

LCWSA

LYCOMING COUNTY WATER & SEWER AUTHORITY



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CONSUMER SERVICE CODE

SANITARY SEWER SERVICE

SPECIFICATIONS:

- PART 1 INSTALLATION REQUIREMENTS AND PROCEDURES**
 - 1.01 Tapping Fees, Liability for Damages and Service Line Cost**
 - 1.02 Service Line Disconnection**
 - 1.03 Service Connection**
 - 1.04 Service Lines & Forcemains**
 - 1.05 Service Line Shut Off Valves (Pressure Sewer)**
 - 1.06 Cleanout Locations**
 - 1.07 Running Traps**
 - 1.08 Interceptors**
 - 1.09 Standard and Drop Manholes**
 - 1.10 Doghouse Manholes**
 - 1.11 Manhole Tie-ins**
 - 1.12 Residential/Commercial Grinder Pump Systems**
 - 1.13 Air/Vacuum Release Valves**

- PART 2 MATERIAL SPECIFICATIONS**
 - 2.01 Gravity Service Connection**
 - 2.02 Pressure Service Connection**
 - 2.03 Tapping Sleeve**
 - 2.04 Service lines & Force mains**
 - 2.05 Service Line Bedding and Backfill Materials**
 - 2.06 Fittings & Accessories**
 - 2.07 Couplings**
 - 2.08 Corporations, Curb Stops & Isolation Valves (1-1/4" to 2")**
 - 2.09 Valves (4" to 12")**
 - 2.10 Curb and Valve Boxes**
 - 2.11 Cleanouts**
 - 2.12 Running Traps**
 - 2.13 Standard & Drop Manholes**
 - 2.14 Doghouse Manhole**
 - 2.15 Manhole Tie-ins**
 - 2.16 Manholes Covers**
 - 2.17 Private Residential/Commercial Grinder Pump Systems**
 - 2.18 Air Release/Vacuum Valves**

PART 3 INSPECTION AND TESTING REQUIREMENTS

3.01 Inspection Requirements

3.02 Testing Requirements (Sewer Lateral/Service Lines)

3.03 Testing Requirements (Manholes)

SANITARY SEWER DETAILS (SS):

GRAVITY SEWER SERVICE CONNECTION TO GRAVITY MAIN DETAIL	LCWSA_SS_01
PRESSURE SEWER SERVICE CONNECTION TO GRAVITY MAIN DETAIL	LCWSA_SS_02
PRESSURE SEWER SERVICE CONNECTION TO FORCE MAIN DETAIL	LCWSA_SS_03
SHALLOW GRAVITY SEWER SERVICE CONNECTION DETAIL	LCWSA_SS_04
DEEP GRAVITY SEWER SERVICE CONNECTION DETAIL	LCWSA_SS_05
RUNNING TRAP DETAIL	LCWSA_SS_06
MANHOLE DETAIL	LCWSA_SS_07
DOGHOUSE MANHOLE BASE DETAIL	LCWSA_SS_08
EXTERIOR DROP MANHOLE DETAIL	LCWSA_SS_09
INTERIOR DROP MANHOLE DETAIL	LCWSA_SS_10
SIMPLEX GRINDER PUMP SYSTEM DETAIL	LCWSA_SS_11
AIR RELEASE DETAIL (SEWER)	LCWSA_SS_12

STANDARD DETAILS (SD):

TRENCHING AND BEDDING DETAIL	LCWSA_SD_01
VALVE & VALVE BOX DETAIL	LCWSA_SD_02
CONCRETE THRUST BLOCK DETAIL	LCWSA_SD_03
RESTAINED PIPE LENGTH SCHEDULE	LCWSA_SD_04
WET TAPPING DETAIL	LCWSA_SD_05
HIGHWAY/STREAM CROSSING DETAIL	LCWSA_SD_06

PART 1 INSTALLATION REQUIREMENTS AND PROCEDURES

1.01 Tapping Fees, Liability for Damages, Service Line Cost and permits:

- A. Determined from LCWSA current Schedule of Rates
- B. Tapping Fee Payment due before connection to sewer main.
- C. The Authority shall not be liable for any damage or expense resulting from leaks, stoppages or defective plumbing or from any other cause occurring to any premises or within any house or building; and it is expressly stipulated by and between the Authority and the owner/customer that no claims shall be made against the said Authority on account of the breakage or stoppage of , or any damage or expense to, any service lateral, building sewer/drain or house connection when the cause thereof is found to be in the service lateral, building sewer/drain or house connection.
- D. All cost and expenses of construction of a service lateral and building sewer/drain connection shall be borne by the owner/customer of the improved property to be connected.
- E. Owner/customer shall indemnify and save harmless the Authority from all losses or damage that may be occasioned, directly or indirectly, as a result of construction of a service lateral and building sewer/drain connection.
- F. The Owner/customer, while excavating, furnish, place and maintain shoring, bracing and sheeting in compliance with the OSHA regulations. The open trench shall be barricaded and covered at night. Lights shall be placed at night to warn the public of danger.
- G. Streets, sidewalks and other public property disturbed in the course of installation of a service lateral and building sewer/drain connection shall be restored at the cost and expense of owner/customer of the improved property being connected in a manner satisfactory to the **Owner of the public property or utility.**
- H. Owner/Customer is required to obtain any required municipal permits for street cuts, excavations, building/zoning, land development etc. associated with installation of new service line.
- I. Owner /Customer is required to obtain a HOP from Penn Dot for any work within a Penn Dot R/W. For the installation of lines that will be part of the public sewer system, the HOP for that portion of the work shall be in the name of LCWSA.
- J. Consumer Service Code will adhere to Lycoming County Water and Sewer Authority Rules and Regulations Governing Wastewater Services in Lycoming County, PA dated February 2, 2000.

1.02 Service Line Disconnection:

- A. Temporary Disconnect where service will be reinstated at later date.
 - 1. Service line will be removed 5 feet outside structure
 - 2. Gasket cap will be installed at end of service line
 - 3. 2x4 post will be placed at cap and extended 3 feet above ground elevation to mark pipe location. Depth of pipe will be marked on post
 - 4. All work and restoration shall be by customer.
- B. Permanent service disconnection
 - 1. Terminate at Authority cleanout
 - 2. Plug will be installed in clean-out tee
 - 3. 2x4 post will be placed at plug and extended 3 feet above ground elevation to mark cleanout location. Depth of tee to be marked on post
 - 4. All work and restoration shall be by customer.

1.03 Service Connection

- A. Each connection unit (service) shall be connected separately and independently through a building sewer to service lateral at sewer main. Grouping of more than one (1) connection unit on the same building sewer shall not be permitted unless expressly authorized by the LCWSA.
- B. Building sewer shall be connected to a collection sewer only at a service lateral.
- C. In the event a sewer lateral does not exist, owner shall, at its expense, provide necessary service lateral per LCWSA details and approved materials.
- D. Sewer lateral connection directly into manholes is not permitted, unless written approval from LCWSA.
- E. The building sewer serving one (1) property may occupy the same trench with the building sewer of the next adjoining property provided that the common trench is on the common property line and each building sewer is on the property being served.
- F. No roof drainage, cellar seepage, surface water, sump pump, residential floor drain drainage, A/C Condenser Units, camper dumping, ground water or water from underground drainage field shall be permitted into public sewer system.
- G. Refer to section 2.01, 2.02, 2.03 for material specifications

1.04 Service Lines & Force mains:

- A. All Service lines have a minimum bury depth of 4'-0"
- B. Gravity building sewer lines size to be 4" or 6". LCWSA recommends 6"
- C. Pressure building sewer line size to be 1-1/4" to 2" depending on pumping requirements.
- D. Force main line size to be 4" to 10"
- D. Minimum slope on building sewer and service laterals to be 1/4" / FT and sloping downward in the direction that waste material is to flow.
- E. Connections between different and/or similar types of pipe will be made by flexible coupling/sleeve.
- F. No Glue joints are allowed for pressure and gravity building sewers.
- G. No concrete/grout mortar joints shall be permitted
- H. No pipe shall be supported on concrete masonry units, bricks or other such materials.
- I. Change of direction by Wye Branches or approved bends.
- J. Refer to section 2.04, 2.05, 2.06, 2.07 for material specifications
- K. Refer to section 3.01 for testing & inspection requirements
- L. Refer to LCWSA details for trenching, bedding & backfill requirements

1.05 Service Line Shut Off Valves (Pressure Sewer):

- A. 1-1/4" TO 2" sewer connections require saddle and corporation stop at sewer force main.
- B. 4" TO 12" sewer connections require live tap and valve at sewer force main
- B. Pressure sewers require curb stops to be located in public Right of Way (ROW), Property Line or LCWSA (ROW)
- C. Pressure sewers require in-line check valve on discharge side of grinder pump station
- D. Refer to section 2.08, 2.09, 2.10 for material specifications

1.06 Cleanout Locations:

- A. Same size as building sewer line.
- B. Property line or edge of R.O.W. (1 EA)
 - 1. Connection point of Customer Building Sewer to Authority Service Lateral.
- C. Building Structure (1 EA)
 - 1. Locate cleanout immediately inside or outside of the structure or where the new lines is connected to the existing line.
- D. Horizontal Lines (As needed)
 - 1. Installed no more than one hundred (50) feet apart for 4" line
 - 2. Installed no more than one hundred (100) feet apart for 6" line
- E. Fittings (1 EA per fitting)
 - 1. Required at all fittings for a direction change of 45 degree and over.
- F. Pressure to Gravity connection (1 EA)
 - 1. Required when a pressure sewer lateral is connected to a gravity sewer lateral
- G. Refer to section 2.11 for material specifications

1.07 Running Traps

- A. LCWSA may consider waiving the installation of the running trap provided that the property owner executes a waiver indemnifying the LCWSA from damages.
- B. Refer to section 2.12 for material specifications

1.08 Interceptors

- A. Grease, oil and sand grit interceptors to be provided by applicant at his own expense.
- B. Designed to properly handle liquid wastes containing grease, any flammable wastes, and or other harmful ingredients.
- C. Type & capacity shall be designed by applicant's engineer and approved by Authority.
- D. Shall be located as to be readily and easily accessible for cleaning and inspections.
- E. Applicant is required to continuously maintain satisfactory and effective operation at his own expense.

1.09 Standard and Drop Manholes

- A. For Commercial Pressure services, the Authority may require a manholes prior to a grinder pump station for sampling purposes.
- B. For Commercial Gravity services, the Authority may require a manhole prior to the lateral cleanout for sampling purposes.
- C. Authority will have complete access to sampling manhole at all times to allow for random sampling.
- D. Drop Manhole required when pipe inflow inverts are 24" and over from outflow inverts.
- E. External Drop Manholes are preferred, Internal Drop Manholes must be approved by Authority under special conditions.
- D. Refer to section 2.13 for material specifications
- E. Refer to LCWSA details for manhole requirements.

1.10 Doghouse Manholes

- A. Doghouse manhole required when installing a new manhole into existing sewer main
- B. Doghouse base to be installed to allow existing sewer flows to remain during construction.
- C. Doghouse Manholes do not require vacuum testing.
- D. Refer to section 2.14 for material specifications

1.11 Manhole Tie-ins

- A. Mainline extensions tie-in to existing manholes only.
- B. Sewer Lateral tie-in to manholes only allowed with LCWSA prior approval for special conditions.
- C. Core Drilling is recommended method of manhole wall penetration.
- D. Any pipe tie-in invert that is 24" or great above existing flow line will require a drop connection installed.
- E. If structural integrity is compromised during tie-in operations, contractor, at his own expense, will replace entire manhole or repair damages to original conditions.
- D. Refer to section 2.15 for material specifications

1.12 Residential/Commercial Grinder Pump Systems:

- A. Required when connecting into pressure force main
- B. Required when minimum gravity slope requirements for building sewers cannot be meet.
- C. LCWSA recommends E/One Extreme Series Grinder Pump Systems
- E. Grinder pump size requirements per design engineer
- F. Required LCWSA approval prior to order and install.
- G. Power requirements per manufactures specifications.
- H. Refer to section 2.17 for material specifications
- I. Refer to LCWSA details for Grinder pump plumbing requirements

1.13 Air/Vacuum Release Valves

- A. Required at high points in the system or at points selected by engineer.
- B. Installed in 4' Diameter Precast manhole with 12" minimum opening in floor for drainage.
- C. Requires saddle connection and isolation valve
- D. Refer to section 2.18 for material specifications
- E. Refer to LCWSA details for Plumbing requirements

PART 2 MATERAIL SPECIFICATION

2.01 Gravity Service Connection

- A. Existing Sewer Main
 - 1. Romac Style CB sewer saddle with Stainless steel adjustable strap
- B. New Sewer Main
 - 1. PVC SDR-35 Tee-Wye or Wye to fit sewer main and lateral sizes

2.02 Pressure Service Connection

- A. Saddle Outlet to be AWWA/ CC Thread
- B. Ductile Iron Sewer Mains
 - 1. Romac Style 202NC Nylon Coated w/ Stainless Steel Straps
- C. HDPE Sewer Main size 2" CTS
 - 1. Ford Brass Saddles Style S40/S41 Hinged
- D. HDPE Sewer Mains 2" IPT to 12" DIPS
 - 1. Romac Style 202N-H Nylon Coated w/ double Stainless Steel Straps
- E. PVC SDR-21 Sewer Mains
 - 1. (1-1/2" – 8") Ford Brass Saddles Style S70 Hinged
 - 2. (10" & 12") Ford Brass Saddles Style S70 Bolted
- F. PVC C900 "Blue Brute" DR 18, DR 14 Sewer Mains
 - 1. (2" to 8") Ford Brass Saddles Style S90 Hinged
 - 2. (10" & 12") Ford Brass Saddles Style S90 Bolted

2.03 Tapping Sleeve (AWWAC223)

- A. DI / PVC Sewer Mains
 - 1. Romac SST III Stainless Steel Tapping Sleeve
- B. Ductile Iron Flange
- C. 4" to 12" Branch Size

2.04 Service lines & Force mains

- A. Gravity Sewer Lines
 - 1. PVC SDR-35 ASTM D3034 w/ push-on gasket joints
 - 2. Ductile Iron Class 52, Protecto 401 lining w/ push-on gasket joints
- B. Pressure Sewer Lines (under 2")
 - 1. HDPE SDR-11, IPS, 200 PSI
- C. Pressure Sewer Lines (2" and larger)
 - 1. PVC SDR-21 w/ gasket joints
 - 2. HDPE DR-11, 200 PSI IPS
 - 3. Ductile Iron Class 52, 350 PSI Double Cement Lined, AWWA C151
 - a. Field Lok 350 Gaskets required per the Restrained Pipe Length Schedule detail
- D. Detectable Warning Tape
 - 1. 2" Wide min.
 - 2. Color – Green
- E. Conductive Tracer Wire (HDPE and PVC Lines only)
 - 1. (12) gauge minimum solid copper
 - 2. Tracer wire access point (monitoring station) to be no more than 500 feet
 - 3. Tracer wire to be continuous, splices allowed only with prior approval
 - 4. Continuity test on all tracer wire shall be performed in the presence of LCWSA Inspector

2.05 Service Line Bedding and Backfill Materials

- A. Pipe Bedding & Initial Backfill Materials (Penn Dot Pub 408 Section 703.2)
 - 1. AASHTO # 8 Coarse Aggregates Crushed Limestone
 - 2. AASHTO # 8 Coarse Aggregates Gravel
 - 3. Suitable Select Soils
- B. Backfill Materials (Penn Dot Pub 408 Section 703.2,3; 220)
 - 1. AASHTO # 2A Coarse Aggregate Subbase
 - 2. 2 RC
 - 3. Suitable Select Soils
 - 4. Type A or B Flowable Backfill
- C. Unsuitable Bearing Replacement Material
 - 1. AASHTO # 1 or # 3 Coarse Aggregates
- D. Bedding for Ductile Iron Service lines - # 8 Gravel or Suitable Select Soils only
- E. Authority must approve suitable select soils prior to using as pipe bedding.

2.06 Fittings & Accessories

- A. Gravity Service Lines
 - 1. PVC SDR-35 ASTM D3034 w/ push-on gaskets
 - 2. PVC SDR-26 HWS Deep Socket Fittings w/ push-on gaskets (Deep Laterals)
 - 3. DI MJ, standard restraint glands, Epoxy coated
- B. Pressure Service Lines (under 2")
 - 1. Ford, Pact Joint, Threaded, Brass
 - 2. Stainless Steel Insert Stiffeners required for PE pipe
 - 3. PVC Threaded fittings
- C. Pressure Service Lines (2" and larger)
 - 1. PVC SDR-21 fittings w/ gasket joint and restraint blocking
 - 2. Tyler/Union, DI, MJ, Epoxy coated
- D. Megalug Mechanical Joint Restraint
 - 1. EBRAA, Series 1100 for DI Pipe
 - 2. EBRAA, Series 2000 PV "Red" for PVC Pipe
 - 3. Infact, Foster Adapters, (AWWA, C153)

2.07 Couplings

- A. Gravity Couplings (Laterals/Mainline) (ASTM C1173)
 - 1. Fernco Strong Back RC Coupling
 - 2. Fernco Shear Ring Coupling
 - 3. GPK, PVC SDR-35 Gasket Repair Coupling
 - 4. DI MJ Sleeve w/ Transition Gaskets
- B. Pressure Couplings (under , 2")
 - 1. Ford Pact Joint or Threaded adapters, IPS, Brass
 - 2. Stainless Steel Insert Stiffeners required for PE pipe
- C. Pressure Coupling (2" and larger)
 - 1. Tyler/Union DI, MJ Solid Sleeve w/ Mega Lug Restraint
 - 2. Romac 501 Straight Coupling
 - 3. Romac XR501 Extended Range Coupling

2.08 Corporations, Curb Stops & Isolation Valves (1-1/4" to 2")

- A. Corporation Stops (AWWA C800)
 - 1. Ford FB1000 Ball Corp AWWA CC Thread x Pact Joint, IPS, Brass
 - 2. Stainless Steel Insert Stiffeners required for PE pipe
- B. Curb Stops (AWWA C800)
 - 1. Ford B44-333 Ball Valve Curb, Brass
 - 2. Pact Joint or threaded adapters, IPS
 - 3. Stainless Steel Insert Stiffeners required for PE pipe
- C. Merit Brass Stainless Steel Full Port Ball Valve V210-FP Series
 - 1. Thread: FIPT
 - 2. Full Port

2.09 Valves (4" to 12")

- A. Inline Plug Valve (AWWA C504, 175 PSI) (Preferred)
 - 1. Milliken Eccentric DI, MJ Joints, Series 600 Plug Valve
 - 2. Valves Sizes 3" to 8" only
 - 2. Full/100 % Port Flow
 - 3. Seals & O-rings: Nitrile (BUNA-N) Elastomers
 - 4. 2" Square operating nut
 - 5. CCW (Left) Open Direction
- B. Inline Gate Valve (AWWA C515, 250 PSI)
 - 1. AFC DI, Series 2500 Resilient Wedge Gate Valve
 - 2. Non Rising Stem (NRS)
 - 3. Mechanical Joint Ends
 - 4. 2" Square operating nut
 - 5. CCW (Left) Open Direction
- C. Tapping Valve (250 PSI)
 - 1. AFC DI Series 2500 Tapping Valve, Resilient Seat
 - 2. Non Rising Stem (NRS)
 - 3. Flange x Mechanical Joint Ends
 - 4. 2" Square operating nut
 - 5. CCW (Left) Open Direction

2.10 Curb and Valve Boxes

- A. Curb Box (for 3/4" to 1" curb stops)
 - 1. Tyler/Union 6500 Series, Screw Type, Depth as required
 - 2. Lid to be marked "SEWER"
- B. Curb Box (for 1-1/4" to 2" curb stops)
 - 1. Tyler/Union CB-7 Enlarged curb box base (Non Traffic Areas only)
 - 2. Bibby – Laperle 4-1/4" Roadway box, Screw Type, Depth as required (Traffic Areas)
 - 3. Lid to be Marked "SEWER"
- C. Valve Box (4" to 12")
 - 1. Tyler/Union 6850 Series, CI Two Piece, Screw Type, Depth as required
 - 2. Tyler /Union 6860 Series, CI Three-Piece, Screw Type Depth as required
 - 3. Lid to be Marked "SEWER"

2.11 Cleanouts

- A. Fittings
 - 1. GPK, PVC SDR-35 w/ gasket joints
- B. Two way cleanout tee
 - 1. GPK, PVC SDR-35 w/ gasket joints
- C. Female Hub w/ Threaded Plug
 - 1. GPK, PVC SDR-35
 - 2. Threaded Plug with Embedded Magnetic
- D. CI Lamphole
 - 1. 4" Pipe – Vestal Model # LH-6
 - 2. 6" pipe – Vestal Model # LH-10
 - 3. Lid to be Marked " Sewer"

2.12 Running Traps

- A. Running Trap includes Cleanout, Gas Trap and Vent as shown on details
- B. All pipe and fittings in running trap to be PVC SDR-35 Pipe, Gasket Joints
- C. Air Vent Caps by Canplas, Installed 12" minimum above finish ground grade.

2.13 Standard and Drop Manholes

- A. Standard Manholes
 - 1. Manholes to be Precast
 - 2. Manholes to be 4' diameter, larger diameter manholes are permitted with Authority approval.
 - 3. Standard or Extended Base section. Base section style based on field conditions.
 - 4. All riser joints to be sealed with flexible butyl rubber joint sealants (2 Ea/Joint).
 - 5. All manholes to be exterior coated with minimum of 10 mils of bitumastic waterproofing at casting facility.
 - 6. Cast-in-Place pipe seals or link seal required for all pipe penetrations.
 - 7. Manhole Flow lines to be poured at casting facility or in field.
 - 8. Piping layout to allow for all angles to be 90' or greater. Less than 90' layout of piping must have Authority approval prior to casting manhole.
 - 9. Copolymer polypropylene plastic manhole steps at 12" spacing.
 - 10. Spacing from top of casting to first step not to exceed 18"
 - 11. All manholes and components in traffic areas to be capable of withstanding H-20 highway loads.
- B. External Drop Manholes
 - 1. Manhole specifications same as standard manholes
 - 2. 4' Internal Diameter Manhole
 - 3. External Drop piping to be PVC SDR-35, Gasket Joint
 - 4. Concrete for encased piping to be minimum 3000 PSI
- C. Internal Drop Manholes
 - 1. Allowed only with prior approval by LCWSA
 - 2. Manhole Specifications same as standard manhole, except for I.D.
 - 3. 5' Internal Diameter Manhole
 - 4. Inside drop per RELINER: Inside Drop Bowl & Accessories
 - 5. All Mounting Hardware to be Stainless Steel
 - 6. Drop Piping to be PVC SDR-35

7. Minimum of 45' Bend located on bottom of drop pipe, aligned with flow line channel.
8. Force Main inlets will require "Force Line Hood" accessory

2.14 Doghouse Manhole

- A. Manhole Riser and cones per standard manhole specifications
- B. Doghouse Manhole openings to be a Minimum of 4" larger than pipe Diameter
- C. All pipe penetrations to be grouted with Waterplug
- D. After pouring, existing pipe to be removed and flow line channel to be modified and grouted smooth
- E. Chemical grout (if needed) to be SealGuard II

2.15 Manhole Tie-ins

- A. New pipe invert to be installed over existing flow channel, to allow for positive flow into channel.
- B. Existing Flow channel to be modified to allow for channel flow from new pipe into existing flow channel.
- C. Core holes for pipe penetrations shall allow for proper sizing of pipe seals.
- D. Pipe penetration seals to be either Link Seal or Kor-N-Seal EX Series Connector boots.
- E. In event core drilling is not feasible, pipe opening can be sealed with water plug along with Romac Style "LCT" Manhole Adapter Gasket.
- F. Chemical grout (if needed) to be SealGuard II

2.16 Manhole Covers & Accessories

- A. Frame and Covers
 1. East Jordan 1892Z Frame/1892A 30" Cover & Frame.
 2. Casting to have "Sanitary Sewer" wording in 2" raised letters.
 3. Manhole Inserts by Parsons required for all manholes
 4. Watertight frames and covers required in wet or flood prone areas
 5. Cast in anchors required for all Watertight Frames.
- B. Grade Rings
 6. Grade rings to be precast concrete risers for all adjustments over 2"
 7. HDPE or Fiber adjustment rings will be allowed for all sloped adjustments and adjustments 2" and under.

2.17 Private Residential/Commercial Grinder Pump Systems:

- A. Simplex Extreme Grinder Pump Station
 1. 1 HP, 1725 rpm 120/240V, 60 Hz, 1 phase motor
 2. Model # DH071-93 (70 Gallon Capacity)
 3. Model # DH129, DH160 require field joints
 4. Simplex Sentry Alarm Panel w/ Visual & Audible alarms Model 250-1
- B. Duplex Extreme Grinder Pump Station
 1. 1 HP, 1725 rpm 120/240V, 60 Hz, 1 phase motors
 2. Model # DH152-93 (150 Gallon Capacity)
 3. Model # DH129, DH160 require field joints
 4. Duplex Alternating Panel Model # T-260
- C. SDR-11 anti-settlement Whip w/ SS MIP Thread

- D. PVC Sch 40 Flap Style Check Valve, 150 PSI, F.I.P.T
- E. SS Curb Stop & Check Valve Riser Assembly and Lateral Kit (optional)
- F. Concrete anchors are required one all stations, see O & M manual for sizing

2.18 Air Release/Vacuum Valves & Accessories

- A. A.R.I. Series D-025, Short Version, Combination Air/Vacuum Valve for Sewage
 - 1. Reinforced Nylon Body (Stainless Steel Body for Harsh Environments)
 - 2. 250 PSI working pressure
 - 3. Stainless Steel interior metal parts
 - 4. Saddle style per section 2.02, Outlet Thread: FIPT
 - 5. Stainless Steel Isolation Valve per section 2.08
 - 6. Stainless Steel Nipples and Fittings
 - 7. Sizing per pumping requirements and line size

PART 3 INSPECTION AND TESTING REQUIREMENTS

3.01 Inspection Requirements

- A. LCWSA inspector shall be provided a 24-hour notice prior to the inspection.
- B. Whenever conditions warrant, no sewer service line or part thereof shall be covered until it has been inspected and accepted.
- C. The levy of an additional fee for re-inspection will be assessed by LCWSA

3.02 Testing Requirements (Sewer Lateral/Service Lines)

- A. Testing and acceptance of sewer service lines shall be made in the presence of the LCWSA inspector.
- B. The equipment and materials for testing shall be furnished by the owner or Plumber/Contractor.
- C. Testing of building/lateral sewer lines will be performed by the use of Pneumatic (air) Pressure Testing Equipment.
- D. The air test shall be applied to the building sewer in its entirety or in sections.
- E. Each section, or the entire lateral, must be completely filled with air to a pressure of 5 psi and be kept under pressure for at least 5 minutes.
- F. Test pressure not to exceed 10 psi.
- G. Make repairs or replace defective material if test fails.
- H. Retest repaired sewer service lines until test requirements are meet.
- I. Repairs, replacements and retests at no additional expense to owner.

3.03 Testing Requirements (Manholes)

- A. Testing and acceptance of sewer service lines shall be made in the presence of the LCWSA inspector.
- B. The equipment and materials for testing shall be furnished by the owner or Plumber/Contractor.
- C. Testing of building/lateral sewer lines will be performed by the use of Vacuum Testing Equipment.
- D. Vacuum testing will include manhole castings, concrete riser and base sections and be tested as one complete unit.
- E. Testing will be as follows:
 - Vacuum of 10 inches of mercury shall drawn on manhole.
 - With all testing valves closed, record time for vacuum to drop to 9 inches.
 - Time required for a 48-inch diameter manhole is greater than 60 seconds.
 - Time required for a 60-inch diameter manhole is greater than 75 seconds.
 - Time required for a 72-inch diameter manhole is greater than 90 seconds.
- F. Make repairs or replace defective material if test fails.
- G. Retest repaired manhole until test requirements are meet.
- H. Repairs, replacements and retests at no additional expense to owner.