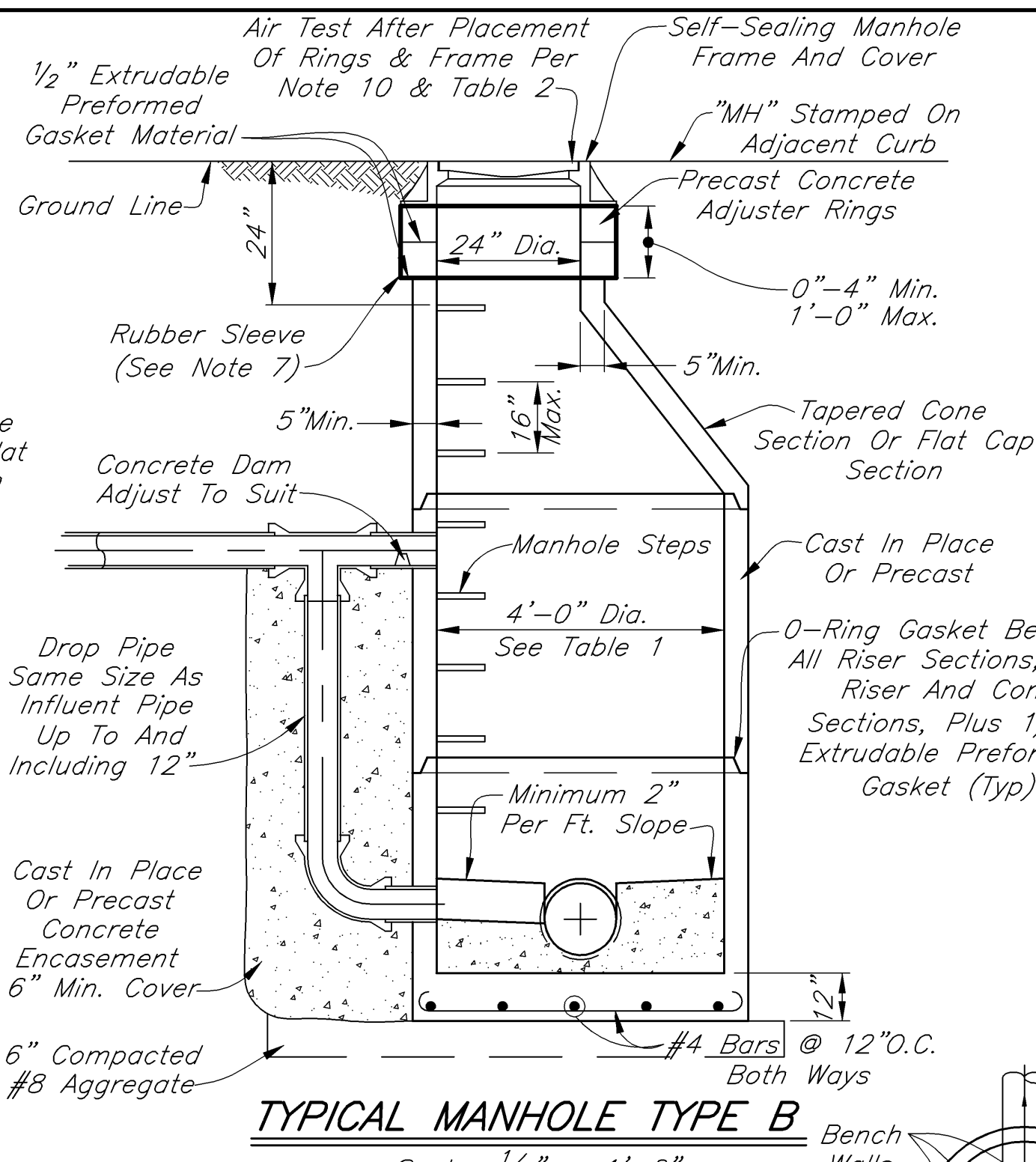
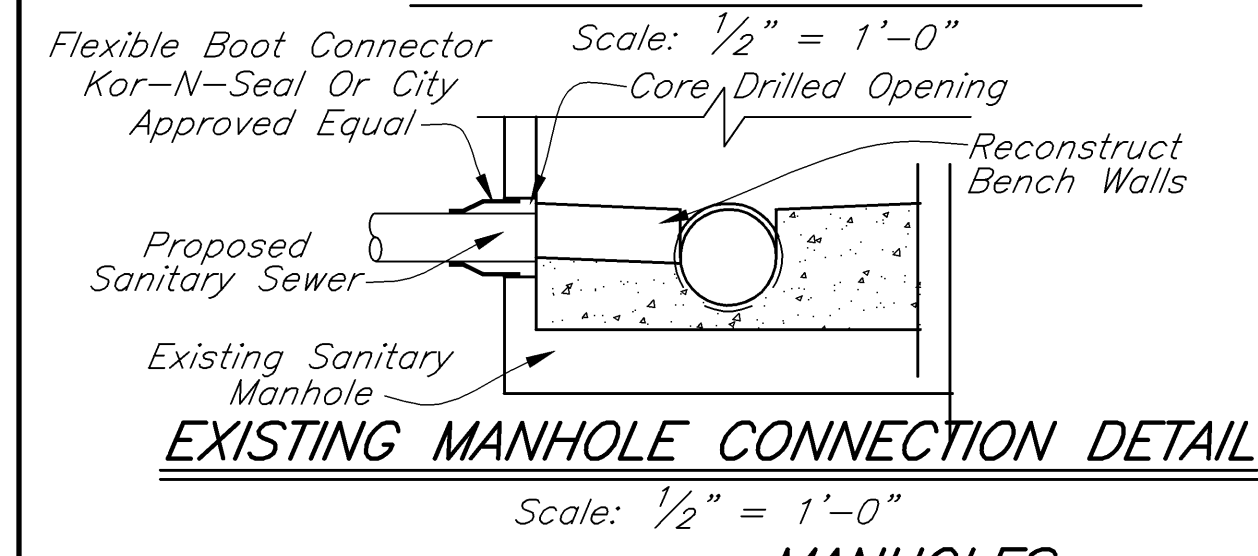


TYPICAL MANHOLE TYPE A
Scale: 1/2" = 1'-0"



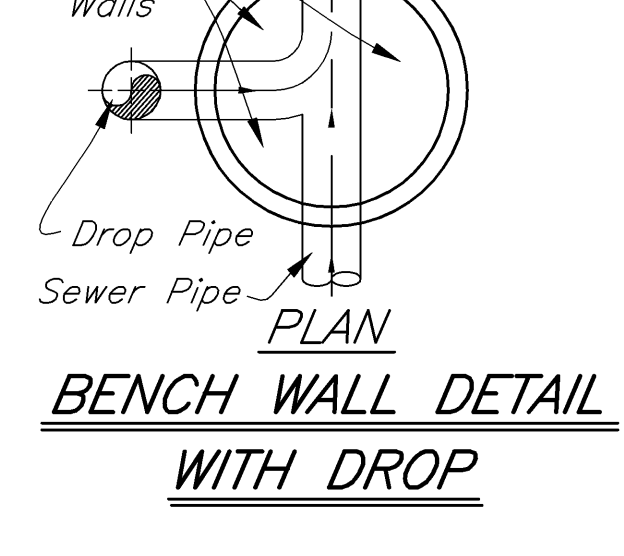
TYPICAL MANHOLE TYPE B
Scale: 1/2" = 1'-0"



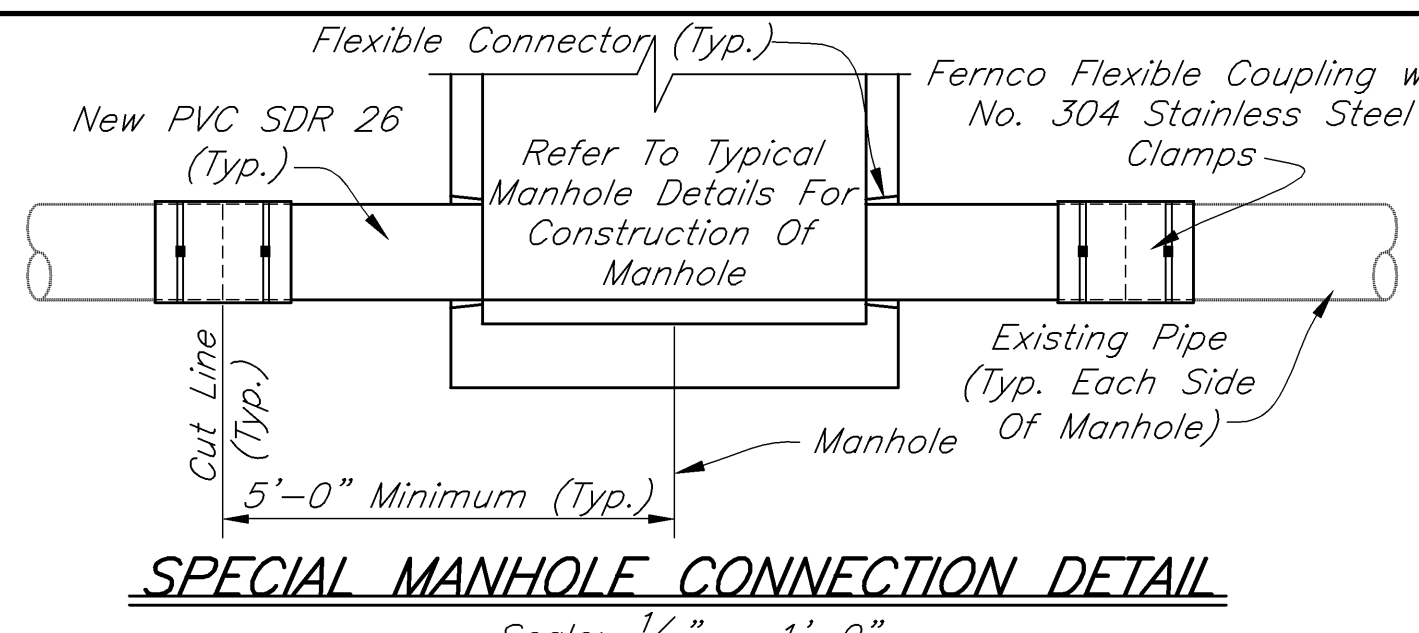
EXISTING MANHOLE CONNECTION DETAIL
Scale: 1/2" = 1'-0"

Pipe Size	Minimum Manhole Diameter	
	Pipe Entering/ Pipe Exiting At 0° To 45° Bend	Pipe Entering/ Pipe Exiting At 45° To 90° Bend
8"-21"	48"	48"
24"	48"	60"
27"-30"	60"	60"
33"-36"	60"	72"

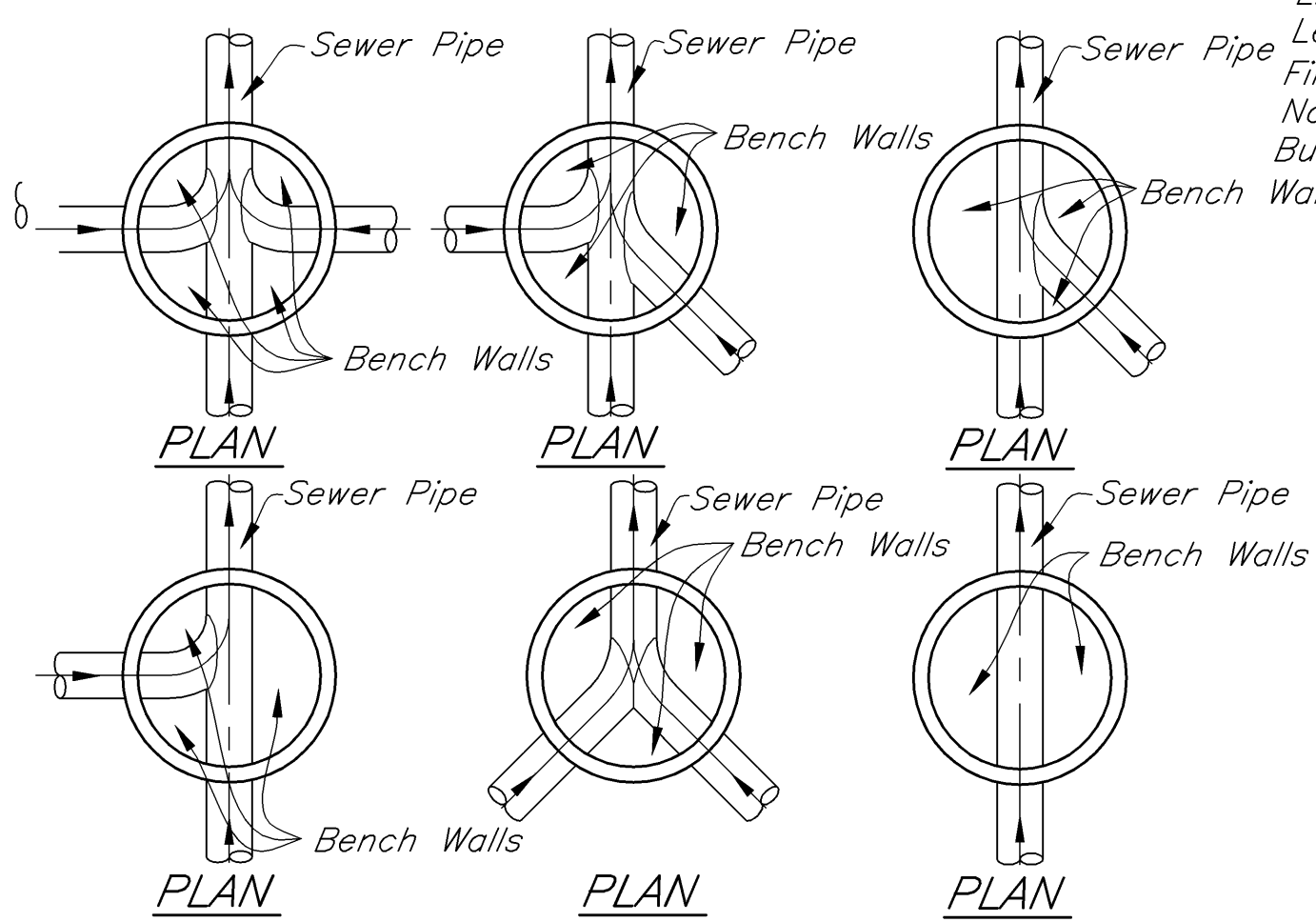
* 72" With A-Lock Connector



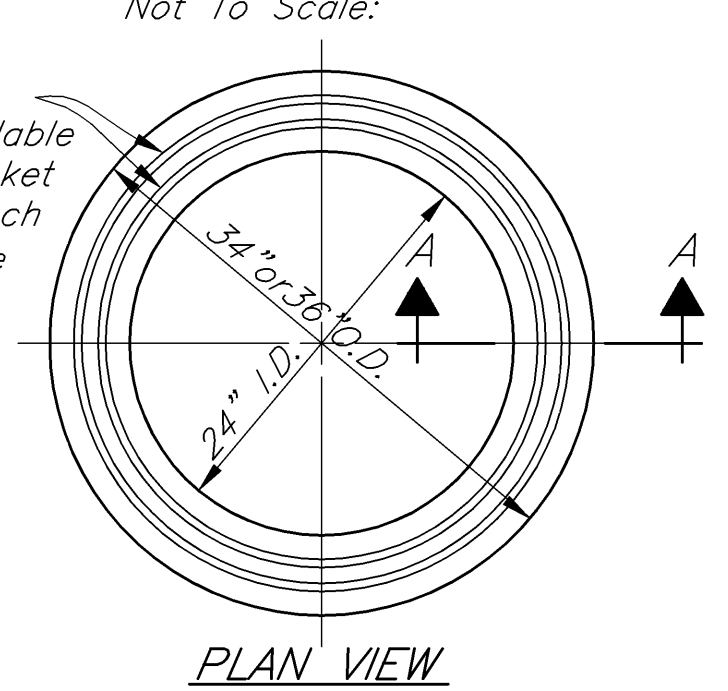
BENCH WALL DETAIL WITH DROP
Scale: 1/2" = 1'-0"



SPECIAL MANHOLE CONNECTION DETAIL
Scale: 1/2" = 1'-0"

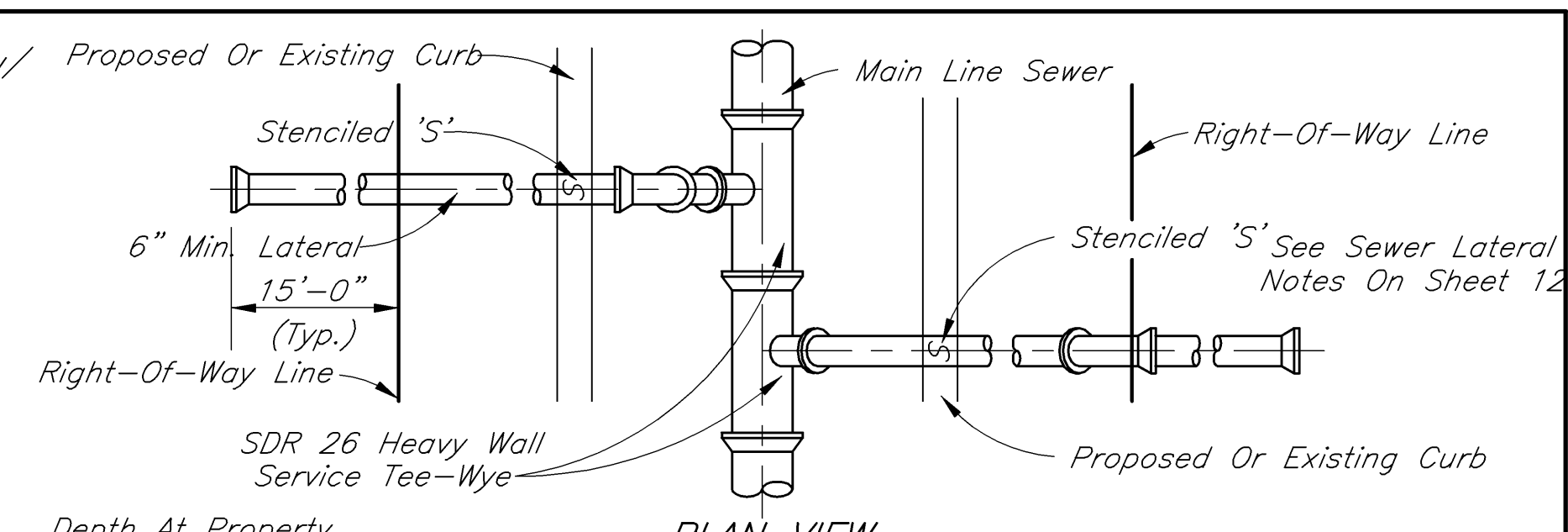


BENCH WALL DETAILS
Not To Scale:

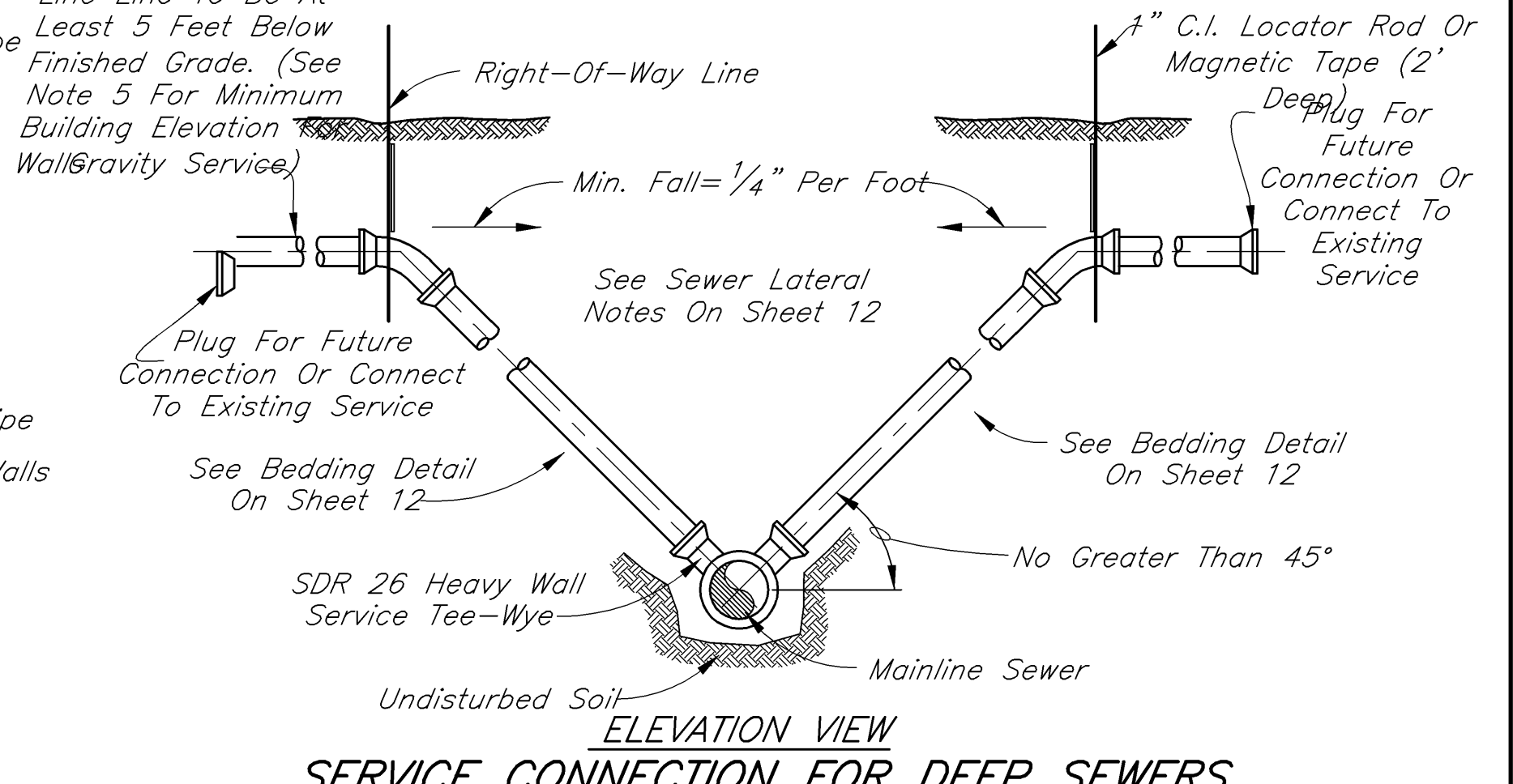


SECTION "A-A"
Not To Scale:

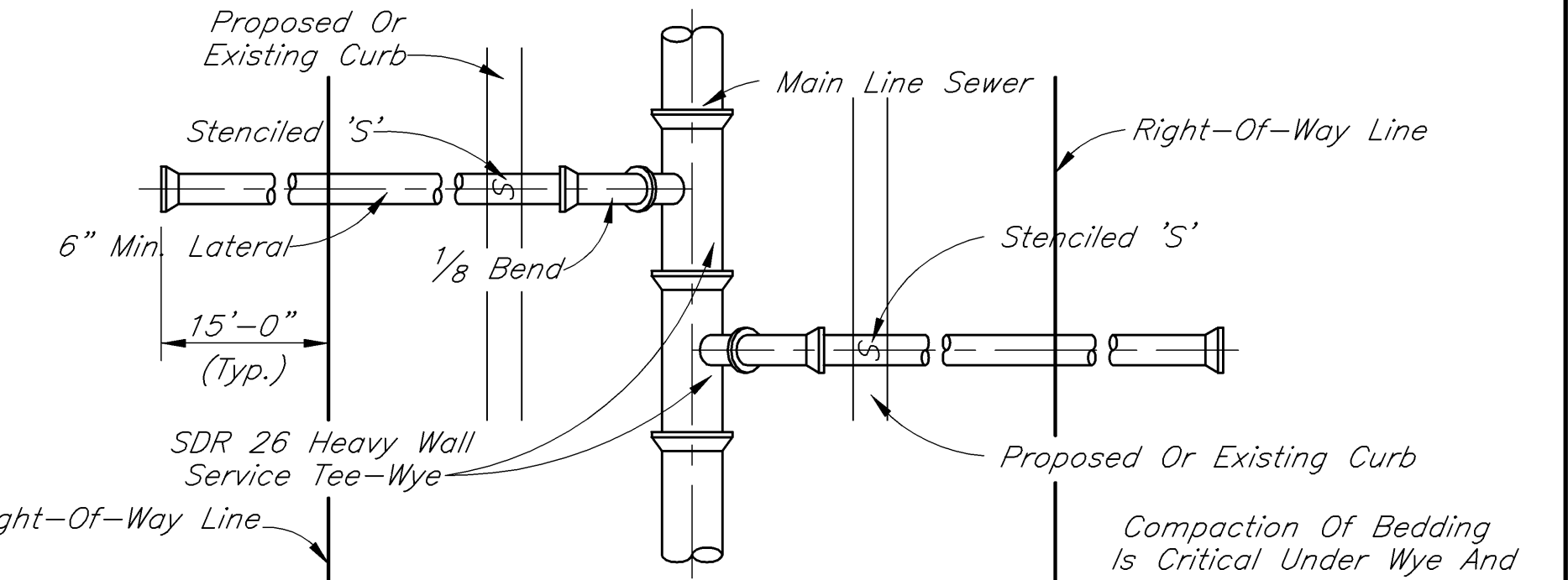
- NOTES:**
- Cast Iron Manhole Frame And Cover R-6462-FH Or Approved Equal
 - 24" Diameter Concrete Pipe Riser
 - Cast Iron Clean-Out And Cover
 - Precast Concrete Inlet Baffle
 - 6" Leveled Sand Bed
 - Precast Concrete Structure Designed For Vehicle Traffic. (Must Be Approved By The Authority Having Jurisdiction)
 - Precast Concrete Outlet Baffle
- GASKET DETAIL**
Nominal 1/2" Butyl Rubber Base Extrudable Preformed Gasket Material (Typ.)
- PRECAST ADJUSTING RING**
Not To Scale:



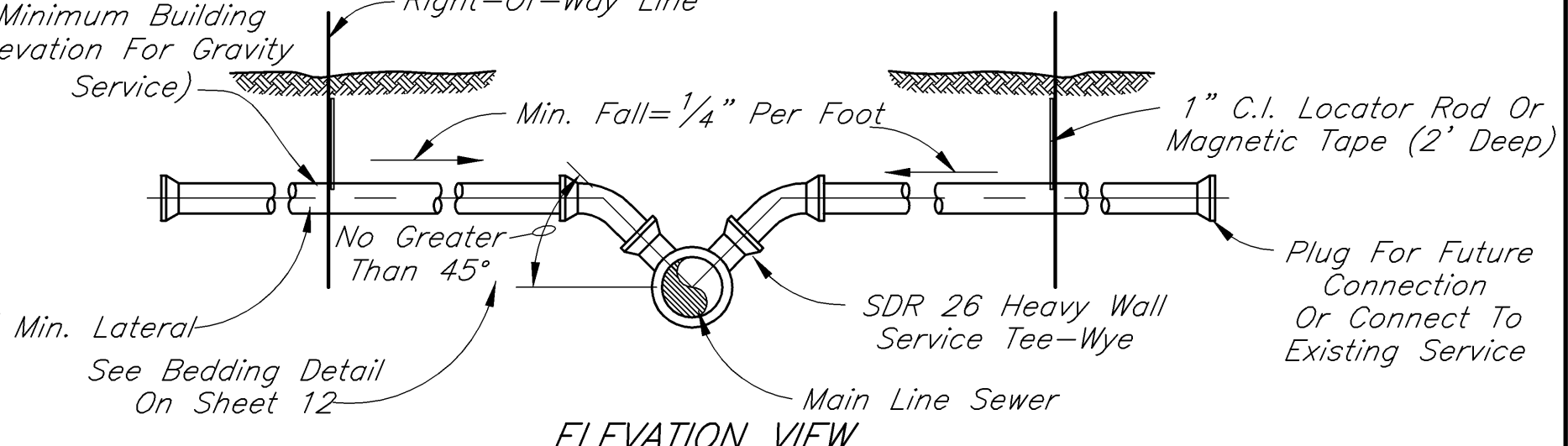
SERVICE CONNECTION FOR DEEP SEWERS (15' DEEP AND OVER)
Not To Scale:



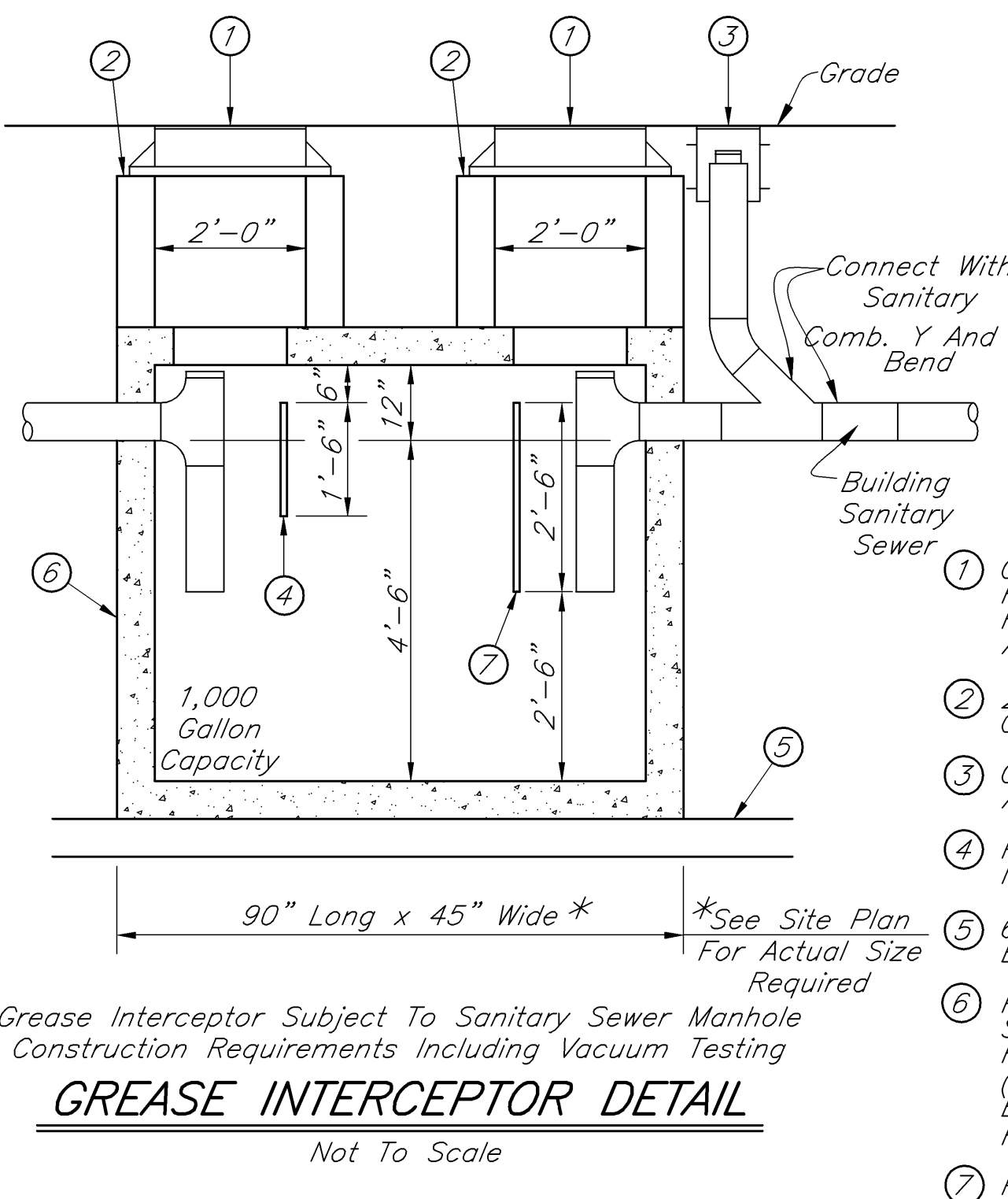
SERVICE CONNECTION FOR SHALLOW SEWERS (LESS THAN 15' DEPTH)
Not To Scale:



SERVICE CONNECTION FOR SHALLOW SEWERS (LESS THAN 15' DEPTH)
Not To Scale:

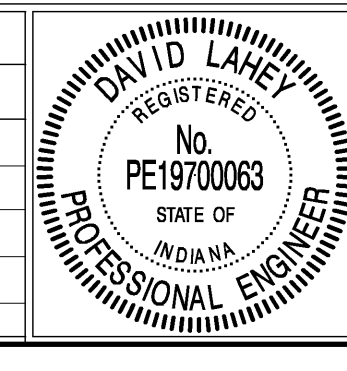


- MANHOLES**
- Precast Concrete Manholes Shall Conform To ASTM C-478. With Rubber Type Gaskets Equal To ASTM C-443. Monolithic Cast-In-Place Manholes Shall Only Be Used With The Prior Written Approval Of Lebanon Utilities Sewer Department. The Base And First Riser Section Of The Precast Concrete Manhole Shall Be Integrally Cast As One Complete Unit. Precast Concrete Cones Shall Be Of The Eccentric Cone Type. No "See Through" Lift Holes Shall Be Allowed On Precast Concrete Manholes 48 Inches In Diameter Or Less. In Addition To The Rubber Type Gaskets All Joints Shall Receive A 1/2 Inch Diameter Non-Asphaltic Mastic (Kent-Seal Or City Approved Equal) Conforming To AASHTO M-198 And Federal Specifications Specifications SS-5-210A. Manhole/Sewer Connection Shall Be Made With A Flexible Watertight Connection.
 - Final Adjustment In Elevation Of The Frame And Cover Shall Be Accomplished By The Use Of A 4 Inch Minimum Thickness Adjusting Ring As Detailed Herein To A Maximum Combined Thickness Of 12 Inches. Brick Or Block Shall Not Be Used In The Construction Of A Manhole Or To Adjust The Elevation Of The Frame And Cover.
 - Manhole Ladder Rungs Shall Be Neenah No. R-1981-J, East Jordan Iron Works No. 8512, M. A. Industries No. PS 1-PF Or As Approved By Lebanon Utilities Sewer Department.
 - Manhole Frame And Cover Shall Be Neenah R-1772-C With Gasketed Lid, East Jordan 1022-2 With Gasketed Lid, Or As Approved By Lebanon Utilities Sewer Department. When Watertight Frame And Cover Are Required By Lebanon Utilities Sewer Department Or Developer, Neenah R-1772-C With Locking Lid, East Jordan 1022-3HT With Locking Lid, Or As Approved By Lebanon Utilities Sewer Department Shall Be Provided. All Covers 5.) Shall Be Stamped "SANITARY SEWER" With 2" Raised Letters.
 - The Lowest Elevation To Receive Gravity Sanitary Service Must Be One (1) Foot Above The Top Of Manhole Casting Elevation Of Either The First Upstream Or Downstream Manhole On The Public Sewer To Which Connection Is To Be Made. Those Portions Of The Building Not Meeting The Stated Gravity Sanitary Service Requirement Shall Be Provided And Maintained By The Property Owner With A Grinder Pump System Or Lebanon Utilities Sewer Department Approved Equal Discharging To The Gravity Building Connection Outside Of The Public Right-Of-Way.
 - Manholes Shall Be Installed At Distances Not Greater Than 400 Feet.
 - Contractor Shall Install An External Rubber Sleeve Sealing System Wrapped Over The Flange Of The Manhole Frame To 2-Inches Below The Bottom Of The Lowest Adjusting Ring. The External Rubber Sealing Sleeve Shall Have A Minimum Thickness Of 60 Mils. And Meet The Requirements Of ASTM C-923, ASTM C-443 And ASTM F-477. The Rubber Sleeve Shall Be Infi-Shield External Manhole Seal, Or As Approved By Lebanon Utilities Sewer Department.
 - Apply Bituminous Coating, Hydrocide 700 Mastic, On The External Face At All Manhole Section Joints. Hydrocide Mastic Shall Be Applied To 6" Above And Below Each Joint. Apply Non-Shrink Mortar Or Epoxy Grout On The Internal Face At All Manhole Section Joints.
 - Commercial Taps As Determined By The Lebanon Utilities Sewer Department Shall Have Lateral Connections Made Directly To An Existing Or Proposed Manhole Using Details Per This Sheet.
 - After Manhole Assembly And Backfilling, A Utilities Representative Will Visually Inspect Each Manhole For Evidence Of Leakage And Select 10 Percent (No Less Than One Per Project) For Vacuum Testing Per ASTM C1244-93. Each Manhole To Be Tested Shall Have All Penetrations Sealed, And A Vacuum Of 10 Inches Of Mercury Is To Be Pulled. After Reaching 10 Inches Of Mercury, The Time Is Recorded For The Vacuum Pressure To Drop To 9 Inches Of Mercury. If The Time Required For The Vacuum To Drop To 9 Inches Of Mercury Exceeds The Minimum Time Shown In Table 2, The Manhole Is



GREASE INTERCEPTOR DETAIL
Not To Scale

REVISIONS		
Rev. No.	Description	Date



RECOMMENDED FOR APPROVAL: *D. A. ID. Lane* 5-4-2006 DATE
 DESIGN ENGINEER
 APPROVED: *Mike M...* 6-30-2006 DATE
 UTILITIES MANAGER
 APPROVED: *[Signature]* 5-4-2006 DATE
 WATER/WASTEWATER OPERATIONS MANAGER

CITY OF LEBANON
 SHEET 13 OF 18
 SANITARY SEWER DETAILS AND NOTES