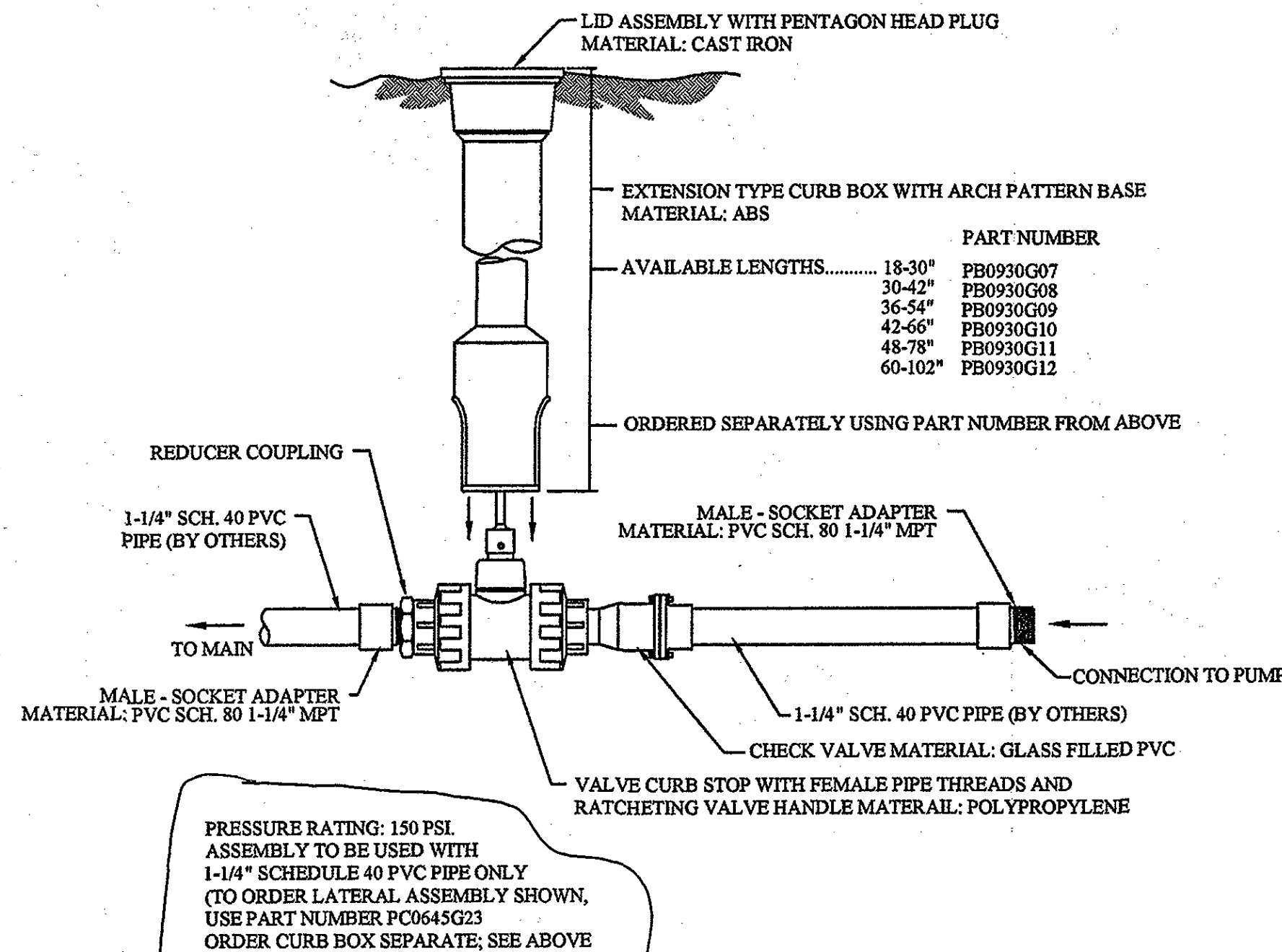


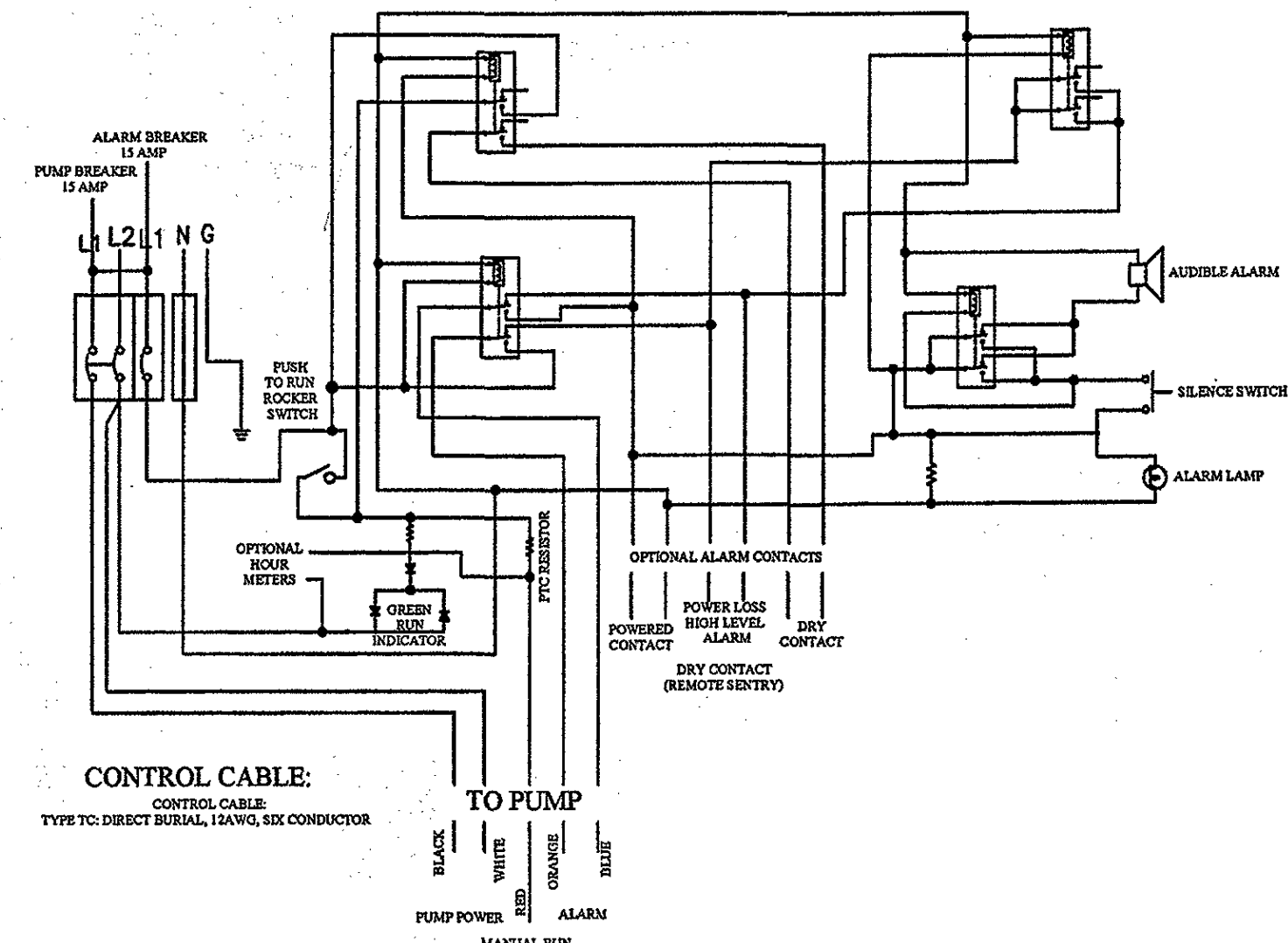
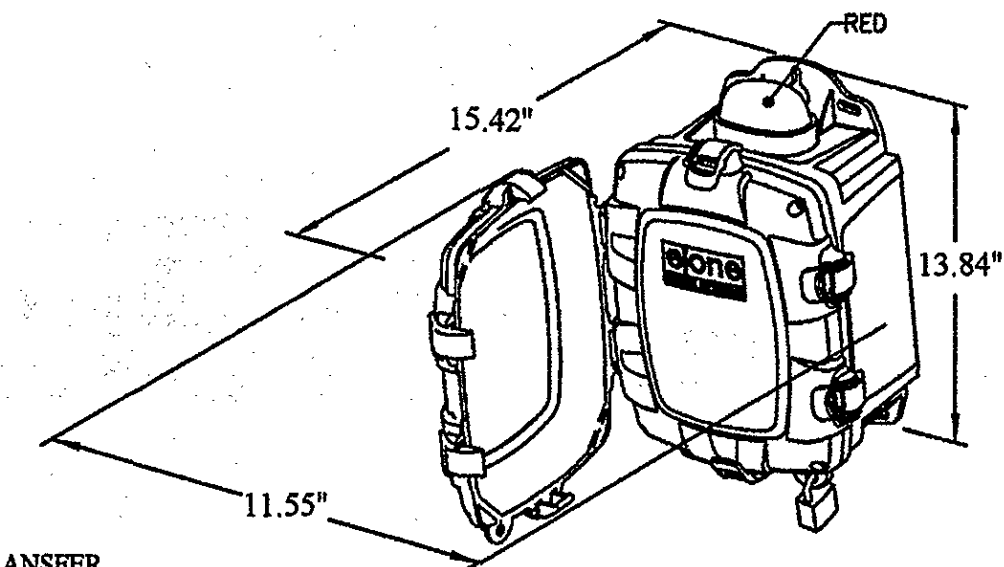
E-ONE GRINDER PUMP STATION, MODEL NO. 1012s-73



1-1/4" PVC LATERAL ASSEMBLY
SCH. 40 PVC PIPE

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

ADDITIONAL FEATURE:
1. GENERATOR RECEPTACLE AUTO TRANSFER
SWITCH (AC MAINS TO PORTABLE GENERATOR)



SIMPLEX SENTRY ELECTRICAL BOX & SCHEMATIC

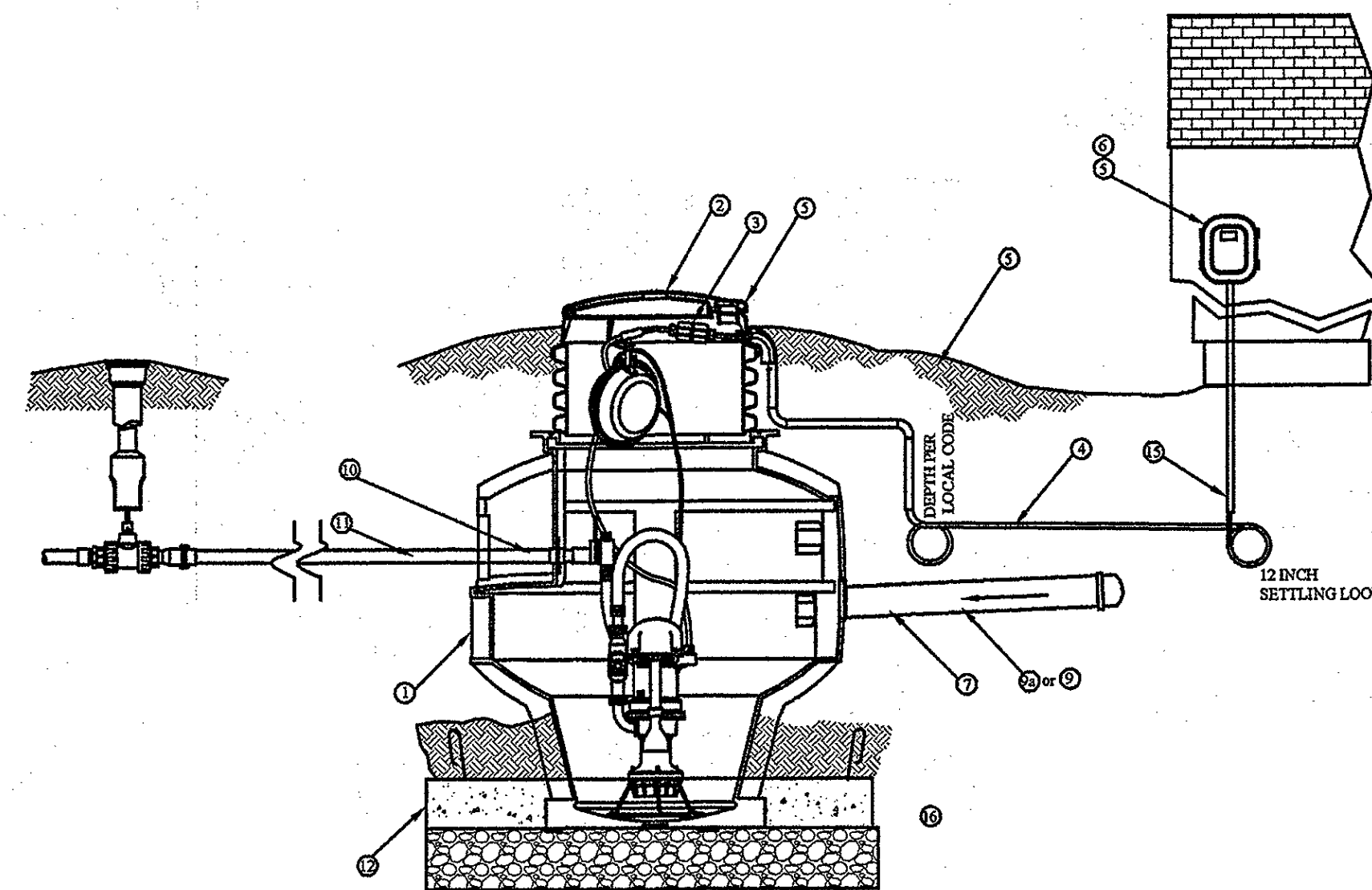
Common Low Pressure Force Main & Grinder Pump Stations

- The low pressure common force main system for The Coves sanitary sewer system phase 1, is designed to provide pressurized sewer service for the 53 residential lots located along the shoreline of Smith Mountain Lake, in Franklin County Virginia. The system has been specifically designed such that each residential lot will utilize a standardized E-One Model 2012s Pump Station. *Each station shall possess 237 gallons of storage capacity.*
- The developer and/or residential lot owner will be required to obtain a copy of this sheet of the The Coves community sewer system in order to procure a sewer system permit from Franklin County Health Department and building permit from Franklin County. Copies of this sheet and Construction Specifications shall be obtained from ACS DESIGN, project engineer and wastewater consultant.
- Installation of the e-one grinder pump system and service connection shall adhere to the minimum standards set forth within these construction drawings and as specified by the manufacturer. The developer, builder or lot owner shall refer to the construction drawings contained herein for specific location and instructions for connection to the common low pressure force main.
- Audio and visual alarms shall be located within each respective residence.
- Installation of the packaged grinder pump station and pressure force main service connection shall be performed by a licensed plumber and electrician as dictated and enforced by Franklin County Building Department.
- After installation, the builder or developer shall contact ACS DESIGN to schedule an on-site inspection of the grinder pump station installation. Prior to inspection, the system shall be fully complete and tested by the contractor. All pumps, alarms, and controls shall be verified as to proper function. After verification, the contractor shall deactivate the pump station and fill it with water. The contractor shall contact ACS DESIGN to schedule an inspection. Inspection shall include verification that all alarms, controls, and the pump are functioning correctly.
- The grinder pump station shall not be installed within any residential structure. The grinder station shall be located such that its top elevation is lower than the lowest finished floor elevation within the residence.
- The e-one pump station shall be constructed by a certified e-one installer. The developer/lot owner shall contact the following:

Falwell Corporation
3900 Campbell Avenue
Lynchburg, Virginia 24501
Phone: 434-846-2737
Fax: 434-846-2740

- After completion of construction, the contractor shall conduct preliminary tests to ensure that the pump station is functional and will operate satisfactorily. The contractor shall then de-energize the system and fill the pump tank full of clean water. The contractor shall contact ACS DESIGN to schedule an inspection. The inspection shall consist of a visual inspection of the installation and an operational inspection of the equipment at such time that the pump is activated. Final inspection shall certify that all alarms and controls performed as specified in the construction documents.
- After final inspection, the contractor shall provide to ACS DESIGN a contractor completion statement that includes the following information:
 - Lot number and street address of installation
 - Date of installation
 - Type of equipment installed
 - Date of final inspection
 - Contractor contact information for warranty and service repairs
- The completion statement shall be attached with the engineer's certification and submitted to VDH and Franklin County for record keeping purposes.
- The builder/lot owner shall be responsible for payment for professional services related to the engineer's final inspection and certification statement.

add minimum 50 foot service separation



EQUIPMENT LAYOUT

BALLAST CART FOR E-ONE 1012s GRINDER PUMP STATION

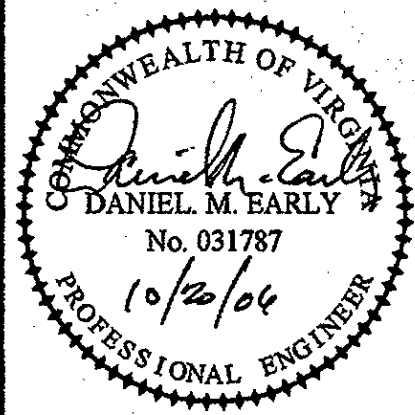
GP MODEL 1012s	STATION VOLUME (in.)	FNET BOUYANT (lbs.)	TANK WEIGHT (lbs.)	FBALLAST (lbs.)	VOLUME CONCRETE (cu. ft.)*	WEIGHT CONCRETE IN AIR (lbs.)*	MINIMUM DIAMETER OF CONCRETE ANCHOR (in.)	MINIMUM THICKNESS OF CONCRETE ANCHOR (in.)
GP MODEL 1012s-55	36.4	2058	213	2264	8.58	1287	60	7

* VOLUME CALCULATED IS FOR MINIMUM DIMENSIONS GIVEN. MINIMUM DIMENSIONS MUST FIRST BE MET OR EXCEEDED FOR ACTUAL APPLICATION

ENVIRONMENT ONE GRINDER PUMP FEATURE IDENTIFICATION

- GRINDER PUMP BASIN - POLYETHYLENE
- ACCESSWAY COVER - FIBERGLASS REINFORCED POLYESTER (FRP)
- ELECTRICAL QUICK DISCONNECT (EQD) - CABLE FROM PUMP CRE TERMINATES HERE.
- POWER AND ALARM CABLE - CIRCUITS TO BE INSTALLED IN ACCORDANCE WITH LOCAL CODE.
- ALARM PANEL - NEMA 4X ENCLOSURE AND EQUIPPED WITH CIRCUIT BREAKERS. LOCATE ACCORDING TO LOCAL CODES.
- ALARM DEVICE - EVERY INSTALLATION IS TO HAVE AN ALARM DEVICE TO ALERT THE HOMEOWNER.
- INLET - EPDM GRPMMET (4.5" I.D.) FOR 4.5" O.D. DWV PIPE.
- WET WELL VENT - 2.0" TANK VENT
- GRAVITY SERVICE LINE - 4" D.W.V. (4.5 O.D. DWV PIPE)
- STUB-OUT - 4"x5" LONG WATERTIGHT STUB-OUT, TO BE INSTALLED AT TIME OF BURIAL UNLESS THE GRAVITY SERVICE LINE IS EXISTING.

- DISCHARGE FTG - 1-1/4" FEMALE NPT, STAINLESS STEEL.
- DISCHARGE LINE - 1-1/4" NOMINAL PIPE SIZE, SUPPLIED BY OTHERS.
- CONCRETE ANCHOR - SEE BALLAST CALCULATIONS CHART FOR SPECIFIC WEIGHT FOR YOUR STATION HEIGHT.
- BEDDING MATERIAL - 6" MINIMUM DEPTH, ROUND AGGREGATE, (GRAVEL), SUPPLIED BY OTHERS.
- FINISHED GRADE - GRADE LINE TO BE 1" TO 2" BELOW REMOVABLE LID AND SLOPE AWAY FROM THE STATION.
- CONDUIT - 1" OR 1-1/2" MATERIAL AND BURIAL DEPTH AS REQUIRED PER NATIONAL AND LOCAL CODES. CONDUIT MUST ENTER PANEL FROM BOTTOM AND BE SEALED PER NEC SECTION 300.5 & 300.7, SUPPLIED BY OTHERS.
- REBAR - REQUIRED TO LIFT TANK AFTER BALLAST (CONCRETE ANCHOR) HAS BEEN ATTACHED, 4 PLACES, EVENLY SPACED AROUND TANK.



ACS DESIGN

ENGINEERING • SURVEYING
LANDSCAPE ARCHITECTURE
CONSTRUCTION MANAGEMENT

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ROANOKE, VIRGINIA 24017
P 540.562.2345 F 562.2344
INFO@ACSDSIGNLLC.COM
WWW.ACSDSIGNLLC.COM

The Coves at Smith Mountain Lake
Optima Properties-Smith Mountain Lake, LLC
Franklin County, Virginia

DRAWN BY: CEK
DESIGNED BY: DME
CHECKED BY: DME
DATE: 01 MAY 2006
JOB NUMBER: 05271

REVISIONS:
No. 1 08/18/06
No. 2 5/11/07
No. 3 FINAL FOR CONSTRUCTION
No. 4

SHEET NO:
C5.1

E-ONE
GRINDER PUMP
DETAILS