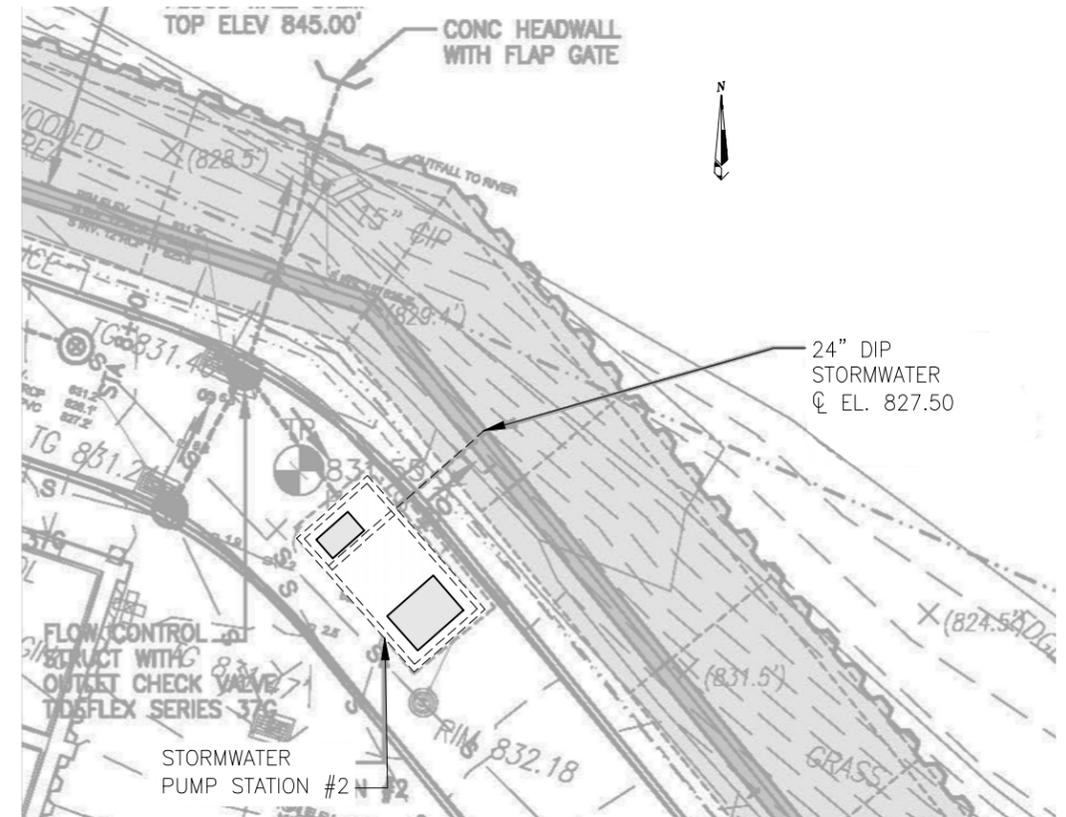


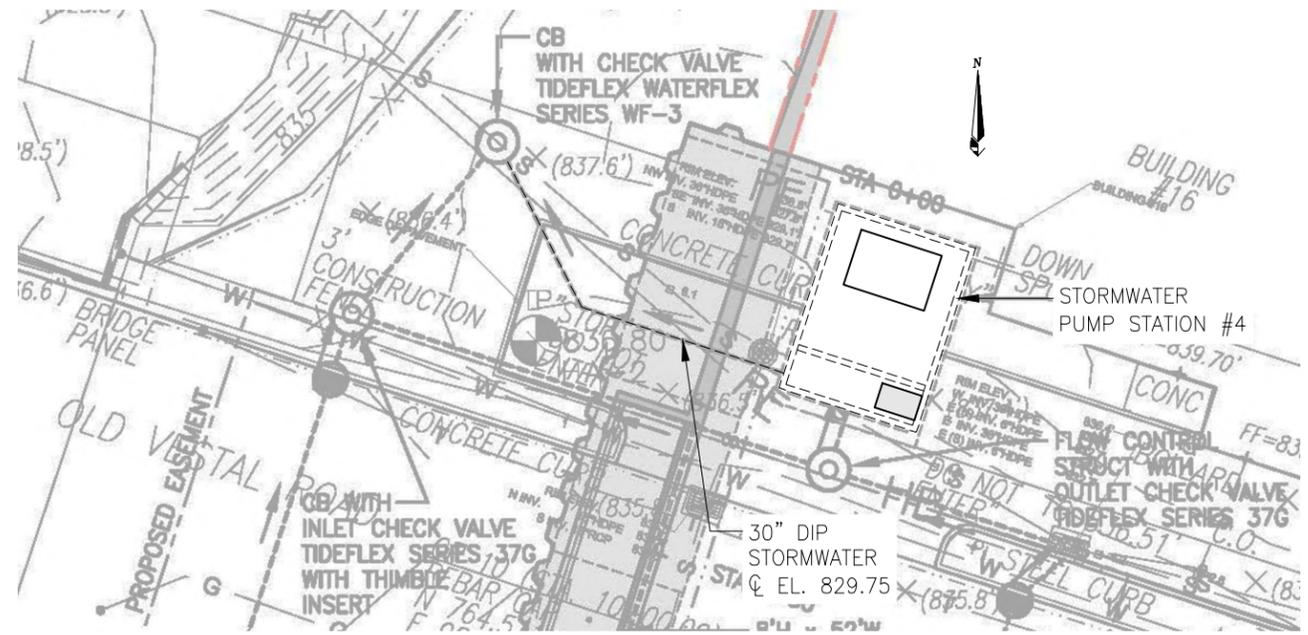
PART PLAN PS #1
Scale: 1"=10'-0"



Scale: 1"=10'-0"
PART PLAN PS #2



PART PLAN PS #3
Scale: 1"=10'-0"



PART PLAN PS #4
Scale: 1"=10'-0"



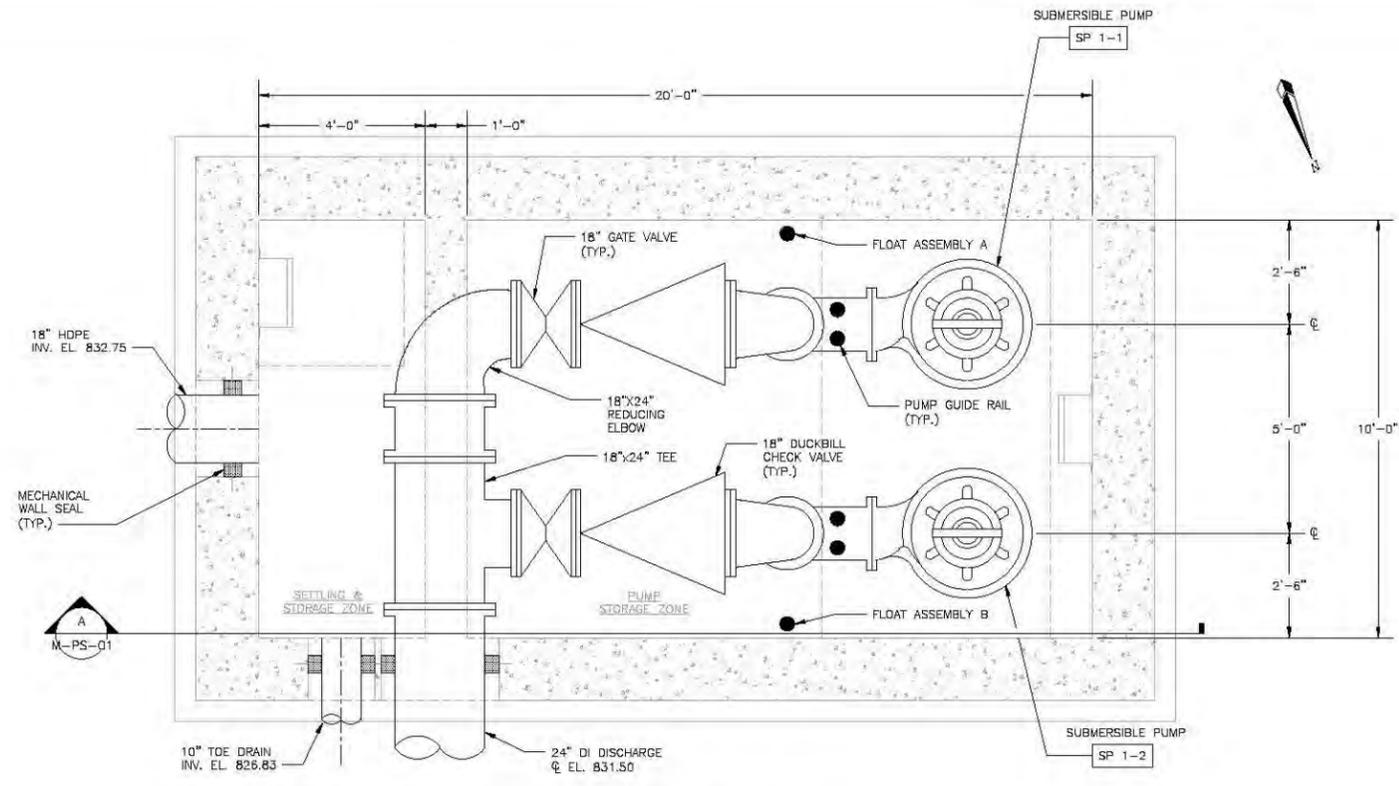
GRIFFITHS ENGINEERING
1" = 10'-0"
DATE: 11/1/00
PROJECT NO. 1116

Date:	Rev #
Designed by:	Project No. 1116
Drawn by:	Plot Scale: AS NOTED

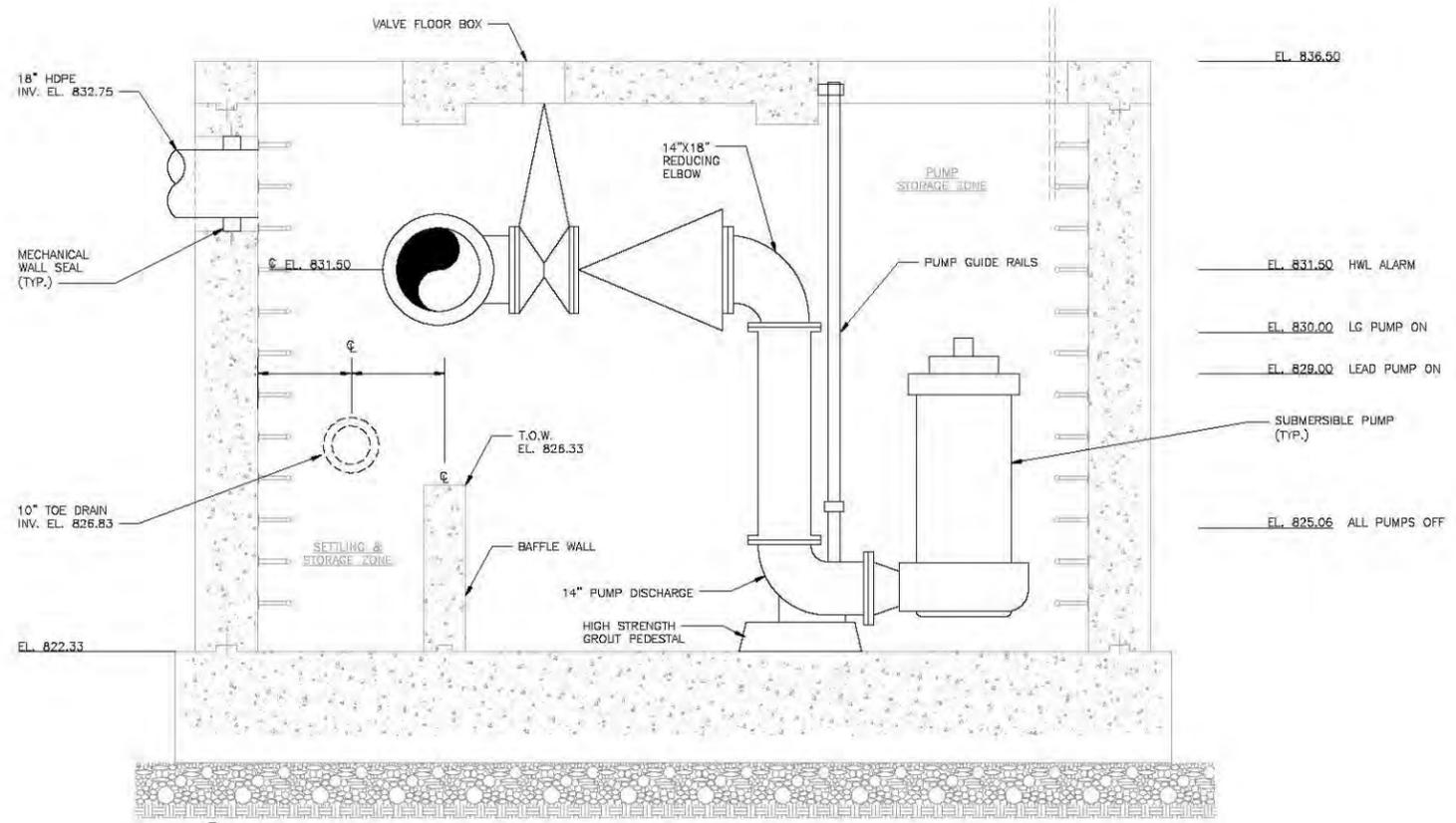
PART
SITE PLANS

Project Location: OL - ST - TOW - 00 - COUNT -
Project Name: BUCS1

Drawing Reference Number:
M-G-02
OF



STORMWATER PUMP STATION No. 1 WET WELL PLAN VIEW
 Scale: 1/2" = 1'-0"
 0 2' 4'



STORMWATER PUMP STATION No. 1 WET WELL SECTION
 Scale: 1/2" = 1'-0"
 0 2' 4'

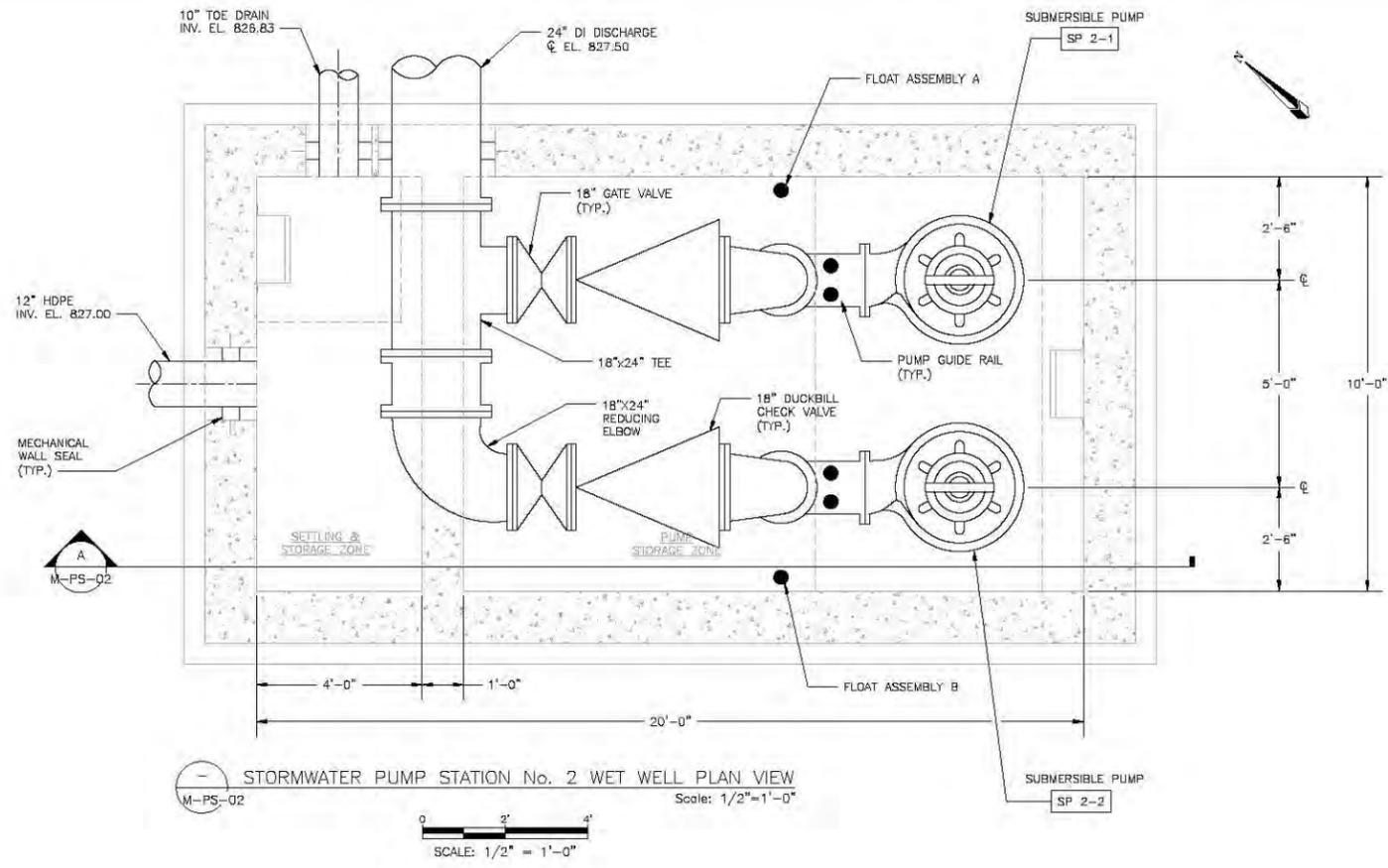
Date:	Rev. #
2012-115	
Project No.:	AS NOTED
2012-115	
Drawn by:	AS NOTED
DB	
Designed by:	AS NOTED

PUMPING STATION 1 PLAN & SECTION

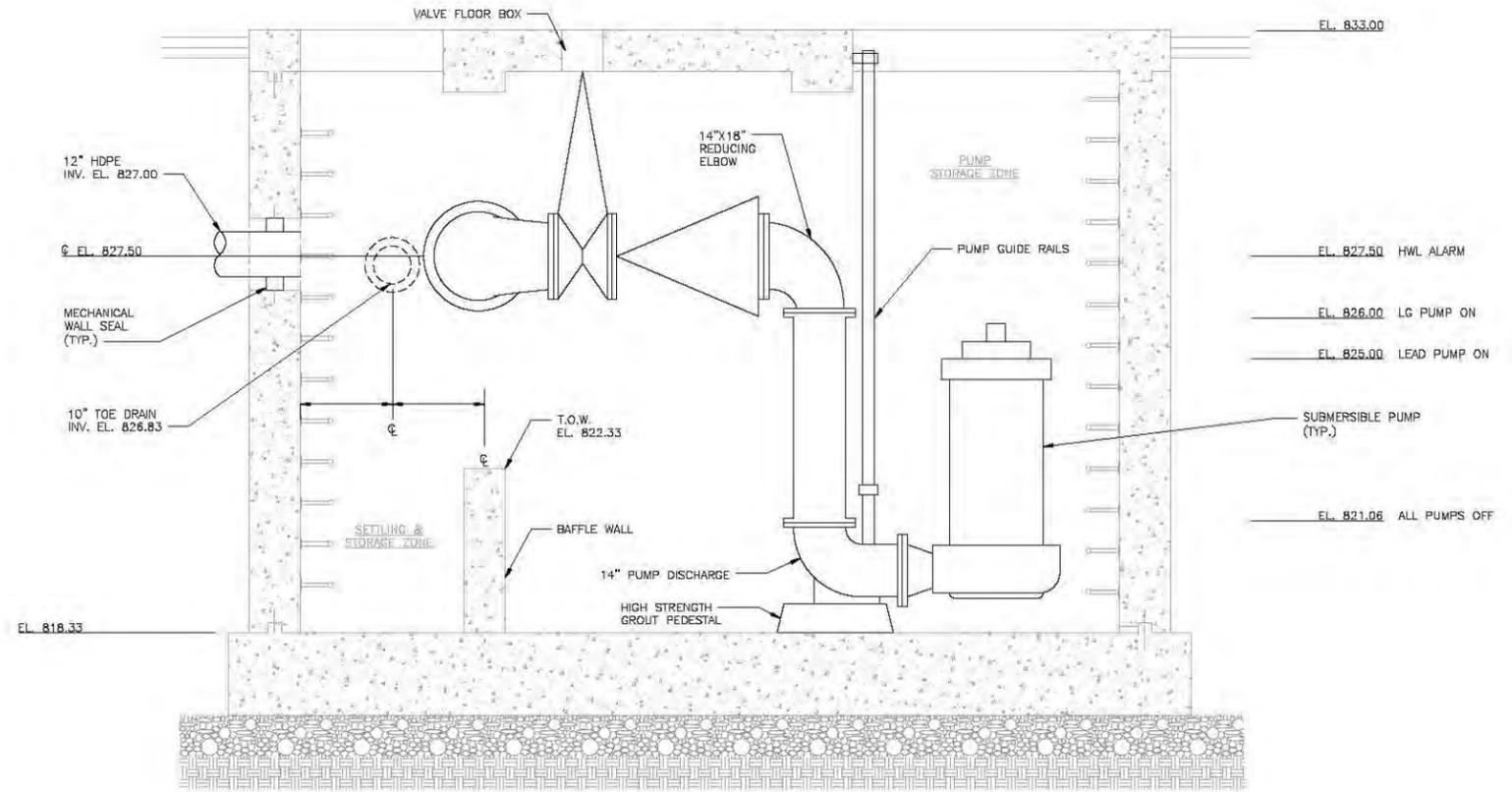
Project Location:
 OLD VESTAL ROAD
 TOWN OF VESTAL
 BROOME COUNTY, NY

Project Name:
BACJSTP FLOOD WALL

Drawing Reference Number:
M-PS-01
 OF



STORMWATER PUMP STATION No. 2 WET WELL PLAN VIEW
 Scale: 1/2" = 1'-0"



STORMWATER PUMP STATION No. 2 WET WELL SECTION
 Scale: 1/2" = 1'-0"



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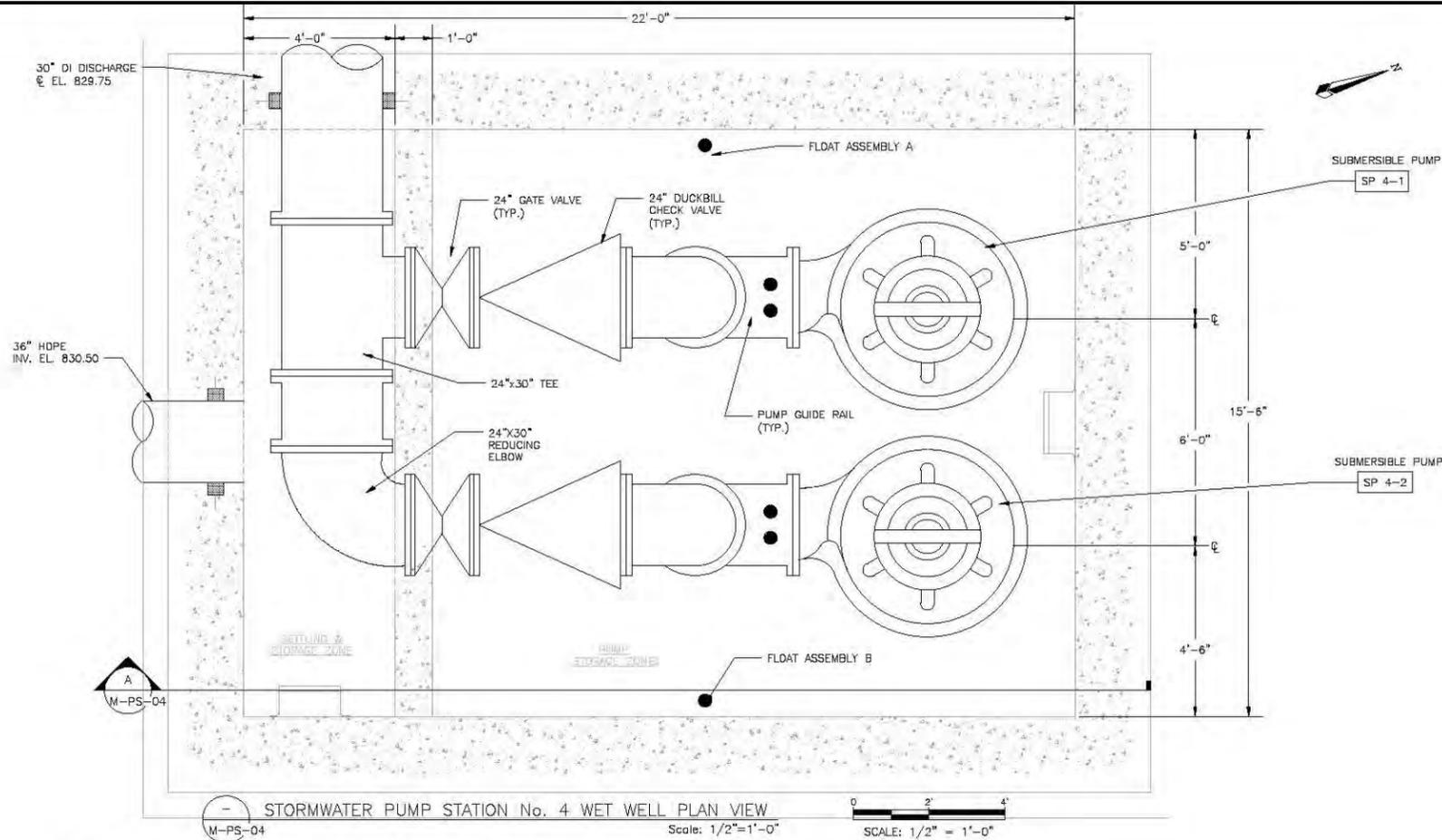
Date:	Rev. #
2012-115	
Project No.:	AS NOTED
2012-115	
Drawn by:	AS NOTED
DB	
Designed by:	AS NOTED

PUMPING STATION 2 PLAN & SECTION

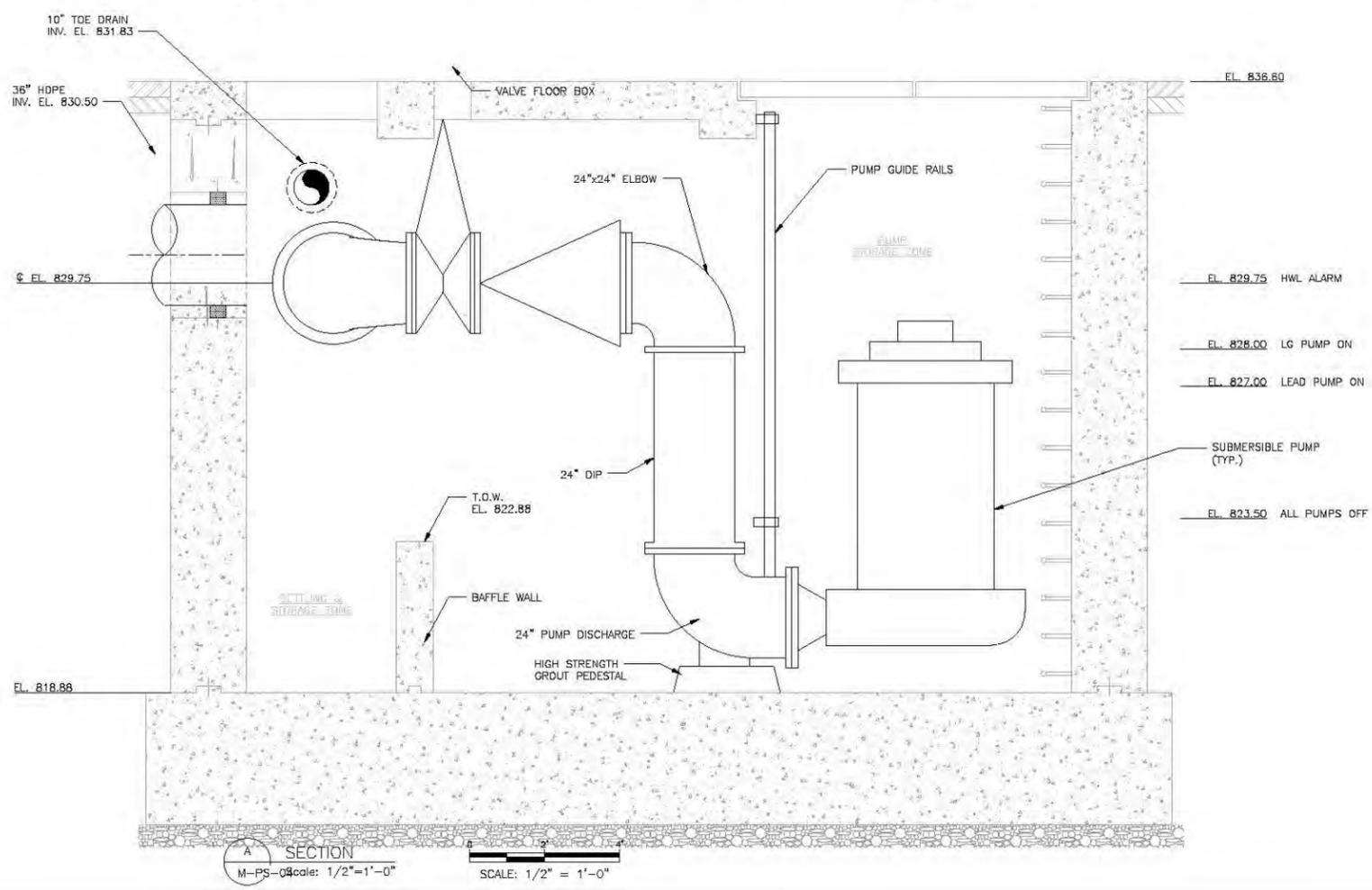
Project Location:
 OLD VESTAL ROAD
 TOWN OF VESTAL
 BROOME COUNTY, NY

Project Name:
BACJSTP FLOOD WALL

Drawing Reference Number:
M-PS-02
 OF



STORMWATER PUMP STATION No. 4 WET WELL PLAN VIEW
 Scale: 1/2" = 1'-0"



SECTION
 Scale: 1/2" = 1'-0"

- EL. 829.75 HWL ALARM
- EL. 828.00 LG PUMP ON
- EL. 827.00 LEAD PUMP ON
- EL. 823.50 ALL PUMPS OFF



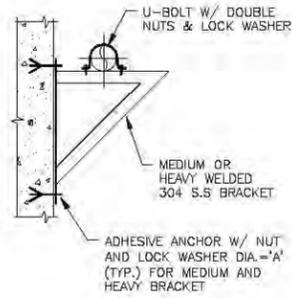
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 13 South Washington Street, Suite 1
 Binghamton, New York 13905
 Telephone (607) 734-9400
 Fax (607) 734-9486

Designed by:	Date:	Rev. #
Drawn by: DB	Project No.: 2012-115	
Checked by:	Project Name:	
Approved by:	Plot Scale:	AS NOTED

**PUMPING STATION 4
 PLAN & SECTION**

Project Location: OLD VESTAL ROAD
 TOWN OF VESTAL
 BROOME COUNTY, NY
 Project Name: **BACJSTP FLOOD WALL**

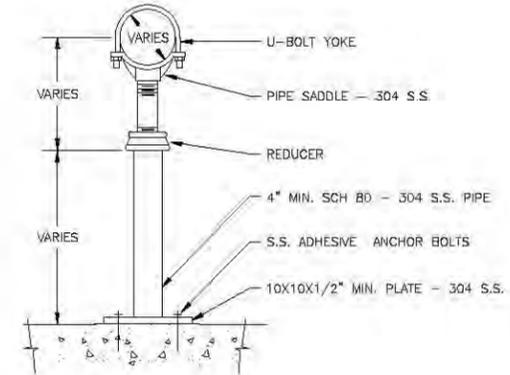
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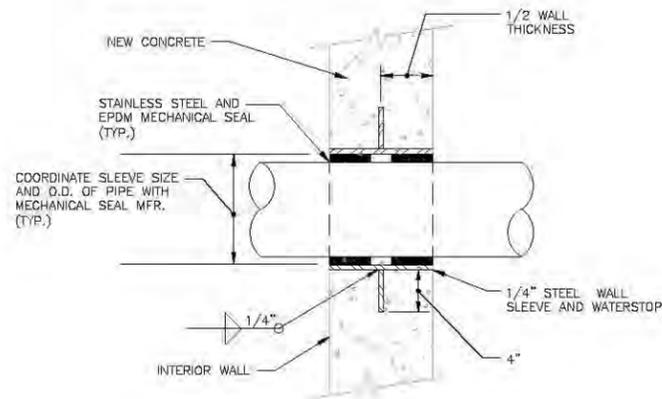
NOTES:
1. THIS PIPE SUPPORT DETAIL IS SUITABLE FOR PIPE SIZES UP TO 24 IN. DIAMETER ONLY.

NOMINAL PIPE DIA. (INCHES)	BRACKET TYPE	ADHESIVE ANCHOR DIA. "A" (INCHES)
18	HEAVY	1
24	HEAVY	1

1 TYPE 32 SUPPORT DETAIL
SCALE: N.T.S.



2 TYPE 37 SUPPORT DETAIL
SCALE: N.T.S.



3 TYPICAL WALL SLEEVE DETAIL
SCALE: N.T.S.

Designed by:	Date:	Rev #
Drawn by:	Project No.:	2012-115
Checked by:	Scale:	AS NOTED
Approved by:	Author:	

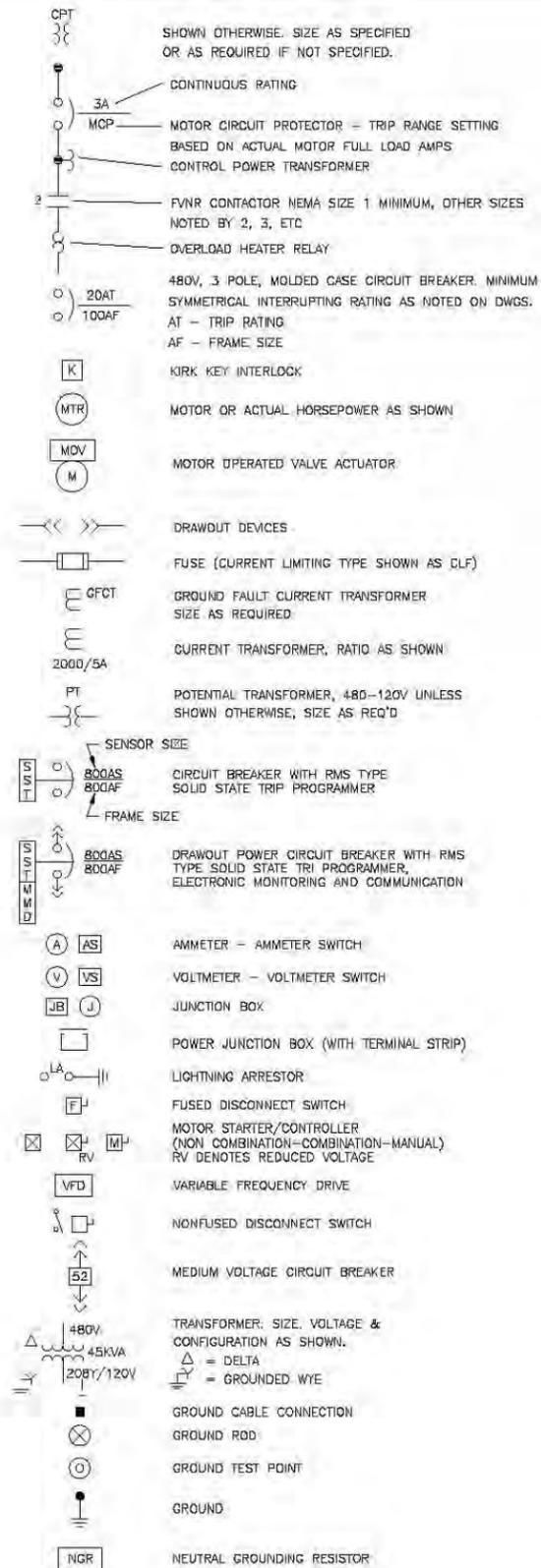
MECHANICAL DETAILS

Project Location: OLD VESTAL ROAD
TOWN OF VESTAL
BROOME COUNTY, NY

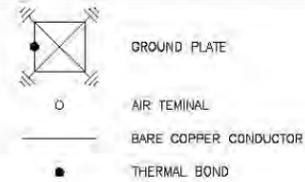
Project Name: BACKSTOP FLOOD WALL

Drawing Reference Number:
M-DT-01
OF

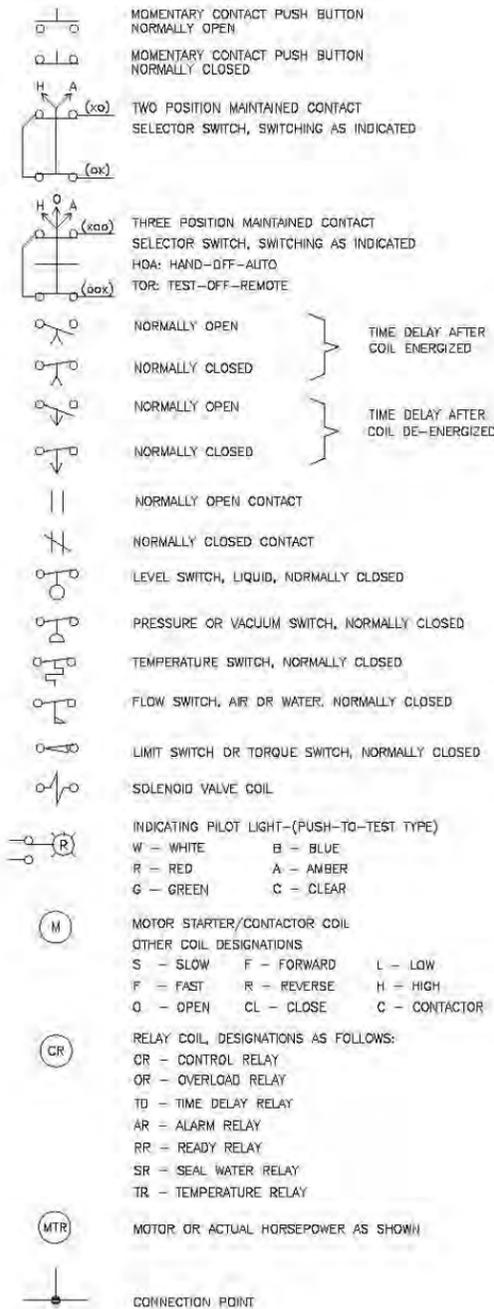
ONE LINE SYMBOLS



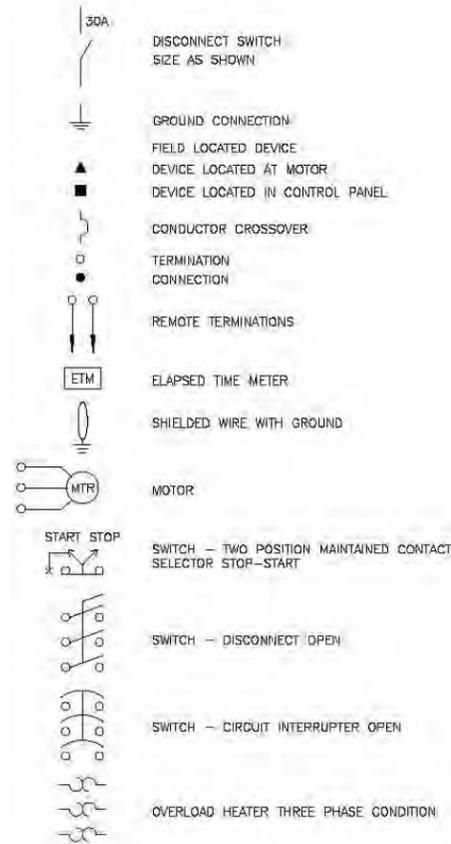
ONE LINE SYMBOLS CONT.



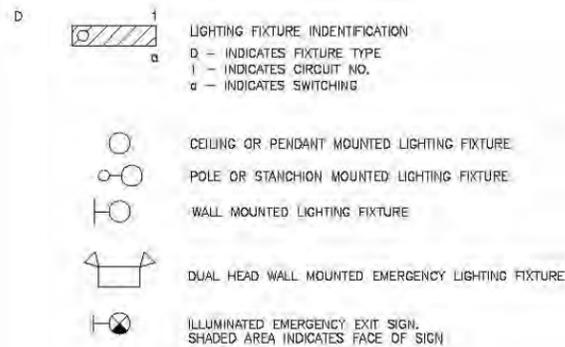
CONTROL SYMBOLS



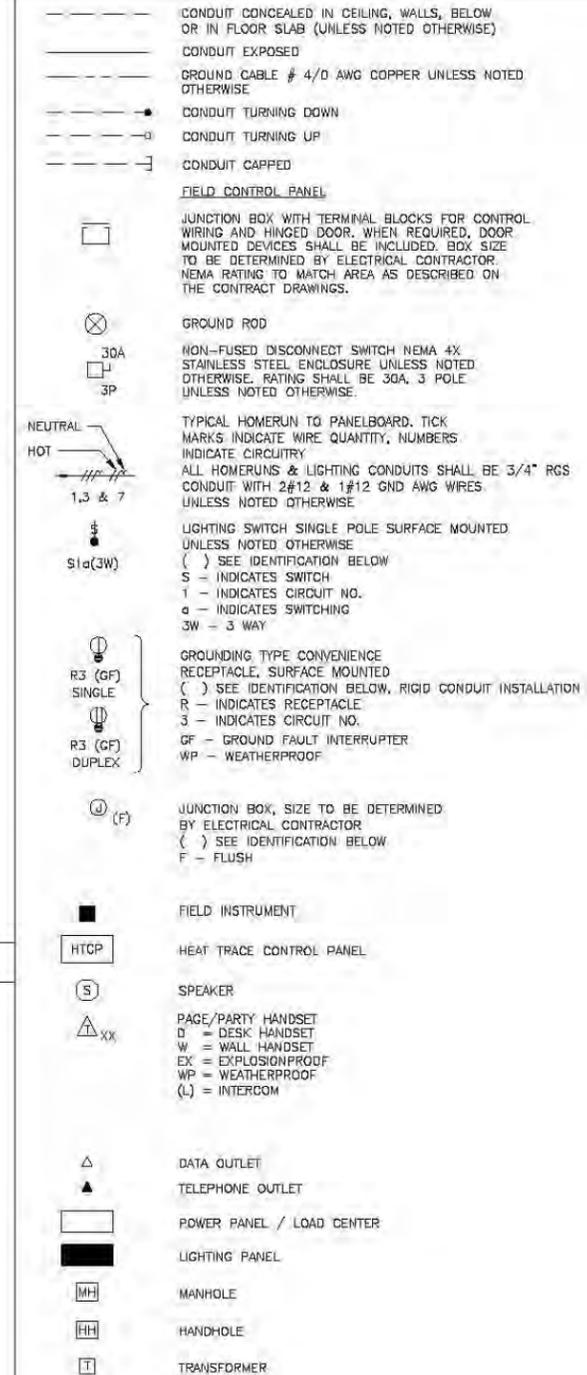
CONTROL SYMBOLS CONT.



LIGHTING PLAN SYMBOLS



POWER LAYOUT SYMBOLS



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Designed by:	Date:	Rev #
Drawn by: JB	Project No.: 2013-116	
UNLESS NOTED OTHERWISE, ALL DIMENSIONS ARE TO FACE UNLESS OTHERWISE SPECIFIED.		
Field Scale:	AS NOTED	

GENERAL NOTES, SYMBOLS AND ABBREVIATIONS 1

Project Location: OLD VESTAL ROAD
 TOWN OF VESTAL
 BROOME COUNTY, NY
 Project Name: BUCKLEUP FLOOD WALL

Drawing Reference Number:
E-G-01
 OF

GENERAL NOTES

1. ALL POWER AND LIGHTING CONDUITS ARE SHOWN DIAGRAMATICALLY. EXACT RUNS SHALL BE DETERMINED BY THE CONTRACTOR IN THE FIELD, EXCEPT WHERE SPECIFICALLY DIMENSIONED ON PLANS.
2. EXACT CONDUIT STUB-UP LOCATIONS ARE TO BE DETERMINED BY THE CONTRACTOR BASED ON THE CERTIFIED MANUFACTURER'S DRAWINGS OF THE RESPECTIVE EQUIPMENT. CONDUITS SHALL BE INSTALLED TO AGREE WITH THE EQUIPMENT FURNISHED.
3. REFER TO THE STRUCTURAL DRAWINGS FOR EXPANSION JOINT LOCATIONS.
4. WALL & FLOOR OPENINGS SPECIFICALLY SHOWN SHALL BE COORDINATED BETWEEN PRIME CONTRACTS.
5. THE CONTRACTOR SHALL PROVIDE A LOCKABLE 120V RATED ON/OFF SWITCH AT EACH INSTRUMENT POWERED AT 120VAC. ELECTRIC VALVE ACTUATORS SHALL BE PROVIDED WITH LOCKABLE DISCONNECT SWITCHES.
6. ALL PANELBOARD CIRCUIT BREAKERS SHALL BE RATED AT 20 AMPS UNLESS OTHERWISE NOTED.
7. PROVIDE GROUNDING PLATES FOR CONNECTION TO GROUND GRID OR BUILDING STEEL AT ALL NEW ELECTRICAL DISTRIBUTION EQUIPMENT INCLUDING MCC'S AND TRANSFORMERS. ALL TRANSFORMER NEUTRAL TERMINALS SHALL BE BONDED TO LOCAL GROUND GRID OR STRUCTURAL STEEL GROUNDING ELECTRODE. CONDUCTOR SHALL BE SIZED IN ACCORDANCE WITH THE NEC.
8. ALL PENETRATIONS FOR CONDUIT ENTRIES TO ELECTRICAL ENCLOSURES SHALL BE MADE FROM THE BOTTOM OR SIDE OF ENCLOSURE.
9. ELECTRICAL RACEWAY SYSTEM FOR FIBER OPTICS CABLES, INCLUDING ARMORED CABLES, SHALL BE PROVIDED SUCH THAT APPROVED FIBER OPTIC CABLE MANUFACTURER REQUIRED MINIMUM BENDING RADI ARE NOT EXCEEDED DURING INSTALLATION, NOR EXCEEDED AFTER CABLE IS PERMANENTLY IN PLACE (INSTALLED), IN ORDER TO MEET THE MINIMUM BENDING RADI, PULL AND JUNCTION BOXES SHALL BE ENLARGED AS REQUIRED AND LARGE SWEEP ELBOWS UTILIZED. CONDUIT AND CONDUIT BODIES SHALL NOT BE USED AS PART OF THE FIBER OPTIC CABLE RACEWAY SYSTEM.
10. ALL CONDUITS SHALL BE RUN EXPOSED. ENCASEMENT OF CONDUIT RUNS IN FLOORS OR SLABS IS PROHIBITED.
11. PROVIDE CONCRETE HOUSEKEEPING PADS FOR ALL FLOOR MOUNTED ELECTRICAL EQUIPMENT INCLUDING BUT NOT LIMITED TO TRANSFORMERS, MCC'S, FREE STANDING VFD ENCLOSURES, AUTOMATIC TRANSFER SWITCHES, ETC. WHETHER OR NOT SHOWN ON PLAN DRAWINGS. CONCRETE HOUSEKEEPING PADS SHALL BE CONSTRUCTED IN ACCORDANCE WITH DETAIL SPECIFICATIONS. PROVIDE VIBRATION ISOLATING FEET FOR TRANSFORMERS AND MINI-POWER CENTERS.
12. CONDUIT AND RACEWAY SYSTEMS SHALL BE RUN PARALLEL TO STRUCTURAL MEMBERS.
13. SEE DIV23 CONTRACT DOCUMENTS SPECIFICATIONS FOR HVAC SYSTEM CABLE AND CONDUIT INTERCONNECTION REQUIREMENTS, HVAC SYSTEMS CONTROL AND LOW VOLTAGE POWER WIRING NOT SHOWN ON ELECTRICAL DRAWINGS.

ABBREVIATIONS

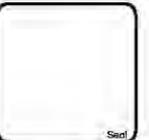
A	—	AMPS
AFF	—	ABOVE FINISHED FLOOR
AIC	—	AMPS INTERRUPTING CAPACITY
AM	—	AMMETER
ATS	—	AUTOMATIC TRANSFER SWITCH
AWG	—	AMERICAN WIRE GAUGE
BKR	—	BREAKER
C	—	CONDUIT
CB	—	CIRCUIT BREAKER
CKT	—	CIRCUIT
CLF	—	CURRENT LIMITING FUSE
CPT	—	CONTROL POWER TRANSFORMER
CT	—	CURRENT TRANSFORMER
DC	—	DIRECT CURRENT
DMU	—	DIGITAL MULTIMETERING UNIT
DWG	—	DRAWING
EL	—	ELEVATION
FCP	—	FIELD CONTROL PANEL
FVNR	—	FULL VOLTAGE NON-REVERSING
FVR	—	FULL VOLTAGE REVERSING
GFCT	—	GROUND FAULT CURRENT TRANSFORMER
GND	—	GROUND
HID	—	HIGH INTENSITY DISCHARGE
HTCP	—	HEAT TRACE CONTROL PANEL
HTPC	—	HEAT TRACE POWER CONNECTION
JB	—	JUNCTION BOX
KCMIL	—	ONE THOUSAND CIRCULAR MILS
KW	—	KILOWATTS
LAP	—	LOCAL ALARM PANEL
LC	—	LIGHTING CONTACTOR
LCP	—	LOCAL CONTROL PANEL
LCS	—	LOCAL CONTROL STATION
LP	—	LIGHTING PANEL
LPI	—	LIGHTNING PROTECTION INSTITUTE
LPS	—	LIGHTNING PROTECTION SYSTEM
MCC	—	MOTOR CONTROL CENTER
MCP	—	MOTOR CIRCUIT PROTECTOR
MPC	—	MINI POWER CENTER
NEC	—	NATIONAL ELECTRICAL CODE
NFPA	—	NATIONAL FIRE PROTECTION ASSOCIATION
NEMA	—	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NC	—	NORMALLY CLOSED
NO	—	NORMALLY OPEN, NUMBER
NTS	—	NOT TO SCALE
NYCEC	—	NEW YORK CITY ELECTRICAL CODE
PB	—	PULL BOX
PCP	—	PROCESS CONTROL PANEL
PP	—	POWER PANEL
PT	—	POTENTIAL TRANSFORMER
RGS	—	RIGID GALVANIZED STEEL
RMS	—	ROOT MEAN SQUARE
RVAT	—	REDUCED VOLTAGE AUTO-TRANSFORMER
SP	—	SPARE
SPD	—	SURGE PROTECTION DEVICE
SWGR	—	SWITCHGEAR
TB	—	TERMINAL BLOCK
TSP	—	TWISTED SHIELDED PAIR
TYP	—	TYPICAL
V	—	VOLTS
VFD	—	VARIABLE FREQUENCY DRIVE
VM	—	VOLTMETER
W	—	WATTS
XFMR	—	TRANSFORMER
XP	—	EXPLOSION PROOF

DEMOLITION NOTES

1. THE CONTRACTOR SHALL COORDINATE ALL DEMOLITION WORK WITH PLANT OPERATORS AND THE ENGINEER. NO EQUIPMENT SHALL BE REMOVED UNTIL APPROVED BY THE ENGINEER.
2. THE CONTRACTOR SHALL REMOVE EQUIPMENT IN CONJUNCTION WITH THE GENERAL SEQUENCE OF CONSTRUCTION. HE IS ADVISED THAT THIS IS AN OPERATING PLANT AND CERTAIN ITEMS CAN NOT BE REMOVED UNTIL NEW POWER SYSTEMS, EQUIPMENT, ETC. ARE INSTALLED, IN PLACE AND OPERATING.
3. THE CONTRACTOR SHALL DE-ENERGIZE AND SAFE-OFF ALL EQUIPMENT SHOWN TO BE REMOVED UNDER THIS CONTRACT AS REQUIRED. ALL OPENINGS IN WALLS, FLOORS, ENCLOSURES, ETC LEFT DUE TO DEMOLITION OF ELECTRICAL EQUIPMENT SHALL BE PATCHED, SEALED AND PAINTED TO MATCH EXISTING MATERIALS AND SURFACES.
4. REFER TO THE SPECIFICATIONS FOR GENERAL SEQUENCE OF CONSTRUCTION & ADDITIONAL DEMOLITION DETAILS.



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 Fax (607) 734-2456



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Drawn by: JB	Project No: 2012-116	
Checked by:	Field Scale: AS NOTED	

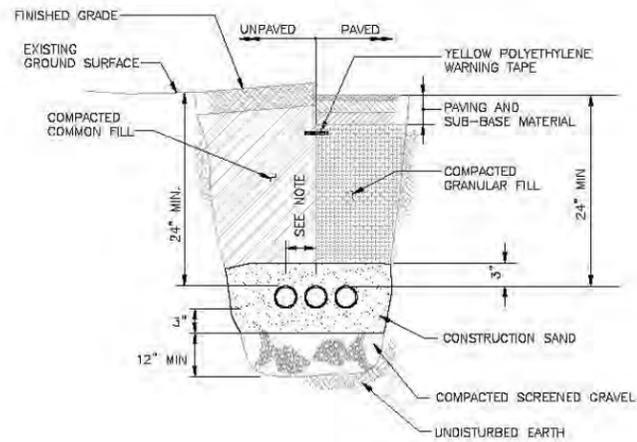
GENERAL NOTES, SYMBOLS AND ABBREVIATIONS

Project Location: OLD VESTAL ROAD
 TOWN OF VESTAL
 BROOME COUNTY, NY
 Project Name: BUCKLE UP FLOOD WALL

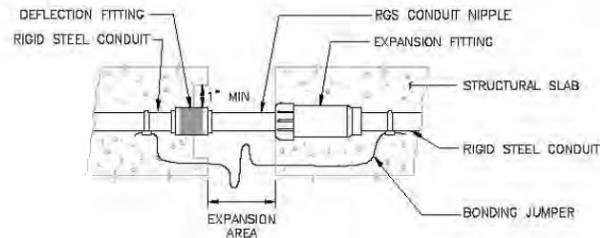
Drawing Reference Number:
F-G-02
 OF

LIGHTING FIXTURE SCHEDULE

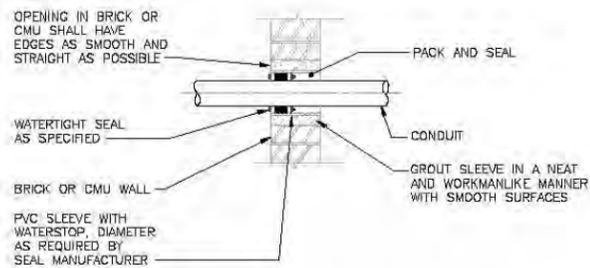
TYPE	LOCATION	LAMPS PWR-LMP TYP	MOUNTING	DESCRIPTION	ACCEPTABLE MANUFACTURER'S CATALOG NUMBERS
A8	-	LED, 8K LUMENS	PENDANT	LED SYSTEM W/ ROBUST CAST ALUMINUM HOUSING UL LISTED FOR WET LOCATIONS \ IP 66 RATED	HOLOPHANE PERTOLUX LED PLED2-08L-5K-AS-XX-XX-X-L5
A12	-	LED, 12K LUMENS	PENDANT	LED SYSTEM W/ ROBUST CAST ALUMINUM HOUSING UL LISTED FOR WET LOCATIONS \ IP 66 RATED	HOLOPHANE PERTOLUX LED PLED2-12L-5K-AS-XX-XX-X-L5
A12H	-	LED, 12K LUMENS	PENDANT / WALL	LED SYSTEM - HIGH ANGLE W/ ROBUST CAST ALUMINUM HOUSING UL LISTED FOR WET LOCATIONS \ IP 66 RATED	HOLOPHANE PERTOLUX LED PLED2-12L-5K-AS-XX-XX-X-L5H
B	-	3 54W TSHQ	PENDANT	FLUORESCENT 4 FOOT LINEAR UL LISTED FOR WET LOCATION \ IP 66 RATED	HOLOPHANE HFL SERIES HFL-K-3-U
BB	-	3 54W TSHQ	PENDANT	FLUORESCENT 4 FOOT LINEAR W/ EMERGENCY BATTERY POWER PACK UL LISTED FOR WET LOCATION \ IP 66 RATED	HOLOPHANE HFL SERIES HFL-K-3-U-BP
E1	-	LED	UNIVERSAL MOUNT	SINGLE FACE LED SELF POWERED EXIT SIGN WITH DUAL VOLTAGE 120/277V, RED LETTERS ON STENCIL FACE PANEL, 20 YEAR LIFE SELF DIAGNOSTICS UNIVERSAL ARROW NEMA 4X / MOUNT & WET UL LISTING	LITHONIA LE-2-W-1-R-120/277-UM-ELN-SD
E2	-	LED	UNIVERSAL MOUNT	DOUBLE FACE LED SELF POWERED EXIT SIGN WITH DUAL VOLTAGE 120/277V, RED LETTERS ON STENCIL FACE PANEL, 20 YEAR LIFE SELF DIAGNOSTICS UNIVERSAL ARROW NEMA 4X / MOUNT & WET UL LISTING	LITHONIA LE-2-W-2-R-120/277-UM-ELN-SD
EM	-	2-8W HALOGEN	WALL SURFACE	12-VOLT MAINTENANCE FREE LEAD CALCIUM BATTERY UNIT DUAL VOLTAGE 120/277V, 100W MINIMUM CAPACITY, VOLTMETER, TWO, 9W HEADS, NEMA 4X RATED WITH FIBERGLASS ENCLOSURE	LITHONIA INDX12125-H1212-SEL



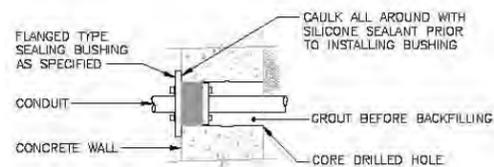
1 UNDERGROUND POWER AND SIGNAL DUCTS
Scale: NONE



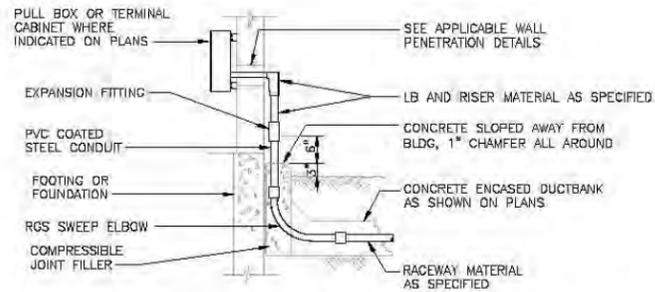
2 COMBINATION EXPANSION-DEFLECTION FITTING
Scale: NONE



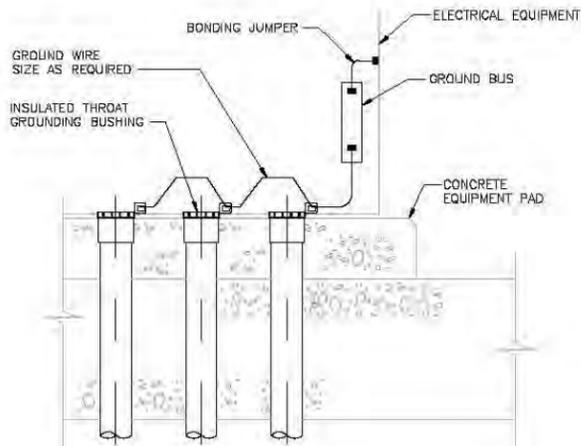
3 WATERTIGHT CONDUIT PENETRATION THROUGH BLOCK WALL
Scale: NONE



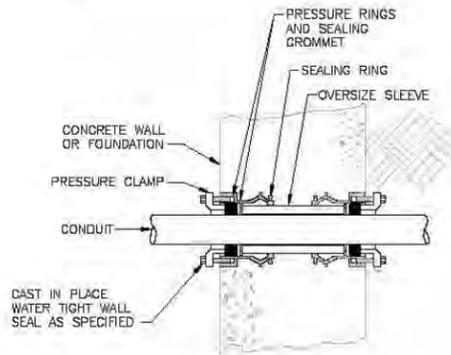
4 BELOW GRADE CONDUIT PENETRATION THROUGH EXISTING CONCRETE WALL
Scale: NONE



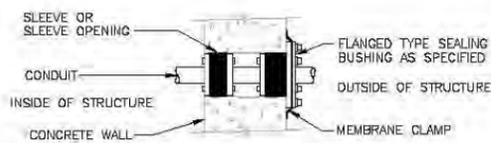
5 ABOVE GRADE CONDUIT PENETRATION THROUGH EXISTING BUILDINGS OR STRUCTURES
Scale: NONE



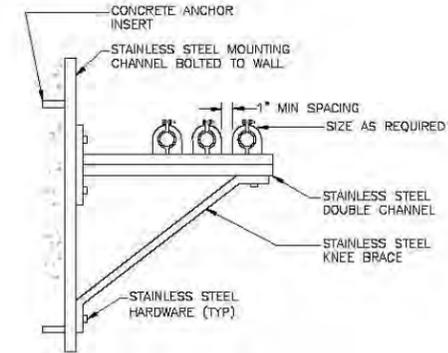
6 MULTIPLE BONDING OF RACEWAYS
Scale: NONE



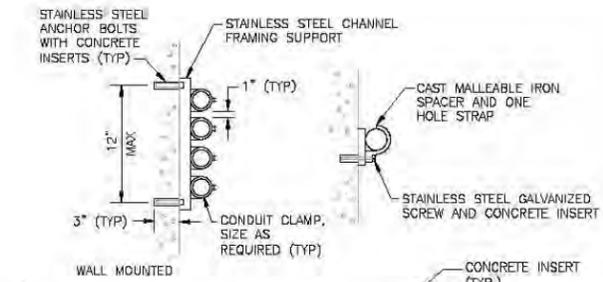
7 WATERTIGHT BELOW GRADE CONDUIT PENETRATION (NEW WORK)
Scale: NONE



8 ABOVE GRADE CONCRETE PENETRATION THROUGH EXISTING WALL
Scale: NONE



9 WALL MOUNTED CONDUIT RACK
Scale: NONE



10 TRAPEZE, WALL AND CEILING CONDUIT MOUNTING
Scale: NONE

NOTE:
PROVIDE SEISMIC RESTRAINTS PER NYC CODE AND APPLICABLE SECTIONS OF DIVISION 16 SPECIFICATIONS. ALL DESIGNED RESTRAINT SYSTEMS SHALL BE SIGNED AND SEALED BY A LICENSED ENGINEER IN THE STATE OF NEW YORK.



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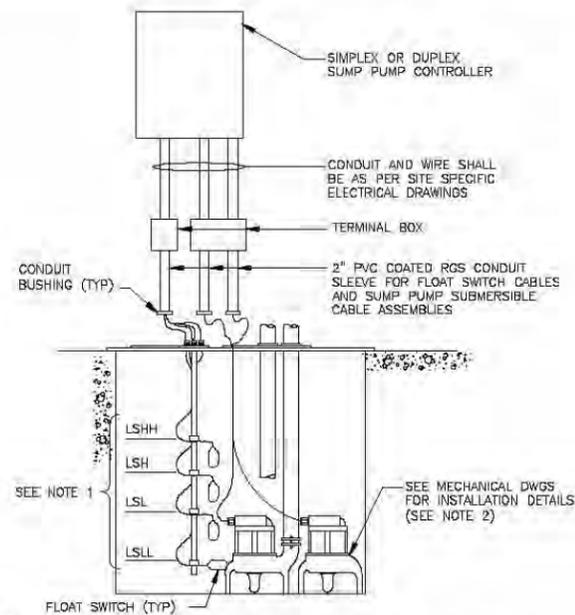
Date:	Rev #
2012-116	
Designed by:	Project No.:
Drawn by:	20
Checked by:	
Scale:	AS NOTED

MISCELLANEOUS
DETAILS
SHEET 1

Project Location:
OLD VESTAL ROAD
TOWN OF VESTAL
BROOME COUNTY, NY

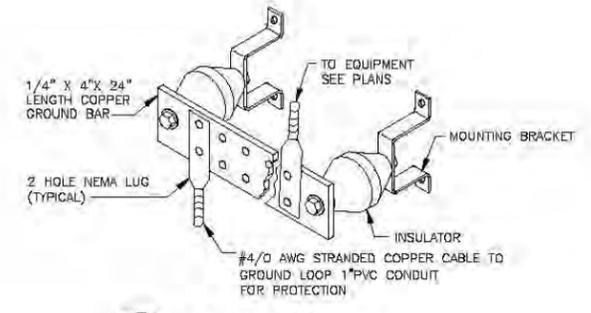
Project Name:
BUCKLE UP FLOOD WALL

Drawing Reference Number:
E-DT-01
OF



- NOTES:**
1. QUANTITY AND FUNCTION OF LEVEL FLOAT SWITCHES SHALL BE AS PER SITE SPECIFIC ELECTRICAL AND INSTRUMENTATION DWGS.
 2. QUANTITY OF PUMPS SHALL BE AS SHOWN ON SITE SPECIFIC MECHANICAL, ELECTRICAL, AND INSTRUMENTATION DRAWINGS.

11 TYPICAL SUMP PUMP INSTALLATION
 Scale: NONE



12 TYPICAL GROUND BAR
 Scale: NONE

Designed by:	Date:	Rev #
Drawn by:	Project No.:	2012-116
Checked by:	Field Scale:	AS NOTED
<small>UNLESS OTHERWISE NOTED, ALL DIMENSIONS ARE TO FACE UNLESS OTHERWISE SPECIFIED.</small>		

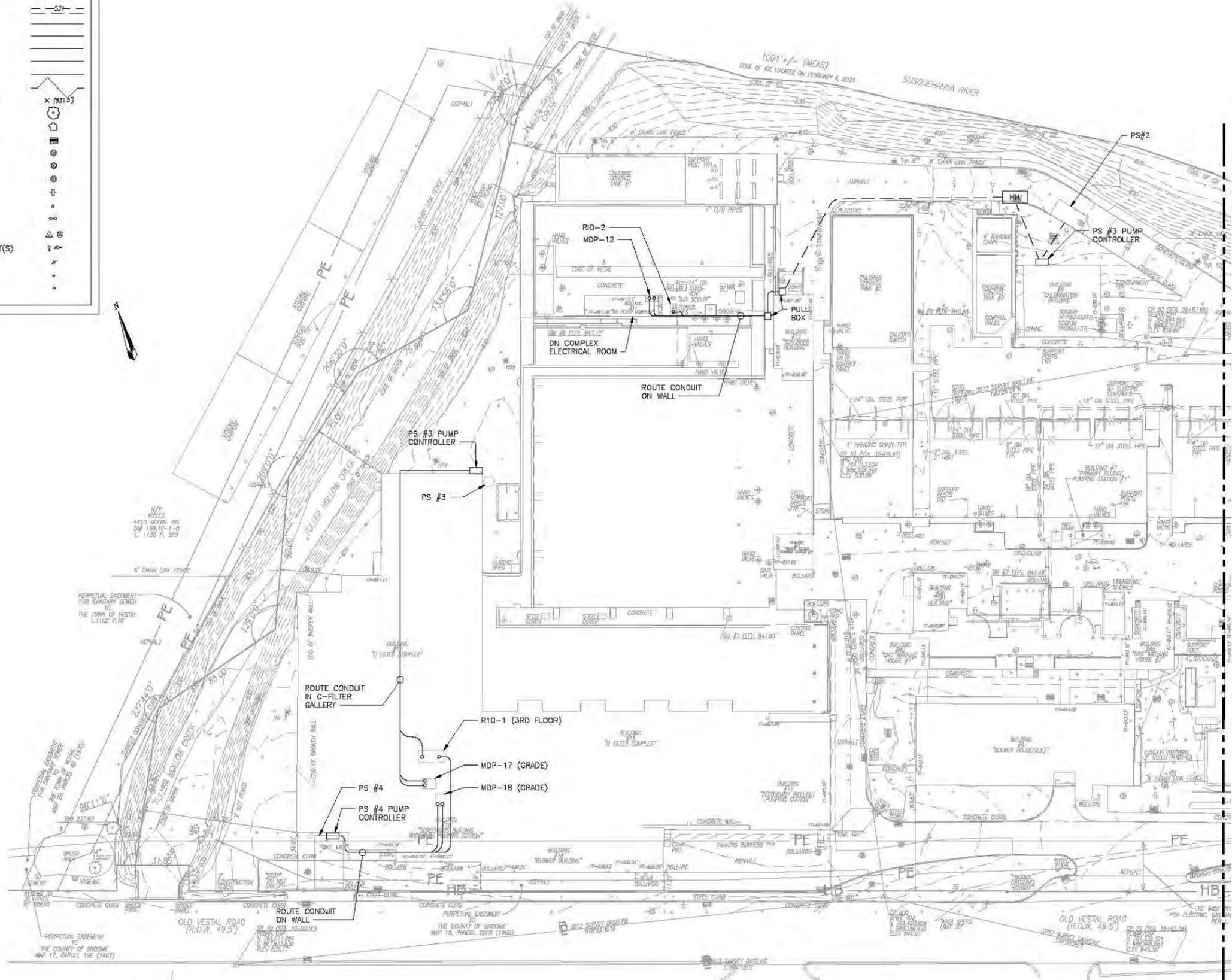
**MISCELLANEOUS
 DETAILS
 SHEET 2**

Project Location: OLD VESTAL ROAD
 TOWN OF VESTAL
 BROOME COUNTY, NY

Project Name: **BUCLETP
 FLOOD WALL**

LEGEND

- EXISTING CONTOURS
- PROPERTY LINE
- HIGHWAY BOUNDARY
- BUILDING LINE
- SURVEY BASELINE
- FENCE LINE
- WOODED AREA
- ELEVATION SPOT SHOT x (531.5)
- DECIDUOUS TREE
- DECIDUOUS SHRUB
- DRAINAGE CATCH BASIN
- SANITARY MANHOLE
- ELECTRIC MANHOLE
- TELEPHONE MANHOLE
- WATER VALVE
- FIRE HYDRANT
- GAS VALVE
- SURVEY CONTROL
- UTILITY POLE WITH LIGHT(S)
- UTILITY POLE
- SIGN
- POST



SCALE: 1" = 30'-0"

SEE E-PS-02 FOR CONTINUATION



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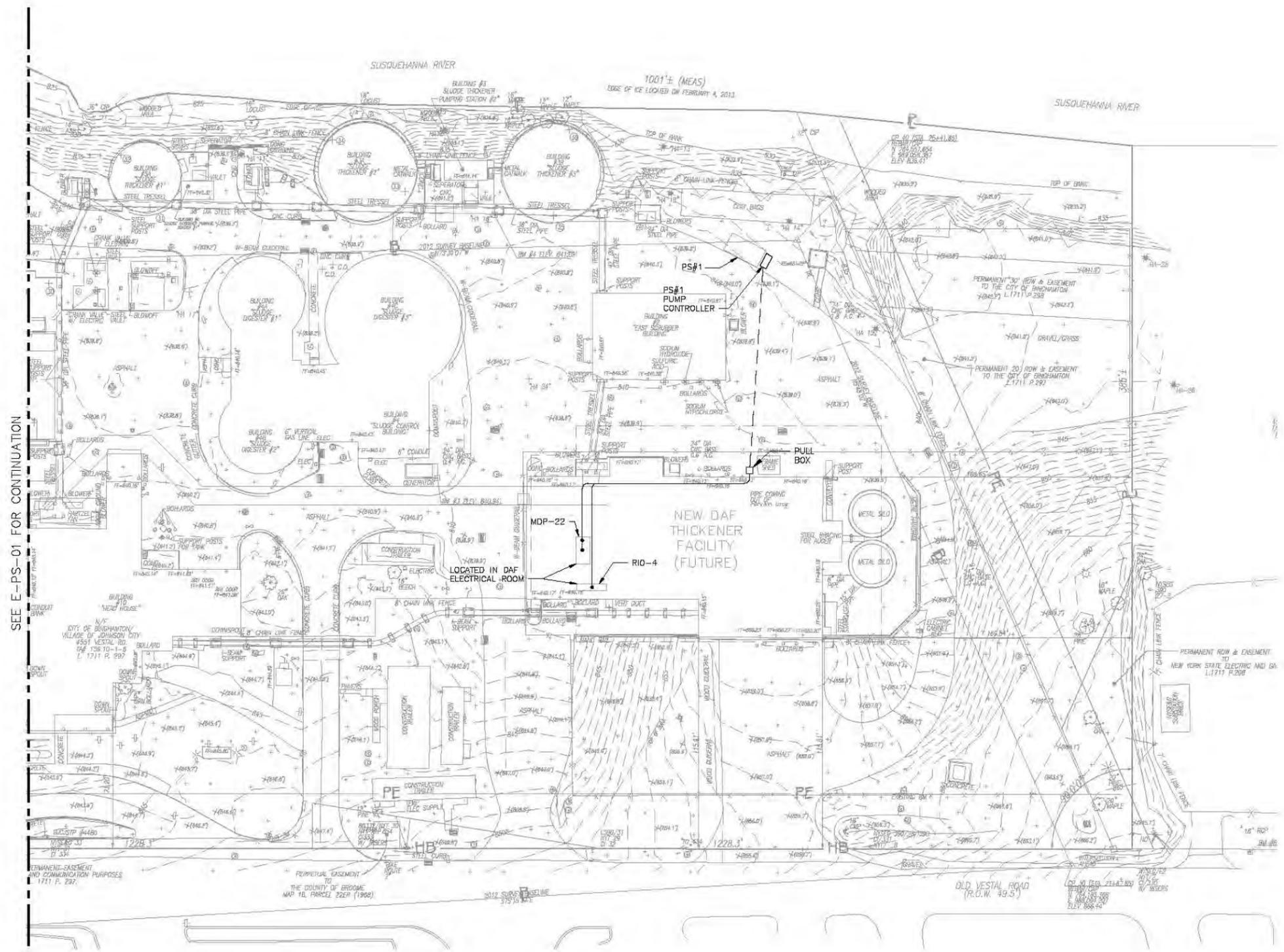
Designed by:	Date:	Rev #
Drawn by:	Project No.:	2012-116
Checked by:	Scale:	AS NOTED

**PUMP STATIONS
 SITE PLAN - WEST**

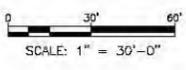
Project Location:
 OLD VESTAL ROAD
 TOWN OF VESTAL
 BROOME COUNTY, NY

Project Name:
**BACJSTP
 FLOOD WALL**

Drawing Reference Number:
E-PS-01
 OF



SEE E-PS-01 FOR CONTINUATION



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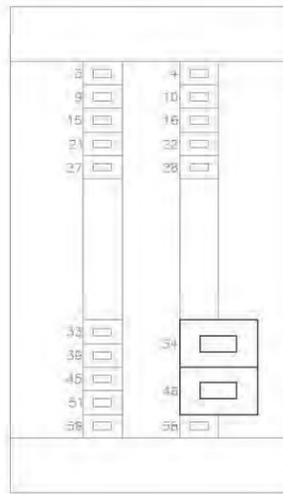
Designed by:	Date:	Rev #
Drawn by:	Project No.:	2012-116
Checked by:	Scale:	AS NOTED

**PUMP STATIONS
 SITE PLAN—EAST**

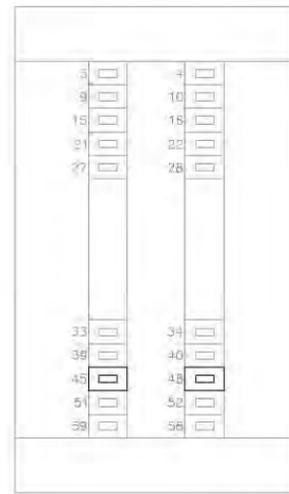
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 FLOOD WALL**

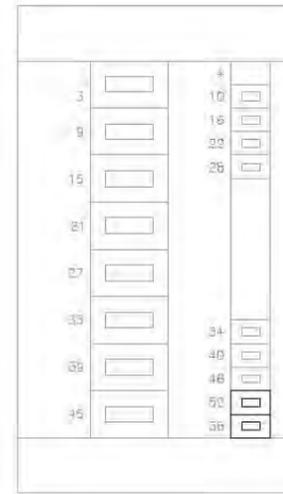
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E-PS-02
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MDP-17 C-FILTER COMPLEX
Scale: 3/4" = 1'-0"



MDP-18 C-FILTER COMPLEX
Scale: 3/4" = 1'-0"



MDP-12 ELEVATION - DN ELECTRICAL ROOM
Scale: 3/4" = 1'-0"

MDP-17 1800A, 480Y/277V, 3PH, 4W, 85kVAIC (C-COMPLEX)					
Ckt #	LOAD DESCRIPTION	HP	AMPS	CB	REMARKS
3	PROCESS BLOWER C1	100	124	250AF/200AT	
4	PROCESS BLOWER C2	100	124	250AF/200AT	
8	PROCESS BLOWER C3	100	124	250AF/200AT	
10	PROCESS BLOWER C4	100	124	250AF/200AT	
15	PROCESS BLOWER C5	100	124	250AF/200AT	
16	PROCESS BLOWER C6	100	124	250AF/200AT	
21	PROCESS BLOWER C7	100	124	250AF/200AT	
22	PROCESS BLOWER C8	100	124	250AF/200AT	
27	PROCESS BLOWER C9	100	124	250AF/200AT	STANDBY
28	PROCESS BLOWER C10	100	124	250AF/200AT	STANDBY
33	SPARE		100	250AF/225AT	
34	SPARE PS#4 'A' FEED	130/130	156/156	400AF/400AT	
39	N-FILTER RUII LCP		49	100AF/80AT	
46	SPARE			100AF/80AT	
46	SPARE PS#4 'B' FEED	130/130	156/156	400AF/400AT	STANDBY
51	C-FILTER RUII LCP		129	250AF/150AT	
57	EF-Q1		7.6	100AF/15AT	
58	SPARE		2.6	100AF/15AT	

MDP-17 SCHEDULE

MDP-18 1800A, 480Y/277V, 3PH, 4W, 85kVAIC (C-COMPLEX)					
Ckt #	LOAD DESCRIPTION	HP	AMPS	CB	REMARKS
3	PROCESS BLOWER N1	100	124	250AF/200AT	
4	PROCESS BLOWER N2	100	124	250AF/200AT	
8	PROCESS BLOWER N3	100	124	250AF/200AT	
10	PROCESS BLOWER N4	100	124	250AF/200AT	
15	PROCESS BLOWER N5	100	124	250AF/200AT	
16	PROCESS BLOWER N6	100	124	250AF/200AT	
21	PROCESS BLOWER N7	100	124	250AF/200AT	
22	PROCESS BLOWER N8	100	124	250AF/200AT	
27	PROCESS BLOWER N9	100	124	250AF/200AT	STANDBY
28	PROCESS BLOWER N10	100	124	250AF/200AT	STANDBY
33	SPARE			250AF	
34	SPARE			250AF	
39	SPARE			250AF	
40	SPARE			250AF	
45	SPARE PS#3 'A' FEED	3/3	4.8/4.8	100AF/20AT	
46	SPARE PS#3 'B' FEED	3/3	4.8/4.8	100AF/20AT	STANDBY
51	EF-Q2		7.6	100AF/15AT	
52	HV-Q1		12.8	100AF/20AT	
51	SPARE			100AF	
52	SPARE			100AF	

MDP-18 SCHEDULE

MDP-12 (EXISTING) 3000A, 480Y/277V, 3PH, 4W, 65kVAIC (DN FILTER COMPLEX ELEC ROOM)					
Ckt #	LOAD DESCRIPTION	HP	AMPS	CB	REMARKS
3	FEED AND BACK WASH PUMP #1	90	157	300AF/300AT	
4	SPACE				
9	FEED AND BACK WASH PUMP #3	90	157	300AF/300AT	
10	C/N AIR COMPRESSOR 1	5	7.8	100AF/20AT	
15	FEED AND BACK WASH PUMP #2	90	157	300AF/300AT	
16	METHANOL FEED PUMP #4	0.75	1.1	100AF/15AT	
21	AIR SCOUR BLOWER DN-1	300	372	800AF/700AT	
22	METHANOL FEED PUMP #3	0.75	1.1	100AF/15AT	
27	AIR SCOUR BLOWER DN-2	300	372	800AF/700AT	
28	C/N AIR COMPRESSOR 2	5	7.6	100AF/20AT	
31	FEED AND BACK WASH PUMP #2	90	157	300AF/300AT	
34	SPARE		49.1	250AF/225AT	
39	SPARE			400AF	
40	METHANOL FEED PUMP #2	0.75	1.1	100AF/15AT	
45	SPARE			400AF	
46	METHANOL FEED PUMP #1	0.75	1.1	100AF/15AT	
52	SPARE PS#2 'A' FEED	60/60	77/77	250AF/200AT 250AF/200AT	
58	SPARE PS#2 'B' FEED	60/60	77/77	250AF/200AT 250AF/200AT	STANDBY

MDP-12 SCHEDULE



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Drawn by:	Project No.:	2012-116
Checked by:	Scale:	AS NOTED
PUMP STATIONS PANEL SCHEDULES		

Project Location:	Project Name:
OLD VESTAL ROAD TOWN OF VESTAL BROOME COUNTY, NY	BAC-11P FLOOD WALL

Drawing Reference Number:
E-PS-03
OF

ABBREVIATIONS:

AFF	ABOVE FINISHED FLOOR (OR OPERATOR PLATFORM)	O/L	(USED FOR ACCESS TO SUB-SYSTEMS) OVERLOAD
BRG	BEARING (MOTOR OR EQUIPMENT)	PCP	PROCESS CONTROL PANEL
BTMP	BRAKE TEMPERATURE (ALARM OR SHUTDOWN)	P & ID	PROCESS AND INSTRUMENTATION DIAGRAM
CHF	CENTRAL HEATING FACILITY	PLC	PROGRAMMABLE LOGIC CONTROLLER
CMP	COMPOUND (GAUGE)	PMCS	PLANT MONITORING AND CONTROL SYSTEM
CORD	EMERGENCY PULL CORD (SAFETY)	P/S	POWER SUPPLY
CRF	CENTRAL RESIDUALS FACILITY	PWR	POWER (ON)
DCS	DISTRIBUTED CONTROL SYSTEM	RAS	RETURN ACTIVATED SLUDGE
DCU	DISTRIBUTED CONTROL UNIT	RES	RESET (FAULT CONDITION OR ALARM)
DFF	DOPPLER FLOW PROFILER	RID	REMOTE IO UNIT
DOPP	DOPPLER TYPE ULTRASONIC METER	RLFLT	REVERSE LIMIT FAULT
EO	ENERGIZE TO CLOSE	RSP	RAW SEWAGE PUMP
EO	ENERGIZE TO OPEN	RVSS	REDUCED VOLTAGE STARTER
FC	FAIL CLOSED	SCADA	SUPERVISORY CONTROL AND DATA ACQUISITION SYSTEM
FCP	FIELD CONTROL PANEL	SCH	SCHEDULE
FDDI	FIBER DISTRIBUTED DATA INTERFACE	SIL	SILENCE
F&I	FURNISHED AND INSTALLED	SIP	SECONDARY INFLUENT PUMP
FIP	FIELD INSTRUMENTATION PANEL	STRB	STROBE LIGHT (OR BEACON)
FL	FLOAT TYPE	SW	SEAL WATER
FLK	FAIL LOCKED (LAST STATE)	SWF	SEAL WATER FAILURE
FLT	FAULT (COMMON)	TFS	TOTAL SYSTEM FAIL
FSC	FAIL-SAFE CLOSED	TM	THERMAL MASS FLOW DEVICE
FSD	FAIL-SAFE OPEN	TRB	TURBINE TYPE
FRS	FIELD REMOTE STATION	TRET	TORQUE RETREAT
FV	FLOW VALVE - DISCRETE	TRQ	TORQUE
FCV	FLOW CONTROL VALVE	ULOC	UPPER LOCATION (IN CONTROL)
GDS	GAS DETECTION SYSTEM	UON	UNLESS OTHERWISE NOTED
GF	GROUND FAULT	UPS	UNINTERRUPTIBLE POWER SUPPLY
HCP	HYDRAULIC CONTROL PANEL	US	ULTRASONIC
HMCS	HVAC MONITORING AND CONTROL SYSTEM	VAC	VACUUM
HTR	HEATER	VFD	VARIABLE FREQUENCY DRIVE
I/O	INPUT/OUTPUT (TO/FROM A COMPUTER OR CONTROLLER)	VFLT	VARIABLE FREQUENCY DRIVE
JB	JUNCTION BOX	WDS	WINDING (MOTOR)
LAN	LOCAL AREA NETWORK	WS	WATER SURFACE
LAP	LOCAL ALARM PANEL		
LAS	LOCAL ALARM STATIONS LOCAL CONTROL PANEL		
LCS	LOCAL CONTROL STATION		
LEAK	LEAK DETECTION		
LLOC	LOWER LOCATION (IN CONTROL)		
LWS	LOCAL OPERATOR WORKSTATION		
LRET	LEVEL RETREAT		
MAG	MAGNETIC FLOW ELEMENT		
MCC	MOTOR CONTROL CENTER		
MPM	MOTOR PROTECTION MODULE (SOLID STATE)		
NC	NORMALLY CLOSED		
NO	NORMALLY OPEN		
NPT	NATIONAL PIPE THREAD		
OCM	OPTICAL COMMUNICATION MODULE		
OIT	OPERATOR INTERFACE TERMINAL (USED FOR ACCESS TO ALL PLANT INFORMATION)		
OIU	OPERATOR INTERFACE UNIT		

GENERAL NOTES:

1. IN GENERAL, THE P&ID SYMBOLS AND DEVICE IDENTIFICATIONS ARE BASED ON INTERNATIONAL SOCIETY OF AUTOMATION ISA-S.51. SOME MODIFICATIONS, ADDITIONS AND ALTERATIONS HAVE BEEN MADE AS NEEDED TO ACCOMMODATE THE PROJECT SPECIFIC REQUIREMENTS.
2. SOME CONTROL AND ELECTRICAL INTERLOCK REQUIREMENTS WHICH CAN BE MORE CLEARLY ILLUSTRATED ON ELECTRICAL WIRING DIAGRAMS (EWD) HAVE BEEN OMITTED FROM THE P&ID DRAWINGS.
3. SOME SYMBOLS AND ABBREVIATIONS SHOWN ON THESE LEGEND SHEETS MAY NOT BE UTILIZED ON THIS SPECIFIC PROJECT.
4. PROCESS PIPING AND EQUIPMENT LEGEND APPLIES TO P&ID SHEETS ONLY AND MAY DIFFER FROM LEGENDS FOR OTHER SHEETS.
5. ALL ITEMS OF INSTRUMENTATION, CONTROL, INDICATION, LOGIC, ETC. SHOWN, SPECIFIED, OR REQUIRED, SHALL BE FURNISHED AND INSTALLED UNDER THE INSTRUMENTATION AND CONTROL SECTION OF THIS CONTRACT. ITEMS SHALL INCLUDE BUT NOT BE LIMITED TO INSTRUMENTS, CONTROLS, PANELS, CONTROL LOGIC, DISPLAYS, ALARMS, ETC.
6. RUN AND FAULT INDICATION SHALL BE PROVIDED BOTH LOCALLY (HARDWIRED) AND ON THE PCS, FOR ALL PLANT PROCESS EQUIPMENT AND SYSTEMS PROVIDED OR MODIFIED UNDER THIS CONTRACT, UNLESS SHOWN OTHERWISE. IN ADDITION TO REQUIRED PCS CONTROL, LOCAL (AT THE EQUIPMENT) MANUAL CONTROL SHALL BE PROVIDED FOR ALL PROCESS EQUIPMENT AND SYSTEMS.
7. ALL IN-LINE FLOW MEASURING DEVICES SHALL BE LOCATED AND INSTALLED TO PROVIDE THE MANUFACTURERS OPTIMUM STRAIGHT LENGTHS OF UPSTREAM AND DOWNSTREAM PIPING. REDUCING FITTINGS AND SMALLER PIPE DIAMETERS, (METERING RUNS) SHALL BE FURNISHED AND INSTALLED AS NECESSARY. ADDITIONAL PIPING, FITTINGS, SUPPORTS, ETC. SHALL BE ADDED AND PIPING ARRANGEMENTS RECONFIGURED TO PROVIDE ACCURACY AS SPECIFIED.
8. ALL ALARMS SHALL HAVE NON ABBREVIATED ENGLISH LANGUAGE DESCRIPTION, AUDIO AND VISUAL INDICATION, AND SPECIFIED IS&A SEQUENCE F1A - AUTOMATIC RESET FIRST OUT WITH NO SUBSEQUENT ALARM STATE.
9. ALL DISPLAYS, INDICATORS, ETC., WHETHER PART OF AN INSTRUMENT, COMPUTER DISPLAY, CONTROLLER, ETC. SHALL BE IN THE CORRECT PROCESS ENGINEERING UNITS AND SCALE.
10. FINAL LOCATIONS OF LOCAL CONTROL PANELS AND LOCAL CONTROL STATIONS SHALL BE FIELD COORDINATED WITH PLANT OPERATIONS.
11. ALL FIELD MOUNTED INDICATORS AND INDICATING TRANSMITTERS SHALL BE INSTALLED SO THAT THEY ARE MAINTAINABLE AND READABLE FROM OPERATING FLOOR.
12. MOTORIZED OR PNEUMATIC VALVE ACTUATOR INSTALLED SIX (6) FEET AND HIGHER FROM OPERATING FLOOR MUST BE PROVIDED WITH REMOTE CONTROL STATION MOUNTED AT 5'-6" ABOVE FINISHED FLOOR UNLESS SHOWN OTHERWISE. THE STATION SHALL HAVE THE SAME NEMA RATING AND FUNCTIONALITY AS AN INTEGRAL ACTUATOR CONTROLS.



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Approved by	AS
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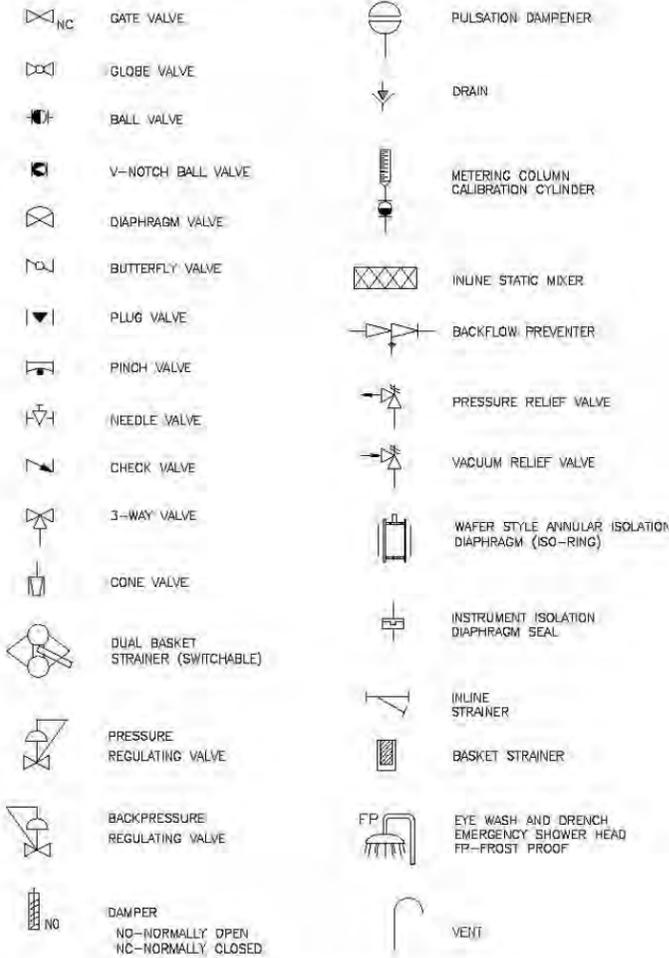
ABBREVIATIONS AND NOTES

Project Location: OLD VESTAL ROAD
 TOWN OF VESTAL
 BROOME COUNTY, NY

Project Name: **BUCLETP FLOOD WALL**

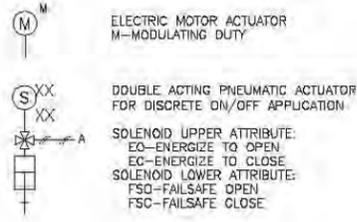
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VALVES AND PIPING SPECIALTIES

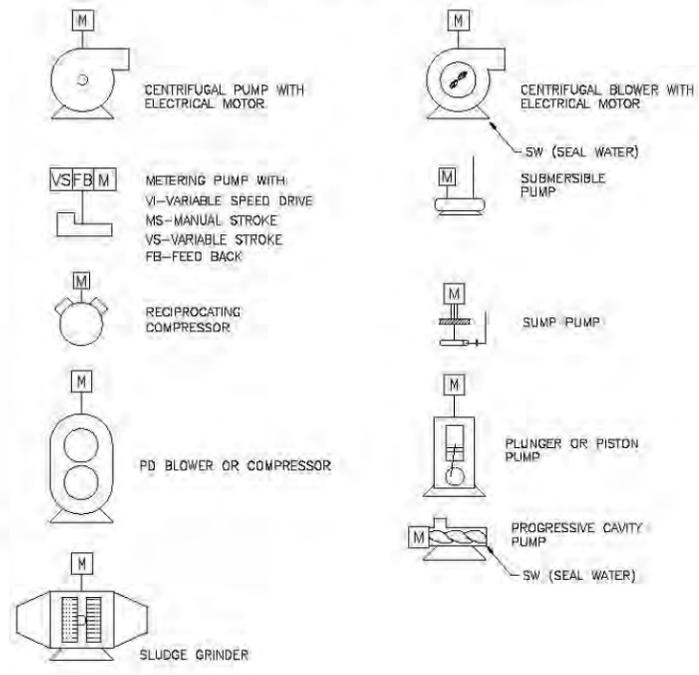


VALVE ACTUATOR SYMBOLS

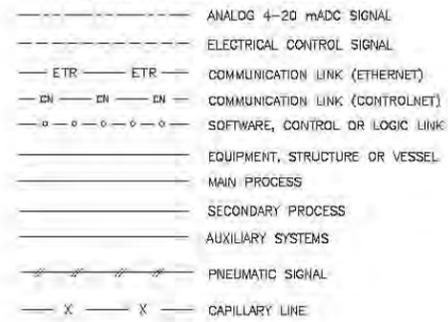
(NOTE 1)



PROCESS EQUIPMENT SYMBOLS

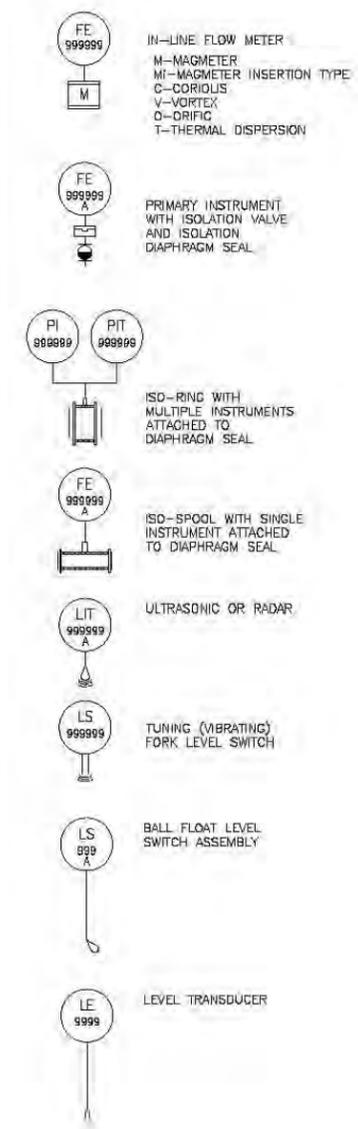


LINE TYPE DESIGNATION



FIELD INSTRUMENT SYMBOLS

(NOTE 1)



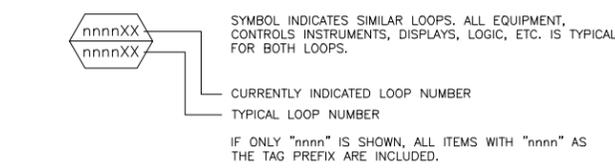
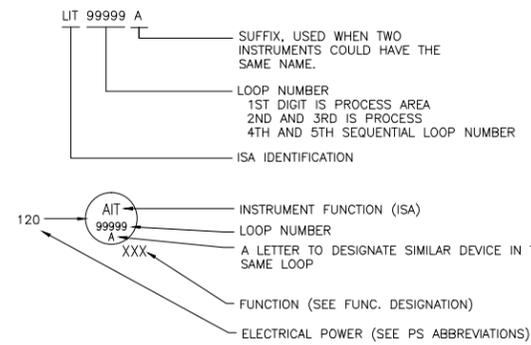
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Project No.:	2012-116
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LEGEND AND SYMBOLS I	

Project Location:	OLD VESTAL ROAD TOWN OF VESTAL BROOME COUNTY, NY
Project Name:	BAC-LTP FLOOD WALL

ISA S5.1 TABLE 1 IDENTIFICATION LETTERS

FIRST LETTER		SUCCEEDING LETTERS			
	MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
B	BURNER, COMBUSTION		NOT USED	NOT USED	NOT USED
C	CONDUCTIVITY (ELECTRICAL)			CONTROL	CLOSE(D)
D	DENSITY, MASS OR SPECIFIC GRAVITY	DIFFERENTIAL			
E	VOLTAGE		PRIMARY ELEMENT		
F	FLOW RATE	RATIO (FRACTION)			
G	GAUGING (DIMENSIONAL)		GLASS GAGE		
H	HAND (MANUALLY INITIATED)				HIGH
I	CURRENT (ELECTRICAL)		INDICATE		
J	POWER	SCAN			
K	TIME OR TIME SCHEDULE			CONTROL STATION (MANUAL OR AUTO)	KEY OPERATED
L	LEVEL		LIGHT		LOW
M	MOISTURE OR HUMIDITY				MIDDLE OR INTERMEDIATE
N	NOT USED		NOT USED	NOT USED	NOT USED
O	NOT USED		ORIFICE (RESTRICTION)		OPEN
P	PRESSURE OR VACUUM		POINT (TEST CONNECTION)		
Q	QUANTITY	INTEGRATE OR TOTALIZE			
R	RADIOACTIVITY		RECORD OR PRINT		
S	SPEED OR FREQUENCY	SAFETY OR SELECTOR		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION			VALVE, DAMPER OR LOUVER	
W	WEIGHT OR FORCE		WELL		
X	AS DEFINED	X AXIS	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT STATE	Y AXIS		RELAY OR COMPUTE	
Z	POSITION			DRIVE, ACTUATE OR UNCLASSIFIED FINAL CONTROL ELEMENT	

INSTRUMENT TAG NUMBERS



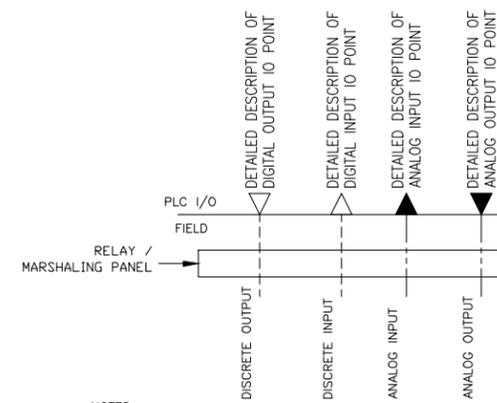
INSTRUMENT TAG NUMBERS

- FIELD
- PANEL FRONT
- PANEL REAR
- WORKSTATION AND OIT DISPLAY OR FUNCTION
- INPUT/OUTPUT TO OR FROM DCU OR PLC
- ANNUNCIATOR PANEL WINDOW POINT
- LOCAL CONTROL STATION

INSTRUMENT FUNCTIONAL DESCRIPTION

- CL - CHLORINE
- CH4 - METHANE
- O2 - OXYGEN
- H2S - HYDROGEN SULFIDE
- PET - PETROLEUM
- ORP - OXIDATION REDUCTION POTENTIAL
- DO - DISSOLVED OXYGEN
- pH - HYDROGEN ION CONCENTRATION

DIGITAL SYSTEMS INTERFACE SYMBOLS



NOTES:

- REFER TO DETAILED SPECIFICATIONS FOR PROCESS FUNCTIONAL DESCRIPTION. ALSO SEE I/O SCHEDULE FOR COMPLETE HARDWIRED INPUT/OUTPUT LISTING.
- ALL 120 VAC OUTPUTS MUST USE 24 VDC INTERPOSING RELAYS TO ISOLATE LOW AND HIGH VOLTAGE CIRCUITS. THE CONTACT RATING OF THE RELAY SHALL NOT BE LESS THAN 5 AMPS.
- ALL ANALOG 4-20 MADC SIGNALS SHALL BE FIELD TERMINATED THROUGH ANALOG MARSHALING PANEL. ALL DISCRETE SIGNALS SHALL BE FIELD TERMINATED THROUGH RELAY / MARSHALING PANEL.

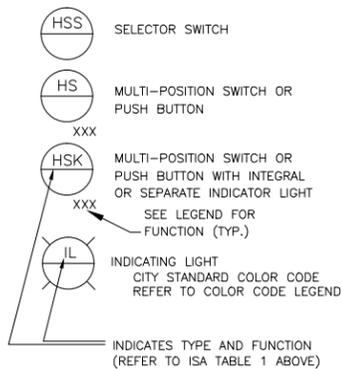
MISCELLANEOUS SYMBOLS

- ITEM FURNISHED AND INSTALLED BY PACKAGED EQUIPMENT VENDOR
- ITEM LOCATED AT EQUIPMENT
- ELECTRICAL INTERLOCK
N=ELECTRICAL WIRING DIAGRAM # X=PHYSICAL LOCATION
- CONTROL STRATEGY, DESCRIBED IN SPECIFICATION SECTION "n". X=LOCATION WHERE PERFORMED
- INSTRUMENT INSTALLATION DETAIL NUMBER
DRAWING NUMBER WHERE DETAIL IS SHOWN

POWER SUPPLY ABBREVIATIONS

- AS - AIR SUPPLY
- 120 - AC POWER SINGLE PHASE
- 480 - AC POWER THREE PHASE
- UPS - POWER DERIVED FROM UPS

HAND SWITCH SYMBOLS



HAND SWITCH LEGEND

- HOA HAND-OFF-AUTO
- LR LOCAL-REMOTE
- OC OPEN-CLOSE
- OO ON-OFF
- LOR LOCAL-OFF-REMOTE
- OOA ON-OFF-REMOTE
- OCR OPEN-CLOSE-REMOTE
- OSR OPEN-STOP-CLOSE
- RES RESET
- SIL SILENCE
- STP STOP
- STR START
- ES EMERGENCY STOP

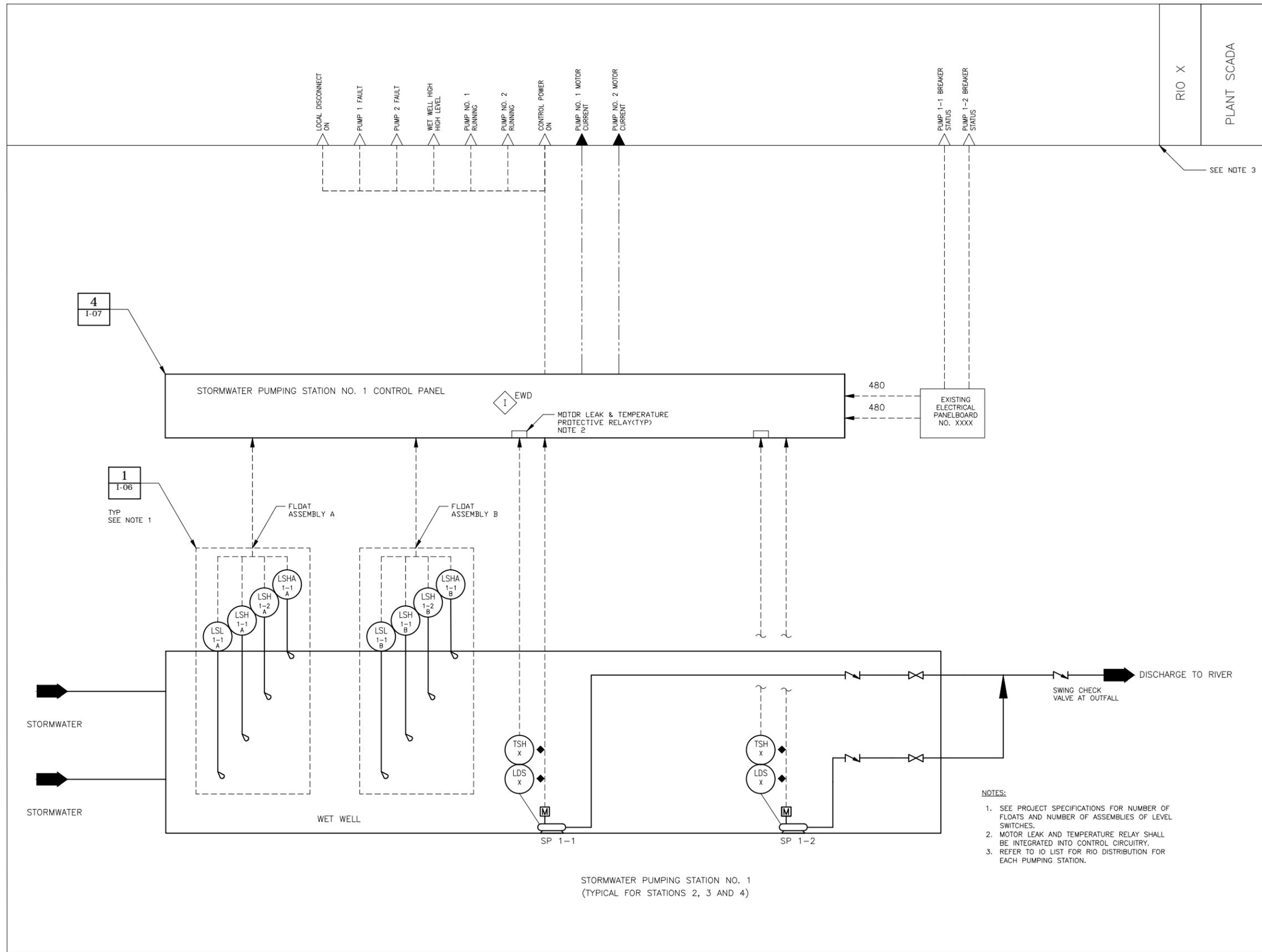
COLOR CODE LEGEND

- RED RUN, OPEN
- GREEN OFF, CLOSED
- WHITE CONTROL POWER ON
- BLUE READY
- AMBER ALARM

Rev #	2012-116
Date	2012-116
Project No.	2012-116
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Checked by	
Reviewed by	
Plot Scale:	AS NOTED

Drawing Name:	LEGEND AND SYMBOLS II
Project Location:	OLD VESTAL ROAD TOWN OF VESTAL BROOME COUNTY, NY
Project Name:	B/CJ-STP FLOOD WALL

Drawing Reference Number:	I-G-03
OF	



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	20	
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Drawing Name:
PUMPING STATION NO. 1

Project Location:
OLD VESTAL ROAD
TOWN OF VESTAL
BROOME COUNTY, NY

Project Name:
**BJCJSTP
FLOOD WALL**

Drawing Reference Number:
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OF