



**City of West Lake Hills Wastewater Collection System
Low Pressure Service Connection Manual
for Commercial Properties (Non-Single Family)**

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Prepared For:

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1.0 GENERAL INFORMATION

The City of West Lake Hills (City) Wastewater Collection System includes areas that require low pressure sewer systems for operation. This document covers the requirements for "commercial" properties to connect to the low pressure systems. For the purposes of this manual, commercial properties are defined as any property that is not single family residential. The City will own and maintain the grinder pump unit and the low pressure service line from the grinder pump unit to the main line after they have been installed by the property owner and accepted for service by the City. The property owner will own and maintain any and all wastewater infrastructure and appurtenances upstream of the grinder pump unit including but not limited to the gravity discharge line and clean-out between the house and the grinder pump unit and any other wastewater lines, pumps and tanks on the property.

1.1 Eligibility for service

Contact the City to determine eligibility for service and the required connection fees that must be paid prior to connection to the system.

1.2 Rules and Codes for Installation

All work shall be in accordance with the City Wastewater Application and Service Agreement, this manual, City ordinances, the Texas Commission on Environmental Quality (TCEQ), Texas Administrative Code (TAC) Chapter 217 rules, the International Plumbing Code, and the National Electric Code. All plumbing work shall be completed under the direction of a licensed plumber, and all electrical work shall be completed by a licensed electrician.

1.3 Primary Contacts and Inspection Requirements

- *City Wastewater Project Coordinator:* 512-327-3628. For general information on wastewater availability, eligibility for service, service applications, connection fees, pre-construction meeting, and final approval of the wastewater connection.
- *Licensed Plumbing and Electrical Inspections (ATS):* 512-328-6995. ATS is required to inspect all plumbing and electrical installations. Plumbing includes all work from the building(s) to the grinder pump unit.
- *Grinder Unit, Low Pressure Service Lines, and Connections to Main Inspections (Crossroads Utility Services):* 512-246-1400. Crossroads is required to inspect the installation of the grinder pump unit, low pressure service lines, and connections to existing mains.
- *Grinder Pump Unit Supplier (Environmental Improvements, Inc.):* 512-295-3733. Environmental Improvements is the required supplier of most grinder pump units. They are required to certify the installation and to start-up the grinder pump unit prior to connection to the system. At properties with larger flows, other grinder pump units may be required per the direction of the City Wastewater Project Coordinator.
- *City Septic Inspector:* 512-610-6836 or 512-327-3628. Coordinate decommissioning of existing septic system with the City's Septic Inspector. Schedule an appointment to discuss the requirements for each specific system. Abandonment shall be in accordance with current TCEQ regulations.

1.4 General Steps for Connection to System

1. Contact the City Wastewater Coordinator to verify eligibility for service and pay all required connection fees to the City. Based on the anticipated flows for the property, the Wastewater Coordinator will inform the property owner of which pump unit will be required as directed by the City wastewater engineer.
2. Determine if an existing wastewater main stub-out exists for the property. If necessary, contact the Wastewater Coordinator for assistance. If no stub-out currently exists, the property owner will be responsible for installing a new stub-out to the existing main.
3. Hire a Contractor for installation. In order to obtain a building permit, the Contractor shall submit the following to the City Planning and Zoning Secretary for review and approval by the City wastewater engineer:
 - a. Drawing/sketch of the proposed installation showing the existing septic system, existing gravity service piping, the location and depth of the proposed grinder pump unit, routing and location of the proposed piping/valves, and the location of the proposed control panel. Drawing shall include measurements from buildings, driveways, and other permanent improvements.
 - b. Grinder pump unit information packet provided by the supplier detailing the equipment to be supplied for the installation. Packet shall include buoyancy calculations and details for buoyancy collars or concrete ballast.
 - c. Product information for the proposed piping, valves, and other appurtenances to be installed.
4. After the building permit has been issued, schedule a pre-construction meeting with the City Wastewater Project Coordinator.
5. Construct the wastewater service connection in accordance with City requirements. See attached specifications and details. Coordinate and schedule the required plumbing, electrical, and service connection inspections throughout construction as described below.
6. Call for inspections
 - a. Call ATS for plumbing and electrical inspections. *Do not backfill any new pipelines upstream of the grinder pump unit or connect the new piping prior to approval by ATS.*
 - b. Call Crossroads for low pressure grinder pump unit and low pressure service line inspections. *Do not backfill the grinder unit or low pressure service lines prior to approval by Crossroads.*
7. Follow grinder pump unit manufacturer installation instructions. Verify acceptable and complete installation by answering “yes” to all items on start-up checklist (see attached Detail 5). Send completed start-up checklist to the grinder pump unit supplier and schedule the start-up appointment. Perform grinder pump unit start-up with the grinder pump unit supplier representative, and once they have certified the installation,

the grinder pump unit supplier will send the City the required warranty. The City will not approve the installation until the City receives the warranty.

8. Connect building lateral to the grinder pump station and place in service.
9. Coordinate decommissioning of the existing septic system with the City's Septic Inspector. Abandonment shall be in accordance with current TCEQ regulations.
10. Submit a final as-built drawing/sketch to the City. Note, the wastewater connection will be approved only after all fees are paid, the wastewater service application has been submitted to the City, all inspections have been passed, and the as-built drawings have been received.

2.0 EQUIPMENT AND MATERIAL SPECIFICATIONS FOR LOW PRESSURE SERVICES

All equipment and materials installed as part of the commercial low pressure connection shall meet the requirements of the TCEQ, TAC Chapter 217, the Uniform Plumbing Code, the National Electric Code, and the City's ordinances, standard details and specifications spelled out herein. The installed equipment shall result in a fully operational sewage pumping system. All handling, storage, and installation shall be in strict accordance with the Manufacturer's written instructions and recommendations.

2.1 Low Pressure Grinder Pump Unit

For ongoing maintenance and operations, the City has standardized on certain grinder pump units of like manufacturer, type and horsepower throughout the system. The grinder pump unit shall be supplied from the manufacturer as a complete unit including the wet well, pumps, internal piping/valves, and electrical controls. It is not allowed to install the grinder pump unit within an existing septic tank. The pumps shall be installed within a laminated fiberglass or molded HDPE wet well with a diameter of not less than 36-inches and a height of not less than 60-inches. The wet well shall provide a minimum of 100 gallons of storage above the high level alarm level. The flowline of the influent gravity service pipe shall be a minimum of 30-inches from the bottom of the wet well. Actual dimensions will depend on the anticipated flows, elevations of the incoming gravity wastewater, and shall meet all TCEQ requirements. The grinder pump unit shall be installed at locations outside of natural drainage ways or any areas subject to flooding.

Unless specifically instructed otherwise by the City, the grinder pump unit for commercial properties shall be an E-One Corporation duplex grinder pump unit as supplied by Environmental Improvements, Inc. of Buda, Texas. The standard E-One duplex grinder pump unit shall consist of two E-One Extreme Semi-positive Displacement Pumps (1 HP each).

When directed by the City Wastewater Coordinator, due to flow rates or head conditions in excess of the capacity of the standard E-One grinder pump unit, a duplex grinder pump unit consisting of two Barnes submersible grinder pumps as supplied by Pump Solutions, Inc. of Hutto, Texas. The specific pump models shall be as directed by the City wastewater engineer.

The wet well cover shall have a load rating of not less than 150 pounds per square foot. The access way, cover, and wet well shall withstand the pressure exerted by saturated soil loading at maximum burial depth and must function normally when exposed to 150 percent of the maximum external soil and hydrostatic pressure.

The wet will require concrete ballast or anti-flotation collars to resist buoyancy forces equivalent to a fully submerged wet well. Supplier to provide buoyancy calculations and details for concrete ballast or anti-flotation collars required to resist buoyancy forces equivalent to a fully submerged wet well.

Internal piping within the grinder pump unit shall be rated for a minimum of 200 psi and shall be of the standard materials supplied by the unit manufacturer. Internal isolation, check, and anti-siphon valves shall be supplied per the standard details.

Each grinder pump unit shall include a lockable NEMA 4X UL listed alarm/disconnect panel suitable for wall or pole mounting. It shall include an audio alarm with an 86 dB buzzer, and a visual alarm lamp. The panel shall be the standard supplied by Environmental Improvements, Inc. or Pump Solutions, Inc.

The following miscellaneous items shall be supplied and/or complied with as part of the installation:

1. Service Equipment/Main Service Disconnect Breaker: A separate internal breaker rated and approved for use as "service equipment" and acts as a main service disconnect of the grinder pump station shall be provided.
2. The control panel shall be furnished, installed and wired to the grinder pump station by a length of 6 conductor type TC cable.
3. The control panel shall be mounted a minimum of 2-feet above the ground and the ground floor of the building being served. It shall be mounted in a conspicuous location in accordance with national and local codes.
4. The Contractor shall clearly label the circuit breaker with the words "grinder pump."
5. GFI Receptacle: One duplex GFCI convenience outlet shall be provided.
6. Furnish conduit seals, sealing compound or sealing barriers on all conduit or wire way entrances into the control panel to preclude corrosive gasses from entering the control/alarm panel.
7. Place a minimum of 6-inches of naturally rounded aggregate, clean and free flowing, with particle size of not less than 1/8-inch or more than 3/4 inch under each grinder pump unit as bedding/leveling material.
8. Backfill of wet well above the concrete ballast shall consist of clean gravel, crushed gravel, or crushed limestone conforming to ASTM C33 for stone quality, compacted to a minimum of 90% Standard Proctor Density. Size gradation shall conform to ASTM C33 No. 57 or No. 67.

Contractor shall warrant the installation of all items constructed against defects in materials and workmanship for a period of one year from the date of acceptance of the installation. All defects and defective components shall be repaired and/or replaced at no cost to the property owner or the City during the warranty period.

The grinder pump manufacturer shall provide a warranty for the grinder pump unit and control panels against defects in workmanship and materials for a period of 5 years under normal use, operation, and service. The warranty shall be a full, unlimited warranty for a 5-year period starting from the date the unit becomes operational. Limited or prorated warranties will not be acceptable. The warranty will be made to the City of West Lake Hills.

Additional requirements and installation instructions are shown on the attached Details 1-6.

2.2 Low Pressure Service Piping and Valves

All buried low pressure service piping from the grinder pump unit to the low pressure main shall be 1-1/2 inch diameter piping for all commercial duplex grinder pump unit installations, unless flow

rates require a larger diameter as agreed to by the City's Wastewater Engineer. Unless specifically directed by the City otherwise, low pressure service piping shall be of the following materials:

1. SDR-11 HDPE piping with fused joints. Fittings shall also be SDR-11 HDPE with fused joints. Changes in direction may be accomplished by installing a radius on the HDPE pipe. Installed radius shall be a minimum of 50% of the manufacturer's recommended minimum allowable bending radius. Bends shall be 45-degrees or less.
2. ASTM D2241 SDR-21 PVC piping with solvent welded joints. Fittings shall be Schedule 40 PVC with solvent welded joints. All changes in direction shall be accomplished by bends of 45-degrees or less, no radii are permitted.
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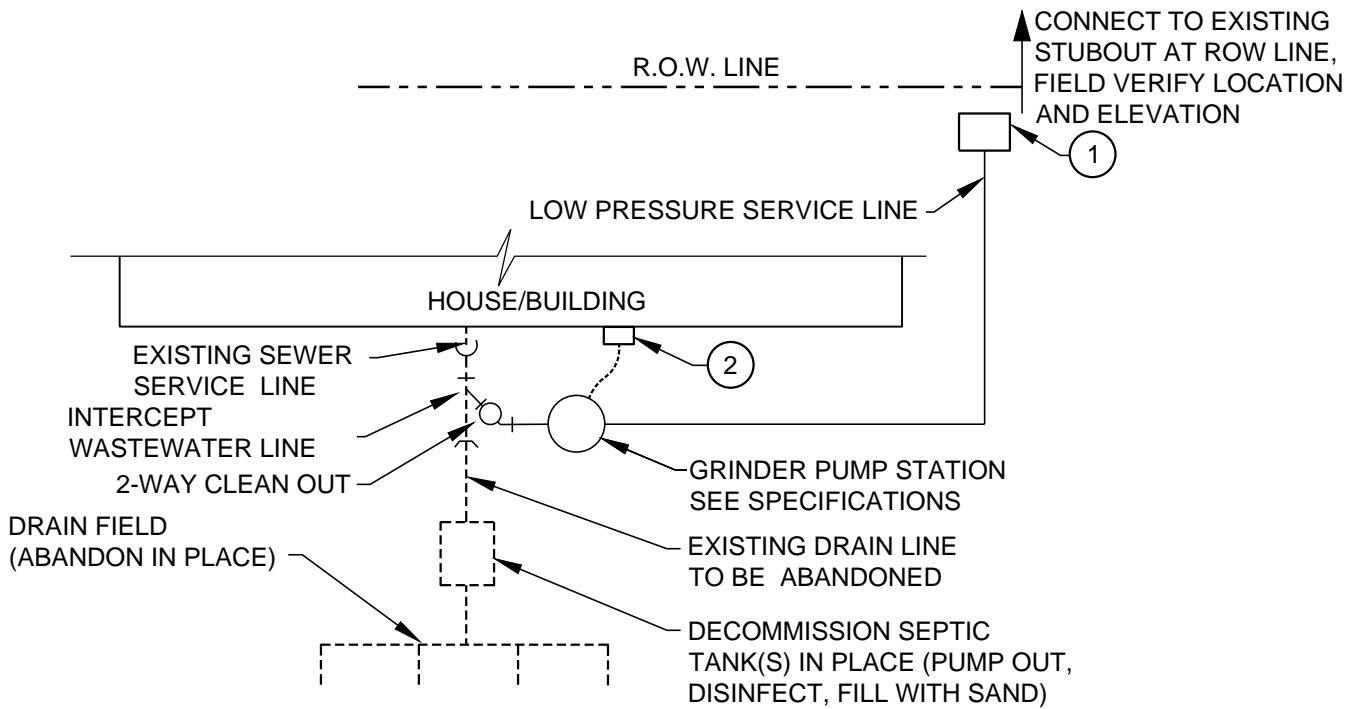
All low pressure service piping shall have a minimum cover of 18-inches, and shall be bedded in clean, homogeneous bedding sand.

A wastewater valve box containing 1-1/2 inch ball and swing check valves shall be installed at the property line per the details herein. The ball valve shall be a full port true union, Nibco 6050N or approved equal. The swing check valve shall be a Stockham B-391Y, Hammond IB949, or approved equal. The meter box shall be plastic with a cast iron lid, Western Iron Works R065 or approved equal. If a stub-out to the property does not exist, a 2nd ball valve shall be installed within a cast iron valve box per the details contained herein.

2.3 Gravity Service Piping

Buried gravity service line from a building to the grinder the pump unit shall meet the current International Plumbing Code requirements. Piping shall be ASTM D3034 SDR-26 PVC. The diameter shall be capable of handling the design flows at the proposed slope, but in no case shall it be smaller than 4-inch diameter. A 2-way clean-out (a double cleanout is not acceptable), per the City of Austin Standard Products List shall be installed between the building and grinder pump unit. Additional clean-outs shall be installed at intervals not to exceed one hundred feet in straight runs and for each aggregate horizontal change in direction exceeding one hundred and thirty five degrees. Gravity service piping shall have a minimum cover of 18-inches, and at a minimum of 1% gradient.

COMMERCIAL LOW PRESSURE DETAILS



- ① INSTALL WW VALVE BOX CONTAINING BALL VALVE AND CHECK VALVE PER DETAIL.
- ② PROPOSED ELECTRICAL CONTROL PANEL, PROVIDED BY GRINDER PUMP STATION MANUFACTURER. CONTROL PANEL TO BE IN CLEAR VISUAL SIGHT OF GRINDER PUMP STATION. SEE ELECTRICAL PANEL DETAIL FOR SPECIFIC REQUIREMENTS.

TYPICAL GRINDER PUMP CONNECTION PLAN

NTS

LOW PRESSURE GENERAL NOTES

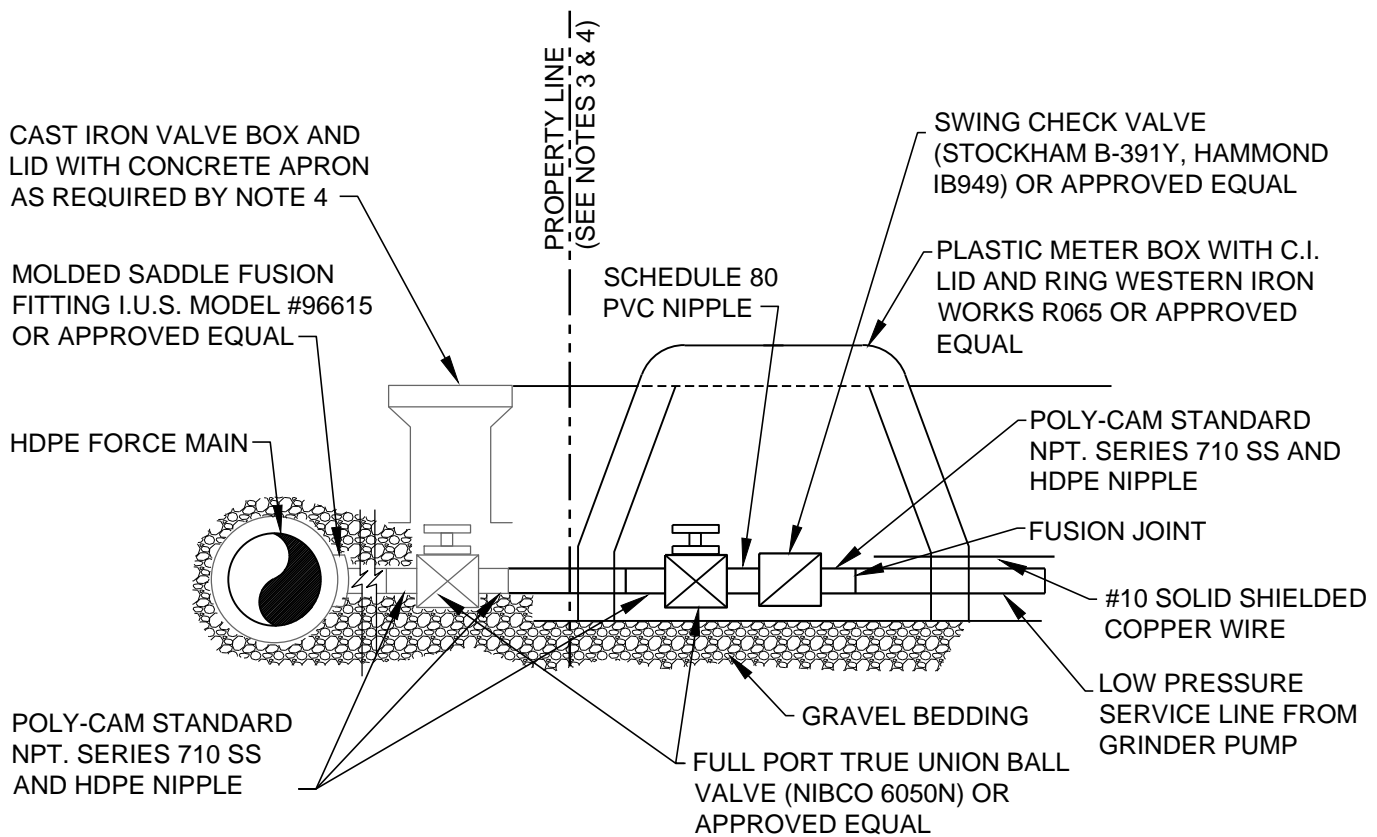
1. ALL PLUMBING SHALL CONFORM TO THE LATEST REVISION OF THE INTERNATIONAL BUILDING CODE AS REQUIRED BY LOCAL ORDINANCES.
2. TYPICAL GRAVITY SERVICE LINES SHALL BE ASTM D 3034 SDR 26 PVC 4-INCH UNLESS ANY SINGLE EXISTING DRAIN LINE IS LARGER, IN WHICH CASE THE PROPOSED LINE AND FITTINGS SHALL BE EQUAL IN SIZE TO THE LARGEST EXISTING DRAIN LINE. GRAVITY SERVICE LINES SHALL BE INSTALLED AT A MINIMUM 1% GRADIENT WITH A MINIMUM COVER OF 18 INCHES.
3. ADDITIONAL SEWER CLEAN-OUTS IN GRAVITY SERVICE LINES SHALL BE INSTALLED AT INTERVALS NOT TO EXCEED ONE HUNDRED FEET IN STRAIGHT RUNS AND FOR EACH AGGREGATE HORIZONTAL CHANGE IN DIRECTION EXCEEDING ONE HUNDRED THIRTY FIVE DEGREES.
4. LOW PRESSURE SERVICE LINES SHALL BE 1-1/4 INCH DIAMETER FOR SIMPLEX GRINDER PUMP UNITS AND 1-1/2 INCH DIAMETER FOR DUPLEX GRINDER PUMP UNITS. LOW PRESSURE SERVICE LINES SHALL BE HDPE SDR-11 WITH FUSED JOINTS, ASTM D2241 SDR-21 PVC WITH SOLVENT WELDED JOINTS, OR SCHEDULE 40 PVC WITH SOLVENT WELDED JOINTS. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
5. CHANGES IN DIRECTION FOR PRESSURE SERVICE LINE ALIGNMENTS CAN BE ACCOMPLISHED BY INSTALLING A RADIUS ON THE HDPE PIPE OF A MINIMUM OF TWO TIMES THE MANUFACTURER'S RECOMMENDED MINIMUM ALLOWABLE BENDING RADIUS. FOR D2241 AND SCHEDULE 40 PVC PIPES, CHANGES IN DIRECTION SHALL BE MADE WITH BENDS OF 45-DEGREES OR LESS, NO RADII ARE PERMITTED.
6. ALL SERVICE LINE AND SERVICE CONNECTION PIPING SHALL BE BEDDED IN CLEAN, HOMOGENEOUS BEDDING SAND.



TYPICAL GRINDER PUMP CONNECTION PLAN

JAN 2016

WEST LAKE HILLS WASTEWATER COLLECTION SYSTEM



TYPICAL SIMPLEX GRINDER PUMP DISCHARGE SERVICE CONNECTION TO FORCE MAIN WITH HDPE COMPONENTS

NTS

NOTES

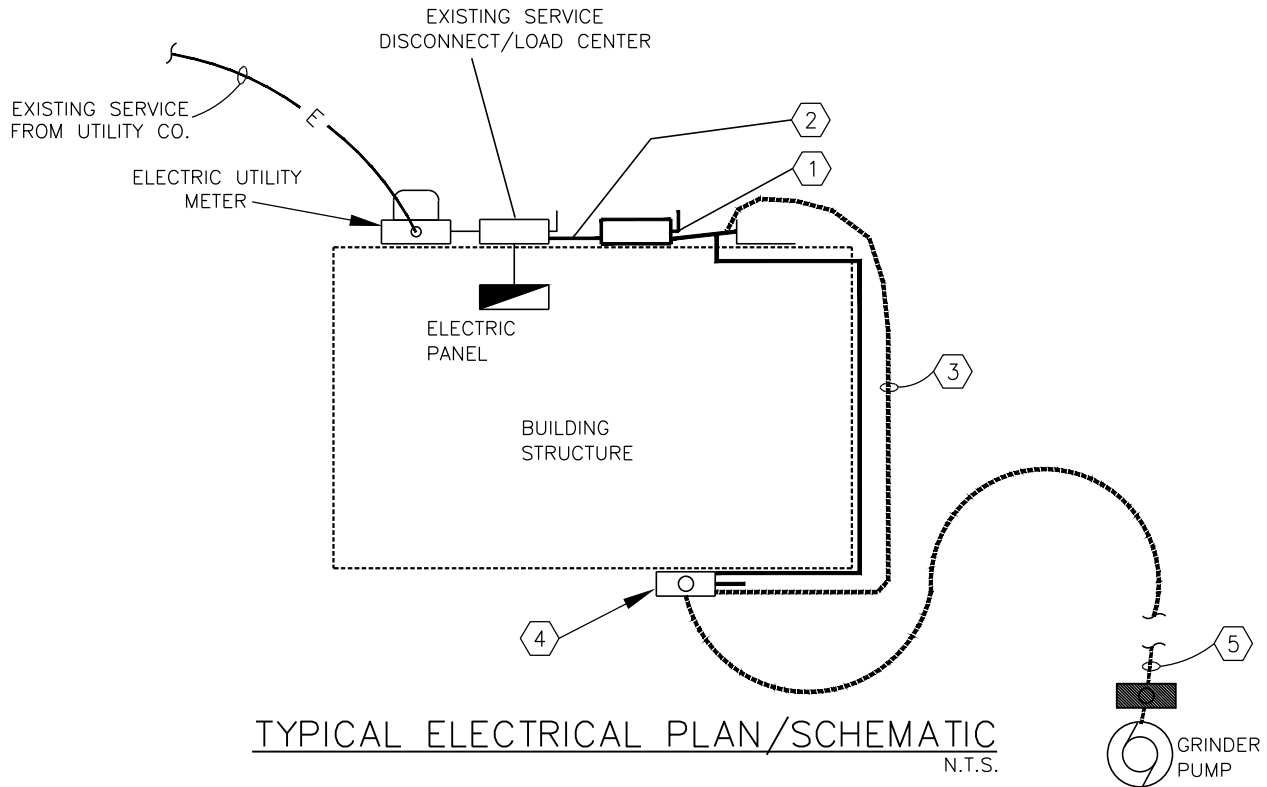
1. LOW PRESSURE SERVICE LINES, BALL VALVES, AND SWING CHECK VALVES SHALL BE 1-1/4 INCH DIAMETER FOR SIMPLEX GRINDER UNITS AND 1-1/2 INCH DIAMETER FOR DUPLEX GRINDER UNITS.
2. FIELD VERIFY LOCATION OF EXISTING VALVE BOX AND STUBOUT. IF NO VALVE/STUBOUT EXISTS, FURNISH AND INSTALL TAPPING SADDLE, LOW PRESSURE SERVICE LINES TO EXISTING MAIN, AND 2 VALVE BOXES WITH 2 BALL VALVES AND 1 CHECK VALVE AS SHOWN ABOVE. OBTAIN ALL REQUIRED PERMITS FOR WORK IN THE PUBLIC RIGHT OF WAY.
3. FOR CONNECTION TO 2 INCH DIA AND 2-1/2 INCH DIA FORCE MAINS, INSTALL MOLDED BUTT TEE AND REDUCER IF REQUIRED.
4. WHERE CAST IRON VALVE BOX IS WITHIN 5 FEET OF EDGE OF ROADWAY PAVEMENT OR WITHIN PAVEMENT, INSTALL 2' X 2' X 6" MIN. CONCRETE APRON AROUND VALVE BOX.
5. LOCATE "WW VALVE BOX" AT PROPERTY LINE OR WITHIN PRIVATE PROPERTY.
6. WHERE WASTEWATER VALVE BOX ON PROPERTY OWNER'S SIDE IS TO BE INSTALLED IN DRIVEWAYS OR OTHER PAVEMENT, PROVIDE A SIMILAR SIZE TRAFFIC RATED VALVE BOX.



DUPLEX GRINDER PUMP DISCHARGE SERVICE CONNECTION

JAN 2016

WEST LAKE HILLS WASTEWATER COLLECTION SYSTEM



TYPICAL ELECTRICAL PLAN/SCHEMATIC
N.T.S.

TYPICAL ELECTRICAL PLAN GENERAL NOTES:

- A. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE. ALL WORK SHALL BE APPROVED BY THE LOCAL AUTHORITY HAVING JURISDICTION. ELECTRICIAN WILL BE RESPONSIBLE FOR ELECTRIC PERMITS AND ARRANGING FOR INSPECTION BY BUILDING OFFICIAL IF REQUIRED.
- B. ALL CONDUCTORS SHALL BE COPPER.

REFERENCE NOTES:

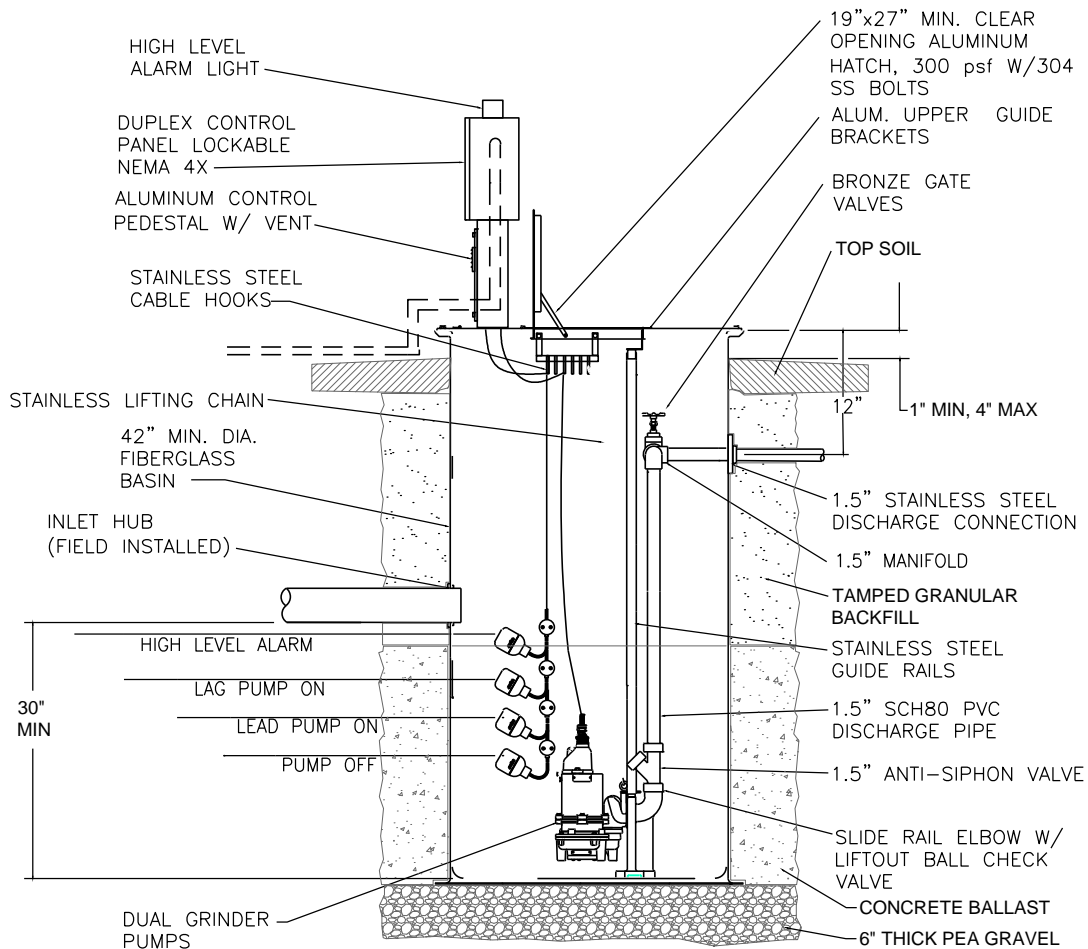
1. PROPOSED FUSIBLE 30-AMP, 240-VOLT DISCONNECT SWITCH FOR SIMPLEX GRINDER PUMP SYSTEMS AND FUSIBLE 60-AMP, 240 VOLT DISCONNECT FOR DUPLEX GRINDER PUMP SYSTEMS, SQUARE D CO. CLASS 3150, CAT. NO. FS222R WITH 30-AMP FUSES AND CAT. NO. DPF6 GROUND TERMINAL KIT. LABEL COVER "GRINDER PUMP DISCONNECT" WITH AN ENGRAVED PHENOLIC NAMEPLATE. PROVIDE AND INSTALL A SURGE ARRESTOR, SQUARE D CO. CAT. NO. SDSA 1175 OR EQUAL. MOUNT DISCONNECT BOX AT SAME ELEVATION AS EXISTING SERVICE DISCONNECT/LOAD CENTER BUT NEVER LESS THAN 2 FEET ABOVE THE GROUND FLOOR ELEVATION OF THE STRUCTURE TO BE SERVED.
2. #6 TYPE THWN AND (1)-#10 GROUND CONDUCTOR TO GRINDER PUMP DISCONNECT SWITCH. TAP EXISTING SERVICE ENTRANCE CONDUCTOR IN EXISTING SERVICE DISCONNECT OR LOAD CENTER PER NEC 230-46, EXCEPTION NO.2, USING COMPATIBLE BURNDY TAP CONNECTORS PER MANUFACTURERS RECOMMENDATIONS. TAPE OVER CONNECTIONS WITH 3M SCOTCH SUPER 33+. COLOR CODE THE WIRING IN ACCORDANCE WITH THE LOCAL AUTHORITY'S REQUIREMENTS. AS AN ALTERNATIVE TO TAPPING THE EXISTING SERVICE ENTRANCE CONDUCTOR, THE CONTRACTOR MAY UTILIZE SPARE BREAKERS AND/OR SPACES (WHERE AVAILABLE) IN THE EXISTING LOAD CENTER TO PROVIDE POWER TO THE PUMP SYSTEM. THIS ALTERNATIVE SHALL BE UTILIZED UPON SECURING BOTH THE LCRA AND PROPERTY OWNER'S PERMISSION.
3. #10 TYPE THWN CONDUCTORS WITHIN CONDUIT FOR BURIED INSTALLATION TO REMOTE CONTROL PANEL LOCATIONS.
4. PROPOSED ELECTRICAL CONTROL PANEL SHALL BE PROVIDED BY THE GRINDER PUMP STATION MANUFACTURER (SEE SPECIFICATIONS). MOUNT THE CONTROL BOX TO THE STRUCTURE BEING SERVED OR ON A UNI-STRUT FRAME AT A LOCATION WITHIN CLEAR VISUAL SIGHT OF THE GRINDER PUMP STATION. CONTROL PANEL SHALL BE A MINIMUM OF 2 FEET ABOVE THE FINISHED FLOOR OF THE BUILDING BEING SERVED. CONTROL PANELS SHALL HAVE INTEGRAL FUSIBLE DISCONNECT AND BE LOCKABLE.
5. PROPOSED BRANCH CIRCUIT WIRING TO GRINDER PUMP STATION. PROVIDE AND INSTALL 2/C #8 W/G TYPE UF CABLE IN 1" SCHEDULE 40 PVC CONDUIT TO 18" BELOW GRADE, NON-RESIDENTIAL INSTALLATIONS 24" BELOW GRADE. COMPLY WITH NEC ARTICLE 300-5. ALARM CONDUCTORS SHALL BE PROVIDED PER GRINDER PUMP STATION MANUFACTURER'S RECOMMENDATIONS.



ELECTRICAL PANEL DETAIL

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WEST LAKE HILLS WASTEWATER COLLECTION SYSTEM



TYPICAL DUPLEX GRINDER PUMP UNIT INSTALLATION

TYPICAL GRINDER PUMP UNIT INSTALLATION:

N.T.S.

1. LOW PRESSURE SERVICE LINES SHALL BE 1-1/2 INCH DIAMETER FOR DUPLEX GRINDER PUMP UNITS. LOW PRESSURE SERVICE LINES SHALL BE HDPE SDR-11 WITH FUSED JOINTS, ASTM D2241 SDR-21 PVC WITH SOLVENT WELDED JOINTS, OR SCHEDULE 40 PVC WITH SOLVENT WELDED JOINTS. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
2. PROVIDE ALL NECESSARY FITTINGS TO INSTALL SERVICE LINES AS SHOWN. CHANGES IN DIRECTION FOR PRESSURE SERVICE LINE ALIGNMENTS CAN BE ACCOMPLISHED BY INSTALLING A RADIUS ON THE HDPE PIPE OF A MINIMUM OF TWO TIMES THE MANUFACTURER'S RECOMMENDED MINIMUM ALLOWABLE BENDING RADIUS. FOR D2241 AND SCHEDULE 40 PVC PIPES, CHANGES IN DIRECTION SHALL BE MADE WITH BENDS OF 45-DEGREES OR LESS, NO RADII ARE PERMITTED.
3. DESIGN OF GRINDER PUMP UNIT SHALL MEET THE REQUIREMENTS OF TCEQ CHAPTER 217. SUBCHAPTER D. THE RESERVE VOLUME IN THE WET WELL MUST BE AT LEAST 100 GALLONS OR GREATER THAN THE ANTICIPATED VOLUME ACCUMULATED DURING A 2 HOUR PERIOD, WHICHEVER IS GREATER.
4. PROVIDE CONCRETE BALLAST OR ANTI-FLOTATION COLLARS TO RESIST BUOYANCY FORCES EQUIVALENT TO A FULLY SUBMERGED WET WELL. SUBMIT BUOYANCY CALCULATIONS FOR REVIEW AND APPROVAL. CONCRETE BALLAST SHALL BE 2,500 PSI MINIMUM STRENGTH.
5. CONTROL PANEL AND ELECTRICAL CONNECTIONS SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS. CONTROL PANEL SHALL BE LOCATED WITHIN SIGHT OF THE WET WELL.



DUPLEX GRINDER PUMP UNIT INSTALLATION DETAIL

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WEST LAKE HILLS WASTEWATER COLLECTION SYSTEM

EP² Start-Up Request Form

Address: _____ Project: _____

Contractor: _____ Name: _____

Contact # _____ Requested Date of Start-Up: _____

Please answer the following questions by circling “yes” or “no”.

- | | | |
|---|-----|----|
| 1. Ballast installed as indicated in the installation manual? | Yes | No |
| 2. Tank installed above finished grade (12” extension max)? | Yes | No |
| 3. All miscellaneous debris removed from inlet pipe and tank before start-up? TANK MUST BE CLEAN | Yes | No |
| 4. Center of inlet pipe a minimum of 30” from bottom of tank? | Yes | No |
| 5. Inlet grommet installed correctly using a hole saw? | Yes | No |
| 6. Discharge assembly installed per factory diagram? | Yes | No |
| 7. Mushroom vent installed when permitted (check code)? | Yes | No |
| 8. 1¼” discharge piping from tank to tap (1½” max)? | Yes | No |
| 9. Control panel mounted 40” to 60” above finished grade? | Yes | No |
| 10. LABELED 30 AMP circuit feeding the E/One control panel? | Yes | No |
| 11. Factory cord grip connector installed properly? | Yes | No |
| 12. Supply cable installed using ¾” (min) electrical conduit? | Yes | No |
| 13. Conduit penetrations on the bottom of the control panel only? | Yes | No |
| 14. All conduits in the panel sealed to prevent moisture damage? | Yes | No |
| 15. EQD plug must extend past the top of the tank (24” max)? | Yes | No |
| 16. EQD, Equalizer, and rope secured at the top of the tank? | Yes | No |
| 17. All residential and main valves opened before start-up? | Yes | No |

- If you answered “no” to any of the above questions please make the needed corrections before submitting this request.
- Once Environmental Improvements, Inc has received the request a representative will contact you to make an appointment for the start-up. The start-up will be completed within the next 2 business days.
- A failed start-up will result in a second start-up once corrections have been made and a new request form has been submitted.
- An additional fee will be invoiced to the party requesting the second start-up.

By signing below I acknowledge that I understand the terms and conditions of this formal request form. Please contact Environmental Improvements, Inc with any questions or concerns at (512) 295-3733.

Sign: _____ Date: _____

**PLEASE EMAIL THE COMPLETED FORM TO:
russell @ei2austin.com**