

ANNE ARUNDEL COUNTY
MARYLAND

DEPARTMENT OF PUBLIC WORKS

CHAPTER III

**REFERENCE DRAWINGS
for
CONCRETE AND ROMAR
STEP AND GRAVITY
SEPTIC TANK INSTALLATIONS**

January 2001

**REFERENCE DRAWINGS FOR
CONCRETE AND ROMAR STEP AND GRAVITY
SEPTIC TANK INSTALLATIONS**

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SEPTIC TANK
PLAN

SEE REF.DWG.:
S-3a - PRESSURE SERVICE
S-4a - GRAVITY SERVICE

SEPTIC TANK
SECTION

SEE REF. DWG.:
S-3b - PRESSURE SERVICE
S-4b - GRAVITY SERVICE

RISER AND
COVER DETAIL

REF. DWG. S-6

PIPE
TRENCH
AND
BEDDING
DETAIL

REF. DWG.
C-1

PLAN VIEW
TANK TOP/RISER
(PRESSURE INSTALLATION,
ONLY)

REF. DWG. S-3c

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED	REFERENCE STEP & GRAVITY SEPTIC TANK DESIGN HDPE PRESSURE AND GRAVITY INSTALLATIONS SHEET 1	REVISED
	_____		_____
	CHIEF ENGINEER		_____
	_____		_____
	DESIGN ENGINEER		_____

SS
L-2

SEPTIC TANK
SIMPLEX PUMP
SYSTEM

TYP. ARRANGEMENT
AT RESIDENCE

REF. DWG.
E-1

ONE LINE DIAGRAM
FOR PUMPS

SEE REF.DWG.:
E-2 - 1/2 H.P. OR LESS
E-3 - 3/4 H.P. TO 2 H.P.

PUMP
INSERT
DETAIL

REF. DWG. :
M-2

JUNCTION BOX

REF.DWG. :
E-6 - EXPLOSION PROOF
E-7 QUAZITE COMPOSOLITE

TANK RISER
ELECTRICAL
CONDUIT
ENTRY
REF. DWG.
E-4 OR
E-5

CURB VALVE
DETAIL

REF. DWG. :
M-1

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED	_____ CHIEF ENGINEER _____ DESIGN ENGINEER	REVISIONS _____ _____ _____ _____	SS L-3
	REFERENCE STEP & GRAVITY SEPTIC TANK DESIGN HDPE OR CONCRETE PRESSURE SERVICE INSTALLATIONS DETAILS SHEET 2			

NOTES

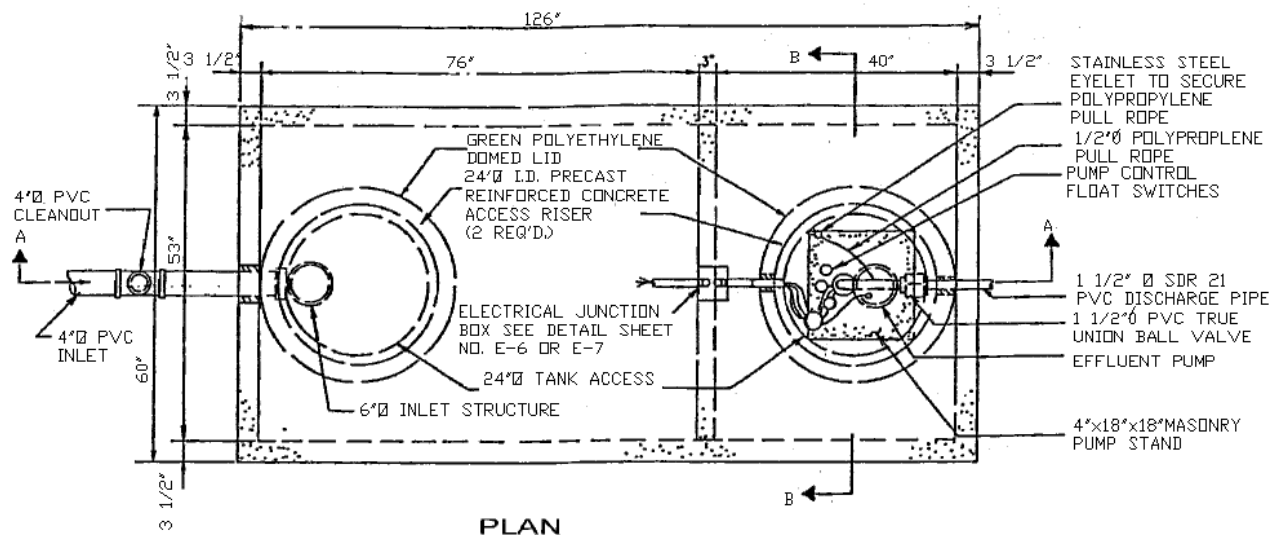
NOTES

NOTES

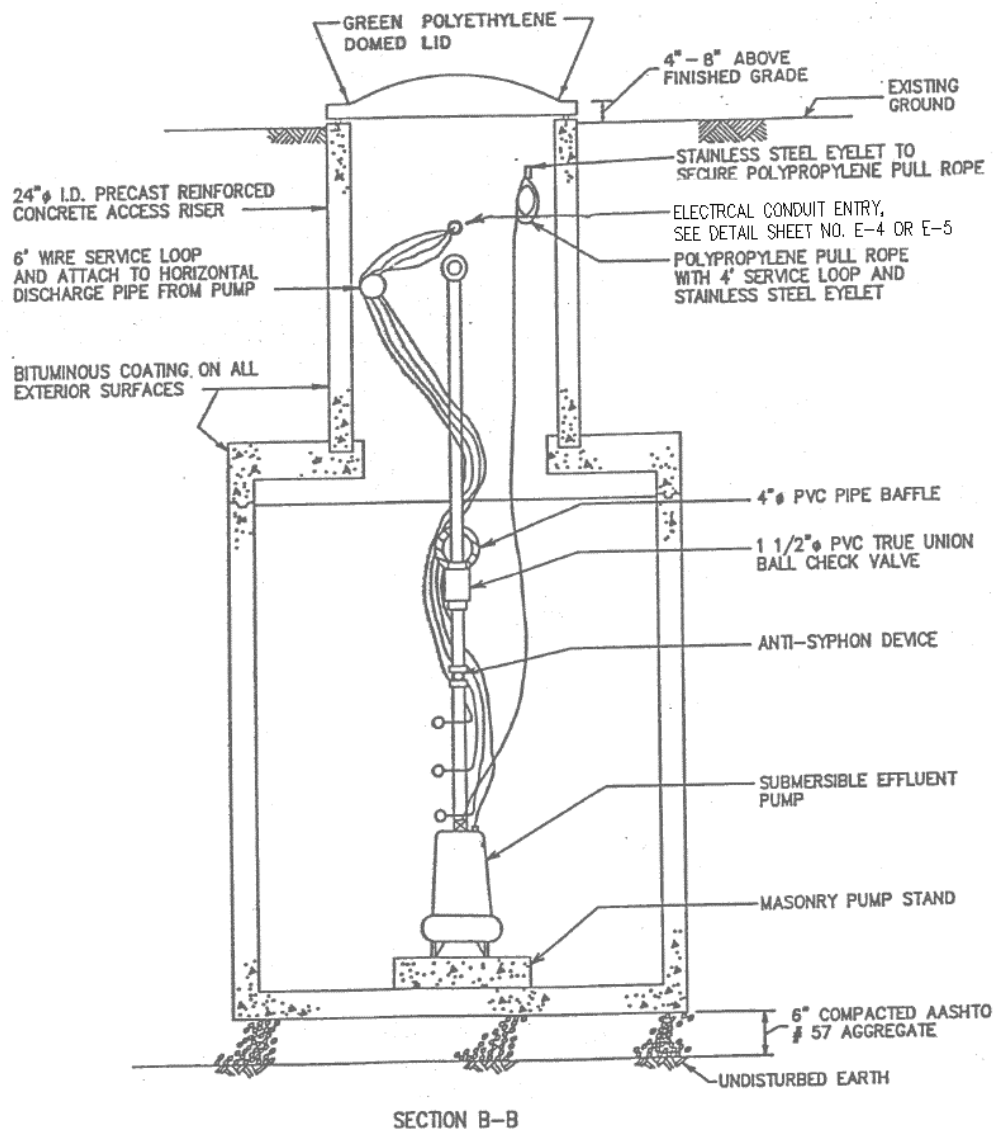
SEE REF.DWG. :
 G-1 a,b,c,d & e - CONCRETE PRESSURE SERVICE
 G-2 a,b & c - CONCRETE GRAVITY SERVICE

G-3 a,b,c,d & e - HDPE PRESSURE SERVICE
 G-4 a & b - HDPE GRAVITY SERVICE

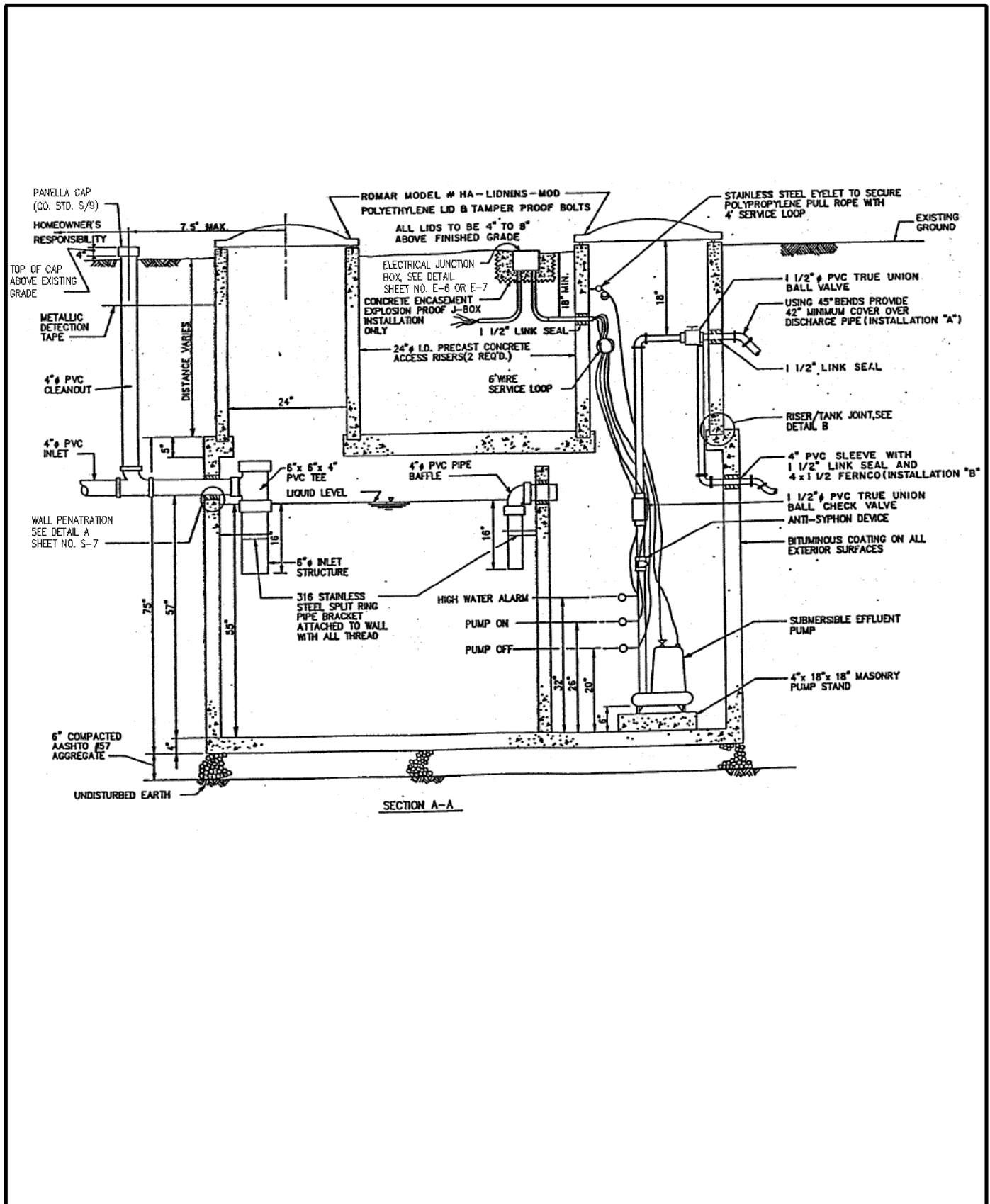
ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED	REVISIONS	REFERENCE STEP & GRAVITY SEPTIC TANK DESIGN HDPE AND CONCRETE, PRESSURE AND GRAVITY SERVICE INSTALLATIONS NOTES SHEET 3 (PRESSURE), SHEET 2 (GRAVITY)	SS L-4
	_____	_____		
	CHIEF ENGINEER	_____		
	DESIGN ENGINEER	_____		



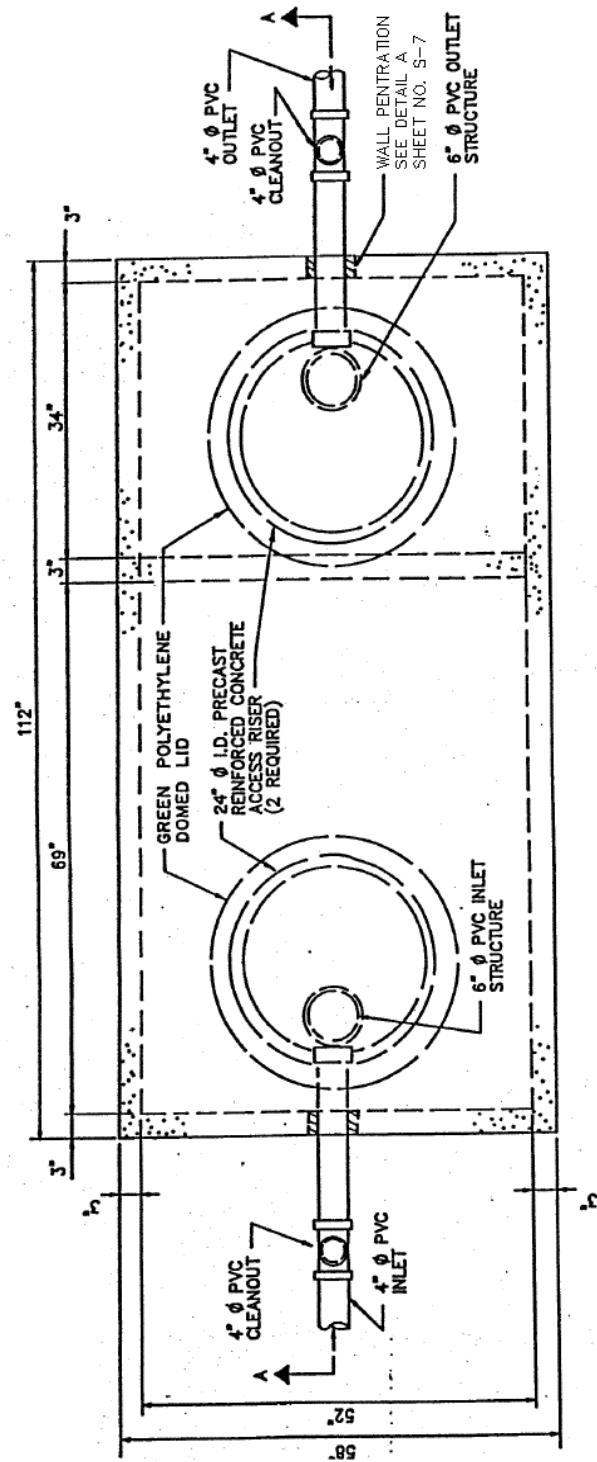
ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED _____ CHIEF ENGINEER	REFERENCE STEP & GRAVITY SEPTIC TANK DESIGN PLAN - 1000 GAL. CONCRETE SEPTIC TANK, PRESSURE INSTALLATION	REVISED _____	SS <hr/> S-1a
	_____ DESIGN ENGINEER		_____	
	DATE:		_____	
	_____		_____	
	_____		_____	



ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED	REFERENCE STEP GRAVITY SEPTIC TANK DESIGN SECTION - 1000 GAL. CONCRETE SEPTIC TANK, PRESSURE INSTALLATION	REVISED	SS S-1b
	_____		_____	
	CHIEF ENGINEER		_____	
	DESIGN ENGINEER		_____	
DATE:				

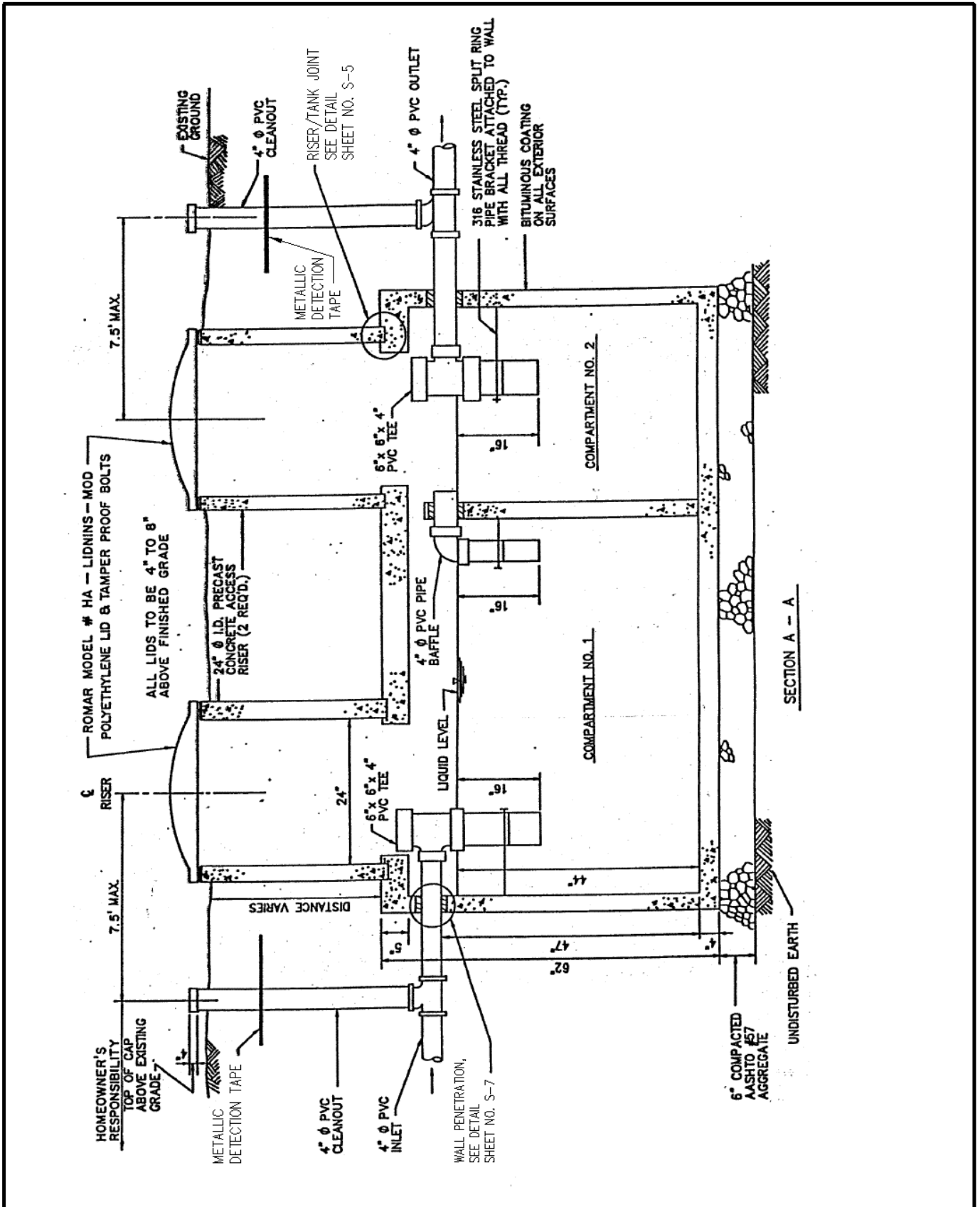


ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED _____ CHIEF ENGINEER	REFERENCE STEP & GRAVITY SEPTIC TANK DESIGN SECTION - 1000 GAL. CONCRETE SEPTIC TANK, PRESSURE INSTALLATION	REVISED _____	SS S-1c
	_____ DESIGN ENGINEER		_____	
	DATE: _____		_____	
	_____		_____	

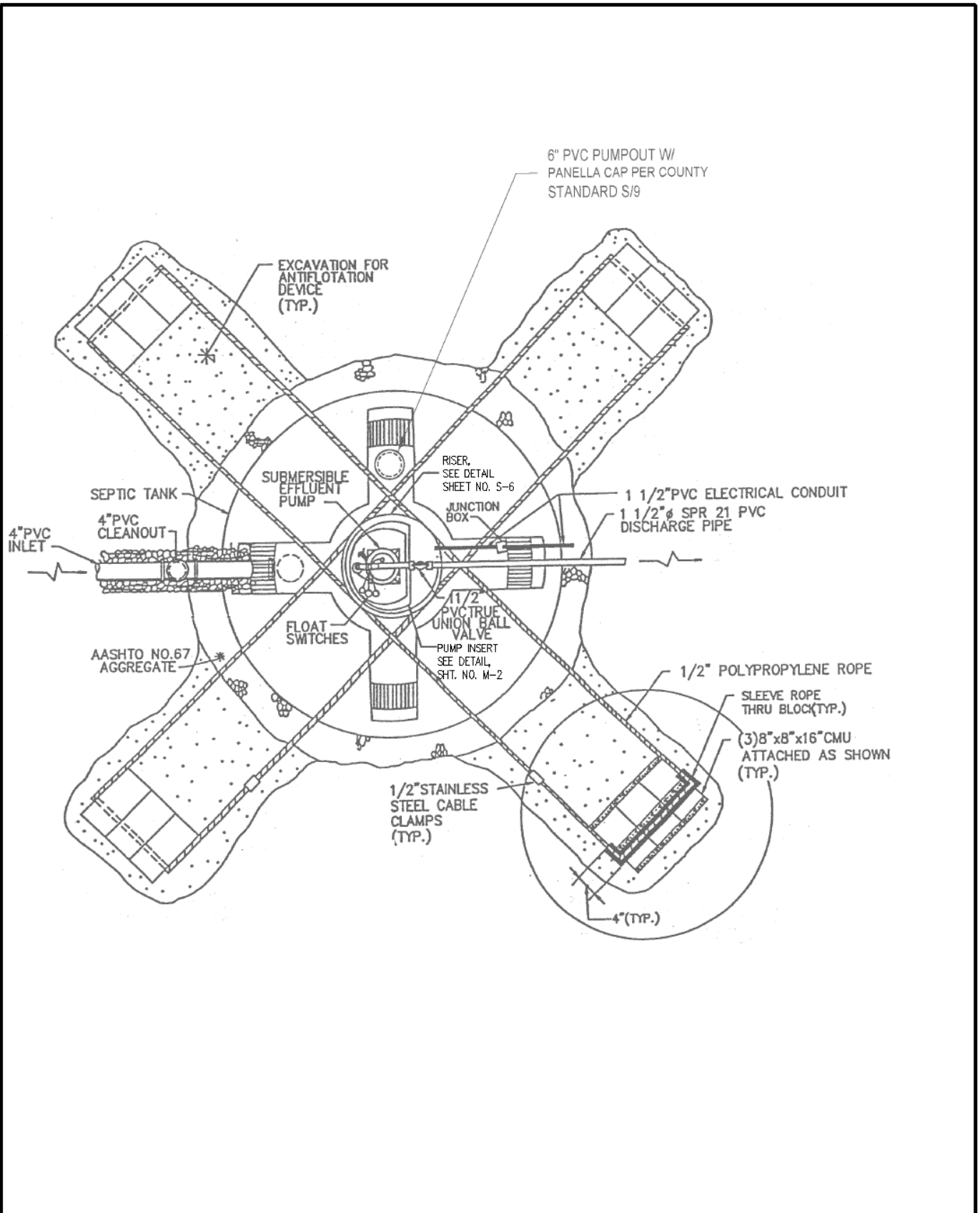


PLAN

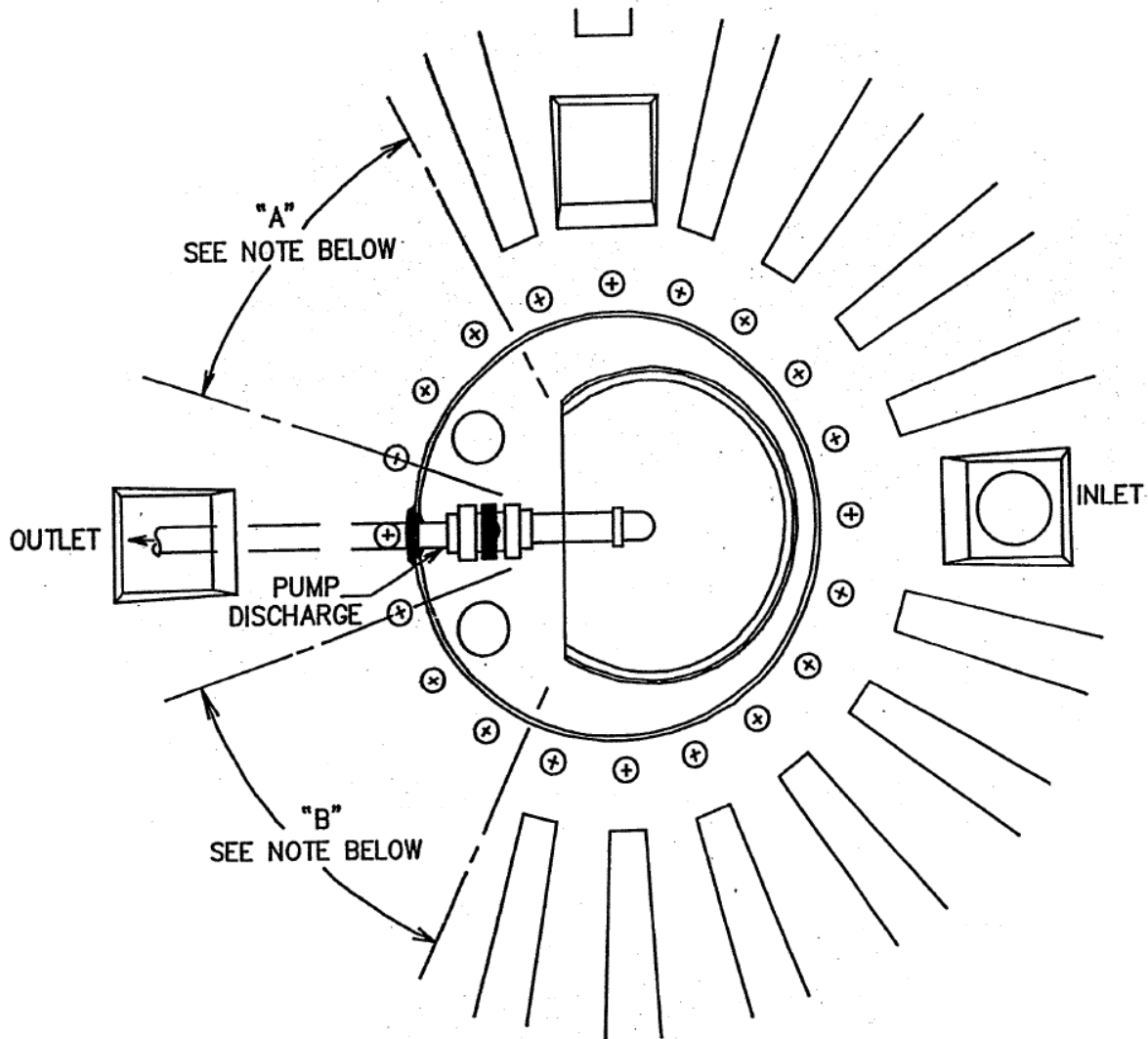
ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED _____ CHIEF ENGINEER _____ DESIGN ENGINEER DATE: _____	REFERENCE STEP & GRAVITY SEPTIC TANK DESIGN PLAN - 1000 GAL. CONCRETE SEPTIC TANK, GRAVITY INSTALLATION	REVISED _____ _____ _____	SS S-20
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ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED	REFERENCE STEP & GRAVITY SEPTIC TANK DESIGN SECTION - 1000 GAL. CONCRETE SEPTIC TANK, GRAVITY INSTALLATION	REVISED	SS S-2b
	_____ CHIEF ENGINEER			
	_____ DESIGN ENGINEER			
	DATE: _____			

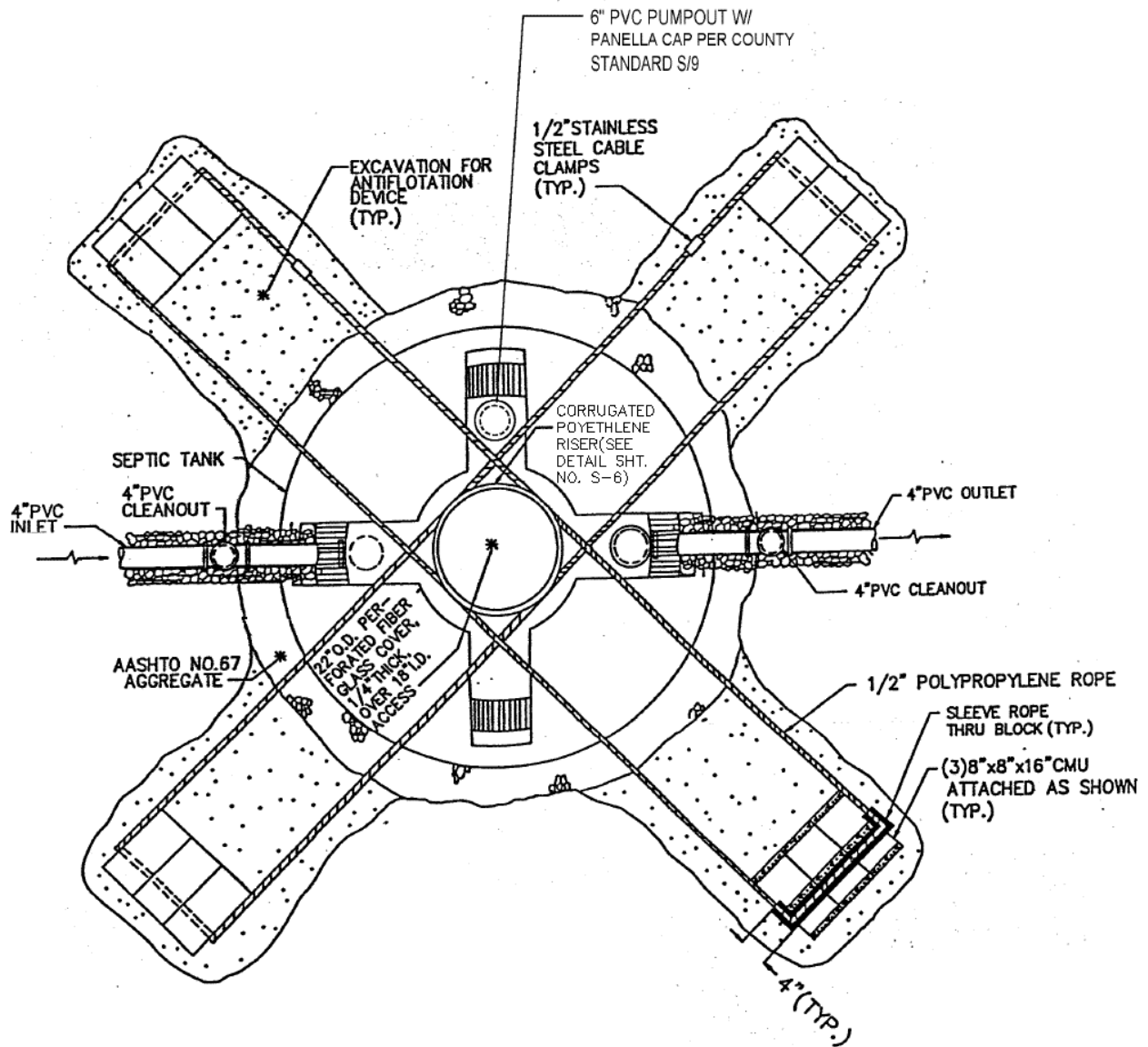


ANNE ARUNDEL DEPARTMENT OF PUBLIC WORKS	APPROVED _____ CHIEF ENGINEER _____ DESIGN ENGINEER DATE: _____	REFERENCE STEP & GRAVITY SEPTIC TANK DESIGN PLAN - ROMAR STEP SEPTIC TANK SEVERE DUTY, PRESSURE INSTALLATION	REVISED _____ _____ _____	<u>SS</u> S-3a
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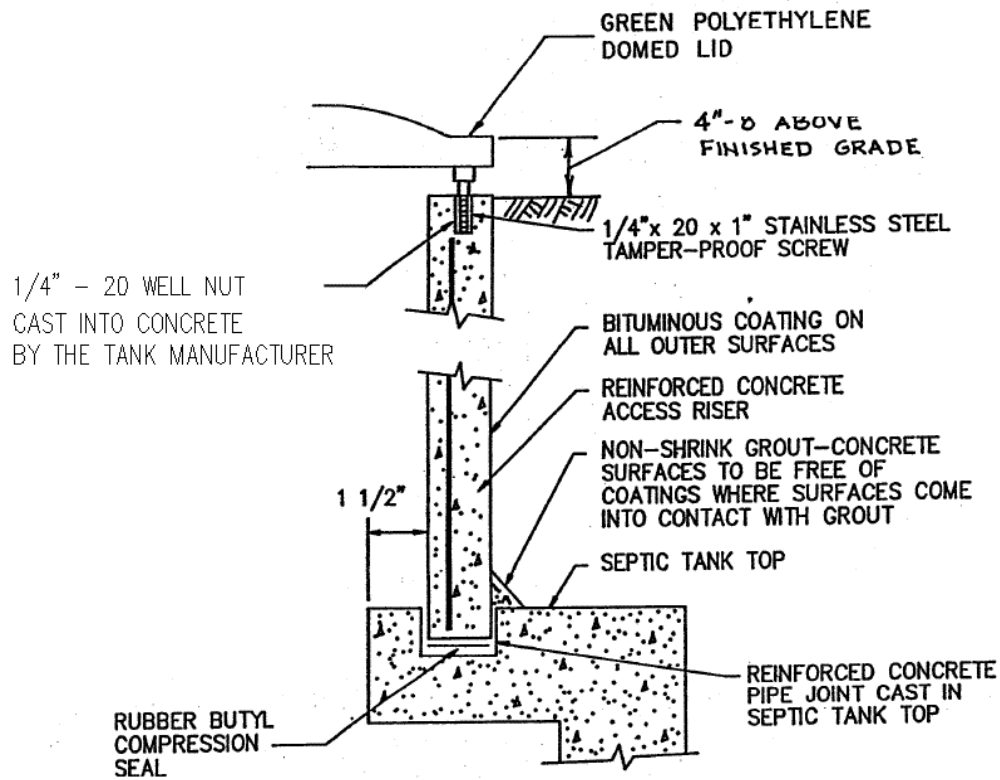


NOTE: RISER CONDUIT PENETRATION FOR PUMP POWER AND FLOATS SHALL FALL WITHIN EITHER AREA "A" OR "B" IN ORDER TO AVOID INTERFERENCE WITH THE PUMP DISCHARGE PIPE AND TO PREVENT INTERFERENCE WITH PUMP DIACHARGE REMOVAL.

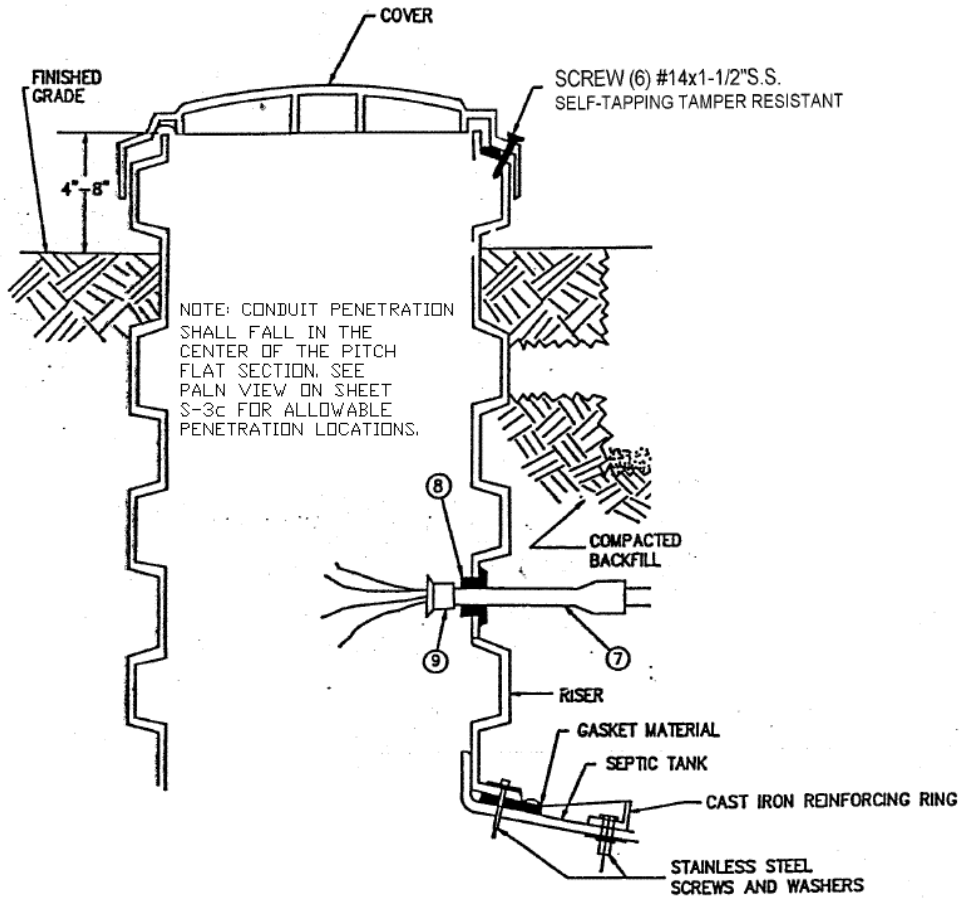
ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED	REFERENCE STEP & GRAVITY SEPTIC TANK DESIGN	REVISED	<u>SS</u> S-3c
	_____		_____	
	CHIEF ENGINEER		_____	
	_____		_____	
	DESIGN ENGINEER	PLAN VIEW TANK TOP/RISER		
	DATE:			



ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED _____ CHIEF ENGINEER	REFERENCE STEP & GRAVITY SEPTIC TANK DESIGN PLAN-ROMAR SDG SEPTIC TANK SEVERE DUTY, GRAVITY INSTALLATION	REVISED _____	<u>SS</u> S-4a
	_____ DESIGN ENGINEER		_____	
	DATE: _____		_____	
	_____		_____	



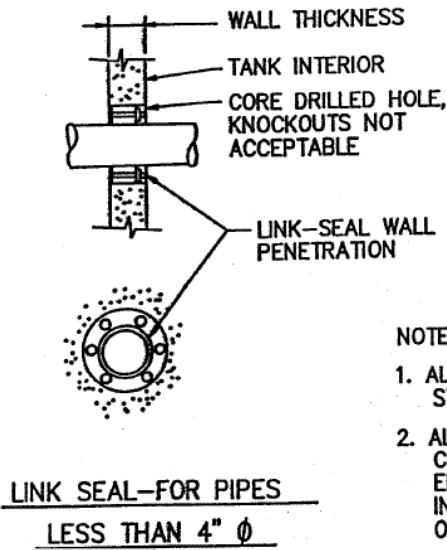
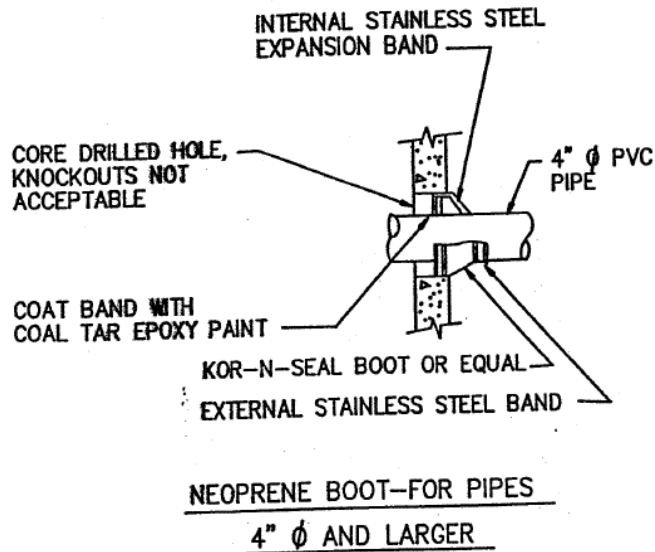
ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED _____ CHIEF ENGINEER	REFERENCE STEP & GRAVITY SEPTIC TANK DESIGN COVER/RISER AND RISER TANK JOINT DETAILS	REVISED _____	<u>SS</u> S-5
	_____ DESIGN ENGINEER		_____	
	DATE: _____		_____	
	_____		_____	



FOR PRESSURE SERVICE APPLICATION:

- ⑦ 1-1/2" SCH. 40 RIGID PVC CONDUIT IF NEEDED TO SUIT SETTING OF BOX/PAD ASSEMBLY
- ⑧ (1) 1-1/2" ADAPT-A-FLEX SEALING GROMMET (AK INDUSTRIES, INC.)
- ⑨ (4) 1-1/2" PVC BELL ENDS

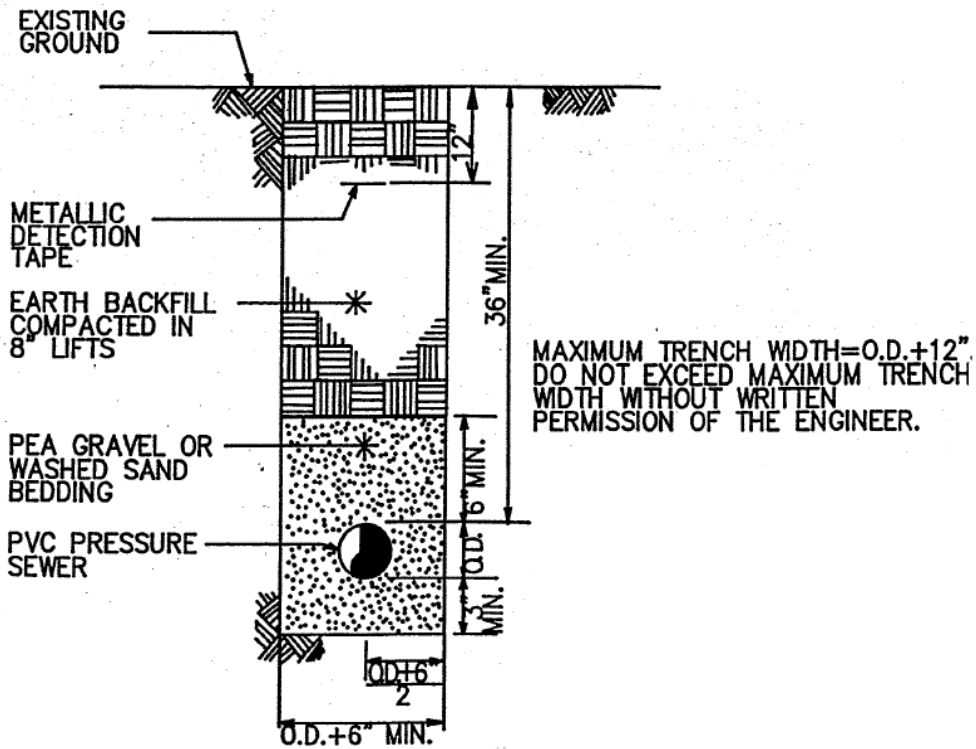
ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED _____ CHIEF ENGINEER	REFERENCE STEP & GRAVITY SEPTIC TANK DESIGN RISER AND COVER DETAIL FOR HDPE TANKS	REVISED _____	<u>SS</u> S-6
	_____ DESIGN ENGINEER		_____	
	DATE: _____		_____	
	_____		_____	



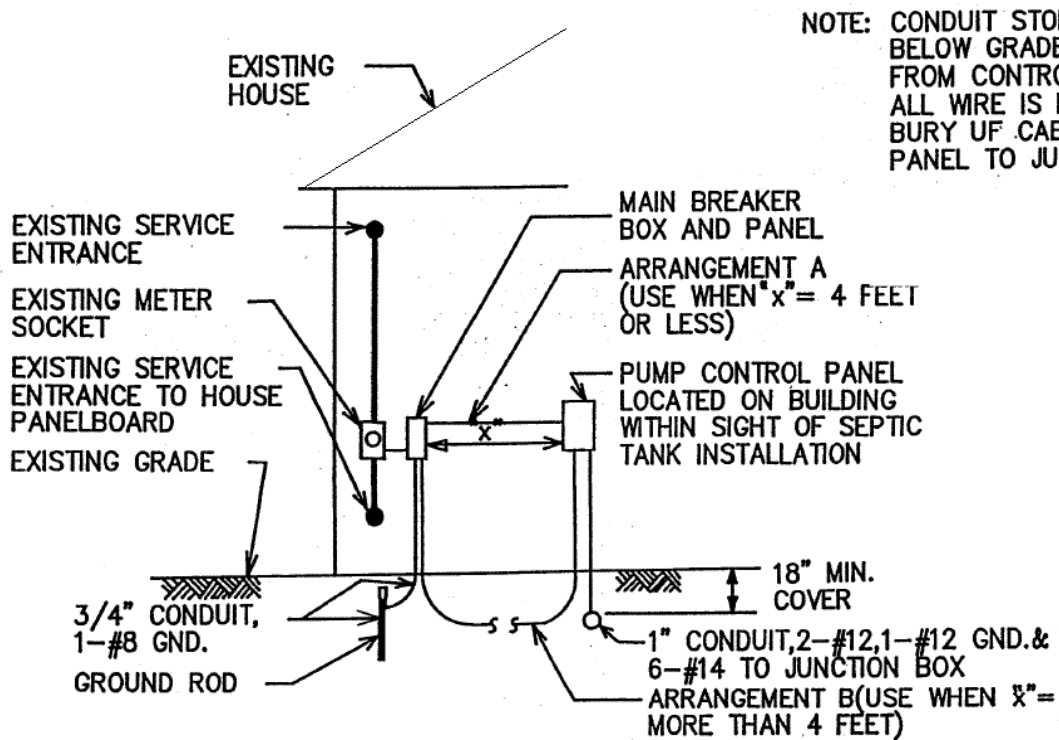
NOTES:

1. ALL METAL PARTS TO BE STAINLESS STEEL.
2. ALL METAL PARTS TO BE COATED WITH COAL TAR EPOXY FOLLOWING INSTALLATION (INSIDE & OUTSIDE).

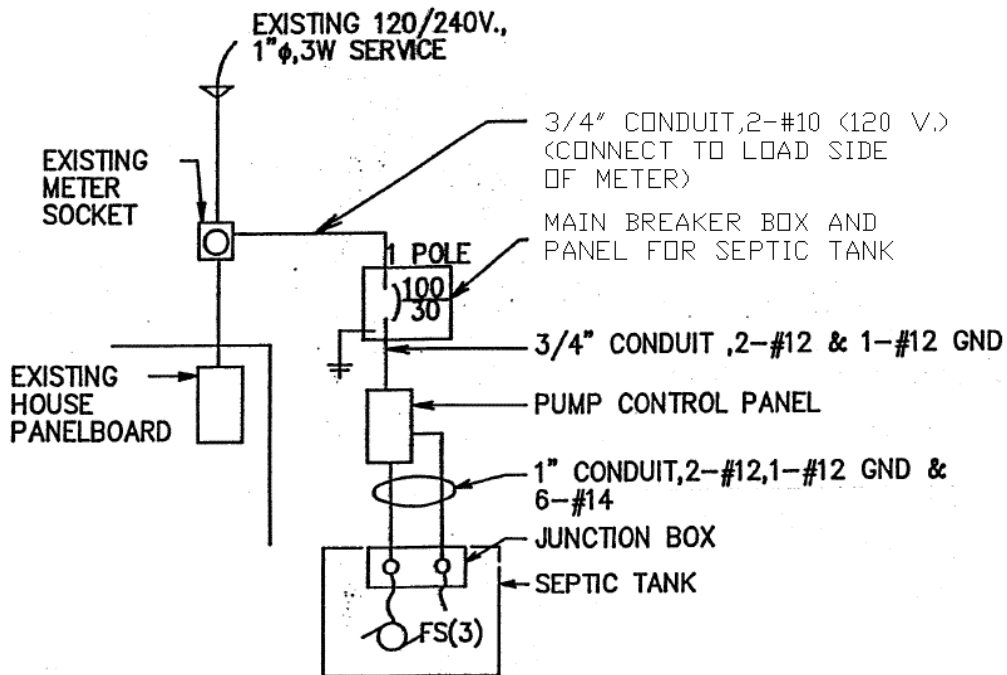
ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED _____ CHIEF ENGINEER _____ DESIGN ENGINEER DATE: _____	REFERENCE STEP & GRAVITY SEPTIC TANK DESIGN CONCRETE TANK WALL PENETRATIONS	REVISED _____ _____ _____	<u>SS</u> S-7
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ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED	REFERENCE STEP & GRAVITY SEPTIC TANK DESIGN	REVISED	SS
	_____ CHIEF ENGINEER		_____	
	_____ DESIGN ENGINEER		_____	
	DATE: _____		_____	
		PIPE TRENCH BEDDING DETAIL		C-1

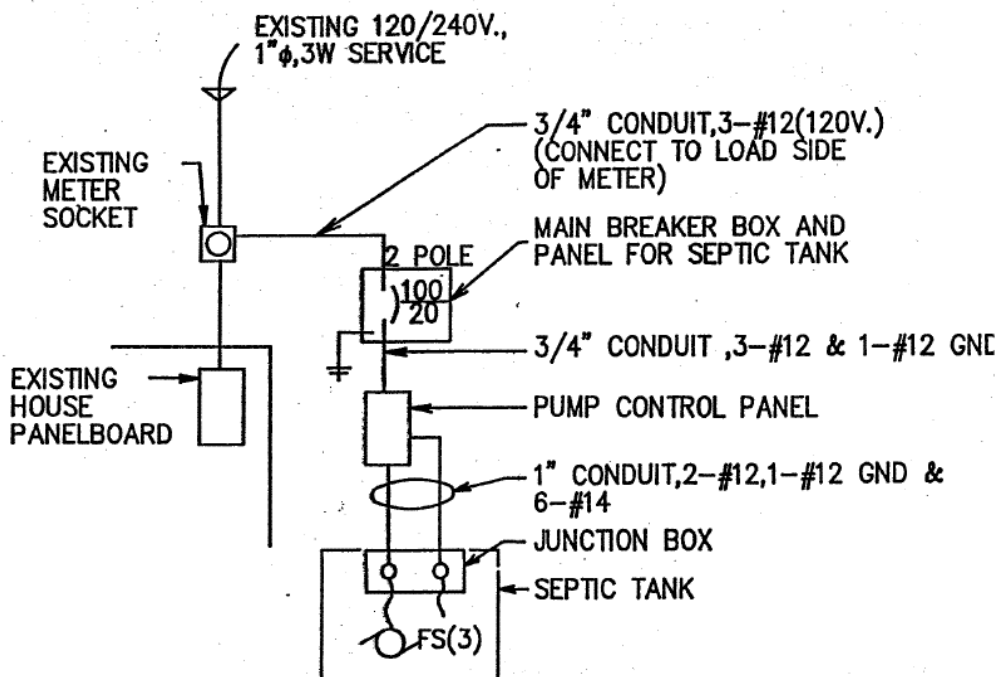


ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED _____ CHIEF ENGINEER	REFERENCE STEP & GRAVITY SEPTIC TANK DESIGN SEPTIC TANK SIMPLEX PUMP SYSTEM TYPICAL ARRANGEMENT AT RESIDENCE	REVISED _____	<u>SS</u> E-1
	_____ DESIGN ENGINEER		_____	
	DATE: _____		_____	
	_____		_____	



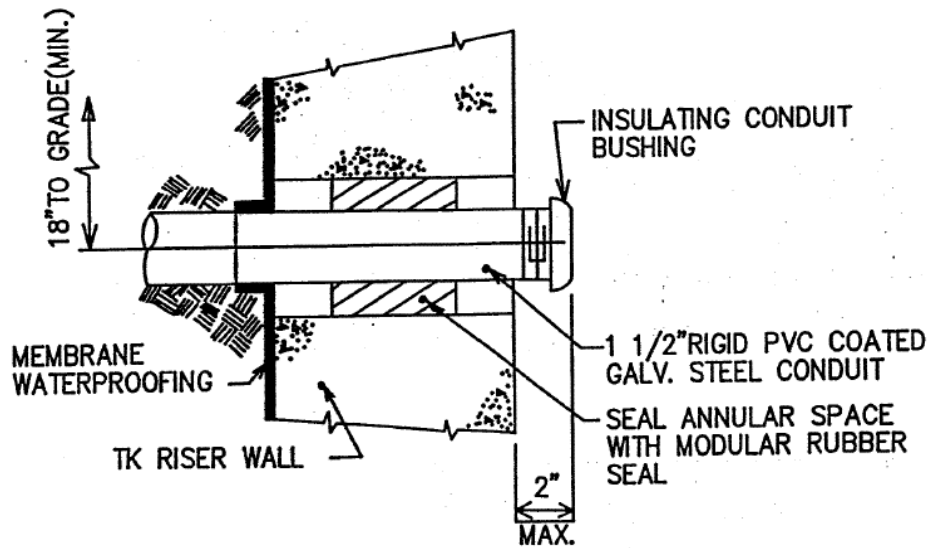
NOTE: ALL CONDUIT PENETRATIONS TO PUMP CONTROL PANEL SHALL ENTER AT BOTTOM OF PANEL.

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED	REFERENCE STEP & GRAVITY SEPTIC TANK DESIGN	REVISED	<u>SS</u> E-2
	_____		_____	
	CHIEF ENGINEER		_____	
	DESIGN ENGINEER		_____	
DATE:		ONE LINE DIAGRAM FOR PUMPS 1/2 HP OR LESS (115 V)		

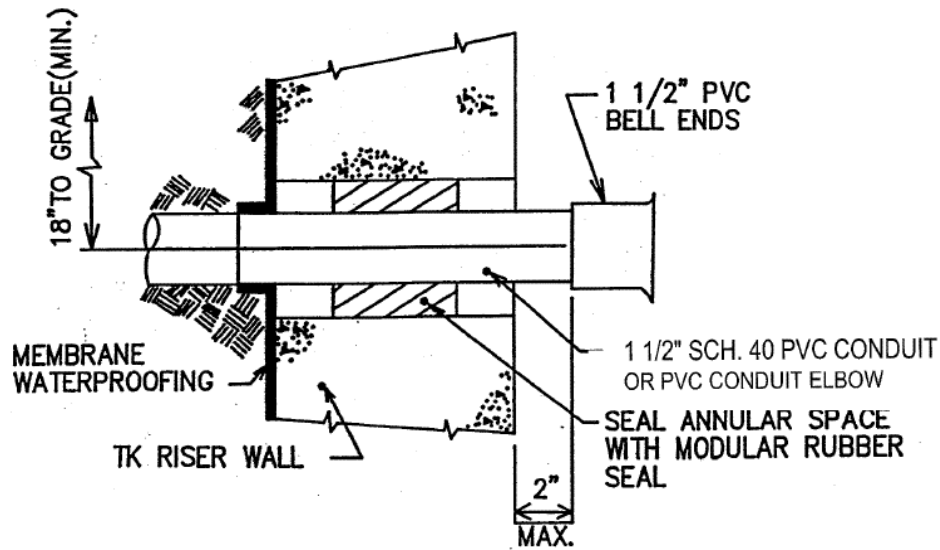


NOTE: ALL CONDUIT PENETRATIONS
TO PUMP CONTROL PANEL
SHALL ENTER AT BOTTOM OF PANEL

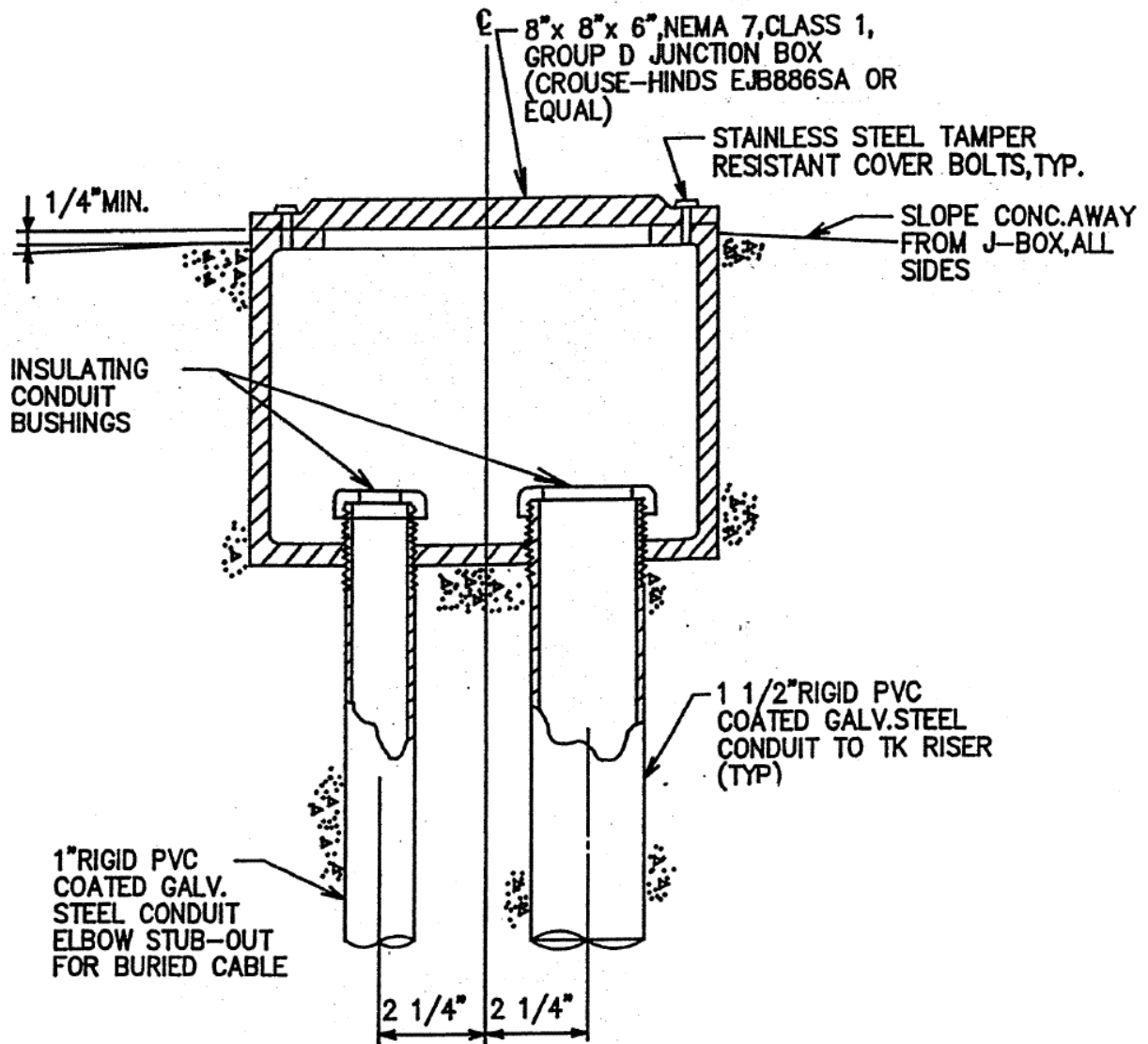
ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED _____ CHIEF ENGINEER	REFERENCE STEP & GRAVITY SEPTIC TANK DESIGN ONE LINE DIAGRAM FOR PUMPS 3/4 HP TO 2 HP	REVISED _____	<u>SS</u> E-3
	_____ DESIGN ENGINEER		_____	
	DATE: _____		_____	
	_____		_____	



ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED _____ CHIEF ENGINEER	REFERENCE STEP & GRAVITY SEPTIC TANK DESIGN TANK RISER ELECTRICAL CONDUIT ENTRY FOR USE WITH EXPLOSION PROOF JUNCTION BOX	REVISED _____	<u>SS</u> E-4
	_____ DESIGN ENGINEER		_____	
	DATE: _____		_____	
	_____		_____	
	_____		_____	

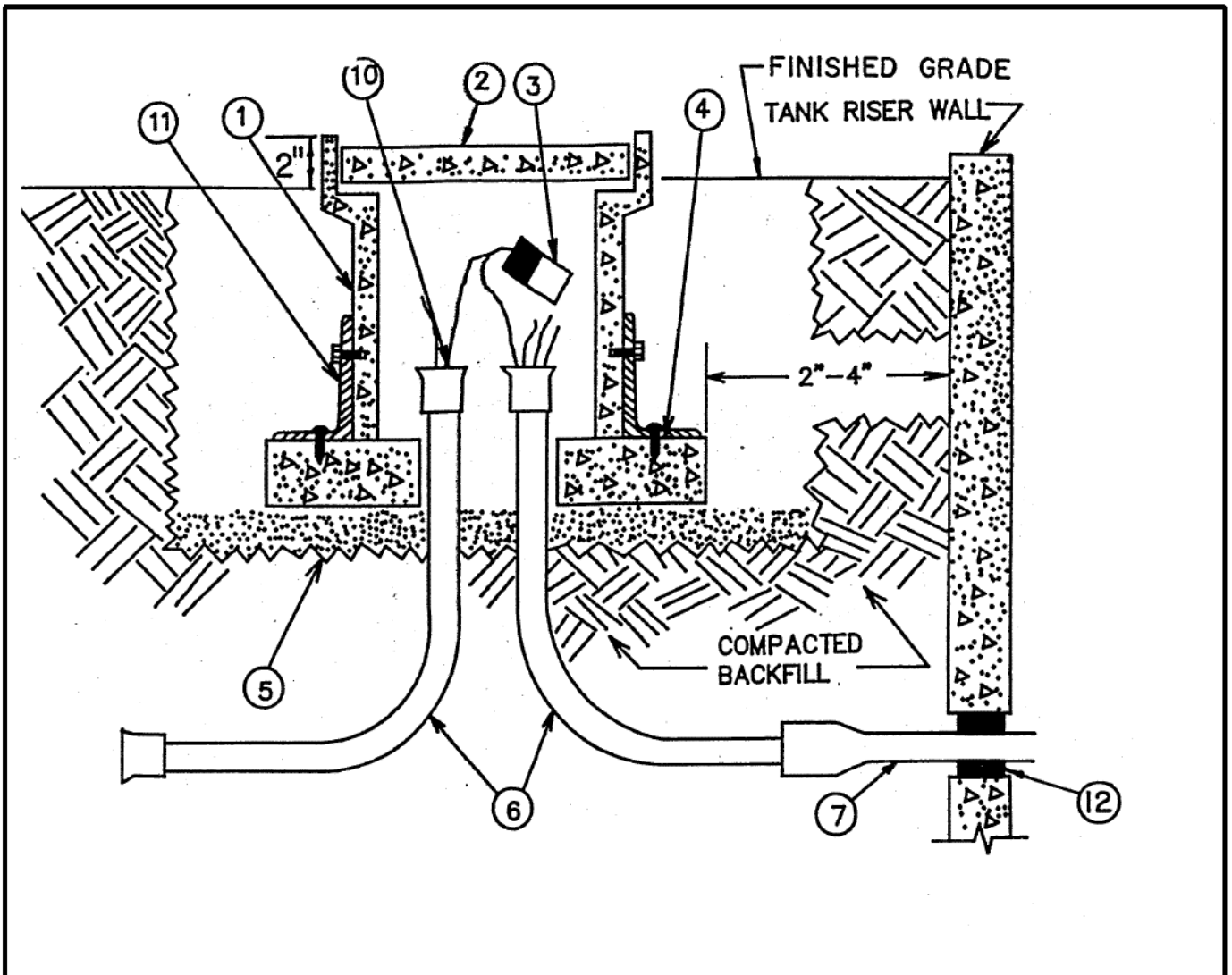


ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED _____ CHIEF ENGINEER	REFERENCE STEP & GRAVITY SEPTIC TANK DESIGN TANK RISER ELECTRICAL CONDUIT ENTRY FOR USE WITH QUAZITE COMPOSOLITE ENCLOSURE	REVISED _____	<u>SS</u> E-5
	_____ DESIGN ENGINEER		_____	
	DATE: _____		_____	
	_____		_____	



EXPLOSION PROOF JUNCTION BOX

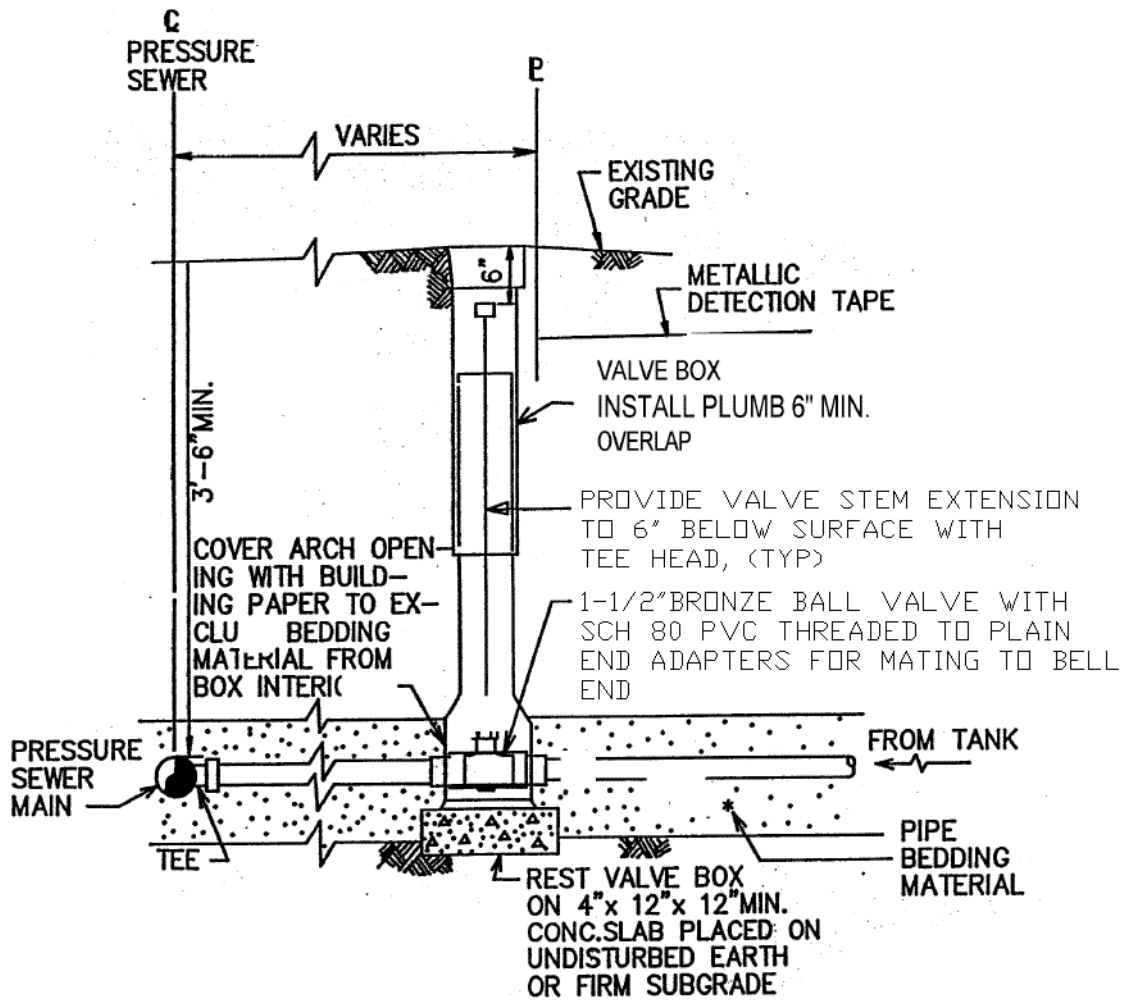
ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED _____ CHIEF ENGINEER	REFERENCE STEP & GRAVITY SEPTIC TANK DESIGN REFERENCE DRAWING EXPLOSION PROOF JUNCTION BOX	REVISED _____	SS E-6
	_____ DESIGN ENGINEER		_____	
	DATE:		_____	
	_____		_____	



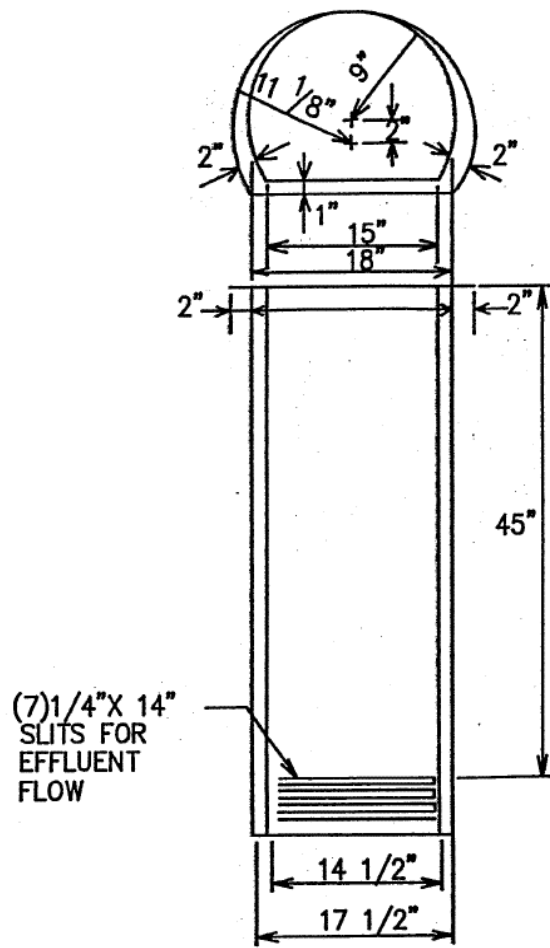
J-BOX INSTALLATION MATERIALS LIST

- ① 6" x 8" QUAZITE COMPOSOLITE ENCLOSURE PC STYLE W/NO BASE (PART#PC06088A06)
- ② 6" x 8" PC STYLE QUAZITE COMPOSOLITE LID W/NO GASKET AND (2) LID BOLTS (PART#PC0608CA00), "ELECTRIC" LOGO ON LID AND PENTAHEAD BOLTS W/WASHERS.
- ③ KING #40-563 AND #40-564 "ONE-STEP" WATERTIGHT/RAINTIGHT SAFETY WIRE CONNECTORS OR IDEAL DB TWISTER PLUS #30-260 WATERTIGHT WIRE CONNECTORS, (TYP)
- ④ (1) 14x14x3 PRECAST CONCRETE MOUNTING PAD WITH 6" DIA. ROUND VOID ON CENTER.
- ⑤ 2" MIN. BEDDING OF PEA GRAVEL ON COMPACTED BACKFILL SAND
- ⑥ (2) 1-1/2" SCH. 40 RIGID PVC CONDUIT ELBOWS
- ⑦ 1-1/2" SCH 40 RIGID PVC CONDUIT IF NEEDED TO SUIT SETTING OF BOX/PAD ASSEMBLY
- ⑧ (1) 1-1/2" ADAPT-A-FLEX SEALING GROMMET (AK INDUSTRIES, INC.)
- ⑨ (4) 1-1/2" PVC BELL ENDS
- ⑩ EACH CABLE ENTRY INSIDE J-BOX SHALL BE SEALED WITH SPEC SEAL FIRESTOP PUTTY BY STI PRODUCTS (PRODUCT #SSP100)
- ⑪ (2) L3-1/2x 2-1/2x 1/4 ALUMINUM ANGLE CLIPS 2" WIDE TO SECURE QUAZITE BOX TO CONC. PAD WITH (2) 3/8-16 S.S. HEX HEAD CAP SCREWS AND (2) #14x1-1/2" S.S. PAN HEAD SHEET METAL SCREWS WITH PLASTIC ANCHORS
- ⑫ (1) 1-1/2" LINK SEAL

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED _____ CHIEF ENGINEER _____ DESIGN ENGINEER DATE: _____	REFERENCE STEP & GRAVITY SEPTIC TANK DESIGN REFERENCE DRAWING QUAZITE COMPOSOLITE ENCLOSURE	REVISED _____ _____ _____ _____
			SS E-7



ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED _____ CHIEF ENGINEER	REFERENCE STEP & GRAVITY SEPTIC TANK DESIGN CURB VALVE DETAIL	REVISED _____	<u>SS</u> M-1
	_____ DESIGN ENGINEER		_____	
	DATE: _____		_____	
	_____		_____	



ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED _____ CHIEF ENGINEER	REFERENCE STEP & GRAVITY SEPTIC TANK DESIGN PUMP INSERT DETAIL	REVISED _____	<u>SS</u> M-2
	_____ DESIGN ENGINEER		_____	
	DATE: _____		_____	
	_____		_____	
	_____		_____	

GENERAL NOTES

1. All construction shall be accomplished in accordance with Anne Arundel County "Specification for Construction" and "Standard Details" (September 1988 and amended) unless noted otherwise.
2. No modifications or alterations are to be made to the septic tank systems without the written approval of the Anne Arundel County Department of Public Works.

SEPTIC TANK INSTALLATION NOTES

1. The tank shall be located so that the following minimum conditions are met:
 - a. All tanks – Contractor/Homeowner shall provide a maintenance easement prepared by a licensed surveyor showing the precise routing of the pipeline from the tank to the in-street collection line.
 - b. Gravity tanks – locate the tank such that pipe slope shall be 2% (two percent) minimum between the house and the tank and 1% (one percent) minimum between the tank and the street. Fall through the tank is 3 inches. Minimum cover shall be 2' maximum 5' below finish grade to top of pipe.
 - c. Pressure tanks – Provide 3'-6" minimum cover over the discharge pipe between the tank and the street.
2. Excavate for new septic tank to undisturbed earth. Provide dewatering system so that excavation remains dry.
3. Install 6" minimum leveling bed of AASHTO #57 aggregate.
4. Tank shall be installed level, and at an elevation such that the top shall be 4 to 8 inches above surrounding grade. A working tolerance of 3/16 inches per foot out of level will be allowed.
5. Backfill shall be placed around the tank so as to provide uniform support. Backfill shall be compacted in 8 inch layers to 95 percent compaction of the standard proctor of the backfill material utilized.
6. Install backfill to the Invert of the Inlet and outlet pipes.
7. Complete backfill operations and fill excavation to grade. Adjust septic tank risers to grade as shown on the drawings.
8. Finished grade elevation in the vicinity of the riser and tank extension shall be 4 to 8 inches above surrounding grade.
9. Install all pump equipment for pump tank installations.
10. Run pump through two complete operations to verify proper operation of floats and controls in the presence of the Engineer/Inspector. Demonstrate removal of pump from tank without the need to disconnect cables at J-box.
11. The precast concrete septic tank shall be certified by a professional engineer licensed in the State of Maryland.
12. The precast concrete septic tanks shall be vacuum tested for leaks following assembly and the connections of all pipe and conduits. Following the plugging of all pipes and the sealing of all other entrances as specified, the structures shall be tested by drawing a vacuum of four inches of mercury. Suitable plugs and equipment must be supplied by the Contractor for the purposes of the test. An acceptable test shall be one in which the vacuum loss following evacuation is zero over a five minute period.
13. Metallic detection tape shall be installed in all pipe trenches at a depth of 1 foot below grade.

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED	REFERENCE STEP & GRAVITY SEPTIC TANK DESIGN CONCRETE PRESSURE SERVICE INSTALLATION NOTES	REVISED	SS G-1a
	_____		_____	
	CHIEF ENGINEER		_____	
	_____		_____	
	DESIGN ENGINEER		_____	
DATE: _____				

A. PRECAST PRESSURE CONCRETE SEPTIC TANK COMPONENTS

ITEM NUMBER	ITEM DESCRIPTION	QUANTITY
1	Precast Concrete, 2 Compartment 1500 gallon one piece Monolithic Septic Tank	1
2	6" Diameter Inlet Structure	1
3	4" Diameter Baffle Structure	1
4	Kor-N-Seal Boots Inlet Outlet Baffle	1 1 1
Items No. 1 through 4 supplied by: Baystar Precast Corp., Owings, MD CT (310) 855-6777.		
5	Green Polyethylene Domed Lid Romar Model #HA - Lindnins - Mod	2
Item No. 5 is manufactured by: Ames/Messco, 9020 Mendenhall Court, Suite J Columbia, MD 21046 (410)995-6971		
6	Stainless Steel 1/4" - 20 x 1" Pan Head Drilled Spanner Tamper Proof Bolts	6
Item No. 6 is manufactured by: A.K. Industries, Inc., 2055 Pidco Drive, Plymouth, Indiana 46563 (219) 936-6022.		
Distributed by: Ames/Messco Inc. 9020 Mendenhall Ct. Suite J Columbia, MD 21046		

B. ELECTRICAL COMPONENTS - PRESSURE TANKS ONLY

ITEM NUMBER	ITEM DESCRIPTION	QUANTITY
7	Submersible Effluent Pumps 1/3 or 1/2 hp. Goulds Model 3885, WED311M (1/3) or WED511HH (1/2)	1
8	6-foot Electrical Service Loop	1
Items No. 7 and 8 are manufactured by: Goulds Pump, Inc., and distributed by Ames/Messco, 9020 Mendenhall Court, Suite J, Columbia, MD 21046		
9	Polypropylene Mini-Floats High Water Pump On Pump Off	3
Item No. 9 is manufactured by: Anchor Scientific, Inc., Box 378, Long Lake, MN 55256 (612) 473-7115.		

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED	REFERENCE STEP & GRAVITY SEPTIC TANK DESIGN CONCRETE PRESSURE SERVICE INSTALLATION NOTES	REVISED	SS G-1b
	_____		_____	
	CHIEF ENGINEER		_____	
	_____		_____	
	DESIGN ENGINEER			
	DATE:			

ITEM NUMBER	ITEM DESCRIPTION	QUANTITY
10	<p>Simplex Pump Control Panel—Fiberglass NEMA 4X Enclosure, with lockable hasp. All metal parts to be stainless steel. Enclosure shall have a submersible rating and be U.V. stabilized. All components shall be "U.L." or "C.S.A." approved. Internal components shall be Industrial rated and include the following:</p> <ul style="list-style-type: none"> (a) Magnetic controller – Model No. CA3-12-12V with one auxiliary contact by Sprecher and Schuh (b) Circuit Breakers – Model No. QC 1020 and QC 1015, single pole by Westinghouse (c) Hand/Off/Auto Toggle Switch – "Maintained" in both the hand and auto position (d) High Water Alarm Buzzer Model No. MC-09201-Q with manual volume control by Floyd Bell (e) High Water Alarm Light – Model No. DTV3P-R-101-01 by Sprecher & Schuh (f) Terminal Strip shall be 6 point minimum and rated to 15 AMP (g) Each control panel shall be supplied with a Dead Front Interior Shield (h) Control Panel Sign shall be adhesive backed, non-fading. Sign shall be 3" x 5" and shall read: <p>"ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS SEPTIC TANK EFFLUENT PUMP CONTROLS IN CASE OF ALARM TELEPHONE 222-8400 DO NOT OPEN PANEL."</p> <p>Item No. 10 shall be as manufactured and distributed by: Ames/Messco, 9020 Mendenhall Court, Suite J, Columbia, MD 21046 (410)995-6971 or Statewide Septic, Inc., 3257 Beards Point Road, Davidsonville, MD 21035 (410)798-0431</p>	1
11	<p>Main Circuit Breaker and Enclosure NEMA Type 3R, lockable, rainproof, safety switches with 30 AMP circuit breaker</p> <p>Item No. 11 is manufacturer by: Square D Manufacturing Company, Towson, MD (301)337-8448</p> <p>THE FOLLOWING ITEMS 20-27 APPLY TO SINGLE DWELLING J-BOX INSTALLATIONS ONLY.</p>	
12	<p>6" X 8" Quazite Composolite Enclosure, PC style w/no base (part #PC0608BA06)</p>	1
13	<p>6" x 8" PC style Quazite Composolite Lid w/no Gasket and (2) Stainless Steel Pentahead Lid Bolts (part #PC0608CA00) "Electric" logo on lid.</p> <p>Item 12 & 13 are distributed by: Graybar Electric, 3701 E. Monument Street, Baltimore, MD 21205 (410) 342-5500</p>	1
14	<p>King #40-563 and #40-564 "One Step" Watertight/Raintight Safety Wire Connectors or Ideal DB Twister Plus #30-260 Watertight Wire Connectors.</p>	As required
15	<p>1 1/2" Sch. 40 Rigid PVC Conduit Elbows</p>	2
18	<p>1 1/2" Sch. 40 Rigid PVC Conduit as needed to suit setting of J-box</p>	As required

<p>ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS</p>	APPROVED	<p>REFERENCE STEP & GRAVITY SEPTIC TANK DESIGN CONCRETE PRESSURE SERVICE INSTALLATION NOTES</p>	REVISED	SS
	_____ CHIEF ENGINEER		_____	G-1c
	_____ DESIGN ENGINEER		_____	
	DATE:		_____	

ITEM NUMBER	ITEM DESCRIPTION	QUANTITY
17	1 1/2" Carlon Bell Ends (PVC) #E997H or equal	4
	Item numbers 14 through 17 are distributed by: Lee Electric Company, 600 West Hamburg Street, Baltimore, MD 21203 (410) 752-4080	
18	Spec Seal Firestop Putty by STI Products (product #SSP 100) 36 cu. in. tube	As required
	Item 18 is distributed by: Tristate Electric Supply Company, 2032 Industrial Drive, Annapolis, MD 21401, (410) 224-4245	
19	14x14x3 Precast Concrete Pad with 6" Diameter Round void in center for supporting/stabilizing electric enclosure	1
	Item 19 is manufactured by: Hoyle Stone Products, Central Ave. and Queen Anne Rd., Mitchellville, MD (301) 249-5171	
	THE FOLLOWING ITEMS 20-24 APPLY TO MULTIPLE DWELLING/COMMERCIAL INSTALLATIONS ONLY.	
20	8" X 8" X 6", NEMA 7, Class I, Group D Junction Box Crouse-Hinds EJB886SA or equal. Provide tamper resistant stainless steel cover bolts	1
21	1 1/2" Rigid PVC coated steel conduit	As required
22	1" Rigid PVC coated steel conduit	As required
23	1 1/2" insulating conduit bushings	2
24	1" insulating conduit bushings	2

C. PIPING AND VALVE COMPONENTS

25	4-inch Diameter Schedule 35 PVC pipe	Length as required
26	1 1/2" Diameter SDR 21 PVC Pipe	Length as required
27	Morrison Bleeder Valve-Part #S20182, or equal Pressure Tank Only	1
	Items No. 25 through 27 are distributed by: Tate Engineering, Inc., 601 West Street, Baltimore, MD 21230 (410) 539-0787	
28	1 1/2" diameter PVC True Union Ball valve Hayward or equal, Pressure Tank Only	1
29	1 1/2" diameter PVC True Union Ball Check Valve Hayward or equal, Pressure Tank Only	1
30	Weld On Primer P-70 or equal, All Tanks	As required
31	Weld On Pipe Cement 711 or equal, All Tanks	As required
32	Pipe Joint Lubricant (Sub Aqueous)	As required
	Items No. 28 through 32 are distributed by: PPS (Plastic Piping Systems) McGraw Court, Columbia, MD 21046 (410) 995-6758	

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED	REFERENCE STEP & GRAVITY SEPTIC TANK DESIGN CONCRETE PRESSURE SERVICE INSTALLATION NOTES	REVISED	SS G-1d
	_____		_____	
	CHIEF ENGINEER		_____	
	_____		_____	
	DESIGN ENGINEER			
	DATE:			

ITEM NUMBER	ITEM DESCRIPTION	QUANTITY
33	316 Stainless Steel Split Ring Pipe support brackets Gravity Pressure	3 2
	Item No. 33 is manufactured by Penn Pipe Hangers, 4501 Aramingo Ave., Philadelphia, PA 19124 1 (800) 742-6437	
34	Metallic Plastic Marker Tape	As required
	Item No. 34 is manufactured by: Allan Co., Inc., 1803 McGowen St. Houston, Texas 77004 (713) 659-5468	
35	1 1/2" Bronze Ball Curb Valve	1
36	Valve Stem Extension with Teehead	Length as required
	Item No. 35 and 36 are manufactured by: Ford Co. distributed by Municipal and Contractor Sales, 2930 Industrial Park Drive, Finksburg, MD 21048 (410)833-4300	
37	Plastic Valve Box with Cast Iron Cover	1
	Item No. 37 is manufactured by: Bingham & Taylor, P.O. Box 939, Culpepper, VA 22701 (703)825-8334	
38	4" Diameter Cleanout Gravity Tank Pressure Tank	2 1
	Item No. 38 is distributed by: PPS (Plastic Piping Systems), McGraw Court, Columbia, MD 21046 (410) 995-6758	

D. MISCELLANEOUS COMPONENTS

39	Rubber Butyl Compression Seal	As required
	Item No. 39 is manufactured and distributed by: Press Seal Gasket Corp., Concrete Products Supply Co., P.O. Box 10482, Fort Wayne, Indiana 46852 1 (800) 348-7325	
40	Non Shrink Grout	As required
	Item No. 40 is manufactured and distributed by National Permacrete Co., Inc., P.O. Box 886, Devon, PA 19333	
41	Coal Tar Epoxy	As required
	Item No. 41 is manufactured by: Tnemec Co., Inc., and distributed by: C. Distler Co., Inc., 302 W. Cary St., Richmond, VA 23220 Baltimore Metro (301)467-2435	
42	Caution Label for Riser Cover "CAUTION: HAZARDOUS ATMOSPHERE DO NOT ENTER" All Tanks	1
	Item No. 42 is distributed by: Lab Safety Supply, Inc., P.O. Box 1368, Jacksonville, W 1 (800) 356-2501	
43	1/2" Polypropylene Rope with stainless Steel Lifting Hoops at each end for pump, Pressure Tank Only	1
44	4" x 18" x 18" Masonry Pump Stand	1
	Items No. 43 and 44 are distributed by: Bowen Farm Supply, 2550 Riva Road, Annapolis, MD (410) 224-3340	
45	AASHTO #57 aggregate or equal All Tanks	As required
46	Chicago Locks Model No. 2313 (one each for control panel and disconnect switch)	2

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED	REFERENCE STEP & GRAVITY SEPTIC TANK DESIGN CONCRETE PRESSURE SERVICE INSTALLATION NOTES	REVISED
	_____		_____
	CHIEF ENGINEER		_____
	_____		_____
	DESIGN ENGINEER		SS
	DATE:		G-1e

GENERAL NOTES

1. All construction shall be accomplished in accordance with Anne Arundel County "Specification for Construction" and "Standard Details" (September 1988 and amended) unless noted otherwise.
2. No modifications or alterations are to be made to the septic tank systems without the written approval of the Anne Arundel County Department of Public Works.

SEPTIC TANK INSTALLATION NOTES

1. The tank shall be located so that the following minimum conditions are met:
 - a. All tanks – Contractor/Homeowner shall provide a maintenance easement prepared by a licensed surveyor showing the precise routing of the pipeline from the tank to the in-street collection line.
 - b. Gravity tanks – locate the tank such that pipe slope shall be 2% (two percent) minimum between the house and the tank and 1% (one percent) minimum between the tank and the street. Fall through the tank is 3 inches. Minimum cover shall be 2' maximum 5' below finish grade to top of pipe.
 - c. Pressure tanks – Provide 3'-6" minimum cover over the discharge pipe between the tank and the street.
2. Excavate for new septic tank to undisturbed earth. Provide dewatering system so that excavation remains dry.
3. Install 6" minimum leveling bed of AASHTO #57 aggregate.
4. Tank shall be installed level, and at an elevation such that the top shall be 4 to 8 inches above surrounding grade. A working tolerance of 3/16 inches per foot out of level will be allowed.
5. Backfill shall be placed around the tank so as to provide uniform support. Backfill shall be compacted in 8 inch layers to 95 percent compaction of the standard proctor of the backfill material utilized.
6. Install backfill to the Invert of the Inlet and outlet pipes.
7. Complete backfill operations and fill excavation to grade. Adjust septic tank risers to grade as shown on the drawings.
8. Finished grade elevation in the vicinity of the riser and tank extension shall be 4 to 8 inches above surrounding grade.
9. Install all pump equipment for pump tank installations.
10. Run pump through two complete operations to verify proper operation of floats and controls in the presence of the Engineer/Inspector. Demonstrate removal of pump from tank without the need to disconnect cables at J-box.
11. The precast concrete septic tank shall be certified by a professional engineer licensed in the State of Maryland.
12. The precast concrete septic tanks shall be vacuum tested for leaks following assembly and the connections of all pipe and conduits. Following the plugging of all pipes and the sealing of all other entrances as specified, the structures shall be tested by drawing a vacuum of four inches of mercury. Suitable plugs and equipment must be supplied by the Contractor for the purposes of the test. An acceptable test shall be one in which the vacuum loss following evacuation is zero over a five minute period.
13. Metallic detection tape shall be installed in all pipe trenches at a depth of 1 foot below grade.

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED	REFERENCE STEP & GRAVITY SEPTIC TANK DESIGN CONCRETE GRAVITY SERVICE INSTALLATION NOTES	REVISED		
	_____		_____	SS	
	CHIEF ENGINEER		_____	_____	G-2a
	_____		_____	_____	
	DESIGN ENGINEER				
	DATE:				

A. PRECAST GRAVITY CONCRETE SEPTIC TANK COMPONENTS

ITEM NUMBER	ITEM DESCRIPTION	QUANTITY
1	Precast Concrete 2 Compartment 1000 gallon One Piece Monolithic Septic Tank	1
2	6" Diameter Inlet Structure	1
3	6" Diameter Outlet Structure	1
4	4" Diameter Baffles Structure	1
5	Precast Concrete Riser, 24" Inside Diameter	2
6	Kor-N-Seal Boots Inlet Outlet Baffle	1 1 1
7	Stainless Steel 1/4" - 20 x 1" Pan Head Drilled Spanner Tamper Proof Bolts	6

Items No. 1 through 7 are supplied by: Baystar Precast Corp,
Owings, MD (301) 855-6777.

B. PIPING AND VALVE COMPONENTS

ITEM NUMBER	ITEM DESCRIPTION	QUANTITY
8	4-inch Diameter Schedule 35 PVC pipe	Length as required
9	1 1/2" Diameter SDR 21 PVC Pipe	Length as required
10	Morrison Bleeder Valve-Part #S20185 or equal Pressure Tank Only	1
Items No. 8 through 10 are distributed by: Tate Engineering, Inc., 601 West Street, Baltimore, MD 21230 (410) 539-0787		
11	1 1/2" diameter PVC True Union Ball valve Hayward or equal, Pressure Tank Only	1
12	1 1/2" diameter PVC True Union Ball Check Valve Hayward or equal, Pressure Tank Only	1
13	Weld On Primer P-70 or equal, All Tanks	As required
14	Weld On Pipe Cement 711 or equal, All Tanks	As required
15	Pipe Joint Lubricant (Sub Aqueous)	As required
Items No. 11 through 15 are distributed by: PPS (Plastic Piping Systems) McGraw Court, Columbia, MD 21046 (410) 995-6758		
16	316 Stainless Steel Split Ring Pipe support brackets Gravity Pressure	3 2
Item No. 16 is manufactured by Penn Pipe Hangers, 4501 Aramingo Ave., Philadelphia, PA 19124 1 (800) 742-8437		
17	Metallic Plastic Marker Tape	As required
Item No. 17 is manufactured by: Allan Co., Inc., 1803 McGowen St. Houston, Texas 77004 (713) 659-5468		
18	1 1/2" Bronze Ball Curb Valve	1
19	Valve Stem Extension with Teehead	Length as required

Item No. 18 and 19 are manufactured by: Ford Co. distributed by
Municipal and Contractor Sales, 2930 Industrial Park Drive,
Finksburg, MD 21048 (410)833-4300

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED	REFERENCE STEP & GRAVITY SEPTIC TANK DESIGN CONCRETE GRAVITY SERVICE INSTALLATION NOTES	REVISED	<u>SS</u> G-2b
	_____		_____	
	CHIEF ENGINEER		_____	
	_____		_____	
	DESIGN ENGINEER			
	DATE:			

ITEM NUMBER	ITEM DESCRIPTION	QUANTITY
20	Plastic Valve Box with Cast Iron Cover Item No. 20 is manufactured by: Bingham & Taylor, P.O. Box 939, Culpepper, VA 22701 (703)825-8334	1
21	4" Diameter Cleanout Gravity Tank Pressure Tank Item No. 21 is distributed by: PPS (Plastic Piping Systems), McGraw Court, Columbia, MD 21046 (410) 995-6758	2 1

C. MISCELLANEOUS COMPONENTS

ITEM NUMBER	ITEM DESCRIPTION	QUANTITY
22	Rubber Butyl Compression Seal Item No. 22 is manufactured and distributed by: Press Seal Gasket Corp., Concrete Products Supply Co., P.O. Box 10482, Fort Wayne, Indiana 46852 1 (800) 348-7325	As required
23	Non Shrink Grout Item No. 23 is manufactured and distributed by National Permacrete Co., Inc., P.O. Box 886, Devon, PA 19333	As required
24	Coal Tar Epoxy Item No. 24 is manufactured by: Themec Co., Inc., and distributed by: C. Distler Co., Inc., 302 W. Cary St., Richmond, VA 23220 BALTIMORE METRO (301) 467-2435	As required
25	Caution Label for Riser Cover "CAUTION: HAZARDOUS ATMOSPHERE DO NOT ENTER" All Tanks Item No. 25 is distributed by: Lab Safety Supply, Inc., P.O. Box 1368, Jacksonville, WI 1 (800) 356-2501	1
26	1/2" Polypropylene Rope with stainless Steel Lifting Hoops at each end for pump, Pressure Tank Only	1
27	4" x 18" x 18" Masonry Pump Stand Items No. 26 and 27 are distributed by: Bowen Farm Supply, 2550 Riva Road, Annapolis, MD (410) 224-3340	1
28	AASHTO #57 aggregate or equal All Tanks	As required
29	Chicago Locks Model No. 2313 (one each for control panel and disconnect switch)	2

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED	REFERENCE STEP & GRAVITY SEPTIC TANK DESIGN CONCRETE GRAVITY SERVICE INSTALLATION NOTES	REVISED	SS G-2c
	_____		_____	
	CHIEF ENGINEER		_____	
	_____		_____	
	DESIGN ENGINEER			
	DATE:			

GENERAL NOTES

1. All construction shall be accomplished in accordance with Anne Arundel County "Specification for Construction" and "Standard Details" (September 1988 and amended) unless noted otherwise.
2. No modifications or alterations are to be made to the septic tank systems without the written approval of the Anne Arundel County Department of Public Works.

SEPTIC TANK INSTALLATION NOTES

1. The tank shall be located so that the following minimum conditions are met:
 - a. All tanks – Contractor/Homeowner shall provide a maintenance easement prepared by a licensed surveyor showing the precise routing of the pipeline from the tank to the in-street collection line.
 - b. Gravity tanks – locate the tank such that pipe slope shall be 2% (two percent) minimum between the house and the tank and 1% (one percent) minimum between the tank and the street. Fall through the tank is 3 inches. Minimum cover shall be 2 feet below finish grade to top of pipe.
 - c. Pressure tanks – Provide 3'-6" minimum cover over the discharge pipe between the tank and the street.
2. Excavate for new septic tank to undisturbed earth. Provide dewatering system so that excavation remains dry.
3. Install 6" minimum leveling bed of ASSHTO #57 aggregate.
4. Tank shall be installed level and at an elevation such that the top of the riser (minus lid) shall be 4-8 inches above surrounding grade. A working tolerance of 3/16 inch per foot out of level will be allowed.
5. Backfill shall be placed around the tank so as to provide uniform support. Backfill shall be compacted in 8 inch layers to 95 percent compaction of the standard proctor of the backfill material utilized.
6. Install concrete masonry units (C.M.U.s) such that the tops of the C.M.U.s are below the centerline (springline) of the tank. Pretension the polypropylene ropes as indicated on the Drawings. Polypropylene ropes shall have a 4 foot long protector sleeve where they pass through C.M.U.s. Do not wrap ropes around riser.
7. Install backfill to the invert of the Inlet and outlet pipes.
8. Install pipe couplings from the tank stubs to the inlet and outlet sewer lines. The couplings shall be rigid, PVC couplings with shear strength equal to the attached piping.
9. Complete backfill operations and fill excavation to grade. Adjust septic tank risers and inlet tee extensions to grade and cap as shown on the drawings. Setting of electrical J-box, conduit elbows and concrete support pad to take place at this time on pump tanks.
10. Finished grade elevation in the vicinity of the riser and tank extension shall be 3 inches above surrounding grade.
11. Install all pump equipment for pump tank installations.
12. Run pump through two complete operations to verify proper operation of floats and controls in the presence of the Engineer/Inspector. Demonstrate removal of pump from the tank without the need to disconnect cables at J-box. Once pump is removed, demonstrate complete removal of pump basket from the tank without obstruction.
13. The HDPE septic tanks shall be vacuum tested for leaks following assembly and the connections of all pipes and conduits. Following the plugging of all pipes and the sealing of all other entrances as specified, the structures shall be tested by drawing a vacuum of four inches of mercury. Suitable plugs and equipment must be supplied by the Contractor for the purposes of the test. An acceptable test shall be one in which the vacuum loss following evacuation is zero over a five minute period.
14. Metallic detection tape shall be installed in all pipe trenches at a depth of 1 foot below grade.
15. Final curb valve locations shall be clearly marked on record drawings and referenced by distance (in feet) from the tank riser to valve box location.

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED	REFERENCE STEP & GRAVITY SEPTIC TANK DESIGN HDPE TANK, PRESSURE SERVICE INSTALLATION NOTES	REVISED	SS G-3a
	_____		_____	
	CHIEF ENGINEER		_____	
	_____		_____	
	DESIGN ENGINEER			
	DATE:			

A. PRESSURE HDPE SEPTIC TANK COMPONENTS

ITEM NUMBER	ITEM DESCRIPTION	QUANTITY
1	High density polyethylene (HDPE) 1,000 gallons septic tank with pump insert Romar I&A, severe duty step tank	1
2	4" Diameter inlet structure	1
3	6" Diameter pump out with cap	1
4	Adapt-A-Flex Seals - Inlet Outlet Pump Out Electrical	1 1 1 1
5	One length of wide pitch corrugated riser (green)	1
6	Domed polyethylene riser cover (green)- UV inhibited, double rib reinforced	1
7	Riser cover tamper proof self-tapping screws #14 x 1 1/2" stainless steel pan head drilled spanner	6
8	Lid gasket - adhesive backed	1
9	Riser to tank gasket - "Conseal" Asphalt-based mastic	1 roll
10	Stainless steel screws and washers to attach riser to tank	20

Items Nos. 1 through 10 are manufactured
by A.K. Industries, Inc., 2055 Pidco Drive,
Plymouth, Indiana 46563 (219) 936-6022.

B. ELECTRICAL COMPONENTS - PRESSURE TANKS ONLY

ITEM NUMBER	ITEM DESCRIPTION	QUANTITY
11	Submersible Effluent Pumps 1/3 or 1/2 HP Goulds Model 3885 WED 311M (1/3) or WED511HH (1/2)	1
12	6-foot Electrical Service Loop	1
13	Polypropylene Mini-Floats High Water Pump On Pump Off	3
14	26 Electrical Junction Box JX Series, rigid foam Noryl NEMA 4	1

Items No. 11 and 12 are manufactured by Goulds Pump, Inc.
and distributed by Ames/Messco, 9020 Mendenhall Court,
Suite J. Columbia, MD 21046.

Items No. 13 and 14 are manufactured by Anchor Scientific, Inc.
Box 378, Long Lake, MN 55256 (612) 473-7115.

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED	REFERENCE STEP & GRAVITY SEPTIC TANK DESIGN HDPE TANK, PRESSURE SERVICE INSTALLATION NOTES	REVISED	SS G-3b
	_____		_____	
	CHIEF ENGINEER		_____	
	_____		_____	
	DATE:			

ITEM NUMBER	ITEM DESCRIPTION	QUANTITY
15	<p>Simplex pump control panel fiberglass NEMA 4x enclosure with lockable hasp. All metal parts to be stainless steel. Enclosure shall have a submersible rating and be UV stabilized. All components shall be "UL" or "CSA" approved. Internal components shall be industrial rated and include the following:</p> <p>(a) Magnetic controller - Model CA3-12-12V with one auxiliary contact by Sprecher and Schuh.</p> <p>(b) Circuit breakers - Model No. QC1020 and QC1015, single pole by Westinghouse.</p> <p>(c) Hand/Off/Auto Toggle Switch - "Maintained" in both the hand or auto position.</p> <p>(d) High water alarm buzzer - Model No. MC-09201-Q with manual volume control by Floyd Bell.</p> <p>(e) High water alarm light - Model No. DTV3P-R-101-01 by Sprecher and Schuh.</p> <p>(f) Terminal strip shall be 6 point rated to 15 AMP.</p> <p>(g) Each control panel shall be supplied with a dead front interior shield.</p> <p>(h) Control panel sign shall be adhesive backed, non-fading. Sign shall be 3" x 5" and shall read:</p> <p>"ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS SEPTIC TANK EFFLUENT PUMP CONTROLS IN CASE OF ALARM TELEPHONE (410) 222-8400 DO NOT OPEN PANEL"</p>	1

Item No. 15 shall be as manufactured and distributed by Ames/Messco Inc., Mendenhall Court, Suite J, Columbia, MD 21046 (410) 995-6971 or Statewide Septic, Inc., 3257 Beards Point Road, Davidsonville, MD 21035 (401) 798-0431.

16	Main circuit breaker and enclosure NEMA type 3R, lockable, rainproof, safety switches with 30 AMP circuit breaker.	1
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Item No. 16 is manufactured by Square D Manufacturing Co., Towson, MD (301) 337-8448.

17	6" x 8" Quazite composite enclosure, PC style w/no base (part # PC0608BA06).	1
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18	6" x 8" PC style Quazite composite lid w/no gasket and (2) stainless steel pentahead lid bolts (part # PC0608CA00) "electric" logo on lid	1
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Item 17 & 18 are distributed by Graybar Electric 3701 E. Monument St., Baltimore, MD 21205, (410) 342-5500.

19	King #40-563 and #40-564 "one step" watertight/rainight safety wire connectors or Ideal DB Twister plus #30-260 watertight wire connectors.	as required
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20	1-1/2" Sch. 40 rigid PVC conduit & elbows.	
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21	1-1/2" Sch. 40 rigid PVC conduit as needed to suit setting of J-box.	as required
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22	1-1/2" Carlon bell ends (pvc)#e997f or equal	
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Items # 19 through 22 are distributed by Lee Electric Co., 600 West Hamburg St., Baltimore, MD 21203 (410) 752-4080.

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED	REFERENCE STEP & GRAVITY SEPTIC TANK DESIGN HDPE TANK, PRESSURE SERVICE INSTALLATION NOTES	REVISED	SS G-3c
	_____		_____	
	CHIEF ENGINEER		_____	
	DESIGN ENGINEER		_____	
	DATE:			

ITEM NUMBER	ITEM DESCRIPTION	QUANTITY
23	Spec seal firestop putty by STI Products (product # SSP-100) 36 cu. in. tube. Item No. 23 is distributed by Tristate Electric Supply Co., 2032 Industrial Dr., Annapolis, MD 21401 (410) 224-4245.	as required
24	14"x14"x3" Precast concrete pad with 6" diameter round void in center for supporting/stabilizing electric enclosure. Item 24 is manufactured by Hoyle Stone Products, Central Ave. 8 Queen Anne Rd., Mitchellville, MD (301) 249-5171.	1
25	Pad locks (Anne Arundel County Department of Public Works) Main breaker box Pump control box	1 1
Item No. 25 is to be supplied by the Anne Arundel County Department of Public Works.		

C. PIPING AND VALVE COMPONENTS

ITEM NUMBER	ITEM DESCRIPTION	QUANTITY
26	(a) 4-inch diameter Schedule 35 PVC pipe (b) 6-inch diameter SDR 35 PVC pipe	Length as required Length as required
27	1 1/2 inch diameter SDR 21 PVC pipe	Length as required
28	Morrison Bleeder valve - part #520185 or equal pressure tank only Item No. 26 through 28 are distributed by Tate Engineering Inc., 601 West Str., Baltimore, MD 21230 (410) 539-0787	1
29	1 1/2" True Union PVC ball valve - Chemtrol or equal, pressure tank only	1
30	1 1/2" True Union ball PVC check valve - Chemtrol or equal, pressure tank only	1
31	4" diameter cleanouts - gravity tank only	2
32	Weld On Primer P-70 or equal, all tanks	as required
33	Weld On Pipe Cement 711 or equal, all tanks	as required
34	4" diameter pipe adapter 4" diameter Sch. 35 PVC 12454-B-PSM. ASTM 03045, or equal or 4" diameter Fernco coupling, Part # 012859 or equal, all tanks	1
35	Pipe Joint lubricant (sub aqueous) Items No. 29 through 35 are distributed by PPS (Plastic Piping Systems), McGraw Court, Columbia, MD 21046 (410) 995-6758	as required
36	Metallic plastic marker tape Items No. 36 is manufactured by Allan Co., Inc. 1803 McGowen St., Houston, TX 77004 (713) 659-5468	as required
37	1 1/2" Bronze ball curb valve	1
38	Valve stem extension with Tee Head Items No. 37 and 38 are manufactured by Ford Co. distributed by Municipal and Contractor Sales, Inc., 2930 Industrial Park Drive, Finksburg, MD 21048 (410) 833-4300	Length as required

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED	REFERENCE STEP & GRAVITY SEPTIC TANK DESIGN HDPE TANK, PRESSURE SERVICE INSTALLATION NOTES	REVISED
	_____ CHIEF ENGINEER		_____ SS
	_____ DESIGN ENGINEER		_____ G-3d
	DATE:		

ITEM NUMBER	ITEM DESCRIPTION	QUANTITY
39	Plastic valve, box with cast iron cover	1
	Item No. 39 is manufactured by Bingham and Taylor, P.O. Box 939, Culpeper, VA 22701 (703) 825-8334	

D. MISCELLANEOUS COMPONENTS

ITEM NUMBER	ITEM DESCRIPTION	QUANTITY
40	Caution table for riser cover "Caution: HAZARDOUS ATMOSPHERE DO NO ENTER" All tanks	1
	Item No. 40 is distributed by Lab Safety Supply, Inc., P.O. Box 1368, Jacksonville, WI, 1-800-356-2501	
41	1/2" polypropylene rope with stainless steel lifting hoops at each end for pump. Pressure tank only	1
42	1/2" stainless steel cable clamps	5
43	8"x8"x16" (2) hole CMU's All tanks	12
44	1/2" polypropylene rope All tanks	as required
45	1" Heavy duty general purpose rubber or vinyl hose	as required
	Items No. 41 through 45 are distributed by Bowen Farm Supply, 2550 Riva Rd., Annapolis, MD 21401 (410) 224-3340	
46	AASHTO #67 aggregate All tanks	as required
	Item No. 46 is distributed by Genstar Stone Products Co., Hunt Valley, MD (410) 527-4000	
47	Geotextile Material	as required

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED	REFERENCE STEP & GRAVITY SEPTIC TANK DESIGN HDPE TANK, PRESSURE SERVICE INSTALLATION NOTES	REVISED	SS G-3e
	_____		_____	
	CHIEF ENGINEER		_____	
	_____		_____	
	DATE: _____			
	DESIGN ENGINEER			

GENERAL NOTES

1. All construction shall be accomplished in accordance with Anne Arundel County "Specification for Construction" and "Standard Details" (September 1988 and amended) unless noted otherwise.
2. No modifications or alterations are to be made to the septic tank systems without the written approval of the Anne Arundel County Department of Public Works.

SEPTIC TANK INSTALLATION NOTES

1. The tank shall be located so that the following minimum conditions are met:
 - a. All tanks – Contractor/Homeowner shall provide a maintenance easement prepared by a licensed surveyor showing the precise routing of the pipeline from the tank to the in-street collection line.
 - b. Gravity tanks – locate the tank such that pipe slope shall be 2% (two percent) minimum between the house and the tank and 1% (one percent) minimum between the tank and the street. Fall through the tank is 3 inches. Minimum cover shall be 2 feet below finish grade to top of pipe.
 - c. Pressure tanks – Provide 3'-6" minimum cover over the discharge pipe between the tank and the street.
2. Excavate for new septic tank to undisturbed earth. Provide dewatering system so that excavation remains dry.
3. Install 6" minimum leveling bed of ASSHTO #57 aggregate.
4. Tank shall be installed level and at an elevation such that the top of the riser (minus lid) shall be 4-8 inches above surrounding grade. A working tolerance of 3/16 inch per foot out of level will be allowed.
5. Backfill shall be placed around the tank so as to provide uniform support. Backfill shall be compacted in 8 inch layers to 95 percent compaction of the standard proctor of the backfill material utilized.
6. Install concrete masonry units (C.M.U.s) such that the tops of the C.M.U.s are below the centerline (springline) of the tank. Pretension the polypropylene ropes as indicated on the Drawings. Polypropylene ropes shall have a 4 foot long protector sleeve where they pass through C.M.U.s. Do not wrap ropes around riser.
7. Install backfill to the invert of the inlet and outlet pipes.
8. Install pipe couplings from the tank stubs to the inlet and outlet sewer lines. The couplings shall be rigid, PVC couplings with shear strength equal to the attached piping.
9. Complete backfill operations and fill excavation to grade. Adjust septic tank risers and inlet tee extensions to grade and cap as shown on the drawings. Setting of electrical J-box, conduit elbows and concrete support pad to take place at this time on pump tanks.
10. Finished grade elevation in the vicinity of the riser and tank extension shall be 3 inches above surrounding grade.
11. Install all pump equipment for pump tank installations.
12. Run pump through two complete operations to verify proper operation of floats and controls in the presence of the Engineer/Inspector. Demonstrate removal of pump from the tank without the need to disconnect cables at J-box. Once pump is removed, demonstrate complete removal of pump basket from the tank without obstruction.
13. The HDPE septic tanks shall be vacuum tested for leaks following assembly and the connections of all pipes and conduits. Following the plugging of all pipes and the sealing of all other entrances as specified, the structures shall be tested by drawing a vacuum of four inches of mercury. Suitable plugs and equipment must be supplied by the Contractor for the purposes of the test. An acceptable test shall be one in which the vacuum loss following evacuation is zero over a five minute period.
14. Metallic detection tape shall be installed in all pipe trenches at a depth of 1 foot below grade.
15. Final curb valve locations shall be clearly marked on record drawings and referenced by distance (in feet) from the tank riser to valve box location.

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED	REFERENCE STEP & GRAVITY SEPTIC TANK DESIGN HDPE TANK, GRAVITY SERVICE INSTALLATION NOTES	REVISED	<u>SS</u> G-4a
	_____		_____	
	CHIEF ENGINEER		_____	
	_____		_____	
	DESIGN ENGINEER		_____	
	DATE:			

A. GRAVITY HDPE SEPTIC TANK COMPONENTS

ITEM NUMBER	ITEM DESCRIPTION	QUANTITY
1	High Density Polyethylene (HDPE) 1,000 Gallon Septic Tank with Pump Insert, Romar I&A, Model SDG Severe Duty	1
2	4" diameter inlet structure	1
3	4" diameter outlet structure	1
4	6" diameter pump out with cap	1
5	Adapt-A-Flex Seals Inlet Outlet Pump Out	1 1 1
6	One length of wide pitch corrugated riser (green)	1
7	Domed polyethylene riser cover (green) UV inhibited, double rib reinforced	1
8	Riser Cover Tamper Proof Self-Tapping screws #14 x 1 1/2" Stainless Steel Pan Head Driller Spanner.	6
9	Inner Access Cover	1
10	Lid Gasket - Adhesive Backed	1
11	Riser-to-Tank Gasket - "Conseal" Asphalt based mastic	1 roll
12	Stainless Steel screws and washers to attach riser to tank	20

Item No.s. 1 through 12 are manufactured by:
A.K. Industries, Inc. , 2055 Pidco Drive,
Plymouth, Indiana 46563 (219)936-6022

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED	REFERENCE STEP & GRAVITY SEPTIC TANK DESIGN HDPE TANK, GRAVITY SERVICE INSTALLATION NOTES	REVISED	<u>SS</u> G-4b
	_____		_____	
	CHIEF ENGINEER		_____	
	_____		_____	
	DESIGN ENGINEER			
	DATE:			