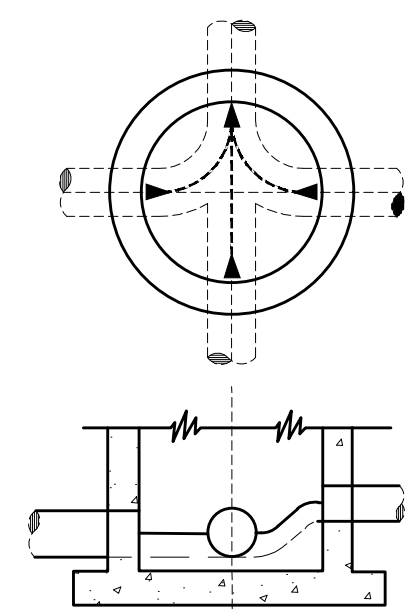


NOTES:

1. MATERIAL: FRAME AND COVER AS SPECIFIED.
2. ADDITIONAL GRADE RINGS MAY BE USED TO ELEVATE EXISTING MANHOLE FRAMES TO RESURFACED GRADE (MAX. 4" HEIGHT).
3. ALL DIMENSIONS ARE NOMINAL.
4. OPTIONAL: HINGED FRAME AND COVER AS SPECIFIED.

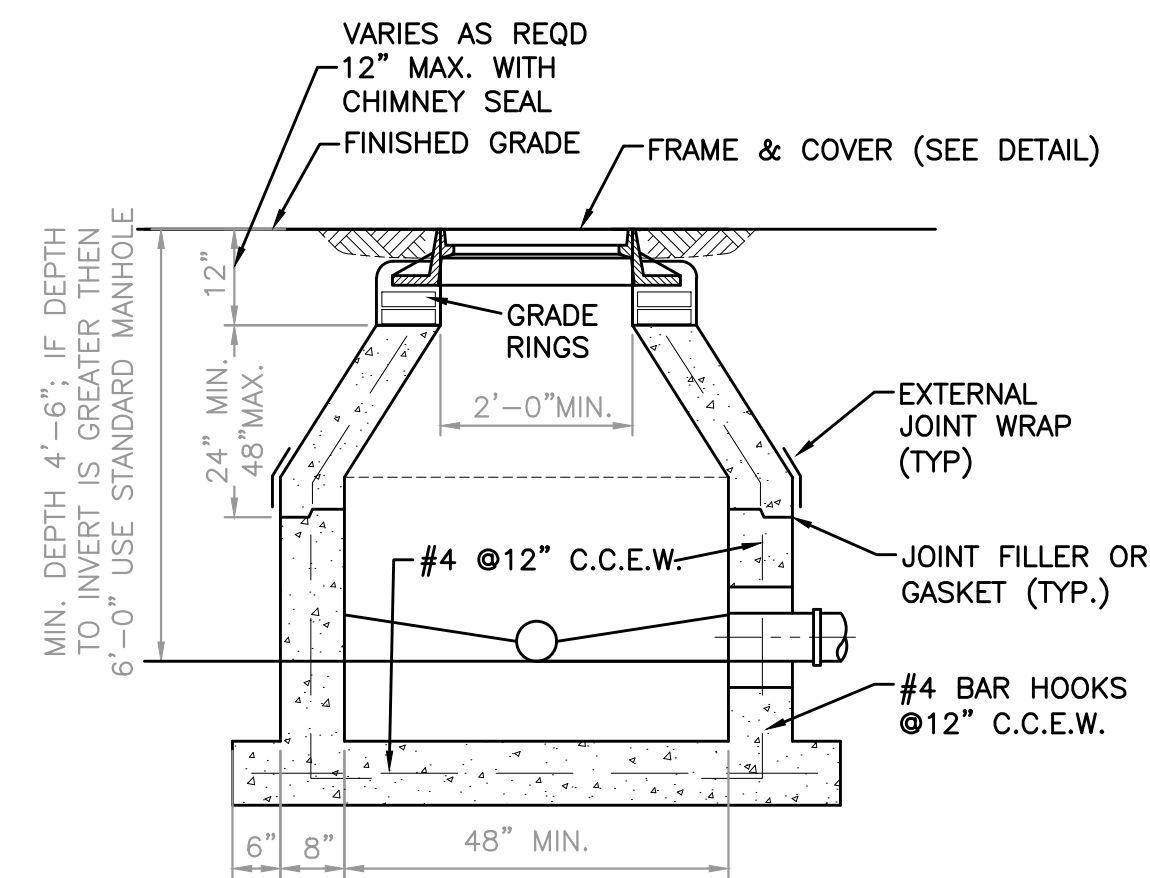
200 MANHOLE FRAME & COVER
PAVED AREAS
N.T.S.



NOTE:

1. ALL INVERT CHANNELS ARE TO BE CONSTRUCTED FOR SMOOTH FLOW WITHOUT OBSTRUCTION.
2. PROPERLY SHAPED SPILLWAYS SHALL BE CONSTRUCTED BETWEEN PIPES WITH DIFFERENT INVERT ELEVATIONS TO PROVIDE FOR SMOOTH FLOWS.
3. SERVICE LATERALS SHALL NOT ENTER MANHOLES UNLESS SPECIFIED ON PLANS AND THEN MUST BE TREATED AS MAINS. (ELEVATIONS SHOWN, PRECAST HOLE, FLOW CHANNEL)
4. BRICK RUBBLE PERMITTED AS FLOW CHANNEL BUILDUP.
5. SIDEWALLS OF FLOW CHANNEL SHALL BE AT LEAST HALF OF PIPE HEIGHT AT ALL POINTS.
6. NO INSIDE DROP LARGER THAN 6" SHALL BE ALLOWED WITH 3 OR 4 INVERTS AND MANHOLES WITH A CHANGE OF DIRECTION OF FLOW OF MORE THAN 45 DEGREES.

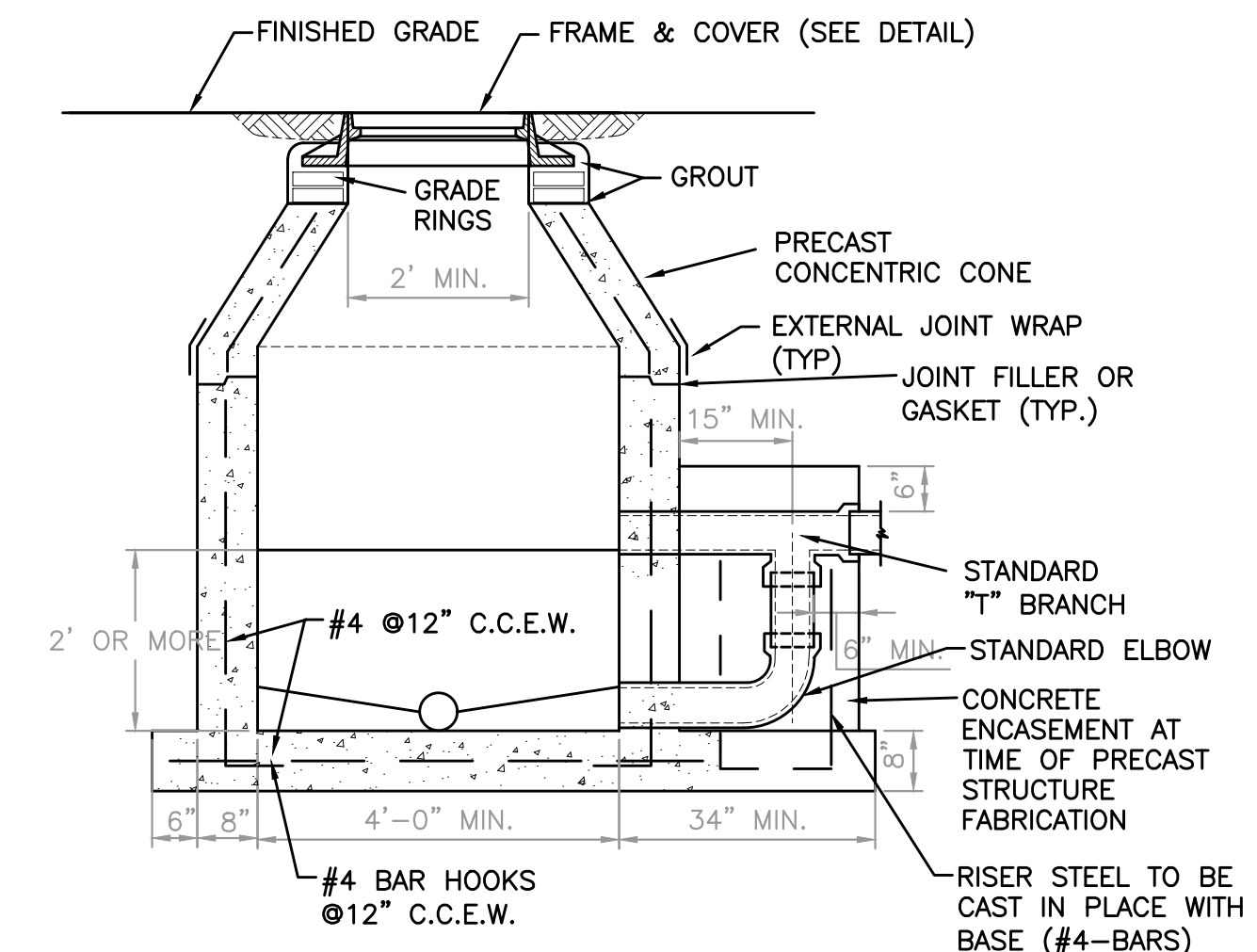
202 INVERT FLOW CHANNELS
N.T.S.



NOTE:

ALL STANDARD MANHOLE NOTES AND DETAILS ARE APPLICABLE

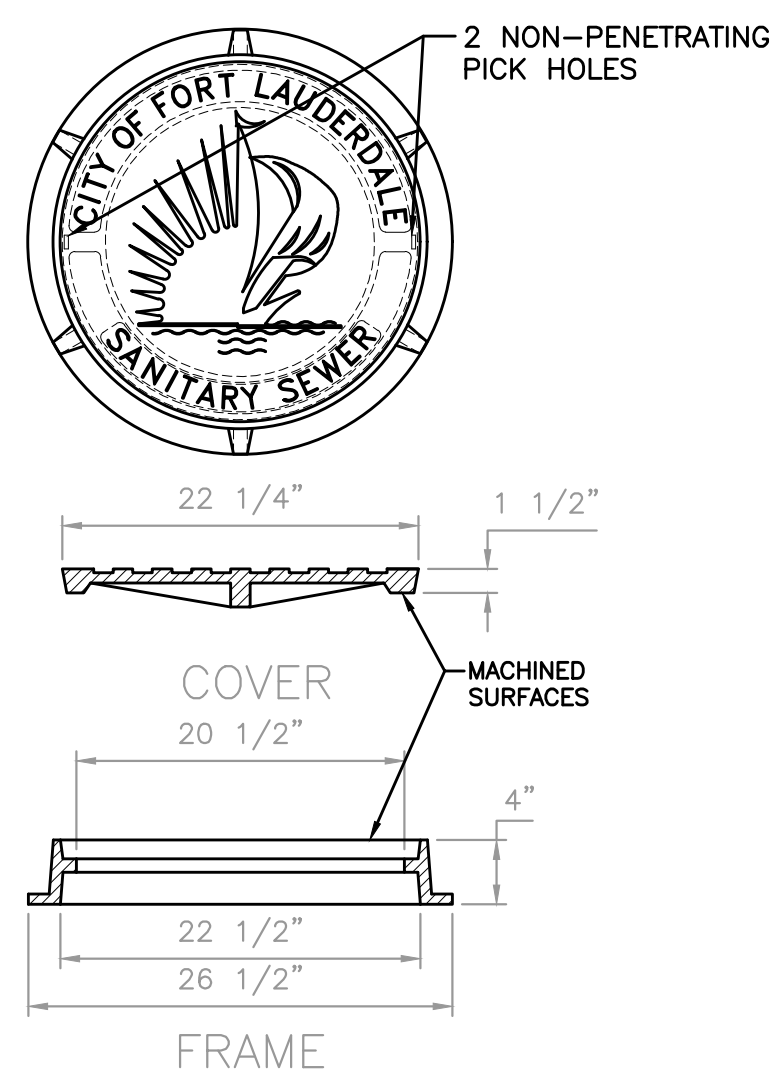
204 SHALLOW MANHOLE
N.T.S.



NOTES:

1. ALL DETAILS AND SPECIFICATIONS FOR STANDARD MANHOLES ARE APPLICABLE EXCEPT FOR REFERENCES TO DROP ASSEMBLY.
2. DROP CONNECTIONS SHALL BE REQUIRED WHENEVER AN INFLUENT INVERT IS LOCATED 2.0 FEET OR MORE ABOVE THE MAIN INVERT CHANNEL. DROP CONNECTIONS SHOULD NOT BE DESIGNED FOR LESS THAN A 2.0 FOOT DROP.
3. SOLVENT TYPE JOINT PVC FITTINGS TO BE UTILIZED IN THE DROP ASSEMBLY ONLY.
4. THE PRECAST BASE SHALL EXTEND FULLY UNDER THE DROP ASSEMBLY AND BE CONSTRUCTED MONOLITHICALLY WITH THE BASE SECTION.
5. BRICK AND CONCRETE RUBBLE ARE PERMITTED AS FILLER IN DROP ENCASEMENT.

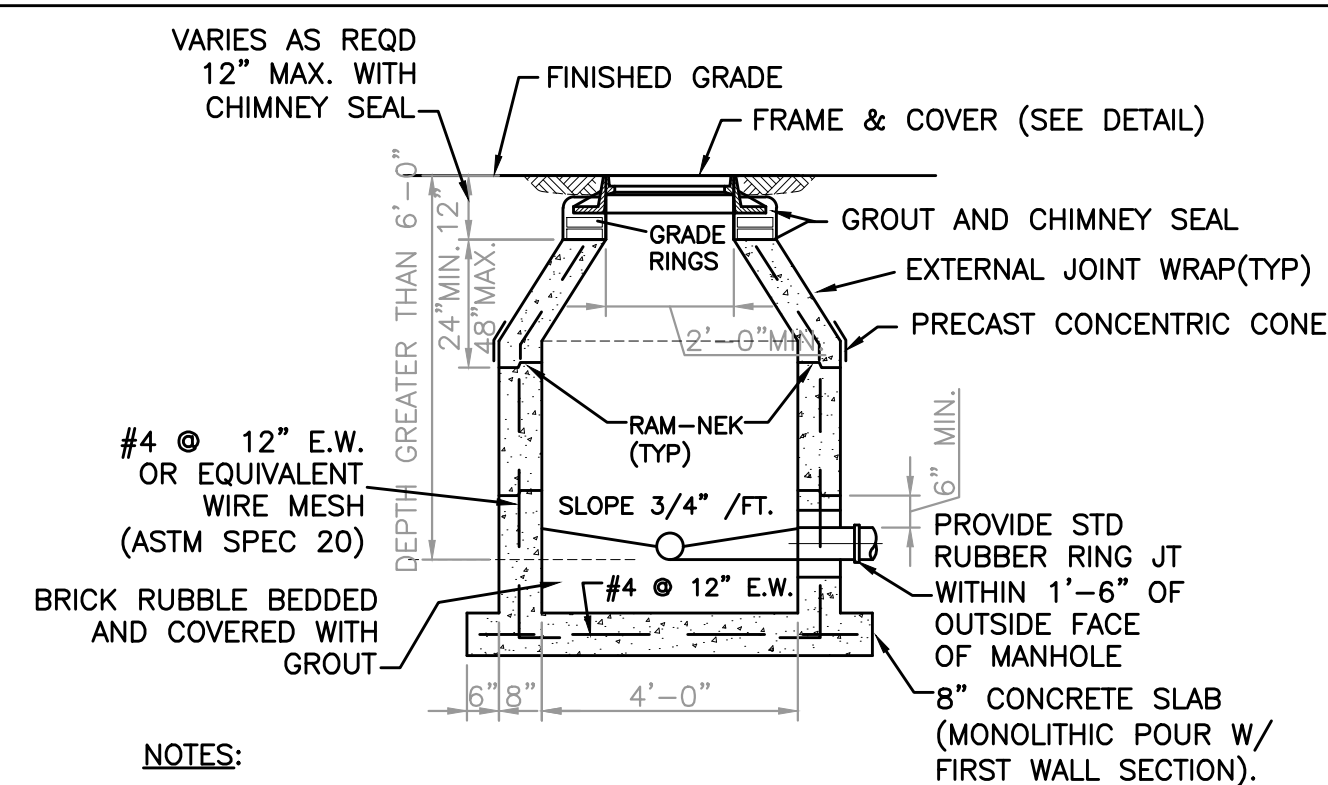
206 OUTSIDE DROP CONNECTION
PRECAST MANHOLE - TYPE B
N.T.S.



NOTES:

1. MATERIAL: FRAME AND COVER AS SPECIFIED.
2. ADDITIONAL GRADE RINGS MAY BE USED TO ELEVATE EXISTING MANHOLE FRAMES TO RESURFACED GRADE (MAX. 4" HEIGHT).
3. ALL DIMENSIONS ARE NOMINAL.
4. OPTIONAL: HINGED FRAME AND COVER AS SPECIFIED.

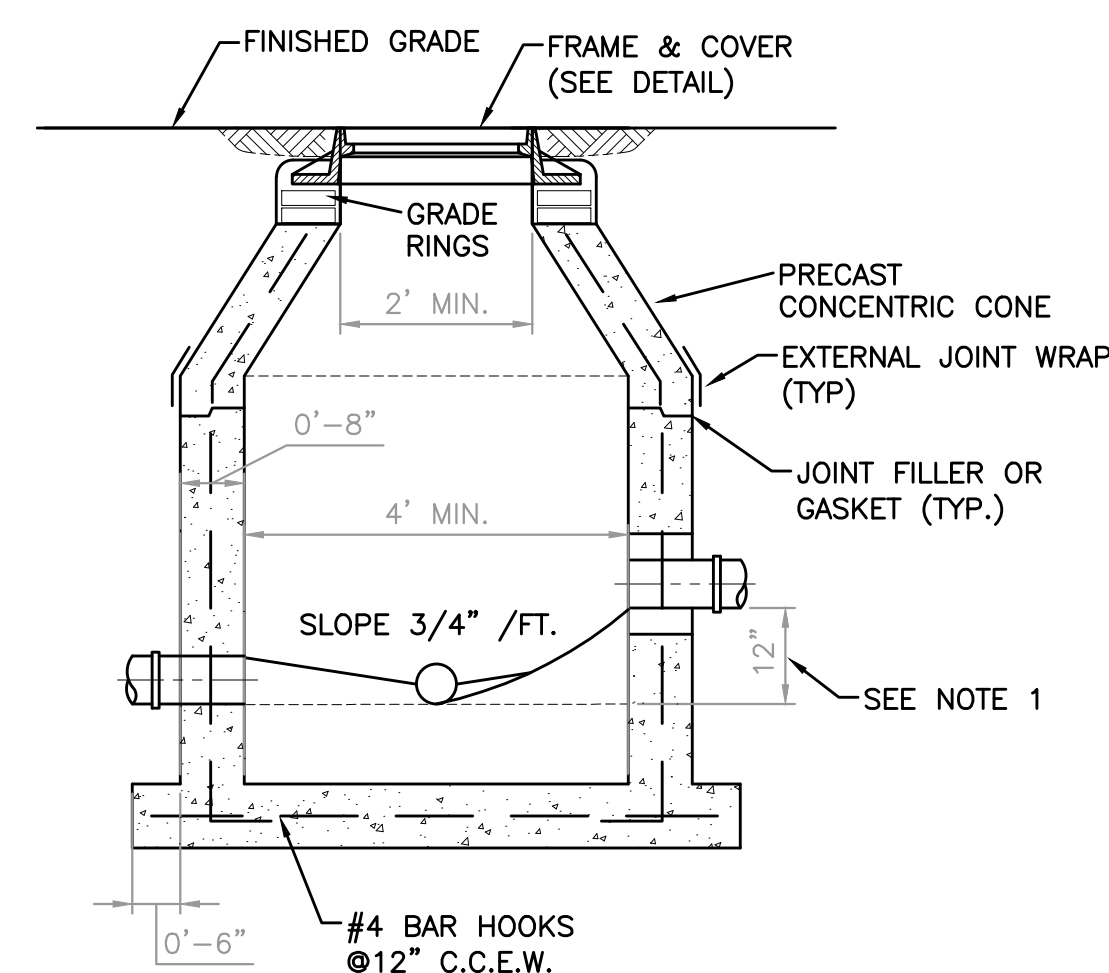
201 MANHOLE FRAME & COVER
UNPAVED AREAS
N.T.S.



NOTES:

1. PRECAST CONCRETE TYPE II 4000 P.S.I.
2. "RAM-NEK" OR EQUAL AT ALL RISER JOINTS (1/2" THICK WITH THE WIDTH AT LEAST 1/2 THE WALL THICKNESS).
3. ALL OPENINGS SHALL BE SEALED WITH A WATERPROOF NON-SHRINKING GROUT.
4. FLOW CHANNELS SHALL BE CONSTRUCTED TO DIRECT INFLUENT INTO FLOW STREAM. (SEE DETAIL)
5. LIFT HOLES ARE PERMITTED.
6. ALL PIPE HOLES SHALL BE PRECAST OR CORE DRILLED.
 - A. FOR PVC PIPE ENTERING MANHOLE WITH PRECAST HOLES USE THE APPROVED NON-ASBESTOS PVC-MANHOLE ADAPTER OR PRECAST FLEXIBLE MANHOLE SLEEVE FOR THE APPROPRIATE PIPE DIAMETER AND DIMENSION RATIO. THE ADAPTER SHALL NOT EXTEND MORE THAN 1" INTO THE MANHOLE. DOUBLE BANDING IS REQUIRED FOR FLEXIBLE MANHOLE SLEEVE.
 - B. CONNECTION TO A MANHOLE WITH A CORE DRILLED HOLE SHALL BE MADE USING A 5" MIN. DUCTILE IRON PIPE SECTION (EPOXY LINED) OR THE APPROVED PVC-MANHOLE ADAPTER.
7. INSIDE DROPS SHALL NOT BE DESIGNED TO EXCEED 1.80 FEET AND NOT CONSTRUCTED TO EXCEED 2.0 FEET. MAX. 6" INSIDE DROP IS PERMITTED FOR MANHOLES WITH 3 OR MORE INVERTS AND MANHOLES WITH A CHANGE IN FLOW DIRECTION OF MORE THAN 45 DEGREES.
8. MANHOLE FABRICATION SHALL BE IN ACCORDANCE WITH ASTM C-478, LATEST STANDARD.
9. MINIMUM 5 FEET IS REQUIRED BETWEEN OUTSIDE OF MANHOLE AND SERVICE WYE.
10. MANHOLES TO BE PAINTED INSIDE AND OUTSIDE WITH 2 COATS OF AN APPROVED PROTECTIVE COATINGS. (ONE COAT RED, ONE COAT BLACK) MIN. 8-10 MILS D.F.T. PER COAT.
11. MANHOLE SHALL BE SET PLUMB TO LINE AND GRADE.

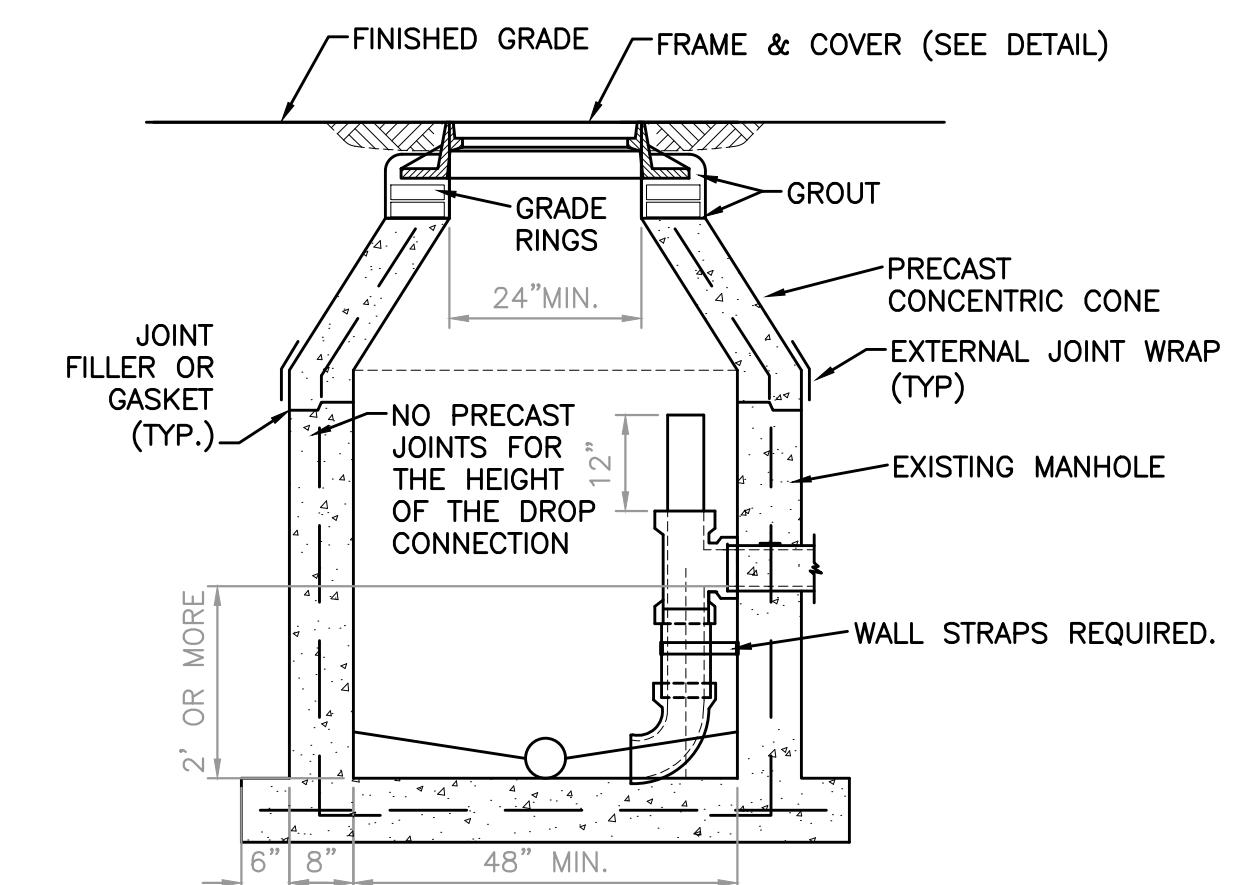
203 STANDARD MANHOLE
N.T.S.



NOTES:

1. INSIDE DROP TO BE USED WHEN DROP IS GREATER THAN 6 INCHES AND LESS THAN 24 INCHES AND/OR FOR LATERAL CONNECTIONS.
2. A FLOW CHANNEL SHALL BE CONSTRUCTED INSIDE MANHOLE TO DIRECT INFLUENT INTO FLOW STREAM.
3. CONSTRUCTION OF DROP SHALL PROVIDE AN OVERSIZED SLAB TO EXTEND UNDER THE DROP CONNECTION.
4. MINIMUM PIPE SIZE FOR DROP IS 8".
5. SEE "STANDARD MANHOLE" DETAIL FOR ADDITIONAL REQUIREMENTS.

205 DROP CONNECTION PRECAST
MANHOLE - TYPE A
N.T.S.



NOTES:

1. ALL DETAILS AND SPECIFICATIONS FOR STANDARD MANHOLES ARE APPLICABLE EXCEPT FOR REFERENCES TO DROP ASSEMBLY.
2. INSIDE DROP CONNECTION TO BE USED ONLY FOR A SINGLE DROP CONNECTION TO AN EXISTING MANHOLE.
3. DROP CONNECTIONS SHALL BE REQUIRED WHENEVER AN INFLUENT INVERT IS LOCATED 2.0 FEET OR MORE ABOVE THE MAIN INVERT CHANNEL. DROP CONNECTIONS SHOULD NOT BE DESIGNED FOR LESS THAN A 2.0 FOOT DROP.
4. SOLVENT TYPE JOINT PVC FITTINGS TO BE UTILIZED IN THE DROP ASSEMBLY ONLY.

207 INSIDE DROP CONNECTION
EXISTING MANHOLE - TYPE C
N.T.S.

ENGINEER:
#Name #NO.
DATE DATE
DATE DATE

DRAWN BY: CMB
DESIGNED BY: SCALE:
CHECKED BY:
FIELD BOOK:

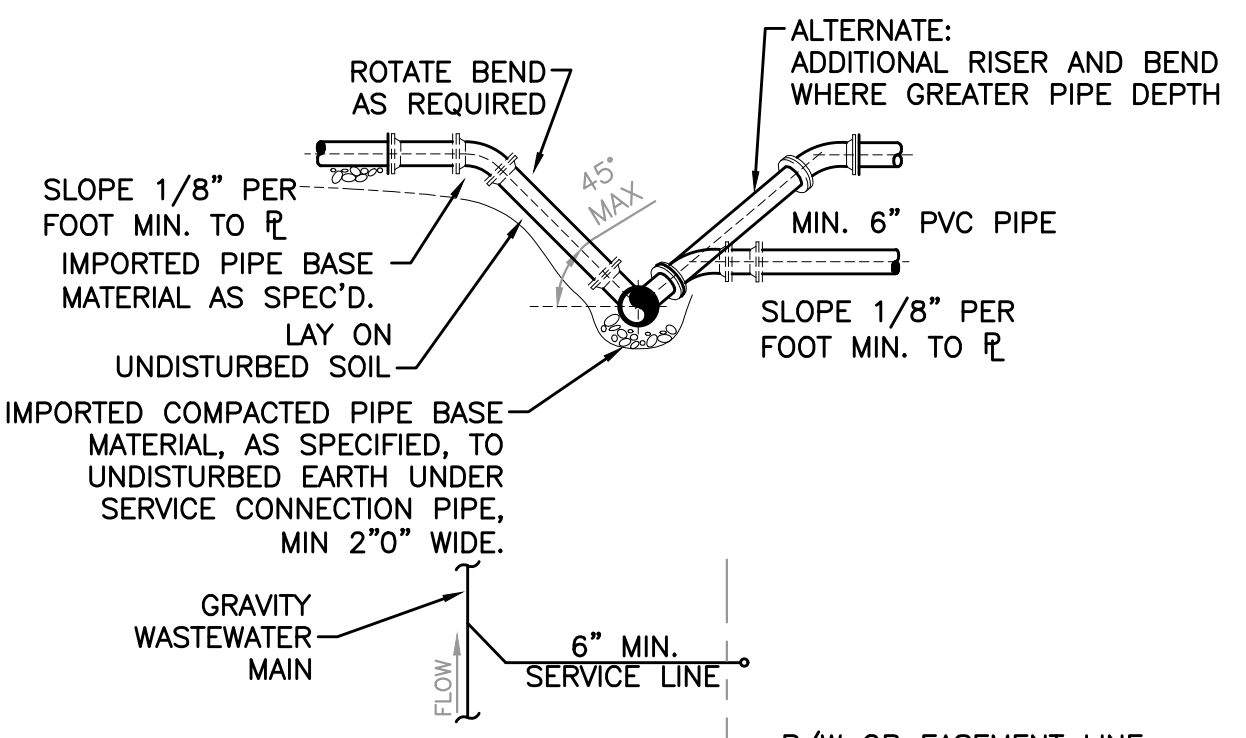
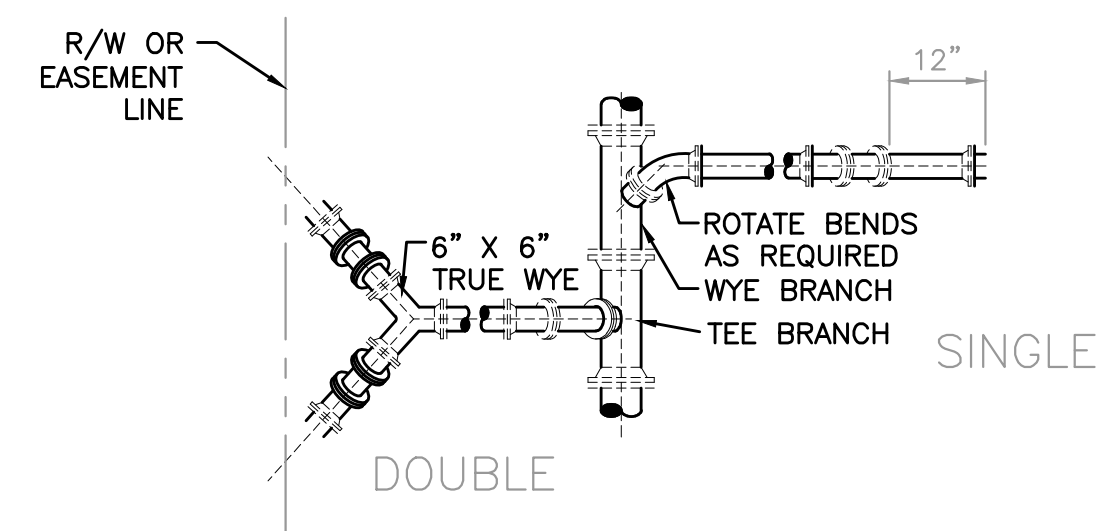
CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	BY	CH'D	REVISIONS	DESCRIPTION

PROJECT # P0000
PROJECT NAME
DESCRIPTION
SHEET
PLACE PROJECT ADDRESS

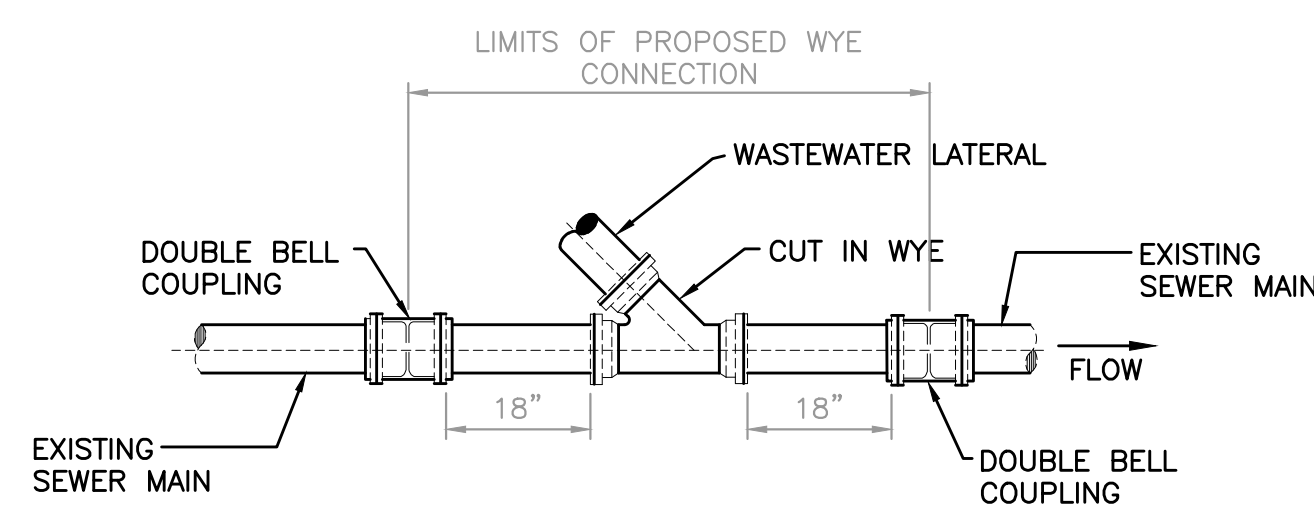
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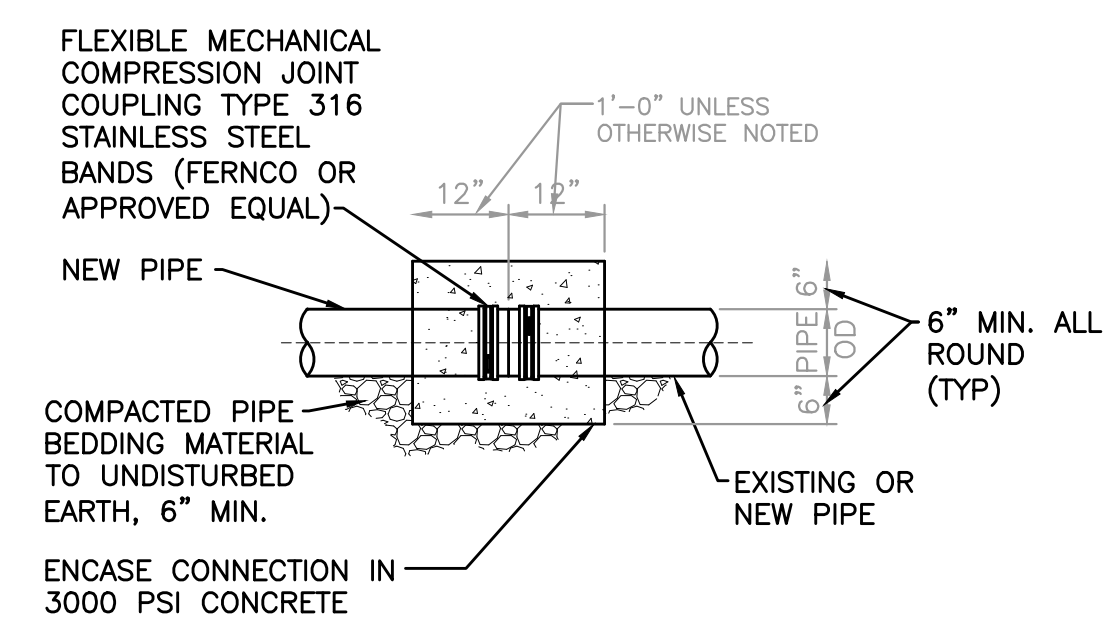


- NOTES:**
1. ALL NEW OR REPLACED SANITARY SEWER SERVICES SHALL BE SINGLE CONNECTIONS. TRUE WYE DOUBLE CONNECTIONS ARE NOT ALLOWED. THE ABOVE TRUE WYE DETAIL IS SHOWN HERE FOR REFERENCE PURPOSES ONLY. FOR CASES WHEN A WYE ALREADY EXISTS AND THE SERVICE LINE IS NOT BEING REPLACED.
 2. WASTEWATER MAIN WYE BRANCH TO MATCH MAIN PIPE MATERIAL.
 3. NO 90° BENDS SHALL BE USED FOR WASTEWATER SERVICE AND CLEANOUT INSTALLATIONS.
 4. SERVICE LATERALS SHALL TERMINATE AT 12" INSIDE THE PROPERTY LINE AT A DEPTH OF 3 FEET EXCEPT WHERE A DEEPER INVERT IS REQUIRED BY EXISTING BUILDING CONDITIONS.

208 TYPICAL WASTEWATER SERVICE CONNECTION N.T.S.



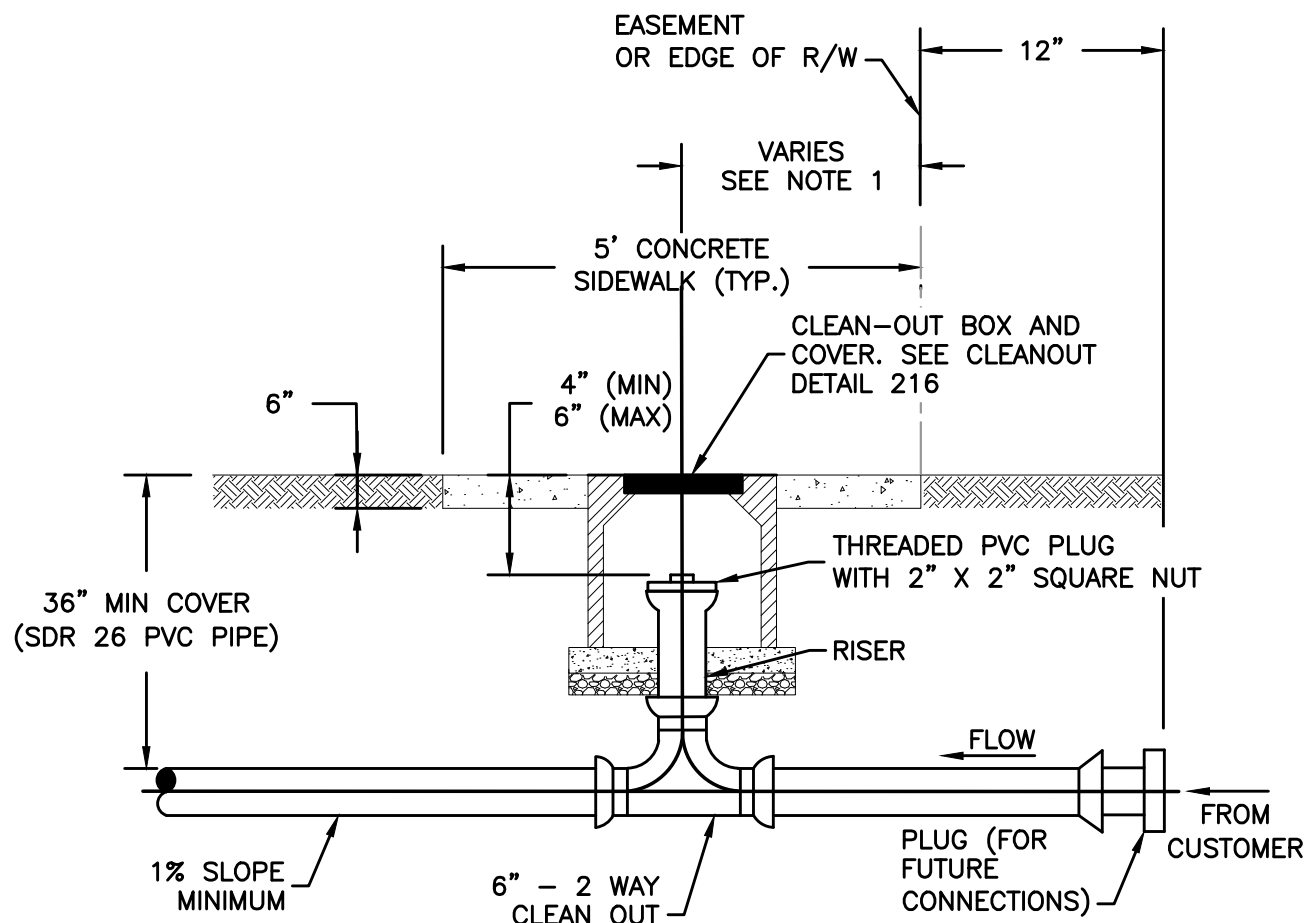
210 NEW LATERAL ON EXISTING GRAVITY WASTEWATER MAIN N.T.S.



- NOTE:**
1. IN PLACE OF CONCRETE ENCASEMENT, WITH CITY'S ADVANCE APPROVAL, THE CONTRACTOR MAY USE SHEAR-RING COUPLINGS (FERNCO OR APPROVED EQUAL) PROVIDED THAT ALL METAL PARTS ARE SHOWN TO BE 316 STAINLESS STEEL.

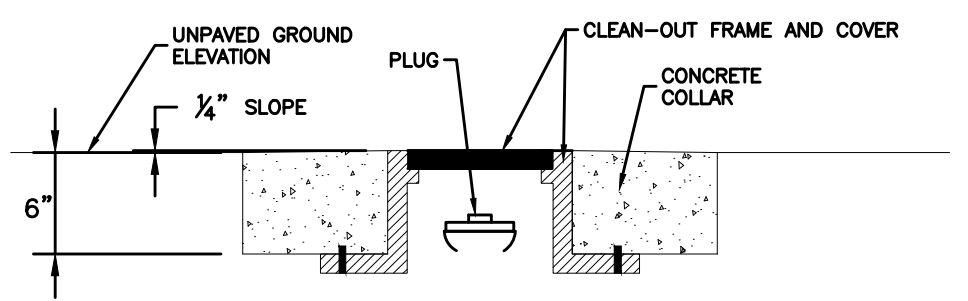
211 JOINT FOR DISSIMILAR GRAVITY SEWER PIPE N.T.S.

- SEWER SYSTEM NOTES**
- ABANDONMENT OF EXISTING WASTEWATER SERVICE CONNECTIONS.**
1. EXISTING SEWER LATERAL CONNECTIONS TO BE ABANDONED AS PART OF NEW CONSTRUCTION AND TO BE REPLACED WITH NEW CONNECTIONS MUST BE SEALED OFF USING SECTIONAL CURED-IN PLACE (CIP) LINERS.
 2. CIP LINER CONTRACTOR MUST BE DULY LICENSED BY BROWARD COUNTY, FLORIDA AND CERTIFIED BY THE EQUIPMENT MANUFACTURER AND/OR ITS AUTHORIZED REPRESENTATIVE TO PERFORM SUCH INSTALLATIONS.
- INSTALLATION OF NEW WASTEWATER SERVICE CONNECTIONS**
3. NEW SERVICE CONNECTIONS TO COMPLY WITH STANDARD DETAIL 208.
 4. NEW WASTEWATER SERVICE CONNECTIONS TO LINED GRAVITY SEWER SHALL BE CONSTRUCTED BY INSTALLING A LMT(LINED MAIN TAP) SADDLE INSTALLATION SYSTEM ENGINEERED TO CONNECT A LATERAL SERVICE PIPE TO A LINER INSIDE A REHABILITATED MAINLINE (LMK TECHNOLOGIES OR APPROVED EQUAL). TO BE INSTALLED PER MANUFACTURER INSTRUCTIONS.
 5. CLEANOUT MUST BE PROVIDED PER STANDARD DETAIL S213.
 6. CONTRACTOR SHALL PERFORM POST CCTV INSPECTION FOR NEW WASTEWATER SERVICE CONNECTION. SUBMIT COPY OF CCTV FILE TO CITY'S DSD AND PW ENGINEERING STAFF FOR INSPECTION OF DEFECTS OR DISTORTION TO MAINLINER.



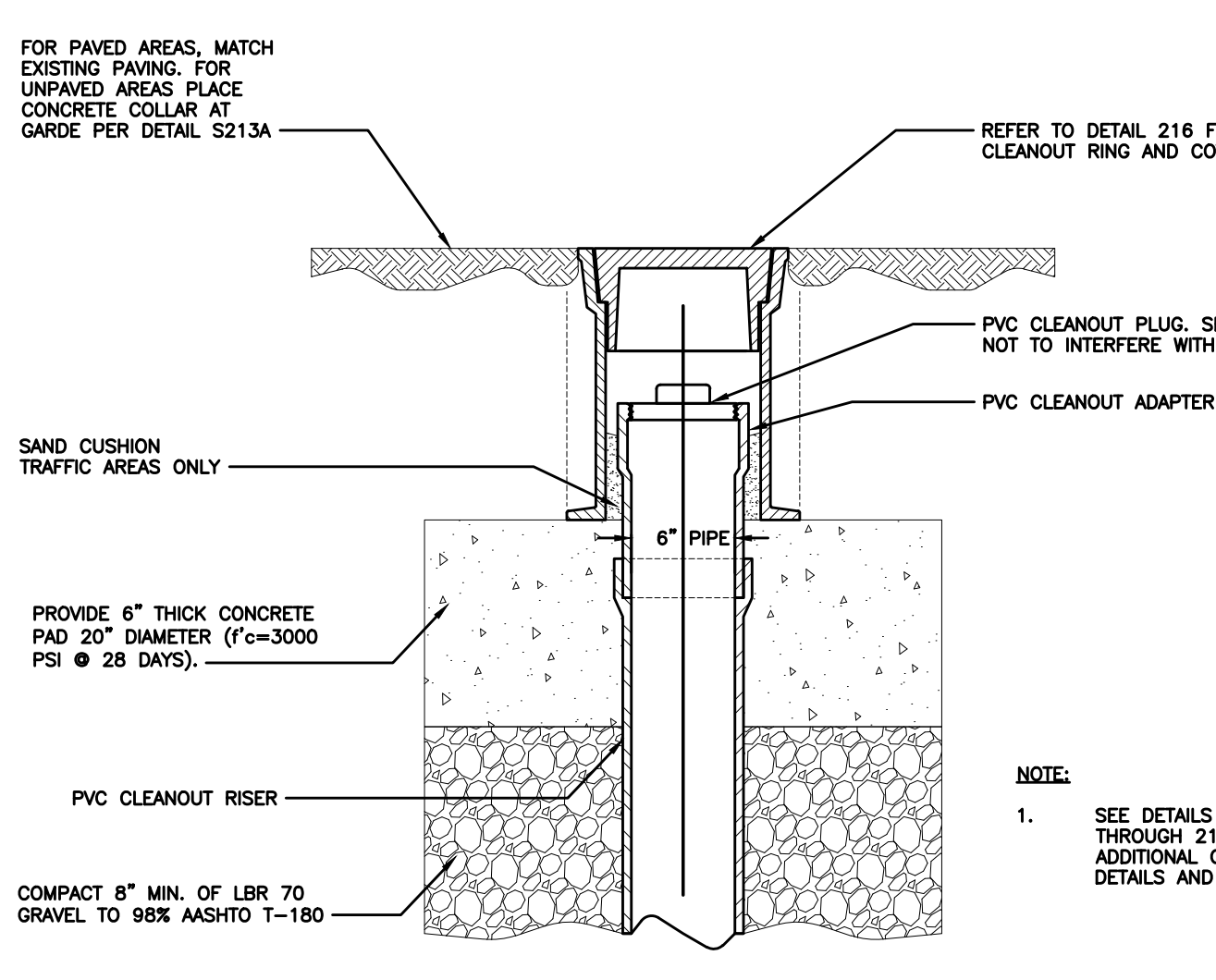
1. THE PROPOSED CLEANOUT SHALL BE INSTALLED WITHIN THE PUBLIC RIGHT-OF-WAY OR EASEMENT. IT SHALL BE INSTALLED IN THE MIDDLE OF THE SIDEWALK IF A SIDEWALK EXISTS ADJACENT TO THE PROPERTY LINE. THIS DIMENSION WILL VARY DEPENDING UPON THE WIDTH OF THE SIDEWALK. IF SIDEWALKS DO NOT EXIST, THE CLEAN OUT SHALL BE INSTALLED 2.5' (MIN.) - 3.0' (MAX) FROM THE RIGHT-OF-WAY LINE.
2. A NEW SECTION OF SIDEWALK SHALL BE POURED AROUND THE CLEAN-OUT BOX WHEN WORKING IN AN AREA WITH EXISTING SIDEWALKS. IF TRENCHLESS METHOD IS USED FOR CLEANOUT INSTALLATION, WHERE A PORTION OF THE CONCRETE SIDEWALK IS REMOVED BY CORE CUTTING, THE CIRCULAR CONCRETE CORE SURROUNDING THE CLEANOUT MAY BE RESTORED WITHOUT REPLACING THE ENTIRE SIDEWALK SLAB, AS LONG AS NO OTHER CRACKS AND/OR DEFECTS EXIST ON THE SLAB. IF CRACKS AND/OR DEFECTS EXIST ON THE SLAB, THE ENTIRE SLAB MUST BE REPLACED.
3. IN UNPAVED AREAS INSTALL 24-INCH-SQUARE OR 24-INCH-DIAMETER CONCRETE COLLAR (3,000 PSI AT 28 DAYS), FORMED UP TO AND AROUND THE CLEAN-OUT BOX AND HAVING A DEPTH OF 6-INCHES. THE COMPLETED CONCRETE COLLAR SHALL BE BROOM-FINISHED AND LEVEL WITH THE CLEAN-OUT BOX COVER AND FINISHED GRADE ELEVATION OF SURROUNDING GRASS, MULCH, GRAVEL, OR OTHER. SLOPE COLLAR FROM CENTER TO EDGE 1/4-INCH PER DETAIL S213A.
4. SEE DETAILS 213 THROUGH 216 FOR ADDITIONAL CLEANOUT DETAILS AND NOTES.

213 SANITARY SERVICE CONNECTION AT PROPERTY LINE OR EASEMENT LINE (PROFILE) N.T.S.

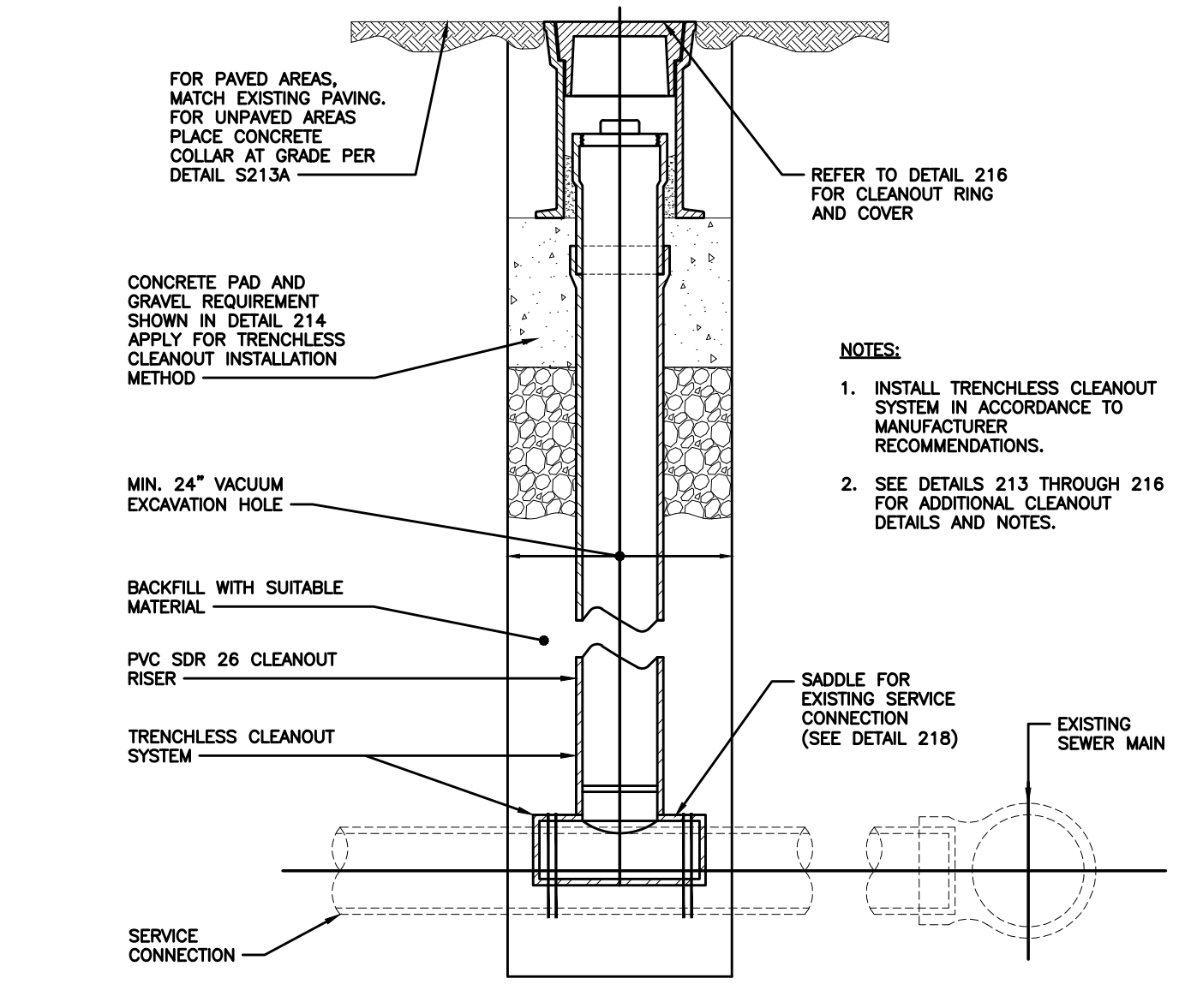


213A CONCRETE COLLAR FOR CLEANOUTS IN UNPAVED AREAS N.T.S.

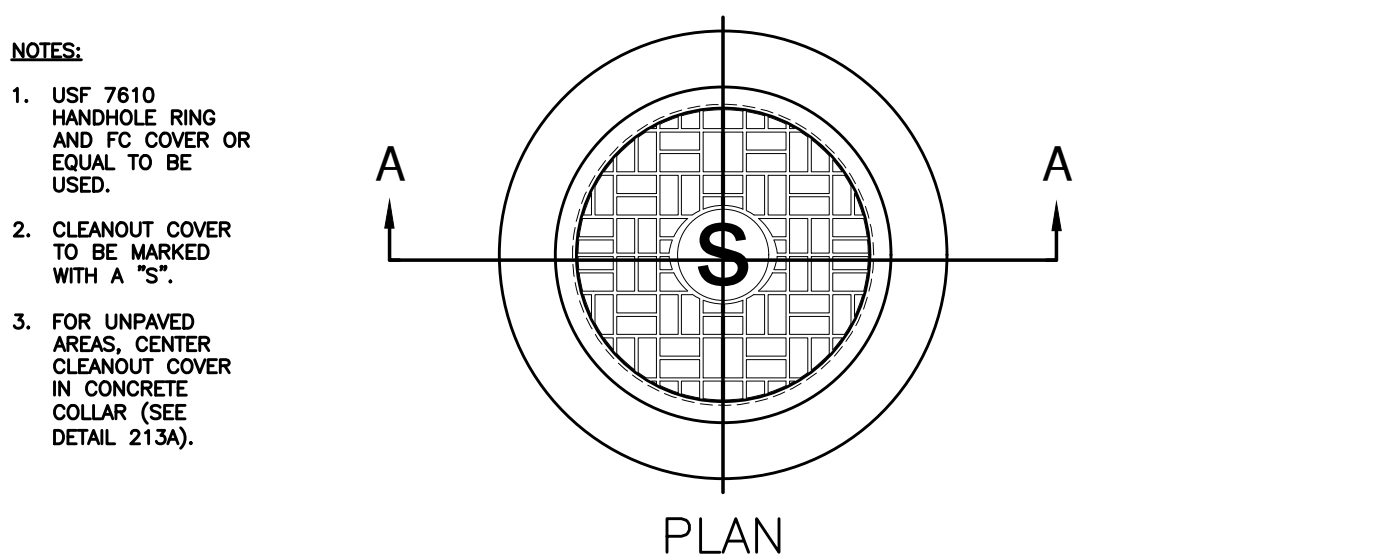
- EXPANSION PLUG NOTES:**
1. EXPANSION PLUG SHALL NOT INTERFERE WITH LID.
 2. PLUG FLANGE SHALL BE LARGER THAN PIPE I.D.
 3. THREADED COMPONENTS SHALL BE FLATTENED OR STAKED TO PREVENT DISASSEMBLY.



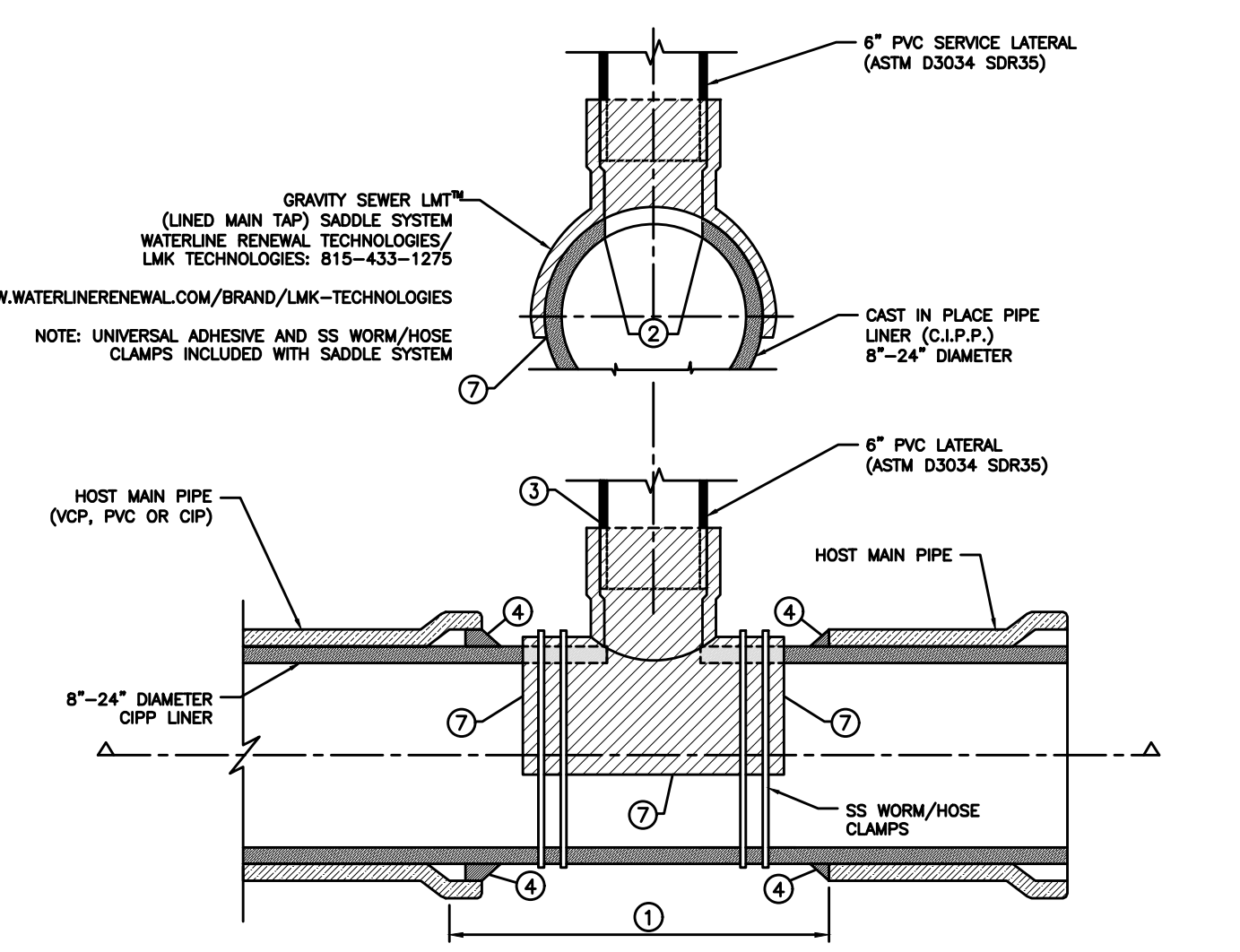
214 CLEAN-OUT COVER ASSEMBLY FOR 6-INCH CLEANOUTS N.T.S.



215 TRENCHLESS CLEANOUT SYSTEM FOR INSTALLATION ON 4-INCH AND 6-INCH SANITARY SERVICE CONNECTIONS N.T.S.

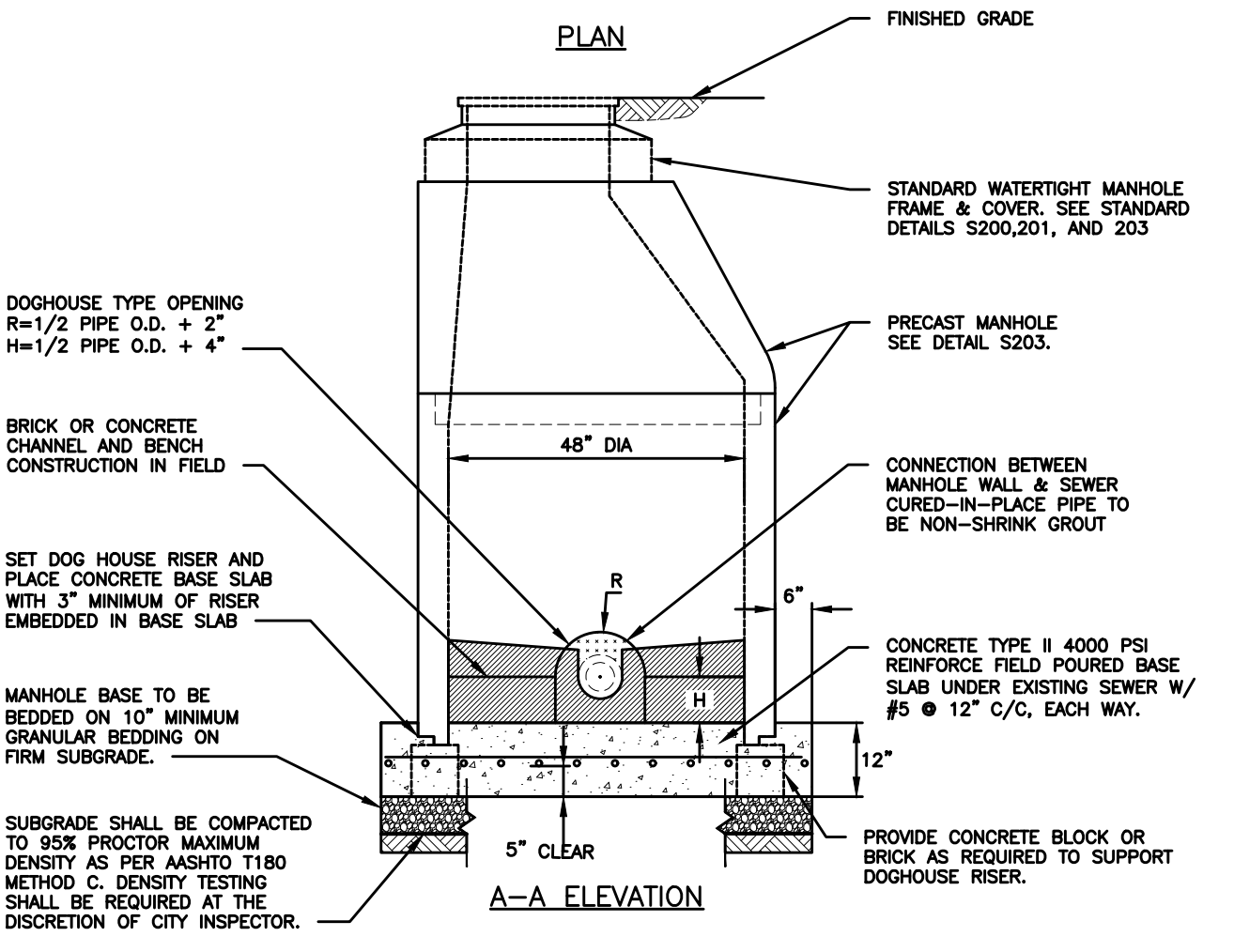
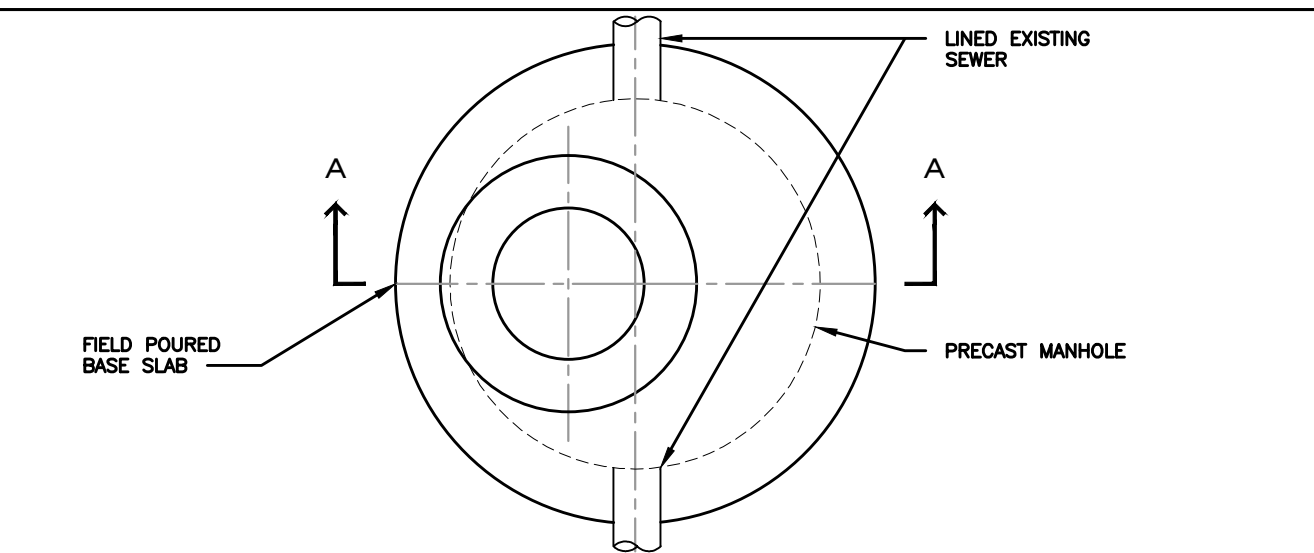


216 CLEANOUT RING AND COVER N.T.S.



- LEGEND**
- 1 CUT & REMOVE SECTION OF HOST PIPE WHERE SERVICE CONNECTION IS TO BE MADE WITHOUT DAMAGING CIP LINER.
 - 2 CUT HOLE FOR LATERAL WITH DIAMETER EQUAL TO INSIDE DIAMETER OF THE PVC LATERAL IN MAIN SEWER LINER WITH POWER TOOL.
 - 3 CONNECT 6" PVC SEWER LATERAL BY LMT(LINED MAIN TAP) SADDLE SYSTEM.
 - 4 SEAL THE PIPE CUTS WITH HYDRAULIC CEMENT.
 - 5 IF NEW LATERAL SERVICE CONNECTION IS BEING CONSTRUCTED SEE TYPICAL WASTEWATER SERVICE CONNECTION DETAIL 208.
 - 6 IF A NEW CLEAN-OUT COVER ASSEMBLY MUST BE INSTALLED SEE STANDARD DETAILS 213, 213A, 214, 215 AND 216 FOR REFERENCE.
 - 7 UNIVERSAL ADHESIVE TO BE ON THE INSIDE OF SADDLE TO FORM WATER TIGHT SEAL BETWEEN LINER AND HOST PIPE. SEE MANUFACTURER'S SPECIFICATIONS FOR MORE APPLICATION INSTRUCTIONS.

218 SADDLE TEE FASTENED TO LINED GRAVITY MAIN N.T.S.



- NOTES: INSTALLATION OF NEW PRECAST CONCRETE MANHOLE(S) BUILT OVER EXISTING CIP LINER.**
1. ALL NEW MANHOLES MUST BE CONSTRUCTED PER STANDARD DETAIL S212 BY EXCAVATING TO HOST PIPE ELEVATION.
 2. REMOVE HOST PIPE MATERIAL (E.G. VCP) FROM AREA OF NEW DOG HOUSE MANHOLE INSTALLATION.
 3. CONTRACTOR SHALL NOT COMPROMISE STRUCTURAL INTEGRITY OF THE CIP LINER.
 4. CONTRACTOR SHALL PROPERLY SEAL CONNECTIONS BETWEEN DOG HOUSE MANHOLE AND CIP LINER WITH NON-SHRINK GROUT TO AVOID INFILTRATION AND INFLOW CONTRIBUTION TO THE CITY'S COLLECTION SYSTEM PER STANDARD DETAIL S212.
 5. MANHOLE BENCH SHALL BE CONSTRUCTED TO INCORPORATE THE BOTTOM HALF OF THE CIP LINER AS PART OF THE MANHOLE TROUGH.
 6. UPON FINAL CONSTRUCTION AND CURING OF THE MANHOLE BENCH THE INSIDE OF THE MANHOLE SHALL BE LINED UTILIZING SPRAY APPLIED POLYMERIC (EPOXY AND URETHANE) RESINS, RAVEN LINING SYSTEMS, IET COATING (PAINTS AND COATINGS, INC.) OR APPROVED EQUAL MUST BE UTILIZED.
 7. ALL NEW DOGHOUSE MANHOLE INSTALLATIONS MUST BE INSPECTED BY CITY INSPECTORS WHO SHALL WITNESS ALL PHASES OF CONSTRUCTION.
 8. CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE POST CCTV INSPECTION OF MAINLINE/ MANHOLE INTERCONNECTIONS.
 9. QUALITY OF CCTV INSPECTION FILES MUST CLEARLY SHOW SUCH INTERCONNECTION IN ORDER TO EVALUATE AND APPROVE. CONTRACTOR SHALL SUBMIT A COPY OF CCTV FILE TO DSD AND PW ENGINEERING STAFF FOR REVIEW AND APPROVAL.

212 PRECAST CONCRETE MANHOLE BUILT OVER EXISTING CURED IN PLACE LINED SEWER PIPE N.T.S.

ENGINEER: #NAME, #NO, #NO, DATE, #DATE

DRAWN BY: #NAME, #NO, #NO, DATE, #DATE

CITY OF FORT LAUDERDALE
PUBLIC WORKS DEPARTMENT
ENGINEERING & ARCHITECTURE
100 North Andrews Avenue, Fort Lauderdale, Florida 33301

NO.	DATE	BY	CHK'D	DESCRIPTION
1	03/04/21	HRS	AT	UPDATE FOR I&I PROGRAM
2	2/22/2024	RB	RB	

PROJECT # P0000
PROJECT NAME
DESCRIPTION
SHEET
PLACE PROJECT ADDRESS

SHEET NO.
SSWR02
TOTAL: 0
CAD FILE: FTLAUD-SSWR02
DRAWING FILE NO. 4-XXX-XX

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