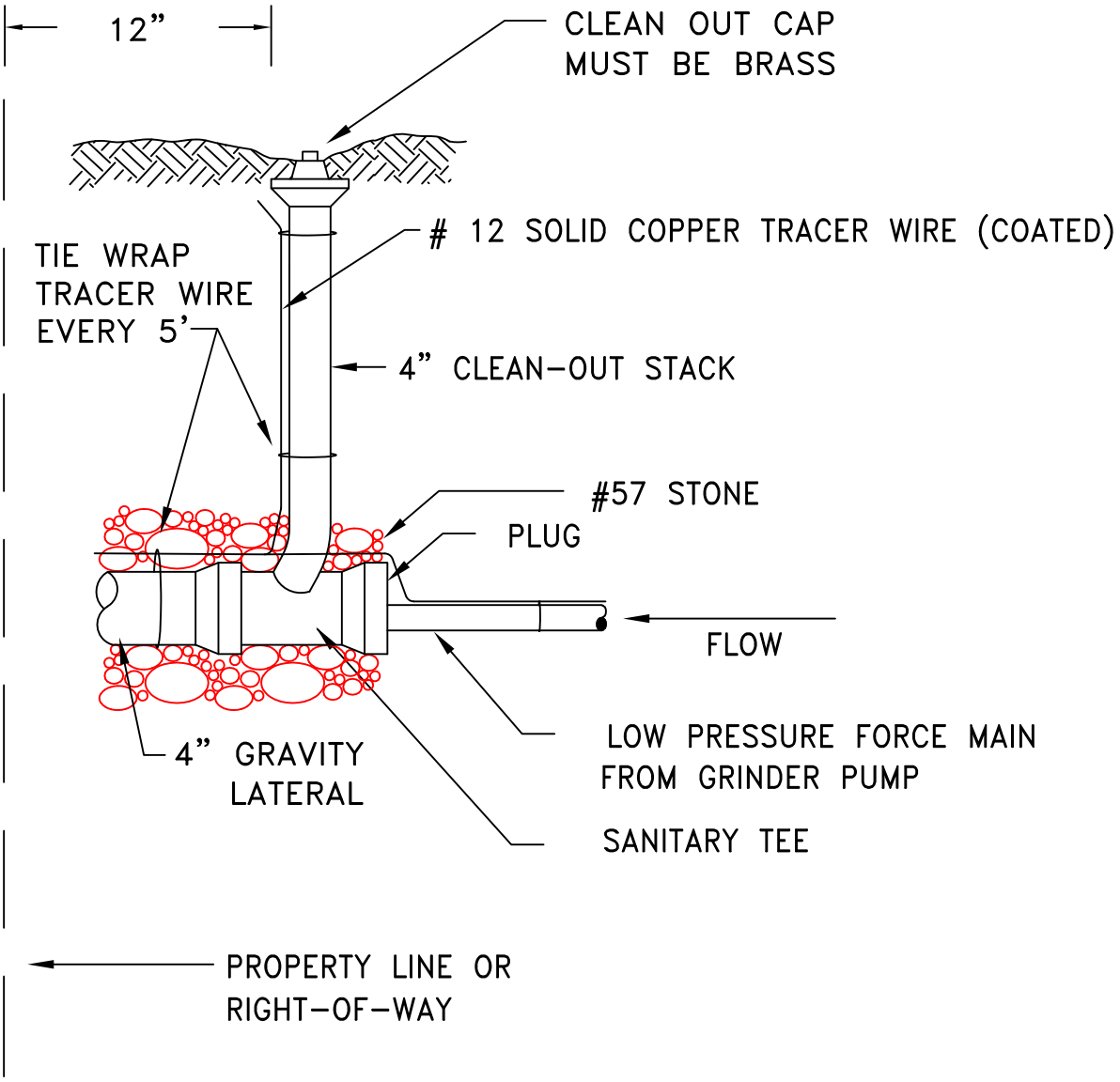
ALL PARTS SHALL BE ASPHALTUM PAINT COATED ASTM A-48, CLASS 25 CAST IRON.

SECTION A-A

CLEANOUT COVER FOR PAVED AREAS

N.T.S.

S-6
REV-2018



NOTE:

GRAVITY LATERAL SHALL CONFORM TO SEWER SERVICE CONNECTION DETAIL EXCEPT FOR LOCATION RELATIVE TO PROPERTY LINE.

GRINDER PUMP CONNECTION TO GRAVITY SEWER MAIN

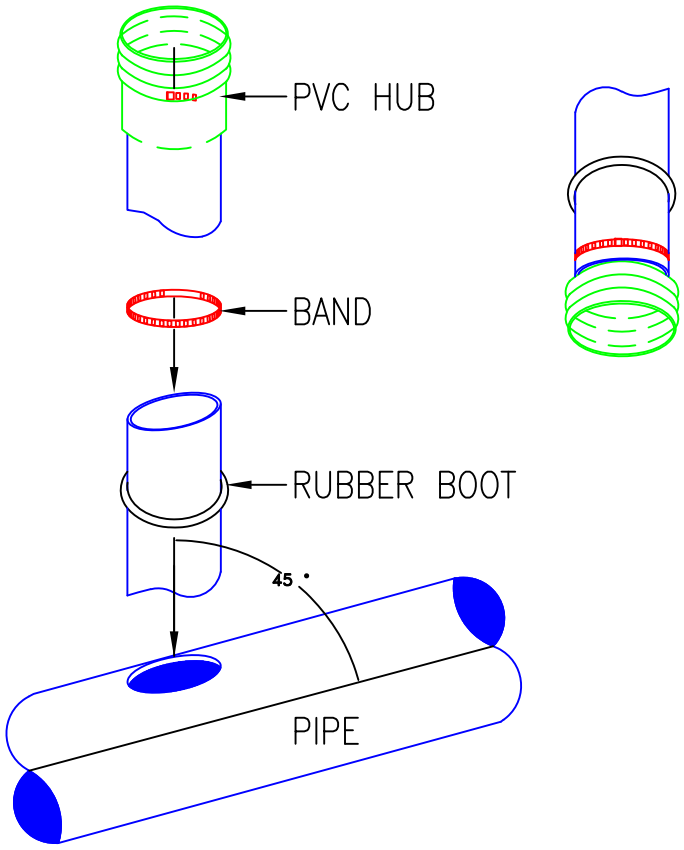
N.T.S.

S–7

REV–2018

NOTE:

THIS METHOD OF CONNECTION SHALL NOT TAKE PRECEDENT OVER USING TEES. THE APPLICATION SHOWN HERE IS FOR TAPPING EXISTING MAINS.



NOTE:

INSERT–A–TEE CAN BE CONNECTED TO PVC, PERMALOC, SPIROLITE, SLIP LINER, DUCTILE IRON, THIN WALL MAIN LINES, CONCRETE(MAINLINES AND MANHOLES), CLAY, ALL THICK WALLED MAIN LINES. IT IS A THREE PIECE CONNECTION THAT IS COMPRESSION–FIT INTO THE CORED WALL OF THE MAIN LINE. IT CONSISTS OF SIDE SERVICES OF 4" THROUGH 12" AND FITS ALL MAIN LINE DIAMETERS.

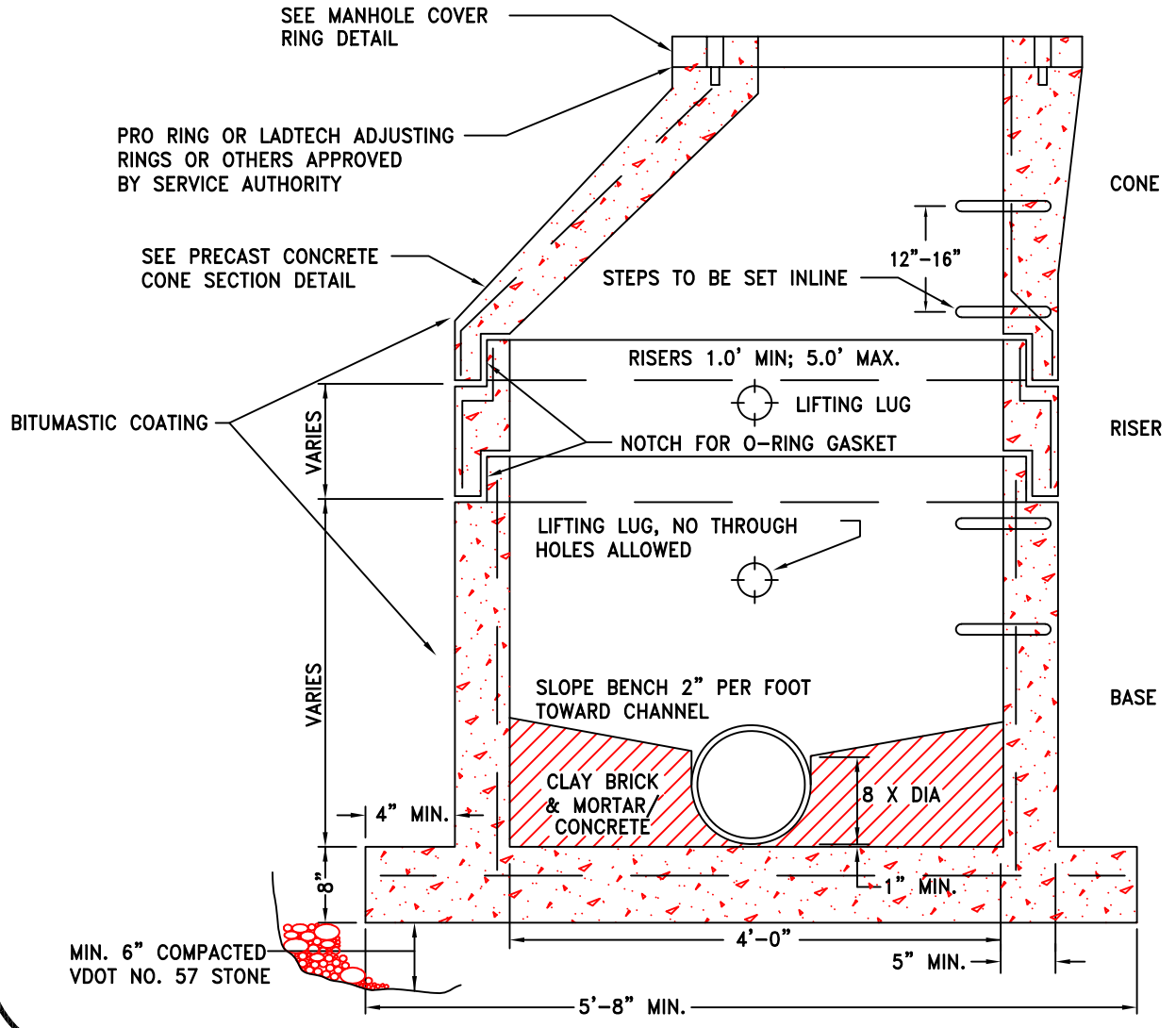
INSERT–A–TEE

N.T.S.

S–8
REV–2018

NOTES:

1. MANHOLE TO MEET CURRENT REQUIREMENTS OF ASTM SPEC. C-478.
2. ALL REINFORCING STEEL TO MEET CURRENT REQUIREMENTS OF ASTM SPEC. A-615.
3. CONCRETE TO BE 4000 PSI MINIMUM COMPRESSIVE STRENGTH.
4. TAPERED JOINT WITH O-RING GASKET TO MEET CURRENT REQUIREMENTS OF ASTM SPEC. C-361 & C-443.
5. 301 MASTIC OR APPROVED EQUAL SHALL BE USED IN ADDITION TO THE JOINT SPECIFIED.
6. APPROVED FLEXIBLE JOINT REQUIRED ON ALL PIPE CONNECTIONS TO MANHOLES. INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. STUB MAY BE USED AT THE APPROVAL OF THE INSPECTOR.
7. MANUFACTURER'S NAME TO BE ON THE INSIDE FACE OF ALL SECTIONS.
8. SET COVER FRAME ON PIONEER 301 MASTIC OR APPROVED SUBSTITUTE.
9. FASTEN WATERTIGHT FRAME TO 3/4" ANCHOR BOLTS (SET ACCORDING TO CONE SECTION DETAIL) WITH NUT AND 2" WASHER. CUT ANCHOR BOLTS OFF 1" ABOVE NUT.
10. KEYWAYS MAY BE SUBSTITUTED FOR LIFTING LUGS.
11. SHOP DRAWINGS ARE REQUIRED FOR MANHOLES USED WITH SEWER MAINS GREATER THAN 24" AND MUST BE APPROVED BY PWCSA.
12. MASONRY UNITS MAY NOT BE USED FOR ADJUSTMENTS.
13. MANHOLE STEPS SHALL BE AMERICAN STEP COMPANY ML-10-TDS-SSR OR APPROVED SUBSTITUTE.



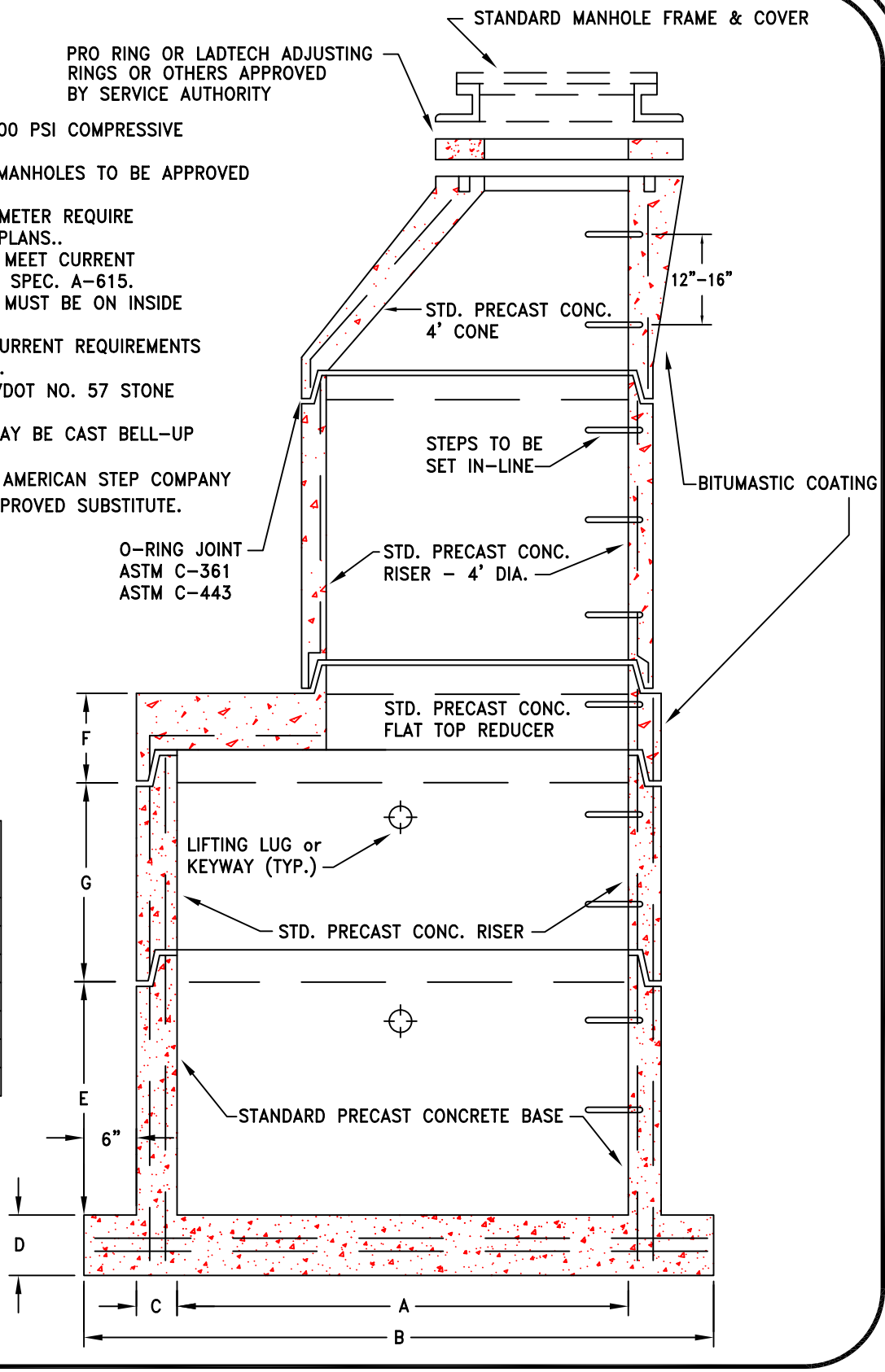
PRECAST CONCRETE 4' DIAMETER MANHOLE

N.T.S.

S-9
REV-2018

NOTES:

1. CONCRETE MUST BE 4000 PSI COMPRESSIVE STRENGTH, MINIMUM.
2. PIPE CONNECTIONS TO MANHOLES TO BE APPROVED FLEXIBLE SLEEVES.
3. MANHOLES OVER 6' DIAMETER REQUIRE DETAILED DRAWING ON PLANS..
4. ALL REINFORCING MUST MEET CURRENT REQUIREMENTS OF ASTM SPEC. A-615.
5. MANUFACTURER'S NAME MUST BE ON INSIDE FACE OF ALL SECTIONS.
6. MANHOLE MUST MEET CURRENT REQUIREMENTS OF ASTM. SPEC. C-478.
7. PLACE 6" COMPACTED VDOT NO. 57 STONE UNDER BASE SECTIONS.
8. JOINT CONFIGURATION MAY BE CAST BELL-UP OR SPIGOT-UP.
9. MANHOLE STEPS TO BE AMERICAN STEP COMPANY ML-10-TDS-SSR OR APPROVED SUBSTITUTE.



DIMENSIONS	MANHOLE DIAMETER IN FEET	
	5'	6'
A	60"	72"
B	84"	98"
C	6"	7"
D	8"	8"
E	VARIES	
F	13" MIN.	13" MIN.
G	VARIES	

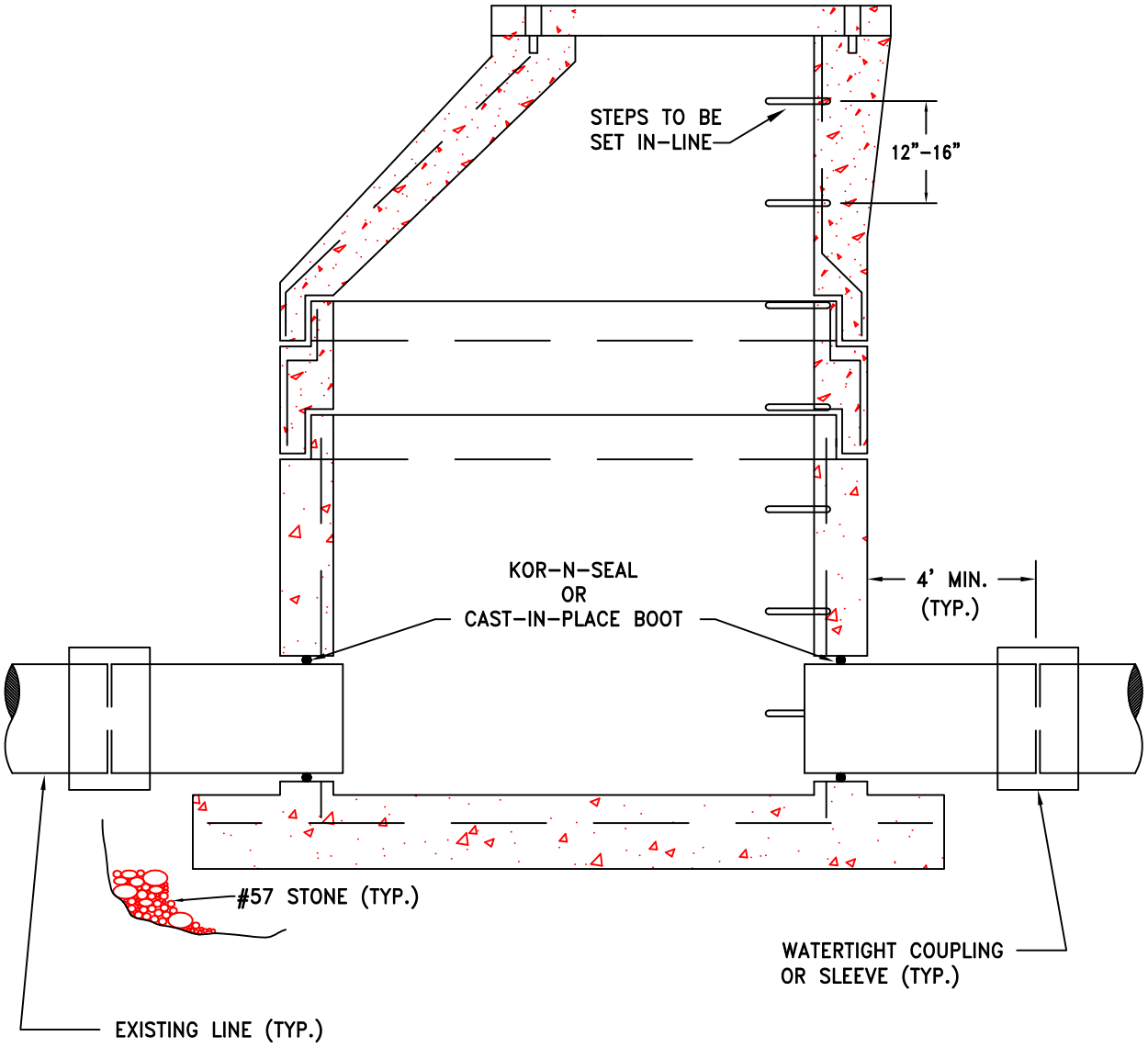
PRECAST CONCRETE 5' AND 6' DIAMETER MANHOLE

N.T.S.

S-10
REV-2018

NOTES:

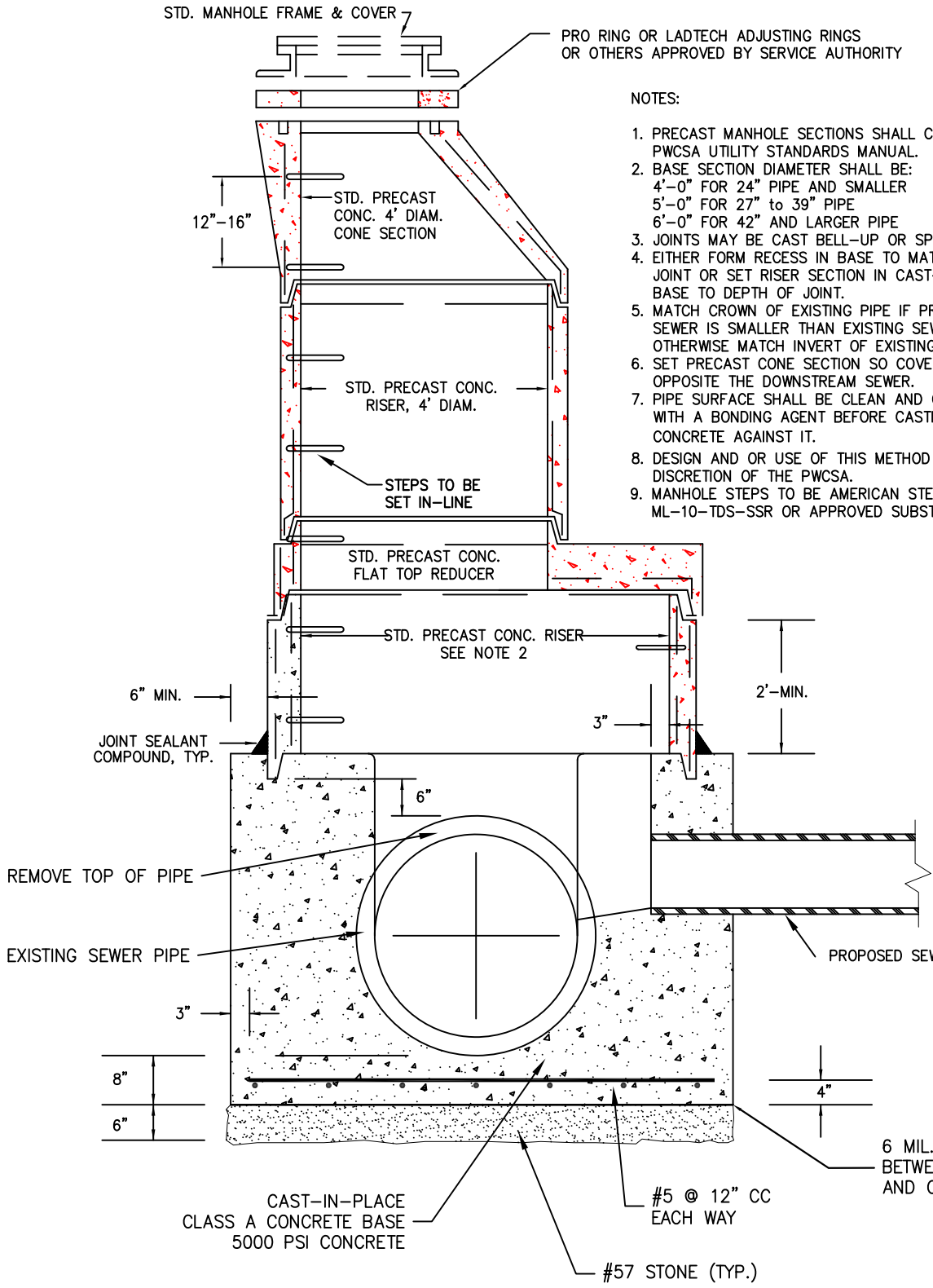
1. CONTRACTOR MUST HAVE ADEQUATE EQUIPMENT TO PUMP AROUND EXISTING LINE WHILE MANHOLE IS CUT IN.
2. PRECAST CONCRETE MANHOLE SHALL CONFORM IN ALL OTHER RESPECTS TO STANDARD PRECAST CONCRETE MANHOLES.
3. DOG HOUSE MANHOLES ARE NOT PERMITTED WITHOUT WRITTEN PERMISSION FROM THE PWCSA.
4. MANHOLE STEPS TO BE AMERICAN STEP COMPANY ML-10-TDS-SSR OR APPROVED SUBSTITUTE.



PRECAST CONCRETE CUT-IN MANHOLE

N.T.S.

S-11
REV-2018



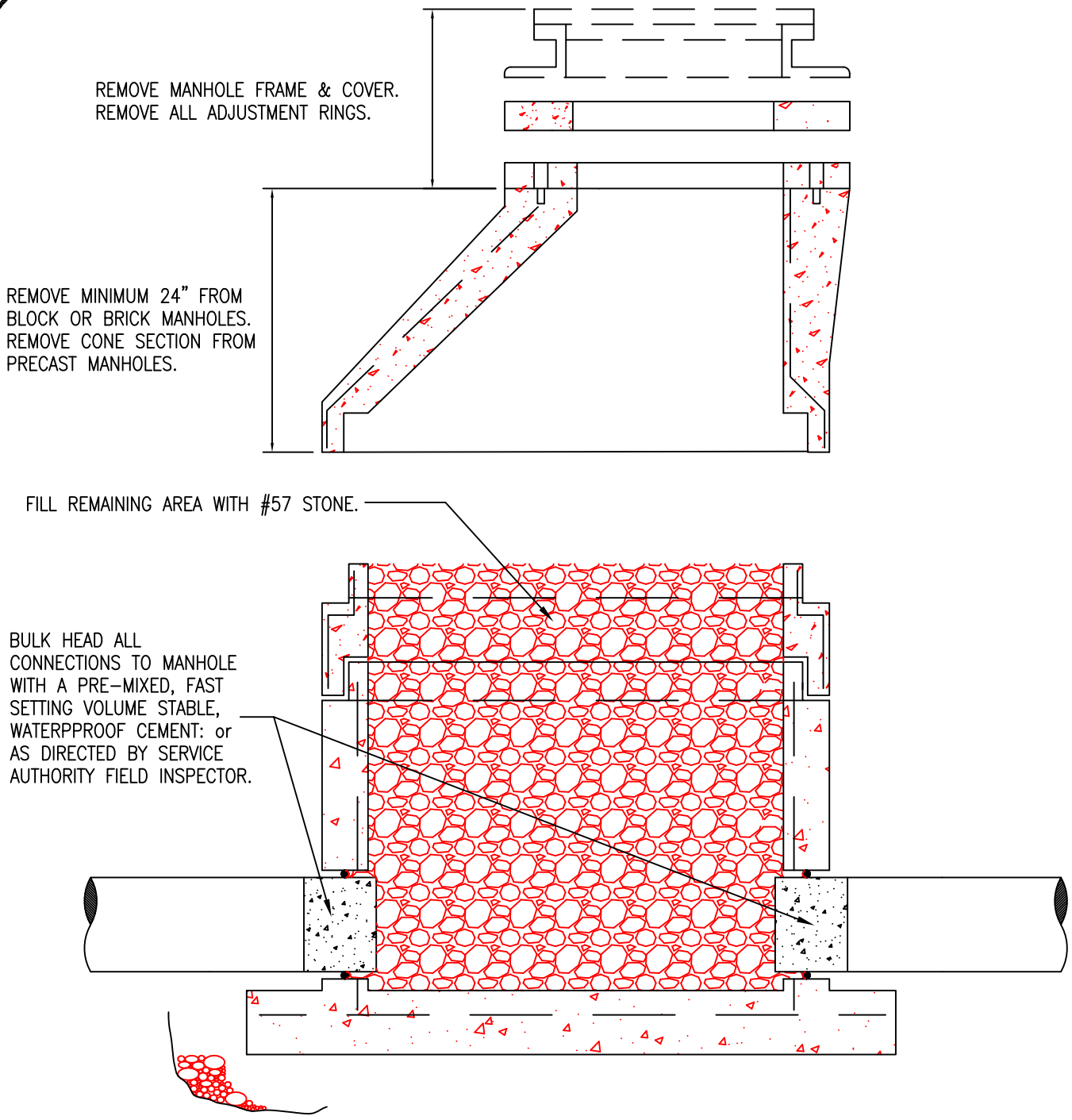
NOTES:

1. PRECAST MANHOLE SECTIONS SHALL CONFORM TO PWCSA UTILITY STANDARDS MANUAL.
2. BASE SECTION DIAMETER SHALL BE:
   4'–0" FOR 24" PIPE AND SMALLER
   5'–0" FOR 27" to 39" PIPE
   6'–0" FOR 42" AND LARGER PIPE
3. JOINTS MAY BE CAST BELL–UP OR SPIGOT–UP.
4. EITHER FORM RECESS IN BASE TO MATCH RISER JOINT OR SET RISER SECTION IN CAST–IN–PLACE BASE TO DEPTH OF JOINT.
5. MATCH CROWN OF EXISTING PIPE IF PROPOSED SEWER IS SMALLER THAN EXISTING SEWER, OTHERWISE MATCH INVERT OF EXISTING SEWER.
6. SET PRECAST CONE SECTION SO COVER IS DIRECTLY OPPOSITE THE DOWNSTREAM SEWER.
7. PIPE SURFACE SHALL BE CLEAN AND COATED WITH A BONDING AGENT BEFORE CASTING CONCRETE AGAINST IT.
8. DESIGN AND OR USE OF THIS METHOD IS AT THE SOLE DISCRETION OF THE PWCSA.
9. MANHOLE STEPS TO BE AMERICAN STEP COMPANY ML–10–TDS–SSR OR APPROVED SUBSTITUTE.

CONSTRUCTION OF MANHOLE OVER EXISTING SEWER

N.T.S.

S–12
REV–2018



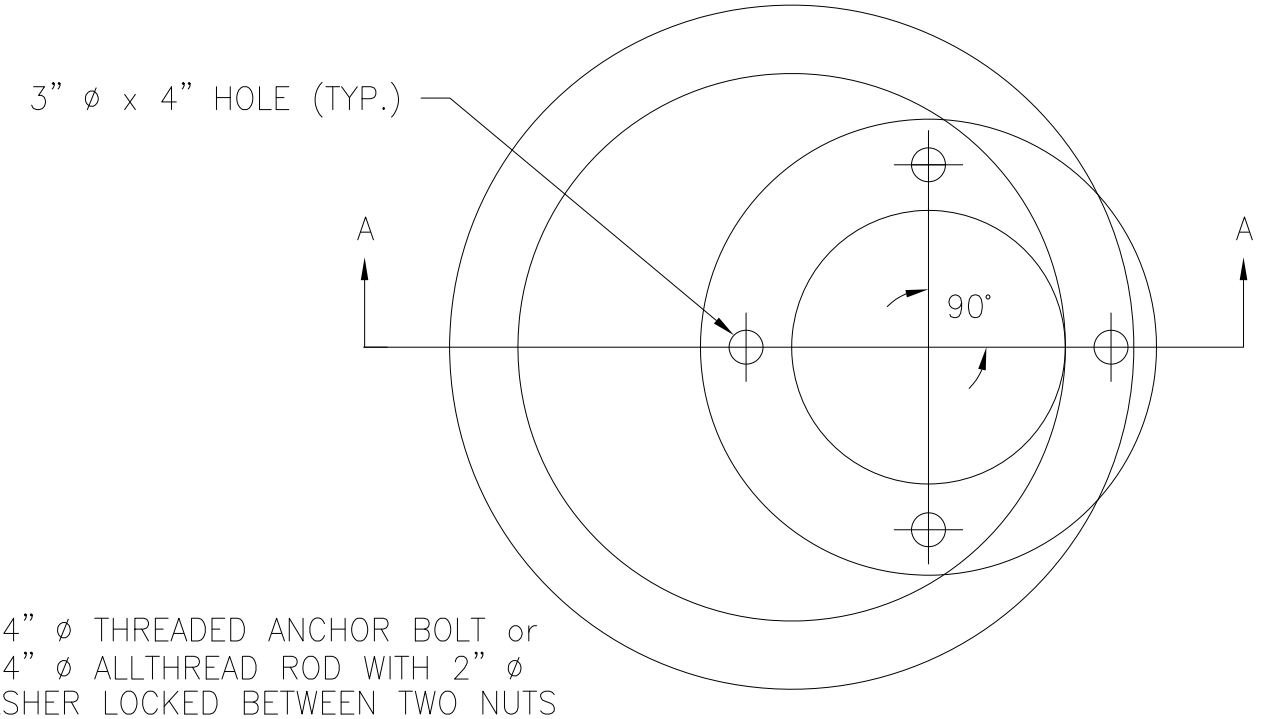
NOTES:

1. WHERE MANHOLE IS LOCATED IN PAVEMENT, PAVEMENT SHALL BE RESTORED IN ACCORDANCE WITH VDOT STANDARDS.
2. MANHOLES LOCATED IN EASEMENT AREAS SHALL BE RESTORED SIMILAR TO SURROUNDING CONDITIONS.

ABANDONMENT OF MANHOLE

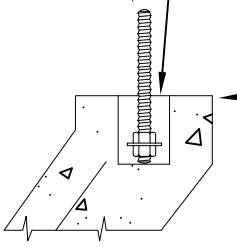
N.T.S.

S-13
REV-2018

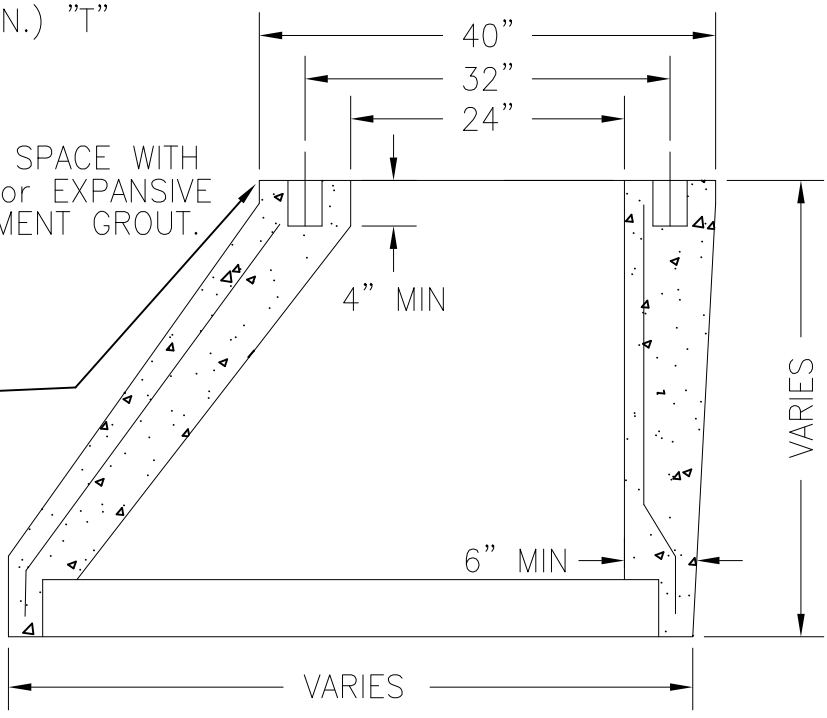


3/4" ø THREADED ANCHOR BOLT or
3/4" ø ALLTHREAD ROD WITH 2" ø
WASHER LOCKED BETWEEN TWO NUTS
AT EMBEDDED END OR 3/4" ø ALLTHREAD
WITH 3" LONG BY 1/2" ø (MIN.) "T"
WELDED ON EMBEDDED END.

FILL ANNULAR SPACE WITH
NON-SHRINK or EXPANSIVE
PORTLAND CEMENT GROUT.



ANCHOR BOLT DETAIL



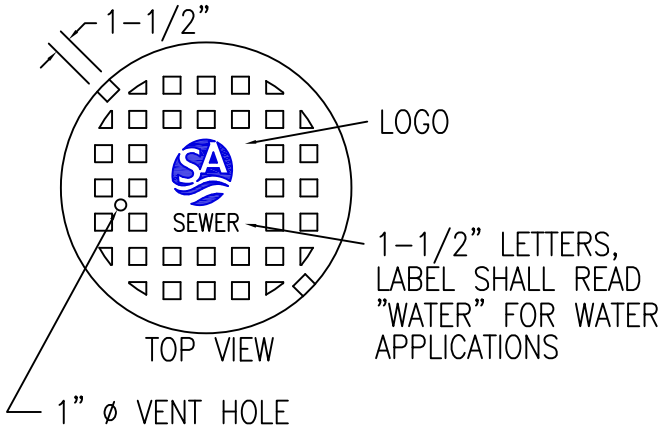
SECTION A-A

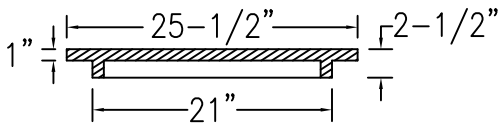
PRECAST CONCRETE MANHOLE CONE SECTION

N.T.S.

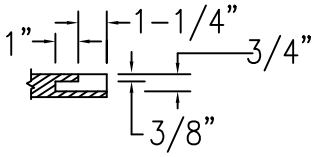
S-14
REV-2018

COVER

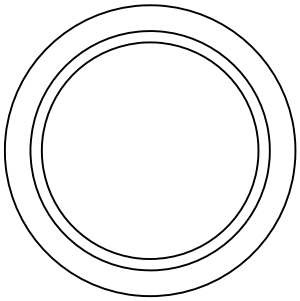




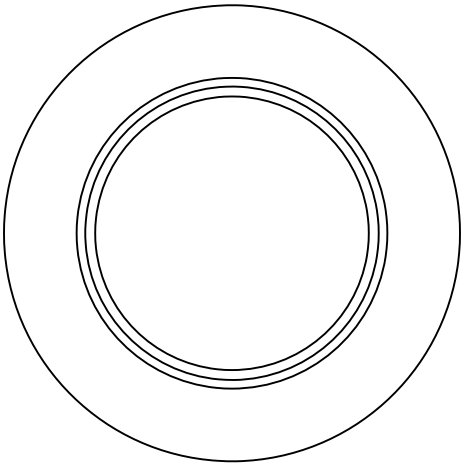
SECTION

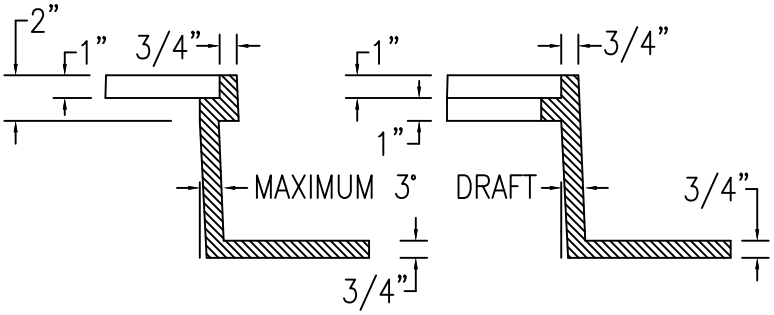


CLOSED PICK HOLE

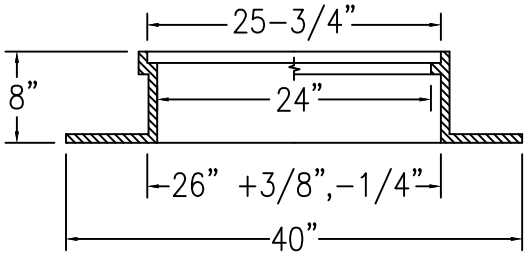

BOTTOM VIEW

FRAME


TOP VIEW



ENLARGED SECTION ALTERNATIVES



SECTION

NOTES:

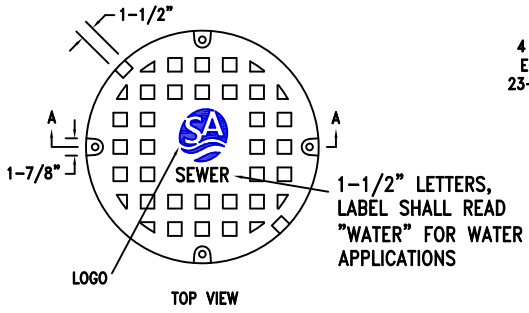
1. MACHINE ALL BEARING SURFACES TO BE TRUE AND LEVEL.
2. MANHOLE FRAME MAY BE GUSSETTED.
3. USE ASTM A48 CLASS 30B GRAY IRON OR BETTER.
4. CERTIFY FRAME AND COVER FOR AASHTO H20 LOADING OR BETTER.
5. RECESS LABEL LETTERING AND LOGO.
6. ADJUSTABLE FRAME AND COVER AS PERMITTED BY SERVICE AUTHORITY.

STANDARD MANHOLE FRAME AND COVER

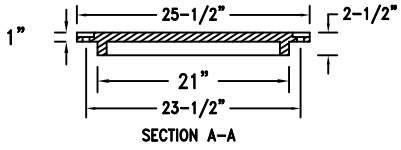
N.T.S.

S-15
REV-2018

COVER

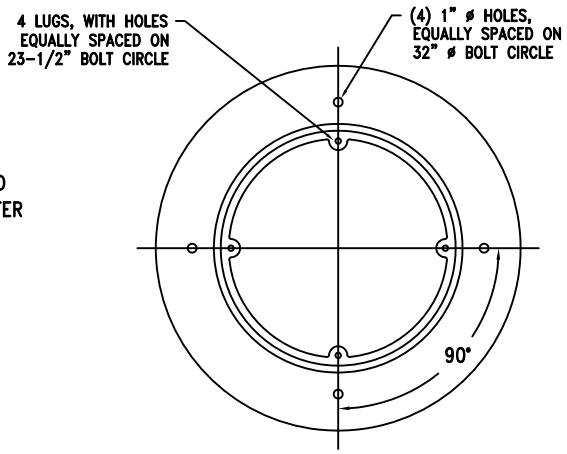


TOP VIEW

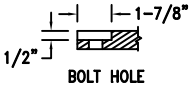


SECTION A-A

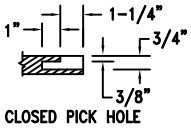
FRAME



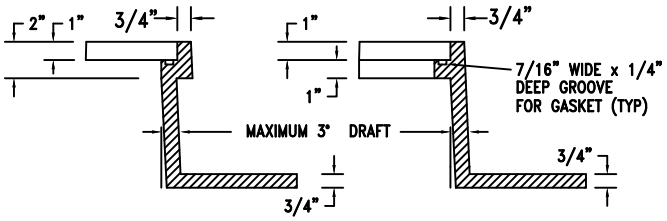
TOP VIEW



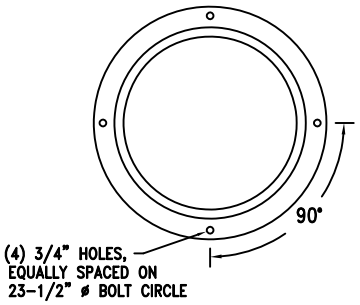
BOLT HOLE



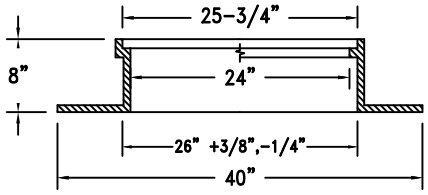
CLOSED PICK HOLE



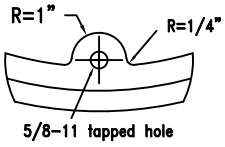
ENLARGED SECTION ALTERNATIVES



BOTTOM VIEW



SECTION



LUG DETAIL

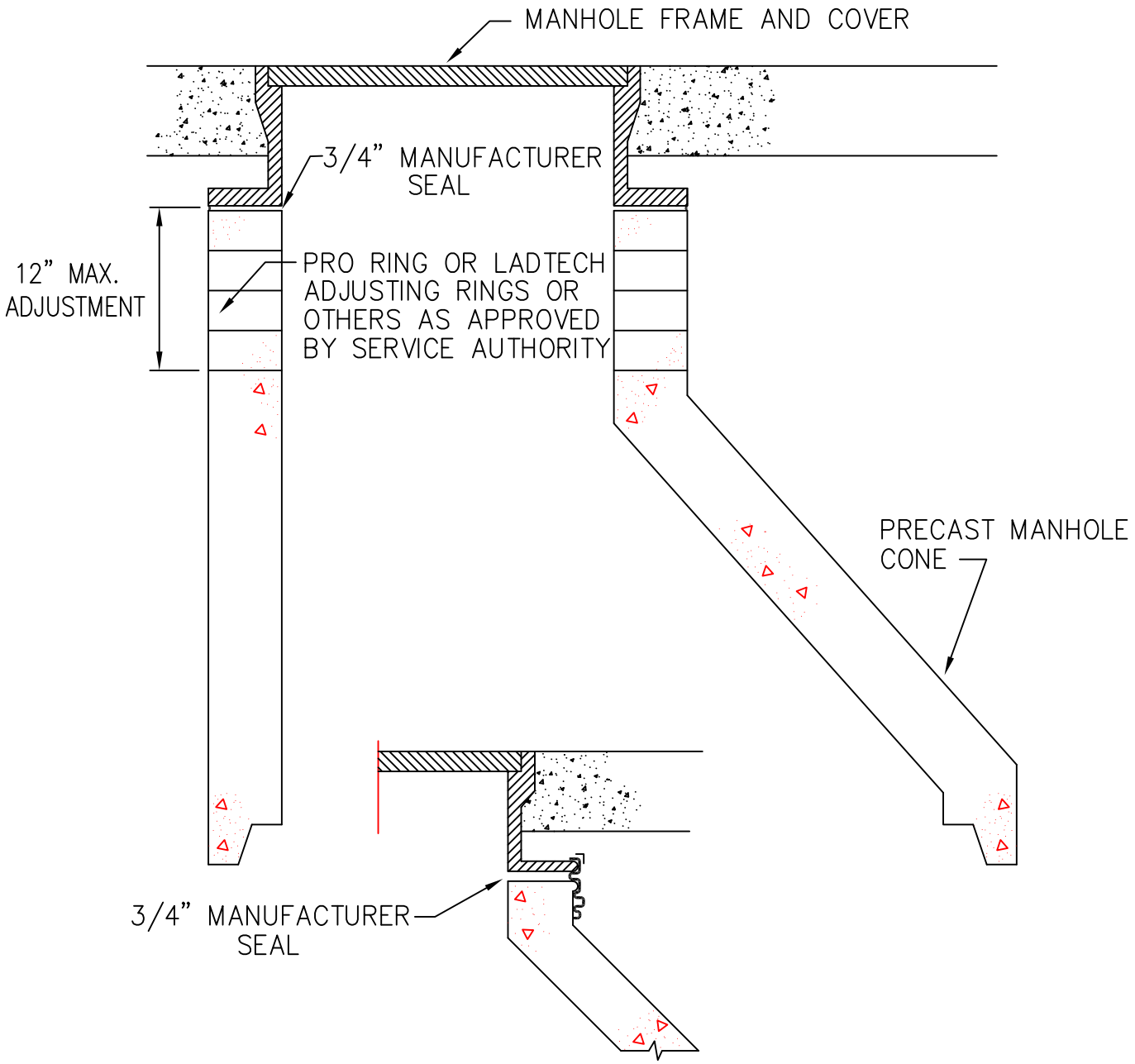
NOTES:

1. MACHINE ALL BEARING SURFACES TO BE TRUE AND LEVEL.
2. MANHOLE FRAME MAY BE GUSSETTED.
3. USE ASTM A48 CLASS 30B GRAY IRON OR BETTER.
4. CERTIFY FRAME AND COVER FOR AASHTO H20 LOADING OR BETTER.
5. RECESS LABEL LETTERING AND LOGO.
6. PROVIDE 3/8" ø RUBBER O-RING GASKET FOR MANHOLE SEAT.
7. PROVIDE FOUR 5/8-11 x 1-1/2" STAINLESS STEEL HEX HEAD BOLTS.

WATERTIGHT MANHOLE FRAME AND COVER

N.T.S.

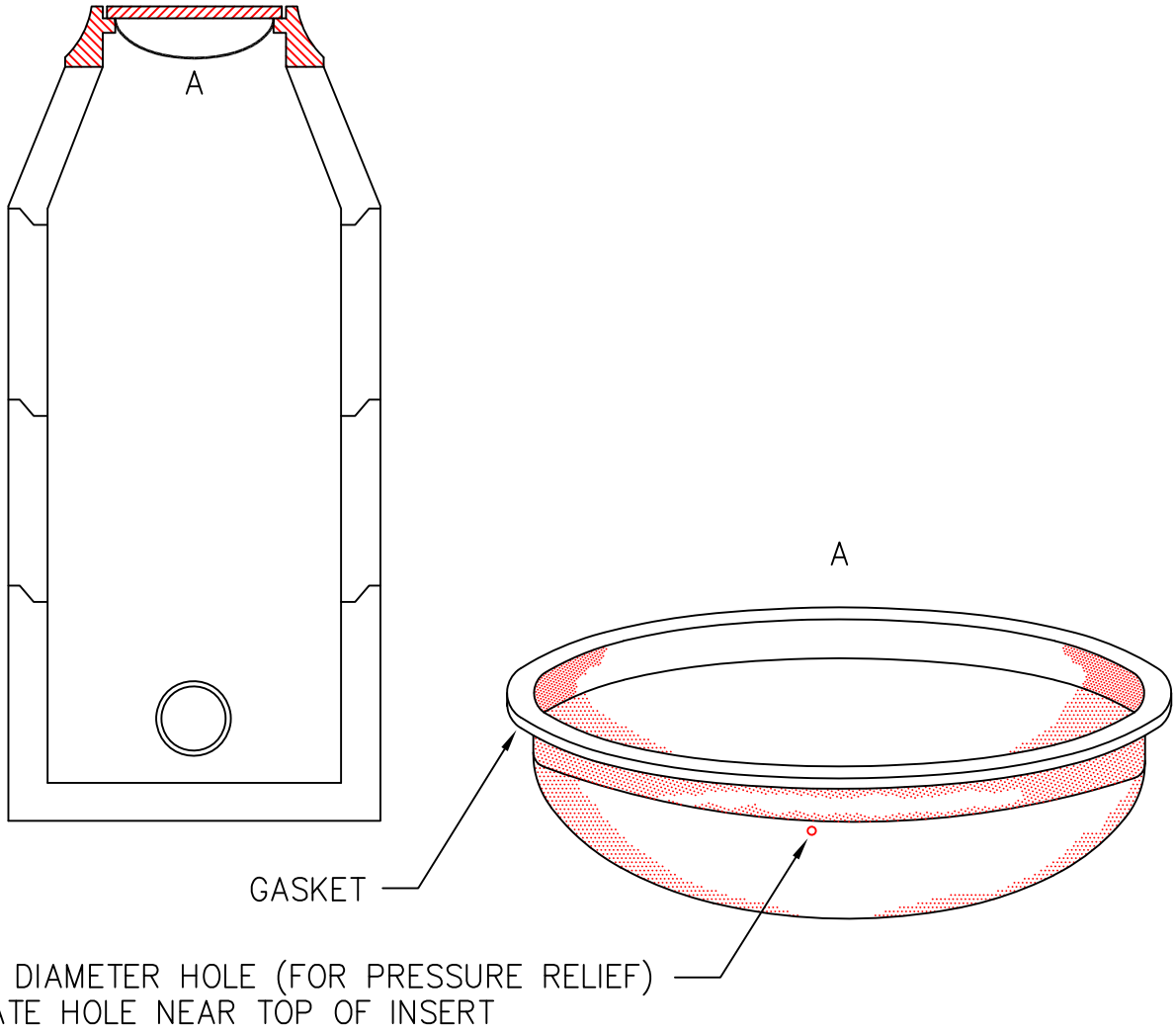
S-16
REV-2018



PRO RING, LADTECH RING OR OTHER

N.T.S.

S-17
REV-2018



NOTES:

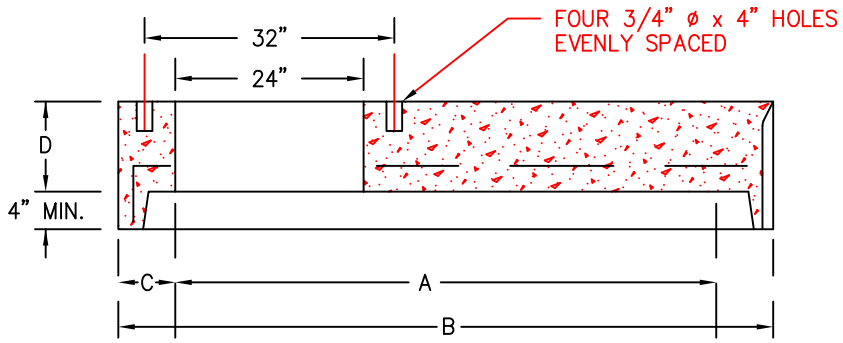
1. THE MANHOLE INSERT WILL BE MADE OF NON-CORRODABLE MATERIALS AND WILL NOT BE DAMAGED BY SEWER GASES OR ROAD OIL.
2. THE INSERT SHALL HAVE TWO NYLON STRAPS FOR LIFTING THE INSERT. THE STRAPS SHALL BE ATTACHED TO THE INSERT WITH STAINLESS STEEL RIVETS.
3. THE BOWL SHALL BE ± 1/8" THICK AND SHALL BE BEWTEEN 6" AND 8" DEEP.
4. THE INSERT SHALL HAVE A GASKET TO SEAL BETWEEN THE INSERT AND THE LIP OF THE MANHOLE FRAME.

WATERPROOF MANHOLE INSERT

N.T.S.

S-18
REV-2018

SECTION A–A

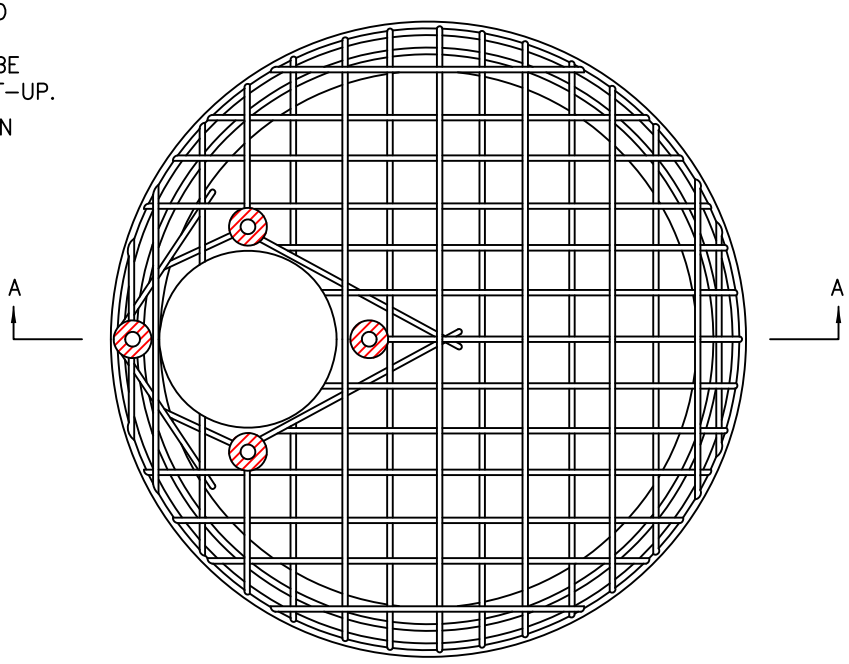


NOTES:

1. CONCETE TO BE 4000 PSI COMPRESSIVE STRENGTH, MIN.
2. ALL REINFORCING STEEL TO MEET CURRENT REQUIREMENTS OF ASTM SPEC. A–615.
3. MANHOLE SECTIONS TO MEET CURRENT REQUIREMENTS OF ASTM SPEC. C–478.
4. FLAT TOP SHALL BE USED ONLY WHEN SPECIFICALLY REQUIRED BY THE PLANS OR WHERE THERE IS HEIGHT OR INVERT CONFLICT As Determined By The CONTRACTOR AND APPROVED BY THE INSPECTOR.
5. JOINT CONFIGURATION MAY BE CAST BELL – UP OR SPIGOT–UP.
6. ANCHOR BOLTS AS SHOWN IN DETAIL S–14

MANHOLE SIZE

	4'	5'	6'
A	48"	60"	72"
B	58"	72"	86"
C	6"	6"	7"
D	6"	8"	8"



TOP VIEW

PRECAST CONCRETE MANHOLE FLAT TOP

N.T.S.

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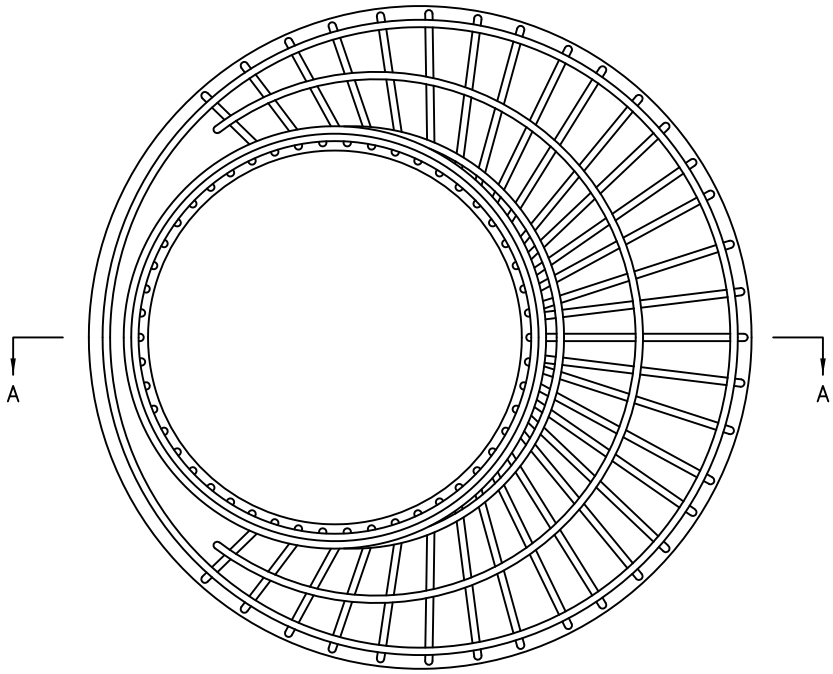
REV–2018



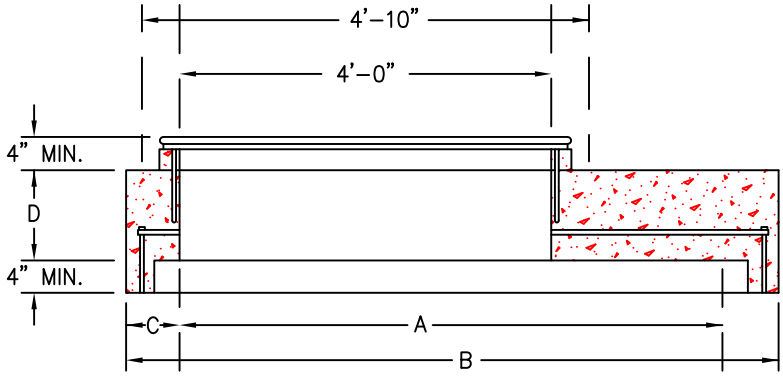
TOP VIEW

NOTES:

1. CONCRETE TO BE 4000 PSI COMPRESSIVE STRENGTH, MIN.
2. ALL REINFORCING STEEL TO MEET CURRENT REQUIREMENTS OF ASTM SPEC. A–615.
3. MANHOLE SECTION TO MEET CURRENT Requirements Of ASTM SPEC. C–478.
4. JOINT CONFIGURATION MAY BE CAST BELL–UP OR SPIGOT–UP.

DIMENSIONS

	5'–4'	6'–4'
A	60"	72"
B	72"	86"
C	6"	7"
D	8"	8"



SECTION A–A

PRECAST CONCRETE MANHOLE REDUCER

N.T.S.

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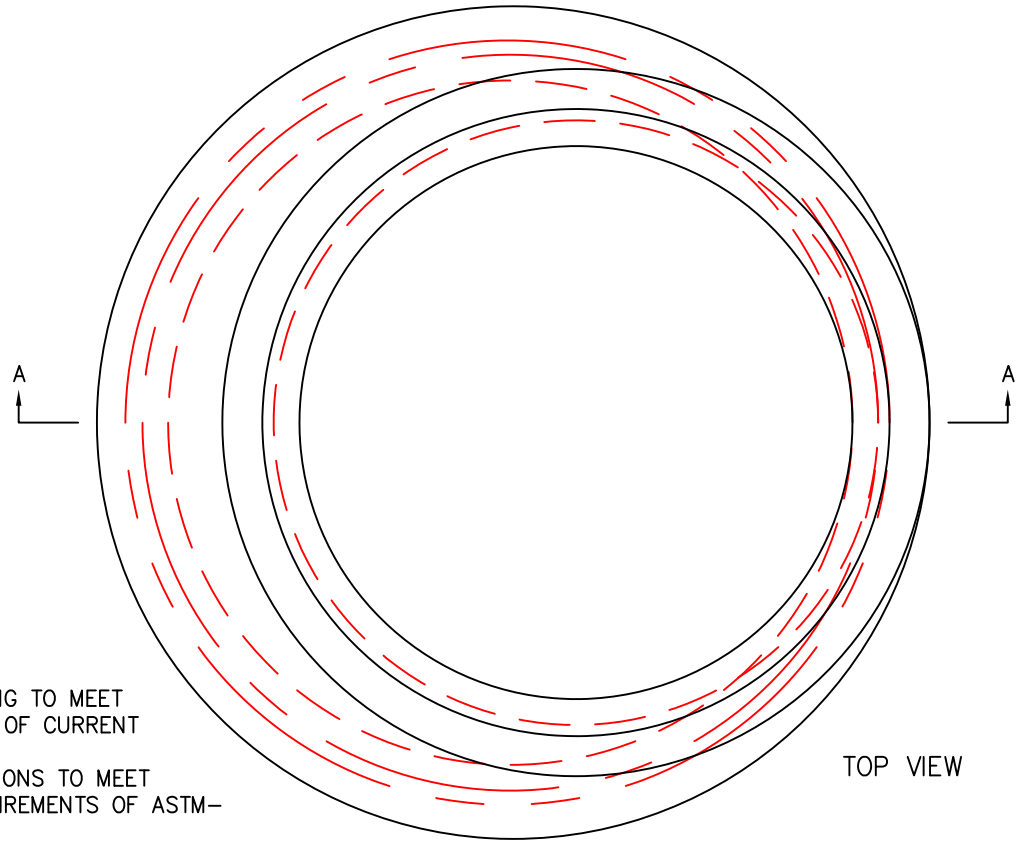
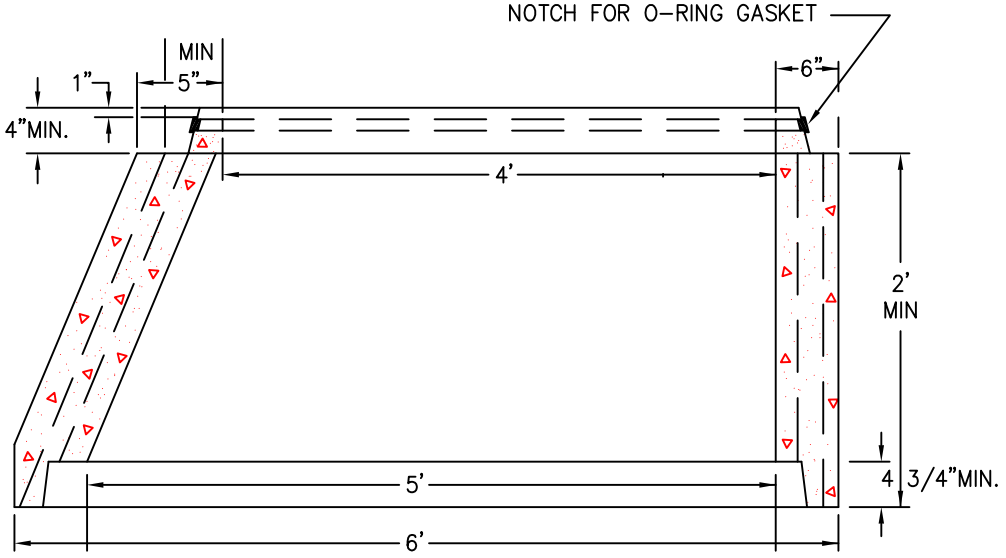


TOP VIEW

NOTES:

1. ALL REINFORCING TO MEET REQUIREMENTS OF CURRENT ASTM A-615.
2. MANHOLE SECTIONS TO MEET CURRENT REQUIREMENTS OF ASTM-Spec C-478.
3. TAPERED JOINT WITH O-RING GASKET TO MEET CURRENT REQUIREMENTS OF ASTM-C-361 SPEC.
4. JOINT CONFIGURATION MAY BE CAST BELL-UP OR SPIGOT -UP.



SECTION A-A

PRECAST CONCRETE MANHOLE CONICAL REDUCER-5' TO 4'

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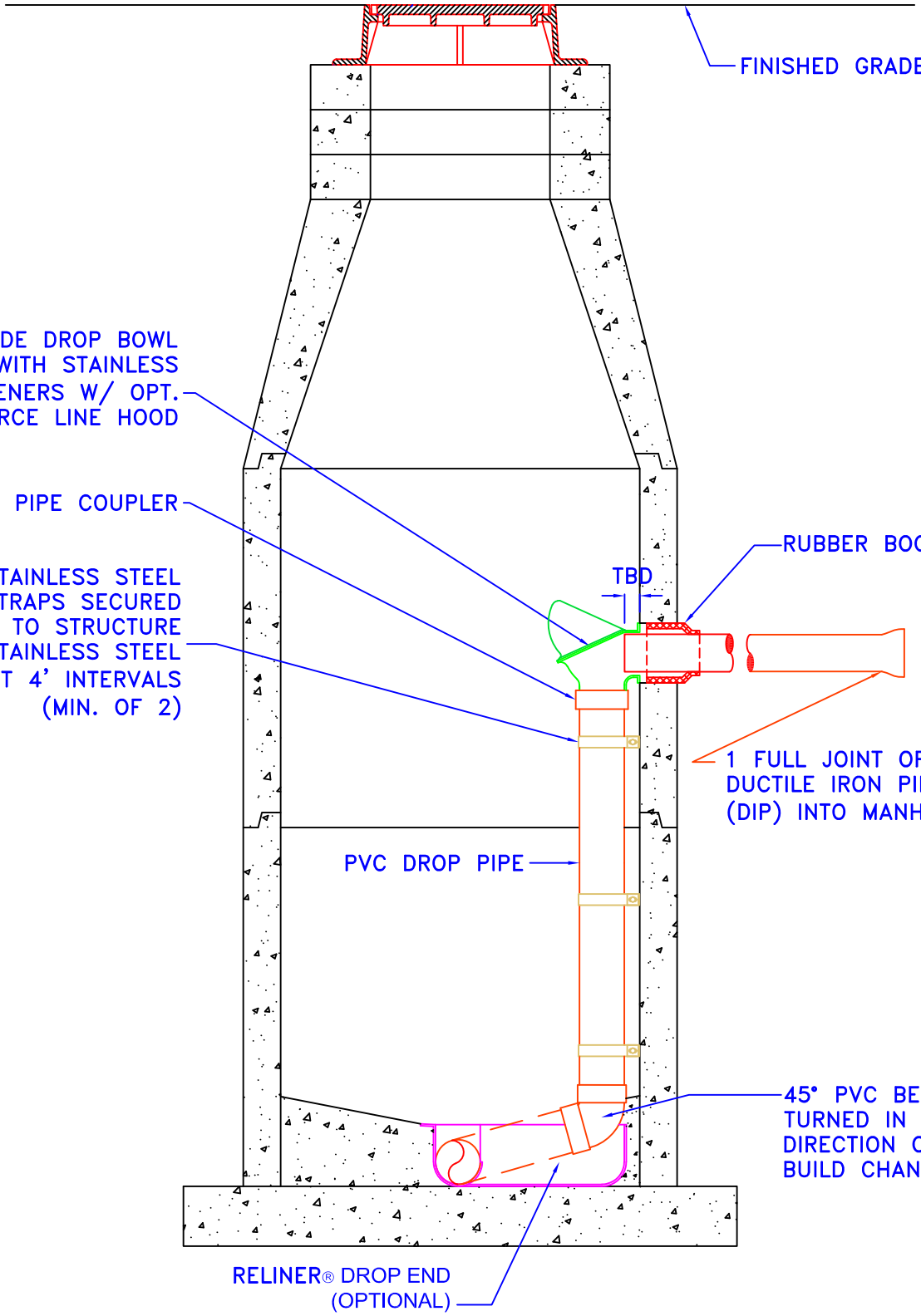
REV-2018

N.T.S.



INSIDE DROP MANHOLE DETAIL

N.T.S.

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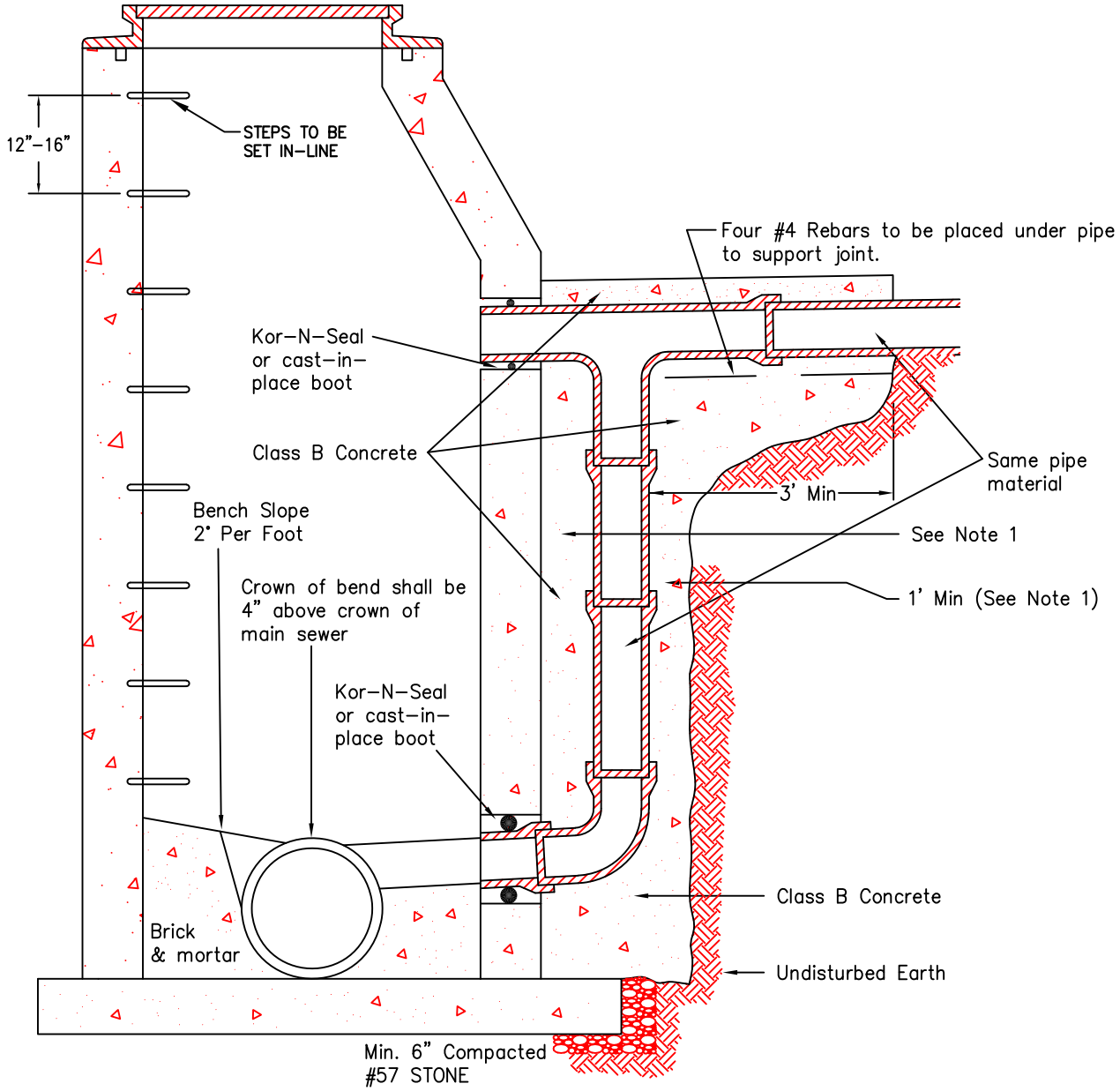
NOTES:

1. Fill drop connection trench with Class B concrete. Drop connection trench width to be same as approach trench.

2. Manhole shall conform in all other respects to STANDARD 4' I.D. PRECAST CONCRETE MANHOLE and CONE SECTION details.

3. Keep annular space between manhole and pipes free of concrete, mortar and grout.

4. Manhole steps to be American Step Company ML-10-TDS-SSR or approved substitute.



4' MANHOLE WITH OUTSIDE DROP CONNECTION

N.T.S.

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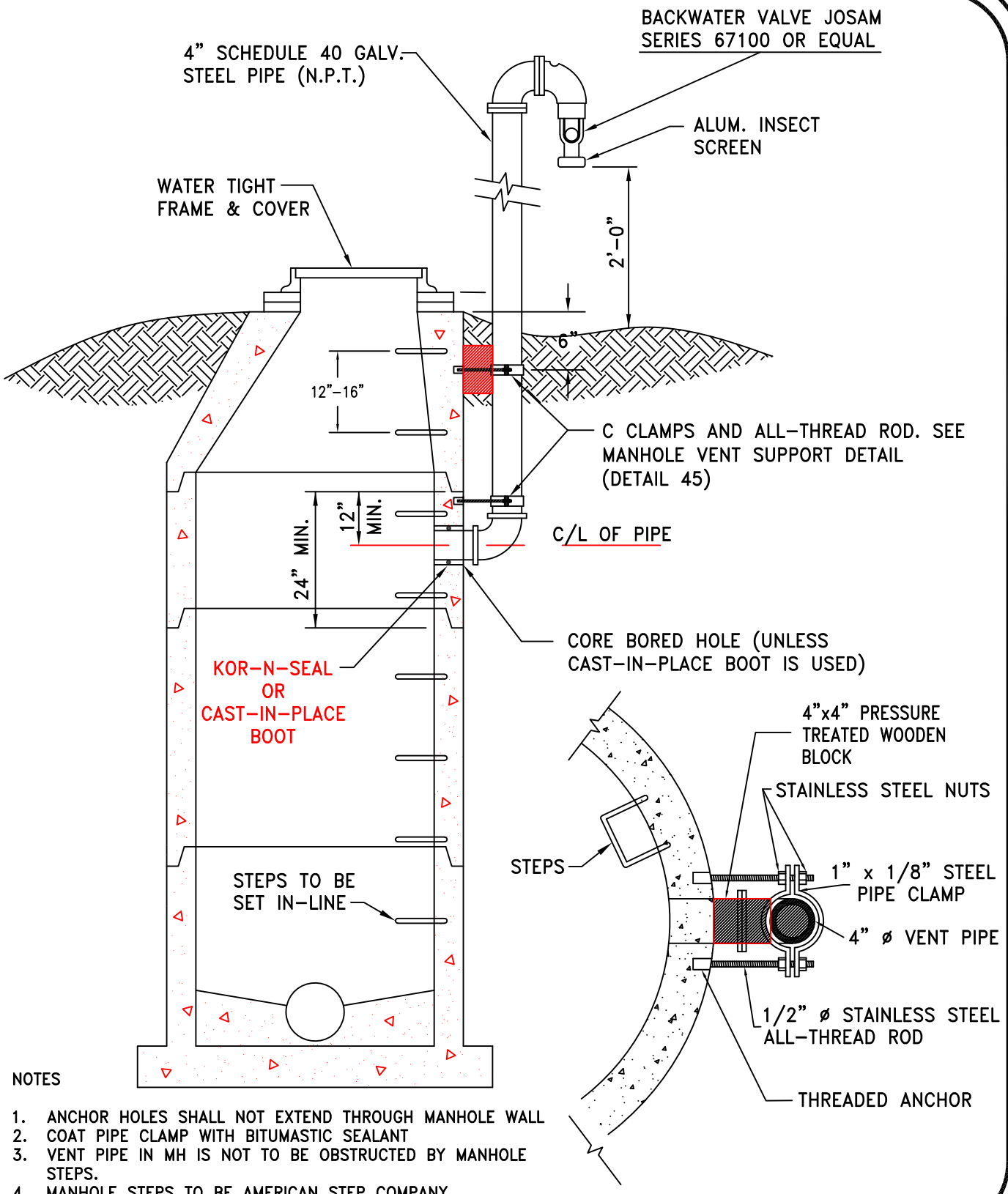

NOTES

1. ANCHOR HOLES SHALL NOT EXTEND THROUGH MANHOLE WALL
2. COAT PIPE CLAMP WITH BITUMASTIC SEALANT
3. VENT PIPE IN MH IS NOT TO BE OBSTRUCTED BY MANHOLE STEPS.
4. MANHOLE STEPS TO BE AMERICAN STEP COMPANY ML-10-TDS-SSR OR APPROVED SUBSTITUTE.

MANHOLE VENT

N.T.S.

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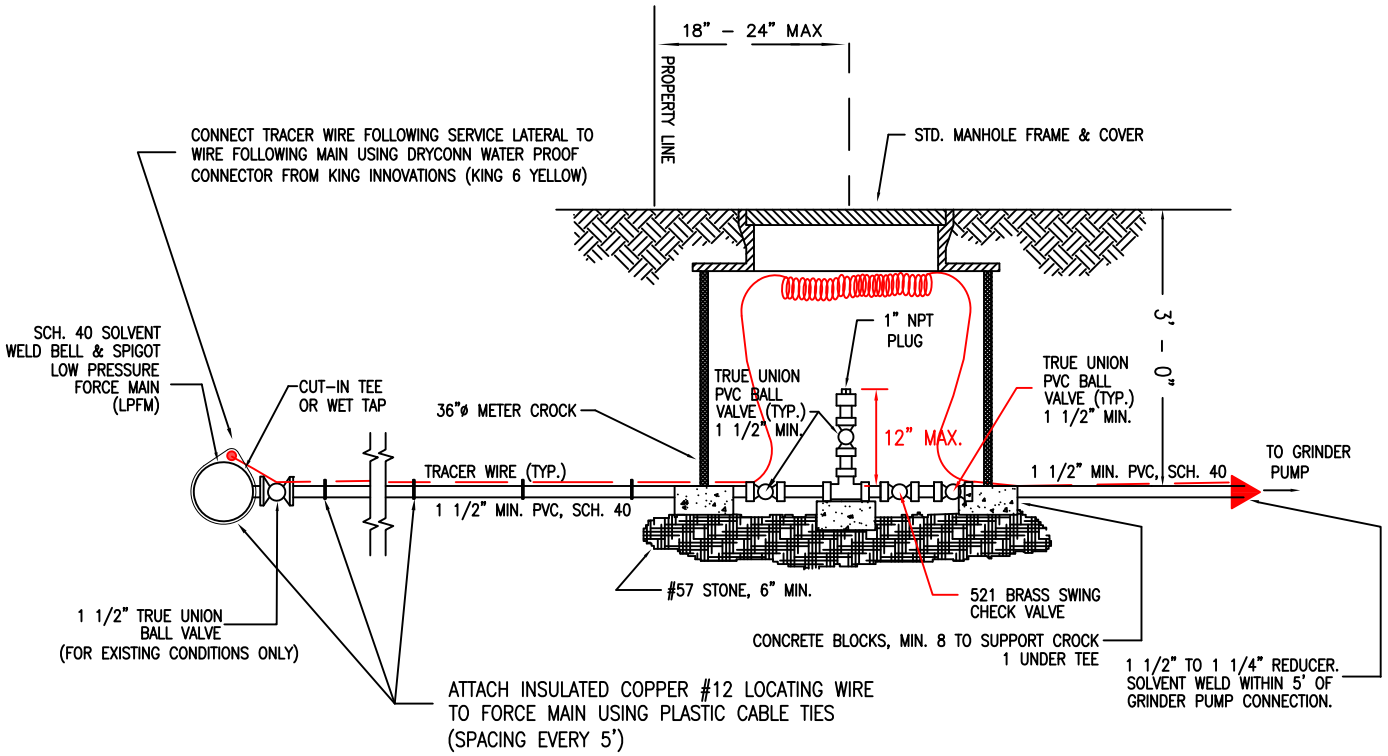
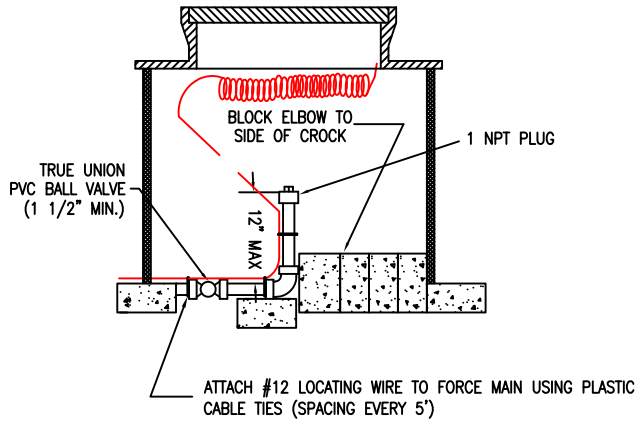
REV-2018





ADAPTATION FOR FLUSHING STATION ON LOW PRESSURE FORCE MAIN DEAD END

NOTES:

1. USE SCHEDULE 40 SOLVENT WELD BELL & SPIGOT PVC PIPE. (220 PSI RATING).
2. ALL PIPE CONNECTIONS MUST WITHSTAND FULL SYSTEM PRESSURE WITHOUT SEPARATING.
3. PROVIDE #12 SOLID COPPER TRACER WIRE ALONG ENTIRE FORCE MAIN & LATERAL CONNECTION TO GRINDER PUMP HOUSING. TRACER WIRE WILL BE LOOPED IN BOX SO THAT IT CAN BE EXTENDED A MIN. OF 18" ABOVE TOP OF BOX. WIRE TO BE STRAPPED TO MAIN AND LATERAL USING PLASTIC CABLE TIES PLACED EVERY 5 FEET.
4. ALL FITTINGS WILL BE SCHEDULE 80 PVC, (320 PSI RATING)

FLUSHING STATION AND GRINDER PUMP CONNECTION TO LOW PRESSURE FORCE MAIN

N.T.S.

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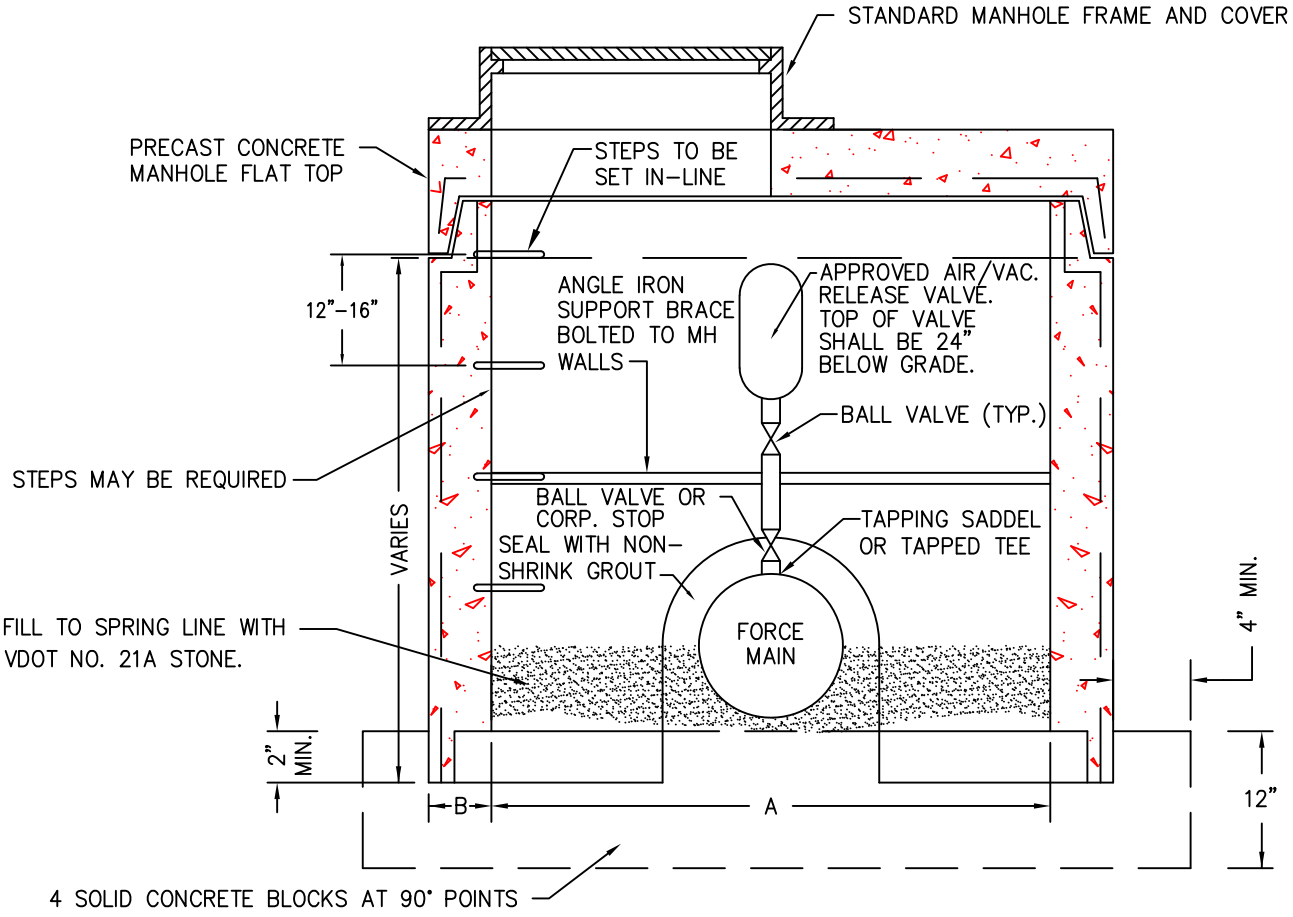
REV-2018

NOTES:

1. CONCRETE SHALL BE 4000 PSI COMPRESSIVE STRENGTH, MIN.
2. ALL REINFORCING SHALL MEET REQUIREMENTS OF CURRENT ASTM SPEC A-615.
3. MANHOLE SECTIONS SHALL MEET REQUIREMENTS OF CURRENT ASTM SPEC C-478.
4. TAPERED JOINT WITH O-RING GASKET SHALL MEET REQUIREMENTS ASTM SPECS C-361 & C-443.
5. CAST MANHOLE SECTION INTO BASE 2" OR DEPTH OF JOINT, WHICHEVER IS DEEPER.
6. JOINT CONFIGURATION MAY BE CAST BELL-UP OR SPIGOT-UP.
7. SIZE DOGHOUSE OPENINGS 4" MIN. AND 8" MAX. LARGER THAN PIPE O.D.
8. ALL AIR RELEASE PIPING SHALL BE BRASS.
9. FOR FORCE MAINS SMALLER THAN 6" DIAMETER, EXCEPT FOR DUCTILE IRON, CLAMP THE AIR/VACUUM RELEASE VALVE TO THE ANGLE IRON SUPPORT BRACE.
10. CAST BASE ON FIRM, UNDISTURBED SOIL.
11. STANDARD PRECAST BASE SECTION MAY BE USED FOR NEW FORCE MAIN CONSTRUCTION. BED STANDARD BASE ON MIN. 6" VDOT NO. 21A. CORE HOLES FOR PIPE MIN. 4" LARGER THAN PIPE O.D. CONFORM TO THIS DETAIL IN ALL OTHER RESPECTS.
12. MANHOLE STEPS TO BE AMERICAN STEP COMPANY ML-10-TDS-SSR OR APPROVED SUBSTITUTE.

CHART A

	MIN DIMENTIONS		
FM	TO 16"	TO 20"	TO 36"
MH	4'	5'	6'
A	48"	60"	72"
B	6"	6"	7"



SEWAGE FORCE MAIN AIR or VACUUM RELEASE ASSEMBLY

N.T.S.

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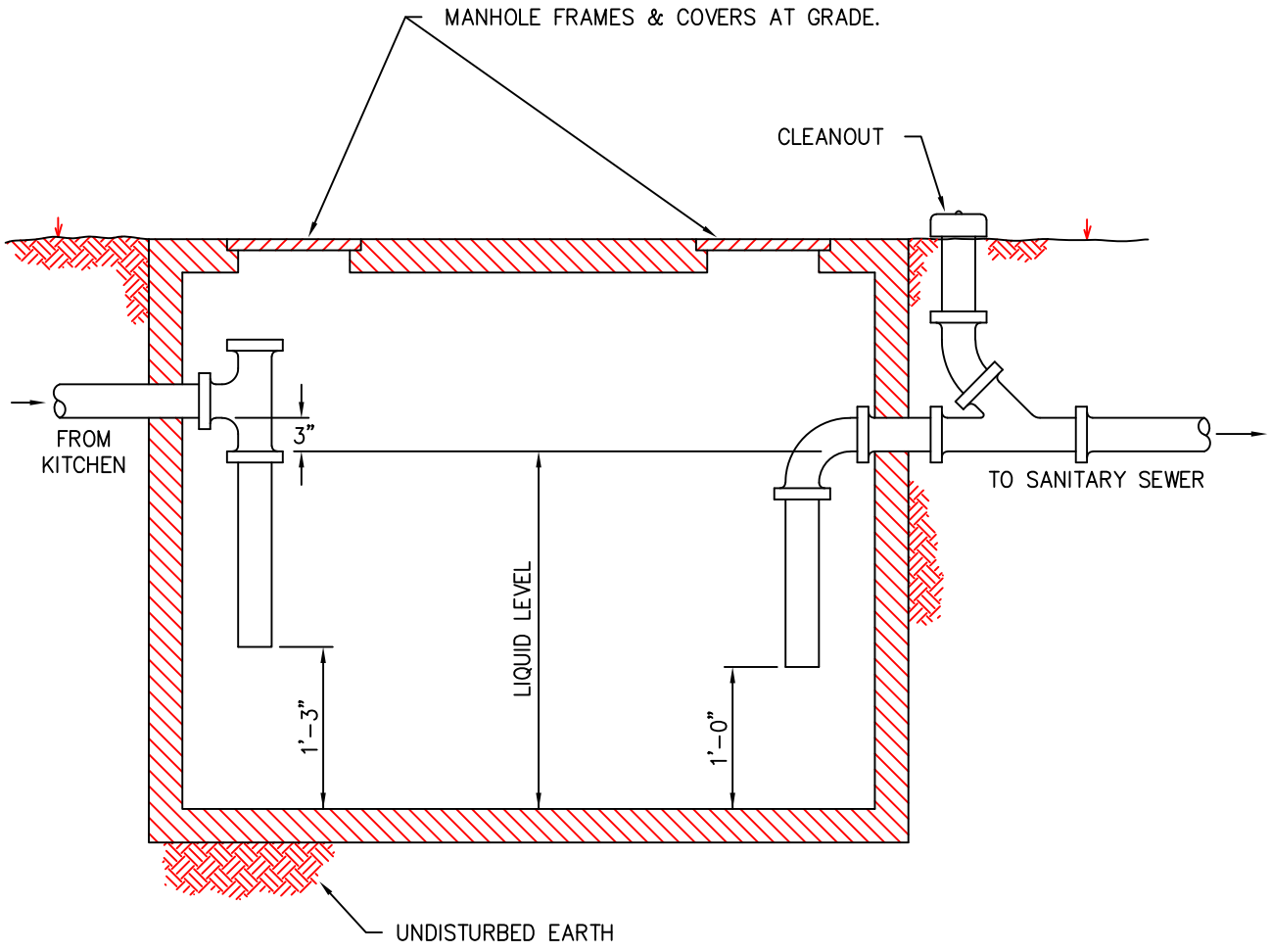

NOTES:

1. DESIGN BASED ON COMMERCIALLY AVAILABLE PRE-CAST SEPTIC TANK.
2. MINIMUM STORAGE 500 GALLONS.

GREASE TRAP

N.T.S.

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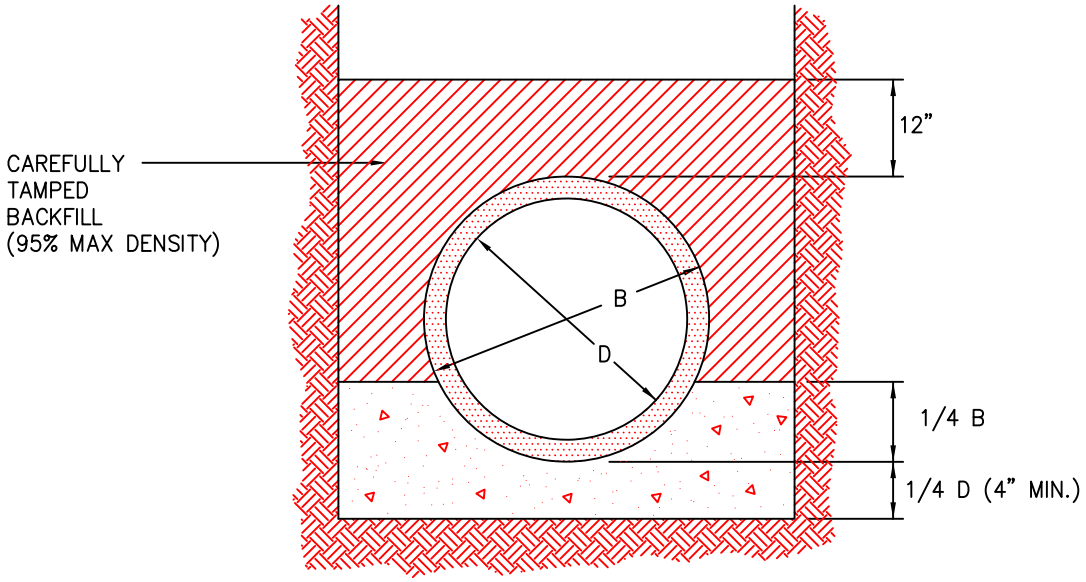
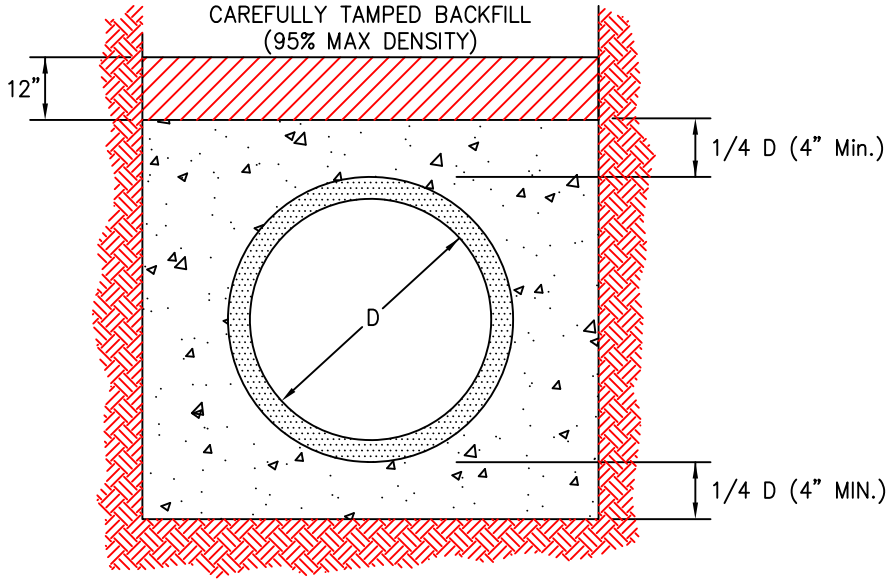
REV-2018

ONLY ALLOWED WITH SPECIFIC PWCSA PERMISSION



STANDARD CONCRETE CRADLE



STANDARD CONCRETE ENCASEMENT
(FOR USE WHEN APPROVED BY DIRECTOR)

NOTES:

1. CONCRETE TO BE CLASS "B" UNLESS OTHERWISE SPECIFIED.
2. TRENCH WIDTH SHALL BE AS SPECIFIED OR AS SHOWN ON PLANS.

CONCRETE CRADLE AND ENCASEMENT

N.T.S.

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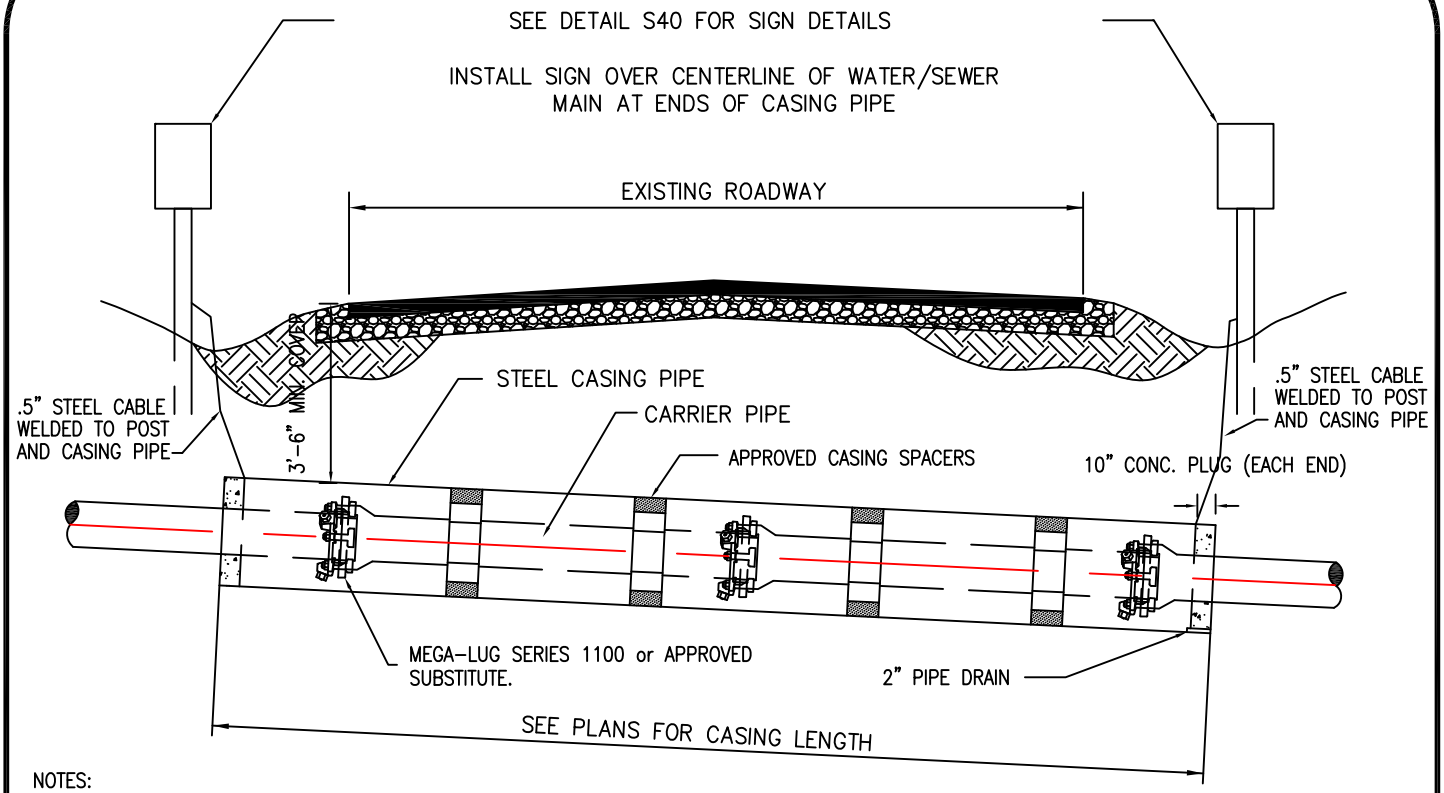
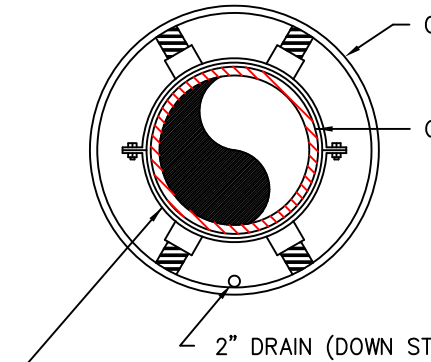


NOTES:

1. SPACE CASING SPACERS ACCORDING TO PIPE OR SPACER MANUFACTURER'S RECOMMENDATION OR 2 PER SECTION OF PIPE, WHICHEVER REQUIRES MORE SPACERS, PLUS ONE (1) WITHIN TWO (2) FEET OF EACH END OF CASING.
2. PUSH OR PULL THE CURRIER PIPE THROUGH THE CASING SO THAT THE JOINTS ARE ALWAYS COMPRESSED.
3. ALL JOINTS WITHIN THE CASING WILL BE RESTRAINED USING MEGA-LUG SERIES 1100 RESTRAINING GLANDS or APPROVED SUBSTITUTE.
4. STEEL ENCASEMENT PIPE SHALL CONFORM TO ASTM A139 WITH A MINIMUM THICKNESS OF 0.5 INCH OR ASTM A53 STANDARD WEIGHT CLASS. PIPE FOR JACKING SHOULD BE OF SUFFICIENT STRENGTH, DIAMETER AND WALL THICKNESS TO ACCOMPLISH THE SPECIFIC TASK.

CARRIER PIPE	CASING PIPE	
	MINIMUM CASING PIPE O.D.	MINIMUM CASING THICKNESS
4	14	0.5"
6	16	0.5"
8	18	0.5"
10	18	0.5"
12	24	0.5"
14	24	0.5"
16	30	0.5"
18	30	0.5"
20	30	0.5"
24	36	0.5"
30	42	0.5"
36	48	0.5"
42	54	0.5"
48	60	0.5"
— —	— —	— —



PIPE IN CASING END VIEW

STEEL CASING

N.T.S.

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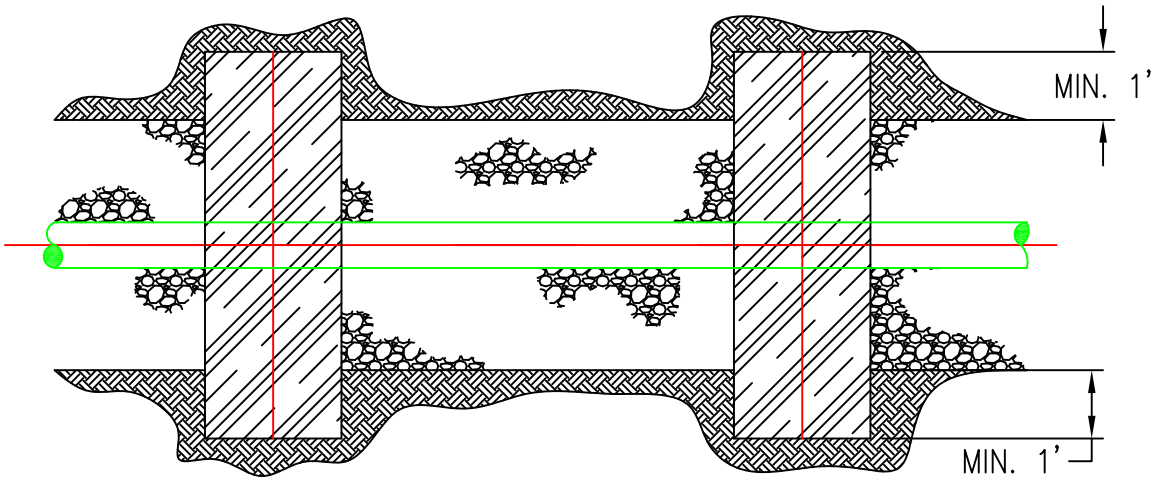
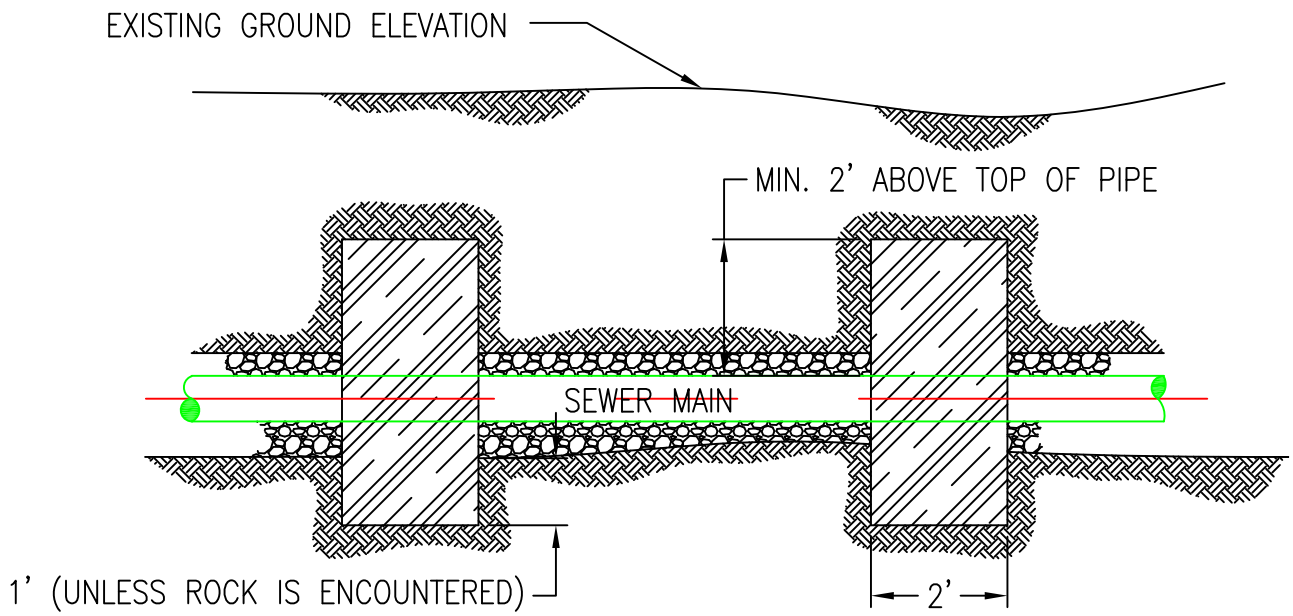


TOP VIEW



SIDE VIEW

NOTES:

1. SPACING TO BE DETERMINED BY THE DESIGN ENGINEER/INSPECTOR.
2. CLAY DAM (MIN. IMPERVIOUSNESS = 10^{-3} CM/SEC)
3. ALTERNATE MATERIALS INCLUDES SOIL MIXED WITH CEMENT AND CONCRETE. (MATERIALS TO BE APPROVED BY DESIGN ENGINEER PRIOR TO PLACING.)

CLAY DAM DETAIL

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PWCSA LOGO

N.T.S.

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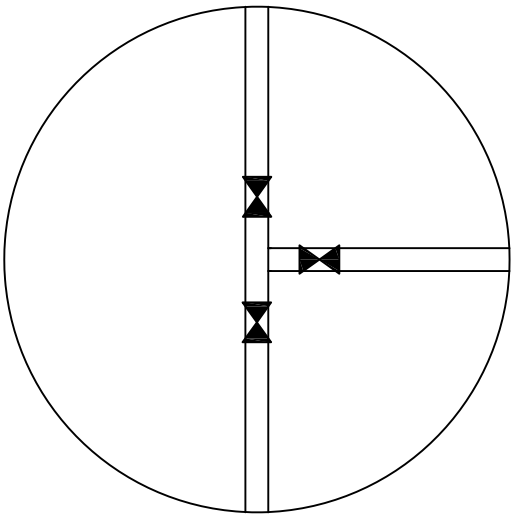

NOTES:

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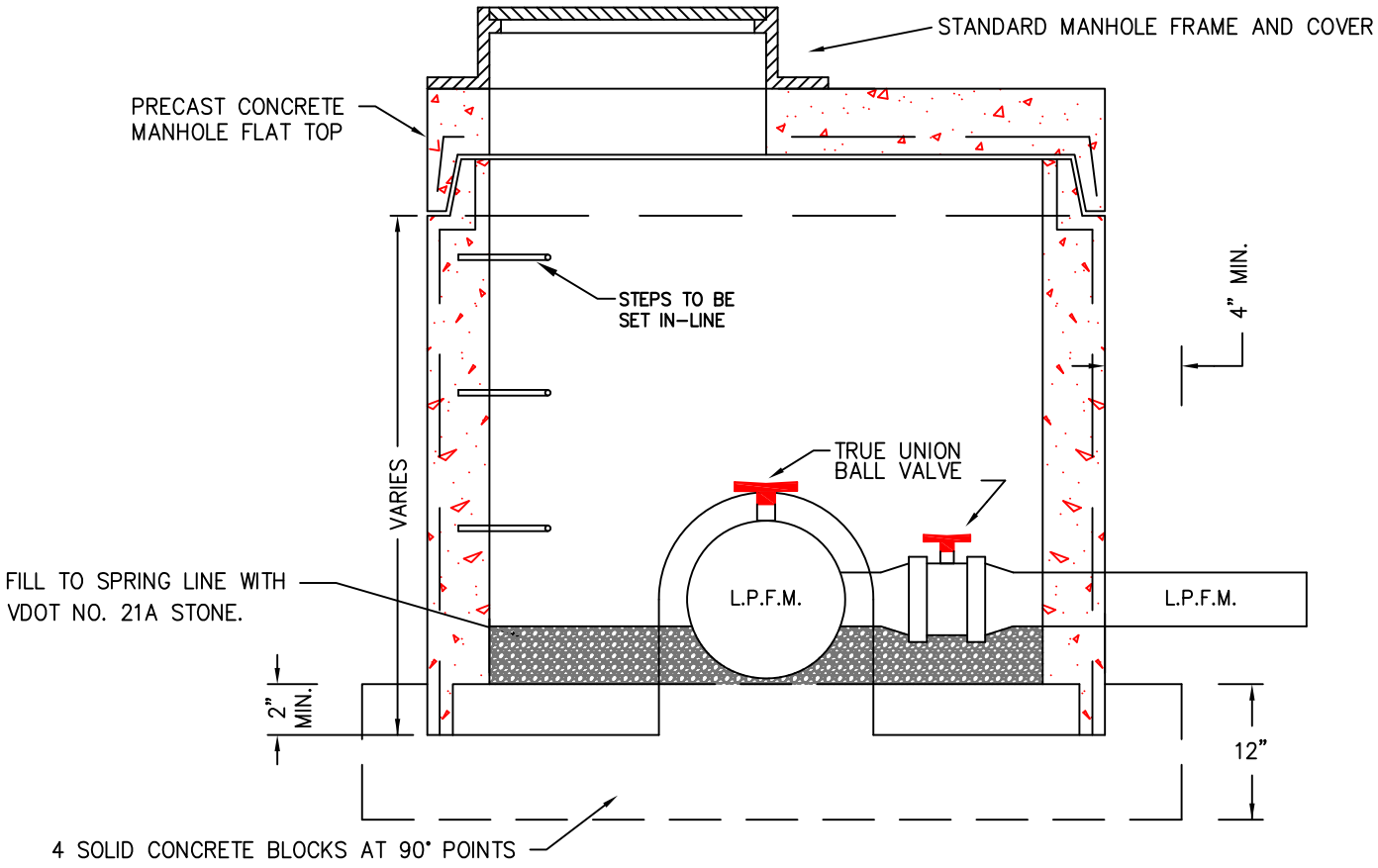
2. ALL REINFORCING SHALL MEET REQUIREMENTS OF CURRENT ASTM SPEC A-615.
3. MANHOLE SECTIONS SHALL MEET REQUIREMENTS OF CURRENT ASTM SPEC C-478.
4. TAPERED JOINT WITH O-RING GASKET SHALL MEET REQUIREMENTS OF ASTM SPECS C-361 & C-443.
5. CAST MANHOLE SECTION INTO BASE 2" OR DEPTH OF JOINT WHICHEVER IS DEEPER.
6. SIZE DOGHOUSE OPENINGS 4" MIN.
7. CAST BASE ON FIRM, UNDISTURBED SOIL.
8. STANDARD PRECAST BASE SECTION MAY BE USED FOR NEW FORCE MAIN CONSTRUCTION. BED STANDARD BASE ON MIN. 6" VDOT NO. 21A. CORE HOLES FOR PIPE MIN. 4" LARGER THAN PIPE O.D. CONFORM TO THIS DETAIL IN ALL OTHER RESPECTS.
9. MANHOLE STEPS TO BE AMERICAN STEP COMPANY ML-10-TDS-SSR OR APPROVED SUBSTITUTE.



LOW PRESSURE FORCE MAIN VALVE CLUSTER DETAIL

N.T.S.

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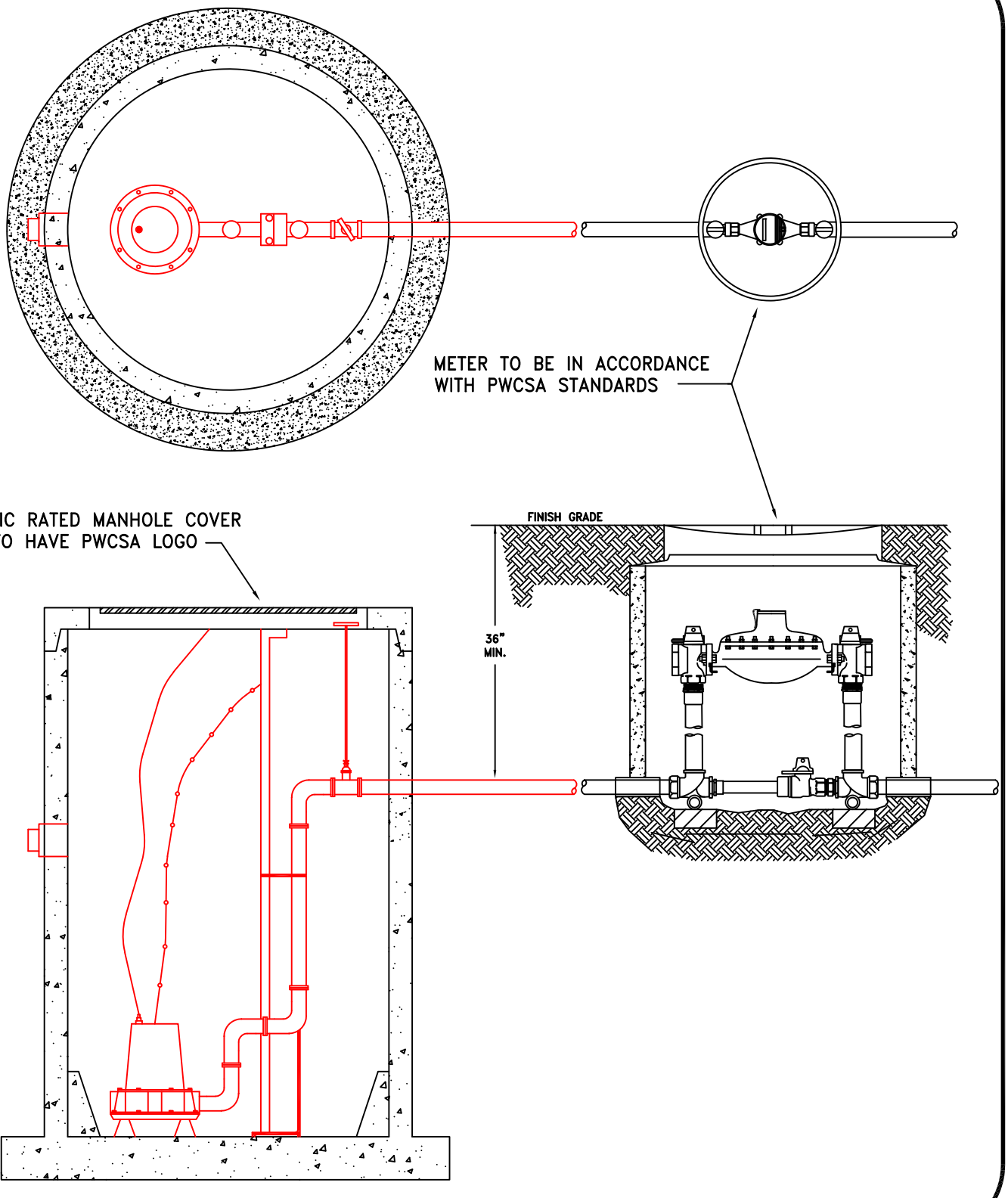
REV-2018



SEWER ONLY METER FOR PROCESS WATER

N.T.S.

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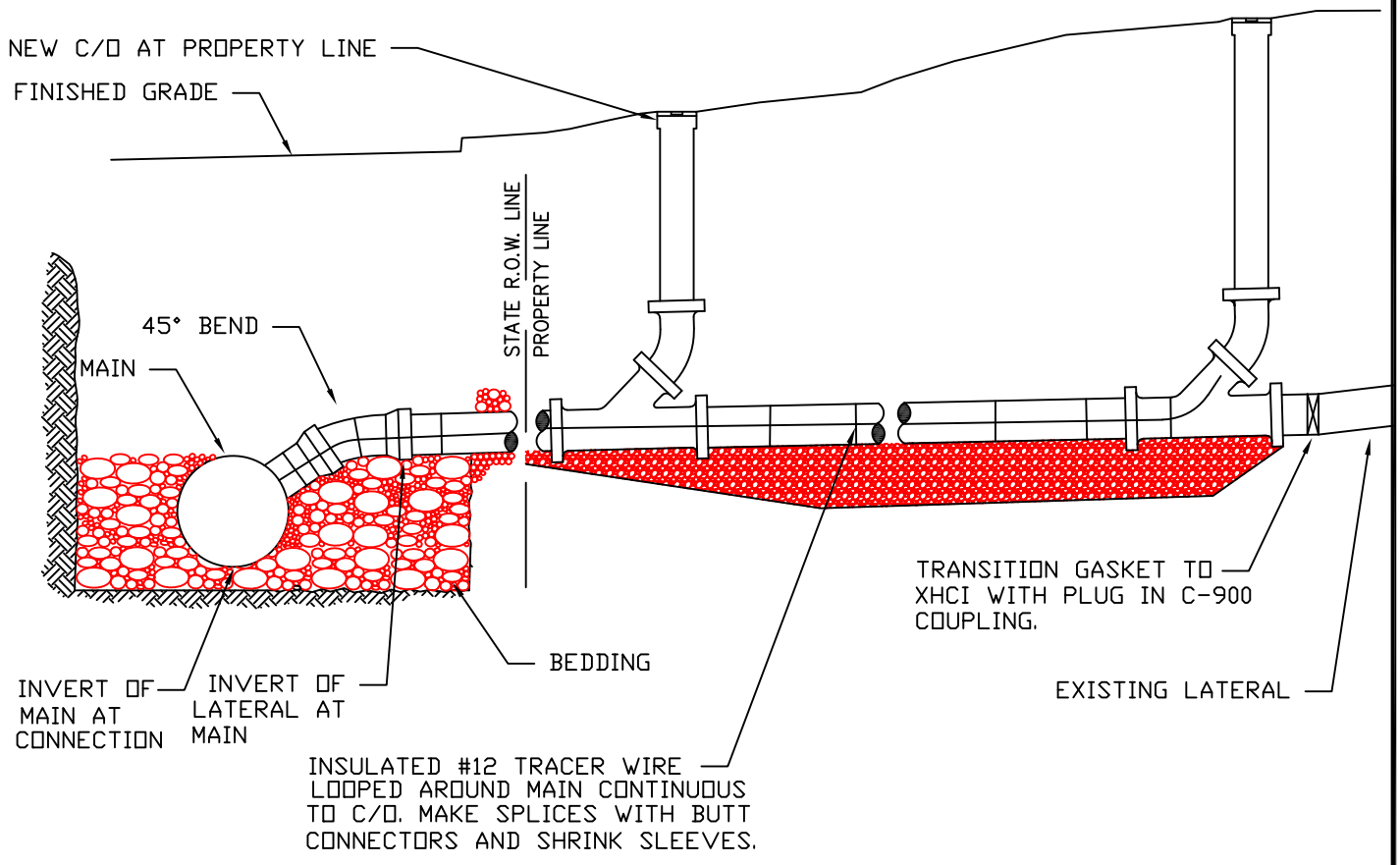

NOTES:

1. STAINLESS STEEL SHEAR PROOF COUPLING / TRANSITION GASKET TO BE MINIMUM 5' FROM LAST PIPE JOINT.
2. REFER TO APPROVED PRODUCTS LIST FOR ADDITIONAL REQUIREMENTS.

SANITARY SEWER LATERAL REPLACEMENT

N.T.S.

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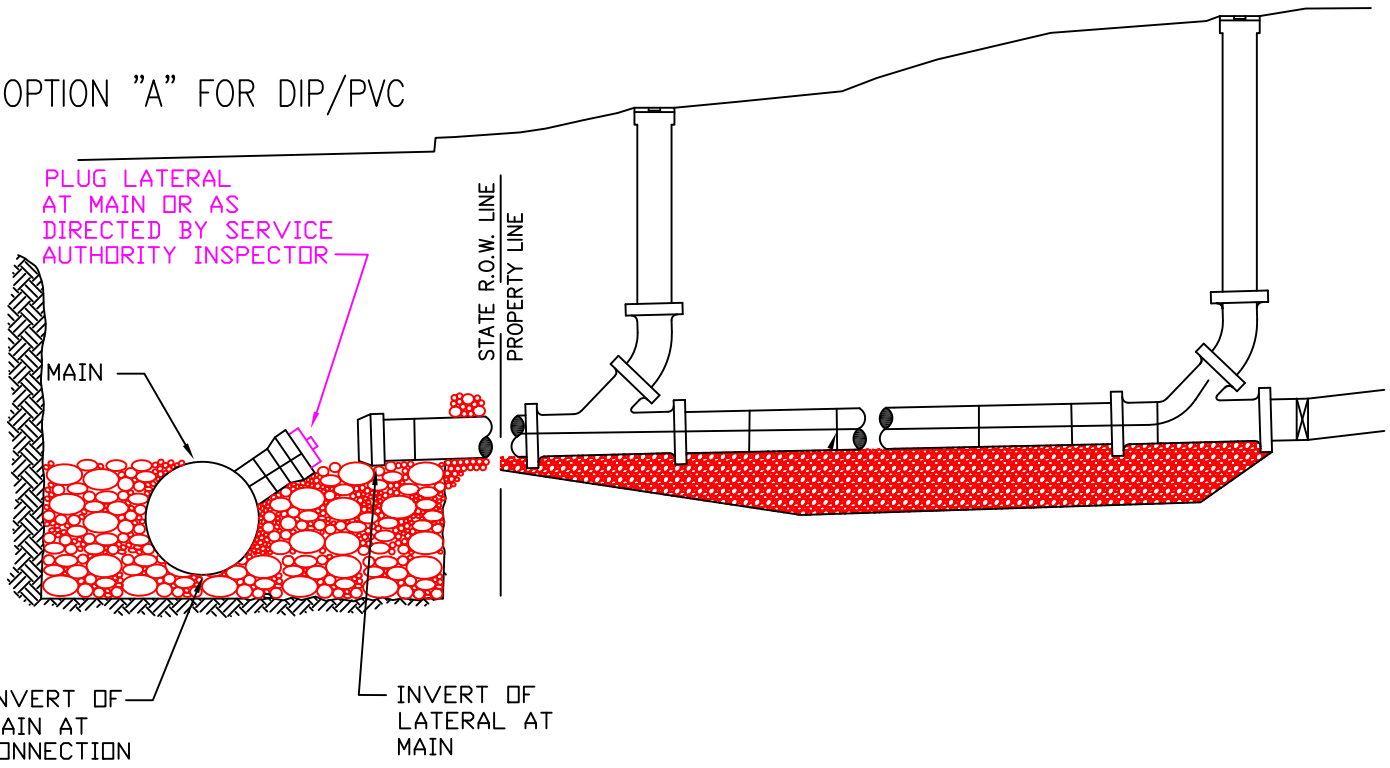
OPTION "A" FOR DIP/PVC



TERMINATION OF SANITARY SEWER LATERAL

N.T.S.

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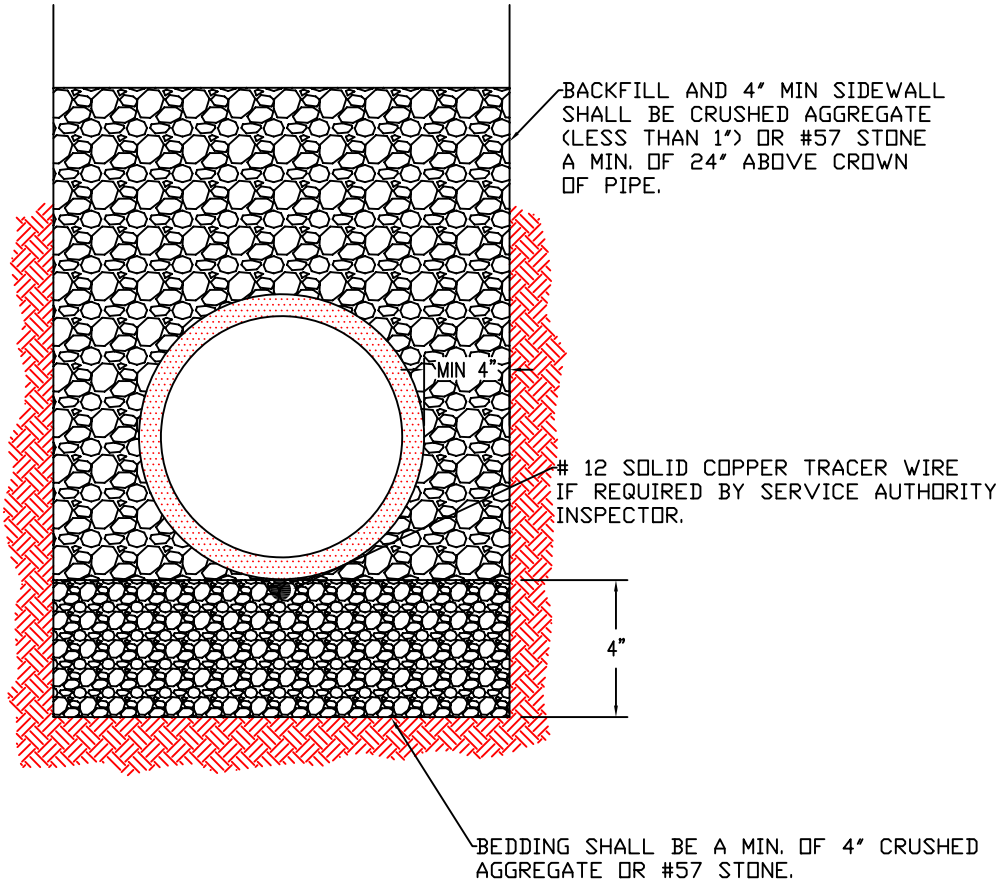
BEDDING AND BACKFILL FOR C-900, C-905 AND POLY-WRAPPED DIP



SANITARY SEWER LINE
BEDDING AND BACKFILL

N.T.S.

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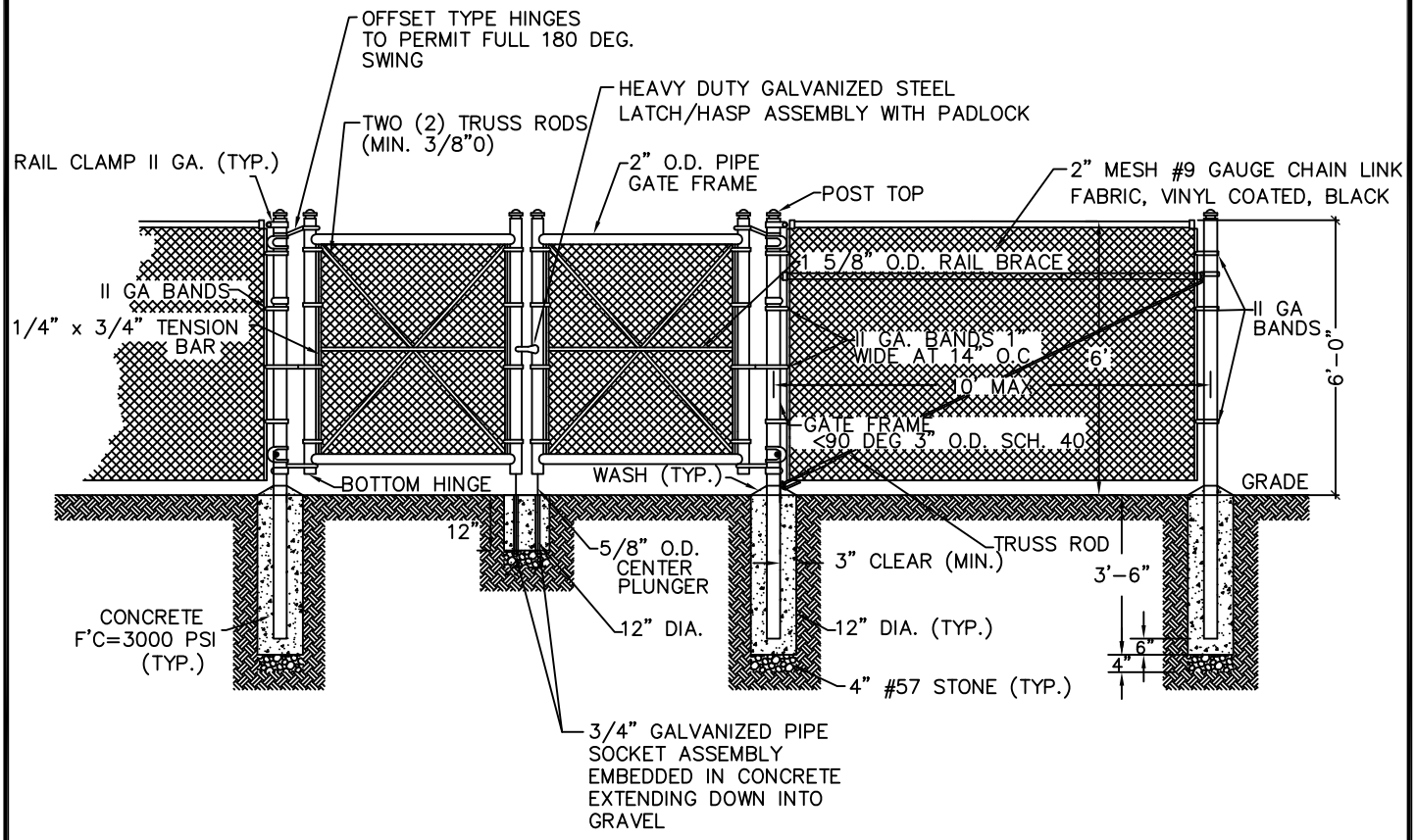

NOTE:

1. CONTRACTOR SHALL FIELD MEASURE TO CONFIRM AREA TO BE FENCED AND LOCATIONS OF GATES AND SUBMIT SHOP DRAWINGS PRIOR TO INSTALLATION

CHAIN LINK FENCE AND GATE DETAIL

N.T.S.

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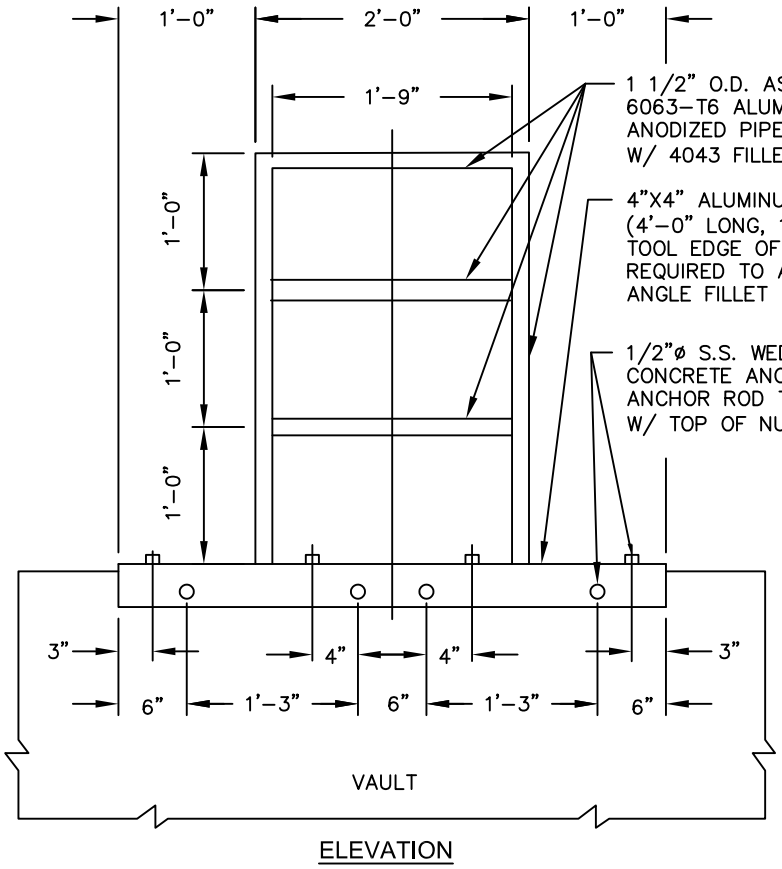
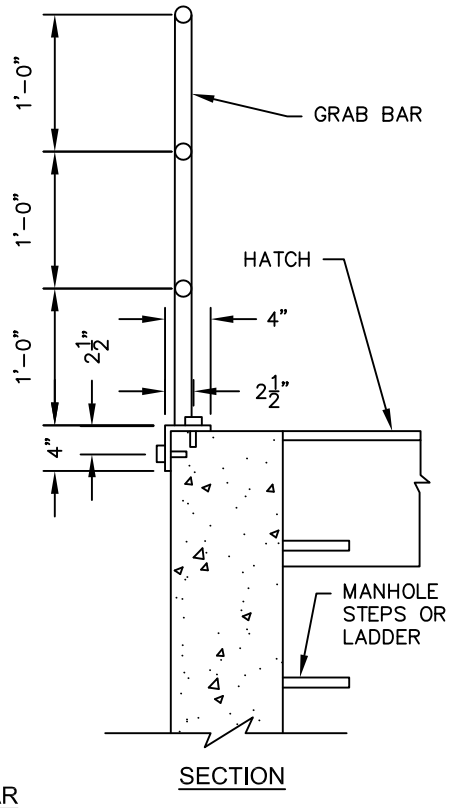
REV-2018

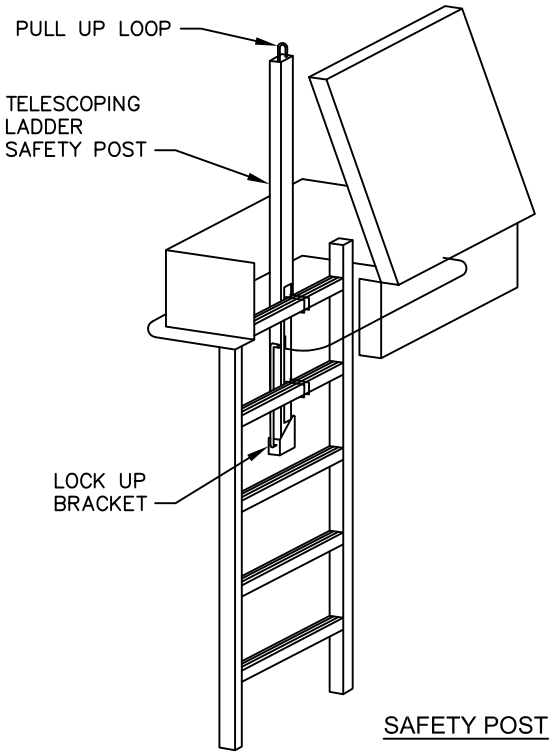


ELEVATION



SECTION

GRAB BAR



SAFETY POST

NOTES:

1. HATCH TO OPEN AWAY FROM GRAB BAR OR SAFETY POST.
2. CENTER GRAB BAR OR SAFETY POST ON CENTER OF LADDER. SAFETY POST MAY BE OFFSET WHEN USED WITH MILLER VI-GO™ SYSTEM.

HATCH SAFETY FEATURES

N.T.S.

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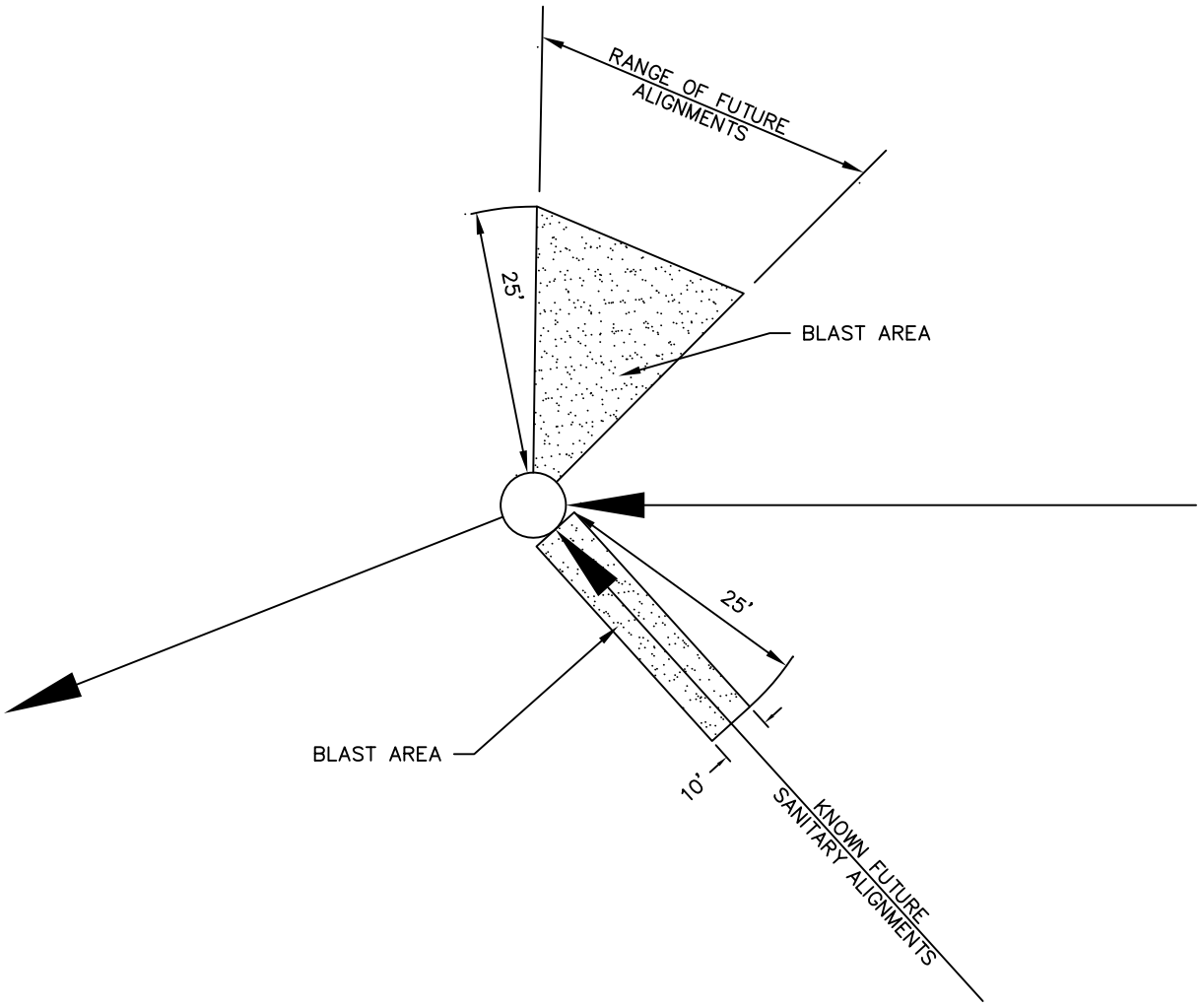

ADVANCE BLASTING

N.T.S.

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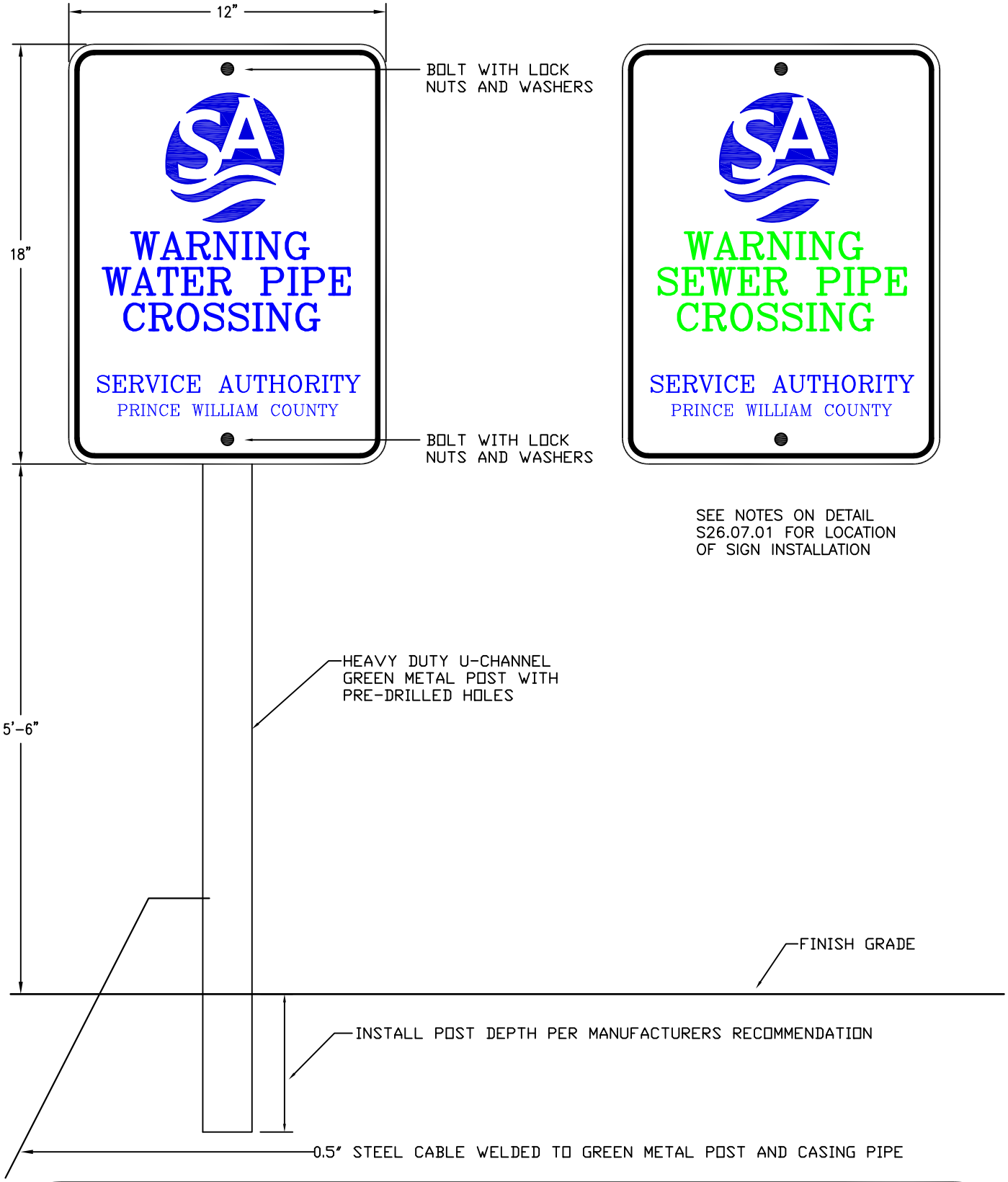
REV-2018



WARNING WATER/SEWER PIPE CROSSING

N.T.S.

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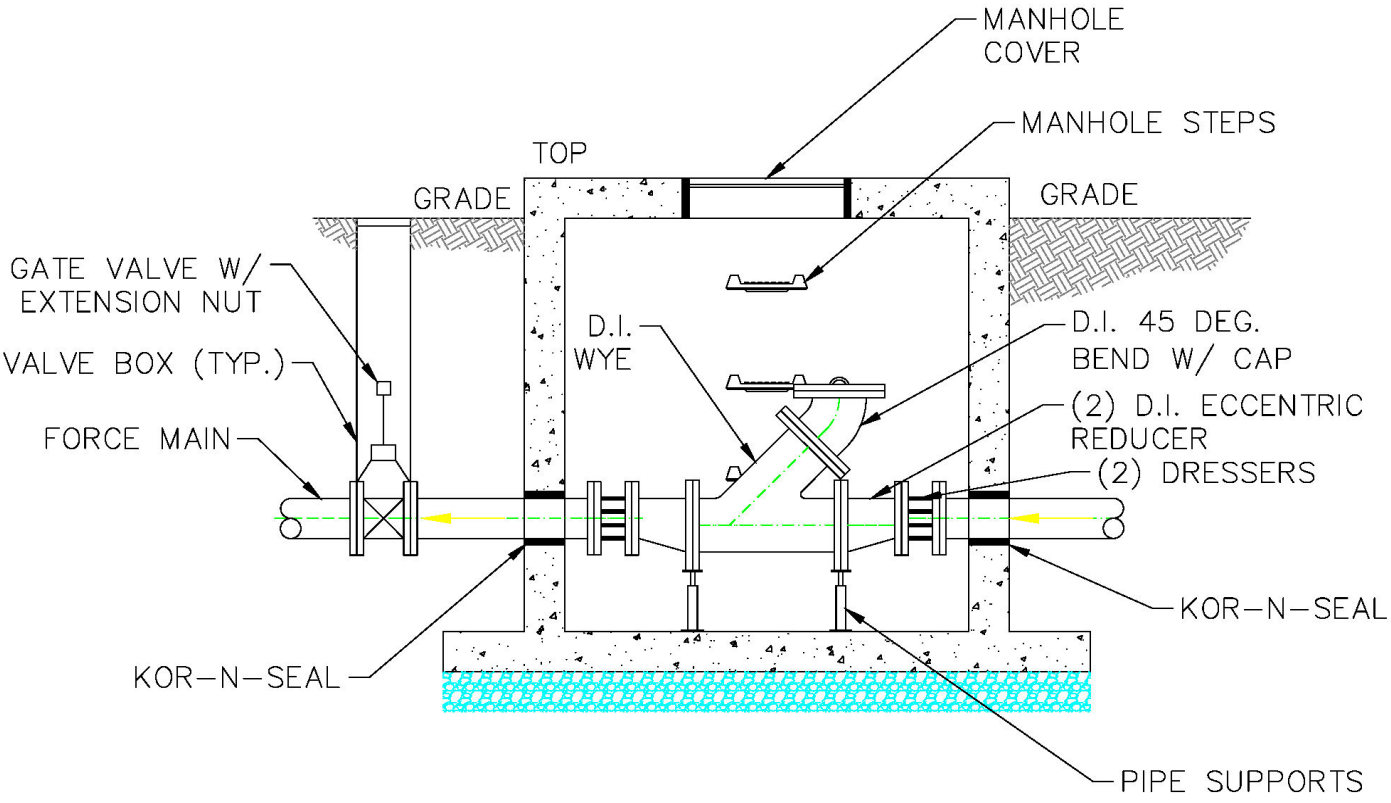
REV-2019



PIG LAUNCH DETAIL

PIG LAUNCH

N.T.S.

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