

# City of Sioux City

Department of Public Works  
Engineering Division



## Policy & Information Handout for GRINDER PUMP SYSTEMS

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## POLICY FOR LOW PRESSURE SEWER SYSTEMS

Effective April 16, 2007

**Intent:** The purpose of this policy is to establish a documented criteria and procedure for the installation and maintenance of low pressure sewer pumps.

- The City will review and approve requests to install low pressure sewer systems in areas where the use of typical gravity sewer applications is not feasible.
- It is the City's intention to maintain the mechanical pump of external grinder pumps associated with approved low pressure sewer systems. This will not include grinder pumps or ejector pumps connected to gravity collection systems
- These systems will be designed based on the use of the Environment One Model 2010 Grinder Pump. Users will be required to use the Environment One Model 2010 Grinder Pump and the E/One Sentry control panel 240 VAC Series. (See Exhibit A)
- The City will not provide 24 hour/7day a week maintenance. Maintenance of these facilities will be done during normal business hours Monday through Friday.
- In accordance with City Code Section 13.07.035:
  - Property owners will be responsible for all installation costs.
  - Property owners will obtain a special permit from the Field Services Department prior to installation.
  - Property owners must dedicate an easement to the City for the purpose of inspection and maintenance of the facility prior to receiving a permit to install.
  - Property owners will be responsible for the maintenance of the pump basin, the electrical panel & wiring and all associated piping.
  - Properties served by this system will be subject to an additional service fee.
- Upon completion of the installation, but prior to the City's final inspection, the property owner must supply the City with the following:
  - A warranty card from the manufacturer.
  - An as-constructed drawing on 8 ½ x 11 paper detailing (See Exhibit D):
    - The building location on the parcel.
    - The driveway location.
    - The location of the grinder pump basin.
    - The location of the electrical panel and disconnect.
    - The curb stop location.
    - Dimension the location of the redundant check valve and connection to the low pressure sewer main.
    - The pipe size and location for both the gravity service to the building and the pressurized pipe connected to the low pressure sewer main.
    - Easement limits shall be identified.
- Property owner is required to properly abandon any existing septic tank at their cost. This shall be approved by the Woodbury County Health Department.



## GRINDER PUMP OPERATING GUIDELINES

PLEASE KEEP FOR FUTURE REFERENCE

Field Services Department 279.6164

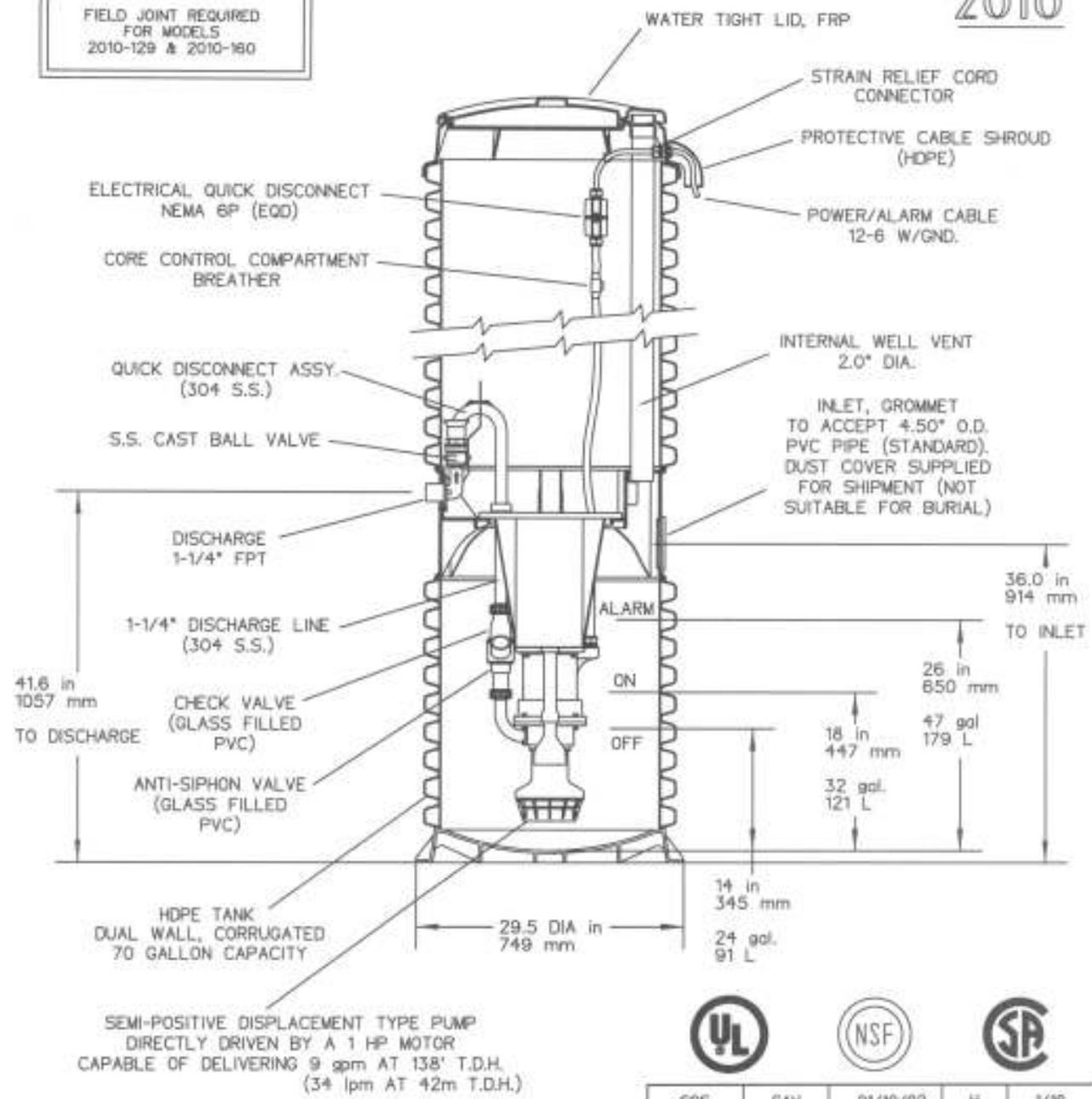
- **DO** refrain from water usage during ANY pump malfunction until repairs are made or during electrical outage unless backup generation is available.
- **DO** call **Field Services (at 279.6164 Monday to Friday, 7:00 am to 3:30 pm, no after hours service will be provided)** whenever an alarm occurs. If a failure occurs during non-business hours, call first thing the following business day. Also, if your neighbor's grinder system is in an alarm state, and you suspect that they are not aware or not home please call the number.
- **DO** ensure the grade around your grinder pump station **slopes down** from outside of the station. **Please allow grinder cover to be at least 4" above grade and remain uncovered.**
- **DO** familiarize yourself with the location of the electrical control panel and note the number on the panel. If you have a house sitter, be sure to tell them the function and location of the control panel.
- **DO** be aware that the maintenance of the plumbing from your home to the grinder pump basin, the grinder pump basin and the service line from the basin to the main line is the responsibility of each individual property owner.
- ⊗ **DO NOT** attempt to make repairs to the pump yourself.
- ⊗ **DO NOT** attempt to connect to a sewer main without the proper approvals and permits. The sewer mains are under pressure.
- ⊗ **DO NOT** bury the top of your grinder pump. Your grinder pump will not function if it is buried.
- ⊗ **DO NOT** dispose of materials such as **grease**, dental floss, seafood shells, large amounts of hair, sanitary napkins, cloth and/or disposable diapers, elastic, glass, cat litter or abrasives (sand, steel wool, lapping compound, etc.). These items cause maintenance problems that could result in a cost to the homeowner for repairs to the pump.
- ⊗ **DO NOT** wash construction materials such as drywall compound, dust from drywall installation, grout, rags or paint(latex, oil and acrylic) into the system.
- ⊗ **DO NOT** flush undesirable substances into the sewer. You must **NEVER** introduce explosives, flammable materials, strong chemicals, gasoline or darkroom chemicals into the system.
- ⊗ **DO NOT** start digging to find an underground utility. Phone One Call at 1.800.292.8989, at least 72 hours in advance of digging.
- ⊗ **DO NOT** connect downspouts, sumps and storm drains or allow any surface water to get into the pressure sewer.
- ⊗ **DO NOT** drive on the grinder pump access cover. You will damage your grinder pump.

# Exhibit A



## Grinder Pump and Control Panel Detail Sheets

FIELD JOINT REQUIRED FOR MODELS 2010-129 & 2010-160



SGS	CAH	01/10/02	H	1/18
DR BY	CHK'D	DATE	ISSUE	SCALE



MODEL 2010, DETAIL SHEET

PA0908P01

**BALLAST REQUIREMENTS**

A CONCRETE ANCHOR IS REQUIRED ON ALL OUTDOOR MODEL 2010 STATIONS. SPECIFIC CONCRETE DIMENSIONS ARE REQUIRED TO ACHIEVE NECESSARY BALLAST EFFECT. SEE INSTALLATION INSTRUCTIONS FOR FURTHER DETAILS.

# E/One Sentry

## Alarm Panel



### Description

The E/One Sentry panels are custom designed for use with Environment One grinder pump stations.

E/One Sentry panels are supplied with audible and visual high level alarms. They are easily installed in accordance with relevant national and local codes. Standard panels are approved by UL, CSA, CE and NSF to ensure high quality and safety.

### Standard Features

Corrosion-proof thermoplastic polyester enclosure, approved by UL for electrical control enclosures

NEMA 4X rated enclosure with padlock

Circuit breakers, 240 VAC service

Terminal blocks and ground lugs

Audible alarm with silence

Manual run feature and run indicator

Alarm-activated redundant pump run

Safety front — authorized personnel only when locked

Conformal-coated alarm board (both sides)

### Optional Features

Contact group — dry, powered and Remote Sentry

Hour meter

120 VAC service

Dead front

Main service disconnect breaker

Generator receptacle with automatic transfer switch (NEMA L14-20P)

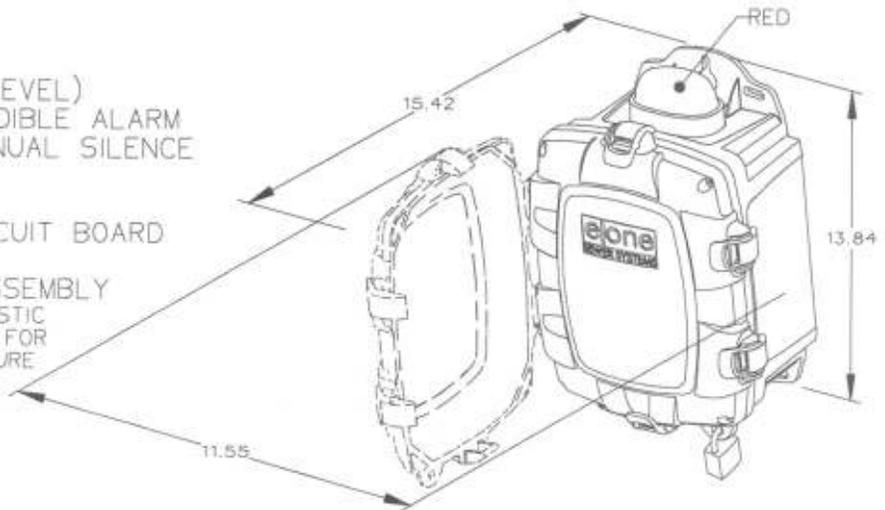
GFCI receptacle

Please consult factory for special applications.

LM000340 Rev. A

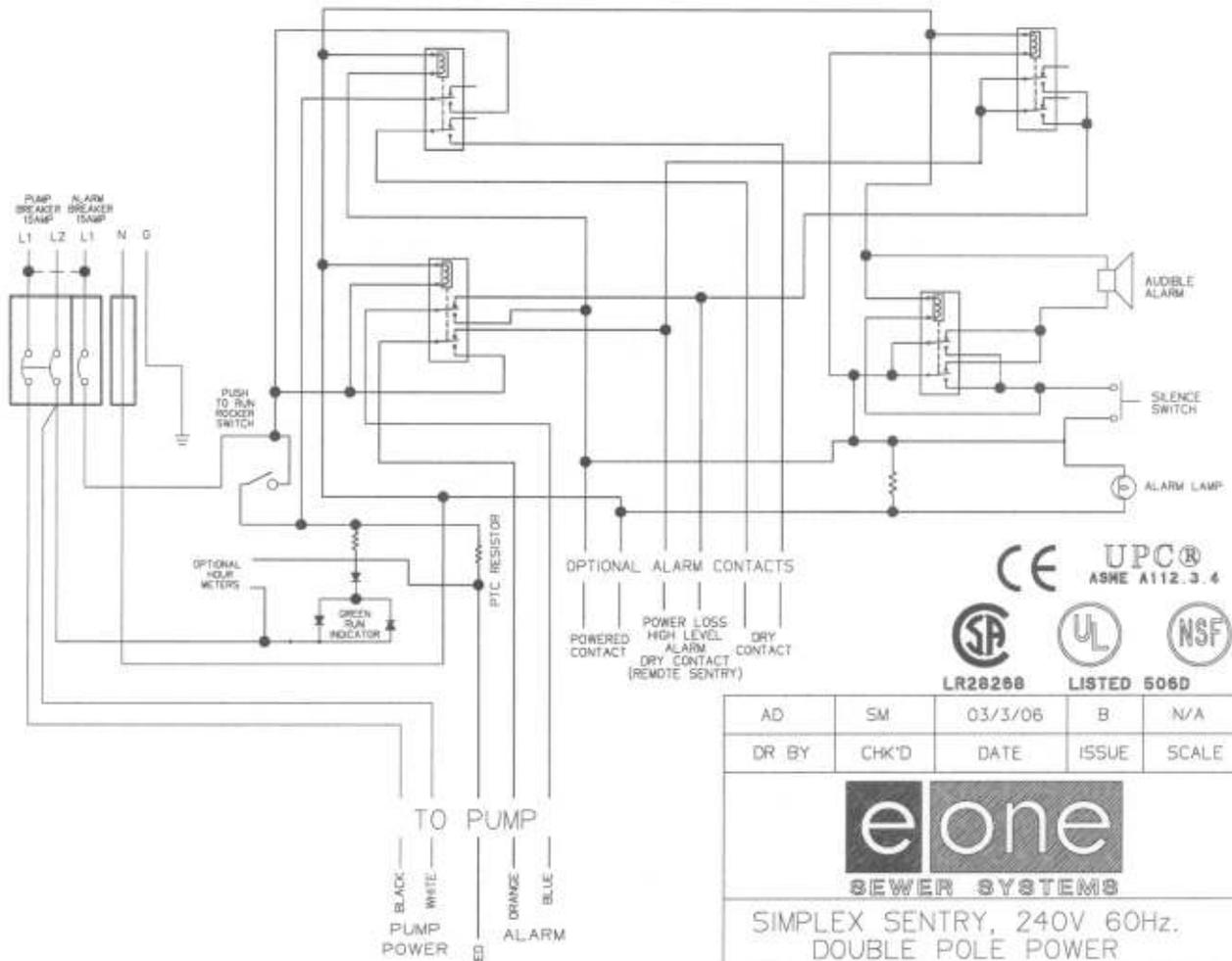
# SIMPLEX SENTRY

REDUNDANT RUN (HIGH LEVEL)  
 EXTERNAL VISUAL & AUDIBLE ALARM  
 EXTERNAL LATCHING MANUAL SILENCE  
 MANUAL RUN  
 PUMP RUN INDICATOR  
 CONFORMAL COATED CIRCUIT BOARD  
 PADLOCK  
 NEMA 4X ENCLOSURE ASSEMBLY  
 CORROSION PROOF THERMOPLASTIC  
 POLYESTER APPROVED BY UL FOR  
 ELECTRICAL CONTROL ENCLOSURE



## OPTIONS:

- ALARM CONTACTS
- HOUR METER



CONTROL CABLE:  
 TYPE TC- DIRECT BURIAL, 12AWG,  
 SIX CONDUCTOR

TO PUMP  
 BLACK — PUMP POWER  
 WHITE —  
 RED — MANUAL RUN  
 ORANGE — ALARM  
 BLUE —

OPTIONAL ALARM CONTACTS  
 POWERED CONTACT  
 POWER LOSS HIGH LEVEL ALARM  
 DRY CONTACT (REMOTE SENTRY)

CE UPC® ASME A112.3.4  
 SP LR20200 UL LISTED 506D NSF

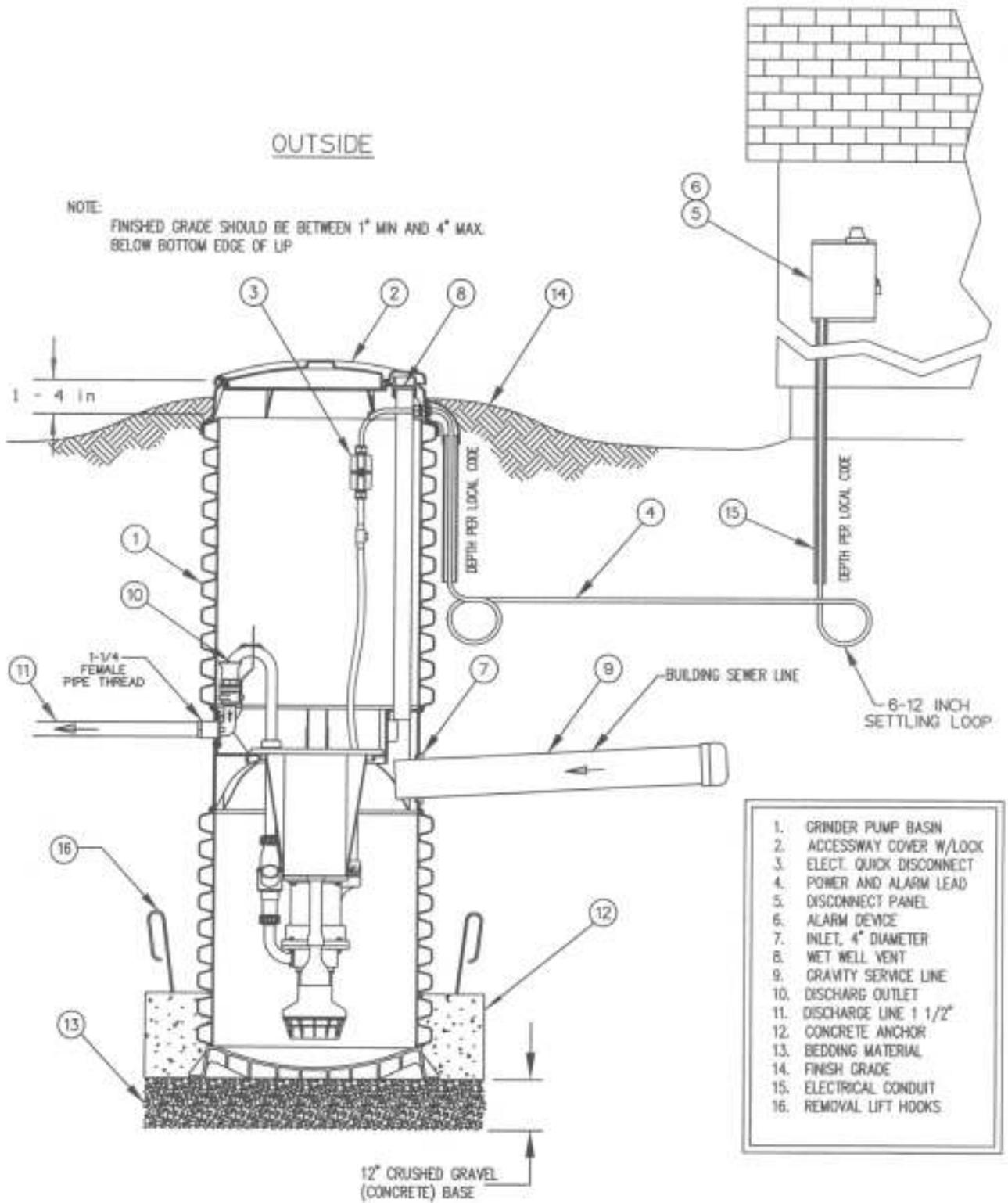
AD	SM	03/3/06	B	N/A
DR BY	CHK'D	DATE	ISSUE	SCALE
SIMPLEX SENTRY, 240V 60Hz. DOUBLE POLE POWER				
LM000326				

# Exhibit B

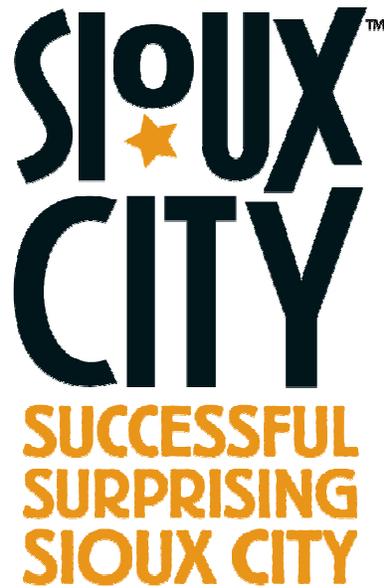


## Grinder Pump Highlights

# GRINDER PUMP HIGHLIGHTS

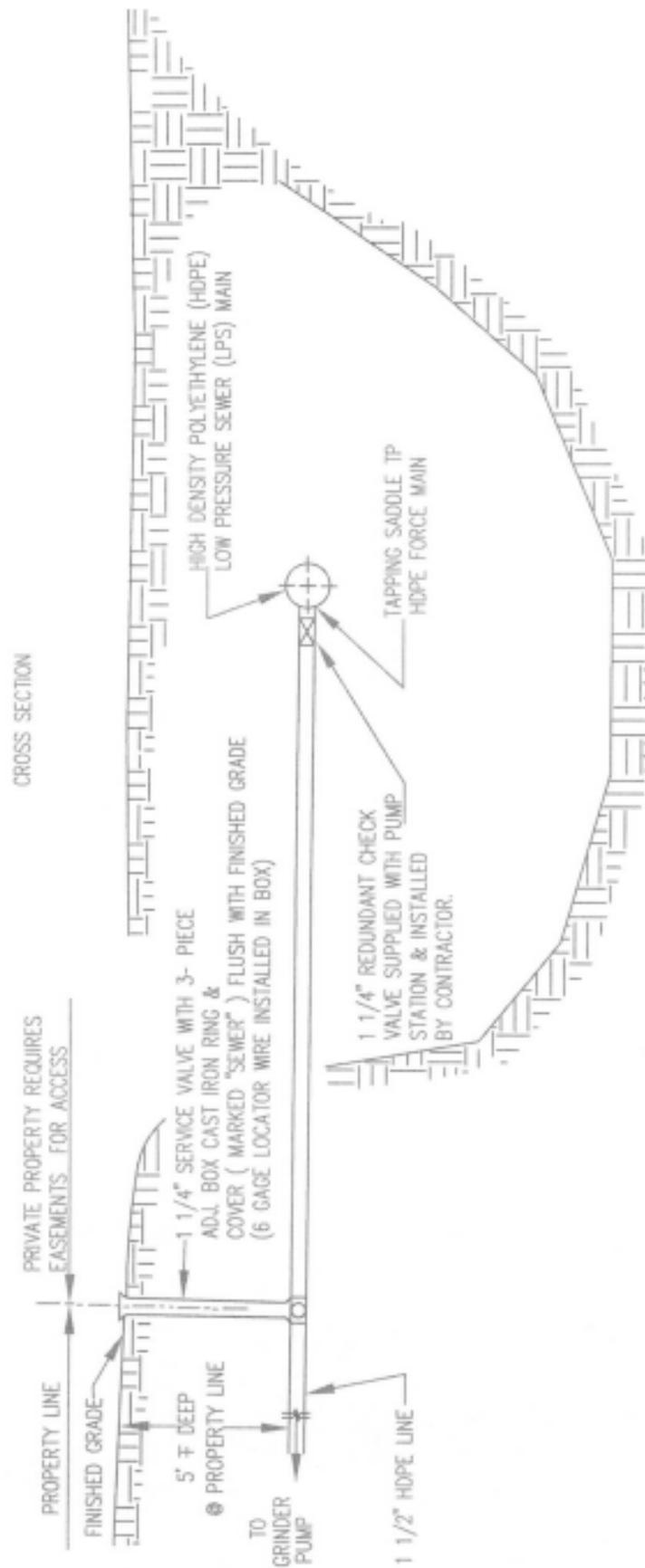


# Exhibit C



## Typical Connection of Service to Low Pressure Sewer Main

# LOW PRESSURE SEWER



# Exhibit D



Example of  
“As-Constructed”  
Drawing

# - EXAMPLE - AS CONSTRUCTED DRAWING GRINDER PUMP INSTALLATION

NAME
ADDRESS
DATE OF INSTALLATION
DRAWN BY

