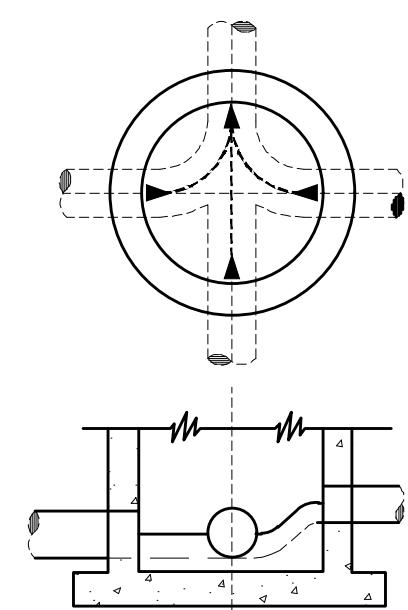


NOTES:

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.

MANHOLE FRAME & COVER
PAVED AREAS

200 N.T.S.

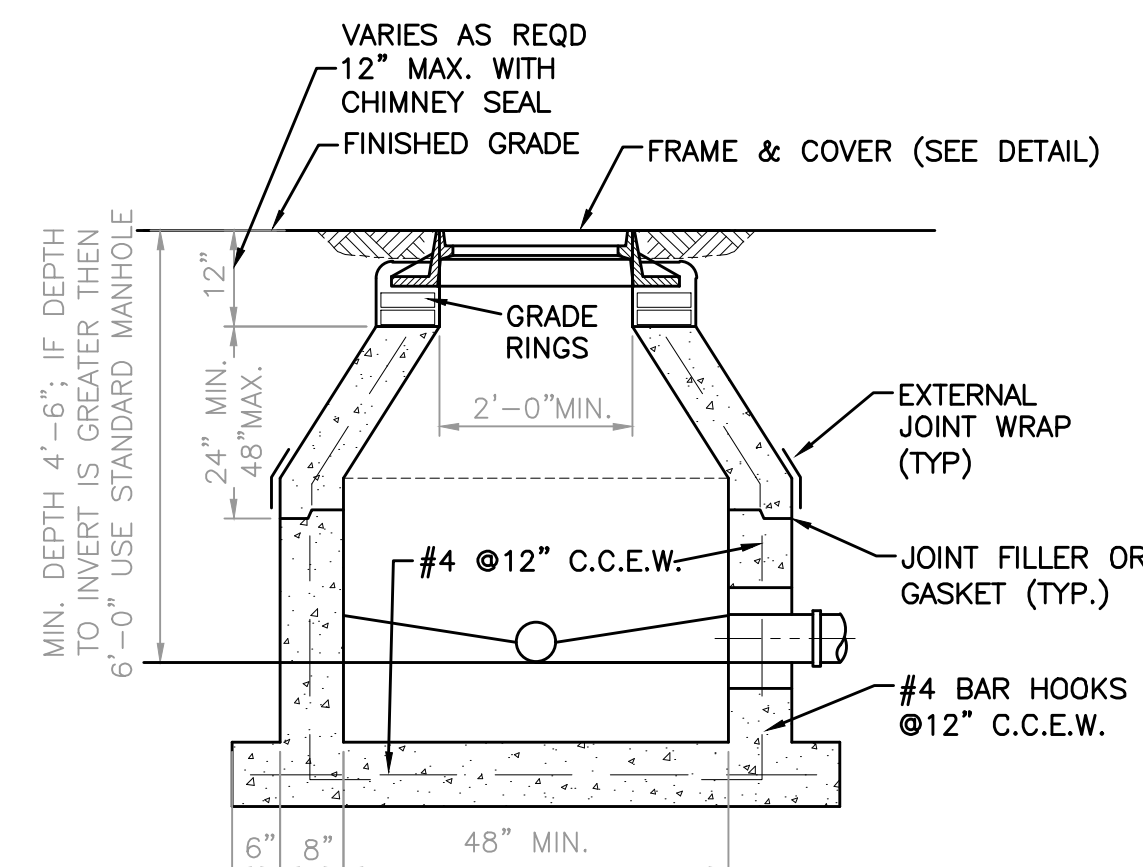


NOTE:

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.

INVERT FLOW CHANNELS

202 N.T.S.

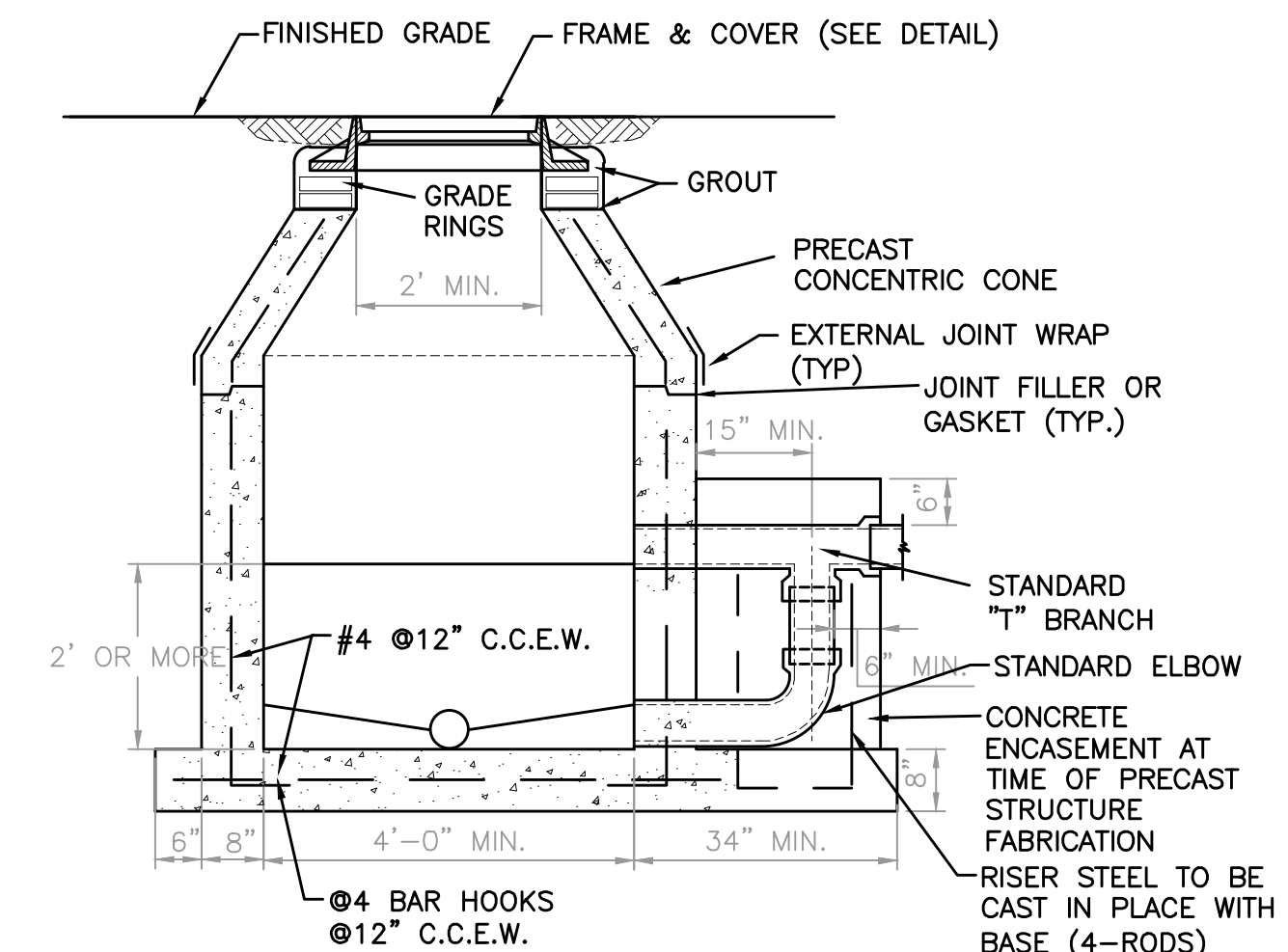


NOTE:

ALL STANDARD MANHOLE NOTES AND DETAILS ARE APPLICABLE

SHALLOW MANHOLE

204 N.T.S.

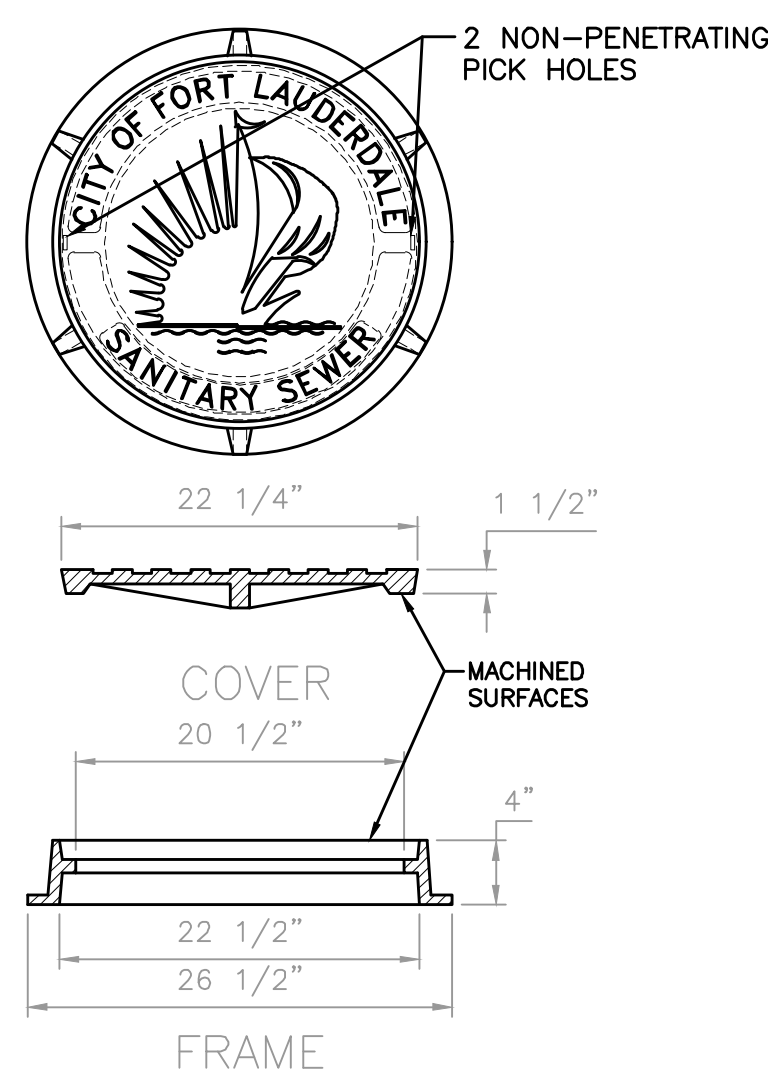


NOTES:

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 ENCASUREMENT.

OUTSIDE DROP CONNECTION
PRECAST MANHOLE - TYPE B

206 N.T.S.

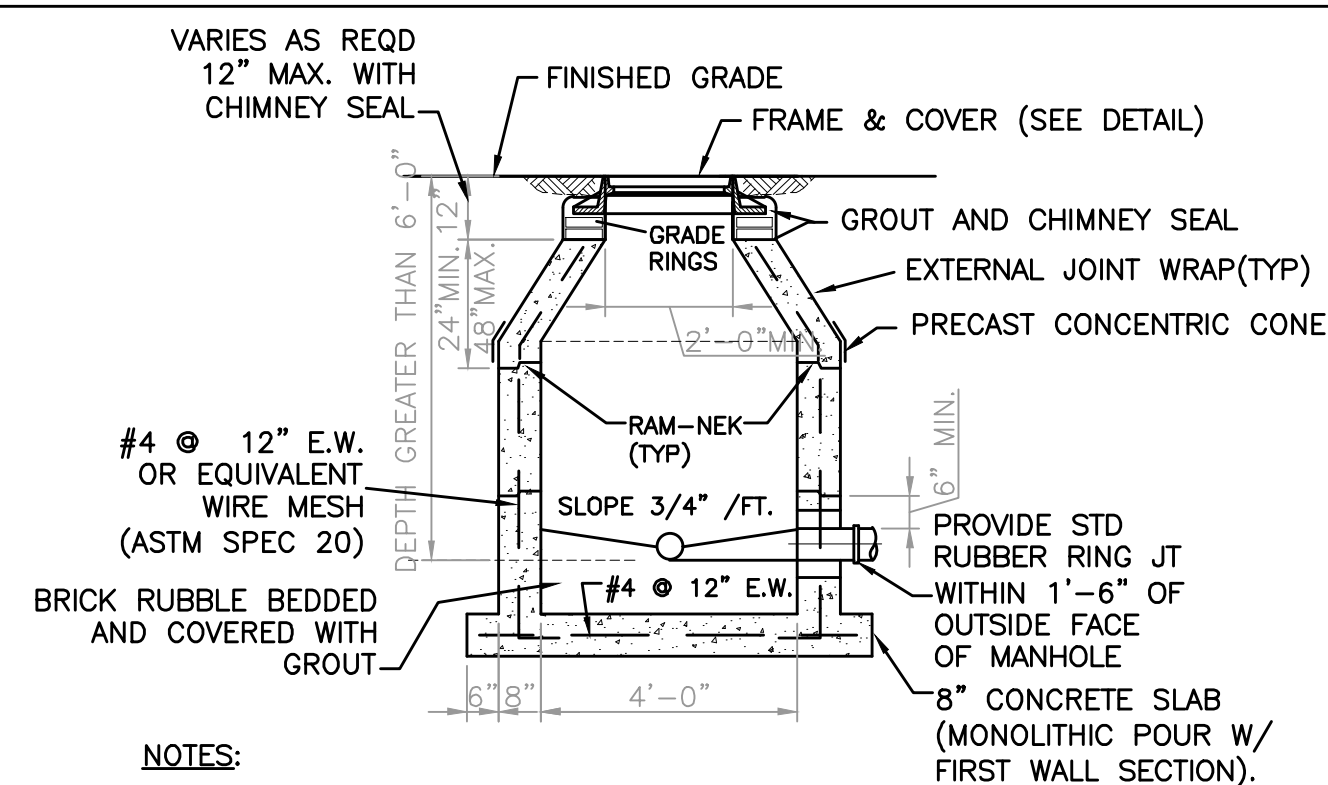


NOTES:

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.

MANHOLE FRAME & COVER
UNPAVED AREAS

201 N.T.S.

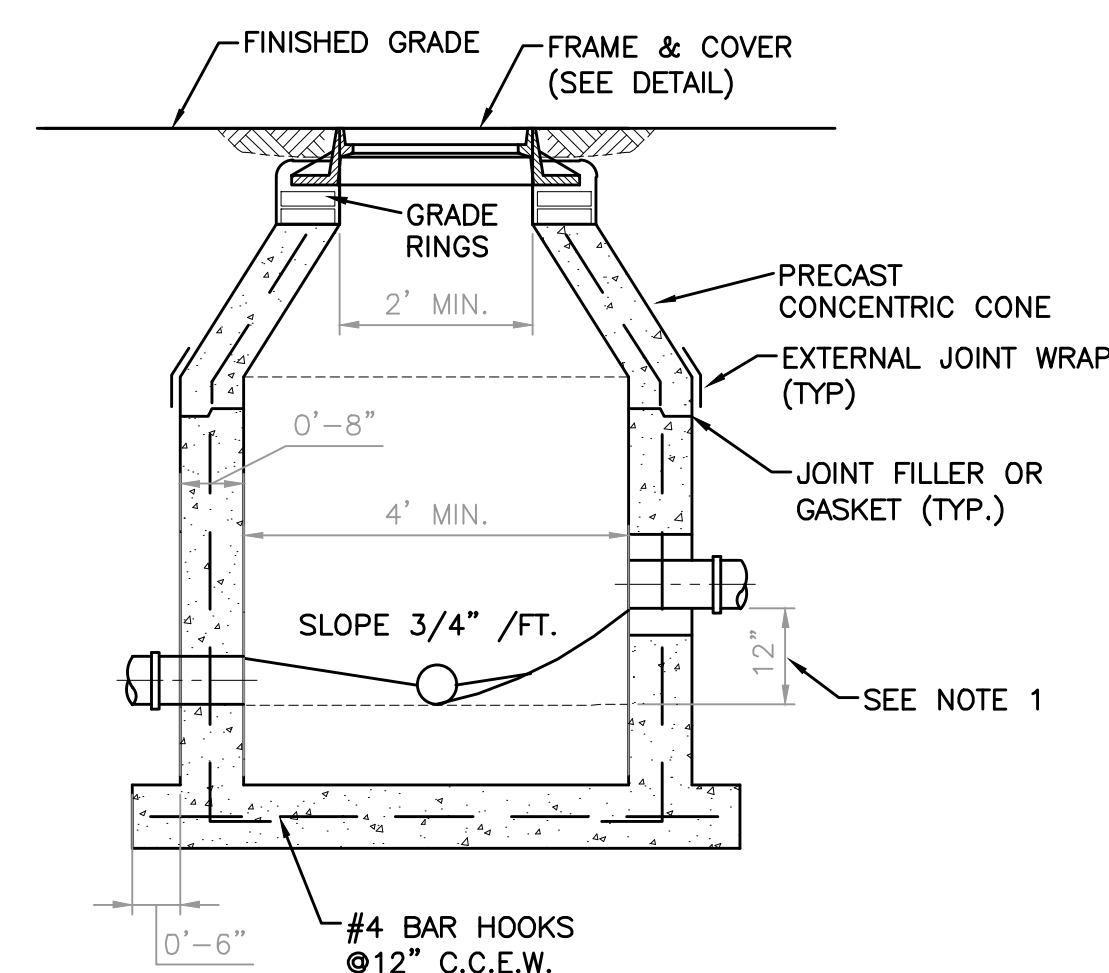


NOTES:

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 COATING. (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.

STANDARD MANHOLE

203 N.T.S.

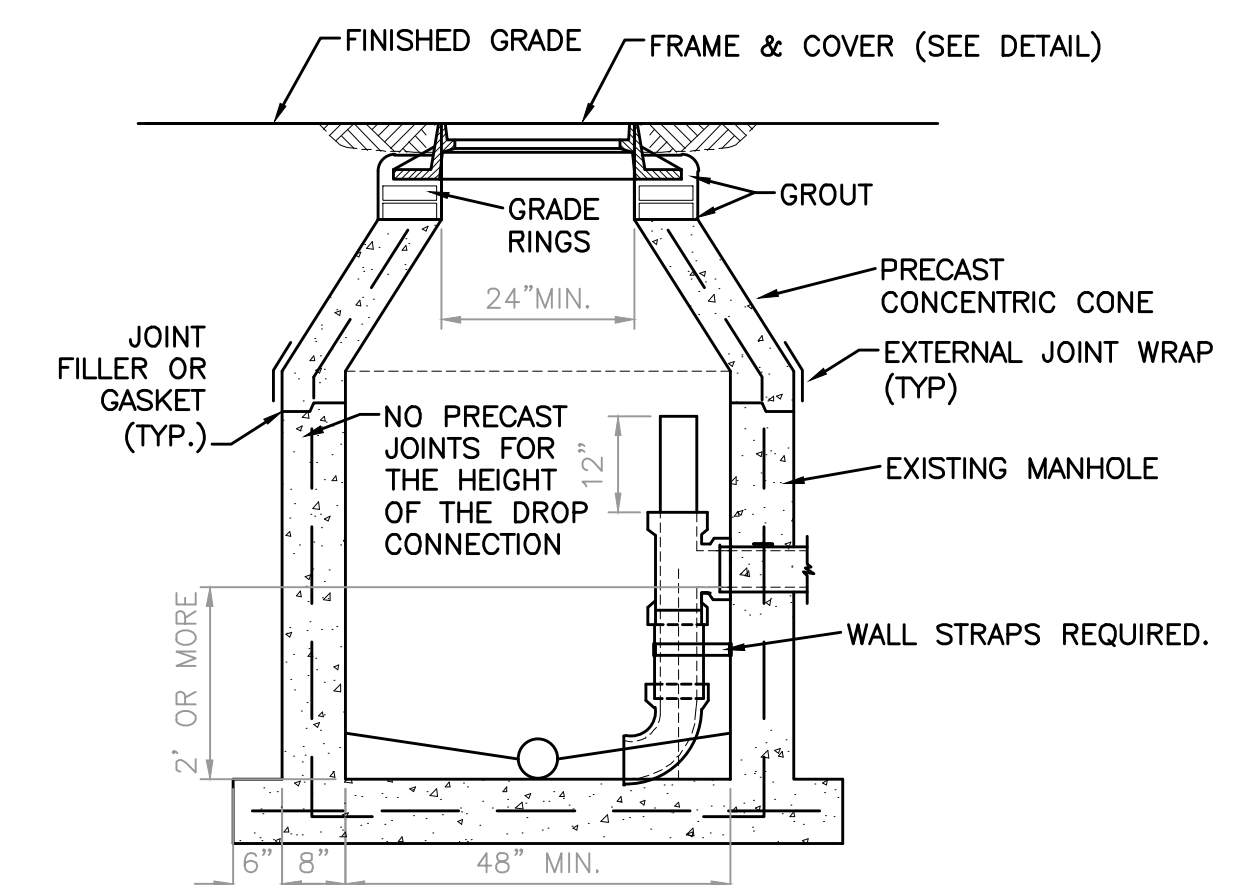


NOTES:

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.

DROP CONNECTION PRECAST
MANHOLE - TYPE A

205 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 2.4 FOOT DROP.
4. SOLVENT TYPE JOINT PVC FITTINGS TO BE UTILIZED IN THE DROP ASSEMBLY ONLY.

INSIDE DROP CONNECTION
EXISTING MANHOLE - TYPE C

207 N.T.S.

ENGINEER: #Name #NO. DATE: #DATE #FAK

DATE: 09/17/2018
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

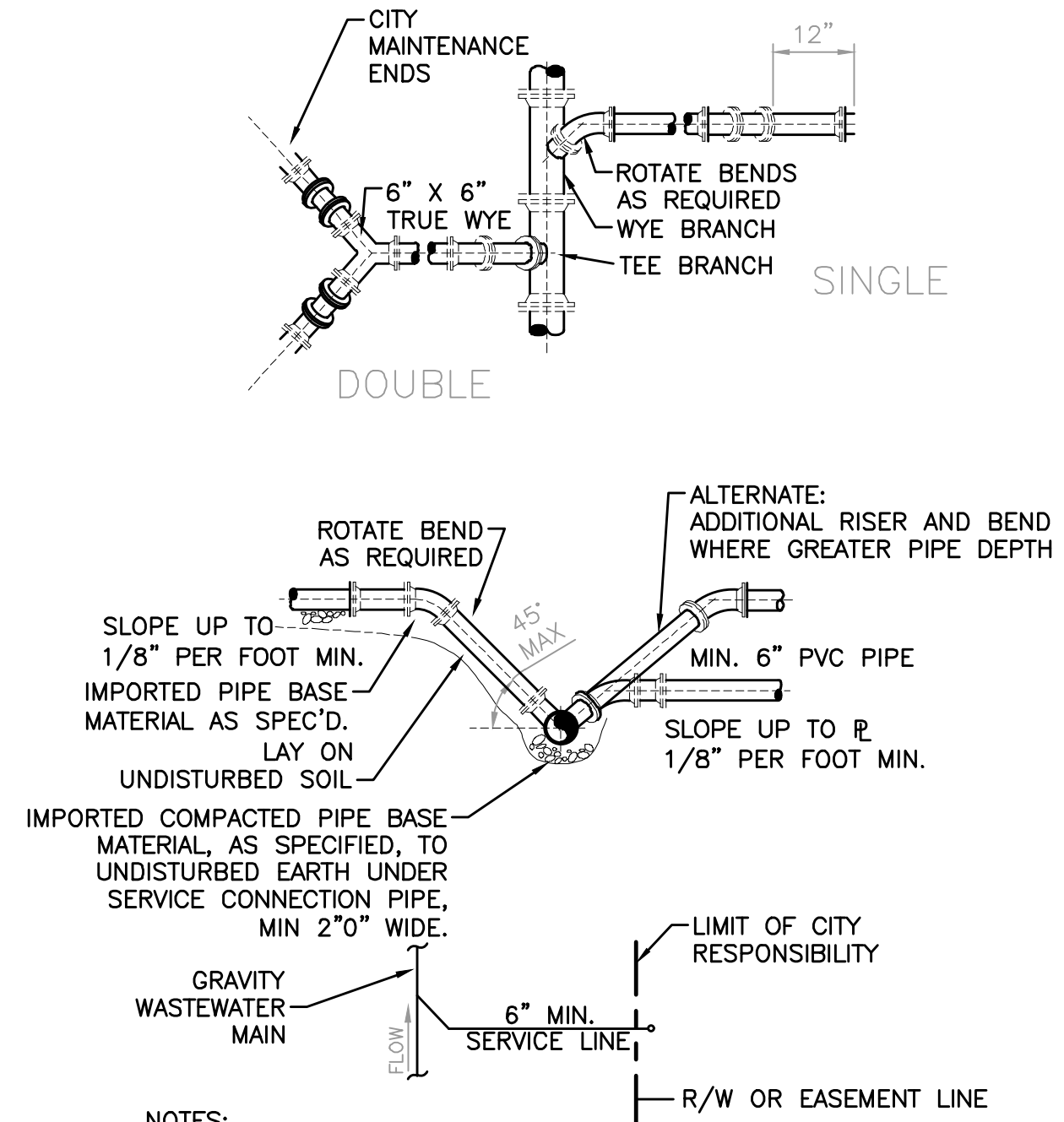
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PROJECT # P0000
PROJECT NAME
DESCRIPTION
SHEET
PLACE PROJECT ADDRESS

SHEET NO.
SSWR01
TOTAL: 0
CAD FILE: FTLAUD-SSWR01
DRAWING FILE NO. 4-XXX-XX

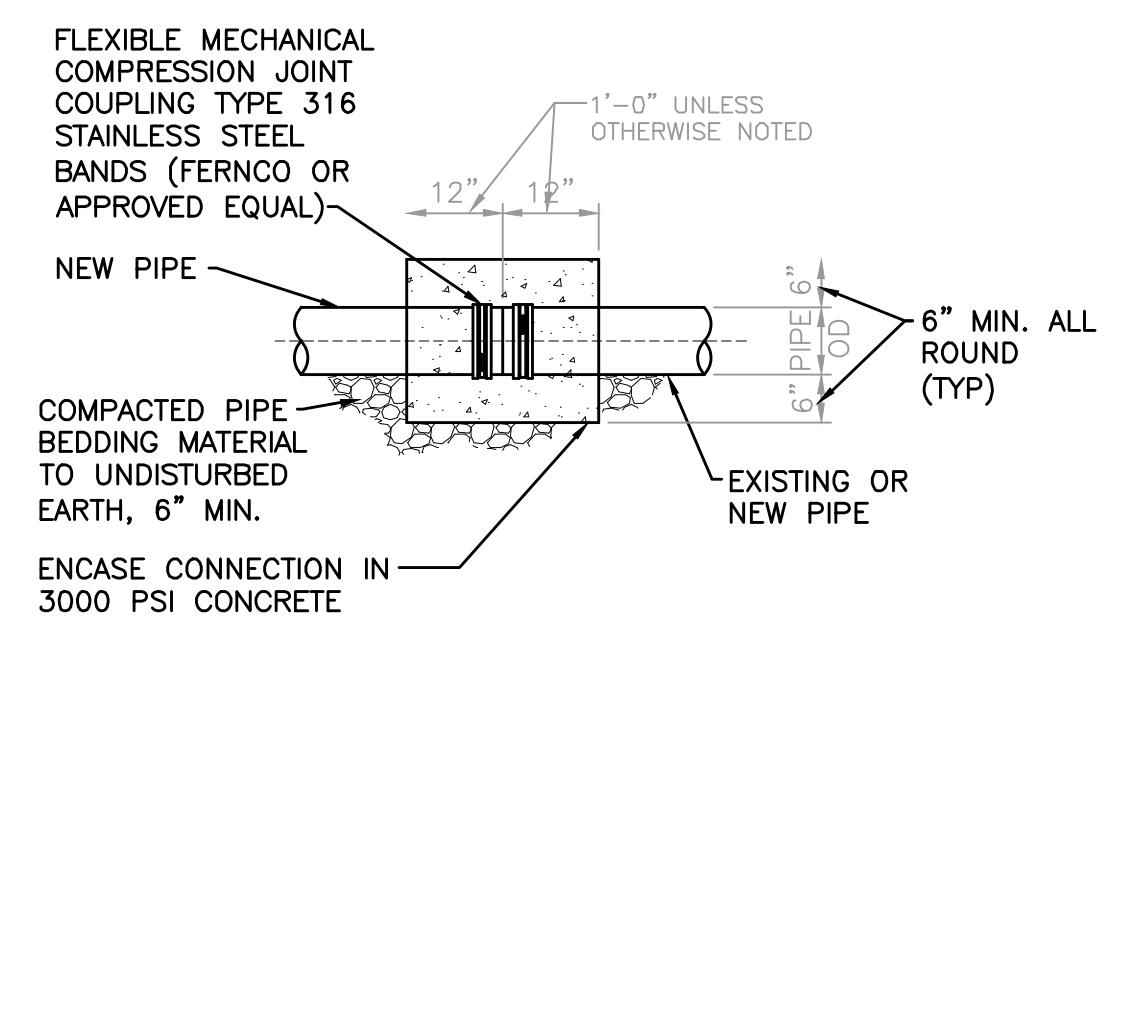
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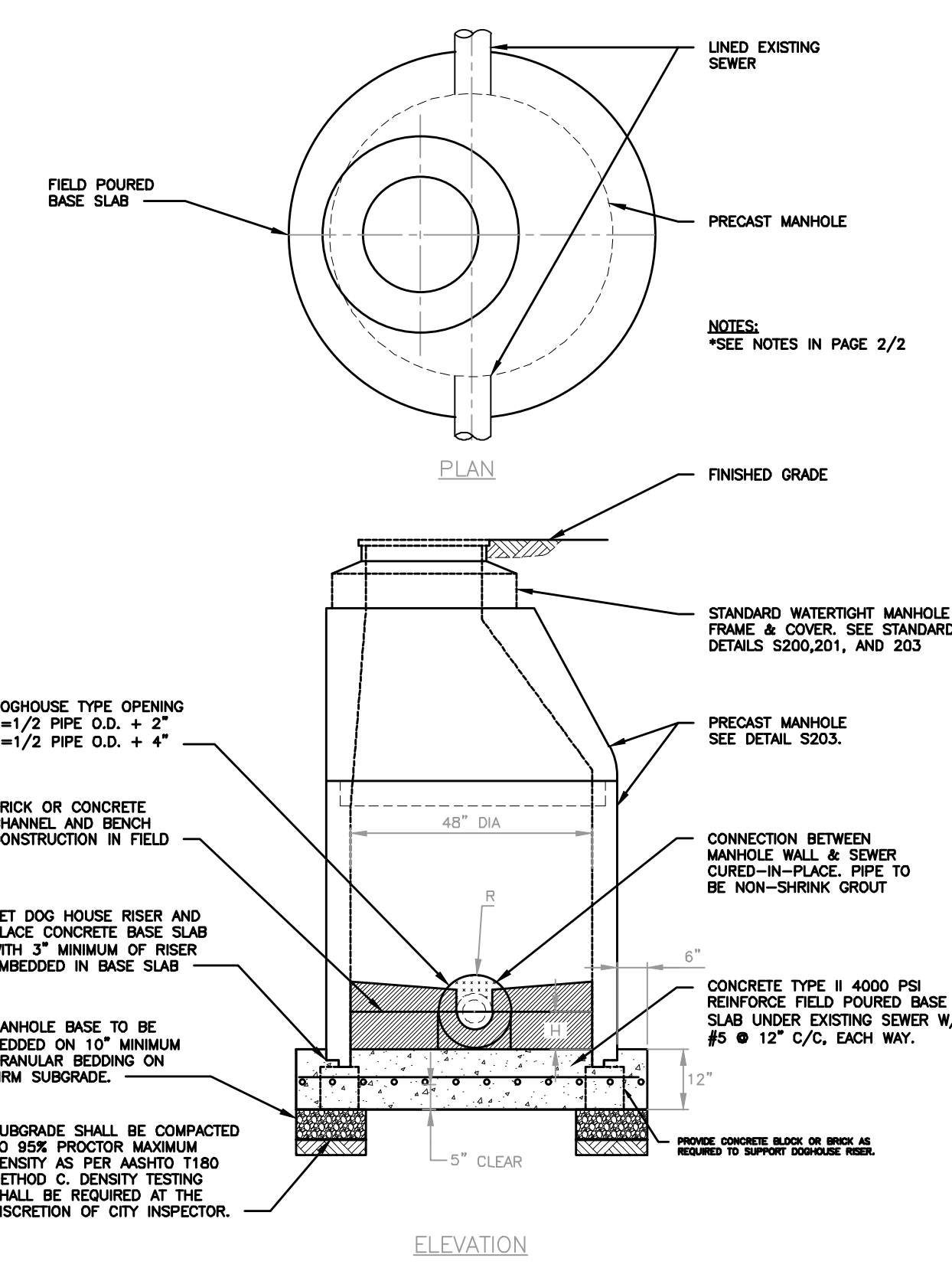


- NOTES:**
1. WASTEWATER MAIN WYE BRANCH TO MATCH MAIN PIPE MATERIAL.
 2. NO 90° BENDS SHALL BE USED FOR WASTEWATER SERVICE AND CLEANOUT INSTALLATIONS.
 3. SERVICE LATERALS SHALL TERMINATE AT 12" INSIDE THE PROPERTY LINE AT A DEPTH OF 3 FEET EXCEPT WHERE A DEEPER INVERT IS REQUIRED BY EXISTING BUILDING CONDITIONS.

208 TYPICAL WASTEWATER SERVICE CONNECTION N.T.S.

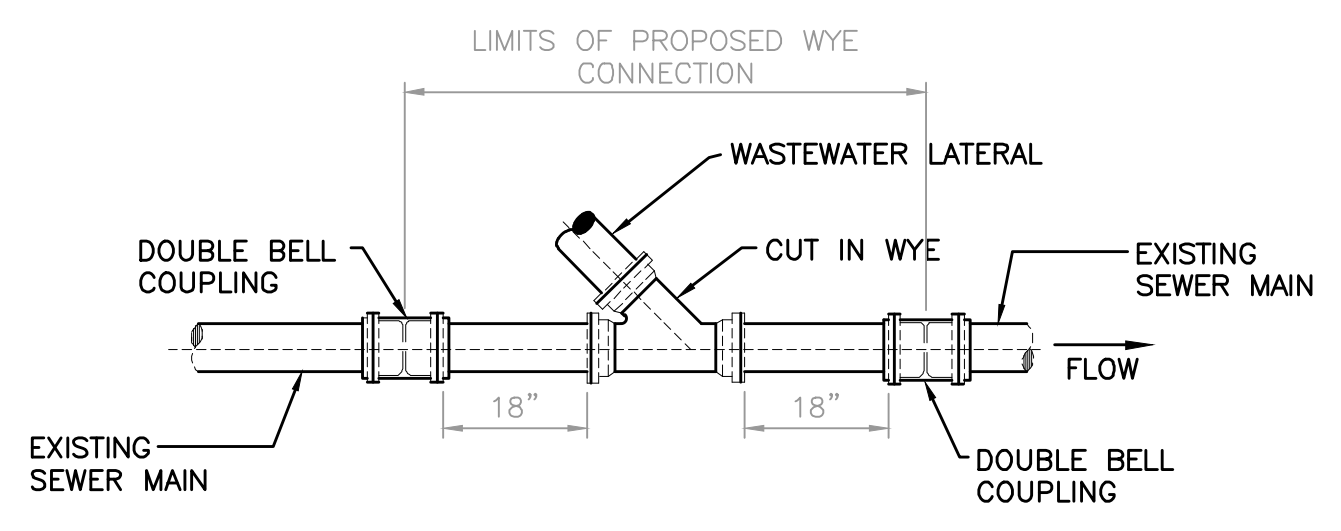


211 JOINT FOR DISSIMILAR GRAVITY SEWER PIPE N.T.S.

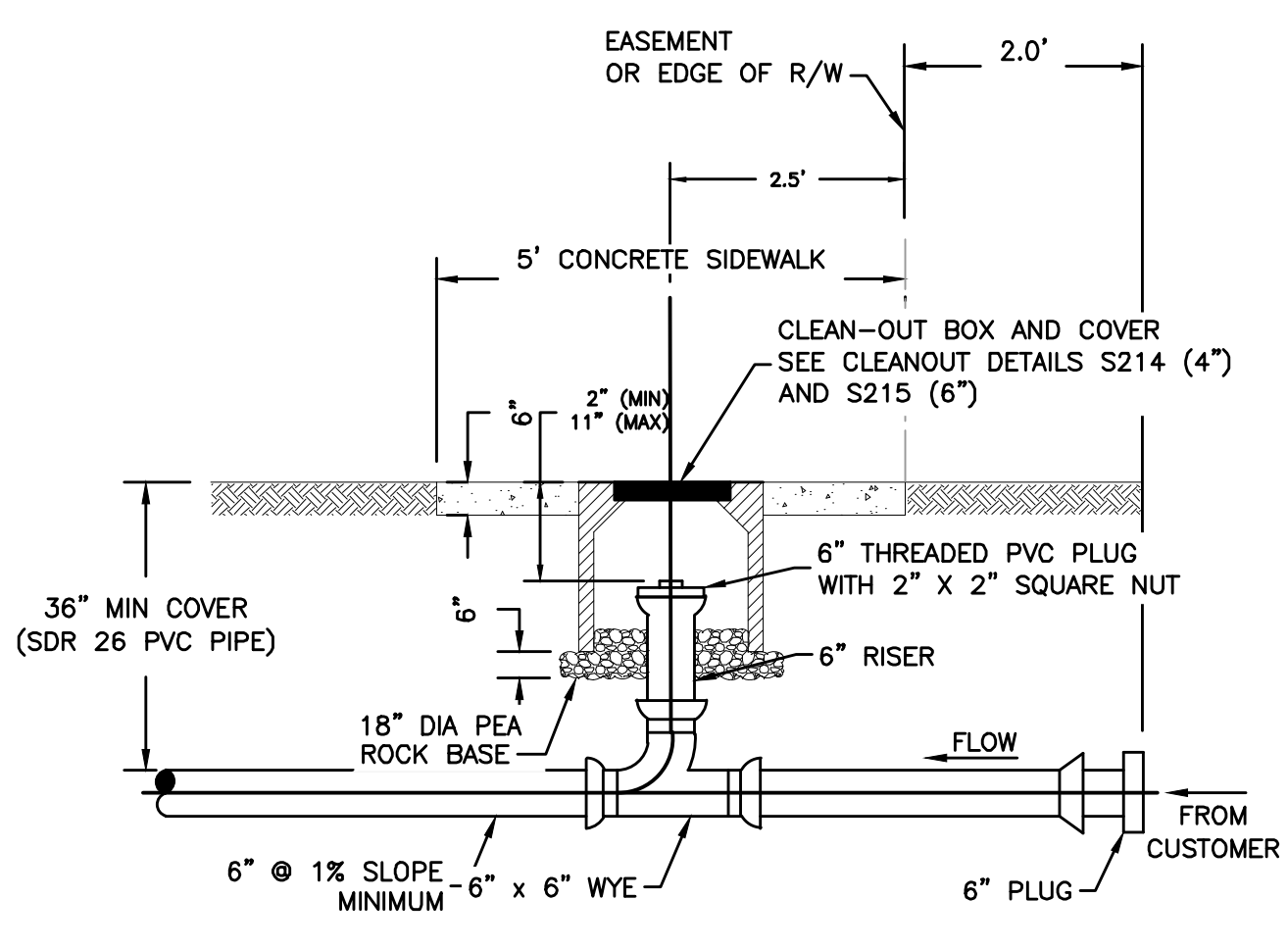


212 PRECAST CONCRETE MANHOLE BUILT OVER EXISTING CURED IN PLACE LINED SEWER PIPE N.T.S.

- 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.
- NOTES: INSTALLATION OF NEW WASTEWATER SERVICE CONNECTIONS.**
3. NEW WASTEWATER SERVICE CONNECTIONS SHALL BE CONSTRUCTED BY INSTALLING A LIT(TM) (LINED MAIN TAP) SADDLE INSTALLATION SYSTEM ENGINEERED TO CONNECT A LATERAL SERVICE PIPE TO A LINER INSIDE A REHABILITATED MANLINE (LMK TECHNOLOGIES OR APPROVED EQUAL), TO BE INSTALLED PER MANUFACTURER INSTRUCTIONS.
 4. CLEANOUT MUST BE PROVIDED PER STANDARD DETAIL S209.
 5. 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 MANLINE.
- NOTES: INSTALLATION OF NEW PRECAST CONCRETE MANHOLE(S) BUILT OVER EXISTING CIP LINER.**
6. ALL NEW MANHOLES MUST BE CONSTRUCTED PER STANDARD DETAIL S212 (P.1 OF 2) BY EXCAVATING TO HOST PIPE ELEVATION.
 7. REMOVE HOST PIPE MATERIAL (E.G. VCP) FROM AREA OF NEW DOG HOUSE MANHOLE INSTALLATION.
 8. CONTRACTOR SHALL NOT COMPROMISE STRUCTURAL INTEGRITY OF THE CIP LINER.
 9. CONTRACTOR SHALL PROPERLY SEAL CONNECTIONS BETWEEN DOG HOUSE MANHOLE AND CIP LINER TO AVOID INFILTRATION AND INFLOW CONTRIBUTION TO THE CITY'S COLLECTION SYSTEM PER STANDARD DETAIL S212 (P.1 OF 2).
 10. MANHOLE BENCH SHALL BE CONSTRUCTED TO INCORPORATE THE BOTTOM HALF OF THE CIP LINER AS PART OF THE MANHOLE THROUGH.
 11. 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, ET COATING (PAINTS AND COATINGS, INC.) OR APPROVED EQUAL MUST BE UTILIZED.
 12. ALL NEW DOGHOUSE MANHOLE INSTALLATIONS MUST BE INSPECTED BY CITY INSPECTORS WHO SHALL WITNESS ALL PHASES OF CONSTRUCTION.
 13. CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE POST CCTV INSPECTION OF MANLINE/ MANHOLE INTERCONNECTIONS.
 14. 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.
- DSD = DEPARTMENT OF SUSTAINABLE DEVELOPMENT
PW = PUBLIC WORKS

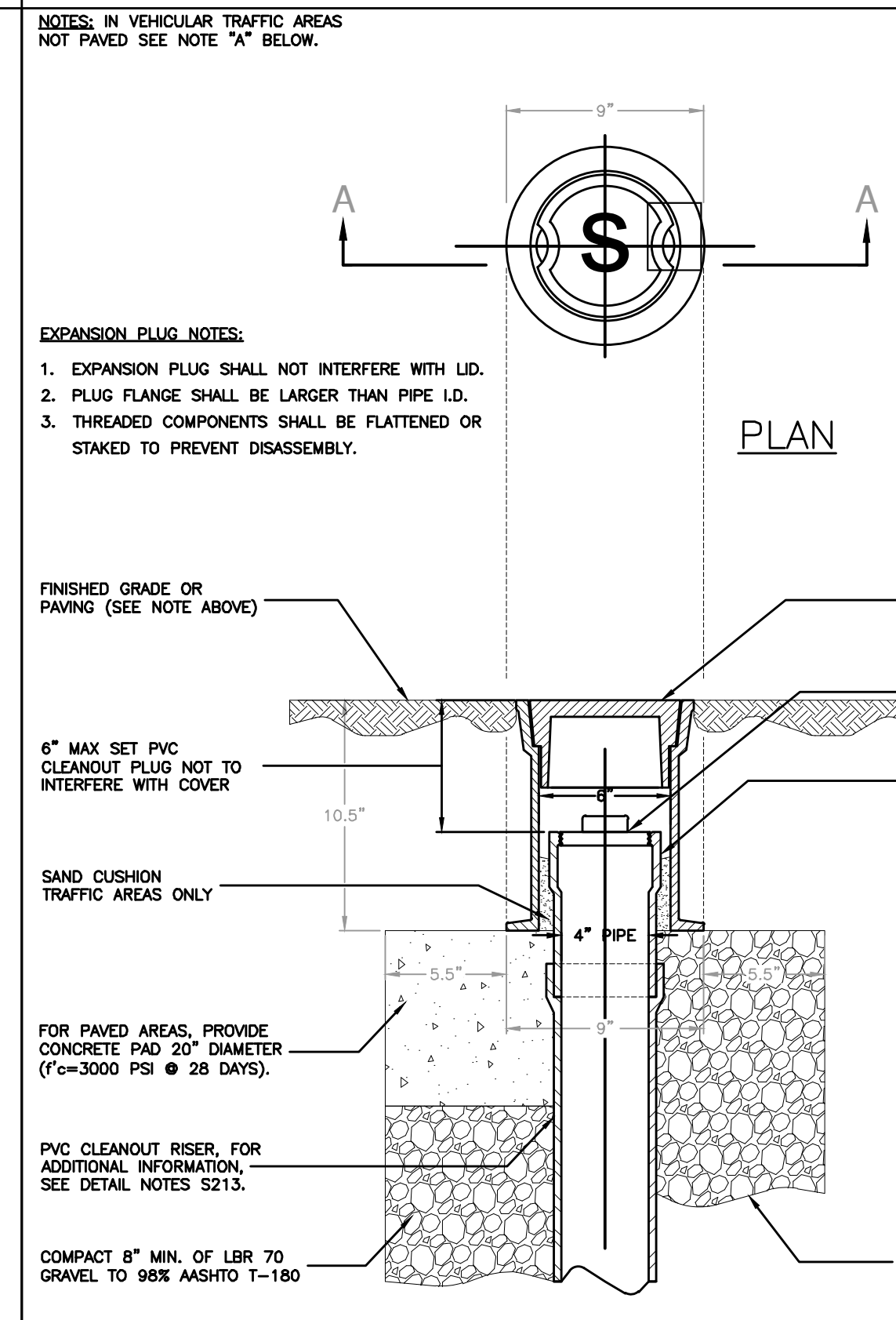


210 NEW LATERAL ON EXISTING GRAVITY WASTEWATER MAIN N.T.S.

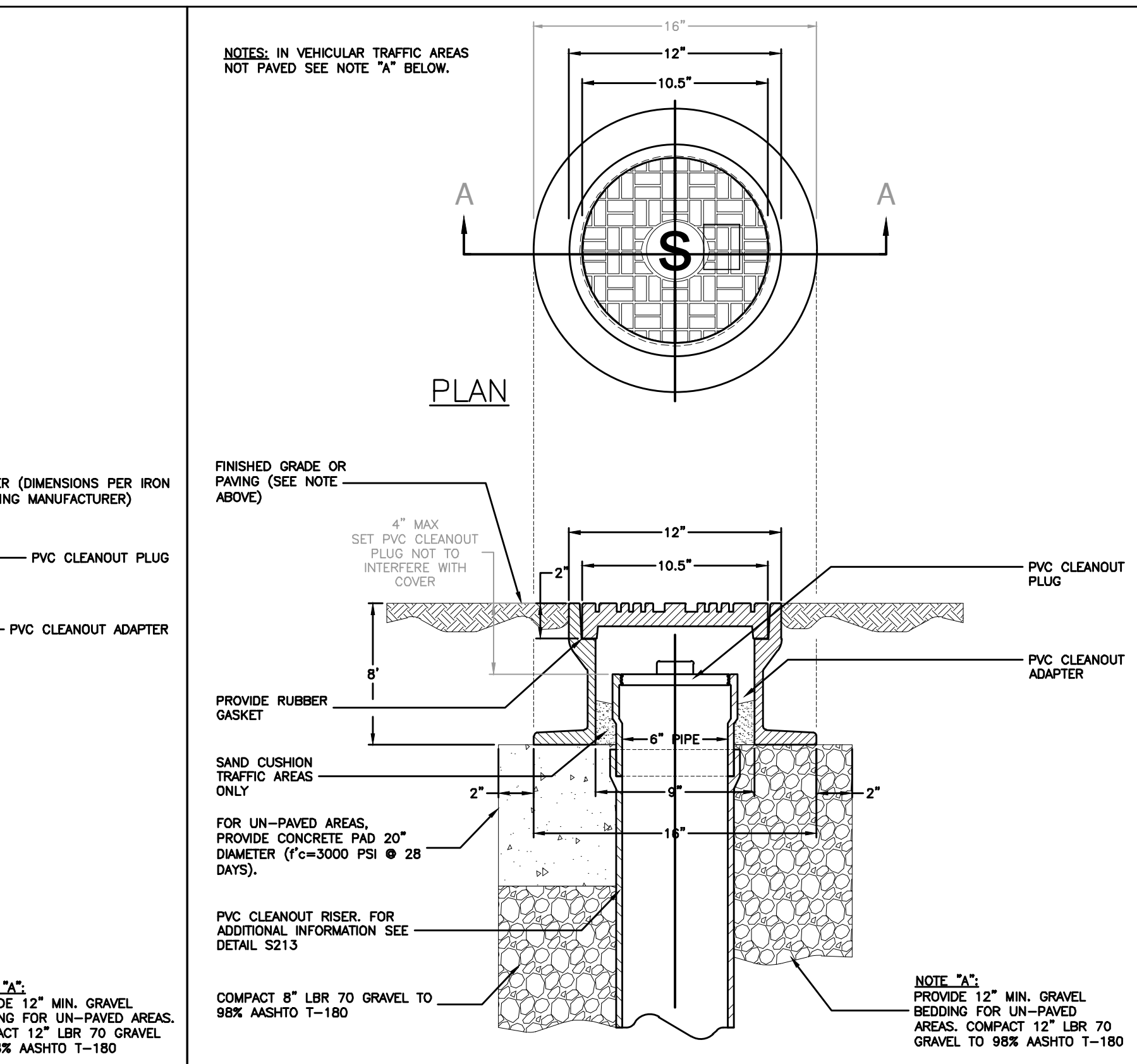


1. THE CLEAN OUT SHALL BE INSTALLED IN THE MIDDLE OF THE SIDEWALK. THIS DIMENSION WILL VARY DEPENDING UPON THE WIDTH OF THE SIDEWALK. 2.5' APPLIES TO 5' SIDEWALK WIDTH. IF SIDEWALKS DO NOT EXIST, THE CLEAN OUT SHALL BE INSTALLED 2.5' FROM THE RIGHT OF WAY LINE.
2. A NEW SECTION OF SIDEWALK SHALL BE POURED AROUND THE CLEAN-OUT BOX WHEN WORKING IN AN AREA WITH EXISTING SIDEWALKS.
3. IN GRASS AREA USE 24"x24" OR 24" DIAMETER CONCRETE COLLAR. SEE DETAILS S214 AND S215 FOR 4 AND 6 INCH CLEAN-OUT.

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



214 CLEAN-OUT COVER ASSEMBLY FOR 4-INCH CLEANOUTS N.T.S.



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

NOT FOR CONSTRUCTION OR BID

ENGINEER: #NAME# NO. #NO. DATE #DATE#
 DRAWN BY: #NAME# DATE: #DATE#
 DESIGNED BY: #NAME# SCALE: #SCALE#
 CHECKED BY: #NAME#
 FIELD BOOK: #NAME#

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

NO.	DATE	BY	REVISIONS	DESCRIPTION

PROJECT # P0000
 PROJECT NAME
 DESCRIPTION
 SHEET
 PLACE PROJECT ADDRESS

SHEET NO.
SSWR02

TOTAL: 0
 CAD FILE: #NAME#
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