UTMA'S
OVERVIEW OF MAINLINE
SANITARY SEWER LINE EXTENSION
REQUIREMENTS
FOR
DEVELOPERS

(Adopted 5/18/2016)

Revision 1 12/15/2021
Revision 2 _____
Revision 3 _____
Revision 4 _____

UNITY TOWNSHIP MUNICIPAL AUTHORITY
PROJECT COMPLETION CHECKLIST

- Submit 110% Performance Bond based on the UTMA approved Cost Estimate and provide an additional 10% Escrow Deposit based on the UTMA approved Cost Estimate for installation of the sanitary sewer. Cost Estimate to include the following line items as a minimum:

1. Mobilization
2. Main Line Sanitary 8", 10", 12" etc. Sewer -- Linear Foot
3. Laterals - Sanitary Sewers 4" & 6" -- Linear Foot
4. Wyes size -- Each
5. Stone Backfill -- Tons
6. Manholes -- Each
7. Erosion and Sedimentation Control -- Lump Sum
8. Traffic Control -- Lump Sum
9. Pavement Restoration Township -- Square Yards
10. Pavement Restoration PennDOT -- Square Yards
11. Bonding - Performance and Maintenance -- Lump Sum
12. Surveys - Layout and As-builts -- Lump Sum

- Installation of sanitary sewers per the approved plans and per UTMA Regulations.

- Complete and submit Record Drawings (As-Builts) for review and approval by UTMA. Record Drawings must be accepted before any sewage permits will be issued for a development and all sewer right of ways must be recorded and conveyed to UTMA.

- After the sewer line has been installed for 30 days, testing will need completed per UTMA Regulations. Tests shall include:

1. Manhole Vacuum Test for each manhole.
2. Pressure Air Test of the entire sewer line.
3. Mandrel (Deflection) Test of the entire sewer line.

- Submit Payment Bond in the amount of 110% of the Contract amount.

- Submit Maintenance Bond for 18 months from the date of the Certificate of Completion in the amount of 15% the cost of construction.

- Escrow Deposit shall remain in place until the expiration date as set forth in any agreements entered into between UTMA and the Developer or otherwise agreed to by UTMA.

(continued)

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UTMA MAINLINE SANITARY SEWER INSTALLATION REQUIREMENTS

SANITARY SEWER GENERAL NOTES:

1. UTILITY CONFLICTS: VERIFY ALL EXISTING UTILITIES IN THE FIELD PRIOR TO START OF EXCAVATION WORK. COMPLY WITH PA ONE CALL (ACT 287) REQUIREMENTS. CONTACT ALL UTILITY COMPANIES THAT MAY HAVE FACILITIES WITHIN THE WORK AREA.

2. PREPARATORY SURVEYS: FIELD CHECK AND VERIFY BENCHMARK ELEVATIONS FOR ALL WORK BEFORE START OF CONSTRUCTION. VERIFY ALL EXISTING SANITARY SEWER INVERTS AND CONFIRM SANITARY SEWER GRADES PRIOR TO INITIATION OF CONSTRUCTION. PREPARE AND SUBMIT CUT SHEET SURVEY. SET/ADJUST FINAL GRADES FOR PROPOSED SANITARY SEWER LINES AND SERVICE LINES AFTER ALL EXISTING UTILITIES AND OTHER OBSTRUCTIONS HAVE BEEN LOCATED BY TEST HOLES. DIG ALL NECESSARY TEST HOLES TO LOCATE ANY EXISTING UTILITIES THAT MAY BE IN CONFLICT WITH THE ALIGNMENT AND GRADE OF THE PROPOSED SANITARY SEWER OR SANITARY SEWER SERVICE LINES, RELOCATE ANY EXISTING UTILITIES SMALLER THAN EIGHT INCH (8") DIAMETER THAT ARE IN CONFLICT WITH THE PROPOSED SEWERS. MEET ALL EXISTING CONDITIONS AND GRADES ALONG THE ROUTE OF THE PROPOSED SEWER LINES.

3. MAINLINE ALIGNMENT: THE ALIGNMENT OF THE PROPOSED SANITARY SEWERS AND LOCATIONS OF THE PROPOSED MANHOLES, WYES AND SIGHT/TEST TEES SHOWN ON THE DRAWINGS ARE ILLUSTRATIVE. THE FINAL CONSTRUCTED ALIGNMENT OF THE MAINLINE MAY BE MODIFIED IN THE FIELD SUBJECT TO PRIOR APPROVAL OF THE ENGINEER AND UTMA WITH PRESERVATION OF DESIGN DEPTH AND PIPELINE GRADE. A PIPELINE IN-LINE LASER LEVEL MUST BE USED FOR ALL PIPELINE INSTALLATIONS.

4. SERVICE LINE LOCATIONS: SET THE ACTUAL LOCATION, PIPELINE STATIONING, ELEVATION AND THE TERMINATION OF ALL SANITARY SEWER SERVICE LINES AT THE TIME OF CONSTRUCTION TO BEST ACCOMMODATE EACH STRUCTURE TO BE SERVED. FOR NEW SERVICE LINE INSTALLATIONS AND EXISTING RECONNECTIONS, PERFORM ALL REQUIRED PREPARATORY WORK INCLUDING DIGGING ANY REQUIRED TEST HOLES TO CONFIRM OR ESTABLISH FINAL CONNECTION OR RECONNECTION POINT.

5. UNCLASSIFIED EXCAVATION: ALL EXCAVATION IS UNCLASSIFIED. NO EXTRA PAYMENT WILL BE MADE FOR ROCK OR ANY OTHER MATERIAL ENCOUNTERED IN CONSTRUCTION AT THE LOCATION SHOWN ON THE DRAWING OR ANY HORIZONTAL OR VERTICAL RELOCATION OF THE PROPOSED SEWER LINES ON THIS PROJECT.

6. COMPETENT PERSON/SAFETY INSPECTOR: DESIGNATE AND MAINTAIN AN ON-SITE TRAINED COMPETENT PERSON/SAFETY INSPECTOR FOR ALL EXCAVATION WORK.

7. TRAFFIC: MAINTAIN AND PROTECT TRAFFIC DURING CONSTRUCTION PER CURRENT MUTCD (PUB.213). COORDINATE ALL WORK WITH LOCAL EMERGENCY RESPONSE AND TRANSPORTATION AGENCIES. PROVIDE ALL REQUIRED SIGNAGE FOR TEMPORARY TRAFFIC CONTROL. MAINTAIN ALL ROADS, SIDEWALKS, STEPS AND TRAVELED WAYS CLEAN, FREE OF MUD OR DUST, AND IN A CONDITION USABLE BY RESIDENTS IN THE AREA DURING CONSTRUCTION. MAINTAIN ACCESS TO ALL RESIDENTIAL AND COMMERCIAL DRIVEWAYS DURING CONSTRUCTION.

8. EXISTING SEWERS: MAINTAIN ALL EXISTING SANITARY SEWERS IN SERVICE DURING CONSTRUCTION. CONTAIN SANITARY SEWAGE TO SANITARY SEWERS. DO NOT DISCHARGE TO THE GROUND SURFACE OR TO GROUNDWATERS. PROVIDE BY-PASS PUMPING AS REQUIRED TO MAINTAIN SANITARY SEWAGE TO SANITARY SEWERS.

9. RIGHTS OF ACCESS: TAKE NOTE THAT ALL R/W AND PROPERTY LINES SHOWN ON THE DRAWINGS ARE APPROXIMATE. CONFINE ALL ACTIVITY TO AUTHORIZED RIGHTS-OF-WAYS. WHEN IN DOUBT, VERIFY WITH OWNER.

10. E & S CONTROL: IMPLEMENT & MAINTAIN AN EROSION & SEDIMENTATION CONTROL PLAN.

11. RESTORATION: RESTORE ALL PRIVATE PROPERTY DISTURBED BY CONSTRUCTION ACTIVITIES WITHIN TWO WEEKS OF CONSTRUCTION WORK. REPLACE MAILBOXES AND DRIVEWAY CROSS DRAINS IMMEDIATELY. RESTORE YARD AREAS WHICH ARE DISTURBED AS A RESULT OF THE WORK WITH FOUR INCHES (4") OF TOPSOIL, SEEDED, AND MULCHED PER TECHNICAL SPECIFICATIONS. ADJUST ALL EXISTING AND NEW INLETS, MANHOLES, VALVE BOXES, CURB BOXES AND ALL OTHER SIMILAR ITEMS LOCATED WITHIN THE NEW PAVED AREAS AS REQUIRED TO MATCH FINAL PAVING GRADE TILT AS REQUIRED WITH APPROVED SPACERS TO MATCH. PROVIDE MINIMUM TWO INCH (2") DEPTH ASPHALT COLD PATCH WITH EIGHTEEN INCH (18") 2A STONE INTERIM TRENCH CAP IN ALL ROADWAYS.

12. DEMOLITION: CUT AND PLUG ALL EXISTING SANITARY SEWER LINES TO BE TAKEN OUT OF SERVICE AT LOCATIONS AS SHOWN ON THE DRAWINGS OR AS DIRECTED BY THE OWNER. PLUG WITH SUITABLE WATERPROOF NON-SHRINK GROUT AT LEAST ONE FOOT (1') INTO PIPE. REMOVE NOTED MANHOLES TO MINIMUM THREE FOOT (3') BELOW GRADE PLUG INLET AND OUTLET PIPES AS DIRECTED. BACKFILL TO GRADE WITH SUITABLE MATERIAL. RETURN CASTINGS TO OWNER. GROUT ALL ABANDONED SEWERS SOLIDLY IN PLACE.

13. RECORDS: MAINTAIN DAILY AS-BUILT RECORD INFORMATION INCLUDING WYE STATIONING. GIVE UTMA ON-SITE REPRESENTATIVE COPIES OF ALL DELIVERY SLIPS FOR ALL MATERIALS DELIVERED TO THE PROJECT.

14. PROJECT COORDINATION: NOTIFY THE AUTHORITY AND AUTHORITY ENGINEER 48 HOURS IN ADVANCE OF STARTING THE PROJECT.

15. PIPELINE TESTING: PIPELINE ACCEPTANCE TESTING INCLUDES; LOW PRESSURE (5 PSIG FOR 5 MIN.), MANDREL, AND MANHOLE VACUUM TESTING. LOW PRESSURE TEST SERVICE LINES SIMULTANEOUSLY WITH MAIN LINE.

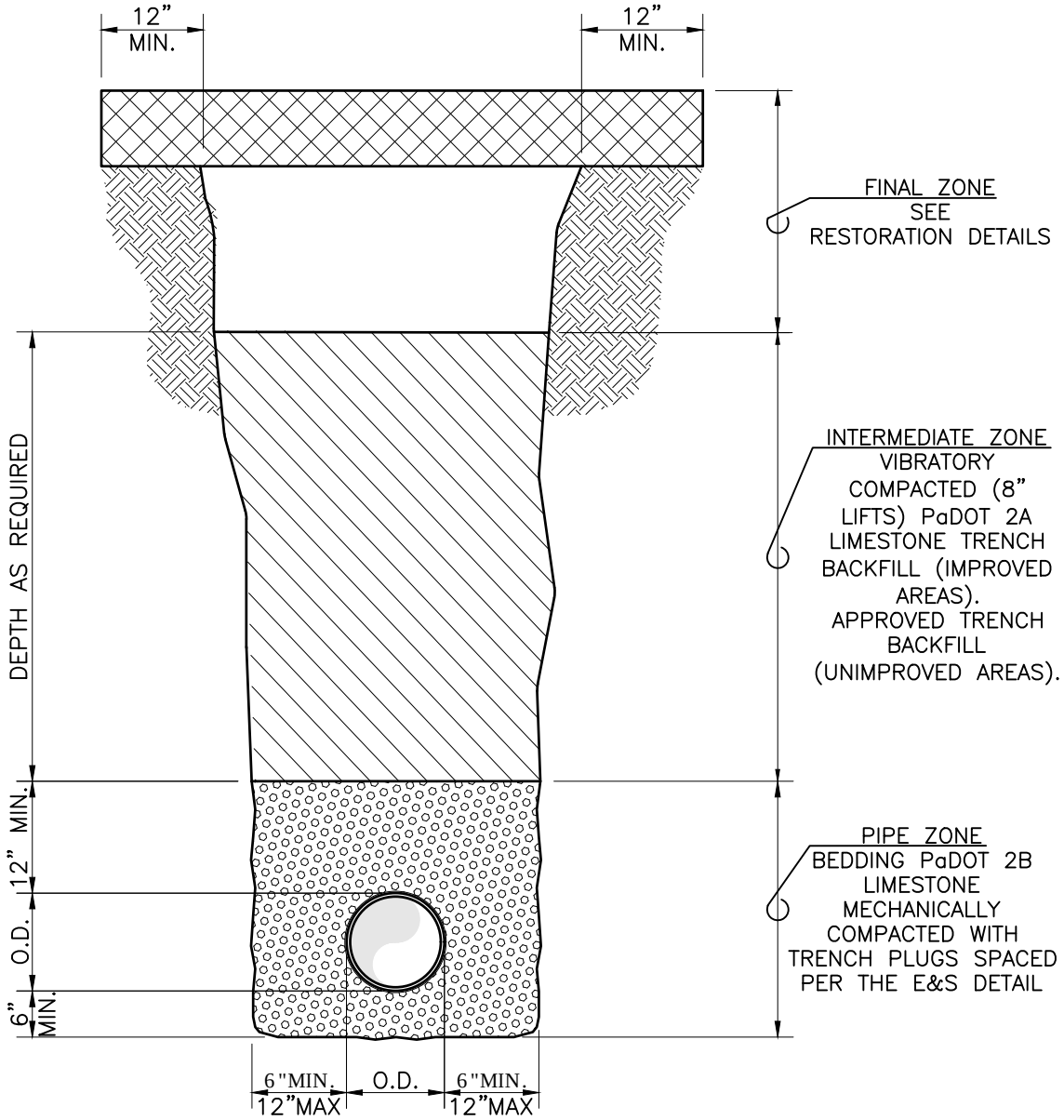
16. OPEN EXCAVATIONS: PROTECT PUBLIC AT ALL TIMES FROM ALL OPEN EXCAVATION. COVER ALL OPEN EXCAVATION WITH SUITABLE STEEL PLATES AT THE END OF EACH WORKDAY.

17. BACKFILL: TRENCH BACKFILL REQUIREMENTS

PIPE ZONE:
PVC PIPE FULL STONE BEDDING [2B CRUSHED LIMESTONE (NO SLAG)]
AND RCCP STONE BEDDING [2B CRUSHED LIMESTONE (NO SLAG)]
WRAP ALL D.I. PIPE WITH 2-PLY CROSS LAMINATED HIGH DENSITY POLYETHYLENE

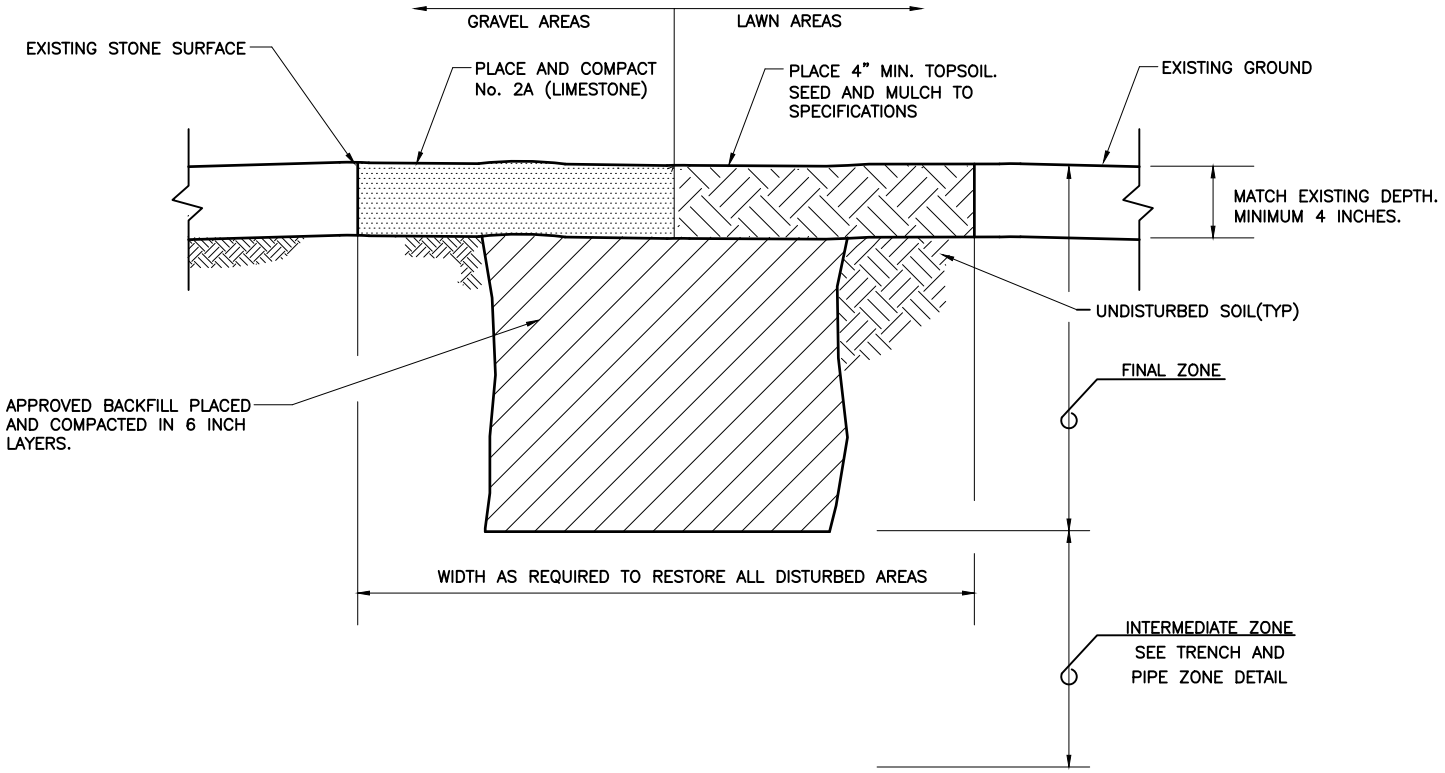
INTERMEDIATE ZONE:
IMPROVED AREAS FULL TRENCH 2A CRUSHED LIMESTONE VIBRATORY COMPACT IN 8" LIFTS
UNIMPROVED AREAS APPROVED BACKFILL VIBRATORY COMPACT IN 8" LIFTS

FINAL ZONE:
AS SPECIFIED



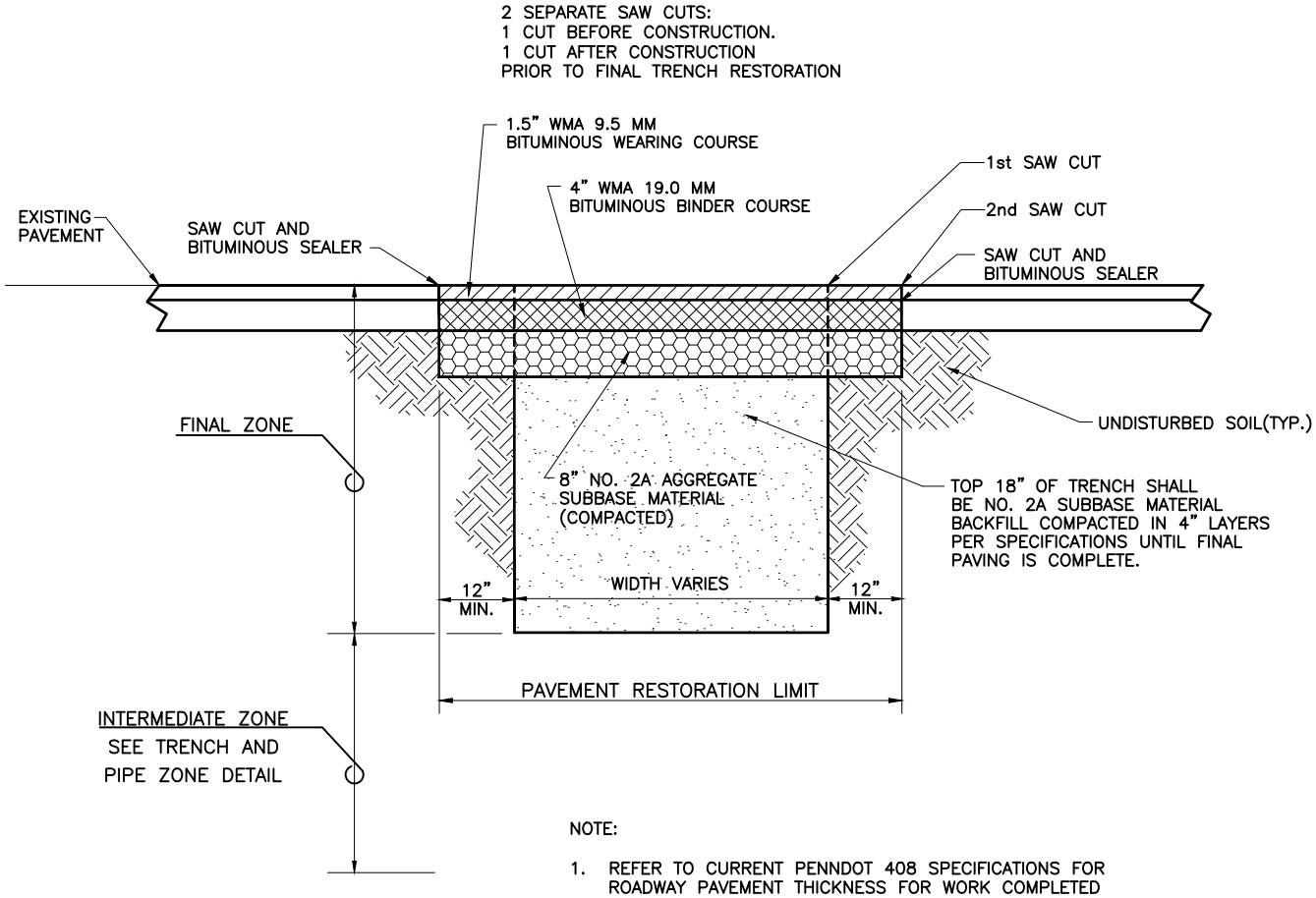
TYPICAL
TRENCH AND PIPE ZONES

N. T. S.



UNIMPROVED AREA SURFACE RESTORATION

N. T. S.

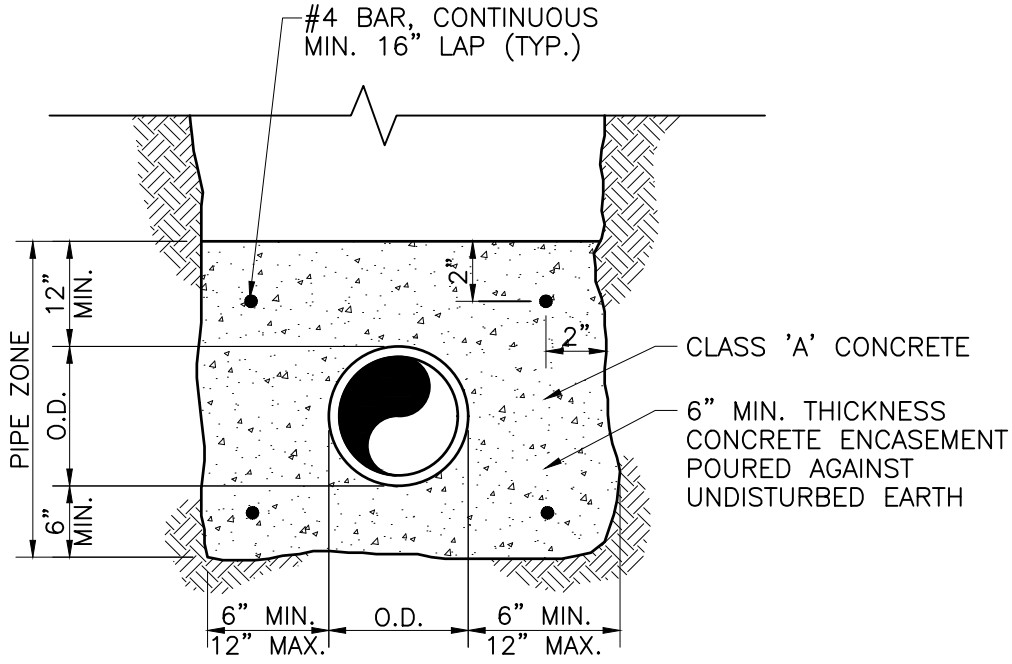


NOTE:

1. REFER TO CURRENT PENNDOT 408 SPECIFICATIONS FOR ROADWAY PAVEMENT THICKNESS FOR WORK COMPLETED WITHIN STATE RIGHT OF WAYS.

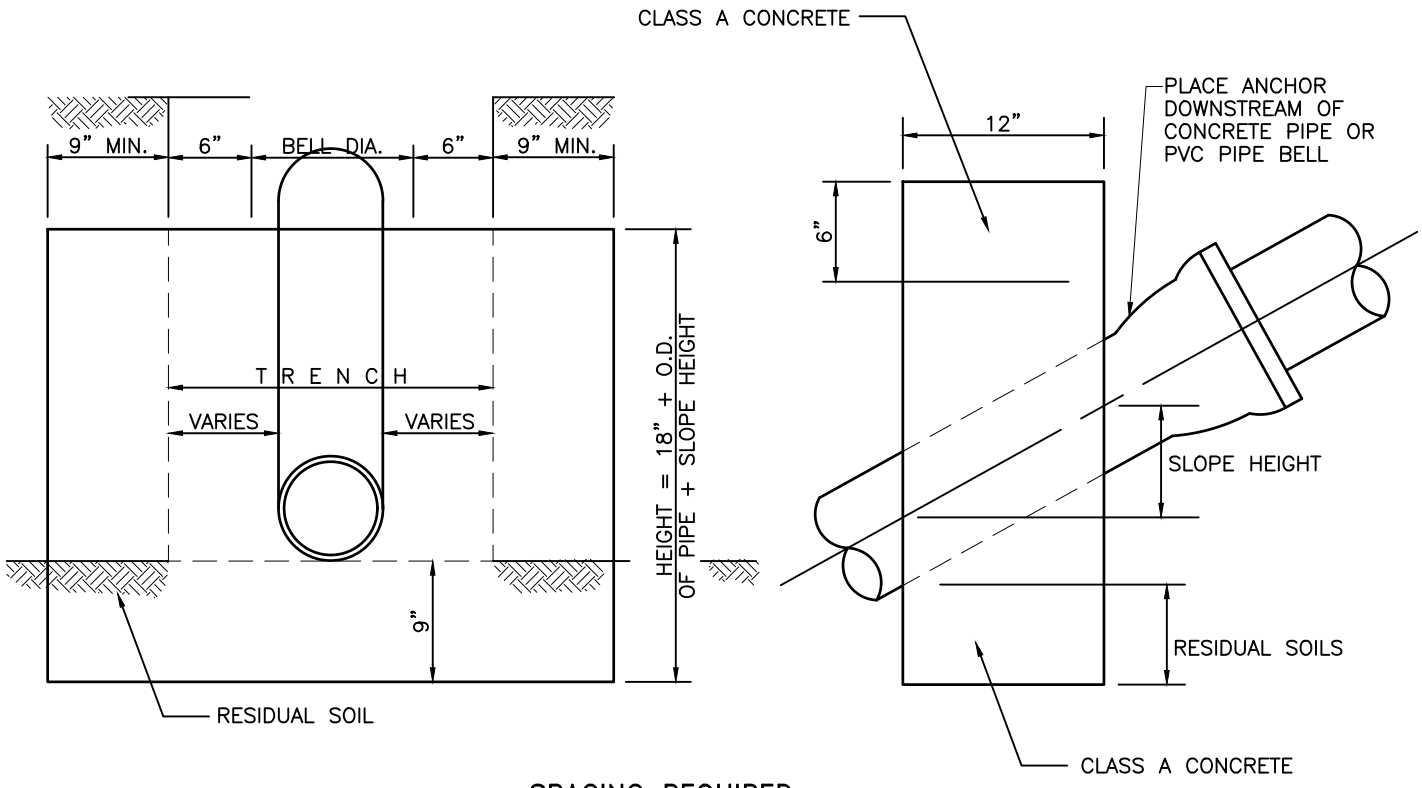
Bituminous Pavement Trench Restoration For Township Roadway

N. T. S.



TYPICAL
CONCRETE ENCASEMENT

N. T. S.

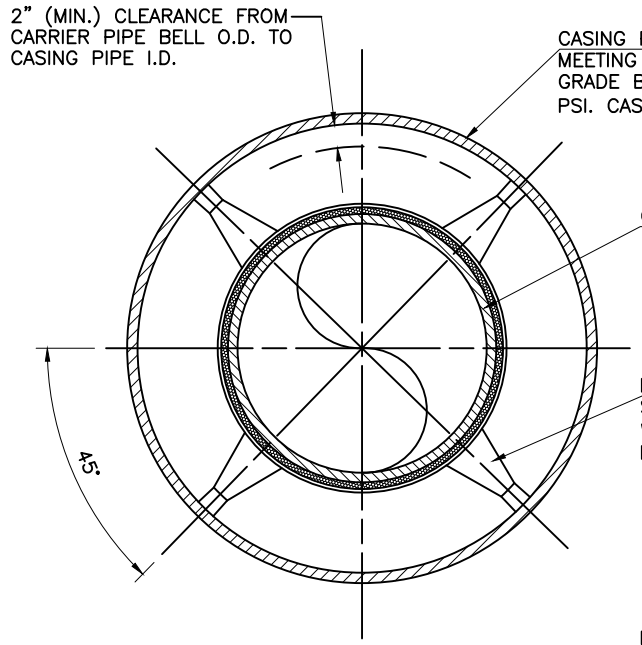


SPACING REQUIRED

% GRADE	DISTANCE CENTER TO CENTER
20% TO 35%	36' C. to C.
35% TO 50%	24' C. to C.
50% +	16' C. to C.

Concrete Anchor

N.T.S.



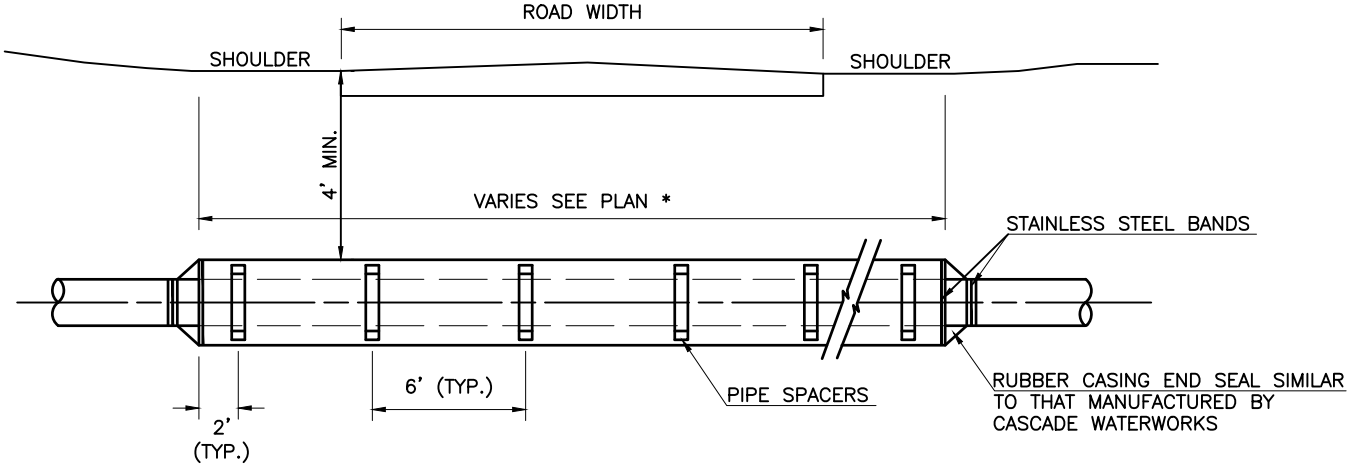
NOTES :

INSTALL PIPE SPACERS MAX. 3' FROM JOINT, MAX. OF 6' BETWEEN SUPPORTS, AND A MAX. OF 2' FROM CASING END.

LOCATE PIPE JOINT 1' MIN. OUTSIDE CASING.

UNDER 12" DIA. CARRIER PIPE, 3 EQUALLY SPACED SPACERS PER SECTION OF PIPE

OVER 12" DIA. CARRIER PIPE, 4 EQUALLY SPACED SPACERS PER SECTION OF PIPE



* EXACT LENGTH OF CASING PIPE TO BE DETERMINED IN THE FIELD.

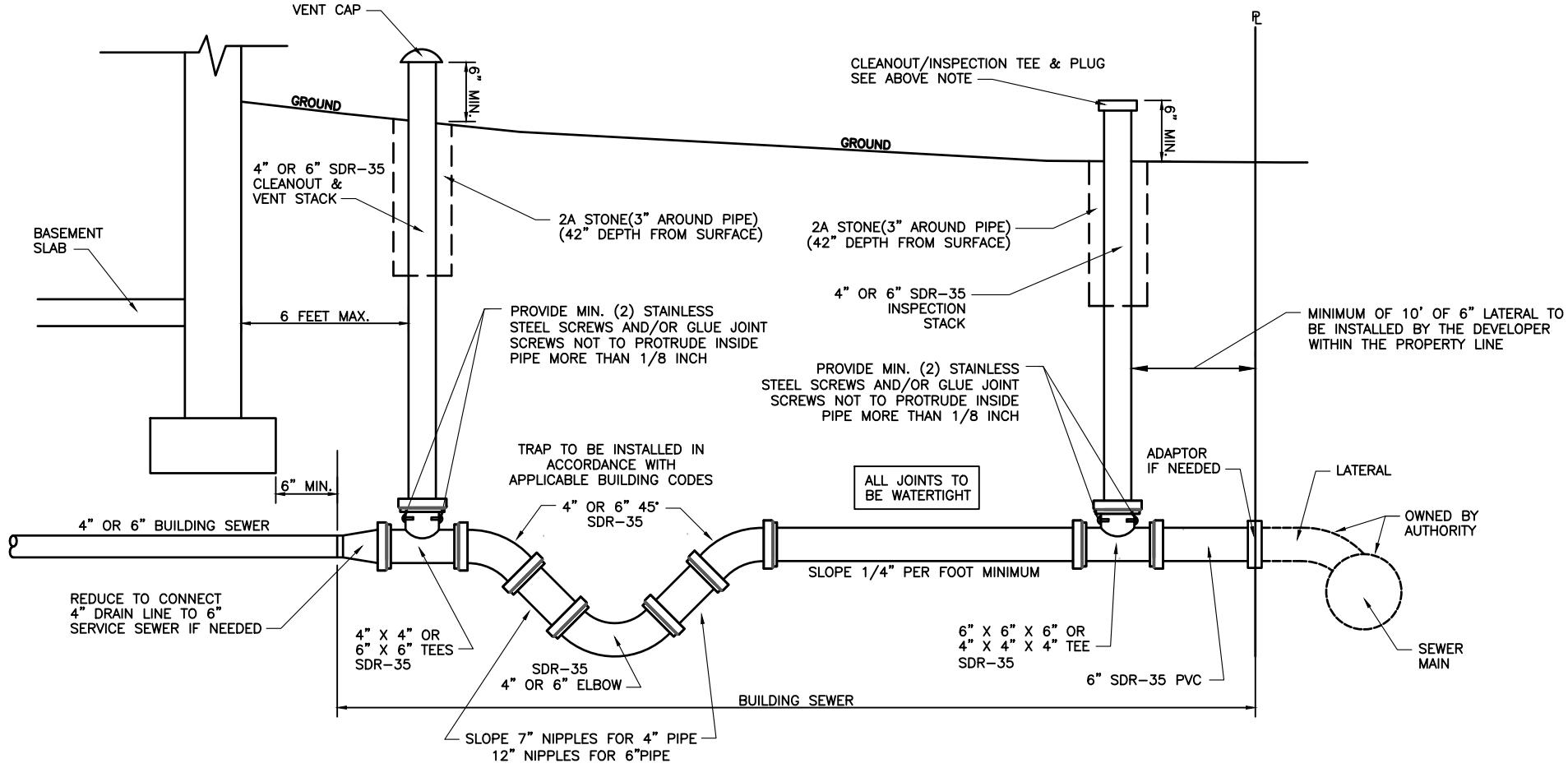
Road Boring Steel Casing Detail

N. T. S.

NOTE: VENT STACKS MAY BE AT GROUND SURFACE IF AN APPROVED METAL CAP IS PROVIDED WITH CONCRETE PAD.

NOTE: VENT STACKS MAY NOT BE LOCATED IN DRIVEWAY OR AREAS SUBJECT TO FLOODING OR COLLECTING GROUND WATER. PERFORATED CLEANOUT/INSPECTION CAPS NOT PERMITTED.

NOTE: CLEANOUTS MUST BE INSTALLED EVERY 100 FEET (MAXIMUM).

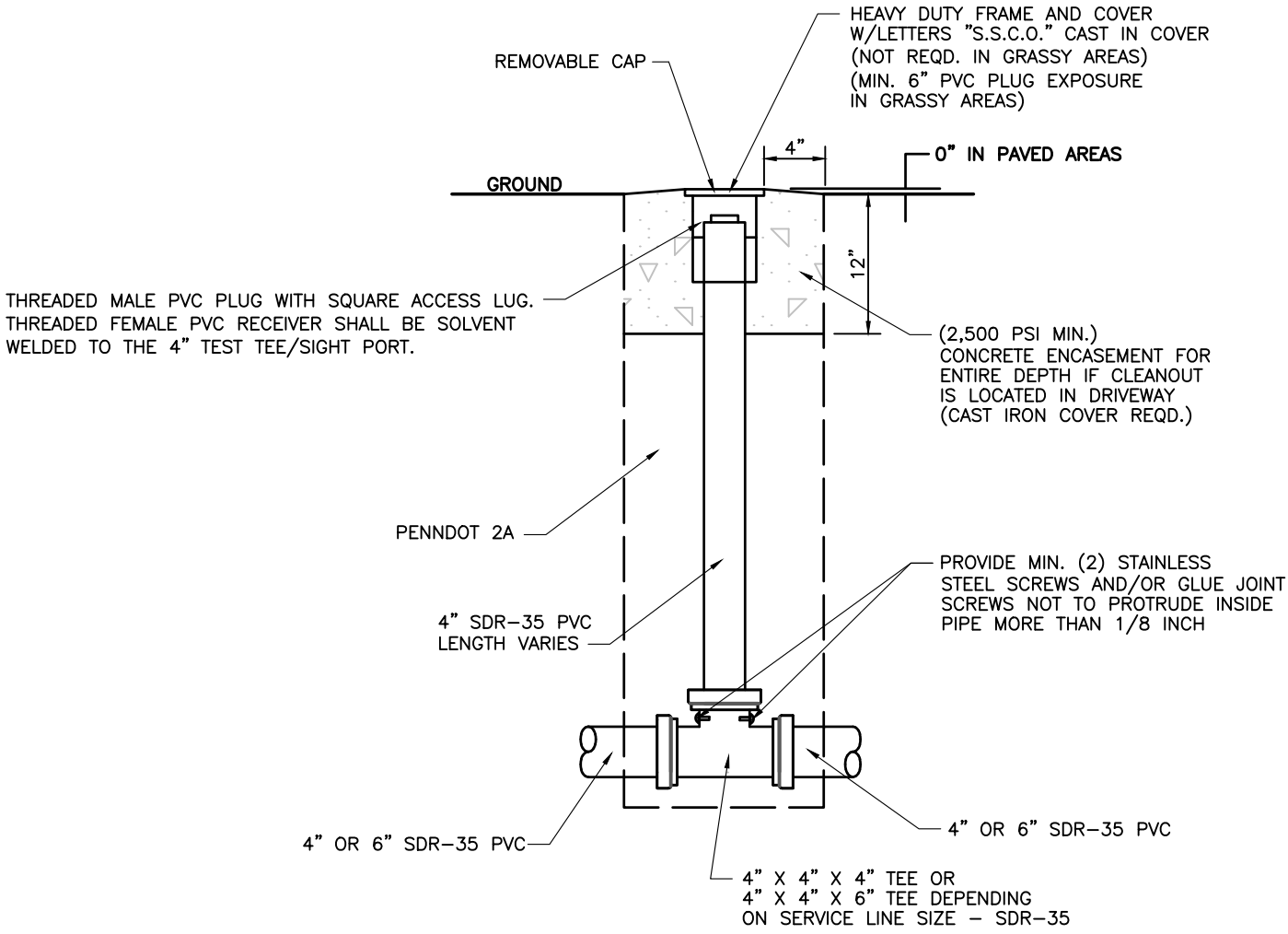


SERVICE SEWER DETAIL
UNITY TOWNSHIP MUNICIPAL AUTHORITY
WESTMORELAND COUNTY, PA

N. T. S.

11.

REVISED 3-18-21

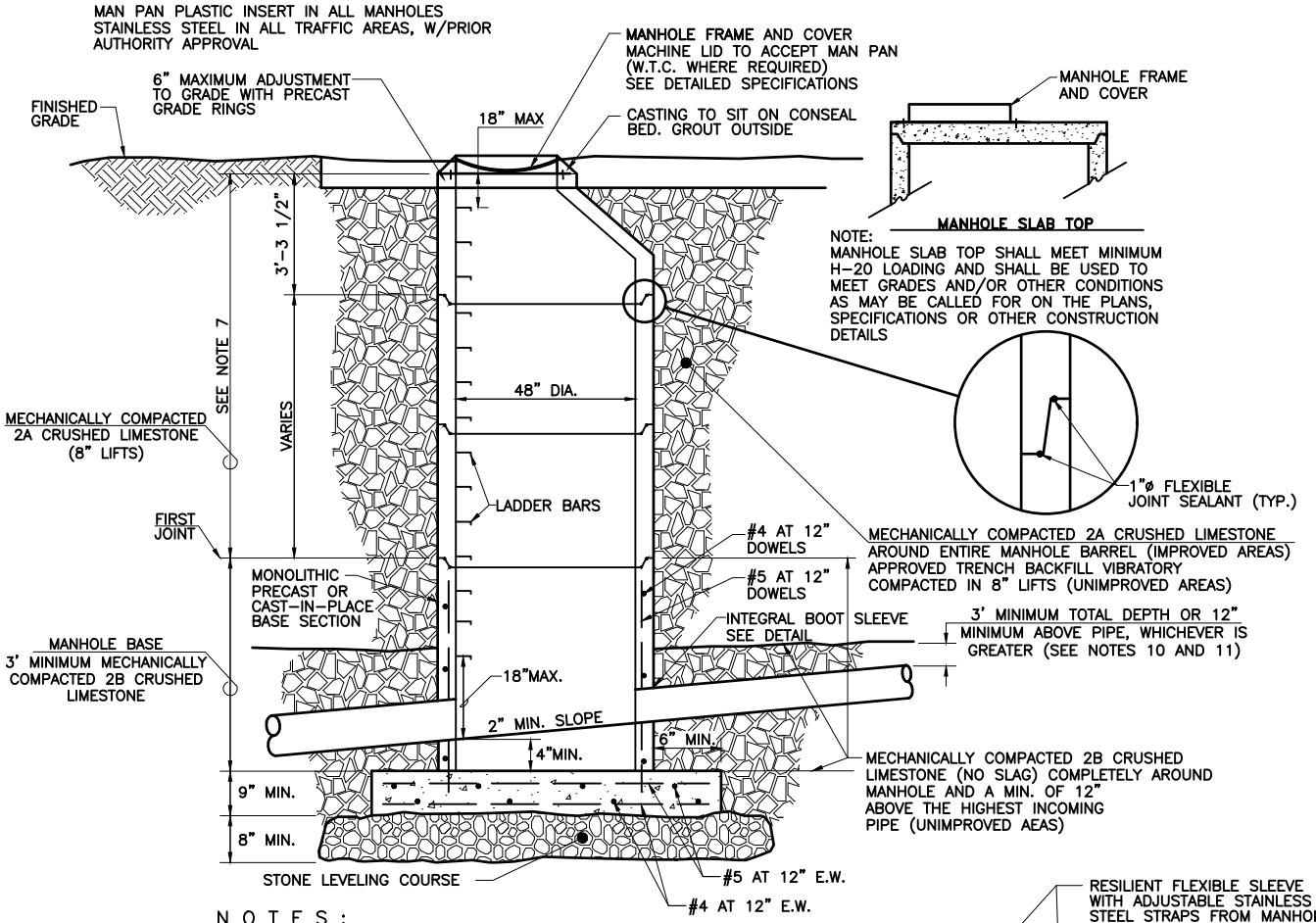


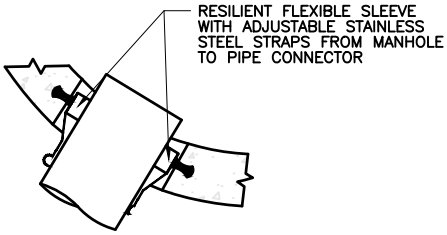
N O T E S :

1. SDR-35 PVC PIPE CONFORMING TO THE CURRENT ASTM REQUIREMENTS.
2. CONSTRUCT ALL LATERALS AT A MINIMUM SLOPE OF TWO PERCENT(2%).
3. INSTALL ALL LATERALS ACCORDING TO THE TRENCH AND PIPE ZONE DETAIL.
4. THE CONTRACTOR TO COORDINATE PLACEMENT OF WYE CONNECTION, SERVICE LATERAL AND SIGHT TEE WITH THE PROPERTY OWNER AND AUTHORITY REPRESENTATIVE PRIOR TO THE START OF CONSTRUCTION.
5. CLEANOUT SPACING - 100 FEET MAXIMUM FOR 4" AND 6" LATERALS.
6. CLEANOUT WILL BE REQUIRED AT ALL BENDS GREATER THAN 45 DEGREES.

TYPICAL CLEANOUT/INSPECTION DETAIL (IMPROVED AREAS)

N. T. S.





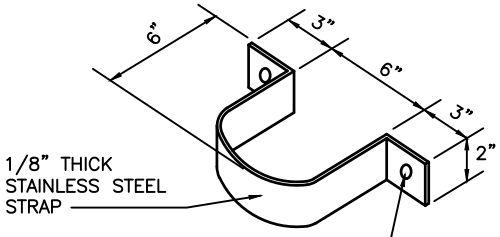
INTEGRAL BOOT SLEEVE

N O T E S :

1. ALL CONCRETE TO BE CLASS AAA CONCRETE, 4500 PSI, 5%± 1% AIR ENTRAINED WITH XYPEX ADMIXTURE.
2. SEAL MANHOLE BARREL JOINTS WITH 2- 1"ø FLEXIBLE BUTYL RUBBER JOINT SEALANT, USE 1/2"ø FOR FRAME AND COVER.
3. ANCHOR FRAME AND COVER WITH 2-3/4" DIA. S.S. ANCHOR BOLTS SET PERMANENTLY INTO CONCRETE.
4. POINT LIFTING HOLES WITH NON-SHRINK GROUT, WATERTIGHT, NEAT AND SMOOTH.
5. MAXIMUM ADJUSTMENT TO FINISHED GRADE USING PRECAST GRADE RINGS IS SIX INCHES (6").
6. CONFORM PRECAST SECTIONS TO ASTM C-478 AS REVISED.
7. IF THIS DIMENSION IS LESS THAN 3'-3" USE PRECAST SLAB TOP DESIGNED TO MEET LOAD CONDITIONS (H-20 MIN.)
8. COAT EXTERIOR OF ALL MANHOLE BARREL SECTIONS WITH 2 COATS OF AN APPROVED BITUMINOUS COATING.
9. CAST LADDER BARS INTO BARREL SECTIONS AND CONFORMING TO ASTM C-478, AS REVISED.
10. WHERE MANHOLES ARE CONSTRUCTED IN IMPROVED AREAS, BACKFILL THE PIPE ZONE AREAS PER NOTE 11, THEN TRANSITION TO MECHANICALLY COMPACTED PaDOT 2A CRUSHED LIMESTONE (NO SLAG) FOR THE REMAINING BACKFILL.
11. WHERE MANHOLES ARE CONSTRUCTED IN UNIMPROVED AREAS, BACKFILL THE ENTIRE EXCAVATED AREA WITH MECHANICALLY COMPACTED PaDOT 2B CRUSHED LIMESTONE (NO SLAG) FROM THE BOTTOM OF THE EXCAVATED AREA TO A 3' TOTAL DEPTH OR 12" ABOVE THE HIGHEST PIPE ENTERING THE MANHOLE, WHICHEVER IS GREATER.
12. INVERTS MAY BE PRE-CAST OR POURED-IN-PLACE. IF POURED-IN-PLACE AND INVERTS ARE MISALIGNED HORIZONTALLY OR VERTICALLY, UTMA WILL REQUIRE GRINDING, JACKHAMMERING AND REPOURING OF INVERTS AS REQUIRED FOR A SMOOTH FLOW LINE.

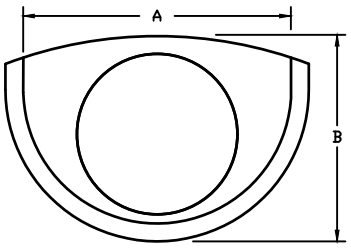
TYPICAL
PRECAST CONCRETE MANHOLE AND SLAB TOP

N. T. S.

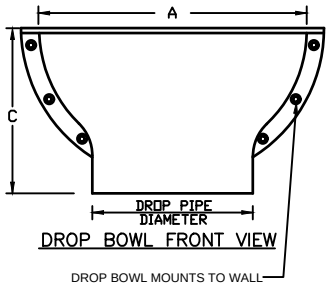


STRAP DETAIL

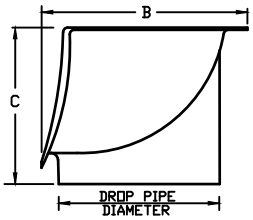
N.T.S.



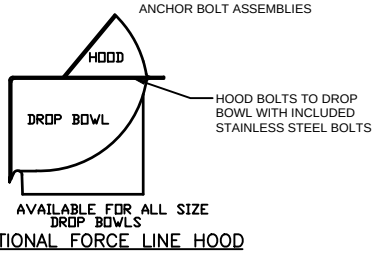
DROP BOWL TOP VIEW



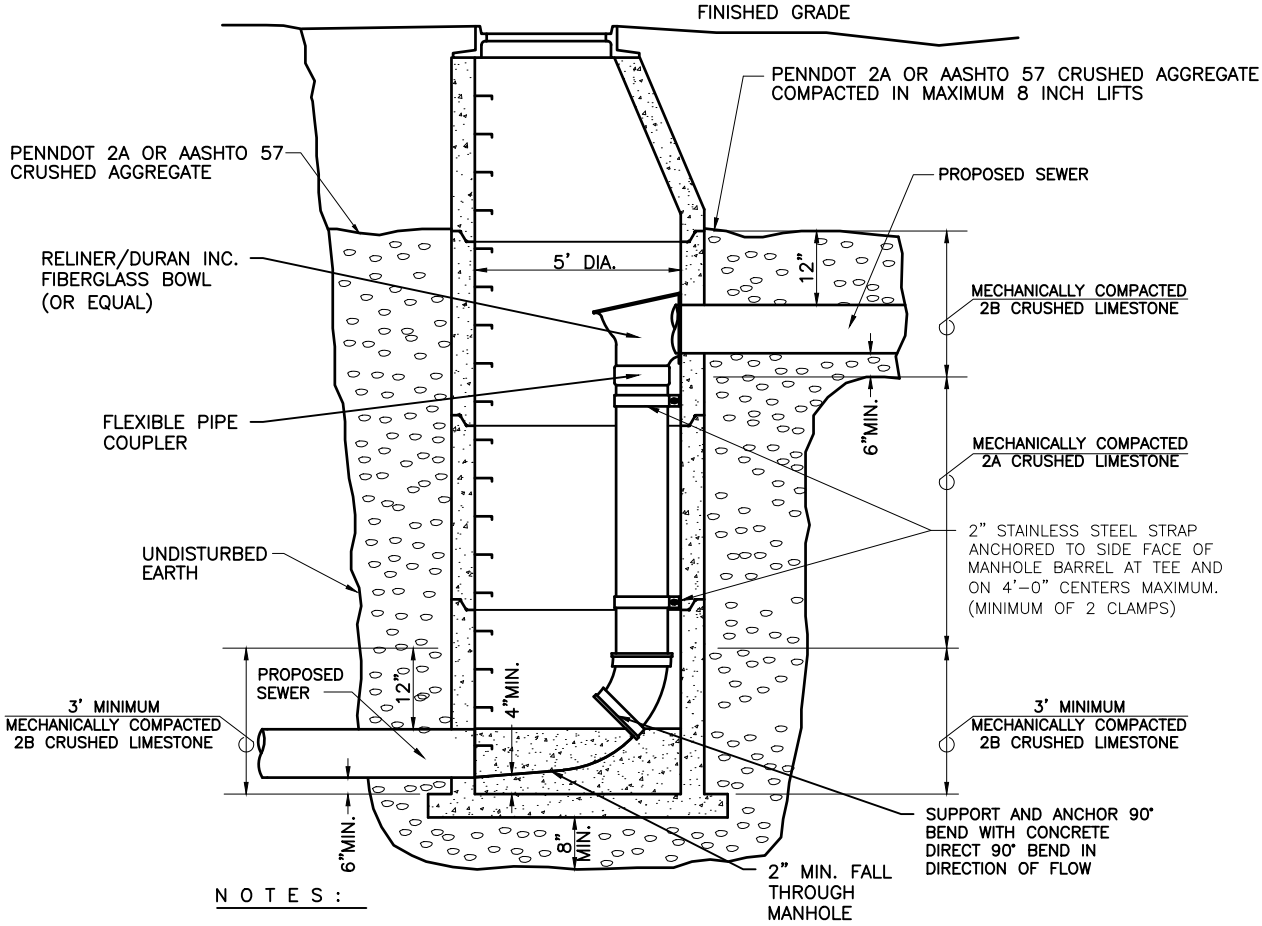
DROP BOWL FRONT VIEW



DROP BOWL SIDE VIEW



OPTIONAL FORCE LINE HOOD

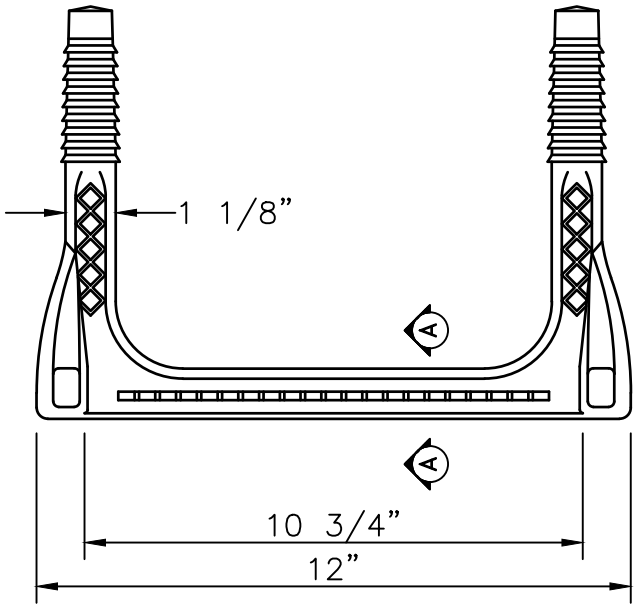


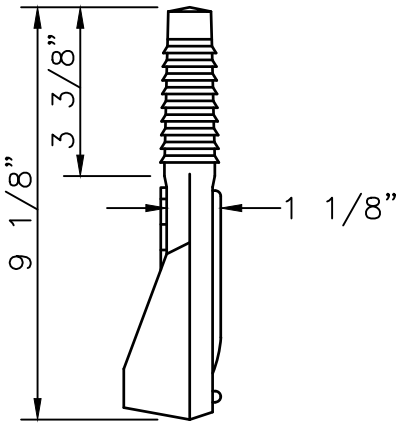
N O T E S :

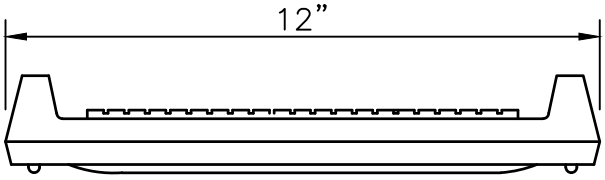
1. USE SAME PIPE MATERIAL USED TO CONSTRUCT THE MAIN FROM WHICH THE DROP CONNECTION IS MADE.
2. CONFORM PVC DROP CONNECTION INLET PIPE SHALL CONFORM TO ASTM SDR 35.
3. DIAMETER OF THE DROP CONNECTION INLET PIPING SHALL EQUAL THE DIAMETER OF THE INLET PIPE.
4. MECHANICALLY COMPACTED PENNDOT 2A OR AASHTO No. 57 CRUSHED AGGREGATE 8" MINIMUM LEVELING COURSE UNDER BOTTOM OF MANHOLE.
5. PROVIDE 5'–0" DIAMETER MANHOLES FOR MANHOLE DROP CONNECTIONS.
6. ALL MOUNTING HARDWARE TO BE STAINLESS STEEL.

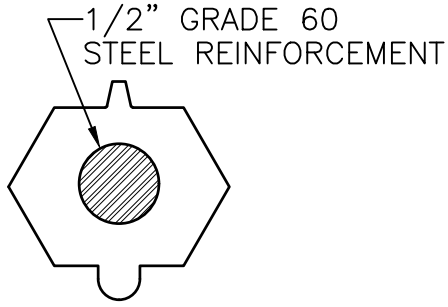
TYPICAL
INSIDE MANHOLE DROP CONNECTION
TO BE USED FOR ALL DROP CONNECTIONS OVER 12' IN DEPTH

N.T.S.

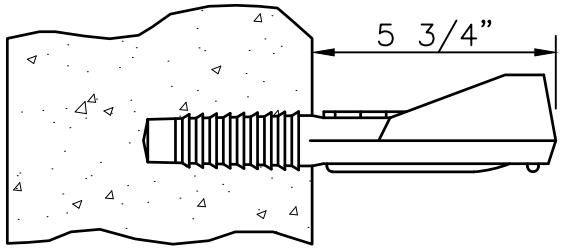






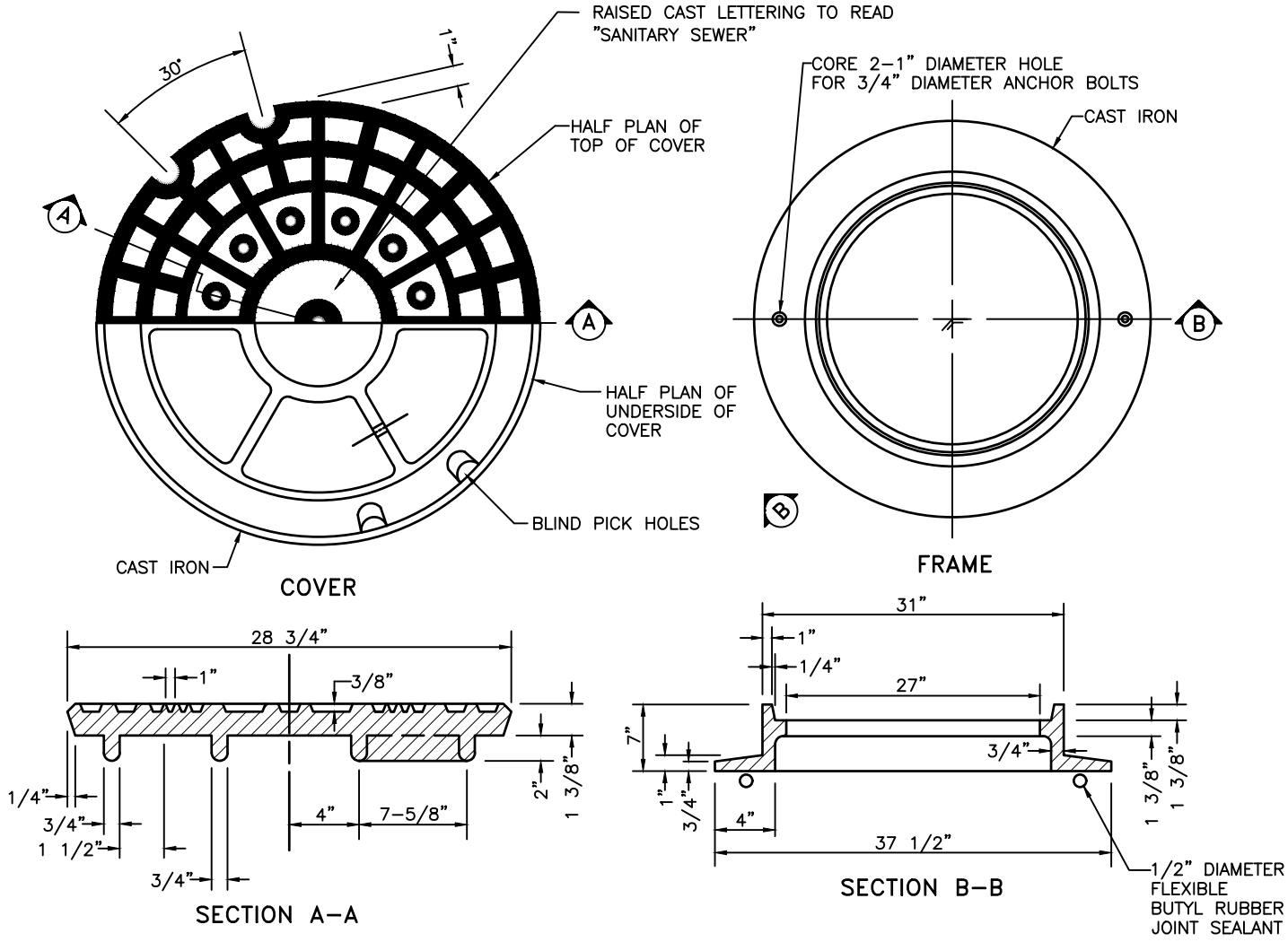


SECTION A–A



TYPICAL
LADDER BARS FOR MANHOLES

N. T. S.



TYPICAL
MANHOLE FRAME AND COVER

N. T. S.

TESTING REQUIREMENTS FOR SANITARY SEWER LINE INSTALLATION

TESTING SANITARY SEWERS (GRAVITY)

Each section of sewer **including service laterals** constructed as part of this contract, shall be cleaned, tested and inspected. All repairs shown to be necessary by the tests are to be made promptly. Broken or cracked pipe shall be replaced and all deposits removed and the sewer left true to line and grade and entirely clean. Each length of sewer is to show a full circle of light from manhole to manhole.

Pressure Air Test -- All sewers (mains and service lines) shall be air tested for leakage and any section of sewer showing leakage in excess of the amount hereinafter set forth shall be rejected.

The air test shall be conducted by the Contractor under the observation of the UTMA's Representative and shall be performed with AIR-LOC equipment manufactured by Cherne Industrial, Inc., Hopkins, Minnesota or approved equal.

The Contractor may desire to perform an air test for his own purposes prior to backfilling; however, the "acceptance air test" shall be performed after backfilling has been completed.

Each section of sewer being tested shall be temporarily sealed off by means of suitable plugs. All ends of lateral stubs shall be sealed with suitable removable caps securely fastened to withstand internal test pressures.

The procedure and criteria to be used for air testing shall conform to currently published standard for the material being tested.

All gauge test pressures in the test shall be increased by the amount of ground water pressure at the crown of the pipe.

Plugs shall be properly secured and care shall be exercised in their removal. All plugs shall be blocked and carefully braced to prevent sudden release of compressed air, slippage, or blowout due to internal pressure.

No personnel shall be permitted in the manholes or at the end of the pipe test section during testing.

The pressurizing equipment shall have a safety gauge which shall limit the loading on the sewer line to 10 psi. The calibrations on all pressure gauges shall be no greater than 0.10 psi.

If the pipe installation fails to meet test requirements, the Contractor shall determine, at his own expense, the source of leakage and shall repair or replace all defective materials and workmanship.

Immediately following the testing, the entire interior of the pipe shall be inspected by a UTMA Representative, and in the event any joints are found to be leaking, they shall be properly repaired, regardless of whether or not the pipe meets the air/pressure test requirements. Under no circumstances shall infiltration in any section of pipe between two adjacent manholes exceed 200 gallon/mile/ inch diameter/day.

All sewer pipes shall be tested by inducing low pressure air, internally, into the pipe. The air shall be slowly introduced into the pipe and the pressures shall gradually be increased within the test section to 5.0 psi. The test section shall be required to **sustain that 5.0 psi minimum without loss or drop in pressure for a time period of 5 minutes.** In the event pressure loss does occur, appropriate repairs or reconstruction shall be made, the test procedure shall be made, and the test procedure shall be repeated until the test criteria (5.0 psi for 5 minutes) are successfully accomplished.

Where groundwater elevations prevail higher than the top of the sewer pipe being tested, 0.5 psi per foot of hydrostatic head above the top of the sewer pipe shall be added to the test pressure.

Mandrel/Deflection Test - All PVC pipes shall also be tested for pipe deflection. Said tests shall not be performed until the backfill has been in place for at least thirty (30) days; maximum acceptable deflection shall be 5% of the internal diameter. Said testing may be performed with a deflectometer, calibrated internal TV equipment or a mandrel similar or equal to that manufactured by Cherne Industries, Inc. Deflection testing equipment and procedures shall be submitted for approval by the Engineer.

Vacuum Testing of Manholes - After erection of the manholes, connection of the sewers, and placement of the backfill to the approximate finished ground elevation, each manhole shall be vacuum-tested for water tightness. Connecting pipes shall be securely plugged and a vacuum testing device shall be placed and sealed within the top of the precast manhole section. A vacuum of ten inches (10") of Hg shall be drawn after which the vacuum pump shall be shut off. If the indicated vacuum pressure drops to nine inches (9") in less than one minute, the test apparatus shall be removed and appropriate repairs shall be performed. The test shall be repeated, as necessary, until a time period of a minimum of one minute occurs before the vacuum pressure drops one inch (1").