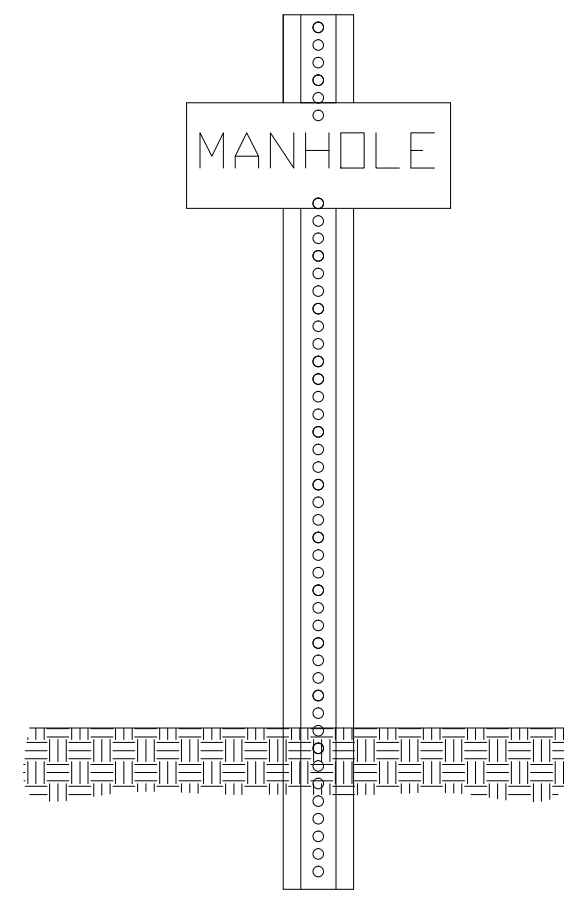


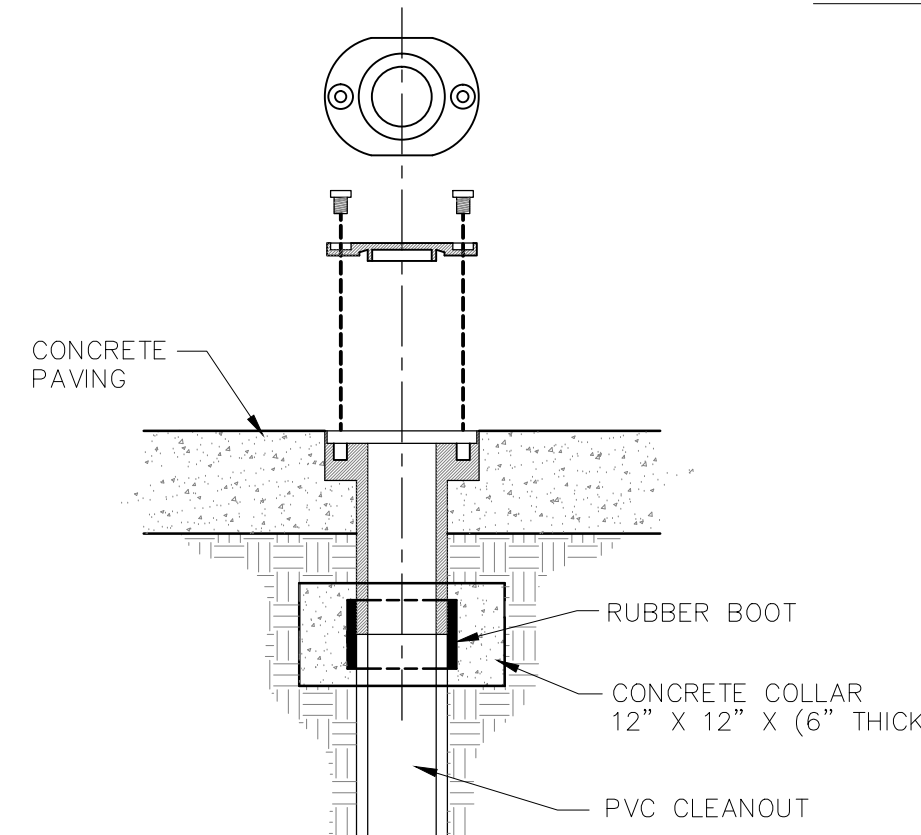
NOTE: PRIOR TO CONSTRUCTION, CONTRACTOR SHALL SUBMIT TO THE PUBLIC WORKS DEPT. A LISTING OF ALL MATERIALS TO BE USED. NO WORK SHALL BE UNDERTAKEN PRIOR TO WRITTEN APPROVAL OF THE MATERIAL LIST BY THE CITY PUBLIC WORKS DEPT.

GENERAL NOTES

1. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE REQUIREMENT OF "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION" PUBLISHED BY THE NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS UNLESS OTHERWISE SPECIFIED IN THESE PLANS.
2. UNLESS OTHERWISE NOTED ALL SANITARY SEWER MAINS AND LATERALS TO BE P.V.C. SEWER PIPE CONFORMING TO ASTM D-2241 WITH A WALL THICKNESS CONFORMING TO SDR-26 WITH ELASTOMERIC GASKET JOINTS CONFORMING TO ASTM D-3139 IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
3. THE CONTRACTOR WILL BE REQUIRED TO TEST ALL NEW MANHOLES BY VACUUM TEST & SPARK TEST MANHOLE COATINGS.
4. ALL NEW MANHOLES SHALL HAVE AN 500 MIL SPRAY APPLIED MONOLITHIC HIGHBUILD EPOXY COATING INSTALLED. (SPECTRA SHIELD LINER SYSTEM OR APPROVED EQUAL)
5. THE CONTRACTOR WILL BE REQUIRED TO AIR TEST ALL LINES, EXCEPT WHERE AIR TESTING CANNOT BE PERFORMED, AN INFILTRATION TEST SHALL BE PERFORMED.
6. PIPE SHALL BE CHECKED AFTER INSTALLATION BY USING A GO-NO-GO MANDREL.
7. IF CITY OF VENUS SANITARY SEWER MAINS AND LATERALS ARE WITHIN A PROJECT'S LIMITS OF CONSTRUCTION, VIDEO INSPECTION OF THOSE EXISTING LINES SHALL BE REQUIRED AT THE BEGINNING OF CONSTRUCTION. THE INSPECTION SHALL BE ACCOMPLISHED BY THE CONTRACTOR. ACCESS FOR VIDEO INSPECTIONS MAY NEED TO BE AT MANHOLES WHICH LIE OUTSIDE THE LIMITS OF CONSTRUCTION.
8. ALL VIDEO WORK IS TO BE PERFORMED WITH CITY INSPECTOR ON SITE. CONTRACTOR SHALL PROVIDE THE CITY INSPECTOR WITH 48 HOUR NOTICE PRIOR TO VIDEO WORK BEGINNING.
9. WHEN CONTRACTOR PERFORMS VIDEO INSPECTION OF ANY SANITARY SEWER LINE AND THERE IS A VERTICAL SEWER CONNECTION, THE TRUE DIRECTION OF THE SERVICE LINE SHALL BE DETERMINED BY THE CONTRACTOR. THIS SHALL BE ACCOMPLISHED BY DYE TESTING WHILE VIDEO TAPING OR BY DIGGING UP THE SERVICE LINE.
10. ALL NEW SANITARY SEWER MAINS AND LATERALS SHALL BE INSPECTED BY PHOTOGRAPHIC MEANS, IN COLOR. COPIES OF ALL VIDEOS SHALL BE PROVIDED TO THE CITY OF VENUS. MAINS AND LATERALS SHALL BE INSPECTED PRIOR TO PLACING OF FORMS AND SETTING OF REINFORCING STEEL FOR PAVING.
11. CONTRACTOR SHALL PROVIDE VIDEO INSPECTION OF ALL/ANY REPAIRS TO EXISTING SEWER MAINS OR LATERALS DUE TO DAMAGE CAUSED BY THE GENERAL CONTRACTOR OR SUBCONTRACTORS.
12. A FINAL VIDEO INSPECTION OF ALL CITY OF VENUS'S MAINS AND LATERALS (NEW OR EXISTING) SHALL BE REQUIRED AFTER ALL CONSTRUCTION ACTIVITIES ARE COMPLETE. NO PROJECT WILL BE ACCEPTED WITHOUT THIS INSPECTION.
13. THE ACTUAL LOCATIONS & ELEVATIONS OF EXISTING UTILITIES CRITICAL TO THE DESIGN SHALL BE VERIFIED BY FIELD SURVEY BY THE CONTRACTOR.
14. ALL SEWER LATERAL CLEANOUTS, MANHOLES & ACCESS CHAMBERS SHALL BE MARKED FOR IDENTIFICATION PURPOSES. THE FOLLOWING IDENTIFICATION SHALL BE USED: C/D FOR LATERAL CLEANOUTS AND MH FOR MANHOLES AND END OF THE LINE ACCESS CHAMBERS. MARKINGS SHALL BE ETCHED IN THE FACE OF THE CURB. FOR MANHOLES IN FIELD A SIGN AND PDST SHALL BE USED SEE DETAIL THIS SHEET.
15. DITCH DENSITY SHALL BE 90% OF MAXIMUM DENSITY IN AREAS NOT UNDER PAVEMENT AND 95% OF MAXIMUM DENSITY IN AREAS UNDER PAVEMENT AFTER COMPACTING, AS DETERMINED BY ASTM D698.
16. UNLESS OTHERWISE NOTED THE HOUSE SERVICE SHALL BE 4" DIAMETER AND BE LOCATED 5' OFFSET FROM LOT CENTER LINE AND 10' OFFSET TO WATER SERVICE.
17. EMBEDMENT FOR SEWER LATERALS SHALL BE THE SAME AS SEWER MAINS.
18. SELECT NATIVE MATERIAL SHALL BE GRAVEL, FINE ROCK CUTTINGS, SAND, SANDY LOAM OR LOAM FREE OF EXCESSIVE CLAY. ROCK CUTTINGS SHALL HAVE NO DIMENSION GREATER THAN TWO INCHES.
19. LATERALS SHALL BE A MINIMUM OF 4 FEET IN DEPTH WHEN IN PUBLIC R.O.W.
20. ALL CONNECTIONS TO MANHOLES SHALL BE MADE WITH AN APPROVED ADAPTER, & BY CORE ONLY. (NO JACK HAMMERS OR HAMMER DRILLS.)
21. ALL LOTS (INCLUDING DUPLEX, TOWNHOME & PATIO LOTS) TO BE SERVED INDIVIDUALLY WITH A MINIMUM 4" SANITARY SEWER LATERAL.
22. CONTRACTOR SHALL FIELD VERIFY LOCATION OF WASTEWATER MAIN PRIOR TO COMMENCING CONSTRUCTION OF IMPROVEMENTS.



MANHOLE LOCATOR SIGN
(NTS)



SANITARY SEWER LATERAL CLEANOUT

Bass & Hays Foundry, Inc. #404 Lateral Cleanout Or Approved Equal

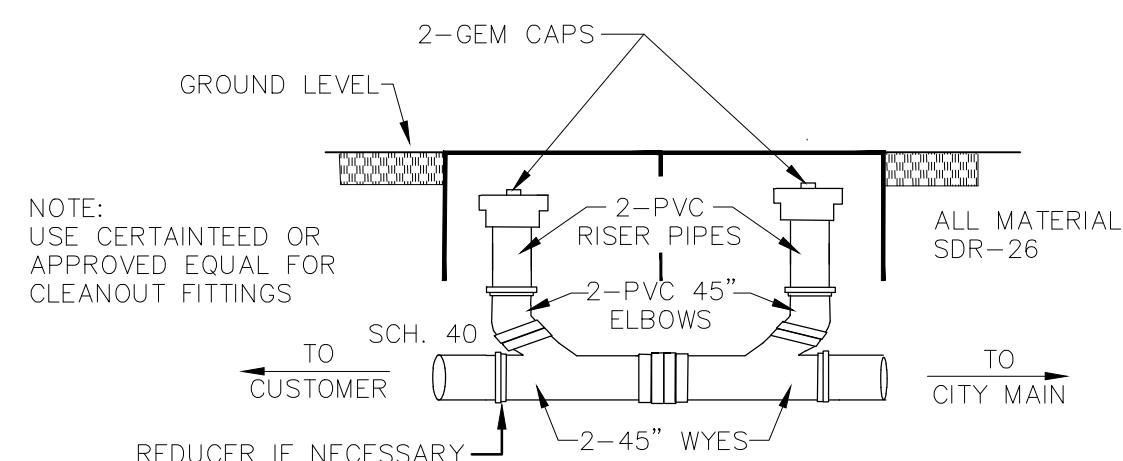
NOT TO SCALE

DOUBLE CLEANOUT BOX

IN CONCRETE DRIVEWAYS OR ALLEY PAVING:
USE BASS & HAYS FOUNDRY, INC. PATTERN #339 CLEANOUT BOOT, # 404 LATERAL CLEANOUT, OR APPROVED EQUAL.

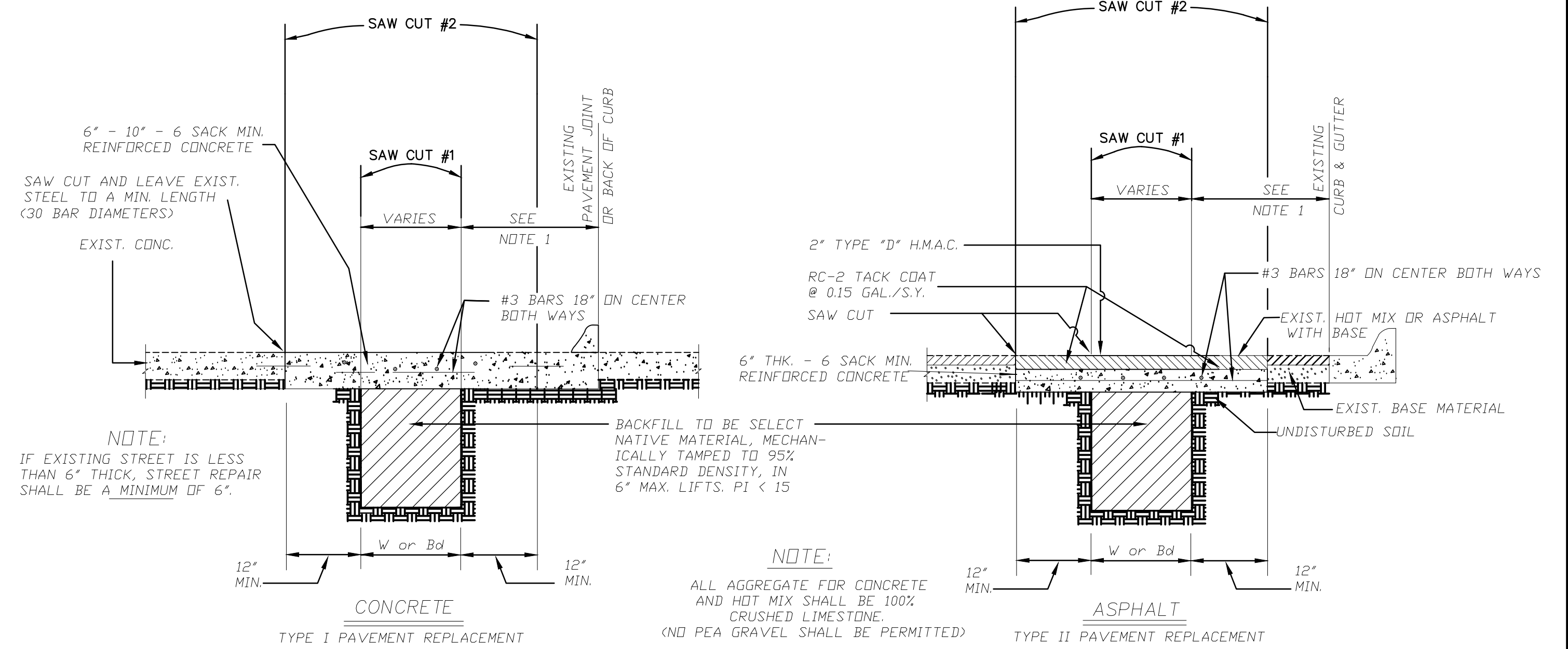
IN SIDEWALKS ONLY, BASS & HAYS FOUNDRY, INC. LATERAL CLEANOUT PATTERN # 404, OR APPROVED EQUAL.

IN GRASSY AREAS
TWO BROOKS NO. 36 H BOXES WITH METAL COVERS OR APPROVED EQUAL.



TYPICAL DOUBLE CLEANOUT (DOUBLE STACK)
(NTS)

SAW CUT # 1 TO BE MADE PRIOR TO INSTALLATION OF PIPE;
SAW CUT # 2 TO BE MADE AFTER PIPE INSTALLATION, TESTING & TRENCH BACK FILL COMPLETED & APPROVED. PAVEMENT CUTS ARE TO BE FULL DEPTH & PARALLEL WITH PROJECT ALIGNMENT. CUTS ARE TO BE MADE WITH POWER DRIVEN WALK-BEHIND SAW, MANUFACTURED FOR PURPOSE OF SAWING PAVEMENT. EDGES OF PAVEMENT WHICH ARE DAMAGE SUBSEQUENT TO SAW CUT # 2 SHALL AGAIN BE SAW CUT TO NEAT STRAIGHT LINES TO REMOVE DAMAGE (SUCH SAW CUTS LINES SHALL BE PARALLEL TO ORIGINAL SAW CUT).

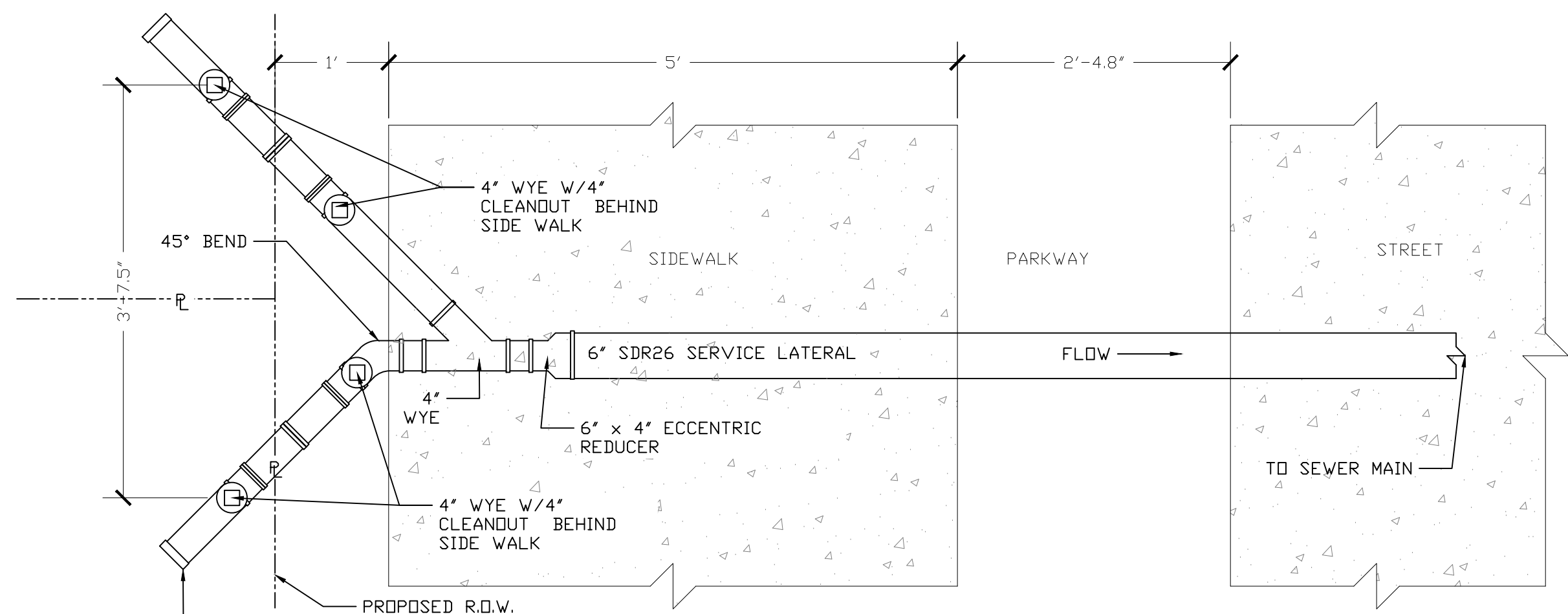


PAVEMENT REPLACEMENT DETAILS

NOT TO SCALE

(FOR ALL STREET CUTS-WATER, SAN/SEWER AND STORM SEWER)

NOTE 1: IF DISTANCE BETWEEN PAVEMENT REPLACEMENT JOINT & BACK OF CURB OR EXISTING PAVEMENT JOINT IS LESS THAN 3 FEET, LIMITS OF PAVEMENT SHALL BE TO BACK OF CURB OR EXISTING PAVEMENT JOINT.

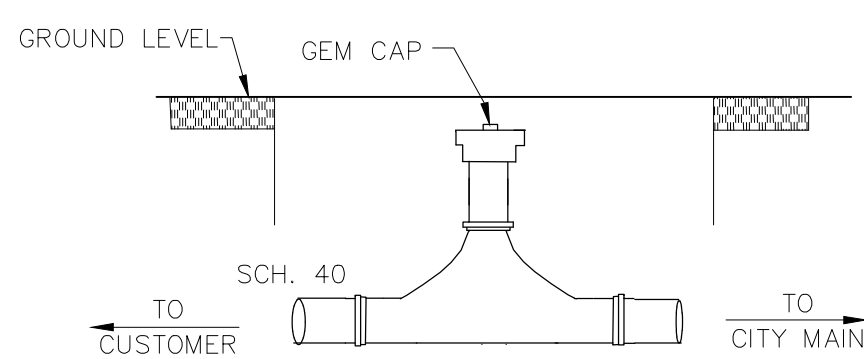


DOUBLE SEWER SERVICE LATERAL DETAIL

NOT TO SCALE

NOTES:

1. SEWER SERVICE LATERAL SHALL BE 4' MINIMUM DEEP AT PROPERTY LINE.
2. INSTALL 6" SDR26 PVC SEWER SERVICE LATERAL W/6" x 4" ECCENTRIC REDUCER.
3. INSTALL 4" SDR 26 PVC PIPE SEWER SERVICE LATERAL WITH WYE CLEANOUTS BEHIND SIDEWALK (2 TYP. PER PROPERTY).
4. ALL SEWER LATERALS SHALL BE INSTALLED AT 1/4" PER FOOT MINIMUM SLOPE.



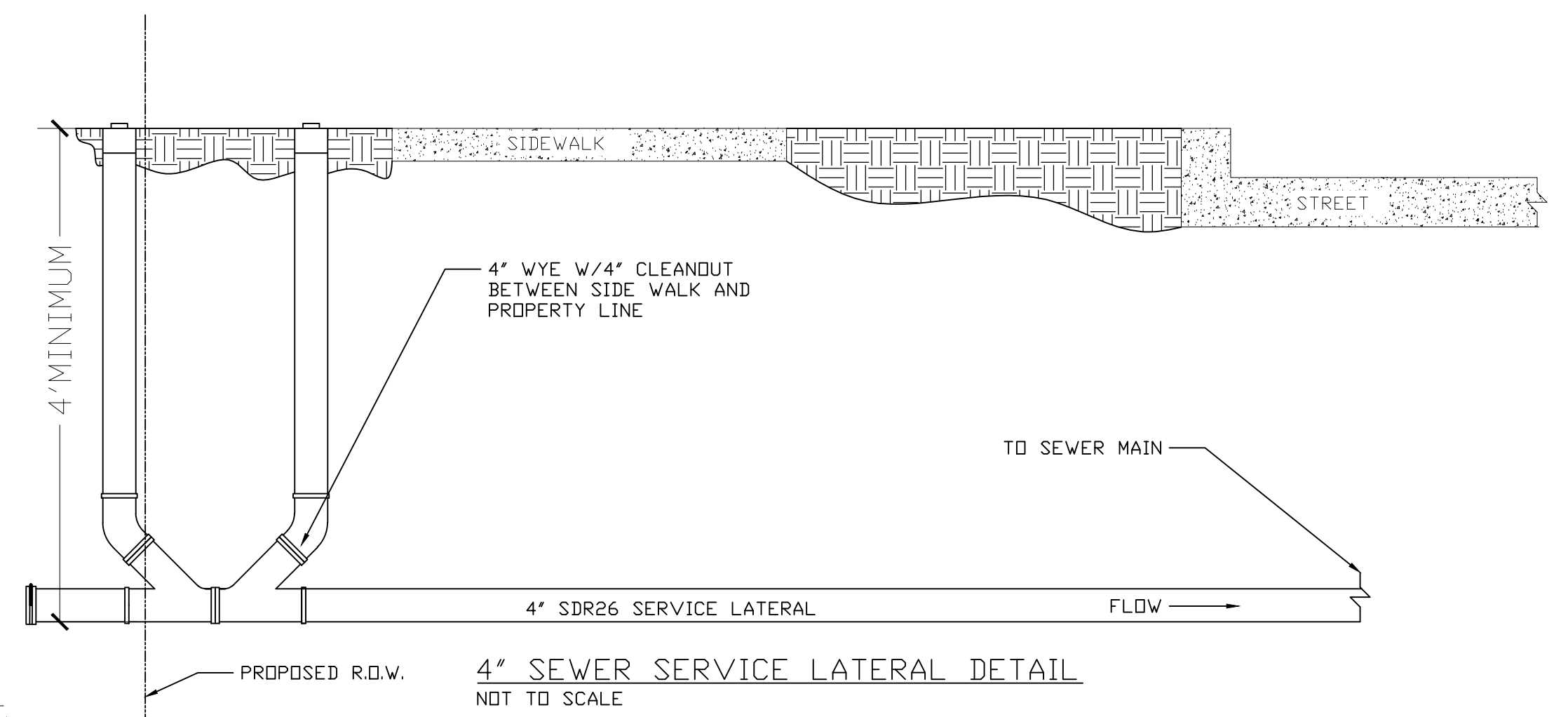
SWEEPING TYPE TEE

(NTS)

NOTE:

DOUBLE CLEANOUT WITH SINGLE STACK CAN BE USED IN LIEU OF TYPICAL DOUBLE CLEANOUT

- ON LINES LESS THAN 4'-0" IN DEPTH. (4' SERVICES ONLY)
- ON LINES OVER 4'-0" A DOUBLE CLEANOUT WITH DOUBLE STACK IS REQUIRED

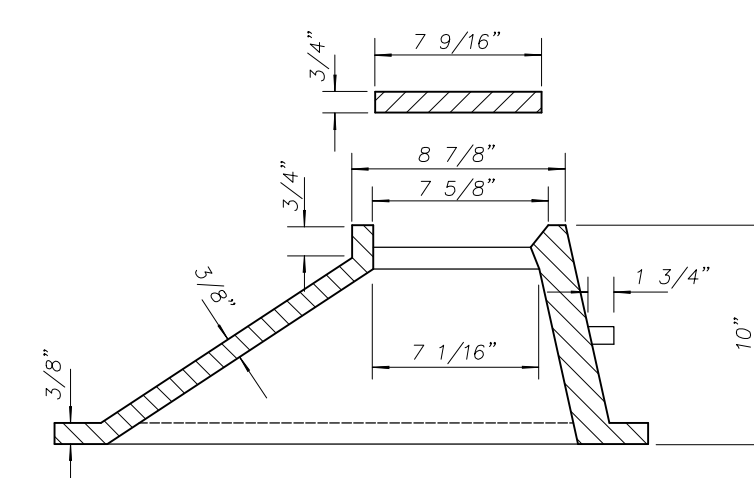


4" SEWER SERVICE LATERAL DETAIL

NOT TO SCALE

NOTES:

1. SEWER SERVICE LATERAL SHALL BE 4' MINIMUM DEEP AT PROPERTY LINE.
2. INSTALL 4" SDR 26 PVC PIPE SEWER SERVICE LATERAL WITH WYE CLEANOUTS BEHIND SIDEWALK (2 TYP. PER PROPERTY).
3. ALL SEWER LATERALS SHALL BE INSTALLED AT 1/4" PER FOOT MINIMUM SLOPE.



SANITARY SEWER CLEANOUT BOOT

Bass & Hays Foundry, Inc. #339 Cleanout Boot (American Made) or Approved Equal

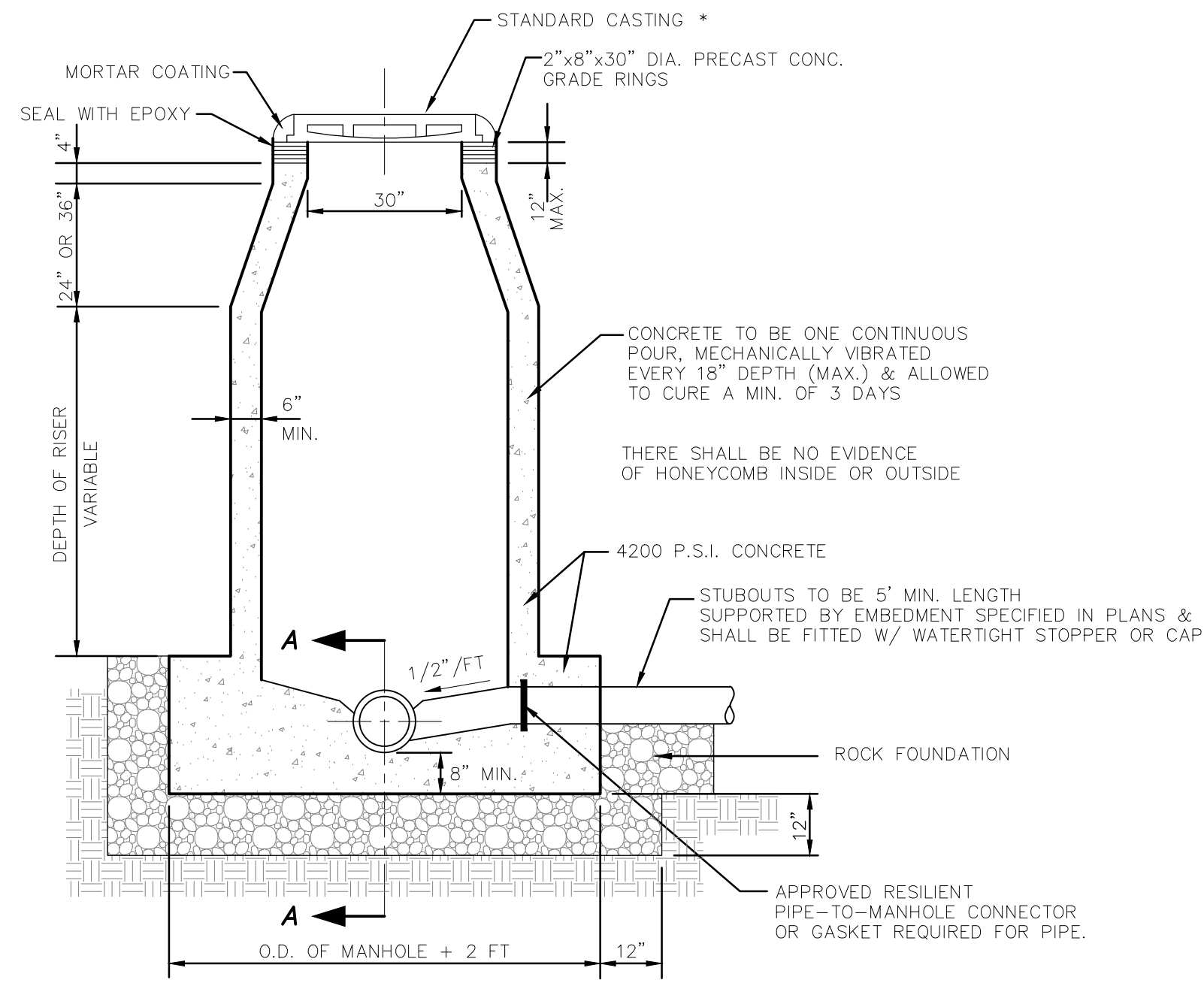


Public Works
Department
Venus, Texas

Wastewater Standard Details

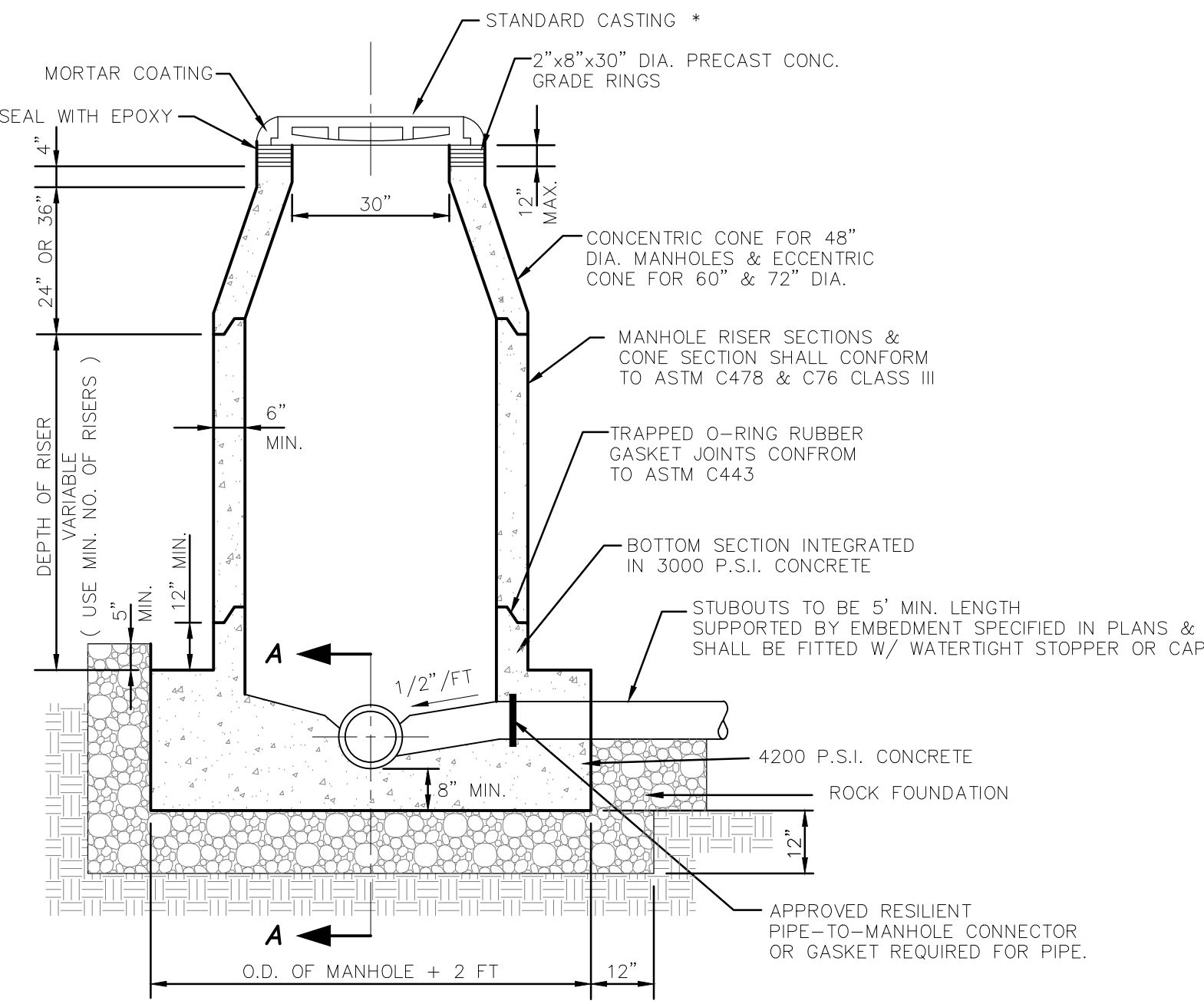
SHEET 1 OF 2

DRAWN BY	DATE	SCALE	RVSD
J. DAUGHERTY	MAY 2018	NOT TO SCALE	



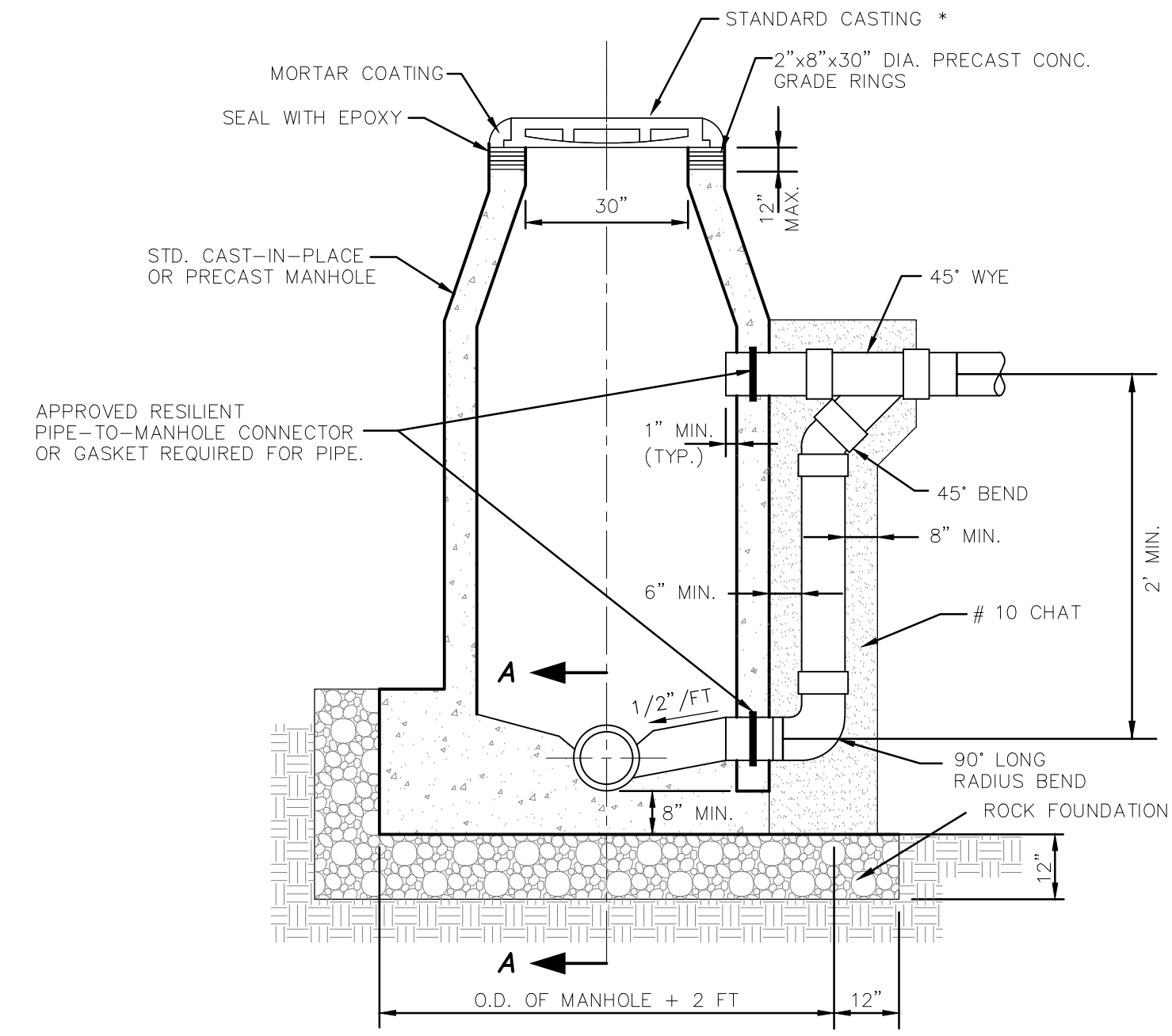
CAST IN PLACE CONCRETE WASTEWATER MANHOLE

NOT TO SCALE



PRECAST CONCRETE WASTEWATER MANHOLE

NOT TO SCALE



WASTEWATER MANHOLE WITH OUTSIDE DROP CONNECTION

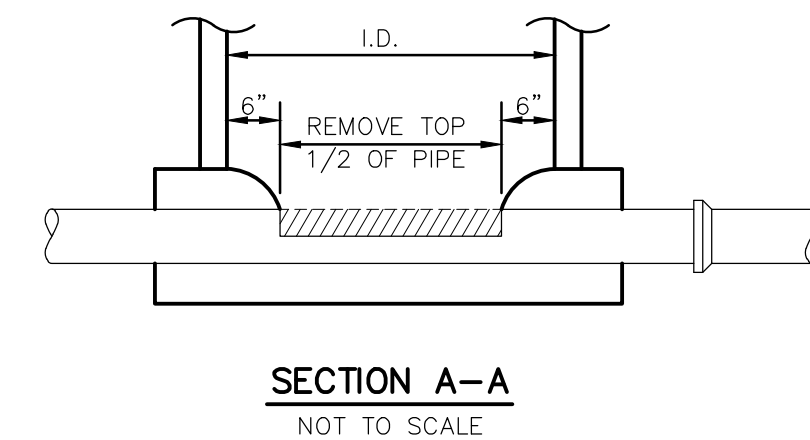
NOT TO SCALE

MAIN SIZE TO MANHOLE SIZE CHART

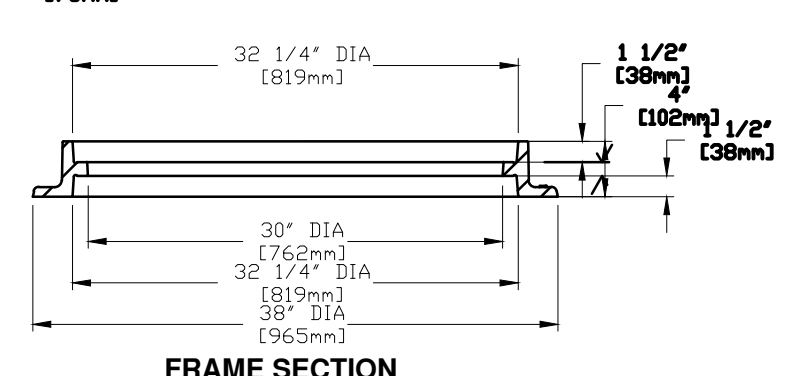
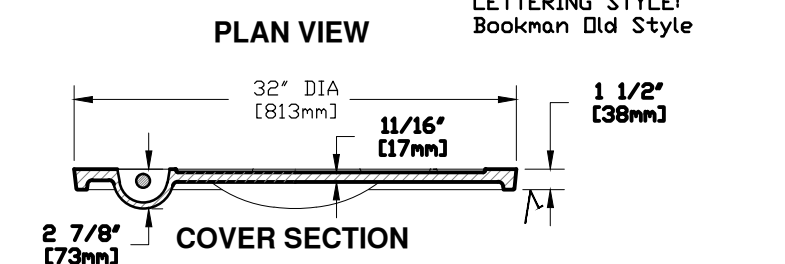
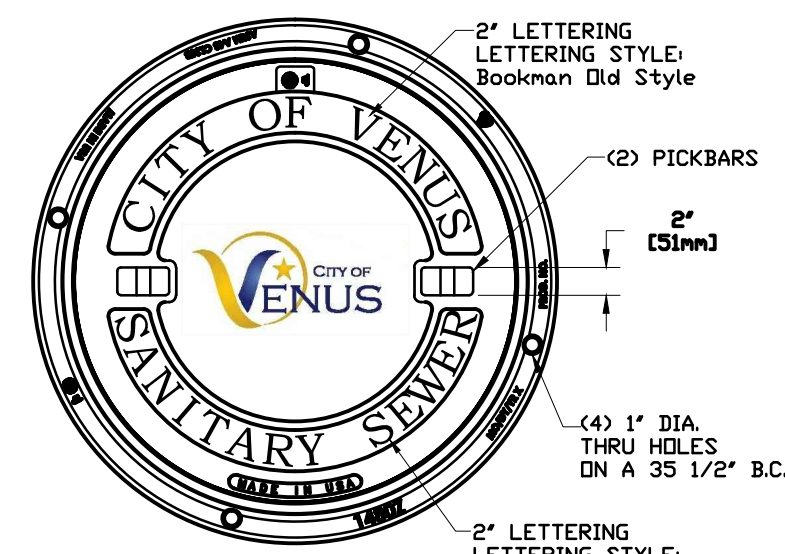
MAIN LINE SIZE	MANHOLE SIZE
6" - 10"	48" DIAMETER
12" - 15"	60" DIAMETER
18" - UP	72" DIAMETER

- * A. 30" DIA CAST IRON M.H. RING & COVER (ABOVE THE 100 YEAR FLOOD PLAIN) (SEE DETAIL AT BOTTOM OF PAGE)
- B. ALL MANHOLE LIDS/RINGS BELOW 100 YEAR FLOOD ELEVATION SHALL BE BOLT-ON TYPE WITH STAINLESS STEEL BOLTS. (BASS & HAYS VRM 30 APPROVED EQUAL)
- C. MANHOLES >10' DEEP TO BE 60" DIAMETER MINIMUM.
- D. ALL MANHOLE SHALL HAVE A MIN. OF 250 MIL SPRAY APPLIED MONOLITHIC HIGH BUILD EPOXY COATING INSTALLED. (ALL MANHOLE LINER SYSTEMS SHALL BE SPARK TESTED).

APPROVED MANHOLE LINER SYSTEMS:
WARREN 301-14
SPECTRA SHIELD
OR PRE APPROVED EQUAL



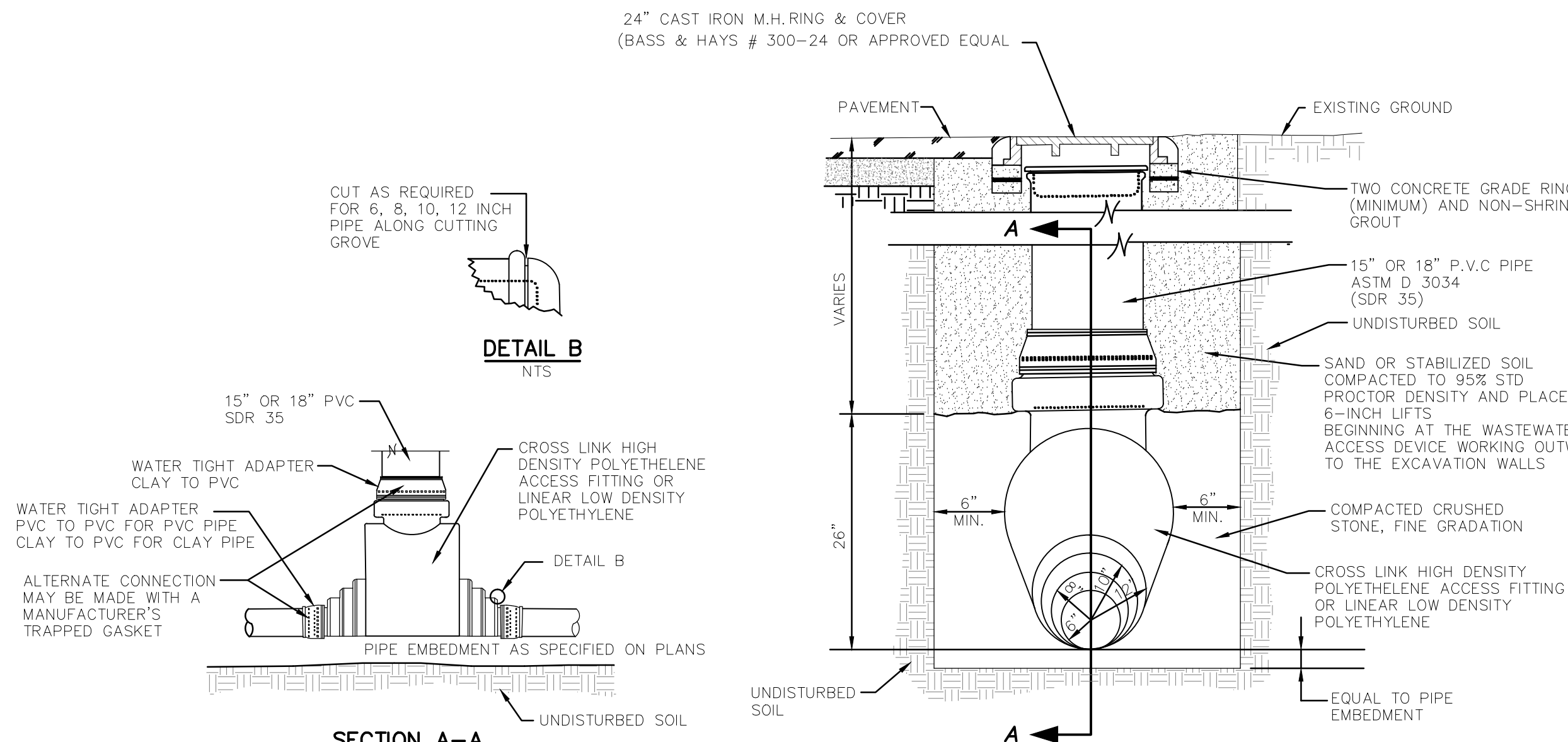
SECTION A-A
NOT TO SCALE



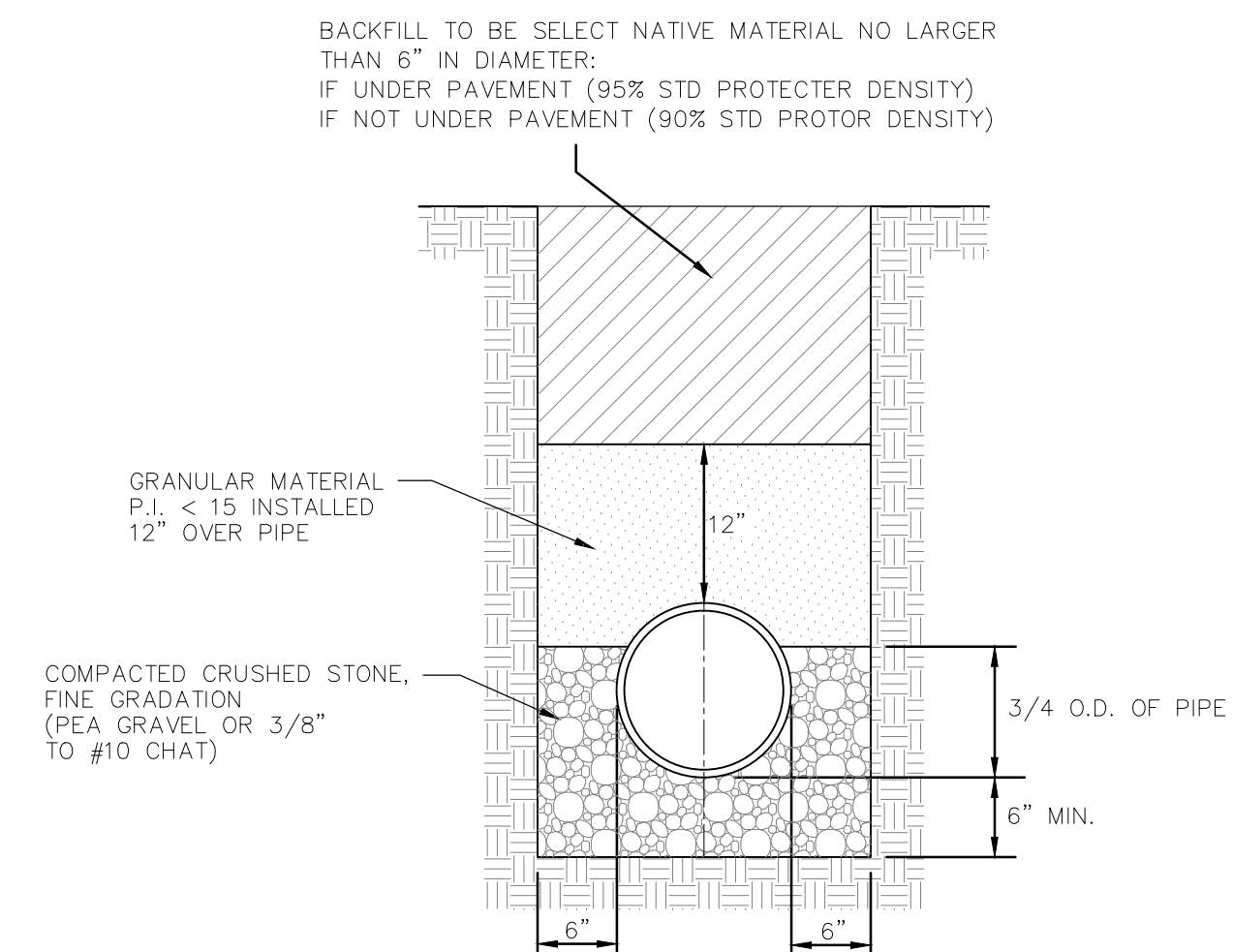
* SECTION OF RING STANDARD CASTING
NOT TO SCALE

MANHOLE RING AND COVER SHALL BE EAST JORDAN PRODUCT NO. 41432157A01 WITH CITY LOGO ON LID.

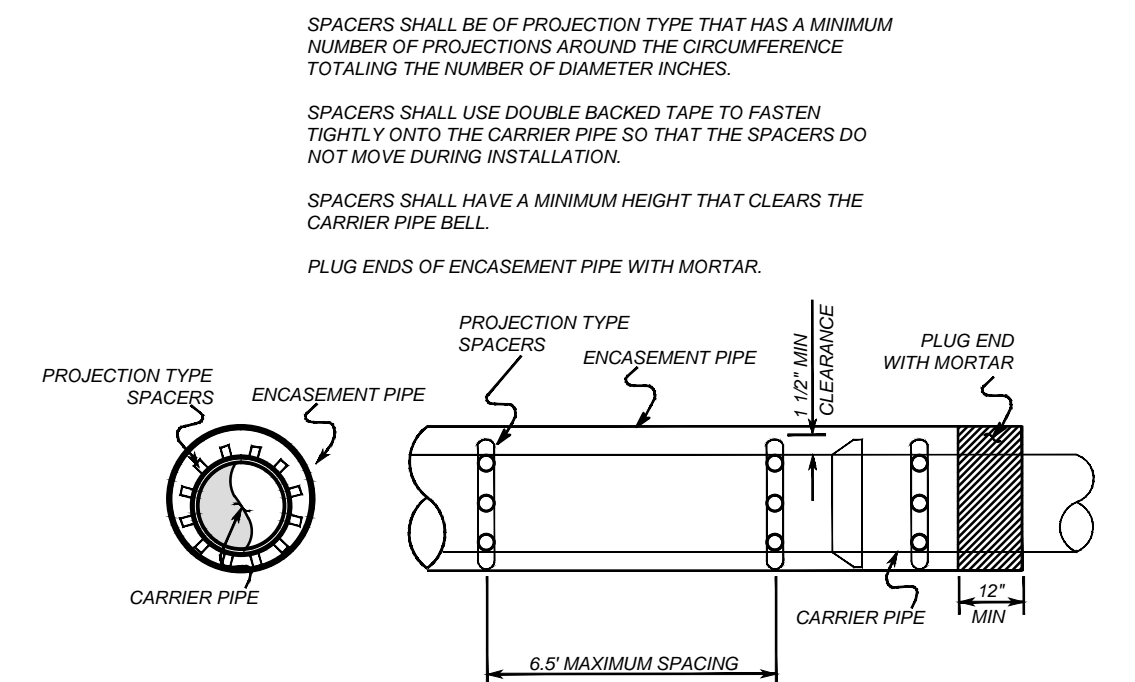
NOTE: PRIOR TO CONSTRUCTION, CONTRACTOR SHALL SUBMIT TO THE PUBLIC WORKS DEPT. A LISTING OF ALL MATERIALS TO BE USED. NO WORK SHALL BE UNDERTAKEN PRIOR TO WRITTEN APPROVAL OF THE MATERIAL LIST BY THE CITY PUBLIC WORKS DEPT.



SECTION A-A
WASTEWATER ACCESS DEVICE
NOT TO SCALE



WASTEWATER MAIN EMBEDMENT DETAIL
NOT TO SCALE



SEWER MAIN BORE DETAIL
CARRIER PIPE THRU ENCASEMENT PIPE
INSTALLATION DETAIL
SCALE NONE

Public Works Department
Venus, Texas

Wastewater Standard Details
SHEET 2 OF 2

DRAWN BY	DATE	SCALE	RVSD
J. DAUGHERTY	MAY 2018	NOT TO SCALE	