

ANNE ARUNDEL COUNTY  
MARYLAND

DEPARTMENT OF PUBLIC WORKS

**CHAPTER IV**

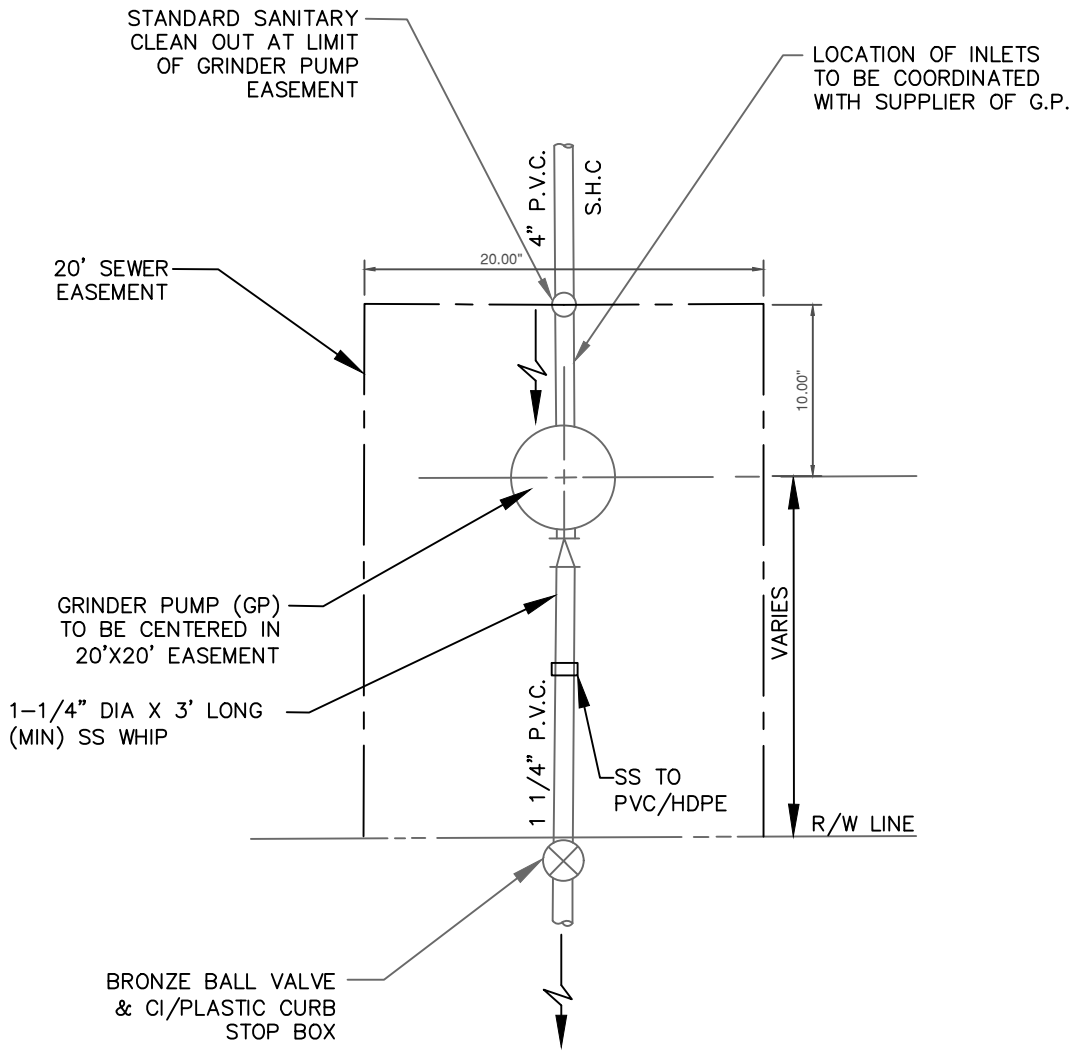
**REFERENCE DRAWINGS**  
**for**  
**GRINDER PUMP**  
**INSTALLATIONS**

**April 2024**

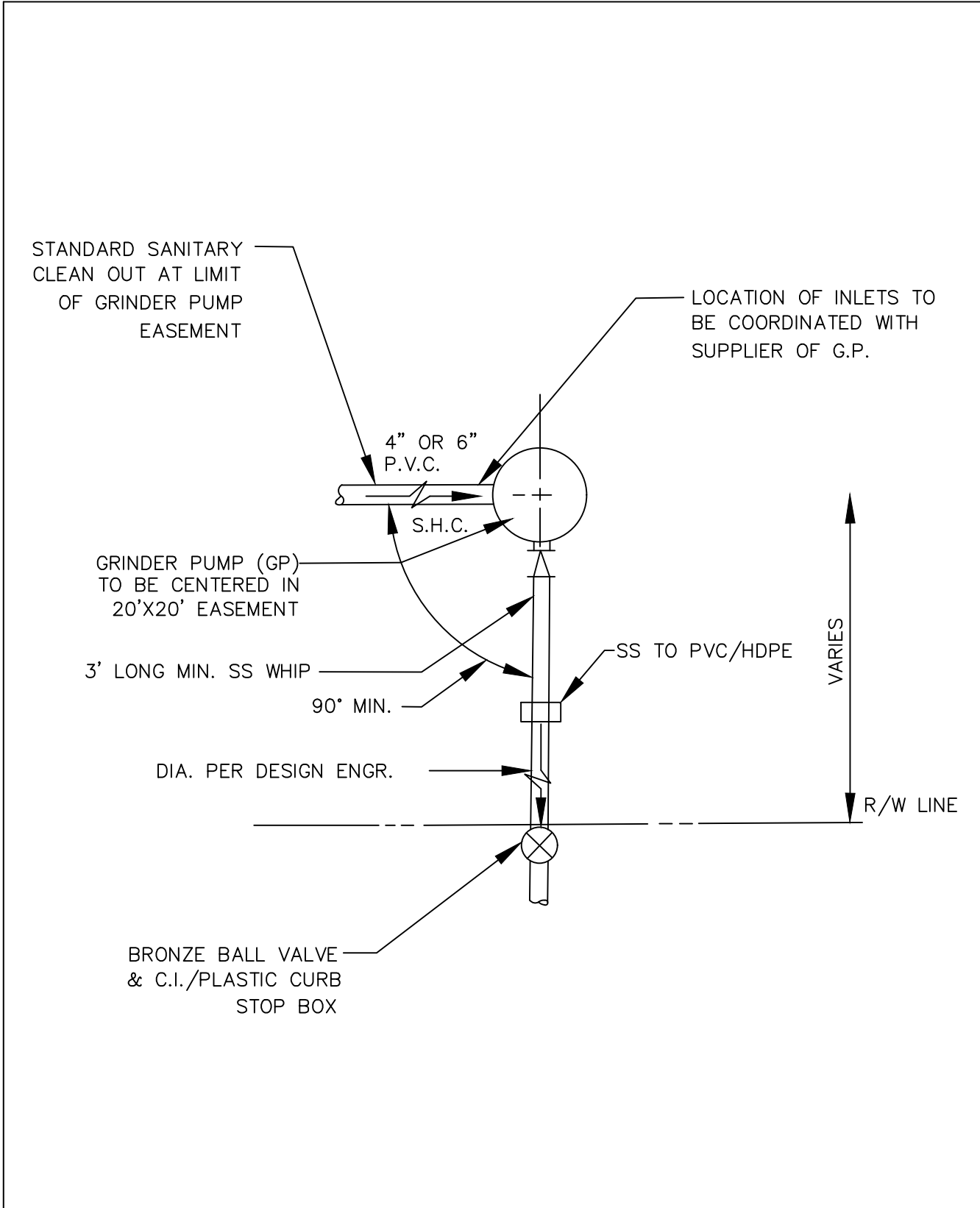
**REFERENCE DRAWINGS FOR  
GINDER PUMP INSTALLATION**

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ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED _____ CHIEF ENGINEER	REFERENCE GRINDER PUMP INSTALLATION TYPICAL SIMPLEX GRINDER PUMP LOCATION PLAN RESIDENTIAL	REVISED 04/2024	SS C-2A
	_____ DESIGN ENGINEER		_____	
	DATE:		_____	
	_____		_____	



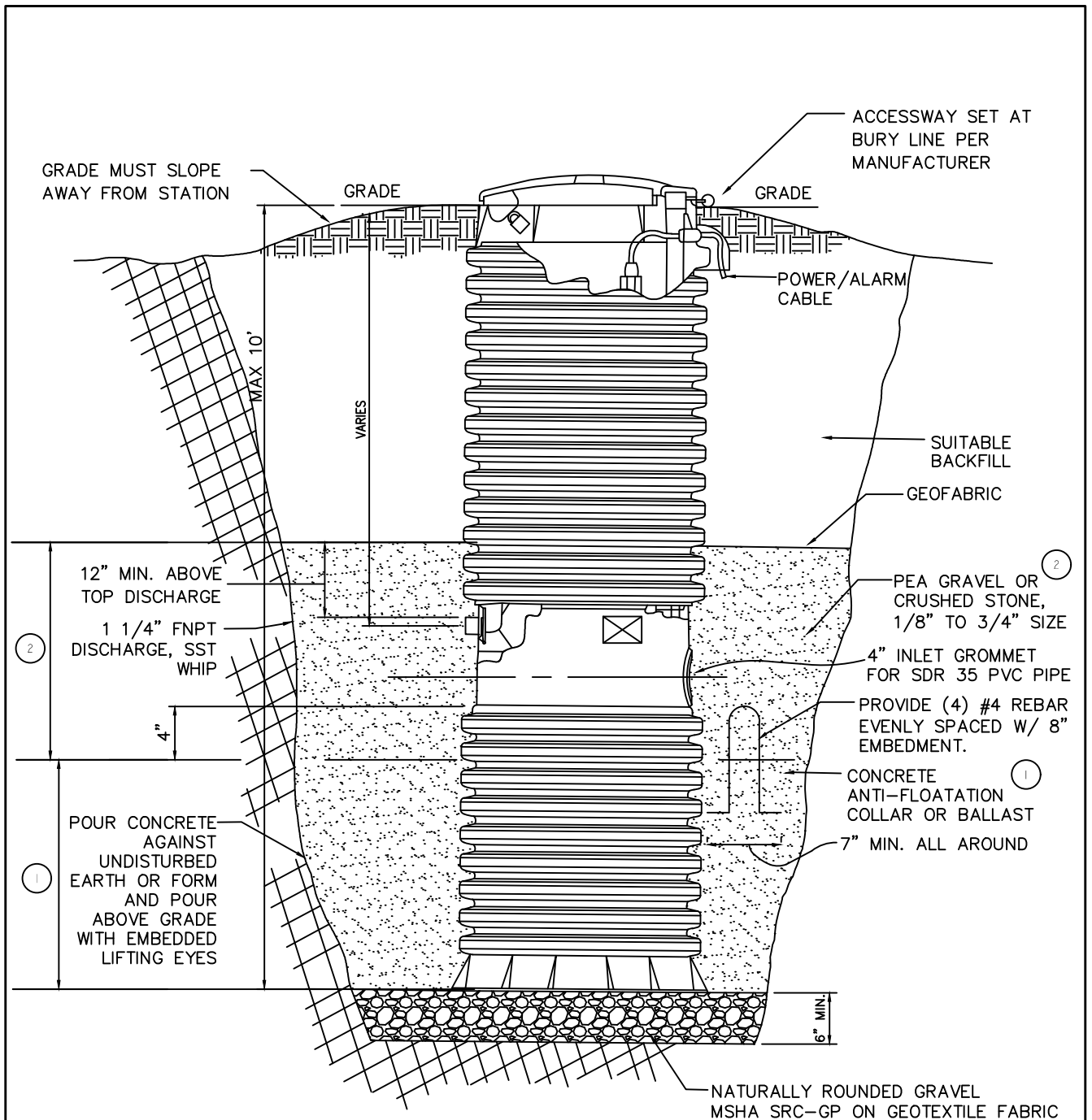
ANNE ARUNDEL  
 COUNTY  
 DEPARTMENT OF  
 PUBLIC WORKS

APPROVED  
 \_\_\_\_\_  
 CHIEF ENGINEER  
 \_\_\_\_\_  
 DESIGN ENGINEER  
 DATE:

REFERENCE GRINDER  
 PUMP INSTALLATION  
 TYPICAL **DUPLEX** GRINDER  
 PUMP LOCATION PLAN  
 COMMERCIAL

REVISED  
 04/2024  
 \_\_\_\_\_  
 \_\_\_\_\_

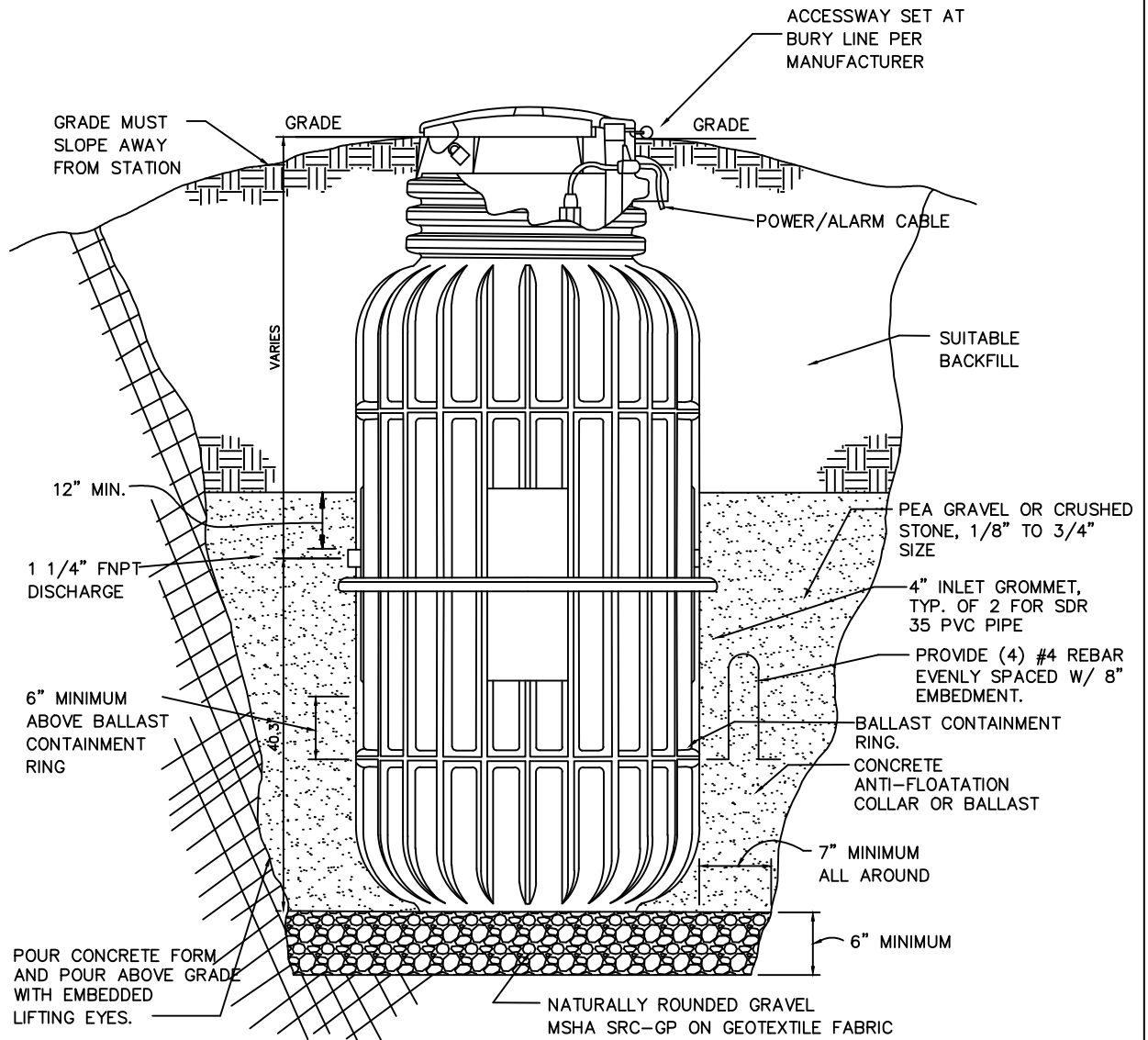
SS  
 C-2B



**NOTES:**

1. DETAIL BASED ON TO ENVIRONMENT ONE SIMPLEX GP UNIT WH101.
2. INSTALL PLUMB—PROVIDE TEMPORARY BRACING TO MAINTAIN POSITIONING DURING CONCRETE PLACEMENT.
3. GRINDER PUMP DIMENSIONS ARE SUBJECT TO CHANGE.
4. SEE MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR FURTHER DETAILS.
5. POUR ANTI-FLOTATION COLLAR ABOVE GRADE, WHEN REQUIRED.

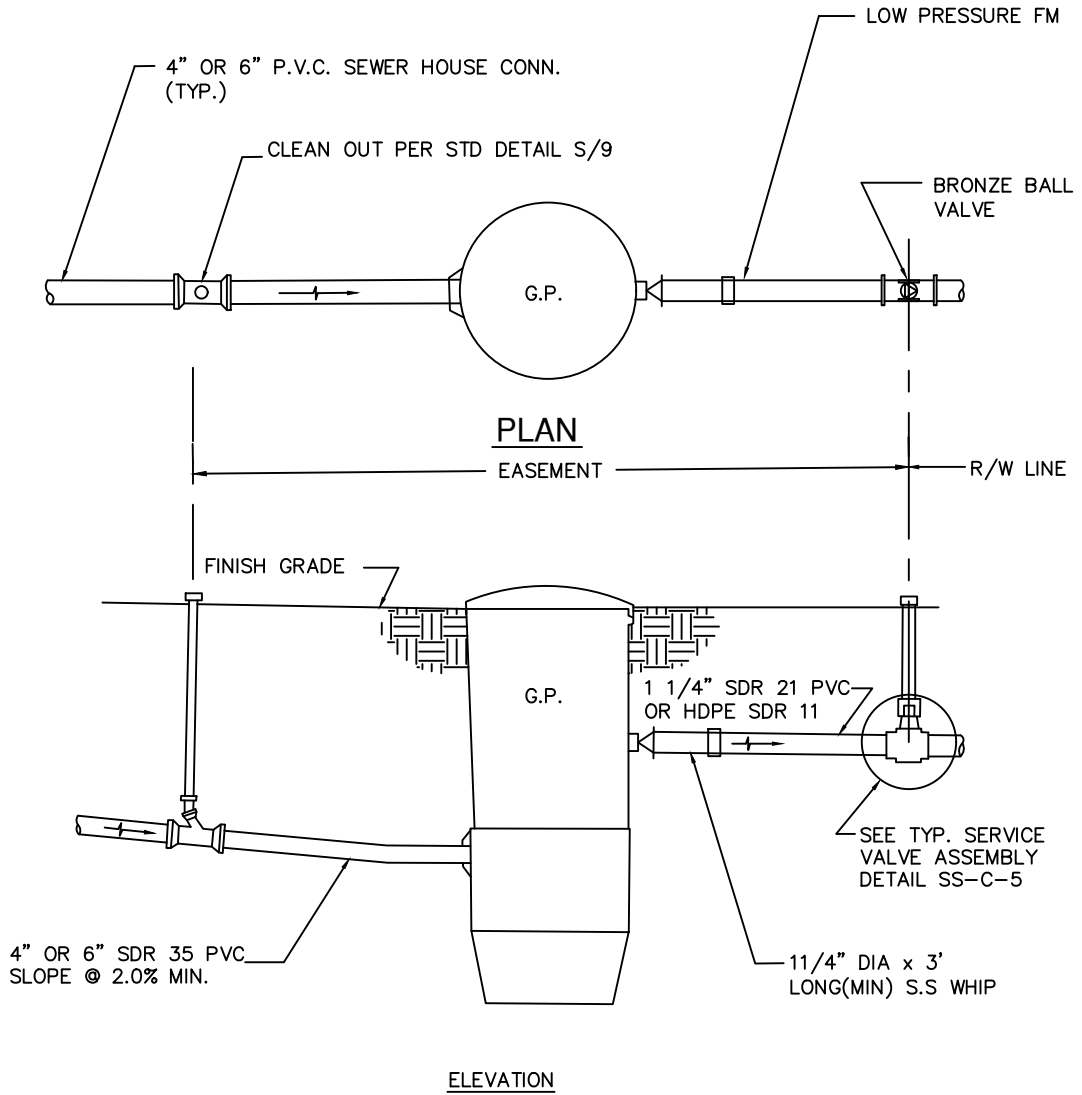
ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED _____ CHIEF ENGINEER	REFERENCE GRINDER PUMP INSTALLATION  TYPICAL SIMPLEX GRINDER PUMP INSTALLATION	REVISED 04/2024	SS C-3A
	_____ DESIGN ENGINEER			
	DATE:			



NOTES:

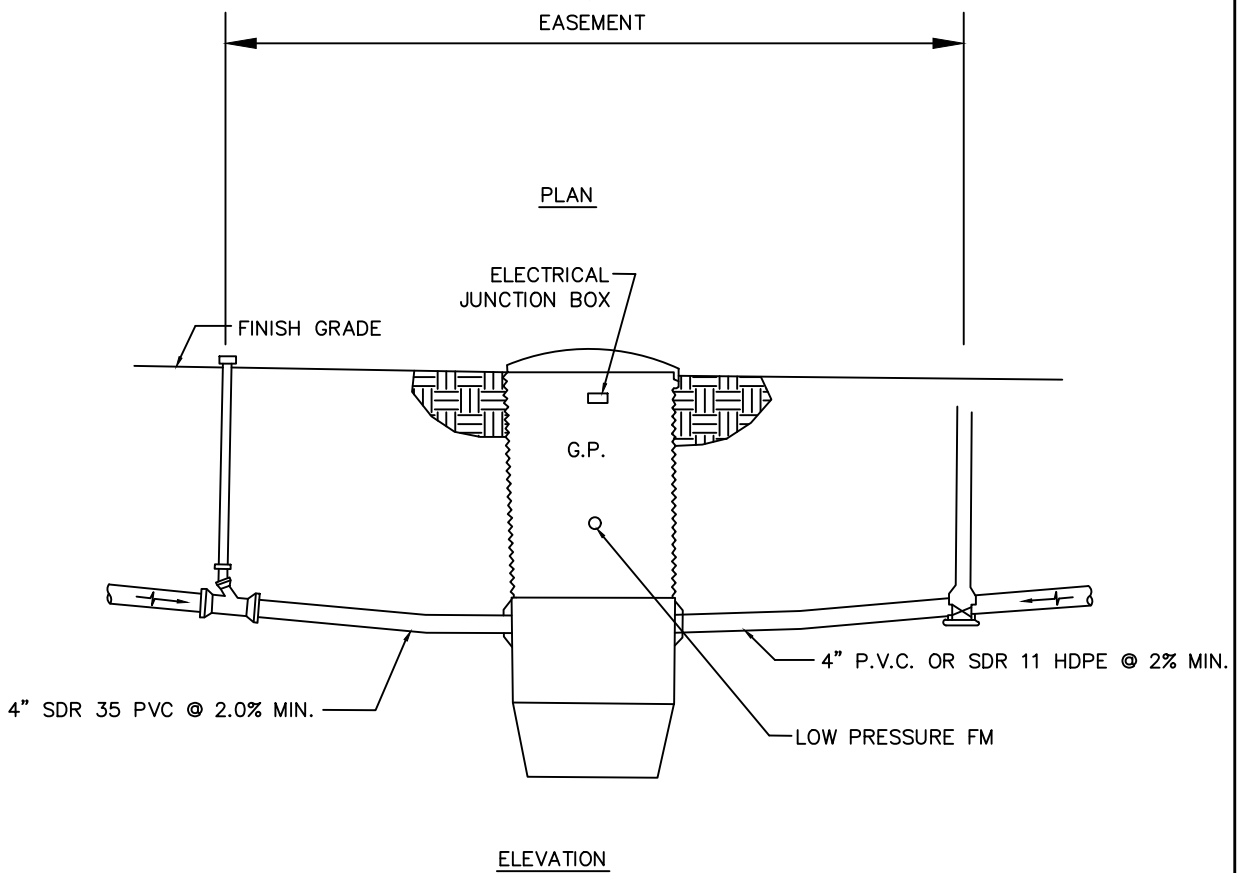
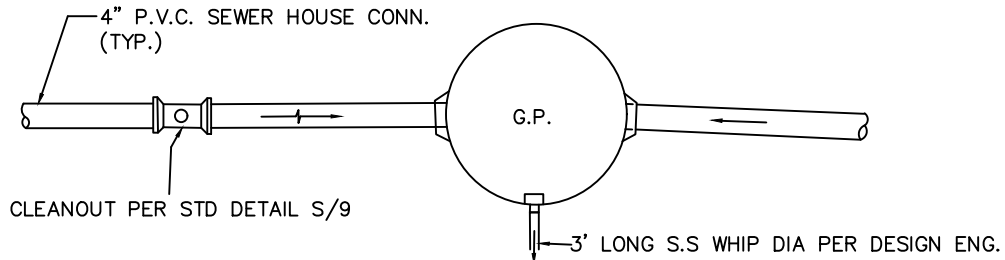
1. DETAILS BASED ON TO ENVIRONMENT ONE DUPLEX GP UNIT WH472
2. INSTALL PLUMP—PROVIDE TEMPORARY BRACING TO MAINTAIN POSITIONING DURING CONCRETE REPLACEMENT
3. GRINDER PUMP DIMENSIONS ARE SUBJECT TO CHANGE.
4. SEE MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR FURTHER DETAILS.
5. POUR ANTI-FLOTATION COLLAR ABOVE GRADE, WHEN REQUIRED.

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED	REFERENCE GRINDER PUMP INSTALLATION  TYPICAL DUPLEX GRINDER PUMP INSTALLATION COMMERCIAL	REVISED	SS  C-3B
	_____		04/2024	
	CHIEF ENGINEER		_____	
	_____		_____	
	DATE: _____			
	DESIGN ENGINEER			



NOTES: 1. SOME SEWER HOUSE CONNECTIONS REQUIRE ONE ADDITIONAL 1/8" BEND.

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED	REFERENCE GRINDER PUMP INSTALLATION TYPICAL GRINDER PUMP SEWER HOUSE CONNECTION	REVISED	SS C-4A
	_____		04/2024	
	CHIEF ENGINEER		_____	
	DESIGN ENGINEER		_____	
	DATE:			

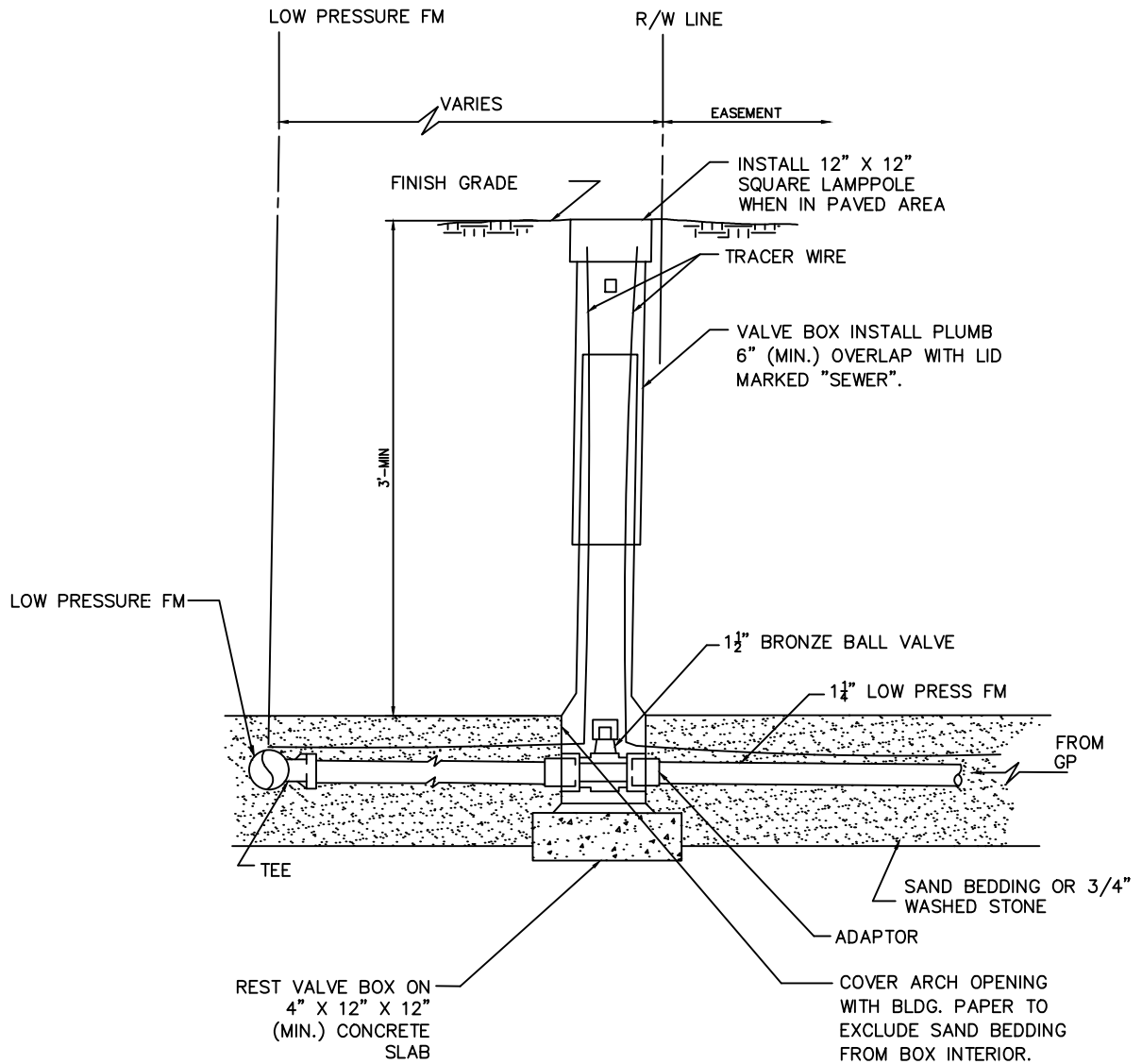


NOTES: 1. SOME SEWER HOUSE CONNECTIONS REQUIRE ONE ADDITIONAL 1/8".

COMMERCIAL

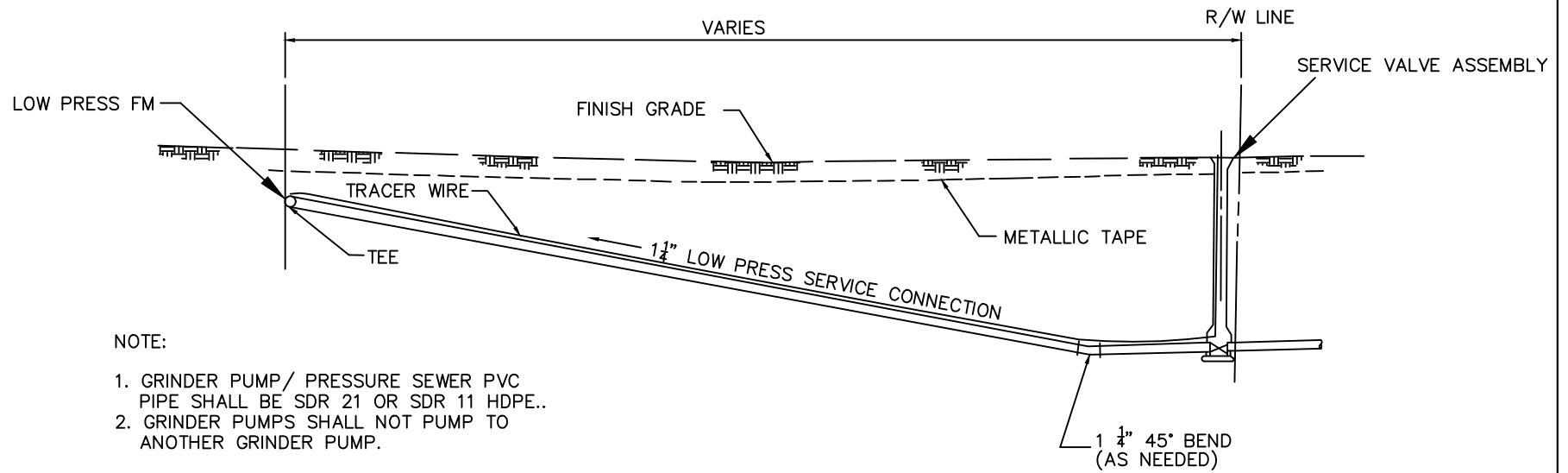
ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED	REFERENCE GRINDER PUMP INSTALLATION  TYPICAL DUPLEX GRINDER PUMP SEWER HOUSE CONNECTION	REVISED	SS C-4B
	_____		04/2024	
	CHIEF ENGINEER		_____	
	DESIGN ENGINEER		_____	
DATE:	_____			



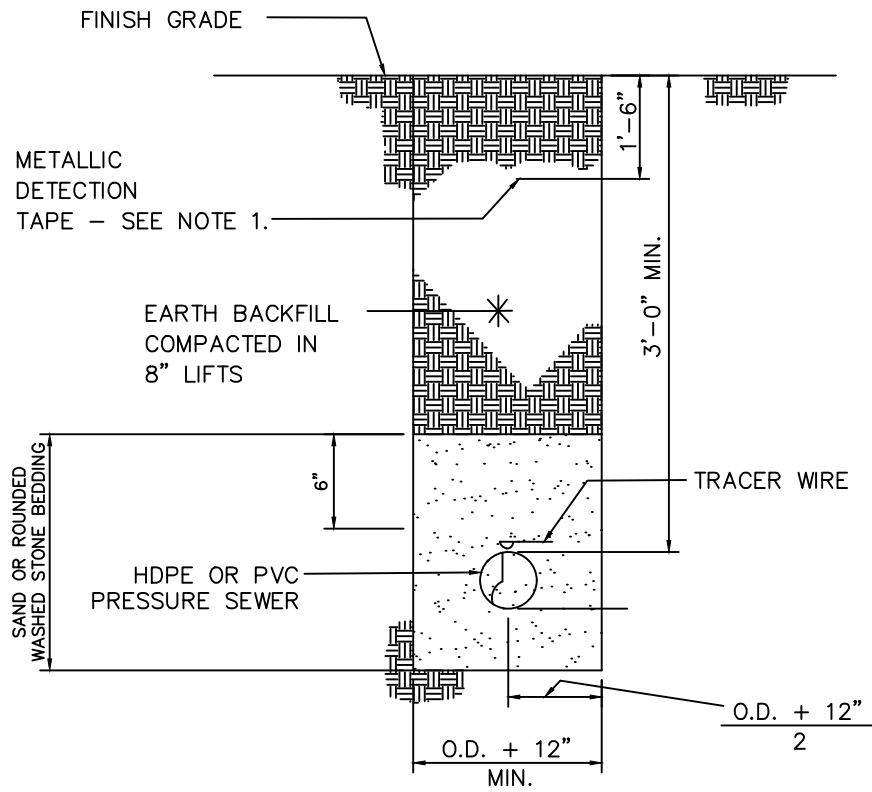


- NOTES:
1. PROVIDE 3' MIN. COVER OVER PRESSURE SEWER.
  2. CONCRETE SLAB—ON UNDISTURBED EARTH OR FIRM SUBGRADE.
  3. ALL CONNECTIONS SHALL BE SCH. 80 GLUE JOINTS OR WITH COMPRESSION FITTINGS AT CONNECTION TO SERVICE VALVE ASSEMBLY.

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED	REFERENCE GRINDER PUMP INSTALLATION  TYPICAL SERVICE VALVE ASSEMBLY	REVISED	SS C-5
	_____		04/2024	
	CHIEF ENGINEER		_____	
	_____		_____	
	DESIGN ENGINEER			
	DATE:			

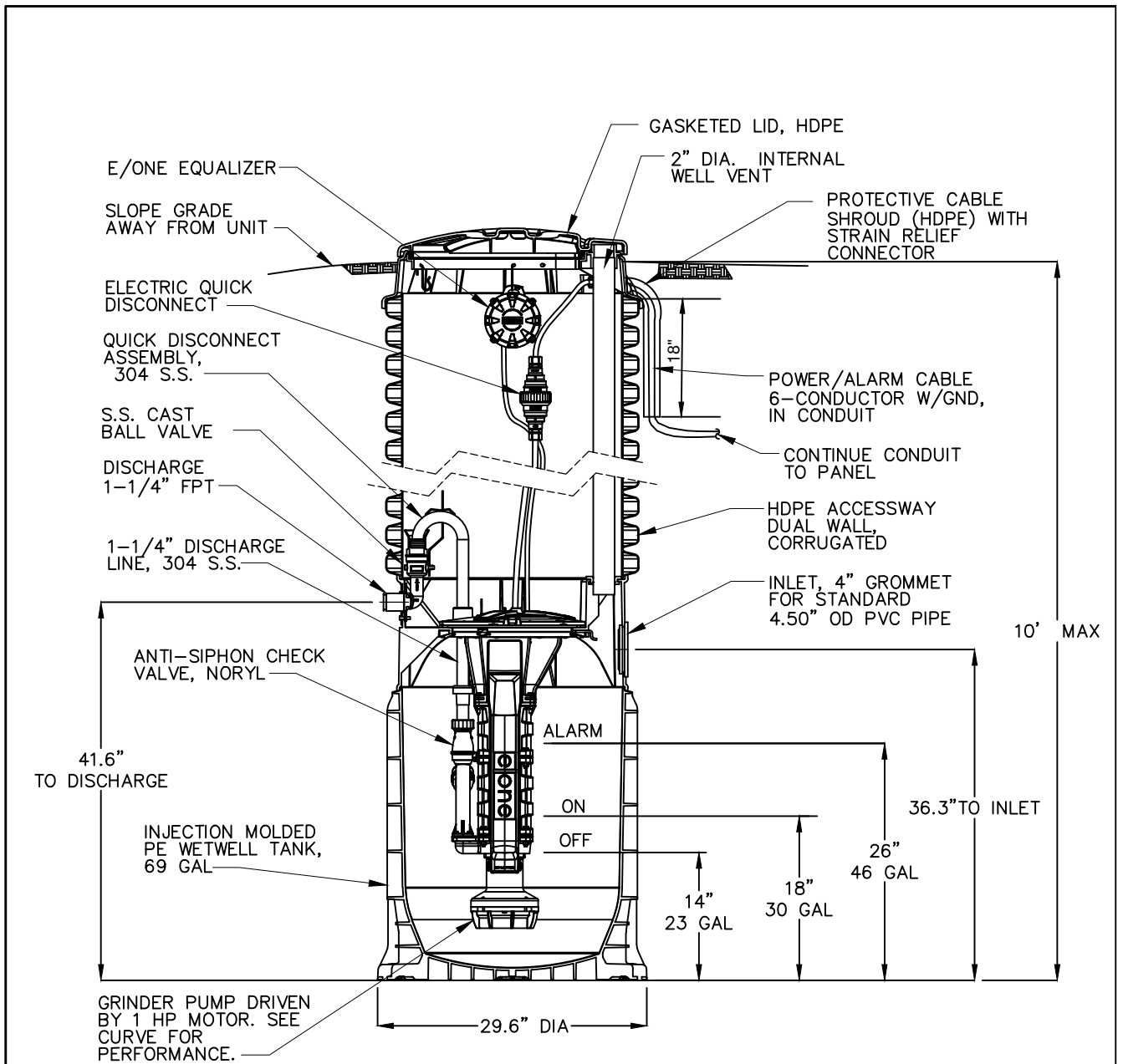


ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED _____ CHIEF ENGINEER	REFERENCE GRINDER PUMP INSTALLATION  CONNECTION FROM SERVICE VALVE ASSEMBLY TO PRESSURE SEWER MAIN	REVISED 04/2024	SS C-6
	_____ DESIGN ENGINEER		_____	
	DATE:		_____	
	_____		_____	



NOTE 1:  
 WHEN INSTALLING PIPE BY DIRECTIONAL DRILLING TECHNIQUES, A COPPER TRACER WIRE SHALL BE PULLED WITH THE PIPE IN LIEU OF THE METALLIC DETECTION TAPE.

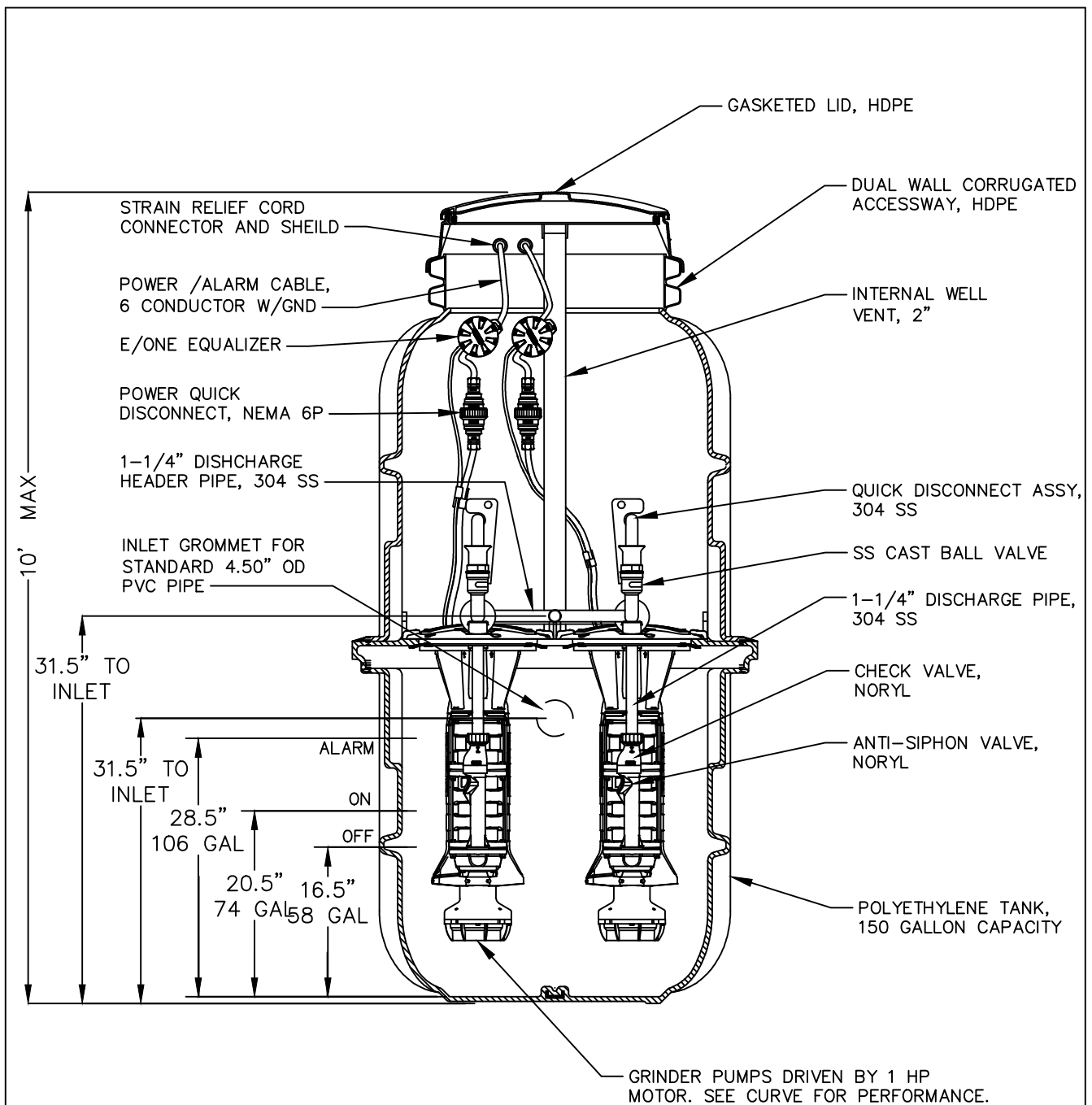
ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED	REFERENCE GRINDER PUMP INSTALLATION  PRESSURE SEWER TRENCH AND BEDDING DETAIL	REVISED	SS C-7
	_____		04/2024	
	CHIEF ENGINEER		_____	
	_____		_____	
	DESIGN ENGINEER			
	DATE:			



**NOTE:**

GRINDER PUMP UNIT DIMENSIONS ARE BASED ON ENVIRONMENT ONE, D SERIES, MODEL DH071, AND ARE SHOWN FOR GENERAL PURPOSES ONLY.

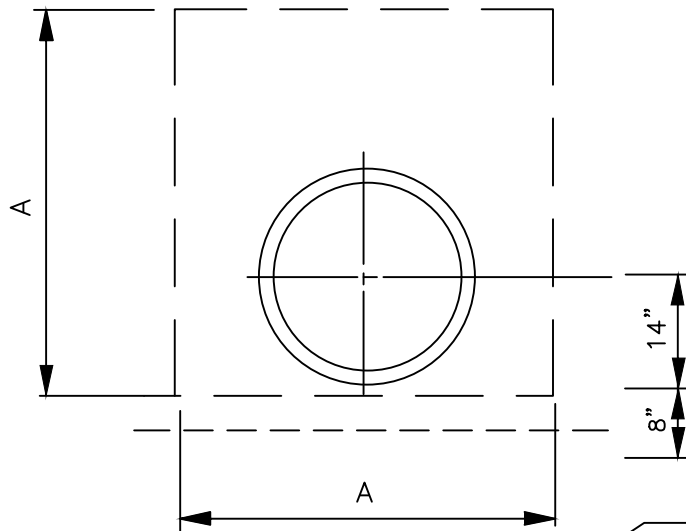
ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED	REFERENCE GRINDER PUMP INSTALLATION  TYPICAL SIMPLEX SEWAGE GRINDER PUMP SECTION	REVISED	SS M-3A
	_____ CHIEF ENGINEER		04/2024	
	_____ DESIGN ENGINEER			
	DATE:			



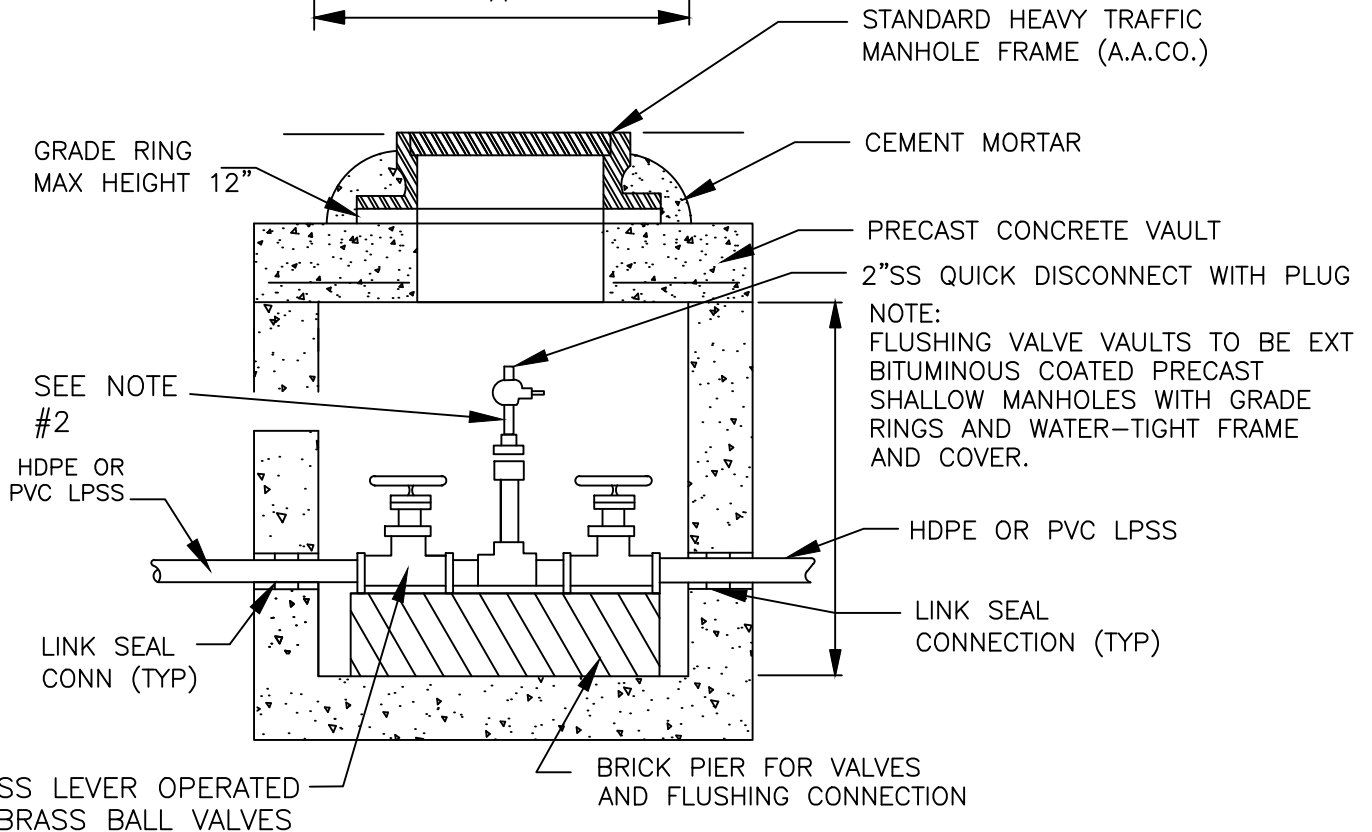
**NOTE:**

GRINDER PUMP UNIT DIMENSIONS ARE BASED ON ENVIRONMENT ONE, D SERIES, MODEL DH152, AND ARE SHOWN FOR GENERAL PURPOSES ONLY.

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED	REFERENCE GRINDER PUMP INSTALLATION TYPICAL DUPLEX GRINDER PUMP DETAIL— COMMERCIAL APPLICATION	REVISED	SS M-3B
	_____ CHIEF ENGINEER		04/2024	
	_____ DESIGN ENGINEER			
	DATE:			



NOTE: MANHOLE FRAME AND COVER TO BE OFFSET TOWARDS  $\phi$  ROAD



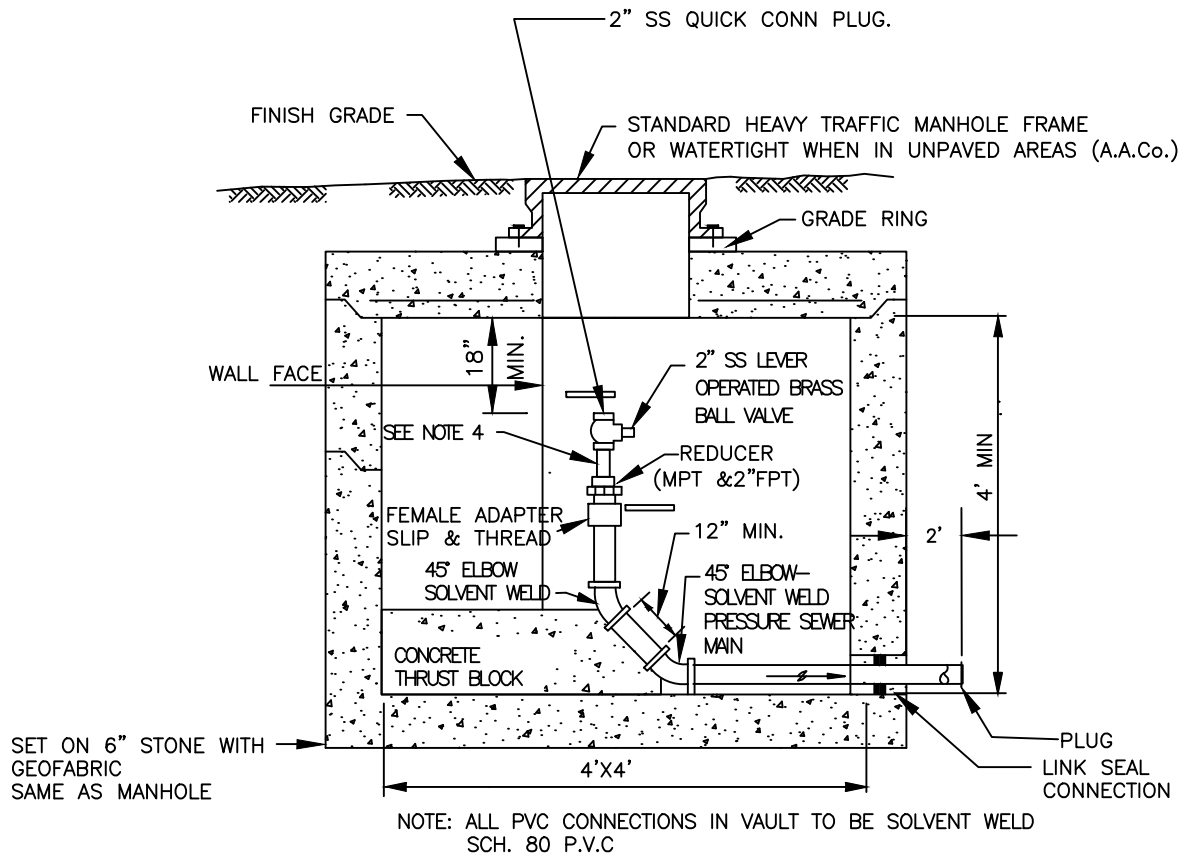
NOTE: FLUSHING VALVE VAULTS TO BE EXT BITUMINOUS COATED PRECAST SHALLOW MANHOLES WITH GRADE RINGS AND WATER-TIGHT FRAME AND COVER.

SECTION

NOTES:

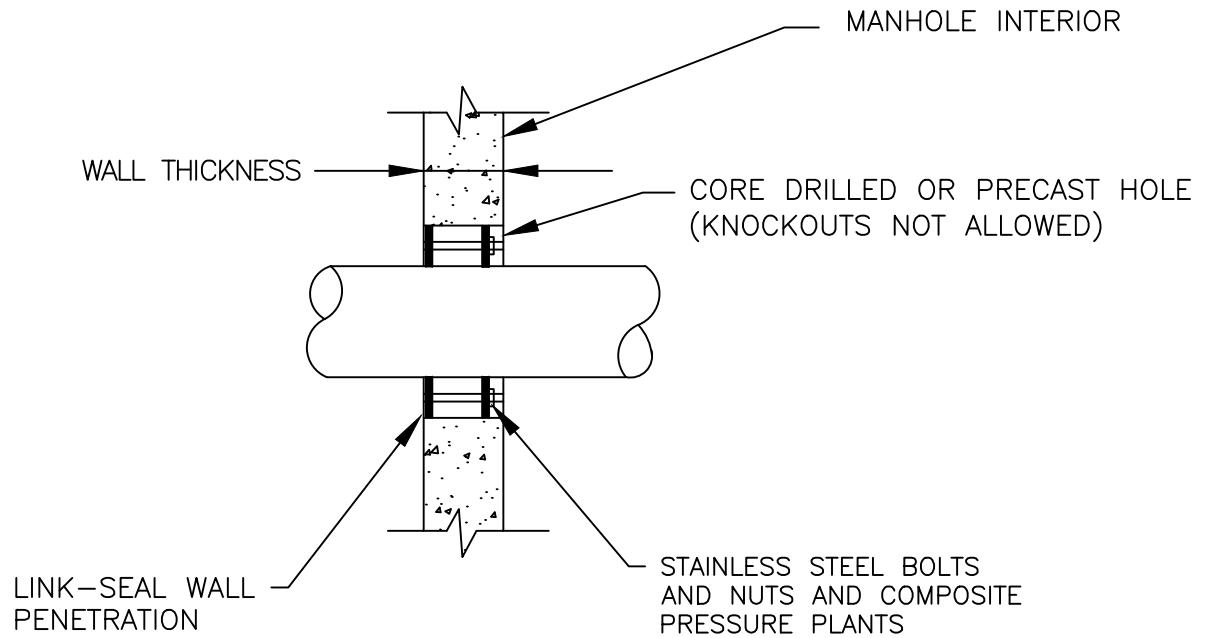
1. ALL PVC PIPE AND APPURTENANCES IN VAULT TO BE SCH 80 AND SOLVENT WELD OR HDPE W/ELECTROFUSION COUPLING
2. AIKENSTRUT CROSS SUPPORT WITH FRP PIPE STRAP TO SUPPORT RISER PIPE. ANCHOR FRP MEMBERS OF VAULT WITH S.S ANCHOR BOLTS.

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED	REFERENCE GRINDER PUMP INSTALLATION	REVISED	SS S-8
	_____ CHIEF ENGINEER		04/2024	
	_____ DESIGN ENGINEER			
	DATE:			



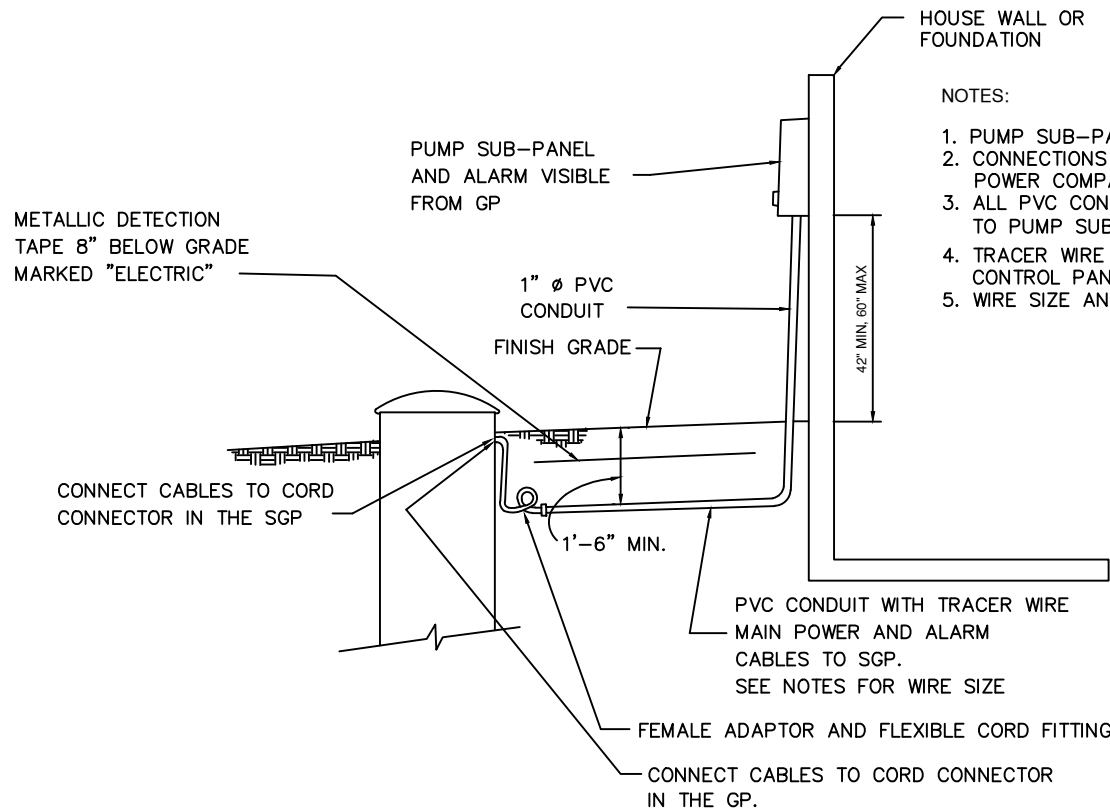
- NOTE:
1. LOCATE FLUSHING CONNECTION FOR EASY HOSE ATTACHMENT AND MAINTAIN ACCESS CLEARANCE.
  2. APPLY TWO (2) COATS OF A WATERPROOF BITUMOSTIC COMPOUND OVER CEMENT MORTAR.
  3. MODIFIED SHALLOW PRECAST MANHOLE. SEE STANDARD DETAIL S/12.
  4. AIKEN STRUT CROSS SUPPORT WITH FRP PIPE STRAP TO SUPPORT RISER PIPE. ANCHOR FRP MEMBERS TO WALL OF VAULT WITH S.S. ANCHOR BOLTS.
  5. ONLY ALLOWED WHEN NO POSSIBLE CHANCE OF EXTENSION.

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED	REFERENCE GRINDER PUMP INSTALLATION	REVISED	SS S-9
	_____ CHIEF ENGINEER		04/2024	
	_____ DESIGN ENGINEER			
	DATE:			
		TERMINAL FLUSHING CONNECTION		



ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED _____ CHIEF ENGINEER	REFERENCE GRINDER PUMP INSTALLATION  LINK SEAL DETAIL	REVISED 04/2024	SS S-10
	_____ DESIGN ENGINEER		_____	
	DATE:		_____	
	_____		_____	
	_____		_____	



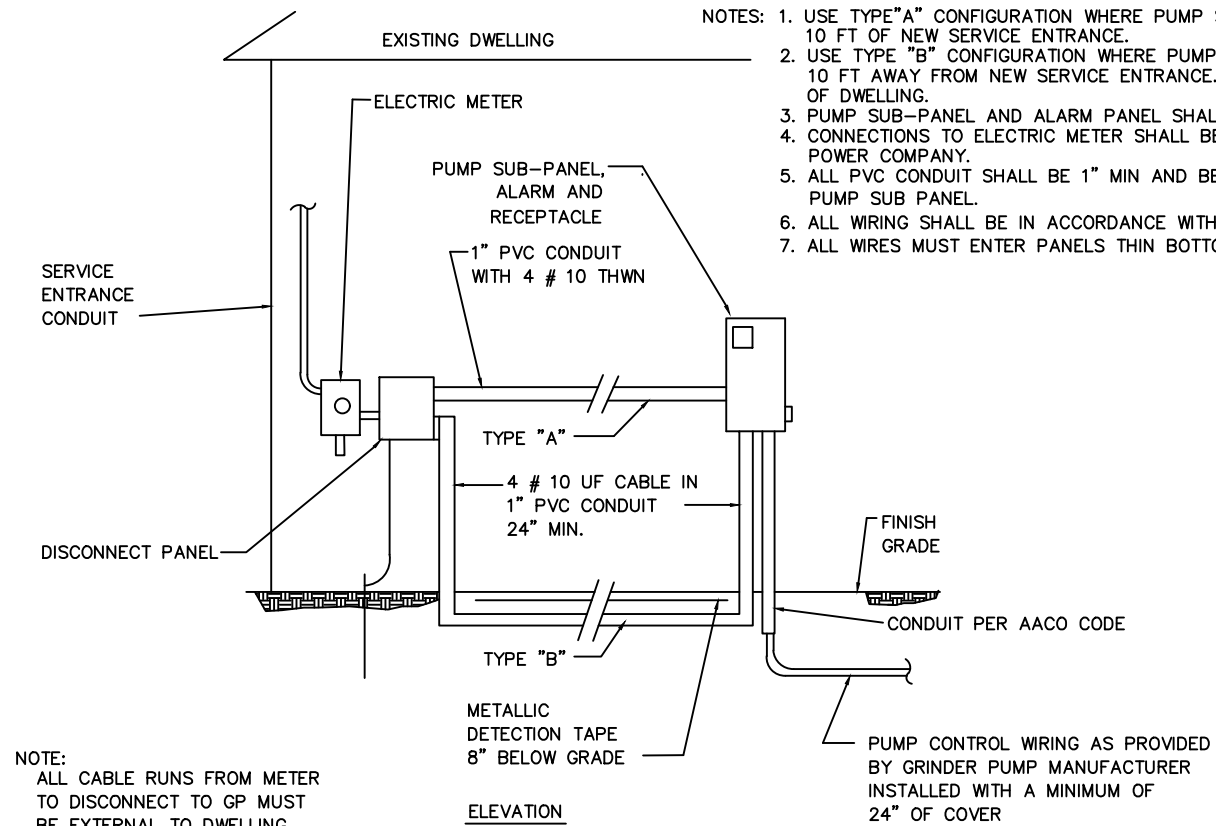


NOTES:

1. PUMP SUB-PANEL AND ALARM PANEL SHALL BE VISABLE FROM S.G.P.
2. CONNECTIONS TO ELECTRIC METER SHALL BE COORDINATED WITH POWER COMPANY.
3. ALL PVC CONDUIT SHALL BE 1' MIN AND BE CONTINUING FROM GP TO PUMP SUB PANEL.
4. TRACER WIRE ON CONDUIT BETWEEN GRINDER AND PUMP CONTROL PANEL.
5. WIRE SIZE AND CONDUIT PER AACO CODE.

SECTION

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED _____ CHIEF ENGINEER	REFERENCE GRINDER PUMP INSTALLATION  TYPICAL ELECTRICAL PANEL ARRANGEMENT	REVISED 04/2024	SS E-8A
	_____ DESIGN ENGINEER			
	DATE:			

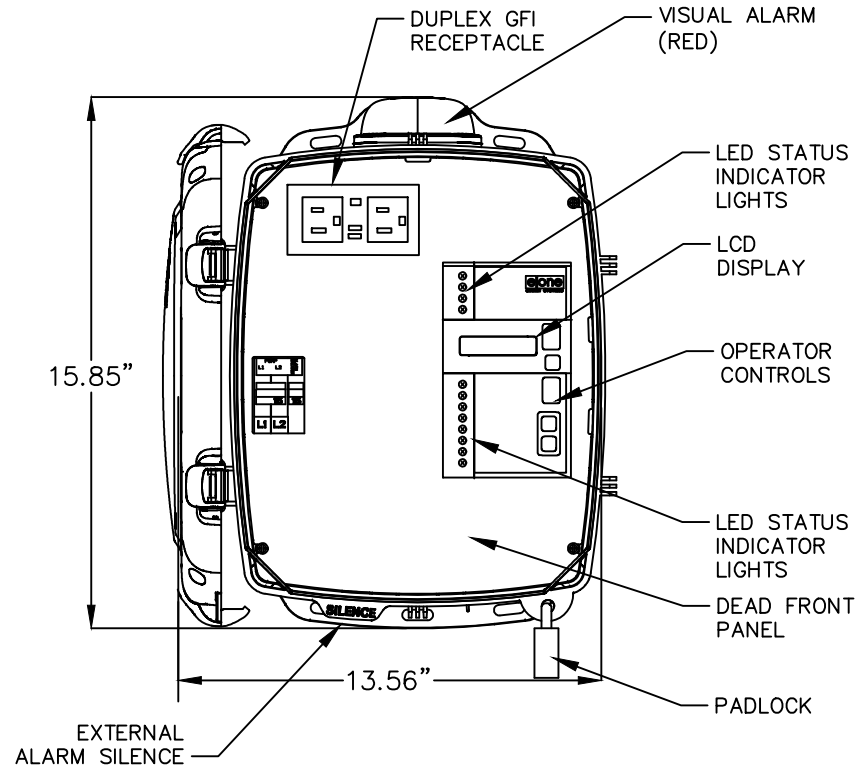
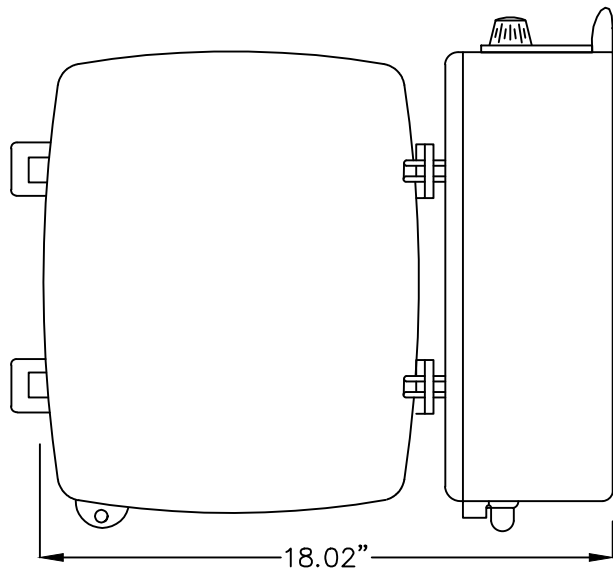


- NOTES:
1. USE TYPE "A" CONFIGURATION WHERE PUMP SUB-PANEL IS WITHIN 10 FT OF NEW SERVICE ENTRANCE.
  2. USE TYPE "B" CONFIGURATION WHERE PUMP SUB-PANEL IS MORE THAN 10 FT AWAY FROM NEW SERVICE ENTRANCE. ALL WIRE TO BE OUTSIDE OF DWELLING.
  3. PUMP SUB-PANEL AND ALARM PANEL SHALL BE VISABLE FROM S.G.P.
  4. CONNECTIONS TO ELECTRIC METER SHALL BE COORDINATED WITH POWER COMPANY.
  5. ALL PVC CONDUIT SHALL BE 1" MIN AND BE CONTINUOUS FROM GP TO PUMP SUB PANEL.
  6. ALL WIRING SHALL BE IN ACCORDANCE WITH AACO CODE.
  7. ALL WIRES MUST ENTER PANELS THIN BOTTOM.

NOTE:  
ALL CABLE RUNS FROM METER TO DISCONNECT TO GP MUST BE EXTERNAL TO DWELLING.

TYPICAL ELECTRICAL PANEL ARRANGEMENT

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED _____ CHIEF ENGINEER	REFERENCE GRINDER PUMP INSTALLATION  TYPICAL ELECTRICAL PANEL ARRANGEMENT	REVISED 04/2024	SS E-8B
	_____ DESIGN ENGINEER		_____	
	DATE:		_____	
	_____		_____	



NOTES:

1. GP PANEL TO BE MOUNTED ON OUTSIDE WALL OF DWELLING. PLACEMENT MUST BE POSITIONED TO ALLOW A CLEAR LINE OF SITE FROM GRINDER PUMP TO PANEL.
2. CONTROL PANEL – PROTECT PLUS BY E/ONE.

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED _____ CHIEF ENGINEER	REFERENCE GRINDER PUMP INSTALLATION  GRINDER PUMP CONTROL AND ALARM PANEL	REVISED 04/2024	SS E-9
	_____ DESIGN ENGINEER			
	DATE:			

PRESENT ENTRANCE  
CABLE OR CONDUIT AND  
WIRE TO ENTRANCE CAP  
AND SERVICE DROP

PRESENT ELECTRIC METER

CONNECT TO LOAD  
SIDE OF METER

3 #8-3/4" C.

PRESENT HOUSE  
SERVICE TO REMAIN

30A. ,3W. ,S/N SERVICE  
ENTRANCE BREAKER

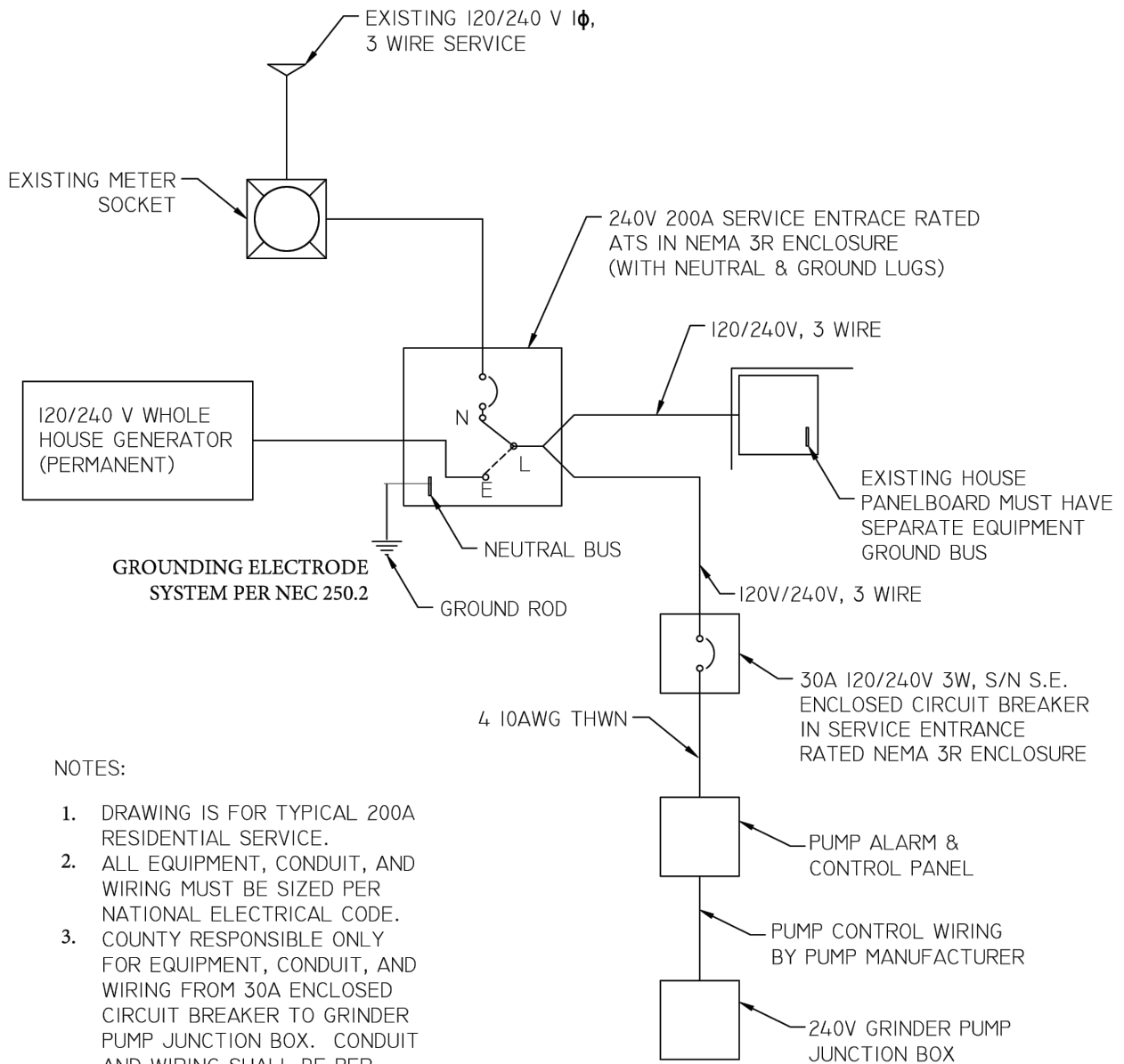
#6 AWG. CU.

4# 10-3/4" C. TO PUMP  
SUB-PANEL & ALARM

SUPPLEMENTAL ELECTRODE  
GROUND ROD

WIRING SHALL BE PROVIDE IN COMPLIANCE WITH THE LATEST ELECTRICAL CODES.

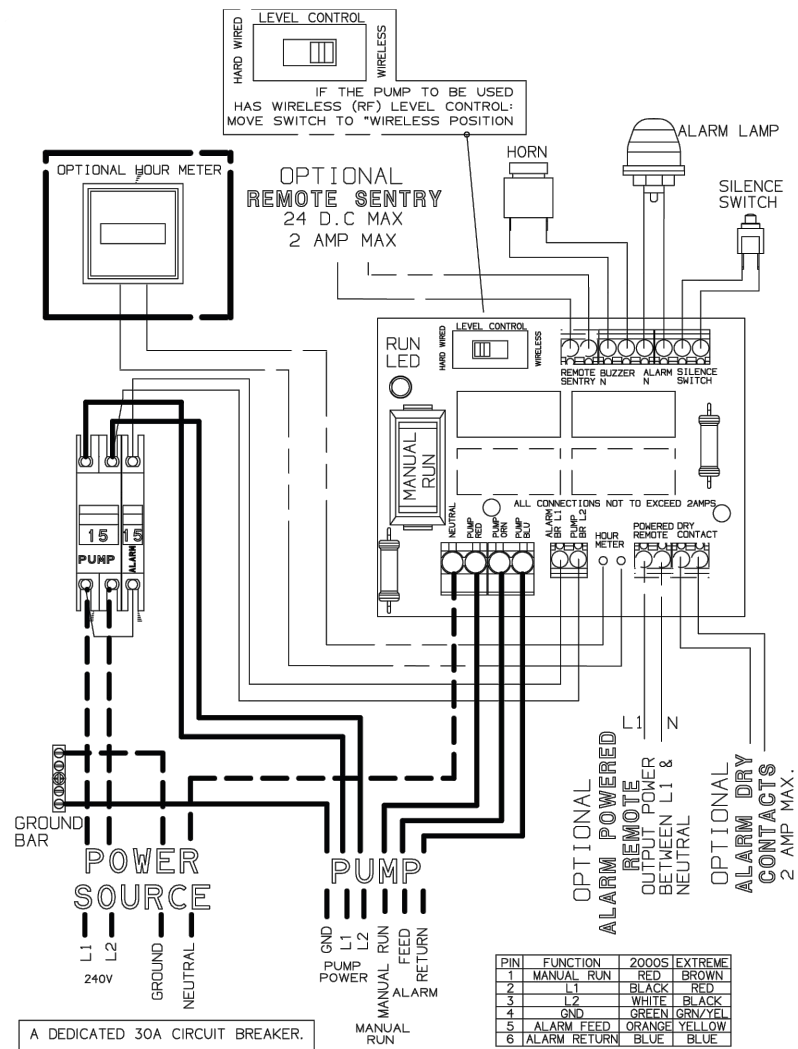
ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED	REFERENCE GRINDER PUMP INSTALLATION  SERVICE ENTRANCE WIRING DIAGRAM	REVISED	SS E-11
	_____		04/2024	
	CHIEF ENGINEER		_____	
	_____		_____	
	DESIGN ENGINEER			
	DATE:			



NOTES:

1. DRAWING IS FOR TYPICAL 200A RESIDENTIAL SERVICE.
2. ALL EQUIPMENT, CONDUIT, AND WIRING MUST BE SIZED PER NATIONAL ELECTRICAL CODE.
3. COUNTY RESPONSIBLE ONLY FOR EQUIPMENT, CONDUIT, AND WIRING FROM 30A ENCLOSED CIRCUIT BREAKER TO GRINDER PUMP JUNCTION BOX. CONDUIT AND WIRING SHALL BE PER COUNTY STANDARD DETAILS.
4. ELECTRICIAN SHALL SUBMIT LOAD CHART WITH PERMIT APPLICATION PER GENERATOR CONNECTION POLICY

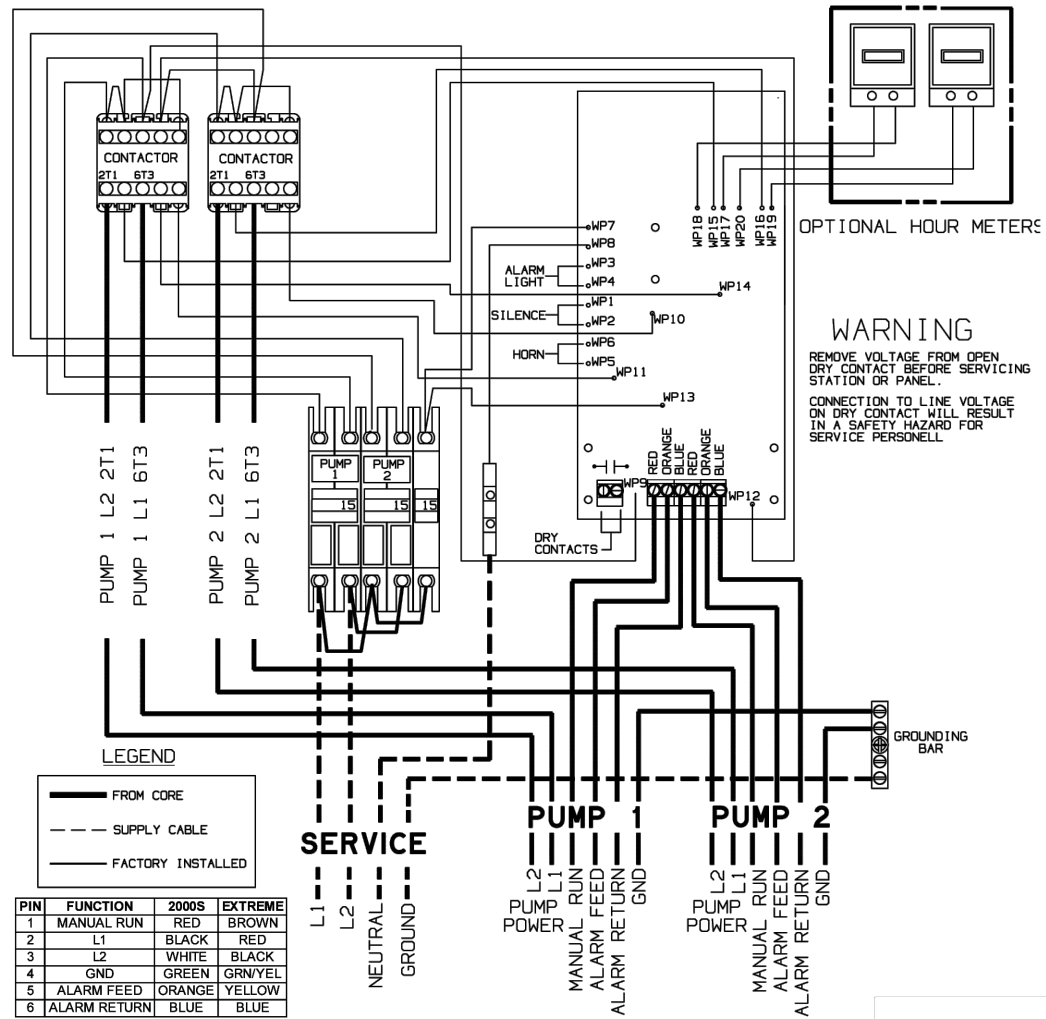
ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED	REFERENCE GRINDER PUMP INSTALLATION	REVISED	SS E-11A
	_____		04/2024	
	CHIEF ENGINEER		_____	
	_____		_____	
	DATE: _____	GENERATOR HOUSE CONNECTION FOR SINGLE GRINDER PUMP		



PIN	FUNCTION	2000S EXTREME
1	MANUAL RUN	RED BROWN
2	L1	BLACK RED
3	L2	WHITE BLACK
4	GND	GREEN GRN/YEL
5	ALARM FEED	ORANGE YELLOW
6	ALARM RETURN	BLUE BLUE

A DEDICATED 30A CIRCUIT BREAKER.

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED _____ CHIEF ENGINEER	REFERENCE GRINDER PUMP INSTALLATION SIMPLEX SEWAGE GRINDER PUMP WIRING DIAGRAM	REVISED 04/2024	SS E-12A
	_____ DESIGN ENGINEER		_____	
	DATE:		_____	
	_____		_____	



A DEDICATED 30A CIRCUIT BREAKER

ANNE ARUNDEL  
 COUNTY  
 DEPARTMENT OF  
 PUBLIC WORKS

APPROVED  
 \_\_\_\_\_  
 CHIEF ENGINEER  
 \_\_\_\_\_  
 DESIGN ENGINEER  
 DATE: \_\_\_\_\_

REFERENCE GRINDER PUMP INSTALLATION  
 DUPLEX SEWAGE GRINDER PUMP  
 WIRING DIAGRAM

REVISED  
 04/2024

SS  
 E-12B