



Mr. William Kutash
Florida Department of Environmental Protection
Waste Management Division
13051 N. Telecom Parkway
Temple Terrace, FL 33637-0926

Subject:

Amendment to Corrective Action Plan for Interim Groundwater Treatment System
Former American Beryllium Company Site
OGC #04-1328
Tallevast, Manatee County, Florida

Dear Mr. Kutash:

Lockheed Martin Corporation (Lockheed Martin) submitted a Corrective Action Plan for the Interim Groundwater Treatment System on September 19, 2008. We would like to amend the plan submitted to replace rather than repair the existing influent tank/containment dike system and also add instrumentation to monitor for leaks in the dual containment piping between the building and the new double-wall tank. After further review, it was determined that there would be significantly less impact to the site and surrounding community if we were to simply replace the existing system with a double-walled tank system. The use of a double-walled tank system will still allow the use of triple-redundant level switches/alarms for monitoring the primary tank level as well as the interstitial space between the inner and outer tanks, however, the specific types of switches will be slightly modified because of the tank construction. The revised level monitoring approach is described below.

The primary tank will include an ultrasonic level transmitter that will be programmed with multiple actuation levels that include:

1. Low Level Alarm – shuts down the extraction and treatment system
2. Low Level – stops the influent pump to the treatment system and the aeration recirculation pump.
3. Start Level 1 – starts the aeration recirculation pump. This set point is intended to ensure that the influent tank contains oxygenated water and the iron remains precipitated so that the iron removal system functions properly

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CONSTRUCTION

Date:
September 30, 2008

Contact:
James M. Bedessem, P.E.

Phone:
813.903.3125

Email:
jim.bedessem@arcadis-us.com

Our ref:
B0038055

Florida License Numbers

Engineering
EB00007917

Geology
GB310

Landscape Architecture
LC26000269

Surveying
LB7062

when the treatment system influent pump turns on.

4. Start Level 2 – starts the treatment system influent pump.
5. High Level Alarm – shuts down the extraction and treatment system, including the aeration recirculation system.

To provide redundant backup to this ultrasonic level transmitter, two additional high level switches and one low level switch will be installed in the tank. The switch type, alarm condition, and action for each are shown below.

Switch Type	Alarm Condition	Action on Alarm
Float Switch	Low-Low Level Alarm	Shuts down the extraction and treatment system, including the aeration recirculation system.
Float Switch	High-High Level Alarm	Shuts down the extraction and treatment system, including the aeration recirculation system.
Conductivity Switch	High-High-High Level Alarm	Shuts down the extraction and treatment system, including the aeration recirculation system.

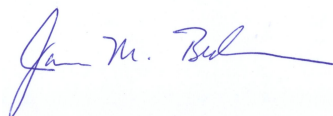
A similar triple redundant switch and alarm setup will be used to monitor for liquid within the interstitial space between the inner and outer tank walls. Three (3) independent conductivity switches will be installed to monitor and alarm on detection of liquid in the interstitial space of the double wall tank. An alarm condition for any of the switches will shut down the extraction system and treatment system, including the aeration recirculation system.

Instrumentation monitoring of the containment piping between the new double-wall influent tank and building will be done using conductivity switches. This will provide an additional factor of safety over visual monitoring of the containment piping. The drawing package has been revised to show the location of the new double-walled tank and process monitoring modifications. The drawings are provided in Attachment 1.

If you have any questions or need additional information regarding the proposed amendment to the Corrective Action Plan, please contact me directly at 813.903.3125, or jim.bedessem@arcadis-us.com.

Sincerely,

ARCADIS U.S., Inc.

A handwritten signature in blue ink, appearing to read "Jim M. Bedessem".

James M. Bedessem, P.E.
Associate Vice President
Florida P.E. License No. 55694

ARCADIS

Attachment 1

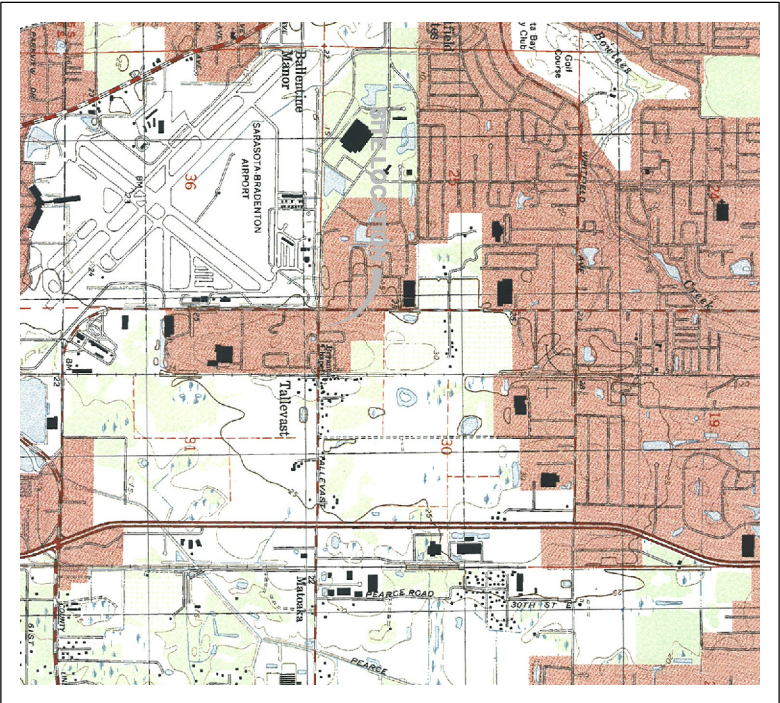
Design Drawings

CONSTRUCTION DRAWINGS

AERATION SYSTEM REDESIGN

FORMER AMERICAN BERYLLIUM COMPANY

1600 TELLEVAST ROAD
SARASOTA, FLORIDA



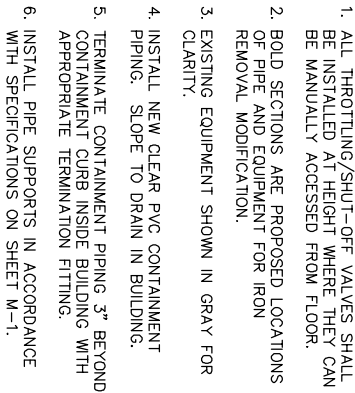
SOURCE: MAPTECH-TERRAIN NAVIGATOR PRO - ST. PETERSBURG, FLORIDA 2001.

SEPTEMBER 2008

INDEX OF DRAWINGS

No.	TITLE
M-1	GENERAL INFORMATION AND SPECIFICATIONS
M-2	LAYOUT OF PROPOSED IRON REMOVAL MODIFICATIONS
M-3	PROCESS & INSTRUMENTATION DIAGRAM
M-4	PROCESS & INSTRUMENTATION DIAGRAM
M-5	PROCESS & INSTRUMENTATION DIAGRAM
M-6	INTERLOCKS, LEGEND, AND ABBREVIATIONS
S-1	INFLUENT TANK AND CONTAINMENT DIKE DEMOLITION
E-1	ELECTRICAL LAYOUT
E-2	ELECTRICAL DETAILS

Professional Engineer's Name										Professional Engineer's No.										FORMER AMERICAN BERYLLIUM COMPANY SITE - TALLEYCAST, FLORIDA										ARCADIS Project No. BR030505.0002.00010																			
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6. INSTALL PIPE SUPPORTS IN ACCORDANCE WITH SPECIFICATIONS ON SHEET M-1.

[illegible]

INTERLOCKS:

- 1 HIGH LEVEL AT EXTRACTION WELL (LAH-101 THROUGH MH-110), TURN ON RESPECTIVE PUMP (P-101 THROUGH P-110). IF PLC DOES NOT REGISTER FLOW AT RESPECTIVE FLOW METER (FIT-101 THROUGH FIT-110), TURN OFF PUMP.
- 2 LOW LEVEL AT EXTRACTION WELL (MH-101 THROUGH MH-110), TURN OFF RESPECTIVE PUMP (P-101 THROUGH P-110).
- 3 HIGH HIGH LEVEL AT EXTRACTION WELL (MH-101 THROUGH MH-110), SIGNAL ALARM AT PLC (LAHH-101 THROUGH LAHH-110), PLC TO SIGNAL AUTO DIALER.
- 4 HIGH LEVEL ALARM (LAH-400) AT INFLUENT TANK T-400, TURN OFF EXTRACTION WELL PUMPS P-101 THROUGH P-110 AND SUMP PUMP P-500, SIGNAL ALARM AT PLC (LAH-400), PLC TO SIGNAL AUTO DIALER.
- 5 HIGH LEVEL ALARM (LAH-403) AT INFLUENT TANK T-400 CONTAINMENT DIKE, TURN OFF EXTRACTION WELL PUMPS P-101 THROUGH P-110 AND SUMP PUMP P-500, SIGNAL ALARM AT PLC (LAH-403), PLC TO SIGNAL AUTO DIALER.
- 6 PUMP OFF SET POINT AT INFLUENT TANK (T-400), TURN OFF P-201 AND P-400.
- 7 PUMP ON SET POINT AT INFLUENT TANK (T-400), TURN ON P-201.
- 8 PH ALARM HIGH (PAH-201) AT ACID INJECTION POINT, TURN OFF PUMPS P-201, P-202, P-400, P-500, AND PHOTOCAT UNIT, SIGNAL ALARM AT PLC, PLC TO SIGNAL AUTO DIALER.
- 9 PH ALARM LOW (PAL-201) AT ACID INJECTION POINT, TURN OFF PUMPS P-201, P-202, P-400, P-500, AND PHOTOCAT UNIT, SIGNAL ALARM AT PLC, PLC TO SIGNAL AUTO DIALER.
- 10 HIGH DIFFERENTIAL PRESSURE ALARM (PAH-202) ACROSS BAG FILTERS (BF-201 AND BF-202), SIGNAL ALARM AT PLC, PLC TO SIGNAL AUTO DIALER.
- 11 HIGH DIFFERENTIAL PRESSURE ALARM (PAH-203) ACROSS CARTRIDGE FILTERS (CF-201 AND CF-202), SIGNAL ALARM AT PLC, PLC TO SIGNAL AUTO DIALER.
- 12 PH ALARM HIGH (PAH-301) AT CAUSTIC INJECTION POINT, TURN OFF PUMPS P-201, P-202, P-400 AND P-500, SIGNAL ALARM AT PLC, PLC TO SIGNAL AUTO DIALER.
- 13 PH ALARM LOW (PAL-301) AT CAUSTIC INJECTION POINT, TURN OFF PUMPS P-201, P-202, P-400 AND P-500, SIGNAL ALARM AT PLC, PLC TO SIGNAL AUTO DIALER.
- 14 HIGH LEVEL ALARM (LAH-500) AT BUILDING SUMP, TURN OFF PUMPS P-101 THROUGH P-110, P-201, P-202, P-400, P-500, AND PHOTOCAT SYSTEM, SIGNAL ALARM AT PLC, PLC TO SIGNAL AUTO DIALER.
- 15 HIGH DIFFERENTIAL pH ALARM (AAH-302) ACROSS EFFLUENT pH PROBES, TURN OFF PUMPS P-201, P-202, P-400, P-500 AND PHOTO-CAT SYSTEM, SIGNAL ALARM AT PLC, PLC TO SIGNAL AUTO DIALER.
- 16 HIGH/LOW PRESSURE IN AERATOR PIPING (PAH-400, PAL-400, PAHH-400), TURN OFF PUMPS P-101 THROUGH P-110, P-201, P-202, P-400, P-500, AND PHOTOCAT SYSTEM, SIGNAL ALARM AT PLC, PLC TO SIGNAL AUTO DIALER.
- 17 HIGH/LOW PRESSURE IN AIR LINE TO AERATOR PIPING (PAH-401, PAL-401), TURN OFF PUMPS P-101 THROUGH P-110, P-201, P-202, P-400, P-500, AND PHOTOCAT SYSTEM, SIGNAL ALARM AT PLC, PLC TO SIGNAL AUTO DIALER.
- 18 PUMP ON SET POINT AT INFLUENT TANK (T-400), TURN ON P-400.
- 19 HIGH HIGH LEVEL ALARM (LAHH-402A AND LAHH-402B) AT INFLUENT TANK T-400, TURN OFF PUMPS P-201, P-202, P-400, P-500, EXTRACTION WELL PUMPS P-101 THROUGH P-110 AND PHOTO-CAT SYSTEM.
- 20 LOW/LOW LEVEL ALARM (LAL-401) AT INFLUENT TANK T-400, TURN OFF EXTRACTION WELL PUMPS P-101 THROUGH P-110, PUMPS P-201, P-202, P-400, AND PHOTO-CAT SYSTEM.
- 21 HIGH/HIGH ALARM (LAHH-404A, LAHH-404B) AT INFLUENT CONTAINMENT DIKE, TURN OFF EXTRACTION WELL PUMPS P-101 THROUGH P-110, PUMPS P-201, P-202, P-400, P-500 AND PHOTO-CAT SYSTEM, SIGNAL ALARM AT PLC.
- 22 SIGNALS ALARM AT AUTODIALER.
- 23 HIGH ALARM (LAH-405, LAH-406, LAH-407, AND LAH-408) AT DOUBLE CONTINUED PROCESS PIPING, TURN OFF PUMPS P-201, P-202, P-400, P-500, EXTRACTION WELL PUMPS P-101 THROUGH P-110 AND PHOTO-CAT SYSTEM.

LEGEND:

- | | |
|--|---------------------------|
| | PROCESS PIPING |
| | FUTURE PIPING/EQUIPMENT |
| | PNEUMATIC PIPING |
| | SKID MOUNTED EQUIPMENT |
| | BUILDING PERIMETER |
| | FENCE |
| | BALL VALVE |
| | GLOBE VALVE |
| | BALL CHECK VALVE |
| | SWING CHECK VALVE |
| | SAMPLE TAP |
| | PRESSURE GAUGE |
| | ANALYZER ELEMENT |
| | FLOW METER |
| | FLANGED CONNECTION |
| | REDUCER |
| | FEMALE HOSE FITTING |
| | CENTRIFUGAL PUMP |
| | DIAPHRAM PUMP |
| | METERING PUMP |
| | INSTRUMENT SIGNAL |
| | PLC CONTROLLER |
| | LOCAL CONTROL PANEL |
| | LOCAL FIELD MOUNT |
| | PLC INTERLOCK |
| | PRESSURE RELIEF VALVE |
| | PNEUMATIC ACCUMULATOR |
| | MALE HOSE FITTING |
| | FLEXLINE HOSE |
| | PURIFIERS IN-LINE AERATOR |
| | AIR RELEASE |
| | AIR/VACUUM RELEASE |
| | ISO DAMPENER FITTING |

ABBREVIATIONS:

- | | | |
|------|------------------------------------|------------------------|
| A | AERATOR | PH ANALYZER ALARM HIGH |
| AAH | PH ANALYZER ALARM LOW | |
| AAL | AIR COMPRESSOR | |
| AC | AIR DRYER | |
| AD | PH ANALYZER ELEMENT | |
| AE | PH ANALYZER INDICATOR | |
| AI | PH ANALYZER INDICATING TRANSMITTER | |
| AIT | AIR RELEASE | |
| AR | AIR/VACUUM RELEASE | |
| AAR | BAG FILTER | |
| ABF | BY-PASS | |
| BP | BALL VALVE | |
| BV | CHECK VALVE | |
| CV | DIFFERENTIAL PH INDICATOR | |
| DAI | DIFFERENTIAL PRESSURE INDICATOR | |
| DPI | DISCONNECT SWITCH | |
| DS | DRAWING | |
| DWG | GRANULAR ACTIVATED CARBON | |
| GAC | GLOBE VALVE | |
| GV | HIGH DENSITY POLYETHYLENE | |
| HOPE | MANHOLE | |
| MH | NORMALLY CLOSED | |
| NC | PRIMARY PLC | |
| P | PHOTO-CAT | |
| PC | PRESSURE CONTROL VALVE | |
| PCV | PRESSURE INDICATOR | |
| PI | PUBLICLY OWNED TREATMENT WORKS | |
| POTW | PRESSURE REGULATING VALVE | |
| PRV | POLYVINYL CHLORIDE PIPE | |
| PVC | SECONDARY PLC | |
| S | SCHEDULE | |
| SCH | STANDARD DIMENSIONAL RATIO | |
| SOR | SAMPLE PORT | |
| SP | TANK | |
| T | TYPICAL | |
| TP | VACUUM BREAKER | |
| VB | VARIABLE FREQUENCY DRIVE | |
| VD | DIAMETER | |

INSTRUMENT IDENTIFICATION LETTERS

FIRST LETTER		SUCCEEDING LETTERS		
MEASURE OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A = ANALYSIS		ALARM		
B = BURNER, COMBUSTION		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
C = USER'S CHOICE			CONTROL, CLOSED	
D = USER'S CHOICE	DIFFERENTIAL			
E = VOLTAGE		SENSOR (PRIMARY ELEMENT)		
F = FLOW RATE	RATIO (FRACTION)			
G = USER'S CHOICE		GLASS, VIEWING DEVICE		
H = HAND				HIGH
I = CURRENT (ELECTRICAL)		INDICATE		
J = POWER	SCAN			
K = TIME, TIME SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L = LEVEL		LIGHT		LOW
M = USER'S CHOICE	MOMENTARY			MIDDLE, INTERMEDIATE
N = USER'S CHOICE		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
O = USER'S CHOICE		ORIFICE, RESTRICTION	OPEN	
P = PRESSURE, VACUUM		POINT (TEST) CONNECTION		
Q = QUANTITY	INTERGRATE, TOTALIZE			
R = RADIATION		RECORD	RUN	
S = SPEED, FREQUENCY	SAFETY	SWITCH	STOP	
T = TEMPERATURE			TRANSMIT	
U = MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V = VIBRATION, MECH. ANALYSIS			VALVE, DAMPER, LOUVER	
W = WEIGHT, FORCE		WELL		
X = UNCLASSIFIED	X AXIS	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y = EVENT, STATUS OR PRESENCE	Y AXIS		RELAY, COMPUTE, CONVERT	
Z = POSITION, DIMENSION	Z AXIS		DRIVE, ACTUATOR, UNCLASSIFIED FINAL CONTROL ELEMENT	

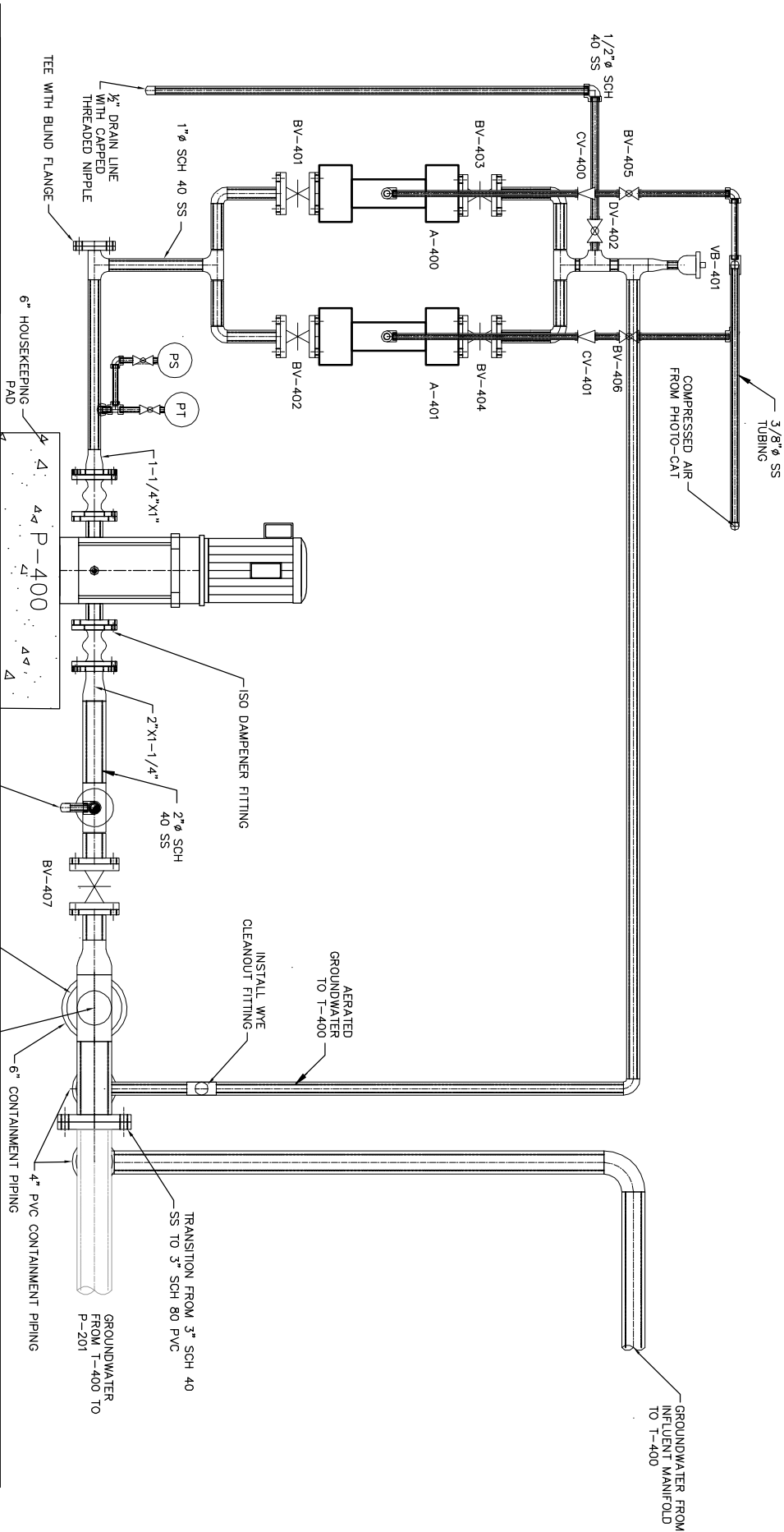
INSTRUMENT SYMBOLS

DISCRETE INSTRUMENTS	PRIMARY CONTROL PANEL NORMALLY ACCESSIBLE TO OPERATOR	AUXILIARY PANEL OR RACK NORMALLY ACCESSIBLE TO OPERATOR
SHARED DISPLAY, SHARED CONTROL		
COMPUTER FUNCTION INCLUDING DISTRIB. CNTRL. SYS.		
PROGRAMMABLE LOGIC CONTROLLER FUNCTION		

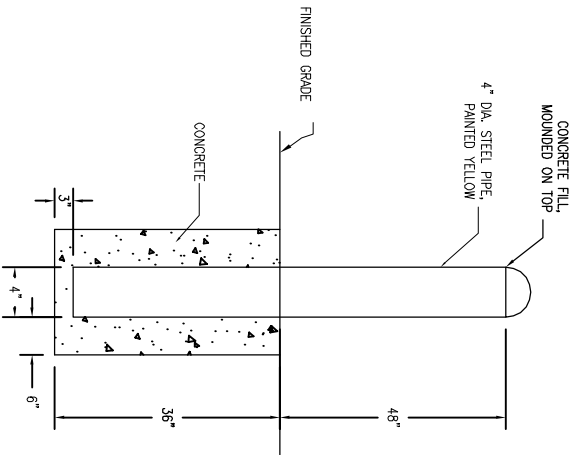
GENERAL NOTES:

1. ALL ANALOG SETPOINTS SHALL BE FIELD ADJUSTED BY OPERATOR AT HMI INTERFACE SCREEN.
 2. ALARMS THAT SHUT DOWN EXTRACTION WELLS AND TREATMENT EQUIPMENT MUST BE CLEARED BY OPERATOR BEFORE BEING RESTARTED.
3. THIS DRAWING IS PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

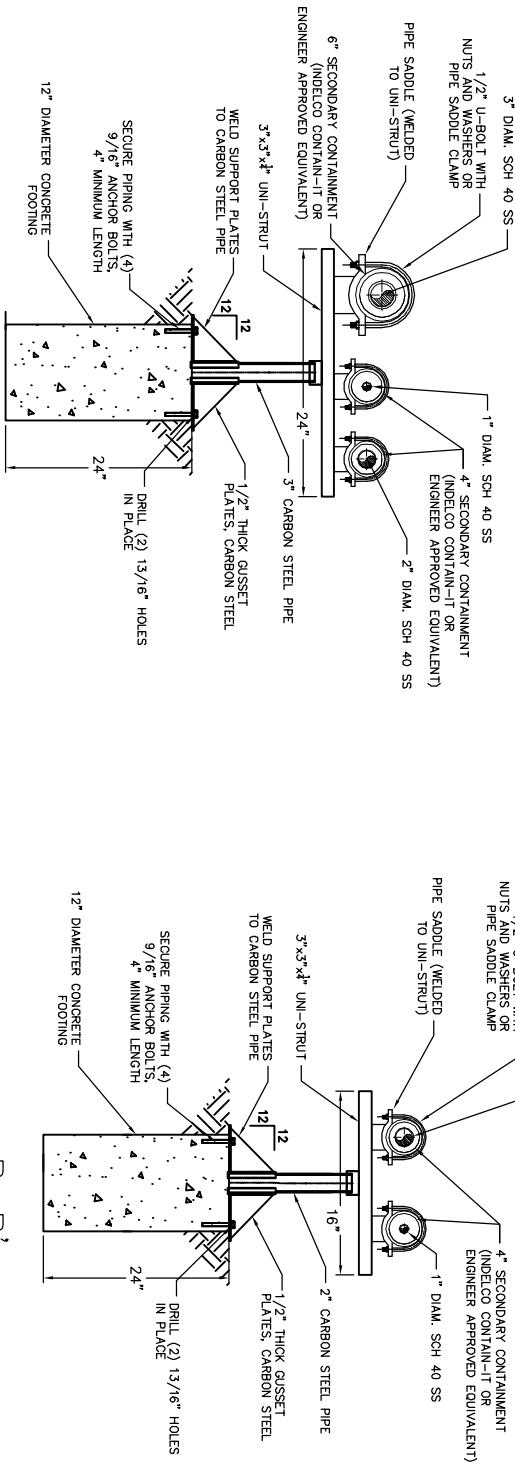
NOT TO SCALE		Professional Engineer's Name JAMES MICHAEL BEDESSEM		ARCADIS Project No. B00398055.0002.000.10	
		Professional Engineer's No.		Date SEPTEMBER 2008	
3 9/26/08		MS JB		ARCADIS	
2 9/19/08		MS JB		3380 BUSCHWOOD PARK DR.	
1 9/10/08		MS JB		SUITE 100	
0 9/4/08		JR JB		TAMPA FLORIDA 33618	
		FL		(813) 933-0897	
No. of Revisions		By		Date	
1		COK		SEPTEMBER 2008	
2		FL		SEPTEMBER 2008	
3		FL		SEPTEMBER 2008	
4		FL		SEPTEMBER 2008	
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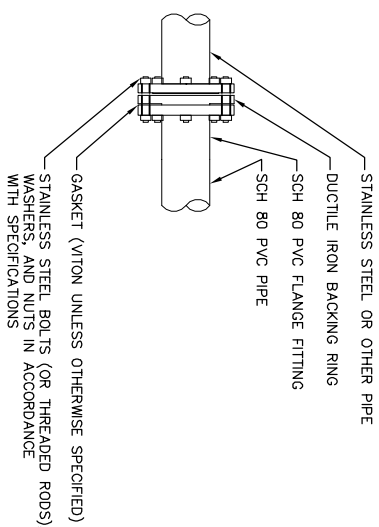
2 SAFETY BOLLARD DETAIL (TYP.)



1 PROPOSED AERATION SYSTEM



4 PIPE TRANSITION DETAIL (TYP.)



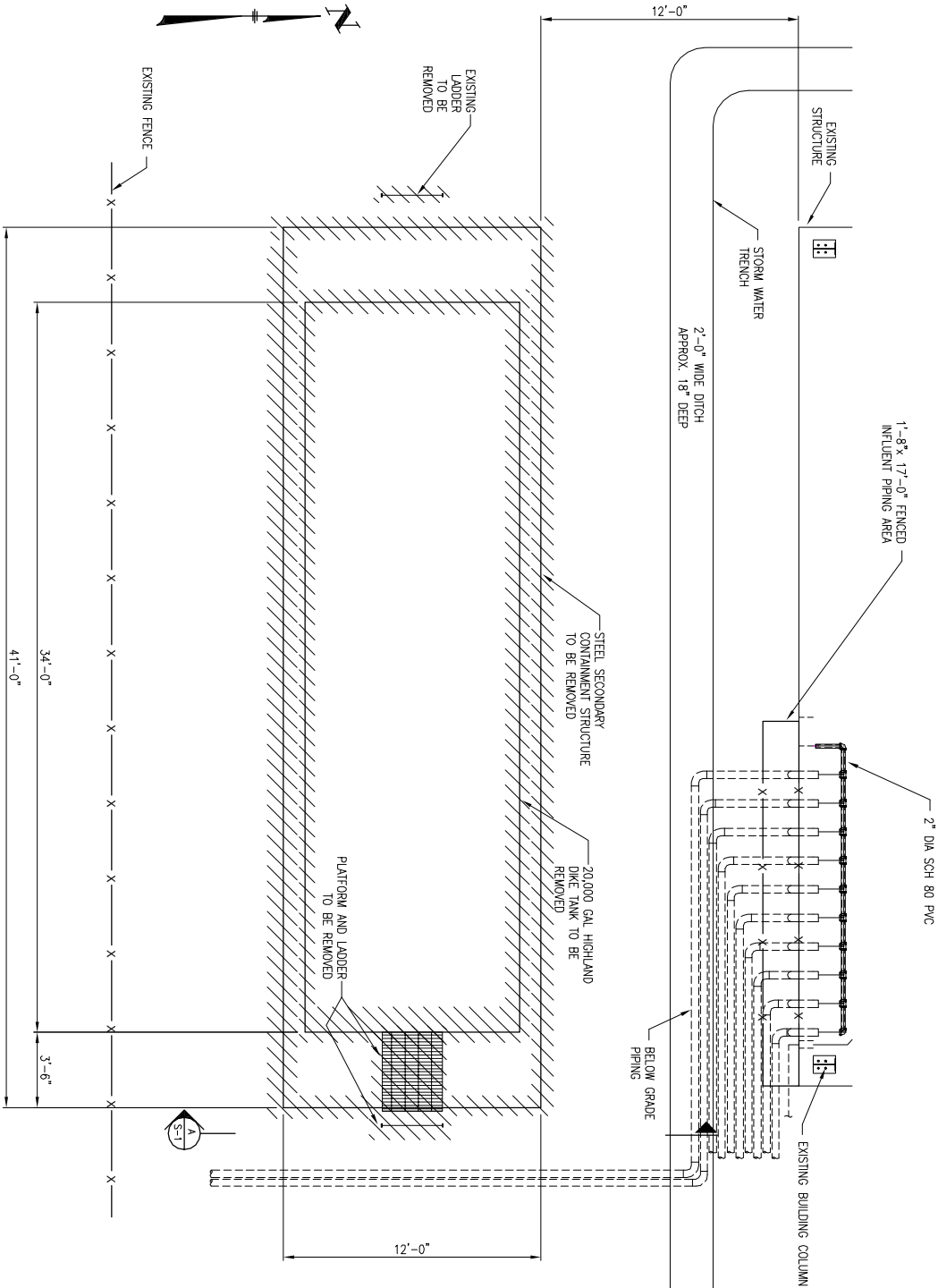
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2		9/19/08		ISSUE TO FLORIDA DEP		MS		JB	
1		9/10/08		AERATION SYSTEM REDSIGN		MS		JB	
0		9/4/08		PRELIMINARY CONCEPT REVIEW		MS		JB	
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MECHANICAL DETAILS AND SECTIONS

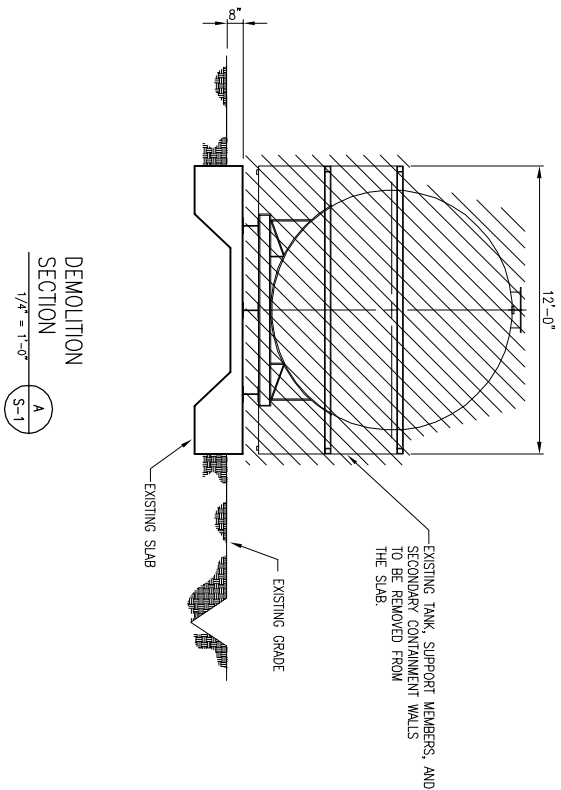
ARCADIS Project No. B0038055.0002.00010
DATE: SEPTEMBER 2008
ARCADIS
3550 BUSCHWOOD PARK DR.
SUITE 100
TAMPA, FLORIDA 33618
(813) 853-0897

M-7



DEMOLITION PLAN TANK AND CONTAINMENT

1/4" = 1'-0"



THIS BAR REPRESENTS ONE ORIGINAL DRAWING.	USE TO VERIFY REVISION SCALE		Professional Engineer's Name	
			Professional Engineer's No.	
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			Date Signed	
ISSUE FOR PERMITS		AH	JB	55694
ISSUE TO FLORIDA DEP		AH	JB	
AERATION SYSTEM REDESIGN		AH	JB	
REVISIONS		By	CHK	
No		Date	FL	
The drawings are the property of the AERATION SYSTEM REDESIGN IN THE TITLE BLOCK AND MAY NOT BE REPRODUCED OR ALTERED IN WHOLE OR IN PART WITHOUT THE EXPRESS WRITTEN PERMISSION OF SAME.		Designed by	AH	
		Drawn by	AH	
		Checked by	JB	



FORMER AMERICAN BERYLLIUM COMPANY SITE • TALLEVAST, FLORIDA

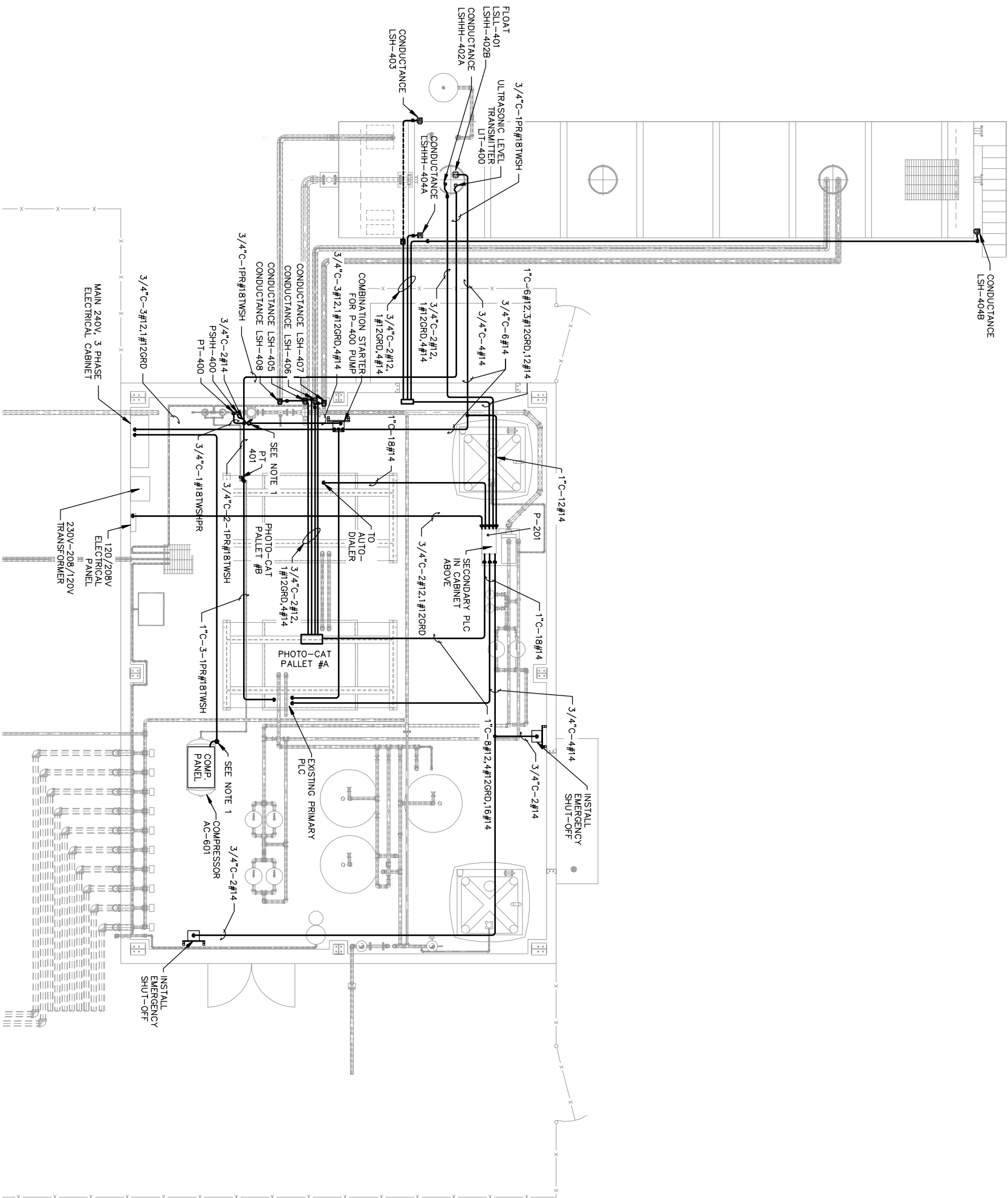
CONSTRUCTION DRAWINGS

INFLUENT TANK AND CONTAINMENT DIKE DEMOLITION

ARCADIS Project No. B0038055.0002.00010

Date: SEPTEMBER 2008

ARCADIS 3550 BUSCHWOOD PARK DR. SUITE 100 TAMPA, FLORIDA 33618 (813) 853-0897



NOTES:

1. ANCHOR CONDUIT TO FLOOR WITH A FLOOR PLATE. INSTALL A "T" CONDUIT IN THE VERTICAL RUN NEAR PANEL. CONNECT FROM THE "T" TO THE PANEL VIA LIQUE TIGHT METAL FLEXIBLE CONDUIT.
2. INSTALL CONDUIT SUPPORTS EVERY 10 FEET FOR ALL CONDUIT RUNS.

[illegible]

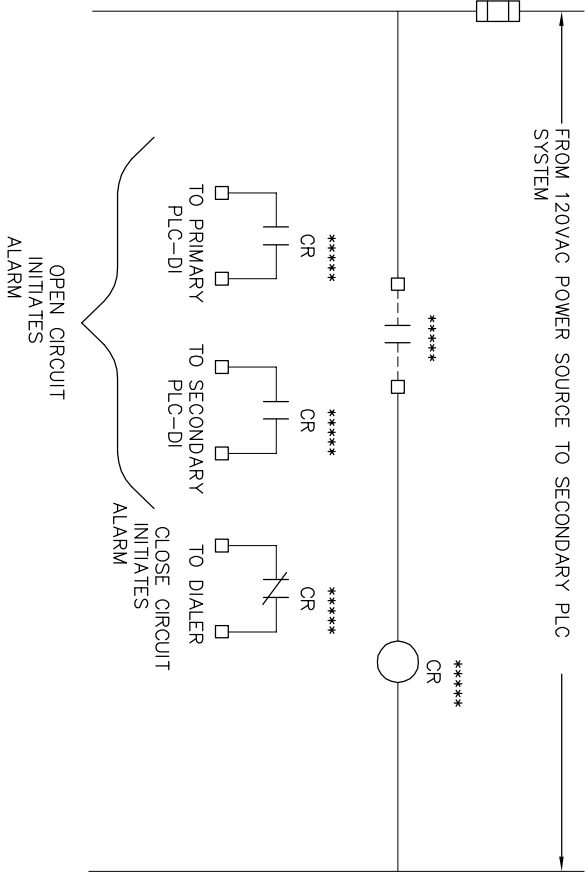
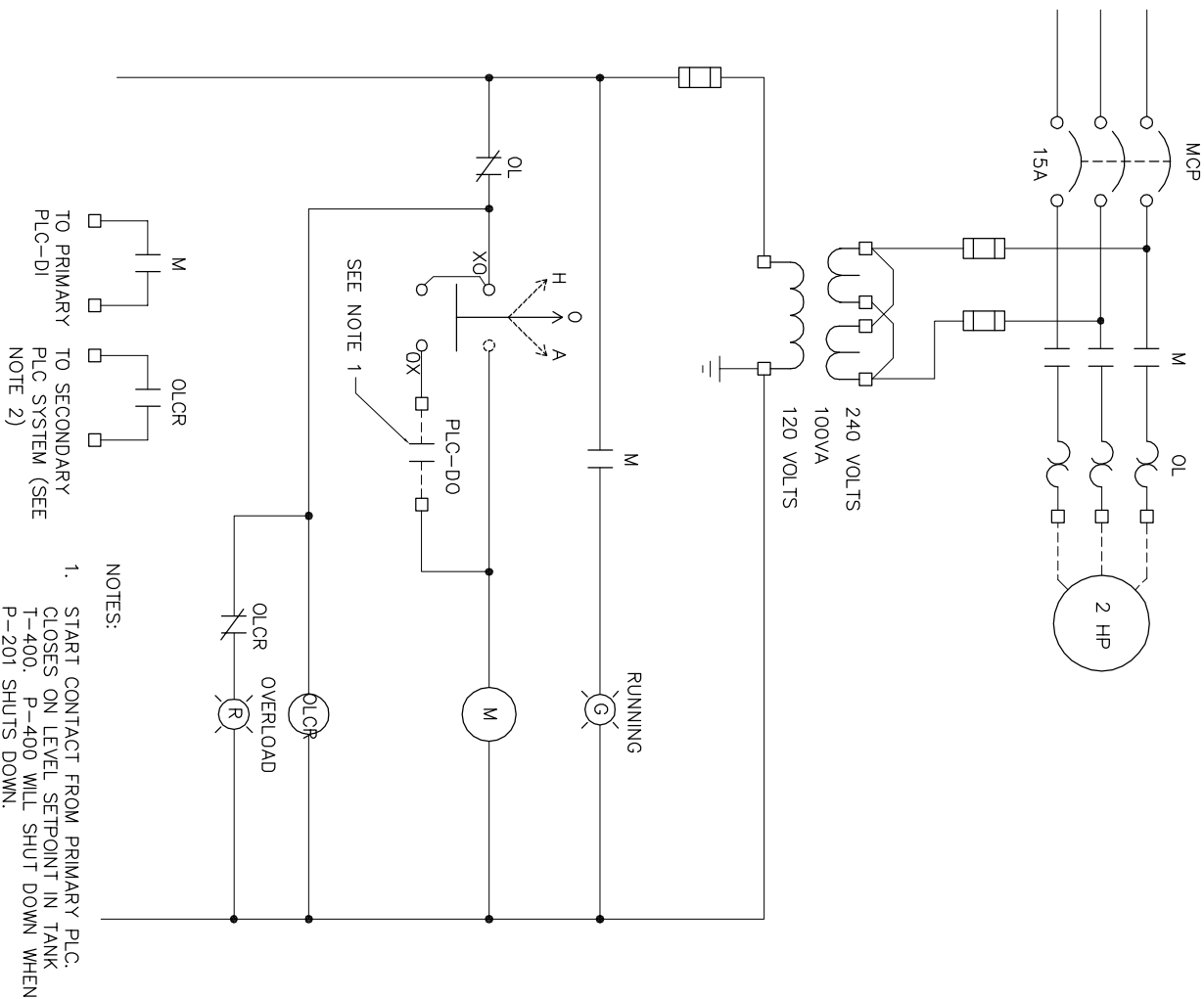
ARCADIS
ARCADIS U.S., INC.
FLORIDA CERTIFICATE OF AUTHORIZATION
NUMBER 7917

FORMER AMERICAN BERYLLIUM COMPANY SITE • TALLEHASSEE, FLORIDA
CONSTRUCTION DRAWINGS

ELECTRICAL LAYOUT

GENERAL

ARCADIS Project No. B0038055.0002.00010	Date SEPTEMBER 2008
ARCADIS 3360 BUSCHWOOD PARK DR. SUITE 100 TAMPA, FLORIDA 33618 (813) 933-0697	



AERATION SYSTEM PUMP P-400

TYPICAL FOR ALL SECONDARY PLC INPUTS

1. START CONTACT FROM PRIMARY PLC. CLOSES ON LEVEL SETPOINT IN TANK T-400. P-400 WILL SHUT DOWN WHEN P-201 SHUTS DOWN.
2. TO RELAY IN SECONDARY PLC ENCLOSURE. ALL LOGIC TO THE SECONDARY PLC SYSTEM IS 'FALL SAFE' AN OPEN CIRCUIT CAUSES AN ALARM.

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ARCADIS

ARCADIS U.S., INC.
FLORIDA CERTIFICATE OF AUTHORIZATION
NUMBER 7917

FORMER AMERICAN BERYLLIUM COMPANY SITE • TALLEYMAST, FLORIDA		ARCADIS Project No. B0039055.0002.00010
CONSTRUCTION DRAWINGS		
ELECTRICAL DETAILS		E-2
GENERAL		
Date SEPTEMBER 2008 ARCADIS 3360 BUSCHWOOD PARK DR. SUITE 100 TAMPA, FLORIDA 33618 (813) 933-0897		

ELECTRICAL SPECIFICATIONS

1. INSTALL TWO NEW THERMAL-MAGNETIC 15A, 3 POLE BREAKERS IN THE EXISTING 240 VOLT, 3 PHASE MAIN DISTRIBUTION PANEL. THE BREAKERS SHALL BE OF THE SAME MANUFACTURE AS THE EXISTING BREAKERS AND SHALL HAVE THE SAME INTERRUPTING RATING AS THE EXISTING BREAKERS. ONE BREAKER SHALL BE LABELED 'AERATION PUMP P-400' AND THE OTHER BREAKER SHALL BE LABELED 'AERATION SYSTEM COMPRESSOR AC-601'.

INSTALL ONE 5 AMP SINGLE POLE BREAKER IN THE 120/208 VOLT LOAD CENTER TO SUPPLY POWER TO THE SECONDARY PLC SYSTEM. THE BREAKERS SHALL BE OF THE SAME MANUFACTURE AS THE EXISTING BREAKERS AND SHALL HAVE THE SAME INTERRUPTING RATING AS THE EXISTING BREAKERS. THE BREAKER LABEL SHALL BE 'SECONDARY PLC SYSTEM'.

- CONDUIT. ALL CONDUIT SHALL BE HOT DIPPED GALVANIZED STEEL (RGS). ALL FLEXIBLE CONDUIT SHALL BE LIQUID TIGHT METAL FLEXIBLE (LTMF) CONDUIT UL LISTED AS GROUND CONDUCTING. ALL FITTINGS SHALL BE THREADED TYPE. LTMF CONDUIT SHALL BE NOT GREATER THAN 24" AND NOT LESS THAN 9" IN LENGTH. CONDUIT IN GRADE SHALL BE PVC SCHEDULE 80. PVC CONDUIT SHALL CONVERT TO RGS NOT LESS THAN 2" ABOVE FINISHED GRADE AND NOT MORE THAN 6" ABOVE FINISHED GRADE. ALL METAL CONDUIT CONNECTIONS SHALL BE MADE USING A LIBERAL COATING OF A CONDUCTIVE SEALANT SUCH AS T&B'S KOPR SHEILD. THE CONDUCTIVE SEALANT SHALL BE UL APPROVED FOR ELECTRICAL CONDUIT USE. ALL JUNCTION AND PULL BOXES BELOW 30" ABOVE FINISHED FLOOR (AFF) INDOORS AND ALL BOXES OUTDOORS SHALL BE NEMA 4 METALLIC. CONDUIT SHALL BE SPACED A MINIMUM OF 1/4" FROM ANY SURFACE. ALL CHANNEL FOR CONDUIT SPACING, CONDUIT SUPPORT, TRAPEZE SYSTEMS, EQUIPMENT MOUNTING, ETC. SHALL BE HOT DIPPED GALVANIZED STEEL WITH A MINIMUM 1.5 OUNCES PER SQUARE FOOT PER SIDE AS PER ASTM A123. THE HANGER RODS FOR THE TRAPEZE SHALL BE 3/8" DIAMETER 316 SS ALL THREADED ROD. MOUNTING HARDWARE SUCH AS BEAM CLAMPS, ETC. SHALL BE EITHER HOT DIPPED GALVANIZED STEEL TO THE COATING SPEC ABOVE OR 316 SS. ALL BOLTS, NUTS, WASHERS, CHANNEL SPRINGS, ETC. SHALL BE 316 SS.
3. WIRING - WIRING SHALL BE STRANDED XHHW EXCEPT SIGNAL CABLE. SIGNAL CABLE SHALL BE TWISTED SHIELDED #18AWG. THE SHIELD SHALL BE 100% FOIL TYPE WITH DRAIN WIRE. SIGNAL WIRING SHALL NOT BE SPLICED AT ITS TERMINI, A GIVEN SIGNAL CABLE SHALL WIRED TO 3 CONSECUTIVE TERMINALS (+, -, DRAIN) IN ORDER TO KEEP THE STRIPPING OF THE OUTER INSULATION AND SHIELD TO A MINIMUM. SPLICING OF CONTROL AND POWER WIRING, WHERE NECESSARY, SHALL BE DONE VIA TERMINALS IN A JUNCTION BOX WITH A BACK PANEL TO MOUNT THE TERMINALS. WIRE NUT SPLICES ARE NOT ACCEPTABLE.
4. THE SECONDARY PLC SYSTEM SHALL BE MOUNTED WITHIN A NEMA 12 METALLIC ENCLOSURE. THE ENCLOSURE SHALL BE SUPPLIED WITH AN INTERNAL MOUNTING PANEL. THE ENCLOSURE SHALL BE OF SUFFICIENT SIZE TO HOUSE THE SECONDARY PLC RACK AND ALL ITS COMPONENTS; THE 3 POLE RELAYS, TERMINALS FOR ALL FIELD WIRING, ETC. THE ENCLOSURE SHALL ALSO CONTAIN A UPS CAPABLE OF PROVIDING 2 HOURS OF OPERATING TIME AT MAXIMUM LOAD. EVERY THING WITHIN THE ENCLOSURE AND POWER BY THE LIGHTING PANEL CIRCUIT FOR THE SECONDARY PLC SYSTEM SHALL BE CONSIDERED THE LOAD FOR THE UPS. THE SECONDARY PLC SHALL NOT BE CONNECTED TO ANY REMOTE VIEWING, PROGRAMMING OR REMOTE SET POINT DEVICE. EACH SECONDARY PLC DIGITAL OUTPUT POINT SHALL BE ISOLATED, RELAY OUTPUT TYPE. THE PLC I/O SHALL HAVE A MINIMUM OF 25% SPARES AND SHALL BE EXPANDABLE BEYOND THE SPARES.
5. SUBMIT SHOP DRAWINGS FOR ALL EQUIPMENT, CONDUIT, WIRE, ETC. FOR ENGINEER'S APPROVAL.