

## SANITARY SEWER CONSTRUCTION GENERAL NOTES

1. THE CITY'S PUBLIC WORKS DEPARTMENT SHALL BE NOTIFIED PRIOR TO BEGINNING ANY SEWER CONSTRUCTION.
2. ALL GRAVITY SANITARY SEWER LINES SHALL BE A MINIMUM OF 8" IN DIAMETER. SERVICE LATERALS SHALL BE A MINIMUM OF 4" DIAMETER (RESIDENTIAL) OR A MINIMUM OF 6" DIAMETER (COMMERCIAL)
3. ALL SANITARY SEWER LINES SHALL BE PVC SDR 26. IN PLACES WHERE A MINIMUM COVER OF 4.0' CANNOT BE MAINTAINED, C-900 GREEN PVC DR-25, CLASS 100 OR CONCRETE ENCASEMENT SHALL BE USED.
4. MINIMUM ALLOWABLE SANITARY SEWER SLOPES ALLOWED ARE:  
8" PIPE 0.40%  
10" PIPE 0.30%  
12" PIPE 0.22%
5. SEWER LINE CONSTRUCTION SHALL BE ACCOMPLISHED BY THE USE OF A LASER INSTRUMENT.
6. THE CONTRACTOR SHALL AT ALL TIMES, DURING PIPE LAYING, DEWATER THE GROUND SUFFICIENTLY TO KEEP THE GROUNDWATER ELEVATION A MINIMUM OF 6" BELOW THE PIPE BEING LAID WITHIN THE AREA OF THE TRENCH.
7. ALL PIPES SHALL BE LAID ON A FIRM FOUNDATION. SOFT OR SPONGY BEDDING FOR PIPES WILL NOT BE ACCEPTED. ANY UNSUITABLE MATERIAL SHALL BE REMOVED AND REPLACED WITH A DRY, COMPACTED, GRANULAR MATERIAL SATISFACTORY TO THE CITY.
8. TRENCHES SHALL BE BACKFILLED WITH CLEAN GRANULAR MATERIAL IN MAX. 1' LIFTS WITH A MINIMUM COMPACTION OF 98 PERCENT (ASSHTO-T180) IN PAVED AREAS AND 95 PERCENT IN UNPAVED AREAS.
9. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT TRENCH COMPACTION TEST BE PROVIDED AT POINTS 1 FOOT ABOVE THE PIPE AND AT 1 FOOT VERTICAL INTERVALS TO FINISH GRADE, AT A MINIMUM SPACING OF EVERY 300 FEET, AND TO FURNISH COPIES OF TEST REPORTS PROMPTLY TO THE CITY INSPECTOR.
10. EXCAVATION AND BACKFILL: THE CONTRACTOR SHALL PROVIDE ADEQUATE SHEETING AND BRACING OF EXCAVATION WORK OR USE OF TRENCH BOX IN ORDER TO PROVIDE FOR THE SAFETY OF WORKMEN, AS WELL AS REPRESENTATIVES OF THE CITY, THE DESIGN ENGINEER, AND THE DEVELOPER.
11. THE CONTRACTOR SHALL INSTALL A METALLIZED FOIL LOCATER TAPE, OR SIMILAR DEVICE AS MAY BE APPROVED BY THE CITY FOR THE FULL LENGTH OF ALL PVC WATER, RECLAIMED WATER AND SEWAGE FORCE MAINS. THIS PIPE LOCATER AID SHALL BE INSTALLED (15) INCHES BELOW FINISHED GRADE OR AS DIRECTED BY THE MANUFACTURER AND IS IN ADDITION TO THE LOCATER WIRE REQUIRED IN THE UTILITY PIPE LOCATION MATERIALS DETAIL (MISCELLANEOUS DETAILS SECTION - M10).
12. MANHOLES SHALL BE LOCATED AT INTERVALS NOT EXCEEDING 400 FEET.
13. MANHOLE RIMS SHALL MATCH FLUSH WITH THE FINISH GRADE ELEVATION IN PAVED AREAS AND A MINIMUM OF 0.2 FEET ABOVE GRADE IN UNPAVED AREAS.



### STANDARD CONSTRUCTION DETAIL

#### GENERAL NOTES

#### SANITARY SEWER CONSTRUCTION

INDEX

S-1A

OCT 2021

## SANITARY SEWER CONSTRUCTION GENERAL NOTES

14. THE CONTRACTOR SHALL CONSTRUCT SANITARY SEWER MANHOLES IN SUCH A WAY THAT SEWER LINES DO NOT INTERSECT SEALED JOINTS BETWEEN SECTIONS OF THE MANHOLE.
15. RUBBER BOOTS AND STAINLESS STEEL BANDS SHALL BE UTILIZED IN THE CONNECTION OF THE SEWER MAIN TO THE MANHOLES (SEE RUBBER BOOT AND PRECAST JOINT CONNECTION DETAIL).
16. DOGHOUSE TYPE MANHOLES ARE NOT PERMITTED WITHIN THE CITY OF SOUTH DAYTONA
17. INDIVIDUAL SANITARY SERVICE CONNECTORS ON NEW CONSTRUCTION SHALL NOT BE CONNECTED DIRECTLY INTO MANHOLES, BUT TO SEWER MAIN LINES BY USE OF WYE CONNECTIONS.
18. FOR SINGLE FAMILY HOMES, SINGLE FOUR INCH SEWER SERVICES SHALL BE CONSTRUCTED AT EACH LOT OR UNIT AND LOCATED ON THE DOWNSTREAM SIDE OF THE LOT CENTER LINE. THESE SERVICES SHALL BE EXTENDED 4 FEET ABOVE GROUND AT THE PROPERTY LINE WITH A PVC RISER AND PLUG BEING EASILY VISIBLE FROM THE ROAD. RUBBER SEAL FITTINGS TO BE USED ON ALL LINES, NO GLUED JOINTS.
19. FOR MULTI-FAMILY AND COMMERCIAL SITES, SIX INCH MINIMUM SEWER SERVICES AND CLEANOUTS SHALL BE PROVIDED AS APPROVED BY THE CITY.
20. SANITARY SEWER LATERALS LONGER THAN 70 FEET, MEASURED FROM THE SEWER MAIN TO THE RIGHT-OF-WAY LINE MAY BE APPROVED ON A CASE BY CASE BASIS. SUCH LATERALS SHALL BE D.I.P. EPOXY LINED OR C-900 PVC.
21. SANITARY SEWER MANHOLES WHICH HAVE SEWER FORCE MAINS DISCHARGING DIRECTLY INTO THEM, OR ANY MANHOLE WITHIN 200 FEET OF A LIFT STATION, SHALL BE FIBERGLASS OR PVC LINED. RETRO-FITTING OF MANHOLES WITH LINERS SHALL BE REQUIRED WHEN NEW CONNECTIONS SUCH AS THIS ARE MADE. LINING SHALL BE AGRU SURE-GRIP, RAVEN, SEWPERCOAT, GREEN MONSTER, OR PRE-APPROVED EQUAL.
22. SEE CHART ON DETAIL INDEX S-1C FOR FORCE MAIN AND REUSE PIPE SIZE AND MATERIALS.
23. THE CITY OF SOUTH DAYTONA REQUIRES THE DEVELOPER/CONTRACTOR TO TELEVIEW ALL SANITARY SEWER MAINS AND LATERALS PRIOR TO ACCEPTANCE AND RESERVES THE RIGHT TO REQUEST WATER AND AIR TESTING. A REPUTABLE COMPANY THAT ENGAGES IN THIS TYPE OF WORK SHALL CONDUCT THE TELEVIEWING PROCESS. THE DVD AND/OR DIGITAL FILE SHALL BE NON STOP WITH AUDIO DESCRIBING WHAT IS BEING REVIEWED. WRITTEN DVD LOGS DESCRIBING THE CONDITION OF THE LINES SHALL ACCOMPANY THE DVD SUBMISSION TO THE CITY. THIS PROCESS SHALL BE WITNESSED BY A REPRESENTATIVE OF THE CITY OF SOUTH DAYTONA.



### STANDARD CONSTRUCTION DETAIL

#### GENERAL NOTES

#### SANITARY SEWER CONSTRUCTION

INDEX

S-1B

JAN - 2024

## SANITARY SEWER CONSTRUCTION GENERAL NOTES

24. ALL MANHOLES CONSTRUCTED IN SIDE YARDS, BACKYARDS, AND EASEMENTS OFF THE RIGHT-OF-WAY SHALL BE OUTFITTED WITH FIBERGLASS LINERS OR OTHER TYPES OF LINERS OR COATINGS APPROVED BY THE CITY. IN ADDITION THE CITY MAY REQUIRE LINERS OR COATINGS TO BE INSTALLED IN OTHER AREAS WHERE THE PUBLIC UTILITY DEPARTMENTS BELIEVE THE NEED IS JUSTIFIED.
25. ALL SEWER LINES WHICH ARE CONSTRUCTED OFF PUBLIC RIGHTS-OF-WAY WITHIN SIDEYARDS, BACKYARDS, AND OTHER POORLY ACCESSIBLE AREAS SHALL BE CONSTRUCTED OF C-900 PVC. ABSOLUTELY NO USE OF PLASTIC STYRENE FITTINGS SHALL BE ALLOWED.
26. SEWER LATERAL LOCATIONS SHALL BE MARKED ALONG THE OUTSIDE OF THE CURB WITH A SAW CUT V, OR BY A METAL TAB SET INTO THE PAVEMENT.
27. EZ-WRAP PLASTIC, AS MANUFACTURED BY PRESS-SEAL GASKET CORPORATION OR APPROVED EQUAL, SHALL BE USED ON THE OUTSIDE OF ALL MANHOLE AND WET WELL JOINTS. APPLY ONE LAYER OF 9" WRAP CENTERED ON EACH JOINT. A CITY INSPECTOR SHALL PERSONALLY INSPECT ALL JOINT SEALS PRIOR TO BACKFILLING OPERATIONS .
28. ALL PROPOSED SEWER MAINS, 4" OR GREATER, SHALL BE FLUSHED AND CLEANED WITH A POLY PIG IN ACCORDANCE WITH LATEST AWWA STANDARDS AND THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION REQUIREMENTS.
29. ALL SEWER MAINS SHALL HAVE A MINIMUM COVER OF 36 INCHES AND A MAXIMUM DEPTH OF 18' TO ANY MANHOLE OR 22' TO ANY WETWELL. IN SPECIAL CASES WHERE IT IS IMPOSSIBLE OR INAPPROPRIATE TO PROVIDE ADEQUATE COVER C900/C905 OR CONCRETE ENCASEMENT MAY BE USED AS APPROVED BY THE CITY.
30. FORCE MAIN SYSTEMS SHALL BE PRESSURE TESTED AT 100 PSI STATIC PRESSURE FOR A PERIOD OF 2 HOURS PER AWWA STANDARDS. TESTS SHALL BE CONDUCTED BEFORE FINAL PAVING AND IN THE PRESENCE OF THE CITY'S INSPECTOR. SUBMIT FOR FDEP CLEARANCE BEFORE PAVING.
31. DURING CONSTRUCTION, CONTRACTOR SHALL ISOLATE NEW SANITARY SEWER CONSTRUCTION FROM EXISTING SANITARY SEWER MAINS. THIS ISOLATION MAY BE BY INSTALLATION OF A BLADDER/PLUG PLACED AT POINT OF CONNECTION OR BY OTHER METHODS. THE PURPOSE OF THIS ISOLATION IS TO ENSURE SURFACE WATER IS NOT RELEASED TO THE TREATMENT PLANT. SURFACE WATER SHALL BE REMOVED PRIOR TO THE BLADDER BEING REMOVED.

FORCE MAIN & REUSE MAIN STANDARDS		
DIAMETER	MATERIAL	STANDARD
2" - 4"	PVC 1120 / SDR 21	ASTM D 2241
> 4" - 12"	PVC 1120 / CLASS 100	AWWA C 900
14" - 36" ( 16"- 24" → DR - 18) ( 30"- 36" → DR - 21)	PVC 1120	AWWA C 905
ALL SIZES	HDPE (DIPS) DR 13.5	ASTM F 714

NOTE: PVC PIPE COLOR SHALL BE GREEN FOR SEWER FORCE MAIN,  
AND PURPLE FOR REUSE MAIN.

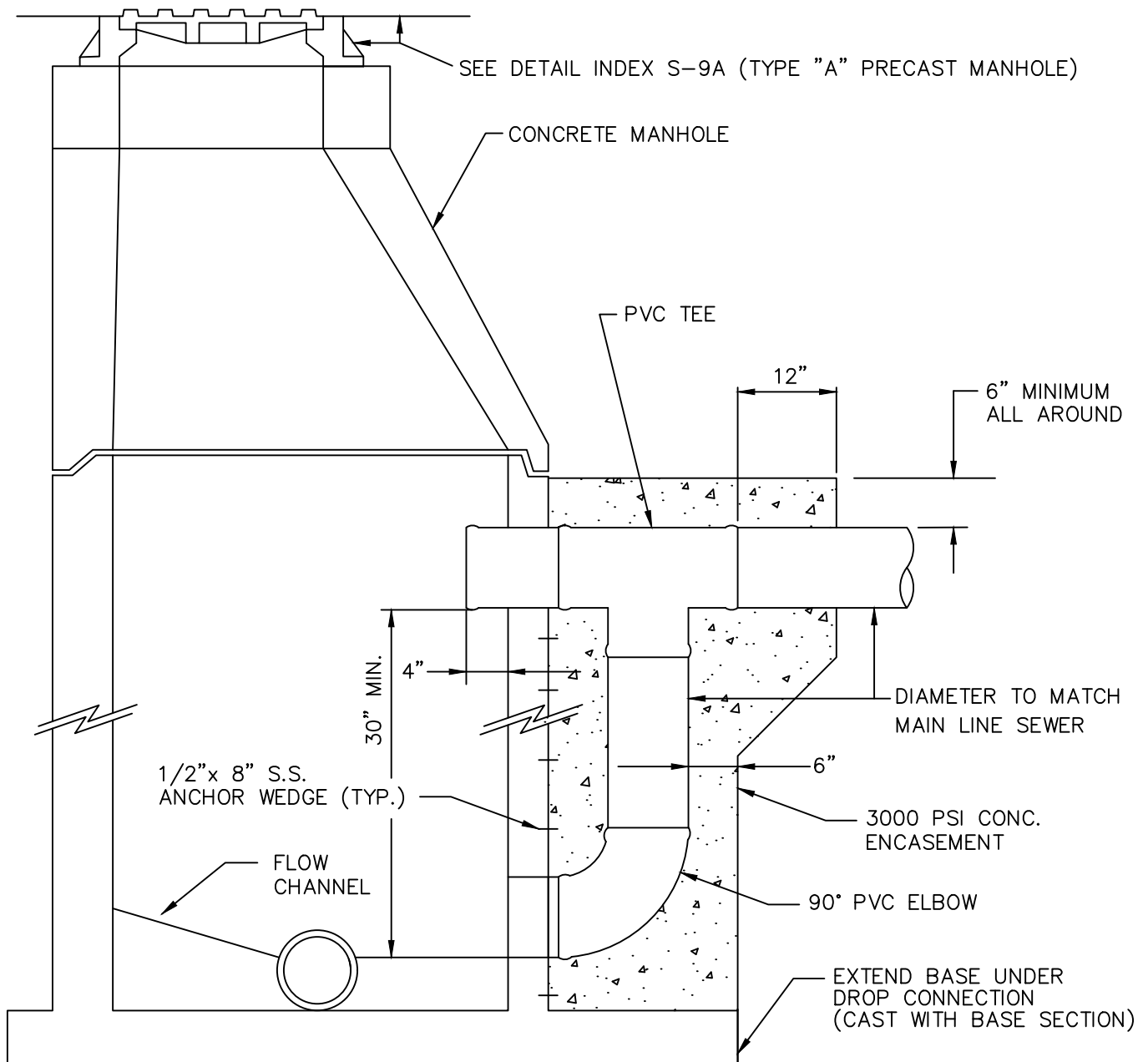


### STANDARD CONSTRUCTION DETAIL GENERAL NOTES SANITARY SEWER CONSTRUCTION

INDEX

S-1C

JAN - 2024



PROVIDE RUBBER GASKET PER  
A.S.T.M. C-923, CAST INTEGRALLY  
IN MANHOLE WALL AND LOCATED  
AS REQUIRED FOR 8" SANITARY SEWER

NOTE: FOR USE WHERE FREE DROP IS GREATER THAN 30". FOR GRAVITY SEWER.



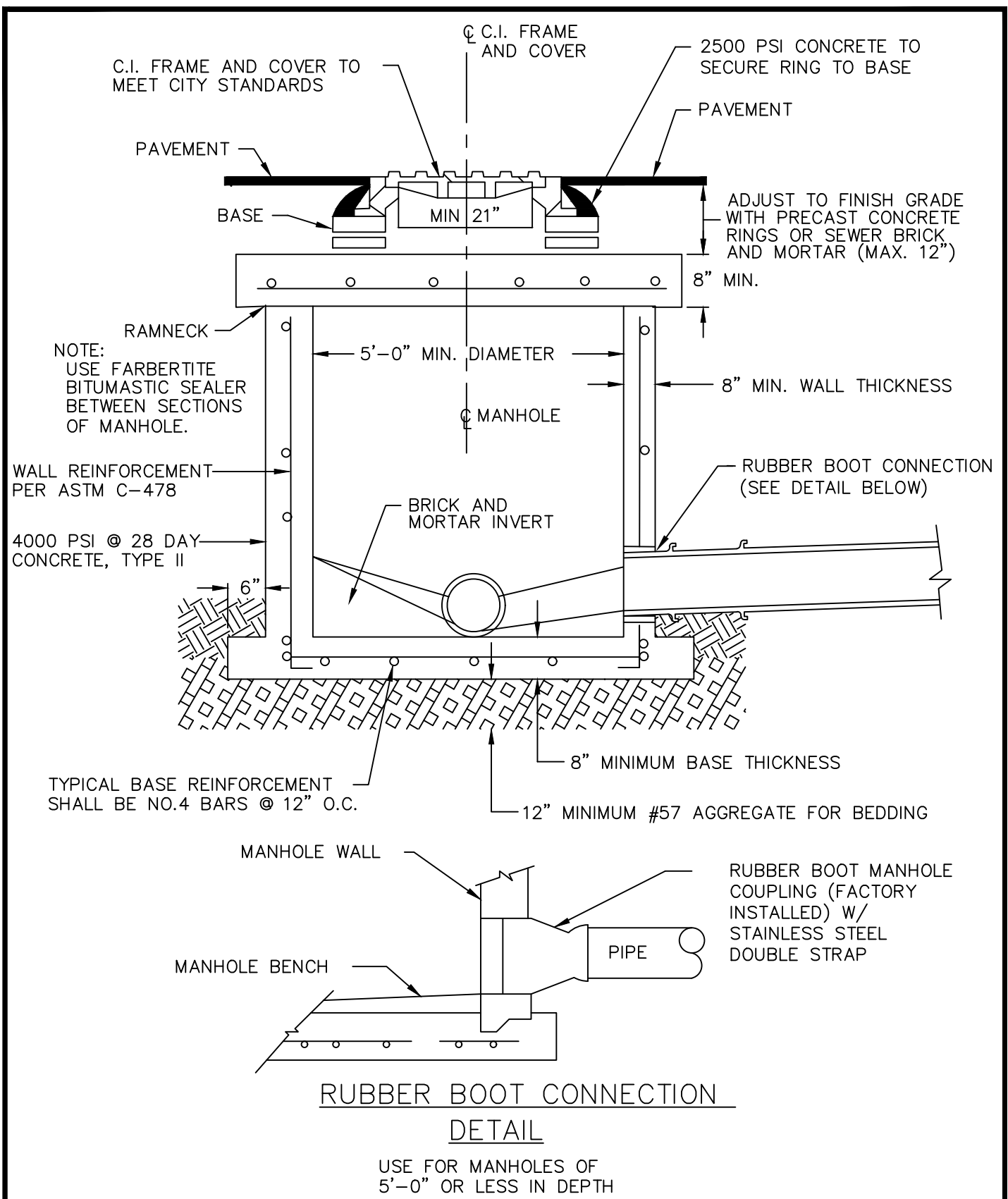
# STANDARD CONSTRUCTION DETAIL OUTSIDE DROP CONNECTION (FOR NEW MANHOLES)

NTS.

INDEX

S-2

JAN - 2024



STANDARD CONSTRUCTION DETAIL

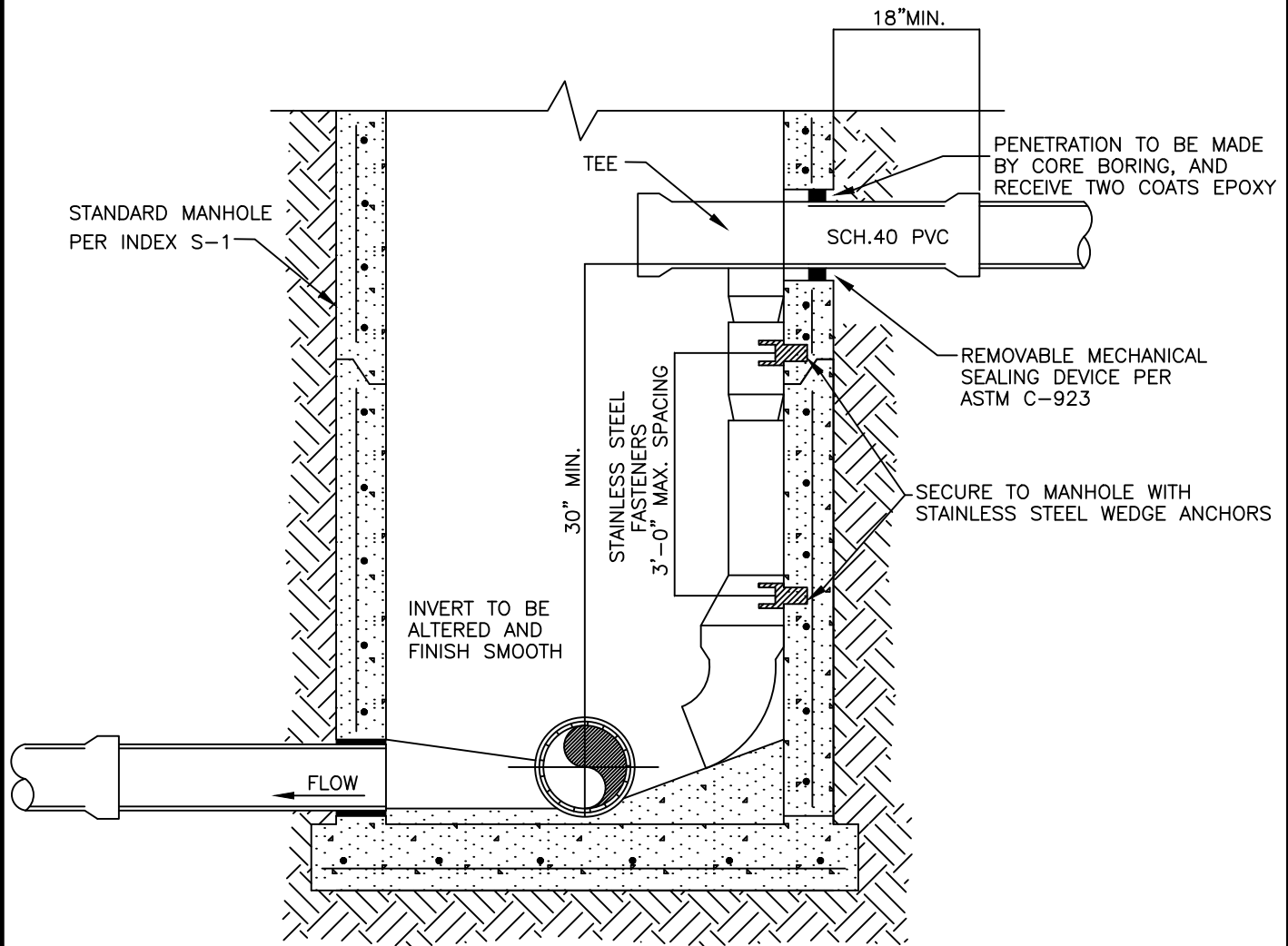
SHALLOW MANHOLE

NTS.

INDEX

S-3

JAN - 2024



**NOTES:**

1. ALL PIPING ENTERING EXISTING STRUCTURES SHALL BE ACCOMPLISHED BY MECHANICAL ROTARY CORE BORING THE MANHOLE RISER. AFTER INSTALLATION OF PIPING, THE ANNULAR SPACE BETWEEN PIPING AND CONCRETE, SHALL BE SEALED WITH LINK-SEAL, THUNDERLINE SEALS, OR APPROVED EQUAL.
2. ALL FITTINGS SHALL BE SCH.40 PVC AS WELL AS DROP PIPE
3. FOR INSIDE DROPS UP TO 12" DIA USE INTRAFLOW LOW PROFILE INSIDE DROP SYSTEM AS MANUFACTURED BY ROYAL ENVIRONMENTAL SYSTEMS OR APPROVED EQUAL.
4. FOR INSIDE DROPS LARGER THAN 12" DIA ALL FERROUS MATERIALS SHALL BE FULLY COATED IN AND OUT WITH 2 COATS OF KOPPERS 300-M EPOXY 8 MILS DFT, TOGETHER WITH THE PENETRATION THROUGH THE STRUCTURE WALL STAINLESS STEEL SHALL NOT BE COATED.
5. ADAPTORS CONNECTING DIFFERENT PIPING MUST BE MANUFACTURED FOR THIS PURPOSE; SUBMIT DETAILS TO ENGINEER FOR APPROVAL.
6. FOR USE WHERE FREE DROP OF GRAVITY SEWER IS GREATER THAN 30".



**STANDARD CONSTRUCTION DETAIL**

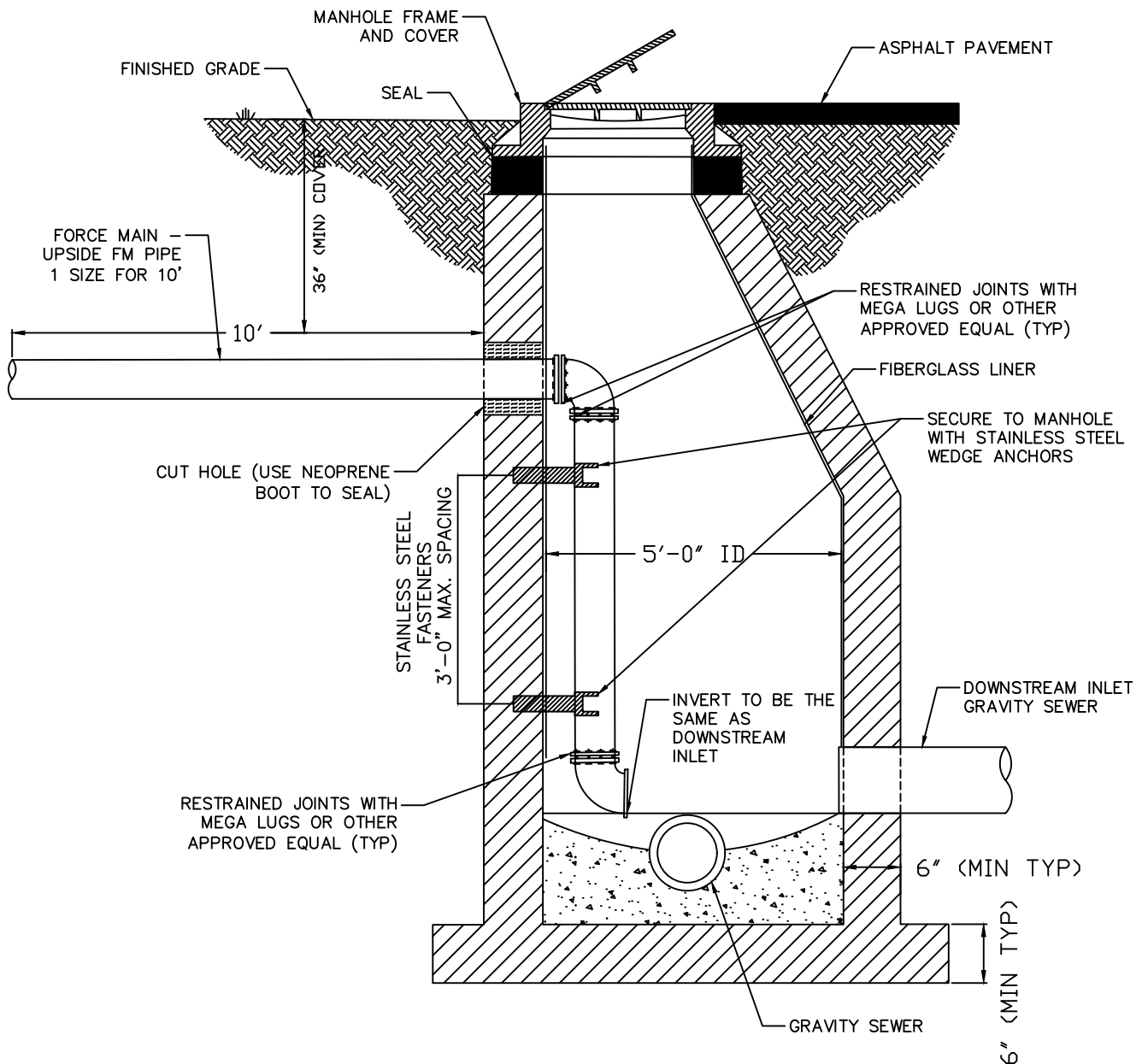
**INSIDE DROP CONNECTION  
(FOR EXISTING MANHOLES)**

NTS

INDEX

S-4A

JAN - 2024



#### NOTES:

1. SEE MANHOLE NOTES ON DRAWING NO. S-9A
2. MATERIALS FOR LINING MANHOLES SHALL BE EQUAL TO THAT MANUFACTURED BY ASSOCIATED FIBERGLASS ENGINEERS OR APPROVED EQUAL AND SHALL BE ENGINEERED TO A STANDARD OF 16,000-POUND VERTICAL DYNAMIC WHEEL LOAD (AASHTO H-20). FIBERGLASS LINERS SHALL BE INSTALLED ON ALL MANHOLES RECEIVING PUMPED SEWAGE.
3. ALL MATERIALS ARE TO BE PER CITY OF SOUTH DAYTONA APPROVED MANUFACTURES PRODUCT LIST.
4. SEAL SHALL BE USED AT ALL JOINTS.



## STANDARD CONSTRUCTION DETAIL

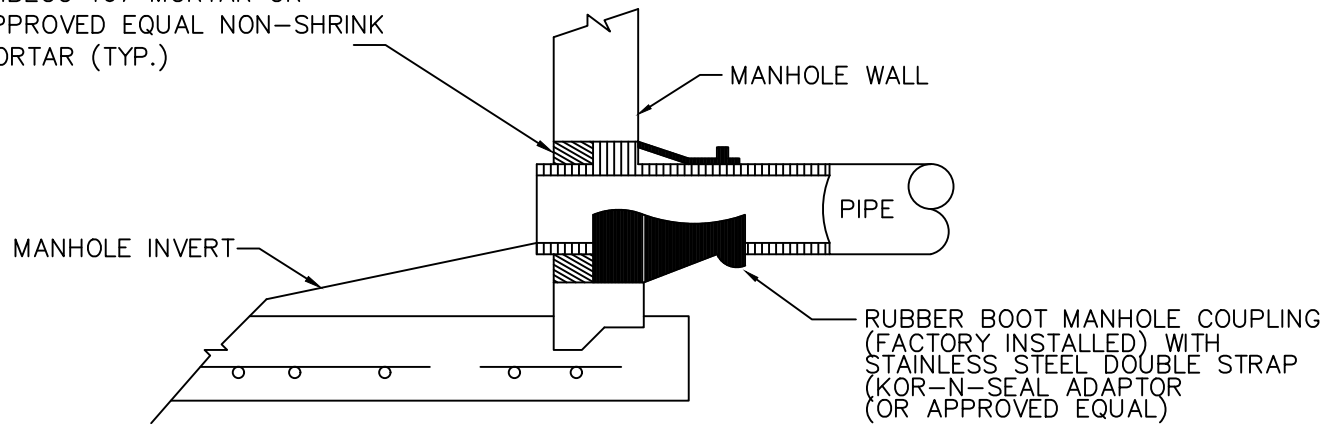
FORCE MAIN TIE-IN  
TO MANHOLE  
NTS

INDEX

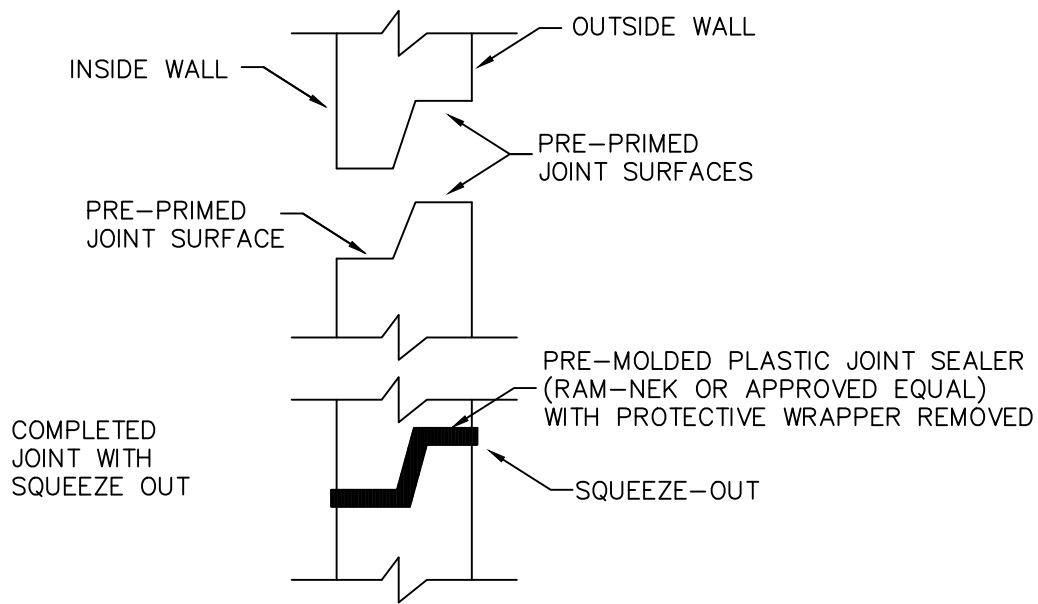
S-4B

JAN - 2024

FILL ANNULAR SPACE WITH  
EMBECO 167 MORTAR OR  
APPROVED EQUAL NON-SHRINK  
MORTAR (TYP.)



## MANHOLE PIPE CONNECTION



NOTE: ALL CONNECTIONS TO EXISTING SANITARY  
SEWER MANHOLES SHALL UTILIZE  
A CORING METHOD AND THE IN-FIELD  
INSTALLATION OF A RUBBER BOOT  
INTO THE MANHOLE AND THEN SECURED  
WITH A STAINLESS STEEL DOUBLE STRAP.

## PRECAST JOINT CONNECTION



STANDARD CONSTRUCTION DETAIL

RUBBER BOOT AND PRECAST  
JOINT CONNECTION DETAIL

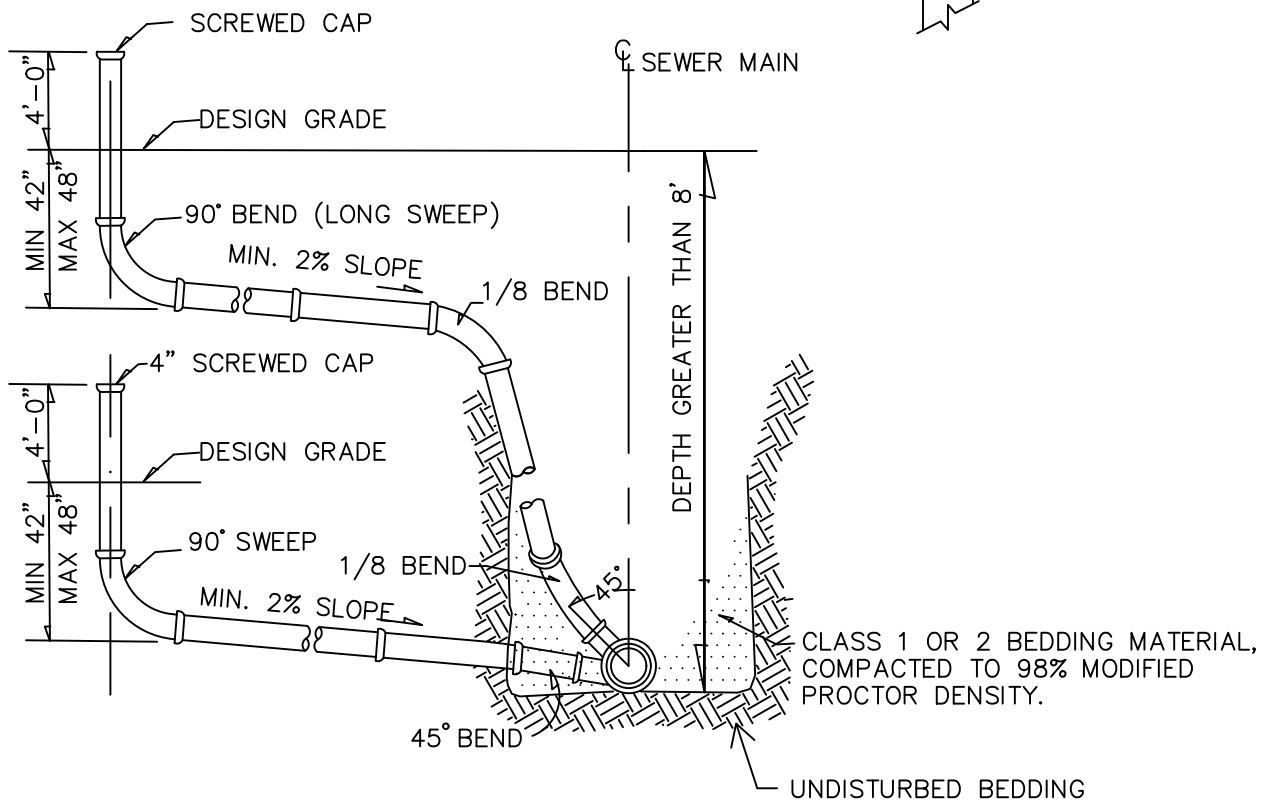
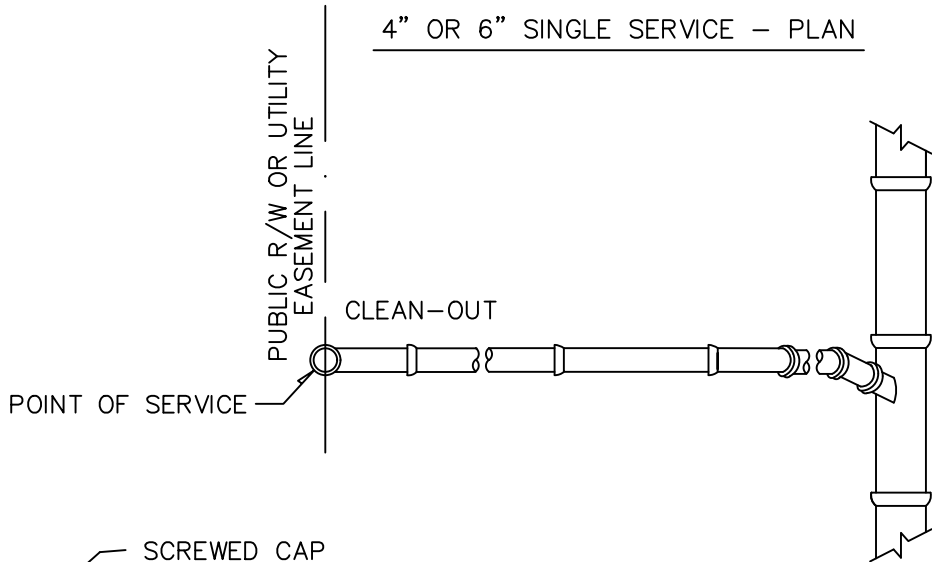
NTS.

INDEX

S-5

JAN - 2024





4" – 6" SINGLE SERVICE – ELEVATION

SEWER LATERAL

NOTE: USE OF STYRENE MATERIAL  
WILL NOT BE PERMITTED.

NOTE

SINGLE SERVICES SHALL BE MIN:  
4" DIA. RESIDENTIAL  
6" DIA. COMMERCIAL

ALL JOINTS TO BE RUBBER  
GASKET (NO GLUED FITTINGS)

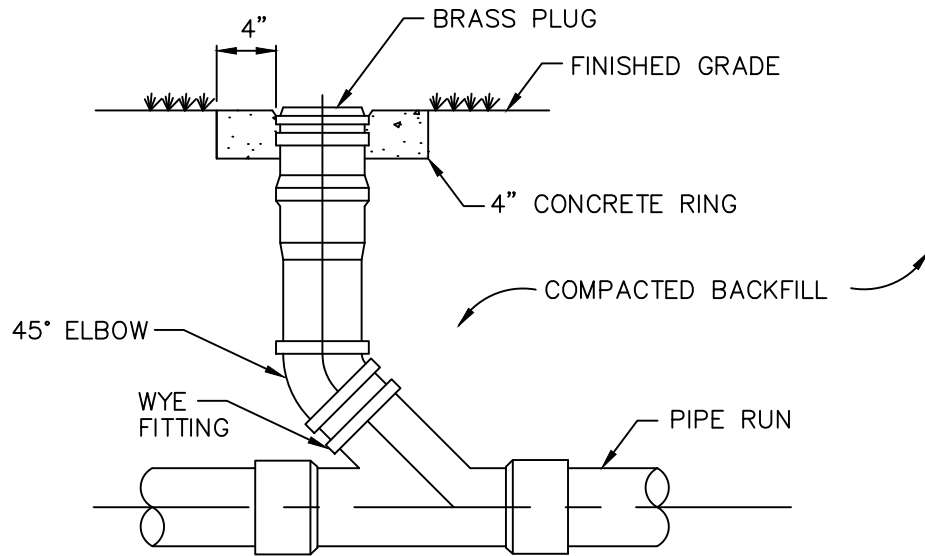


STANDARD CONSTRUCTION DETAIL  
SEWER LATERAL DETAIL  
NTS.

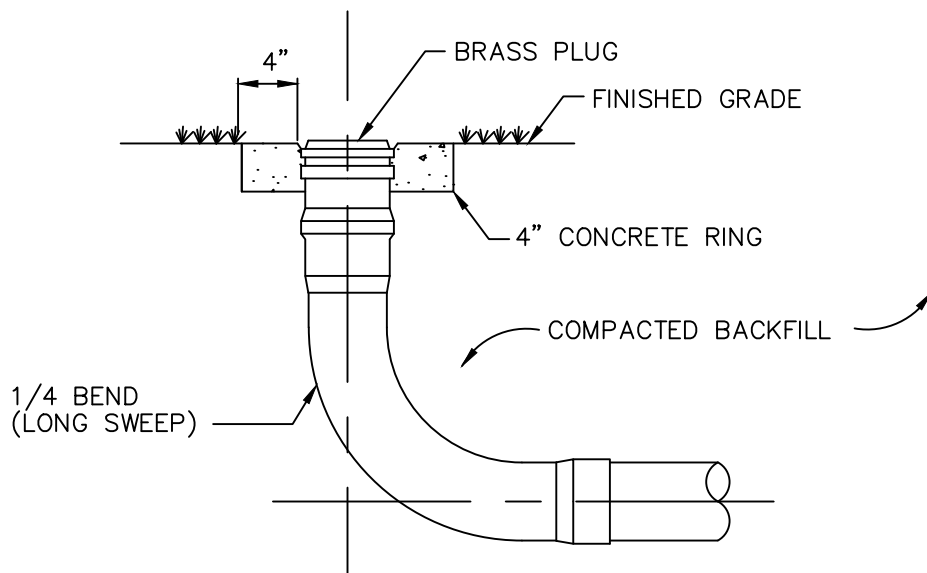
INDEX

S-6

JAN - 2024



IN-LINE CLEANOUT



TERMINAL CLEANOUT

NOTE: CONCRETE COLLAR REQUIRED IN UNPAVED AREAS

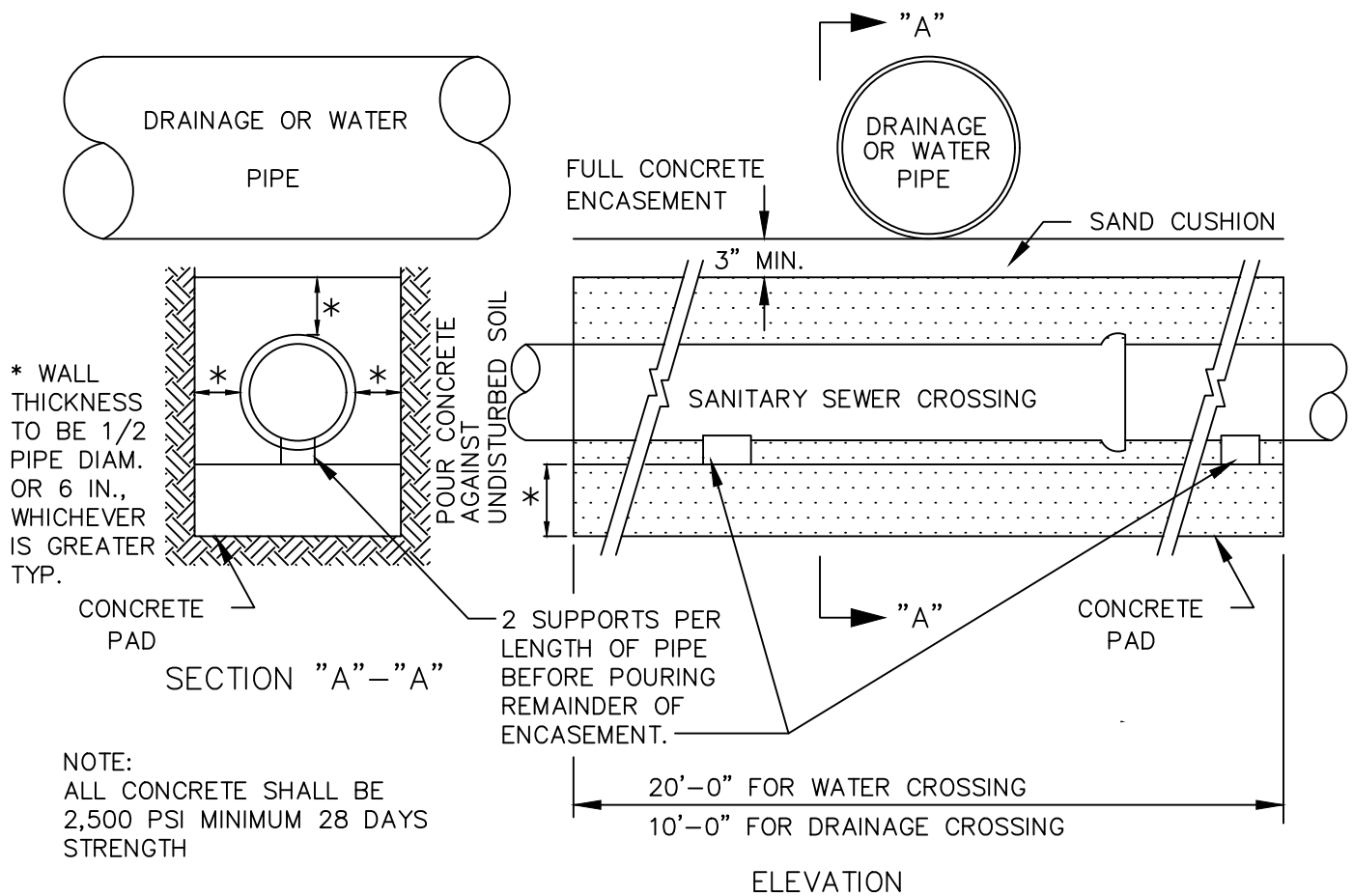
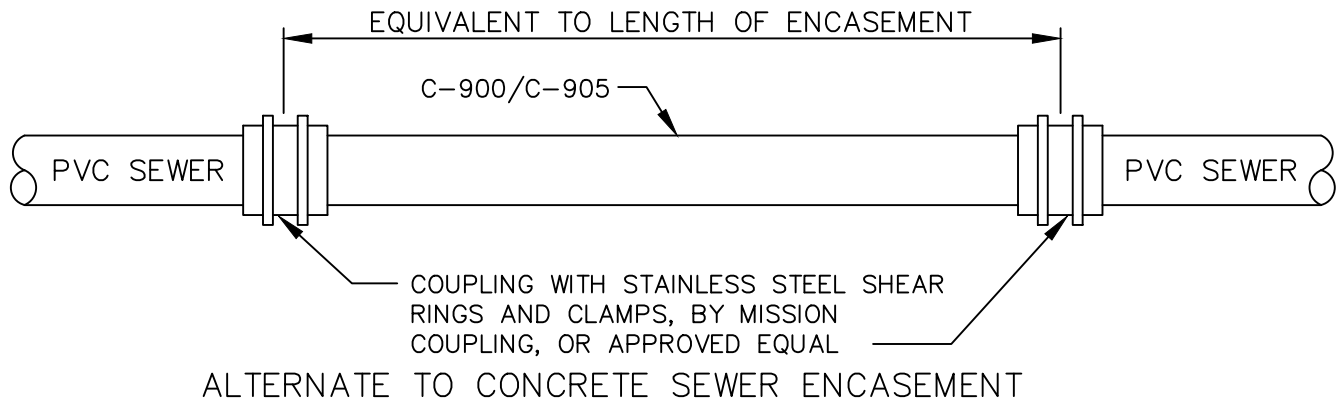


STANDARD CONSTRUCTION DETAIL  
CLEANOUT DETAIL  
NTS.

INDEX

S-7

JAN - 2024



WATER MAIN SHALL BE LOCATED ABOVE ENCASEMENT AS SHOWN ON PLANS OR DETERMINED IN THE FIELD, USE ENCASEMENT WHERE VERTICAL CLEARANCE BETWEEN WATER MAIN AND SEWER IS LESS THAN 12 INCHES.



STANDARD CONSTRUCTION DETAIL

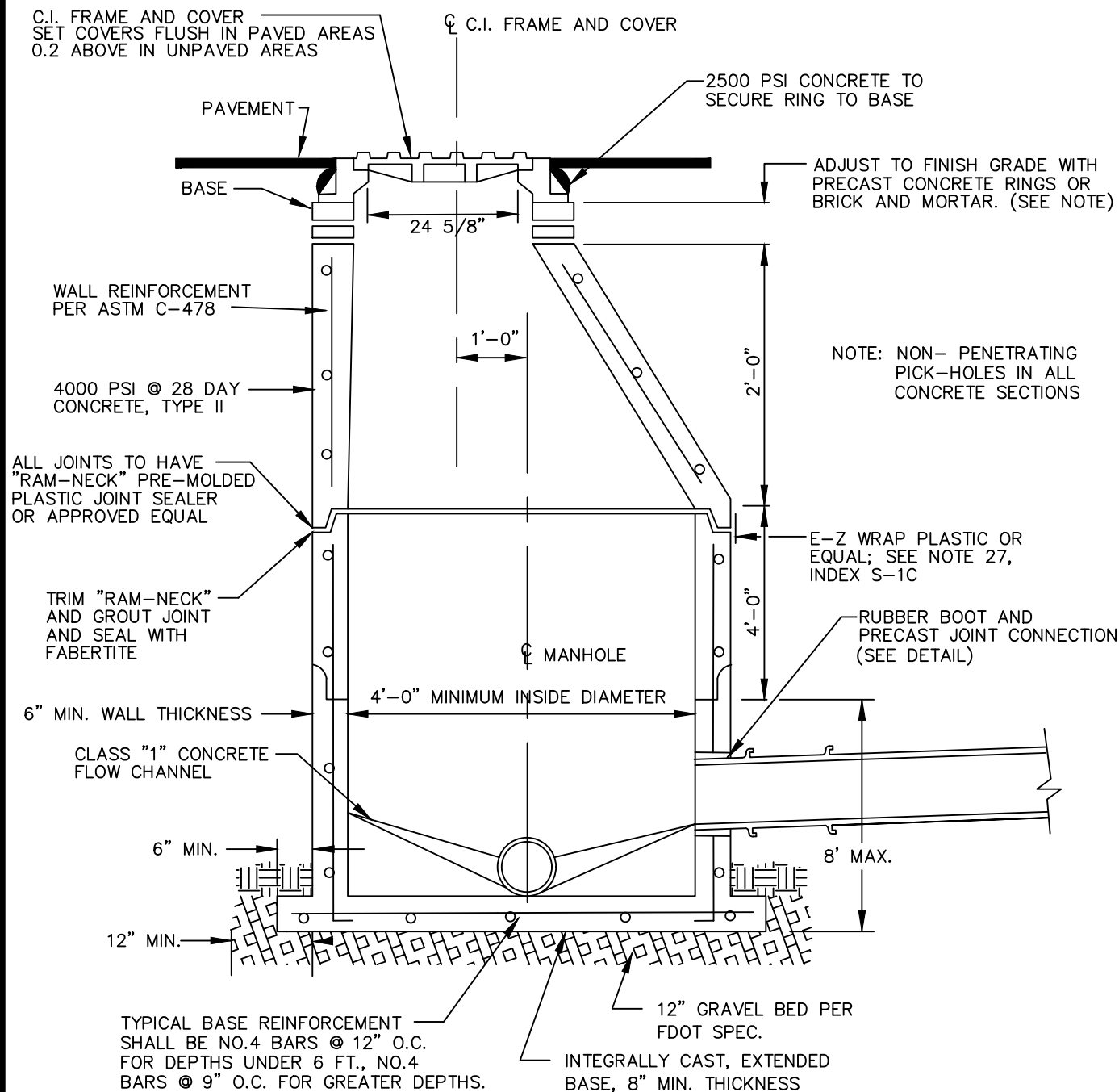
SANITARY SEWER CROSSING

NTS.

INDEX

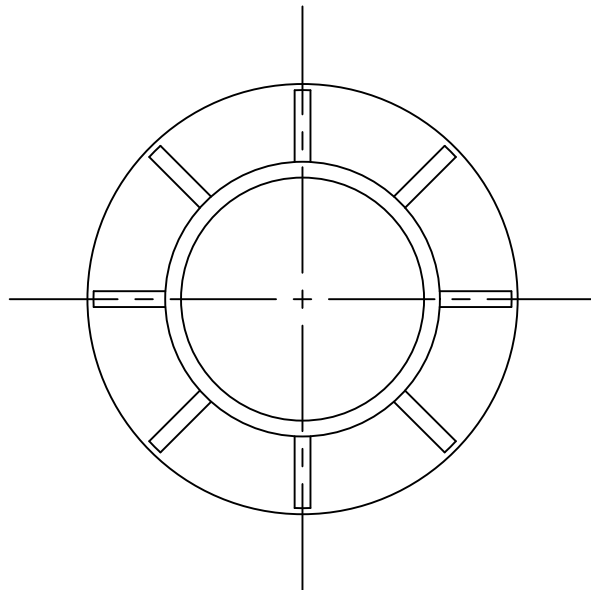
S-8

JAN - 2024

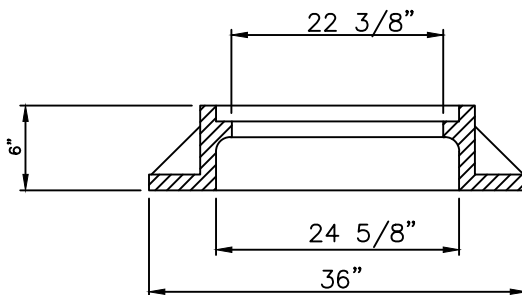


- NOTES: 1. THE TOP OF THE CONE SHOULD BE SET 2 1/2" MIN. - 12" MAX. BELOW THE BOTTOM OF THE MANHOLE COVER FRAME TO ACCOMMODATE FUTURE GRADE CHANGES (USE BRICK AND MORTAR OR PRECAST CONCRETE RINGS).
2. MANHOLES WHICH RECEIVE DISCHARGE FROM A FORCE MAIN AND ANY MANHOLES LOCATED WITHIN 200' OF A LIFT STATION OR ANY MANHOLES OUTSIDE OF THE RIGHT-OF-WAY, A SULFIDE CORROSION-RESISTANT MATERIAL SHALL BE USED AS LINER FOR THOSE MANHOLES THAT MEET THE CONDITIONS STATED ABOVE. THE LINER SHALL BE EITHER FIBERGLASS OR PVC OR AS APPROVED BY THE CITY ENGINEER.
3. NO "DOGHOUSE" TYPE MANHOLES ARE ALLOWED.
4. WALL THICKNESS INCREASES WITH DEPTH OVER 10 FEET

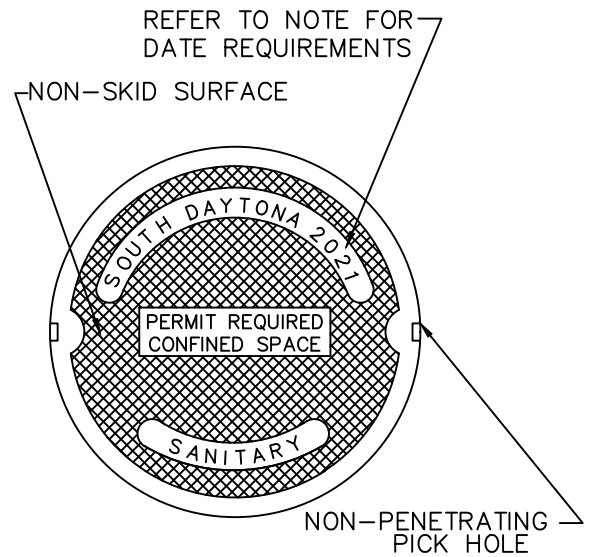
JAN - 2024



RING TOP VIEW



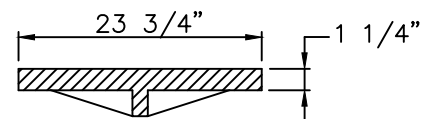
RING SECTION



COVER DETAIL

N.T.S.

NOTE: FOR PRIVATE SANITARY SEWER SYSTEMS, REMOVE CITY OF ORMOND BEACH NAME



COVER SECTION

NOTE: MANHOLE RING AND COVER SHALL CONFORM TO FDOT STANDARD INDEX 201, SHEET 1 OF 6, AS SHOWN IN ROADWAY TRAFFIC DESIGN STANDARDS.

NOTE: YEAR STAMP TO MATCH CASTING YEAR

U. S. FOUNDRY 195E-ORS ("O" RING SEAL) OR APPROVED EQUAL

COVER TYPE	LOAD RATING	COVER WEIGHT	TOTAL WEIGHT
BJ	HEAVY DUTY	200	350

FOR MANHOLES IN FL. D.O.T. R/W OR AS DETERMINED BY THE CITY. THE COVER TYPE SHALL BE - BJ HEAVY DUTY 200 LBS W/ ORS.

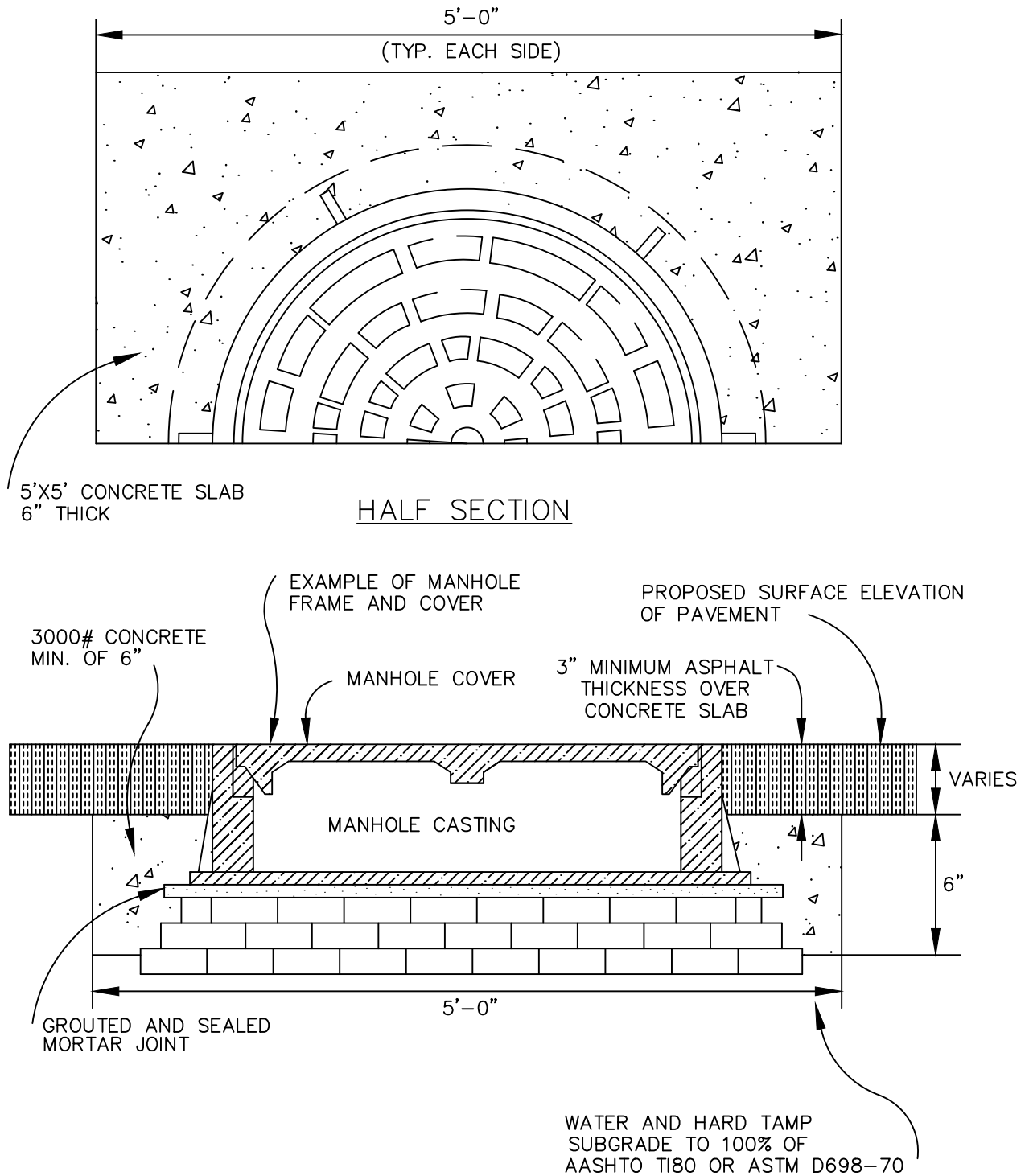


STANDARD CONSTRUCTION DETAIL  
MANHOLE RING AND COVER DETAIL  
N.T.S.

INDEX

S-9B

JAN - 2024



### MANHOLE ADJUSTMENT DETAILS

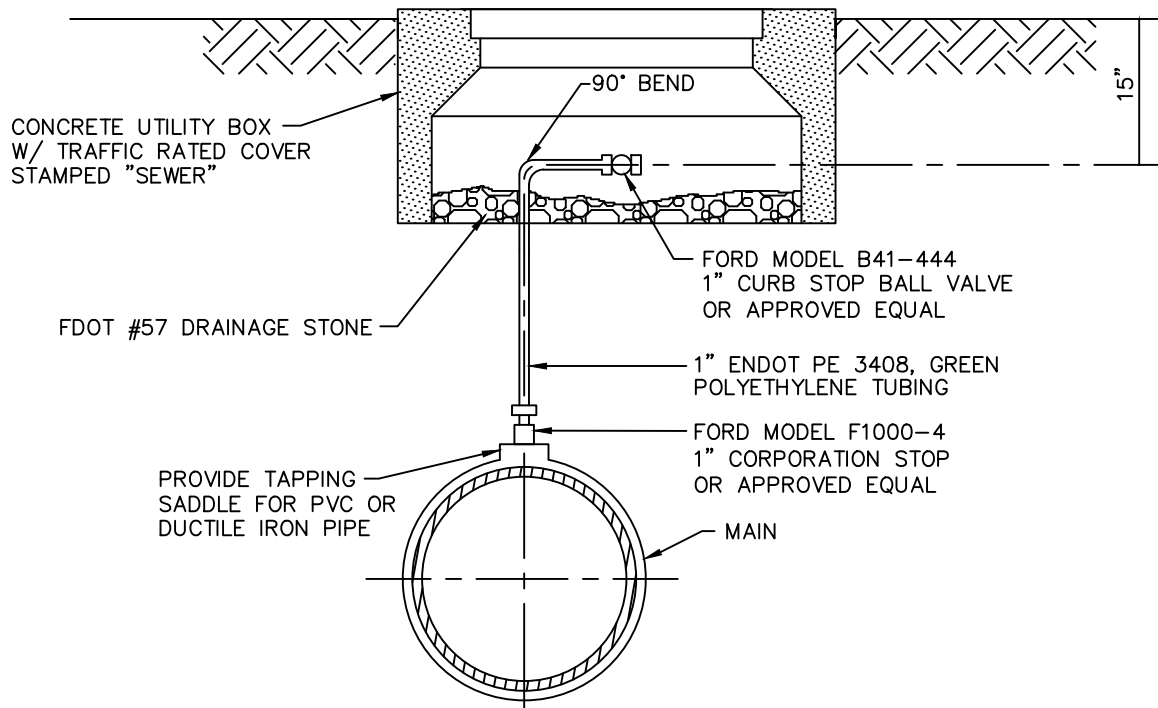


STANDARD CONSTRUCTION DETAIL  
MANHOLE ADJUSTMENT DETAILS  
NTS

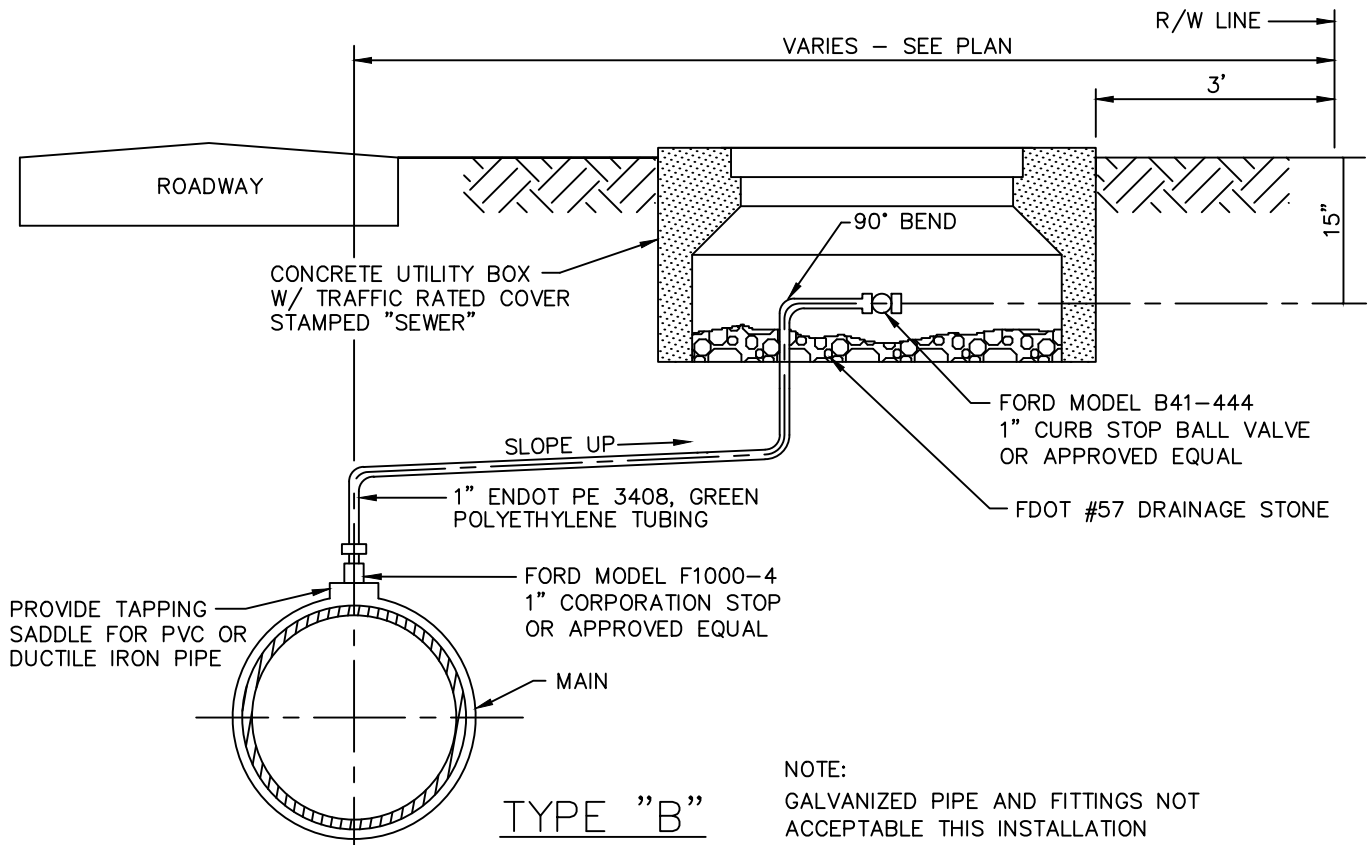
INDEX

S-9C

JAN - 2024



TYPE "A"



TYPE "B"

NOTE:  
GALVANIZED PIPE AND FITTINGS NOT  
ACCEPTABLE THIS INSTALLATION

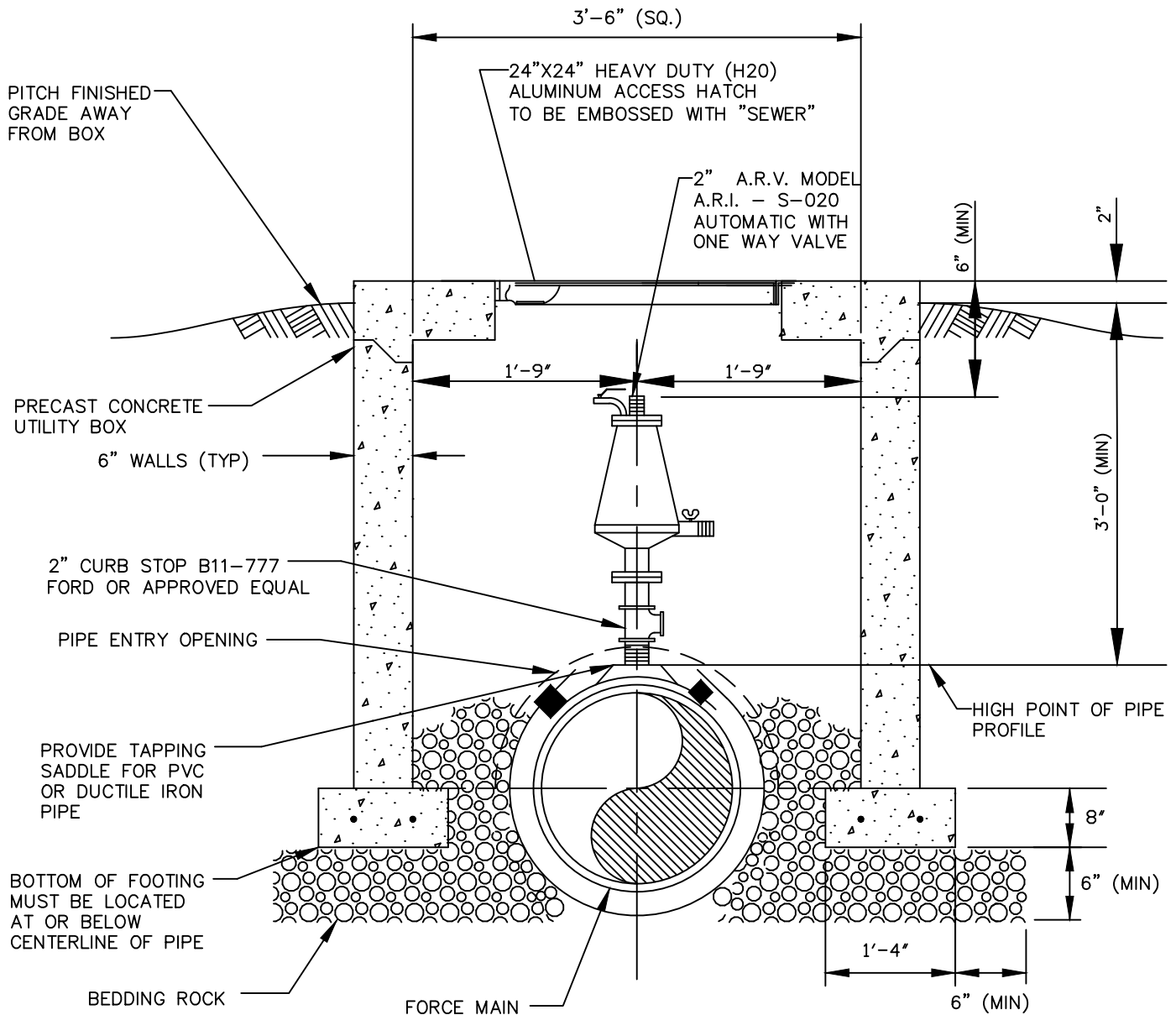


STANDARD CONSTRUCTION DETAIL  
MANUAL AIR RELEASE VALVE  
NTS

INDEX

S-10A

JAN - 2024



NOTE:

1. GALVANIZED PIPE AND FITTINGS NOT ACCEPTABLE FOR THIS INSTALLATION
2. STRUCTURE TO BE ADEQUATE FOR AASHTO H20 LOADING
3. DESIGNER IS RESPONSIBLE FOR PROVIDING CONSTRUCTION MATERIAL AND STEEL REINFORCING REQUIREMENTS
4. NO SURFACE COATING REQUIRED ON VAULT
5. ALUMINUM HATCH TO INCLUDE S.S. HINGE AND S.S. SLAM LOCKS WITH REMOVABLE KEYS
6. FITTINGS AND PIPE FOR A.R.V. SHALL BE BRASS. BODY SHALL BE STAINLESS STEEL. USE S-025 WITH VACUUM GUARD AT ONLY ATTACHMENT.
7. COAL TAR EPOXY INTERIOR OF VAULT.



STANDARD CONSTRUCTION DETAIL  
AUTOMATIC AIR RELEASE VALVE  
(FORCE MAIN)

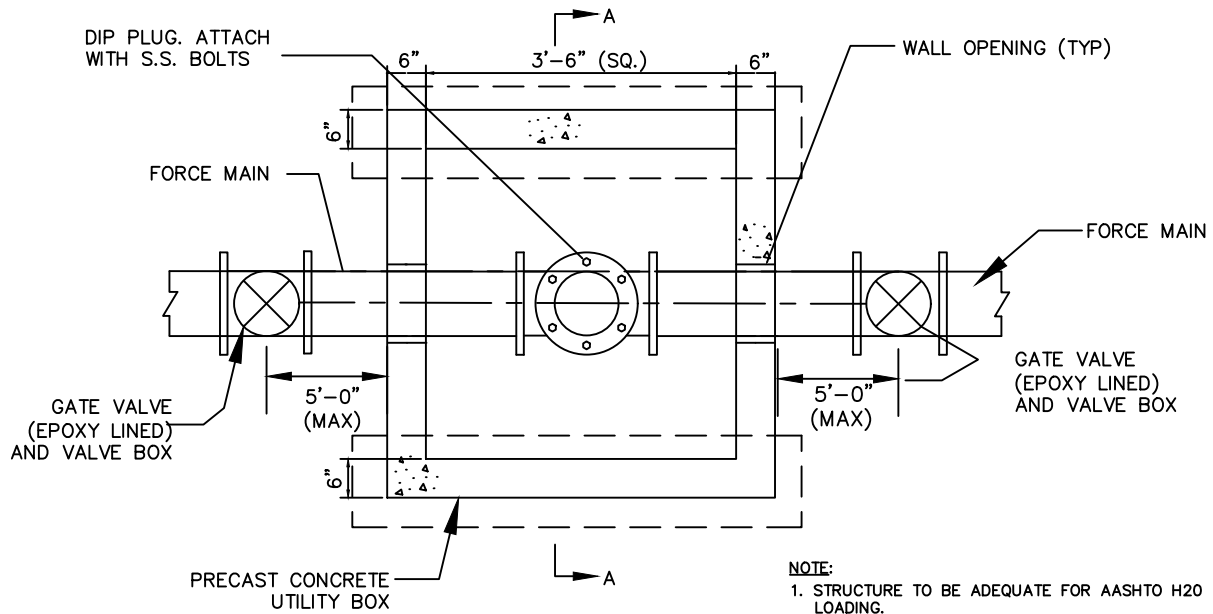
NTS

INDEX

S-10B

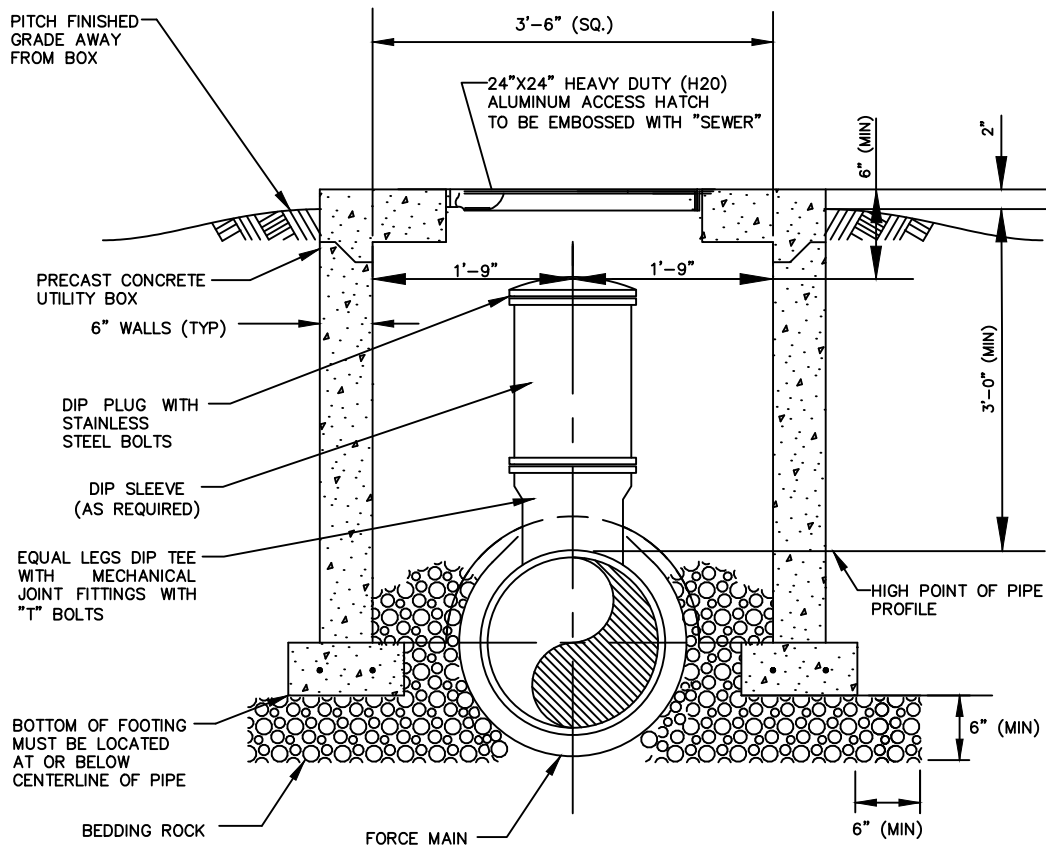
JAN - 2024





**PLAN**  
NO SCALE

- NOTE:**
1. STRUCTURE TO BE ADEQUATE FOR AASHTO H20 LOADING.
  2. NO SURFACE COATING REQUIRED ON VAULT
  3. ALUMINUM HATCH TO INCLUDE S.S. HINGE & SLAM LOCKS WITH REMOVABLE KEYS.
  4. DESIGNER IS RESPONSIBLE FOR PROVIDING CONSTRUCTION MATERIAL AND STEEL REINFORCING REQUIREMENTS
  5. ALL DIP TO BE EPOXY LINED.



**SECTION A-A**  
NO SCALE



STANDARD CONSTRUCTION DETAIL

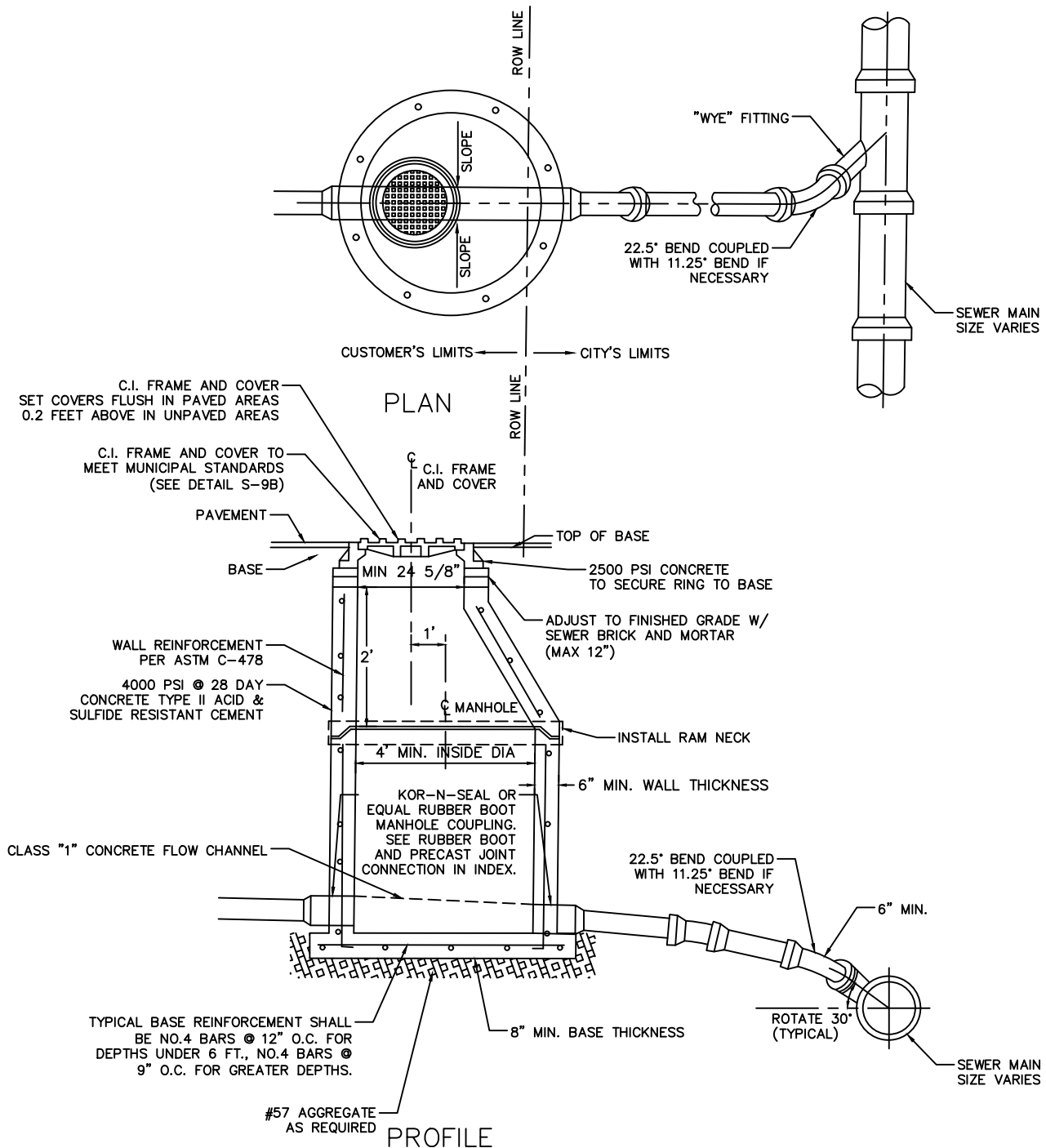
POLY PIG LAUNCHING VAULT

NTS

INDEX

S-11

JAN - 2024



- NOTES: 1. THE TOP OF THE CONE SHOULD BE SET 2 1/2" MIN. - 12" MAX. BELOW THE BOTTOM OF THE MANHOLE COVER FRAME TO ACCOMMODATE FUTURE GRADE CHANGES (USE BRICK AND MORTAR OR PRECAST CONCRETE RINGS).
2. MANHOLES WHICH RECEIVE DISCHARGE FROM A FORCE MAIN AND ANY MANHOLES LOCATED WITHIN 200' OF A LIFT STATION OR ANY MANHOLES OUTSIDE OF THE RIGHT-OF-WAY, A SULFIDE CORROSION-RESISTANT MATERIAL SHALL BE USED AS LINER FOR THOSE MANHOLES THAT MEET THE CONDITIONS STATED ABOVE. THE LINER SHALL BE EITHER FIBERGLASS OR PVC OR AS APPROVED BY THE CITY ENGINEER.
3. NO "DOGHOUSE" TYPE MANHOLES ARE ALLOWED.



## STANDARD CONSTRUCTION DETAIL

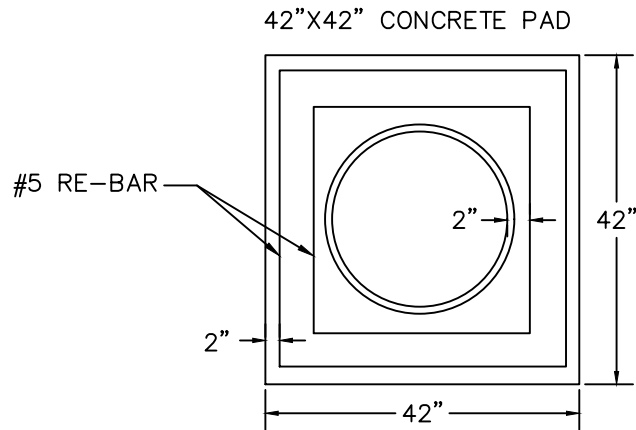
### COMMERCIAL TRAFFIC BEARING SAMPLING MANHOLE DETAIL

NTS

INDEX

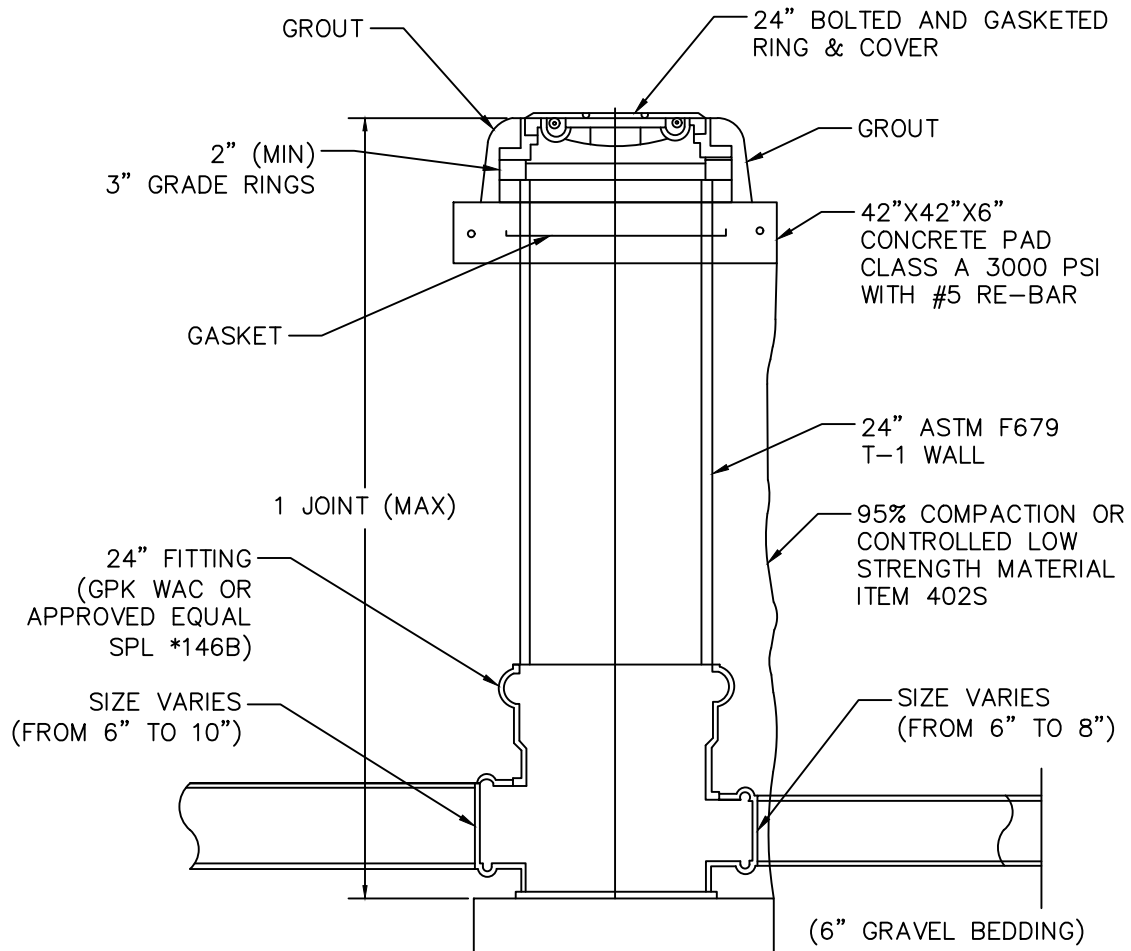
S-12A

JAN - 2024



CITY SIDE

OWNER SIDE



## STANDARD CONSTRUCTION DETAIL

COMMERCIAL NON-TRAFFIC BEARING  
SAMPLING MANHOLE DETAIL

NTS

INDEX

S-12B

JAN - 2024