RIVERHEAD WATER DISTRICT

**** ADDENDUM NO. 1 ****
SEPTEMBER 22, 2016

Project No.: RDWD 16-02

Project Name: INSTALLATION OF NEW VARIABLE FREQUENCY DRIVES AT PLANT NO. 10 SOUND SHORE ROAD, RIVERHEAD

Bid Due Date: THURSDAY, SEPTEMBER 27, 2016 AT 2:05 PM

Description: ADDITION TO CONTRACT

ADDITIONS:

Please note the following during preparation of bid proposals:

1. Furnish and install a new output and bypass contactor that are factory aligned, mechanically and electrically interlocked.
2. Furnish and install a new line reactor in the existing MCC cubicle.

Contractor shall review revised Sheet E1.0 dated 09.19.2016 for a detailed scope of work required.

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This addendum forms a part of the contract documents and modifies the original bidding documents. A copy of this signed addendum shall be included with the bid proposal. Contractor shall also verify receipt of this addendum with engineer for the District. Send verification of receipt to jcollins@h2m.com.

Name: _____ Signature: _____
(Please Print)

Company: _____ Date: _____

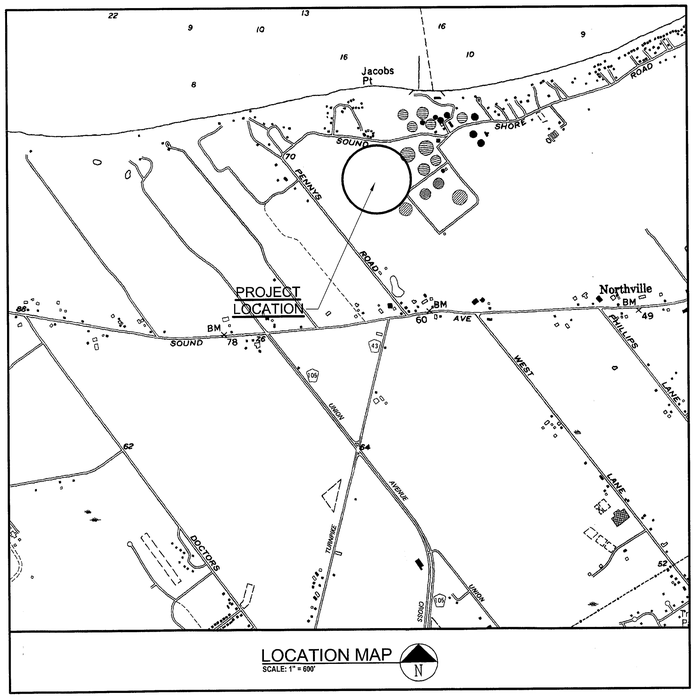
RIVERHEAD WATER DISTRICT

TOWN OF RIVERHEAD
SUFFOLK COUNTY, NEW YORK

INSTALLATION OF TWO (2) NEW VFD'S AT PLANT NO. 10

RDWD 16-02

SEPTEMBER 2016



LOCATION MAP
SCALE: 1" = 600'

TOWN SUPERVISOR

Sean Walter

TOWN COUNCIL

John Dunleavy
Timothy Hubbard
Jodi Giglio
James Wooten

TOWN CLERK

Diane Wilhelm

SUPERINTENDENT

Mark Conklin

DRAWING LIST

INFORMATIONAL DRAWINGS

T0.0	COVER SHEET

ELECTRICAL DRAWINGS

E0.0	ELECTRICAL LEGENDS
E1.0	ELECTRICAL POWER PLAN

H2M architects + engineers

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RDWD 16-02

SEPTEMBER 2016

VLV

VLV

CHECKED BY: REVIEWED BY

SEAL

STATE OF NEW YORK
JEFFREY L. CZAJKA
No. 073522-1
LICENSED PROFESSIONAL ENGINEER

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RIVERHEAD WATER DISTRICT

INSTALLATION OF TWO (2) NEW VFD's AT PLANT NO. 10

FINAL BID DOCUMENT

SHEET #

T0.0

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ELECTRICAL LEGEND

SYMBOL	DESCRIPTION	COMMENTS
S_3	THREE - WAY SWITCH	46" AFF TO CL UON
S_4	FOUR - WAY SWITCH	46" AFF TO CL UON
S_I	ILLUMINATED SWITCH	46" AFF TO CL UON
S^A	SINGLE POLE SWITCH; "A" INDICATE SWITCH CONTROL	46" AFF TO CL UON
S_D	SINGLE POLE DIMMER SWITCH	46" AFF TO CL UON
S_{3D}	THREE - WAY DIMMER SWITCH	46" AFF TO CL UON
S_K	SINGLE POLE KEYED SWITCH	46" AFF TO CL UON
S_{K3}	KEYED THREE - WAY SWITCH	46" AFF TO CL UON
S_{K4}	KEYED FOUR - WAY SWITCH	46" AFF TO CL UON
S_H	HORSEPOWER RATED SWITCH, WITH INDICATOR (CONTRACTOR SHALL COORDINATE VOLTAGE, PHASE WITH EQUIPMENT)	46" AFF
S_P	SWITCH AND PILOT LIGHT	———
S_T	SWITCH W/ THERMAL OVERLOAD PROTECTION (CONTRACTOR SHALL COORDINATE VOLTAGE, PHASE WITH EQUIPMENT)	———
S_{OS}	OCCUPANCY SENSOR WITH MANUAL OVERRIDE, WALL MOUNT	———
TC	TIME CLOCK	———
PC	PHOTOCELL	———
PB	PUSH BUTTON	———
E,G	EMERGENCY SHUT OFF SWITCH; "E" INDICATES ELECTRICAL; "G" INDICATES GAS	———
OS	OCCUPANCY SENSOR, CEILING MOUNT	———
	OCCUPANCY SENSOR POWER PACK, MOUNTED ABOVE CEILING	———
	2 #12 AWG + #12 AWG GND IN 3/4" E.C. CONCEALED IN WALL OR CEILING	———
	5 #12 AWG + #12 AWG IN 3/4" E.C. CONCEALED IN WALL OR CEILING	———
	3 #12 AWG + #12 AWG GND IN 3/4" E.C. CONCEALED IN OR BELOW SLAB	———
LP1-35	DEDICATED HOMERUN TO PANEL LP1 FOR CIRCUIT No. 35 ONLY.	———
	SIMPLEX RECEPTACLE, 120V, 20A. COORDINATE MOUNTING HEIGHT WITH MECHANICAL CONTRACTOR TO CLEAR BASEBOARDS.	FLUSH
	DUPLEX RECEPTACLE, 120V, 20A. COORDINATE MOUNTING HEIGHT WITH MECHANICAL CONTRACTOR TO CLEAR BASEBOARDS.	FLUSH
	QUAD RECEPTACLE, DOUBLE DUPLEX RECEPTACLE, 120V, 20A; COORDINATE MOUNTING HEIGHT WITH MECHANICAL CONTRACTOR TO CLEAR BASEBOARDS.	FLUSH
C	DUPLEX RECEPTACLE, 120V, 20A; SUBLETTER "C" INDICATES CEILING MOUNT	FLUSH
	DUPLEX RECEPTACLE, 120V, 20A; FLOOR MOUNTED.	FLUSH
IG	ISOLATED GROUND DUPLEX RECEPTACLE. COORDINATE MOUNTING HEIGHT WITH MECHANICAL CONTRACTOR TO CLEAR BASEBOARDS.	FLUSH
GFI	DUPLEX RECEPTACLE, 120V, 20A; WITH GROUND FAULT INDICATOR. COORDINATE MOUNTING HEIGHT WITH MECHANICAL CONTRACTOR TO CLEAR BASEBOARDS.	FLUSH
UC	DUPLEX RECEPTACLE, 120V, 20A; SUBLETTER "UC" INDICATES UNDER COUNTER.	AS PER ENGINEER
CT	DUPLEX RECEPTACLE, 120V, 20A; SUBLETTER "CT" INDICATES COUNTER TOP.	AS PER ENGINEER
WP	DUPLEX RECEPTACLE, 120V, 20A; SUBLETTER "WP" INDICATES WEATHER PROOF.	AS PER ENGINEER
40 240	SPECIAL PURPOSE OUTLET, 240V, 40A. VERIFY NEMA CONFIGURATION W/ EQUIPMENT MANUFACTURER.	AS PER ENGINEER
TL	TWIST LOCK RECEPTACLE, 125V, 20A, 3 WIRE; UNLESS OTHERWISE NOTED.	AS PER ENGINEER
	SURFACE RACEWAY WITH 2 GROUNDED + ISOLATED TYPE DUPLEX RECEPTACLES + 1 DATA OUTLET PER POSITION, 18" AFF UNLESS OTHERWISE NOTED.	———
	TELEPHONE/POWER POLE	———
S1	MAGNETIC STARTER, S1 ; SEE STARTER SCHEDULE.	———
DS1	DISCONNECT SWITCH, DS1; SEE DISCONNECT SWITCH SCHEDULE.	———
J	JUNCTION BOX.	———
J 4X	NEMA 4X STAINLESS STEEL JUNCTION BOX WITH GASKETED COVER	———
J S	J. BOX RECESSED IN WALL W/BLANK COVER. PROVIDE 3/4" E.C & DRAG LINE TO ABOVE FINISHED CEILING. MOUNT 18"AFF, UNLESS OTHERWISE NOTED.	———
J M	FOR MONITOR. J. BOX RECESSED IN WALL W/ BLANK COVER PROVIDE 3/4" E.C. AND DRAG LINE TO ABOVE FINISHED CEILING.	———
T T1	TRANSFORMER T1, SEE TRANSFORMER SCHEDULE.	———
P1	ELECTRICAL PANEL P1, RECESSED; SEE PANEL SCHEDULES.	———
P1	ELECTRICAL PANEL P1, SURFACE; SEE PANEL SCHEDULES.	———
	CONDUIT GOING DOWN	———
	CONDUIT GOING UP	———
	PULL BOX	———
T	TELEPHONE. PROVIDE 3/4" E.C. W/ DRAG LINE TO AFC & EMPTY BOX RECESSED IN WALL W/BLANK COVER.	18" AFF TO CL UON
TV	CABLE TV. PROVIDE 3/4" E.C. W/ DRAG LINE TO AFC & EMPTY BOX RECESSED IN WALL W/BLANK COVER.	———
D	DATA. PROVIDE 3/4" E.C. W/ DRAG LINE TO AFC & EMPTY BOX RECESSED IN WALL W/BLANK COVER.	18" AFF TO CL UON
	COMBINED DATA AND TELEPHONE. PROVIDE 3/4" E.C. W/ DRAG LINE TO AFC & EMPTY BOX RECESSED IN WALL WITH BLANK COVER.	———
S	SECURITY CAMERA BOX. PROVIDE 3/4" E.C. W/ DRAG LINE TO AFC & EMPTY BOX RECESSED IN WALL W/BLANK COVER.	———

SYMBOL	DESCRIPTION	COMMENTS
AFF	ABOVE FINISHED FLOOR	———
AFC	ABOVE FINISHED CEILING	———
AFG	ABOVE FINISHED GRADE	———
AMP, A	AMPERE	———
ATS	AUTOMATIC TRANSFER SWITCH (SEE TRANSFER SWITCH SCHEDULE)	———
AWG	AMERICAN WIRE GUAGE	———
BFC	BELOW FINISHED CEILING	———
CL	CENTERLINE	———
CT	COUNTER TOP	———
EC	RIGID GALVANIZED STEEL ELECTRICAL CONDUIT	———
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	———
GFI	GROUND FAULT INDICATOR	———
LIPA	LONG ISLAND POWER AUTHORITY (LOCAL ELECTRIC UTILITY)	———
MCB	MAIN CIRCUIT BREAKER	———
MLO	MAIN LUGS ONLY	———
UON	UNLESS OTHERWISE NOTED	———
UC	UNDER COUNTER	———
V	VOLT	———
VAC	VOLTS ALTERNATING CURRENT	———
VDC	VOLTS DIRECT CURRENT	———
X-FMR	TRANSFORMER	———
WP	WEATHER PROOF	———

SINGLE LINE DIAGRAM LEGEND

SYMBOL	DESCRIPTION	COMMENTS
T	LINE VOLTAGE THERMOSTAT 120V, 10A	———
	CIRCUIT BREAKER WITH TRIP & POLES AS NOTED	———
TS1	TRANSFER SWITCH TS1 (SEE TRANSFER SWITCH SCHEDULE)	———
30/2 MCB P1	DISTRIBUTION PANEL P1 W/30A, 2 POLE M.C.B. (SEE DISTRIBUTION PANEL SCHEDULE)	———
DS1 100/2	DISCONNECT SWITCH DS1, 100A, 2 POLE (SEE DISCONNECT SWITCH SCHEDULE)	———
DS2 40/3	FUSED DISCONNECT SWITCH DS2, FUSED AT 40 AMPS, 3 POLES (SEE DISCONNECT SWITCH SCHEDULE)	———
G1	GENERATOR SET G1	———
M	ELECTRIC METER AND METER PAN AS PER LIPA REQUIREMENTS	———
5	MOTOR, NUMBER INDICATES HORSEPOWER	———
CTS	CURRENT TRANSFORMERS	———
PTS	VOLTAGE TRANSFORMERS	———
	TRANSFORMER WITH SIZE, PRIMARY & SECONDARY VOLTAGES AS NOTED.	———
RVRM 10	REDUCED VOLTAGE SOLID STATE RAMPING MODULE, SIZED FOR 10 H.P.	———
RVSS 150	REDUCED VOLTAGE SOLID STATE STARTER, SIZED FOR 150 H.P.	———
VFD 25	VARIABLE FREQUENCY DRIVE, RATED FOR 25 H.P.	———
FVNR 6	FULL VOLTAGE NON-REVERSING STARTER, NEMA SIZE 6.	———
FVR 5	FULL VOLTAGE REVERSING STARTER, NEMA SIZE 5	———
JJS	FAST ACTING SOLID STATE FUSES SIZED AS PER MANUFACTURER	———
	MULTIPLE BRANCH CIRCUITS AS REQUIRED	———
	CONTROL CIRCUIT (MIN. 2 #12 AWG IN 3/4" E.C.)	———

ELECTRICAL CONTROL LEGEND

SYMBOL	DESCRIPTION	COMMENTS
	PUMP OR BLOWER MOTOR	———
	FLOW METER	———
M	MOTOR CONTROLLED VALVE WITH LIMIT SWITCHES	———
LS	LIMIT SWITCH	———
FT	FLOW TRANSMITTER	———
FS	FLOW SWITCH	———
PT	PRESSURE TRANSMITTER	———
PS	PRESSURE SWITCH	———
LT	LEVEL TRANSMITTER	———
LE	LEVEL ELECTRODES	———
DP	DIFFERENTIAL PRESSURE TRANSMITTER	———
	SOLENOID VALVE	———
	PITOT TUBE & AIR PRESSURE SWITCH	———
TLDS	TELEPHONE LINE DISCONNECT SWITCH	———
PID	PROPORTIONAL- INTEGRAL-DERIVATIVE SINGLE LOOP CONTROLLER	———
SC TP A	SIGNAL CONDITIONER TIME PULSE DURATION TO ANALOG	———

SYMBOLS LEGEND

102	ROOM DESIGNATION	H	COLUMN GRID
5 A2.2	BUILDING SECTION CUT		ELEVATION LINE
5 A2.2	WALL SECTION CUT	H TITLE SCALE	DRAWING TITLE
5 A2.2	DETAIL KEY	5 A2.2	INTERIOR ELEVATION REFERENCE
5 A2.2	ELEVATION KEY	#	SEE NOTE #
		#	ON DWG. #

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CONSULTANTS:

MARK	DATE	DESCRIPTION

PROJECT #: RDWD 16-02
DATE: SEPTEMBER 2016
DESIGNED BY: VLV
DRAWN BY: VLV
CHECKED BY: REVIEWED BY: JR

SEAL: STATE OF NEW YORK · JEFFREY L. CZAJKA · No. 076429 · LICENSED PROFESSIONAL ENGINEER

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Riverhead Water District

INSTALLATION OF TWO (2) NEW VFD's AT PLANT NO. 10

Riverhead, NY

TOWN OF RIVERHEAD · FAVET PROSPERITAS PER PROGRESSUM · 1792

CONTRACT
CONTRACT E
ELECTRICAL CONSTRUCTION

STATUS
FINAL BID DOCUMENT

SHEET TITLE
ELECTRICAL LEGENDS

SHEET #
E0.0

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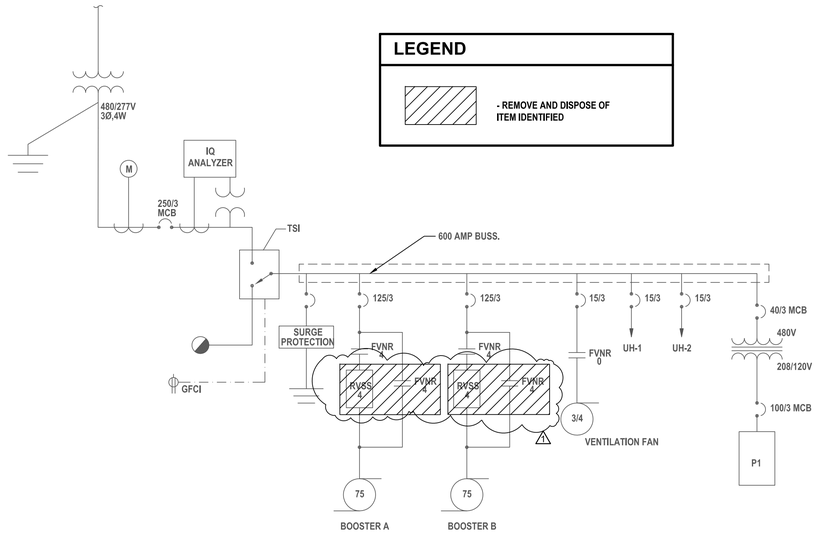
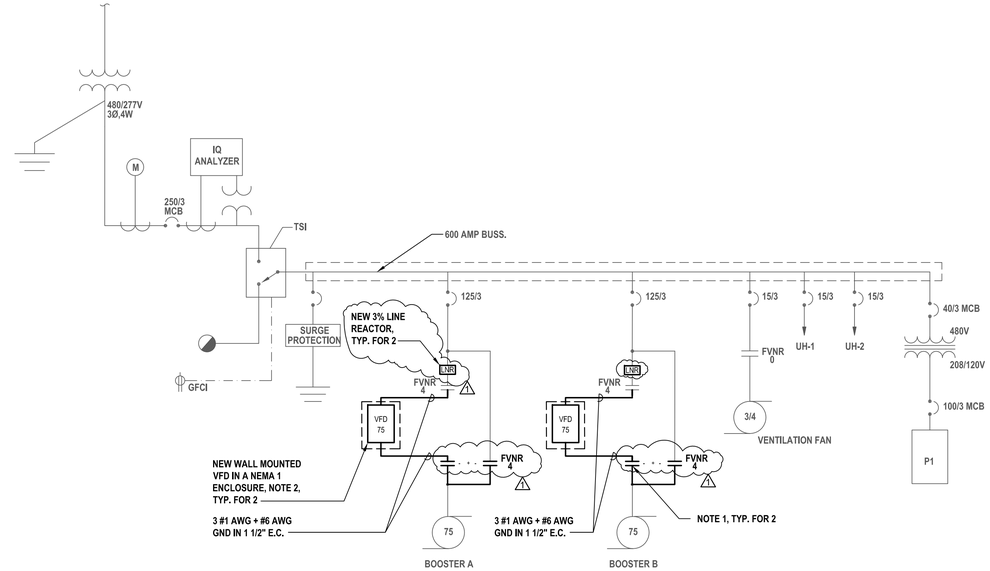


1 Existing Single Line Diagram

SCALE: NTS

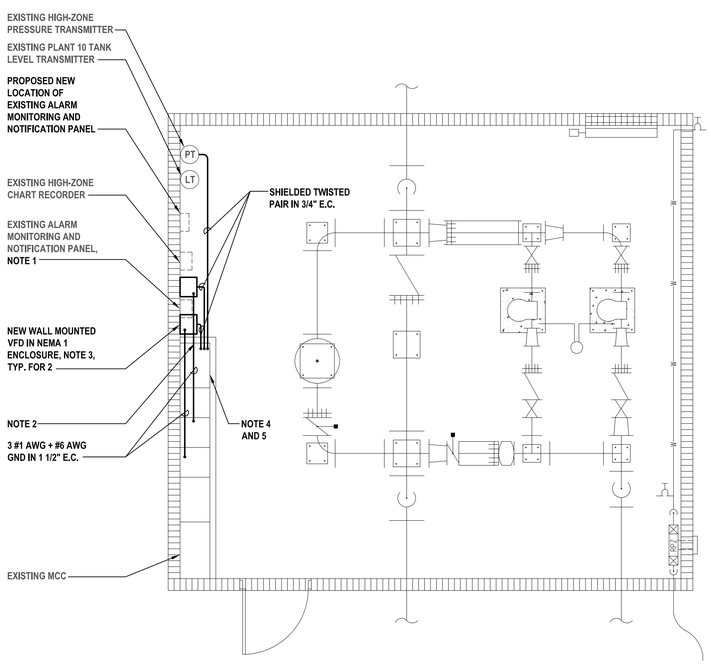


2 New Single Line Diagram

SCALE: NTS

NOTES:

1. CONTRACTOR SHALL INSTALL A NEW OUTPUT AND BYPASS CONTACTORS (NEMA 4) IN EXISTING BOOSTER CUBICLE. NEW OUTPUT AND BYPASS CONTACTOR SHALL BE ELECTRICALLY AND MECHANICALLY INTERLOCKED AND SHALL BE INTERFACED WITH NEW VFD. CONTRACTOR SHALL PROVIDE ALL REQUIRED WIRING AND RELAYS.
2. CONTRACTOR SHALL INTEGRATE NEW VFD WITH EXISTING BOOSTER CONTROL CIRCUIT IN EXISTING MCC CUBICLE. CONTRACTOR SHALL PROVIDE ALL REQUIRED COMPONENTS TO INTEGRATE NEW VFD INCLUDING NEW WIRING AND RELAYS AND CONTROLS.

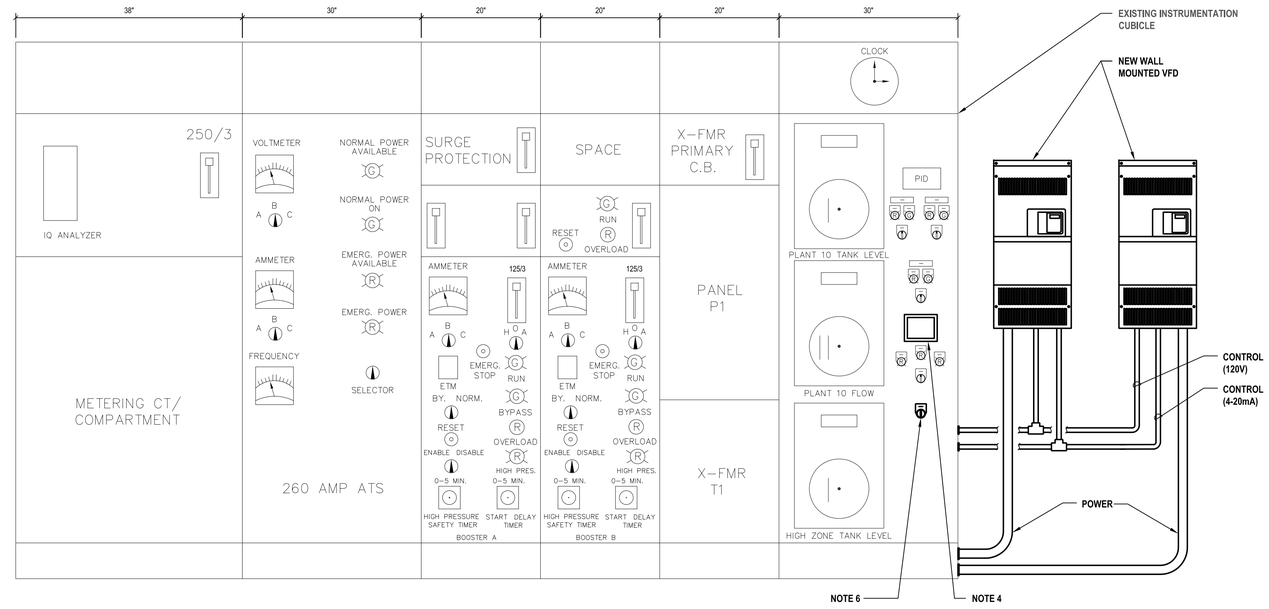


3 Electrical Power Plan

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

NOTES:

1. CONTRACTOR SHALL RELOCATE EXISTING ALARM MONITORING AND NOTIFICATION PANEL TO ALLOW FOR INSTALLATION OF NEW VFD'S. CONTRACTOR SHALL EXTEND ALL WIRING AND CONDUIT AS REQUIRED. COORDINATE WITH ENGINEER AND OWNER FOR EXACT NEW LOCATION.
2. CONTRACTOR SHALL REMOVE EXISTING SHELF ON THE SIDE OF EXISTING MCC TO ALLOW FOR INSTALLATION OF NEW VFD'S.
3. CONTRACTOR SHALL INTERFACE NEW VFD'S WITH EXISTING EXISTING PLC TO ALLOW THE VFD'S TO OPERATE AS LEAD-LAG PUMP CONTROLS. CONTRACTOR SHALL COORDINATE WITH OWNER FOR START/STOP SETPOINT LEVEL AND TIME DELAY PROGRAMMING.
4. CONTRACTOR SHALL INSTALL A NEW 4" HUMAN MACHINE INTERFACE SCREEN (HMI, ALLEN BRADLEY 2711R-T4T) ON EXISTING INSTRUMENTATION CUBICLE DOOR. CONTRACTOR SHALL INTERFACE NEW HMI WITH EXISTING PLC. PROVIDE INTERFACE CABLE AS PER MANUFACTURER'S REQUIREMENT. CONTRACTOR SHALL RELOCATE EXISTING PILOT DEVICES AS REQUIRED TO ALLOW FOR INSTALLATION OF NEW HMI PANEL. EXTEND ALL WIRING AS REQUIRED.



4 Existing MCC Elevation

SCALE: 1"= 1'-0"

5. CONTRACTOR SHALL REMOVE AND REPLACE EXISTING 8-PT ANALOG INPUT AND 4-PT ANALOG OUTPUT CARD WITH NEW 16-PT ANALOG INPUT CARD (ALLEN BRADLEY 1746-NI16I) AND 8-PT ANALOG OUTPUT CARD (ALLEN BRADLEY 1746-NO8I). CONTRACTOR SHALL MODIFY EXISTING PLC PROGRAM TO INCORPORATE NEW I/O'S AND INTEGRATION ON NEW 4" HMI SCREEN. REFER TO SPEC SECTION 265012 FOR NEW DESCRIPTION OF CONTROLS FOR NEW BOOSTER VFD's.
6. CONTRACTOR SHALL REMOVE AND REPLACE EXISTING 2-POSITION TANK/PRESSURE SELECTOR SWITCH WITH NEW 3-POSITION TANK-PRESSURE-TRACKING SELECTOR SWITCH. INTERFACE NEW SELECTOR SWITCH WITH EXISTING PLC.

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