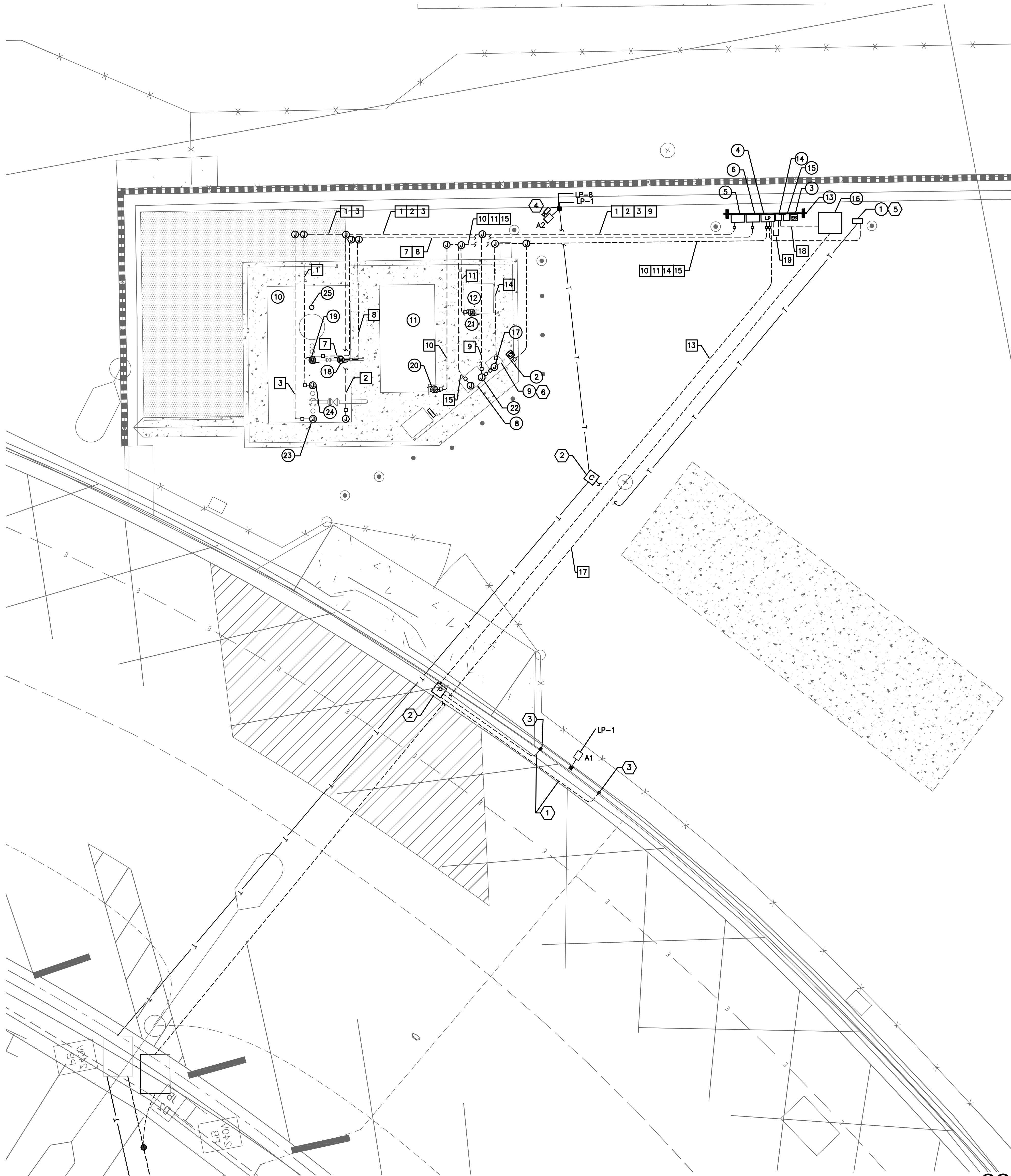


three inches = one foot  
one and one half inches = one foot  
one inch = one foot  
three quarters inch = one foot  
one half inch = one foot  
three eighths inch = one foot  
one quarter inch = one foot  
one eighth inch = one foot

EQUIPMENT LIST	
1	EMERGENCY CALL STATION
2	EFSO-1
3	EFSO-2
4	SERVICE PANEL 'LP'
5	ATG & ALARM PANEL
6	PUMP CONTROL BOX
7	WP/GFI RECEPTACLE
8	E85 DISPENSER
9	FUELS MANAGEMENT KIOSK
10	E85 FUEL TANK (5000 GALLONS)
11	RELOCATED FUEL TANK (1000 GALLONS)
12	RELOCATED FUEL TANK (250 GALLONS)
13	H-FRAME
14	DISCONNECT SWITCH (SERVICE ENTRANCE RATED)
15	EFSO CONTACTOR
16	45KVA 480/208V, 3Ø TRANSFORMER
17	PERMISSIVE CONNECTION
18	ANTI SIPHON SOLENOID VALVE
19	DP-1
20	DP-2
21	DP-3
22	DISPENSER SENSOR
23	INTERSTITIAL LEAK MONITOR
24	LEVEL SENSORS (HH, H, AND L)
25	ATG

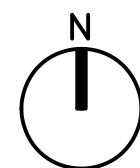


GENERAL NOTES:

- SEE SHEET ES001 FOR ELECTRICAL LEGEND, ABBREVIATIONS AND GENERAL NOTES.
- SEE SHEET EI601 FOR PANELBOARD SCHEDULE AND CABLE/CONDUIT SCHEDULE.
- SEE SHEET ES501 FOR EQUIPMENT LOCATION ON H-FRAME. H-FRAME IS LOCATED OUTSIDE OF THE HAZARDOUS BOUNDARY.
- THE FUELS MANAGEMENT SYSTEM WILL BE CONNECTED TO FUELS MANAGEMENT SYSTEM PROVIDER (FUELS FORCE IF USED OR APPROVED EQUAL) VIA WIRELESS CONNECTION FOR WEX CARD PERMISSIVE AND AUTHORIZATION. VA SHALL HAVE ACCESS TO THE PROVIDER WEBPAGE CONFIGURATION.
- CONDUIT SEALS SHALL BE INSTALLED WITHIN 18" OF THE ENCLOSURE.
- XX REFERENCES CABLE AND CONDUIT SCHEDULE PRESENTED ON DRAWING EI601.
- THE ELECTRICAL TRENCH DETAIL FOR ASPHALT PAVEMENT AREAS IS SHOWN AS DETAIL 13 ON DRAWING ES501.

KEY NOTES:

- PROVIDE 2 - 2" RIGID METAL CONDUIT AS SHOWN FOR FUTURE ELECTRIC CAR CHARGING STATION. CONDUITS SHALL BE BURIED AT LEAST 24" BELOW FINISHED GRADE. PROVIDE PULL WIRES IN EACH SPARE CONDUIT.
- UNDERGROUND PULL BOX. SEE DETAIL 12/ES501.
- STUB UP AND CAP CONDUIT FOR FUTURE USE.
- PROVIDE OUTDOOR PTZ VIDEO SURVEILLANCE IP CAMERA. MOUNT CAMERA TO LIGHT POLE. VERIFY THE CAMERA IS COMPATIBLE WITH EXISTING CISCO 7 VSOM SERVER VERSION 6.3.2. SEE CAMERA RISER DETAIL 11/ES501.
- PROVIDE A VOIP EMERGENCY PHONE CALL STATION. 120V POWERED, FREE STANDING. THE CALL STATION SHALL INCLUDE A F/O-CAT5E CONVERTER, 120-24VAC TRANSFORMER. VERIFY THE EMERGENCY PHONE IS COMPATIBLE WITH THE EXISTING IP BASED PHONE SYSTEM PRIOR TO PROCUREMENT. COORDINATE WITH VA PERSONNEL FOR THE DESIGNATED PHONE NUMBER TO BE CONNECTED TO THIS NEW EMERGENCY PHONE, AND PROGRAM VIA THE EMERGENCY PHONE PROVIDER WEBPAGE. SEE RISER DIAGRAM DETAIL 5/ES502.
- THE FUELS MANAGEMENT SYSTEM SHALL INCLUDE A BYPASS MECHANISM. THE BYPASS MECHANISM SHOULD BE USED FOR THE VA OWNED VEHICLES, DURING SYSTEM MAINTENANCE OR IF THE FUELS MANAGEMENT SYSTEM GOES DOWN. COORDINATE WITH THE SYSTEM PROVIDER AND VA COR.



SCALE: 1"=5'

CONSTRUCTION DOCUMENT SUBMISSION

CONSULTANTS:

ARCHITECT/ENGINEERS:



AMEC Environment & Infrastructure, Inc.  
1075 BIG SHANTY ROAD, NW, SUITE 100  
KENNESAW, GEORGIA 30144 (770) 421-3400

Drawing Title  
FUELING STATION - POWER  
AND SYSTEMS

Approved Project Director  
YAPAHCS PLANNING AND ENGINEERING

Project Title  
E85 FUELING STATION PLAN

Location  
LOMA LINDA CA

Project Number  
605-332

Building Number  
-

Drawing Number  
EP101

Dwg. 17 of 22

Office of  
Construction  
and Facilities  
Management



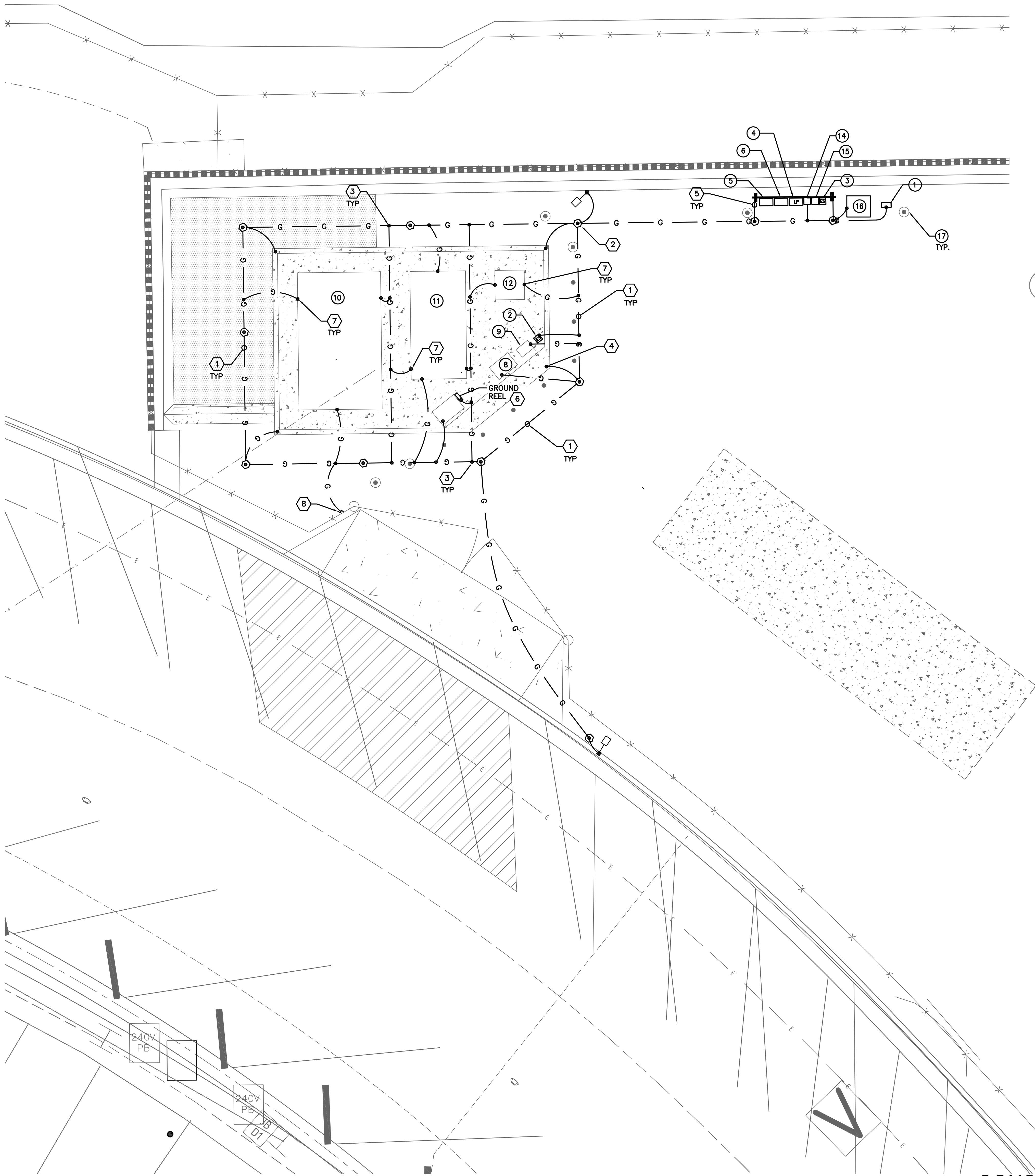


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2/3/2014-13-1003 vanc loma final - e85 fueling (CAD) sheet files (EP102.dwg 6-04-14 05:18:27 PM asdr:rat)

### EQUIPMENT LIST

1	EMERGENCY CALL STATION
2	EFSO-1
3	EFSO-2
4	SERVICE PANEL 'LP'
5	ATG & ALARM PANEL
6	PUMP CONTROL BOX
7	WP/GFI RECEPTACLE
8	E85 DISPENSER
9	FUELS MANAGEMENT KIOSK
10	E85 FUEL TANK (5000 GALLONS)
11	RELOCATED FUEL TANK (1000 GALLONS)
12	RELOCATED FUEL TANK (250 GALLONS)
13	H-FRAME
14	DISCONNECT SWITCH (SERVICE ENTRANCE RATED)
15	EFSO CONTACTOR
16	45KVA 480/208V, 3 $\phi$ TRANSFORMER
17	REMOVABLE STEEL BOLLARD

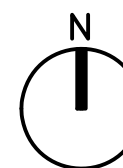


### GENERAL NOTES:

- SEE SHEET ES001 FOR ELECTRICAL LEGEND, ABBREVIATIONS AND GENERAL NOTES.
- GROUNDING RESISTANCE SHALL NOT EXCEED 5 OHMS.
- ALL UNDERGROUND AND STRUCTURAL STEEL GROUNDING CONNECTIONS SHALL BE EXOTHERMIC WELDS.
- BOND ALL ABOVE AND UNDERGROUND FUEL METALLIC PIPING TO THE GROUND GRID.
- BOND ALL PUMP MOTORS ON TANKS TO THE GROUND GRID.
- BOND TANK LADDERS TO GROUNDING SYSTEM.
- EXOTHERMICALLY WELD TANK SADDLE SUPPORTS TO GROUND GRID. COORDINATE WITH STRUCTURAL PRIOR TO WELDING.
- SEE SHEET ES001 FOR GROUNDING DETAILS.
- BOND ALL STEEL BOLLARDS AND UNDERGROUND ELECTRICAL BOXES TO THE GROUNDING SYSTEM.
- SPACING BETWEEN GROUNDING RODS SHALL NOT BE LESS THAN 6' APART.
- BOND NEW GROUNDING SYSTEM TO EXISTING GROUNDING. PROVIDE BONDING CONNECTIONS AT TWO LOCATIONS AS A MINIMUM.
- THE GROUNDING TRENCH DETAIL FOR ASPHALT PAVEMENT AREAS IS SHOWN AS DETAIL 14 ON DRAWING ES001.

### KEY NOTES

- #2/0 AWG BARE COPPER GROUNDING CONDUCTOR. GROUNDING CONDUCTORS SHALL BE BURIED A MINIMUM OF 30" BELOW FINISHED GRADE.
- 3/4"x10' L. COPPER CLAD STEEL GROUND ROD (TYPICAL). TOP OF GROUND RODS SHALL BE BURIED A MINIMUM OF 30" BELOW FINISHED GRADE.
- UNDERGROUND EXOTHERMIC WELDING.
- BOND FOUNDATION STEEL TO GROUND GRID AT TWO LOCATIONS AT A MINIMUM.
- PROVIDE GROUND CONNECTIONS TO THE H-FRAME STEEL, SERVICE ENTRANCE FUSIBLE DISCONNECT, ESTOPS, AND EMERGENCY CALL STATION TO THE NEAREST POINT ON THE GROUND GRID.
- GROUNDING REEL: GROUNDING LUG TO BE FASTENED TO UNPAINTED PORTION OF PLATE.
- MECHANICALLY CONNECT FUEL TANKS TO GROUNDING GRID WITH COMPRESSION FITTINGS AND COPPER HARDWARE.
- BOND GROUNDING SYSTEM TO EXISTING FENCE. PROVIDE BONDING CONNECTIONS AT LEAST AT TWO LOCATIONS AS A MINIMUM.



SCALE: 1"=5'

CONSTRUCTION DOCUMENT SUBMISSION

### CONSULTANTS:

### ARCHITECT/ENGINEERS:



AMEC Environment & Infrastructure, Inc.  
1075 BIG SHANTY ROAD, NW, SUITE 100  
KENNESAW, GEORGIA 30144 (770) 421-3400

Drawing Title  
FUELING STATION - GROUNDING

Approved Project Director  
-  
VAPAHCS PLANNING AND ENGINEERING

Project Title  
E85 FUELING STATION PLAN

Location  
LOMA LINDA CA  
Date  
29 APR 2014  
Checked  
DAL  
Drawn  
CKB

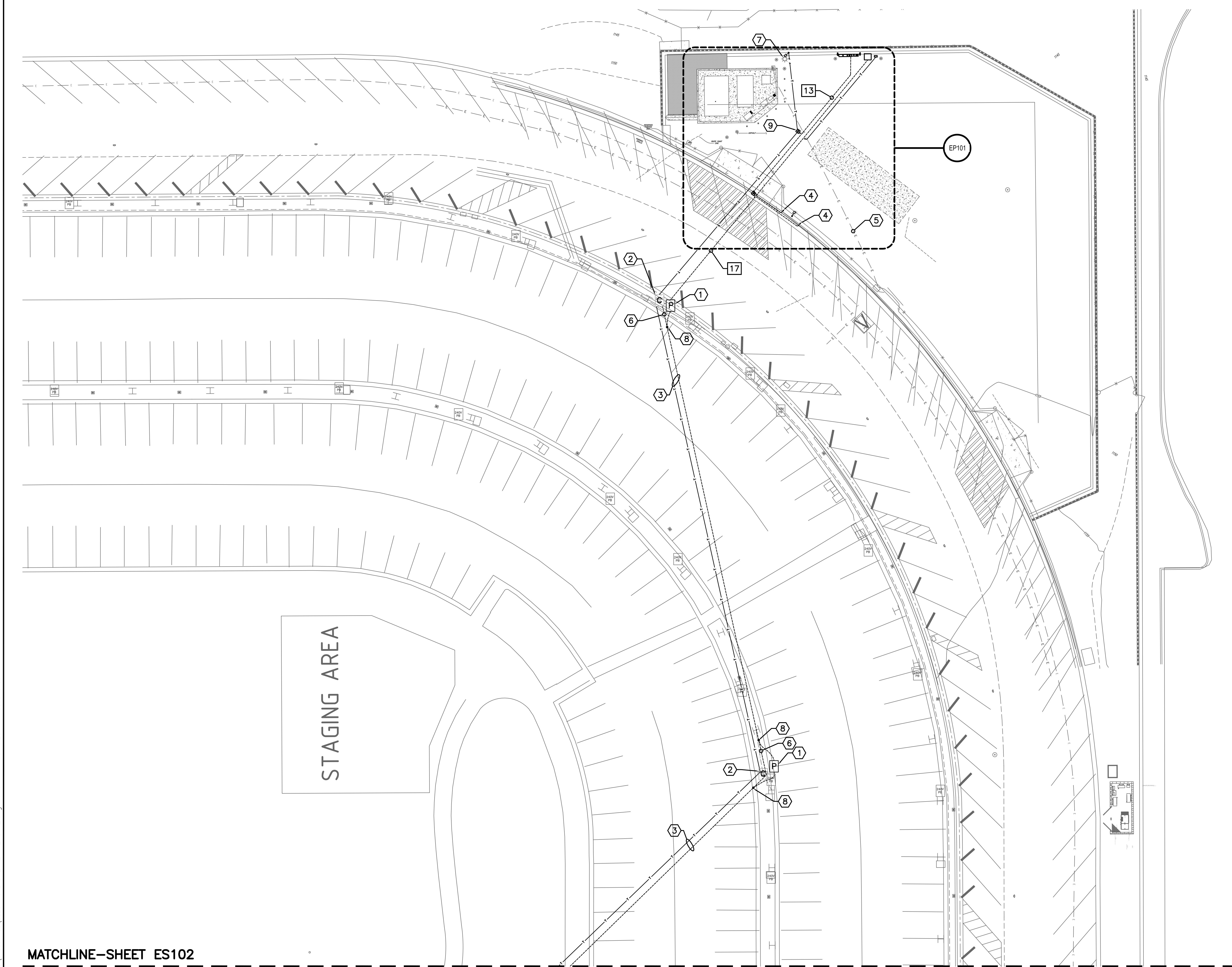
Project Number  
605-332

Building Number  
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Drawing Number  
EP102  
Dwg. 18 of 22

Office of  
Construction  
and Facilities  
Management

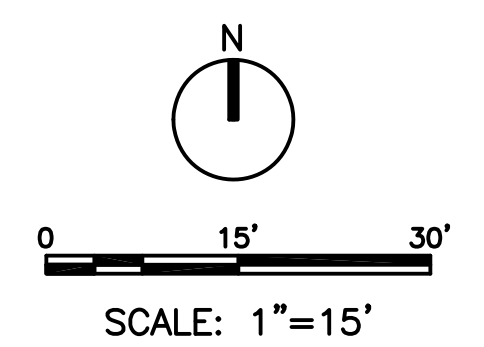






## STAGING AREA

- ## KEY NOTES:
1. PROVIDE UNDERGROUND CONCRETE PULL BOX FOR POWER TO TIE INTO EXISTING 2" CONDUIT. SEE DETAIL 12/ES501
  2. EXISTING UNDERGROUND PULLBOX FOR COMMUNICATIONS.
  3. THE THREE EXISTING CONDUITS EXTENDING SOUTH OF THE EXISTING PULL BOX (KEY NOTE 2 ON DRAWING ES101) WILL BE REUSED. ONE 1-INCH CONDUIT WILL BE USED FOR COMMUNICATIONS, AND THE 2-INCH CONDUIT WILL BE USED FOR POWER. THE SECOND 1-INCH CONDUIT WILL BE A SPARE.
  4. STUB UP AND CAP CONDUIT FOR FUTURE USE.
  5. CUT BELOW GRADE EXISTING ELECTRICAL CONDUITS AT GRADE LEVEL. CAP AND ABANDON IN PLACE.
  6. CUT BELOW GRADE EXISTING 2" CONDUIT. CAP AND ABANDON IN PLACE.
  7. REMOVE EXISTING LIGHTING POLE AND FIXTURE.
  8. CONNECT NEW 2" CONDUIT TO EXISTING 2" CONDUIT. USE APPROPRIATE FITTINGS FOR CONNECTION.
  9. NEW UNDERGROUND COMMUNICATIONS PULL BOX.

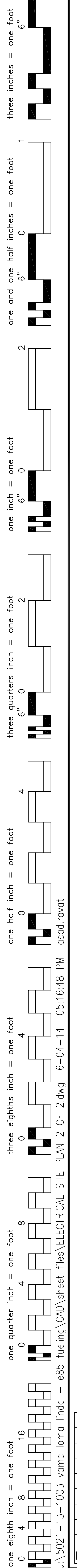


0 15' 30'

SCALE: 1"=15'

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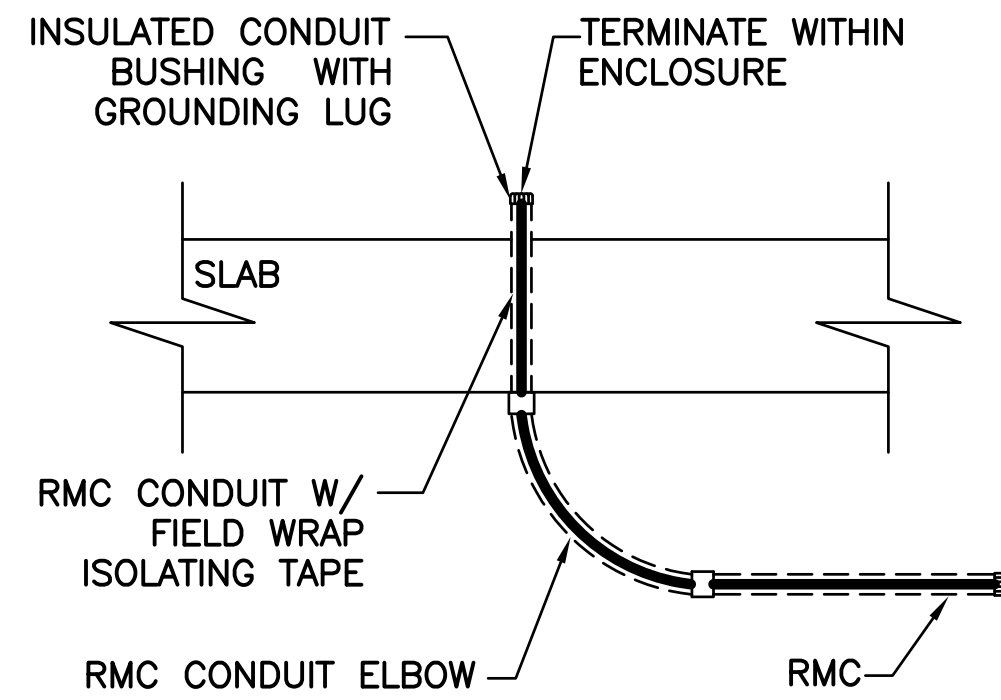


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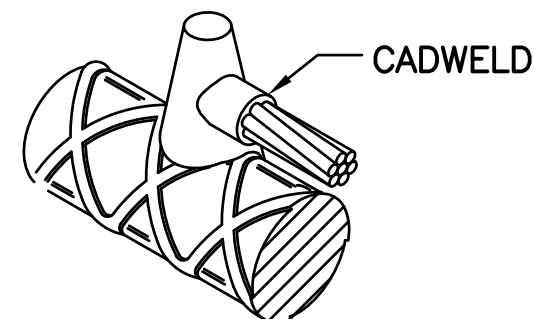


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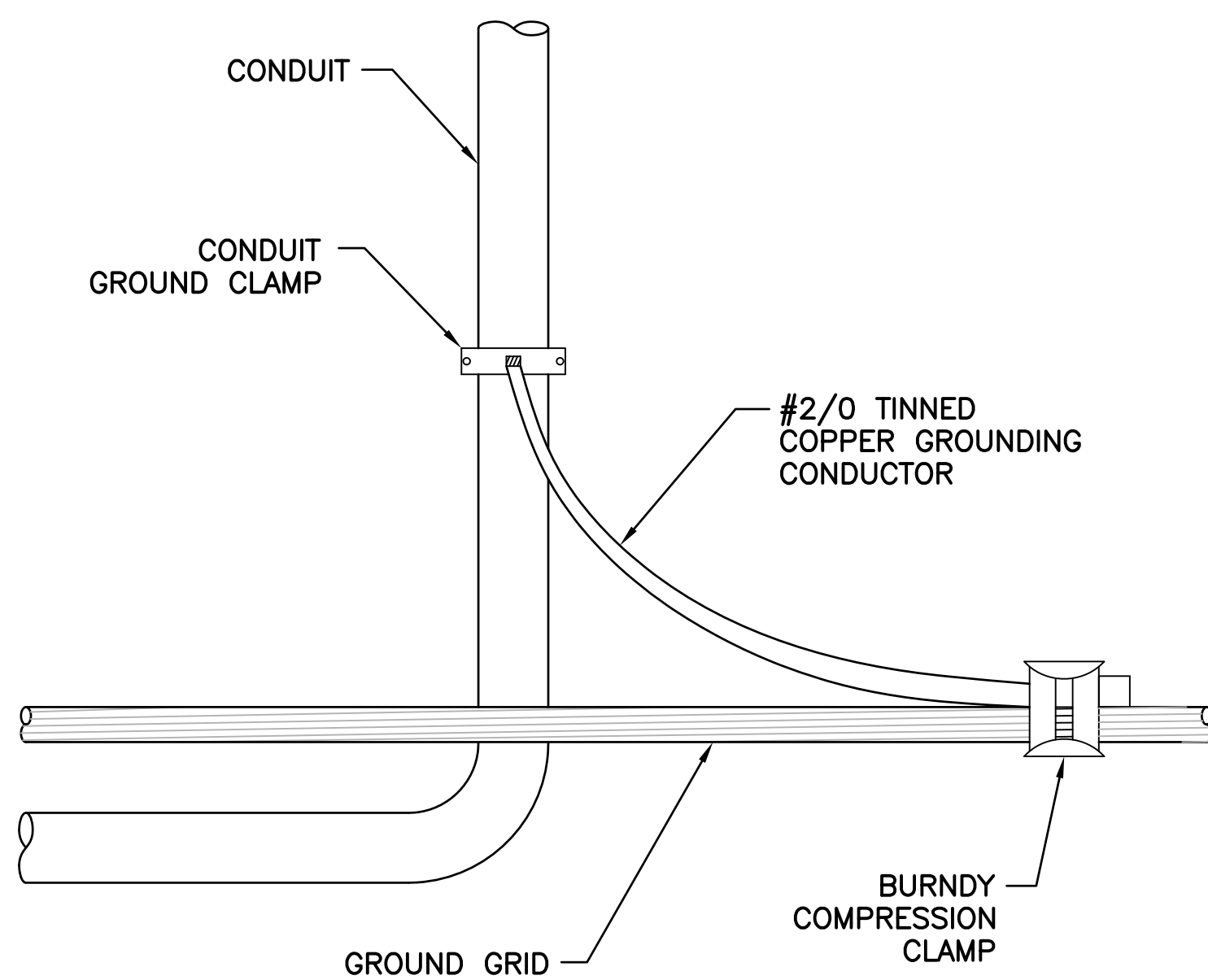
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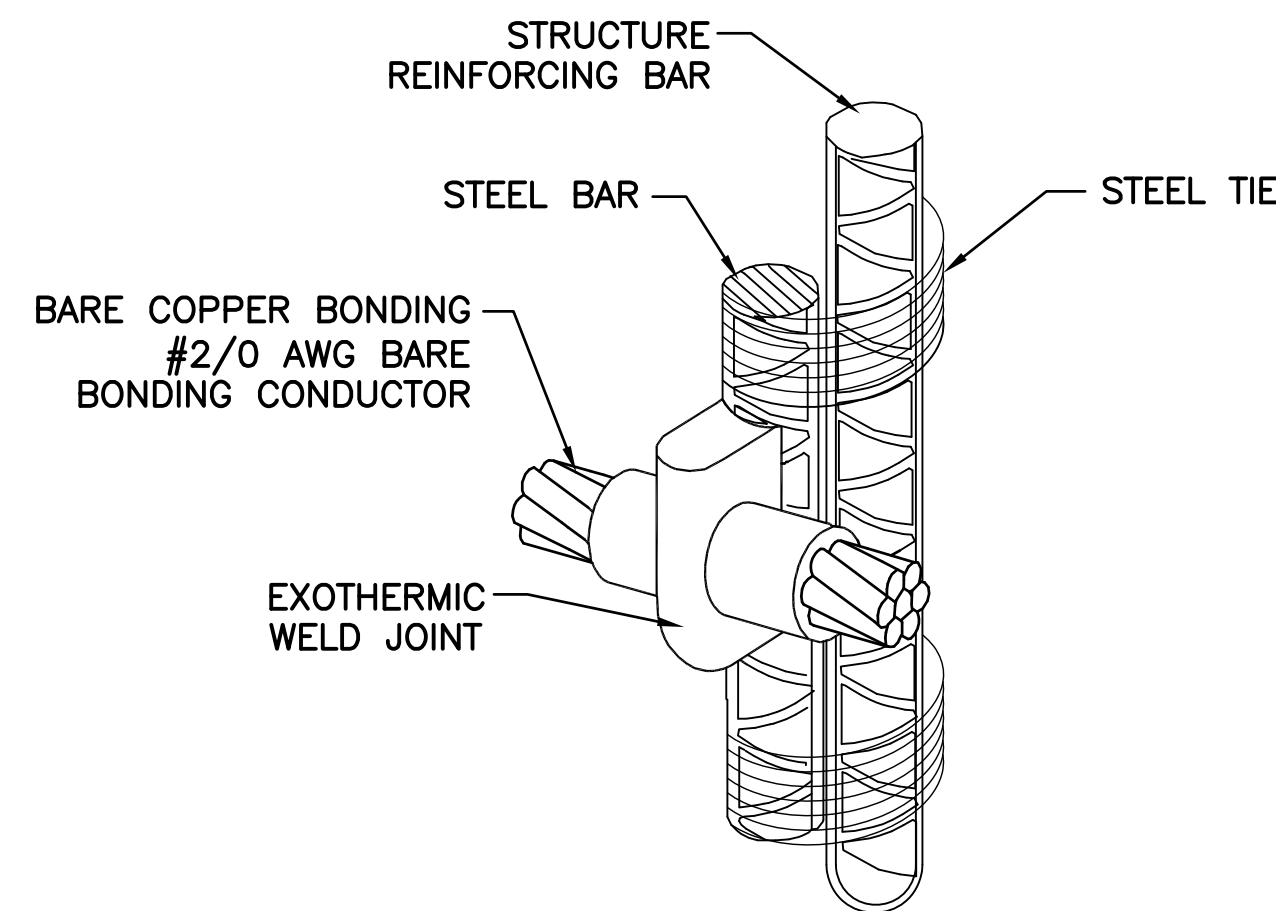
1 TYPICAL CONDUIT STUB-UP THROUGH SLAB  
SCALE: NTS



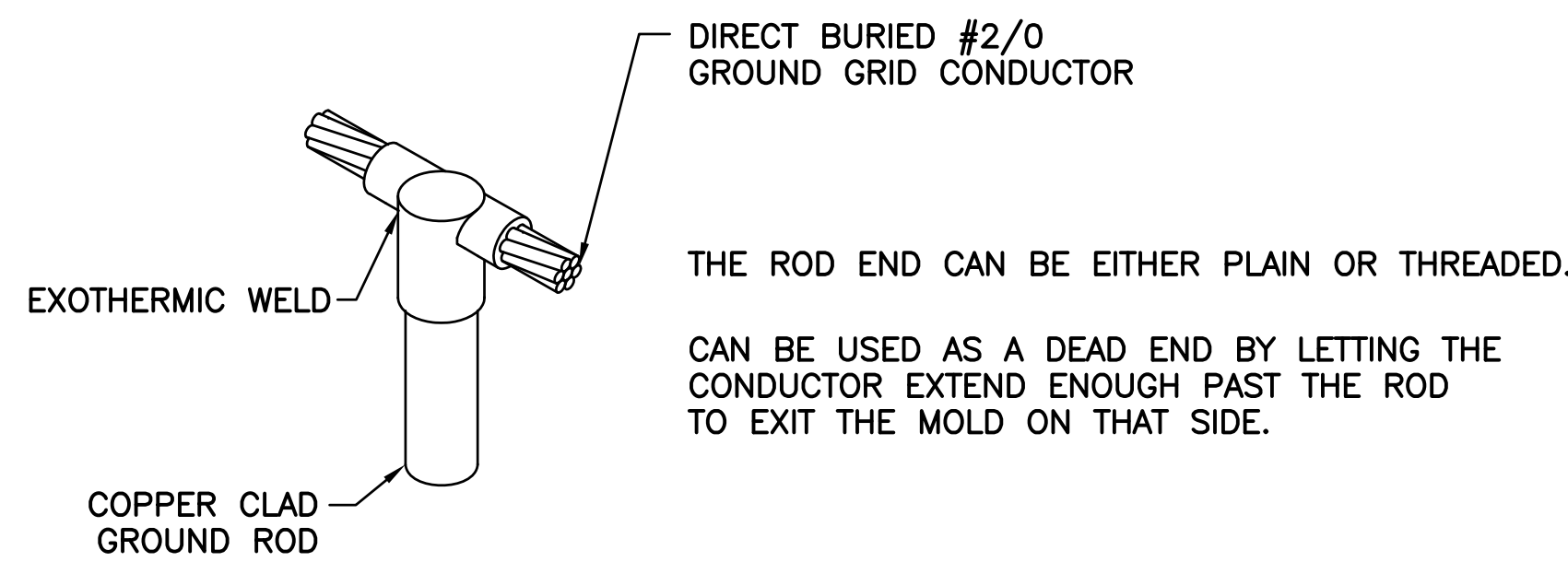
2 HORIZONTAL REBAR BOND DETAIL  
SCALE: NTS



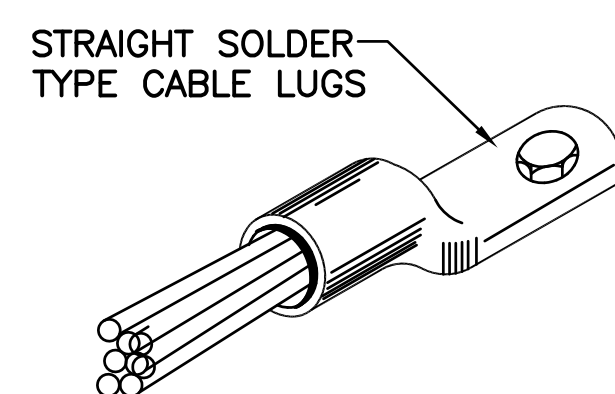
3 CONDUIT GROUNDING DETAIL  
SCALE: NTS



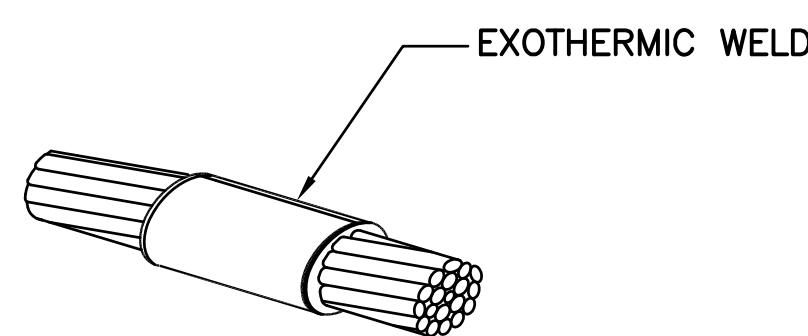
4 WELDING TO STEEL  
SCALE: NTS



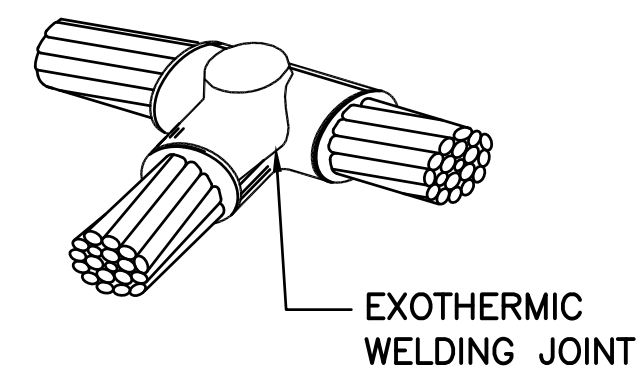
5 TWO CONDUCTORS TO ROD DETAIL  
SCALE: NTS



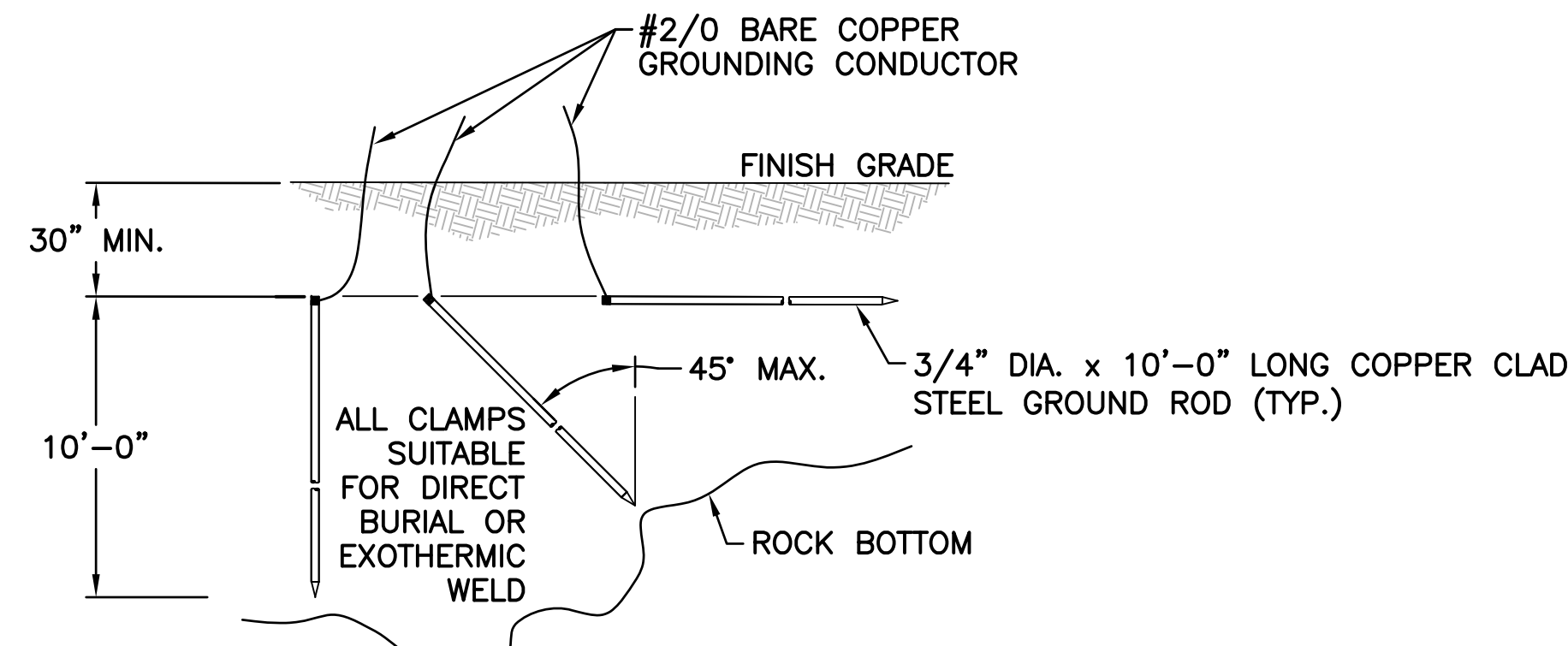
6 GROUND CABLE LUG  
SCALE: NTS



7 HORIZONTAL SPLICE  
SCALE: NTS

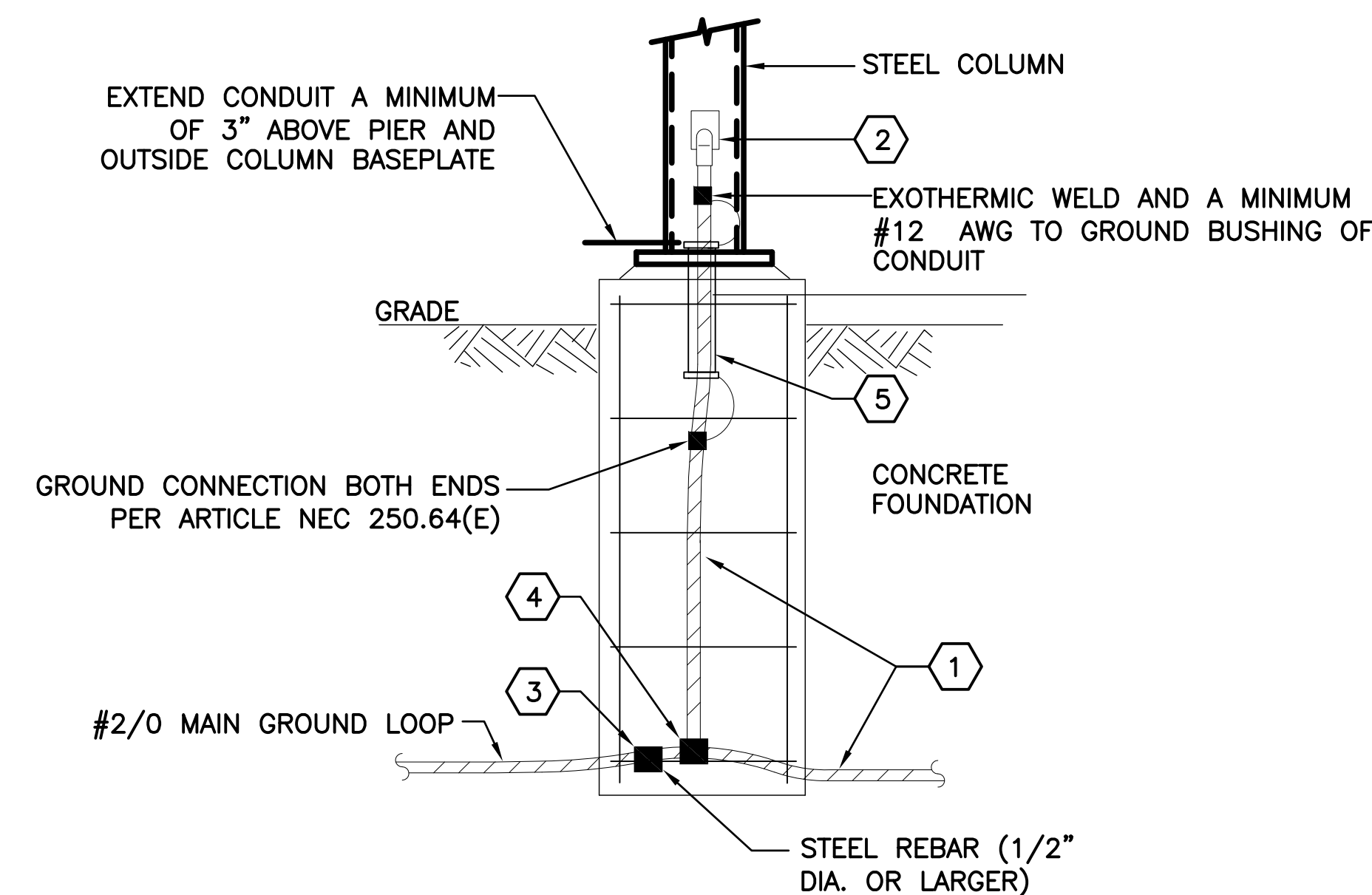


8 T-CONNECTION EXOTHERMIC  
SCALE: NTS



- NOTES:
1. THE ELECTRODE SHALL BE INSTALLED SUCH THAT AT LEAST 8' OF LENGTH IS IN CONTACT WITH THE SOIL.
  2. GROUND ROD SHALL BE DRIVEN VERTICALLY, NOT TO EXCEED 45 DEGREES FROM THE VERTICAL.
  3. WHERE ROCK BOTTOM IS ENCOUNTERED THE ELECTRODE SHALL BE PERMITTED TO BE BURIED IN A TRENCH THAT IS AT LEAST 30" DEEP.

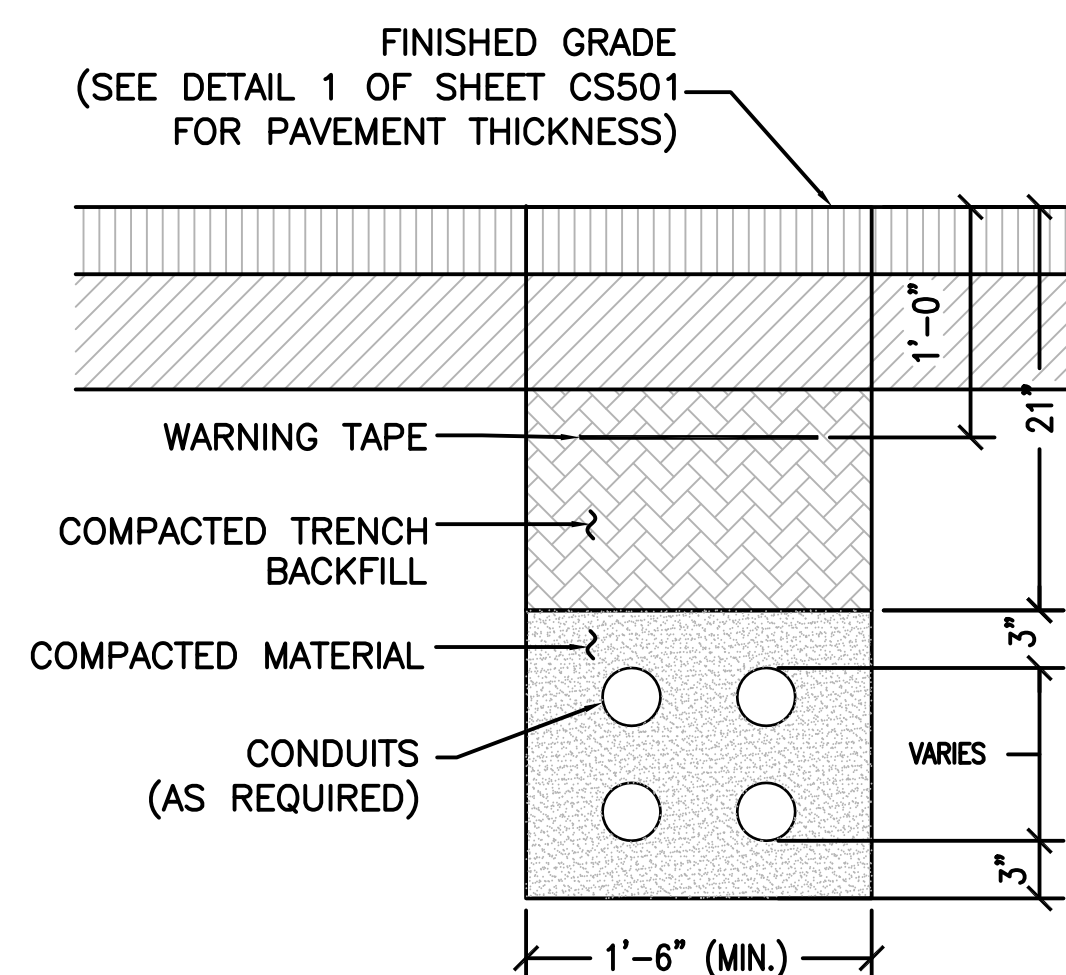
9 BURIED GROUND ROD DETAIL  
SCALE: NTS



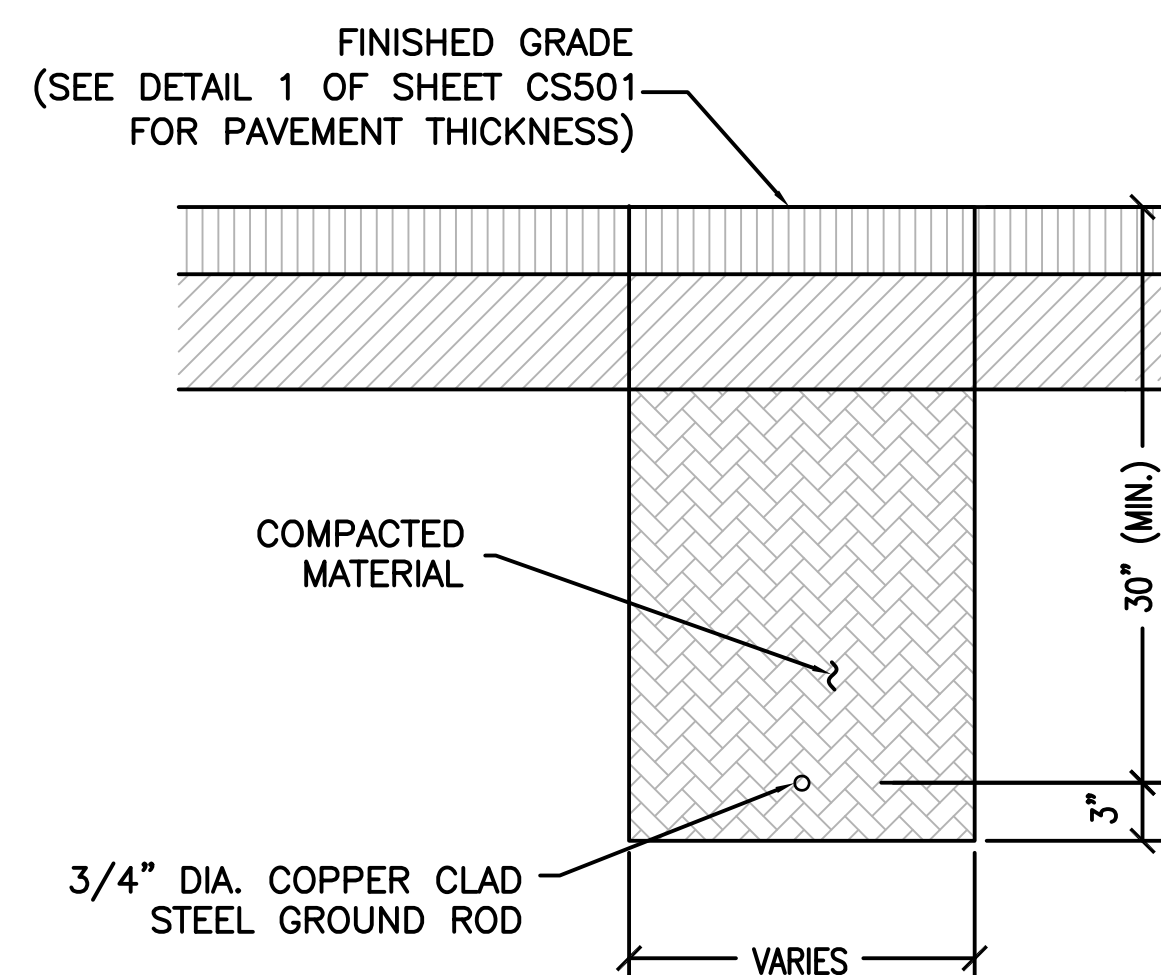
- NOTE:
- BOND GROUNDING CONDUCTOR TO LOWEST STEEL REINFORCING BAR. THE BAR SELECTED SHOULD BE THE ONE PROVIDING THE LONGEST LENGTH (20 FT. MIN.)

ITEM	DESCRIPTION
1	#2/0 AWG BARE, STRANDED COPPER CONDUCTOR
2	EXOTHERMIC WELD CABLE TO STEEL COLUMN
3	GROUNDING CONDUCTOR TO REBAR CONNECTION - EXOTHERMIC TYPE
4	CABLE TO CABLE EXOTHERMIC CONNECTION - PER DRAWING
5	1" DIA. RGS CONDUIT MIN. 18" LONG WITH GROUNDING BUSHING EACH END

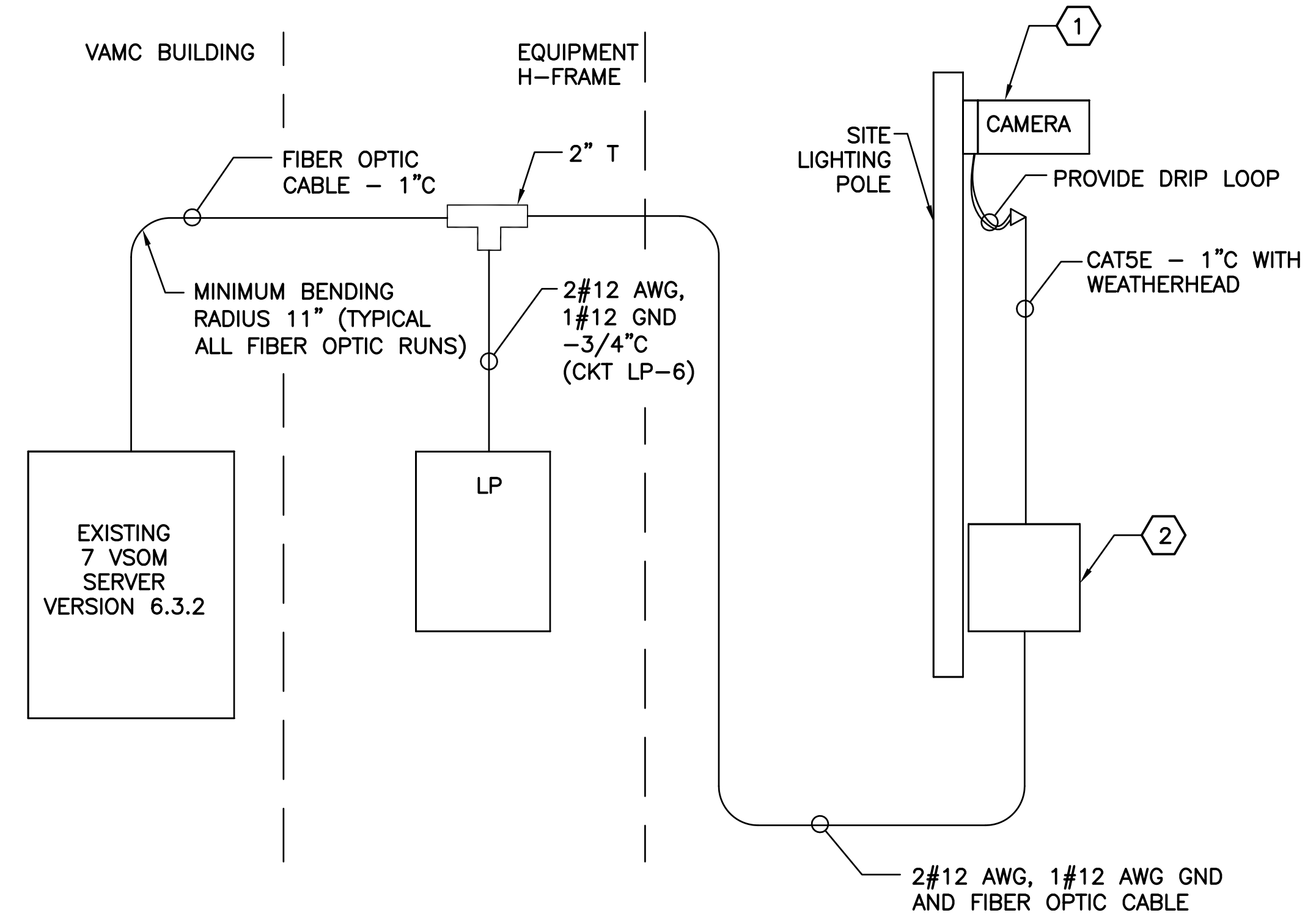
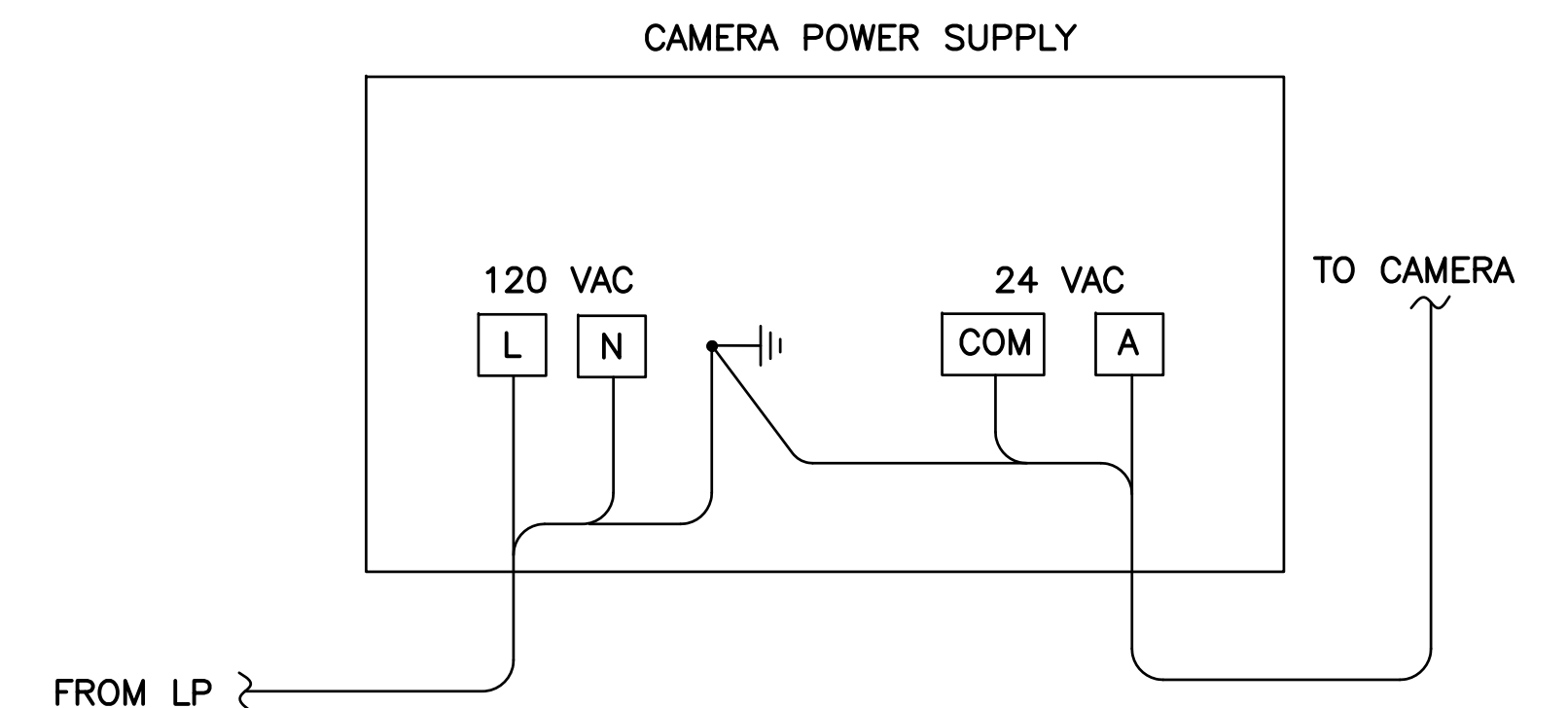
10 LIGHTING POLE BASE  
SCALE: NTS



11 UTILITY TRENCH DETAIL  
SCALE: NTS

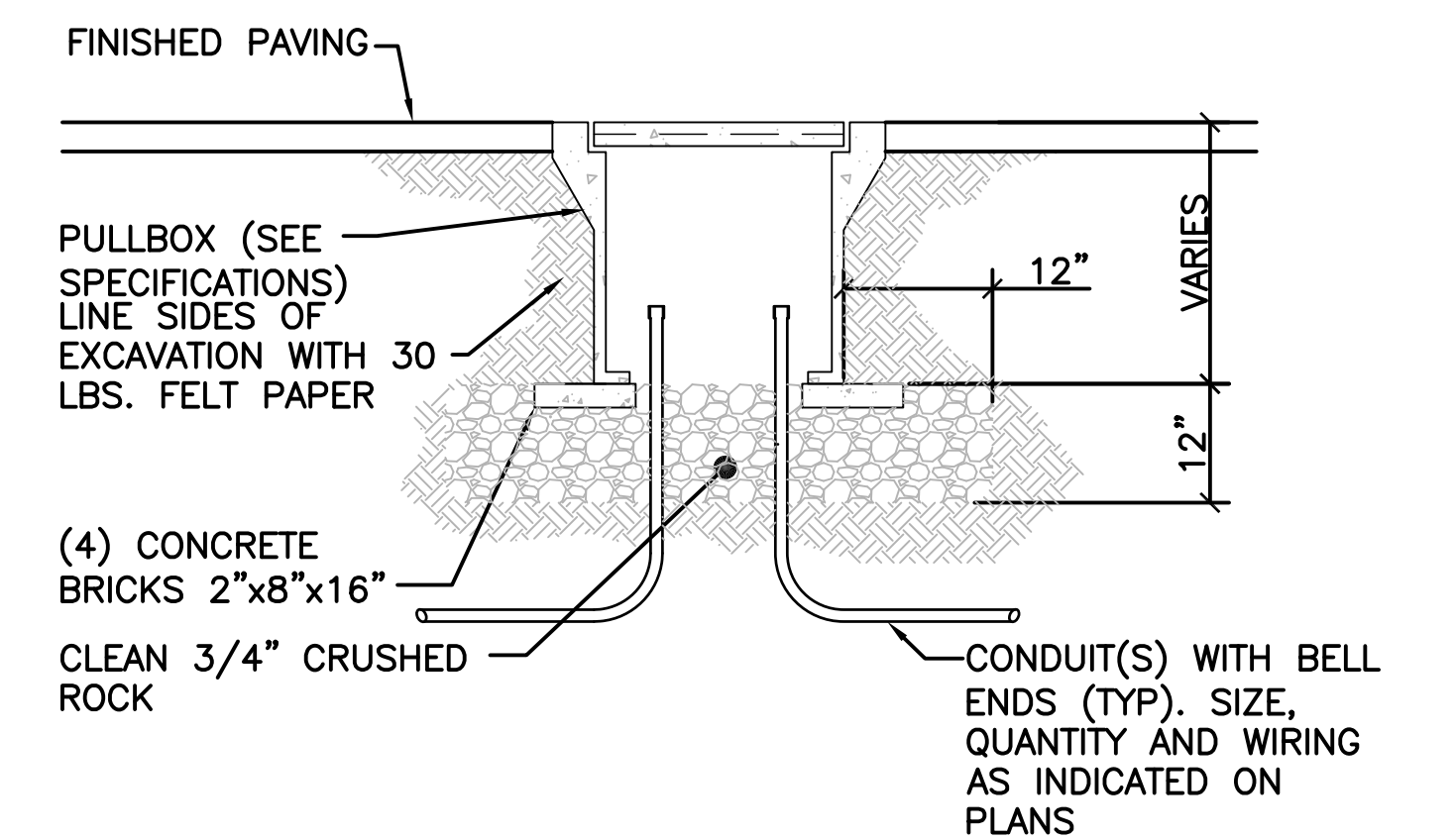


12 GROUNDING TRENCH DETAIL  
SCALE: NTS



- NOTES:
1. CISCO CAMERA TO BE COMPATIBLE WITH 7 VSOM VERSION 6.3.2 AND SUITABLE FOR OUTDOOR APPLICATION.
  2. ENCLOSURE INCLUDES A FIBER OPTIC TO CAT5E CONVERTER AND A 120V TO 24V TRANSFORMER.

11 CAMERA RISER  
SCALE: NTS

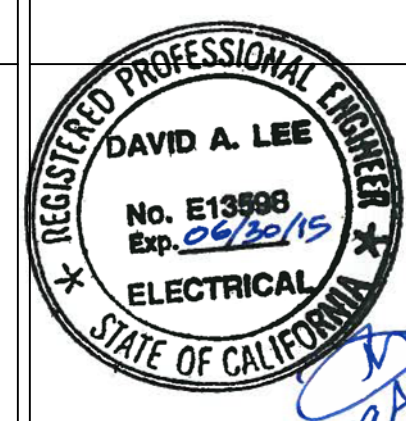


12 UNDERGROUND PULL BOX DETAIL  
SCALE: NTS

CONSTRUCTION DOCUMENT SUBMISSION

CONSULTANTS:

ARCHITECT/ENGINEERS:



AMEC Environment & Infrastructure, Inc.  
1075 BIG SHANTY ROAD, NW, SUITE 100  
KENNESAW, GEORGIA 30144 (770) 421-3400

Drawing Title  
ELECTRICAL DETAILS 1 OF 3

Approved Project Director  
VAPAHCS PLANNING AND ENGINEERING

Project Title  
E85 FUELING STATION PLAN

Location  
LOMA LINDA CA

Date  
29 APR 2014

Checked  
DAL

Drawn  
CKB

Project Number  
605-332

Building Number  
-

Drawing Number  
ES501

Dwg 19 of 22

Office of  
Construction  
and Facilities  
Management







# CONTRACT DRAWINGS (100%) FOR E85 FUELING STATION



VETERANS ADMINISTRATION MEDICAL CENTER LOMA LINDA, CA  
CONTRACT NO. VA701-13-J-0143  
PROJECT NO. 605-332

SHEET INDEX		
PAGE NUMBER	SHEET NUMBER	SHEET TITLE
1	GI001	COVER SHEET
2	VF101	EXISTING CONDITIONS
3	CD101	DEMOLITION PLAN
4	CS101	SITE PLAN
5	CS102	GRADING AND DRAINAGE PLAN
6	CS103	FUEL TRUCK TURN PATH ANALYSIS
7	CS501	CIVIL DETAILS
8	SS001	STRUCTURAL GENERAL NOTES
9	SS501	STRUCTURAL TANK PAD AND CONCRETE SPILL PAD
10	MS001	FUELING LEGEND, NOTES, ABBREVIATIONS AND FLOW DIAGRAM
11	MS101	FUELING SITE PLAN
12	MS201	E85 FUEL STORAGE TANK PLAN VIEW
13	MS501	FUELING DETAILS
14	ES001	ELECTRICAL LEGEND, ABBREVIATIONS AND GENERAL NOTES
15	ES101	ELECTRICAL SITE PLAN 1 OF 2
16	ES102	ELECTRICAL SITE PLAN 2 OF 2
17	EP101	FUELING STATION - POWER AND SYSTEMS
18	EP102	FUELING STATION - GROUNDING
19	ES501	ELECTRICAL DETAILS 1 OF 3
20	ES502	ELECTRICAL DETAILS 2 OF 3
21	ES503	ELECTRICAL DETAILS 3 OF 3
22	EI601	ELECTRICAL SINGLE LINE DIAGRAMS - SCHEDULES

#### CONSTRUCTION STATEMENT OF WORK:

THESE DESIGN DRAWINGS PRESENT TECHNICAL DOCUMENTS FOR THE DEVELOPMENT OF AN E85 FUELING STATION TO ACCOMMODATE VETERANS ADMINISTRATION VEHICLES AT THE VETERANS ADMINISTRATION MEDICAL CENTER, LOMA LINDA, CA.

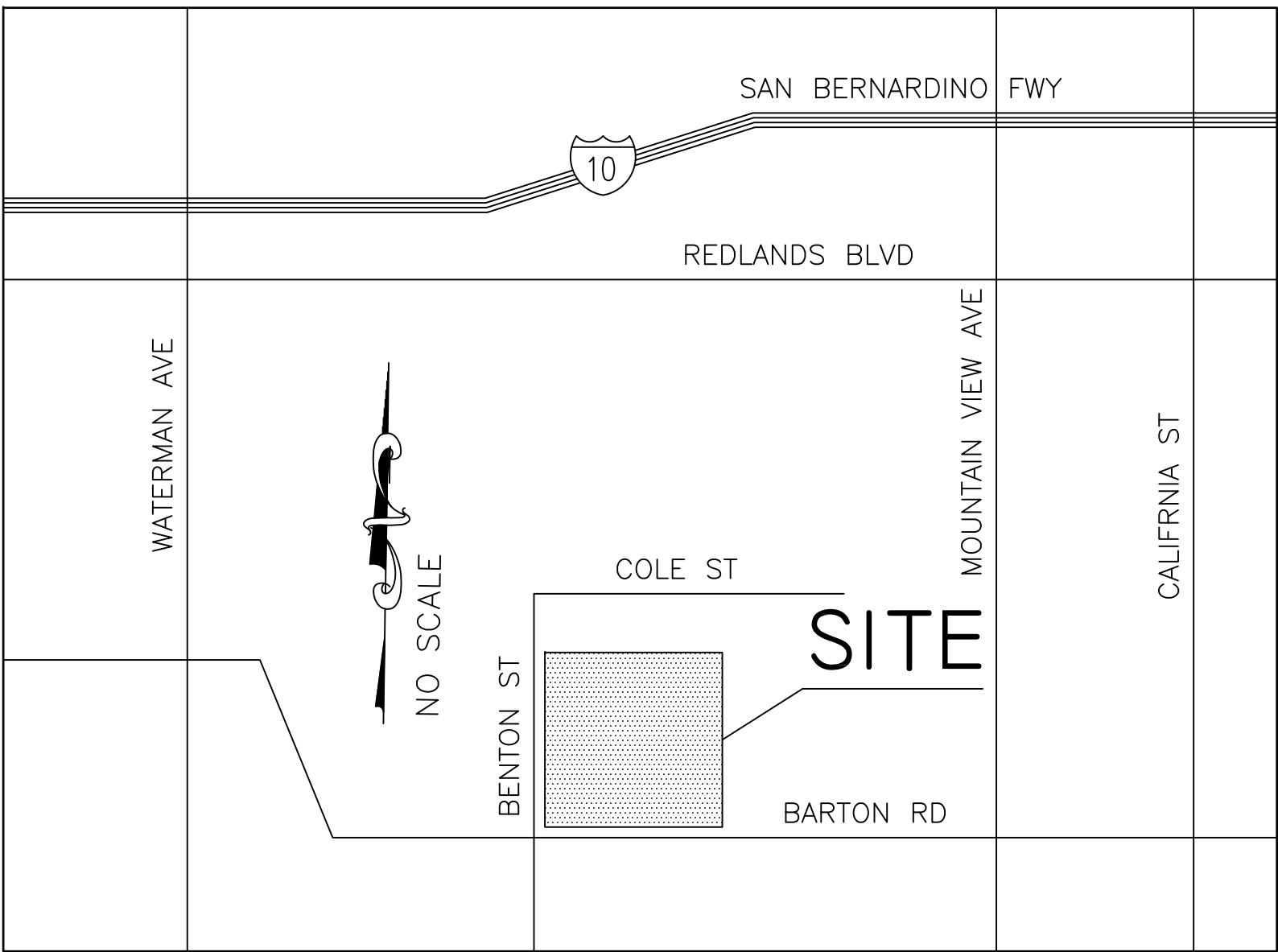
THE ADDITION OF THE E85 FUELING STATION WILL RESULT IN DEMOLITION OF THE EXISTING FUEL TANK CONTAINMENT SLAB, AND THE TWO EXISTING TANKS WILL BE RELOCATED TO A NEW CONCRETE CONTAINMENT SLAB ALONG WITH THE NEW 5000 GALLON E85 FUEL TANK. THE NEW SLAB WILL BE CONSTRUCTED IN THE SAME GENERAL LOCATION AS THE OLD SLAB, ALLOWING FOR CODE REQUIREMENTS.

BOTH THE OFF-LOADING FUEL SUPPLY FILL BOX AND THE DISPENSING PUMP WILL BE LOCATED WITHIN THE CONTAINED AREA ON THE NEW SLAB. A CONCRETE TRUCK OFF-LOADING SPILL SLAB WILL BE CONSTRUCTED ADJACENT TO THE CONTAINMENT SLAB FOR PARKING THE 32-FOOT LONG FUEL SUPPLY TRUCK DURING THE OFF-LOADING PROCESS. THIS SLAB WILL AT A LOCATION AT LEAST 25 FEET FROM ALL FUEL TANKS.

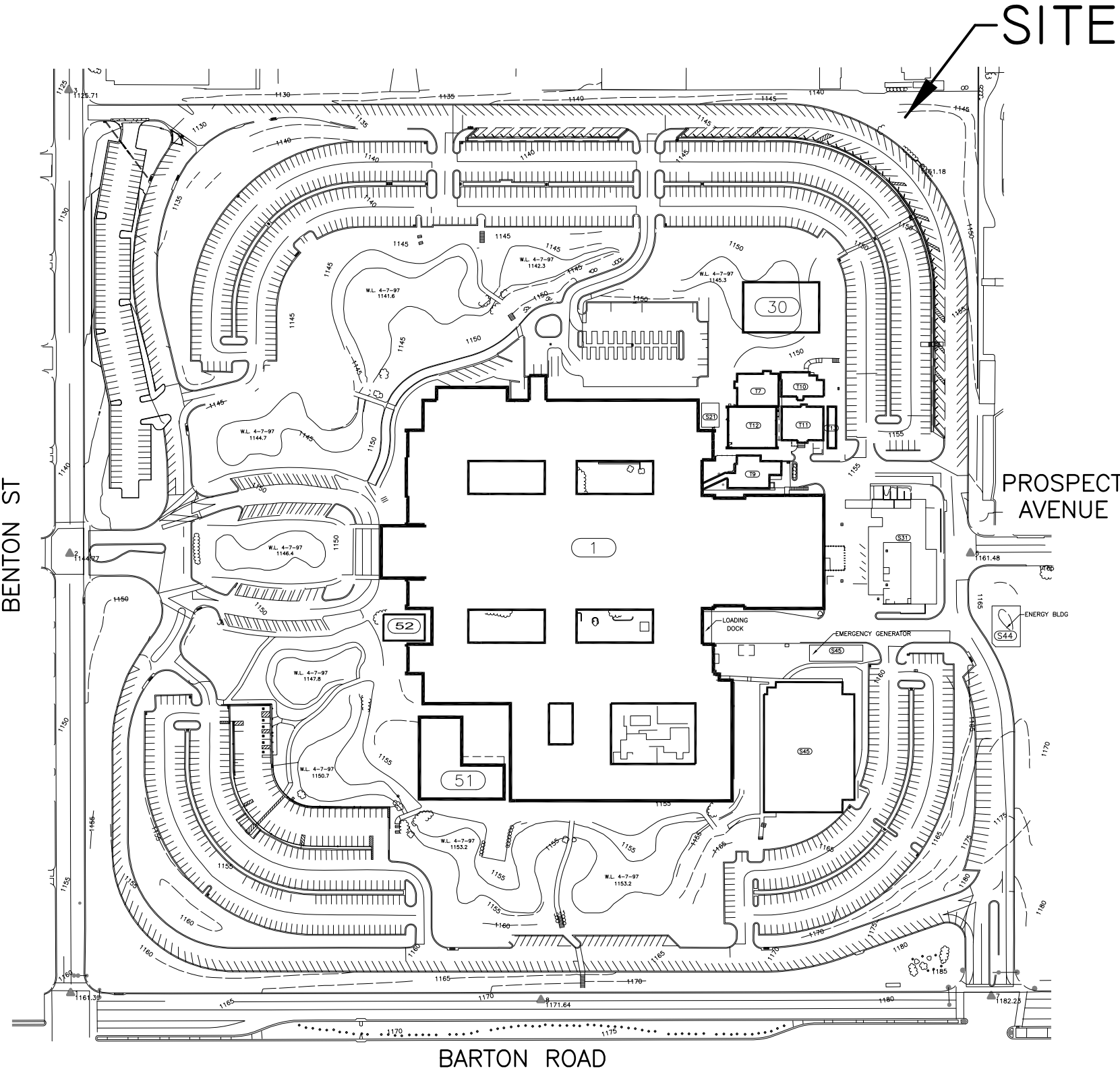
THE FUEL MANAGEMENT SYSTEM WILL BE PROGRAMMED CONSISTENT WITH VA REQUIREMENTS AND BE COMPATIBLE WITH BOTH THE WEX AND GSA PROCESSING SYSTEMS.

THE E85 FUEL STATION DESIGN ALSO INCLUDES UPGRADED LIGHTING, AN EMERGENCY TELEPHONE, AND SECURITY CAMERAS FOR VIDEO SURVEILLANCE.

#### VICINITY MAP



#### SITE LOCATION MAP



#### PREPARED FOR:

DEPARTMENT OF VETERANS AFFAIRS  
PROGRAM CONTRACTING ACTIVITY CENTRAL  
6150 OAK TREE BLVD., SUITE 300  
INDEPENDENCE, OH 44131

#### PREPARED BY:

**amec**  
AMEC ENVIRONMENT AND INFRASTRUCTURE, INC.  
1075 BIG SHANTY ROAD, SUITE 100  
KENNESAW, GA 30144  
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Approved: BARBARA FALLEN MEDICAL CENTER DIRECTOR	Approved: GEOFFREY SCHULLER ASSISTANT CHIEF, FACILITY MANAGEMENT SERVICES (FMS)	Approved: NORVELL KING CHIEF, POLICE
Approved: DWIGHT EVANS, M.D. CHIEF OF STAFF	Approved: ANDREA MARTINEZ CHIEF, PROJECTS SECTION	Approved: JONATHAN VINSKEY SAFETY MANAGER
Approved: MELISSA G. LLOYD ASSOCIATE DIRECTOR FOR PATIENT CARE AND NURSING ADMINISTRATION	Approved: LARRY BARRETT ENERGY MANAGER, F.M.S.	Approved: MICHAEL B. ING MD CHIEF, INFECTIOUS DISEASE / INFECTION CONTROL
Approved: SHANE ELLIOT ASSOCIATE DIRECTOR FOR ADMINISTRATION	Approved: RANDAL MUSHRUSH PLANT SUPERVISOR, FMS	Approved: ALONSO ACOSTA PROJECT ENGINEER/COTR, FMS
Approved: PRACHI ASHER ASSISTANT DIRECTOR	Approved: DOUG WIRTHGEN CHIEF, OFFICE OF INFORMATION & TECHNOLOGY (OI&T)/FCIO	Approved: ALEJANDRA VALDERRAMA CONTRACTING OFFICER

REVISION 1	6/5/14
Revisions	Date

#### CONSULTANTS:

#### ARCHITECT/ENGINEERS:



AMEC Environment & Infrastructure, Inc.  
1075 BIG SHANTY ROAD, NW, SUITE 100  
KENNESAW, GEORGIA 30144 (770) 421-3400

Drawing Title COVER SHEET	Project Title COVER SHEET	Project Number 605-332	Office of Construction and Facilities Management Department of Veterans Affairs
Approved Project Director VAPAHCS PLANNING AND ENGINEERING	Location LOMA LINDA CA	Building Number -	
Date 29 APR 2014	Checked JLS	Drawn CKB	
		Drawing Number GI001	
		Dwg. 1 of 22	