

**ADDENDUM NO. 4  
FOR  
CITY OF GREENFIELD  
WASTEWATER TREATMENT PLANT SURFACE AERATOR ADDITION**

DATE: March 23, 2016

FROM: Doug Pike, PE, City Engineer  
City of Greenfield  
599 El Camino Real  
Greenfield, CA 93927  
Tel: (805) 331-3553

TO: Prospective Bidders

This addendum forms a part of the Contract Documents and modifies the original Procurement Documents dated February 2016, as noted herein. Each bidder shall acknowledge receipt of this Addendum by completing the acknowledgment at the end of this Addendum, and by confirming receipt of this addendum on the contract Bid Form. Failure to acknowledge receipt of the four addenda on the Bid Proposal may subject Bidder to disqualification.

The following changes or clarifications have been made to the Bid Documents:

**CHANGES TO PRIOR ADDENDA:**

1. None.

**CHANGES TO PROCUREMENT REQUIREMENTS:**

2. Bid Schedule. Bid Item 18 shall be entitled "Sludge Removal" and quantity adjusted from 250 dry tons (DT) to 1,000 dry tons (DT). (Note: This quantity change was based on some preliminary testing that indicated the sludge quantity can be assumed to be approximately 1" depth, on average, across the three ponds, and some dirt may be mixed into the sludge at time of removal).
3. Bid Schedule: Bid Item 17 Pond Liner. The Contractor Shall, at the time of bid, submit a schedule of alternate costs for Bid Item 17 as follows:

<b>Bid Item</b>	<b>Bid Item Description</b>	<b>Schedule for alternate award amounts</b>	<b>Pond Liner (SF)</b>	<b>Unit Price</b>	<b>Total Bid Item Cost</b>	<b>Contractors Bid Total with this Bid Item</b>
17A.	Base Bid Option	Pond Liner - Ponds 1, 2 & 3 (Per base Bid-restated)	308,000			
17B.	Alternate 1 Option	Pond Liner - Cost for lining Ponds 1 & 2 Only				
17C.	Alternate 2 Option	Pond Liner - Cost for lining Pond 1 Only				

**Although the Base bid written in numbers and words at the bottom of the bid schedule represents 17A, the Contract award will be based upon the Total Base Bid With Bid Item 17A OR 17B OR 17C, as calculated in the table above.**

**CHANGES TO SPECIFICATIONS:**

4. Contractor to verify DIR registration and current license for each subcontractor and complete form attached and submit with Bid Proposal

5. Section 01 20 00, Price and Payment Procedures. Change Existing Sub-item 19, to Sub-Item 20. Add Sub-item 19 as follows: Survey of bottom elevations of Ponds 1, 2 and 3, after sludge drying/removal, but prior to removal of dirt, for the purposes of estimating quantities of soils to be removed."
6. Section 01 20 00, Price and Payment Procedures. Replace Bid Item No. 18 - Sludge Dewatering, Hauling and Disposal, with the following:

### **Bid Item No. 18 – Sludge Removal**

- A. Units: Dry Ton (DT).
- B. Measurement:
  1. Measurement shall be the actual weight, expressed in dry tons (imperial units), of sludge removed and disposed of, based on calculation of dry tons based on moisture content analyses conducted on each truck load of sludge hauled. Calculations subject to approval of the Engineer.
- C. Payment includes full compensation for all furnishing all labor, materials, tools, equipment, and incidentals, and for doing all work required to provide sludge removal in accordance with the contract documents.
  - a. No payment for sludge removal will be made until all the listed items have been completed to the satisfaction of the Owner.
  - b. Value for this pay item on first progress payment shall not exceed 25% of bid item value, based on a calculation of the bid schedule quantity times the bid unit price for this item.
  - c. Intermediate partial payments based on Engineer's determination, and total value approved for payment shall not exceed actual percent complete of Contract Work.
  - d. Final pay request shall include the remaining value for this pay item, based on approved calculations of dry tons of biosolids removed, in accordance with truck haul tickets and corresponding laboratory moisture content analyses.
  - i. Scope of bid item: sludge removal includes, but is not limited to the following:
    1. Removing sludge from Ponds 1, 2 and 3, controlling odors to the satisfaction of the City, maintaining operation of treatment processes during removal of sludge, protecting existing improvements in place during sludge removal operations, protecting daily WWTP operations;
    2. Providing necessary equipment, power and utilities to adequately remove and haul sludge, control odors, and mitigate objectionable odors;
    3. Temporary grading and site improvements to accommodate sludge removal operations, if required;
    4. Testing and analytical results from a certified California laboratory qualified to perform testing in accordance with Title 22 CCR, Division 4.5, Chapter 11, Article 3;
    5. Hauling and disposing of sewage sludge at a fully licensed,

qualified facility to handle and beneficially reuse non-hazardous sewage sludge solids, or qualified landfill;

6. All other incidental work necessary to complete the sludge removal in accordance with the Contract Documents.
7. Section 01 50 00, Temporary Facilities and Controls, Para. 1.012.A. Add the following: "Contractor shall provide temporary power provisions as required for the Work, the cost of which shall be included in the base bid. The City will pay for the cost of temporary power consumption during construction."
8. Section 02 21 00, Surveys. To Paragraph 1.2A, Summary, add the following: "The Work also includes survey of Ponds 1, 2 and 3 Pond bottoms prior to pond restoration, and following sludge drying/removal operations, as part of establishing quantities of existing soil to be removed from these ponds."
9. Section 02 42 00, Removal and Salvage of Construction Materials. Add Paragraph 3.9 as follows: "Contractor shall remove excess dirt from Ponds 1, 2 and 3, and place excess dirt in the areas shown on the Exhibit attached to this Addendum and as shown on the Drawings. The upper 5 to 6 inches of soil, after removal of sludge material, shall be used to fill in the existing ditch shown, with an estimated fill volume of 7,900 CY. Soils in this ditch shall be compacted to 90% relative compaction, with the upper 24 inches compacted to 85% relative compaction. Subsequent soils removed from Ponds 1, 2 and 3 shall be deposited:
  - a. To build up the berms between Effluent Disposal Fields 1, 2, 3 and 4 with soil (see arrows in the sketch). These berms shall be widened by approximately 2' and increased in height by 1', and berms shall be compacted to 85% relative compaction.
  - b. Within Effluent Disposal Fields 2 through 8, with no more than 3" soil depth added to any one field. Soil shall be spread and levelled to +/- 1" of a constant elevation within each field. Soil shall be loosely applied, not compacted.
10. Section 33 47 13, Pond and Reservoir Liners. Delete requirement for soil sterilant.
11. Section 33 47 99, Sludge Removal From Ponds. Replace with the attached Section 33 47 99, Sludge Removal From Ponds. This revised section addresses the option to remove and haul sludge without the requirement of mechanical dewatering equipment.

#### CHANGES TO DRAWINGS:

12. Drawing C-2. Ponds 1, 2 and 3, assume average bottom elevation of 222.50 across all three ponds for quantity and estimation purposes. Note that although Pond 1 elevations are shown, sludge was subsequently removed from this Pond 1 several years ago, and existing elevations shown may not be fully representative of actual pond bottom elevation.
13. Drawing C-5, Detail 6, Cable-Mounted Aerator and Mooring Post Detail. Change stainless steel cable call out from "3/8 inch SS Cable" to "3/16 inch SS Cable".
14. Drawings E-1, E-2, E-3 and E-4. Replace with the attached Drawings E-1, E-2, E-3, E-4. (Attached drawings follow page 5 of 5 of this addendum)

Please acknowledge receipt of this Addendum No. 4 by signing where indicated below. **Please EMAIL the signed and dated addendum to Mr. Doug Pike, City Engineer, City of Greenfield, (805) 331-3553, at [dpike@mnsengineers.com](mailto:dpike@mnsengineers.com).**

\_\_\_\_\_  
Company Name

\_\_\_\_\_  
Date

END OF ADDENDUM



**Areas to Deposit Excess Soils from Ponds 1, 2 and 3**

## Verification of DIR Registration and Verification of Licensure of Sub Contractors

The Prime Contractor has verified that each Sub Contractor listed herein, at time of bid, has a Department of Industrial Relations (DIR) registration number, as well as is licensed with an appropriate license type, for the work to be performed. A list of Sub Contractors, with their DIR numbers and licensure information is below.

\_\_\_\_\_  
Signed (Contractor's Authorized Representative)/ Date

Subcontractor \_\_\_\_\_ DIR No. \_\_\_\_\_ Lic. Type/No. \_\_\_\_\_

## GENERAL NOTES

- CODE COMPLIANCE: ALL WORK SHALL CONFORM TO AND BE PERFORMED IN ACCORDANCE WITH CODES, STANDARDS, AND ORDINANCES AS SET FORTH BY THE AUTHORITIES HAVING JURISDICTION AND THEIR LATEST ADOPTED EDITIONS (IN EFFECT AT TIME OF BUILDING PERMIT APPLICATION) OF THE FOLLOWING PUBLICATIONS:
  - CALIFORNIA CODE OF REGULATIONS TITLE 24; INCLUDES 2013 CALIFORNIA ELECTRICAL CODE, 2013 CALIFORNIA FIRE CODE, 2013 CALIFORNIA BUILDING CODE, ETC. WITH LOCAL AMENDMENTS AS APPLICABLE.
  - AMERICANS WITH DISABILITIES ACT (ADA).
- SAFETY: THE ELECTRICAL CONTRACTOR IS RESPONSIBLE TO MAINTAIN ALL EQUIPMENT IN A SAFE AND RESPONSIBLE MANNER. KEEP DEAD FRONT EQUIPMENT IN PLACE WHILE EQUIPMENT IS ENERGIZED. CONDUCT ALL CONSTRUCTION OPERATIONS IN A SAFE MANNER FOR EMPLOYEES AS WELL AS OTHER WORKPERSONS OR ANYONE VISITING THE JOB SITE. PROVIDE BARRIERS, FLAGS, TAPE, ETC. AS REQUIRED FOR SAFETY. THE CONTRACTOR SHALL HOLD ALL PARTIES HARMLESS OF NEGLIGENT SAFETY PRACTICES, WHICH MAY CAUSE INJURY TO OTHERS ON OR NEAR THE JOB SITE.
- LABEL PANELS, CABINETS, BACKBOARDS, MAIN DEVICES, SAFETY SWITCHES, CONTACTORS AND OTHER SPECIFICALLY DESIGNATED EQUIPMENT SHOWN ON PLANS. USE ENGRAVED LAMINATED PLASTIC NAMEPLATES ATTACHED BY SCREWS OR RIVETS. FOR FEEDERS, NEATLY AND INDELIBLY LABEL CONDUIT DESTINATIONS ON BOTH VISIBLE ENDS OF CONDUIT RUNS WHERE CONDUITS TERMINATE AT DESIGNATED ENCLOSURES, STRUCTURES OR EQUIPMENT (INCLUDING PULL AND SPLICE BOXES).
- EQUIPMENT ANCHORAGE NOTE  
ALL MECHANICAL AND ELECTRICAL EQUIPMENT SHALL BE ANCHORED OR BRACED TO MEET THE HORIZONTAL AND VERTICAL FORCES PRESCRIBED IN THE 2013 CBC, SECTION 1615A.1.20 AND ASCE 7-05 SECTIONS 13.3, 13.4 & 13.6.

THE ATTACHMENT OF THE FOLLOWING ITEMS SHALL BE DESIGNED TO RESIST THE FORCES PRESCRIBED ABOVE, BUT NEED NOT BE DETAILED ON THE PLANS:

- EQUIPMENT WEIGHING LESS THAN 400 POUNDS SUPPORTED DIRECTLY ON THE FLOOR OR ROOF.
- FURNITURE REQUIRED TO BE ATTACHED IN ACCORDANCE WITH PART 2, TITLE 24, C.C.R..
- TEMPORARY OR MOVABLE EQUIPMENT.
- EQUIPMENT WEIGHING LESS THAN 20 POUNDS SUPPORTED BY VIBRATION ISOLATORS.
- EQUIPMENT WEIGHING LESS THAN 20 POUNDS SUSPENDED FROM A ROOF OR FLOOR OR HUNG FROM A WALL.

FOR THOSE ELEMENTS THAT DO NOT REQUIRE DETAILS ON THE APPROVED DRAWINGS, THE INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE MECHANICAL/ELECTRICAL ENGINEER AND THE FIELD REPRESENTATIVE OF THE DIVISION OF THE STATE ARCHITECT.

### PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEM BRACING NOTE

PIPING, DUCTWORK, AND ELECTRICAL DISTRIBUTION SYSTEMS SHALL BE BRACED TO RESIST THE FORCES PRESCRIBED IN ASCE 7-05 SECTION 13.3 AS DEFINED IN ASCE 7-05 SECTION 13.6.8, 13.6.7, AND 13.6.5.5, ITEM 6, RESPECTIVELY.

## GENERAL SITE PLAN NOTES

- UTILITY COMPANY CONTACTS: BEFORE CONSTRUCTION, COORDINATE & VERIFY ALL UTILITY COMPANY REQUIREMENTS:  
JOSE SALDANA JFSE@PGE.COM (831)784-3576
- TRENCHING AND BACKFILLING FOR ALL CONDUIT SYSTEMS SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR. ALL CONDUITS SHALL HAVE MINIMUM COVER REQUIREMENTS AS SPECIFIED IN CEC 300-5. MORE STRINGENT DEPTH REQUIREMENTS MAY BE IMPOSED BY UTILITY COMPANY AND / OR THIS SPECIFICATION. JOINT TRENCHING MAY BE UTILIZED WHERE PRACTICABLE AND WERE PERMITTED BY THIS SPECIFICATION.
- LOCATIONS OF EXISTING UNDERGROUND (UG) UTILITY SYSTEMS SHALL BE DETERMINED BY CALLING UNDERGROUND SERVICE ALERT (USA). WHEN PLANNING UNDERGROUND WORK, AND BEFORE YOU DIG, CONTACT UNDERGROUND SERVICE ALERT (USA) AT LEAST 48 HOURS PRIOR TO EXCAVATION (WEEKENDS EXCLUDED) FOR THE LOCATION OF UNDERGROUND GAS AND ELECTRIC LINES OR EQUIPMENT.
- MAINTAIN REQUIRED CLEARANCES FROM ALL SANITARY SEWER, WATER AND STORM DRAIN PIPING. REFER TO CIVIL PLANS FOR EXACT LOCATIONS AND DEPTHS OF PIPING.
- ALL SITE UTILITY WORK SHALL BE INSTALLED PER THE UTILITY COMPANY ISSUED CONSTRUCTION DRAWINGS AND SPECIFICATIONS SPECIFIC TO THIS PROJECT. ANY UTILITY WORK PERFORMED WITHOUT PRIOR UTILITY COMPANY APPROVAL SHALL BE DONE AT THE CONTRACTOR'S RISK.

## LEGEND

NOTE: INTERPRET IN CONTEXT

### LIGHT FIXTURES

- CEILING SURFACE MOUNT
- WALL SURFACE MOUNT
- PENDANT MOUNT
- ⊕ RECESSED DOWNLIGHT
- ⊕ RECESSED WALLWASH
- ⊕ RECESSED FLOOR
- ⊕ SURFACE FLOOR
- FLUOR. STRIP LON
- TRACK LIGHT
- DIRECTIONAL FLOOD
- EMERGENCY FIXTURE
- POLE LIGHT
- POLE LIGHT— DECORATIVE
- UPLIGHT— FLUSH IN GRADE
- BOLLARD
- TANDEM—WIRED LAMPS
- UNDERCABINET LIGHT
- WALL SURFACE MOUNT LINEAR TYPE
- PENDANT LINEAR FLOOR
- RECESSED WALL MOUNT
- WALLPACK
- EXIT LIGHT— WALL (ARROW INDICATES DIRECTION)
- EXIT LIGHT— CEILING (ARROW INDICATES DIRECTION)
- LETTER ADJACENT INDICATES FIXTURE TYPE

### SWITCHES

- SPST
- DPST
- 3-WAY
- 4-WAY
- DIMMER
- TIMER SWITCH
- W/THERMAL OVERLOAD
- W/PILOT LIGHT
- KEY OPERATED
- DUAL LEVEL SWITCHING
- SWITCHLEG DESIGNATION
- OCCUPANCY SENSOR

### POWER/COMM.

- ⊕ SINGLE RECEPT.
- ⊕ DUPLEX RECEPT.
- ⊕ DUPLEX— HALF SWITCHED
- ⊕ DOUBLE DUPLEX
- ⊕ SPECIAL CONFIGURATION
- ⊕ FLOORMOUNT 208V, 1ϕ RECEPT
- ⊕ DUPLEX— FLOOR OUTLET
- ⊕ GROUND FAULT CIRCUIT INTERRUPT
- ⊕ MOUNTED ABOVE COUNTER
- ⊕ JUNCTION BOX
- ⊕ TELEPHONE OUTLET
- ⊕ DATA OUTLET
- ⊕ PHONE/DATA COMBO OUTLET
- ⊕ MOUNTED ABOVE COUNTER
- ⊕ TELEVISION OUTLET
- ⊕ SAFETY DISCONNECT
- ⊕ DROP CORD RECEPT
- ⊕ ABOVE-CLGMOUNT J-BOX
- ⊕ TV OUTLET—FLOORMOUNT
- ⊕ TELEPHONE FLOOR OUTLET
- ⊕ DATA FLOOR OUTLET
- ⊕ PHONE/DATA COMBO FLOOR OUTLET

### MISCELLANEOUS

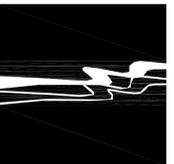
- MOTOR
- THERMOSTAT
- CIRCUIT BREAKER
- FUSIBLE SWITCH
- GROUND
- PHASE
- CLOCK
- CLOCK/SPEAKER COMBINATION
- WALL MOUNTED CLOCK
- PUSHBUTTON
- FLUSHMOUNT PANEL
- SURFACE MOUNT PANEL
- FLUSHMOUNT CABINET
- SURFACE MOUNT CABINET
- DAMPER MOTOR
- HUMIDISTAT
- MAGNETIC CONTACTOR
- COMBINATION STARTER

### CONDUIT/WIRE

- NEW
- UNDERGROUND
- NEW POWER HOMERUN (3 HOTS & NEUT SHOWN)
- ISOLATED GROUND
- EXISTING TO REMAIN
- (E) POWER HOMERUN
- WIRE LINE— CONTINUOUS
- CONDUIT STUB (W/MARKER)
- VERTICAL CONDUIT RUN
- CONDUIT SEAL
- FLEXIBLE CONNECTION
- LOW VOLTAGE
- SURFACE MOUNT RACEWAY
- INDICATES LINE CONTINUOUS
- CORD W/PLUG

## CONVENTIONS

- ⊠ NUMBERED SHEET NOTES: REFERS TO NOTES ON SAME SHEET AS REFERENCE
- ① DETAIL REFERENCE:  
—DETAIL DESIGNATION  
—SHEET NUMBER REFERENCE
- ③103 FEEDER SCHEDULE DESIGNATION  
(EXAMPLE: 3103 = 310 AMPERE, 600V,  
(C) CURRENT CARRYING CONDUCTORS,  
PREFIXES: 'M' INDICATES MEDIUM VOLTAGE,  
'CO14' INDICATES CONDUIT ONLY,  
QUANTITY (1) AND SIZE (4"))



**WALLACE GROUP**  
CIVIL AND TRANSPORTATION ENGINEERING  
CONSTRUCTION MANAGEMENT  
LANDSCAPE ARCHITECTURE  
MECHANICAL ENGINEERING  
PLANNING  
PUBLIC WORKS ADMINISTRATION  
SURVEYING / GIS SOLUTIONS  
WATER RESOURCES

612 CLARION COURT  
SAN LUIS OBISPO, CA 93401  
T 805 544-4011 F 805 544-4294  
www.wallacegroup.us

### SIGNATURE

### DATE SIGNED

These plans and specifications, and the ideas and design incorporated herein, are instruments of service prepared for the construction of work shown hereon and shall not be used in whole or in part for any other project without written authority of Wallace Group, a California Corporation.

Copyright © 2009 Wallace Group, a California Corporation. All rights reserved. Copies of this drawing shall have this notice.



P.O. Box 1167 — 3562 Empire St.  
San Luis Obispo, CA 93406  
Phone: (805) 543-3850  
Fax: (805) 543-3829  
eoa@thomaelec.com



EXPIRES: 06/30/17  
THOMA #14-8034

REV.	DATE	DESCRIPTION
1	03/15/2016	ADDENDUM 3

GREENFIELD WASTEWATER TREATMENT PLANT  
SURFACE AERATOR ADDITION  
GENERAL NOTES LEGEND AND ABBREVIATIONS

JOB #: 1163-0003  
DESIGNERS: GO/CP  
DRAWN BY: LB  
DATE: 03/15/2016

### DRAWING NO.

E-1

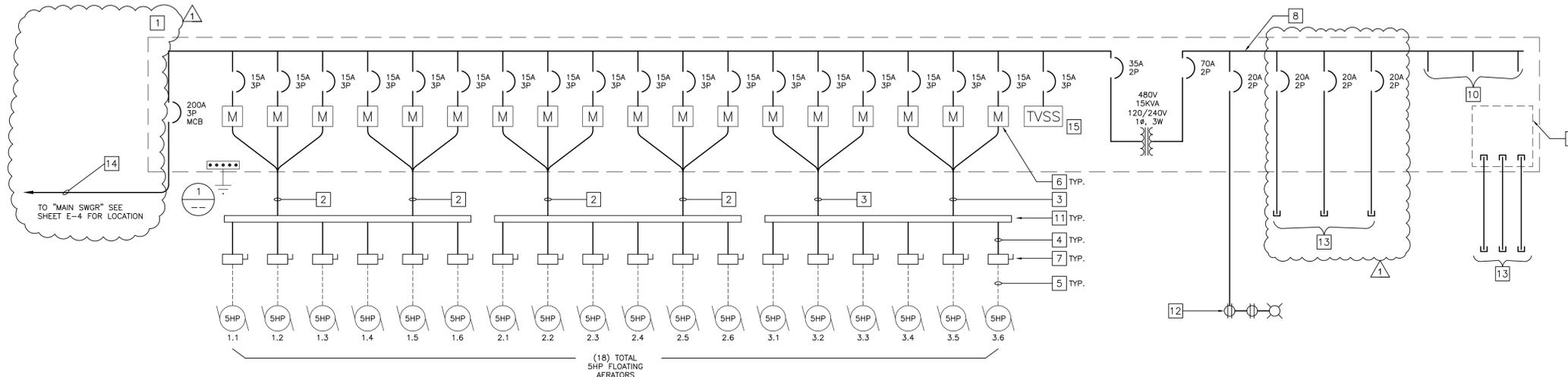
8 OF 11 SHEETS

## ABBREVIATIONS

A AMPERE	FACP FIRE ALARM CONTROL PANEL	OCF OVERCURRENT PROTECTION
AB AMP BREAKER	FAT FIRE ALARM TERMINAL	OD OUTSIDE DIAMETER
ABAND ABANDONED	FAU FORCED AIR UNIT	OH OVERHEAD
ABV ABOVE	FBO FURNISHED BY OTHERS	OSA OFFICE OF THE STATE ARCHITECT
AC ALTERNATING CURRENT	FC—# FAN COIL	OSHPD OFFICE OF STATEWIDE HEALTH PLANNING & DEVELOPMENT
AC—# AIR CONDITIONER	FLA FULL LOAD AMPS	OVLD OVERLOAD
ADJ—# ADJACENT	FLR FLOOR	P POLE
AF AMP FUSE, AMP FRAME	FLUOR FLUORESCENT	PA PUBLIC ADDRESS
AFF ABOVE FINISH FLOOR	FS FUSIBLE SWITCH	PB PULLBOX
AFG ABOVE FINISH GRADE	FVNR FULL VOLTAGE NON-REVERSING	PC PULL CHAIN
AIC AMPERES INTERRUPTING CAPACITY	G GROUNDING CONDUCTOR	PC PHOTOCELL
AI ALUMINUM	GC GENERAL CONTRACTOR	PC PLUMBING CONTRACTOR
AS AMP SWITCH RATING	GD GARBAGE DISPOSAL	ph PHASE
ATS AUTOMATIC TIME SWITCH	GFCI GROUND FAULT CIRCUIT INTERRUPTER	PANEL
ATS AUTOMATIC TRANSFER SWITCH	GFI GROUND FAULT CIRCUIT INTERRUPTER	PCC POINT OF CONNECTION
AV AUDIBLE/AUDIO VISUAL	GND GROUND	—PP— POWER PRIMARY
AWG AMERICAN WIRE GAGE	GRS GALVANIZED RIGID STEEL	—PS— POWER SECONDARY
BFG BELOW FINISH GRADE	GWS GANG WITH SWITCH	PV PHOTOVOLTAIC
BIL BASIC IMPULSE LEVEL	H HEIGHT, HIGH	(R) RELOCATE(D)
BLDG BUILDING	HACR HEATING, AC & REFRIG	RECEPT RECEPTACLE
C CONDUIT	HO HIGH OUTPUT	REF REFRIGERATOR
C—# CATV CONDUIT	HOA HAND-OFF-AUTO	REQ'D REQUIRED
CABT CABINET	HP HORSEPOWER	RLA RATED LOAD AMPS
CATV CABLE TELEVISION	HPF HIGH POWER FACTOR	RM ROOM
CB CIRCUIT BREAKER, CODE BLUE	HPS HIGH PRESSURE SODIUM	RMC RIGID METAL CONDUIT
CBC CA. BUILDING CODE	ID IDENTIFICATION	REMOVE REMOVE
CA. ELECTRICAL CODE	IF INSIDE FROST	RPLC REPLACE
CA. ENERGY COMMISSION	IG ISOLATED GROUND	RS RAPID START
CF COMPACT FLUORESCENT	J-BOX JUNCTION BOX	SC SIGNAL CABINET
CFC CALIFORNIA FIRE CODE	k QUANTITY 1000	SCC SHORT CKT CURRENT
CLG CEILING	kVA KILOVOLTAMPS	SFM STATE FIRE MARSHAL
CL CENTER LINE	kw KILOWATT	SHT SHEET
CKT CIRCUIT	LC LIGHTING CONTACTOR	SPEC SPECIFICATION
CNTR CONTRACTOR	LF LOW PRESSURE SODIUM	SPST SINGLE POLE SINGLE THROW
C.O. CONDUIT ONLY (W/PULLROPE)	LRA LOCKED ROTOR AMPS	SQ SQUARE
COND CONDUIT, CONDUCTOR	LS LIFE SAFETY BRANCH	STR'G STORAGE
CR CRITICAL BRANCH	LT LIGHT	SURF SURFACE
CSFM CALIFORNIA SFM	LTG LIGHTING	SVC SERVICE
CT CURRENT TRANSFORMER	LV LOW VOLTAGE	SW SWITCH
Cu COPPER	M MECHANICAL CONTRACTOR	T TRANSFORMER, TERMINAL
CU—# CONDENSING UNIT	MCA MINIMUM CKT AMPS	—T— TELEPHONE CONDUIT
D DEPTH	MCB MAIN CIRCUIT BREAKER	(TBR) TO BE REMOVED
DC DIRECT CURRENT	MCTB MAIN CATV TERMINAL BOARD	TIA TIME CLOCK
DF DRINKING FOUNTAIN	MCTC MAIN CATV TERMINAL CABINET	TEL TELEPHONE
DIA DIAMETER	MECH MECHANICAL	TELCO TELEPHONE COMPANY
DISC DISCONNECT	MFR MANUFACTURER	TIME SWITCH
DIST DISTRIBUTION	MFS MAIN FUSIBLE SWITCH	TSP TIME SWITCH OVERRIDE
DPST DOUBLE POLE SINGLE THROW	MH METAL HALIDE	TTB TWISTED SHIELDED PAIR
DW DISHWASHER	MLO MAIN LUGS ONLY	UB TELEPHONE TERMINAL BOARD
EM EMERGENCY	MOCP MAXIMUM OCP	TTC TELEPHONE TERMINAL CABINET
(E) EXISTING	MSB MAIN SWITCHBOARD	TX TRANSFORMER
EA EACH	MT MOUNT	TYP TYPICAL
EB ELECTRONIC BALLAST	MT HT MOUNTING HEIGHT	TYP SIM TYPICAL SIMILAR
EC ELECTRICAL CONTRACTOR	MTS MANUAL TRANSFER SWITCH	UC UNDERCABINET, UNDERCOUNTER
EC—# EVAPORATIVE COOLER	MTTB MAIN TELEPHONE TERMINAL BOARD	UG UNDERGROUND
EF—# EXHAUST FAN	MTTC MAIN TELEPHONE TERMINAL CABINET	UGPS UNDERGROUND PULL SECTION
EL EVENING LIGHT	MW MICROWAVE	UL UNDERWRITERS LABORATORIES
ELEC ELECTRICAL	N NEUTRAL (GROUNDED CONDUCTOR)	UNW UNLESS OTHERWISE NOTED
ELEC ELECTRICAL	(N) NEW	USA UG SVC ALERT 800-642-2444
EM EMERG BATTERY BACKUP	N3R NEMA 3R	V VOLT
EMB EMERGENCY BALLAST	NC NORMALLY CLOSED	VAC VOLT AMPERES
EMERG EMERGENCY	NEC NATIONAL ELECTRICAL CODE	VLT VOLT ALTERNATING CURRENT
EOL END OF LINE	NEMA NAT'L ELEC. MANUFACTURER'S ASSOC	VHO VERY HIGH OUTPUT
EQUIP EQUIPMENT	NIC NOT IN CONTRACT	VOLT VOLTAGE
ES ENERGY SAVING	NL NIGHT LIGHT	VNDAL—RESISTANT VANDAL-RESISTANT
(EXN) (E) IN (N) LOCATION	NO NORMALLY OPEN	W WIDTH, WATT, WIRE
(EXR) (E) TO BE (R)	NPF NORMAL POWER FACTOR	WH—# WATER HEATER
EXT EXTERIOR	NTS NOT TO SCALE	WP WEATHERPROOF (NEMA 3R)
F FLUORESCENT	OC ON CENTER	XFMR TRANSFORMER
(F) FUTURE		+48 INDICATES MOUNTING HEIGHT AFF
F—# FURNACE		
FA FIRE ALARM		

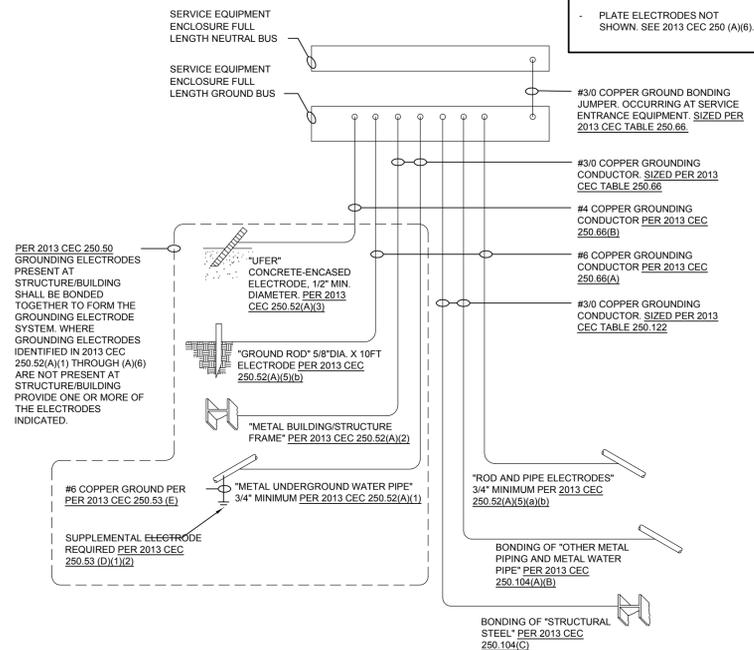
REFERENCE NOTES

- MOTOR CONTROL CENTER (AERATOR SWGR) 200A, 277/480V, 3Ø, 4W, NEMA 3R, 65KAIC. MOUNT ON CONCRETE PAD. SEE DETAIL 3/E-3.0 FOR ADDITIONAL INFORMATION.
- 1" C WITH (9)#10 THWN & (1)#10 GND. THREE AERATOR FEEDS.
- 1" C WITH (9)#12 THWN & (1)#12 GND. THREE AERATOR FEEDS.
- 3/4" C WITH (3)#12 THWN & (1)#12 GND TO AERATOR DISCONNECT.
- AERATOR CONDUCTORS PROVIDED BY OTHERS. TERMINATION BY EC.
- COMBINATION MOTOR STARTER, FVNR, WITH H-O-A SELECTOR SWITCH, INDICATOR LIGHTS, START/STOP PUSH BUTTONS, INTEGRAL CPT, AND CONTROL WIRING FOR FUTURE REMOTE AND AUTOMATIC CONTROLS. TYPICAL FOR (18)
- 30A NON-FUSED DISCONNECT, NEMA 4X, SS. TYPICAL FOR (18).
- INTEGRAL LOAD CENTER WITH (18) CIRCUITS.
- SPACE IN CABINET FOR FUTURE CONTROLS ENCLOSURE (TIMECLOCK, DO MONITOR, ETC.), MINIMUM OF 60" X 36" X 10"D SPACE REQUIRED.
- BUSSED SPACE PROVISIONS FOR FUTURE LOADS
- 6" x 6" x 8" GUTTER MOUNTED TO DISCONNECT BACKBOARD. SEE DETAIL 1/E-3.0.
- RECEPTACLES AND LIGHTS IN CABINET. SEE DETAIL 2/E-3.0.
- 1 1/2" CONDUIT ONLY TO DO-CONTR-1, 2 AND 3 LOCATIONS.
- (4) 250 MCM Cu, (1) #2 GND - 3" CONDUIT
- TRANSIENT VOLTAGE SURGE SUPPRESSOR.



SINGLE LINE DIAGRAM

- NOTES:
- GROUND RINGS NOT SHOWN. SEE 2013 CEC 250(A)(5)(4).
  - PLATE ELECTRODES NOT SHOWN. SEE 2013 CEC 250 (A)(6).



1 GROUND/BOND DETAIL

SINGLE LINE DIAGRAM NOTES

- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONTACT AND COORDINATE WITH THE SERVING UTILITY TO ENSURE ALL SERVING UTILITY REQUIREMENTS ARE MET.
- SERVICE ENTRANCE EQUIPMENT SHALL BE IN ACCORDANCE WITH THE SERVING ELECTRIC UTILITY COMPANY'S REQUIREMENTS.
- FOR SERIES RATED EQUIPMENT; IN ADDITION TO ALL FACTORY APPLIED, CODE REQUIRED MARKING AND SPECIFIED LABELING OF THE ELECTRICAL PANELBOARD AND THEIR COMPONENTS, ADDITIONAL MARKING AND LABELING IDENTIFYING THE SERIES RATED SYSTEM SHALL BE PROVIDED AS FOLLOWS:
  - THE SERIES COMBINATION INTERRUPTING RATING, AS INDICATED ABOVE, SHALL BE MARKED ON THE EQUIPMENT BY THE MANUFACTURER AS REQUIRED BY NEC 240-83(C).
  - WHEN USED, THE CONTRACTOR SHALL USE A "SERIES RATED SYSTEM" LABEL INDICATING SERIES RATING WARNINGS, COMPLYING WITH NEC 110-22 AND SHALL BE FURNISHED BY MANUFACTURER. THE LABEL SHALL BE PERMANENTLY AFFIXED TO THE INTERIOR OF PANELBOARD'S TRIM WHERE IT CAN BE READILY SEEN BY SERVICE PERSONNEL. THE COMPLETED LABEL SHALL READ:
 

CAUTION!  
SERIES COMBINATION SYSTEM RATED SYSTEM [XX,XXX]A.  
IDENTIFIED REPLACEMENT COMPONENT REQUIRED.  
ANY ADDITIONS OR REPLACEMENTS SHALL BE WITH IDENTICAL COMPONENTS.  
FAILURE TO DO SO COULD RESULT IN ELECTRICAL EXPLOSION AND FIRE.
- ALL CONDUCTORS SHALL BE COPPER WITH TYPE [THHN/THWN] INSULATION UNLESS OTHERWISE NOTED.
- ALL SWITCHES, CIRCUIT BREAKERS AND OTHER EQUIPMENT, AS SPECIFIED, SHALL HAVE TERMINATION PROVISIONS LISTED AND IDENTIFIED FOR USE WITH 75 DEG. CONDUCTORS, AND ALL FEEDER CONDUCTORS, AND CONDUITS, ARE SIZE BASED ON USE OF 75 DEG. C COPPER WIRES TYPE THWN/THHN.
- DESIGN SHOWN IS BASED ON EATON PRODUCT. ENGINEER-APPROVED EQUAL ALTERNATE PRODUCT WILL BE ACCEPTABLE.
- ALL EQUIPMENT SHALL HAVE AN APPROVED TESTING LABORATORY LABEL ATTACHED [UL, CSA, ETC.] (CEC 110-2).



2 ARC FLASH SIGN



WALLACE GROUP®  
CIVIL AND TRANSPORTATION ENGINEERING  
CONSTRUCTION MANAGEMENT  
LANDSCAPE ARCHITECTURE  
MECHANICAL ENGINEERING  
PLANNING  
PUBLIC WORKS ADMINISTRATION  
SURVEYING / GIS SOLUTIONS  
WATER RESOURCES

612 CLARION COURT  
SAN LUIS OBISPO, CA 93401  
T 805 544-4011 F 805 544-4294  
www.wallacegroup.us

SIGNATURE  
DATE SIGNED

These plans and specifications, and the ideas and design incorporated herein, are instruments of service prepared for the construction of work shown hereon and shall not be used in whole or in part for any other project without written authority of Wallace Group, a California Corporation.  
Copyright © 2009 Wallace Group, a California Corporation. All rights reserved. Copies of this drawing shall have this notice.



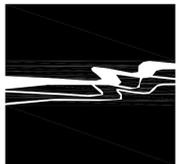
THOMA ENGINEERING, INC.  
P.O. Box 1167 - 3562 Empire St.  
San Luis Obispo, CA 93406  
Phone: (805) 543-3850  
Fax: (805) 543-3829  
cso@thomaelec.com



REV.	DATE	DESCRIPTION
1	03/15/2016	ADDENDUM 3

GREENFIELD WASTEWATER TREATMENT PLANT  
SURFACE AERATOR ADDITION  
SINGLE LINE DIAGRAM

JOB #: 1163-0003  
DESIGNERS: GO/CP  
DRAWN BY: LB  
DATE: 03/15/2016  
DRAWING NO.



**WALLACE GROUP®**

CIVIL AND TRANSPORTATION ENGINEERING  
CONSTRUCTION MANAGEMENT  
LANDSCAPE ARCHITECTURE  
MECHANICAL ENGINEERING  
PLANNING  
PUBLIC WORKS ADMINISTRATION  
SURVEYING / GIS SOLUTIONS  
WATER RESOURCES

612 CLARION COURT  
SAN LUIS OBISPO, CA 93401  
T 805 544-4011 F 805 544-4294  
www.wallacegroup.us

SIGNATURE

DATE SIGNED

These plans and specifications, and the ideas and design incorporated herein, are instruments of service prepared for the construction of work shown hereon and shall not be used in whole or in part for any other project without written authority of Wallace Group, a California Corporation.

Copyright © 2009 Wallace Group, a California Corporation. All rights reserved. Copies of this drawing shall have this notice.



**Thoma ENGINEERING**  
THOMA ELECTRIC, INC.

P.O. Box 1167 - 3562 Empire St.  
San Luis Obispo, CA 93406  
Phone: (805) 543-3850  
Fax: (805) 543-3829  
coul@thomaelec.com



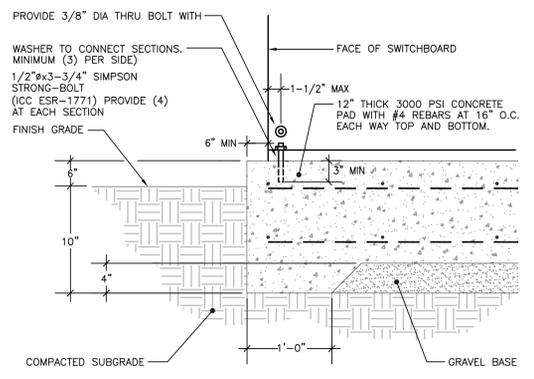
EXPIRES: 06/30/17  
THOMA #14-8034

REV.	DATE	DESCRIPTION
1	03/15/2016	ADDENDUM 3

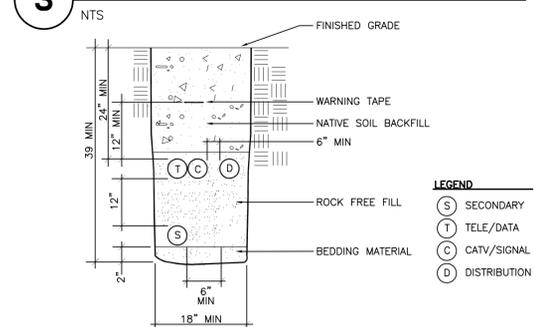
GREENFIELD WASTEWATER TREATMENT PLANT  
SURFACE AERATOR ADDITION  
ELECTRICAL DETAILS

JOB #: 1163-0003  
DESIGNERS: GO/CP  
DRAWN BY: LB  
DATE: 03/15/2016  
DRAWING NO.

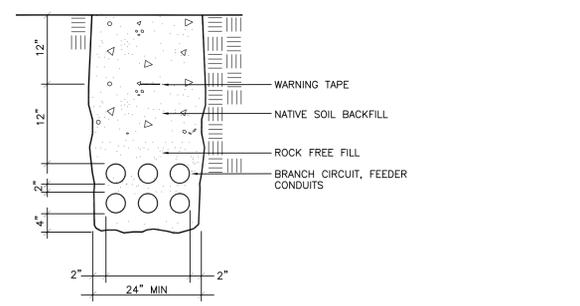
E-3  
10 OF 11 SHEETS



**3 SWITCHBOARD MOUNTING SECTION**

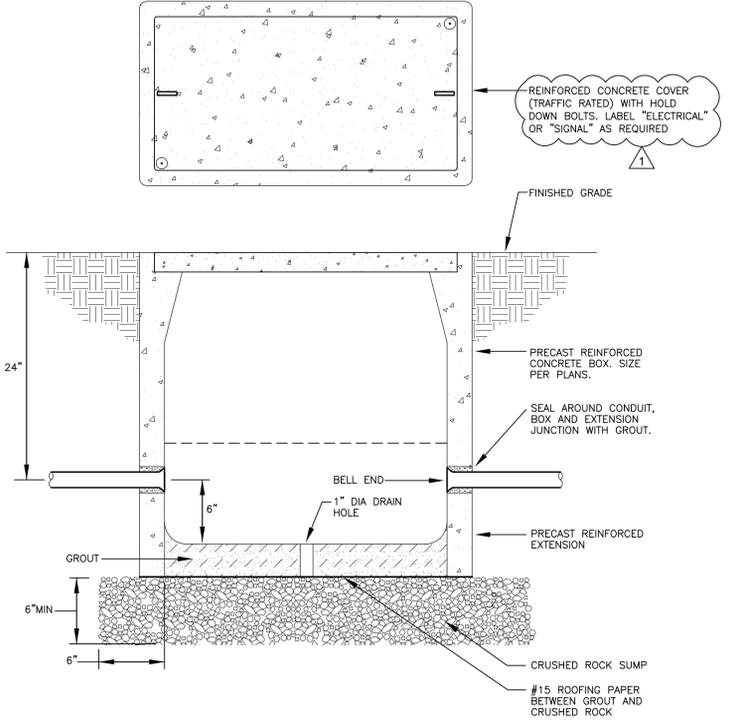


**4 SECONDARY TRENCH DETAIL**

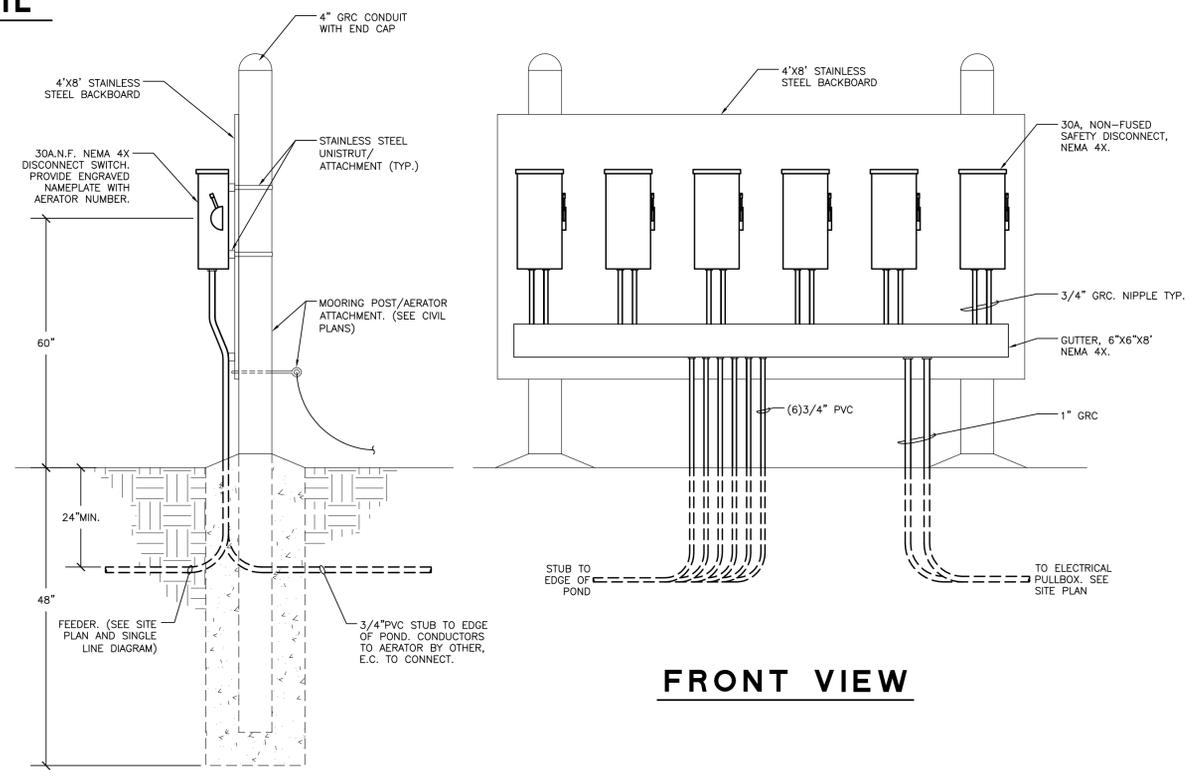


**5 TYP FEEDER/BRANCH CKT CONDUIT TRENCH DETAIL**

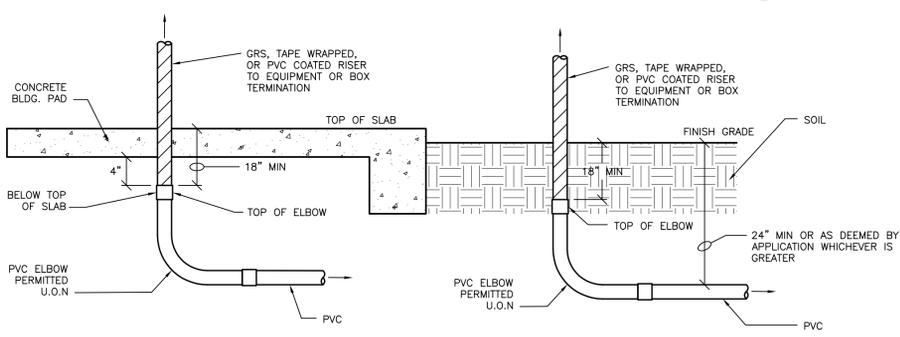
- NOTES:**  
UNDERGROUND CONDUITS AND TRANSITION TO ABOVE GRADE/SLAB SHALL BE AS FOLLOWS:
- PVC ELBOWS ALLOWED IF TOP OF ELBOW IS MINIMUM 18" BFG OR BELOW TOP OF SLAB, OTHERWISE GRS, TAPE WRAPPED, OR PVC COATED ELBOWS ARE REQUIRED.
  - GRS ELBOWS ARE REQUIRED IF CONDUIT RUN IS 150' GREATER.
  - GRS RISERS ARE REQUIRED FROM ELBOW BELOW GRADE TO EQUIPMENT (DEVICE, OUTLET, PANEL, CABINET, ETC.) ABOVE GRADE.
  - GRS ELBOWS/RISERS TO BE PVC COATED OR TAPED WRAPPED (1/2" LAPPED) TO 3" ABOVE FINISH GRADE OR TOP OF SLAB.



**6 PULLBOX DETAIL**



**2 AERATOR DISCONNECT SWITCH ELEVATION**

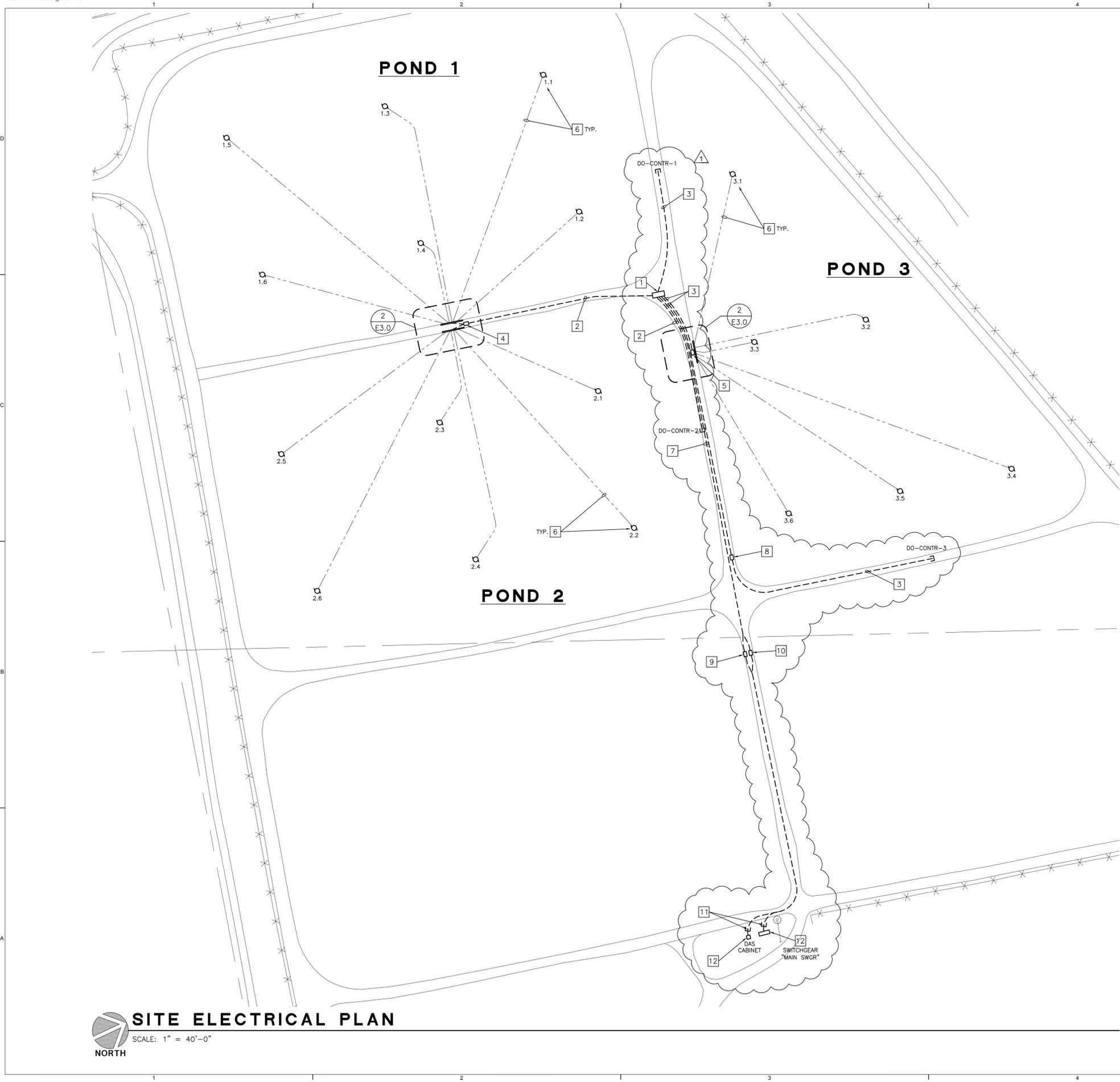


**7 UNDERGROUND CONDUITS & TRANSITIONS TO ABOVE GRADE/SLAB**

REFERENCE NOTES

1. NEW MOTOR CONTROL CENTER "AERATOR SWGR" SEE SINGLE LINE DIAGRAM SHEET E-2.0. COORDINATE LOCATION WITH CIVIL PLANS TO MAINTAIN ADEQUATE CLEARANCE FOR SERVICE VEHICLES ON ROAD.
2. FEEDERS TO AERATOR DISCONNECTS. SEE SINGLE LINE DIAGRAM SHEET E-2.0.
3. (2) 1 1/2" CONDUIT ONLY TO DO-CONTR 1, 2 AND 3 LOCATION. STUB CONDUITS UP A MINIMUM OF 6" ABOVE GRADE AT DO-CONTR-1, 2 AND 3 LOCATIONS. COORDINATE STUB LOCATIONS WITH OWNER PRIOR TO INSTALLATION.
4. 17"X30" FLUSH IN GRADE PULLBOX WITH TRAFFIC RATED LID, LABEL "ELECTRICAL".
5. 11"X17" FLUSH IN GRADE PULLBOXES WITH TRAFFIC RATED LIDS, LABEL "ELECTRICAL".
6. AERATORS CONDUCTORS BY OTHERS. EC TO CONNECT.
7. (4) 250 MCM, (1) #2 GROUND IN (1) 3" CONDUIT AND (1) 1 1/2" CONDUIT ONLY TO "MAIN SWGR" (SWGR BY OTHERS).
8. 11" X 17" CAST CONCRETE UNDERGROUND PULL BOX WITH EXTENSION FOR DAS COMMUNICATIONS CIRCUIT. SEE 6/E-3.
9. 11" X 17" CAST CONCRETE UNDERGROUND PULL BOX WITH EXTENSION FOR POWER CIRCUIT, SEE 6/E-3.
10. 13" X 24" CAST CONCRETE UNDERGROUND PULL BOX WITH EXTENSION FOR POWER CIRCUIT, SEE 6/E-3.
11. CONNECT TO STUB OUTS (BY OTHERS), PROVIDE AND INSTALL FEEDER FROM "MAIN SWGR" (BY OTHERS) TO "AERATOR SWGR" (THIS PROJECT), SEE SINGLE LINE DIAGRAM FOR FEEDER.
12. DAS CABINET AND SWITCHGEAR "MAIN SWGR" AND STUB OUT PROVIDED AND INSTALLED BY OTHERS.

NOTE:  
COORDINATE CONDUIT ROUTING WITH CIVIL TO AVOID CONFLICT WITH PROCESS PIPING AND JUNCTION BOXES.



**SITE ELECTRICAL PLAN**  
SCALE: 1" = 40'-0"  
NORTH



**WALLACE GROUP®**  
CIVIL AND TRANSPORTATION ENGINEERING  
CONSTRUCTION MANAGEMENT  
LANDSCAPE ARCHITECTURE  
MECHANICAL ENGINEERING  
PLANNING  
PUBLIC WORKS ADMINISTRATION  
SURVEYING / GIS SOLUTIONS  
WATER RESOURCES

612 CLARION COURT  
SAN LUIS OBISPO, CA 93401  
T 805 544-4011 F 805 544-4294  
www.wallacegroup.us

SIGNATURE

DATE SIGNED

These plans and specifications, and the ideas and design incorporated herein, are instruments of service prepared for the construction of work shown hereon and shall not be used in whole or in part for any other project without written authority of Wallace Group, a California Corporation.  
Copyright © 2009 Wallace Group, a California Corporation. All rights reserved. Copies of this drawing shall have this notice.



P.O. Box 1167 - 3562 Empire St.  
San Luis Obispo, CA 93406  
Phone: (805) 543-3850  
Fax: (805) 543-3829  
cost@thomaelec.com



EXPIRES: 06/30/17  
THOMA #14-8034

REV.	DATE	DESCRIPTION
1	03/15/2016	ADDENDUM 3

**GREENFIELD WASTEWATER TREATMENT PLANT  
SURFACE AERATOR ADDITION  
SITE ELECTRICAL PLAN**

JOB #: 1163-0003  
DESIGNERS: GO/CP  
DRAWN BY: LB  
DATE: 03/15/2016  
DRAWING NO.  
**E-4**  
11 OF 11 SHEETS