ANNE ARUNDEL COUNTY
MARYLAND

DEPARTMENT OF PUBLIC WORKS

CHAPTER II

REFERENCE DRAWINGS
for
WET/DRY WELL AND
SUBMERSIBLE
PUMPING STATIONS

January 2001
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1 1/2" BITUMINOUS CONCRETE SURFACE COURSE (SF)

3 1/2" BITUMINOUS CONCRETE BASE COURSE (BF)

6" COMPACTED BASE COURSE (CR-6)

FILTER CLOTH

FENCE POST

6" CONCRETE MOWING STRIP WITH EXPANSION JOINTS

SLOPE TO DRAIN

6x6-W6xW6 W.W.F.

MINIMUM 6" THICK CONCRETE

PLAN VIEW

10'-0" MAX.

REFERENCE SEWAGE PUMPING STATION DESIGN

SITE PAVING DETAIL

PS C1-1

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS

APPROVED CHIEF ENGINEER DESIGN ENGINEER

DATE:

Published: 01/01 Revised:
TYPICAL CANTILEVER SLIDING GATE
NOT TO SCALE

TYPICAL ROLLER ASSEMBLY
NOT TO SCALE

EXTENSION FOR GATE STOP - BOTH ENDS

NOTE: MOVABLE GATE FRAMING TO BE ALUMINUM

LOCK
ROLLER (TYP.)

MALLEABLE ROLLER
NOTE: ACCESS ROAD SHOULDERS SHALL BE 2' WIDE ON BOTH SIDES AND CONSIST OF 7" MINIMUM DEPTH COMPACTED CR-6 WITH MINIMUM 2" WHITE TEXAS STONE ON TOP.
TRENCH WIDTH, W, PER TYPICAL TRENCH DETAIL

TRENCH BACKFILL PLACED AND COMPACTED IN 8" LAYERS

SHAPE COMPACTED PIPE BEDDING TO CONFORM TO PIPE, MINIMUM WIDTH 6/10 PIPE O.D.

CAREFULLY COMPACTED TRENCH BACKFILL PLACED IN 6" LAYERS, MIN. 2'-0" OVER PIPE.

GRAVITY SEWER OR D.I.P. FORCE MAIN

EXCAVATION AND COMPACTED STONE REFILL FOR TRENCH SUBGRADE STABILIZATION, WHERE DEEMED NECESSARY BY THE ENGINEER, 18 INCHES DEPTH TYPICAL, OR AS ORDERED BY THE ENGINEER.

COMPACTED STONE BEDDING WHERE ORDERED BY THE ENGINEER

WHERE STONE BEDDING IS USED, MINIMUM OF 6" BELOW BARREL AND 4" BELOW BELL

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REFERENCE SEWAGE PUMPING STATION DETAIL
PIPE BEDDING DETAIL

Published: 01/01 Revised:
SEDIMENT AND EROSION

PROJECT SPECIFIC

WET/DRY WELL  X  SUBMERSIBLE  X

REFERENCE SEWAGE PUMPING STATION DESIGN
CIVIL
SEDIMENT AND EROSION

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF ENGINEER

DESIGN ENGINEER

DATE

APPROVED

REVISED

PS
C-2
PLAN—PUMP STATION BUILDING

NOTE:
THE BUILDING DIMENSIONS ARE FOR A 100 KW GENERATOR AND 275 GALLON FUEL TANK. BUILDING DIMENSIONS FOR OTHER SIZE GENERATORS AND FUEL TANKS SHALL BE MODIFIED ACCORDingly.
REFERENCE SEWAGE PUMPING STATION DESIGN
BUILDING ELEVATION 1

NOTE: COLORS TO BE SELECTED BY THE OWNER (COUNTY OPERATIONS BUREAU PERSONNEL)
PRE-FINISHED ALUMINUM CONTINUOUS RIDGE VENT

COMPOSITION SHINGLES

PRE-FINISHED ALUM. GUTTER & DOWNSPOUT
(DRAINAGE MUST FLOW IN SUCH A MANNER AS NOT TO CAUSE A SLIP HAZARD DURING COLD WEATHER)

TREATED 2" x 8" RAKE BOARD CLAD IN PRE-FINISHED ALUM.
TYPICAL ALL EXTERIOR TRIM

DIESEL FUEL FILL AND VENT PIPE INSTALLED AT ACCESSIBLE HEIGHT FOR FILLING (MAX. 5' ABOVE GROUND) TERMINATE FILL PIPE BELOW VENT OPENING.

FACE BRICK

NOTE:
1. SEE SITE GRADING PLAN FOR DOWN SPOUT LOCATIONS.
2. COLORS TO BE SELECTED BY THE OWNER (COUNTY OPERATIONS BUREAU PERSONNEL)

ELEVATION

REFERENCE SEWAGE PUMPING STATION DESIGN
BUILDING ELEVATION 2
NOTE: COLORS TO BE SELECTED BY THE OWNER
(COUNTY OPERATIONS BUREAU PERSONNEL)

1'-0"x1'-0" PRE-FINISHED ALUM. EXHAUST LOUVER

GENERATOR EXHAUST PIPE

FACE BRICK

4'-0"x5'-6" PRE-FINISHED ALUM. EXHAUST LOUVER

ELEVATION 3

REFERENCE SEWAGE PUMPING STATION DESIGN
BUILDING ELEVATION 3
TREATED 2" x 8" RAKE BOARD CLAD IN PRE-FINISHED ALUM. TYPICAL ALL EXTERIOR TRIM.

FACE BRICK

ELEVATION 4

NOTE: COLORS TO BE SELECTED BY THE OWNER (COUNTY OPERATIONS BUREAU PERSONNEL)

REFERENCE SEWAGE PUMPING STATION DESIGN
BUILDING ELEVATION 4

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DATE:

REVISED

PS A1-5
NOTE: COLORS TO BE SELECTED BY THE OWNER
(COUNTY OPERATIONS BUREAU PERSONNEL)
NOTE: COLOR OF BRICK TO BE SELECTED BY THE OWNER.
REFERENCE SEWAGE PUMPING STATION
EAVE DETAIL

COMPOSITION SHINGLES (30 YR. LIFE) OVER 2 PLYS OF 15LB. ROOFING FELT

3/4" APA RATED PLYWOOD SHEATHING EXPOSURE
W/ PLYCLIPS

PRE-FIN. ALUM. GUTTER W/ FASCIA BRACKETS AT 3'-0"
O.C. AND PRE-FIN. DOWNSPOUT W/HANGERS (ONE
AT TOP, ONE INTERMEDIATE, AND ONE AT BOTTOM)

CONTINUOUS PRE-FINISHED ALUMINUM SCREENING

TREATED 2" X 8" TRIM W/ PRE-FIN.
PREFORMED ALUM. FASCIA

15 POUND FELT OVER HORIZONTAL
JOINT REINFORCEMENT

1 1/2" CONT. VENT

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PUBLIC WORKS

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REFERENCE SEWAGE PUMPING STATION
EAVE DETAIL

REVISED

1-16-01

P
A1-8
TREATED 2" x 10" WIDE PLATE W/ 1/2"-Ø ANCHOR BOLTS @ 4'-0" O.C. (TYP.)

DRIP EDGE

TREATED 2" x 8" TRIM W/ PRE-FIN.
PRE-FORMED ALUM. FASCIA

15 POUND FELT OVER HORIZONTAL
JOINT REINFORCEMENT

REFERENCE SEWAGE PUMPING STATION
RAKE DETAIL
TYPICAL DETAIL OF WALL PENETRATION
FOR GENERATOR EXHAUST PIPE

SCHEDULE 40 EXHAUST PIPE SIZE AS RECOMMENDED BY GENERATOR SET MFG.

ESCUTCHEON PLATE

INNER SLEEVE, SCH. 40 2 x EXHAUST PIPE DIA.

EXHAUST THIMBLE ASSEMBLY

STAINLESS STEEL BIRD SCREEN OVER MITERED PIPE END

CAULK ALL AROUND

6" MIN 10" MIN. 10" MIN.

FACE BRICK

WEEP TUBE

CMU LINTEL

ANGLE LINTEL

VENT PERFORATIONS ALL AROUND, BOTH ENDS.

METAL OUTER SLEEVE, PTD. 3 x EXHAUST PIPE Ø
MASONRY WALL

PROVIDE 3/16" Ø STAINLESS STEEL EXPANSION BOLTS @ 2'-0" ON CENTER TO SECURE ALUM. TO MASONRY AND 3/16" Ø SELF TAPPING S.S. SCREWS TO SECURE ALUM. TO ALUM.

1-1/2" x 1-1/2" x 3/16" ALUMINUM ANGLES CONTINUOUS AT HEAD, JAMB, AND SILL INSIDE AND OUTSIDE FACE OF LOUVER (PRE-FIN. ANGLES TO MATCH LOUVER)

PRE-FINISHED LOUVER

TYPICAL DETAIL OF REMOVABLE LOUVER AT GENERATOR ROOM
THICKENED SLAB DETAIL

SCALE: 3/4" = 1'-0"

INTERIOR WALL

ADDITIONAL LAYER OF W.W.F.

6" MIN.
PROJECT SPECIFIC

PROJECT SPECIFIC

6" MIN.
PRECAST WET WELL MFR. DESIGN

CAST IN PLACE CONC. COVER SLAB, DESIGN TO ACCOMODATE OPENINGS

SEE DETAIL A ON DRAWING S1-5

LENGTH, WIDTH & DEPTH AS REQUIRED

SEE DETAIL B ON DRAWING S1-6

CAST IN PLACE CONCRETE BASE SLAB, DESIGN TO ACCOMODATE WET WELL
DETAIL - A

(WET WELL BASE)

G. 3/4" Ø A307 ANCHOR BOLT
LENGTH AS REQUIRED
(MINIMUM OF 12 REQUIRED -
equally spaced around
perimeter)
**Detail - B**

(for 10’Ø and larger wet wells)

- **Reinforced Conc.** Press Pipe Wet Well Wall
- **Anti-Seep Collar**
  - #4 Bars Cont. (Typ.)
- **L8” x 6” x 3/4” x 8” Long**
- **1”Ø Wedge Type Insert w/ 4 1/2” Min. Embed. (Hilti Kwik-Bolt or Approved Equal)**
- **3/4”Ø A307 Anchor Bolt, 2’-8” Long (12 Required Equally Spaced Around Perimeter)**
- **Top of Base Slab**

**Notes:**

- **Note A:** Waterproof anti-seep collar, including hold down angle, with bituthene membrane per manufacturer’s specifications.
- **Note B:** Coat slab and precast pipe w/ epoxy bonding compound before placing concrete.

---

**Reference Sewage Pumping Station Design Wet Well Base**
STRUCTURAL NOTES

SPECIFICATIONS
ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE ANNE ARUNDEL COUNTY DEPT. OF PUBLIC WORKS "STANDARD DETAILS AND SPECIFICATIONS FOR CONSTRUCTION DATED SEPTEMBER 1988 INCLUDING ALL REVISIONS AND ADDENDA, AND ALL APPLICABLE OSHA STANDARDS.

CONCRETE DESIGN: SERVICE LOAD DESIGN METHOD, FC=1350 PSI
REINFORCED STEEL DESIGN: FS=24,000 PSI
STRUCTURAL STEEL DESIGN: ELASTIC DESIGN METHOD

FOUNDATIONS
ALL FOUNDATION DESIGNS ARE BASED ON AN ASSUMED MINIMUM SAFE SOIL BEARING PRESSURE OF 2,000 PSF. THE CONTRACTOR SHALL VERIFY THE SOIL BEARING PRESSURE BEFORE CONSTRUCTION COMMENCES AND SHALL IMMEDIATELY CONTACT THE ENGINEER IF THE ACTUAL SOIL BEARING PRESSURE DOES NOT MEET THE ASSUMED MINIMUM DESIGN VALUE.

FOOTINGS
THE BOTTOMS OF ALL FOOTINGS SHALL BE AT LEAST 2'-6" BELOW FINISHED GRADE. ALL FOOTINGS SHALL BE UPON UNDISTURBED SOIL OR THOROUGHLY COMPACTED FILL. ALL DISTURBED SOIL UNDER FOOTINGS SHALL BE REPLACED BY S.H.A. MIX NO. 1 CONCRETE.

CONCRETE
ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH ACI 318-95. ALL STRUCTURAL CONCRETE SHALL BE S.H.A. MIX NO. 2 WITH A MINIMUM 28 DAY STRENGTH OF 3,000 PSI. CONCRETE NOTED AS S.H.A. MIX NO. 1 SHALL HAVE A MINIMUM 28 DAY STRENGTH OF 2,500 PSI. ALL EXPOSED CORNERS SHALL BE CHAMFERED, 3/4"x3/4".

REINFORCED STEEL
REINFORCING STEEL BARS SHALL CONFORM TO A.S.T.M. A-615 GRADE 60. WELDED WIRE MESH SHALL BE IN CONFORMANCE WITH A.S.T.M. A-185. UNLESS OTHERWISE NOTED, ALL SPLICES SHALL BE IN ACCORDANCE WITH ACI 318-95. UNLESS OTHERWISE INDICATED, THE MINIMUM COVER SHALL BE 2".

STRUCTURAL STEEL
ALL STRUCTURAL STEEL SHALL BE A.S.T.M. A-36. SEE SPECIAL PROVISIONS.

ALUMINUM
SEE SPECIAL PROVISIONS.

LINTELS
CMU LINTELS ARE PRECAST CONCRETE, SEE SPECS. FOR BRICK VENEER SUPPORT ACROSS OPENINGS, PROVIDE LOOSE ANGLE LINTELS WITH 3 1/2" LEG HORIZONTAL AS FOLLOWS:
OPENINGS TO 3'-6"  3"x3  1/2"x1/4" ANGLE
OPENINGS 3'-7" TO 5'-0"  4"x3  1/2"x5/16" ANGLE
OPENINGS 5'-1" TO 7'-11"  5"x3  1/2"x3/8" ANGLE
ALL ANGLES SHALL HAVE A 6" MINIMUM BEARING.
2 ALUMINUM ANGLES 2"x2"x1/4" WELDED TOGETHER

TYP. BAND BARS THROUGHOUT

CONTINUOUS BENT CIRCULAR ALUMINUM ANGLE 3"x3"x1/4"

ALUMINUM R BEAM POCKET, ANCHOR TO WALL

STAINLESS STEEL 1/2"# FLAT HEAD MACHINE SCREWS IN EXP. SHIELDS 18" O.C.

REMOVABLE GRATING

ALUMINUM GRATING SUPPORT BEAM

FIXED GRATING

REFERENCE SEWAGE PUMPING STATION DETAIL

GRATING DETAIL

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS

APPROVED

CHIEF ENGINEER

DATE:

DESIGN ENGINEER

REVISED

PS
S2-1

Published: 01/01   Revised:
PIPE CAP W/HANDLE (TYP.) REMOVABLE

LADDERSIGN CLIMBING RAIL, IF REQUIRED
SAFETY EXTENSION POLES

3/4"Q STAINLESS STEEL EXPANSION BOLT (TYP.)
UPPER SOCKET
SEE RUNG DETAIL
1-1/4"G ALUM. PIPE
LOWER SOCKET
LOCKING SLOT

12" O.C. (TYP)

TENSION SPRING (TYP.)

ALUMINUM STRINGER
FB 3" X 3/8"

ALUMINUM L 4"X3"X3/8" XO'-2 1/2" WELD TO STRINGER

ELEVATION

RUNG DETAIL

1"Q. RUNG WITH SERRATED TREAD WELDED TO STRINGER (TYP.)

SAFETY EXTENSION POLE
UPPER SOCKET (TYP.)
1-1/4"G ALUM. SAFETY EXTENSION POLE (TYP.)

3"X1/2" ALUM. BENT PLATE
FASTEN LADDER @ CONCRETE TOP SLAB AND ALUMINUM GRATING SUPPORT.

SECTION A-A

ANNE ARUNDEL
COUNTY
DEPARTMENT OF
PUBLIC WORKS
APPROVED
CHIEF ENGINEER
DATE:

REFERENCE SEWAGE
PUMPING STATION DETAIL
LADDER AND SAFETY
EXTENSION POLE DETAIL

REvised
S2-2

Published: 01/01 Revised:
I-31 of 127

2"x3/8" ALUM. BARS @ 1 1/2" O.C.

D.I.P. INFLUENT SEWER

C

L3 1/2"x3x1/4"

D D

EXTEND INFLUENT PIPE 6" INTO WET WELL TO ACCOMMODATE FUTURE INSTALLATION OF COMMUNITOR BY OWNER.

3"x3"x1/4" BENT PLATE.
WELD TO PLATE & BOLT TO WALL EA. SIDE OF BAR SCREEN W/1/2"x3" S.S. MA BOLTS 6" O.C.

NOTES:

1. ALL ALUMINUM SURFACES TO BE IN CONTACT WITH CONCRETE SHALL BE COATED WITH APPROVED BARRIER MATERIAL.

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

APPROVED

CHIEF ENGINEER

DATE:

REFERENCE SEWAGE PUMPING STATION DETAIL
BAR SCREEN PLAN VIEW

REVISED

PS S2-3A

Published: 01/01 Revised:
SECTION B-B

NOTES:
1. ALL ALUMINUM SURFACES TO BE IN CONTACT WITH CONCRETE SHALL BE COATED WITH APPROVED BARRIER MATERIAL.
NOTES

SECTION C–C

1. ALL ALUMINUM SURFACES TO BE IN CONTACT WITH CONCRETE SHALL BE COATED WITH APPROVED BARRIER MATERIAL.
1/2" F.O.S. & F.O.R.
ALUM. COVER FRAME

REMOVABLE ALUMINUM CHECKERED PLATE COVER-
1/4" THICK

CONCRETE FLOOR SLAB

SINGLE PIPE SUPPORTS
1"x1"x1/8"

Published: 01/01   Revised:
NOTE

The Contractor shall countersink the galvanized C-channel into the pressure treated timbers as shown on the plans. The width and depth of the countersunk groove shall be made within 1/2-inch of the C-channel's width and depth. Grooves constructed exceeding this tolerance will not be approved and the timbers will be removed from the project.
SECTION A-A

NOTES

1) PIPE PENETRATIONS AND ELECTRICAL CONDUIT ENTRANCE LOCATIONS SHOWN ARE APPROXIMATE AND HAVE BEEN LOCATED TO AVOID ANY PIPE PENETRATION OF THE FIBERGLASS ENCLOSURE. THE CONTRACTOR IS RESPONSIBLE FOR FIELD LOCATING ALL SLAB PENETRATIONS AND ENTRANCES TO ACCOMMODATE THE INSTALLED EQUIPMENT.

2) BLOWER ENCLOSURE INTERIOR TO INCLUDE SOUND PROOFING.

3) PIPE PENETRATIONS THROUGH THE FIBERGLASS ENCLOSURE WILL NOT BE PERMITTED.

4) ALL PIPE PENETRATIONS THROUGH THE CONCRETE SOIL ODOR FILTER PAD TO PASS THROUGH PVC PIPE SLEEVE 1” DIAMETER LARGER THAN THE PIPE PENETRATION REQUIRED. SPACE BETWEEN SLEEVE AND PENETRATING PIPE TO REMAIN OPEN.

5) ALL BLOWER INTER-CONNECTING PIPING WITHIN THE BLOWER ENCLOSURE SHALL BE SCH 80 PVC EXCEPT THE 4” DIA. INLET AND 4” DIA. DISCHARGE PIPE.
I-44 of 127

NOTE: SEE SITE PLANS FOR ORIENTATION

SECTION A-A

REFERENCE SEWAGE PUMPING STATION DESIGN
BYPASS DRAIN VALVE AND VALVE BOX DETAIL
PLAN & SECTION

Published: 01/01   Revised:
SOIL ODOR FILTER STRUCTURE

1. THE PRESSURE TREATED TIMBERS SHALL BE MARINE GRADE AND BE TREATED WITH 100% PURE OXIDE FORM OF CHROMATE COPPER ARSENATE (CCA) AT A RATE OF 2.5 LBS. CCA PER CUBIC FOOT OF WOOD. COMMON GRADE, GROUND CONTACT, PRESSURE TREATED TIMBERS WILL NOT BE APPROVED FOR USE IN CONSTRUCTING THE FILTER STRUCTURE.

2. DURING CONSTRUCTION OF THE TIMBER FILTER STRUCTURE, INDIVIDUAL TIMBERS SHALL BE PLACED SUCH THAT THE "BEST SIDE" IS FACING OUT.

3. ALL IRRIGATION PIPING SHALL MAINTAIN POSITIVE SLOPE AND DRAIN TO EITHER THE AUTOMATIC DRAIN VALVE OR THE CURB VALVE. PIPING BETWEEN THE CURB VALVE AND SOLENOID VALVE SHALL DRAIN TO THE CURB VALVE.

4. THE IRRIGATION CONTROL BOX SHALL BE INSTALLED 2 INCHES BELOW THE TOP OF THE HARDWOOD CHIPS.

5. THE RUBBER BUTYL SEALANT SHALL BE PLACED BETWEEN THE TIMBER COURSES IN ONE CONTINUOUS STRIP. WHERE IT IS NECESSARY TO JOIN MULTIPLE STRIPS OF SEALANT THE ENDS SHALL BE OVERLAPPED SUFFICIENTLY SO THAT DURING COMPRESSION THE SEALANT MATERIAL WILL FORM A SINGLE, CONTINUOUS BOND.

6. THE RUBBER BUTYL SEALANT SHALL BE PLACED SUCH THAT DURING COMPRESSION ANY EXCESS SEALANT IS PULLED TOWARDS THE INSIDE OF THE FILTER STRUCTURE. ANY MATERIAL PULLED PAST THE OUTSIDE FACE OF THE FILTER STRUCTURE SHALL BE NEATLY REMOVED. DURING REMOVAL OF ANY EXCESS SEALANT THE INDIVIDUAL TIMBERS SHALL BE PROTECTED FROM DAMAGE. DAMAGED TIMBERS SHALL NOT BE APPROVED AND WILL BE REMOVED FROM THE PROJECT.

7. THE RUBBER BUTYL SEALANT AND LAG SCREW ASSEMBLIES SHALL BE USED TO FASTEN ALL TIMBER COURSES EXCEPT THE TOP COURSE. THE TOP COURSE OF TIMBERS SHALL BE FASTENED USING GALVANIZED SPIKES AND WILL NOT REQUIRE THE RUBBER BUTYL SEALANT.

8. DURING INSTALLATION OF THE TIMBERS ALL NECESSARY PRECAUTIONS SHALL BE MADE TO ENSURE THAT INDIVIDUAL TIMBERS ARE NOT SPLIT. THIS INCLUDES DRILLING ALL PILOT AND COUNTERSINK HOLES. ALL SPLIT TIMBERS SHALL BE REMOVED FROM THE PROJECT.

9. THERE SHALL BE ONE LAG SCREW ASSEMBLY OR SPIKE LOCATED AT THE END OF EACH TIMBER. LAG SCREW ASSEMBLIES SHALL BE SPACED A MINIMUM OF 2 FEET ON CENTER.

10. ALL LAG SCREW ASSEMBLIES SHALL BE TIGHTENED TO ENSURE FULL COMPRESSION OF THE RUBBER BUTYL SEAL. THE OUTSIDE FACE OF THE TIMBERS SHOULD REVEAL LESS THAN A 1/8-INCH SPACE.

Published: 01/01  Revised:
SOIL ODOR FILTER
SECTIONS
(ABOVE OR BELOW GRADE)

ODOR FILTER PIPING
TRENCH DETAIL

DWG. S5-2

PROJECT SPECIFIC

WET/DRY WELL  X
SUBMERSIBLE  X

REFERENCE SEWAGE PUMPING STATION DESIGN
STRUCTURAL
SOIL ODOR FILTER
SECTIONS AND DETAILS

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

APPROVED
CHIEF ENGINEER

DESIGN ENGINEER

DATE:

REVISED
PS
S-5
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<td>PEAK DOMESTIC &amp; COMMERCIAL FLOW, GPM</td>
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<td>INFILTRATION @ 500 QAL/IN. DIA./MILE PIPE</td>
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<tr>
<td>DESIGN FLOW GPM</td>
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NOTE: EMERGENCY STORAGE FOR PROTECTION OF SHELLFISH AND SWIMMING WATERS SHALL BE IN ACCORDANCE WITH CURRENT MDE REQUIREMENTS.
3/4" CONDUIT
SEALING FITTING

3/4" PVC COATED
RIGID CONDUIT

3/8" NYLON TUBE

3/8" TUBE TO 1/2" PIPE
MALE CONNECTOR

1/2" STAINLESS STEEL COUPLING

1/2" STAINLESS STEEL BUBBLER PIPE

ANNE ARUNDEL
COUNTY
DEPARTMENT OF
PUBLIC WORKS

APPROVED
CHIEF ENGINEER
DATE:

REFERENCE SEWAGE
PUMPING STATION DESIGN
BUBBLER LINE TRANSITION
IN WET WELL

REVISED

Published: 01/01   Revised:
EXTEND HATCH DRAIN THROUGH CONCRETE SLAB OR WALL TO DRAIN ABOVE GRADE.
(TYPICAL ALL HATCHES)

6'-0" x 6'-0"
ACCESS HATCH

3'-0" x 6'-0"
ACCESS HATCH

6' THICK CONCRETE PAD
FLUSH WITH GRADE,
REINFORCED WITH 6X6-
W8xWG WNF

CONC. VENT PIPE ANCHOR
O.D.+16" x 8" THICK

WET WELL
VENTILATION BLOWER

EXHAUST VENT,
FRP OR PVC

REFERENCE SEWAGE PUMPING STATION DESIGN
PUMP STATION AND VALVE VAULT
(TOP SLAB)
PLAN VIEW SUBMERSIBLE
ALL PIPING WITHIN STRUCTURES TO BE FLANGED DIP UNLESS OTHERWISE NOTED. ALL PIPING SHOWN OUTSIDE STRUCTURES TO BE DIP WITH RESTRAINED MECHANICAL JOINTS.
PART D: CAM OPERATED S.S. COUPLING W/ S.S. DUST PLUG BY EVER-TITE OR EQUAL. ALSO PROVIDE A 6" X 4" ADAPTOR COUPLING. ATTACH DUST PLUG TO PART D COUPLING W/ 16" LENGTH OF BRASS CHAIN.

STAINLESS STEEL PIPE SUPPORT BRACKETS

EMERGENCY SUCTION CONNECTION (6" DIP)

12" x 12" x 10" DEEP SUMP (TYP.) (SHOWN OUT OF SECTION FOR CLARITY)

MUD VALVE (TYPICAL)

STEM SUPPORT

EXTENSION STEM (TYP.)

REFERENCE SEWAGE PUMPING STATION DESIGN
VALVE VAULT SECTION
SUBMERSIBLE
OIL TANK (TANK SHALL BE THE SMALLEST AVAILABLE SIZE TO GIVE 24 HOUR FUEL SUPPLY AT FULL LOAD FOR THE GENERATOR SIZE PROVIDED)

4'-0" W X HEIGHT REQUIRED EXHAUST AIR LOUVER

BACKDRAFT DAMPER
EXHAUST LOUVER

CONTROL ROOM EXHAUST FAN

PROVIDE ALUMINUM TRANSITION & CONNECT TO GENERATOR
FLEXIBLE CONNECTION

CONTROL ROOM

M.O.D.

ELEC. UNIT HEATER

4'-0" W X HEIGHT REQUIRED F.A. INTAKE LOUVER

1/2" F.O.S. & F.O.R. PIPING IN FLOOR TRENCH. PROVIDE ALUMINUM CHECKERED PLATE COVER, SEE DETAIL ON DRAWING S2-5

6" THICK CONCRETE CONTAINMENT DIKE

2" CAPPED CONNECTION FOR STICKING

2" FILLER CAP TURN UP 90° TERMINATE FILL BELOW TOP OF VENT (INSTALL AT ACCESSIBLE HEIGHT FOR FILLING)

2" VENT TURN UP 90°
TANK GAUGE

EMERGENCY DIESEL GENERATOR

GENERATOR ROOM

F.A. INTAKE LOUVER

M.O.D.
VENT DUCT UP TO GOOSENECK 2'-0" ABOVE GRADE. PROVIDE STAINLESS STEEL INSECT SCREEN OVER OPENING.

DUCT TO TERMINATE 2'-0" ABOVE FINISHED FLOOR. PROVIDE SCREEN OVER OPEN END DUCT.

BLOWER #2—PROVIDE PLATFORM & LODGE AS APPROVED BY COUNTY DURING CONSTRUCTION W/ (4)-1/2" Ø HANGER RODS W/VIBRATION ISOLATORS.

DEHUMIDIFIER—MOUNTED ON WALL WHERE DIRECTED BY COUNTY. EXTEND DRAIN LINE TO SUMP PUMP PIT

SUMP PUMP & PIT

VENT DUCT UP TO GOOSENECK 2'-0" ABOVE GRADE. PROVIDE INSECT SCREEN OVER OPENING. EXTEND DUCT DOWN BELOW ROOF 6" MIN.
IF VALVE DOES NOT ALLOW ShOWN MOUNTING OF LUG PLATE, INSTALL LUG PLATE ON BACKSIDE OF PIPE FLANGE.

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<th>PIPE DIA</th>
<th>MAXIMUM OPERATING PRESSURE</th>
<th>NO. OF RODS</th>
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<td>125</td>
<td>6</td>
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FURNISH A DISCHARGE PRESSURE GAUGE WITH QUICK CONNECTS.

FURNISHED BY COUNTY INSTALLED BY CONTRACTOR

SNUBBER; 1/2" QUICK CONNECT (SWAGELOK "OF" SERIES OR EQUAL).

FURNISHED AND INSTALLED BY CONTRACTOR

BALL VALVE WITH SPRING RETURN HANDLE; 1/2" SCREWED, 316SS BODY, STEM AND BALL AND TEFLOL SEAT & PACKING. SPRING RETURN HANDLE, "FULLY CLOSED" POSITION.

1/2" FEMALE NPT BODY WITH PLUG

1/2" FEMALE NPT STEM WITH PROTECTOR CAP

1/2" S.S. NIPPLE

USE NPT THREADDED CONNECTIONS ON SUCTION SIDE TAPS. USE SADDLES ON DISCHARGE SIDE TAPS.
A/C  AIR COMPRESSOR
PRV  PRESSURE REDUCING/REGULATING VALVE
R    ROTAMETER
PS   PRESSURE SWITCH
G    GAUGE

(NOT REQUIRED FOR ELECTRONIC PRESSURE SWITCH)
NOTE:
1. DIMENSIONS SHALL BE ADJUSTED TO SUIT PIPE SIZE.
FERROUS SULFATE STORAGE
AND FEED SYSTEM –
PLAN VIEW

DWG. M3-1

SECTION

DWG. M3-2

SECTION

DWG. M3-3

NOMENCLATURE

DWG. M3-4

WET/DRY WELL  X

SUBMERSIBLE  X

REFERENCE SEWAGE PUMPING STATION DESIGN
MECHANICAL
FERROUS SULFATE SYSTEM

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS

APPROVED

CHIEF ENGINEER

DATE:

DESIGN ENGINEER

REVISED

PS M-3
NOTE:
SEE DRAWING M3-4 FOR NOMENCLATURE.

REFERENCE SEWAGE PUMPING STATION DESIGN
FERROUS SULFATE STORAGE AND
FEED SYSTEM — PLAN VIEW
NOTE:
SEE DRAWING M3-4 FOR NOMENCLATURE.

SECTION B-B

REFERENCE SEWAGE PUMPING STATION DESIGN
FERROUS SULFATE SYSTEM
SECTION
NOMENCLATURE

1. DOUBLE WALL FIBERGLASS REINFORCED PLASTIC STORAGE TANK.
2. VINYLESTER LINING.
3. CHEMICAL FEED AND CONTROL UNIT (INSIDE BUILDING)
4. MOUNTING PEDESTAL WITH FLOW CALIBRATION (INSIDE BUILDING)
5. SPILL CONTAINMENT BASIN
6. FILL PORT - 2"Ø CAMLOCK COUPLING WITH CAP
7. DOUBLE WALL FILL PIPING - (2"Ø IN 4"Ø)
8. DOUBLE WALL SUCTION PIPING - (2"Ø IN 4"Ø)
9. DOUBLE WALL FEED PIPING TO INJECTION POINT - (1/2"Ø IN 1"Ø)
10. 2" PVC VENT
11. LEAK DETECTION PROBE CONNECTION POINT
12. INTERSTITIAL LEAK DETECTION PROBE
13. ATTACHED MANWAY RISER WITH 22"Ø ACCESS OPENING
14. REMOVABLE BOLTED MANWAY COVER
15. LIQUID LEVEL SIGNAL FLOATS
16. LEAK DETECTION MONITOR WITH AUDIBLE/VISIBLE ALARM & LEAK LOCATION INDICATOR
17. VISIBLE LIQUID LEVEL SIGNALS WITH AUDIBLE HIGH LEVEL ALARM
18. TIE DOWN SYSTEM
19. CONCRETE SLAB OR DEADMAN FOR FLOATATION RESISTANCE
20. CONDUIT FOR LEAK DETECTION WIRING
21. CONDUIT FOR LEVEL SIGNAL WIRE

TANK DATA

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<th>CAPACITY (GAL.)</th>
<th>DIAMETER</th>
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Published: 01/01    Revised:
SECTION A-A

- Fiberglass Blower Enclosure
- Removable Access Door (2 Required)
- Regenerative Type Soil Odor Filter Blower (Size to Suit Installation)
- Vibration Eliminator Rails (2 Required)
- Blower Electrical Supply See Electrical Details
- Pressure Gauge Assembly With Quick Disconnect
- SCH 80 PVC Union
- Fiberglass Enclosure Fasteners
- Finished Grade Slope Away From Blower Pad

REFERENCE SEWAGE PUMPING STATION DESIGN
SOIL ODOR FILTER
BLOWER ASSEMBLY - SECTION A
NOTES

DIMENSIONS PROVIDED ARE APPROXIMATE LOCATIONS. ALL FASTENING LOCATIONS SHOULD BE FIELD DETERMINED BASED ON DELIVERED EQUIPMENT.
NOTE:
SEE DRAWING E1-4 FOR LEGEND
NOTE:
SEE DRAWING E1-4 FOR LEGEND

EXPLOSION PROOF JUNCTION BOX FLUSH WITH GRADE. INSTALL 1" CONDUIT FOR FLOAT CABLES. SEAL CONDUIT TO BUILDING.

MOUNT SWITCH AT TOP OF LADDER (TYP. FOR BOTH WET & DRY WELLS)

HATCH SWITCH FOR TURNING ON BLOWER #1

TYPE "A"

WET WELL
NOTES:
1. FLOAT MAST GREATER THAN 12" FROM WALL AND MOUNTED SO NO OBSTRUCTION WILL INTERFERE WITH FLOAT MOVEMENT.
2. FLOATS LESS THAN 16" APART SHALL BE IN 90° SEPARATED VERTICAL PLANES.
3. FLOAT MAST SHALL BE LOCATED 18" FROM WET WELL LADDER OR STEPS.
**LEGEND**

- □ FLOURESCENT CEILING FIXTURE
- $ SWITCH SINGLE POLE
- ☐ DUPLEX RECEPTACLE - 20A, 125V, 3W
- --- CONDUIT & WIRING
- EXP. EXPLOSION PROOF
- M.O.D. MOTOR OPERATED DAMPER (M.O.D.)
- ☒ THERMOSTAT
- N.T.S. NOT TO SCALE
- ☒ CONTROL DEVICE
- □ DISCONNECT SWITCH
- ☒ MOTOR
- ☐ WALL MOUNTED FIXTURES - A: INCANDESCENT, B: H.I.D.
- --- FUEL OIL SUPPLY
- --- FUEL OIL RETURN
- N.O. NORMALLY OPEN
# LIGHTING FIXTURE SCHEDULE

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<td>D-1</td>
<td>WALL MOUNTED VAPORPROOF INCANDESCENT W/ GUARD &amp; WHITE GLOBE</td>
<td>150W-A-213 REQ'D</td>
<td>CROUSE-HINDS #VXHT15 GP-G*</td>
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<td>EXPLOSION PROOF INCANDESCENT - WALL MOUNTED W/ GUARD &amp; GLOBE</td>
<td>100W-A192 REQ'D</td>
<td>CROUSE-HINDS #EVEX.140*</td>
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<td>B</td>
<td>SURFACE MOUNTED FLUORESCENT - 1x4&quot;, 2 LAMPS-ABS PLASTIC HOUSING, ACRYLIC DIFFUSER, GASKETED ELECTRONIC BALLAST</td>
<td>F40-CW2 REQ'D T8</td>
<td>LITHONIA #DL240A.120*</td>
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<tr>
<td>B-1</td>
<td>SAME AS B, EXCEPT WITH LOW TEMPERATURE BALLAST</td>
<td>2 REQ'D</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>WALL MOUNTED HPS POLYCARBONATE DIFFUSER WITH PHOTO CELL</td>
<td>150W-HPS1 REQ'D</td>
<td>HUBBELL #PVC-01505-111*</td>
</tr>
</tbody>
</table>

* OR EQUAL

---

**Reference Sewage Pumping Station Design**

**Lighting Fixture Schedule**

---

Anne Arundel County Department of Public Works

Approved by:

Chief Engineer:

Design Engineer:

Date:

Revised:

PS

E1-6
REFERENCE SEWAGE PUMPING STATION
TYPICAL WET WELL ELECTRICAL CONDUIT ENTRY DETAIL

2 1/2" UNDERGROUND PVC COATED GALVANIZED STEEL CONDUIT
MEMBRANE WATERPROOFING
WET WELL WALL

SEAL ANNULAR SPACE WITH MODULAR RUBBER SEAL
INSULATING CONDUIT BUSHING

25" TO GRADE (MIN.)

MAX. 2"
EXPLOSION PROOF JUNCTION BOX
SEE DETAIL ON DRAWING E1-5
PROVIDE SEPARATE JUNCTION
BOX FOR FLOAT CABLES AND
PUMP POWER CABLES.

LOCATE AT TOP OF LADDER

N.T.S.

HATCH SWITCH

TYPE “A”

MCC-B4

#2

WASTEWATER PUMPS
480V, 3φ

#1

MCC-B3

LP1-5

NOTE:
SEE DRAWING E1-4 FOR LEGEND

VENT PIPE, DROP BELOW GRADE

BLOWER #1

MMS IN NEMA 4

LP1

REFERENCE SEWAGE PUMPING STATION DESIGN
WET WELL ELECTRICAL PLAN
SUBMERSIBLE
GORMAN-RUPP CONTROLLER

LP-1
IFU
2.6A
OFF ON

NO.1 NO.2

AP1
AP2

EPS

LR1
LR2
TD
LR3
LR4

CR10

CR10A
CR8
T.C.

ALT

CR3
CR4
SR5

REFERENCE SEWAGE
PUMPING STATION DESIGN
BUBBLER SYSTEM CONTROL DIAGRAM
(W/ELECTRIC PRESSURE SWITCHES)
WET/DRY WELL

ANNE ARUNDEL
COUNTY
DEPARTMENT OF
PUBLIC WORKS

APPROVED

CHIEF ENGINEER

DESIGN ENGINEER

DATE:

Published: 01/01 Revised:
LEGEND

△ LOCATED IN MCC SECTION C1

□ TERMINAL STRIP

● LOCATED IN WET WELL

△ LOCATED ON EXTERIOR OF BLDG.
LEGEND

▲ LOCATED IN MCC SECTION C1

□ TERMINAL STRIP

● LOCATED IN WET WELL

△ LOCATED ON EXTERIOR OF BLDG.

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS

APPROVED

CHIEF ENGINEER

DESIGN ENGINEER

REFERENCE SEWAGE PUMPING STATION DESIGN

PUMP ONE CONTROL DIAGRAM (SUBMERSIBLE)

Published: 01/01 Revised:
REMOTE MONITOR CONNECTIONS

WET WELL BLOWER AND LIGHTS

Dwg. E3-2

DWAR WELL BLOWER AND LIGHTS

Dwg. E3-3

MOTOR OPERATED DAMPER GENERATOR INTAKE LOUVER

Dwg. E3-4

MOTOR OPERATED DAMPER AND EXHAUST FAN – CONTROL ROOM

Dwg. E3-4

WET/DRY WELL  X  SUBMERSIBLE  

REFERENCE SEWAGE PUMPING STATION DESIGN

ELECTRICAL CONTROL DIAGRAMS
WET WELL BLOWER

LIMIT SWITCH MOUNTED UNDER WET WELL HATCH. N.C.—HELD OPEN WHEN HATCH IS CLOSED.

WET WELL LIGHTS

XP SWITCH LOCATED IN WET WELL
LIMIT SWITCH MOUNTED UNDER DRY WELL HATCH. N.C.—HELD OPEN WHEN HATCH IS CLOSED.

DOUBLE POLE SWITCH MOUNTED AT TOP OF DRY WELL LADDER

DRY WELL LIGHTS
THERMOSTAT (COOLING)

MOTOR OPERATED DAMPER & EXHAUST FAN - CONTROL ROOM

N.O. CONTACT IN ATS

MOTOR OPERATED DAMPER
GENERATOR INTAKE LOUVER
NOTES:
*  - LOCATED IN AUTOMATIC TRANSFER SWITCH (ATS)
■  - LOCATED IN GENERATOR ROOM
△  - LOCATED IN MCC SECTION "C1"
†  - PROVIDED WHEN STATION HAS TWO COMMERCIAL POWER SERVICES
●  - LOCATED IN WET WELL

37 POINT TERMINAL BOARD

40 CONDUCTOR, #22 AWG CABLE - 4' LONG

37 PIN CONNECTOR, AMP DB37M

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

REFERENCE SEWAGE PUMPING STATION DESIGN
REMOTE MONITOR CONNECTIONS SUBMERSIBLE

APPROVED
CHIEF ENGINEER
DATE:

REVISED
PS
E3-1B

Published: 01/01  Revised:
# Motor Control Center Schedule

## Motor Control Center Center
480/277V, 3φ, 3W, W/Ground Bus

<table>
<thead>
<tr>
<th>SECT.</th>
<th>NAMEPLATE</th>
<th>HP</th>
<th>KW</th>
<th>NEMA STARTER SIZE</th>
<th>CIRC. BRKR. FRAME</th>
<th>TRIP</th>
<th>SEL. SW.</th>
<th>IND. LT.</th>
<th>AUX. CONT.</th>
<th>OTHER</th>
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<tbody>
<tr>
<td>A1</td>
<td>Automatic Transfer Switch</td>
<td></td>
<td></td>
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<td>2-N.O.</td>
<td>2-N.O.</td>
<td>Normal (Emerg.)</td>
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<tr>
<td>A2</td>
<td>Main Breaker</td>
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<td></td>
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<td>B1</td>
<td>Unit Heater</td>
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<td></td>
<td></td>
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<td></td>
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<td></td>
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<tr>
<td>B2</td>
<td>Portable Pump</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>B3</td>
<td>Sewage Pump #1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1-Red</td>
<td>1-Green</td>
<td>ETM</td>
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<tr>
<td>B4</td>
<td>Sewage Pump #2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1-Red</td>
<td>1-Green</td>
<td>ETM</td>
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<tr>
<td>B5</td>
<td>Transformer Disconnect</td>
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<td></td>
<td></td>
<td></td>
<td>Fuse</td>
<td></td>
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<tr>
<td>C1</td>
<td>Pump Controls</td>
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</tbody>
</table>

## Reference Sewage Pumping Station Design

**Anne Arundel County Department of Public Works**

**Approved:**
- **Chief Engineer:**
- **Design Engineer:**

**Date:**

**Revised:**

**PS E4-2**
### SCHEDULE OF PANEL "LP-1"

**208/120V, 3PH, 4W 60A MAIN BREAKER**

<table>
<thead>
<tr>
<th>CIRC. NO.</th>
<th>EQUIPMENT</th>
<th>CIRC. BREAKER</th>
<th>TRIP</th>
<th>POLE</th>
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<tr>
<td>1</td>
<td>BUBBLER CONTROLS</td>
<td></td>
<td>20</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>FLOAT CONTROLS AND RTU</td>
<td></td>
<td>20</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>SPARE</td>
<td></td>
<td>20</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>LIGHTS—GENERATOR BUILDING</td>
<td></td>
<td>20</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>LIGHTS—WET WELL</td>
<td></td>
<td>20</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>RECEPTACLES—GENERATOR BUILDING</td>
<td></td>
<td>20</td>
<td>1</td>
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<tr>
<td>7</td>
<td></td>
<td></td>
<td>20</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>BATTERY CHARGER</td>
<td></td>
<td>15</td>
<td>1</td>
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<tr>
<td>9,11</td>
<td>GENERATOR JACKET WATER HEATER</td>
<td>*</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>MOD &amp; EXHAUST FAN—CONTROL ROOM</td>
<td></td>
<td>20</td>
<td>1</td>
</tr>
<tr>
<td>12</td>
<td>MOD—GENERATOR ROOM</td>
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<td>20</td>
<td>1</td>
</tr>
<tr>
<td>13</td>
<td>BLOWER—WET WELL</td>
<td></td>
<td>20</td>
<td>1</td>
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<tr>
<td>14,16,18</td>
<td>PANEL LP2</td>
<td>30</td>
<td>3</td>
<td></td>
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<tr>
<td>15</td>
<td>FLOWMETER (RECEIVER/RECORDER)</td>
<td></td>
<td>15</td>
<td>1</td>
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<tr>
<td>17</td>
<td>AIR COMPRESSOR</td>
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<td>20</td>
<td>1</td>
</tr>
<tr>
<td>19</td>
<td>SPARE</td>
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</tr>
<tr>
<td>20-24</td>
<td>SPACE</td>
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</tr>
</tbody>
</table>

* SIZE FOR HEATER WATTAGE

---

**ANNE ARUNDEL COUNTY**

**DEPARTMENT OF PUBLIC WORKS**

**APPROVED**

---

**REFERENCE SEWAGE PUMPING STATION DESIGN**

**SCHEDULE OF PANEL "LP-1"**

**WET/DRY WELL**

---

**REvised**

---

Published: 01/01 Revised:
# SCHEDULE OF PANEL "LP 2"
208/120V, 3PH, 4W MAIN LUG ONLY

<table>
<thead>
<tr>
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<th>EQUIPMENT</th>
<th>CIRC. BREAKER</th>
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<tr>
<td>1,3,5</td>
<td>MAIN</td>
<td>30</td>
</tr>
<tr>
<td>2</td>
<td>LIGHTS—DRY WELL</td>
<td>20</td>
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<tr>
<td>4</td>
<td>RECEPTACLES—DRY WELL</td>
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</tr>
<tr>
<td>6</td>
<td>BLOWER—DRY WELL</td>
<td>20</td>
</tr>
<tr>
<td>7</td>
<td>DEHUMIDIFIER</td>
<td>20</td>
</tr>
<tr>
<td>8</td>
<td>SUMP PUMP</td>
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<tr>
<td>9</td>
<td>FLOWMETER (TRANSMITTER)</td>
<td>15</td>
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<tr>
<td>10</td>
<td>SPARE</td>
<td>20</td>
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<tr>
<td>11</td>
<td>SPARE</td>
<td>20</td>
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<tr>
<td>12</td>
<td>SPACE</td>
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# Schedule of Panel "LP 1"

## 208/120V, 3PH, 4W 60A Main Breaker

<table>
<thead>
<tr>
<th>CIRC. NO.</th>
<th>EQUIPMENT</th>
<th>CIRC. BREAKER</th>
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<tbody>
<tr>
<td></td>
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<td>TRIP</td>
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<tr>
<td>1</td>
<td>BUBBLER CONTROLS</td>
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<td>2</td>
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<td>SPARE</td>
<td>20</td>
</tr>
<tr>
<td>4</td>
<td>LIGHTS—GENERATOR BUILDING</td>
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</tr>
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<td>5</td>
<td>LIGHTS—WET WELL</td>
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<td>6</td>
<td>RECEPTACLES—GENERATOR BUILDING</td>
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<td>7</td>
<td>SPARE</td>
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<tr>
<td>8</td>
<td>BATTERY CHARGER</td>
<td>15</td>
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<tr>
<td>9,11</td>
<td>GENERATOR JACKET WATER HEATER</td>
<td>*</td>
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<td>10</td>
<td>MOD &amp; EXHAUST FAN—CONTROL ROOM</td>
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<td>12</td>
<td>MOD—GENERATOR ROOM</td>
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<td>13</td>
<td>BLOWER—WET WELL</td>
<td>20</td>
</tr>
<tr>
<td>14,16,18</td>
<td>PANEL LP2</td>
<td>30</td>
</tr>
<tr>
<td>15</td>
<td>FLOWMETER (RECEIVER/RECORER)</td>
<td>15</td>
</tr>
<tr>
<td>17</td>
<td>AIR COMPRESSOR</td>
<td>20</td>
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<tr>
<td>19</td>
<td>SPARE</td>
<td>20</td>
</tr>
<tr>
<td>20–24</td>
<td>SPACE</td>
<td></td>
</tr>
</tbody>
</table>

* SIZE FOR HEATER WATTAGE

---

**Anne Arundel County Department of Public Works**

Approved by: [Signature]

**Reference Sewage Pumping Station Design**

Schedule of Panel "LP-1" Submersible

Revised: E4-3B

Published: 01/01  Revised:
NOTE: SEE DRAWING E5-18 FOR LEGEND

REFERENCE SEWAGE PUMPING STATION DESIGN
PROCESS AND INSTRUMENTATION DIAGRAM

ANNE ARUNDEL COUNTY
DEPARTMENT OF PUBLIC WORKS

APPROVED
CHIEF ENGINEER
DATE: DESIGN ENGINEER

REVISIONS

PS E5-1A
P & ID LEGEND

AS
AIR SUPPLY LINE

WS
WATER SUPPLY LINE

ES
ELECTRICAL SUPPLY

Pressure Reducing Regulator
Self Contained

Blower Motor

Hand/Off/Auto Switch

Timer

Pressure Indicator

Electrically Actuated Ball Valve

By-Pass Drain Valve with Valve Box

Irrigation Spray Valve

Published: 01/01 Revised:
NOTES

1. 3/4" C. WITH (5) #12 THWN AND (2) #12 GROUND.

2. PILOT LIGHT, OILTIGHT/WATERTIGHT, 120V TO 6V TRANSFORMER TYPE, SQUARE D #9001-KT1W9 AND LEGEND PLATE TO READ "POWER ON" SQUARE D #9001-KN238SP, OR EQUAL.

3. THREE-POSITION SELECTOR SWITCH, SQUARE D #9001-KS43BH1 WITH LEGEND PLATE #9001-KN260SP, OR EQUAL.

4. TIMING RELAY, REPEAT CYCLE TYPE, 2-DPDT 1/3 CONTACTS, 120V, 2 TO 60 MINUTE INDEPENDENTLY ADJUSTABLE ON AND OFF TIME RANGES, DUAL KNOBS, AGASTAT #SRC72A11A, OR EQUAL.

5. SPRINKLER CONTROLLER, 120V, 5A CONTACTS, ON-OFF AND MANUAL-AUTOMATIC SWITCHES, 24-HOUR TIME DIAL, 14 DAY SKIPPER FEATURE, INTERRATIC #LS7141, OR EQUAL.

6. MAGNETIC CONTRACTOR, OPEN TYPE, 120V, 1-POLE, 1HP, SIZE 0, SQUARE D #8502-SB05V02, OR EQUAL.

7. TERMINAL BLOCKS, SQUARE D CLASS 9080, OR EQUAL.

8. WHITE ON BLACK ENGRAVED PHENOLIC NAMEPLATE, 3/16" HIGH LETTERING TO READ AS SHOWN. SCREW MOUNT TO ENCLOSURE DOOR.

9. NEMA 12 ENCLOSURE 12"Hx12"Wx6"D WITH MOUNTING PAN, HOFFMAN #A-1212CH/A-12P12, OR EQUAL. MOUNT TOP AT 6'-0" ABOVE FLOOR UNLESS INDICATED OTHERWISE.

10. 3/4" C., WITH (3) #12 THWN AND (1) #12 GROUND.

11. 3/4" LIQUIDTIGHT FLEXIBLE METAL CONDUIT WITH (2) #12 THWN AND (1) #12 GROUND.

12. NEMA 4 MANUAL STARTER WITH OVERLOAD PROTECTION AND PILOT LIGHT, 115 VOLT, RATED 1HP MINIMUM, SQUARE D #2510-FW1PHG, OR EQUAL WITH CONDUIT OPENINGS TOP AND BOTTOM.
NOTE: ARRANGE ELECTRICAL INSTALLATION UNDER BLOWER ENCLOSURE TO PROVIDE EASY ACCESS TO MOTOR SWITCH WHILE MAXIMIZING ACCESS TO BLOWER.
NOTE:
SEE DRAWING E5-3 FOR ELECTRICAL NOTES.