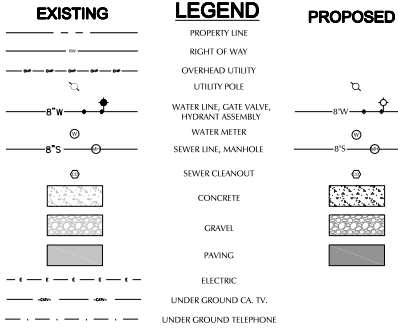


PUMP STATION REHABILITATION PROJECT CONSTRUCTION PLANS

TOWN OF GEORGETOWN GEORGETOWN HUNDRED, SUSSEX COUNTY, DELAWARE AUGUST 2024 GEO01-07

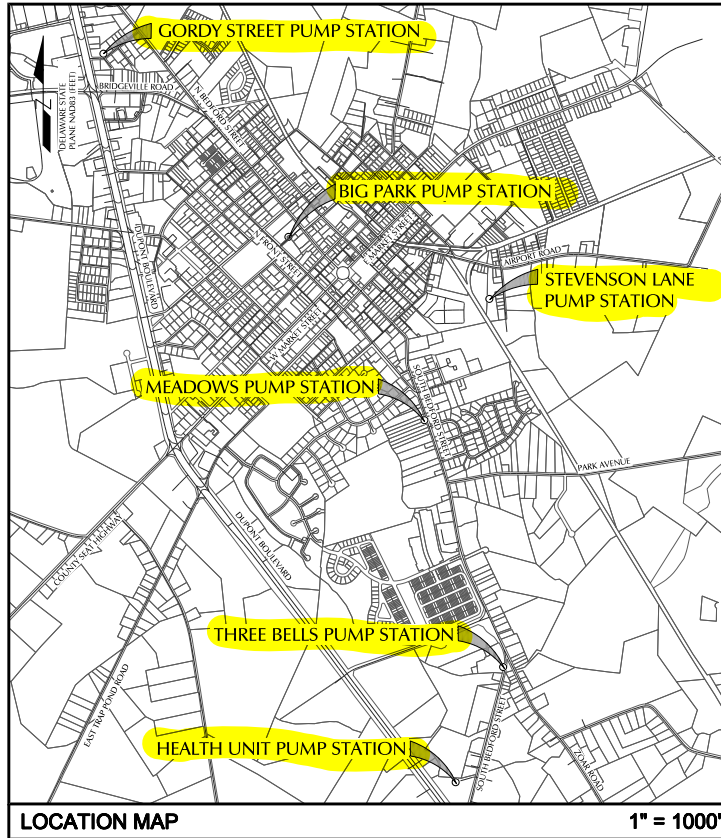


GENERAL PROJECT NOTES:

- SURVEY INFORMATION PRESENTED HEREIN IS BASED UPON FIELD MEASUREMENTS COLLECTED ON JUNE 1, 2022 AND NOVEMBER 11, 2022 AND CONSTRUCTION DRAWINGS PROVIDED BY THE TOWN OF GEORGETOWN. DATUM IS ASSUMED.
- EXISTING UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE BASED UPON THE BEST AVAILABLE INFORMATION AND ARE SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR ONLY. NO GUARANTEE IS MADE OR IMPLIED REGARDING THE ACCURACY OR COMPLETENESS THEREOF. CONTRACTOR IS RESPONSIBLE FOR THE VERIFICATION OF DEPTH, SIZE AND MATERIAL OF ALL UNDERGROUND UTILITIES BEFORE BEGINNING ANY EXCAVATION OR PIPE INSTALLATION BY TEST PITCHING. IF THE CONTRACTOR RELIES ON SAID INFORMATION, HE DOES SO AT HIS OWN RISK. PROVIDING THE INFORMATION ON THE PLANS DOES NOT RELIEVE THE CONTRACTOR OF HIS OBLIGATION TO SUPPORT AND PROTECT ALL LOCATED OR UNLOCATED EXISTING UTILITIES AND STRUCTURES. SHOULD ANY EXISTING UTILITIES BE DAMAGED BY THE CONTRACTOR, THEN THE CONTRACTOR SHALL REPAIR THE DAMAGE CAUSED TO THE OWNERS SATISFACTION, AT THE CONTRACTORS EXPENSE.
- CONTRACTOR SHALL NOTIFY MISS UTILITY AT (1-800-282-8555) AND THE TOWN OF GEORGETOWN AT (1-302-456-7291) AT LEAST 48 HOURS PRIOR TO EXCAVATION, TO HAVE EXISTING UNDERGROUND UTILITIES LOCATED AND MARKED.
- ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS, THE TOWN OF GEORGETOWN CONSTRUCTION STANDARDS AND SPECIFICATIONS FOR WATER, STORM DRAINS, SEWER, AND STREETS, PREPARED BY DAVIS, BOWEN & FRIEDEL, INC., LATEST EDITION, AND ALL APPLICABLE CONSTRUCTION PERMITS.
- CONTRACTOR TO SUBMIT SHOP DRAWINGS TO THE TOWN FOR REVIEW PRIOR TO BEGINNING CONSTRUCTION.
- CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTENANCE OF TRAFFIC IN ALL WORK AREAS.
- CONTRACTOR SHALL DETERMINE THE LOCATION OF ALL RIGHT-OF-WAY LINES AND PROPERTY LINES. ALL PROPOSED UTILITIES ARE TO BE CONSTRUCTED WITHIN THE ROADWAY OR EASEMENT RIGHT-OF-WAY.
- CONTRACTOR SHALL ADJUST TO FINISH GRADE AS REQUIRED ANY EXISTING OR NEW VALVE BOXES, MANHOLES, CATCH BASINS ETC., PRIOR TO PLACING PAVING.
- DRAWINGS DO NOT INCLUDE THE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. ALL CONSTRUCTION MUST BE PERFORMED IN COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970, AS AMENDED AND ALL RULES APPLICABLE AND REGULATIONS.
- THE CONTRACTOR SHALL ASSUME ALL RESPONSIBILITY FOR ANY DEVIATION FROM THESE PLANS UNLESS WRITTEN APPROVAL HAS BEEN PROVIDED BY THE ENGINEER.
- ALL DRIVEWAYS, CURBS, SIDEWALKS, ETC. DAMAGED BY UTILITY INSTALLATION SHALL BE RESTORED TO ORIGINAL CONDITION. COST FOR RESTORATION WORK SHALL BE INCLUDED IN THE PRICE BID. SIDEWALKS AND CURBS SHALL BE REMOVED AND REPLACED TO THE NEAREST UNDISTURBED JOINT. SAW CUT JOINT PRIOR TO REMOVAL.
- CONTRACTOR SHALL PROVIDE BY-PASS PUMPING AS NECESSARY TO CONSTRUCT THE PROPOSED IMPROVEMENTS.
- ALL PAVING, FENCING, SIGNS, OBJECTS, ETC. DAMAGED BY THE WORK SHALL BE RESTORED TO ORIGINAL CONDITION. COST FOR RESTORATION SHALL BE INCLUDED IN THE APPROPRIATE UNIT PRICE BID.
- ONLY SUITABLE AND APPROVED GRANULAR MATERIAL SHALL BE USED FOR BACKFILL.
- STATE AND FEDERAL WETLANDS DO NOT EXIST WITHIN THE PROPOSED LIMIT OF DISTURBANCE.
- DELAWARE REGULATIONS PROHIBIT THE BURIAL OF CONSTRUCTION DEMOLITION DEBRIS, INCLUDING TREES AND STUMPS ON CONSTRUCTION SITES. ANY SOLID WASTE FOUND DURING THE EXCAVATION FOR STRUCTURES AND UTILITY LINES ON AND OFF SITE MUST BE REMOVED AND PROPERLY DISCARDED.
- ALL DISTURBED AREAS, INCLUDING THE CONTRACTORS ACCESS, STORAGE AND STAGING AREA, HALL ROUTES, ETC. SHALL BE RESTORED TO A SMOOTH LINE AND GRADE EQUAL TO OR BETTER THAN THAT WHICH EXISTED PRIOR TO CONSTRUCTION. USE WAYS TO PROTECT SITE ACCESS FROM VEHICULAR DAMAGE. ROUTES BETWEEN THE SITE AND OFFSITE STAGING AREAS SHALL BE SWEEP CLEAN AND LEFT IN A NEAT AND ORDERLY MANNER AT THE END OF EACH WORK DAY.
- THE CONTRACTOR SHALL ADVISE THE ENGINEER, IN WRITING, OF ANY DAMAGED FACILITIES IN THE CONTRACTORS STAGING AND STORAGE AREA PRIOR TO THE BEGINNING OF CONSTRUCTION. ALL OTHER AREAS OF THIS PROJECT SHALL REMAIN ACCESSIBLE TO USERS OF THIS FACILITY.
- THE CONTRACTOR SHALL BE FULLY AND SOLELY RESPONSIBLE FOR THE PROTECTION OF THE PUBLIC FROM ANY CONSTRUCTION ACTIVITIES, CONSTRUCTION STAGING AREAS, OR UNFINISHED WORK AREAS AND SHALL BE RESPONSIBLE FOR MAINTENANCE OF TRAFFIC IN ALL WORK AREAS. THE CONTRACTOR SHALL ERECT BARRICADES AND POST WARNING SIGNS INDICATING THAT THE CONSTRUCTION AREAS AND STAGING AREA IS RESTRICTED TO CONSTRUCTION PERSONNEL ONLY. ALL SIGNING, TRAFFIC CONTROL AND SAFETY SHALL MEET STATE OF DELAWARE STANDARDS.
- FITTINGS SHOWN ON THE PLANS ILLUSTRATE ANTICIPATED SIZE AND ANGLE OF DEFLECTION. ANGLE MAY VARY DUE TO FIELD CONDITIONS.
- RECORD PLAN SHALL BE PROVIDED TO THE TOWN OF GEORGETOWN WITHIN THIRTY (30) DAYS AFTER COMPLETION OF CONSTRUCTION.
- CONTRACTOR SHALL PERFORM ALL CLEARING AND GRUBBING REQUIRED FOR CONSTRUCTION. DISPOSE OF CLEARED AND GRUBBED MATERIALS AT AN APPROVED OFFSITE LOCATION. THE COST OF REMOVAL AND DISPOSAL OF CLEARED AND GRUBBED MATERIALS SHALL BE INCLUDED IN THE APPROPRIATE UNIT PRICE BID.
- OWNER SHALL APPLY AND PAY FOR SERVICE UPGRADES IF WARRANTED FOR THE PROPOSED SCOPE OF WORK.
- MOTORS AND ELECTRICAL EQUIPMENT SHALL BE RATED FOR THE SERVICE VOLTAGE. STEP TRANSFORMERS TO INCREASE OR REDUCE SERVICE VOLTAGE ARE NOT ACCEPTABLE.

DRAWING INDEX:

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T1.2	GENERAL NOTES AND DETAILS
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E-01	GEORGETOWN PUMP STATION ELECTRICAL NOTES
E-02	GEORGETOWN PUMP STATION ELECTRICAL NOTES
E-03	GEORGETOWN PUMP STATION ELECTRICAL NOTES
E-04	GEORGETOWN PUMP STATION ELECTRICAL NOTES
E-05	GEORGETOWN PUMP STATION ELECTRICAL NOTES
E-06	GEORGETOWN PUMP STATION ELECTRICAL NOTES
HEALTH UNIT PUMP STATION	
HU1.1	EXISTING CONDITIONS AND DEMOLITION PLAN
HU2.1	EQUIPMENT REPLACEMENT PLAN
E-HU	ELECTRICAL EQUIPMENT REPLACEMENT PLAN
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E-ME1	ELECTRICAL EQUIPMENT REPLACEMENT PLAN
BIG PARK PUMP STATION	
BP1.1	EXISTING CONDITIONS AND DEMOLITION PLAN
BP2.1	EQUIPMENT REPLACEMENT PLAN & DETAILS
E-BP1	ELECTRICAL EQUIPMENT REPLACEMENT PLAN & DETAILS
E-BP2	ELECTRICAL EQUIPMENT REPLACEMENT PLAN & DETAILS
GORDY STREET & STEVENSON LANE PUMP STATIONS	
GS2.1	EQUIPMENT REPLACEMENT PLAN



APPROVED BY TOWN OF GEORGETOWN

EUGENE S. DVORNICK JR., TOWN MANAGER DATE

OWNER'S / DEVELOPER'S CERTIFICATION

I, THE UNDERSIGNED, CERTIFY THAT ALL LAND CLEARING, CONSTRUCTION AND DEVELOPMENT SHALL BE DONE PURSUANT TO THE APPROVED STANDARD PLAN AND THAT RESPONSIBLE PERSONNEL (I.E. BLUE CARD HOLDER) INVOLVED IN THE LAND DISTURBANCE WILL HAVE A CERTIFICATION OF TRAINING PRIOR TO INITIATION OF THE PROJECT, AT A DNRRC SPONSORED OR APPROVED TRAINING COURSE FOR THE CONTROL OF EROSION AND SEDIMENT DURING CONSTRUCTION. IN ADDITION, I GRANT THE DNRRC SEDIMENT AND STORMWATER PROGRAM AND/OR THE RELEVANT DELEGATED AGENCY THE RIGHT TO CONDUCT ON-SITE REVIEWS.

OWNER: ERIC RUST, WASTEWATER SUPERINTENDENT DATE
WASTEWATER RECLAMATION FACILITY
2402 CEDAR LANE
GEORGETOWN, DELAWARE 19947

ENGINEER'S CERTIFICATION

I, ROBERT J. PALMER, HEREBY CERTIFY THAT I AM A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF DELAWARE AND THAT THIS PLAN WAS EITHER PREPARED BY ME OR UNDER MY DIRECTION. TO THE BEST OF MY KNOWLEDGE AND BELIEF, THIS PLAN COMPLIES WITH THE APPLICABLE STATE AND LOCAL REGULATIONS AND ORDINANCES. MY LICENSE NUMBER IS 11563, AND EXPIRES ON JUNE 30, 2026.

ENGINEER: ROBERT J. PALMER, P.E. DATE

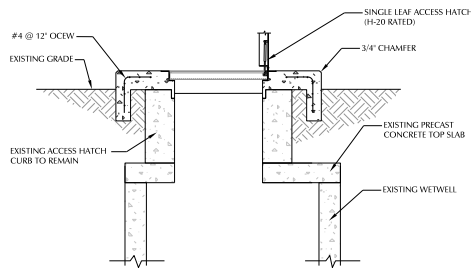


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DATE: 08/13/2024 5:59:16 PM

PUMP STATION REHABILITATION PROJECT
TOWN OF GEORGETOWN
GEORGETOWN HUNDRED
SUSSEX COUNTY, DELAWARE

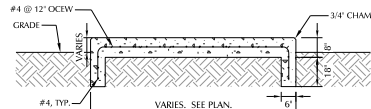
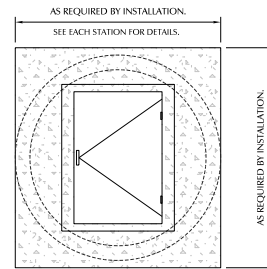
DATE: **AUG 13, 2024**
SCALE: **AS SHOWN**
DRAWN BY: **SKM**
PROJECT NO.: **GEO01-07**

DESIGN NO.: **T1.0**



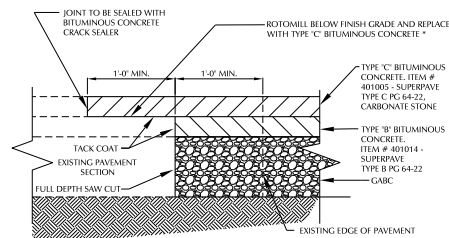
ACCESS HATCH REPLACEMENT DETAIL

NOT TO SCALE



HOUSEKEEPING PAD DETAIL

NOT TO SCALE



* REFER TO TOWN STANDARD DETAIL DB-2 FOR MINIMUM REQUIRED PAVEMENT THICKNESSES REQUIRED IN AREAS MAINTAINED BY THE TOWN OF GEORGETOWN. REFER TO DEDDOT STANDARD DETAIL P-4 FOR MINIMUM REQUIRED PAVEMENT THICKNESSES REQUIRED IN AREAS MAINTAINED BY DEDDOT.

TYPICAL PAVEMENT TIE-IN DETAIL

NOT TO SCALE

SERIES H1R ACCESS DOOR

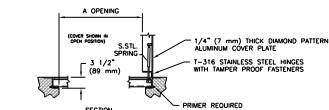
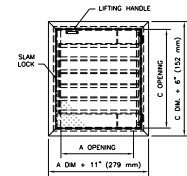
- STANDARD FEATURES:**
- +H20 LOAD RATING (SEE NOTES)
 - +EXTRUDED ALUMINUM ANGLE FRAME
 - +VENGE LEAF CONSTRUCTION
 - +AUTO-LOCK T-316 STAINLESS STEEL
 - +HOLD OPEN ARM WITH RELEASE HANDLE
 - +T-316 STAINLESS STEEL SLAM LOCK WITH REMOVABLE KEY
 - +T-316 STAINLESS STEEL SLAM LOCK WITH REMOVABLE KEY
 - +STAINLESS STEEL COMPRESSION SPRING ASSIST
 - +RECESSED LIFTING HANDLE
 - +LIFETIME GUARANTEE



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QTY	STANDARD SIZES				UNIT WT. (LBS.)
	MODEL NO.	A DIM. (INCH)	C DIM. (INCH)	NET WT. (LBS.)	
H1R242	24 (24)	24 (24)	42 (42)	42 (42)	40 (90)
H1R242	24 (24)	30 (30)	42 (42)	42 (42)	40 (90)
H1R242	24 (24)	36 (36)	42 (42)	42 (42)	40 (90)
H1R242	24 (24)	42 (42)	42 (42)	42 (42)	40 (90)
H1R242	24 (24)	48 (48)	42 (42)	42 (42)	40 (90)
H1R242	24 (24)	54 (54)	42 (42)	42 (42)	40 (90)
H1R242	24 (24)	60 (60)	42 (42)	42 (42)	40 (90)
H1R242	24 (24)	66 (66)	42 (42)	42 (42)	40 (90)
H1R242	24 (24)	72 (72)	42 (42)	42 (42)	40 (90)
H1R242	24 (24)	78 (78)	42 (42)	42 (42)	40 (90)
H1R242	24 (24)	84 (84)	42 (42)	42 (42)	40 (90)
H1R242	24 (24)	90 (90)	42 (42)	42 (42)	40 (90)
H1R242	24 (24)	96 (96)	42 (42)	42 (42)	40 (90)
H1R242	24 (24)	102 (102)	42 (42)	42 (42)	40 (90)
H1R242	24 (24)	108 (108)	42 (42)	42 (42)	40 (90)
H1R242	24 (24)	114 (114)	42 (42)	42 (42)	40 (90)
H1R242	24 (24)	120 (120)	42 (42)	42 (42)	40 (90)

- NOTES:**
- 1) SUITABLE FOR USE IN OFF STREET LOCATION WHERE NOT SUBJECTED TO HIGH DENSITY TRAFFIC.
 - 2) PROVIDE A FULL BED OF CLASS #4 CONCRETE UNDER FRAME AND SUPPORT ANGLES.



SINGLE LEAF ACCESS HATCH DETAIL

NOT TO SCALE

SERIES H2R ACCESS DOOR

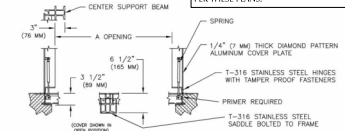
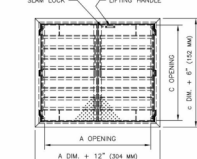
- STANDARD FEATURES:**
- +AUTO-LOCK T-316 STAINLESS STEEL HOLD OPEN ARM WITH RELEASE HANDLE
 - +T-316 STAINLESS STEEL HINGES AND ATTACHING HARDWARE
 - +T-316 STAINLESS STEEL SLAM LOCK WITH REMOVABLE KEY
 - +COBALT LEAF CONSTRUCTION
 - +EXTRUDED ALUMINUM FRAME
 - +RECESSED LIFTING HANDLE
 - +LIFETIME GUARANTEE



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QTY	STANDARD SIZES				UNIT WT. (LBS.)
	MODEL NO.	A DIM. (INCH)	C DIM. (INCH)	NET WT. (LBS.)	
H2R242	24 (24)	24 (24)	42 (42)	42 (42)	100 (220)
H2R242	24 (24)	30 (30)	42 (42)	42 (42)	100 (220)
H2R242	24 (24)	36 (36)	42 (42)	42 (42)	100 (220)
H2R242	24 (24)	42 (42)	42 (42)	42 (42)	100 (220)
H2R242	24 (24)	48 (48)	42 (42)	42 (42)	100 (220)
H2R242	24 (24)	54 (54)	42 (42)	42 (42)	100 (220)
H2R242	24 (24)	60 (60)	42 (42)	42 (42)	100 (220)
H2R242	24 (24)	66 (66)	42 (42)	42 (42)	100 (220)
H2R242	24 (24)	72 (72)	42 (42)	42 (42)	100 (220)
H2R242	24 (24)	78 (78)	42 (42)	42 (42)	100 (220)
H2R242	24 (24)	84 (84)	42 (42)	42 (42)	100 (220)
H2R242	24 (24)	90 (90)	42 (42)	42 (42)	100 (220)
H2R242	24 (24)	96 (96)	42 (42)	42 (42)	100 (220)
H2R242	24 (24)	102 (102)	42 (42)	42 (42)	100 (220)
H2R242	24 (24)	108 (108)	42 (42)	42 (42)	100 (220)
H2R242	24 (24)	114 (114)	42 (42)	42 (42)	100 (220)
H2R242	24 (24)	120 (120)	42 (42)	42 (42)	100 (220)

- NOTES:**
- 1) SUITABLE FOR USE IN OFF STREET LOCATION WHERE NOT SUBJECTED TO TRAFFIC.
 - 2) PROVIDE A FULL BED OF CLASS #4 CONCRETE UNDER FRAME AND SUPPORT ANGLES.



DOUBLE LEAF ACCESS HATCH DETAIL

NOT TO SCALE

OPTIONAL PROTECTIVE GRATING PANEL

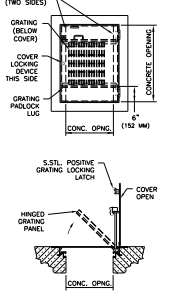
- STANDARD FEATURES:**
- +ALUMINUM T BAR CONSTRUCTION
 - +ALL T-316 STAINLESS STEEL HARDWARE
 - +LOCKABLE WITH REMOVABLE PROTECTIVE COVER
 - +HINGES WITH POSITIVE LATCH TO MAINTAIN UPRIGHT POSITION
 - +LOAD RATED CONFORMS TO ACCESS COVER
 - +VIEW AREA FOR OBSERVATION AND LIMITED MAINTENANCE
 - +SAFETY ORANGE POWDER-COATED FINISH
 - +NATURAL W/STL SPRING NUTS (300 LBS. PSF (1464 KG. PSF - METRIC) LOADED SQUARE GRID)
 - +LIFETIME GUARANTEE



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- APPLICATIONS:**
- THE OPTIONAL PROTECTIVE GRATING PANEL SHOULD BE SPECIFIED FOR APPLICATIONS IN AREAS THAT REQUIRE ADDITIONAL PROTECTION BEYOND THE ACCESS COVER BE LEFT IN THE OPEN POSITION. THE OPTION SHOULD BE DESIRABLE THE GRATING PANEL HAS PROVISIONS FOR AN OVER-SIZED PADLOCK THAT WOULD PROVIDE SECONDARY PROTECTION AGAINST UNAUTHORIZED PERSONNEL OPENING THE ACCESS COVER. THIS OPTION IS NOT AVAILABLE FOR ALL ACCESS COVER MODELS. PLEASE CONSULT THE FACTORY.

- HOLIDAY PRODUCTS OPTIONAL PROTECTIVE GRATING PANEL IS EQUIPPED WITH ALL T-316 STAINLESS STEEL HARDWARE. THIS LOCKABLE GRATING PANEL CAN BE FACTORY INSTALLED ON MOST MODELS IN OUR EXTENSIVE LINE OF QUALITY ACCESS COVERS. EACH GRATING PANEL IS POWDER COAT FINISHED IN SAFETY ORANGE COLOR, AND IS EQUIPPED WITH A T-316 STAINLESS STEEL POSITIVE LATCH WITH RELEASE HANDLE THAT SECURELY LOCKS GRATING PANEL IN THE OPEN POSITION. THE GRATING SUPPORT LEGS FEATURE NUTS WITH POSITIVE LOCK WRENCH IS SUPPLIED WITH FOUR STAINLESS STEEL SPRING NUTS USED TO TIGHTEN LATCH BRACKETS AND CABLE HOLDERS.
- CONSULT FACTORY FOR ALL PRICING
 - FOR ADDITIONAL INFORMATION VISIT US AT: HolidayProducts.com



HATCH PROTECTIVE GRATE DETAIL

NOT TO SCALE

BEACON ENGINEERING LLC
302.264.8825 | info@beaconengineering.com

ISSUED FOR BIDDING
(08/13/2024 5:59:16 PM)

Date: _____
By: _____
Revision: _____

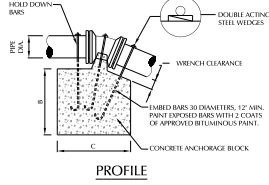
PUMP STATION REHABILITATION PROJECT
TOWN OF GEORGETOWN
GEORGETOWN HUNDRED
SUSSEX COUNTY, DELAWARE

GENERAL NOTES AND DETAILS

Date: **AUG 13, 2024**
Scale: **AS SHOWN**
Drawn By: **SKM**
Proj No.: **GE001-07**
Des. No.: **T1.1**

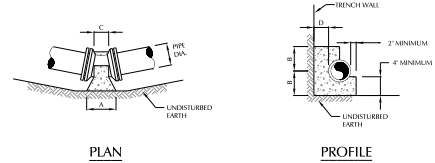
BEND		PIPE DIAMETER							
		4"	6"	8"	10"	12"	16"	18"	24"
11 1/4	A	1.54	1.58	1.62	2.05	2.07	2.11	2.67	2.99
	B	1.53	1.57	1.59	1.99	2.02	2.04	2.59	2.97
	C	2.49	2.50	2.50	2.59	2.60	2.61	3.00	3.09
22 1/2	A	2.49	2.50	2.51	3.08	3.09	3.11	4.00	4.09
	B	1.99	1.99	2.00	2.46	2.46	2.47	3.00	3.00
	C	2.96	2.96	2.97	3.01	3.01	3.01	3.01	3.01
45	A	2.46	2.46	2.46	3.00	3.00	3.00	3.00	3.00
	B	1.98	1.98	1.98	2.46	2.46	2.46	2.46	2.46
	C	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00

* USE OF BAGGED CONCRETE PROHIBITED.



VERTICAL DOWNWARD BEND THRUST BLOCK DETAIL
NOT TO SCALE

SIZE	11 1/4	22 1/2	45
4"	3.86	3.86	3.86
6"	3.86	3.86	3.86
8"	3.86	3.86	3.86
10"	3.86	3.86	3.86
12"	3.86	3.86	3.86
16"	3.86	3.86	3.86
18"	3.86	3.86	3.86
20"	3.86	3.86	3.86
24"	3.86	3.86	3.86



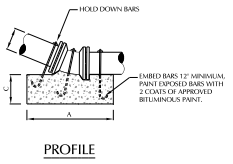
VERTICAL UPWARD BEND THRUST BLOCK DETAIL
NOT TO SCALE

BEND		11 1/4								22 1/2								45										
		4"	6"	8"	10"	12"	16"	18"	20"	24"	4"	6"	8"	10"	12"	16"	18"	20"	24"	4"	6"	8"	10"	12"	16"	18"	20"	24"
A	A	6"	6"	6"	10"	10"	10"	14"	14"	14"	6"	6"	6"	10"	10"	10"	14"	14"	14"	6"	6"	6"	10"	10"	10"	14"	14"	14"
	B	7"	7"	7"	9"	10"	10"	14"	14"	14"	7"	7"	7"	9"	10"	10"	14"	14"	14"	7"	7"	7"	9"	10"	10"	14"	14"	14"
	C	4"	4"	4"	6"	10"	10"	14"	14"	14"	4"	4"	4"	6"	10"	10"	14"	14"	14"	4"	4"	4"	6"	10"	10"	14"	14"	14"
D	A	7"	7"	7"	9"	10"	10"	14"	14"	14"	7"	7"	7"	9"	10"	10"	14"	14"	14"	7"	7"	7"	9"	10"	10"	14"	14"	14"
	B	7"	7"	7"	9"	10"	10"	14"	14"	14"	7"	7"	7"	9"	10"	10"	14"	14"	14"	7"	7"	7"	9"	10"	10"	14"	14"	14"
	C	4"	4"	4"	6"	10"	10"	14"	14"	14"	4"	4"	4"	6"	10"	10"	14"	14"	14"	4"	4"	4"	6"	10"	10"	14"	14"	14"
E	A	1.31	1.31	1.31	2.11	2.07	2.07	3.4	3.4	3.4	1.31	1.31	1.31	2.11	2.07	2.07	3.4	3.4	3.4	1.31	1.31	1.31	2.11	2.07	2.07	3.4	3.4	3.4
	B	7"	7"	7"	9"	10"	10"	14"	14"	14"	7"	7"	7"	9"	10"	10"	14"	14"	14"	7"	7"	7"	9"	10"	10"	14"	14"	14"
	C	4"	4"	4"	6"	10"	10"	14"	14"	14"	4"	4"	4"	6"	10"	10"	14"	14"	14"	4"	4"	4"	6"	10"	10"	14"	14"	14"
D	A	7"	7"	7"	9"	10"	10"	14"	14"	14"	7"	7"	7"	9"	10"	10"	14"	14"	14"	7"	7"	7"	9"	10"	10"	14"	14"	14"
	B	7"	7"	7"	9"	10"	10"	14"	14"	14"	7"	7"	7"	9"	10"	10"	14"	14"	14"	7"	7"	7"	9"	10"	10"	14"	14"	14"
	C	4"	4"	4"	6"	10"	10"	14"	14"	14"	4"	4"	4"	6"	10"	10"	14"	14"	14"	4"	4"	4"	6"	10"	10"	14"	14"	14"

* USE OF BAGGED CONCRETE PROHIBITED.

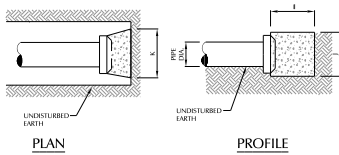
BEND		PIPE DIAMETER							
		4"	6"	8"	10"	12"	16"	18"	24"
11 1/4	A	1.66	1.66	1.66	2.57	2.57	2.57	3.49	4.07
	B	1.53	1.53	1.59	1.99	2.02	2.04	2.46	2.97
	C	2.49	2.50	2.50	2.59	2.60	2.61	3.00	3.09
22 1/2	A	2.49	2.50	2.51	3.08	3.09	3.11	4.00	4.09
	B	1.99	1.99	2.00	2.46	2.46	2.47	3.00	3.00
	C	2.96	2.96	2.97	3.01	3.01	3.01	3.01	3.01
45	A	2.46	2.46	2.46	3.00	3.00	3.00	3.00	3.00
	B	1.98	1.98	1.98	2.46	2.46	2.46	2.46	2.46
	C	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00

* USE OF BAGGED CONCRETE PROHIBITED.



HORIZONTAL BEND THRUST BLOCK DETAIL
NOT TO SCALE

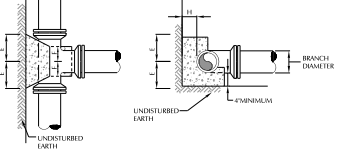
SIZE	11 1/4	22 1/2	45
4"	3.86	3.86	3.86
6"	3.86	3.86	3.86
8"	3.86	3.86	3.86
10"	3.86	3.86	3.86
12"	3.86	3.86	3.86
16"	3.86	3.86	3.86
18"	3.86	3.86	3.86
20"	3.86	3.86	3.86
24"	3.86	3.86	3.86



PIPE DIA.		4"	6"	8"	10"	12"	16"	18"	20"	24"
I	A	6"	6"	6"	10"	10"	10"	14"	14"	14"
	B	1.57	1.57	1.57	1.99	2.02	2.04	2.46	2.97	3.00
K	A	1.57	1.57	1.57	1.99	2.02	2.04	2.46	2.97	3.00
	B	1.57	1.57	1.57	1.99	2.02	2.04	2.46	2.97	3.00

* USE OF BAGGED CONCRETE MIX IS PROHIBITED.

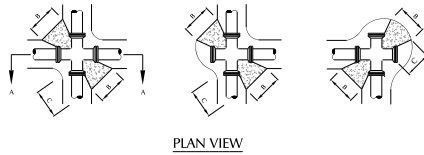
PLUG THRUST BLOCK DETAIL
NOT TO SCALE



BRANCH DIA.		4"	6"	8"	10"	12"	16"	18"	20"	24"
I	A	6"	6"	6"	10"	10"	10"	14"	14"	14"
	B	1.57	1.57	1.57	1.99	2.02	2.04	2.46	2.97	3.00
J	A	6"	6"	6"	10"	10"	10"	14"	14"	14"
	B	1.57	1.57	1.57	1.99	2.02	2.04	2.46	2.97	3.00
K	A	6"	6"	6"	10"	10"	10"	14"	14"	14"
	B	1.57	1.57	1.57	1.99	2.02	2.04	2.46	2.97	3.00

* USE OF BAGGED CONCRETE PROHIBITED.

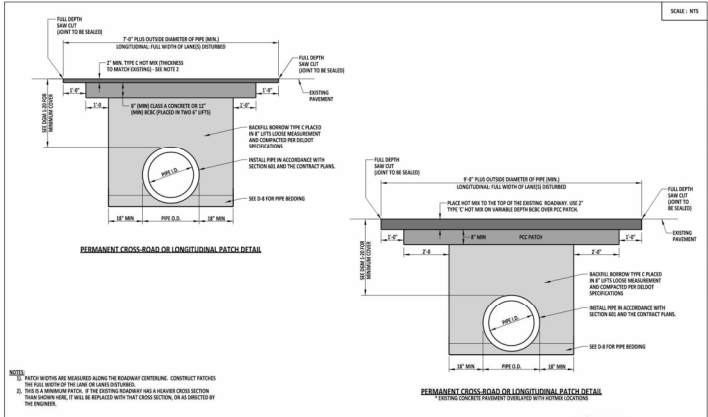
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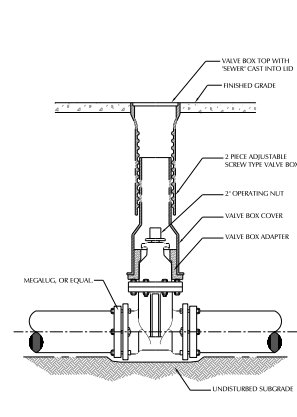
BRANCH DIA.		4"	6"	8"	10"	12"	16"	18"	20"	24"
A	A	1.09	1.09	1.09	1.46	1.46	1.46	1.99	1.99	1.99
	B	1.52	1.52	1.52	2.00	2.00	2.00	2.46	2.46	2.46
C	A	2.46	2.46	2.46	2.46	2.46	2.46	2.46	2.46	2.46
	B	2.46	2.46	2.46	2.46	2.46	2.46	2.46	2.46	2.46

* USE OF BAGGED CONCRETE IS PROHIBITED.

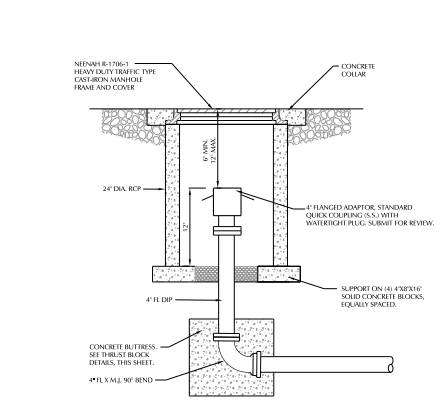
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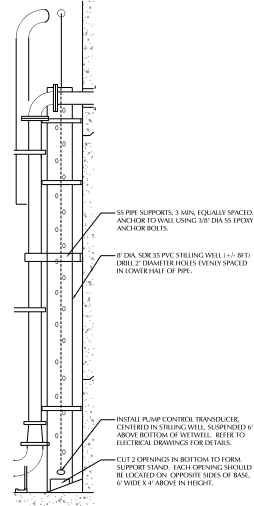
RECOMMENDED	STANDARD NO.	P-4 (200)	SHT.	1	OF	1	APPROVED	REVIEWED



GATE VALVE DETAIL
NOT TO SCALE



EMERGENCY BYPASS DETAIL
NOT TO SCALE



STILLING WELL DETAIL
NOT TO SCALE

PEACON ENGINEERING LLC
302.864.8825 | info@peaconeng.com

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PUMP STATION REHABILITATION PROJECT
TOWN OF GEORGETOWN
GEORGETOWN HUNDRED
SUSSEX COUNTY, DELAWARE

GENERAL NOTES AND DETAILS

Date: AUG 11, 2024
Scale: AS SHOWN
Drawn by: SKM
Proj No.: GCO01-07
Dwg. No.: T1.3

GENERAL ELECTRICAL REQUIREMENTS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. PROVIDE ALL LABOR, MATERIALS, EQUIPMENT AND SERVICES NECESSARY FOR AND INCIDENTAL, TO THE COMPLETE INSTALLATION AND OPERATION OF ALL ELECTRICAL WORK, INCLUDING ALL CONTROL PANELS, ELECTRICAL DISTRIBUTION AND CONTROL SYSTEMS.
B. ALL WORK UNDER THIS DIVISION IS SUBJECT TO THE GENERAL CONDITIONS AND SPECIAL REQUIREMENTS FOR THE ENTIRE CONTRACT.
C. UNLESS OTHERWISE SPECIFIED, ALL SUBMISSIONS SHALL BE MADE TO, AND ACCEPTANCES AND APPROVALS MADE BY, THE ENGINEER.
D. CONFORM TO THE REQUIREMENTS OF ALL RULES, REGULATIONS AND CODES OF LOCAL, STATE, AND FEDERAL AUTHORITIES HAVING JURISDICTION. ALL INSTALLATION SHALL CONFORM TO THE NATIONAL ELECTRICAL CODE AND NECA - STANDARDS OF INSTALLATION.
E. PERFORM THE WORK IN A FIRST-CLASS, SUBSTANTIAL, AND WORKMANLIKE MANNER. ANY MATERIALS INSTALLED WHICH DO NOT PRESENT AN ORDERLY AND NEAT WORKMANLIKE APPEARANCE SHALL BE REMOVED AND REPLACED WHEN SO DIRECTED BY THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
F. COORDINATE THE ELECTRICAL WORK FOR ALL EQUIPMENT MANUFACTURERS AND SUPPLIERS.
G. ARRANGE CONDUIT, WIRING, EQUIPMENT, AND OTHER WORK GENERALLY AS SHOWN, PROVIDING PROPER CLEARANCES AND ACCESS. CAREFULLY EXAMINE ALL CONTRACT DRAWINGS AND INSTALL THE WORK IN EACH LOCATION WITHOUT SUBSTANTIAL ALTERATION. WHERE DEPARTURES ARE PROPOSED BECAUSE OF FIELD CONDITIONS OR OTHER CAUSES, PREPARE AND SUBMIT DETAILED DRAWINGS FOR ACCEPTANCE. THE RIGHT IS RESERVED BY THE ENGINEER TO MAKE REASONABLE CHANGES IN LOCATION OF EQUIPMENT, CONDUIT, AND WIRING UP TO THE TIME OF ROUGH-IN OR FABRICATION.
H. THE CONTRACT DRAWINGS ARE GENERALLY DIAGRAMMATIC. ALL OFFSETS, BENDS, FITTINGS AND ACCESSORIES ARE NOT NECESSARILY SHOWN. PROVIDE ALL SUCH ITEMS AS MAY BE REQUIRED TO FIT THE WORK TO THE CONDITIONS AND FORM A COMPLETED SYSTEM.
I. THE ENGINEER RESERVES THE RIGHT, AT ANY TIME, TO CORRECT CLERICAL ERRORS WITHIN THE SPECIFICATIONS OR ON THE DRAWINGS AS REQUIRED TO MAINTAIN THE INTEGRITY AND THE INTENT OF THE DESIGN.
J. THE CONTRACTOR SHALL IMMEDIATELY REPORT TO THE ENGINEER ANY DISCREPANCIES BETWEEN THE SPECIFICATIONS, THE DRAWINGS AND EQUIPMENT.
K. ALL COMPONENTS, EQUIPMENT, CONTROL PANELS, AND ASSEMBLIES SHALL BE U.L. LISTED FOR THEIR APPLICATION AND USE. ALL CONTROL PANELS SHALL BE BUILT TO AND U.L. LISTED TO THE CURRENT 508 STANDARD.

1.2 DEFINITIONS OF TERMS

"ENGINEER" - THE ENGINEER SHALL BE DEFINED AS BEACON ENGINEERING, LLC, ITS EMPLOYEES, OR ITS DULY AUTHORIZED REPRESENTATIVE.

"OWNER" - THE OWNER SHALL BE DEFINED AS THE TOWN OF GEORGETOWN ITS EMPLOYEES, OR ITS DULY AUTHORIZED REPRESENTATIVE.

"CONTRACTOR" - THE CONTRACTOR SHALL BE DEFINED AS THE PERSON, FIRM OR CORPORATION WHO IS LEGALLY CONTRACTED BY THE OWNER OR ENGINEER FOR THIS PROJECT.

"SUBCONTRACTOR" - THE SUBCONTRACTOR SHALL BE DEFINED AS A PERSON, FIRM OR CORPORATION WHO IS LEGALLY CONTRACTED BY THE CONTRACTOR TO PERFORM PART OR ALL OF THE PROJECTED WORK.

"SYSTEMS HOUSE" - SYSTEMS HOUSE SHALL BE DEFINED AS THE PERSON, FIRM OR CORPORATION WHO INTEGRATES OR ASSEMBLES MANUFACTURED COMPONENTS AND ITEMS.

"MANUFACTURER" - THE MANUFACTURER SHALL BE DEFINED AS THE PERSON, FIRM OR CORPORATION WHO MAKES OR FABRICATES AN END PRODUCT FROM RAW MATERIAL.

"FURNISH", "PROVIDE", "INSTALL", "SUPPLY" - IN THIS SECTION OF THE SPECIFICATION, THE ABOVE TERMS ARE USED INTERCHANGEABLY, AND ARE TO BE DEFINED AS FURNISHING, INSTALLING, AND WIRING THE REFERENCED ITEM IN PLACE. ALL REQUIRED AND RELATED MATERIAL AND INSTALLATION LABOR ARE TO BE PROVIDED BY THE CONTRACTOR TO ASSURE A COMPLETE AND OPERABLE REFERENCED ITEM.

"GPM" - GALLON PER MINUTE

1.3 PERMITS AND FEES

- A. OBTAIN, PAY FOR AND DELIVER ALL PERMITS, CERTIFICATES OF INSPECTION, ETC., REQUIRED BY THE AUTHORITIES HAVING JURISDICTION. DELIVER CERTIFICATES TO THE OWNER PRIOR TO FINAL ACCEPTANCE OF THE WORK.

1.4 ELECTRICAL WORK UNDER OTHER SPECIFICATION DIVISIONS

- A. IN GENERAL, POWER WIRING AND MOTOR STARTING EQUIPMENT FOR ALL DIVISIONS AND THE ELECTRICAL CONNECTION OF ALL EQUIPMENT IS TO BE FURNISHED UNDER THIS DIVISION. THE CONTRACTOR SHALL CAREFULLY REVIEW THE CONTRACT DOCUMENTS AND BE RESPONSIBLE FOR THE COORDINATION OF THE ELECTRICAL WORK UNDER ALL OF THE VARIOUS DIVISIONS.

1.5 MATERIAL AND EQUIPMENT

- A. MATERIAL AND EQUIPMENT INSTALLED AS A PART OF THE PERMANENT INSTALLATION SHALL BE NEW, UNLESS OTHERWISE INDICATED OR SPECIFIED, AND SHALL BE APPROVED FOR INSTALLATION IN EACH PARTICULAR CASE WHERE STANDARDS HAVE BEEN ESTABLISHED.
B. WHERE MATERIAL OR EQUIPMENT IS IDENTIFIED BY PROPRIETARY NAME, MODEL NUMBER, AND/OR MANUFACTURER, FURNISH THE NAMED ITEM OR EQUIVALENT THEREOF, FOR REVIEW OF ACCEPTANCE BY THE ENGINEER.
C. SUBSTITUTED ITEMS OR ITEMS OTHER THAN THOSE NAMED SHALL BE EQUAL OR BETTER IN QUALITY, CONSTRUCTION, AND PERFORMANCE AND MUST BE SUITABLE FOR THE AVAILABLE SPACE REQUIRED, ARRANGEMENT, AND APPLICATION. SUBMIT ANY AND ALL DATA NECESSARY TO DETERMINE THE SUITABILITY OF SUBSTITUTED ITEMS.
D. SUBSTITUTIONS WILL NOT BE PERMITTED FOR SPECIFIC ITEMS OF MATERIAL OR EQUIPMENT WHERE SPECIFICALLY INDICATED, OR INDICATED AS "NO SUBSTITUTIONS WILL BE ACCEPTED."
E. MATERIAL SUBMISSIONS SHALL CONFORM TO REQUIREMENTS OUTLINED IN "SUBMITTALS, REVIEW AND ACCEPTANCE." OF THIS SECTION AND OF DIVISION 1 SECTION 01300.

1.6 SUBSTITUTIONS

- A. SUBSTITUTED ITEMS OR ITEMS OTHER THAN THOSE NAMED SHALL BE EQUAL OR BETTER IN QUALITY AND PERFORMANCE AND MUST BE SUITABLE FOR THE AVAILABLE SPACE, REQUIRED ARRANGEMENT AND APPLICATION. SUBMIT ANY AND ALL DATA NECESSARY TO DETERMINE THE SUITABILITY OF SUBSTITUTED ITEMS. IN MAKING REQUESTS FOR SUBSTITUTION, THE CONTRACTOR SHALL:
1. PERSONALLY INVESTIGATE PROPOSED PRODUCT OR METHOD, AND DETERMINE THAT IT IS EQUAL OR SUPERIOR IN ALL RESPECTS TO THAT SPECIFIED.
2. PROVIDE THE SAME GUARANTEE FOR THE SUBSTITUTION AS FOR PRODUCT OR METHOD SPECIFIED.
3. COORDINATE THE INSTALLATION OF ACCEPTED SUBSTITUTION INTO WORK MAKING SUCH CHANGES AS MAY BE REQUIRED FOR WORK TO BE COMPLETED IN ALL RESPECTS.
4. FURNISH AN ITEMIZED COMPARISON OF PROPOSED SUBSTITUTION WITH PRODUCT OR METHOD SPECIFIED.
5. FURNISH AN ACCURATE COST DATA ON PROPOSED SUBSTITUTION IN COMPARISON WITH PRODUCT OR METHOD SPECIFIED.

- B. IN THE EVENT THE CONTRACTOR CHOOSES TO FURNISH AND INSTALL A SYSTEM OR ITEM OF EQUIPMENT OF DIFFERENT ARRANGEMENT FROM THAT SHOWN OR SPECIFIED, AND RECEIVES APPROVAL TO DO SO, THE CONTRACTOR SHALL FURNISH AND INSTALL ANY ADDITIONAL WIRING, CONDUIT OR OTHER MATERIALS AS REQUIRED BY THE SYSTEM AT NO ADDITIONAL COST TO THE OWNER.

- C. THE CONTRACTOR WAIVES ALL CLAIMS FOR ADDITIONAL COSTS RELATED TO SUBSTITUTIONS WHICH CONSEQUENTLY BECOME APPARENT.

- D. REDESIGN DUE TO CONTRACTOR'S SUBSTITUTION SHALL BE ACCOMPLISHED BY A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF DELAWARE AND WILL BE SUBJECT TO REVIEW AND APPROVAL BY THE ENGINEER BEFORE IMPLEMENTATION. WHETHER OR NOT THE ENGINEER ACCEPTS A PROPOSED SUBSTITUTE, CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS INCURRED FOR ANY REDESIGN REQUIRED AS A RESULT OF ANY REQUESTED SUBSTITUTION. ENGINEER SHALL RECORD TIME REQUIRED FOR REVIEW OF CONTRACTOR'S SUBMITTED REDESIGN AND OWNER SHALL BE REIMBURSED BY THE CONTRACTOR FOR ALL COSTS OF THE OWNER'S ENGINEER IN PERFORMING SAID REVIEW. ENGINEER SHALL BILL THE OWNER AT THEIR BILLING RATES CURRENT AT THE TIME OF THE REVIEW.

- E. SUBSTITUTIONS WILL NOT BE PERMITTED FOR SPECIFIC ITEMS OF MATERIAL OR EQUIPMENT WHERE SPECIFICALLY INDICATED, OR INDICATED AS "NO SUBSTITUTIONS WILL BE ACCEPTED."

- F. MATERIAL SUBMISSIONS SHALL CONFORM TO REQUIREMENTS OUTLINED IN "SUBMITTALS, REVIEW AND ACCEPTANCE."

1.7 SUBMITTALS, REVIEW AND ACCEPTANCE

A. GENERAL

- 1. THE EQUIPMENT, MATERIAL, INSTALLATION, WORKMANSHIP, ARRANGEMENT OF WORK, FINAL INSTRUCTION AND FINAL DOCUMENTATION IS SUBJECT TO REVIEW AND ACCEPTANCE. SUBMIT FOR REVIEW IN CLEAR AND LEGIBLE FORM THE FOLLOWING DOCUMENTS.
a. DESCRIPTIVE DATA
b. SHOP DRAWINGS
c. COMPONENT LAY-OUT AND ARRANGEMENT DRAWINGS
d. CONTRACTOR RECORD DRAWINGS
e. OWNER INSTRUCTIONS AND MANUALS
f. PROGRAMS
g. ELECTRICAL DRAWINGS
2. PREPARE ALL SUBMITTALS SPECIFICALLY FOR THIS PROJECT AND STAMP EACH SUBMITTAL IN A FORM INDICATING THAT THE DOCUMENTS HAVE BEEN CONTRACTOR REVIEWED, ARE COMPLETE AND ARE IN COMPLIANCE WITH THE REQUIREMENTS OF THE PLANS AND SPECIFICATIONS.
3. COORDINATE THE INSTALLATION REQUIREMENTS AND ANY MECHANICAL REQUIREMENTS FOR THE EQUIPMENT SUBMITTED. SUBMITTALS WILL BE REVIEWED FOR GENERAL COMPLIANCE WITH DESIGN CONCEPT IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR THE CORRECTNESS OF ALL SUBMITTALS. REVIEWS WILL NOT VERIFY DIMENSIONS, QUANTITIES, OR OTHER DETAILS.
4. IDENTIFY ALL SUBMITTALS, INDICATING THE INTENDED APPLICATION, LOCATION, OR SERVICE OF THE SUBMITTED ITEM. REFER TO SPECIFICATION SECTIONS OR PARAGRAPHS WHERE APPLICABLE. CLEARLY INDICATE THE EXACT TYPE, MODEL NUMBER, SIZE AND SPECIAL FEATURES OF THE PROPOSED ITEM. SUBMITTALS OF A GENERAL NATURE WILL NOT BE ACCEPTED.
5. SUBMIT ACTUAL OPERATING CONDITIONS OR CHARACTERISTICS FOR ALL EQUIPMENT WHERE REQUIRED CAPACITIES ARE INDICATED. FACTORY ORDER FORMS SHOWING ONLY REQUIRED CAPACITIES WILL NOT BE ACCEPTABLE.
6. ACCEPTANCE WILL NOT CONSTITUTE WAIVER OF CONTRACT REQUIREMENTS UNLESS DEVIATIONS ARE SPECIFICALLY INDICATED, CLEARLY NOTED, AND ACCEPTED.
7. DOCUMENTS OF GENERAL FORM INDICATING OPTIONS SHALL BE CLEARLY MARKED TO SHOW WHAT IS SPECIFICALLY PROPOSED FOR THIS PROJECT.
8. SUBMITTALS NOT IN COMPLIANCE WITH THE REQUIREMENTS OF THIS SECTION WILL BE RETURNED WITHOUT REVIEW.
9. ALL SUBMITTALS SHALL ALSO MEET ALL THE REQUIREMENTS IN SECTION 01300 AND OTHER RELATED SECTIONS IN THIS SPECIFICATION REFERENCING SUBMITTALS.
10. CORRECTIONS OR COMMENTS ON SUBMITTALS AND THE SHOP DRAWINGS RESULTING FROM THE ENGINEER'S REVIEW DO NOT RELIEVE THE CONTRACTOR FROM COMPLIANCE WITH THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS. THE OWNER OR ENGINEER WILL NOT BE RESPONSIBLE FOR ERRORS OR OMISSIONS ON ANY DRAWINGS OR INFORMATION FURNISHED BY THE CONTRACTOR, EVEN THOUGH DRAWINGS CONTAINING SUCH ERRORS OR OMISSIONS ARE INADVERTENTLY APPROVED. THE REVIEW IS ONLY FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. THE CONTRACTOR IS RESPONSIBLE FOR CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS; SELECTING FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION; AND IN PERFORMING THIS WORK IN A SAFE MANNER. IF THE SUBMITTAL DRAWINGS OR OTHER INFORMATION DEVIATE FROM THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL ADVISE THE ENGINEER OF THE DEVIATIONS, IN WRITING ACCOMPANYING THE SHOP DRAWINGS, INCLUDING THE REASONS FOR THE DEVIATIONS, AND SHALL REQUEST A DEVIATION FROM THE CONTRACT DOCUMENT.

B. DESCRIPTIVE DATA

- 1. SUBMIT DESCRIPTIVE DATA FOR ALL ITEMS. DATA SHALL CONSIST OF SPECIFICATIONS, DATA SHEETS, CAPACITY RATINGS, PERFORMANCE CURVES, OPERATING CHARACTERISTICS, CATALOG CUTS, DIMENSIONAL DRAWINGS, INSTALLATION INSTRUCTIONS AND ANY OTHER INFORMATION NECESSARY TO INDICATE COMPLETE COMPLIANCE WITH THE CONTRACT DOCUMENTS.

C. SHOP DRAWINGS

- 1. PREPARE AND SUBMIT SHOP DRAWINGS AND/OR DIAGRAMS FOR ALL SPECIALLY FABRICATED ITEMS, MODIFICATIONS TO STANDARD ITEMS, SPECIALLY DESIGNED SYSTEMS WHERE DETAILED DESIGN IS NOT SHOWN ON THE CONTRACT DRAWINGS OR WHERE THE PROPOSED INSTALLATION DIFFERS FROM THAT SHOWN ON THE CONTRACT DRAWINGS.
2. SHOP DRAWINGS SHALL INCLUDE PLANS, ELEVATIONS, SECTIONS, MOUNTING DETAILS OF COMPONENT PARTS, POINT TO POINT INTERCONNECTION DIAGRAMS, ELEMENTARY DIAGRAMS, SINGLE LINE DIAGRAMS, AND ANY OTHER DRAWINGS NECESSARY TO SHOW THE FABRICATION AND CONNECTION OF THE COMPLETE ITEM OR SYSTEM.

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Diamond State Engineering logo and contact information: 3808 Peachtree Blvd., Atlanta, GA 30318, Phone: (404) 977-9999, Fax: (404) 977-1329

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GEORGETOWN PUMP STATION REHAB & BLOWER RETROFIT stamp: Date: 2023-09-20, Scale: AS NOTED, Drawn By: MCS, Proj. No.: 22-2-0002, Dwg. No.: E-00

Stamp: Date: 2023-09-20, Scale: AS NOTED, Drawn By: MCS, Proj. No.: 22-2-0002, Dwg. No.: E-00

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- 3. COMPONENT LAY-OUT AND ARRANGEMENT DRAWINGS SHALL SHOW THE LOCATION OF EQUIPMENT AND COMPONENT WITH DIMENSIONAL LAY-OUT, ENCLOSURE SIZE AND TYPE AND BACK PANEL LAY-OUT.
- 4. SHOP DRAWINGS SHALL BE PROVIDED FOR ALL EQUIPMENT AND COMPONENTS INCLUDING BUT, NOT LIMITED TO, THE FOLLOWING ITEMS:
 - SPECIAL WIRING SYSTEMS AND EQUIPMENT SAFETY
 - LIGHT FIXTURES
 - CONTROL PANELS
 - SAFETY SWITCHES
 - BREAKER PANELS
 - DEVICES
 - CONTROL PANEL COMPONENTS
 - STARTERS
 - WIRE
 - MOTOR CONTROLS AND DRIVES
 - MISSION EQUIPMENT
 - ANTENNAS, TOWERS, AND RELATED EQUIPMENT

D. CONTRACTOR RECORD DRAWINGS

- 1. AS THE WORK PROGRESSES, RECORD ON A SET OF WHITE PRINTS, THE INSTALLED LOCATIONS, AND SIZES OF ELECTRIC CONDUITS, EQUIPMENT, ETC. UPON COMPLETION OF THE WORK, SUBMIT WITH THE O & M MANUALS ONE (1) COMPLETE SET OF WHITE PRINTS WITH "RECORD" INFORMATION NEATLY RECORDED THEREON IN RED INK.

E. OWNER INSTRUCTIONS AND MANUALS

- 1. FULLY INSTRUCT THE OWNER IN THE OPERATION AND MAINTENANCE OF ALL SYSTEMS AND EQUIPMENT. PROVIDE QUALIFIED MANUFACTURER'S REPRESENTATIVES WHERE SPECIFIED OR OTHERWISE REQUIRED.
- 2. WRITE STEP-BY-STEP DETAILED INSTRUCTIONS FOR TURN ON, TURN OFF, SEASONAL CHANGEOVER, AND PERIODIC CHECKS OF ALL SYSTEMS AND EQUIPMENT. INCLUDE ALL PRECAUTIONS AND WARNINGS.
- 3. PREPARE A LIST OF THE MANUFACTURERS OF ALL MAJOR EQUIPMENT, THEIR LOCAL SERVICE REPRESENTATIVE AND PROCEDURES FOR OBTAINING SERVICE.
- 4. FURNISH TO THE OWNER TWO (2) COPIES OF THE MANUFACTURER'S INSTALLATION, OPERATION, AND MAINTENANCE MANUAL. INCLUDE REPLACEMENT PARTS LISTS WHERE APPLICABLE. ALSO INCLUDE COPIES OF ALL POSTED INSTRUCTIONS, LISTS, AND CHARTS. ASSEMBLE THE MATERIAL IN ONE OR MORE HEAVY-DUTY 8 1/2" X 11" LOOSE-LEAF BINDERS WITH TAB SEPARATORS. FURNISH TO THE OWNER ALL ORIGINAL COPIES OF THE SOFTWARE, (1) BACK-UP COPY, (2) COPIES OF ALL PROGRAMS, AND (4) HARD COPIES OF THE PROGRAM. SUBMIT FOR APPROVAL BEFORE FINAL DELIVERY.
- 5. DELIVER INSTRUCTION MATERIAL TO THE OWNER PRIOR TO THE FORMAL INSTRUCTION PERIOD.
- 6. DELIVER COMPLETE SETS OF ALL APPROVED SUBMITTALS TO THE OWNER FOR FILING.
- 7. NO EQUIPMENT SHALL BE INSTALLED PRIOR TO THE APPROVAL OF ITS SUBMITTALS AND SHOP DRAWINGS.

1.8 SCOPE OF PROJECT AND SPECIFIC ELECTRICAL REQUIREMENTS

- A. THE FOLLOWING IS A LIST OF SPECIFIC ITEMS FOR THE INTENT TO DESCRIBE THE SCOPE OF REQUIRED ELECTRICAL WORK FOR THIS PROJECT. THIS LIST IS NOT A COMPLETE LIST AND ELECTRICAL REQUIREMENTS NOT MENTIONED HEREIN THAT MUST BE PROVIDED TO INSURE A COMPLETE AND OPERABLE SYSTEM SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR.

- 1. FURNISH A COMPLETED ELECTRICAL DISTRIBUTION, LIGHTING SYSTEM AND GENERAL OUTLET SYSTEM AS SHOWN.
- 2. COORDINATE EQUIPMENT INSTALLATION AND WIRE FOR PUMPS, CONTROLS, AND RELATED EQUIPMENT.
- 3. FURNISH THE CONTROLS NECESSARY FOR PUMPING AND LEVEL CONTROLS, ALARM SYSTEM, AND ALL OTHER CONTROLS NECESSARY TO PROVIDE A COMPLETE AND OPERATING SYSTEM.
- 4. INSTALL THE SERVICE CONDUCTORS TO THE POWER COMPANY'S TRANSFORMER AND PAY FOR ALL SERVICE INSTALLATION COSTS CHARGED BY THE POWER COMPANY.
- 5. FURNISH CONNECTIONS TO EXISTING MISSION SYSTEM.
- 6. FURNISH ELECTRICAL EQUIPMENT.
- 7. FURNISH A NEW 3 PHASE SERVICE FROM THE POWER COMPANIES UTILITIES TO THE SITE.
- 8. PROVIDE CLASS 1 DIVISION ONE ELECTRICAL EQUIPMENT WHERE REQUIRED INCLUDING SEAL-OFFS, CONDUIT BODIES, AND RACEWAYS.

PART 2 - PRODUCTS

2.1 CONDUIT

- A. ALL CONDUIT SHALL BE HOT-DIP GALVANIZED, FULL-WEIGHT, RIGID STEEL MEETING ANSI C-80.1, FEDERAL SPECIFICATION WW-C-681, AND UL STANDARD #6.
- B. MINIMUM SIZE CONDUIT SHALL BE 3/4" TRADE SIZE RIGID GALVANIZED STEEL (RGS). SIZES OF CONDUITS SHALL BE NOT LESS THAN AS SHOWN ON THE DRAWINGS AND/OR THE SCHEDULES IN THESE SPECIFICATIONS AND AS REQUIRED BY THE NATIONAL ELECTRICAL CODE. CONDUITS SHALL BE INSTALLED RIGIDLY AND WITH SUPPORTS SPACED NOT MORE THAN FIVE FEET APART. ALL EXPOSED CONDUITS SHALL BE INSTALLED WITH RUNS PARALLEL OR PERPENDICULAR TO CEILINGS AND WALLS, WITH RIGHT ANGLE TURNS, CONSISTING OF MANUFACTURED ELBOWS, FITTINGS, OR SYMMETRICAL BENDS.
- C. CONDUITS AND FITTINGS BURIED DIRECTLY IN THE GROUND, INTERIOR DAMP OR CORROSIVE AREAS, AND ALL OTHER AREAS AS NOTED SHALL BE PROTECTED BY A BONDED-ON, 40 MIL, (400) PVC COATING. SUPPLY ROBBOY INDS. INC. PLASTI-BOND, OR EQUAL. ALL RELATED FITTINGS, CONDUIT BODIES, AND BOXES SHALL ALSO BY PVC COATED. ALL SCRAPS AND CUTS SHALL BE RECOATED IN THE FIELD.
- D. NO WIRES SHALL BE INSTALLED IN CONDUITS UNTIL ALL WORK HAS BEEN COMPLETED WHICH MAY CAUSE DAMAGE TO WIRES OR CONDUITS. ALL CONDUITS SHALL BE TESTED FOR OBSTRUCTIONS BEFORE INSTALLING WIRING. AS EACH RUN OF CONDUIT IS COMPLETED, SEALS SHALL BE USED TO PLUG CONDUITS TO PREVENT ACCUMULATION OF MORTAR, DIRT, OR FOREIGN OBJECTS IN THE RUN. NO SUBSTANCE SHALL BE USED WHICH MAY DAMAGE OR DETERIORATE THE CONDUCTOR INSULATION.
- E. FITTINGS
 - 1. ALL FITTINGS ARE TO MATCH CONDUIT MATERIAL AND BE SUITABLE FOR THE PURPOSE INTENDED.
 - 2. PROVIDE COMPOUND FILLED SEALING FITTINGS FOR ALL CONDUITS ENTERING OR LEAVING HAZARDOUS LOCATIONS, DRY WELLS, AND BELOW GRADE ENTRANCES MADE INTO EQUIPMENT AND STRUCTURES.
 - 3. PROVIDE EXPANSION FITTINGS WITH BONDING JUMPS WHERE CONDUITS CROSS EXPANSION JOINTS OR WHERE OTHERWISE REQUIRED TO COMPENSATE FOR THERMAL EXPANSION AND CONTRACTION.
 - 4. FASTEN RIGID STEEL CONDUIT WITH THREADED GALVANIZED STEEL FITTINGS, DOUBLE LOCKNUTS, AND INSULATED BUSHINGS. INSULATED BUSHINGS SHALL BE "OZ" TYPE "B", OR EQUAL.
- F. SUPPORTS
 - 1. ALL PARTS AND HARDWARE USED FOR SUPPORT OF EQUIPMENT, CONDUITS AND FITTINGS SHALL BE GALVANIZED FOR DRY EXTERIOR, DAMP, OR WET LOCATIONS. PROVIDE PLATED FASTENERS FOR DRY LOCATIONS AND STAINLESS STEEL (316 GRADE, OR BETTER) FOR EXTERIOR, DAMP, OR WET LOCATIONS.
 - 2. SUPPORT SINGLE RUNS OF SUSPENDED FEEDER CONDUIT WITH "KINDORF" C-149 OR C-150 ADJUSTABLE HANGERS, OR EQUAL, USING 3/8" RODS FOR CONDUITS UP TO 2" AND 1/2" RODS FOR CONDUITS LARGER THAN 2".
 - 3. SUPPORT GROUPS OF SUSPENDED CONDUITS RUN IN PARALLEL ON TRAPEZE HANGERS CONSTRUCTED OF "UNISTRUT" CHANNELS WITH C-140 CONDUIT STRAPS OR EQUAL, AND SUSPENDED WITH 1/2" HANGER RODS.
 - 4. SUPPORT SURFACE RUNS OF CONDUIT USING ONE HOLE PIPE STRAPS OR TWO HOLE PIPE STRAPS. STRAP SPACING SHALL BE MAXIMUM 5' ON CENTERS.
 - 5. FASTEN PIPE STRAPS AND HANGERS TO CONCRETE USING INSERTS OR EXPANSION BOLTS APPROVED FOR THE PURPOSE. TOGGLE BOLTS SHALL BE USED FOR HOLLOW MASONRY. WOODEN PLUGS WILL NOT BE ACCEPTED.
 - 6. ALL CONDUITS SHALL BE SPACED 1/4" OFF THE MOUNTING SURFACE USING GALVANIZED SPACERS APPROVED FOR THE PURPOSE.

2.2 FLEXIBLE METAL CONDUIT

- A. ALL FLEXIBLE METAL CONDUIT SHALL BE OF THE LIQUID-TITE TYPE. THE CONDUIT SHALL BE CONSTRUCTED WITH A GALVANIZED STEEL INTERIOR AND A SUNLIGHT RESISTANT COATING MEETING UL 360. THE CONDUIT SHALL BE RATED FOR HEAVY DUTY, VERY WET LOCATIONS. FURNISH OZ/GEDNEY TYPE UAG CONDUIT.
- B. FASTEN FLEXIBLE METAL CONDUIT WITH FITTINGS INCORPORATING A THREADED FERRULE AND NYLON SEALING RING. FURNISH T & B "TITE-BITE" INSULATED CONNECTORS OR APPROVED EQUAL.

2.3 OUTLET BOXES

- A. OUTLET BOXES AND CONDUIT FITTINGS FOR ALL LOCATIONS SHALL BE NEMA 4 CAST MALLEABLE IRON WITH THREADED HUBS FOR CONDUIT ENTRANCE. BOXES AND CONDUIT FITTINGS SHALL HAVE GASKETED COVER PLATES. PLASTIC BOXES AND CASE "WHITE METAL" BOXES CLASSIFIED AS NEMA 4 WILL NOT BE ACCEPTABLE.

2.4 JUNCTION BOXES, PULL BOXES, AND ENCLOSURES

- A. ALL JUNCTION AND PULL BOXES SHALL BE FURNISHED AND INSTALLED AS SHOWN OR WHERE REQUIRED TO FACILITATE PULLING OF WIRES OR CABLES. SUCH BOXES SHALL BE INSTALLED IN ACCESSIBLE LOCATIONS. ALL EXTERIOR BOXES EXCEPT AS NOTED SHALL BE CONSTRUCTED FROM TYPE 304 STAINLESS STEEL, NEMA RATED 4X-SS.
- B. ALL BOXES IN HAZARDOUS AREAS OR THE WET WELL SHALL BE SUITABLE FOR USE IN CLASS 1, DIVISION 1, GROUP D AREAS.
- C. ALL OTHER ENCLOSURES FOR RELAYS OR EQUIPMENT SHALL BE CONSTRUCTED OF 16 GAUGE TYPE 304 STAINLESS STEEL WITH HINGED COVER AND 3 SIDE CLAMPING. ALL EQUIPMENT AND DEVICES SHALL BE MOUNTED ON A BACK PLATE. SUPPLY A HOFFMAN BULLETIN A-51 OR A-4.

2.5 WIRES AND CABLES

- A. ALL WIRE, UNLESS OTHERWISE INDICATED SHALL BE 600 VOLT, MULTI RATED TYPE THINWALL MTW. CONDUCTORS SHALL BE SIZED AND RUN AS INDICATED. CONDUCTORS SHALL BE SOFT DRAWN COPPER OF NOT LESS THAN 98% CONDUCTIVITY. ALL CONDUCTORS SHALL BE APPROVED FOR WET LOCATIONS AND BE OIL RESISTANT.
- B. NO BRANCH CIRCUIT WIRES SMALLER THAN NUMBER TWELVE (12) AWG SHALL BE USED UNLESS OTHERWISE INDICATED. CONDUCTORS SHALL BE CONTINUOUS FROM OUTLET TO OUTLET AND FROM TERMINAL BOARD TO POINT OF FINAL CONNECTION, AND NO SPICE SHALL BE MADE EXCEPT WITHIN OUTLET OR JUNCTION BOXES. ALL CONDUCTORS SHALL BE OF THE SIZE INDICATED. ALL WIRES NUMBER EIGHT (8) AWG AND LARGER SHALL BE STRANDED. WIRES AND CABLES SHALL BE AS MANUFACTURED BY PLASTIC WIRE AND CABLE CORPORATION, OKONITE COMPANY, OR EQUAL.
- C. CONTROL WIRING SHALL NOT BE LESS THAN NUMBER FOURTEEN (14) AWG AND SHALL BE COLOR CODED USING COLORS IMPREGNATED INTO THE INSULATION. ALL WIRING, CONTACTS, AND TERMINAL BLOCKS SHALL BE SUITABLY TAGGED FOR EASE IN IDENTIFICATION AND TRACING OF CIRCUITS. IDENTIFICATION TAGS SHALL BE ENGRAVED FIBER OR PLASTIC TYPE, SUBJECT TO ACCEPTANCE. WIRES SHALL BE NUMBER AND CODED, USING BRADY "QUICKLABELS", OR EQUAL. ALL WIRES SHALL BE OF THE STRANDED CONSTRUCTION.
- D. INSTRUMENTATION WIRING SHALL BE TWO CONDUCTOR NUMBER 16 AWG SHIELDED CABLE WITH 600 VOLT POLYETHYLENE INSULATION, ALUMINUM-POLYESTER SHIELD (100% SHIELD COVERAGE), NO. 18 AWG COPPER DRAIN WIRE AND PVC JACKET. FURNISH BELDEN NO. 719, OR EQUAL. THREE CONDUCTOR CABLE SHALL BE SIMILAR TO ABOVE, BELDEN NO. 8618.
- E. UNDERGROUND TELEPHONE AND TELEMETRY CABLE: FURNISH 3 PAIR 20 GAUGE COPPER, DIRECT BURIAL CABLE. GEL FILLED, WITH ALUMINUM JACKET AND BLACK SUNLIGHT RESISTANT PREMIUM GRADE POLYPROPYLENE COVER.
- F. A COLOR CODING SYSTEM, AS LISTED BELOW, SHALL BE USED THROUGHOUT THE FACILITIES NETWORK OF FEEDERS AND CIRCUITS AND USED AS A BASIS OF BALANCING THE LOAD. SELECTION SHALL BE BASED ON APPLICABLE WORK COVERED BY THIS CONTRACT.

SYSTEM	COLOR	PHASE A	PHASE B	PHASE C	NEUTRAL	GROUND
120/240V		BLACK	RED	BLUE	WHITE	GREEN

*SEE NEC PAR. 210-5 FOR COMBINED SYSTEM REQUIREMENTS.


- G. ALL CONTROL WIRING SHALL BE COLOR CODED WITH WIRES OF COLORS DIFFERENT FROM THOSE USED TO DESIGNATE PHASE WIRES.
- H. JOINTS OF 10 AWG AND SMALLER SHALL BE MADE WITH PROPERLY INSULATED SOLDERLESS- TYPE PRESSURE CONNECTORS, WHERE STRANDED CONDUCTORS OR MULTIPLE SOLID CONDUCTORS ARE CONNECTED TO TERMINALS, SOLDERLESS LUGS MANUFACTURED BY THOMAS AND BETTS COMPANY, OR EQUAL, SHALL BE USED.
- I. JOINTS OF NO. 8 AWG AND LARGER IN POWER AND LIGHTING CIRCUITS SHALL BE OF THE TYPE INDENTED INTO THE CONDUCTOR BY MEANS OF A HAND OR HYDRAULIC PRESSURE TOOL. CONNECTORS SHALL BE BURNDY "HY-DENT", T & B "STA-KON", OR EQUAL. CONNECTORS FOR CONTROL WIRING SHALL BE BURNDY "HY-LUG", OR EQUAL.
- J. ALL CONTROL WIRING SHALL BE SPLICED OR TERMINATED AT A TERMINAL STRIP. "WIRE NUTS" WILL NOT BE ACCEPTED.

2.6 SAFETY DISCONNECT SWITCHES AND MANUAL TRANSFER SWITCHES

- A. PROVIDE SAFETY DISCONNECT SWITCHES AS SHOWN ON THE DRAWINGS AND WHERE REQUIRED BY THE NATIONAL ELECTRICAL CODE. SWITCHES SHALL BE HORSEPOWER RATED FOR ITS SPECIFIC MOTOR WHERE APPLICABLE AND SHALL BE OF THE SIZES REQUIRED. SWITCHES USED AS SERVICE ENTRANCE EQUIPMENT SHALL BE LABELED AS SUCH. THE CONTRACTOR SHOULD NOTE THAT NOT ALL SWITCHES AS REQUIRED BY THE NEC ARE SHOWN BUT MUST BE PROVIDED BY THE CONTRACTOR.
- B. SWITCHES SHALL BE OF THE HEAVY-DUTY TYPE WITH SIDE HANDLE OPERATION. SWITCHES SHALL BE EQUIPPED WITH A COVER INTERLOCK TO PREVENT OPERATION WITH COVER OPEN AND PROVISIONS TO PADLOCK THE SWITCH IN THE OPEN POSITION.
- C. SWITCHES SHALL BE VISIBLE BLADE, EXTERNALLY OPERATED, WITH ALL CURRENT CARRYING PARTS SILVER OR TIN PLATED COPPER.

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Scale



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#	Revision	By	Date
1	ADD SCHEDULE 1	BSM	2023-01-10
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ISSUED FOR BIDDING

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 957

GEORGETOWN PUMP STATION
 REHAB & BLOWER RETROFIT
 COW BRIDGE BRANCH - INDIAN RIVER WATERESHED
 COVINGTON, MISSISSIPPI
 TPA MAP # 150-23-001-12-00
 GEORGETOWN PUMP STATION ELECTRICAL NOTES
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Date: 2023-09-20
 Scale: AS NOTED
 Des. By: MCS
 Proj. No.: 22-2-0002

Dwg. No.:
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- D. SWITCHES INSTALLED OUTSIDE, AS NOTED, OR IN WET LOCATIONS SHALL BE RATED AS NEMA 3R STAINLESS STEEL.
- E. SWITCHES SHALL BE AS MANUFACTURED BY SQUARE D, CLASS 3110 OR EQUAL AND CLASS 3140 FOR THE MANUAL TRANSFER SWITCH.
- F. ALL SWITCHES SHOWN OR DESCRIBED FOR USE ON ALL CONTROL PANELS OR COMBINATION STARTERS ARE TO BE OF THE SIDE MOUNTED OR FLANGE MOUNTED TYPE. DOOR MOUNTED SWITCHES OR OPERATORS WILL NOT BE ACCEPTED.

2.7 THERMAL MANUAL MOTOR STARTING SWITCHES

- A. THERMAL MANUAL MOTOR STARTING SWITCHES SHALL BE MANUALLY OPERATED SWITCHES EQUIPPED WITH A MELTING ALLOY TYPE THERMAL OVERLOAD RELAY.
- B. THERMAL UNIT SHALL BE INTERCHANGEABLE AND THE STARTER SHALL BE INOPERATIVE IF THE THERMAL UNIT IS REMOVED.
- C. THE SWITCH SHALL BE QUICK MAKE AND BREAK TYPE WITH SELF-INDICATING TRIP FREE HANDLE.
- D. ENCLOSURES SHALL BE NEMA 3R NON-METALLIC OR NEMA 3R CAST ALUMINUM FOR ALL LOCATIONS. PROVIDE HANDLE GUARD HAVING LOCKING PROVISIONS ON ALL ENCLOSURES. PROVIDE FLUSH MOUNTED ENCLOSURES FOR UNITS LOCATED IN FINISHED AREAS.
- E. WHERE INDICATED, STARTING SWITCHES SHALL BE COMBINED WITH A THREE-POSITION HAND-OFF-AUTOMATIC SELECTOR SWITCH MOUNTED IN THE SAME OR SIMILAR ENCLOSURE.

2.8 WIRING DEVICES

- A. THE FOLLOWING WIRING DEVICES SHALL BE FURNISHED AND INSTALLED WHERE CALLED FOR ON THE DRAWINGS. MISCELLANEOUS ITEMS NOT INCLUDED BELOW SHALL BE UNDERWRITER'S LABORATORIES STANDARD CONFORMING TO THE NEC. ALL DEVICES ARE TO BE HEAVY DUTY, SPEC. GRADE TYPE. DEVICES SHALL BE ARROW-HART, LEVITON, HUBBELL, OR EQUAL, TO THE FOLLOWING ARROW-HART CATALOG NUMBERS.
 - B. WALL SWITCHES
 - 1. TOGGLE SWITCHES SHALL BE OF THE SILENT MECHANICAL TYPE RATED 20 AMPERE, 120/277 VOLT A.C. SINGLE POLE SWITCHES SHALL BE ARROW-HART #1991-1 FOR 20AMP. TWO POLE AND THREE AND FOUR-WAY SWITCHES SHALL BE OF THE SAME MANUFACTURE AND GRADE. GANGED 277 VOLT SWITCHES SHALL COMPLY WITH NEC 380-8. USE ARROW-HART #1991 SERIES, OR EQUAL.
 - C. RECEPTACLES
 - 1. 20 AMPERE, 120 VOLT, DUPLEX RECEPTACLES, NEMA 5-20R: DUPLEX RECEPTACLES SHALL BE 3 WIRE, U-GROUND. RECEPTACLES SHALL BE ARROW-HART #5352, OR EQUAL.
 - 2. 20 AMPERE, 120 VOLT, SINGLE RECEPTACLES, NEMA 5-20R: SINGLE RECEPTACLES, 20 AMPERE, 3 WIRE, U-GROUND. RECEPTACLES SHALL BE ARROW-HART #5361 OR EQUAL.
 - 3. 20 AMPERE, 120 VOLT, DUPLEX RECEPTACLES, NEMA 5-20R: GROUND FAULT CIRCUIT INTERRUPTER TYPE. ARROW-HART #6F5342, OR EQUAL.
 - D. COVER PLATES
 - 1. INTERIOR, FLUSH INSTALLATION: PROVIDE SATIN FINISH STAINLESS STEEL TYPE 302.
 - 2. TELEPHONE OUTLET, WALL: SAME AS ABOVE WITH MINIMUM 3/8 INCH RUBBER GROMMETTED CENTER HOLE FOR TELEPHONE CABLE.
 - 3. EXPOSED, WHERE DEVICES ARE INSTALLED EXPOSED IN "IS" OR "FD" CAST METAL BOXES, THEY SHALL BE FURNISHED WITH CAST ALUMINUM "DS" TYPE COVER PLATES.
 - 4. WIRING DEVICES DESIGNATED TO BE WEATHERPROOF SHALL BE PROVIDED WITH GASKETED, SPRING-HINGED LID-TYPE, CAST METAL COVERS HAVING CORROSION RESISTANT FINISH AND WEATHERPROOF MAT, UNLESS OTHERWISE SPECIFIED OR INDICATED.
 - E. SPECIAL WIRING DEVICES SHALL BE PROVIDED AS CALLED FOR ON THE DRAWINGS.

2.9 INDIVIDUALLY ENCLOSED RELAYS AND POWER RELAYS

- A. RELAYS SHALL BE MAGNETIC HEAVY-DUTY TYPE, 600 VOLT, WITH CONTINUOUS DUTY COIL AND A CONTINUOUS DUTY RATED CONTACTS TO MATCH THE APPLICATION.
- B. RELAYS USED FOR MOTOR LOADS SHALL BE RATED AS SUCH.
- C. ENCLOSURES SHALL BE INDUSTRIAL-TYPE NEMA 12, UNLESS OTHERWISE INDICATED.
- D. PLUG IN OR "CONTROL" TYPE RELAYS WILL NOT BE ACCEPTED.
- E. FURNISH SQUARE D COMPANY CLASS 8501, TYPE CO.

2.10 LIGHTING FIXTURES

- A. PROVIDE A LIGHT FIXTURE FOR EACH FIXTURE SYMBOL SHOWN ON THE DRAWING OF THE DESIGN AND QUALITY DESCRIBED HEREIN.

- B. SUPPORT FIXTURES INDEPENDENT OF DUCTS, AND PIPING. PROVIDE HANGERS FROM PURLIONS, BEAMS ETC. FOR SUPPORT OF ALL BOXES AND FIXTURES. PROVIDE GALVANIZED STEEL FOR ALL SUPPORT HANGERS, CHANNELS, BOLTS, ETC.
- C. PROVIDE A MINIMUM OF TWO SUPPORTS FOR EACH LED TYPE FIXTURE, ONE AT EACH END OF THE FIXTURE.
- D. PROVIDE ALIGNER HANGERS FOR ALL STEM SUSPENDED FIXTURES SO THAT FIXTURES HANG LEVEL WITH VERTICAL STEMS.
- E. PROVIDE ONLY UL LISTED AND LABELED FIXTURES WITH UL LISTED WIRING. WIRING SHALL BE SUITABLE FOR THE FIXTURE TEMPERATURE LISTING.
- F. FIXTURE TYPES
 - 1. TYPE A: SUPPLY AN LINEAR LED LIGHT FIXTURE MOUNTED TO THE CEILING. LIGHT FIXTURE SHALL MATCH FIXTURE SCHEDULE OR BE AN APPROVED EQUAL.

2.11 CONTROL PANEL GENERAL REQUIREMENTS

ALL CONTROL PANELS, INCLUDING STARTERS, CONTROL ALARM, DIALER INTERFACE, PUMP STATION CONTROL PANELS, LEVEL CONTROL PANELS AND DISPLAY PANELS SHALL MEET THE FOLLOWING GENERAL REQUIREMENTS, AND SHALL BE UL LISTED AS AN ASSEMBLY IN ACCORDANCE WITH U.L. 508B STANDARDS OR APPLICABLE U.L. STANDARD.

- A. ALL EXTERNAL WIRING IS TO TERMINATE AT A CENTRALLY LOCATED TERMINAL STRIP. THE TERMINAL STRIP SHALL BE CONSTRUCTED OF BOX-TYPE COPPER TERMINALS WITH NYLON INSULATORS SUITABLE FOR MINIMUM WIRE SIZES #22 TO #8 AWG. THE BLOCKS SHALL BE OF THE NEMA TYPE AND HAVE A LARGE HEAD SCREW, SIZED TO ACCEPT A 1/4" WIDE SCREWDRIWER BLADE, WITH PRESSURE PLATE AND BE MOUNTED ON A TRACK. SUPPLY SQUARE D CLASS 9080 TYPE GR6 OR EQUAL.
- B. WHERE POSSIBLE ALL INTERNAL WIRING IS TO BE IN A PLASTIC WIREWAY WITH REMOVABLE COVER.
- C. ALL WIRE SHALL BE COPPER TINNED PER ASTM B-33, STRANDED, RATED AT 600 VOLT AC, 105 DEGREES C, RATED AS UL TYPE 1015, AWM STYLE 1236, AND CSA TYPE TEW, OR OTHER APPROVED "CONTROL PANEL" WIRE. THE MINIMUM SIZE IS TO BE #16 AWG. FURNISH WIRE EQUAL TO CAROL CABLE #C2104. ALL INSTRUMENTATION WIRING IS TO BE SHIELDED, MINIMUM SIZE #18 AWG 600 VOLT AC. ALL WIRE IS TO BE COPPER TINNED STRANDED. ALL INTERNAL AC WIRING IS TO BE RED IN COLOR FOR NON-GROUNDED WIRES AND WHITE FOR ALL GROUNDED WIRES (NEUTRAL). THE GROUNDING WIRES SHALL BE GREEN. ALL OTHER CONTROL WIRES AND INSTRUMENTATION WIRES ARE TO BE OF A DIFFERENT COLOR THAN THE POWER WIRING.
- D. ALL RELAYS, DEVICES, AND EQUIPMENT SHALL BE MOUNTED ON A STEEL BACKPLATE RAISED OFF THE BACK OF THE ENCLOSURE.
- E. ALL RELAYS, DEVICES, EQUIPMENT, SWITCHES, PILOTS, AND ALL OTHER COMPONENTS MOUNTED IN OR ON THE ENCLOSURE SHALL BE MARKED AND LABELED AS SHOWN ON THE FACTORY DRAWINGS.
- F. ALL CONTROL PANELS SHALL BE SUPPLIED WITH A COMPLETE SET OF DRAWINGS SHOWING CONTROL LOGIC, WIRING LOGIC, COMPONENT LAYOUT, AND WIRE TO COMPONENT CONNECTION. A COPY IS TO BE IN EACH CONTROL PANEL AND THE O & M MANUAL.
- G. ALL DOOR MOUNTED SWITCHES, PILOTS, AND COMPONENTS SHALL HAVE AN IDENTIFICATION PLATE DESCRIBING THEIR FUNCTION. THE PLATES SHALL BE MADE OF LAMINATED PLASTIC WITH A BLACK BACKGROUND AND WHITE ENGRAVED CHARACTERS. ALL PLATES SHALL BE MOUNTED WITH STAINLESS STEEL FASTENERS.
- H. GENERAL CONTROL RELAYS USED TO PERFORM THE INTERLOCKING, INTERFACING, AND SEQUENTIAL FUNCTIONS SHOWN ON THE DRAWINGS SHALL BE PROVIDED FOR OPERATION WITH 120 VOLTS, 60 HERTZ COIL AND CONTACTS RATED AT 10 AMPERES, AT 120 VOLTS AC WITH NEON PILOT INDICATOR.
- I. PLUG-IN TIMING RELAYS SHALL BE OF THE SOLID STATE, PLUG-IN TYPE WITH ON DELAY OR OFF DELAY FUNCTION AS REQUIRED BY THE CONTROL SYSTEM. THEY SHALL OPERATE ON 120 VOLTS, 60 HERTZ, WITH CONTACTS RATED 10 AMPERES AT 120 VOLTS AC. ROCKER SWITCHES SHALL ADJUST THE TIME DELAY RELAYS SHALL BE AS MANUFACTURED BY TIMEMARK MODEL 360.
- J. ELAPSED TIME METERS SHALL BE THE NON-RESETTING TYPE, 5 DIGIT, WITH A TIME RANGE OF 9999 HOURS AND SHALL BE EAGLE SIGNAL CATALOG NO. HK410AG OR EQUAL.
- K. THE PERCENT TIMERS SHALL BE MOUNTED IN THE DOOR, AND HAVE AN EXTERNAL ADJUSTMENT KNOB. THE TIMER IS TO BE A MOTOR DRIVEN CLUTCH ENGAGED TYPE WITH ONE SPDT CONTACT. CONTACT RATING SHALL BE 10 AMPS @ 120 VOLT. THE UNIT SHALL HAVE A REMOVABLE PLUG IN TYPE NEMA 12 FACE AND TIMER SECTION. SUPPLY AN EAGLE SIGNAL CONTROLS HQ9 SERIES, WITH A 15 MINUTE RANGE.
- L. THE ALTERNATING RELAY SHALL BE A SOLID STATE PLUG-IN TYPE WITH AN LED INDICATOR SHOWING THE POSITION OF THE OUTPUT. A THREE-POSITION TOGGLE SWITCH SHALL BE INCLUDED TO SELECT BETWEEN ALTERNATING OUTPUT OR A FIXED SEQUENCE. FURNISH A TIMEMARK MODEL 261DT-120-120.
- M. ALL SELECTOR SWITCHES, PUSH BUTTONS, AND PILOT SWITCHES ARE TO BE FULL SIZED 1 1/8" DIA MOUNTING BLEND NEMA 4X RATED AND HEAVY DUTY. ALL PILOT LIGHTS SHALL BE OF THE PUSH-TO-TEST TRANSFORMER, OR NEON TYPE. FURNISH ALLEN-BRADLEY COMPANY, BULLETIN 800H, OR EQUAL.

- N. THE RECYCLE TIMERS SHALL BE A SOLID STATE PLUG-IN TYPE UNIT. A SEPARATE ADJUSTMENT SHALL BE PROVIDED FOR BOTH THE ON AND OFF CYCLE OF THE TIMER. WHEN POWER IS APPLIED TO THE TIMER, THE UNIT SHALL CYCLE BETWEEN THE OFF TIME AND THE ON TIME UNTIL THE POWER IS REMOVED. THE TIMING ADJUSTMENT SHALL BE SET WITH ROCKER-TYPE SWITCHES AND HAVE AN ADJUSTMENT OF 1 TO 1023 MINUTES FOR BOTH THE ON AND OFF CYCLES. FURNISH A TIMEMARK MODEL #368 OR EQUAL.
- O. INTRINSICALLY SAFE BARRIER: FURNISH AND INSTALL A U.L. AND F.M. APPROVED TRANSFORMER TYPE BARRIER WHERE SHOWN OR REQUIRED BY THE NEC. THE BARRIER SHALL MEET ALL NECESSARY REQUIREMENTS TO ISOLATE AND ELIMINATE ALL VOLTAGE AND CURRENT POTENTIALS THAT COULD IGNITE A HAZARDOUS ATMOSPHERIC MIXTURE DURING NORMAL OR ABNORMAL OPERATING CONDITIONS. ZENER TYPE BARRIERS ARE NOT ACCEPTABLE.
- P. ALL DISCONNECT SWITCHES OR CIRCUIT BREAKERS SHALL HAVE A SIDE OR FLANGE MOUNTED OPERATOR. DOOR OR COVER MOUNTED OPERATORS OR HANDLES WILL NOT BE ACCEPTED.
- Q. PROVIDE ARC FLASH LABELS FOR ALL EQUIPMENT BEING INSTALLED. LABELS SHALL INDICATE HAZARD LEVEL AND PPE REQUIREMENTS AS REQUIRED BY NFPA 70E & IEEE 1584 AND AS FURTHER DESCRIBED IN THE PROJECT SPECIFICATIONS AND/OR PER THE MANUFACTURER'S RECOMMENDATIONS. NO TERMINAL STRIPS, WIRING CONNECTIONS, OR OTHER EXPOSED WIRING OR POINTS OF POTENTIAL ARC/FLASH SHALL BE EXPOSED TO THE OPERATOR WHEN THE MAIN CABINET IS OPEN. ALL WIRING BETWEEN COMPONENTS SHALL BE RUN IN RGS, SIZED FOR THE APPLICATION.

2.12 PUMP PANELS

- A. SUPPLY AND INSTALL A COMPLETE CONTROL SYSTEM TO CONTROL THE WET WELL LEVEL AND PUMPS. THE SYSTEM SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING MAJOR ITEMS.
 - 1. THE PUMP PANELS ARE TO HOUSE THE LEVEL SET POINT CONTROLLERS, CONTROL LOGIC RELAYS TO CONTROL THE PUMP STARTERS, WHERE INDICATED, AND ALARM THE FUNCTIONS. THE ENCLOSURE IS TO BE A HINGED NEMA 3R5S ENCLOSURE FOR OUTDOOR LOCATIONS AND NEMA 12 FOR INDOOR LOCATIONS, ALL WITH A STEEL BACK PANE. THE SET POINT CONTROLLER, SELECTOR SWITCHES, AND PILOT LIGHTS ARE TO BE MOUNTED IN THE DOOR FOR THE INDOOR LOCATIONS AND ON A SWING-OUT PANEL MOUNTED BEHIND THE ENCLOSURE DOOR FOR OUTDOOR LOCATIONS. THE ENCLOSURE IS TO BE ADEQUATELY SIZED TO CONTAIN ALL THE COMPONENTS, AND PROVIDE PROPER COOLING WITH FANS AS REQUIRED.
 - 2. LEVEL SENSOR TRANSDUCERS FOR EACH LOCATION.
 - 3. THE SYSTEM SHALL BE SUPPLIED AS A COMPLETE AND OPERATING SYSTEM AND SHALL INCLUDE ALL ITEMS AND EQUIPMENT, SHOWN OR NOT SHOWN ON THE DRAWINGS AND AS DESCRIBED HEREIN, NECESSARY TO PROVIDE A COMPLETE SYSTEM.
 - 4. ALL NECESSARY INSTALLATION LABOR SHALL BE INCLUDED.
 - 5. A FACTORY REPRESENTATIVE SHALL BE SUPPLIED TO INSPECT THE INSTALLATION, START-UP AND MAKE FINAL ADJUSTMENTS. THE FACTORY REPRESENTATIVE SHALL PROVIDE UP TO 8 HOURS OF TRAINING AT THE SITE FOR THE OWNER'S REPRESENTATIVE. THE START-UP SERVICE IS NOT TO BE INCLUDED IN THE TRAINING TIME, AND SHALL NOT INCLUDE TRAVEL TIME OR EXPENSES.
 - 6. THE PANEL IS FACTORY ASSEMBLED AND FULLY TESTED AT THE FACTORY PRIOR TO SHIPPING.
 - 7. ALL COMPONENTS AND EQUIPMENT SHALL MEET THE REQUIREMENTS OF THE "CONTROL PANEL GENERAL REQUIREMENTS" SECTION.
- B. LEVEL CONTROL
 - 1. THE LEVEL AND PUMP OPERATION IS TO BE MAINTAINED BY A SOLID STATE LEVEL CONTROL SYSTEM. THIS SYSTEM IS TO CONSIST OF A PRECISION HEAVY-DUTY PRESSURE TRANSDUCER INSTALLED IN THE WET WELLS OR TANK, CONVERTING THE LIQUID LEVEL TO A 4-20 MA ELECTRICAL SIGNAL, CONNECTED TO THE SETPOINT CONTROLLER. THE SETPOINT CONTROLLER SHALL SEND THE LEVEL START AND STOP SIGNALS TO THE CONTROL LOGIC RELAYS AND PUMP STARTERS.
- C. SETPOINT CONTROLLER
 - 1. THE SETPOINT CONTROLLER SHALL INCLUDE A NUMERICAL, 10 DIGIT KEY PAD TO PERFORM THE REQUIRED SETPOINT ON AND OFF FUNCTIONS. THE KEY PAD SHALL HAVE A TYPE12 MEMBRANE. ALL SETPOINTS SHALL BE MADE VIA THIS KEY PAD AND BE CAPABLE OF ONE TENTH OF ONE FOOT INCREMENTS, NO DIAL OR POTENTIOMETER ADJUSTMENTS WILL BE ACCEPTED. THE CONTROLLER SHALL ALSO HAVE THE CAPABILITY TO RESET ANY LEVEL TO ZERO AND SCALE UP FROM THE POINT. THE DISPLAY SHALL ALSO BE INCORPORATED INTO THE KEY PAD WITH THREE 5/8" LED DIGITS, AND ONE DECIMAL POINT. THE READING SHALL BE 0 TO 99.9 AN LED SHALL BE INCLUDED ON THE DISPLAY TO INDICATE THE CONDITION OF THE SETPOINTS. A PROGRAMMABLE TIME DELAY TO DELAY BOTH THE "ON" AND "OFF" OF EACH SETPOINT SHALL BE INCLUDED. THE DELAY SHALL BE FROM 1 TO 9.99 SECONDS. EACH SETPOINT SHALL HAVE A SEPARATE ADJUSTMENT FOR THE "OFF" AND "ON" POSITION. A SEPARATE PROGRAM LOCK-OUT SWITCH SHALL BE MOUNTED INSIDE THE ENCLOSURE TO PREVENT THE CHANGING OF THE SETPOINTS BY THE KEYPAD. ALL SETPOINT VALUES, OFFSET AND ANY OTHER PROGRAM DATA SHALL BE ACCESSIBLE AND SHOWN ON THE DISPLAY. THE CONTROLLER SHALL HAVE A TOTAL OF SIX SETPOINT OUTPUTS. THESE OUTPUTS ARE TO BE OF THE SPDT TYPE CONSTRUCTION. THE UNIT IS TO HAVE A MICROPROCESSOR WITH 12 BIT RESOLUTION, FAULT-CHECK SELF-DIAGNOSTICS, AND A NONVOLATILE MEMORY FOR ALL PARAMETERS AND SETPOINT VALUES. NO MEMORY LOSS SHOULD RESULT IN CASE OF A LOSS OF POWER. BATTERY BACK-UP WILL NOT BE ACCEPTABLE. THE CONTROLLER IS TO BE A STAND-ALONE UNIT. NO OTHER CONTROL FUNCTIONS SHALL BE INCORPORATED IN THIS CONTROLLER. FURNISH REQUIRED ISOLATION TO MEET U.L. REQUIREMENTS.

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**GEORGETOWN PUMP STATION
 REHAB & BLOWER RETROFIT**

COW BRIDGE - BRANCH - INDIAN RIVER WA TERSHED
 GEORGETOWN PUMP STATION
 TOWN OF GEORGETOWN, DE LAWARE
 TPA MAP # 150-23.001-12.00

GEORGETOWN PUMP STATION ELECTRICAL NOTES

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- 2. THE SETPOINT CONTROLLER SHALL BE A SHORITE CONTROLS SERIES 8970, GEMCO SERIES 1995, INVENTRON 91109410, OR APPROVED EQUAL.
- D. SUBMERSIBLE LEVEL SENSOR TRANSDUCER.
 - 1. THE TRANSDUCER SHALL BE CONSTRUCTED OF 316 STAINLESS STEEL, NON-LIQUID FILLED AND BE RATED AS SUBMERSIBLE, WITH A 4-20 MADC 1% ACCURACY SIGNAL. THE TRANSDUCER SIGNAL CABLE SHALL BE OF THE UNDERWATER TYPE, SUITABLY STRONG TO SUPPORT THE TRANSDUCER WITHOUT ADDITIONAL SUPPORT. THE CORD SHALL ALSO INCORPORATE AN INTEGRAL BREATHER TUBE TO VENT THE INSIDE OF THE TRANSDUCER TO THE ATMOSPHERE TO ASSURE TRUE GAUGE PRESSURE. THE CORD IS TO HAVE NO SPLICES, OVER PRESSURE PROTECTION FOR A MINIMUM OF 1.5 TIMES THE RATED PRESSURE, AND TEMPERATURE COMPENSATION OF 2% SHALL BE INCLUDED. THE RANGE SHALL BE AS REQUIRED TO MATCH THE MEASURED LEVEL. A VENT TUBE ANEROID BELLOW AND VAPOR TRAP SHALL BE INSTALLED IN THE VENT TUBE AT THE ENCLOSURE. THE TRANSDUCER SHALL BE RATED FOR A CLASS I, DIVISION I EXPLOSION PROOF LOCATION. THE TRANSDUCER SHALL HAVE ENCAPSULATED ELECTRONICS, STAINLESS PRESSURE CAVITY AND MEANS TO PREVENT DAMAGE FROM WATER ENTERING THE VENT TUBE. FACTORY SURGE AND LIGHTING PROTECTION OPTIONS SHALL BE PROVIDED. THE RANGE SHALL BE 0-15PSI.
 - 2. FURNISH A KELLER PSI SERIES 700 WITH THE LISTED OPTIONS AND SURGE PROTECTION, OR APPROVED EQUAL.
- E. ALL SELECTOR SWITCHES, PUSH BUTTONS, AND PILOT LIGHTS SHALL BE OF THE HEAVY-DUTY TYPE, 1/324 MOUNTING HOLE NEMA 4 STYLE. ALL PILOT LIGHTS SHALL BE OF THE PUSH-TO-TEST TRANSFORMER OR NEON TYPE. FURNISH ALLEN-BRADLEY COMPANY BULLETIN 800H, OR EQUAL.
- F. ALL SWITCHES AND PILOTS SHALL HAVE A PLASTIC LAMINATED LEGEND PLATE WITH WHITE LETTERS ENGRAVED ON A BLACK BACKGROUND.

2.13 PANELBOARD

- A. PROVIDE, WHERE INDICATED ON THE DRAWINGS, AN AUTOMATIC CIRCUIT BREAKER-TYPE PANELBOARD COMPLETE WITH ENCLOSING CABINET, TRIMS AND HINGED DOOR. ENCLOSURES SHALL BE RATED NEMA TYPE 3-R FOR OUTDOOR USE.
- B. ALL PANELBOARD INTERIORS SHALL BE FACTORY ASSEMBLED, COMPLETE WITH CIRCUIT BREAKERS AS SCHEDULED HEREIN OR AS SHOWN ON THE DRAWINGS. INTERIORS SHALL ALSO BE DESIGNED AND ASSEMBLED SO THAT ANY INDIVIDUAL BREAKER CAN BE REPLACED WITHOUT DISTURBING ADJACENT UNITS OR WITHOUT REMOVING OR ADDING BUSS BARS, AND SHALL EMPLOY SEQUENCE BUSSING.
- C. EACH PANEL SHALL BE EQUIPPED WITH A TYPED DIRECTORY, INDICATING PLAINLY WHAT EACH BRANCH CIRCUIT OF THE PANEL SERVES.
- D. EACH PANEL SHALL BE IDENTIFIED BY A LEGEND PLATE BOLTED TO THE EXTERIOR COVER OR DOOR, USING STAINLESS STEEL HARDWARE. THE LEGEND SHALL BE A LAMINATED PLASTIC TYPE WITH 1/2" WHITE LETTERS OR DIGITS ENGRAVED ON A BLACK BACKGROUND.
- E. PROVIDE A LOCKABLE HINGED DOOR AND TRIM TO COVER ALL BREAKER HANDLES. ALL LOCKS FOR ALL THE PANELS SHALL BE KEYPED ALIKE. FURNISH TO THE OWNER TWO KEYS PER PANEL.
- F. PANELBOARDS SHALL BE PROPERLY CLEANED AND FINISHED WITH A MEDIUM GRAY FINISH OVER A RUST-INHIBITING ZINC PHOSPHATIZED OR GALVANIZED COATING.
- G. BUSS BARS SHALL BE TIN-COATED COPPER.
- H. EACH PANELBOARD SHALL BE EQUIPPED WITH AN INTERIOR MOUNTED EQUIPMENT GROUND BAR.
- I. CIRCUIT BREAKERS SHALL BE BOLT-ON TYPE, MOLDED CASE, THERMAL-MAGNETIC WITH A MINIMUM 10,000 A.I.C. AT 240 OR 120 VOLTS.
- J. ALL PANELBOARDS ARE TO BE EQUIPPED WITH A MAIN CIRCUIT BREAKER. THE BREAKER IS TO HAVE AN AIC RATING SIZED TO MATCH THE FEEDER OR POWER COMPANY'S AVAILABLE FAULT CURRENT.
- K. FURNISH SQUARE D COMPANY TYPE NOOD EQUIPMENT.

2.14 ENCLOSED AND MAIN CIRCUIT BREAKERS

- A. THE CIRCUIT BREAKERS SHALL BE ENCLOSED IN A NEMA 1 TYPE ENCLOSURE WITH SURFACE MOUNTED COVERS FOR INDOOR USE AND NEMA 4XSS FOR OUTDOOR USE, AND WITH PROVISIONS TO LOCK THE BREAKER IN THE OPEN POSITION. ALL ENCLOSURES USED FOR SERVICE ENTRANCE SHALL BE SO APPROVED. ALL ENCLOSURES SHALL BE EQUIPPED WITH A SOLID NEUTRAL AND A SEPARATE GROUND BAR. THE CIRCUIT BREAKERS SHALL BE MANUFACTURED BY THE SQUARE D COMPANY, CATALOG KCL, MHL OR AN APPROVED EQUAL WITH THE SAME VOLTAGE, AMPERAGE, RATING AND MEET THE SITES REQUIRED INTERRUPTING CAPACITY AS PER THE NEC. THE BREAKER IS TO HAVE AN AIC RATING SIZED TO MATCH THE FEEDER OR POWER COMPANY'S AVAILABLE FAULT CURRENT. THE CONTRACTOR SHALL CONTACT THE POWER COMPANY AND REQUEST THE AVAILABLE FAULT CURRENT FOR THE LOCATION AND SIZE THE BREAKER AS REQUIRED. THE POWER COMPANY'S CALCULATION SHALL BE SUPPLIED AS PART OF THE SUBMITTAL PACKAGE FOR THE BREAKER.

2.15 FLOAT SWITCH

- A. FURNISH WHERE INDICATED A TEARDROP-TYPE FLOAT SWITCH WITH A STEEL TUBE MERCURY SWITCH ENCAPSULATED IN A POLYURETHANE RESIN. THE CORD IS TO BE 16 AWG, 300 VOLT AC, TYPE SLOW CORD. A CASE IRON WEIGHT IS TO BE SECURED TO THE CORD AT THE FLOAT. ADEQUATE CORD LENGTH IS TO BE FURNISHED TO MAKE THE FINAL CONNECT IN AN APPROVED ENCLOSURE, WITH NO SPLICES. FURNISH A CONERY MANUFACTURING, INC. SERIES 2900 FLOAT WITH WEIGHT.

2.16 PHASE AND POWER LOSS MONITOR, (PL)

- A. FURNISH A PHASE AND POWER LOSS MONITOR WHERE SHOWN TO SENSE LOSS OF PHASE, PHASE REVERSAL, OVER VOLTAGE, UNDER VOLTAGE AND PHASE UNBALANCE.
- B. THE MONITOR SHALL HAVE INDIVIDUAL ADJUSTMENTS FOR UNDER VOLTAGE, OVER VOLTAGE AND A 1-10 SECOND TIME DELAY. LEDS SHALL INDICATE FAULT CONDITIONS. TRANSIENT PROTECTION SHALL BE RATED AT 2500 VRMS. THE OUTPUT SHALL BE ONE SPDT RELAY.
- C. FURNISH A TIMEMARK CORP., MODEL 269.

2.17 NOT USED

2.18 D.C. POWER SUPPLY

- A. FURNISH WHERE SHOWN A 24 VOLT D.C. POWER SUPPLY FOR EACH SETPOINT CONTROLLER. THE POWER SUPPLY IS TO BE EXTERNAL AND INDEPENDENT OF THE POWER SUPPLY FURNISHED IN THE SETPOINT CONTROLLER. A SEPARATE POWER SUPPLY IS TO BE FURNISHED FOR EACH SETPOINT CONTROLLER AND TRANSDUCER.
- B. THE POWER SUPPLY IS TO HAVE THE FOLLOWING FEATURES:
 - 85 TO 264 VOLT AC INPUT
 - REGULATED 24 VOLT D.C. OUTPUT @ .32 AMP
 - +10% OUTPUT VOLTAGE ADJUSTMENT
 - LED OPERATION INDICATOR
 - 2000 VOLT AC FOR 60 SEC DIELECTRIC STRENGTH
 - DIN RAIL MOUNTING
 - UL LISTED
- C. FURNISH AN INDEC MODEL PSR-AD0724-E.

2.19 MOTOR STARTERS AND MOTOR CONTACTORS

- A. MAGNETIC STARTERS AND CONTACTORS SHALL BE AN ELECTROMAGNETIC DESIGN WITH DOUBLE-BREAK CADMIUM OXIDE SILVER CONTACTS. THE DESIGN SHALL MEET OR EXCEED THE APPLICABLE REQUIREMENTS OF UL AND NEMA.
- B. PROVIDE NEMA RATED MAGNETIC-TYPE STARTERS TO MATCH THE MOTOR HORSEPOWER, VOLTAGE, SERVICE FACTOR CURRENT, AND ALL OTHER MOTOR SPECIFICATIONS.
- C. STARTER UNITS SHALL BE SUPPLIED WITH 3-POLE BLOCK-TYPE MANUAL RESET OVERLOAD RELAYS, PROVIDING CLASS 20 OPERATION. THESE RELAYS SHALL UTILIZE THE DIRECTLY HEATED EUTECTIC ALLOY RATCHET HEATER ELEMENT, WHICH ARE AMBIENT INSENSITIVE.
- D. PROVIDE A SQUARE D COMPANY CLASS 8536 OR APPROVED EQUAL.

2.20 "TRUE OFF" DELAY TIMER

- A. PROVIDE A "TRUE OFF" SOLID STATE DELAY TIMER THAT WILL TIME AND OPERATE WITH THE INPUT POWER REMOVED.
- B. THE TIMER SHALL HAVE A DELAY TIME ADJUSTMENT KNOB. THE UNIT SHALL INCORPORATE DIGITAL CMOS DESIGN WITH TRANSIENT PROTECTION. THE CONTACT RATING SHALL BE 10 AMPS AT 120 VAC. THE RANGE SHALL BE 3 SEC. TO 5 MIN.
- C. FURNISH AN R-K ELECTRONICS MODEL COB-115A-5-5M.

2.21 PUMP PANEL SURGE PROTECTOR

- A. THE SUPPRESSOR SHALL BE UL TESTED AND LABELED MEETING UL 1449 STANDARD, BE CSA CERTIFIED, AND FOLLOW IEEE/ANSI C62.51 AND C62.45 GUIDELINE TESTING. THE SUPPRESSOR SHALL HAVE THE FOLLOWING FEATURES:
 - 1. FULL CYCLE CLAMPING PROFILE THAT FOLLOWS THE CONTOUR OF THE AC SINE WAVE.
 - 2. REAL-TIME DIAGNOSTICS WITH FAULT LED, AUDIBLE ALARM, AND ALARM CONTACTS.
 - 3. LINE SIDE MONITORING LEDS.

2.22 NOT USED

2.23 SURGE PROTECTION FOR BREAKER PANELS

- A. FURNISH A LIGHTNING SURGE ARRESTER AND A SURGE PROTECTOR AT THE MAIN BREAKER LOCATION OF ALL BREAKER PANELS. BOTH UNITS ARE TO MOUNTED AS NEAR AS POSSIBLE TO THE PANEL. THE LIGHTNING ARRESTER SHALL MEET THE FOLLOWING:
 - 1. NEC ARTICLE 280.
 - 2. UL LISTED AS A SECONDARY SURGE ARRESTER.
 - 3. MEET ANSI/IEEE C62.11-1987.
 - 4. DISCHARGE 10,000 AMPS AT 750 VOLT.
- B. FURNISH A SQUARE D COMPANY CLASS 6671-SDSA1 175 ARRESTER
- C. THE SURGE SUPPRESSER SHALL MEET THE FOLLOWING:
 - 1. FEATURES FULL-CYCLE TRACKING.
 - 2. MEET UL STANDARD 1449.
 - 3. 75 KA TRANSIENT CURRENT CAPACITY.
 - 4. 950 JOULES ENERGY CAPACITY.
 - 5. 832 VOLT MAXIMUM L-L AND 532 VOLT L-N CLAMPING CAPACITY.
 - 6. FURNISH A LEVITON SERIES 42000 SUPPRESSER.

2.24 SUPERVISORY CONTROL & DATA ACQUISITION (MISSION) EQUIPMENT & SYSTEM

- A. FURNISH ALL REQUIRED MATERIAL, DESIGN, AND PROGRAMMING NECESSARY TO CONTROL AND MONITOR THE PROPOSED PUMPING STATION AND ASSOCIATED EQUIPMENT FROM THE OWNER'S EXISTING MISSION SYSTEM. THE CONTRACTOR SHALL NOTE THAT NOT ALL OF THE REQUIRED MATERIALS AND SERVICES NECESSARY FOR A COMPLETE AND OPERABLE SYSTEM ARE LISTED OR SHOWN IN THE SPECIFICATIONS OR DRAWINGS. THE CONTRACTOR WILL BE REQUIRED TO PROVIDE A LEVEL OF SYSTEM DESIGN FOR A COMPLETE INTEGRATION WITH THE EXISTING MISSION SYSTEM. THE CONTRACTOR WILL BE REQUIRED TO SPEND A HIGH LEVEL OF TIME, BOTH DURING THE BID PHASE AND CONSTRUCTION PHASE OF THIS PROJECT, INVESTIGATING THE EXISTING SYSTEM IN ORDER TO FULLY UNDERSTAND ITS OPERATION, AND HARDWARE REQUIREMENTS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO SUBMIT ANY CONCERNS OR INADEQUACY WITH THE EXISTING SYSTEM, DURING THE BID PHASE, TO THE ENGINEER. THE CONTRACTOR WILL BE REQUIRED TO DEMONSTRATE TO THE ENGINEER WITH SHOP DRAWINGS, SEQUENCES OF OPERATION AND TEST RESULTS THAT THEY FULLY UNDERSTAND THE SCOPE AND REQUIREMENTS OF THE MISSION INTEGRATION, AND HAVE GENERATED A COMPLETE SYSTEM DESIGN. THE DEMONSTRATION SHALL BE SUBMITTED AND APPROVED PRIOR TO THE CONTRACTOR ORDERING ANY MISSION EQUIPMENT. IT MUST BE FULLY UNDERSTOOD THAT THE CONTRACTOR MUST FURNISH A COMPLETE AND OPERABLE SYSTEM, AND THAT NO SERVICES OR MATERIAL WILL BE PROVIDED BY THE OWNER.
- B. THE OWNER HAS IN PLACE AN OPERABLE TOWN- WIDE MISSION SYSTEM UTILIZING A SPECIFIED EQUIPMENT STANDARD. THE OWNER HAS AN INVENTORY OF SPARE PARTS AND THEIR PERSONNEL HAVE BEEN TRAINED ON THE SYSTEM AND HARDWARE. THE STANDARD EQUIPMENT COMPONENTS ARE CURRENT PRODUCTION ITEMS OF THE MANUFACTURERS SPECIFIED IN THESE SPECIFICATIONS AND ARE READILY AVAILABLE FROM SEVERAL SOURCES, AND SUPPORTED LOCALLY BY SEVERAL SERVICE COMPANIES. FOR THESE REASONS ONLY THE SPECIFIED COMPONENTS WILL BE ACCEPTED FOR THIS PROJECT. NO SUBSTITUTIONS WILL BE ACCEPTED.
- C. THE EXISTING MISSION SYSTEM SHALL BE TUNED, ADJUSTED, AND PROGRAMMED AS NECESSARY TO PROVIDE A COMPLETE AND OPERATIONAL SYSTEM THE SPECIFICATIONS HEREIN AND THE CONTRACT DRAWINGS ARE FURNISHED TO PROVIDE THE MINIMUM LEVEL OF PERFORMANCE AND REQUIRED EQUIPMENT. NOT ALL OF THE NECESSARY EQUIPMENT, HARDWARE, AND SOFTWARE ARE SHOWN, LISTED OR DESCRIBED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FURNISH AND INSTALL ALL NECESSARY ITEMS TO PROVIDE THE REQUIRED "COMPLETE AND OPERATIONAL SYSTEM".

2.25 MANUAL POWER INLET/TEMPORARY GENERATOR CONNECTION.

- A. THE MANUAL POWER INLET/TEMPORARY GENERATOR CONNECTION SHALL BE A MINIMUM OF NEMA 3R.
- B. THE TEMPORARY CONNECTION SHALL BE WEATHERPROOF WHILE IN USE.
- C. COORDINATE WITH TOWN OF GEORGETOWN FOR TEMPORARY POWER AVAILABILITY PRIOR TO PROVIDING TEMPORARY CONNECTION.

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GEORGETOWN PUMP STATION REHAB & BLOWER RETROFIT
 COW BRIDGE BRANCH - INDIAN RIVER WATER-SHED
 YORK COUNTY, DELAWARE
 TOWN MAP # 15-23-001-12.00

GEORGETOWN PUMP STATION ELECTRICAL NOTES

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PART 3 - EXECUTION

3.1 EXAMINATION OF SITE

A. EXAMINE THE SITE, DETERMINE ALL CONDITIONS AND CIRCUMSTANCES UNDER WHICH THE WORK MUST BE DONE, AND MAKE ALL NECESSARY ALLOWANCES.

3.2 SUPERVISION AND COORDINATION

A. PROVIDE COMPLETE SUPERVISION, DIRECTION, SCHEDULING, AND COORDINATION OF ALL WORK UNDER THE CONTRACT, INCLUDING THAT OF SUBCONTRACTORS, MANUFACTURERS, AND SUPPLIERS, USING FULL ATTENTION AND THE BEST SKILL. BE RESPONSIBLE FOR ALL WORK AND MAKE ALL SUBCONTRACTORS, SUPPLIERS, AND MANUFACTURERS FULLY AWARE OF ALL REQUIREMENTS OF THE CONTRACT.

B. COORDINATE THE ROUGH-IN OF ALL ELECTRICAL WORK PERFORMED UNDER THE VARIOUS DIVISIONS.

C. COORDINATE THE INSTALLATION OF ALL NECESSARY SLEEVES, ANCHORS AND SUPPORTS FOR CONDUIT, WIRING, AND OTHER WORK PERFORMED UNDER THE VARIOUS DIVISIONS.

D. THE CONTRACTOR SHALL CAREFULLY COORDINATE THE INSTALLATION OF ALL UNDERGROUND AND OVERHEAD ELECTRICAL WORK WITH OTHER UTILITY SYSTEMS, BOTH NEW AND EXISTING. LOCATIONS OF PROPOSED UNDERGROUND CONDUIT ARE SHOWN AS APPROXIMATE. ALL SUCH ITEMS SHALL BE STAKED AND UTILITY CROSSINGS IDENTIFIED PRIOR TO INSTALLATION. THE ACTUAL STAKED LAYOUT SHALL BE REVIEWED WITH THE ENGINEER PRIOR TO THE INSTALLATION. LOCATING AND AVOIDING EXISTING UNDERGROUND AND OVERHEAD UTILITIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. ANY DAMAGE TO EXISTING UTILITIES SHALL BE IMMEDIATELY REPAIRED BY THE CONTRACTOR AT NO COST TO THE OWNER.

3.3 WIRING METHODS

A. ALL INTERIOR WIRING SHALL BE RUN IN RIGID GALVANIZED STEEL CONDUIT. THE WIRING MAY BE SURFACE MOUNTED OR A FLUSH MOUNTED SYSTEM.

B. ALL EXPOSED EXTERIOR WIRING SHALL BE RUN IN RIGID GALVANIZED STEEL CONDUIT.

C. ALL WIRING IN UNDERGROUND LOCATIONS IN WET OR CORROSIVE LOCATIONS, IN ALL WET WELLS, IN ALL CHLORINE ROOMS AND IN ALL CHEMICAL ROOMS SHALL BE RUN IN PVC COATED RIGID CONDUIT. WHERE SUCH CONDUITS PASS UNDER PAVING OR BUILDING, THEY SHALL BE ENCASED IN 3" CONCRETE ENVELOPE. WHERE SUCH CONDUITS PENETRATE FOOTINGS OR UNDER ROADWAYS, THEY SHALL BE CONCRETE ENCASED AND THE CONCRETE ENVELOPE SHALL BE REINFORCED. ALL CUTS AND SCRATCHES IN THE PVC COATING SHALL BE REPAIRED OR RECOVERED. ALL FITTINGS, BOXES AND CONDUIT BODIES SHALL BE PVC COATED.

D. ALL CONDUITS INSTALLED UNDER ROADWAYS, DRIVEWAYS, WALKWAYS SHALL BE INSTALLED TO A MINIMUM DEPTH OF 24" BELOW THE FINISHED GRADE.

E. SHORT LENGTHS OF FLEXIBLE METALLIC CONDUIT SHALL BE USED AS FINAL EQUIPMENT CONNECTIONS IN CASES WHERE VIBRATION IS A FACTOR, SUCH AS WITH MOTORS, TRANSFORMERS, AND ENGINE-GENERATORS. FLEXIBLE CONDUIT SHALL BE STANDARD LIQUID-TIGHT TYPE, UTILIZING FITTINGS MANUFACTURED FOR THIS SPECIFIC PURPOSE. ALL FLEXIBLE CONDUITS SHALL BE OF MINIMUM LENGTH TO ACCOMPLISH THE PURPOSE FOR WHICH THEY ARE USED, WHERE FLEXIBLE CONNECTIONS ARE PERMISSIBLE AS ABOVE, AND WHERE CONNECTION BOXES ARE AN INTEGRAL PART OF A PIECE OF EQUIPMENT AND WILL NOT ACCOMMODATE 3/4" FITTINGS, 1/2" FLEXIBLE CONDUIT MAY BE USED. A GROUNDING CONDUCTOR SHALL BE PROVIDED.

3.4 EQUIPMENT INSTALLATION

A. DRAWINGS SHOWING THE LAYOUT OF THE ELECTRICAL SYSTEMS INDICATE THE APPROXIMATE LOCATIONS OF OUTLETS, APPARATUS AND EQUIPMENT. THE RUNS OF FEEDERS AND BRANCHES AS SHOWN ON THE DRAWINGS ARE SCHEMATIC ONLY AND ARE NOT INTENDED TO SHOW THE EXACT ROUTING AND LOCATION. ACTUAL ROUTING SHALL BE GOVERNED BY STRUCTURAL CONDITIONS, OBSTRUCTIONS AND SIZE AND SHAPE OF APPROVED EQUIPMENT. THIS SHALL NOT BE CONSTRUED TO MEAN THAT THE DESIGN OF THE SYSTEMS MAY BE CHANGED, IT MERELY REFERS TO THE EXACT RUN OF A RACEWAY BETWEEN GIVEN POINTS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO SECURE ALL DRAWINGS AFFECTING CONDUIT TERMINATIONS TO EQUIPMENT, SPECIFIED IN THIS OR OTHER SECTIONS, OR FURNISHED BY OTHERS, AND TO VERIFY CONDUIT LOCATIONS BEFORE INSTALLATION. THE CONTRACTOR SHALL CONSULT ALL CONTRACT DRAWINGS AND SPECIAL PROVISIONS WHICH MAY AFFECT THE LOCATION OF OUTLETS, APPARATUS, AND MAY BUILDING EQUIPMENT, TO AVOID INTERFERENCE WITH THE WORK OF OTHER TRADES AND PERMIT FULL COORDINATION OF WORK. THE DRAWINGS SHOW ONLY THE MINIMUM REQUIRED ELECTRICAL BOXES, JUNCTION BOXES AND WIRE DUCTS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FURNISH ALL ADDITIONAL BOXES AND DUCTS REQUIRED TO MEET GENERAL ESTABLISHED TRADE PRACTICES AND ALL REQUIRED BOXES AND DUCTS TO FURNISH A COMPLETE AND OPERABLE SYSTEM EVEN IF SUCH REQUIRED BOXES AND DUCTS ARE NOT SHOWN.

B. ALL ELECTRICAL CONTROLLERS AND DEVICES NOT CONTAINED IN A FACTORY ASSEMBLED MOTOR CONTROL CENTER SHALL BE COMPLETE WITH APPROPRIATE NEMA ENCLOSURES, UNLESS NOTED OTHERWISE ENCLOSURES SHALL BE NEMA 4X SS.

C. INSTALL IN EASILY ACCESSIBLE LOCATIONS, ALL ELECTRICAL EQUIPMENT SUCH AS JUNCTION OR PULL BOXES, PANELBOARDS, SWITCHES, CONTROL AND SIMILAR APPARATUS THAT MAY REQUIRE PERIODIC OPERATION, MAINTENANCE, AND INSPECTION, WHILE THE DRAWINGS INDICATE, AS FAR AS POSSIBLE, ACCESSIBLE LOCATIONS, THE BUILDING CONSTRUCTION MAY DICTATE THAT SUCH LOCATIONS ARE NOT READILY ACCESSIBLE, IN WHICH CASES THE CONTRACTOR SHALL CALL THE ENGINEER'S ATTENTION TO THESE CONDITIONS BEFORE ADVANCING THE CONSTRUCTION TO A STAGE WHERE A CHANGE WILL CAUSE ADDITIONAL COST. ALL EQUIPMENT SHALL BE INSTALLED MEETING ALL NEC CLEARANCE AND ACCESSIBILITY REQUIREMENTS.

D. THE OWNER RESERVES THE RIGHT OF A REASONABLE AMOUNT OF SHIFTING OF OUTLET AND EQUIPMENT LOCATIONS AT NO ADDITIONAL COST TO THE OWNER UP UNTIL THE TIME OF ROUGH-IN WORK.

E. FURNISH ALL REQUIRED MOUNTING HARDWARE, INCLUDING SUPPLEMENTARY STEEL ANGLES, CHANNELS, HANGERS, OR SLIPS NECESSARY TO PROPERLY SUPPORT CONDUITS AND OTHER ELECTRICAL MATERIALS AND EQUIPMENT. ALL SUCH MATERIAL SHALL BE CORROSION RESISTANT.

F. KEEP ALL CONDUITS A MINIMUM 6" AWAY FROM FLUES, STEAM PIPES, HOT WATER PIPES, OR OTHER HOT SURFACES ABOVE 77 DEGREES F.

G. INSTALL EXPOSED CONDUITS PARALLEL AND PERPENDICULAR TO WALLS, STRUCTURAL MEMBERS, CEILINGS, AND INTERIOR SURFACES. INSTALL PLUMB. ALL INSTALLATION SHALL BE MADE IN A NEAT AND QUALITY WORKMANLIKE MANNER. INSTALLATIONS THAT ARE NOT SHALL BE REPLACED BY THE CONTRACTOR AT NO COST TO THE OWNER.

H. PROVIDE AN 1/8" NYLON PULL LINE IN EACH CONDUIT TO BE LEFT EMPTY.

I. MAKE ANGLE BENDS IN EXPOSED RUNS OF CONDUITS WITH MANUFACTURED ELBOWS. SCREW JOINED CONDUIT FITTINGS OR CONDUIT BENT TO RADIUS OF MANUFACTURED ELBOWS.

J. USE CAPPED BUSHINGS OR "PUSH PENNY" PLUGS TO PREVENT FOREIGN MATTER FROM ENTERING THE CONDUIT SYSTEM DURING CONSTRUCTION.

K. CLEAN AND PLUG OR CAP ALL CONDUITS LEFT EMPTY FOR FUTURE USE.

L. PROVIDE STAND-OFF BRACKETS TO MAINTAIN A MINIMUM 1/4" AIR SPACE BETWEEN THE CONDUIT AND THE MOUNTING SURFACE AT ALL LOCATIONS.

M. LUBRICANTS FOR PULLING WIRES SHALL BE APPROVED FOR USE WITH THE WIRES AND CONDUITS INSTALLED. SOAP SHALL NOT BE USED.

N. ALL ELECTRICAL PANELS, BOXES, SWITCHES, TRANSFORMERS, ETC. WHICH ARE SURFACE-MOUNTED, BOTH INTERIOR AND EXTERIOR, SHALL BE INSTALLED ON RACKS MOUNTED ON THE WALLS TO PROVIDE AN AIR SPACE BEHIND THE EQUIPMENT. THE RACK SHALL CONSIST OF KINDORF CHANNEL, MINIMUM 3/4" DEPTH OR EQUAL. ALL ELECTRICAL EQUIPMENT MOUNTED ON RAILINGS OR SIMILAR STRUCTURES SHALL BE COMPLETE WITH FRAMEWORK BACKBOARDS TO PROVIDE AIR SPACE BEHIND. THE FRAMEWORK SHALL BE SECURELY FASTENED TO THE RAILING OR STRUCTURE WITH CORROSION RESISTANT HARDWARE. ALL SUPPORTS IN DAMP OR CORROSIVE AREAS SHALL BE PVC COATED. TYPICAL MOUNTING METHODS SHALL BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.

3.5 GUARANTEE

A. GUARANTEE OBLIGATIONS SHALL BE AS HEREINBEFORE SPECIFIED IN THE GENERAL CONDITIONS OF THESE SPECIFICATIONS, AND AS FOLLOWS:

1. GUARANTEE THE COMPLETE ELECTRICAL SYSTEM FREE FROM ALL MECHANICAL AND ELECTRICAL DEFECTS FOR THE PERIOD OF ONE (1) YEAR BEGINNING FROM THE DAY OF FINAL ACCEPTANCE OF THE WORK BY THE OWNER.
2. DURING THE GUARANTEE PERIOD, BE RESPONSIBLE FOR THE PROPER ADJUSTMENTS OF ALL SYSTEMS, EQUIPMENT, AND APPARATUS INSTALLED BY HIM AND DO ALL WORK NECESSARY TO ENSURE EFFICIENT AND PROPER FUNCTIONING OF THE SYSTEMS AND EQUIPMENT.
3. UPON RECEIPT OF NOTICE FROM THE OWNER OF FAILURE OF ANY PART OF THE ELECTRICAL INSTALLATION DURING THE GUARANTEE PERIOD, NEW REPLACEMENT PARTS SHALL BE FURNISHED AND INSTALLED PROMPTLY AT NO COST.

3.6 TEMPORARY POWER

A. OBTAIN AND PAY FOR A TEMPORARY ELECTRICAL SERVICE AT EACH LOCATION WHERE REQUIRED FOR CONSTRUCTION POWER. THE SERVICE SHALL HAVE (4) 20-AMP GFI PROTECTED OUTLETS. ADDITIONAL BREAKER SPACE SHALL BE PROVIDED FOR UP TO (4) 2-POLE BREAKERS. THE TEMPORARY SERVICE AND OUTLETS SHALL BE LOCATED WITHIN 50' OF THE BUILDING FOUNDATION AT EACH SITE LOCATION. ANY USE OF THE OWNER'S UTILITIES MUST BE APPROVED BY THE ENGINEER. THE COST FOR THE SERVICE SHALL BE PAID FOR CONTRACTOR.

3.7 CONNECTIONS AND ALTERATIONS TO EXISTING WORK

A. KEEP ALL EXISTING ELECTRICAL SYSTEMS IN OPERATION DURING THE PROGRESS OF THE WORK. PROVIDE TEMPORARY ELECTRICAL SERVICE AND CONNECTIONS TO SYSTEMS OR EQUIPMENT, ETC., WHERE NECESSARY TO MAINTAIN CONTINUOUS OPERATION UNTIL THE NEW SYSTEMS AND EQUIPMENT ARE READY FOR OPERATION.

B. WHEN EXISTING ELECTRICAL WORK IS REMOVED, REMOVE ALL CONDUIT, DUCTS, SUPPORTS, ETC., TO A POINT BELOW THE FINISHED FLOORS OR BEHIND FINISHED WALLS AND CAP. SUCH POINTS SHALL BE FAR ENOUGH BEHIND FINISHED SURFACES TO ALLOW FOR THE INSTALLATION OF THE NORMAL THICKNESS OF FINISH MATERIAL. ALL WIRING AND CONDUCTORS SHALL BE REMOVED TO THEIR SOURCE.

C. WHEN THE WORK SPECIFIED HEREIN CONNECTS TO ANY EXISTING EQUIPMENT, CONDUIT, WIRING, ETC., PERFORM ALL NECESSARY ALTERATIONS, CUTTINGS, FITTINGS, ETC., OF THE EXISTING WORK AS MAY BE NECESSARY OR REQUIRED TO MAKE SATISFACTORY CONNECTIONS BETWEEN THE NEW AND EXISTING WORK AND LEAVE THE COMPLETED WORK IN A FINISHED AND WORKMANLIKE CONDITION.

D. WHEN THE WORK SPECIFIED HEREIN, OR UNDER OTHER DIVISIONS, NECESSITATES RELOCATION OF EXISTING EQUIPMENT, CONDUIT, WIRING, ETC., PERFORM ALL WORK AND MAKE ALL NECESSARY CHANGES TO EXISTING WORK AS MAY BE REQUIRED TO LEAVE THE COMPLETED AND EXISTING WORK IN A FINISHED AND WORKMANLIKE MANNER.

3.8 DEMOLITION

A. REMOVE FROM THE PREMISES AND DISPOSE OF ALL EXISTING WIRING, CONDUIT, MATERIAL, FIXTURES, DEVICES, EQUIPMENT, ETC., NOT REQUIRED FOR REUSE OR REINSTALLATION.

B. DELIVER WHERE DIRECTED EXISTING MATERIAL AND EQUIPMENT WHICH IS REMOVED AND IS DESIRED BY THE OWNER OR IS INDICATED TO REMAIN THE PROPERTY OF THE OWNER.

C. ALL OTHER MATERIALS AND EQUIPMENT WHICH ARE REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED BY THE CONTRACTOR FROM THE PREMISES.

3.9 STORAGE AND PROTECTION OF EQUIPMENT

A. ALL ELECTRICAL EQUIPMENT TO BE USED IN THE CONSTRUCTION SHALL BE PROPERLY STORED AND PROTECTED AGAINST THE ELEMENTS. ALL EQUIPMENT SHALL BE STORED UNDER COVER, AND SHALL NOT BE STORED AT THE CONSTRUCTION SITE ON THE GROUND, IN MUD, WATER, SNOW, RAIN, SLEET, OR DUST. LARGE DIAMETER CABLES MAY BE STORED ON REELS WITH WEATHERPROOF MATERIALS. SUCH WEATHERPROOF MATERIALS SHALL BE HEAVY-DUTY, SECURELY FASTENED AND MADE IMPERVIOUS TO THE ELEMENTS.

D. CONVENTIONAL ELECTRICAL CONSTRUCTION MATERIALS SUCH AS BUILDING WIRE, OUTLET AND JUNCTION BOXES, WIRING DEVICES, CONDUIT, LIGHTING FIXTURES, FITTINGS, ETC. SHALL BE STORED IN CONSTRUCTION BUILDINGS, COVERED TRAILERS OR PORTABLE COVERED WAREHOUSES. ANY EQUIPMENT SUBJECT TO DAMAGE OR CORROSION FROM EXCESSIVE MOISTURE SHALL BE STORED IN DRY, HEATED AREAS. ANY EQUIPMENT CONTAINING PLASTIC OR MATERIAL SUBJECT TO DAMAGE CAUSED BY EXCESSIVE HEAT OR SUNLIGHT SHALL BE STORED TO PREVENT SUCH DAMAGE. THIS INCLUDES PLASTIC DUCTS AND LENSES.

C. EQUIPMENT DAMAGED AS A RESULT OF THE ABOVE CONDITIONS SHALL BE PROPERLY REPAIRED AT THE CONTRACTOR'S EXPENSE OR SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE. IF, IN THE OPINION OF THE ENGINEER, THE EQUIPMENT HAS BEEN DAMAGED TO SUCH AN EXTENT IT CANNOT OPERATE PROPERLY AFTER REPAIRS ARE MADE.

D. ALL ELECTRICAL ENCLOSURES EXPOSED TO CONSTRUCTION DAMAGES SUCH AS PAINT SPOTS, SPACKLING OR PLASTER SPATTER, GROUT SPLASHES, WATERPROOFING COMPOUND, TAR SPOTS OR RUNS AND PIPE COVERING COMPOUND SPLASHES, SHALL BE COMPLETELY COVERED AND PROTECTED AGAINST DAMAGE.

E. IN THE EVENT OF LEAKAGE INTO A BUILDING OF ANY FOREIGN MATERIAL OR FLUID OCCURS OR MAY OCCUR, THE CONTRACTOR SHALL TAKE ALL STEPS AS DESCRIBED ABOVE TO PROTECT ANY AND ALL EQUIPMENT.

F. AFTER CONNECTIONS TO ELECTRICAL EQUIPMENT ARE COMPLETE AND THE EQUIPMENT IS READY FOR OPERATION, ALL CONSTRUCTION DEBRIS SHALL BE REMOVED FROM ALL ENCLOSURES. SUCH DEBRIS INCLUDES DUST, DIRT, WIRE CLIPPINGS, TAPE, AND INSULATION REMOVED IN ORDER TO MAKE THE CONNECTION.

3.10 PENETRATION OF WATERPROOF CONSTRUCTION

A. COORDINATE THE WORK TO MINIMIZE PENETRATION OF WATERPROOF CONSTRUCTION, INCLUDING ROOFS, EXTERIOR WALLS AND INTERIOR WATERPROOF CONSTRUCTION, WHERE SUCH PENETRATIONS ARE NECESSARY, PROVIDE ALL NECESSARY CURBS, SLEEVES, SHIELDS, FLASHINGS, FITTINGS, AND CALKING TO MAKE THE PENETRATIONS ABSOLUTELY WATER-TIGHT.

Seal

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Revision: By: Date:

1	ADDED SCHEDULE 1	2023-11-10
2		
3		
4		
5		

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GEORGETOWN PUMP STATION
REHAB & BLOWER RETROFIT
COW BRIDGE - BRANCH - INDIAN RIVER WATERWASHED
TOWNSHIP - SUSSEX COUNTY, DELAWARE
T.A. MAP # 150-23-001-12.00

GEORGETOWN PUMP STATION ELECTRICAL NOTES
REVISED ENCLOSURES HEREIN ARE CORRELATED TO BEACON ENGINEERING, LLC, AND SHALL NOT BE REPRODUCED OR REUSED WITHOUT WRITTEN PERMISSION. COPYRIGHT © 2023

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Des. By: MCS
Proj. No.: 22-2-0002

Dwg. No.:
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CONTINUED FROM PREVIOUS PAGE

3.11 OPERATION OF EQUIPMENT

- A. LUBRICATE, CLEAN, ADJUST, AND TEST ALL EQUIPMENT AND SYSTEMS IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS PRIOR TO INITIAL OPERATION. DO NOT OPERATE EQUIPMENT UNLESS PROPER SAFETY DEVICES AND CONTROLS ARE OPERATIONAL. PROVIDE ALL MAINTENANCE AND SERVICE FOR EQUIPMENT WHICH IS OPERATED DURING CONSTRUCTION AND PROTECT THE EQUIPMENT.
- B. WHERE SPECIFIED OR OTHERWISE REQUIRED, PROVIDE THE SERVICES OF THE MANUFACTURER'S FACTORY-TRAINED SERVICEMEN OR TECHNICIANS TO START UP THE EQUIPMENT.

3.12 TESTING AND ADJUSTMENT

- A. PERFORM ALL TESTS WHICH ARE SPECIFIED OR REQUIRED TO DEMONSTRATE THAT THE WORK IS INSTALLED AND OPERATING PROPERLY. WHERE FORMAL TESTS ARE REQUIRED, GIVE PROPER NOTICES AND PERFORM ALL NECESSARY PRELIMINARY TESTS TO ASSURE THAT THE WORK IS COMPLETE AND READY.
- B. ADJUST ALL SYSTEMS, EQUIPMENT AND CONTROLS TO OPERATE IN A SAFE, EFFICIENT AND STABLE MANNER.
- C. PROVIDE CIRCUITS THAT ARE FREE FROM GROUND FAULTS, SHORT CIRCUITS, AND OPEN CIRCUITS.
- D. OTHER TESTS OF A SPECIFIC NATURE FOR SPECIAL EQUIPMENT SHALL BE AS SPECIFIED UNDER THE RESPECTIVE EQUIPMENT.

3.13 IDENTIFICATION

- A. MARK AND PERMANENTLY IDENTIFY ALL UNITS, SAFETY SWITCHES, CONTROL PANELS, CONTROLS, PANELBOARDS, TERMINAL BOXES, CONTROL CENTERS, AND OTHER EQUIPMENT IN ACCORDANCE WITH THE PROJECT NOMENCLATURE. IDENTIFICATION PLATES SHALL BE LAMINATED PLASTIC, BLACK WITH WHITE ENGRAVED 1/4 INCH HIGH LETTERING. ATTACH IDENTIFICATION PLATES WITH 316 GRADE STAINLESS STEEL SCREWS APPROVED FOR THE PURPOSE.
- B. IDENTIFICATION BY MEANS OF MARKING PENS, EMBOSSED PLASTIC TAPE MARKERS, OR OTHER TEMPORARY METHODS WILL NOT BE ACCEPTABLE.

3.14 CUTTING AND PATCHING

- A. PROVIDE ALL CUTTING AND PATCHING NECESSARY FOR THE INSTALLATION OF THE ELECTRICAL WORK. ANY DAMAGE DONE TO THE WORK ALREADY IN PLACE BY REASON OF THIS WORK SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE BY A QUALIFIED MECHANIC EXPERIENCED IN SUCH WORK. PATCHING SHALL BE UNIFORM IN APPEARANCE AND SHALL MATCH WITH THE SURROUNDING SURFACE.
- B. DO NOT CUT STRUCTURAL MEMBERS WITHOUT APPROVAL FROM THE ENGINEER.

3.15 CLEANING, PAINTING, AND FINISHES

- A. PROVIDE PROTECTIVE FINISHES ON ALL MATERIALS AND EQUIPMENT. USE COATED OR CORROSION-RESISTANT MATERIALS, HARDWARE, AND FITTINGS THROUGHOUT THE WORK. PAINT ALL BARE UNTREATED FERROUS SURFACES PRIOR TO INSTALLATION, USING RUST-INHIBITING PAINT.
- B. CLEAN ALL SURFACES PRIOR TO APPLICATION OF ADHESIVES, COATINGS, PAINT, OR OTHER FINISHES.
- C. PROVIDE FACTORY-APPLIED FINISHES WHERE SPECIFIED. UNLESS OTHERWISE INDICATED, FACTORY-APPLIED PAINTS SHALL BE BAKED ENAMEL WITH PROPER PRE-TREATMENT.
- D. PROTECT ALL FINISHES AND RESTORE ANY DAMAGED FINISHES TO THEIR ORIGINAL CONDITION.
- E. THE ABOVE REQUIREMENTS APPLY TO ALL WORK, WHETHER EXPOSED OR CONCEALED.
- F. REMOVE ALL CONSTRUCTION MARKINGS AND WRITINGS FROM EXPOSED EQUIPMENT, CONDUIT, AND BUILDING SURFACES.

3.16 PROVISIONS FOR ACCESS

- A. PROVIDE ADEQUATE ACCESS TO ALL EQUIPMENT, JUNCTION BOXES, SWITCHES, CONTROLS, AND OTHER DEVICES.
- B. WHERE ACCESS DOORS ARE NECESSARY, PROVIDE MANUFACTURED STEEL DOOR ASSEMBLIES CONSISTING OF HINGED DOOR, FLUSH SCREWDRIVER CAMLOCKS AND FRAME, DESIGNED FOR THE PARTICULAR WALL OR CEILING CONSTRUCTION. PROPERLY SIZE AND LOCATE EACH DOOR. DOORS SHALL BE MILCOR METAL ACCESS DOORS AS MANUFACTURED BY INLAND-RYERSON, OR EQUAL.

3.17 EXCAVATION, BACKFILLING, COMPACTING, AND SITE PREPARATION

- A. THE CONTRACTOR SHALL DO ALL EXCAVATING AND BACKFILLING AND SITE PREPARATION NECESSARY TO INSTALL UNDERGROUND DUCTBANKS, MANHOLES OR HANDHOLES, CABLES, CONDUIT, ETC., INCLUDED IN THIS DIVISION OF THE WORK. EXCAVATION AND BACKFILL SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS IN ALL OTHER DIVISIONS.

3.18 ELECTRICAL SERVICE INSTALLATION

- A. CONTACT AND COORDINATE WITH THE POWER COMPANY, THE INSTALLATION OF THE REQUIRED ELECTRICAL SERVICE SIZE AND TYPE FOR THE NEW SITES. THE INSTALLATION AND ALL RELATED COSTS, INCLUDING THOSE FROM THE POWER COMPANY, SHALL BE INCLUDED AS PART OF THIS SECTION AND BE PAID FOR BY THE CONTRACTOR. THIS IS TO INCLUDE THE COST TO EXTEND THE PRIMARY SIDE EQUIPMENT, TRANSFORMERS, AND SECONDARY SIDE EQUIPMENT TO THE BUILDING AND SERVICE LOCATION. THE CONTRACTOR SHALL CONTACT AND COORDINATE WITH THE POWER COMPANY THE METERING EQUIPMENT TYPE AND INSTALLATION. NO ELECTRICAL SERVICE INSTALLATION COSTS WILL BE PAID FOR BY THE ENGINEER OR OWNER. ANY SERVICE EQUIPMENT NOT FURNISHED OR INSTALLED BY THE POWER COMPANY SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR, INCLUDING RACEWAYS, METERS, AND CT CABINETS AS NECESSARY TO PROVIDE A COMPLETE AND OPERABLE ELECTRICAL SERVICE SYSTEM.

Sheet

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#	Revision	By	Date
2	ADDENDUM 1		2023-11-15
1			19
B			22
A			23

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GEORGETOWN PUMP STATION
 REHAB & BLOWER RETROFIT
 COW BRIDGE - BRANCH - INDIAN RIVER WATER-SHED
 1500 W. WINDY HILL RD. - INDESEX COUNTY, DELAWARE
 TPA - MAP # 15-23-00-12.00
 GEORGETOWN PUMP STATION ELECTRICAL NOTES

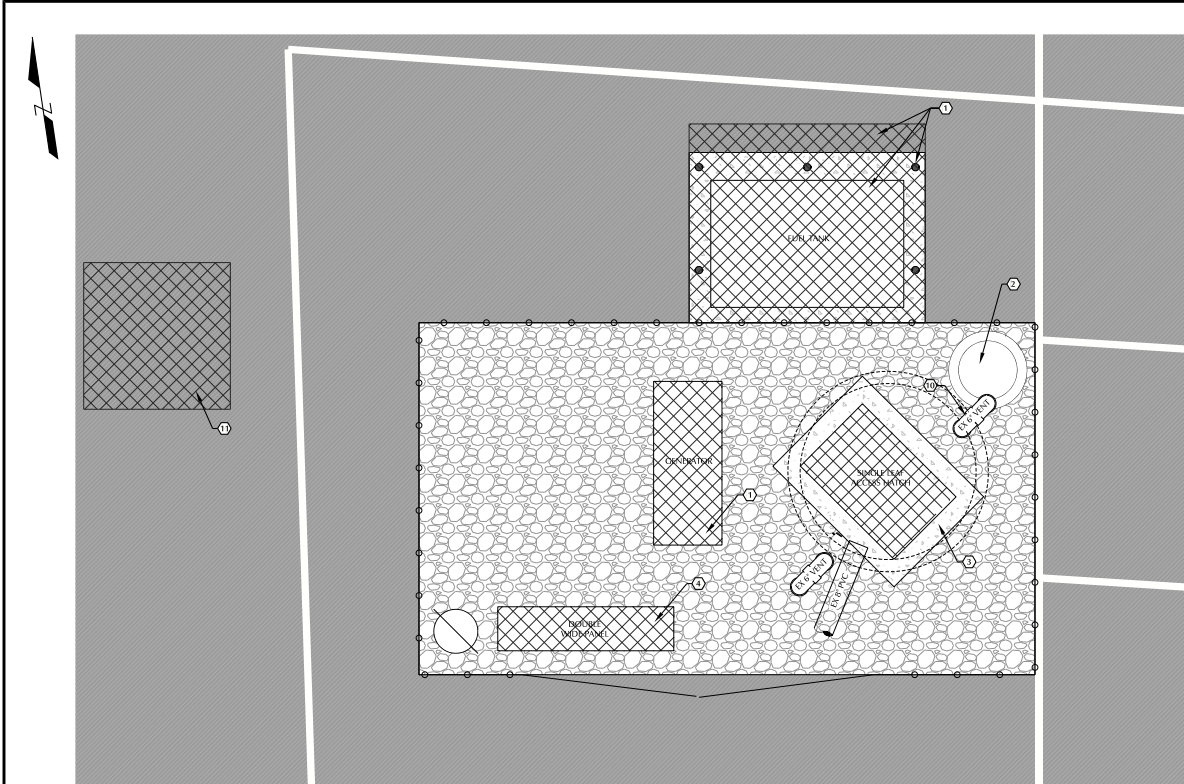
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 Proj. No.: 22-2-0002

Draw. No.:
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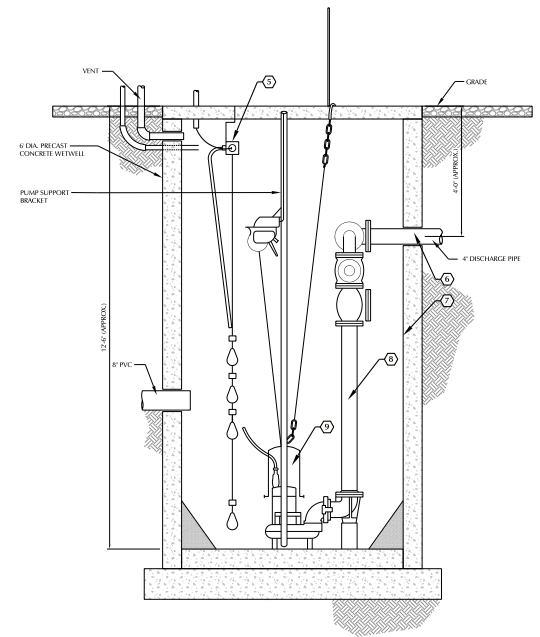
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EXISTING CONDITIONS AND DEMOLITION PLAN
 1" = 2'-0"
 0 2 4 6 FEET



ELEVATION
 NOT TO SCALE

DEMOLITION NOTES:

- 1 REMOVE AND DISPOSE OF EXISTING BOLLARDS, FUEL TANK, FUEL LINES, AND EMERGENCY GENERATOR. REMOVE EXISTING CONCRETE PAD, SAWCUT AND REMOVE EXISTING PAVING AS REQUIRED TO CONSTRUCT NEW HOUSEKEEPING PAD.
- 2 REMOVE AND DISPOSE OF EXISTING METER AND METER PIT.
- 3 REMOVE EXISTING ACCESS HATCH. CONCRETE COLLAR AND HATCH FRAME TO REMAIN.
- 4 DEMOLISH AND REMOVE EXISTING CONTROL SERVICE PANEL, CONDUITS AND APPURTENANCES AS REQUIRED TO INSTALL NEW CONTROL PANEL WHERE INDICATED. SALVAGE MISSION SCADA PANEL FOR REUSE WITH NEW PANEL.
- 5 REMOVE AND DISPOSE OF FLOTT, JUNCTION BOXES, AND ASSOCIATED ELECTRICAL COMPONENTS.
- 6 SAWCUT AND REMOVE 4" DI FORCE MAIN TO A POINT 5 FEET DOWNSTREAM OF FLOW METER VAULT.
- 7 REMOVE ALL DEBRIS, RESIDUES, FATS, OILS, GREASE, SOLIDS AND ALL OTHER DELETERIOUS MATERIALS FROM WETWELL AND DISPOSE AT THE WWTIP AT AN OWNER APPROVED LOCATION. POWER WASH ALL EXPOSED SURFACES OF WETWELL TO PREPARE FOR INSTALLATION OF COATING SYSTEM.
- 8 REMOVE ALL PIPING, VALVES, LIFT RAIS, BASE FITTINGS, BASE PLATES, ETC. AND GRIND ANCHOR BOLTS EVEN WITH SURFACE OF WETWELL.
- 9 REMOVE EXISTING PUMPS AND SALVAGE TO OWNER.
- 10 REMOVE EXISTING DUCT AS REQUIRED TO MAKE CONNECTION TO PROPOSED BIOFILTER.
- 11 SAW CUT PAVEMENT NEAT AND STRAIGHT FORMING RIGHT ANGLES FOR PATCH. TEST PIT TO LOCATE EXISTING 10" W.

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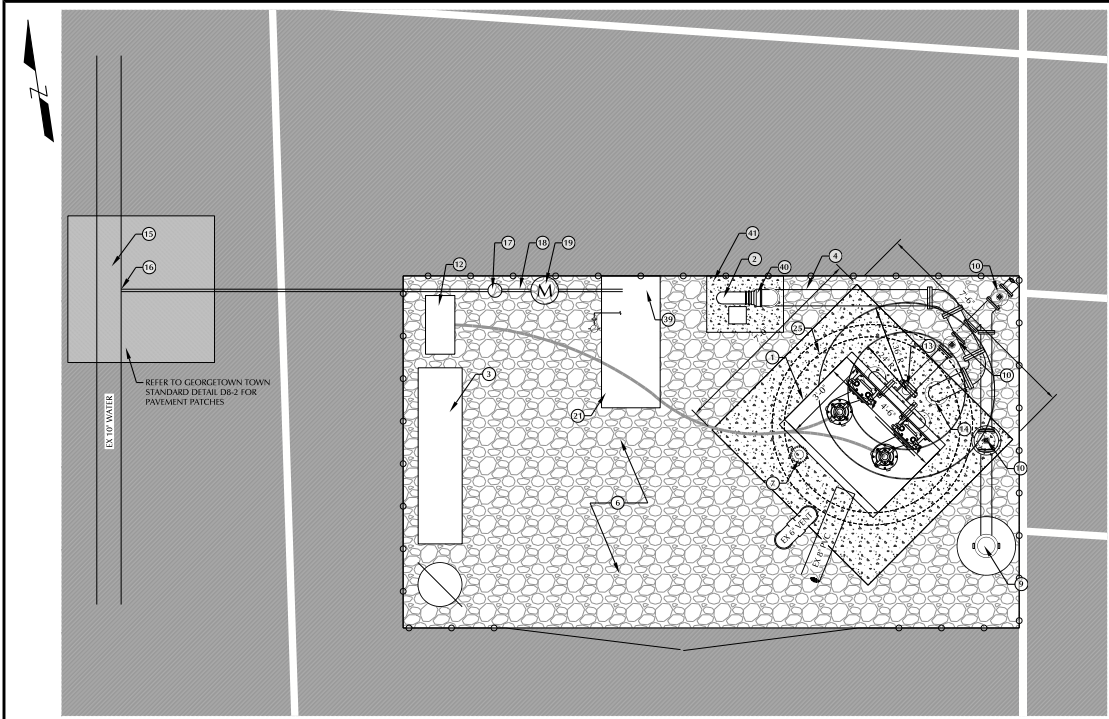
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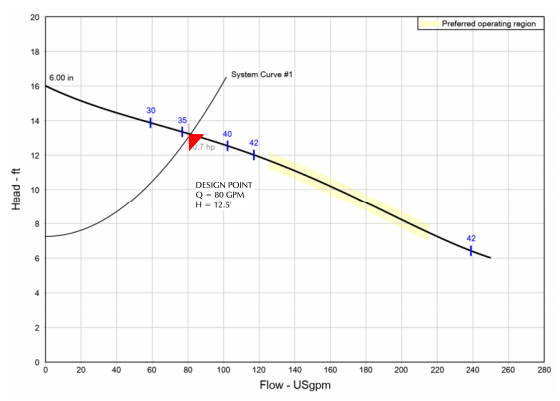
PUMP STATION REHABILITATION PROJECT
 CONRAD BRANCH, INDIAN RIVER WATERED,
 TOWN OF GEORGETOWN, GEORGETOWN HUNDRED,
 SUSSEX COUNTY, DELAWARE
 TAX MAP # 135-23.00-12.00 HEALTH UNIT PUMP STATION
EXISTING CONDITIONS AND DEMOLITION PLAN

Date:	AUG 13, 2024
Scale:	AS NOTED
Drawn By:	SKM
Proj No.:	GEO01-07

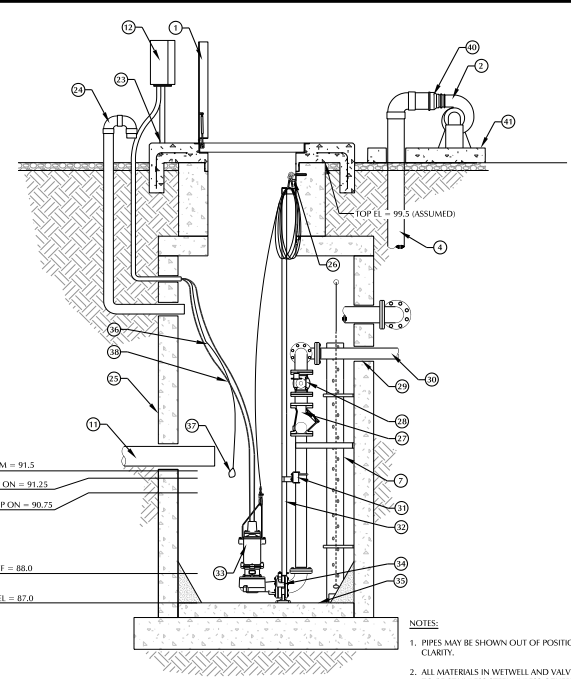
Dwg. No.:
HU1.1



EQUIPMENT REPLACEMENT PLAN
1" = 2'-0"



PUMP CURVE - HEALTH UNIT



HWL ALARM = 91.5
LAG PUMP ON = 91.25
LEAD PUMP ON = 90.75
PUMPS OFF = 88.0
BOTTOM EL. = 87.0

ELEVATION
NOT TO SCALE

- NOTES:**
- PIPES MAY BE SHOWN OUT OF POSITION FOR CLARITY.
 - ALL MATERIALS IN WETWELL AND VALVE VAULT TO BE STAINLESS STEEL UNLESS OTHERWISE NOTED.
 - VENTILATION PIPING TO BE 6" SCH. 40 PVC, PAINTED ABOVE GRADE.

CONSTRUCTION NOTES:

- INSTALL NEW 11R SINGLE LEAF ACCESS DOOR AND GRATING PANEL BY HALLIDAY, REFER TO DETAIL, DWG T1.1. FOR HATCH DETAIL AND HATCH REPLACEMENT DETAIL. HATCH HINGES SHALL BE LOCATED ON THE TRASH BASKET SIDE OF THE CLEAR OPENING.
- PLASTEC MODEL 15 EXHAUST FAN WITH WEATHER ENCLOSURE
- INSTALL NEW CONTROL PANEL WITH SALVAGED MISSION SCADA PANEL. REFER TO ELECTRICAL PLANS FOR DETAILS.
- 6" PVC DUCT
- NOT USED
- REGRADE LIFT STATION YARD AREA AS REQUIRED TO PROVIDE POSITIVE DRAINAGE ACROSS EXISTING PARKING LOT.
- PVC STILLING WELL AND PRESSURE TRANSDUCER. REFER TO STILLING WELL DETAIL DWG T1.3.
- NOT USED
- EMERGENCY BY-PASS ASSEMBLY. SEE DETAIL DWG T1.3.
- GATE VALVE. SEE DETAIL DWG T1.3.
- 8" INFLUENT PIPE INV = 91.25
- POWER AND CONTROL CABLE JUNCTION BOX. REFER TO ELECTRICAL DRAWINGS FOR DETAILS.
- HALLIDAY D2R EMBEDDED HOIST SOCKET. PROVIDE ADDITIONAL REINFORCEMENT AS REQUIRED BY MANUFACTURER LOAD TABLE. SEE DETAIL DWG T1.2.
- MODIFY DUCT TO EXTEND TO TERMINATE AT EL. = 93.25 (18" ABOVE INFLUENT PIPE).
- EX 10" W. TEST PIT TO FIELD LOCATE
- CORPORATION STOP WITH SERVICE TAP
- CURB BOX
- 1" SDR 7 PE
- WATER METER. REFER TO TOWN STANDARD DETAIL D5-5, DWG T1.2.
- NOT USED
- AT GRADE REDUCED PRESSURE BACKFLOW PREVENTER ENCLOSURE. PROVIDE POWER AS REQUIRED BY ENCLOSURE MANUFACTURER FOR HEATING SYSTEM.
- CORD SEAL CONNECTORS FOR POWER AND CONTROL CORDS (NOT SHOWN)
- PVC VENT PIPE WITH S.S. BIRD SCREEN
- EXISTING 6" DIA. PRECAST CONCRETE WETWELL
- PROVIDE 10-15 EXTRA STAINLESS STEEL LIFTING CABLE, COILED & TIED. SIZE BY MANUFACTURER. SEAL FREE END TO PREVENT UNLOAD OF CABLE. TYP. BOTH CABLES. ATTACH CABLE TO CONCRETE AT TOP OF WETWELL VIA THREADED INSERT, W/ S.S. SPRING SNAP FOR COILED CABLE STORAGE.
- 4" BALL CHECK VALVE
- 4" FULL-PORT PLUG VALVE WITH WORM GEAR OPERATOR AND NUT.
- LINK-SEAL GASKET, TYP. REPAIR WALL PENETRATION USING NON-SHRINK GROUT.
- 4" DIA. DUCTILE IRON PUMP DISCHARGE PIPE
- INTERMEDIATE RAIL SUPPORT (ONE REQUIRED FOR EACH 20 FEET OF BASIN DEPTH IN EXCESS OF 20 FEET OR AS REQUIRED BY THE MANUFACTURER.
- 1-1/2" DIA. STAINLESS STEEL PIPE GUIDE RAILS, MUST BE PLUMB.
- (2) MEYERS 48X DUPLIX 4" SUBMERSIBLE NON-CLOG PUMPS
- LIFT OUT ASSEMBLY
- BOTTOM OF BASIN MUST HAVE SMOOTH TROWELED SURFACE FOR MEETING SUPPORT CASTING.
- SUPPORT FLOAT WITH CABLE SUPPORT OFF STILLING WELL. MIN. 2 SUPPORTS.
- REDUNDANT HWL ALARM. INSTALL TEAR DROP MECHANICAL FLOAT W/WEIGHT (WIDE ANGLE TYPE) AT 6" ABOVE EXISTING HIGH WATER LEVEL.
- POWER CABLE
- FROST PROOF YARD HYDRANT, WOODFORD MODEL Y34, 3/4" FPT NON-FREEZE HOWA YARD HYDRANT (3 FT. BURIAL DEPTH)
- WATERPROOF & CORROSION RESISTANT FLEXIBLE COUPLING TO TRANSITION TO FAN OUTLET
- HOUSEKEEPING PAD, SEE DETAIL DWG T1.1.

Scale: _____

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By: _____
Revision: _____

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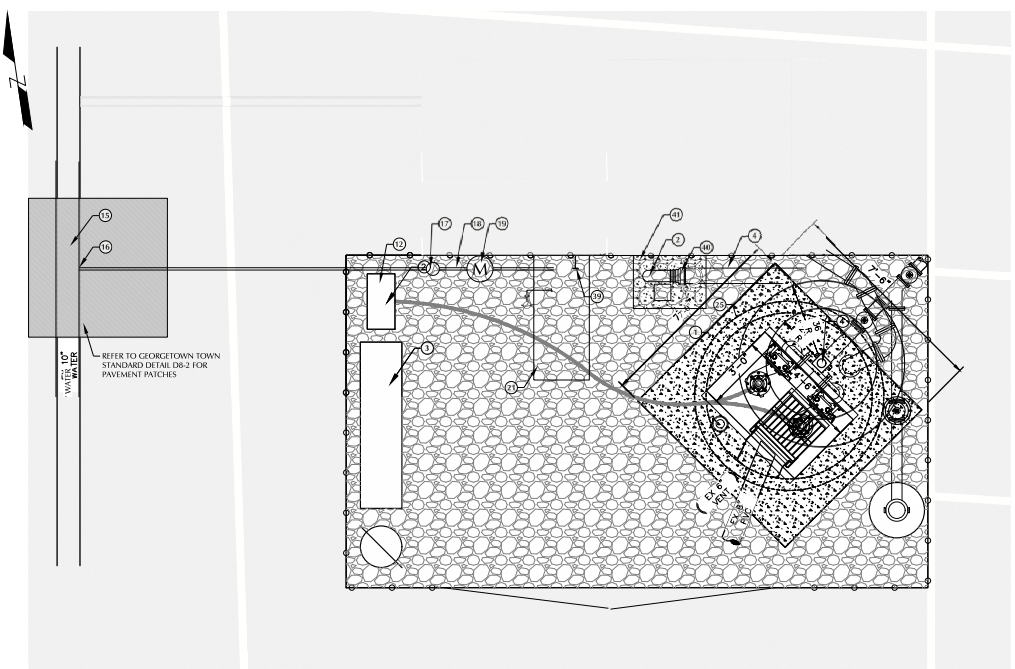
PUMP STATION REHABILITATION PROJECT
CONTRACTOR: ANIRAN WATERWORKS
TOWN OF GEORGETOWN, GEORGETOWN HARBOR, SUSSEX COUNTY, DELAWARE
TAX MAP # 135-23.00-12.00 HEALTH UNIT PUMP STATION

EQUIPMENT REPLACEMENT PLAN

Date: **AUG 13, 2024**
Scale: **AS NOTED**
Drawn By: **SKM**
Proj No.: **GE001-07**

Dwg. No.: **HU2.1**

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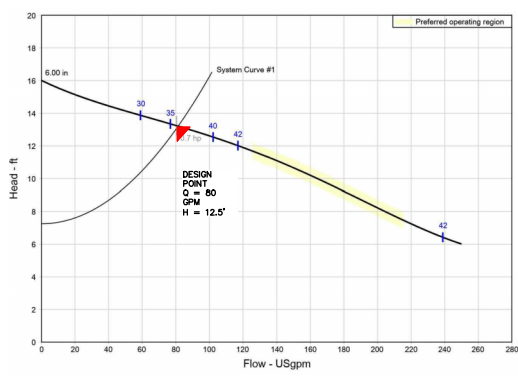
EQUIPMENT REPLACEMENT PLAN

1" = 2'-0"

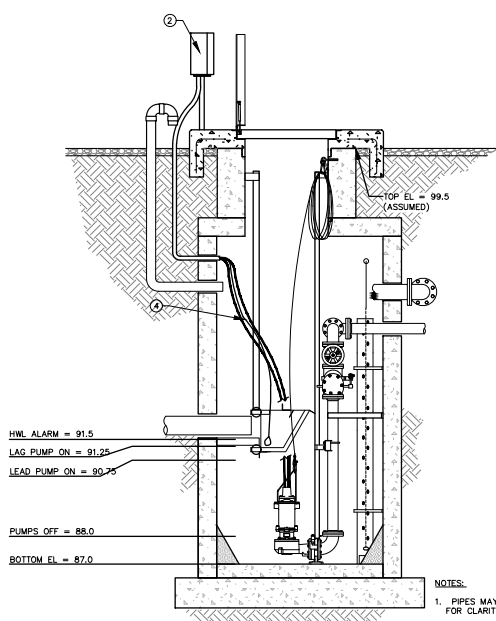


CONSTRUCTION NOTES:

- 1 PROVIDE PUMP CONTROL PANEL COMPLETE W/ 24 CIRCUIT, 3 PHASE, 150A DISTRIBUTION PANEL, PUMP CONTROLLERS, STARTERS.
- 2 CLASS 1 DIVISION 1 JUNCTION BOX. REFER TO DRAWING E-DE FOR DETAILS.
- 3 CORD SEAL CONNECTORS FOR POWER AND CONTROL CORDS (NOT SHOWN)
- 4 POWER CABLE
- 5 PROVIDE ELECTRICAL CONNECTION TO NEW FAN.
- 6 PROVIDE NEMA SIZE 0 MAGNETIC MOTOR STARTERS, OVERLOADS, AND ALL CODE REQUIRED APPURTENANCES.

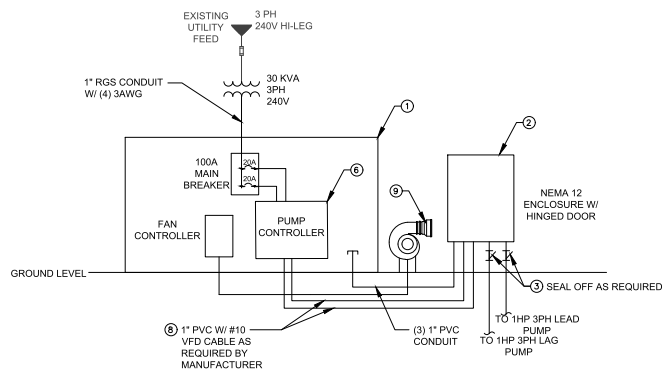


PUMP CURVE - HEALTH UNIT



ELEVATION
NOT TO SCALE

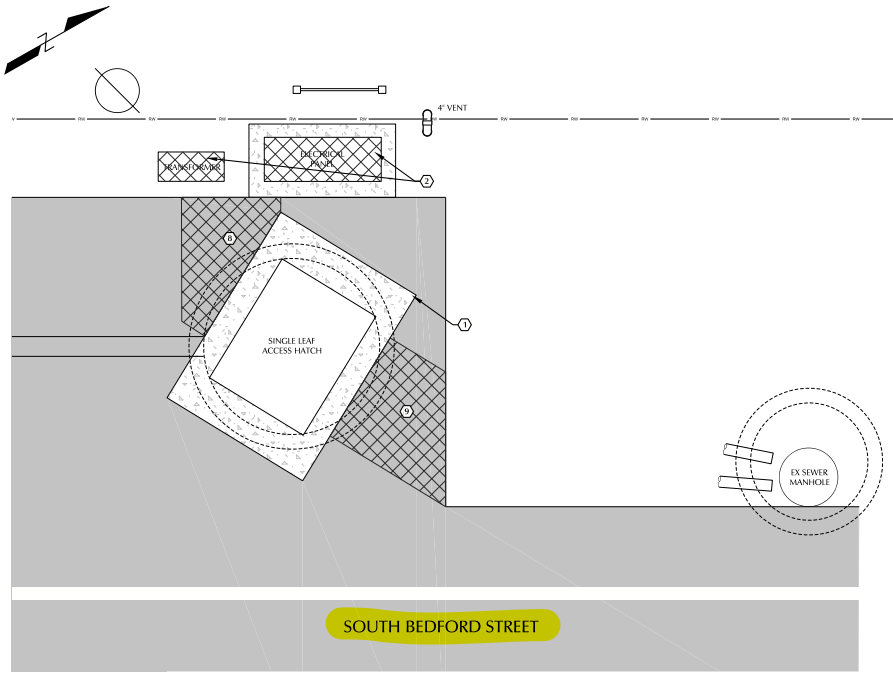
- NOTES:**
1. PIPES MAY BE SHOWN OUT OF POSITION FOR CLARITY.
 2. ALL MATERIALS IN WETWELL AND VALVE VAULT TO BE STAINLESS STEEL UNLESS OTHERWISE NOTED.
 3. VENTILATION PIPING TO BE 6" SCH. 40 PVC, PAINTED ABOVE GRADE.



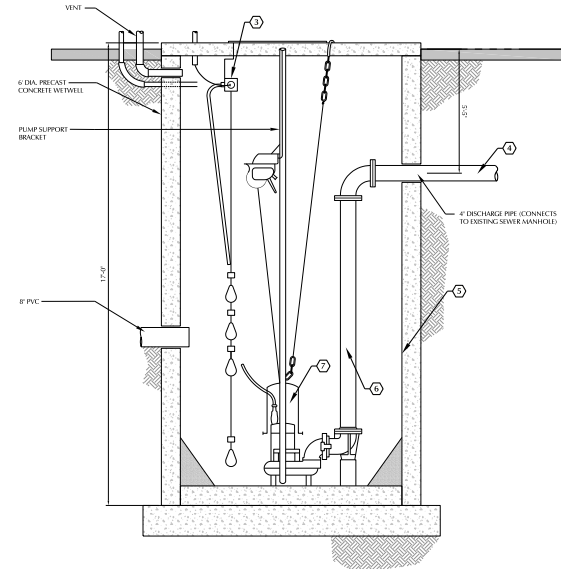
SINGLE LINE - HEALTH UNIT

Diamond State Engineering																									
Mechanical, Electrical, Plumbing Division 2001 - 2000 Phone: (302) 497-7994 Fax: (302) 497-1208																									
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>Rev.</th> <th>Date</th> <th>By</th> <th>Check</th> </tr> <tr> <td>1</td> <td>2023-11-13</td> <td>BEH</td> <td></td> </tr> <tr> <td>2</td> <td>2023-10-19</td> <td>BEH</td> <td></td> </tr> <tr> <td>3</td> <td>2023-09-22</td> <td>BEH</td> <td></td> </tr> <tr> <td>4</td> <td>2023-09-22</td> <td>CCB</td> <td></td> </tr> <tr> <td>5</td> <td>2023-09-22</td> <td>CCB</td> <td></td> </tr> </table>	Rev.	Date	By	Check	1	2023-11-13	BEH		2	2023-10-19	BEH		3	2023-09-22	BEH		4	2023-09-22	CCB		5	2023-09-22	CCB		<p>ISSUED FOR BIDDING</p> <p style="font-size: x-small;">(08/13/2024 5:59:16 PM)</p>
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<p>PUMP STATION REHABILITATION PROJECT COW BRIDGE BRANCH - INDIAN RIVER WATERSHED, TOWN OF GEORGETOWN, GEORGETOWN HUNDRED, SUSSEX COUNTY, DELAWARE TAX MAP # 135-23.00-12.00 HEALTH UNIT PUMP</p> <p>ELECTRICAL EQUIPMENT REPLACEMENT PLAN</p>																									
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Date:</td> <td>2023-09-20</td> </tr> <tr> <td>Scale:</td> <td>AS NOTED</td> </tr> <tr> <td>Drawn By:</td> <td>MCS</td> </tr> <tr> <td>Proj. No.:</td> <td>22-2-0002</td> </tr> </table>				Date:	2023-09-20	Scale:	AS NOTED	Drawn By:	MCS	Proj. No.:	22-2-0002														
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EXISTING CONDITIONS AND DEMOLITION PLAN
1" = 2'-0"



ELEVATION
NOT TO SCALE

DEMOLITION NOTES:

- ① CONCRETE COLLAR, HATCH AND HATCH FRAME TO REMAIN.
- ② DEMOLISH AND REMOVE EXISTING CONTROL/SERVICE PANEL, TRANSFORMER, ELECTRICAL EQUIPMENT, AND CONDUITS AS REQUIRED TO INSTALL NEW CONTROL PANEL WHERE INDICATED. SALVAGE MISSION SCADA PANEL FOR REUSE WITH NEW PANEL.
- ③ REMOVE AND DISPOSE OF FLOATS, JUNCTION BOXES, AND ASSOCIATED ELECTRICAL COMPONENTS.
- ④ SAWCUT AND REMOVE 4" DI FORCE MAIN TO A POINT 5 FEET OUTSIDE OF WETWELL.
- ⑤ REMOVE ALL DEBRIS, RESIDUES, FATS, OILS, GREASE, SOLIDS AND ALL OTHER DELETERIOUS MATERIALS FROM WETWELL AND DISPOSE AT THE WWTP AT AN OWNER APPROVED LOCATION. POWER WASH ALL EXPOSED SURFACES OF WETWELL TO PREPARE FOR INSTALLATION OF COATING SYSTEM.
- ⑥ REMOVE ALL PIPING, VALVES, LIFT RAILS, BASE FITTINGS, BASE PLATES, ETC. AND GRIND ANCHOR BOLTS EVEN WITH SURFACE OF WETWELL.
- ⑦ REMOVE EXISTING PUMPS AND SALVAGE TO OWNER.
- ⑧ SAWCUT FULL DEPTH, NEAT AND STRAIGHT AS REQUIRED TO REMOVE REDIRECT POWER AND CONTROL CONDUITS TO PROPOSED JUNCTION BOX.
- ⑨ SAWCUT FULL DEPTH, NEAT AND STRAIGHT AS REQUIRED TO REMOVE EXISTING PAVING TO REPLACE EXISTING FORCE MAINS.

Sheet: 0

BEACON ENGINEERING LLC
2335 W. 12th Street
Tulsa, Oklahoma 74104
918.466.8835 | info@beaconengineering.com

Date: _____
By: _____
Revision: _____

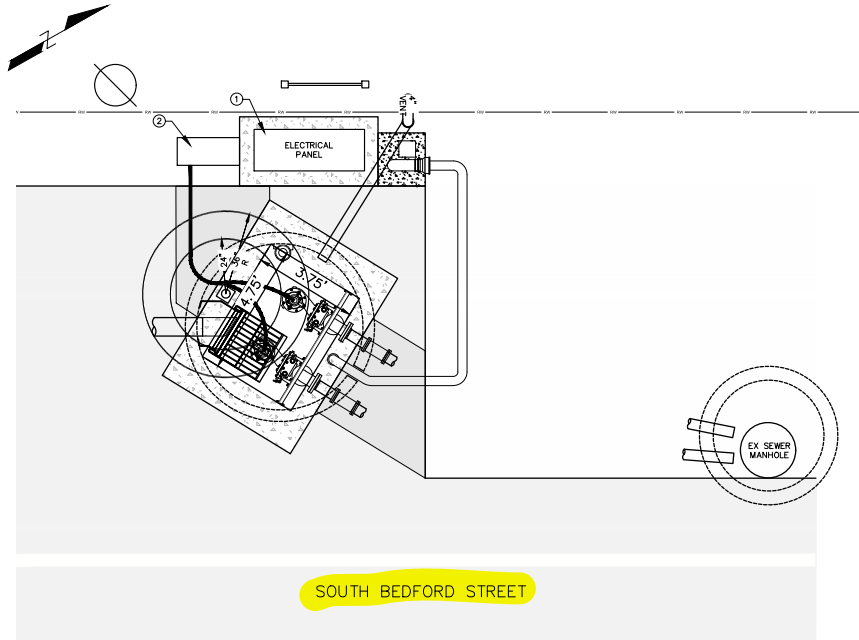
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PUMP STATION REHABILITATION PROJECT
COW BRIDGE BRANCH - INDIAN RIVER WATERSHED
SUSSEX COUNTY, DELAWARE
TAX MAP # 135-20,007.02 THREE BELLS PUMP STATION

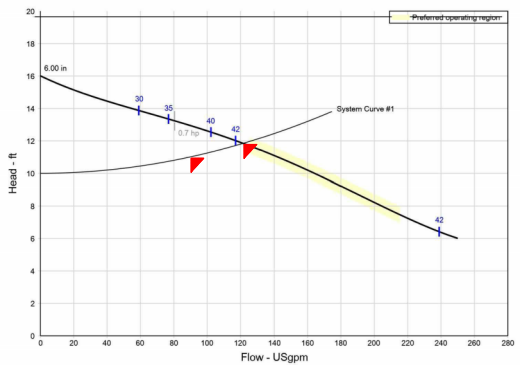
EXISTING CONDITIONS AND DEMOLITION PLAN

Date: **AUG 13, 2024**
Scale: **AS NOTED**
Drawn By: **SKM**
Proj No.: **GEO01-07**

Dwg. No.: **TB1.1**



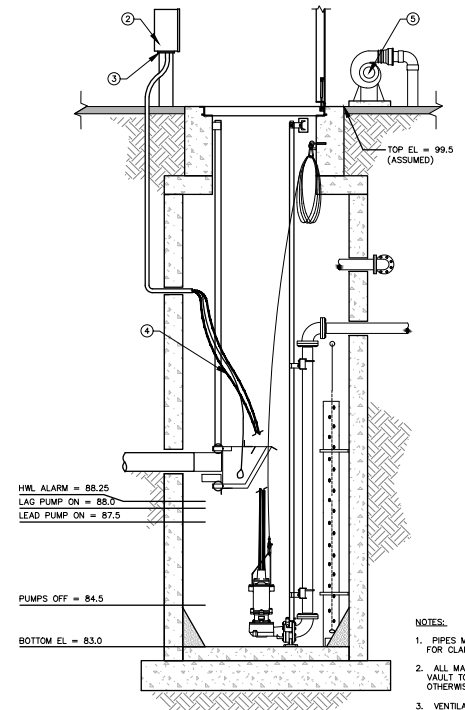
EQUIPMENT REPLACEMENT PLAN
1/2" = 1'



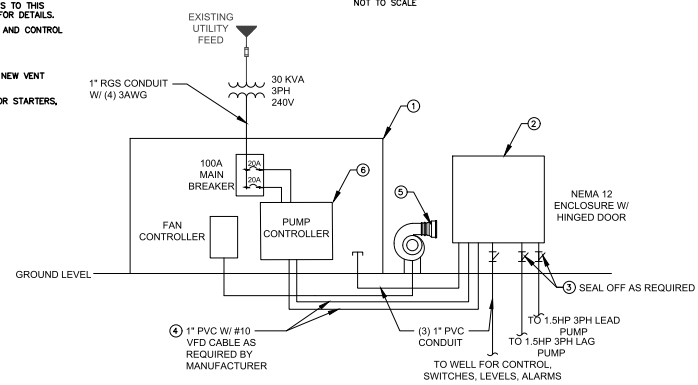
PUMP CURVE - THREE BELLS

CONSTRUCTION NOTES:

- ① PROVIDE PUMP CONTROL PANEL COMPLETE W/IT 24 CIRCUIT, 3 PHASE, 150A DISTRIBUTION PANEL, PUMP CONTROLLERS, STARTERS.
- ② CLASS 1 DIVISION 1 JUNCTION BOX, REDIRECT CONDUITS FROM EXISTING WELWELL PENETRATIONS TO THIS LOCATION. REFER TO DRAWING E-DE FOR DETAILS.
- ③ CORD SEAL CONNECTORS FOR POWER AND CONTROL CORDS (NOT SHOWN)
- ④ POWER CABLE
- ⑤ PROVIDE ELECTRICAL CONNECTION TO NEW VENT BLOWER
- ⑥ PROVIDE NEMA SIZE 0 MAGNETIC MOTOR STARTERS, OVERLOADS, AND ALL CODE REQUIRED APPURTENANCES.



- NOTES:**
1. PIPES MAY BE SHOWN OUT OF POSITION FOR CLARITY.
 2. ALL MATERIALS IN WELWELL AND VALVE VAULT TO BE STAINLESS STEEL UNLESS OTHERWISE NOTED.
 3. VENTILATION PIPING TO BE 6" SCH. 40 PVC, PAINTED ABOVE GRADE.



SINGLE LINE - THREE BELLS

Diamond State Engineering
Manufactured Electrical Engineering Division
Dover, Pennsylvania 19003
Phone: (302) 487-7494 Fax: (302) 497-1208

Rev.	Date	By	Check
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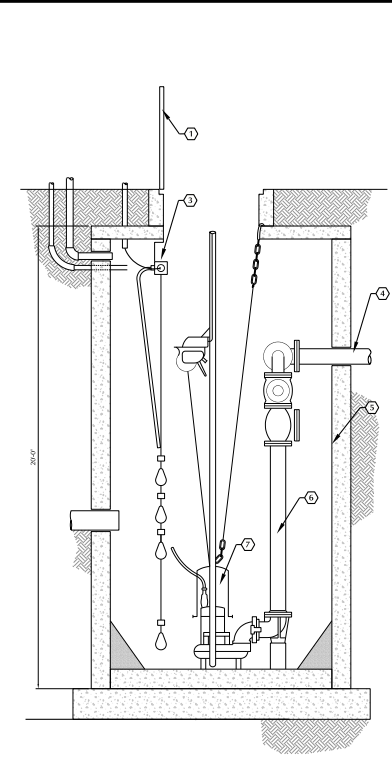
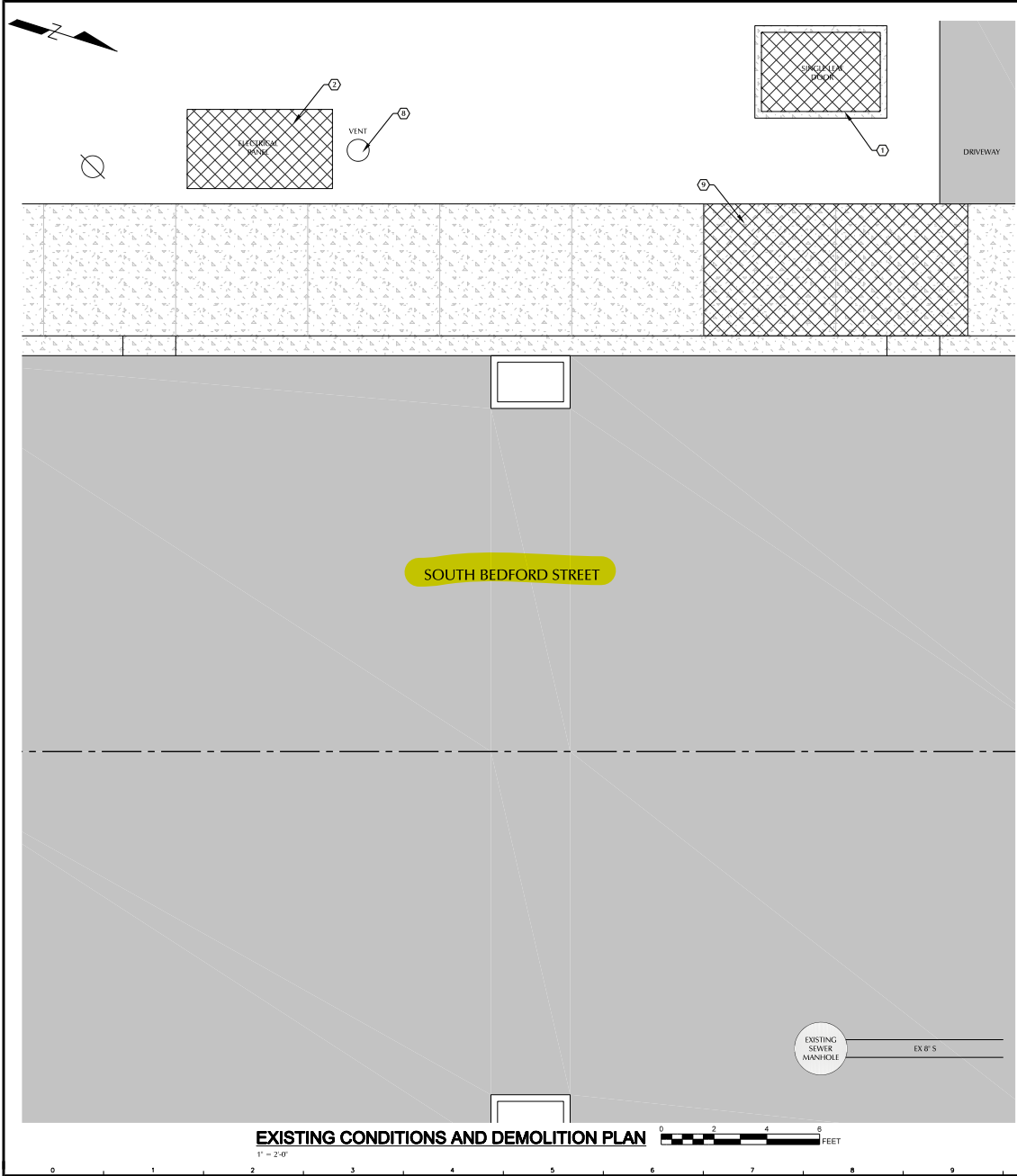
PUMP STATION REHABILITATION PROJECT
COW BRIDGE BRANCH - INDIAN RIVER WATERSHED,
TOWN OF GEORGETOWN, GEORGE TOWN HUNDRED,
LASSALLE COUNTY, DELAWARE
TAX MAP #R35-24069-702
STATION

ELECTRICAL EQUIPMENT REPLACEMENT PLAN

Date: 2023-09-20
Scale: AS NOTED
Des/By: MCS
Proj/No: 22-2-0002

Draw No: **E-TB**

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ELEVATION
NOT TO SCALE

DEMOLITION NOTES:

- ① REMOVE EXISTING ACCESS HATCH, CONCRETE COLLAR AND HATCH FRAME TO REMAIN.
- ② DEMOLISH AND REMOVE EXISTING CONTROL/SERVICE PANEL, TRANSFORMER, CONDUITS AND APERTURES AS REQUIRED TO INSTALL NEW CONTROL PANEL WHERE INDICATED, SALVAGE MISSION SCADA PANEL FOR REUSE WITH NEW PANEL.
- ③ REMOVE AND DISPOSE OF FLOATS, JUNCTION BOXES, AND ASSOCIATED ELECTRICAL COMPONENTS.
- ④ SAWCUT AND REMOVE 4" DI FORCE MAIN TO A POINT 5 FEET OUTSIDE OF WETWELL.
- ⑤ REMOVE ALL DEBRIS, RESIDUES, FATS, OILS, GREASE, SOLIDS AND ALL OTHER DELETERIOUS MATERIALS FROM WETWELL AND DISPOSE AT THE WWTP AT AN OWNER APPROVED LOCATION. POWER WASH ALL EXPOSED SURFACES OF WETWELL TO PREPARE FOR INSTALLATION OF COATING SYSTEM.
- ⑥ REMOVE ALL PIPING, VALVES, LIFT RAILS, BASE FITTINGS, BASE PLATES, ETC. AND GRIND ANCHOR BOLTS EVEN WITH SURFACE OF WETWELL.
- ⑦ REMOVE EXISTING PUMPS AND SALVAGE TO OWNER.
- ⑧ REMOVE EXISTING VENT AS REQUIRED TO INSTALL NEW BIOFILTER VENTILATION SYSTEM.
- ⑨ SAWCUT AND REMOVE EXISTING SIDEWALK TO NEAREST UNDISTURBED JOINT.

Scale:

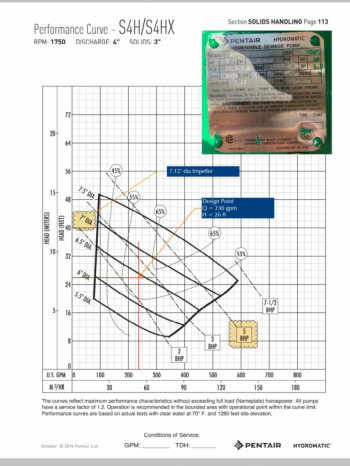
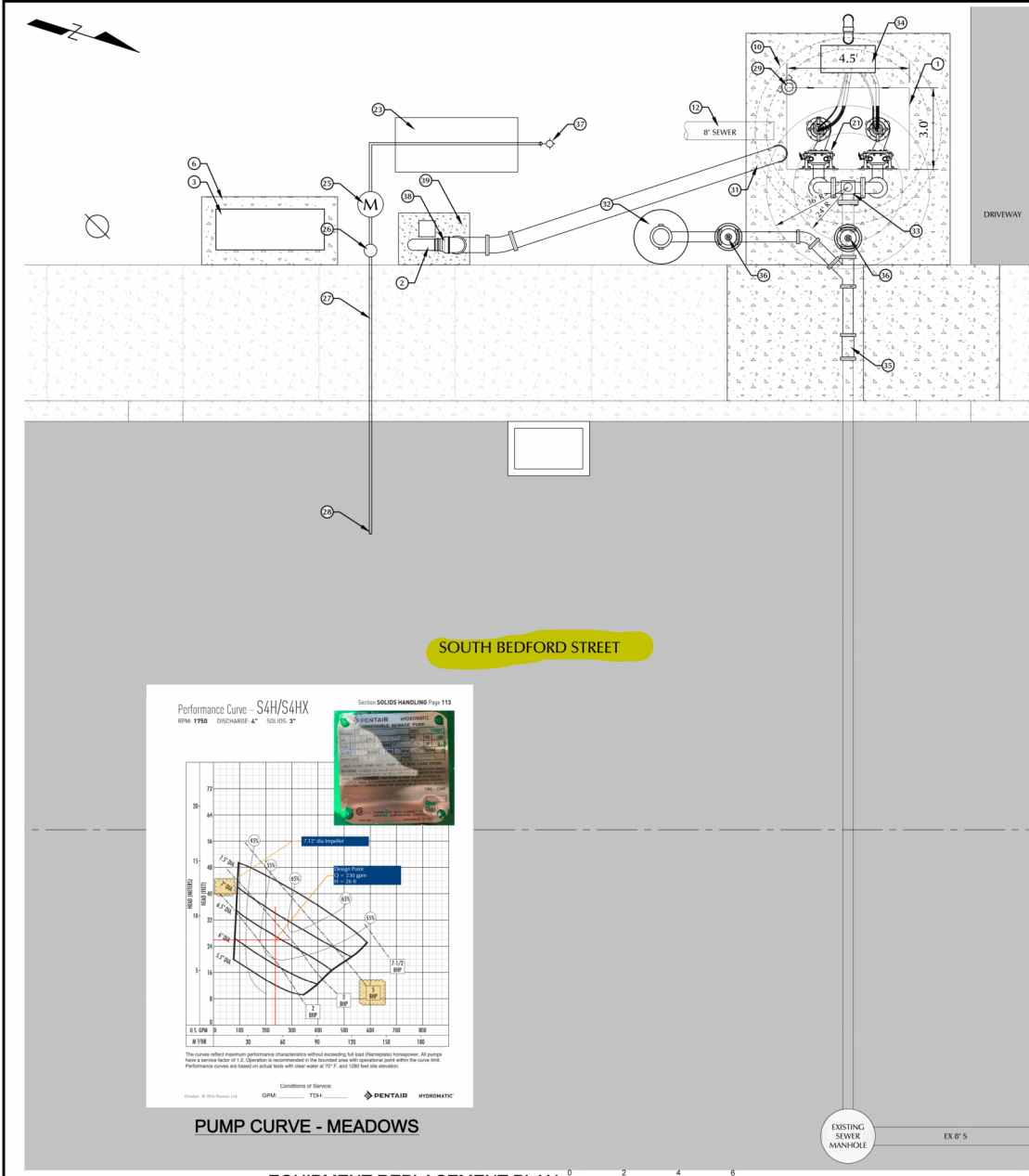
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Revision: _____
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 By: _____
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 TAX MAP # 135-20-097.00 MEADOWS PUMP STATION

PUMP STATION REHABILITATION PROJECT
 CONRAD BRIDGEMAN - INDIAN RIVER WATERSHED,
 SUSSEX COUNTY, DELAWARE
 TAX MAP # 135-20-097.00 MEADOWS PUMP STATION
EXISTING CONDITIONS AND DEMOLITION PLAN

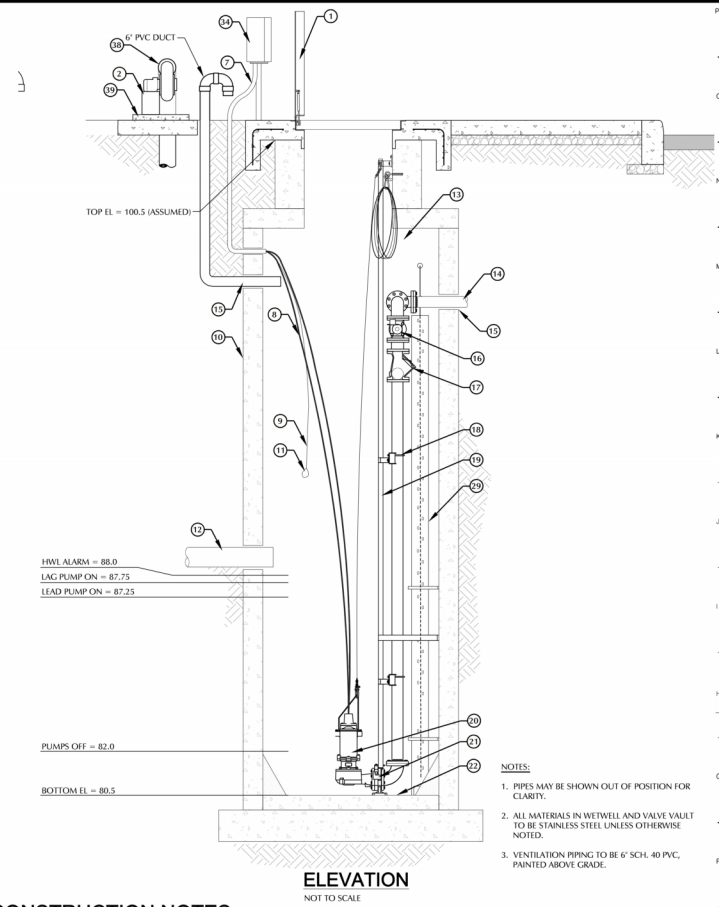
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 Drawn By: **SKM**
 Proj No.: **GEO01-07**

Dwg. No.: **ME1.1**



PUMP CURVE - MEADOWS

EQUIPMENT REPLACEMENT PLAN
1" = 2'-0"



ELEVATION
NOT TO SCALE

CONSTRUCTION NOTES:

- 1) INSTALL HALLIDAY MODEL F10R SINGLE LEAF ALUMINUM ACCESS HATCH CAST INTO CONCRETE TOP SLAB. TYP. REFER TO DETAIL DWG T1.1. FOR HATCH DETAIL AND HATCH REPLACEMENT DETAIL. HATCH HINGES SHALL BE LOCATED ON THE JUNCTION BOX SIDE OF THE CLEAR OPENING.
- 2) PLASTIC MODEL 15 EXHAUST FAN WITH WEATHER ENCLOSURE
- 3) INSTALL NEW CONTROL PANEL WITH SALVAGED MISSION SCADA PANEL. REFER TO ELECTRICAL PLANS FOR DETAILS.
- 4) NOT USED
- 5) NOT USED
- 6) HOUSEKEEPING PAD. SEE DETAIL DWG T1.1.
- 7) CORD SEAL CONNECTORS FOR POWER AND CONTROL CORDS (NOT SHOWN).
- 8) POWER CABLE
- 9) SUPPORT FLOAT WITH CABLE SUPPORT OFF STILLING WELL. MIN. 2 SUPPORTS.
- 10) EXISTING 6" DIA. PRECAST CONCRETE WETWELL
- 11) REDUNDANT HML ALARM. INSTALL TEAR DROP MECHANICAL FLOAT WEIGHT (WIDE ANGLE TYP) AT 6" ABOVE EXISTING HIGH WATER LEVEL.
- 12) 8" INFLUENT PIPE. INV = 88.2.
- 13) PROVIDE 10-15 EXTRA STAINLESS STEEL LIFTING CABLE, COILED & TIED, SIZE BY MANUFACTURER. SEAL FREE END TO PREVENT UNRAVEL OF CABLE. TYP. BOTH CABLES. ATTACH CABLE TO CONCRETE AT TOP OF WETWELL VIA THREADED INSERT, W/ S.S. SPRING SNAP FOR COILED CABLE STORAGE.
- 14) 4" DIA. DUCTILE IRON PUMP DISCHARGE PIPE
- 15) LINK-SEAL GASKET, TYP. REPAIR WALL PENETRATION USING NON-SHRINK GROUT. CORE DRILL OPENING IN SIDE OF WETWELL AS REQUIRED TO INSTALL PVC DUCT. REPAIR OPENING WITH LINK-SEAL WALL SEAL.
- 16) 4" FULL-PORT PLUG VALVE WITH WORM GEAR OPERATOR AND NUT.
- 17) 4" BALL CHECK VALVE
- 18) INTERMEDIATE RAIL SUPPORT (ONE REQUIRED FOR EACH 20 FEET OF BASIN DEPTH IN EXCESS OF 20 FEET OR AS REQUIRED BY MANUFACTURER).
- 19) 1/2" DIAMETER STAINLESS STEEL PIPE GUIDE RAILS, MUST BE PLUMB.
- 20) (1) HYDROMATIC S4H-4" SUBMERSIBLE, NON-CLOG PUMP. NO SUBSTITUTION PERMITTED. PROVIDE (2) BASE FITTINGS AND GUIDE RAIL ASSEMBLIES, AND INSTALL TOWN PROVIDED PUMP.
- 21) LIFT OUT ASSEMBLY, TYP. OF 2.
- 22) BOTTOM OF BASIN MUST HAVE SMOOTH TROWELED SURFACE FOR MEETING SUPPORT CASTING
- 23) AT GRADE REDUCED PRESSURE BACKFLOW PREVENTER ENCLOSURE. PROVIDE POWER AS REQUIRED BY ENCLOSURE MANUFACTURER FOR HEATING SYSTEM.
- 24) NOT USED
- 25) WATER METER. REFER TO TOWN STANDARD DETAIL DS-5, DWG T1.2.
- 26) CURB BOX
- 27) 1" SDR 7 PE INSTALLED BY THE MISSILE OR DIRECTIONAL DRILLING METHOD.
- 28) CORPORATION STOP WITH SERVICE TAP. EXISTING 10" MAIN IS 10 FEET AWAY BEYOND EXISTING SEWER MAIN. TEST PIT TO LOCATE.
- 29) PVC STILLING WELL AND PRESSURE TRANSDUCER. REFER TO STILLING WELL DETAIL DWG T1.3.
- 30) NOT USED
- 31) 6" PVC DUCT. MODIFY DUCT TO EXTEND TO TERMINATE AT EL = 89.7 (18" ABOVE INFLUENT PIPE).
- 32) EMERGENCY BY-PASS ASSEMBLY. SEE DETAIL DWG T1.3.
- 33) HALLIDAY D2R EMBEDDED HOIST SOCKET. PROVIDE ADDITIONAL REINFORCEMENT AS REQUIRED BY MANUFACTURER LOAD TABLE.
- 34) POWER AND CONTROL CABLE JUNCTION BOX. REFER TO ELECTRICAL DRAWINGS FOR DETAILS.
- 35) REPAIR SLEEVE
- 36) 4" GATE VALVE. SEE DETAIL DWG T1.3.
- 37) FROST PROOF YARD HYDRANT, WOODFORD MODEL Y34, 3/4" FPT NON-FREEZE KOWA YARD HYDRANT (3 FT. BURIAL DEPTH)
- 38) WATERPROOF & CORROSION RESISTANT FLEXIBLE COUPLING TO TRANSITION TO FAN OUTLET
- 39) HOUSEKEEPING PAD. SEE DETAIL DWG T1.1.

- NOTES:**
1. PIPES MAY BE SHOWN OUT OF POSITION FOR CLARITY.
 2. ALL MATERIALS IN WETWELL AND VALVE VAULT TO BE STAINLESS STEEL UNLESS OTHERWISE NOTED.
 3. VENTILATION PIPING TO BE 6" SCH. 40 PVC, PAINTED ABOVE GRADE.

Scale: _____

BEACON ENGINEERING LLC
2311 W. 10TH STREET
SUITE 200
MILWAUKEE, WI 53224
312.864.8825 | info@beaconengineeringllc.com

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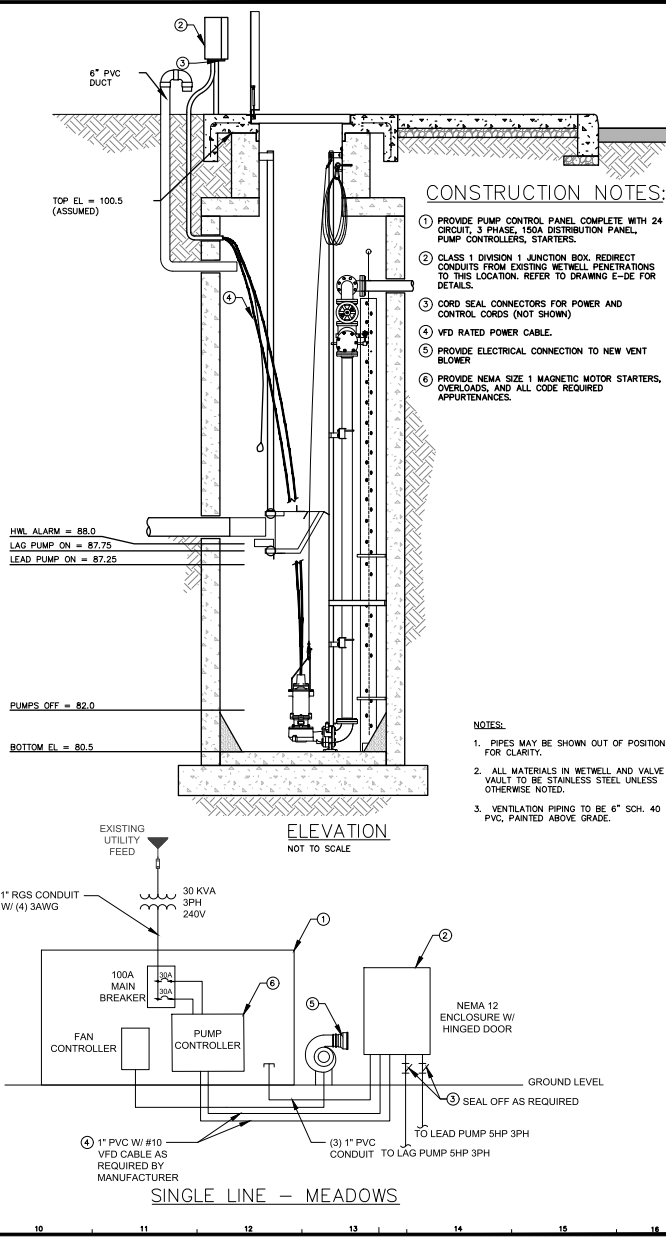
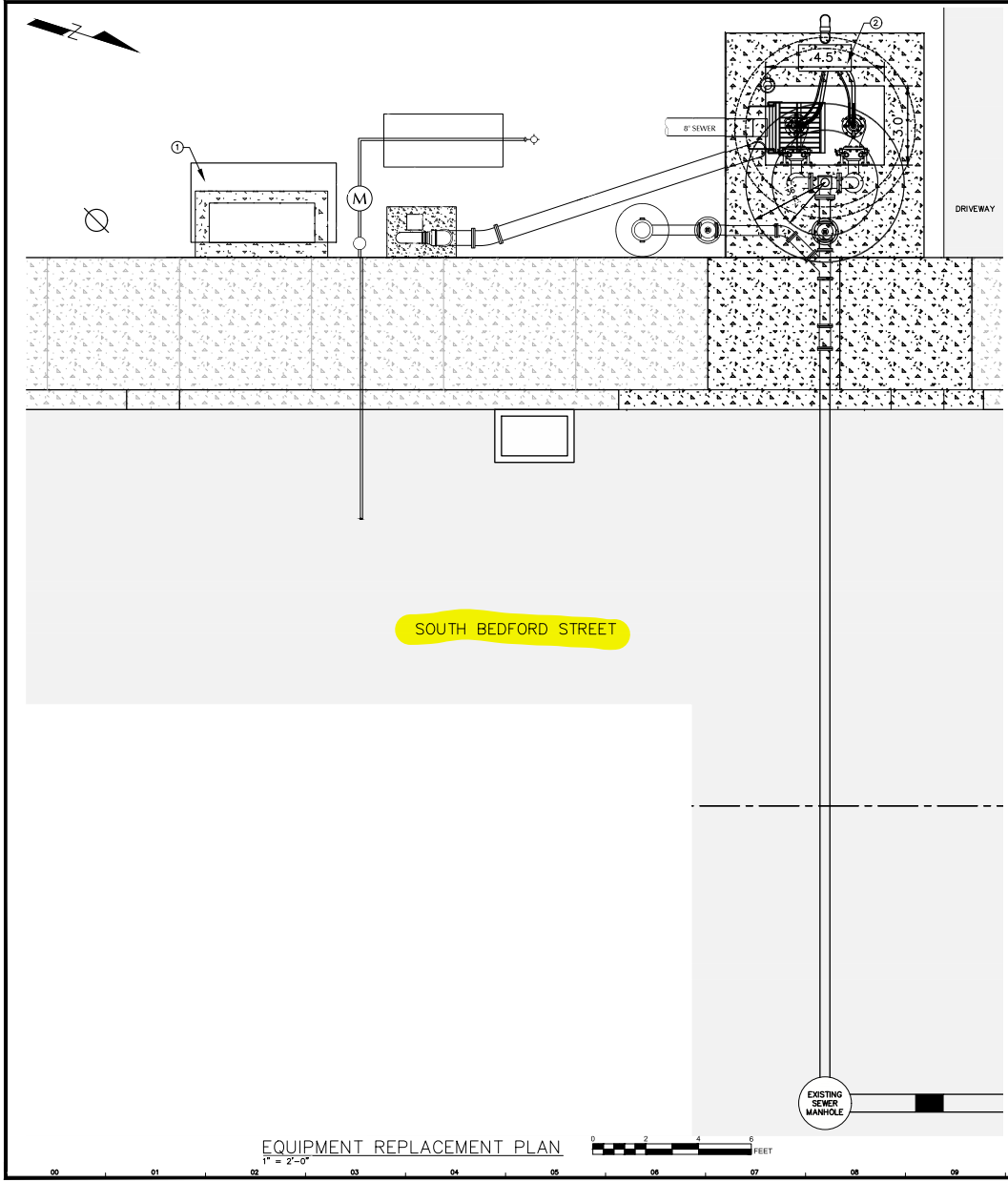
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Proj. No.: **GE001-07**
Dwg. No.: **ME2.1**

PUMP STATION REHABILITATION PROJECT
COW BRIDGE BRANCH - INDIAN RIVER WATERSHED
SUSSEX COUNTY, DELAWARE
TAX MAP # 135-20-09-7-00 MEADOWS PUMP STATION

EQUIPMENT REPLACEMENT PLAN

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CONSTRUCTION NOTES:

1. PROVIDE PUMP CONTROL PANEL COMPLETE WITH 24 CIRCUIT, 3 PHASE, 150A DISTRIBUTION PANEL, PUMP CONTROLLERS, STARTERS.
2. CLASS 1 DIVISION 1 JUNCTION BOX, REDIRECT CONDUITS FROM EXISTING WETWELL PENETRATIONS TO THIS LOCATION, REFER TO DRAWING E-DE FOR DETAILS.
3. CORD SEAL CONNECTORS FOR POWER AND CONTROL CORDS (NOT SHOWN)
4. VFD RATED POWER CABLE.
5. PROVIDE ELECTRICAL CONNECTION TO NEW VENT BLOWER.
6. PROVIDE NEMA SIZE 1 MAGNETIC MOTOR STARTERS, OVERLOADS, AND ALL CODE REQUIRED APPURTENANCES.

- NOTES:**
1. PIPES MAY BE SHOWN OUT OF POSITION FOR CLARITY.
 2. ALL MATERIALS IN WETWELL AND VALVE VAULT TO BE STAINLESS STEEL UNLESS OTHERWISE NOTED.
 3. VENTILATION PIPING TO BE 6" SCH. 40 PVC, PAINTED ABOVE GRADE.

Sheet

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Mechanical, Electrical, Plumbing, Design
Doris, Pennsylvania 19030
Phone: (610) 667-7474 Fax: (610) 667-1208

#	Revision	By:	Date:
1	ADDENDUM 1	BEH	2023-11-13
2	ISSUED FOR BID	BEH	2023-10-19
1	95% PROJECT DESIGN SUBMISSION	BEH	2023-09-22
B	Preliminary Review	CCB	08/09/2023
A			

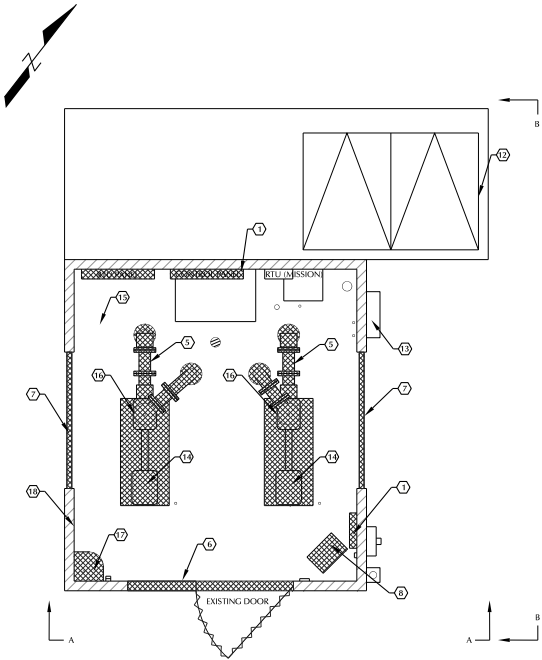
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PUMP STATION REHABILITATION PROJECT
COW BRIDGE-BRANCH - INDIAN RIVER WATERSHED,
TOWNSHIP OF GEORGETOWN, GEORGETOWN HUNDRED,
COUNTY OF GEORGETOWN, NEW JERSEY
TAX MAP #135-20.09-7.00 MEADOWS PUMP STATION
ELECTRICAL EQUIPMENT REPLACEMENT PLAN

Date: 2023-09-20
Scale: AS NOTED
Des/By: MCS
Proj.No: 22-2-0002

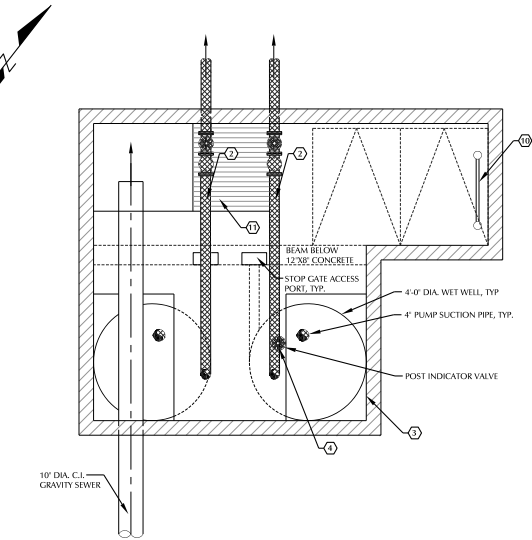
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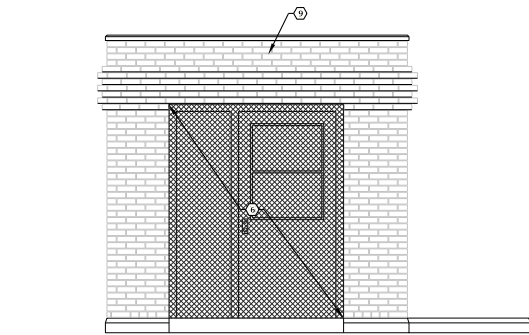
EXISTING CONDITIONS AND DEMOLITION PLAN - UPPER LEVEL

1" = 2'-0"



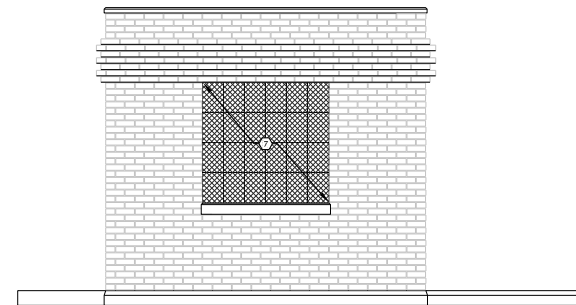
EXISTING CONDITIONS AND DEMOLITION PLAN - LOWER LEVEL

1" = 2'-0"



FRONT ELEVATION A-A

1" = 2'-0"



SIDE ELEVATION B-B

1" = 2'-0"

DEMOLITION NOTES:

- ① DEMOLISH AND REMOVE EXISTING CONTROL SERVICE PANEL AND CONDUITS AS REQUIRED TO INSTALL NEW CONTROL PANEL WHERE INDICATED. SALVAGE MISSION SCADA PANEL FOR REUSE WITH NEW PANEL.
- ② SAWCUT AND REMOVE 4" DI FORCE MAIN AND GATE VALVES TO A POINT 5 FEET OUTSIDE OF WETWELL.
- ③ REMOVE ALL DEBRIS, RESIDUES, FATS, OILS, GREASE, SOLIDS AND ALL OTHER DELETERIOUS MATERIALS FROM WET WELL AND DISPOSE AT THE WWTP AT AN OWNER APPROVED LOCATION. POWER WASH ALL EXPOSED SURFACES OF WET WELL TO PREPARE FOR INSTALLATION OF COATING SYSTEM.
- ④ REMOVE ALL PIPING, VALVES, ETC.
- ⑤ REMOVE EXISTING PUMPS AND SALVAGE TO OWNER.
- ⑥ REMOVE EXISTING DOOR ASSEMBLY AND APPURTENANCES.
- ⑦ REMOVE EXISTING WINDOWS FROM BOTH THE EAST AND WEST SIDES OF PUMP HOUSE.
- ⑧ REMOVE EXISTING UNIT HEATER.
- ⑨ REMOVE EXISTING BUILT UP MEMBRANE ROOF. CLEAN ROOF DRAIN AND VERIFY FUNCTION.
- ⑩ LADDER TO REMAIN
- ⑪ BAR SCREEN TO REMAIN
- ⑫ 4 X 6' ACCESS HATCH TO REMAIN
- ⑬ MANUAL TRANSFER SWITCH TO REMAIN
- ⑭ EXISTING PUMP
- ⑮ REMOVE ALL LIGHTING AND APPURTENANCES
- ⑯ EXISTING WATER CONNECTION FOR SEAL LUBRICATION TO BE REMOVED AND CAPPED 5 FEET OUTSIDE OF BUILDING.
- ⑰ REMOVE EX. SINK AND PLUMBING. PLUG ALL PLUMBING PENETRATIONS WITH NON-SHRINK GROUT.
- ⑱ REMOVE EXISTING LOOSE PAINT AND DEBRIS ON WALLS AND PREPARE SURFACE TO BE PAINTED.

Scale:

BEACON ENGINEERING LLC
 3012 BEACON BLVD
 SUITE 200
 GEORGETOWN, DE 20636
 TEL: 410-326-8825 | INFO@BEACONENGINEERINGLLC.COM

Date: _____
 By: _____
 Revision: _____

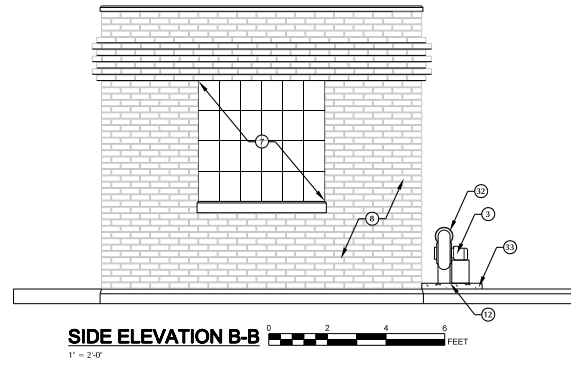
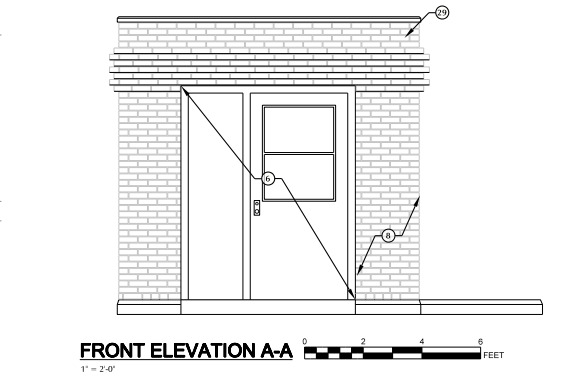
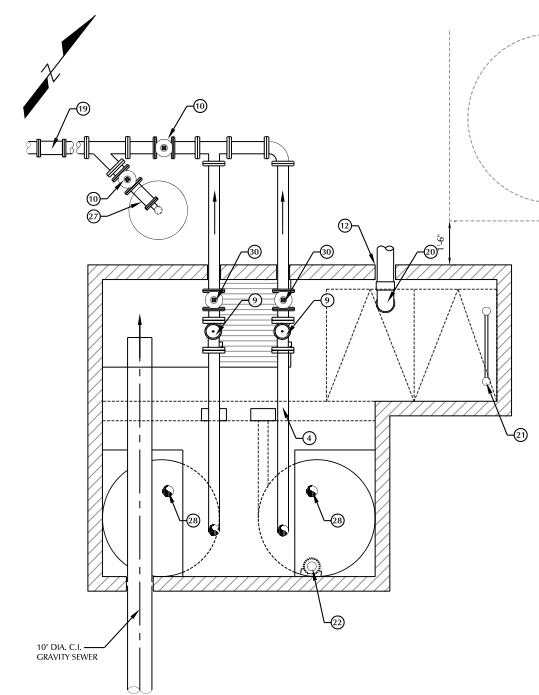
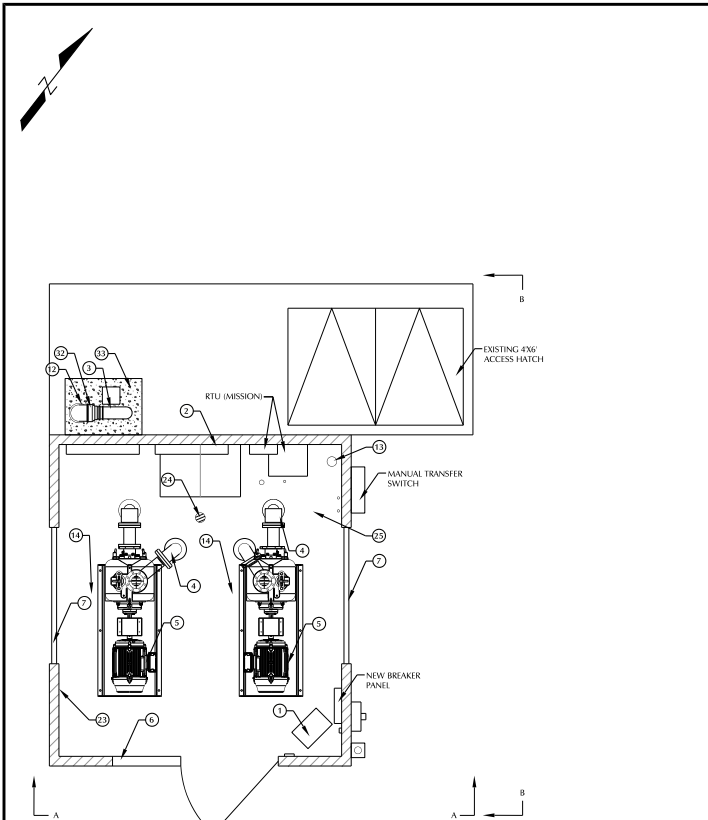
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 TAX MAP # 135-14-20-11.00 BIG PARK PUMP STATION

PUMP STATION REHABILITATION PROJECT
 CONY BRIDGE BRANCH INDIAN RIVER WATERSHED
 TOWN OF GEORGETOWN, GEORGETOWN HUNDRED,
 SUSSEX COUNTY, DELAWARE
 TAX MAP # 135-14-20-11.00 BIG PARK PUMP STATION

EXISTING CONDITIONS AND DEMOLITION PLAN

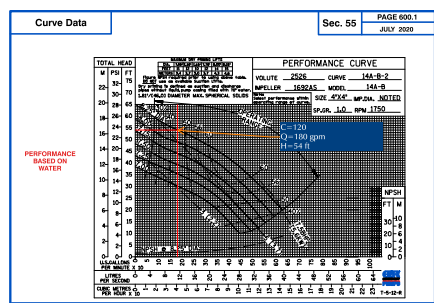
Date: **AUG 13, 2024**
 Scale: **AS NOTED**
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 Proj No.: **GE001-07**

Dwg. No.: **BP1.1**



CONSTRUCTION NOTES:

- ① REPLACE UNIT HEATER.
- ② INSTALL NEW CONTROL PANEL WITH SALVAGED SCADA PANEL.
- ③ PLASTIC MODEL 15 EXHAUST FAN WITH WEATHER ENCLOSURE
- ④ NEW PIPING, VALVES, FITTINGS AND APPURTENANCES.
- ⑤ HYDROMATIC OR GORMAN-RUPP SUCTION LIFT PUMPS.
- ⑥ INSTALL NEW DOOR ASSEMBLY PER MANUFACTURERS INSTRUCTIONS.
- ⑦ INSTALL NEW WINDOWS PER MANUFACTURERS INSTRUCTIONS.
- ⑧ REPORT AND/OR REPLACE BRICK AS NECESSARY.
- ⑨ 4" BALL CHECK VALVE
- ⑩ 4" GATE VALVE, SEE DETAIL DWG T1.3.
- ⑪ NOT USED
- ⑫ CORE DRILL WET WELL TO INSTALL 6" DIA PVC DUCT. FILL ANNULAR SPACE BETWEEN DUCT AND WET WELL WALL WITH LINK-SEAL WALL SEAL.
- ⑬ SEAL ALL FLOOR PENETRATIONS WITH NON-SHRINK GROUT.
- ⑭ NOT USED
- ⑮ NOT USED
- ⑯ NOT USED
- ⑰ NOT USED
- ⑱ RECONNECT TO EXISTING MAIN USING D.I. REPAIR SLEEVE. TEST PIT TO FIELD LOCATE EXISTING MAIN.
- ⑳ TERMINATE BOTTOM OF DUCT 12" ABOVE WALKWAY. REFER TO DUCT DETAIL, DWG T1.1.
- ㉑ INSTALL OSHA REQUIRED GRAB BAR. SEE DETAIL, DWG T1.2.
- ㉒ PVC STILLING WELL AND PRESSURE TRANSDUCER. REFER TO STILLING WELL DETAIL DWG T1.3.
- ㉓ PAINT WALLS AND CEILING
- ㉔ REPLACE EXISTING FLOOR DRAIN AND P-TRAP
- ㉕ NEW LIGHTS, SWITCHES, AND ELECTRICAL OUTLETS. REFER TO ELECTRICAL PLANS FOR DETAILS.
- ㉖ NOT USED
- ㉗ EMERGENCY BYPASS ASSEMBLY, REFER TO DWG T1.3.
- ㉘ NEW 4" DIAMETER DUCTILE IRON SUCTION PIPE
- ㉙ NEW BUILT UP MEMBRANE ROOF
- ㉚ 4" FULL-PORT PLUG VALVE WITH WORM GEAR OPERATOR AND NUT.
- ㉛ WATERPROOF & CORROSION RESISTANT FLEXIBLE COUPLING TO TRANSITION TO FAN OUTLET
- ㉜ WATERPROOF & CORROSION RESISTANT FLEXIBLE COUPLING TO TRANSITION TO FAN OUTLET
- ㉝ HOUSEKEEPING PAD, SEE DETAIL DWG T1.1.



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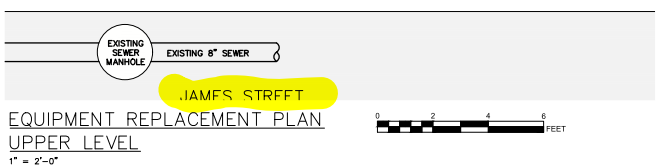
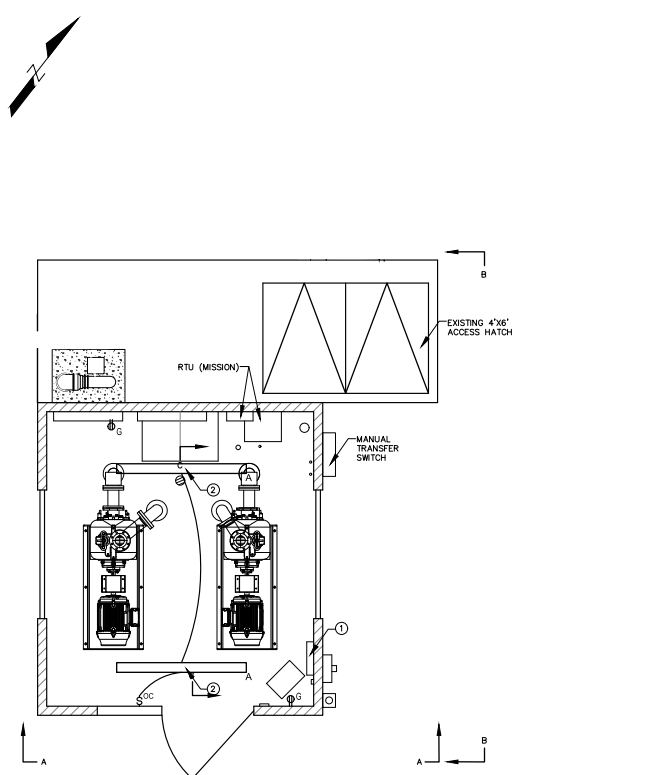
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PUMP STATION REHABILITATION PROJECT
 COW BRIDGE BRANCH INDIAN RIVER WATERSHED,
 TOWN OF GEORGETOWN, GEORGETOWN HUNDRED,
 SUSSEX COUNTY, DELAWARE
 TAX MAP # 135-14-20-11.00 BIG PARK PUMP STATION

Date: **AUG 13, 2024**
 Scale: **AS NOTED**
 Drawn By: **SKM**
 Proj No.: **GE001-07**

Dwg. No.: **BP2.1**

Mon, 2023 November 13, 10:51:13 Z:\PROJECT\2023-0002 - GEORGETOWN PUMP STATION\BAC6002_1_Dwg050 - Equipment - Drawing01 - Drawing.dwg (BP.dwg)



**EQUIPMENT REPLACEMENT PLAN
LOWER LEVEL**
1" = 2'-0"

CONSTRUCTION NOTES:

- ① PROVIDE 42 CIRCUIT, 3 PHASE, 400A DISTRIBUTION PANEL.
- ② PROVIDE NEW LIGHTS, SWITCHES, AND RECEPTACLES IN EXISTING LOCATIONS. CONDUIT MAY BE REUSED IF DEEMED APPROPRIATE BY OWNER.
- ③ PROVIDE 3PH ELECTRIC HEAT TO MATCH EXISTING UNIT.

LUMINAIRE SCHEDULE											
TYPE	DESCRIPTION	BASIS OF DESIGN			QTY	SOURCE		WATTS	INPUT VOLTAGE	MOUNTING	COMMENTS
		MANUFACTURER	SERIES			TYPE	LUMENS				
A	CONTRACTOR SELECT 8' STRIP LIGHTS	LITHONIA	CS6	4	LED	6272-12046	35K/40K/50K	46,6400	120-277	CEILING	
NOTES											

DATE: 2023-09-20
SCALE: AS NOTED
DESIGNER: MCS
PROJECT NO.: 22-2-0002
DWG. NO.: E-BP.1

REVISIONS:

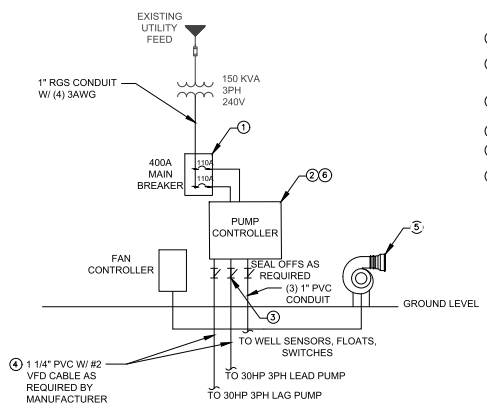
#	DATE	BY	REVISION
1	2023-11-13	BEH	ADDENDUM 1
2	2023-10-19	BEH	ISSUED FOR BID
3	2023-09-22	BEH	95% PROJECT DESIGN SUBMISSION
4	08/09/2023	CCB	Primary Review

ISSUED FOR BIDDING
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COMPANY: Diamond State Engineering
 Mechanical, Electrical, Plumbing Design
 20001 S. DuPont Highway, Suite 100
 Dover, Delaware 19901
 Phone: (302) 687-7294 Fax: (302) 697-1208

PROJECT: COW BRIDGE-BRANCH - INDIAN RIVER WATERSHED, TOWN OF GEORGETOWN, GEORGETOWN HUNDRED, SUSSEX COUNTY, DELAWARE
LOCATION: #135-14-20-14.00 BIG PARK PUMP STATION
TITLE: EQUIPMENT REPLACEMENT PLAN & DETAILS

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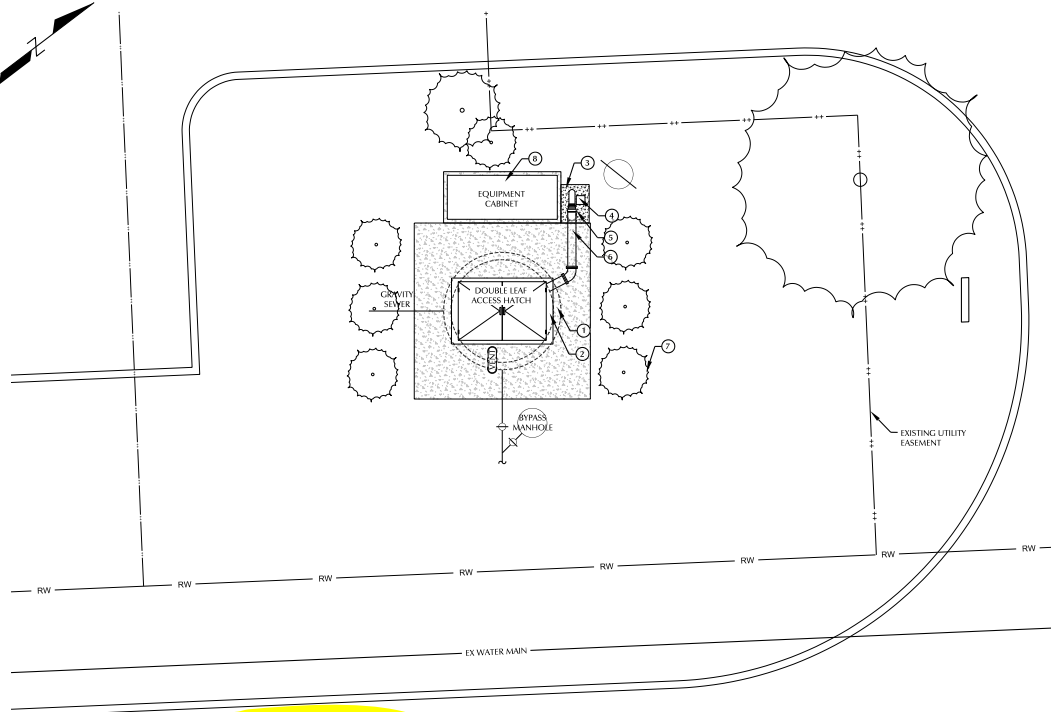


SINGLE LINE - BIG PARK

CONSTRUCTION NOTES:

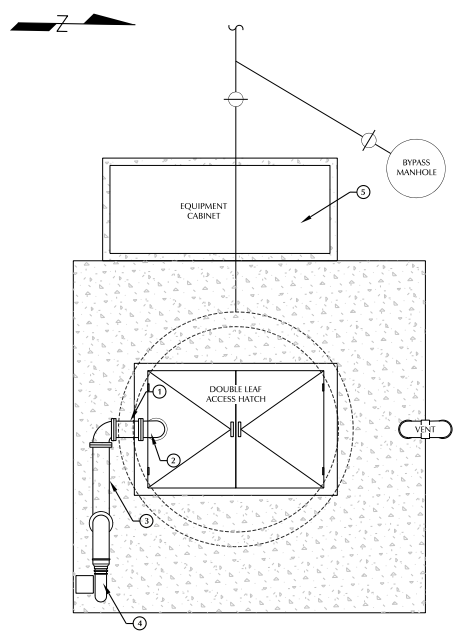
- ① PROVIDE 42 CIRCUIT, 3 PHASE, 400A DISTRIBUTION PANEL.
- ② PROVIDE PUMP CONTROL PANEL COMPLETE WITH PUMP CONTROLLERS, STARTERS.
- ③ CORD SEAL CONNECTORS FOR POWER AND CONTROL CORDS (NOT SHOWN)
- ④ VFD RATED POWER CABLE.
- ⑤ PROVIDE ELECTRICAL CONNECTION TO NEW VENT BLOWER
- ⑥ PROVIDE NEMA SIZE 3 MAGNETIC MOTOR STARTERS, OVERLOADS, AND ALL CODE REQUIRED AFFURTENANCES.

Diamond State Engineering																					
Mechanical, Electrical, Plumbing Design 2000 West Chester Pike Dover, Delaware 19901 Phone: (302) 697-9294 Fax: (302) 697-1208																					
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 5%;">#</th> <th style="width: 15%;">Revision</th> <th style="width: 10%;">By</th> <th style="width: 10%;">Date</th> </tr> </thead> <tbody> <tr> <td>Z</td> <td>ADDENDUM 1</td> <td>BEH</td> <td>2023-11-13</td> </tr> <tr> <td>1</td> <td>ISSUED FOR BID</td> <td>BEH</td> <td>2023-10-19</td> </tr> <tr> <td>B</td> <td>95% PROJECT DESIGN SUBMISSION</td> <td>BEH</td> <td>2023-09-22</td> </tr> <tr> <td>A</td> <td>Preliminary Review</td> <td>CCB</td> <td>08/09/2023</td> </tr> </tbody> </table>	#	Revision	By	Date	Z	ADDENDUM 1	BEH	2023-11-13	1	ISSUED FOR BID	BEH	2023-10-19	B	95% PROJECT DESIGN SUBMISSION	BEH	2023-09-22	A	Preliminary Review	CCB	08/09/2023	<p style="text-align: center; font-weight: bold; border: 1px solid black; padding: 2px;">ISSUED FOR BIDDING</p> <p style="text-align: center; font-size: x-small;">(08/09/2023 5:59:17 PM)</p>
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Z	ADDENDUM 1	BEH	2023-11-13																		
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A	Preliminary Review	CCB	08/09/2023																		
COW BRIDGE-BRANCH - INDIAN RIVER WATERSHED, TOWN OF GEORGETOWN, GEORGETOWN - HUNDRED, SUSSEX COUNTY, DELAWARE SIX WAK # 135-14, 20-141.00 BIG PARK PUMP STATION EQUIPMENT REPLACEMENT PLAN & DETAILS																					
Date: 2023-09-20 Scale: AS NOTED Des/By: MCS Proj.No.: 22-2-0002																					
Dwg. No.: E-BP.2																					



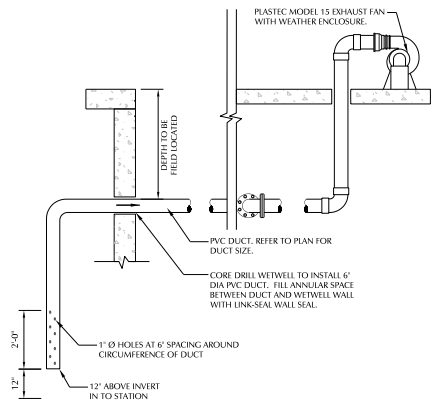
GORDY STREET PUMP STATION PLAN

1" = 4'-0"



STEVENSON LANE PUMP STATION PLAN

1" = 2'-0"



STEVENSON LANE INLET VENT CONNECTION DETAIL

1" = 2'-0"

CONSTRUCTION NOTES - GORDY STREET:

- 1 CORE DRILL WETWELL TO INSTALL 6" DIA PVC DUCT. FILL ANNULAR SPACE BETWEEN DUCT AND WETWELL WALL WITH LINK-SEAL WALL SEAL.
- 2 TERMINATE BOTTOM OF DUCT 12" ABOVE INVERT INTO STATION.
- 3 HOUSEKEEPING PAD, SEE DETAIL, DWG T1-1.
- 4 PLASTIC MODEL 15 EXHAUST FAN WITH WEATHER ENCLOSURE
- 5 WATERPROOF & CORROSION RESISTANT FLEXIBLE COUPLING TO TRANSITION TO FAN OUTLET
- 6 6" PVC DUCT
- 7 EXISTING SHRUB TO REMAIN, TYP.
- 8 REPLACE ALL PENETRATIONS BETWEEN EQUIPMENT CABINET AND WETWELL TO PROVIDE AIR-TIGHT SEAL OFF FITTINGS TO PREVENT SEWER GAS FROM BEING FORCED INTO CABINET BY VENTILATOR.

CONSTRUCTION NOTES - STEVENSON LANE:

- 1 CORE DRILL WETWELL TO INSTALL 6" DIA PVC DUCT. FILL ANNULAR SPACE BETWEEN DUCT AND WETWELL WALL WITH LINK-SEAL WALL SEAL.
- 2 TERMINATE BOTTOM OF DUCT 12" ABOVE INVERT INTO STATION.
- 3 6" DIA PVC DUCT
- 4 PLASTIC MODEL 15 EXHAUST FAN WITH WEATHER ENCLOSURE.
- 5 REPLACE ALL PENETRATIONS BETWEEN EQUIPMENT CABINET AND WETWELL TO PROVIDE AIR-TIGHT SEAL OFF FITTINGS TO PREVENT SEWER GAS FROM BEING FORCED INTO CABINET BY VENTILATOR.
- 6 ADD ALT. NO. C1: REMOVE AND REPLACE EQUIPMENT CABINET. SUBMIT SHOP DRAWINGS FOR REVIEW. CABINET REPLACEMENT SHALL BE CONSISTENT WITH THE DESIGN BASIS USED FOR THE MEADOWS PUMP STATION. THIS WORK TO BE COMPLETED ONLY IF ADD ALT. NO. C1 IS ACCEPTED BY THE OWNER.

Scale: 0 1 2 3 4 5 FEET

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Revision: 0

By: _____

Drawn: _____

PUMP STATION REHABILITATION PROJECT
 UPPER DEEP CREEK & COW BRANCH/NDWV RIVER WATERSHED,
 TOWN OF GEORGETOWN, GEORGETOWN HUNDRED,
 SUSSEX COUNTY, DELAWARE
 TAX MAP # 35-14-13-9-00 GORDY STREET PUMP STATION
 TAX MAP # 35-20-00-66-00 STEVENSON LANE PUMP STATION
EQUIPMENT REPLACEMENT PLAN

Date: **AUG 13, 2024**
 Scale: **AS NOTED**
 Drawn By: **SKM**
 Proj No.: **GE001-07**

Dwg. No.: **GS2.1**