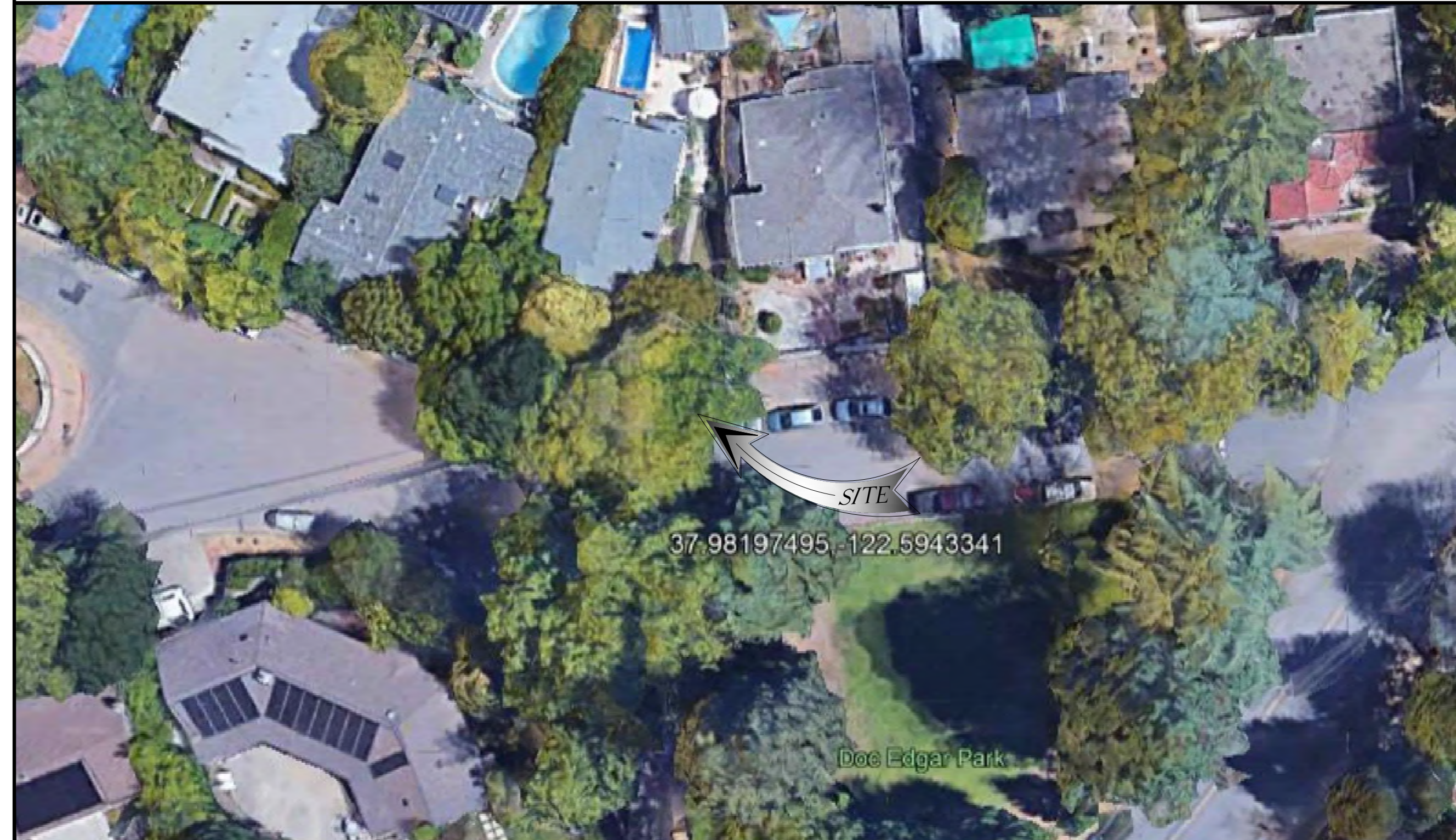


EXISTING SITE PHOTO



LOCATION MAP



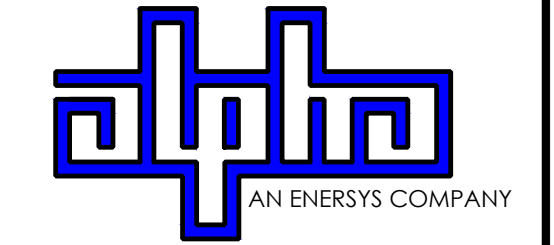
SITE ADDRESS:
16 CYPRESS DR
FAIRFAX, CA 94930

SITE INFORMATION

SITE ADDRESS:	16 CYPRESS DR FAIRFAX, CA 94930
LATITUDE/LONGITUDE (NAD 83):	37.98197495, -122.5943341
JURISDICTION:	Town of Fairfax
POWER PROVIDER:	-
AMP DRAW:	8.64



3011 COMCAST PLACE
LIVERMORE, CA 94551



3767 ALPHA WAY
BELLINGHAM, WA 98226



23 MAUCHLY, STE 110
IRVINE, CA 92618

J5 PROGRAM ID: ALP-CA-CPUC
J5 PROJECT ID: P-060614

ISSUE STATUS

REV	DATE	DESCRIPTION	BY
A	09/13/21	90% CD	JW
0	03/06/23	100% CD	AB
A	06/06/23	PCC #1	JG

AE TDA6 SCOPE OF WORK

- THIS PROJECT MODIFICATION OF EXISTING CONSISTS OF:
- INSTALLATION OF (2) (N) ALPHA PN-4 POWERNODE SYSTEM ENCLOSURE
 - INSTALLATION OF (12) (N) 12V ALPHA 210FTX BATTERIES
 - INSTALLATION OF (1) (N) PRECAST CONCRETE PAD
 - REMOVAL & REPLACEMENT OF (E) POWER SUPPLY
 - INSTALLATION OF CONDUIT BETWEEN (E) AND (N) CABINETS
 - ALL ASSOCIATED ELECTRIC WIRES AND CONDUITS TO CONNECT POWERNODE CABINET TO EXISTING ALPHA CABINET

DRAWING INDEX

SHEET	DESCRIPTION
T1	TITLE SHEET AND SITE PLAN
A1	ELEVATIONS
D1	DETAILS
D2	DETAILS
TC1	TRAFFIC CONTROL

PROJECT TEAM

OWNER:	COMCAST CABLE 3011 COMCAST PLACE LIVERMORE, CA 94551	ENGINEER/ ARCHITECT:	J5 INFRASTRUCTURE PARTNERS MARK MASCUNANA ARCHITECT/ENGINEER CONTACT PH: (281) 387-8814 EMAIL: mark.mascunana@j5ip.com 23 MAUCHLY, SUITE 110 IRVINE, CALIFORNIA, 92618
APPLICANT:	ALPHA TECHNOLOGIES, INC. RICHARD A. SEIFF SERVICE OPERATIONS MANAGER ENERGY SYSTEMS AMERICAS PH: (331) 276-0232 EMAIL: rich.seiff@enersys.com		

CODE COMPLIANCE

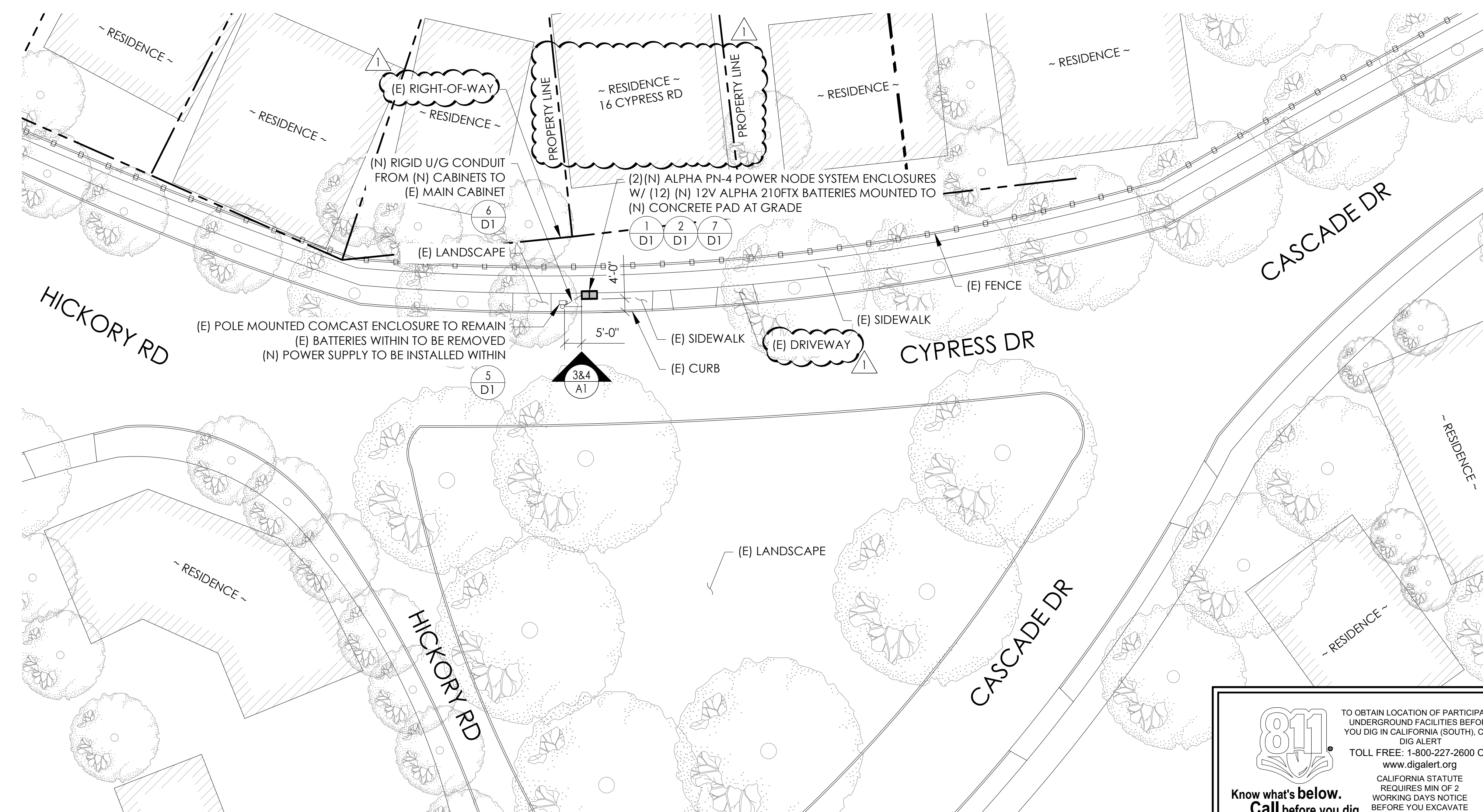
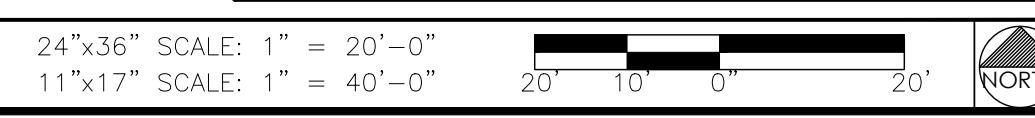
ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.

1. CALIFORNIA BUILDING STANDARDS CODE, 2019 TRIENNIAL EDITION OF TITLE 24, WITH AN EFFECTIVE DATE OF JANUARY 1, 2020.	PART 8 - CALIFORNIA HISTORICAL BUILDING CODE
PART 10 - CALIFORNIA ADMINISTRATIVE CODE	PART 9 - CALIFORNIA FIRE CODE, BASED ON THE 2018 INTERNATIONAL FIRE CODE
PART 2 - CALIFORNIA BUILDING CODE, BASED ON THE 2018 INTERNATIONAL BUILDING CODE	PART 10 - CALIFORNIA EXISTING BUILDING CODE, BASED ON THE 2018 INTERNATIONAL EXISTING BUILDING CODE
PART 2.5 - CALIFORNIA RESIDENTIAL CODE, BASED ON THE 2018 INTERNATIONAL RESIDENTIAL CODE	PART 11 - CALIFORNIA GREEN BUILDING STANDARDS CODE (ALSO KNOWN AS CALGREEN)
PART 3 - CALIFORNIA ELECTRICAL CODE, BASED ON THE 2017 NATIONAL ELECTRICAL CODE	PART 12 - CALIFORNIA REFERENCED STANDARDS CODE
PART 4 - CALIFORNIA MECHANICAL CODE, BASED ON THE 2018 UNIFORM MECHANICAL CODE	2. ANSII/A-222 (REV H)
PART 5 - CALIFORNIA PLUMBING CODE, BASED ON THE 2018 UNIFORM PLUMBING CODE	3. 2018 NFPA 101, LIFE SAFETY CODE
PART 6 - CALIFORNIA ENERGY CODE	4. 2019 NFPA 72, NATIONAL FIRE ALARM AND SIGNALING CODE
PART 7 - VACANT	5. 2019 NFPA 13, STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS

GENERAL CONTRACTOR NOTES

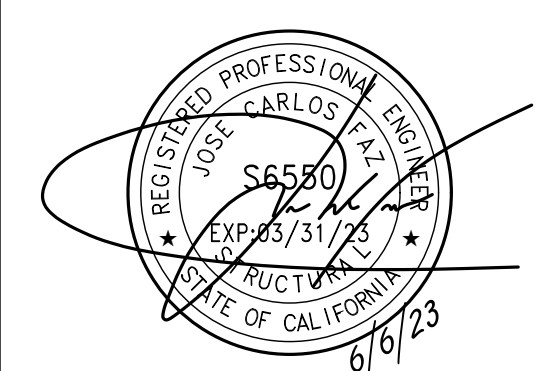
DO NOT SCALE DRAWINGS IF NOT FULL SIZE (24 X 36)

CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT / ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BEAR THE RESPONSIBILITY FOR THE SAME.

SITE PLAN

SEAL



SITE INFORMATION

SITE ADDRESS:
16 CYPRESS DR,
FAIRFAX, CA 94930

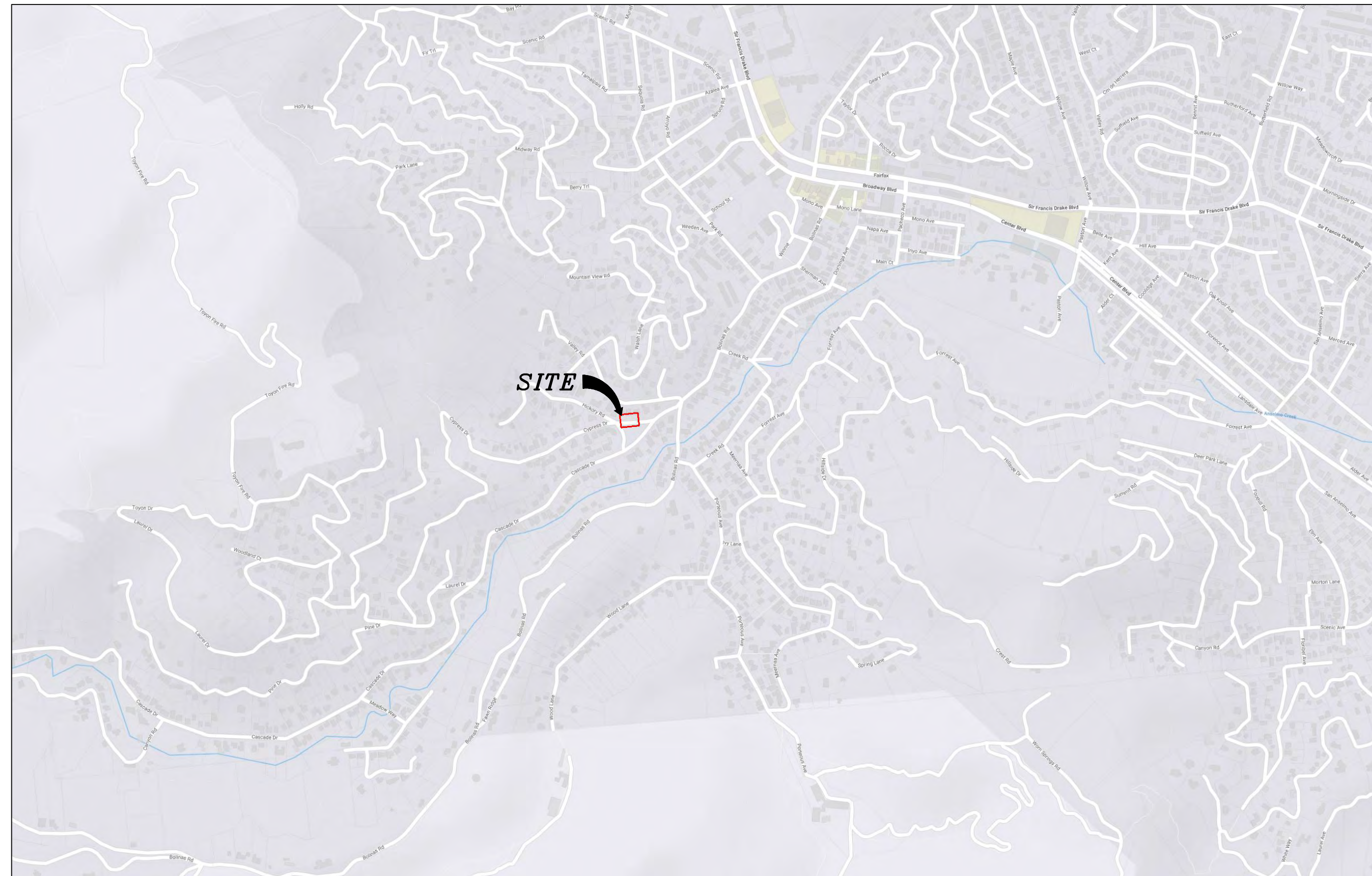
APN:
003-202-05

SHEET TITLE:

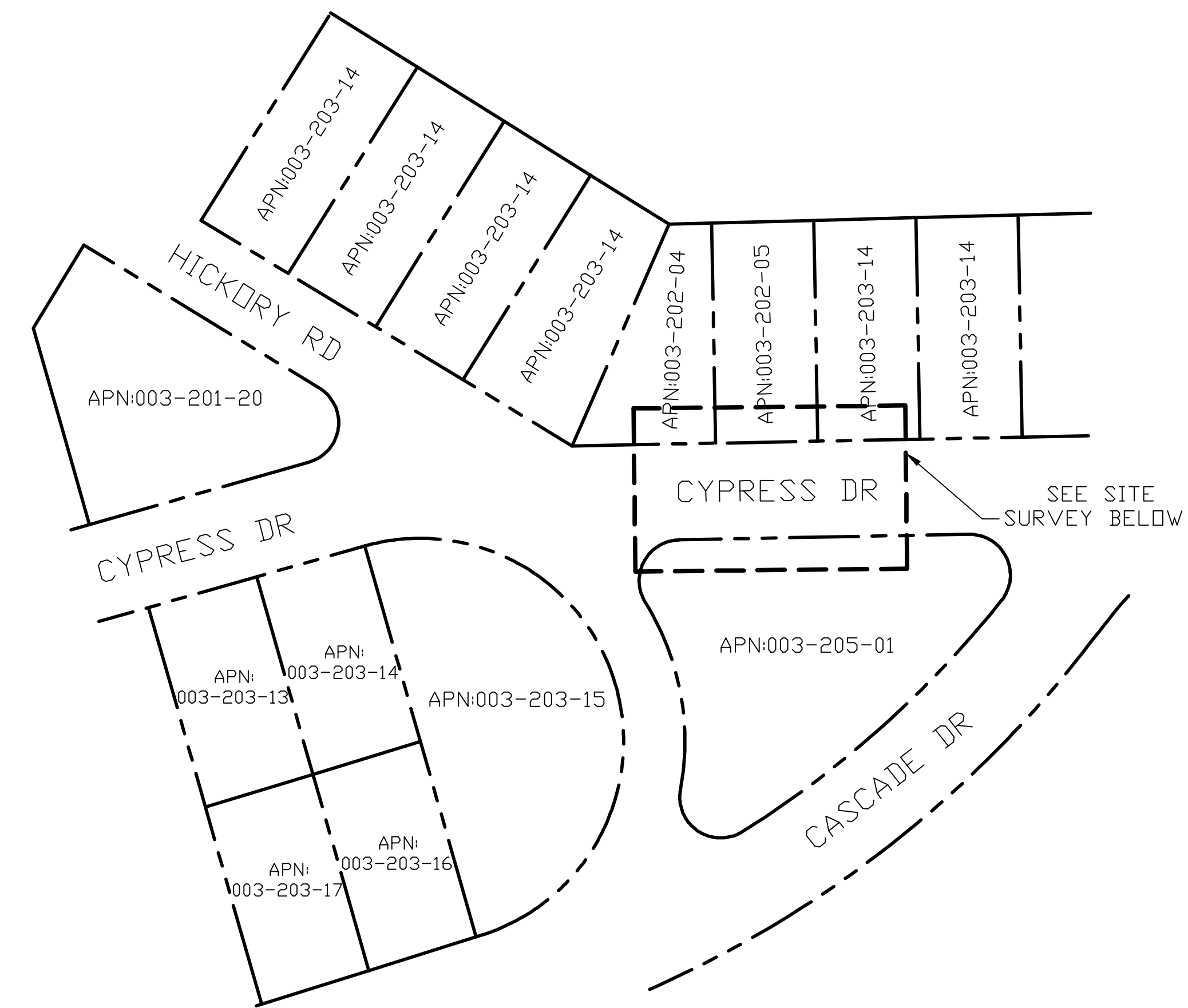
TITLE SHEET

T1

PLANS



VICINITY MAP
N.T.S.



OVERALL SITE
N.T.S.

SURVEY DATE
02/03/2023

BASIS OF BEARING
BEARINGS SHOWN HEREON ARE BASED UPON U.S. STATE PLANE NAD83 COORDINATE SYSTEM CALIFORNIA STATE PLANE COORDINATE ZONE THREE, DETERMINED BY GPS OBSERVATIONS.

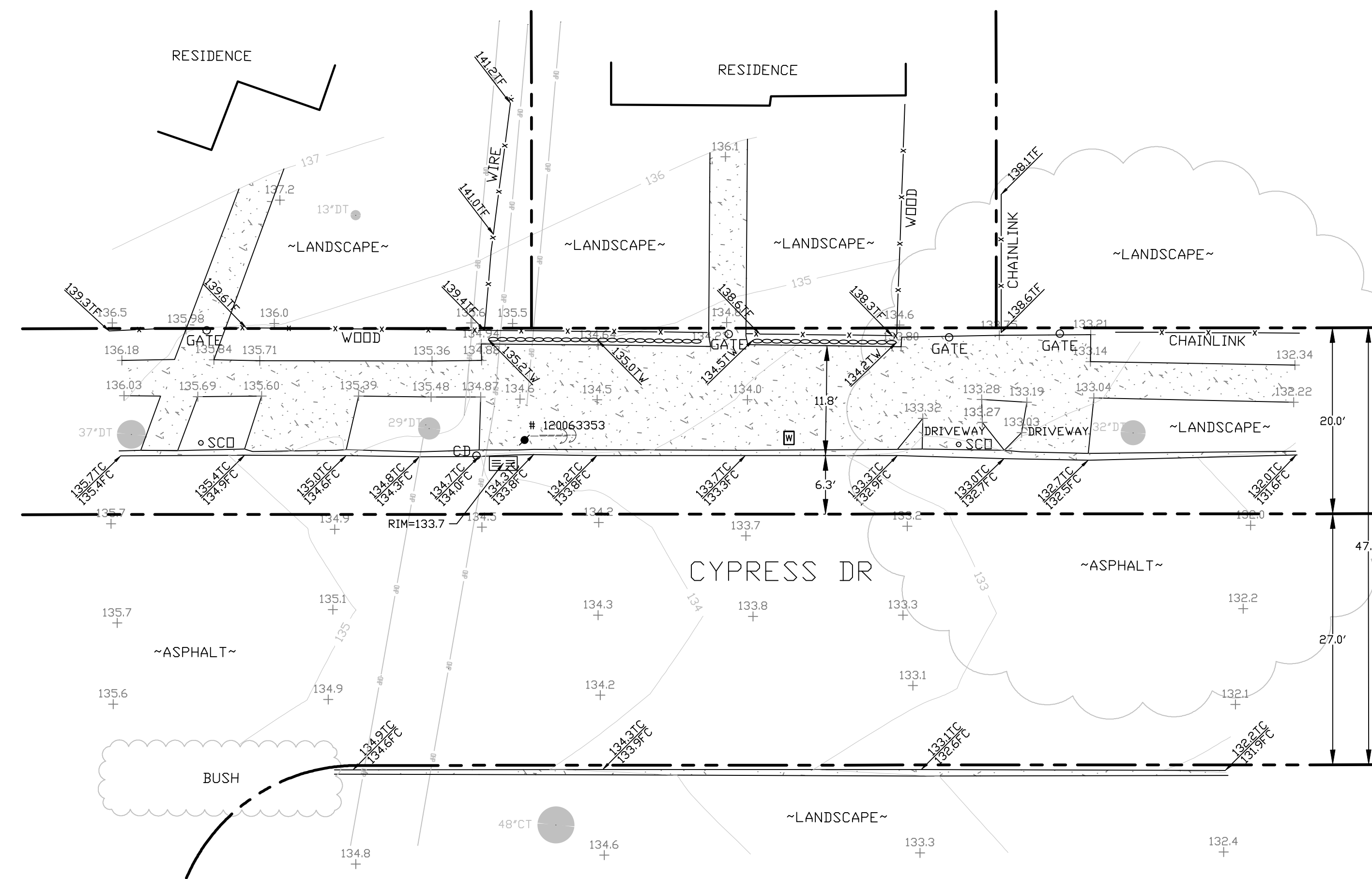
BENCHMARK
PROJECT ELEVATIONS ESTABLISHED FROM GPS DERIVED ORTHOMETRIC HEIGHTS BY APPLICATION OF NGS 'GEOID 18' MODELED SEPARATIONS TO ELLIPSOID HEIGHTS DETERMINED BY OBSERVATIONS OF THE 'CRTN' REAL TIME NETWORK. ALL ELEVATIONS SHOWN HEREON ARE REFERENCED TO NAVD88.

FLOOD ZONE
THIS PROJECT APPEARS TO BE LOCATED WITHIN FLOOD ZONE "X". ACCORDING TO FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP(S), MAP ID #06041C0451E, DATED 03/17/2014.

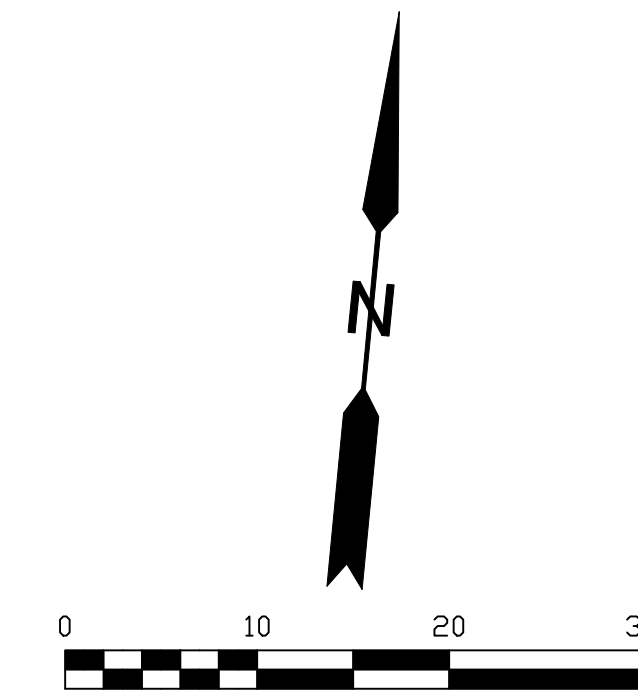
UTILITY NOTES
SURVEYOR DOES NOT GUARANTEE THAT ALL UTILITIES ARE SHOWN OR THEIR LOCATIONS ARE DEFINITE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR AND DEVELOPER TO CONTACT 811 AND ANY OTHER INVOLVED AGENCIES TO LOCATE ALL UTILITIES PRIOR TO CONSTRUCTION. REMOVAL, RELOCATION AND/ OR REPLACEMENT IS THE RESPONSIBILITY OF THE CONTRACTOR.

SURVEYOR'S NOTE
THE LOCATION AND DIMENSIONS SHOWN WERE TAKEN FROM THE MAP RECORDED IN BOOK 4 PAGE 74 OF MAPS MARIN COUNTY RECORDER AND DOES NOT CONSTITUTE A BOUNDARY SURVEY OF THE PROPERTIES.

TITLE REPORT DESCRIPTION
TITLE REPORT PARCEL
APN: 001-171-36
PREPARED USING AMERICAN TITLE'S TITLE REPORT #5026900-6942870 DATED 01/11/2023;



SITE SURVEY



- LEGEND**
These standard symbols may be found in the drawing.
- CONCRETE
 - PROPERTY LINE
 - CENTER LINE
 - OVERHEAD LINE
 - FENCE
 - ROOF
 - ROCK WALL
 - WATER METER
 - POWER POLE
 - ELEVATION GRADE
 - GUY WIRE
 - MAILBOX
 - SIGN
 - RECTANGLE INLET
 - SHRUB
 - TRUNK
 - CT CONIFEROUS TREE
 - DC DECIDUOUS TREE
 - TC TOP OF CURB
 - FC FACE OF CURB
 - TF TOP OF FENCE
 - TW TOP OF WALL
 - CD CURB DRAIN

COMCAST
3011 COMCAST PLACE
LIVERMORE, CA 94551

ALPHA
3767 ALPHA WAY
BELLINGHAM, WA 98226

Eaton Land Surveying, Inc.
15604 Magnolia Rd.
Grass Valley, CA. 95949
Ph. 530.830.0038

DRAWN BY: HE
CHECKED BY: SE

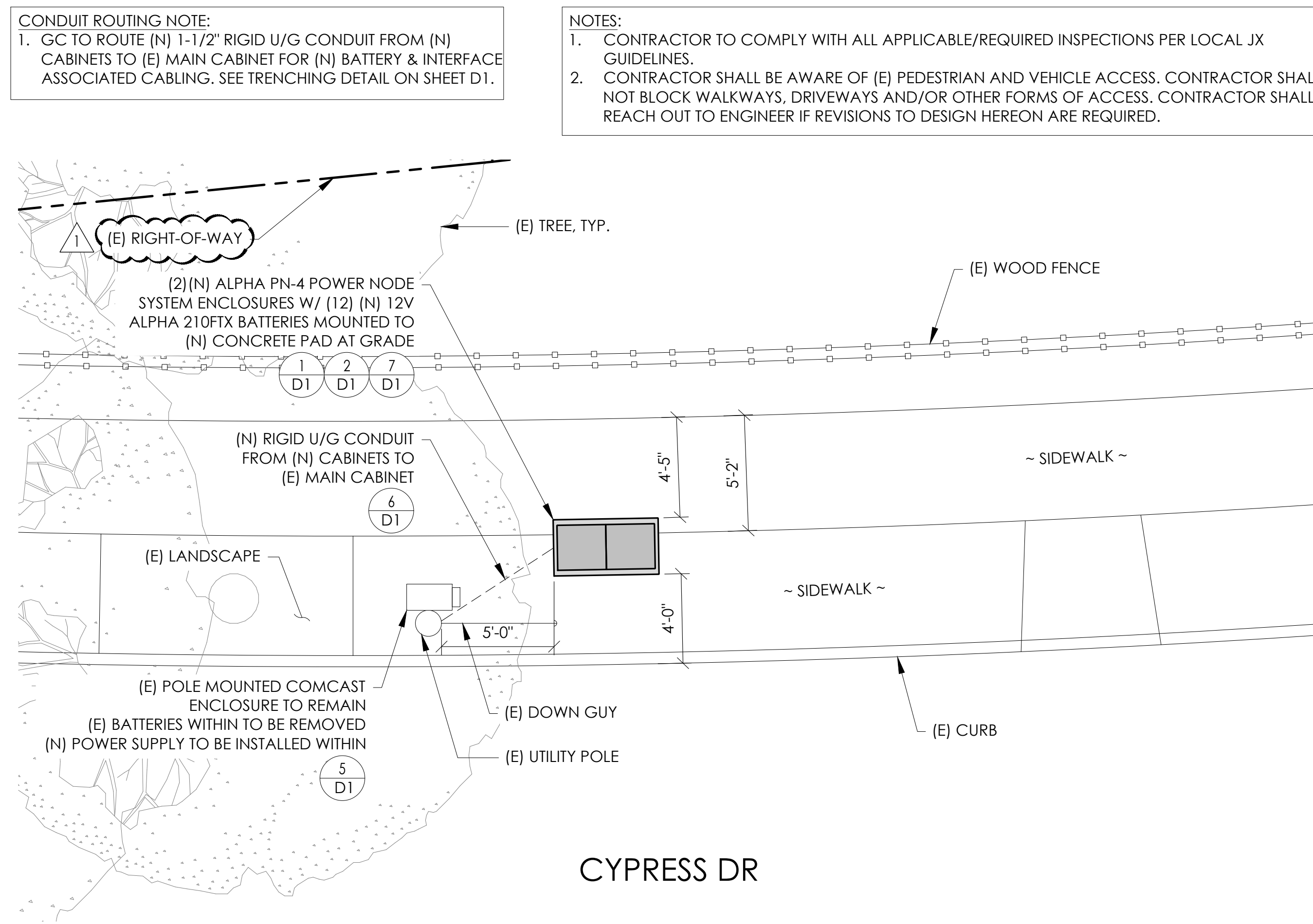
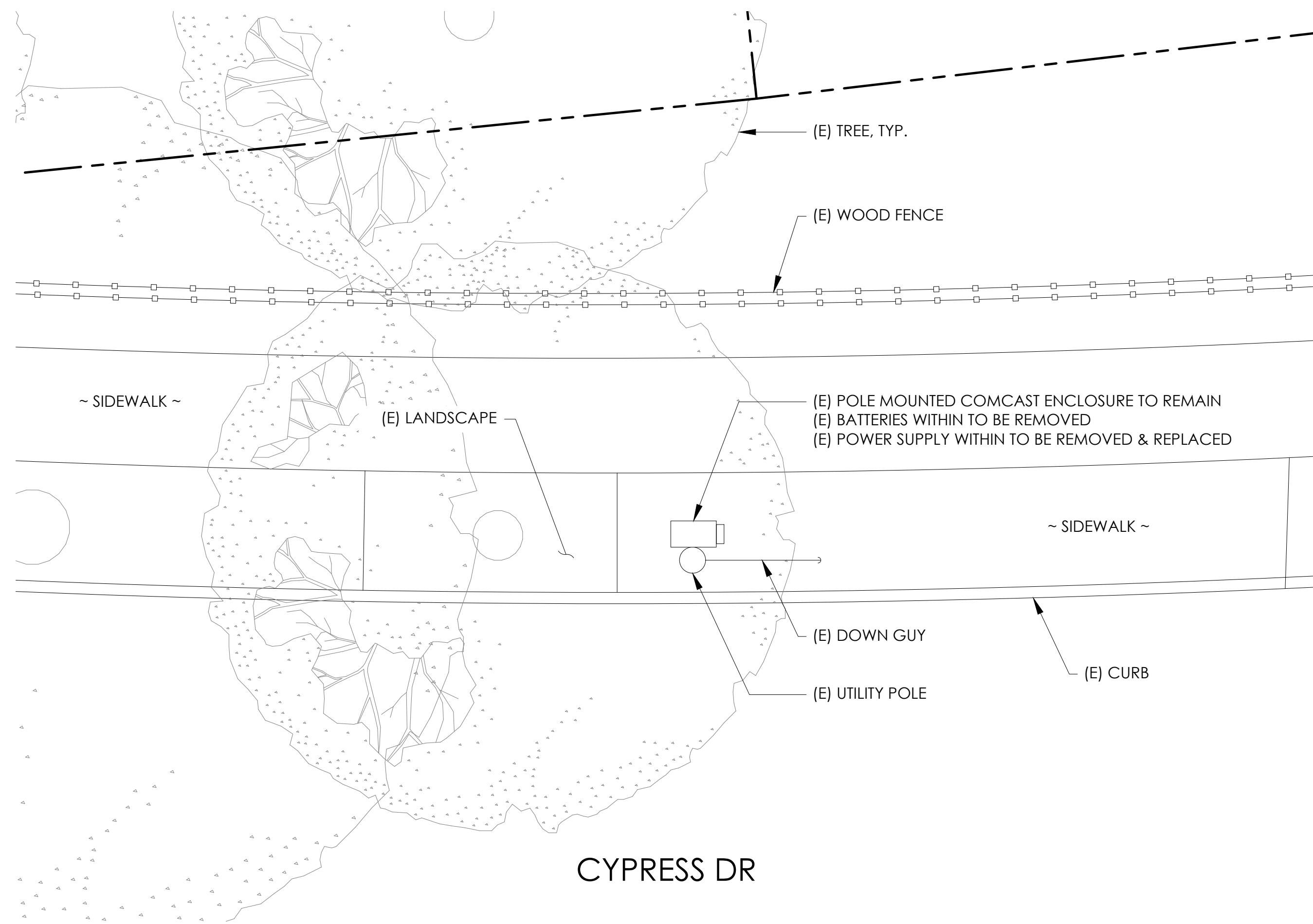
REVISIONS:		
REV	DATE	DESCRIPTION
0	02/06/23	SUBMITTAL

LICENSED LAND SURVEYOR
SHAWN M. EATON
#8644
STATE OF CALIFORNIA
EXP. 12/31/23

PROJECT INFORMATION:
P-060614
1 HICKORY RD.
FAIRFAX, CA. 94930
MARIN COUNTY

SHEET TITLE:
SITE SURVEY

SHEET NUMBER:
LS-1

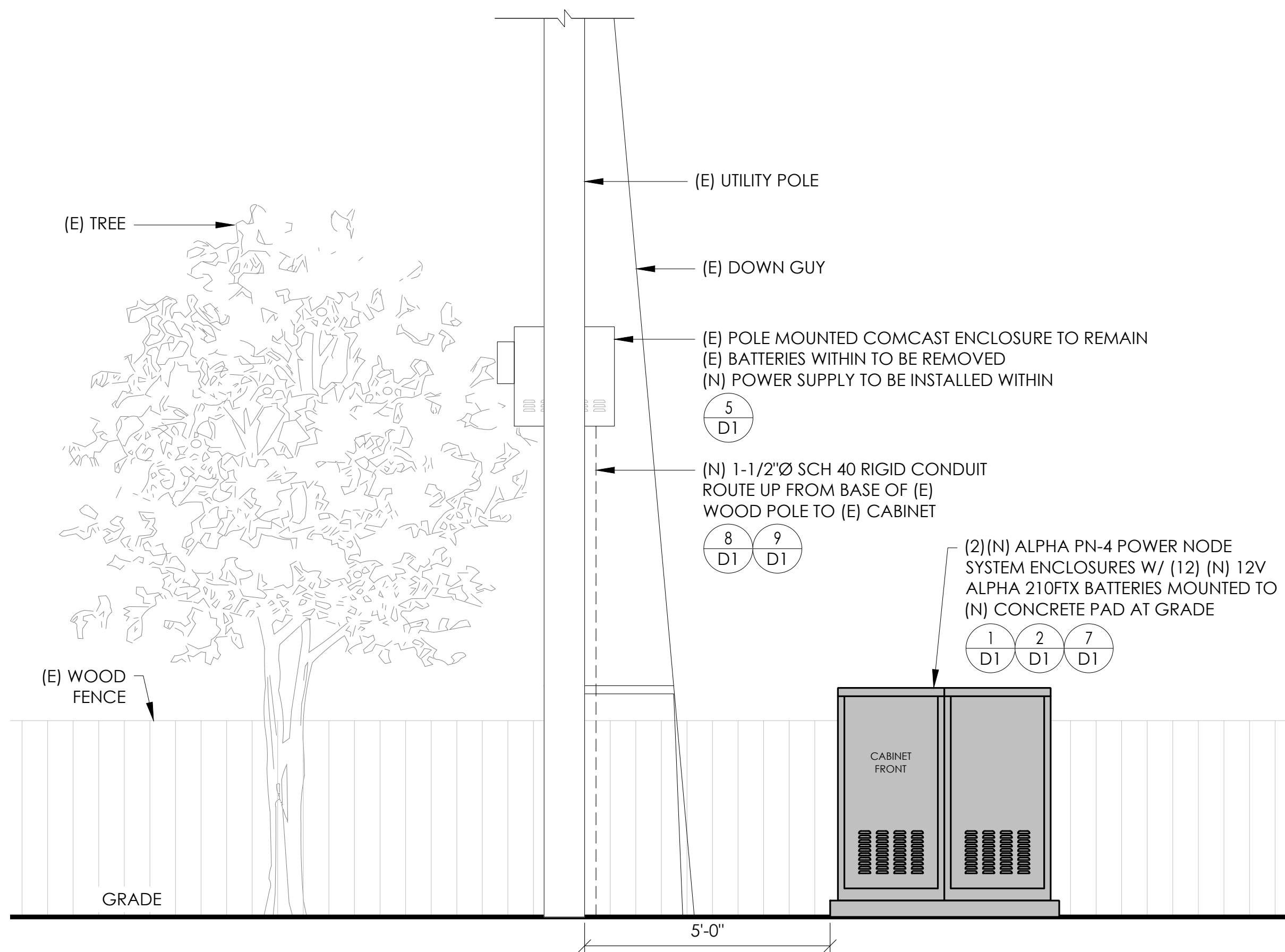
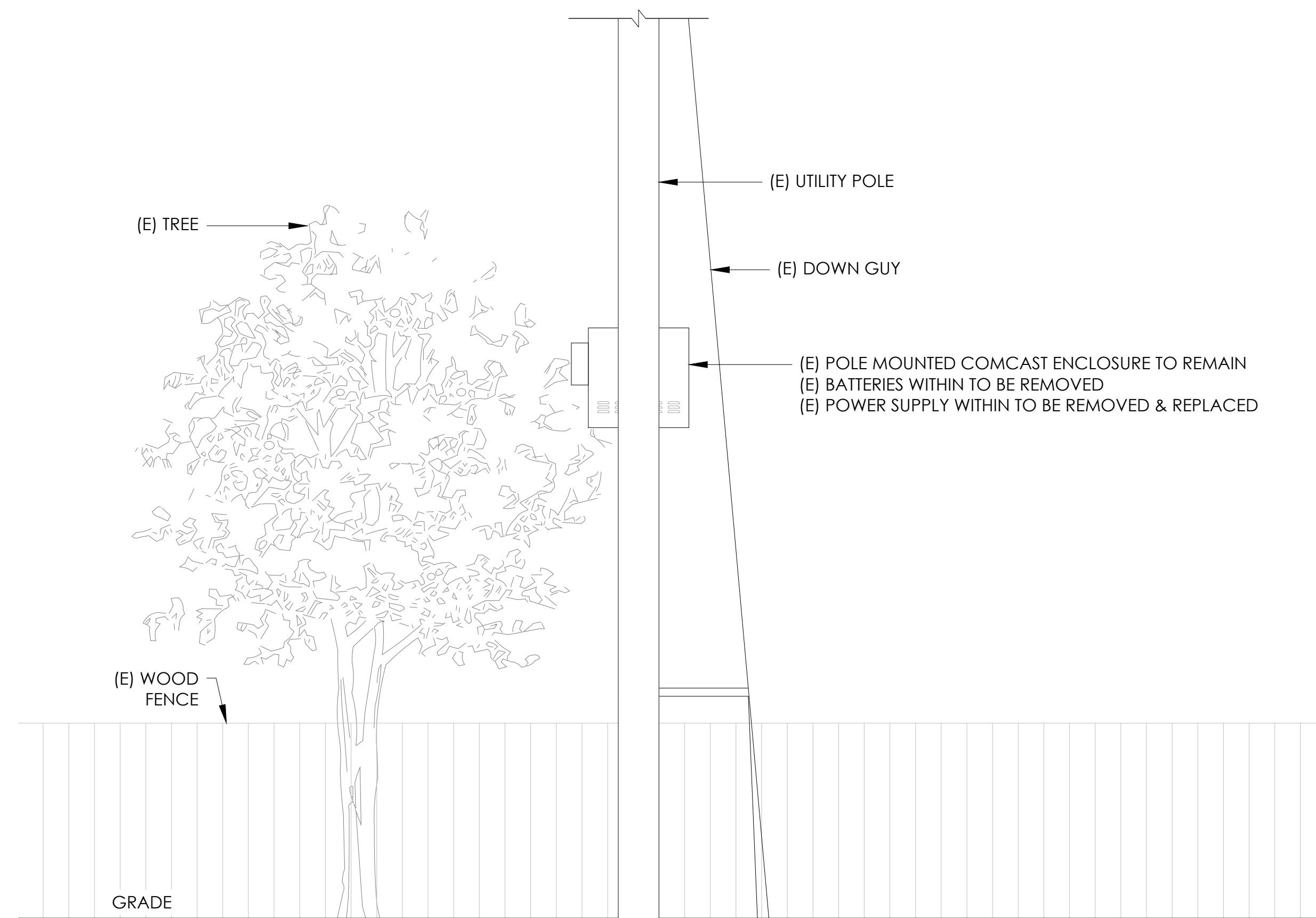


EXISTING ENLARGED SITE PLAN

24"x36" SCALE: 1/4" = 1'-0"
11"x17" SCALE: 1/8" = 1'-0"
4' 3' 2' 1' 0" 4' NORTH 2

PROPOSED ENLARGED SITE PLAN

24"x36" SCALE: 1/4" = 1'-0"
11"x17" SCALE: 1/8" = 1'-0"
4' 3' 2' 1' 0" 4' NORTH 1



EXISTING ELEVATION

24"x36" SCALE: 1/2" = 1'-0"
11"x17" SCALE: 1/4" = 1'-0"
2' 1' 0" 2' 4

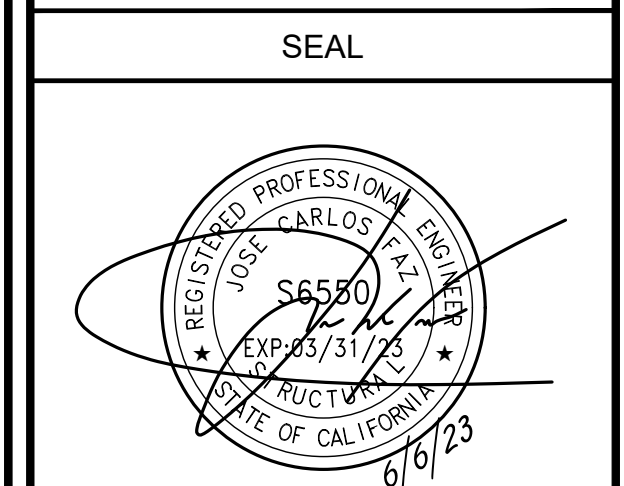
PROPOSED ELEVATION

24"x36" SCALE: 1/2" = 1'-0"
11"x17" SCALE: 1/4" = 1'-0"
2' 1' 0" 2' 3



ISSUE STATUS

REV	DATE	DESCRIPTION	BY
A	09/13/21	90% CD	JW
0	03/06/23	100% CD	AB
1	06/06/23	PCC #1	JG



SITE INFORMATION

SITE ADDRESS:
16 CYPRESS DR,
FAIRFAX, CA 94930

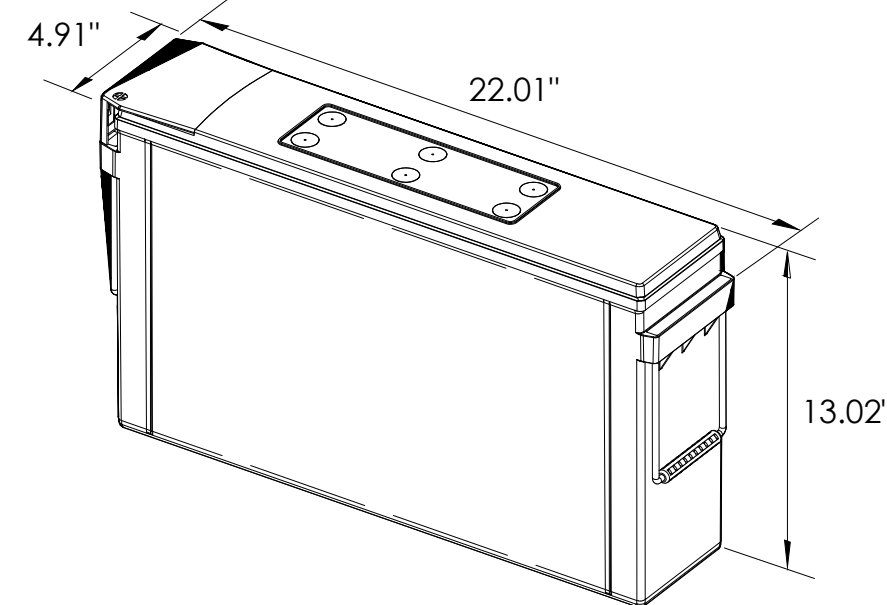
APN:
003-202-05

SHEET TITLE:
ELEVATIONS

A1



ALPHA
210 FX BATTERY UNIT

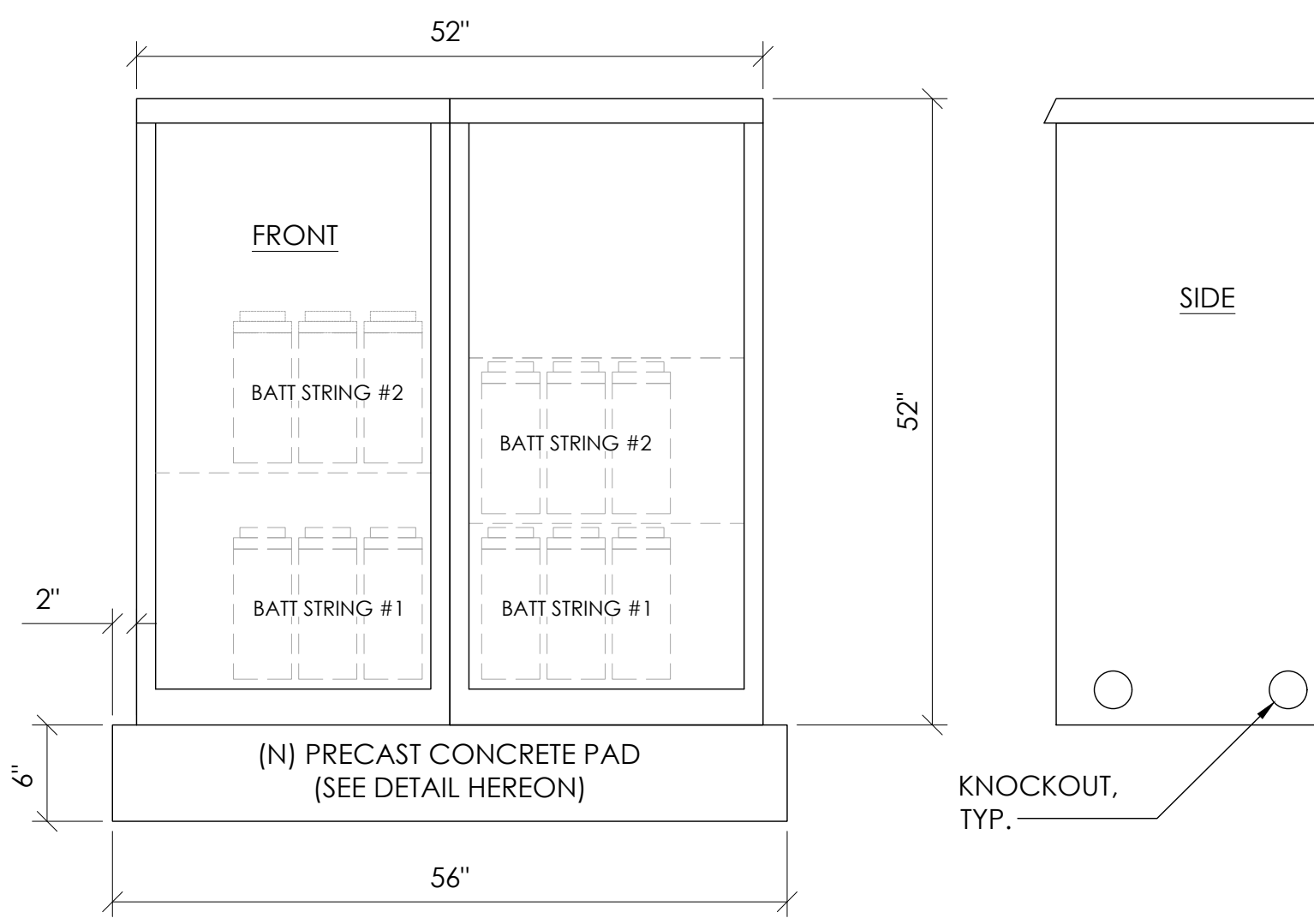


EQUIPMENT SPECIFICATIONS (1 UNIT)	
MFG:	ALPHA
MODEL:	210 FX
HEIGHT:	13.02 IN
WIDTH:	4.91 IN
LENGTH:	22.01 IN
WEIGHT:	145 LBS

BATTERY INFORMATION (VRLA TYPE BATTERIES)

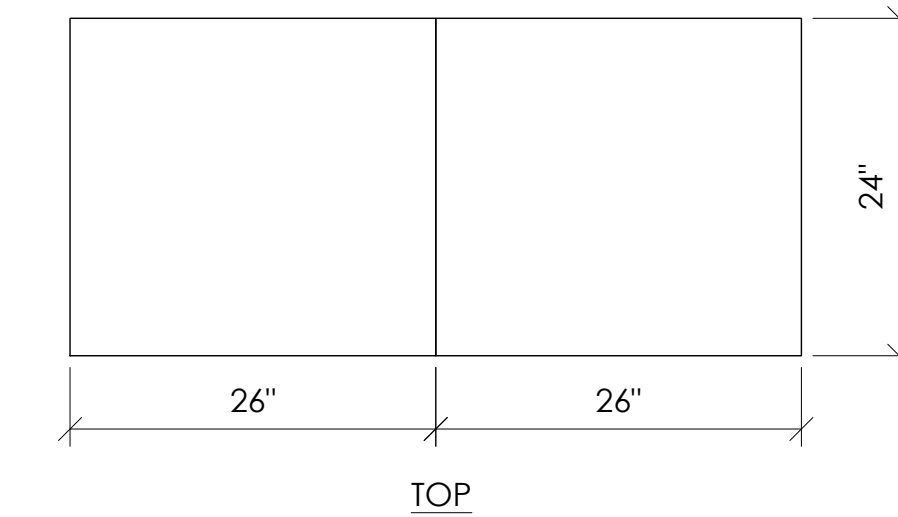
INSTALL STATUS	BATTERY MODEL	TOTAL # OF BATTERY UNITS INSTALLED	VOLTAGE (V)	AMP-HOURS (AH)	KWh, Kilowatt-hours = (V*AH)/1000	TOTAL BATTERY CAPACITY, KWh	STATIONARY BATTERY STORAGE SYSTEM THRESHOLD QUANTITY, PER CFC 2019 SECTION 1206	STATIONARY BATTERY STORAGE SYSTEM CODE CHECK	TOTAL ELECTROLYTE VOLUME (GALLONS) PER UNIT	TOTAL ELECTROLYTE BY VOLUME (GALLONS) =
PROPOSED	ALPHACELL 210FTX	12	12	210	2.52	30.24			2.1	25.2
TOTAL		12				30.24	70	CFC 2019 SECTION 1206 DOES NOT APPLY		25.2

7 BATTERY SPECIFICATIONS
N.T.S.

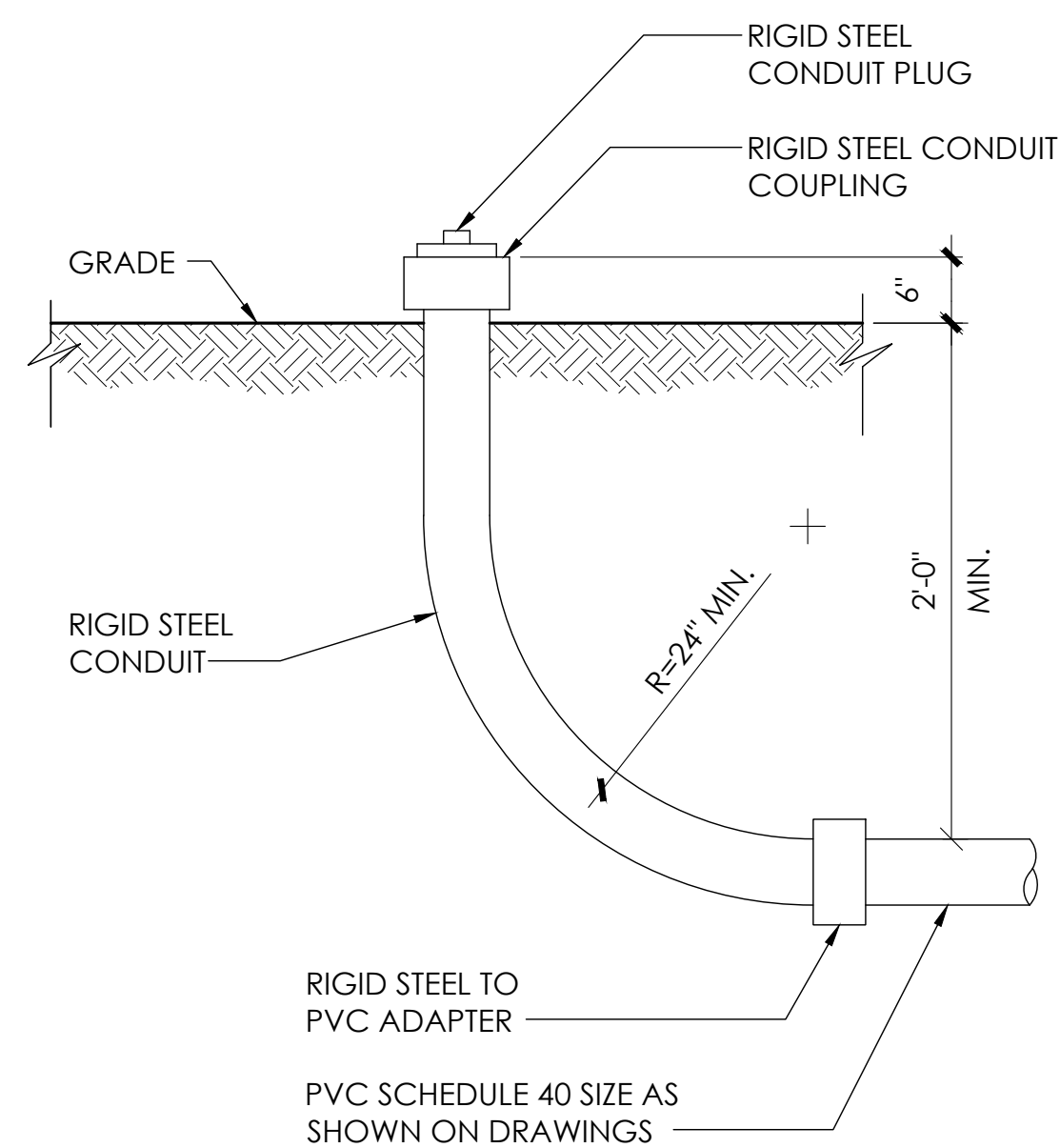


CABINET SPECIFICATIONS

MANUFACTURER:	ALPHA
MODEL:	PN-4
HEIGHT:	52"
WIDTH:	26"
DEPTH:	24"
WEIGHT (EMPTY):	360 LBS.
WEIGHT (W/ BATTERIES):	2,100 LBS.
MATERIAL:	ALUMINUM
BATTERY CONFIGURATION:	
CABINET #1:	(2) BATTERY STRINGS
CABINET #2:	(2) BATTERY STRINGS



1 DUAL EQUIPMENT CABINET DETAIL
N.T.S.

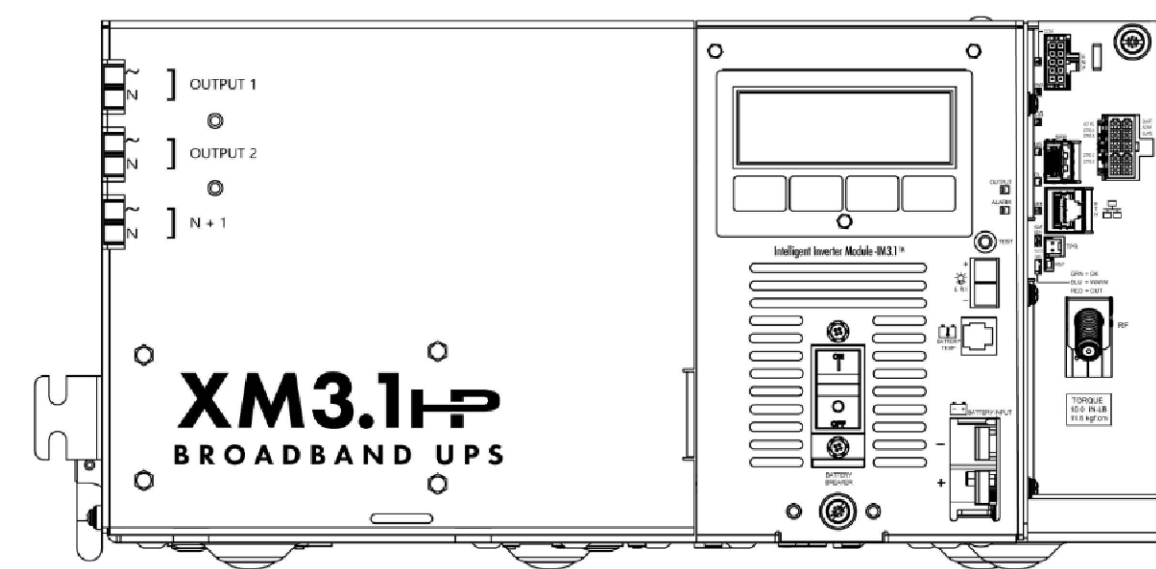


8 STUB-UP DETAIL
N.T.S.

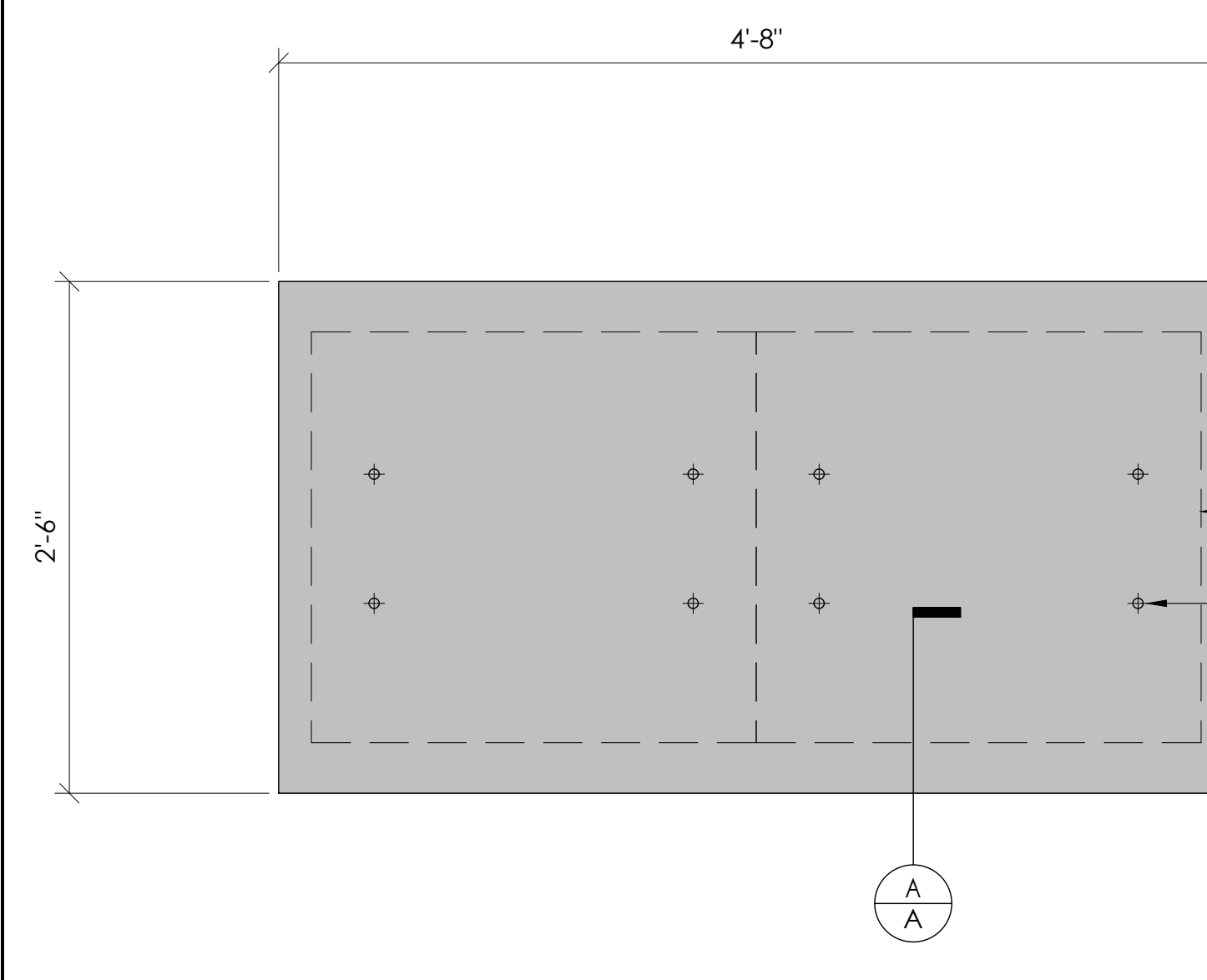
NOTE:
1. USE MANUFACTURER SUPPLIED MOUNTING HARDWARE.

NOMINAL INPUT VOLTAGE: 120V AC
OUTPUT VOLTAGE: 63/89V AC

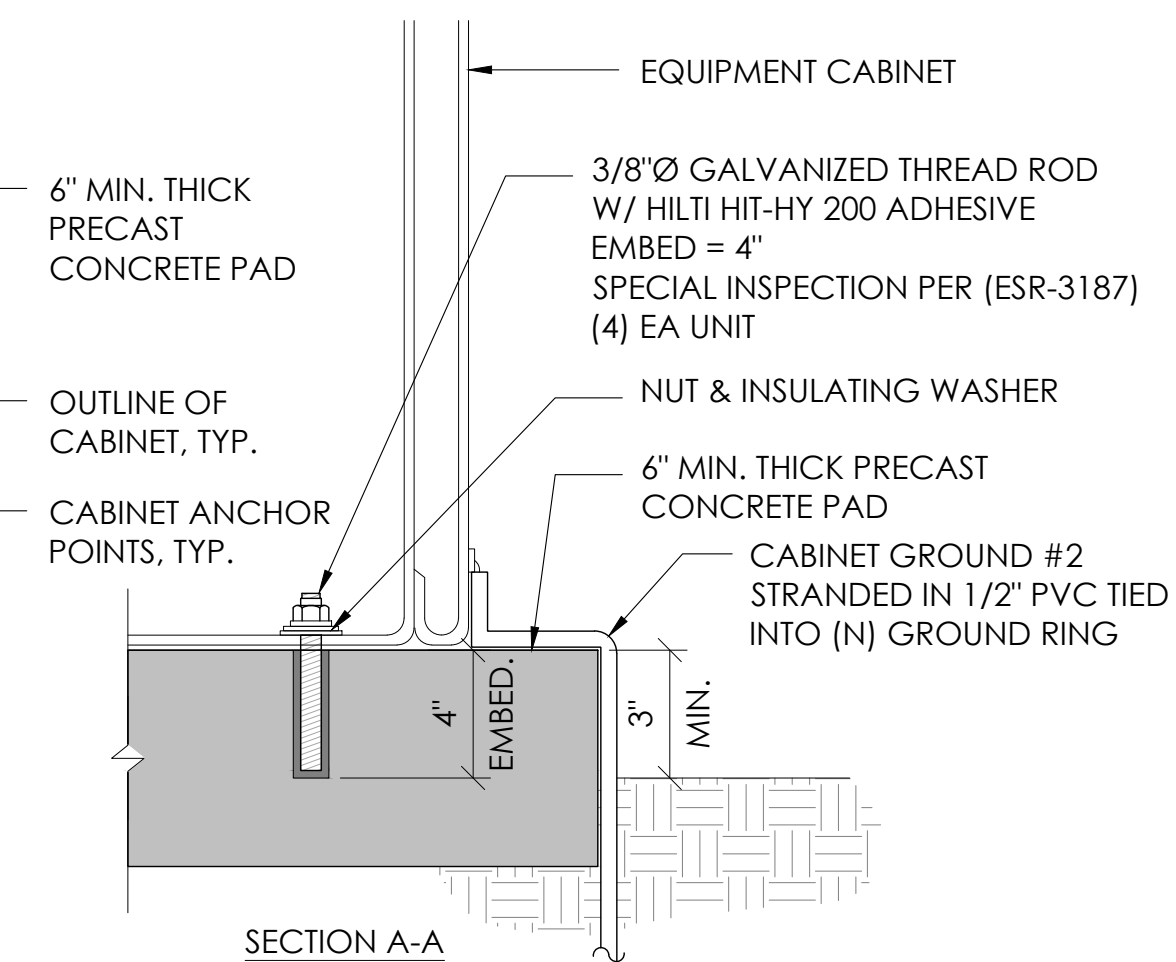
EQUIPMENT SPECIFICATIONS	
MFG:	ALPHA
MODEL:	XM3.1-HP
HEIGHT:	7.76 IN
WIDTH:	16.43 IN
DEPTH:	10.57 IN
WEIGHT:	61 LBS



5 POWER SUPPLY DETAIL
N.T.S.

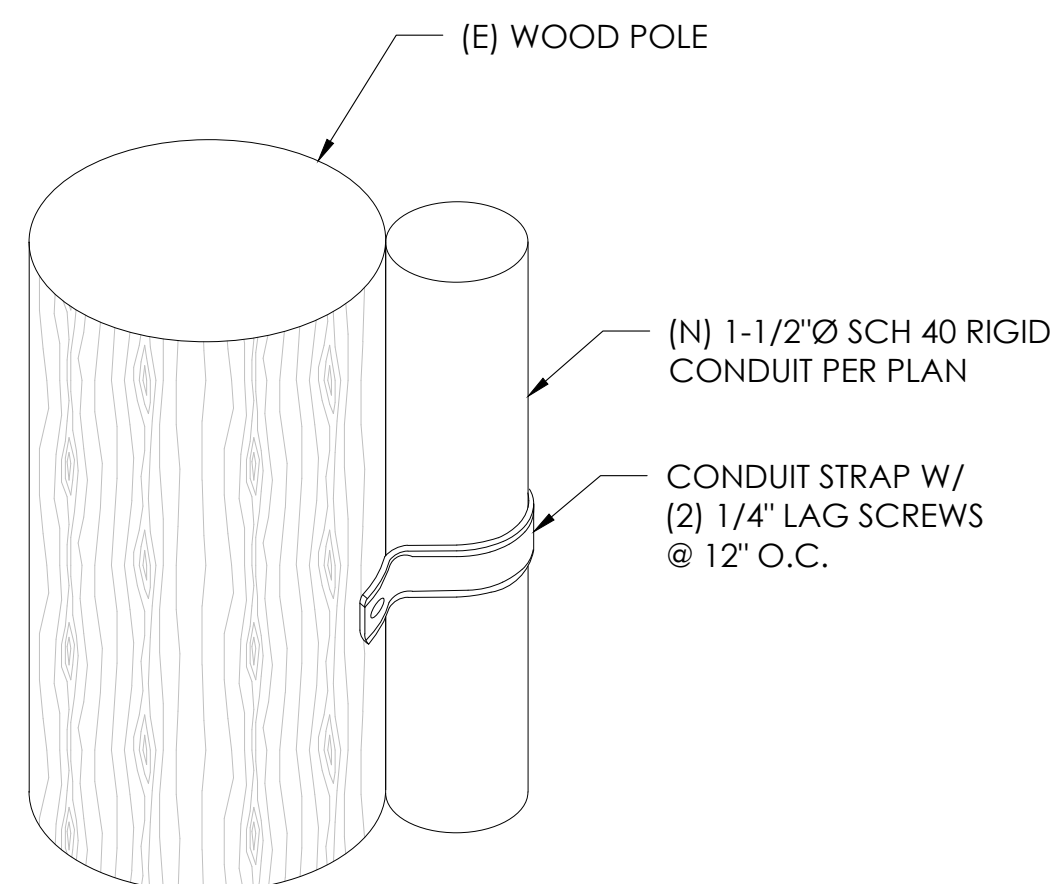


PLACE CONCRETE PAD MINIMUM 2" FROM NEARBY CONCRETE PAD(S)



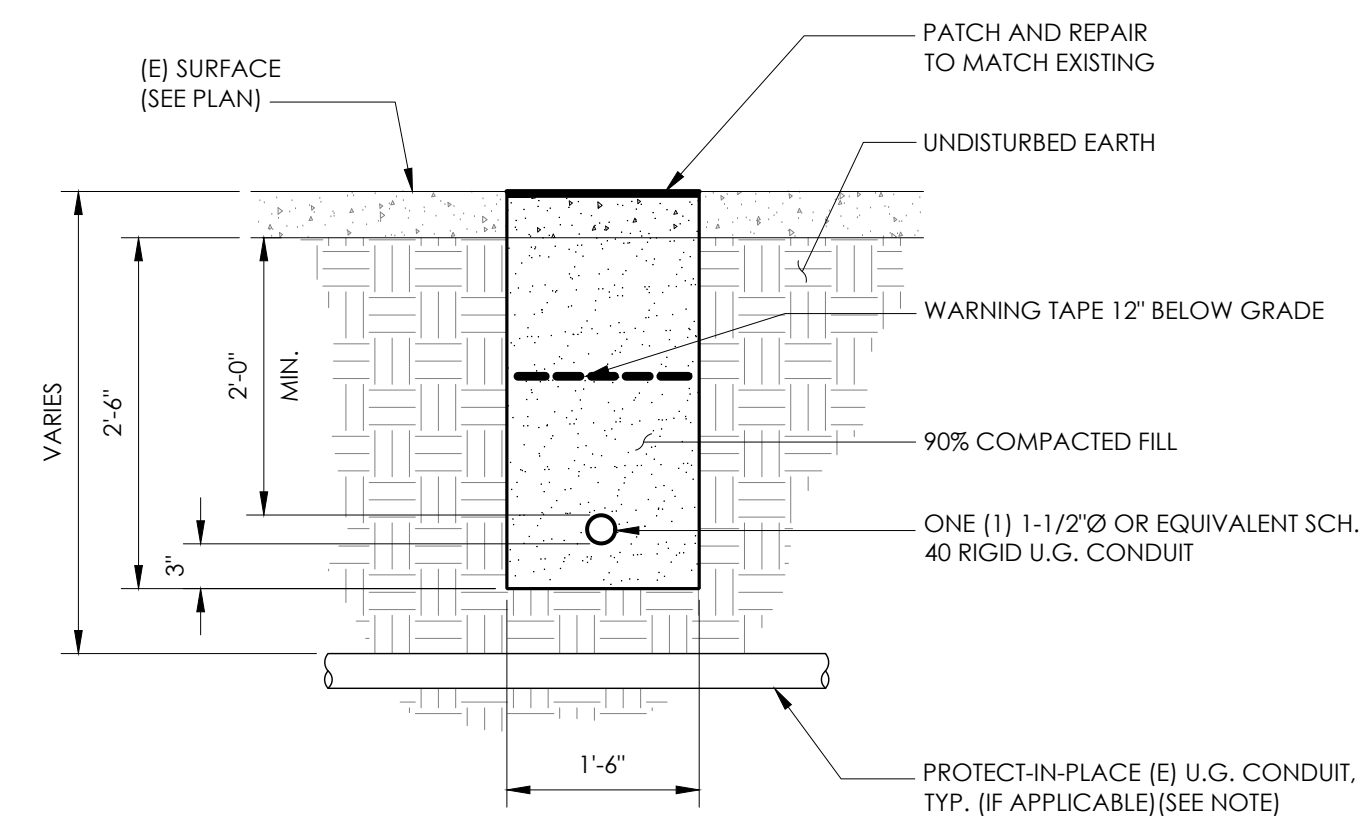
2 CONCRETE PAD & ANCHORAGE DETAIL
N.T.S.

NOTE:
1. CONTRACTOR TO VERIFY RISER MOUNTING REQUIREMENTS W/ POLE OWNER AND/OR POWER COMPANY



9 CONDUIT RISER ATTACHMENT DETAIL
N.T.S.

NOTE:
1. PRIOR TO STARTING CONSTRUCTION, THE CONTRACTOR HAS THE RESPONSIBILITY TO LOCATE ALL EXISTING UTILITIES, CONDUITS WHETHER OR NOT SHOWN ON THE PLANS, AND TO PROTECT THEM FROM DAMAGE.



6 TRENCHING DETAIL
N.T.S.

1/2" x 8" COPPER GROUND ROD, FOUR PLACES, DRIVEN ABOUT 2 FEET (TYPICAL) FROM THE CORNERS OF THE PAD.

#2 BARE COPPER WIRE LOOP TERMINATED TO EACH GROUND ROD AND BURIED BELOW GRADE 2 TO 12 INCHES.
CORROSION-PROOF CONNECTIONS (25+ YEAR LIFE-SPAN) AND HARDWARE SUITABLE FOR DIRECT BURIAL MUST BE USED.

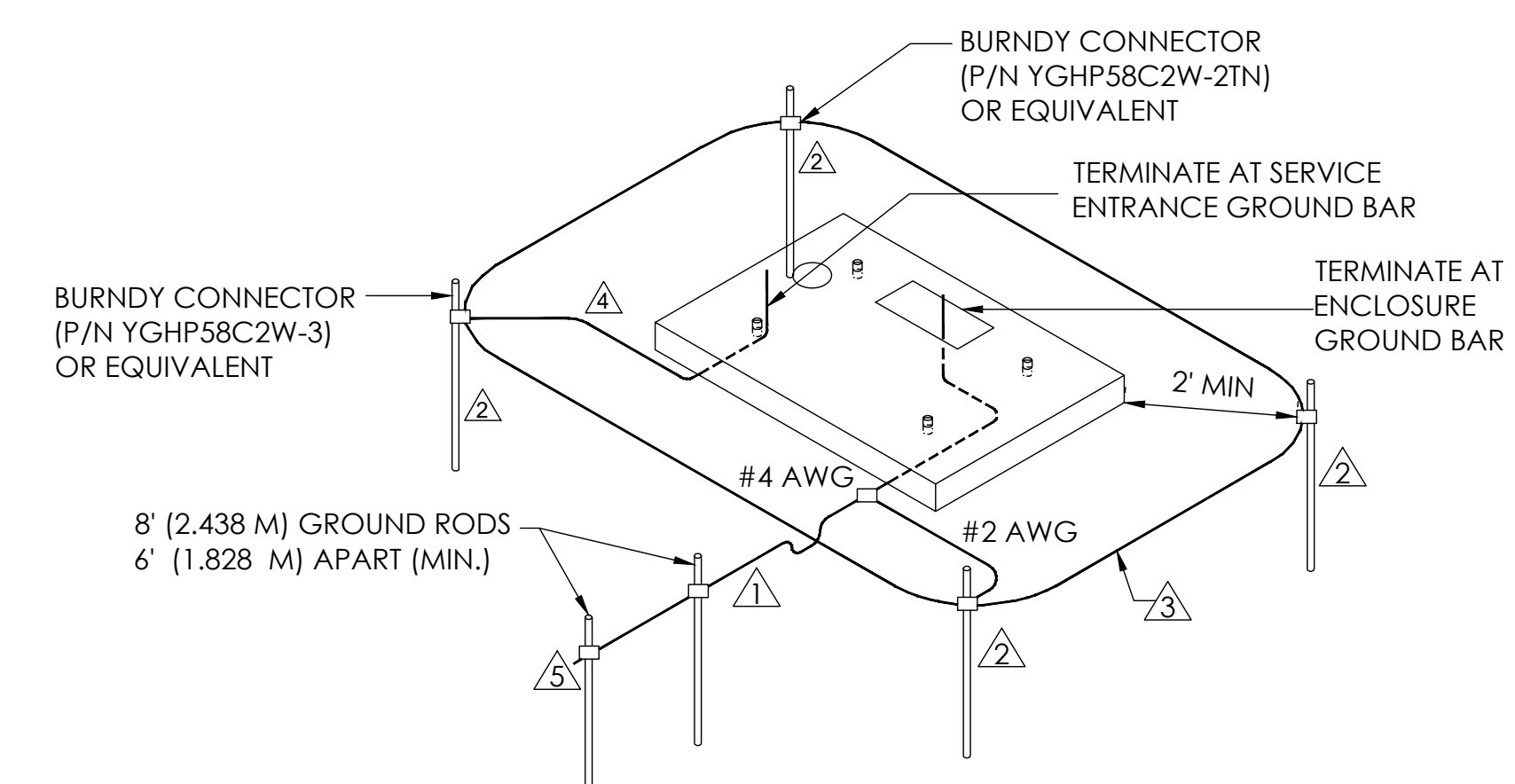
#2 BARE COPPER WIRE FROM LOOP TO ENCLOSURE.

WHEN THE ELECTRICAL SUPPLY IS A PRIMARY SERVICE (NOT A SECONDARY OR FEEDER SERVICE), A #2 BARE COPPER WIRE MUST BOND THE LIGHTNING PROTECTION LOOP TO THE GROUNDING ELECTRODE CONDUCTOR WHERE THEY ARE CLOSEST.

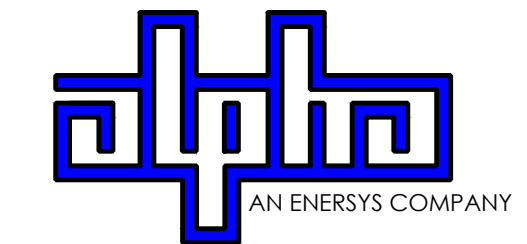
SERVICE GROUNDING (REQUIRED)

#6 BARE COPPER WIRE FROM SERVICE NEUTRAL / GROUND BAR WITH 2 GROUND RODS LOCATED 6' APART.

3 GROUNDING DETAIL
N.T.S.



3011 COMCAST PLACE
LIVERMORE, CA 94551



3767 ALPHA WAY
BELLINGHAM, WA 98226



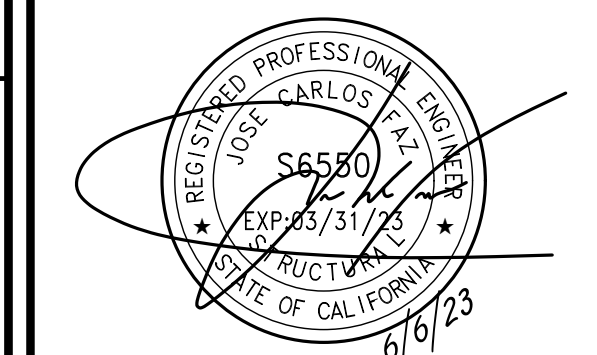
23 MAUCHLY, STE 110
IRVINE, CA 92618

J5 PROGRAM ID: ALP-CA-CPUC
J5 PROJECT ID: P-060614

ISSUE STATUS

REV	DATE	DESCRIPTION	BY
A	09/13/21	90% CD	JW
0	03/06/23	100% CD	AB
A	06/06/23	PCC #1	JG

SEAL



SITE INFORMATION

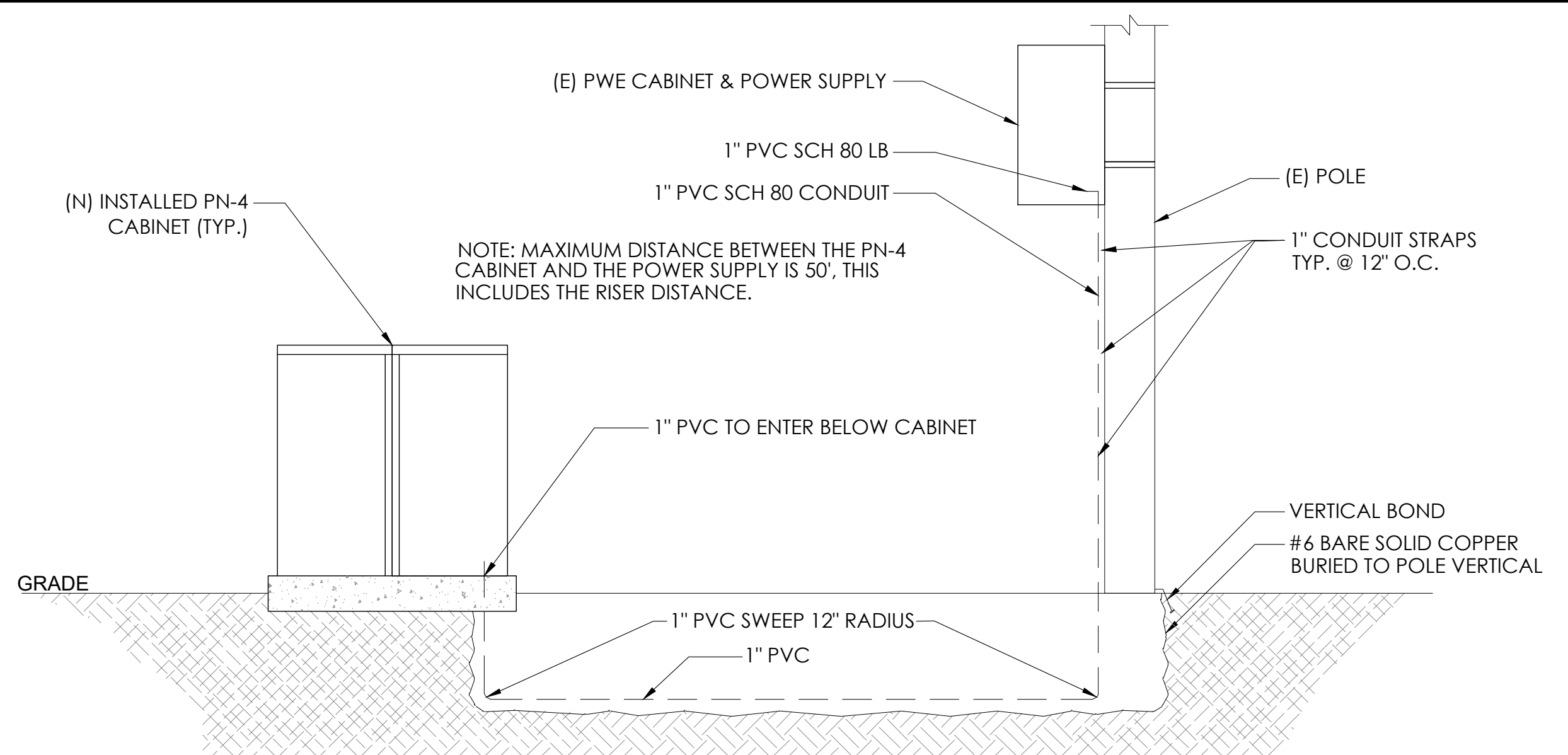
SITE ADDRESS:
16 CYPRESS DR,
FAIRFAX, CA 94930

APN:
003-202-05

SHEET TITLE:

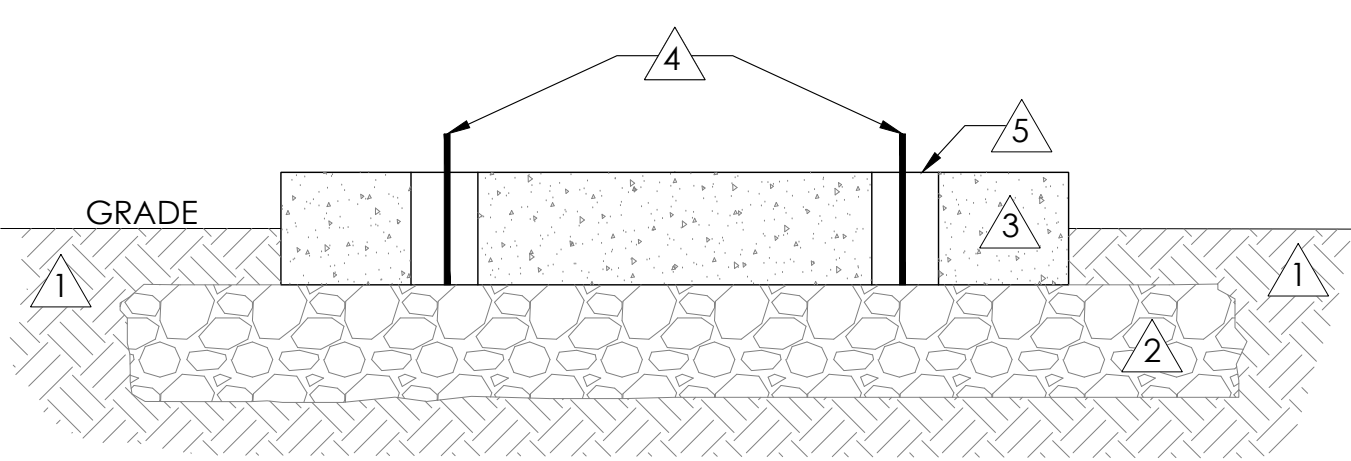
DETAILS

D1

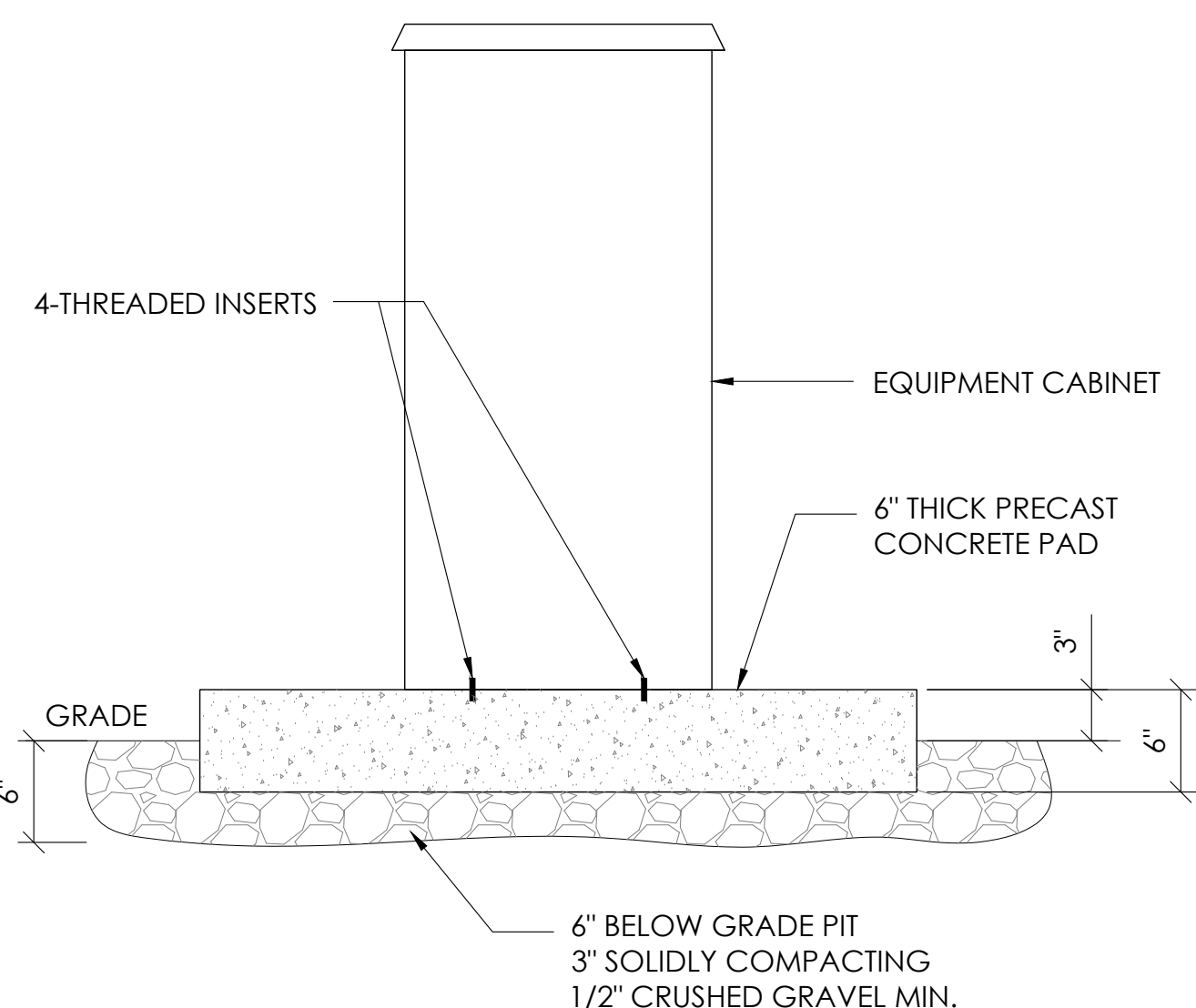


1 CONDUIT/RISER INSTALLATION
N.T.S.

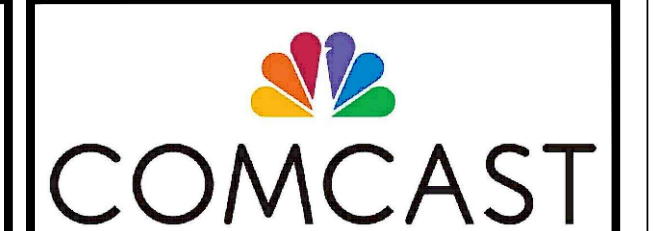
- 1 UNDISTURBED GROUND
- 2 COMPACTED GRAVEL (6" BELOW GRADE)
- 3 CONCRETE PAD (6" THICK)
- 4 1/2" - 4 MOUNTING STUDS FOR THREADED INSERTS
- 5 OPEN AREA FOR UTILITY SWEEPS (OPTIONAL)



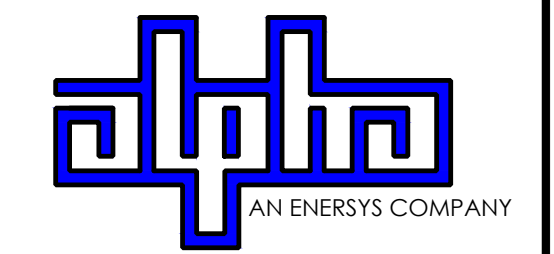
3 FOUNDATION BASE FOR PN4
N.T.S.



2 P4 CABINET INSTALLATION
N.T.S.



3011 COMCAST PLACE
LIVERMORE, CA 94551



3767 ALPHA WAY
BELLINGHAM, WA 98226



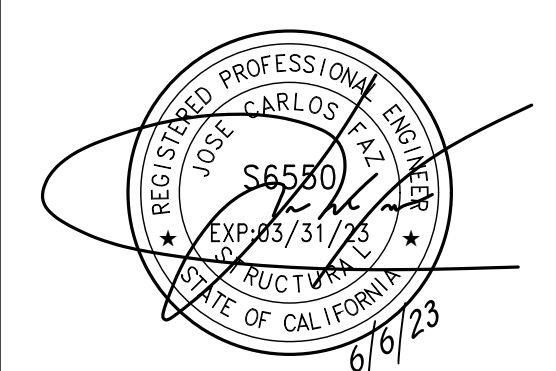
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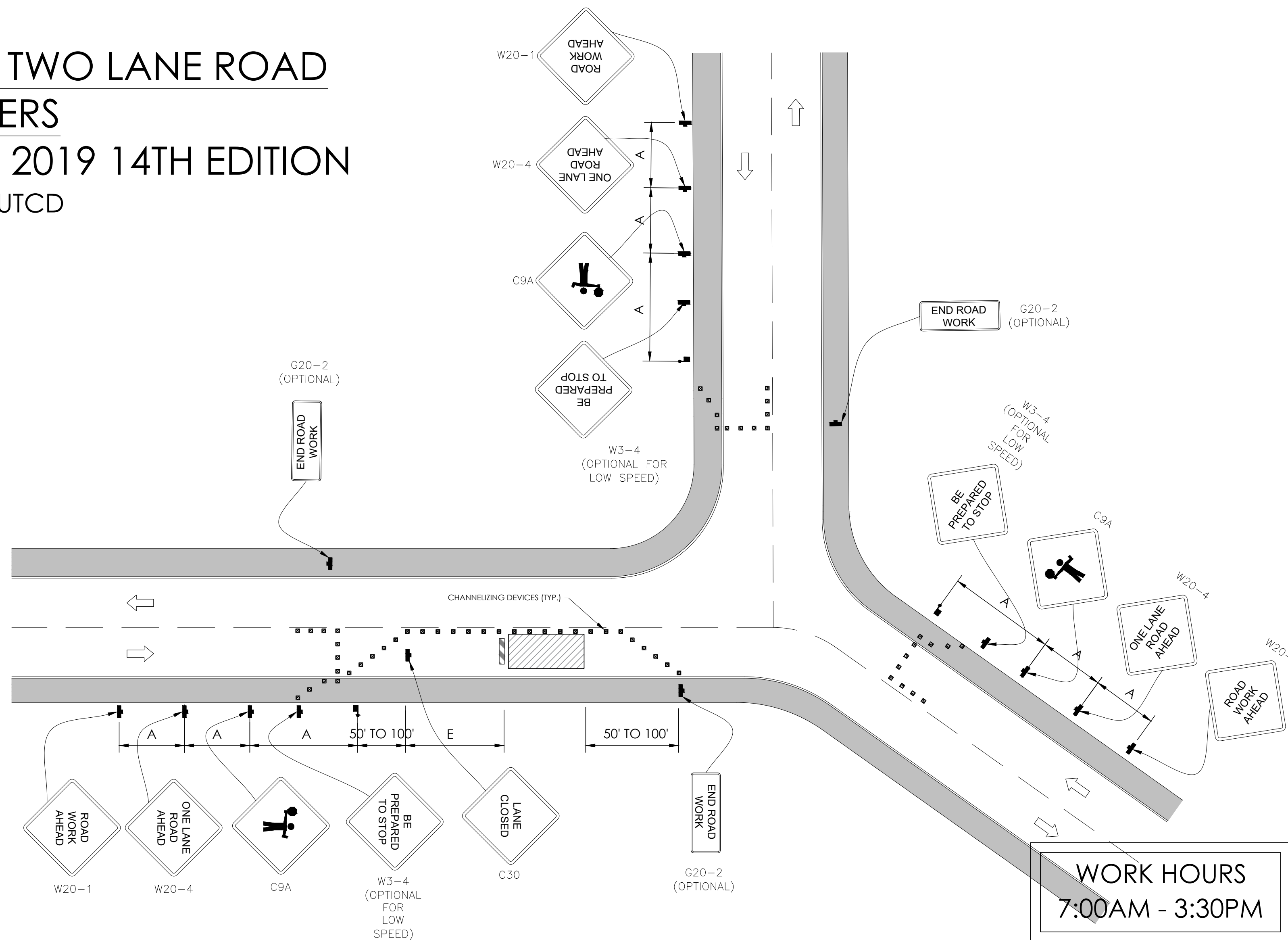
SHEET TITLE:

DETAILS

D2

TRAFFIC CONTROL FOR LANE CLOSURE ON TWO LANE ROAD INTERSECTION USING FLAGGERS

WORK AREA TRAFFIC CONTROL HANDBOOK 2019 14TH EDITION
PER STANDARDS AND GUIDANCE OF CA-MUTCD



GENERAL NOTES:

1. ALL WORK AND MATERIALS SHALL COMPLY WITH THE CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), 2019.
2. ALL STRIPING AND MARKINGS SHALL CONFORM TO THE STATE OF CALIFORNIA 2010 STANDARD PLAN A20A.
3. THE CONTRACTOR SHALL PROVIDE FOR ACCESS TO ALL ADJACENT PROPERTIES.
4. FLASHING YELLOW BEACONS, TYPE "B", SHALL BE USED ON ALL W20-1 SIGNS AND ON ALL TYPE III BARRICADES GUARDING THE WORK OVERNIGHT.
5. ALL SIGNS SHALL BE REFLECTORIZED AND STANDARD SIZE.
6. ALL TUBULAR DELINEATORS AND CONES SHALL BE 28" MINIMUM HEIGHT, REFLECTORIZED AND MAINTAINED ERECT IN THE INDICATED POSITION AT ALL TIMES, AND SHALL BE REPAIRED, REPLACED, OR CLEANED AS NECESSARY TO PRESERVE THEIR APPEARANCE AND CONTINUITY, AND SHALL INCLUDE A 12" HIGH-INTENSITY REFLECTORIZED SLEEVE..
7. THE CONTRACTOR SHALL MAINTAIN, ON A CONTINUOUS BASIS, ALL SIGNS, DELINEATORS, BARRICADES, ETC., TO ENSURE PROPER FLOW AND SAFETY OF TRAFFIC DURING CONSTRUCTION.
8. THE CONTRACTOR SHALL HAVE SIGNS, DELINEATORS, BARRICADES, ETC., PROPERLY INSTALLED PRIOR TO COMMENCING CONSTRUCTION.
9. CONSTRUCTION OPERATIONS SHALL BE CONDUCTED IN SUCH A MANNER AS TO CAUSE AS LITTLE INCONVENIENCE AS POSSIBLE TO ABUTTING PROPERTY OWNERS.
10. ADDITIONAL TRAFFIC CONTROLS, TRAFFIC SIGNS OR BARRICADING MAY BE REQUIRED IN THE FIELD. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PLACEMENT OF ANY ADDITIONAL DEVICES NECESSARY TO ASSURE THE SAFETY TO THE PUBLIC AT ALL TIMES DURING CONSTRUCTION.
11. EXACT LOCATION AND TYPE OF CONSTRUCTION SIGNS SHALL BE DIRECTED BY THE ENGINEER BASED UPON CONSTRUCTION CONDITIONS.
12. MOVE DELINEATORS AND/OR CONES TO SIDEWALK DURING NON-WORKING HOURS. REMOVE BARRICADES ETC., FROM TRAVEL LANE.
13. REMOVE OR TURN OFF SIGNS DURING NON-WORKING HOURS.
14. ALL CONFLICTING LINES, EXISTING CURB PAINT, AND MARKINGS SHALL BE REMOVED BY WET SANDBLASTING OR OTHER APPROVED METHOD PRIOR TO INSTALLATION OF NEW/TEMPORARY STRIPING. ALL CONFLICTING RAISED PAVEMENT MARKERS SHALL BE REMOVED. PAVEMENT THAT IS DAMAGED DUE TO REMOVAL OF MARKERS SHALL BE REPAIRED TO THE SATISFACTION OF THE CITY ENGINEER AND/OR STATE INSPECTOR.
15. DIMENSIONS BASED ON GIS MAPPING DATA AND/OR RECORD DRAWINGS AND NOT A SURVEY.
16. TIME OF LANE CLOSURE TO BE IN ACCORDANCE WITH REQUIREMENTS OF JURISDICTION.
17. ADDITIONAL ADVANCED FLAGGERS MAY BE REQUIRED. FLAGGER SHOULD STAND IN A CONSPICUOUS PLACE, BE VISIBLE TO APPROACHING TRAFFIC. PLACE A MINIMUM OF FOUR CONES AT 40-FT INTERVAL IN ADVANCE OF FLAGGER STATION AS SHOWN.

SPEED MPH (2)	DIMENSION A/B/C ADVANCE WARNING SIGN SPACING (5)	DIMENSION L MERGIN TAPER LENGTH	DIMENSION L/2 SHIFTING TAPER LENGTH	DIMENSION L/3 MINIMUM SHOULDER TAPER	DIMENSION "E"	MAXIMUM CHANNELIZER TAPER SPACING (3)	MAXIMUM CHANNELIZER TANGENT SPACING (3)	MAXIMUM CHANNELIZER CONFLICT SPACING (6)
					BUFFER SPACE (4-A) AND FLAGGER STATION STOPPING SIGHT DISTANCE (4-B) (0% (-3%) (-6%))			
MPH	FT	ft	ft	ft	ft	ft	ft	ft
25	100	125	65	45	(155) (160) (135)	25	50	12
30	250	180	90	60	(200) (205) (215)	30	60	15
35	250	245	125	85	(250) (260) (275)	35	70	17
40	250	320	160	110	(305) (315) (335)	40	80	20
45	350	540	270	180	(360) (380) (400)	45	90	22
50	350	600	300	200	(425) (450) (475)	50	100	25
55	500	660	330	220	(495) (520) (555)	50	100	25
60	500	720	360	240	(570) (600) (640)	50	100	25
65	500	780	390	260	(645) (685) (730)	50	100	25

1	WORK ON FREEWAYS AND EXRESSWAYS SHALL MEET THE CALTRANS STANDARD PLANS AND STANDARD SPECIFICATION REQUIREMENTS
2	POSTED SPEED OR OBSERVED OPERATION SPEED (WHICHEVER IS GREATER)
3	CHANNELIZER SPACING SHALL BE REDUCED BY HALF AT AREAS WHERE WORK IS TAKING PLACE ON CURVES OR AREAS OF HEAD-ON CONFLICT
4-A	BUFFER SPACE MAY BE INSERTED IN LOW-SPEED URBAN AREAS AND SHOULD BE INSERTED IN HIGH-SPEED URBAN AND RURAL AREAS
4-B	THE STOPPING SIGHT DISTANCE SHOULD ENABLE ROAD USERS TO SEE THE PRIMARY FLAGGER STATION AND SAFELY STOP
5	SIGN SPACING IN RURAL AREAS SHOULD BE 500 FT
6	** TABLE 6F-101 (CA)

3011 COMCAST PLACE
LIVERMORE, CA 94551

3767 ALPHA WAY
BELLINGHAM, WA 98226

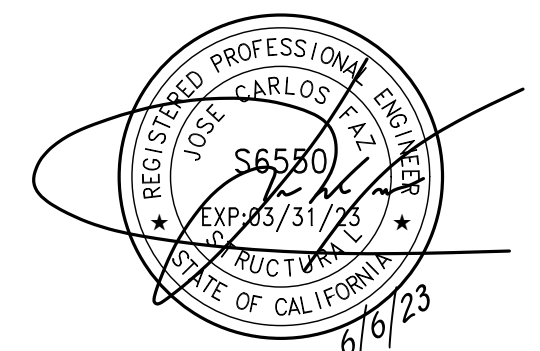
23 MAUCHLY, STE 110
IRVINE, CA 92618

J5 PROGRAM ID: ALP-CA-CPUC
J5 PROJECT ID: P-060614

ISSUE STATUS

REV	DATE	DESCRIPTION	BY
A	09/13/21	90% CD	JW
0	03/06/23	100% CD	AB
1	06/06/23	PCC #1	JG

SEAL



SITE INFORMATION

SITE ADDRESS:
16 CYPRESS DR,
FAIRFAX, CA 94930

APN:
003-202-05

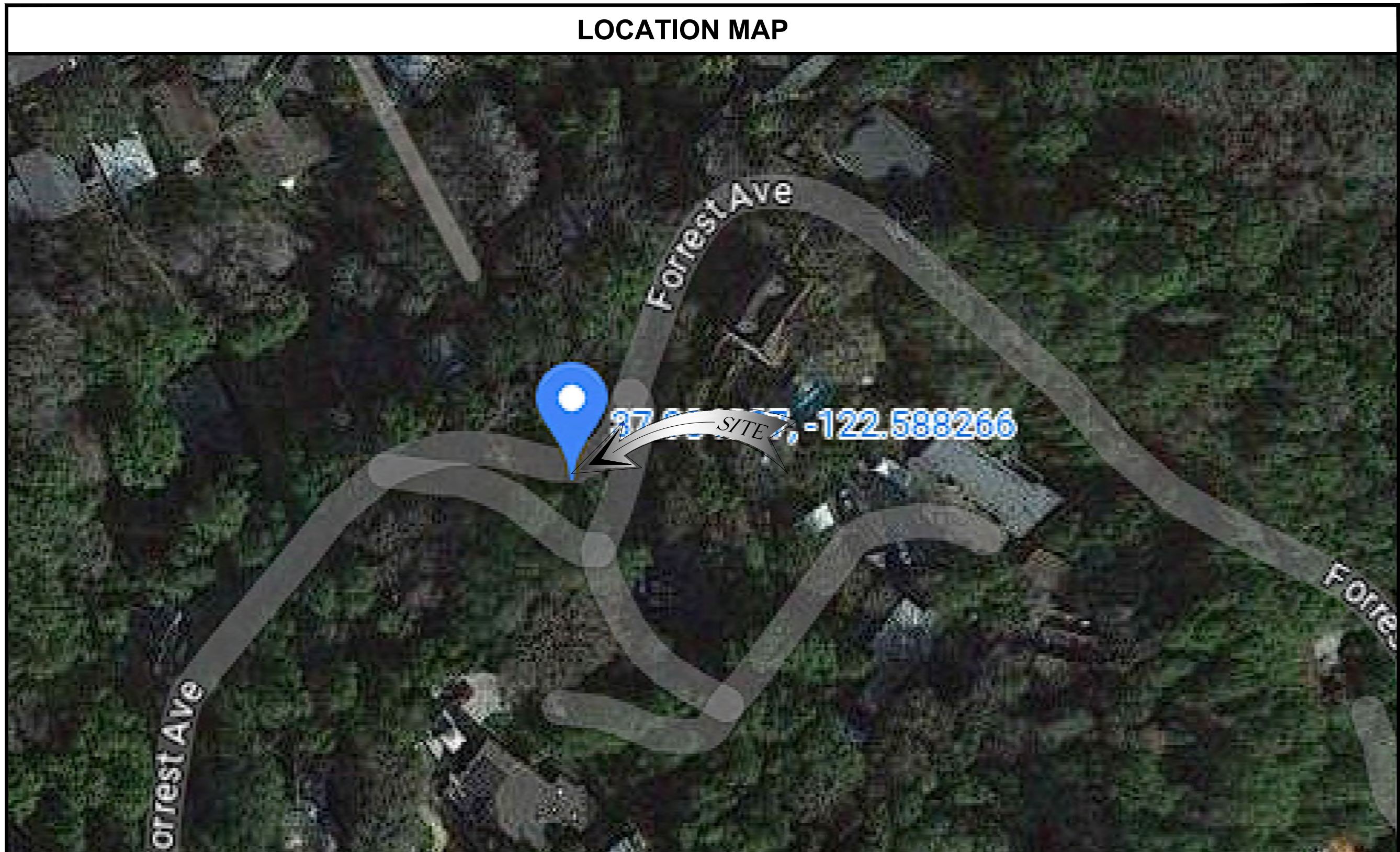
SHEET TITLE:

TRAFFIC CONTROL

TC1



EXISTING SITE PHOTO



LOCATION MAP



SITE ADDRESS:
284 FORREST AVE
FAIRFAX, CA 94930

SITE INFORMATION	
SITE ADDRESS:	284 FORREST AVE FAIRFAX, CA 94930
LATITUDE/LONGITUDE (NAD 83):	37.984189, -122.588235
JURISDICTION:	Fairfax City
POWER PROVIDER:	PG&E
AMP DRAW:	9.00

DRAWING INDEX	
SHEET	DESCRIPTION
T1	TITLE SHEET AND SITE PLAN
T2	PROJECT INFORMATION & NOTES
LS-1	SITE SURVEY
A1	ENLARGED SITE PLANS & ELEVATIONS
D1	DETAILS
D2	DETAILS
D3.0	HAZMAT NOTE
D3	MANUFACTURER'S SPECIFICATIONS, RATINGS AND LISTINGS OF EACH ESS
D4	ENERGY (BATTERY) MANAGEMENT SYSTEMS AND OPERATION SIGNAGE
D5	INSTALLATION REQUIREMENTS
D6	COMMISSIONING
D7	COMMISSIONING
D8	DECOMMISSIONING
D9	SIGNAGE & NAMEPLATE LABEL
TC1	TRAFFIC CONTROL
S1	STRUCTURAL NOTES
S2	SPECIAL INSPECTION NOTES
S3	STRUCTURAL DETAILS

PROJECT TEAM		
OWNER:	COMCAST CABLE 3055 TRIAD PLACE LIVERMORE, CA 94551	ENGINEER/ ARCHITECT:
		J5 INFRASTRUCTURE PARTNERS MARK MASCUNANA ARCHITECT/ENGINEER CONTACT PH: (281) 387-8814 EMAIL: mark.mascunana@j5ip.com 23 MAULCHLY, SUITE 110 IRVINE, CALIFORNIA, 92618
APPLICANT:	ALPHA TECHNOLOGIES, INC. RICH SEIFF DIRECTOR OF SERVICES WEST REGION ENERGY SYSTEMS AMERICAS PH: (331) 276-0232 EMAIL: cpucpermits@enersys.com	

CODE COMPLIANCE	
ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.	
1.	CALIFORNIA BUILDING STANDARDS CODE: 2022 TRIENNIAL EDITION OF TITLE 24, WITH AN EFFECTIVE DATE OF JANUARY 1, 2023.
	PART 1 - CALIFORNIA ADMINISTRATIVE CODE
	PART 2 - CALIFORNIA BUILDING CODE, BASED ON THE 2021 INTERNATIONAL BUILDING CODE
	PART 2.5 - CALIFORNIA RESIDENTIAL CODE, BASED ON THE 2021 INTERNATIONAL RESIDENTIAL CODE
	PART 3 - CALIFORNIA ELECTRICAL CODE, BASED ON THE 2020 NATIONAL ELECTRICAL CODE
	PART 4 - CALIFORNIA MECHANICAL CODE, BASED ON THE 2021 UNIFORM MECHANICAL CODE
	PART 5 - CALIFORNIA PLUMBING CODE, BASED ON THE 2021 UNIFORM PLUMBING CODE
	PART 6 - CALIFORNIA ENERGY CODE
	PART 7 - VACANT
	PART 8 - CALIFORNIA HISTORICAL BUILDING CODE
	PART 9 - CALIFORNIA FIRE CODE, BASED ON THE 2021 INTERNATIONAL FIRE CODE
	PART 10 - CALIFORNIA EXISTING BUILDING CODE, BASED ON THE 2021 INTERNATIONAL EXISTING BUILDING CODE
	PART 11 - CALIFORNIA GREEN BUILDING STANDARDS CODE (CGBSC; ALSO KNOWN AS CALGREEN)
	PART 12 - CALIFORNIA REFERENCED STANDARDS CODE
2.	ANSI/TIA-222 (REV. H)
3.	2021 NFPA 101, LIFE SAFETY CODE
4.	2022 NFPA 72, NATIONAL FIRE ALARM AND SIGNALING CODE
5.	2022 NFPA 13, STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS

GENERAL CONTRACTOR NOTES

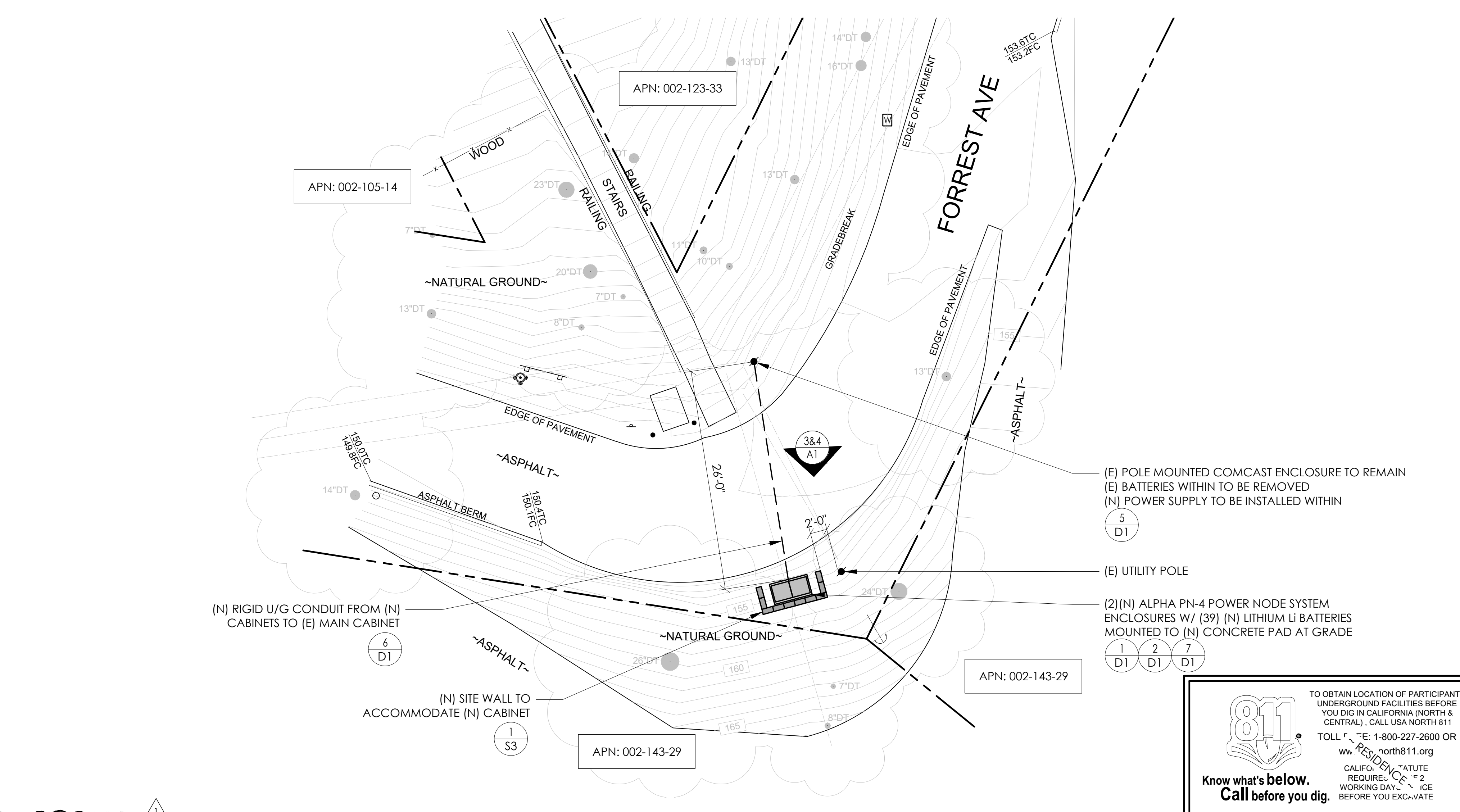
DO NOT SCALE DRAWINGS IF NOT FULL SIZE (24 X 36)

CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT/ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BEAR THE RESPONSIBILITY FOR THE SAME.



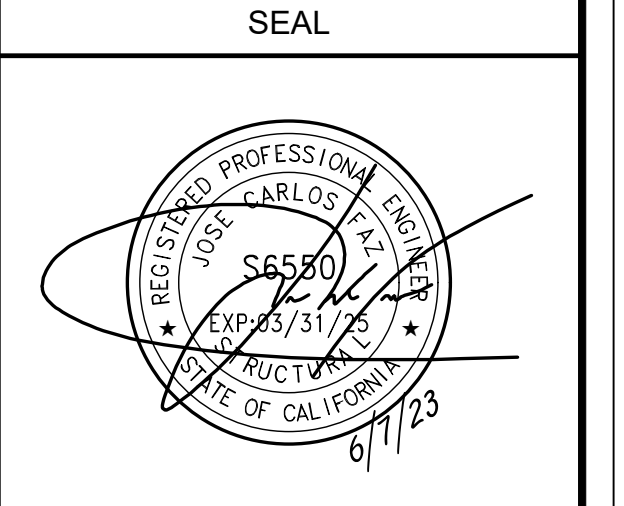
ISSUE STATUS			
REV	DATE	DESCRIPTION	BY
A	05/03/23	90% CD	MG
0	05/19/23	100% CD	MG
1	06/07/23	PCC #1	MJC

- LA6 SCOPE OF WORK**
- THIS PROJECT MODIFICATION OF EXISTING CONSISTS OF:
- INSTALLATION OF (2) (N) ALPHA PN-4 POWERNODE SYSTEM ENCLOSURES
 - INSTALLATION OF (39) (N) LITHIUM (LI) BATTERIES
 - INSTALLATION OF (1) (N) PRECAST CONCRETE PAD
 - REMOVAL & REPLACEMENT OF (E) POWER SUPPLY
 - ALL ASSOCIATED ELECTRIC WIRES AND CONDUITS TO CONNECT POWERNODE CABINET TO EXISTING ALPHA CABINET
 - POWER METER AND POWER SUPPLY CABINET ARE PRE-EXISTING AND WILL NOT CHANGE. THIS INSTALLATION WILL NOT REQUIRE A NEW POWER SERVICE OR METER



SITE PLAN

24"x36" SCALE: 1/8" = 1'-0"
11"x17" SCALE: 1/16" = 1'-0"
8' 6' 4' 2' 0' 8' NORTH



SITE INFORMATION

SITE ADDRESS:
284 FORREST AVE,
FAIRFAX, CA 94930

SHEET TITLE:
T1

PURPOSE OF THIS WORK

THE CALIFORNIA PUBLIC UTILITIES COMMISSION (CPUC) HAS ISSUED DECISION 21-02-029, ESTABLISHING NEW MEASURES APPLICABLE TO FACILITIES-BASED WIRELINE TELECOMMUNICATIONS PROVIDERS TO HELP ENSURE ACCESS TO VITAL COMMUNICATIONS DURING NATURAL DISASTERS AND ELECTRIC GRID OUTAGES. "FACILITIES-BASED WIRELINE PROVIDERS" ARE THE COMPANIES RESPONSIBLE FOR INFRASTRUCTURE THAT PROVIDES OR OTHERWISE CARRIES 9-1-1, VOICE, TEXT MESSAGES, OR DATA SERVICES. THE DECISION PRIORITIZES RESILIENCY FOR WIRELINE FACILITIES LOCATED IN TIER 2 AND TIER 3 HIGH FIRE THREAT DISTRICTS. THE DECISION ADOPTS SEVERAL NEAR AND LONGER-TERM OBLIGATIONS AIMED AT PREVENTING THE KIND OF COMMUNICATIONS FAILURES THAT HAVE CHALLENGED FIRST RESPONDERS AND CRITICAL FACILITY OPERATORS DURING RECENT WILDFIRES AND PUBLIC SAFETY POWER SHUTOFF (PSPS) EVENTS.

THE EXTENDED RUNTIME LITHIUM (XRT-LI) POWER SYSTEM AS DESCRIBED HEREIN MEETS AND/OR EXCEEDS THE REQUIREMENTS LEVIED BY THE CPUC GOVERNING BODY.

TABLE OF CONTENT

REQUIREMENTS FOR PERMIT SUBMISSION BASED ON THE CALIFORNIA FIRE CODE

1207.1.3 CONSTRUCTION DOCUMENTS

THE FOLLOWING INFORMATION SHALL BE PROVIDED WITH THE PERMIT APPLICATION:

1. LOCATION AND LAYOUT DIAGRAM OF THE ROOM OR AREA IN WHICH THE ESS IS TO BE INSTALLED.	SHEETS T1, A1, D1
2. DETAILS ON THE HOURLY FIRE-RESISTANCE RATINGS OF ASSEMBLIES ENCLOSING THE ESS. 9540A NOTED IN SYSTEM SAFETY AND CERTIFICATIONS. TEST CERTIFICATION IS FOUND ON THE ATTACHMENT COFC_8016142_EN.PDF. TEST PROCEDURES AND DOCUMENTS ARE FOUND IN THE ATTACHMENT 80132092-UL 9540A CHECKLIST.	SHEETS T1, A1, D1
3. THE QUANTITIES AND TYPES OF ESS TO BE INSTALLED.	SHEETS T1, A1, D1, D3
4. MANUFACTURER'S SPECIFICATIONS, RATINGS, AND LISTINGS OF EACH ESS.	SHEETS D1, D3 (RATINGS INCLUDED FOR CABINET, XM3.1, BPM, BCM ONLY).

ESS ELECTRICAL RATINGS ARE AS FOLLOWS:

GROUND MOUNTED ENCLOSURES, SERIES MODELS PN-4LIX, PN-4LIBX ; TYPE 3R.
PN-4LIX + PN-4LIBX (LARGEST SYSTEM 50 BATTERIES)

INPUTS:
VOLTAGE 120 VAC
FREQUENCY 60 HZ
CURRENT 20, 15 A

OUTPUTS:
AC OUTPUT VOLTAGE 89/63 VAC CATV
AC OUTPUT FREQUENCY 60 HZ
AC OUTPUT CURRENT 18 A MAX

BATTERY:
DC (TO XM3.1 - INVERTER MODE) 36 VDC NOMINAL, 55 A MAX
DC (FROM XM3.1 TO INTERNAL BATTERY PACK - CHARGE) 38 A MAX
INTERNAL BATTERY CELL 3.62 VDC 51 AH LITHIUM-ION
INTERNAL BATTERY PACK 36 VDC NOMINAL, 51 AH LITHIUM-ION
SYSTEM UP TO 50 BATTERY PACKS (UP TO 22 SERVICE CABINET, UP TO 28 BATTERY CABINET) 36 VDC NOMINAL, 2514 AH, 90.5 KWH LITHIUM-ION

MAX AMBIENT: 45(°C)

5. DESCRIPTION OF ENERGY (BATTERY) MANAGEMENT SYSTEMS AND THEIR OPERATION.	BCM DETAIL SHEET D3, D4
6. LOCATION AND CONTENT OF REQUIRED SIGNAGE IS ATTACHED.	SHEET D9
7. DETAILS ON FIRE SUPPRESSION, SMOKE OR FIRE DETECTION, THERMAL MANAGEMENT, VENTILATION, EXHAUST, AND DEFLAGRATION VENTING SYSTEMS, IF PROVIDED.	N/A
8. SUPPORT ARRANGEMENT ASSOCIATED WITH THE INSTALLATION, INCLUDING ANY REQUIRED SEISMIC RESTRAINT.	SHEET D5
9. A COMMISSIONING PLAN COMPLYING WITH SECTION 1207.2.1.	SHEETS D5-D7
10. A DECOMMISSIONING PLAN COMPLYING WITH SECTION 1207.2.3.	SHEET D8

CALIFORNIA FIRE CODE

1207.4.5 VEHICLE IMPACT PROTECTION

WHERE ESS ARE SUBJECT TO IMPACT BY A MOTOR VEHICLE, INCLUDING FORKLIFTS, VEHICLE IMPACT PROTECTION SHALL BE PROVIDED IN ACCORDANCE WITH SECTION 312.

ICC, SECTION 312 | VEHICLE IMPACT PROTECTION

312.1 GENERAL

VEHICLE IMPACT PROTECTION REQUIRED BY THIS CODE SHALL BE PROVIDED BU POSTS THAT COMPLY WITH SECTION 312.2 OR BY OTHER APPROVED PHYSICAL BARRIERS THAT COMPLY WITH SECTION 312.3.

312.2 POSTS

GUARD POSTS SHALL COMPLY WITH ALL OF THE FOLLOWING REQUIREMENTS:

1. CONSTRUCTED OF STEEL NOT LESS THAN 4 INCHES (102 mm) IN DIAMETER AND CONCRETE FILLED.
2. SPACED NOT MORE THAN 4 FEET (1219 mm) BETWEEN POSTS ON CENTER.
3. SET NOT LESS THAN 3 FEET (914 mm) DEEP IN A CONCRETE FOOTING OF NOT LESS THAN A 15-INCH (381 mm) DIAMETER.
4. SET WITH THE TOP OF THE POSTS NOT LESS THAN 3 FEET (914 mm) ABOVE GROUND.
5. LOCATED NOT LESS THAN 3 FEET (914 mm) FROM THE PROTECTED OBJECT.

312.3 OTHER BARRIERS

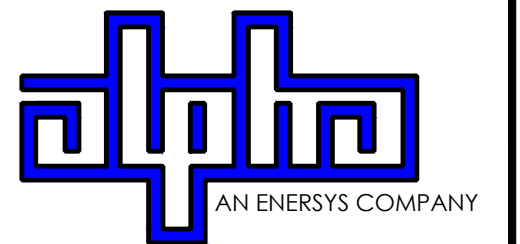
BARRIERS, OTHER THAN POSTS SPECIFIED IN SECTION 312.2, THAT ARE DESIGNED TO RESIST, DEFLECT OR VISUALLY DETER VEHICULAR IMPACT COMMENSURATE WITH AN ANTICIPATED IMPACT SCENARIO SHALL BE PERMITTED WHERE APPROVED.

1207.5.7 VEGETATION PROXIMITY TO ESS

ESS PROXIMITY TO VEGETATION WILL BE COMPLIANT WITH CFC 1207.5.7 EACH SITE WILL BE EVALUATED AT THE TIME OF INSTALLATION AND CORRECTIVE MEASURES WILL TAKE PLACE WITH REGARDS TO TRIMMING VEGETATION.



3011 COMCAST PLACE
LIVERMORE, CA 94551



3767 ALPHA WAY
BELLINGHAM, WA 98226



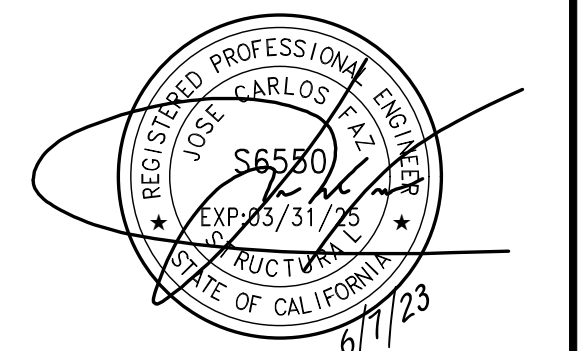
23 MAUCHLY, STE 110
IRVINE, CA 92618

J5 PROGRAM ID: ALP-CA-CPUC
J5 PROJECT ID: P-061764

ISSUE STATUS

REV	DATE	DESCRIPTION	BY
A	05/03/23	90% CD	MG
0	05/19/23	100% CD	MG
1	06/07/23	PCC #1	MJC

SEAL

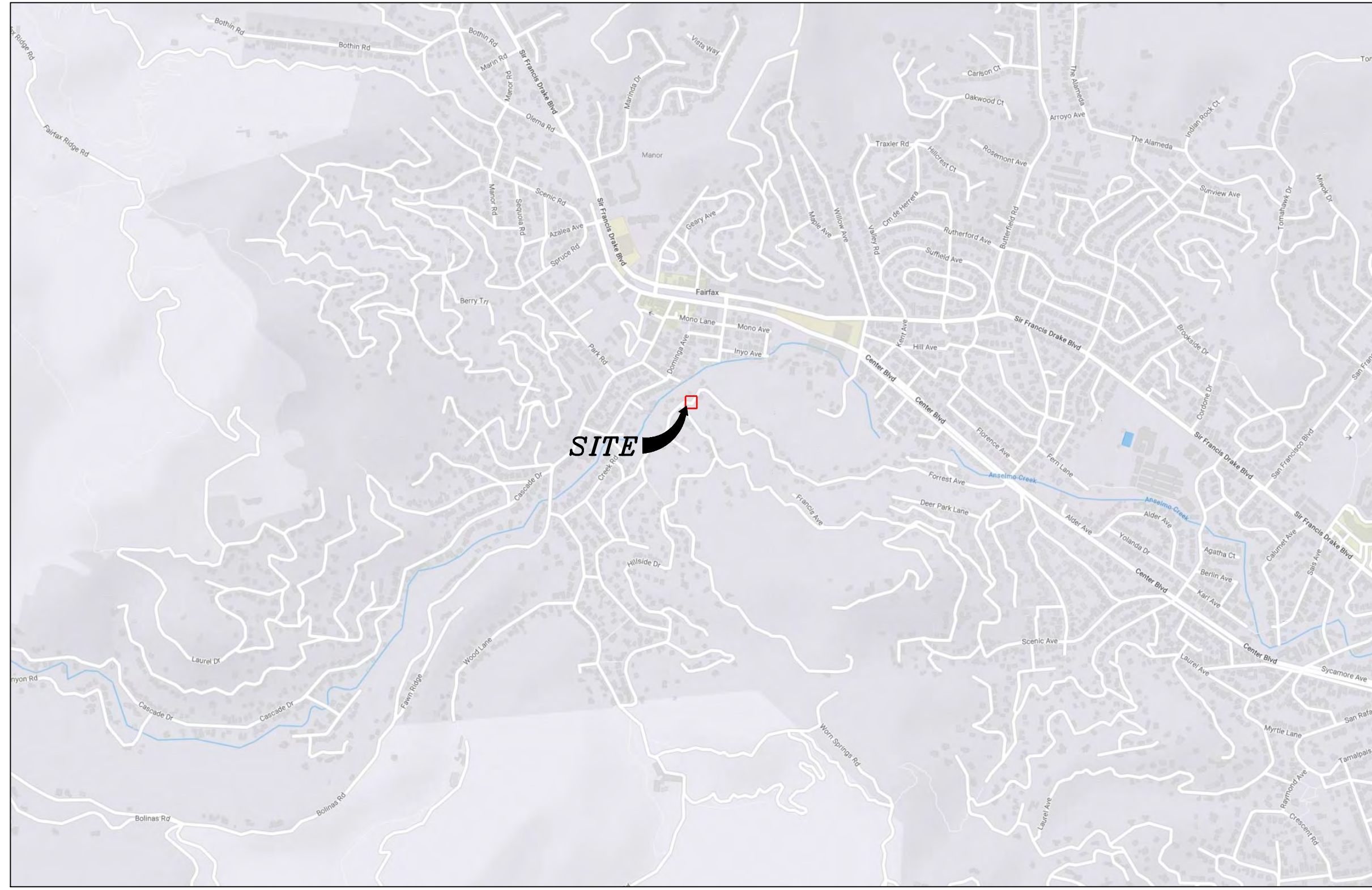


SITE INFORMATION

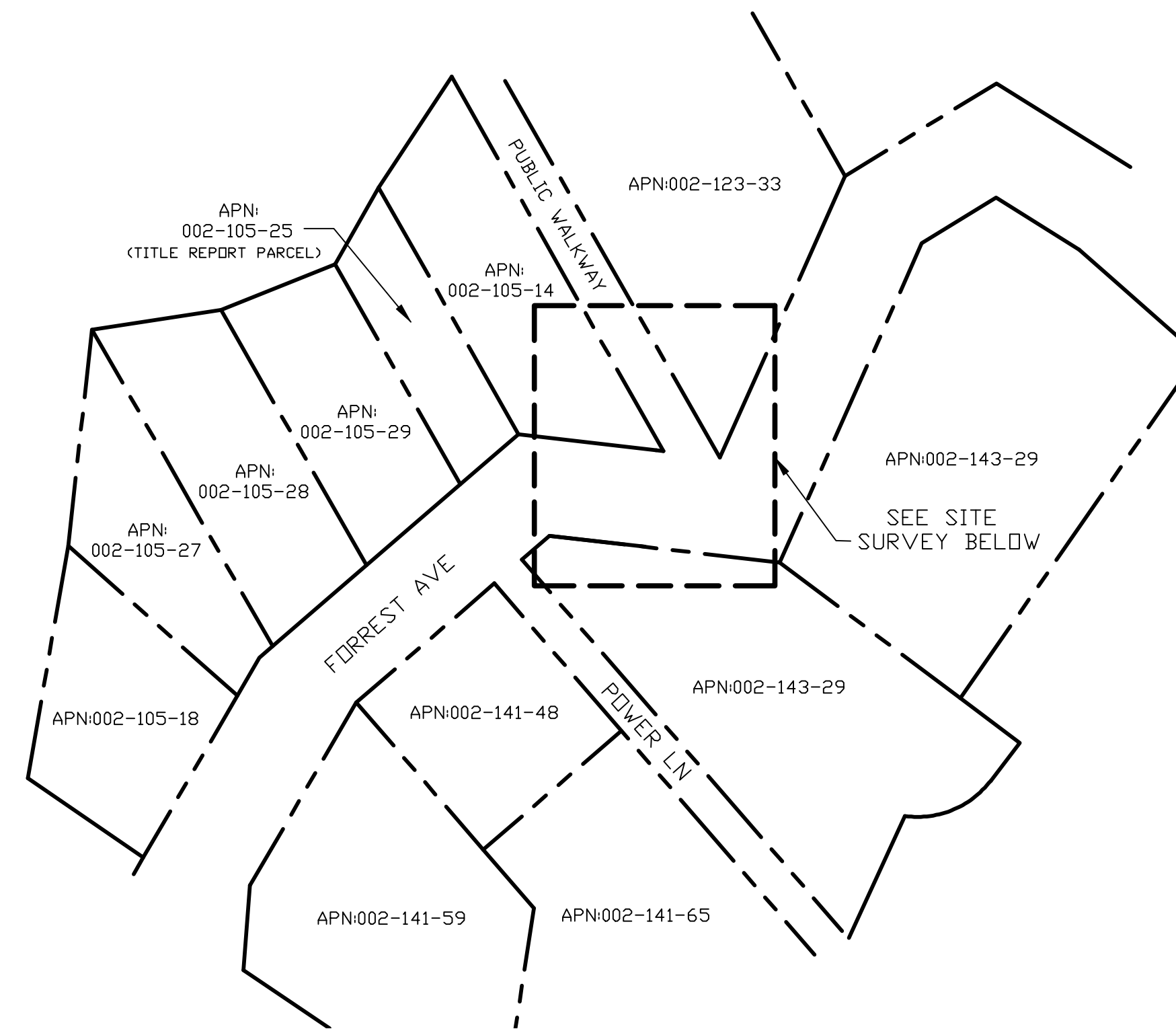
SITE ADDRESS:
284 FORREST AVE,
FAIRFAX, CA 94930

SHEET TITLE:
PROJECT INFORMATION & NOTES

T2



VICINITY MAP
N.T.S.



OVERALL SITE
N.T.S.

SURVEY DATE
01/27/2023

BASIS OF BEARING
BEARINGS SHOWN HEREON ARE BASED UPON U.S. STATE PLANE NAD83 COORDINATE SYSTEM BENCHMARK CALIFORNIA STATE PLANE COORDINATE ZONE THREE, DETERMINED BY GPS OBSERVATIONS.

BENCHMARK
PROJECT ELEVATIONS ESTABLISHED FROM GPS DERIVED ORTHOMETRIC HEIGHTS BY APPLICATION OF NGS "GEOID 18" MODELED SEPARATIONS TO ELLIPSOID HEIGHTS DETERMINED BY OBSERVATIONS OF THE "CRN" REAL TIME NETWORK. ALL ELEVATIONS SHOWN HEREON ARE REFERENCED TO NAVD88.

FLOOD ZONE
THIS PROJECT APPEARS TO BE LOCATED WITHIN FLOOD ZONE "AE". ACCORDING TO FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP(S), MAP ID #06041C0452E, DATED 03/17/2014.

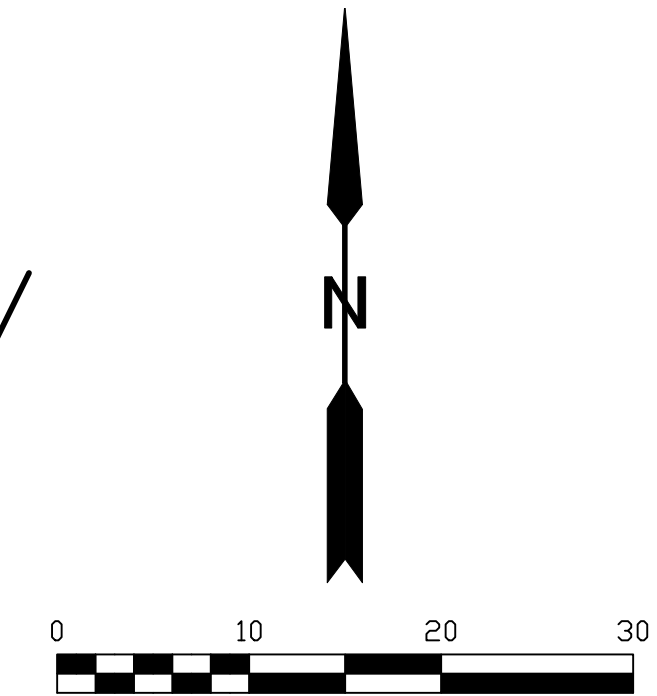
UTILITY NOTES
SURVEYOR DOES NOT GUARANTEE THAT ALL UTILITIES ARE SHOWN OR THEIR LOCATIONS ARE DEFINITE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR AND DEVELOPER TO CONTACT 811 AND ANY OTHER INVOLVED AGENCIES TO LOCATE ALL UTILITIES PRIOR TO CONSTRUCTION. REMOVAL, RELOCATION AND/ OR REPLACEMENT IS THE RESPONSIBILITY OF THE CONTRACTOR.

SURVEYOR'S NOTE
THE LOCATION AND DIMENSIONS SHOWN WERE TAKEN FROM THE MAP(S) RECORDED IN BOOK 2 PAGE 131 OF MAPS AND BOOK 2004 PAGE 67 OF RECORDS OF SURVEYS, MARIN COUNTY RECORDER AND DOES NOT CONSTITUTE A BOUNDARY SURVEY OF THE PROPERTIES.

TITLE REPORT DESCRIPTION
TITLE REPORT PARCEL
APN: 002-105-25
PREPARED USING AMERICAN TITLE'S TITLE REPORT #5026900-6942923 DATED 01/12/2023;



SITE SURVEY



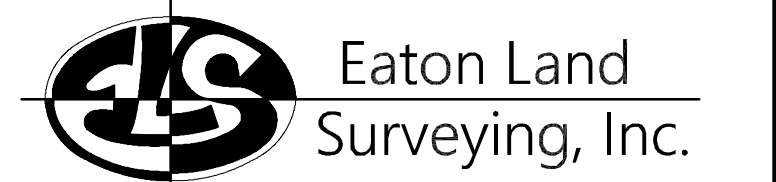
LEGEND

These standard symbols may be found in the drawing.

- CONCRETE
- PROPERTY LINE CENTER LINE
- OVERHEAD LINE
- FENCE
- ROOF WALL
- ROCK WALL
- WATER METER
- WATER VALVE
- POWER POLE
- ELEVATION GRADE
- GUY WIRE
- MAILBOX
- WATER METER
- SIGN
- MANHOLE TELE
- MANHOLE UTILITY
- RECTANGLE INLET
- SHRUB
- TRUNK
- CT CONIFEROUS TREE
- DC DECIDUOUS TREE
- TC TOP OF CURB
- FC FACE OF CURB
- TF TOP OF FENCE
- TW TOP OF WALL
- CD CURB DRAIN

COMCAST
3011 COMCAST PLACE
LIVERMORE, CA 94551

ALPHA
3767 ALPHA WAY
BELLINGHAM, WA 98226



Eaton Land
Surveying, Inc.

15604 Magnolia Rd.
Grass Valley, CA. 95949
Ph. 530.830.0038

DRAWN BY: HE
CHECKED BY: SE

REVISIONS:		
REV	DATE	DESCRIPTION
0	02/18/23	SUBMITTAL



PROJECT INFORMATION:

P-061764

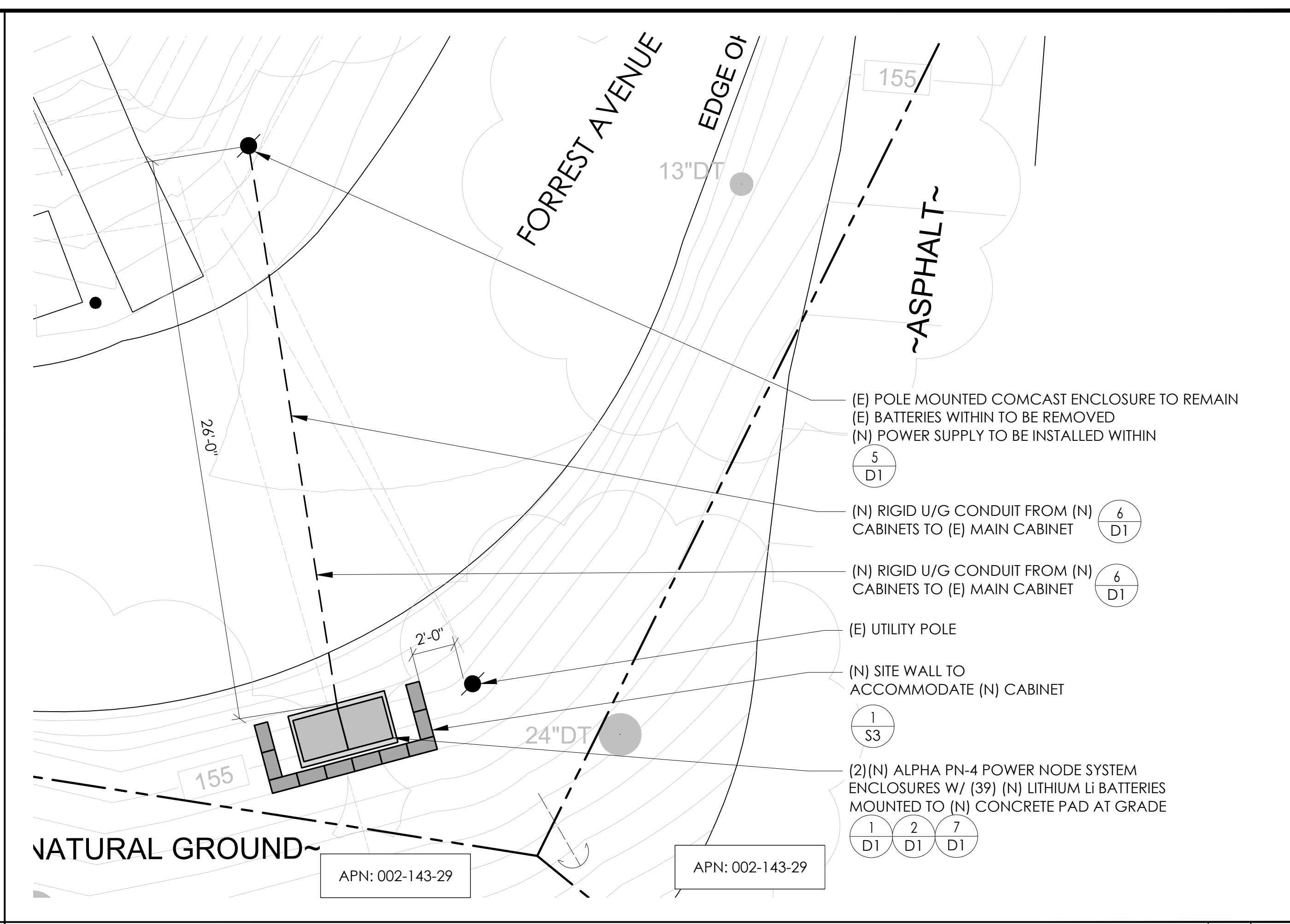
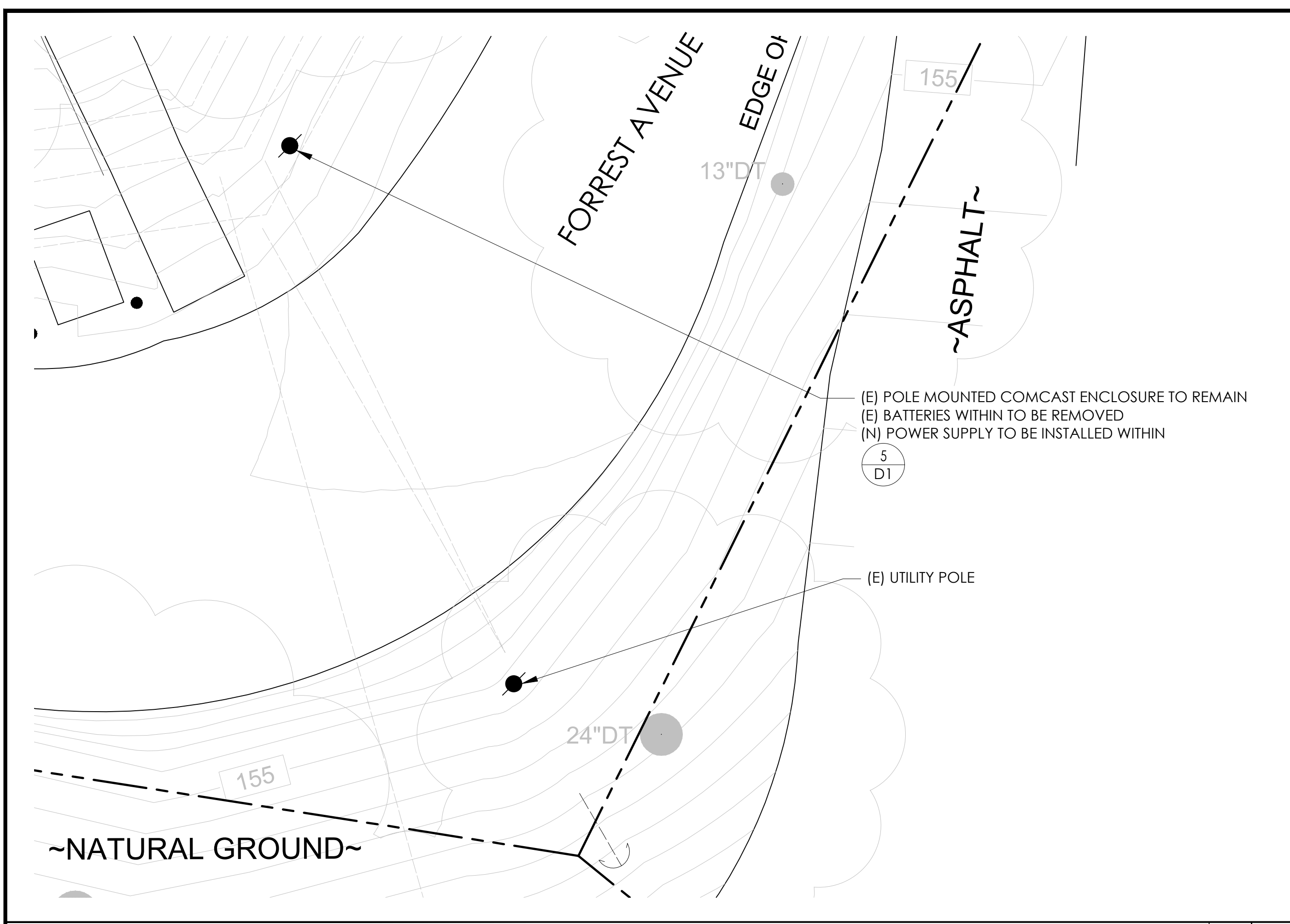
294 FORREST AVE.
FAIRFAX, CA. 94930
MARIN COUNTY

SHEET TITLE:

SITE SURVEY

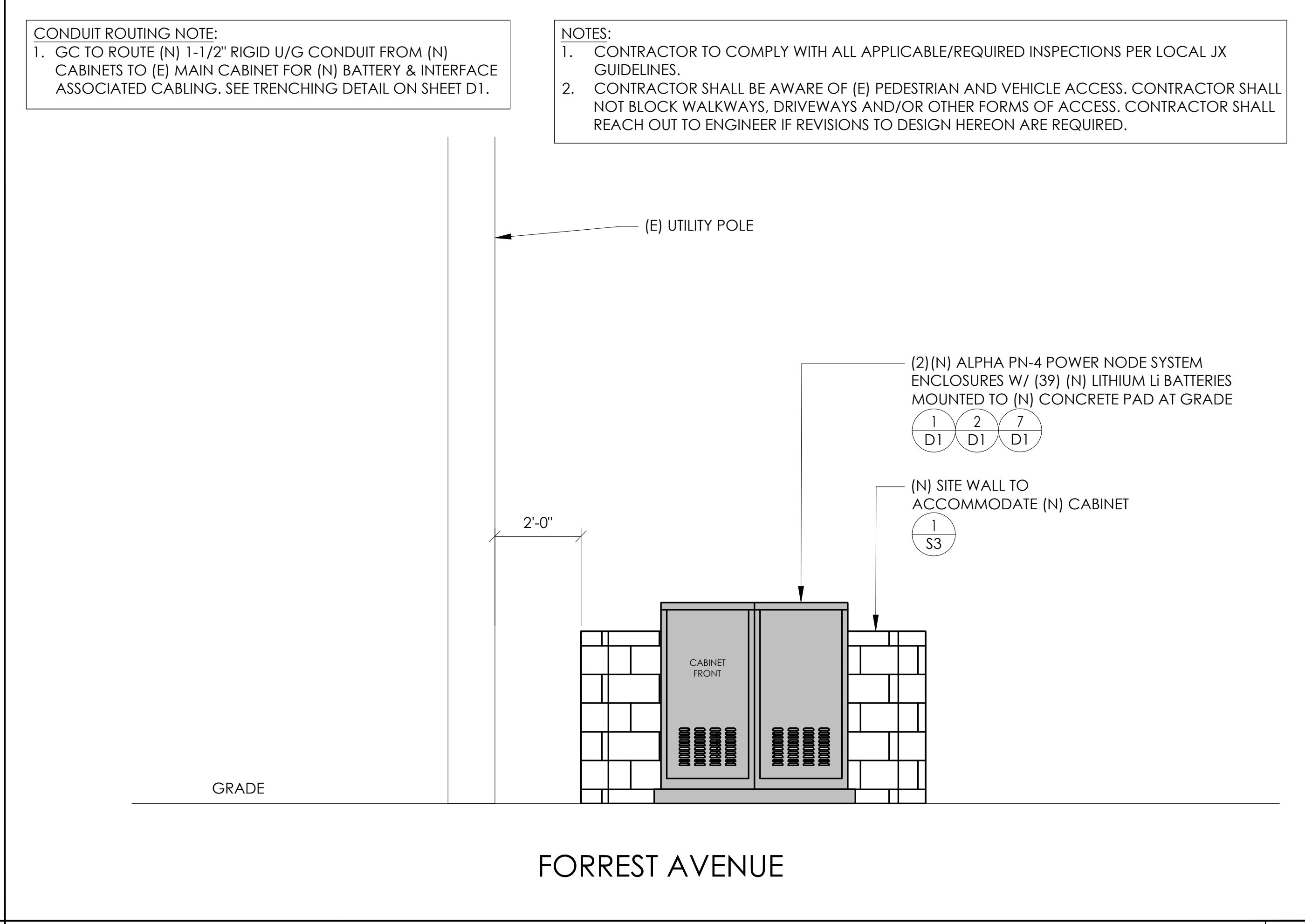
SHEET NUMBER:

LS-1



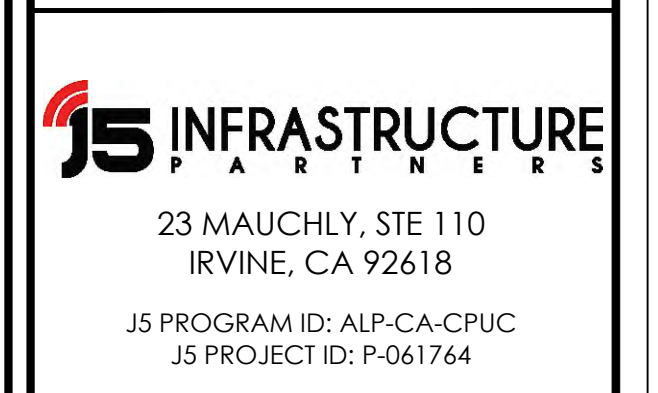
EXISTING ENLARGED SITE PLAN 24"x36" SCALE: 1/4" = 1'-0" 11"x17" SCALE: 1/8" = 1'-0" 4' 3' 2' 1' 0" NORTH 2

PROPOSED ENLARGED SITE PLAN 24"x36" SCALE: 1/4" = 1'-0" 11"x17" SCALE: 1/8" = 1'-0" 4' 3' 2' 1' 0" NORTH 1



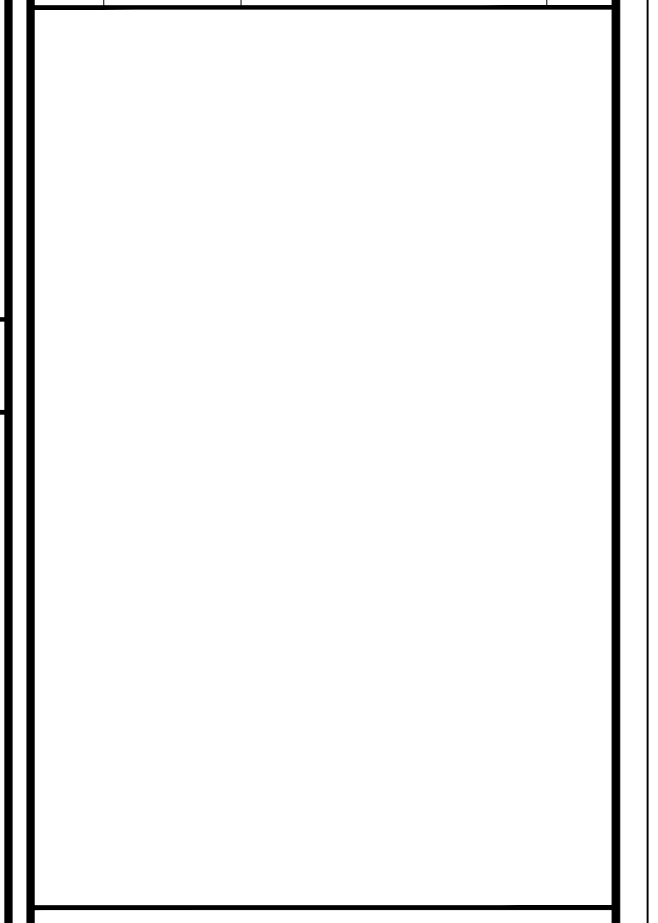
EXISTING ELEVATION 24"x36" SCALE: 1/2" = 1'-0" 11"x17" SCALE: 1/4" = 1'-0" 2' 1' 0" 2' 4

PROPOSED ELEVATION 24"x36" SCALE: 1/2" = 1'-0" 11"x17" SCALE: 1/4" = 1'-0" 2' 1' 0" 2' 3



ISSUE STATUS

REV	DATE	DESCRIPTION	BY
A	05/03/23	90% CD	MG
0	05/19/23	100% CD	MG
1	06/07/23	PCC #1	MJC

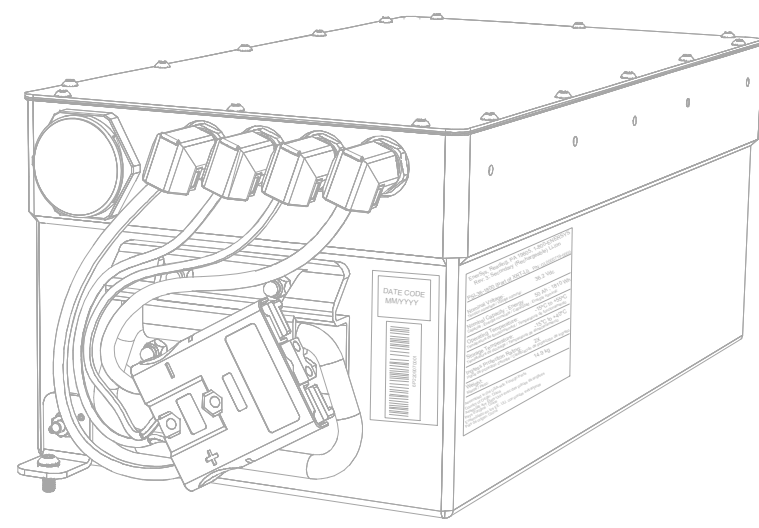


SEAL

SITE INFORMATION

SITE ADDRESS:
284 FORREST AVE,
FAIRFAX, CA 94930

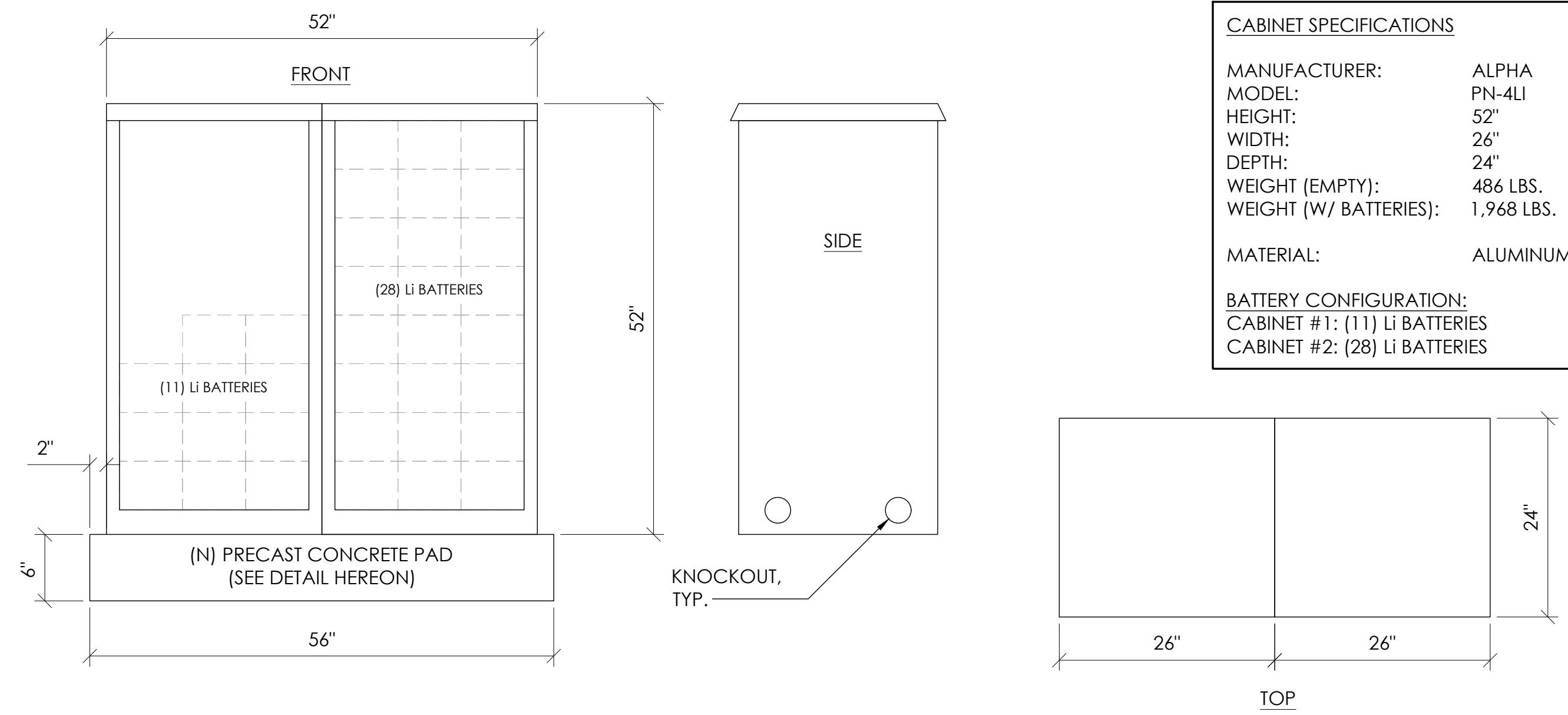
SHEET TITLE:
**ENLARGED SITE
PLANS & ELEVATIONS**
A1



EQUIPMENT SPECIFICATIONS (1 UNIT)	
MFG:	POWERSAFE
MODEL:	PSI-36-1800
HEIGHT:	5.27 IN
WIDTH:	6.57 IN
LENGTH:	13.54 IN
WEIGHT:	32.8 LBS

BATTERY INFORMATION (LITHIUM TYPE BATTERIES)										
INSTALL STATUS	BATTERY MODEL	TOTAL # OF BATTERY UNITS INSTALLED	VOLTAGE (V)	AMP-HOURS (AH)	KWh, Kilowatt-hours = (V*AH)/1000	TOTAL BATTERY CAPACITY, KWh	STATIONARY BATTERY STORAGE SYSTEM THRESHOLD QUANTITY, PER CFC 2019 SECTION 1206	STATIONARY BATTERY STORAGE SYSTEM CODE CHECK	TOTAL ELECTROLYTE VOLUME (GALLONS) PER UNIT	TOTAL ELECTROLYTE BY VOLUME (GALLONS) =
PROPOSED	POWERSAFE PSI-36-1800	39	36	50	1.8	70.2			0	0
TOTAL		39				70.2	20	CFC 2022 SECTION 1207 APPLIES		0

7 LITHIUM BATTERY SPECIFICATIONS
N.T.S.



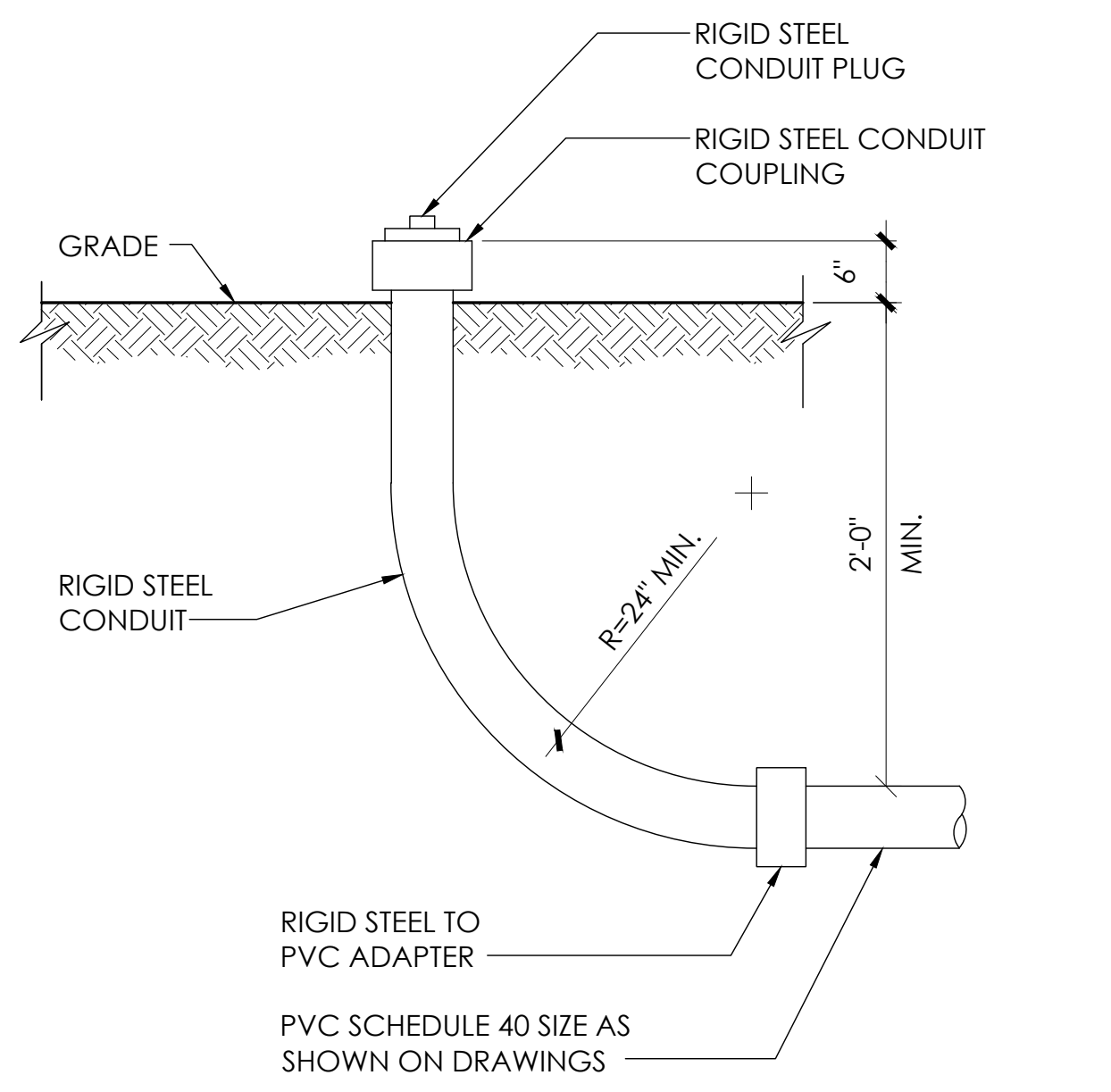
1 DUAL EQUIPMENT CABINET DETAIL
N.T.S.

COMCAST
 3011 COMCAST PLACE
 LIVERMORE, CA 94551

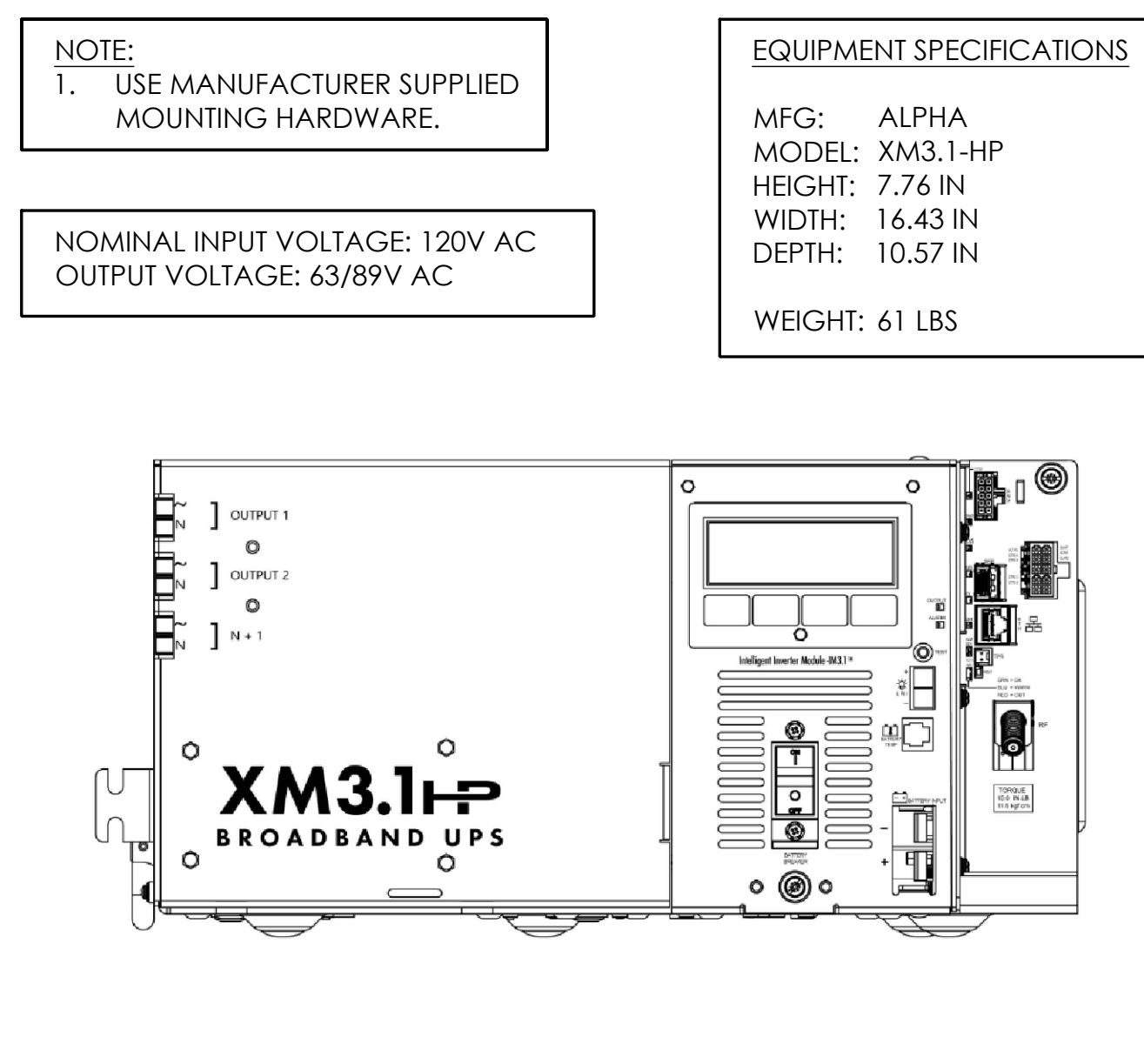
alpha
 AN ENERSYS COMPANY
 3767 ALPHA WAY
 BELLINGHAM, WA 98226

J5 INFRASTRUCTURE PARTNERS
 23 MAUCHLY, STE 110
 IRVINE, CA 92618
 J5 PROGRAM ID: ALP-CA-CPUC
 J5 PROJECT ID: P-061764

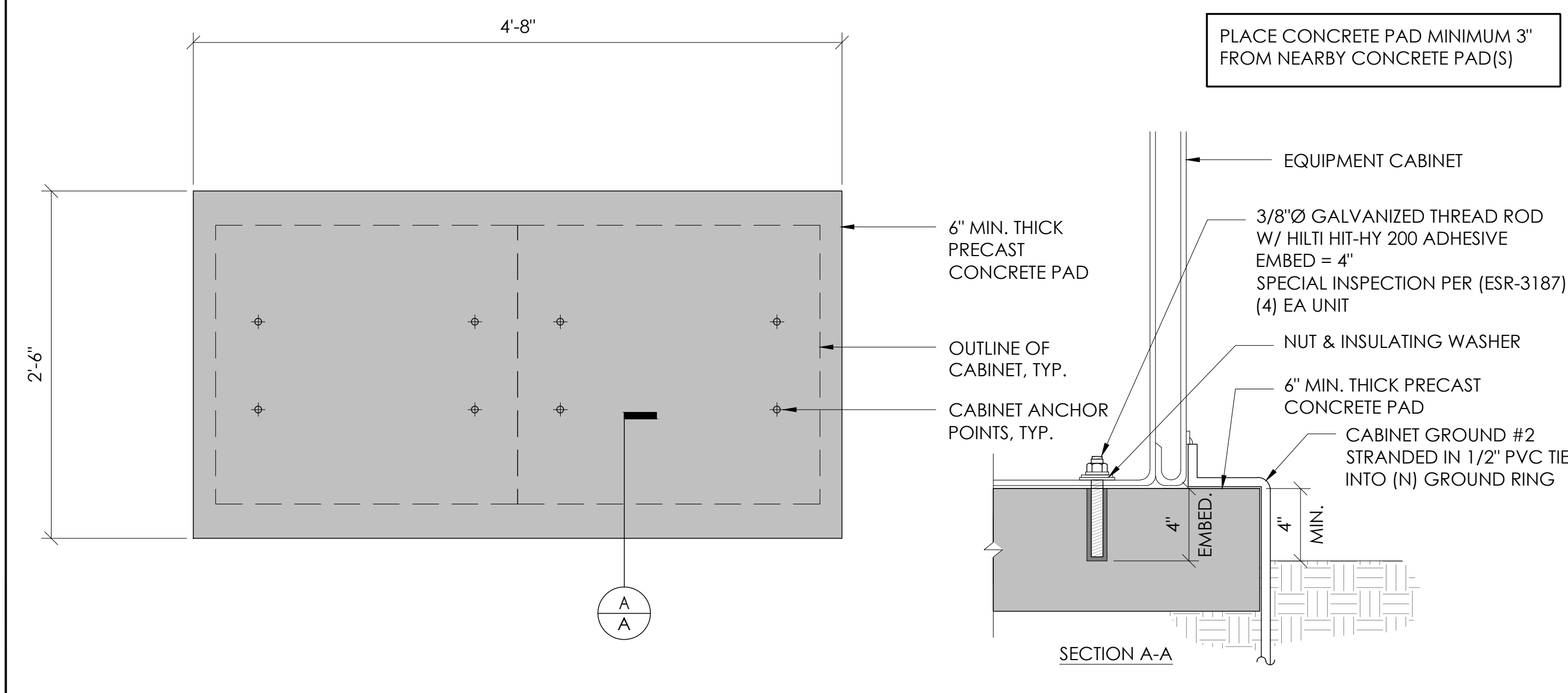
ISSUE STATUS			
REV	DATE	DESCRIPTION	BY
A	05/03/23	90% CD	MG
0	05/19/23	100% CD	MG
A	06/07/23	PCC #1	MJC



8 STUB-UP DETAIL
N.T.S.

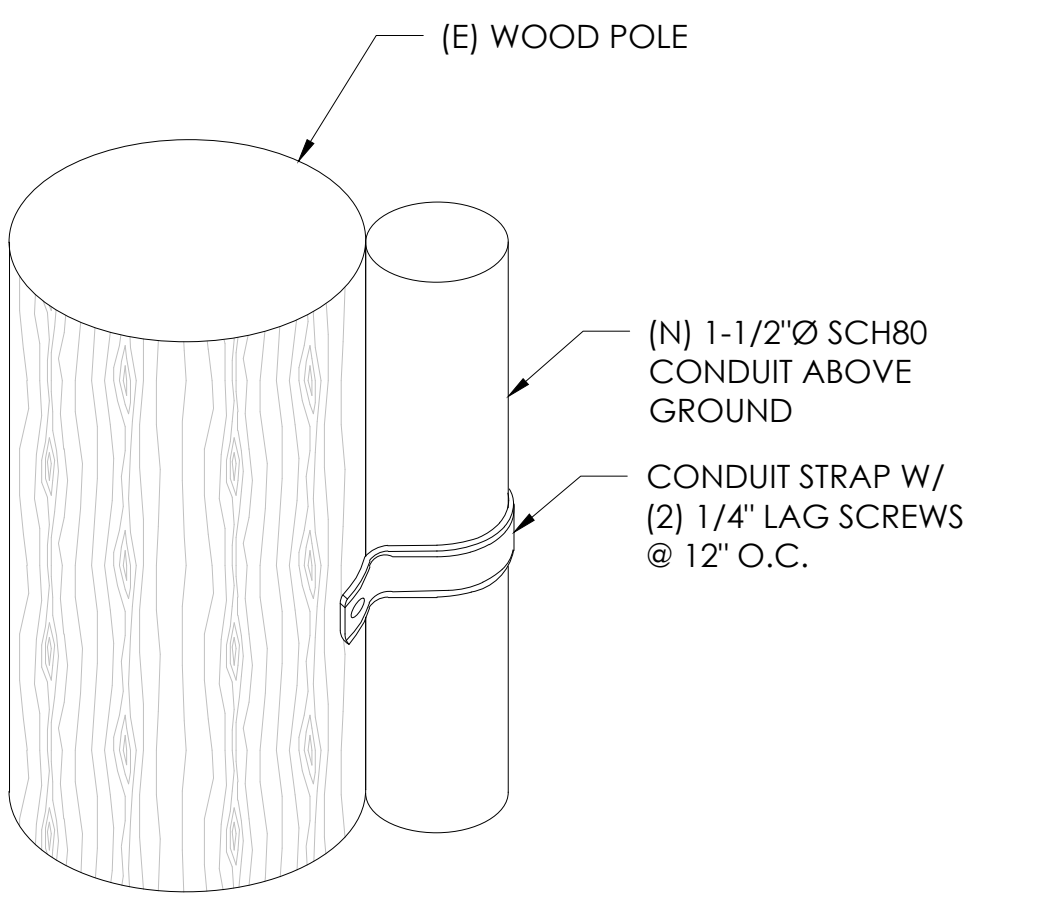


5 POWER SUPPLY DETAIL
N.T.S.



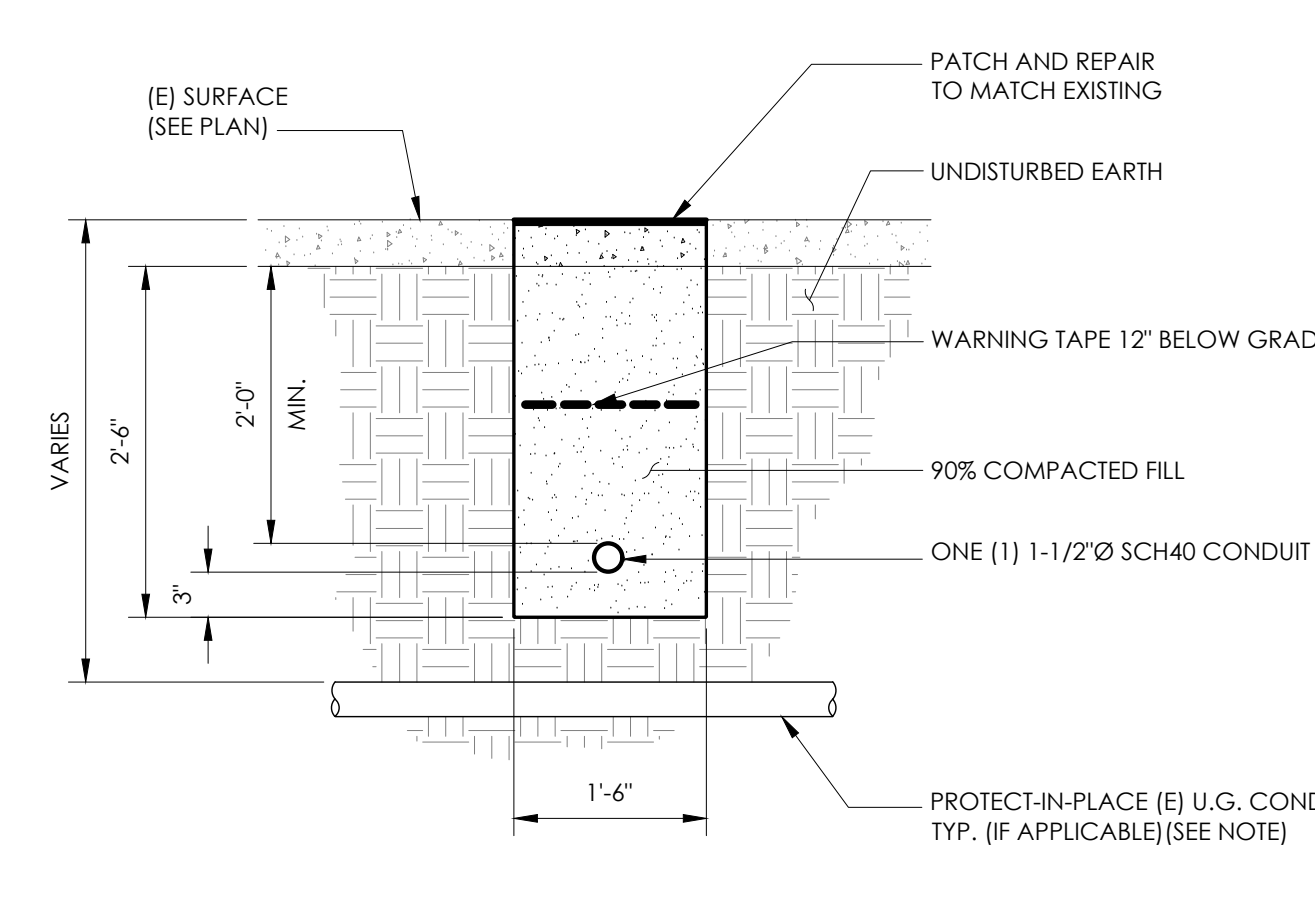
2 CONCRETE PAD & ANCHORAGE DETAIL
N.T.S.

NOTE:
 1. CONTRACTOR TO VERIFY RISER MOUNTING REQUIREMENTS W/ POLE OWNER AND/OR POWER COMPANY
 2. USE 1-1/2" CONDUIT IF CABLE IS LESS THAN 50'
 3. USE 2" CONDUIT IF CABLE IS MORE THAN 50'



9 CONDUIT RISER ATTACHMENT DETAIL
N.T.S.

NOTE:
 1. PRIOR TO STARTING CONSTRUCTION, THE CONTRACTOR HAS THE RESPONSIBILITY TO LOCATE ALL EXISTING UTILITIES, CONDUITS WHETHER OR NOT SHOWN ON THE PLANS, AND TO PROTECT THEM FROM DAMAGE.
 2. USE 1-1/2" CONDUIT IF CABLE IS LESS THAN 50'
 3. USE 2" CONDUIT IF CABLE IS MORE THAN 50'



6 TRENCHING DETAIL
N.T.S.

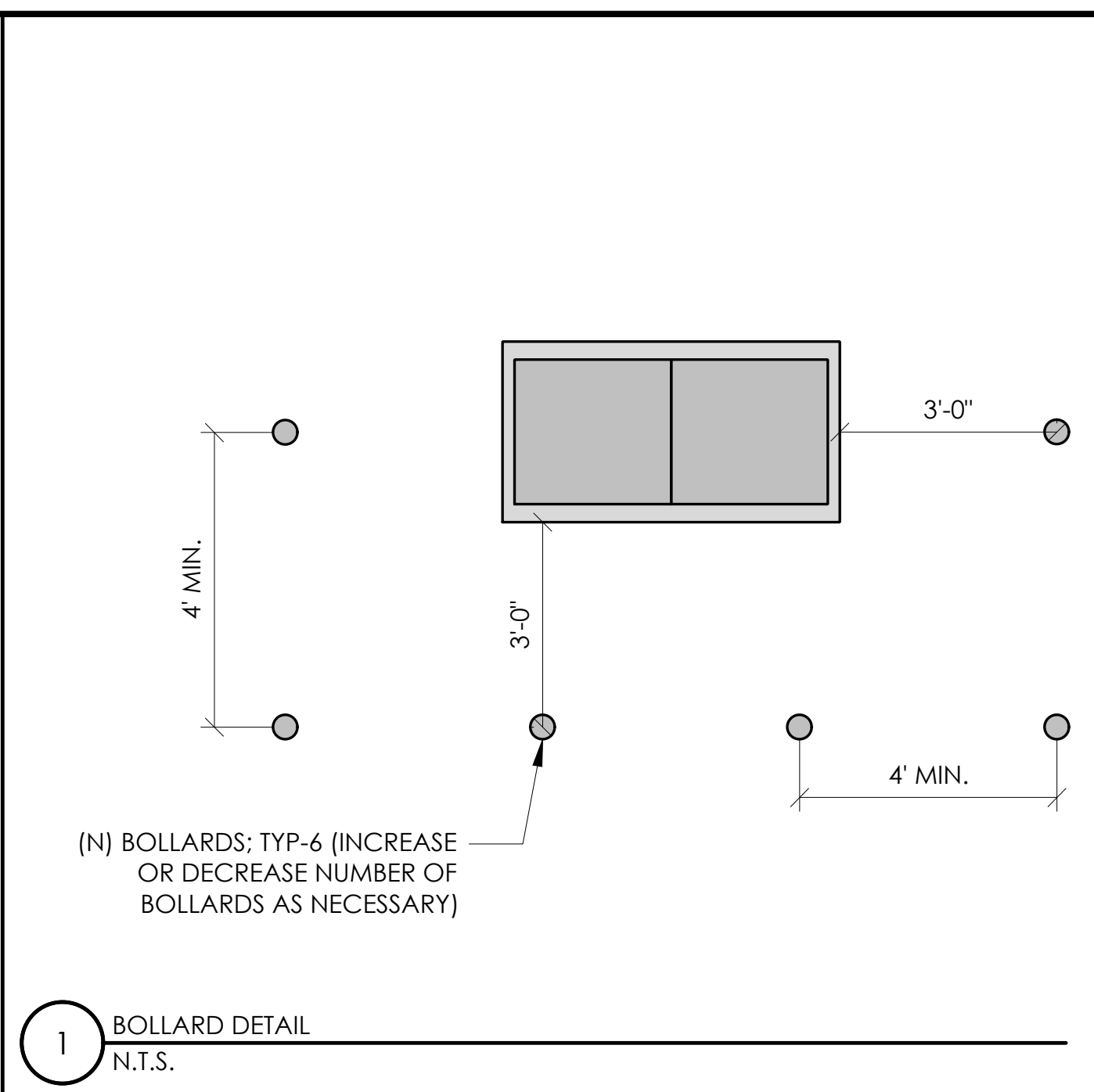
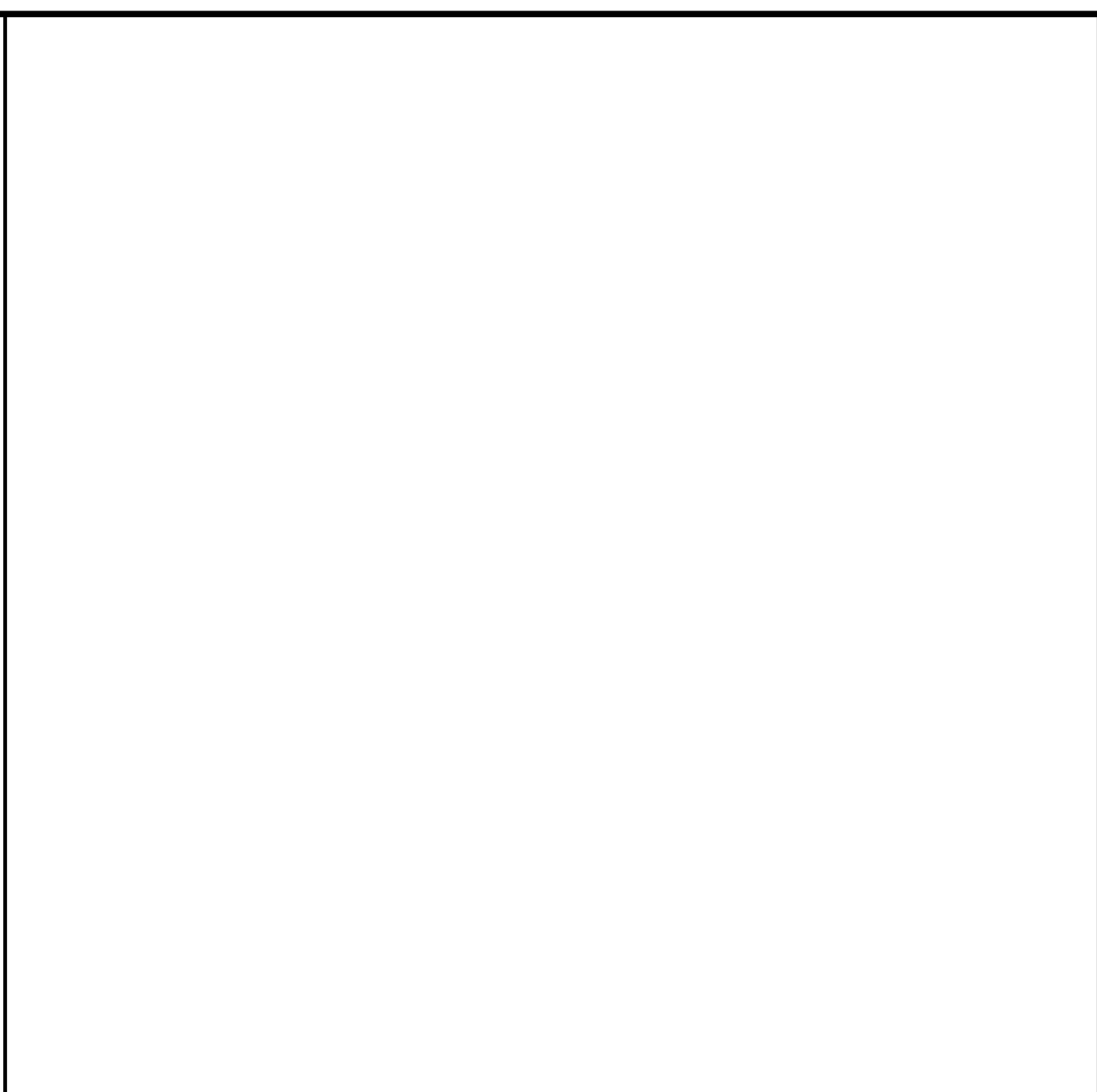
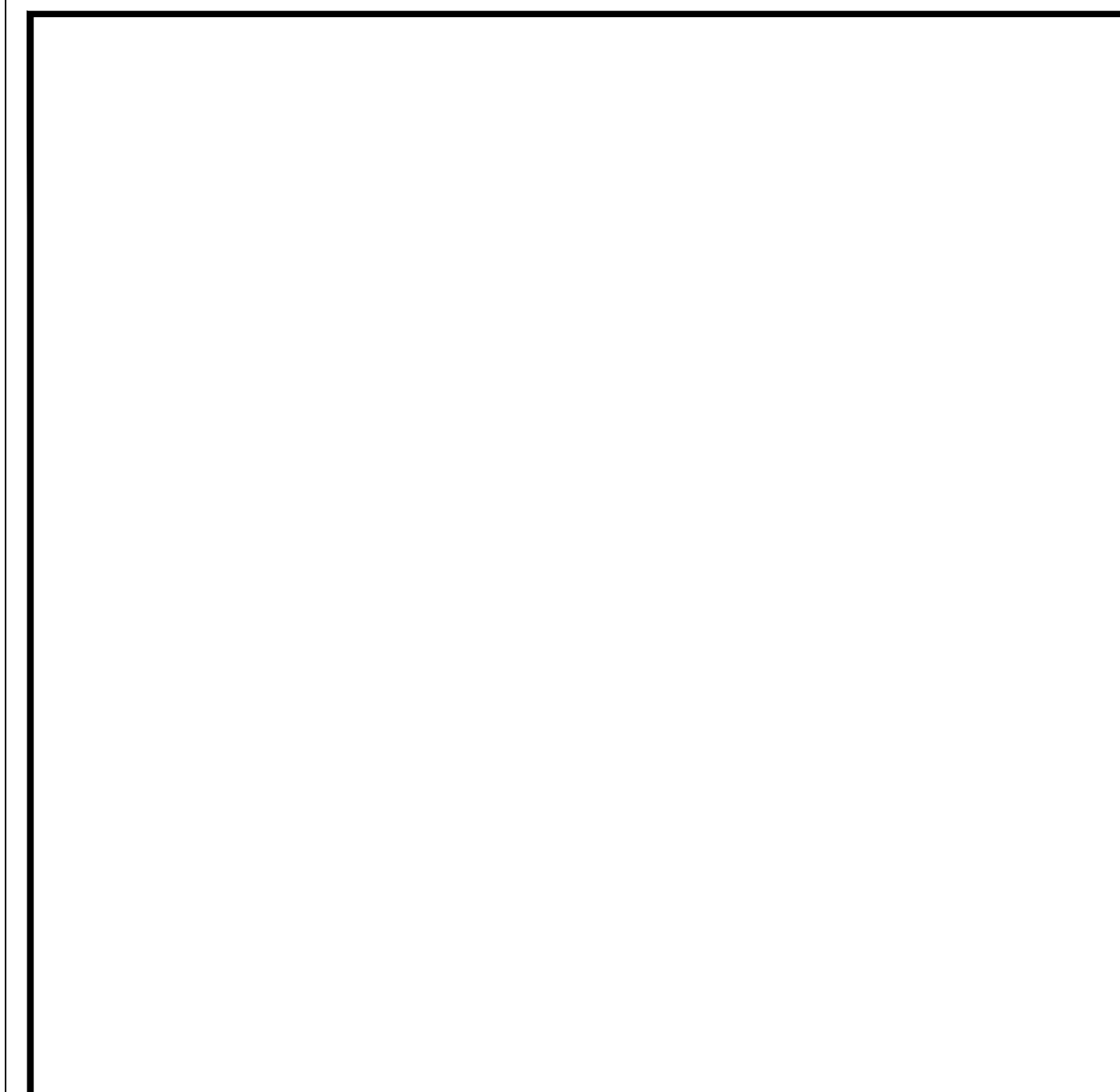
SEAL

SITE INFORMATION

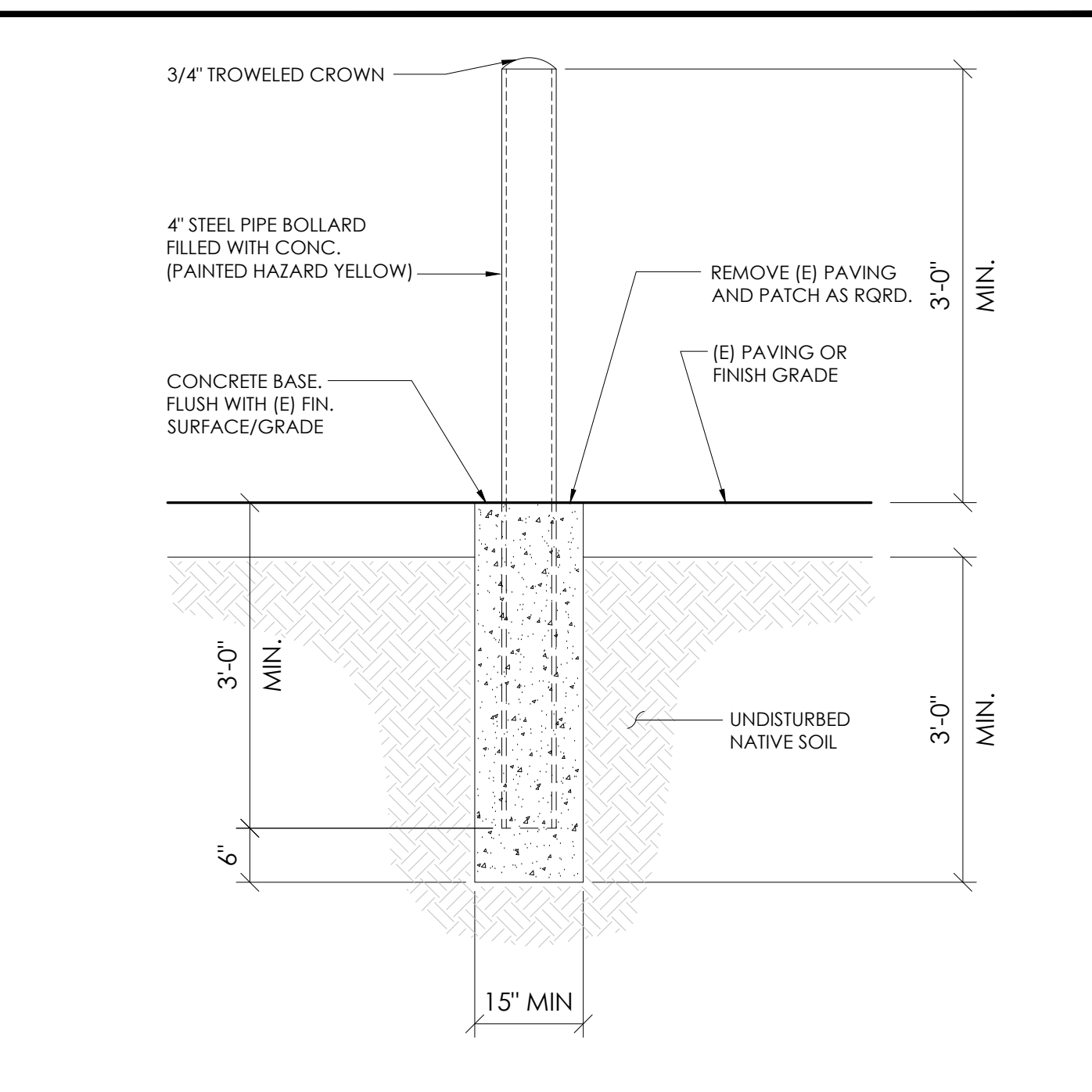
SITE ADDRESS:
 284 FORREST AVE,
 FAIRFAX, CA 94930

SHEET TITLE:
DETAILS

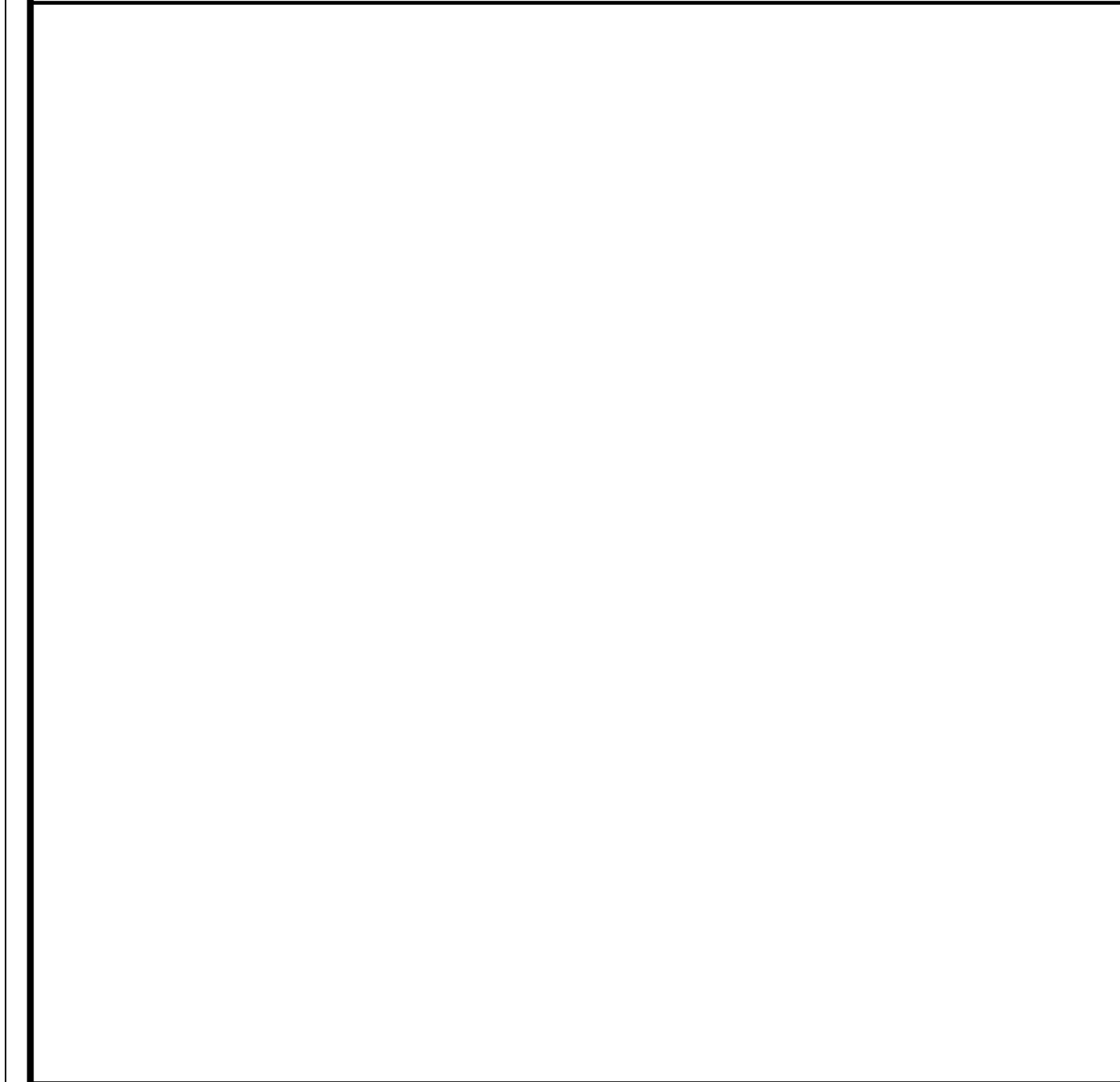
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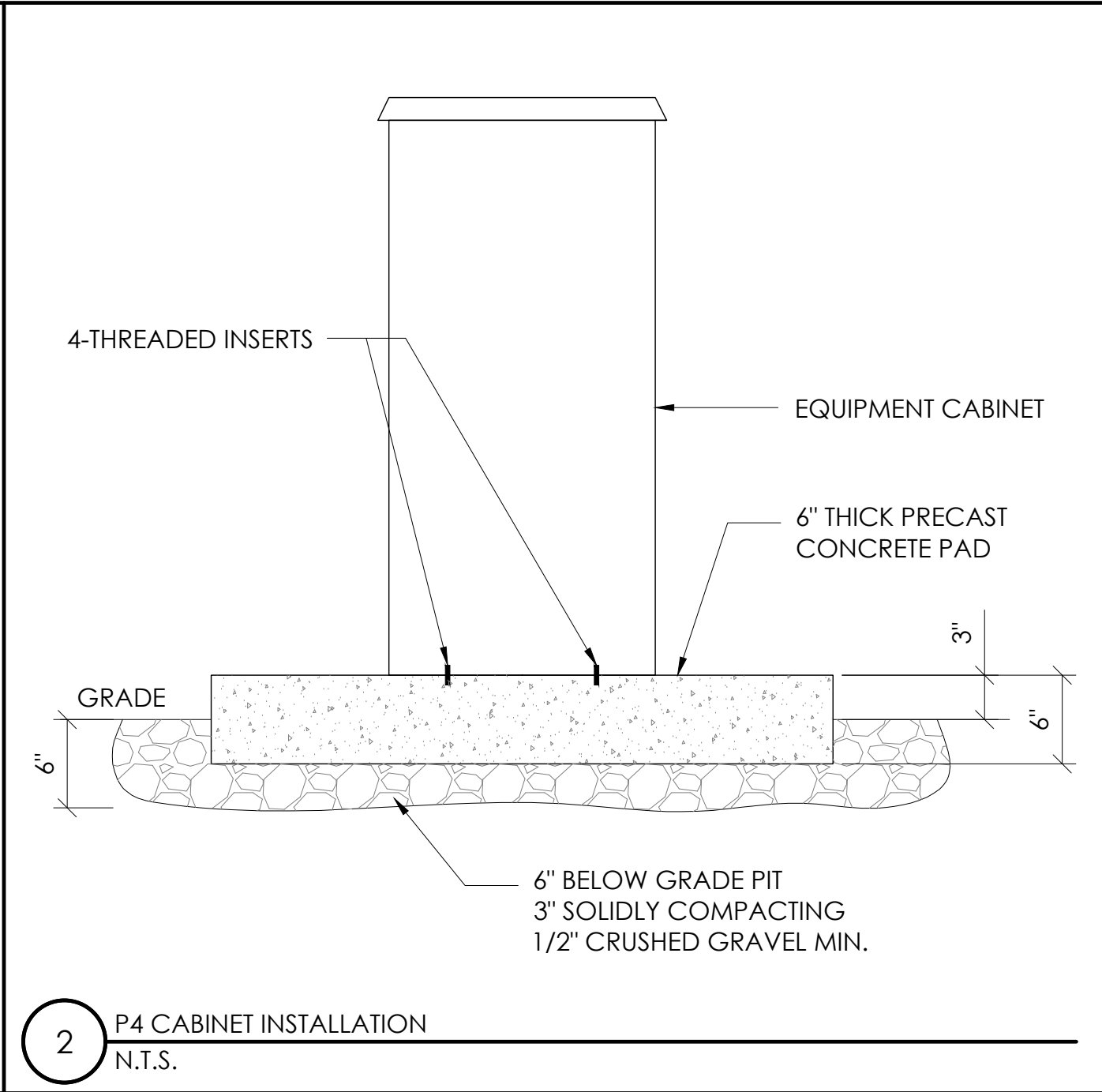
1 BOLLARD DETAIL
N.T.S.



2 P4 CABINET INSTALLATION
N.T.S.



3 FOUNDATION BASE FOR PN4
N.T.S.



NOTE:
1. CONTRACTOR TO VERIFY RISER MOUNTING REQUIREMENTS W/ POLE OWNER AND/OR POWER COMPANY
2. USE 1-1/2" CONDUIT IF CABLE IS LESS THAN 50'
3. USE 2" CONDUIT IF CABLE IS MORE THAN 50'

4 CONDUIT/RISER INSTALLATION | GROUNDING DETAIL
N.T.S.

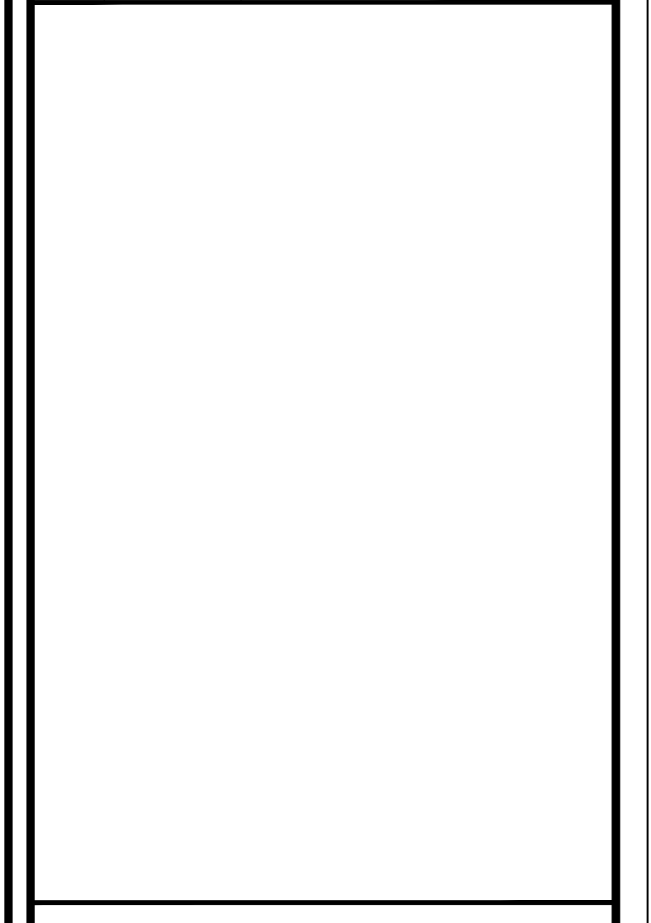
COMCAST
3011 COMCAST PLACE
LIVERMORE, CA 94551

alpha
AN ENERSYS COMPANY
3767 ALPHA WAY
BELLINGHAM, WA 98226

J5 INFRASTRUCTURE PARTNERS
23 MAUCHLY, STE 110
IRVINE, CA 92618
J5 PROGRAM ID: ALP-CA-CPUC
J5 PROJECT ID: P-061764

ISSUE STATUS

REV	DATE	DESCRIPTION	BY
A	05/03/23	90% CD	MG
0	05/19/23	100% CD	MG
1	06/07/23	PCC #1	MJC



SEAL

SITE INFORMATION

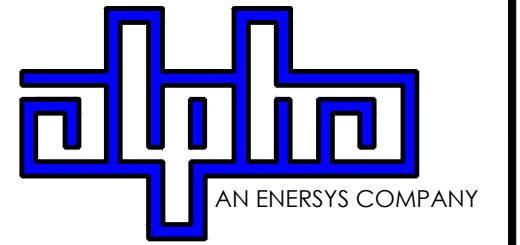
SITE ADDRESS:
284 FORREST AVE,
FAIRFAX, CA 94930

SHEET TITLE:
DETAILS

D2



3011 COMCAST PLACE
LIVERMORE, CA 94551



3767 ALPHA WAY
BELLINGHAM, WA 98226



23 MAUCHLY, STE 110
IRVINE, CA 92618

J5 PROGRAM ID: ALP-CA-CPUC
J5 PROJECT ID: P-061764

ISSUE STATUS

REV	DATE	DESCRIPTION	BY
A	05/03/23	90% CD	MG
0	05/19/23	100% CD	MG
1	06/07/23	PCC #1	MJC

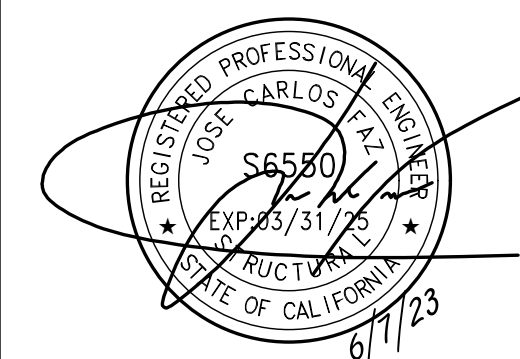
HAZMAT NOTE:

COMCAST HAS DETERMINED THAT THE LITHIUM BATTERY SYSTEMS DEPLOYED AT THE CPUC-MANDATED 72-HOUR BACKUP POWER SITES, BELOW THE HAZARDOUS MATERIALS REPORTING THRESHOLD ESTABLISHED BY (I) CALEPA IN THE BATTERY REPORTING GUIDANCE FOR UNIFIED PROGRAM AGENCIES MARCH 10, 2022 EDITION, AND (II) THE MATERIAL BREAKDOWN PROVIDED IN THE MANUFACTURER'S SAFETY DATA SHEET.

THESE SYSTEMS HAVE A MAXIMUM OF 50 SMALL LITHIUM BATTERIES, WHICH HAVE APPROXIMATELY 14.6% OF ELECTROLYTE WEIGHT BY VOLUME, OR 0.28 GALLONS PER BATTERY, AND CONTAINS A MAXIMUM OF 14 GALLONS OF ELECTROLYTE MATERIAL—BELOW THE REQUIRED REPORTABLE THRESHOLD OF 55 GALLONS.

COMCAST WILL CONTINUE TO ASSESS ANY FURTHER REPORTING REQUIREMENTS REQUIRED BY EACH LOCAL JURISDICTION.

SEAL



SITE INFORMATION

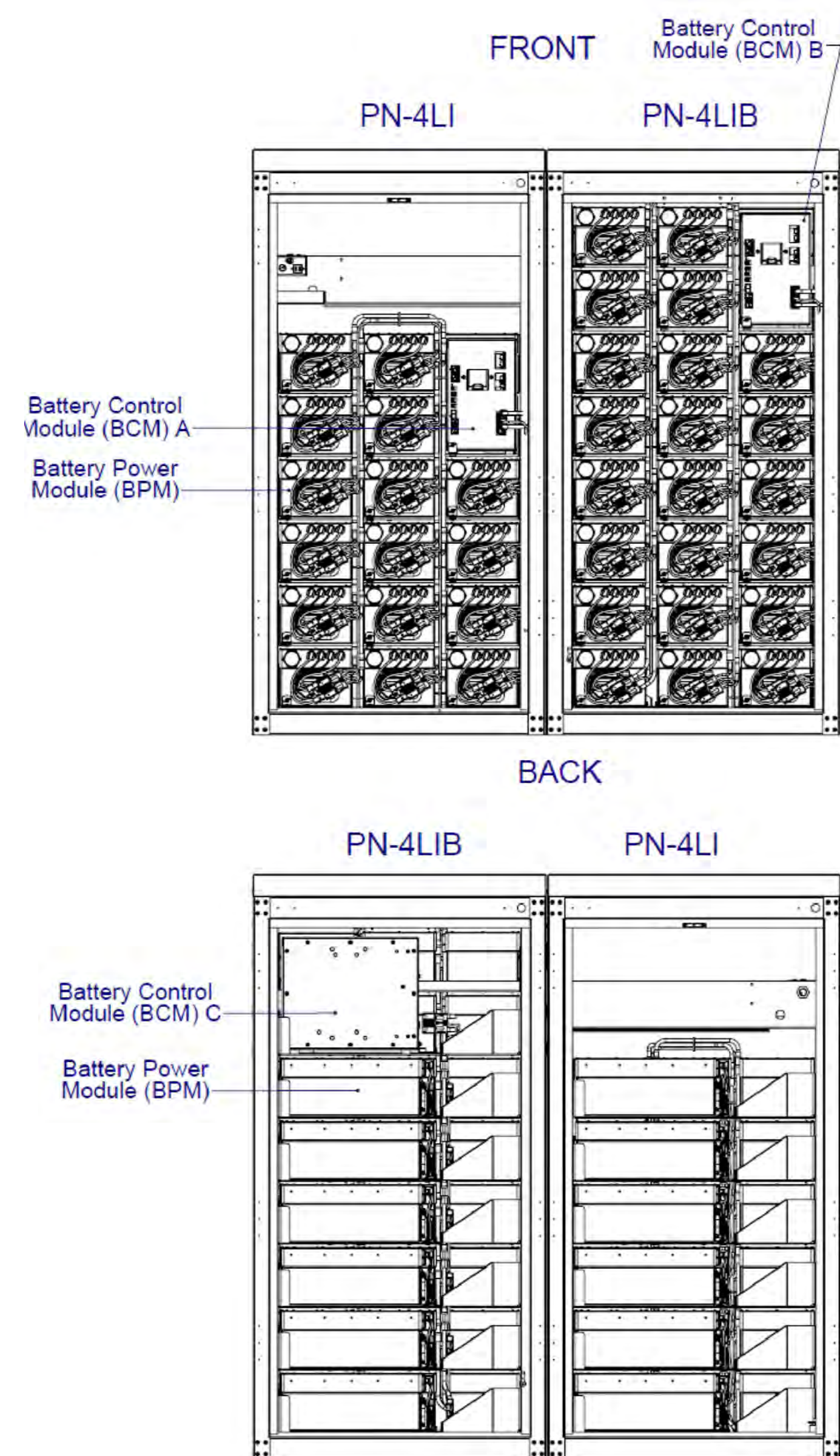
SITE ADDRESS:
284 FORREST AVE,
FAIRFAX, CA 94930

SHEET TITLE:

HAZMAT NOTE

D3.0

System Operation	
Normal Operating Temperature ¹	32°F to 113°F (0°C to 45°C)
Safe Functioning Temperature Range ²	5°F to 131°F (-15°C to 55°C)
Non-destructive Temperature Range ³	-40°F to 167°F (-40°C to 75°C)
Abnormal Temperature Range ⁴	Less than -40°F (-40°C) and greater than 167°F (75°C)
Charge/Discharge Temperature (Upper Limit)	131°F (55°C)
Charge/Discharge Temperature (Lower Limit)	-9.4°F (-23°C)
Charge/Discharge Rating	40.7V @ 44A
The following values are based on cell manufacturer specifications at 1C discharge rate at 25°C:	
System (fully populated w/ 3 BCMs and 50 BPMs) Rated Usable Energy Capacity	81.3 kWh (@ 40.7V maximum)
Battery String (1 BCM and 22 BPMs) Rated Energy Capacity	35.8 kWh (@ 40.7V maximum)
Battery Power Module (BPM) Rated Energy Capacity	1.6 kWh (@ 40.7V maximum)
Battery Electrical Ratings	
Battery Voltage	30.0VDC to 40.7VDC
Battery Current	39A limit (BCM is based on the fuse)
Power Supply (XM3.1-918-HP) Electrical Ratings - Fine Mode Parameters	
Nominal AC Input Voltage	120VAC (factory ordered)
Nominal Input Frequency	60Hz
Input Frequency Tolerance	±3%
Input Voltage Operating Range Tolerance	-25% to +15%
Input Voltage Range	90VAC to 138VAC
Output Voltage	63/89VAC
Output Voltage Regulation (Based on Nominal Input Voltage at 50% Load, 25°C)	-2.5 to +1%
Maximum Rated Output Current	18A
Maximum Output Power ⁵	1620VA
Fine Mode Parameters ⁶	Maximum rated output current
Line Mode Efficiency	Up to 94%
Standby Efficiency	Up to 91%
Output Waveform	Quasi-square wave
Short Circuit Protection	<150% of max current rating
Transfer Characteristics	Uninterrupted output
Battery Voltage	36VDC



2.0 Power System, continued

2.1 Battery System

2.1.1 Battery Power Module (BPM)

The Battery Power Module (BPM, also known as an EnerSys PowerSafe® ION 36-1800 lithium battery, PSI-36-1800) is a single, field replaceable high density lithium-ion battery engineered to maximize battery capacity in a compact form factor. The BPM provides superior energy density and performance ideal for cable broadband outside plant applications. The integrated Battery Management System (BMS) is optimized for performance with the Alpha® XM3.1-HP™ Intelligent Broadband UPS, ensuring proper charging and integration with a remote management system.

The BPM provides high energy density for extended runtimes. The system manages charge and discharge flows of energy, while reporting operating parameters and status remotely. Low self-discharge and fast recharge rates make the modules both storage and deployment friendly. The BMS provides additional levels of protection - overvoltage, undervoltage, and overcurrent - while managing cell balancing and temperatures to help maintain the BPM's overall State of Health (SoH).

2.1.1.1 BPM Features and Specifications

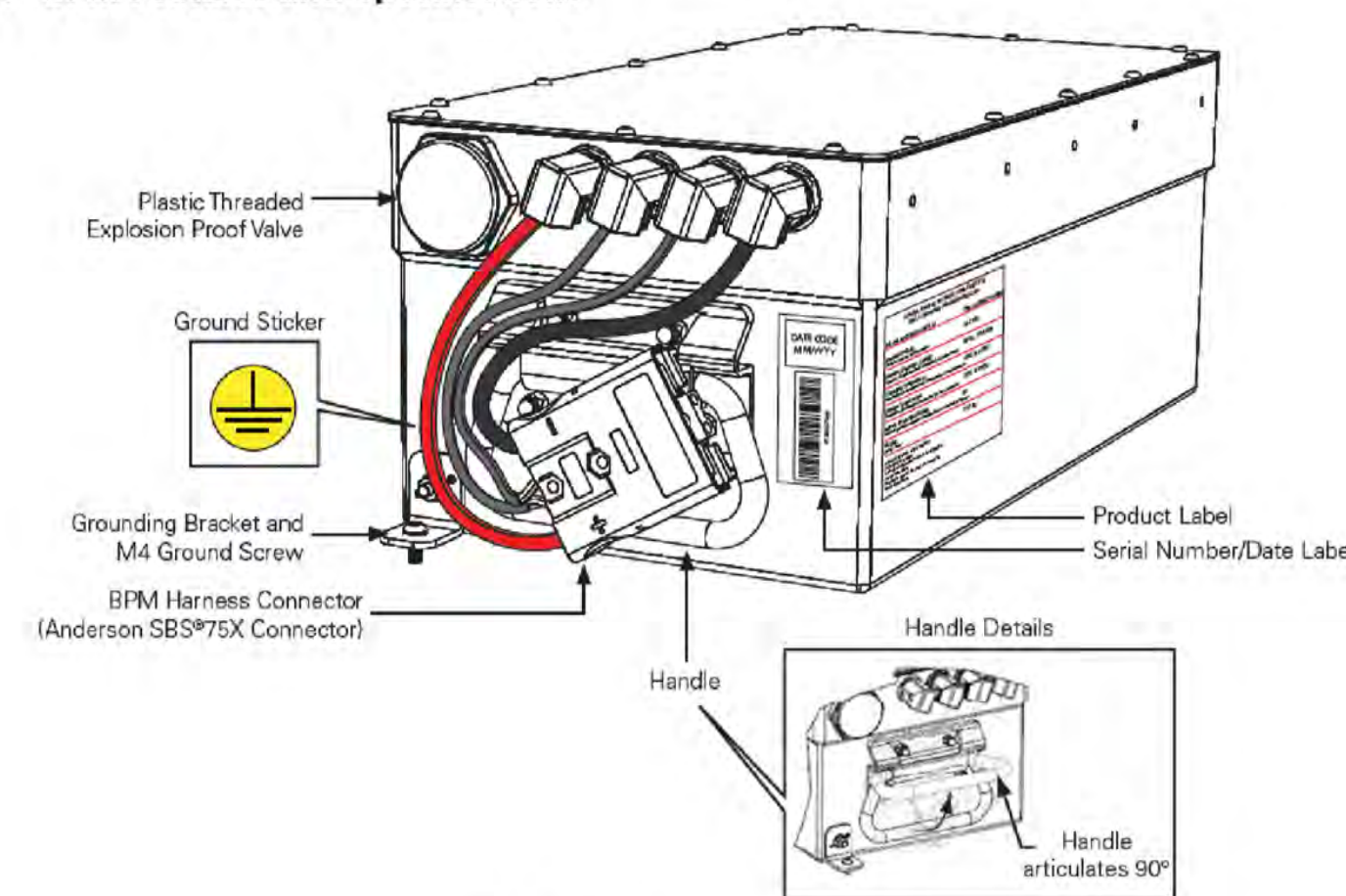


Fig. 2-2. Battery Power Module (BPM)

2.0 Power System, continued

2.1.1.2 Battery Identification and Labels

Battery Power Module (BPM) Specifications	
Nominal Voltage	36V
Operating Voltage Range	30.0V to 40.7V
Maximum Discharge Current	30A
Maximum Charge Current	30A
Capacity	60 Ah
Energy	1810 Wh
Module Operating Temperature (Charge)	-4°F to 131°F (-20°C to +55°C)
Module Operating Temperature (Discharge)	-22°F to 131°F (-30°C to +55°C)
Sealing - Designed To	IP64
Weight	32.8 lbs (14.9 kg)
Dimensions (H x L x W)	5.27" x 13.54" x 6.57" (134 mm x 317 mm x 167 mm)
Self-discharge	Retention ≥ 85%, Recovery ≥ 90%, 28 days at 20 °C or 7 days at 55 °C at ambient module temperature
Terminal Type	Anderson SBS75X Connector
Lifting Handle	Folding pull handle
AC Impedance @ 1 kHz (40% SOC, 25°C)	< 6 mΩ
Communication Protocol	isoSPI
Certifications	Compliant with UN 38.3, UL® 1973

Table 2-2. Battery Power Module (BPM) Specifications

2.1.1.3 BPM Storage and Shelf Life

The optimal storage temperature for the BPM ranges from 5°F to 131°F (-15°C to +55°C).

Notice of FCC Compliance

Per FCC 47 CFR 15.21: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Per FCC 47 CFR 15.105: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at their own expense.

System Safety and Certifications

Certification	Type
UL® 9540	Energy Storage System (ESS) Requirements
UL® 9540a	Standard for Test Method for Evaluating Thermal Runaway Fire Propagation in Battery Energy Storage Systems
UL® 1973	Batteries for Use in Light Electric Rail (LER) and Stationary Applications
UN 38.3	Transportation Testing for Lithium Batteries and Cells
IEC 62368	Audio/Video, information and communication technology equipment; Telecommunication products: network infrastructure equipment
ISO® 13849-1:2015	Functional safety; Safety-related Parts of Control Systems

2.1.2 Battery Control Module (BCM)

The Battery Control Module (BCM, also known as an EnerSys PowerSafe® ION battery management system, model PSI-36-BMS) manages and monitors a series of BPMs, and coordinates with the XM3.1-HP™ power supply.

2.1.2.1 BCM Features and Specifications

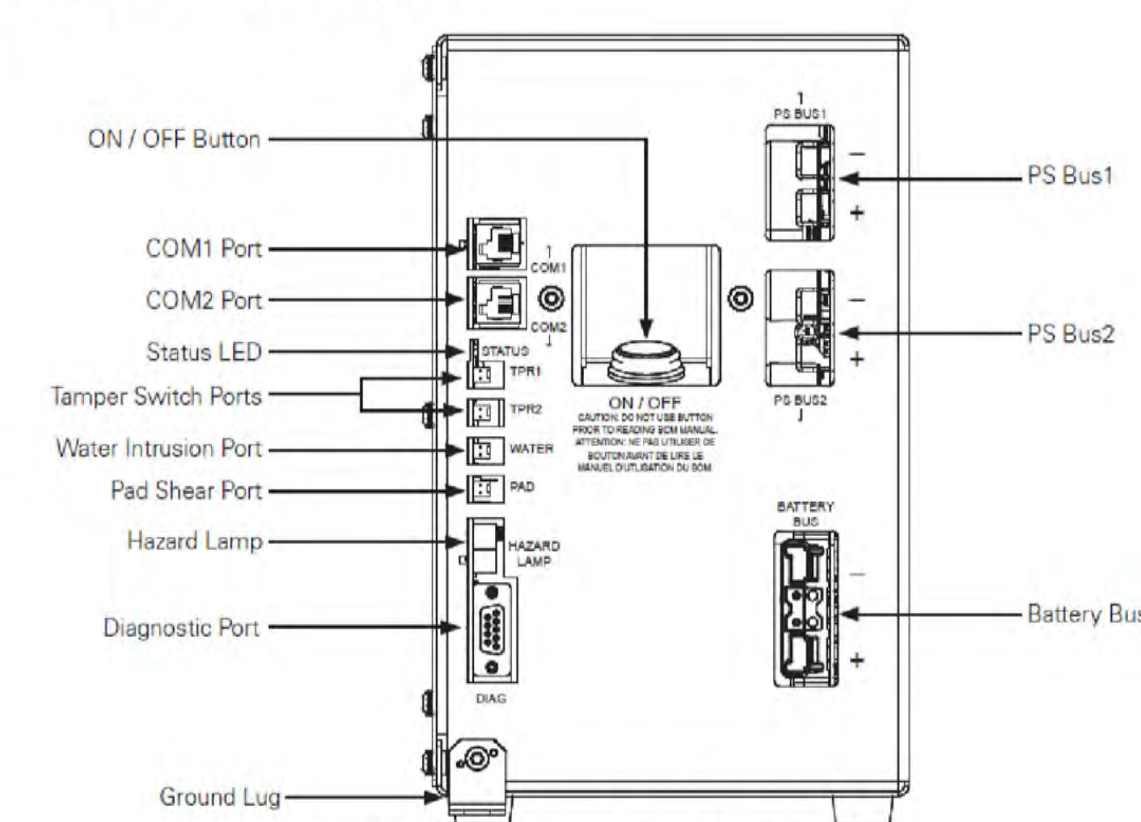


Fig. 2-3. Battery Control Module (BCM)

Battery Control Module (BCM) Features

ON / OFF Button	Direct control of BCM power. <ul style="list-style-type: none"> Short press (one second) turns the BCM on. Long press (three seconds) turns the BCM off, unless charging/discharging is occurring. Always use the Link-Up process, described in Section 5.6.1, Link-Up, to power up the battery system.
COM1 Port	Communications link to the power supply, or to the downstream BCM. The LED adjacent to this connector indicates whether the port is receiving power from the power supply.
COM2 Port	Communications link to the next BCM. A termination plug (p/n ATL400844-001) shall be installed in the last BCM.
Status LED	A pair of LEDs (green and red) indicating the status of the BCM, as described in Section 2.1.2.3, Status LED.
Tamper Switch Ports	Connections for door switches, to indicate if the cabinet is being accessed. TPR1 is for the front door, and TPR2 is for the rear door of the cabinet it is inserted in.
Water Intrusion Port	Connection for optional water intrusion switch; normally unused.
Pad Shear Port	Connection for optional pad shear detection switch; normally unused.
Hazard Lamp	Connection for optional external indicator lamp indicating a potential safety hazard in approaching the cabinet. The LED adjacent to this connector also indicates the possible hazard condition.
Diagnostic Port	Connection for service access to the BCM. This connector is reserved for use by trained Alpha/EnerSys personnel only.
Ground Lug	Earth ground connection between the BCM and the cabinet shelf.
PS Bus1	Power cable link to the power supply, or to the upstream BCM.
PS Bus2	Power cable link to the downstream BCM. This opening should remain covered for the last BCM, to avoid accidental contact with the power terminals.
Battery Bus	Combined power and communications cable to the string of Battery Power Modules (BPMs).

Battery Control Module (BCM) Specifications

Nominal DC Input Voltage	36.2V
Operating Voltage Range	30.0V to 40.7V
Maximum Continuous Discharge Current	39A
Maximum Continuous Charge Current	39A
Maximum Voltage	40.7V
Module Operating Temperature	-4 to 185°F (-20 to 85°C) (Note: Derating occurs before or up to extremes.)
Weight	16.5 lbs (7.5 kg)
Dimensions (H x L x W)	10.38" x 6.39" x 13.15" (264 mm x 162 mm x 334 mm)
Connectors	
To Battery Pack	6 Position SBS75X Connector
To Inverter / Parallel BCM	2 Position Anderson™ PP75 Connector
Communication Protocol	Alpha RS-485; CAN 2.0
Safety Certification	Compliant with UL® 1973

Table 2-4. Battery Control Module (BCM) Specifications

2.1.2.2 Status LED

The red/green pair status LED is the primary indicator of the BCM's status, showing whether the BCM is powered, the batteries are online for backup use, and whether the BCM is communicating with the power supply as follows:

Status	BCM Powered?	Batteries online?	Communicating with power supply?
Off	No	No	Not specified
Solid GREEN	Yes	Yes	Yes
Blinking GREEN	Yes	Yes	No
Blinking RED	Yes	No	Yes
Blinking GREEN and RED	Yes	No	No

Table 2-5. Status LED Functions

The COM LED, next to the COM1 connector, is lit GREEN when there is a communications voltage from the power supply. Communications is not possible if this LED is not lit.

The Hazard LED, next to the Hazard Lamp connector, blinks RED when there is a potential safety concern in approaching the cabinet. This occurs when the temperature within the battery modules is critically high.

2.1.2.3 ON / OFF Button

The push-button on the front of the BCM turns the BCM on or off. To turn the BCM on, press the button for one second and then release it. The status LED should begin blinking red, indicating that the BCM is powered but the batteries are not online, or the LED will blink alternating green and red if the BCM is not communicating with a power supply. If the BCM is communicating with an XM3.1-HP™ power supply, the power supply will detect the BCM startup, and automatically perform a "Link-Up" operation (as described in Section 5.6.1, Link-Up) to bring the BCM batteries online.

To turn the BCM off, verify that the system is not actively being charged or discharged. Press the ON/OFF button for three seconds and then release it. If the batteries were online (solid green status LED), the status LED will begin blinking red, and after a short pause there is an audible sound as the contactors open. After a few seconds, the BCM should turn off and the status LED goes dark.

If the BCM status LED is solid green and a three-second press does not result in a red blinking LED, it usually means that the BCM is presently charging or discharging. Ensure the charging or discharging is finished, or else command the BCM(s) to turn off from the "Batteries" web page.

NOTICE:

As noted above, the OFF function will not work if the battery system is charging or discharging.

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BELLINGHAM, WA 98226

J5 INFRASTRUCTURE
PARTNERS

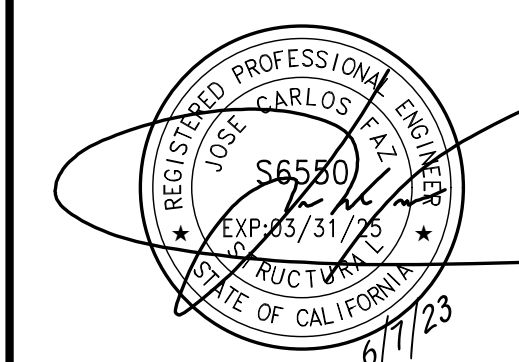
23 MAUCHLY, STE 110
IRVINE, CA 92618

J5 PROGRAM ID: ALP-CA-CPUC
J5 PROJECT ID: P-061764

ISSUE STATUS

REV	DATE	DESCRIPTION	BY
A	05/03/23	90% CD	MG
0	05/19/23	100% CD	MG
1	06/07/23	PCC #1	MJC

SEAL



SITE INFORMATION

SITE ADDRESS:
284 FORREST AVE,
FAIRFAX, CA 94930

SHEET TITLE:
MANUFACTURER'S
SPECIFICATIONS, RATINGS
AND LISTINGS OF EACH ESS

D3

2.2 Theory of Operation

The battery subsystem is comprised of one or more strings (A, B, and C) of Battery Power Modules (BPM) connected in parallel. Each string is monitored and controlled by a Battery Control Module (BCM). Strings A and B may contain 3 to 22 power modules each, and String C may contain 6 power modules as described in Table 5-1.

Each BPM has maximum continuous charge and discharge limits based on the cell manufacturer limitations and an internal BPM fuse. Cell limits are determined based on temperature and state of charge (SOC). The limit for the BPM is established by the value that is smaller between the cell limit and the fuse limit.

Each BCM has maximum continuous charge and discharge limits based on an internal fuse. In the event that the maximum BCM charge or discharge limit exceeds the combined BPMs' limits due to configuration or operating conditions (e.g. only one BPM is connected to the string, cold temperatures, etc.) the BCM will act to disconnect to protect itself and the BPMs.

The maximum charging and discharging limit for the battery subsystem is based on the combined current limits of the number of connected BCM strings.

2.2.1 Charging



CAUTION!

The Battery Management System (BMS) tracks the battery's condition and automatically assesses the best charging parameters based on present conditions. These parameters can be communicated to the inverter/charger using the CANBUS connection. There is no "typical" BMS charging cycle due to the adaptive nature for each unique situation.

2.2.1.1 Battery Power Module (BPM)

Battery Power Module Continuous Charge Limits as a Function of Temperature and User SOC

Temp. (°C) /SOC (%)	User SOC (%)																			
	0%	5%	10%	15%	20%	25%	30%	35%	40%	45%	50%	55%	60%	65%	70%	75%	80%	85%	90%	95%
-30°C	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-20°C	4	4	4	4	4	3.5	3.5	3	3	3	3	2.5	2.5	2	2	1.5	1.5	1	1	1
-10°C	10	10	10	10	10	10	10	10	7.5	7.5	7.5	6	6	6	5	4.5	4	3.5	3	3
0°C	25.5	25.5	25.5	25.5	25.5	25.5	25.5	17.8	17.8	17.8	15.3	15.3	15.3	11.5	11.5	11.5	7.5	7.5	7.5	7.5
10°C	30	30	30	30	30	30	30	30	30	30	25.5	25.5	25.5	20.4	20.4	20.4	15.3	15.3	15.3	15.3
25°C	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	25.5	25.5	25.5	25.5
45°C	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26
55°C	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5

Table 2-10, Battery Power Module Continuous Charge Limits as a Function of Temperature and User SOC

2.2.1.2 System and Battery String Level

System Level Maximum Continuous Charge Limits Scalable for User SOC

Temp. (°C) /SOC (%)	User SOC (%)																				
	0%	5%	10%	15%	20%	25%	30%	35%	40%	45%	50%	55%	60%	65%	70%	75%	80%	85%	90%	95%	100%
-30°C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
-20°C	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.1
-10°C	1.4	1.4	1.5	1.6	1.7	1.7	1.8	1.8	1.8	1.7	1.5	1.4	1.3	1.2	1.2	1.1	0.9	0.8	0.7	0.6	0.4
0°C	3.7	3.7	3.7	3.6	3.6	3.5	3.5	3.4	3.4	3.4	3.4	3.4	3.4	3.2	3.0	2.9	2.7	2.5	2.2	2.0	1.8
10°C	6.0	6.0	5.8	5.7	5.5	5.3	5.2	5.0	4.9	5.1	5.3	5.4	5.1	4.8	4.6	4.3	4.0	3.7	3.4	3.0	2.4
25°C	10.0	10.0	10.1	10.2	10.3	10.4	10.5	10.6	10.7	10.8	10.9	11.0	10.4	9.8	9.3	8.5	7.7	6.9	6.1	5.2	4.0
45°C	3.1	3.1	3.1	3.1	3.1	3.2	3.2	3.2	3.3	3.3	3.3	3.4	3.4	3.3	3.4	3.4	3.5	3.5	3.6	3.1	3.1
50°C	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.4	2.1
55°C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 2-11, System Level Maximum Continuous Charge Limits Scalable for User SOC

For total BPMs of 2 to 22, limits are equal to the lesser of 44.1 A or the value in the scalable table above multiplied by the total number of battery power modules in system.

For total BPMs of 23 to 44, limits are equal to the lesser of 72.5 A or the value in the scalable table above multiplied by the total number of battery power modules in system.

For total BPMs of 45 to 50, limits are equal to the lesser of 82.3 A or the value in the scalable table above multiplied by the total number of battery power modules in system.



NOTICE:

The same values above also applies to the battery string level of maximum continuous charge limits that are scalable for user SOC. Limits are equal to the lesser of 44.1A or value in scalable table multiplied by the total number of battery power modules in the string.

2.2.1.3 Battery Control Module (BCM)

The maximum continuous charging current for BCM is 44.1A. In the event that the connected BPMs have an aggregated lower charging limit, the BCM will disconnect when the lower limits has been exceeded for protection.

2.2.1.4 Battery Subsystem

The maximum continuous charging current limits for the battery subsystem take into account imbalance factors to ensure reliable operation and may be less than the summation of max limits for all the connected BCM strings.

2.2.2 Discharging

2.2.2.1 Battery Power Module (BPM)

Battery Power Module Continuous Discharge Limits as a Function of Temperature and User SOC

Temp. (°C) /SOC (%)	User SOC (%)																			
	5%	10%	15%	20%	25%	30%	35%	40%	45%	50%	55%	60%	65%	70%	75%	80%	85%	90%	95%	
-30°C	0	5	10	20	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26
-20°C	5.2	18.9	29.2	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
-10°C	10	25	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
0°C	18	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
10°C	25.5	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
25°C	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
45°C	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
55°C	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10

Table 2-12, Battery Power Module Continuous Discharge Limits as a Function of Temperature and User SOC

2.2.2.2 System and Battery String Level

System Level Maximum Continuous Discharge Limits Scalable for User SOC

Temp. (°C) /SOC (%)	User SOC (%)																				
	0%	5%	10%	15%	20%	25%	30%	35%	40%	45%	50%	55%	60%	65%	70%	75%	80%	85%	90%	95%	100%
-30°C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
-20°C	0.0	0.5	0.9	1.2	1.5	1.9	2.2	2.6	2.8	2.7	2.6	2.5	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3
-10°C	0.0	1.7	3.0	4.2	5.4	6.6	7.8	9.0	9.8	9.4	9.0	8.7	8.6	8.4	8.3	8.2	8.2	8.2	8.2	8.2	8.2
0°C	0.0	3.2	4.7	6.0	7.3	8.6	9.9	11.2	12.2	12.0	11.8	11.7	11.6	11.5	11.4	11.4	11.4	11.4	11.4	11.4	11.4
10°C	0.0	4.6	6.4	7.8	9.2	10.7	12.1	13.5	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6
25°C	0.0	8.9	10.5	11.2	11.9	12.8	13.3	14.1	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6
45°C	0.0	9.6	10.8	10.8	10.9	10.9	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
50°C	0.0	6.1	6.9	7.0	7.1	7.2	7.3	7.4	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
55°C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 2-13, System Level Maximum Continuous Discharge Limits Scalable for User SOC

For total BPMs of 2 to 22, limits are equal to the lesser of 44.1 A or the value in the scalable table above multiplied by the total number of battery power modules in system.

For total BPMs of 23 to 44, limits are equal to the lesser of 72.5 A or the value in the scalable table above multiplied by the total number of battery power modules in system.

For total BPMs of 45 to 50, limits are equal to the lesser of 82.3 A or the value in the scalable table above multiplied by the total number of battery power modules in system.



NOTICE:

The same values above also applies to the battery string level of maximum continuous discharge limits that are scalable for user SOC. Limits are equal to the lesser of 44.1A or value in scalable table multiplied by the total number of battery power modules in the string.

2.2.2.3 Battery Control Module (BCM)

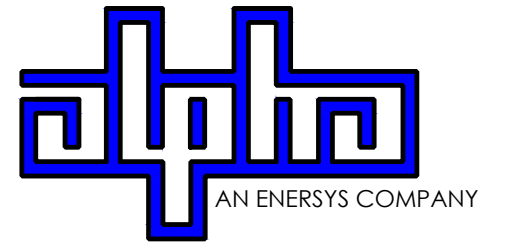
The maximum continuous discharging current for BCM is 44.1A. In the event that the connected BPMs have an aggregated lower discharging limit, the BCM will disconnect when the lower limits has been exceeded for protection.

2.2.2.4 Battery Subsystem

The maximum continuous discharging current limits for the battery subsystem take into account imbalance factors to ensure reliable operation and may be less than the summation of max limits for all the connected BCM strings.



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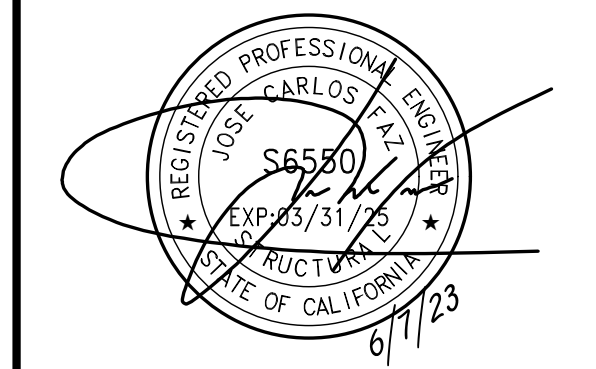
23 MAUCHLY, STE 110
IRVINE, CA 92618

J5 PROGRAM ID: ALP-CA-CPUC
J5 PROJECT ID: P-061764

ISSUE STATUS

REV	DATE	DESCRIPTION	BY
A	05/03/23	90% CD	MG
0	05/19/23	100% CD	MG
	06/07/23	PCC #1	MJC

SEAL



SITE INFORMATION

SITE ADDRESS:
284 FORREST AVE,
FAIRFAX, CA 94930

SHEET TITLE:
ENERGY (BATTERY)
MANAGEMENT SYSTEMS
AND OPERATION

D4

2.1.3 BPM and BCM Safety

Each battery string is comprised of a BCM and multiple BPMs. An active Battery Management System (BMS) is incorporated within each BCM string to provide protection against overcurrent, overvoltage, over-discharge, and over-temperature conditions. The BCM and BPMs incorporate passive overcurrent protection in the form of fuses. The BMS communicates operating limits to the connected XM3.1-HP™ power supply via CAN communications. The BMS self-protects in case these limits are violated.

WARNING! EXPLOSION, ELECTROCUTION OR FIRE HAZARD

- Only use EnerSys® approved charging sources.
- A battery can present a risk of electric shock, burns from high short-circuit current, fire, or explosion. Observe proper precautions.
- Ensure the cables are properly sized.
- Ensure clearance requirements are strictly enforced around the batteries.
- Ensure the area around the batteries is well ventilated and clean of debris.
- Never allow a spark or flame near the batteries.
- Always use insulated tools. Avoid dropping tools onto batteries or other electrical parts.
- Do not charge battery below -9.4°F (-23°C).
- Follow the appropriate listed procedure for removing/replacing battery modules within this system.
- Do not stick fingers or tools in BCM.
- Remove jewelry before accessing the system.
- Do not use BPMs or BCMs with external signs of damage.

CAUTION! EQUIPMENT DAMAGE

- Failure to install or use this product as instructed can result in damage to the product that may not be covered under the limited warranty.
- Do not break into or tear apart BPMs.
- This product has no user-replaceable parts, including fuses. It is only serviceable by qualified personnel. An open fuse should be returned to EnerSys for evaluation.
- Only install BPMs and BCMs per the procedure. Do not connect them together in any other manner, or to other batteries.

WARNING! FUMES & ELECTROLYTE HAZARD

- Any gelled or liquid emissions from a battery is an electrolyte, which is harmful to the skin and eyes. In the event of an electrolyte leak, do not come in contact with the electrolyte. Immediately disconnect the battery and properly dispose of it.
- If electrolyte contacts the skin, wash immediately and thoroughly with water. If electrolyte enters the eyes, wash thoroughly for 10 minutes with clean water or a special neutralizing eye wash solution and seek immediate medical attention.
- If the battery material is released, remove operators from area until the battery cools and fumes dissipate. Provide maximum ventilation to clear out hazardous gasses. Avoid skin and eye contact or inhalation of vapors. Remove spilled liquid with absorbent cloth and dispose of according to local codes.

ATTENTION:

- See Fig. 2-2 and 2-3 for silkscreen labels.
- Install this product in accordance with local electrical, building, fire, and other codes or utility requirements.
- Use with copper conductors rated 75°C minimum.
- If installed in the United States, all wiring methods shall be in accordance with the National Electrical Code® (NFPA 70), NESC® and California General Order Codes.
- If installed in Canada, all wiring methods shall be in accordance with the Canadian Electrical Code, C22.1, Current Edition.
- Wear complete eye and clothing protection when working with batteries.
- Do not expose to rain or spray.
- Fire suppression equipment must be available in case of fire. The minimum required equipment for this installation is a type ABC fire extinguisher.

2.1.3.1 BPM and BCM Disposal and Recycling

WARNING! EXPLOSION & FIRE HAZARD

Do not dispose of the BPM or BCM by fire. Disposal or recycling of this battery shall be managed in accordance with approved local, state, and federal requirements. Consult state environmental agencies and/or the federal EPA.

Disposal or recycling of this battery shall be managed in accordance with approved local, state, and federal requirements. Consult state environmental agencies and/or federal EPA.

Do not dismantle, incinerate, or crush batteries.

In case of irreparable failure or end of life, the battery must be taken out of operation in a controlled manner (contact Alpha for more details). The battery should not be dismantled by the customer. Specialized handling and recycling are required for damaged products. Do not dispose of waste batteries as unsorted municipal waste.

Alpha®, in line with government regulations, will accept the Extended Runtime Lithium-ion (XRTLi) system batteries at specific facilities for disposal. Contact your local Alpha representative for specific recycling instructions per region.

2.1.3.2 System Safety and Certifications

The XRTLi system has been certified to the following standards:

System Safety and Certifications	
Certification	Type
UL® 9540	Energy Storage System (ESS) Requirements
UL® 9540a	Standard for Test Method for Evaluating Thermal Runaway Fire Propagation in Battery Energy Storage Systems
UL® 1973	Batteries for Use in Light Electric Rail (LER) and Stationary Applications
UN 38.3	Transportation Testing for Lithium Batteries and Cells
IEC 62368	Audio/Video, information and communication technology equipment; Telecommunication products; network infrastructure equipment
ISO® 13849-1:2015	Functional safety; Safety-related Parts of Control Systems

4.2 Enclosure Mounting Procedure

ATTENTION:

Seismic rated anchors MUST be used when securing the enclosure to the pad, and there must be at least 3" between the co-located PN-4LI cabinets and other structures. Alpha® recommends using seismic rated anchors such as the HILTI® HSL4/HSL4-G (or equivalent). Contact your Alpha representative for more information.

The enclosure bolts directly to the concrete pad. Mounting holes are provided in the base of the internal enclosure rack to accommodate the pad's 3/8" stainless or galvanized anchor bolts.

1. If installing two cabinets, place a Poron gasket (Alpha p/n 648-023-10-001) around the 2.5" knockout on the top front of the PN-4LIB22 or PN-4LIB28 before attaching cabinets. See figure below.
2. Place vapor barrier material on pad and make cutouts for anchoring hardware and other openings as necessary. A 25+ year vapor barrier MUST be used between the concrete and enclosure base to inhibit moisture ingress and to prevent corrosion caused by concrete-to-metal contact.
3. With no less than two field personnel lifting the enclosure, position it above the concrete pad and slowly lower it into position over the pad's 3/8" anchor bolts.
4. Secure the enclosure using stainless, galvanized (or better) flat washers, lock washers and 3/8" nuts at each mounting bolt.

NOTICE:

Enclosures must be mounted flush with a smooth surface. If the concrete pad is uneven or has bumps, cracks or other imperfections, the installer is responsible for correcting these defects prior to installing the enclosure.

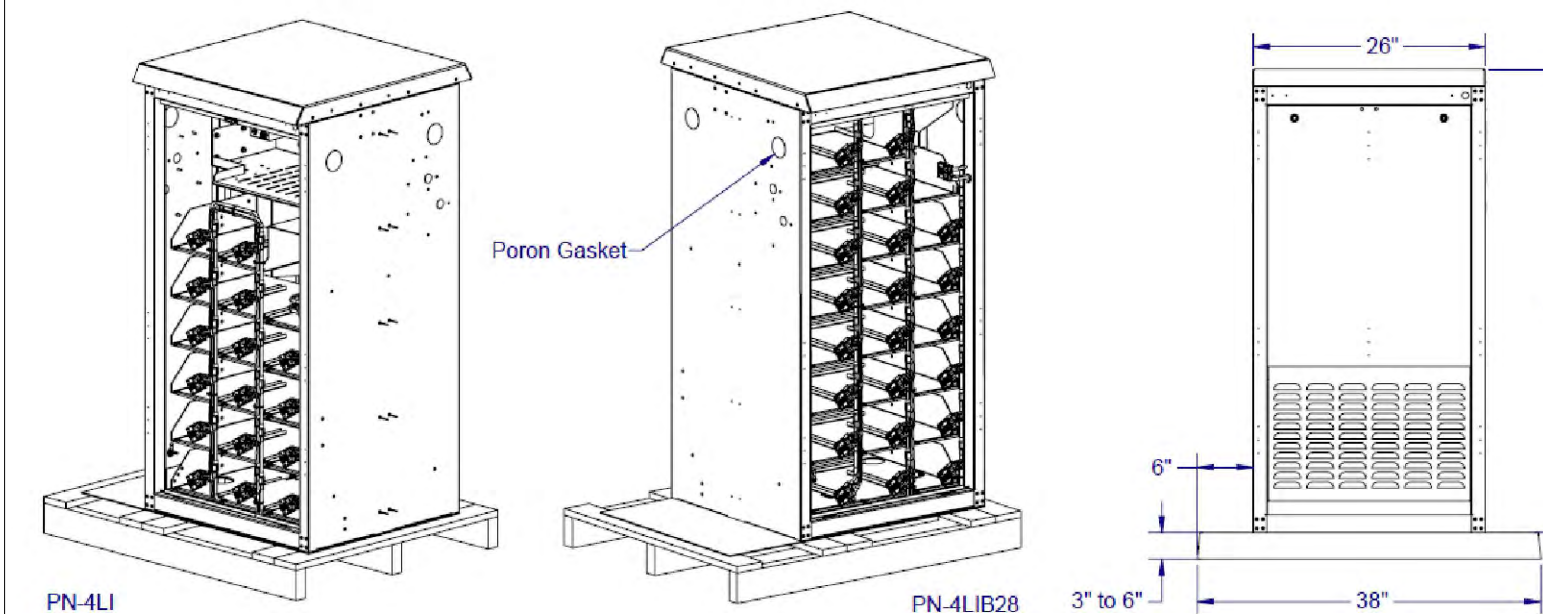


Fig. 4.1, Poron Gasket Location

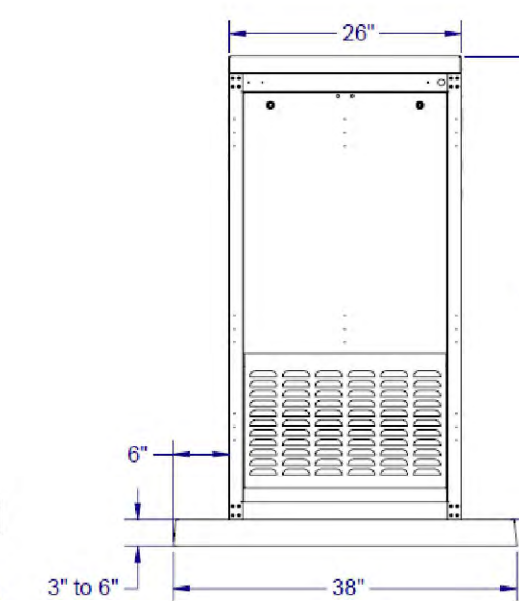
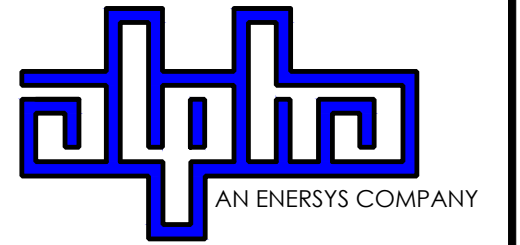


Fig. 4.2, PN-4LI Mounted to Prepared Pad


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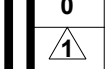
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BELLINGHAM, WA 98226


J5 INFRASTRUCTURE PARTNERS

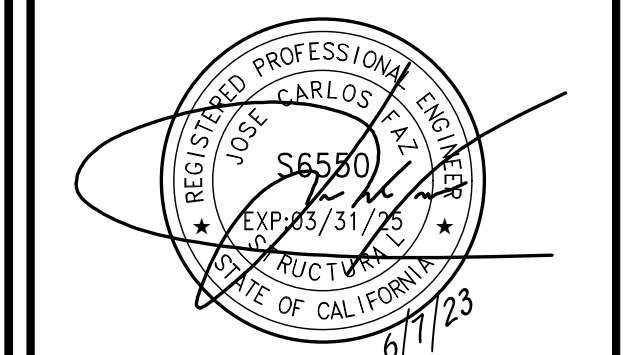
23 MAUCHLY, STE 110
IRVINE, CA 92618

J5 PROGRAM ID: ALP-CA-CPUC
J5 PROJECT ID: P-061764

ISSUE STATUS

REV	DATE	DESCRIPTION	BY
A	05/03/23	90% CD	MG
0	05/19/23	100% CD	MG
	06/07/23	PCC #1	MJC

SEAL



SITE INFORMATION

SITE ADDRESS:
284 FORREST AVE,
FAIRFAX, CA 94930

SHEET TITLE:
**INSTALLATION
REQUIREMENTS**

D5

5.0 System Installation

NOTICE:

Before going on-site, ensure laptop or tablet contains the latest XM3.1-HP™ XRT power supply and BCM support software.

WARNING! ELECTRICAL & FIRE HAZARD

- Installer must wear the correct PPE when installing batteries. Failure to do so may result in injury or death.
- Failure to install and/or use this equipment as instructed in the system documents can result in a hazard to personnel or damage to the equipment. This system is only serviceable by qualified personnel.

CAUTION!

Do not install, charge or reconcile battery below 0°C. Failure to follow this will damage equipment.

WARNING! ELECTRICAL HAZARD

When working with any electrical equipment, touch the enclosure to remove any self-generated static charges before working on the system.

Required Tools and Equipment:

- Insulated tools (size and setting based on battery manufacturer torque specification)
- Safety glasses or face shield
- Rubber gloves
- Disposable gloves
- Chest shield
- Box or bag for storing cables and hardware while out in the field
- Infrared temperature probe
- Infrared imager
- True RMS voltmeter
- Digital multimeter (DMM)
- Battery Reconciliation Device (BRD) (p/n 018-00003-20-001)
- Tools for troubleshooting isoSPI communication wires on BPM wire harness:
 - SBS*75X auxiliary contact insertion tool: *PM1002G1*
 - SBS*75X auxiliary contact extraction tool: *PM1003G1*
 - SBS*75X auxiliary contact insertion inspection tool: *PM1003GX*
- Spotlight360™ laptop or tablet (Android OS capable with USB OTG), USB OTG adapter
- WiFi router
- Barcode scanner
- Ethernet cable, connected to the laptop, for interaction with the power supply element of the backup power system
- Lawical CANUSB interface adapter, connected to a USB port on the laptop, for low-level communications with the BCM

5.2 XM3.1-HP™ Power Supply Installation Procedure

NOTICE:

If upgrading existing plant services with the XRT-Li power system, follow your company's policy of providing an alternate power source to the cable plant during this procedure. The process used in this installation will create an interruption of the existing power source. Alpha® recommends using a service power supply such as the APP-9015S.

NOTICE:

To allow adequate ventilation, ensure the power supply is placed approximately 2' from the front edge of the shelf.

The following procedure is for installing an XM3.1-HP™ power supply in the same cabinet as the BPMs. If the power supply exists in a separate cabinet, proceed to the next section.

1. Ensure the cabinets are completely installed, including being bolted to the pad and enclosure grounding, before proceeding.
2. Turn the disconnect or main breaker on. Test the AC mains voltage at the outlets.
3. Install the SPI or SPI-RF in the back of the cabinet. Connect the HFC hardline to the SPI. Leave the AUX/MAIN switch in the AUX position.
4. Mount LAP surge suppressor. If the center screw is installed in the left side outlet, remove and discard it. Insert the LAP into the lower left outlet and install the longer supplied screw through the LAP and into the outlet to secure it.
5. Place the power supply in the cabinet.
6. Mount the RF surge suppressor and ground it appropriately. Connect the plant RF cable to the input of the surge suppressor. Connect a short RF jumper cable to the output of the RF surge suppressor. (Do not connect this to the power supply at this time.) Alpha recommends tightening the RF cable on the power supply and the surge suppressor connectors to a torque setting of 10in-lb ± 1in-lb.
7. If Spotlight360™ is not available or being used, record the XM3.1-HP power supply serial number. Even with existing sites, the serial number must be recorded.
8. Optional: Connect the XM3.1-HP power supply ground wire to the enclosure. Torque to 10in-lb ± 1in-lb.
9. Plug in the short IEA power cord into the XM3.1-HP power supply. DO NOT connect the cord to the service outlet or to the LAP at this time.

Other power supply connections will be mentioned in subsequent sections.

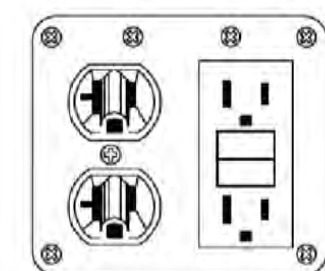


Fig. 5-2, Input Power Panel

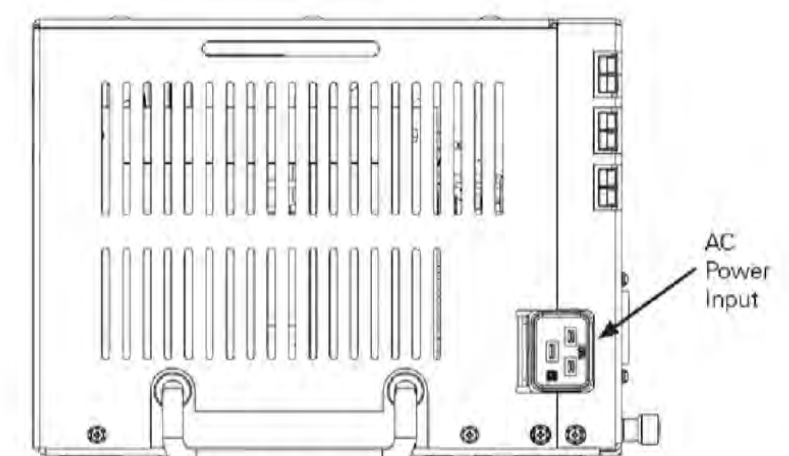


Fig. 5-3, XM3.1-HP AC Power Input Location (Side View)

5.3 BCM Installation Procedure

1. Place BCM A in its designated spot in the PN-4LI or PN-4LIB22, which is the left cabinet in a two cabinet installation. If the configuration calls for BCM B and/or BCM C, place those in the right cabinet, a PN-4LIB28, depending on the configuration. If using a single PN-4LIB28 with an external power supply, BCM A and BCM B will be located within the PN-4LIB28 cabinet.
2. Secure BCMs to the enclosure(s) via the ground securing screw. Torque to 75 in-lb (8.5 Nm). Do not connect the Battery Bus connector, but confirm all DC wiring is accessible.

5.4 BPM Installation Procedure

NOTICE:

Do not carry the BPM via the harness. Only use the handle located on the front when transporting.

NOTICE:

Before installing the BPMs, refer to Table 5-1 for BPM configurations under BCMs. BPMs must be placed in their appropriate slots under their corresponding BCM (ex: BPM A1 must go into the slot designated for BPM A1.) Do not skip the order. Skipping modules will cause operational issues.

1. Install all the Battery Power Modules (BPMs) by lifting via the handle and sliding into position (see figure below). Refer to work order for system configuration and BPM placement. Ensure the battery harness is out of the way when installing the BPMs.
2. Secure all BPMs in place in the enclosure with the ground securing screw. Torque to 75 in-lb (8.5 Nm).

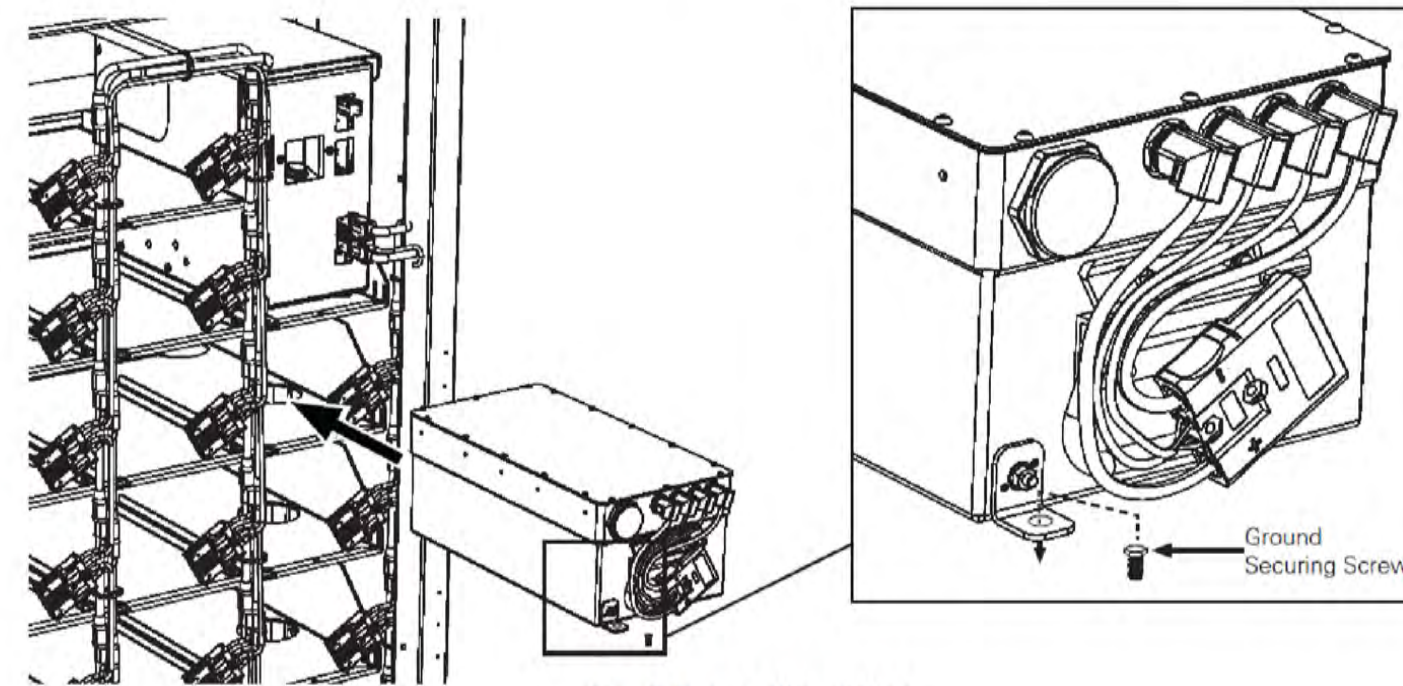


Fig. 5-4, Installing BPM

5.0 System Installation, continued

The following table describes the required varying configurations and the number of BPMs under BCM A, BCM B and BCM C, and optimized configuration for load balancing. Note that the higher number of BPMs fall under BCM A, and the BCM C should always contain six BPMs in a string.

Total BPMs	Cabinets	BCM A	BCM B
3	1	3	
4	1	4	
5	1	5	
6	1	6	
7	1	7	
8	1	8	
9	1	9	
10	1	10	
11	1	11	
12	1	12	
13	1	13	
14	1	14	
15	1	15	
16	1	16	
17	1	17	
18	1	18	
19	1	19	
20	1	20	
21	1	21	
22	1	22	
23	2	12	11
24	2	12	12
25	2	13	12
26	2	13	13
27	2	14	13
28	2	14	14
29	2	15	14
30	2	15	15
31	2	16	15
32	2	16	16
33	2	17	16
34	2	17	17
35	2	18	17
36	2	18	18
37	2	19	18
38	2	19	19
39	2	20	19
40	2	20	20
41	2	21	20
42	2	21	21
43	2	22	21
44	2	22	22

Total BPMs	Cabinets	BCM A	BCM B	BCM C
45	2	20	19	6
46	2	20	20	6
47	2	21	20	6
48	2	21	21	6
49	2	22	21	6
50	2	22	22	6

5.4.1 Verifying Ground Integrity

In order to ensure UL® compliance for the field installation, all modules must be grounded. Following this process will confirm the modules are grounded correctly.

1. Set digital multimeter (DMM) to continuity or Ohm testing.
2. Attach the common (-) lead to a ground reference point such as the ground on the cabinet door.
3. Use the test lead and touch each BCM front screw on the faceplate next to the ON / OFF button. The reading on the DMM should be less than 2 Ohms.
4. Use the test lead, touch each BPM metal handle. The reading on the DMM should be less than 2 Ohms.

5.4.2 Inter-Cabinet Cable Connections

1. Ensure the XM3.1-HP™ power supply battery circuit breaker is turned off.
2. Install DC battery cables between the power supply and BCM A. If installed, route cables from BCM A to BCM B, and from BCM B to BCM C. Ensure cables are routed so they don't interfere with the removal of any BPM or ability to close the door. Note that some cables will be routed through the conduit between the cabinets.
3. Using the gray system COM cable, connect the XM3.1-HP power supply COM port to the BCM A COM1 port.
4. If additional BCMs are present in the cabinet(s), the BCM A COM2 connects to BCM B COM1 using a system COM cable. BCM B COM2 connects to BCM C COM1.
5. When the final connection is made, place the RS485 Communication Termination in the last connected BCM COM2 port.
6. Install tamper cables. The front door should be connected to TPR1 and the back door to TPR2 ports. They are not polarity dependent, but the connector is polarized. Note that it is easy to connect the tamper cables incorrectly. Verify the connector is centered prior to pushing them in.
7. Do not connect a tamper cable to the second BCM in a cabinet (either BCM B or BCM C).

NOTICE:

The TPR (tamper) port on the XM3.1-HP™ power supply in a PN-4LI cabinet is not used.

5.4.3 Reconciliation and BPM Connections

NOTICE:

The following instructions utilize the Battery Reconciliation Device (BRD) during the reconciliation process. If using a digital multimeter (DMM) in place of a BRD, see Section 5.4.4, Reconciliation and BPM Connections with a Digital Multimeter.

After the ground integrity has been verified, the BPMs must be reconciled in order to bring their states of charge to a common level. This reconciliation process must be performed in the recommended temperature range for normal operation (0°C - 45°C) of the XRT-Li power system, as noted in Table 2-1.

To give a basic overview of BPM connection process, the cabinet wire harness must be connected to the last BPM in the string (ex: If there are sixteen batteries in string A, connect only BPM A16.) Working backwards from the last BPM, test the unconnected BPM to ensure it is safe to connect to the BPM(s) already attached to the wire harness. Once verified, the BPM can be connected to the harness and the technician can move on to the next unconnected BPM. Repeat this process until all the BPMs in the string are checked and connected.

WARNING! ELECTRICAL HAZARD

BPMs must be reconciled before installing/attaching to Bus. Failure to do so will result in equipment damage such as a blown fuse.

1. Ensure the battery bus cable is NOT plugged into a BCM. As indicated on Table 5-1, based on the count shown for this string (A, B or C), connect cabinet-integrated BPM harness connector (BPM bus) to the highest numbered BPM connector shown in that table.
2. To ensure proper State of Charge (SoC) levels, a reconciliation of these components must be performed. Connect the Battery Reconciliation Device (BRD) starting from the next to last BPM. Place the cabinet's SBS*75X Anderson connector into the BRD's BPM bus port.
3. Place the next to last BPM's harness connector into BRD's BPM port.
4. Check BRD display to verify that two BPMs are detected. (See Fig. 5-5.) This should reflect the BPM connected to the BRD BPM port and subsequent BPMs in the string.
5. On-site verify the meter's operation and calibration: Turn on your digital multimeter (DMM), set mode to DC volts, automatic or manual range above 42VDC. With the BRD connected to the BPMs, place meter's common lead in the CMN- (common negative) test point on the BRD, place the meter's positive lead in the 5VDC+ test point, and verify your meter displays 5.0VDC ±0.05V. Remove meter leads from test point.

NOTICE:

There are three important voltages in this process: the voltage of the BPM under test, the voltage of the BPM string, and the delta in voltage between them. The steps included in this section identify the correct way to measure and understand these voltages to allow a non-destructive direct connection.

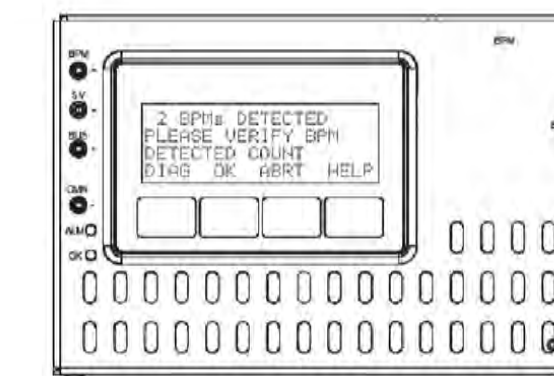
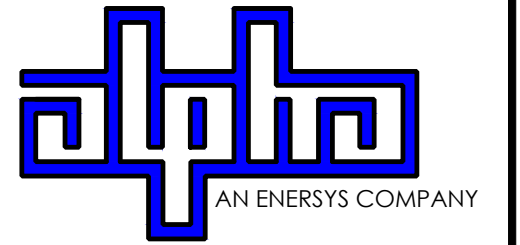


Fig. 5-5, BPM Detection Screen on BRD



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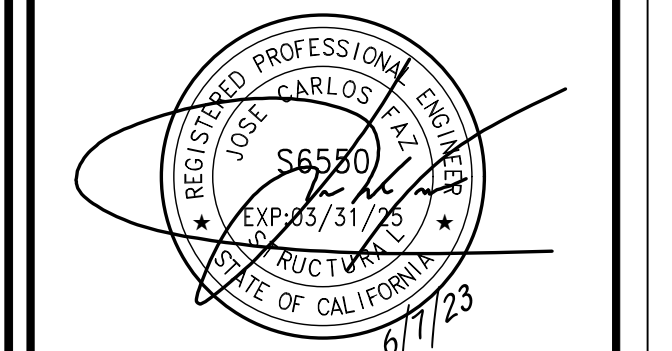
23 MAUCHLY, STE 110
IRVINE, CA 92618

J5 PROGRAM ID: ALP-CA-CPUC
J5 PROJECT ID: P-061764

ISSUE STATUS

REV	DATE	DESCRIPTION	BY
A	05/03/23	90% CD	MG
0	05/19/23	100% CD	MG
	06/07/23	PCC #1	MJC

SEAL



SITE INFORMATION

SITE ADDRESS:
284 FORREST AVE,
FAIRFAX, CA 94930

SHEET TITLE:

COMMISSIONING

D6

CAUTION!
The BRD may become hot to the touch when in use.

NOTICE:
The BRD uses "buzzer logic"; when the BRD is inactive and not reconciling, an audible buzz will notify the technician. This buzzing will start at five minutes of inactivity then four minutes, three minutes, two minutes, and then every minute it is inactive, and it will beep once per interval.

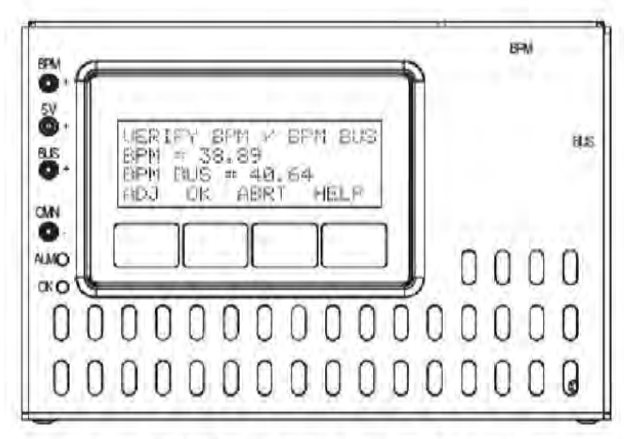


Fig. 5-6, Verifying BPM / BPM BUS

NOTICE:
If a few BPMs are widely different in voltage, spare BPMs can be substituted to speed up reconciliation.

- Use the previously on-site calibrated DMM to verify BPM voltage. Place meter's common lead in the CMN- test point on the BRD, place the meter's positive lead in the BPM+ test point, and verify your meter displays between 30 and 41VDC. Verify the BRD displayed value. If the difference between the DMM and BRD readings are greater than 0.03VDC, press the **ADJ** softkey on the BRD to adjust the voltage closer to what the DMM measures. Use the arrow softkeys to adjust the displayed values. If the difference is within spec, press the **OK** button. (See Fig. 5-6 to Fig. 5-8 for reference.)
- Use the previously on-site calibrated DMM to verify BPM BUS+ voltage. Place meter's common lead in the CMN- test point on the BRD, place the meter's positive lead in the BUS+ test point, and verify your meter displays between 30 and 41VDC. Verify the BRD displayed value. If the difference between the DMM and BRD readings are greater than 0.03VDC, press the **ADJ** softkey on the BRD to adjust the voltage closer to what the DMM measures. If the difference is within spec, press the **OK** button.

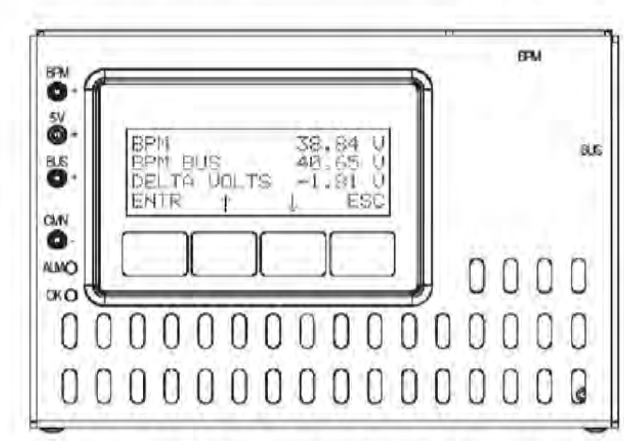


Fig. 5-7, BRD Screen - BPM, BPM BUS and Delta Voltage Readings

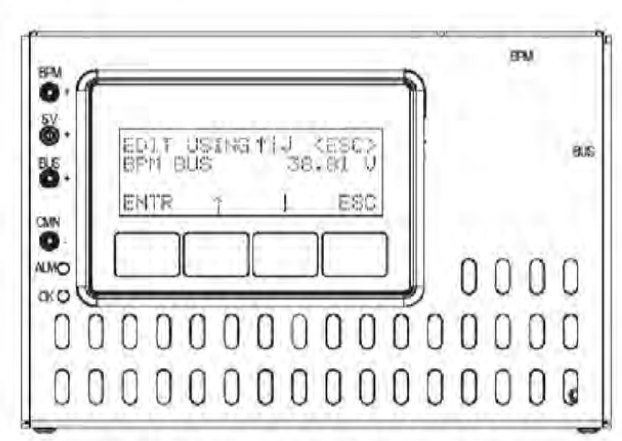


Fig. 5-8, BRD Screen - Voltage Adjustment

5.0 System Installation, continued

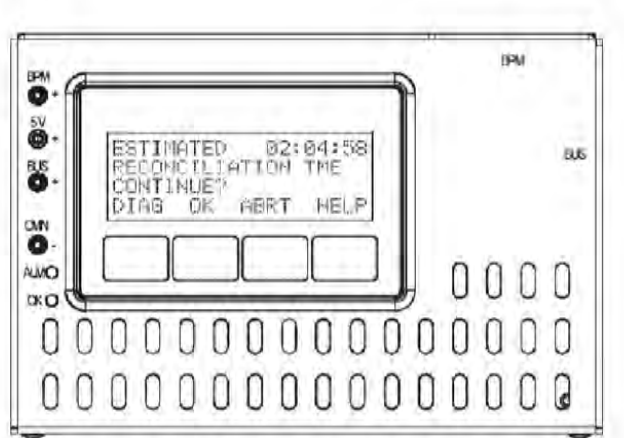


Fig. 5-9, BRD Screen - Reconciliation Estimated Time

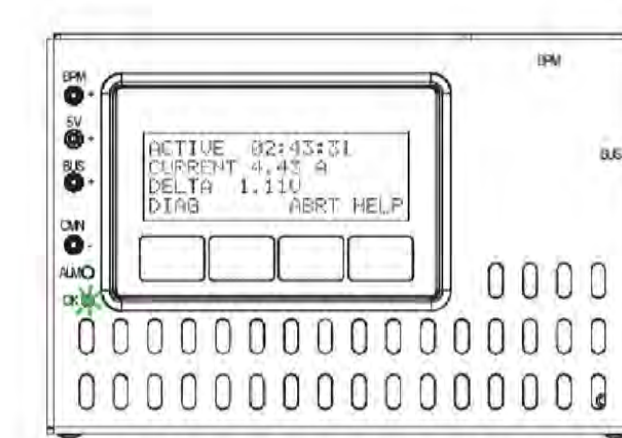


Fig. 5-10, BRD Screen - Reconciliation in Progress

- Reconciliation will start - the green LED will blink during this process (Fig. 5-10). The top line on the BRD display will show an estimated time (Fig. 5-9). Ordinarily this is a rapid process unless the BPMs are not already balanced to a common charge level. During this process, the BRD may become warm to the touch. Reconciliation is done when the BRD's OK green LED lights up solid (Fig. 5-11).

NOTICE:
The Abort (**ABRT**) function is always available on the display screen of the BRD. If there is an emergency or if any issue arises during the reconciliation process, press the **ABRT** softkey to stop reconciliation.

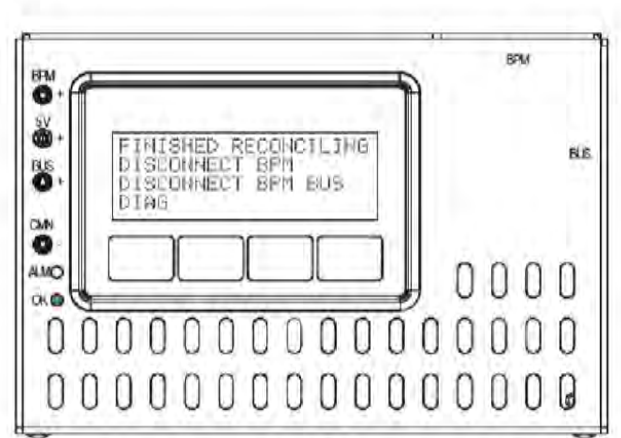


Fig. 5-11, BRD Screen - Reconciliation Complete

- Check the voltage by placing one of the DMM probes in the BPM+ jack on the BRD and the other probe in the BUS+ jack. Verify the voltage delta is less than 0.10VDC. If it is, press the **OK** softkey on the BRD. If it is not less than 0.10VDC, press the **RTRY** softkey to retry balancing.
- Disconnect the BRD. Connect the BPM to the BPM Bus.
- Continue with the next lower numbered BPM in the chain (example: BPM 14 and BPM BUS string connector 14). Connect BPM BUS cabinet-integrated connector to the previously on-site calibrated BRD BUS port, and connect the BPM to the BPM port on the BRD.
- Use the previously on-site calibrated DMM to verify delta voltage displayed on the BRD. If the difference is within 11.0V, press the **OK** softkey twice.

5.0 System Installation, continued

- Reconciliation will start - the green LED will blink during this process (Fig. 5-9). The top line on the BRD display will show an estimated time (Fig. 5-10). Ordinarily this is a rapid process unless the BPMs are not already balanced to a common charge level. (Displayed on BRD.) During this process, the BRD may become warm to the touch. Reconciliation is done when the BRD's OK green LED lights up solid.
 - Check the voltage on the DMM. Verify the voltage delta is less than 0.10VDC. If it is, press the **OK** softkey on the BRD. If it is not less than 0.10VDC, press the **RTRY** softkey to retry balancing.
 - Disconnect the BRD. Connect the BPM to the BCM Bus.
 - Repeat steps 10 to 15 for the remainder of the BPMs in the string, ending with BPM1.
 - Verify BPM count displayed on BRD matches the count expected on this string. If this matches, continue to next step.
 - Connect the BPM string battery wire harness, connector A0, B0 or C0, into its corresponding BCM.
 - After reconciling all the BPMs behind BCM A, repeat this process for BCM B and BCM C, where applicable.
- NOTICE:**
BCM reconciliation can occur on different BPM strings simultaneously if required. More than one reconciliation in a single string is not allowed.

20. Proceed to **Section 5.5, Battery Management System (BMS) Configuration/Firmware Installation Procedure.**

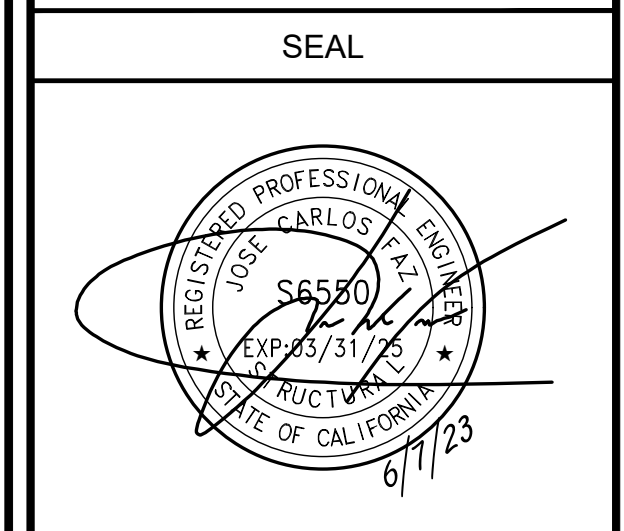
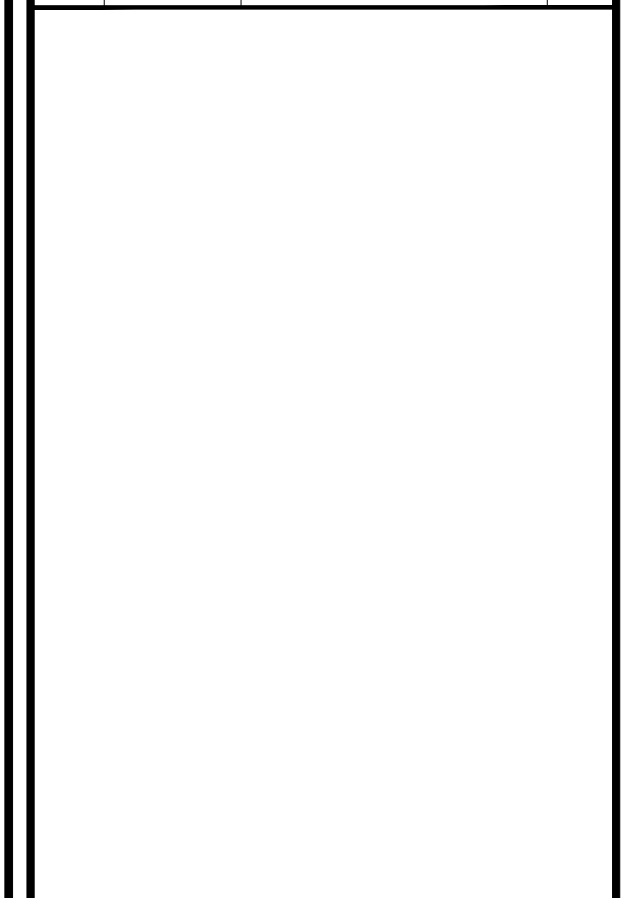
5.4.4 Manual Reconciliation and BPM Connections with a Digital Multimeter

This reconciliation process must be performed in the recommended temperature range for normal operation (0°C - 45°C) of the XRT-Li power system, as noted in Table 2-1. BPMs have an operational range and the BPM DC terminal voltages must be within a tolerable voltage range before connection, to limit the amount of instantaneous current across the connections between the BPM and the other BPMs on the DC BPM bus. Connections outside the tolerable voltage range will result in equipment damage. To confirm the delta in voltage is a simple process of measuring the terminals of each connector. This process proceeds from the highest numbered BPM applicable to the string to BPM1.

- Ensure the BPM bus cable is NOT plugged into the BCM. Set digital multimeter (DMM) to DC volts in a sub 50VDC range or automatic.
 - Using a known calibration source, confirm meter is reading accurately.
 - Check each BPM you are planning to connect to the system. (All BPMs).
 - Place the Common, or negative lead of the DMM to the negative "-" terminal of the SBS®75X connector on the BPM you plan to connect.
 - Place the Positive (V+) lead of the DMM to the positive "+" terminal of the SBS®75X connector on the BPM you plan to connect.
 - When a good connection is indicated check the voltage indicated on the DMM.
 - Record the voltage using an appropriate method.
 - Is the voltage below 25VDC?
 - Check connections.
 - If connections are good, the BPM is suspect; return to depot for evaluation.
 - Is the voltage above 42VDC?
 - Check your DMM against a known source.
 - Reconciliation may be problematic as this voltage is outside of the normal operating range. Note serial number and voltage reading, and proceed with reconciliation.
 - If a few BPMs are widely different in voltage, spare BPMs can be substituted to speed up reconciliation.
 - After confirming the highest numbered BPM displays a voltage above 25 and below 42 VDC, connect it to its BPM bus connector.
 - Check the BPM bus voltage you are planning to connect to the system. (2nd and remaining).
 - Place the Common, or negative lead of the DMM to the negative "-" terminal of the SBS®75X connector on the BPM bus you plan to connect to.
 - Place the Positive (V+) lead of the DMM to the positive "+" terminal of the SBS®75X connector on the BPM bus terminal you plan to connect the BPM to.
 - Visually inspect the voltage, it should be between 25 and 42 VDC.
 - Follow recommendations in step 3 if voltages are outside of this range.
 - Record the voltage using an appropriate method.
 - Compare the recorded reading to the next lowest numbered BPM.
 - If the difference in voltage is less than 100mVDC (0.100VDC), connect the BPM module to the BPM BUS.
 - If the voltage of the BPM is more than 100mV below the BPM BUS, charge the BPM with an approved charging source until it is within 100mV of the BPM bus.
 - If the voltage of the BPM is 100mV above the BPM bus, discharge the BPM using an approved method until it is within 100mV of the BPM bus.
 - When the voltage difference is <100mV between the BPM and BPM bus connect the BPM module to the BPM bus using the corresponding connector.
- 5.0 System Installation, continued**
- Follow steps 5 and 6 for the remaining BPMs on this BPM bus.
 - Follow this process for the remaining BPM / BCM strings in the system.
 - Proceed to next section for BMS firmware installation.



ISSUE STATUS			
REV	DATE	DESCRIPTION	BY
A	05/03/23	90% CD	MG
0	05/19/23	100% CD	MG
	06/07/23	PCC #1	MJC



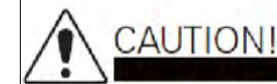
SITE INFORMATION

SITE ADDRESS:
284 FORREST AVE,
FAIRFAX, CA 94930

SHEET TITLE:
COMMISSIONING

D7

6.4 Decommissioning



Decommissioning **MUST** be performed by trained personnel. Failure to follow the procedures could result in equipment damage or personal injury.

ATTENTION:

Refer to **Section 2.3.1, BCM and BPM Safety** for more information and safety guidelines.

6.4.1 Overview

The decommissioning process is comprised of five major components:

1. An approved concrete support structure for ground mount cabinets.
2. Utility and HFC components and conduits.
3. One or more painted aluminum cabinet(s) with steel doors and battery support structure inside.
4. A utility connected HFC compatible inverter/charger that may be contained within a battery or pole cabinet. The voltages of this device include a utility provided 120VAC input, an HFC 89VAC NESCC compliant low voltage output to the cable plant or devices and a nominal 36VDC battery string voltage.
5. A 36VDC high density Li-ion battery system sharing the same cabinet with the inverter charger or be distributed between multiple cabinets. The system sizes range from just a few kWh of available storage to 81kWh of storage. The battery systems are comprised of one to three sets of 6 to 22 Battery Power Modules (BPMs) connected to a Battery Control Module (BCM) resulting in a complete end to end Battery Management System (BMS).

Depending on the type of decommissioning, each type requires a different approach.

- Decommissioning for redeployment of the system or components
 - Decommissioning of the entire system
 - Decommissioning of components
 - Repurposing of the site
 - Decommissioning a defective or damaged system
- Decommissioning of Lithium Ion BPMs or BCMs or BPMs and BCMs.
 - Decommissioning of the BCMs
 - Decommissioning for routine disposal of BPMs
 - Decommissioning of exhausted modules
 - Decommissioning of defective or damaged modules
 - Replacement and recommissioning items.

Carriage of High Density Lithium-ion Battery Power Modules:

In the above definitions there are 2 types of BPM handling, routine and defective. Routine handling can leverage normal lithium-ion carriage, defective modules must be carried in an EnerSys® approved high density Li-ion carrier and methods.

6.4.2 Decommissioning System with a Normal or Exhausted Battery System

Procedure:

1. Visit the site, deploy appropriate safety systems, unlock, and open the on-site cabinets. It is important that the technician determines the state of charge (SOC) of the system, which can be easily obtained from the XM3.1-HP™ power supply's Smart Display, if operational.
2. Open the HFC inverter/charger battery breaker, open the AC disconnect and remove the AC utility plug from the receptacle inside the cabinet. Remove the other electrical connections from the HFC inverter/charger, including the PP30 output connection, the PP50 battery connection, the RF or fiber communications cables, and all other connecting cables.
3. Remove the HFC XM3.1-HP power supply inverter/charger from the cabinet and dispose of it in an appropriate manner.
4. Disconnect the battery system. Remove each of the (1 to 3) BPMs' DC interconnection cables by pulling and removing the PP50 connected #6 AWG cables from each BCM. Remove the communications cable, tamper and other smaller cables connected to each BCM. The next step is for the tech to remove each of the BCMs BPM 0 bus connectors from the front of those units by pulling the Anderson™ SBS75X connectors from the front of the BCMs. Remove the ground screws that attach each BCM to the cabinet. Remove each of the BCMs and dispose of them using an approved method.
5. Gather and collect loose wiring.
6. If not completed earlier, determine the SOC of the BPMs; this can be accomplished using a DVM and measuring the bus voltage at the removed Anderson SBS75X connector terminals:
 - DC voltage >42VDC (>91%SOC) modules may be in an overcharge condition – use appropriate ground shipping.
 - DC voltage less than 42VDC but over 32VDC (91%>SOC>30%), batteries in a good or low state of charge n – use typical battery containers and ground transportation.
 - DC voltage less than 32VDC, batteries in a good or exhausted condition – use typical battery containers and ground or Air transportation.
7. Once the SOC has been determined continue to disconnect each of the BPMs from its BPM BUS connection by separating the Anderson™ SBS75X connectors.
8. When all the BPM connectors are disconnected, remove BPMs by removing the ground screw from each unit and then using the handle remove the module from the cabinet and place it in an appropriate container and dispose of it properly using the methods related to the BPMs reported SOC.
9. Populate the containers with the approved count of BPMs and note the total nameplate power being loaded in a cargo vehicle. Note not to exceed the cargo vehicles total rating for both weight and power capacity when loading. Ensure that loads are secure and loaded in such a way that their weight is distributed as required by the vehicle for safe operation.
10. Any BPM with a known electrical, physical, or thermal event related damage must be placed in an approved EnerSys® Lithium containment system and shipped to the factory for disposition. These containers will be designated for a particular population, do not exceed that population. Ship according to the EnerSys approved method for that battery condition and count. These containers must be labeled as required. Follow the above rules for battery container loading and securing as well as assuring the shipping method follows the directions outlined for suspect lithium battery transportation.
11. Remove the remainder of the HFC components from the cabinet including the SPI, hardline, RF and optical cables from the cabinet. Battery harnesses may be removed from the cabinet. Gather components and wire and dispose of these items appropriately.
12. Have the Utility disconnect the AC service from the cabinet and remove the meter and decommission the service.
13. Remove the cabinet securing bolts from poles and the concrete pad. Remove the cabinet and dispose of them using appropriate means.
14. Remove concrete pad and conduit if required.
15. Entire system decommissioning complete.

NOTICE:

If the system is to be recommissioned, move the equipment to the new site and recommission as outlined in **Section 5.0, System Installation**.

NOTICE:

Repurposing the decommissioned site to handle VRLA or VRLA with generators will require the removal of all BPMs, BCMs and cabinets as shown in the procedure above to allow a properly outfitted VRLA cabinet to be put in its place. The concrete pad, electrical service, HFC cabling, and conduit can be left in place and reused.

6.4.3 Suspect Module Decommissioning

The following subsections describe the removal of a single or multiple suspect items on the site.

Procedure for removing/replacing XM3.1-HP™ power supply powering the site:

1. Visit the site, deploy appropriate safety systems, unlock, and open the on-site cabinets. It is important that the technician determines the state of charge (SOC) of the system, which can be easily obtained from the XM3.1-HP power supply's Smart Display, if operational.
2. Open the HFC inverter/charger battery breaker, open the AC disconnect and remove the AC utility plug from the receptacle inside the cabinet. Remove the other electrical connections from the HFC inverter/charger, including the PP30 output connection, the PP50 battery connection, the RF or fiber communications cables, and all other connecting cables.
3. Remove the HFC XM3.1-HP power supply inverter/charger from the cabinet and dispose of it in an appropriate manner.
4. Replace the XM3.1-HP power supply following the installation manual, if required.

Procedure for removing/replacing one or more BCMs:

1. Visit the site, deploy appropriate safety systems, unlock, and open the on-site cabinets. It is important that the technician determines the state of charge (SOC) of the system, which can be easily obtained from the XM3.1-HP power supply's Smart Display, if operational. Open the HFC inverter/charger battery breaker.
2. On the BCM to be removed, depress the BCM ON/OFF button for 3 seconds. The BCM should shut down and Status LED will turn off. Note that all the BCMs will likely be shut down from the event. Carefully remove the wires from the front of the BCM – the PP50 DC interconnect cables, the Comms cables, the tamper cable, and other sense cables. Remove the SBX™75X BPM bus cable from the front of the BCM. Remove the ground screw and remove the BCM.
3. If the BCM is to be replaced, see **Section 6.3.2, BCM (p/n GL0005910-0000)** to install the replacement BCMs.
4. If the BCM is not to be replaced, the BPMs will also have to be decommissioned. The cables may have to be re-routed as required to ensure connections to additional BCM and BPM chains.
5. Place the defective BCM in an appropriate container and dispose of according to local codes.

Procedure for decommissioning one or more BPMs, but the system will still be operational:

1. Visit the site, deploy appropriate safety systems, unlock, and open the on-site cabinets. It is important that the technician determines the state of charge (SOC) of the system, which can be easily obtained from the XM3.1-HP power supply's Smart Display, if operational. Open the HFC inverter/charger battery breaker.
2. On the BCM hosting the BPM to be removed, depress the BCM ON/OFF button for 3 seconds. The BCM should shut down and Status LED will turn off. Note that all the BCMs will likely be shut down from the event. Remove the SBX™75X BPM bus cable from the front of the BPM connector to be removed. Remove the ground screw from the decommissioned BPM and remove the BPM from the enclosure.
3. Place the removed BPM in the appropriate container (based on the systems SOC) as shown in the system BPM decommissioning section.

Procedure for replacing defective BPM in the chain:

1. A replacement BPM will be assigned to the site. Record the replacement BPM's serial number information.
2. Take the BPM in the BPM #1 slot in the affected chain and move it to the previously removed BPM location by disconnecting the SBS™75X connectors on the # 1 BPM and BPM bus. Remove the #1 BPM ground screw and remove the #1 BPM from the #1 slot.
3. Place the #1 BPM in the previously removed BPM slot. Secure the BPM using the appropriate ground screw.
4. Connect the SBS75X connections. (The #1 BPM will be at the same SOC as the rest of the BPMs in this chain. This can be confirmed with a DVM or the BRD). When the SOC is confirmed or reconciliation is complete, attach the BPM to the BPM bus location.
5. Update the serial number information related to this slot.
6. Place a new BPM in the # 1 slot. Follow the reconciliation procedure and use a BRD or other approved method to bring the replacement BPM to the correct SOC and voltage related to that BPM bus chain.
7. Ensure the BRD indicates the correct count of BPM devices for this chain. Connect the #0 BPM by plugging into the associated BPM's SBS75X slot.
8. Update the #1BPM serial number data in the records.

Procedure for removing a decommissioned BPM without replacement – creating a smaller string with one less BPM:

1. Shutdown and disconnect the SBS75x cables in the above section.
2. Remove the BPM as indicated in the above section.
3. Take the last BPM in the chain and place it in the removed BPM slot (unless it is in the last BPM chain location) following the above reconciliation and documentation steps.
4. Reinsert the SBS75X BPM #0 connector in the front of the BCM.
5. The BCM will have to be reprogrammed with the new lower count of BPMs on the bus; see **Section 5.5, Battery Management System (BMS) Configuration/Firmware Installation Procedure**.
6. Dispose of the BPM in the manner shown in the first section depending on its SOC.
7. Perform a Link-up procedure. See **Section 5.6.1, Link-Up**.



3011 COMCAST PLACE
LIVERMORE, CA 94551



3767 ALPHA WAY
BELLINGHAM, WA 98226



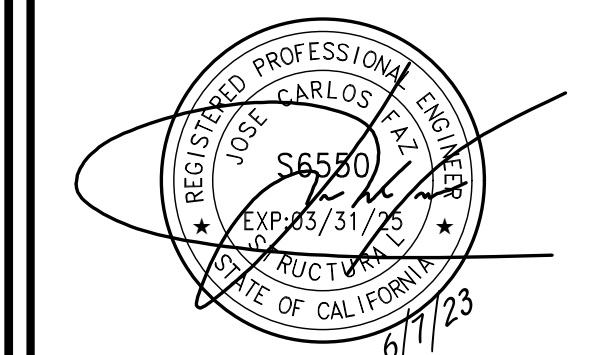
23 MAUCHLY, STE 110
IRVINE, CA 92618

J5 PROGRAM ID: ALP-CA-CPUC
J5 PROJECT ID: P-061764

ISSUE STATUS

REV	DATE	DESCRIPTION	BY
A	05/03/23	90% CD	MG
0	05/19/23	100% CD	MG
A	06/07/23	PCC #1	MJC

SEAL



SITE INFORMATION

SITE ADDRESS:
284 FORREST AVE,
FAIRFAX, CA 94930

SHEET TITLE:

DECOMMISSIONING

D8

2.1.3.3 BPM and BCM Identification and Labels

The battery serial numbers are located in two places on the battery case. The first is on the front of the battery. The manufacturing date is also located on this label below the serial number. The second is on the positive terminal side towards the rear of the battery.

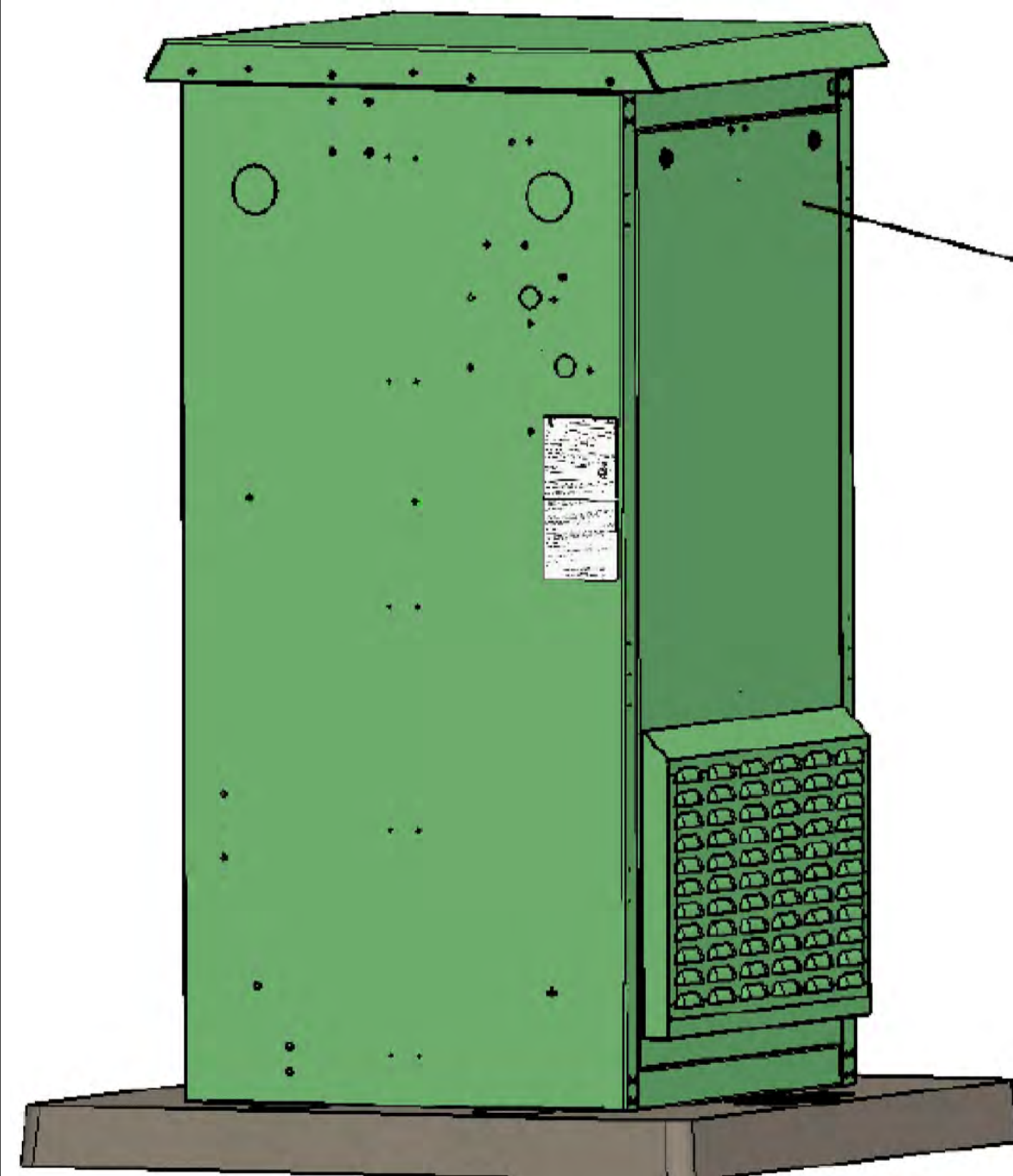
The BPM and BCM have the following labels and identification:

BCM and BPM Identification and Labels	
Label/Symbol	Indication
	Indicates a hazard.
	Indicates high voltage.
	Read/refer to manual.
	Recycle electrical equipment according to WEEE (Waste Electrical and Electronic Equipment) directive.
	Recycle and dispose of battery according to Hazardous Material Regulations for Class 9 Miscellaneous.
	Lithium-ion battery can be recycled. Follow local regulations for recycling.
	Grounding
	DC Voltage

Table 2-7, BCM and BPM Identification and Labels

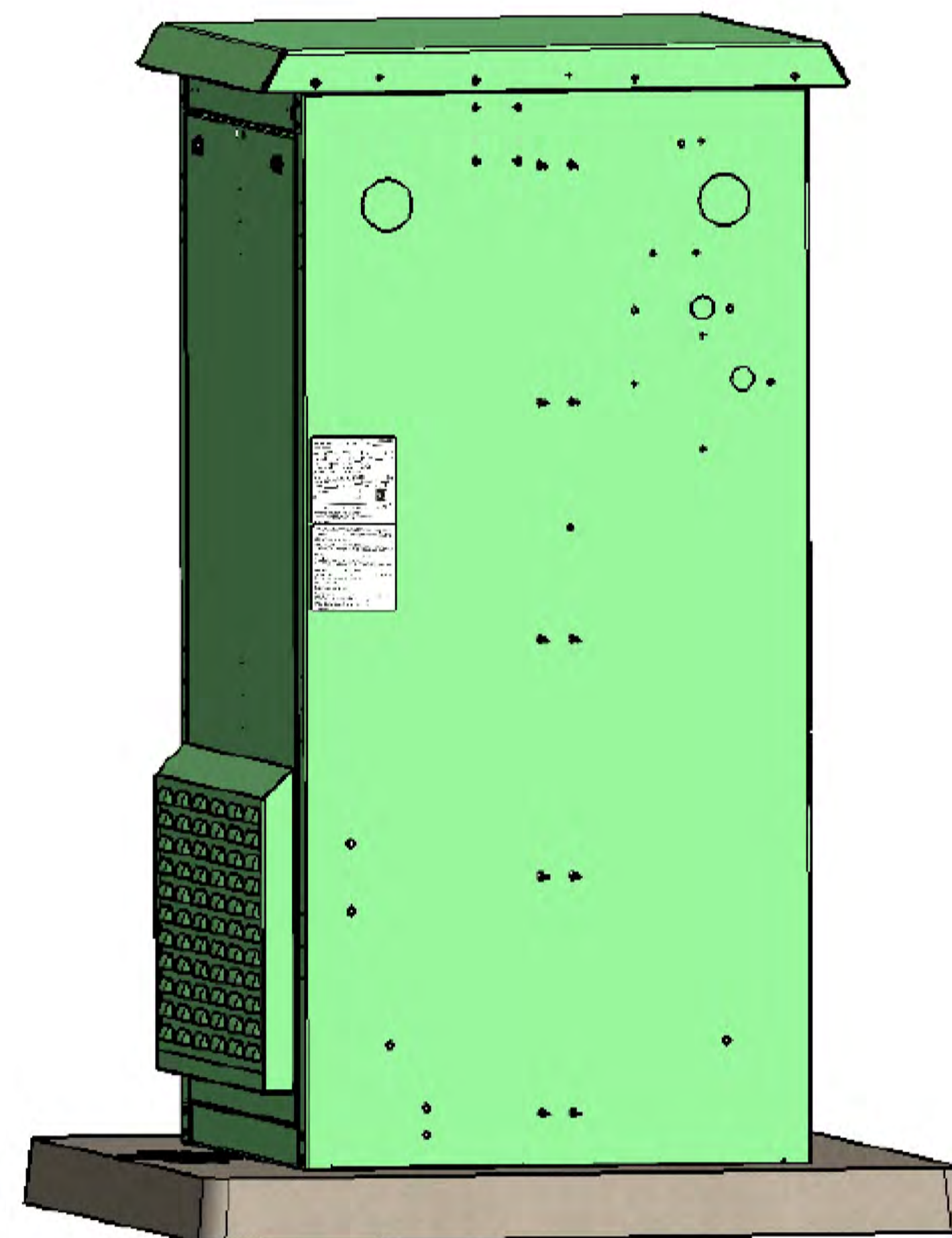
XRT-Li Nameplate Labels

The nameplate labels are affixed to the left side of the PN-4LI cabinet.



XRT-Li Nameplate Labels

The nameplate labels are affixed to the right side of the PN-4LIB cabinet.



alpha POWER SUPPLY EQUIPMENT
ENERGY STORAGE SYSTEM

INPUT VAC HZ A. MAX VA MAX
 OUTPUT VAC HZ A. MAX VA MAX
 DC CHARGER VDC NOM. A. MAX
 DC INVERTER VDC NOM. A. MAX
 MAX SYSTEM DC SCRR: 1250A @ 15ms
 ENERGY OUTPUT THIS UNIT AS INSTALLED KWH KWH MAX
 ENERGY OUTPUT SYSTEM AS INSTALLED KWH KWH MAX
 MODEL DATE CODE FACTORY CODE
 CONFIGURATION
 S/N

SA [®]
C US
161172

RAINFOOF TYPE 3R ENCLOSURE

To be installed by qualified service personnel only, in accordance with applicable local and/or state electrical codes, including consideration of a dedicated grounding rod.
 D'être installé par une personne qualifiée suivant les codes électrique locaux et/ou nationaux applicable prenant en considération d'une tige de mise à la terre.
 950-00040-19-001 A

CAUTION: To reduce the risk of electric shock and fire, a circuit breaker/service disconnect switch must be installed ahead of this equipment on the enclosure when the equipment is not provided with a service entrance. Refer to installation instructions for details.
ATTENTION: Un disjoncteur/sectionneur de branchement doit être installé sur le cabinet devant l'équipement pour réduire le risque de choc électrique et d'incendie lorsque l'appareil ne dispose pas d'une entrée de service. Lisez les instructions d'installation pour plus de détails.
CAUTION: This unit has more than one power supply connection point. To reduce risk of electric shock, before servicing disconnect both the AC input breaker and the battery circuit switching device.
ATTENTION: Ce cabinet a plus d'un point de connexion d'alimentation. Pour réduire le risque de choc électrique, déconnecter la fois l'entrée du disjoncteur AC et le dispositif de commutation de circuit de la batterie.
WARNING: Hazardous voltage circuits. Risk of electric shock. Hazardous live parts inside this unit are energized from the battery supply even when the input AC power is disconnected.
AVERTISSEMENT: Circuits à tension élevée. Risque de choc électrique. Pièces sous tension dangereuses à l'intérieur de cet appareil sont alimentées à partir de l'alimentation de la batterie même lorsque l'alimentation secteur d'entrée est débranché.
WARNING: To reduce the risk of injury, read all instructions.
AVERTISSEMENT: Veuillez lire toutes les instructions pour réduire le risque de blessures.
 Ambient temperature range / Plage de température ambiante: +45C to -15C.
 Weight / Poids: 1,200 lbs / 544 kg MAX.
 Technology utilized in ESS is Li-ion.
 La technologie utilisée dans l'ESS est le Li-ion.
 For use with CATV equipment.
 À utiliser avec l'équipement CATV.
 This enclosure is designed to be used with Alpha Technologies power supply modules.
 Ce cabinet est désigné pour être utilisée avec les modules d'alimentation de Alpha Technologies.
 This equipment meets the unit level performance criteria of UL 9540A.
 Cet équipement répond aux critères de performance au niveau le appareil de UL 9540A.
 Technical Support / Assistance technique: 1-800-863-3364 950-00045-19-001 A

ISSUE STATUS

REV	DATE	DESCRIPTION	BY
A	05/03/23	90% CD	MG
0	05/19/23	100% CD	MG
	06/07/23	PCC #1	MJC

SEAL



SITE INFORMATION

SITE ADDRESS:
284 FORREST AVE,
FAIRFAX, CA 94930

SHEET TITLE:
SIGNAGE & NAMEPLATE LABEL

D9

ISSUE STATUS

REV	DATE	DESCRIPTION	BY
A	05/03/23	90% CD	MG
0	05/19/23	100% CD	MG
	06/07/23	PCC #1	MJC

SEAL

SITE INFORMATION

SITE ADDRESS:
284 FORREST AVE,
FAIRFAX, CA 94930

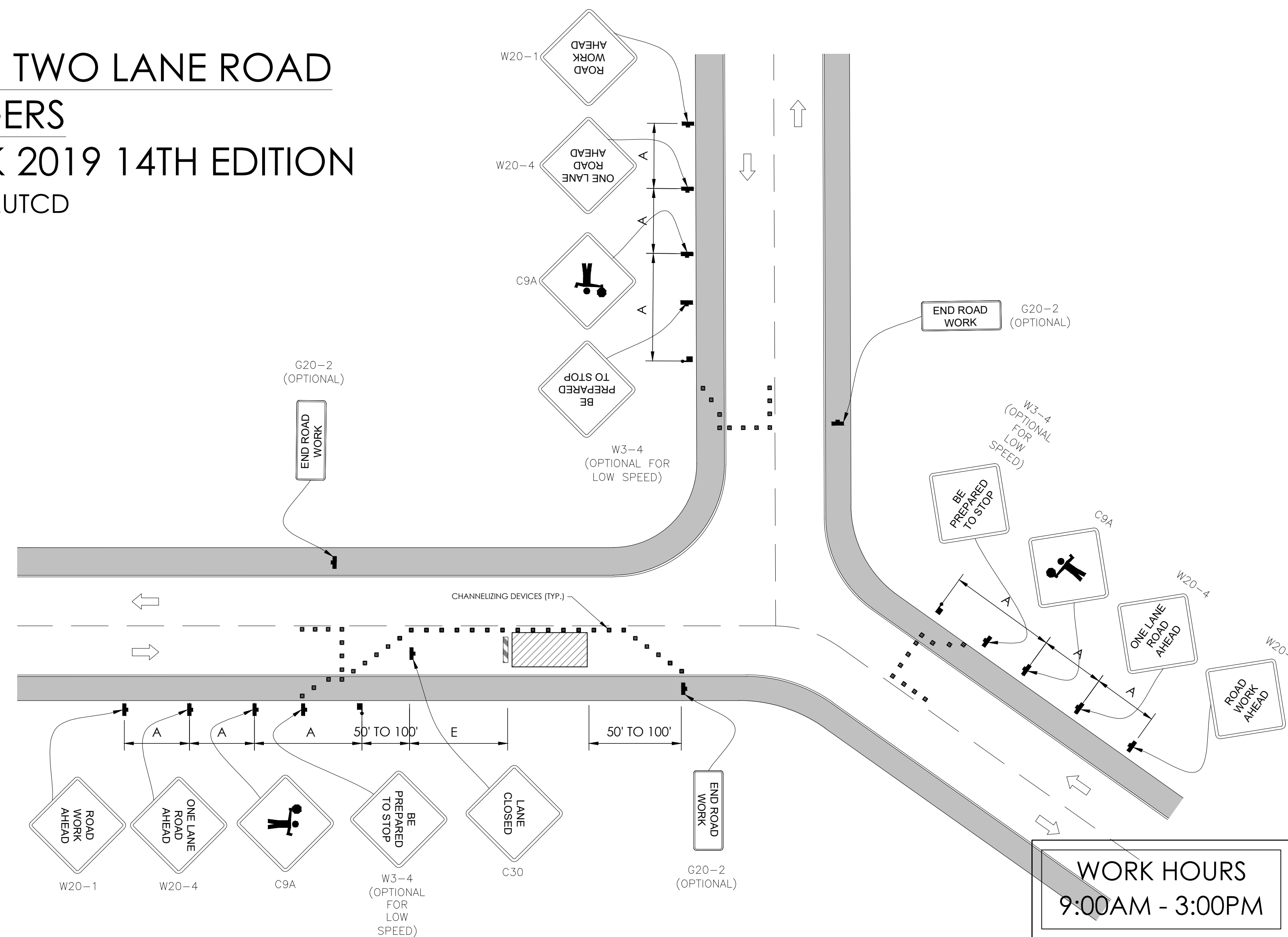
SHEET TITLE:
TRAFFIC CONTROL

TC1

TRAFFIC CONTROL FOR LANE CLOSURE ON TWO LANE ROAD INTERSECTION USING FLAGGERS

WORK AREA TRAFFIC CONTROL HANDBOOK 2019 14TH EDITION

PER STANDARDS AND GUIDANCE OF CA-MUTCD



GENERAL NOTES:

- ALL WORK AND MATERIALS SHALL COMPLY WITH THE CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), 2014 EDITION.
- ALL STRIPING AND MARKINGS SHALL CONFORM TO THE STATE OF CALIFORNIA 2010 STANDARD PLAN A20A.
- THE CONTRACTOR SHALL PROVIDE FOR ACCESS TO ALL ADJACENT PROPERTIES.
- FLASHING YELLOW BEACONS, TYPE "B", SHALL BE USED ON ALL W20-1 SIGNS AND ON ALL TYPE III BARRICADES GUARDING THE WORK OVERNIGHT.
- ALL SIGNS SHALL BE REFLECTORIZED AND STANDARD SIZE.
- ALL TUBULAR DELINEATORS AND CONES SHALL BE 28" MINIMUM HEIGHT, REFLECTORIZED AND MAINTAINED ERECT IN THE INDICATED POSITION AT ALL TIMES, AND SHALL BE REPAIRED, REPLACED, OR CLEANED AS NECESSARY TO PRESERVE THEIR APPEARANCE AND CONTINUITY, AND SHALL INCLUDE A 12" HIGH-INTENSITY REFLECTORIZED SLEEVE..
- THE CONTRACTOR SHALL MAINTAIN, ON A CONTINUOUS BASIS, ALL SIGNS, DELINEATORS, BARRICADES, ETC., TO ENSURE PROPER FLOW AND SAFETY OF TRAFFIC DURING CONSTRUCTION.
- THE CONTRACTOR SHALL HAVE SIGNS, DELINEATORS, BARRICADES, ETC., PROPERLY INSTALLED PRIOR TO COMMENCING CONSTRUCTION.
- CONSTRUCTION OPERATIONS SHALL BE CONDUCTED IN SUCH A MANNER AS TO CAUSE AS LITTLE INCONVENIENCE AS POSSIBLE TO ABUTTING PROPERTY OWNERS.
- ADDITIONAL TRAFFIC CONTROLS, TRAFFIC SIGNS OR BARRICADING MAY BE REQUIRED IN THE FIELD. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PLACEMENT OF ANY ADDITIONAL DEVICES NECESSARY TO ASSURE THE SAFETY TO THE PUBLIC AT ALL TIMES DURING CONSTRUCTION.
- EXACT LOCATION AND TYPE OF CONSTRUCTION SIGNS SHALL BE DIRECTED BY THE ENGINEER BASED UPON CONSTRUCTION CONDITIONS.
- MOVE DELINEATORS AND/OR CONES TO SIDEWALK DURING NON-WORKING HOURS. REMOVE BARRICADES ETC., FROM TRAVEL LANE.
- REMOVE OR TURN OFF SIGNS DURING NON-WORKING HOURS.
- ALL CONFLICTING LINES, EXISTING CURB PAINT, AND MARKINGS SHALL BE REMOVED BY WET SANDBLASTING OR OTHER APPROVED METHOD PRIOR TO INSTALLATION OF NEW/TEMPORARY STRIPING. ALL CONFLICTING RAISED PAVEMENT MARKERS SHALL BE REMOVED. PAVEMENT THAT IS DAMAGED DUE TO REMOVAL OF MARKERS SHALL BE REPAIRED TO THE SATISFACTION OF THE CITY ENGINEER AND/OR STATE INSPECTOR.
- DIMENSIONS BASED ON GIS MAPPING DATA AND/OR RECORD DRAWINGS AND NOT A SURVEY.
- TIME OF LANE CLOSURE TO BE IN ACCORDANCE WITH REQUIREMENTS OF JURISDICTION.
- ADDITIONAL ADVANCED FLAGGERS MAY BE REQUIRED. FLAGGER SHOULD STAND IN A CONSPICUOUS PLACE, BE VISIBLE TO APPROACHING TRAFFIC. PLACE A MINIMUM OF FOUR CONES AT 40-FT INTERVAL IN ADVANCE OF FLAGGER STATION AS SHOWN.

SPEED MPH (2)	DIMENSION A/B/C ADVANCE WARNING SIGN SPACING (5)	DIMENSION L MERGIN TAPER LENGTH	DIMENSION L/2 SHIFTING TAPER LENGTH	DIMENSION L/3 MINIMUM SHOULDER TAPER	DIMENSION "E" BUFFER SPACE (4-A) AND FLAGGER STATION STOPPING SIGHT DISTANCE (4-B) (0%) (-3%) (-6%)	MAXIMUM CHANNELIZER TAPER SPACING (3)	MAXIMUM CHANNELIZER TANGENT SPACING (3)	MAXIMUM CHANNELIZER CONFLICT SPACING (6)
MPH	FT	ft	ft	ft	ft	ft	ft	ft
25	100	125	65	45	(155) (160) (135)	25	50	12
30	250	180	90	60	(200) (205) (215)	30	60	15
35	250	245	125	85	(250) (260) (275)	35	70	17
40	250	320	160	110	(305) (315) (335)	40	80	20
45	350	540	270	180	(360) (380) (400)	45	90	22
50	350	600	300	200	(425) (450) (475)	50	100	25
55	500	660	330	220	(495) (520) (555)	50	100	25
60	500	720	360	240	(570) (600) (640)	50	100	25
65	500	780	390	260	(645) (685) (730)	50	100	25
1	WORK ON FREEWAYS AND EXPRESSWAYS SHALL MEET THE CALTRANS STANDARD PLANS AND STANDARD SPECIFICATION REQUIREMENTS							
2	POSTED SPEED OR OBSERVED OPERATION SPEED (WHICHEVER IS GREATER)							
3	CHANNELIZER SPACING SHALL BE REDUCED BY HALF AT AREAS WHERE WORK IS TAKING PLACE ON CURVES OR AREAS OF HEAD-ON CONFLICT							
4-A	BUFFER SPACE MAY BE INSERTED IN LOW-SPEED URBAN AREAS AND SHOULD BE INSERTED IN HIGH-SPEED URBAN AND RURAL AREAS							
4-B	THE STOPPING SIGHT DISTANCE SHOULD ENABLE ROAD USERS TO SEE THE PRIMARY FLAGGER STATION AND SAFELY STOP							
5	SIGN SPACING IN RURAL AREAS SHOULD BE 500 FT							
6	** TABLE 6F-101 (CA)							

STRUCTURAL NOTES

A. STRUCTURAL DESIGN CRITERIA

- THE STRUCTURAL DESIGN HAS BEEN PERFORMED IN ACCORDANCE WITH THE 2022 CALIFORNIA BUILDING CODE (BUILDING CODE).
- WIND DESIGN DATA

ULTIMATE WIND SPEED	V = 92 mph
RISK CATEGORY	II
EXPOSURE CATEGORY	C
- SEISMIC DESIGN DATA

RISK CATEGORY	II
SEISMIC IMPORTANCE FACTOR	I _e = 1.0
MAPPED SPECTRAL ACCELERATION	S _s = 1.500
MAPPED SPECTRAL ACCELERATION	S ₁ = 0.600
SITE CLASS	D
DESIGN SPECTRAL ACCELERATION	S ₀₅ = 1.200
DESIGN SPECTRAL ACCELERATION	S ₀₁ = 0.680
SEISMIC DESIGN CATEGORY	D

B. GENERAL

- SPECIFIC NOTES AND DETAILS ON THE STRUCTURAL DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS.
- STRUCTURAL DRAWINGS SHALL NOT BE SCALED. COORDINATE DIMENSION, ELEVATION, SLOPE, AND DRAINAGE REQUIREMENTS WITH THE ARCHITECTURAL DRAWINGS.
- STANDARDS REFERENCED ON THE STRUCTURAL DRAWINGS REFER TO THE EDITION APPLICABLE UNDER THE APPLICABLE BUILDING CODE.
- THE RESPONSIBILITY FOR THE REVIEW AND COORDINATION OF DRAWINGS AND SPECIFICATIONS PRIOR TO THE START OF RELATED CONSTRUCTION SHALL BEAR ON THE CONTRACTOR. DISCREPANCIES THAT EXIST SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IN A TIMELY MANNER, PRIOR TO START OF RELATED CONSTRUCTION.
- WORK PERFORMED IN CONFLICT WITH THE STRUCTURAL DRAWINGS OR APPLICABLE BUILDING CODE REQUIREMENTS SHALL BE CORRECTED AT THE EXPENSE OF THE CONTRACTOR.
- EXISTING CONDITIONS SHALL BE VERIFIED BEFORE STARTING RELATED WORK. EXISTING CONDITIONS THAT ARE NOT REFLECTED ON THE STRUCTURAL DRAWINGS OR THAT DEVIATE FROM THE MAXIMUM OR MINIMUM DIMENSIONS INDICATED SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IN A TIMELY MANNER. SUCH CONDITIONS MAY INCLUDE CONFLICT IN GRADES, ADVERSE SOIL CONDITIONS, PRESENCE OF GROUND WATER, UNCOVERED OR UNEXPECTED EXISTING CONSTRUCTION CONFIGURATIONS, ETC.
- MATERIALS AND WORKMANSHIP SHALL CONFORM TO REQUIREMENTS OF APPLICABLE REGULATIONS AND THE BUILDING CODE AS AMENDED AND ADOPTED BY THE BUILDING OFFICIAL.
- LOADS TO THE BUILDING AND/OR EXISTING STRUCTURES EXCEEDING THE LOADS INDICATED ON THE PLANS, OR ANY LOADS EXCEEDING 400 POUNDS THAT ARE NOT INDICATED ON THE STRUCTURAL DRAWINGS SHALL BE REPORTED TO THE ENGINEER.

C. TEMPORARY WORK AND SITE SAFETY

- THE STRUCTURAL DRAWINGS SHOW THE REQUIREMENTS FOR THE COMPLETED STRUCTURE ONLY. TEMPORARY WORKS REQUIRED TO COMPLETE THE CONSTRUCTION PROCESS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE STRUCTURAL ENGINEER SHALL NOT BE RESPONSIBLE FOR THE DESIGN OR FIELD VERIFICATION OF TEMPORARY AND ANCILLARY WORK.
- THE RESPONSIBILITY FOR SAFETY IN AND AROUND THE JOBSITE SHALL BEAR ON THE CONTRACTOR. PROPER AND SAFE METHODS OF CONSTRUCTION SHALL BE EMPLOYED AT ALL TIMES INCLUDING THE STABILIZING OF INCOMPLETE STRUCTURES, FORMWORK, SHORING, RESHORING, FALSEWORK, PLATFORMS, SCAFFOLDING, BARRIERS, WALKWAYS, ETC. AND INCLUDING CONTROL OF THE INTENSITY, DURATION AND LOCATION OF CONSTRUCTION LOADS.
- THE RESPONSIBILITY FOR THE DESIGN AND INSTALLATION OF ALL CRIBBING, SHEATHING, UNDERPINNING, AND SHORING REQUIRED TO SAFELY RETAIN ALL GRADES AND STRUCTURES SHALL BEAR ON THE CONTRACTOR.
- CONSTRUCTION MATERIALS SHALL BE SPREAD OUT IF PLACED ON A STRUCTURE. LOADS SHALL NOT EXCEED THE DESIGN LIVE LOAD INDICATED. WHERE THE STRUCTURE HAS NOT ATTAINED FINAL DESIGN STRENGTH, ADEQUATE SHORING AND OR BRACING SHALL BE INSTALLED.

D. FOUNDATIONS

- THE RECOMMENDATIONS PROVIDED IN THE GEOTECHNICAL INVESTIGATION REPORT SHALL BE FOLLOWED:

FIRM: MEP
DATE: 03/29/2023
REFERENCE NO.: 06104-01
- DEVIATIONS IN GEOTECHNICAL CONDITIONS FROM THOSE DESCRIBED IN THE GEOTECHNICAL REPORT SHALL BE REPORTED TO THE STRUCTURAL AND GEOTECHNICAL ENGINEERS IN A TIMELY MANNER.
- SPECIAL INSPECTION AND TESTING IS REQUIRED IN ACCORDANCE WITH SECTIONS 1704 AND 1705 OF THE BUILDING CODE AND THE "STATEMENT OF SPECIAL INSPECTIONS" ON THESE CONSTRUCTION DOCUMENTS.
- THE MAXIMUM ALLOWABLE SOIL BEARING PRESSURE SHALL BE 2000 psf. THE RESULTING ALLOWABLE BEARING VALUE MAY BE INCREASED BY 1/3 FOR WIND AND SEISMIC LOAD CASES.
- THE EXPANSION INDEX HAS BEEN DETERMINED TO BE GREATER THAN 50 AND THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT HAVE BEEN INCORPORATED INTO THESE DRAWINGS.
- THE EXPANSION INDEX HAS BEEN DETERMINED TO BE 50 OR LESS AND NO SPECIAL DESIGN RECOMMENDATIONS ARE REQUIRED.

- FOOTING AND UTILITY TRENCH BACKFILL SHALL BE MECHANICALLY COMPACTED IN LAYERS SUBJECT TO THE APPROVAL OF THE GEOTECHNICAL ENGINEER. FLOODING WILL NOT BE PERMITTED.
- LOOSE SOIL AND FILL MATERIAL SHALL BE COMPACTED ACCORDING TO THE REQUIREMENTS OF THE SOILS REPORT.
- COMPACTION TEST REPORTS FOR FILL BY A QUALIFIED TESTING LAB SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER, GEOTECHNICAL ENGINEER AND BUILDING OFFICIAL PRIOR TO REQUESTING FOUNDATION INSPECTION.
- FOOTING DEPTHS INDICATED ON THE STRUCTURAL DRAWINGS ARE BELIEVED TO BE IN SUITABLE BEARING MATERIALS AND ARE INDICATED FOR COST ESTIMATING PURPOSES ONLY. THE GEOTECHNICAL ENGINEER MAY REQUIRE FOUNDATION DEPTHS TO BE INCREASED. THE RESPONSIBILITY FOR CONFORMING TO THE GEOTECHNICAL REPORT RECOMMENDATIONS REGARDING DEPTH OF FOOTINGS SHALL BEAR ON THE CONTRACTOR.
- ANCHOR BOLTS, DOWELS AND HOLD-DOWN ANCHORS SHALL BE TIED IN PLACE PRIOR TO FOUNDATION INSPECTION.
- WALLS RETAINING EARTH SHALL BE DRAINED AND BACKFILLED ACCORDING TO THE RECOMMENDATIONS WITHIN THE GEOTECHNICAL REPORT.
- BACKFILLING BEHIND RETAINING WALLS SHALL NOT BEGIN UNTIL WALLS HAVE BEEN CURED FOR A MINIMUM OF 14 DAYS.
- SHORING SHALL BE INSTALLED AT THE TOP OF RESTRAINED RETAINING WALLS PRIOR TO BACKFILLING. SHORING SHALL REMAIN IN PLACE UNTIL THE PERMANENT STRUCTURAL SUPPORTING MEMBERS ARE IN PLACE. FOR CONCRETE SUPPORTING MEMBERS, SHORING TO REMAIN IN PLACE FOR A MINIMUM OF 7 DAYS AFTER CONCRETE PLACEMENT.
- SLABS ON GRADE THAT RESTRAIN THE BOTTOM OF RETAINING WALLS SHALL BE IN PLACE PRIOR TO BACKFILLING OF THE WALLS.

E. REINFORCING STEEL

- DETAILING, FABRICATION AND ERECTION OF REINFORCING BARS SHALL BE PREFORMED IN ACCORDANCE WITH ACI 315, "DETAILS AND DETAILING OF CONCRETE REINFORCEMENTS."
- REINFORCING BARS SHALL CONFORM TO ASTM A 615, GRADE 60, U.O.N.
- U.O.N., REINFORCING BAR LAP SPLICES SHALL BE:

NW & LW CONCRETE MASONRY (CMU)	CLASS B (18" MIN) 64 BAR DIA. (24" MIN)
--------------------------------	--
- DETAILS OF REINFORCEMENT SHALL COMPLY WITH THE PROVISIONS OF ACI 318.
- WHERE HOOKS ARE ILLUSTRATED AS 90-DEGREE HOOKS, 180-DEGREE HOOKS MAY BE USED IN LIEU OF 90-DEGREE HOOKS.
- REINFORCING BARS FOR CONCRETE SHALL BE PROVIDED WITH THE FOLLOWING MINIMUM COVER:

CONCRETE CAST AGAINST EARTH	3"
FORMED CONCRETE EXPOSED TO EARTH / WEATHER	
#5 OR SMALLER	1 1/2"
#6 OR LARGER	2"
SLABS (#11 AND SMALLER)	3/4"
- VERTICAL WALL BARS SHALL BE ACCURATELY POSITIONED AND SECURED AT THE CENTER OF THE WALL, U.O.N.

F. REINFORCED CONCRETE

- CONCRETE CONSTRUCTION SHALL CONFORM WITH CHAPTER 19 OF THE BUILDING CODE AND TO THE PROVISIONS OF ACI 318.
- THE STRUCTURAL DESIGN OF FOOTINGS SHOWN ON THESE DRAWINGS IS BASED ON A SPECIFIED COMPRESSIVE STRENGTH, F_c, NOT MORE THAN 2,500 psi.
- WATER MAY BE ADDED TO CONCRETE ON-SITE TO OBTAIN SPECIFIED SLUMPS PROVIDED THAT IT IS ADDED WITHIN ONE HOUR OF BATCHING AND SITE-ADDED WATER IS SPECIFIED ON THE BATCH REPORT. SITE-ADDED WATER SHALL NOT COMPROMISE THE STRENGTH OR SLUMP OF THE CONCRETE.
- CONCRETE SHALL NOT BE PLACED BEYOND 1-1/2 HOURS FOLLOWING BATCHING.
- PROJECTING CORNERS OF SLABS, BEAMS, WALLS, COLUMNS, ETC., SHALL BE FORMED WITH A 3/4" CHAMFER U.O.N.
- WHERE CONCRETE IS PLACED AGAINST EXISTING CONCRETE SURFACES, THE EXISTING CONCRETE SURFACES SHALL BE THOROUGHLY CLEANED AND ROUGHENED TO A MINIMUM AMPLITUDE OF 1/4-INCH. A CONCRETE BONDING AGENT SHALL BE APPLIED TO THE EXISTING CONCRETE SURFACE.
- READY MIX CONCRETE SHALL BE MIXED AND DELIVERED IN ACCORDANCE WITH ASTM C 94.
- CEMENT SHALL CONFORM TO ASTM C 150 TYPE I OR II, LOW ALKALI.
- FLYASH SHALL CONFORM TO ASTM C 618, CLASS F. FLYASH SHALL BE LIMITED TO NO MORE THAN 20% OF THE TOTAL WEIGHT OF CEMENTITIOUS MATERIALS IN THE CONCRETE, U.O.N.
- AGGREGATES FOR NORMAL WEIGHT CONCRETE SHALL CONFORM TO ASTM C 33.
- NORMAL WEIGHT CONCRETE SHALL HAVE A MAXIMUM DRY DENSITY OF 150 pcf.
- MINIMUM CONCRETE COMPRESSIVE STRENGTHS AT 28 DAYS, MAXIMUM SLUMPS, AND MAXIMUM WATER/CEMENT RATIOS SHALL BE AS FOLLOWS:

DESCRIPTION	MIN 28 DAY F _c	SLUMP	MAX W/C RATIO
SHALLOW FOUNDATIONS	3,500 psi	4" +/- 1"	0.52
SLABS ON GRADE	3,000 psi	4" +/- 1"	0.45
- SLUMPS INDICATED ARE PRIOR TO PLASTICIZER ADDITIVES.
- CONCRETE EXPOSED TO WEATHER SHALL BE AIR ENTRAINED.

G. REINFORCED CONCRETE MASONRY (CMU)

- MASONRY CONSTRUCTION SHALL CONFORM TO CHAPTER 21 OF THE BUILDING CODE AND ACI 530.1.
- SPECIAL INSPECTION AND TESTING IS REQUIRED IN ACCORDANCE WITH SECTIONS 1704 AND 1705 OF THE BUILDING CODE AND THE "STATEMENT OF SPECIAL INSPECTIONS" ON THESE CONSTRUCTION DOCUMENTS.
- CONCRETE MASONRY CONSTRUCTION SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF F_m = 2,000 psi, U.O.N.
- CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C 90, MEDIUM WEIGHT, SINGLE OPEN-END UNITS, U.O.N.
- MORTAR SHALL CONFORM TO ASTM C 270, TYPE "S".
- GROUT SHALL CONFORM TO ASTM C 476. GROUT MIXES SHALL BE DESIGNED BY A QUALIFIED TESTING LABORATORY AND APPROVED BY THE ENGINEER.
- STRENGTH VERIFICATION OF MASONRY SHALL BE BY THE UNIT STRENGTH METHOD IN ACCORDANCE WITH ACI 530.1, SECTION 1.4B.2.b. MASONRY COMPONENTS SHALL HAVE THE FOLLOWING STRENGTHS:

DESCRIPTION	MINIMUM COMPRESSIVE STRENGTH
MASONRY UNITS	2,000 psi
GROUT	2,000 psi
- VERTICAL BARS IN WALLS SHALL BE PLACED IN THE CENTER OF THE WALL UNLESS OTHERWISE INDICATED. VERTICAL BARS SHALL BE TIED OR OTHERWISE FIXED IN POSITION AT THE TOP AND BOTTOM AND AT INTERVALS OF NOT MORE THAN 200 BAR DIAMETERS.
- HORIZONTAL BARS SHALL BE PLACED IN BOND BEAM UNITS.
- CONDUITS OR PIPES SHALL NOT OCCUR IN SAME CELL AS REINFORCING BARS.
- MASONRY UNITS SHALL BE PLACED IN A RUNNING BOND PATTERN, U.O.N.
- MASONRY CELLS SHALL BE SOLID GROUTED, U.O.N.
- A GROUT POUR SHALL BE THE TOTAL HEIGHT OF MASONRY THAT IS GROUTED PRIOR TO THE ERECTION OF ADDITIONAL MASONRY. A GROUT POUR SHALL NOT EXCEED THE HEIGHT LIMITS GIVEN IN ACI 530.1, TABLE 7 AND MAY CONSIST OF ONE OR MORE GROUT LIFTS.
- A GROUT LIFT SHALL BE THE HEIGHT OF GROUT THAT IS PLACED IN A SINGLE, CONTINUOUS OPERATION BEFORE CONSOLIDATION OF GROUT. GROUT LIFTS SHALL NOT EXCEED 5'-4" IN HEIGHT UNLESS THE FOLLOWING CONDITIONS ARE MET:
- MASONRY IS ALLOWED TO CURE FOR A MINIMUM OF 4 HOURS PRIOR TO GROUTING
- GROUT SLUMP IS MAINTAINED BETWEEN 10 AND 11 INCHES AS VERIFIED BY TESTING
- LIFTS ARE LIMITED TO A HEIGHT BETWEEN HORIZONTAL BOND BEAMS, OR A MAXIMUM OF 12'-8".
- GROUT SHALL BE CONSOLIDATED BY MECHANICAL VIBRATION. WHERE LIFTS EXCEED 12 INCHES, GROUT SHALL BE RE-CONSOLIDATED BY MECHANICAL VIBRATION AFTER INITIAL WATER LOSS AND SETTLEMENT.
- INSPECTION AND CLEAN OUT HOLES SHALL BE PROVIDED AT THE BASE OF GROUTED CELLS WHERE A GROUT POUR EXCEEDS 5'-4" IN HEIGHT. HOLE SPACING SHALL NOT EXCEED 32 INCHES ON CENTER.
- WHEN GROUTING IS STOPPED FOR ONE HOUR OR LONGER, HORIZONTAL CONSTRUCTION JOINTS SHALL BE FORMED BY STOPPING THE GROUT POUR 1-1/2" BELOW TOP OF THE UPPERMOST UNIT.

H. POST-INSTALLED ADHESIVE ANCHORS

- SPECIAL INSPECTION AND TESTING IS REQUIRED IN ACCORDANCE WITH SECTIONS 1704 AND 1705 OF THE BUILDING CODE AND THE "STATEMENT OF SPECIAL INSPECTIONS" ON THESE CONSTRUCTION DOCUMENTS.
- ADHESIVE ANCHOR INSTALLERS SHALL BE TRAINED BY A QUALIFIED REPRESENTATIVE OF THE ADHESIVE MANUFACTURER ON THE PROPER PROCEDURES AND TECHNIQUES FOR INSTALLATION.
- ADHESIVE SHALL BE STORED ON THE JOBSITE IN A COOL, DRY LOCATION IN CONFORMANCE WITH THE MANUFACTURER'S REQUIREMENTS.
- ADHESIVE ANCHORS SHALL NOT BE USED FOR OVERHEAD INSTALLATION.
- POST-INSTALLED ADHESIVE ANCHORS SHALL BE AS FOLLOWS, U.O.N.

MATERIAL	ANCHOR
NW & LW CONCRETE	HILTI HIT-HY 200 V3 (ESR-4868)
SOLID GROUTED CMU	HILTI HIT-HY 270 (ESR-4143)
- POST-INSTALLED ADHESIVE ANCHORS SHALL BE AS FOLLOWS, U.O.N.

MATERIAL	ANCHOR
NW & LW CONCRETE	SIMPSON SET-XP (ESR-2508)
SOLID GROUTED CMU	SIMPSON SET-XP (ER-265)
- THREADED RODS FOR ADHESIVE ANCHORS SHALL CONFORM TO ASTM F1554 GR 36, UNO. NUTS FOR ANCHOR RODS SHALL CONFORM TO ASTM A563, GR A HEX.
- ANCHORS SHALL BE OF THE TYPE, DIAMETER, AND MINIMUM DIMENSIONAL REQUIREMENTS (EMBEDMENT, SPACING, AND EDGE DISTANCE) AS INDICATED ON THE DRAWINGS.
- ANCHORS SHALL BE INSTALLED IN HOLES DRILLED WITH DRILLING EQUIPMENT OF THE TYPE REQUIRED IN THE MANUFACTURER'S PUBLISHED EVALUATION REPORT. HOLES SHALL BE CLEANED IN CONFORMANCE WITH THE ANCHOR MANUFACTURER'S INSTRUCTIONS.
- WHEN INSTALLING ANCHORS IN EXISTING REINFORCED CONCRETE OR MASONRY, AVOID CUTTING OR DAMAGING THE EXISTING REINFORCING BARS.
- WHEN INSTALLING ANCHORS INTO PRESTRESSED CONCRETE (PRE- OR POST-TENSIONED), LOCATE THE PRESTRESSED TENDONS BY USING A NON-DESTRUCTIVE METHOD PRIOR TO INSTALLATION. AVOID CUTTING OR DAMAGING THE TENDONS.

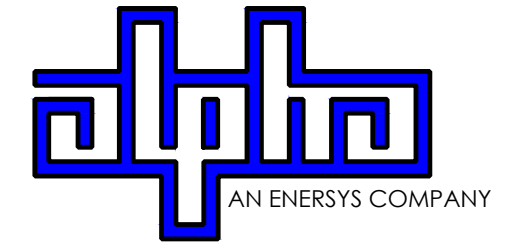
STRUCTURAL ABBREVIATIONS

THE STRUCTURAL DRAWINGS MAY INCLUDE THE FOLLOWING STANDARD ABBREVIATIONS:

(E)	EXISTING
(N)	NEW
(P)	PROPOSED
B.N.	BOUNDARY NAILING
BLOG	BUILDING
BM	BEAM
BOTT	BOTTOM
BRG	BEARING
CFS	COLD-FORMED STEEL
CJP	COMPLETE JOINT PENETRATION
CL	CENTERLINE
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CONT	CONTINUOUS
CTR	CENTER
CTSK	COUNTERSUNK
DBL	DOUBLE
Do	DITTO/DO OVER
E.N.	EDGE NAILING
EA	EACH
EQUIP	EQUIPMENT
F.N.	FIELD NAILING
FRP	FIBER-REINFORCED POLYMER
FTG	FOOTING
GALV	GALVANIZED
GLB	GLULAM BEAM / MEMBER
HGR	HANGER
HORIZ	HORIZONTAL
HSS	HOLLOW STEEL SECTION
INT	INTERIOR
k	KIP(S) = 1,000 lb
lb	POUND(S)
MFR	MANUFACTURER
MTL	METAL
O.H.	OPPOSITE HAND / MIRROR
OC	ON CENTER
PL	PLATE
psf	POUNDS PER SQUARE FOOT
P-T	POST-TENSIONED
REINF	REINFORCEMENT
PSL	PARALLEL STRAND LUMBER
REQ'D	REQUIRED
SHTG	SHEATHING
SMS	SHEET METAL SCREW
SQ	SQUARE
STIFF	STIFFENER
STL	STEEL
T&B	TOP & BOTTOM
T&G	TONGUE & GROOVE
THK	THICK
TPL	TRIPLE
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
VIF	VERIFY IN FIELD
W/	WITH



3011 COMCAST PLACE
LIVERMORE, CA 94551



3767 ALPHA WAY
BELLINGHAM, WA 98226



23 MAUCHLY, STE 110
IRVINE, CA 92618

J5 PROGRAM ID: ALP-CA-CPUC
J5 PROJECT ID: P-061764

ISSUE STATUS

REV	DATE	DESCRIPTION	BY
A	05/03/23	90% CD	MG
0	05/19/23	100% CD	MG
1	06/07/23	PCC #1	MJC

SEAL



SITE INFORMATION

SITE ADDRESS:
284 FORREST AVE,
FAIRFAX, CA 94930

SHEET TITLE:
**STRUCTURAL
NOTES**

S1

SPECIAL INSPECTION AND TESTING PROGRAM

A. GENERAL

1. NOTICE TO THE APPLICANT, OWNER, OWNER'S AGENT, ARCHITECT OR ENGINEER OF RECORD: BY USING THESE PERMITTED CONSTRUCTION DRAWINGS FOR CONSTRUCTION OR INSTALLATION OF THE WORK SPECIFIED HEREIN, YOU AGREE TO COMPLY WITH THE REQUIREMENTS OF THE BUILDING OFFICIAL FOR SPECIAL INSPECTIONS, STRUCTURAL OBSERVATIONS, CONSTRUCTION MATERIAL TESTING AND OFF-SITE FABRICATION OF BUILDING COMPONENTS CONTAINED IN THE STATEMENT OF SPECIAL INSPECTIONS AND AS REQUIRED BY CONSTRUCTION CODES.
2. NOTICE TO THE CONTRACTOR, BUILDER, INSTALLER, SUBCONTRACTOR OR OWNER-BUILDER: BY USING THESE PERMITTED CONSTRUCTION DRAWINGS FOR CONSTRUCTION OR INSTALLATION OF THE WORK SPECIFIED HEREIN, YOU ACKNOWLEDGE THAT YOU ARE AWARE OF THE REQUIREMENTS CONTAINED IN THE STATEMENT OF SPECIAL INSPECTIONS. YOU AGREE TO COMPLY WITH THE REQUIREMENTS OF THE BUILDING OFFICIAL FOR SPECIAL INSPECTIONS, STRUCTURAL OBSERVATIONS, CONSTRUCTION MATERIAL TESTING AND OFF-SITE FABRICATION OF BUILDING COMPONENTS CONTAINED IN THE STATEMENT OF SPECIAL INSPECTIONS AND AS REQUIRED BY CONSTRUCTION CODES.
3. THE OWNER OR OWNER'S AGENT, OTHER THAN THE CONTRACTOR, SHALL EMPLOY SPECIAL INSPECTION AND TESTING AGENCIES TO PROVIDE INSPECTIONS DURING CONSTRUCTION ON THE TYPES OF WORK LISTED IN THE STATEMENT OF SPECIAL INSPECTIONS.
4. SPECIAL INSPECTION SHALL BE PERFORMED IN ADDITION TO INSPECTION BY THE BUILDING OFFICIAL AS REQUIRED IN SECTION 110 OF THE BUILDING CODE. SPECIAL INSPECTION SHALL NOT BE A SUBSTITUTE FOR INSPECTION BY THE BUILDING OFFICIAL.
5. WHEN WORK IN MORE THAN ONE CATEGORY OF WORK REQUIRING SPECIAL INSPECTION OR TESTING IS TO BE PERFORMED SIMULTANEOUSLY, OR THE GEOGRAPHIC LOCATION OF THE WORK IS SUCH THAT IT CANNOT BE OBSERVED IN ACCORDANCE WITH THE STATEMENT OF SPECIAL INSPECTIONS AND SECTION 1704 OF THE BUILDING CODE, IT SHALL BE THE SPECIAL INSPECTION AGENCY'S RESPONSIBILITY TO EMPLOY A SUFFICIENT NUMBER OF INSPECTORS TO ASSURE THAT THE REQUIRED WORK IS INSPECTED.
6. THE SPECIAL INSPECTION AGENCY SHALL BE APPROVED BY THE BUILDING OFFICIAL FOR INSPECTION OF THE PARTICULAR TYPE OF CONSTRUCTION OR OPERATION REQUIRING SPECIAL INSPECTION. EXCEPTIONS:
 - A. WHEN THIS REQUIREMENT FOR AGENCY APPROVAL IS WAIVED BY THE BUILDING OFFICIAL.
7. THE CONSTRUCTION MATERIALS TESTING AGENCY SHALL BE APPROVED BY THE BUILDING OFFICIAL FOR THE TESTING OF MATERIALS, SYSTEMS, COMPONENTS AND EQUIPMENT.
8. PRIOR TO THE START OF CONSTRUCTION, THE SPECIAL INSPECTION AND TESTING AGENCIES SHALL SUBMIT DOCUMENTATION TO THE BUILDING OFFICIAL DEMONSTRATING THE COMPETENCE AND RELEVANT EXPERIENCE OR TRAINING OF THE SPECIAL INSPECTORS WHO WILL PERFORM THE SPECIAL INSPECTIONS AND TESTS DURING CONSTRUCTION.
9. EACH CONTRACTOR RESPONSIBLE FOR THE CONSTRUCTION OF THE MAIN WIND- OR SEISMIC-FORCE-RESISTING SYSTEM, DESIGNATED SEISMIC SYSTEM, OR WIND- OR SEISMIC-RESISTING COMPONENT LISTED IN THE STATEMENT OF SPECIAL INSPECTIONS SHALL SUBMIT A STATEMENT OF RESPONSIBILITY TO THE OWNER (OR OWNER'S DESIGNATED AGENT) AND BUILDING OFFICIAL PRIOR TO COMMENCEMENT OF WORK. THE CONTRACTOR'S STATEMENT OF RESPONSIBILITY SHALL CONTAIN ACKNOWLEDGEMENT OF AWARENESS OF THE SPECIAL REQUIREMENTS CONTAINED IN THE STATEMENT OF SPECIAL INSPECTIONS AND TESTING.
10. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE SPECIAL INSPECTION OR TESTING AGENCIES AT LEAST ONE WORKING DAY PRIOR TO PERFORMING ANY WORK THAT REQUIRES SPECIAL INSPECTION.
11. WORK REQUIRING SPECIAL INSPECTION OR TESTING THAT IS INSTALLED OR COVERED WITHOUT THE APPROVAL OF THE BUILDING OFFICIAL IS SUBJECT TO REMOVAL OR EXPOSURE AT THE CONTRACTOR'S EXPENSE.

B. REQUIRED REPORTS:

1. THE SPECIAL INSPECTION AGENCY SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE.
2. SPECIAL INSPECTION REPORTS SHALL INDICATE WHETHER THE WORK INSPECTED WAS, OR WAS NOT PERFORMED IN CONFORMANCE WITH THE APPROVED CONSTRUCTION DOCUMENTS.
3. THE CONSTRUCTION MATERIALS TESTING AGENCY SHALL FURNISH REPORTS TO THE BUILDING OFFICIAL AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE.
4. MATERIAL TESTING REPORTS SHALL INDICATE WHETHER THE TESTED MATERIALS CONFORM, OR DO NOT CONFORM, TO THE REQUIREMENTS OF THE APPROVED CONSTRUCTION DOCUMENTS.
5. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION.
6. IF DISCREPANCIES ARE NOT CORRECTED, THE DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OFFICIAL AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE PRIOR TO COMPLETION OF THAT PHASE OF WORK.
7. A FINAL REPORT DOCUMENTING THE REQUIRED SPECIAL INSPECTIONS, MATERIAL TESTING AND CORRECTION OF ANY DISCREPANCIES NOTED IN THE INSPECTIONS SHALL BE SUBMITTED AT A POINT IN TIME AGREED UPON, PRIOR TO THE START OF WORK, BY THE PERMIT APPLICANT AND THE BUILDING OFFICIAL.

C. CONTINUOUS AND PERIODIC SPECIAL INSPECTIONS:

1. WHERE CONTINUOUS SPECIAL INSPECTION IS REQUIRED, THE SPECIAL INSPECTOR SHALL CONTINUOUSLY PROVIDE FULL-TIME INSPECTION OF THE WORK.
2. WHERE PERIODIC SPECIAL INSPECTION IS REQUIRED, THE SPECIAL INSPECTOR NEED NOT BE CONTINUOUSLY PRESENT DURING THE WORK WHERE PERIODIC INSPECTION IS INDICATED. AS A MINIMUM, PERIODIC SPECIAL INSPECTION SHALL OCCUR DAILY.

D. OFF-SITE FABRICATION:

1. SPECIAL INSPECTION AND TESTING IS REQUIRED FOR THE OFF-SITE FABRICATION OF STRUCTURAL LOAD-BEARING OR LATERAL LOAD RESISTING MEMBERS AND REINFORCING ASSEMBLIES, UNLESS THE FABRICATION IS PERFORMED BY AN APPROVED FABRICATOR.
2. AN APPLICATION FOR OFF-SITE FABRICATION MUST BE SUBMITTED TO THE BUILDING OFFICIAL FOR APPROVAL PRIOR TO COMMENCING ANY FABRICATION WORK REQUIRING SPECIAL INSPECTION OR TESTING.
3. A CERTIFICATE OF COMPLIANCE FOR OFF-SITE FABRICATION MUST BE SUBMITTED BY THE FABRICATOR TO THE SPECIAL INSPECTION OR TESTING AGENCY PRIOR TO FABRICATION, AND SUBMITTED TO THE BUILDING OFFICIAL PRIOR TO ERECTION OF PREFABRICATED COMPONENTS.
4. SPECIAL INSPECTION SHALL INCLUDE VERIFICATION THAT THE FABRICATOR MAINTAINS DETAILED FABRICATION AND QUALITY CONTROL PROCEDURES THAT PROVIDE A BASIS FOR INSPECTION CONTROL OF WORKMANSHIP AND THE FABRICATOR'S ABILITY TO CONFORM TO THE APPROVED CONSTRUCTION DOCUMENTS AND REFERENCED STANDARDS.
5. SPECIAL INSPECTION SHALL INCLUDE REVIEW OF THE PROCEDURES FOR COMPLETENESS AND ADEQUACY RELATIVE TO THE REQUIREMENTS OF THE BUILDING CODE.

STATEMENT OF SPECIAL INSPECTIONS AND TESTING

DESCRIPTION OF TYPE OF INSPECTION REQUIRED	CONTINUOUS	PERIODIC	FOOT-NOTE
--	------------	----------	-----------

MASONRY (ACI 530 LEVEL B QUALITY ASSURANCE)			
CERTIFICATES OF MATERIALS COMPLIANCE PRIOR TO THE START OF WORK		X	
MASONRY CONSTRUCTION AT THE START OF WORK		X	1
REINFORCING STEEL MATERIAL		X	
PLACEMENT OF REINFORCING STEEL PRIOR TO DELIVERY OF GROUT		X	
PLACEMENT OF CAST-IN ANCHORS PRIOR TO DELIVERY OF GROUT		X	2
MASONRY CONSTRUCTION DURING COURSE OF WORK		X	3
MASONRY CONSTRUCTION PRIOR TO GROUTING		X	
GROUT PLACEMENT	X		
GROUT SLUMP DURING GROUT PLACEMENT (IF LIFTS GREATER THAN 5'-0" ARE USED)	X		
PREPARATION OF GROUT SPECIMENS DURING CONSTRUCTION (IF USING UNIT STRENGTH METHOD)		X	
TESTING OF GROUT STRENGTH DURING CONSTRUCTION (IF USING UNIT STRENGTH METHOD)		X	

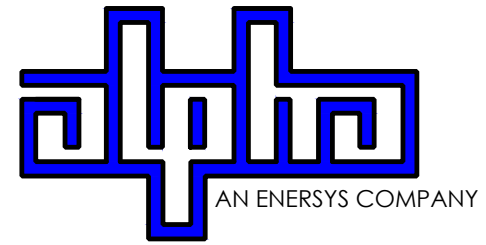
POST-INSTALLED ANCHORS			
JOBSITE STORAGE OF ADHESIVE PRIOR TO INSTALLATION FOR CONFORMANCE WITH MANUFACTURER'S REQUIREMENTS		X	1
INSTALLATION OF ADHESIVE ANCHORS IN HORIZONTALLY OR UPWARDLY-INCLINED ORIENTATIONS	X		1
INSTALLATION OF ADHESIVE ANCHORS IN DOWNWARD VERTICAL ORIENTATIONS		X	1

FOOTNOTES FOR STATEMENT OF SPECIAL INSPECTIONS

SPECIAL INSPECTION FOR POST-INSTALLED ANCHORS SHALL COMPLY WITH THE REQUIREMENTS SPECIFIED IN THE EVALUATION APPROVAL



3011 COMCAST PLACE
LIVERMORE, CA 94551



3767 ALPHA WAY
BELLINGHAM, WA 98226



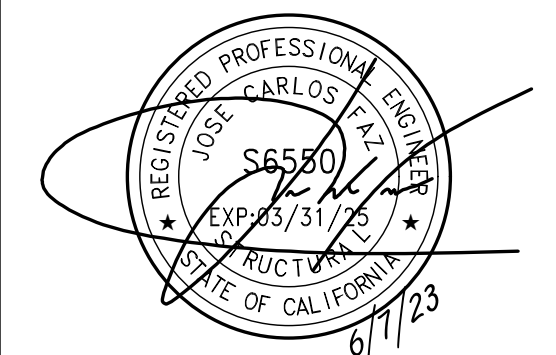
23 MAUCHLY, STE 110
IRVINE, CA 92618

J5 PROGRAM ID: ALP-CA-CPUC
J5 PROJECT ID: P-061764

ISSUE STATUS

REV	DATE	DESCRIPTION	BY
A	05/03/23	90% CD	MG
0	05/19/23	100% CD	MG
1	06/07/23	PCC #1	MJC

SEAL



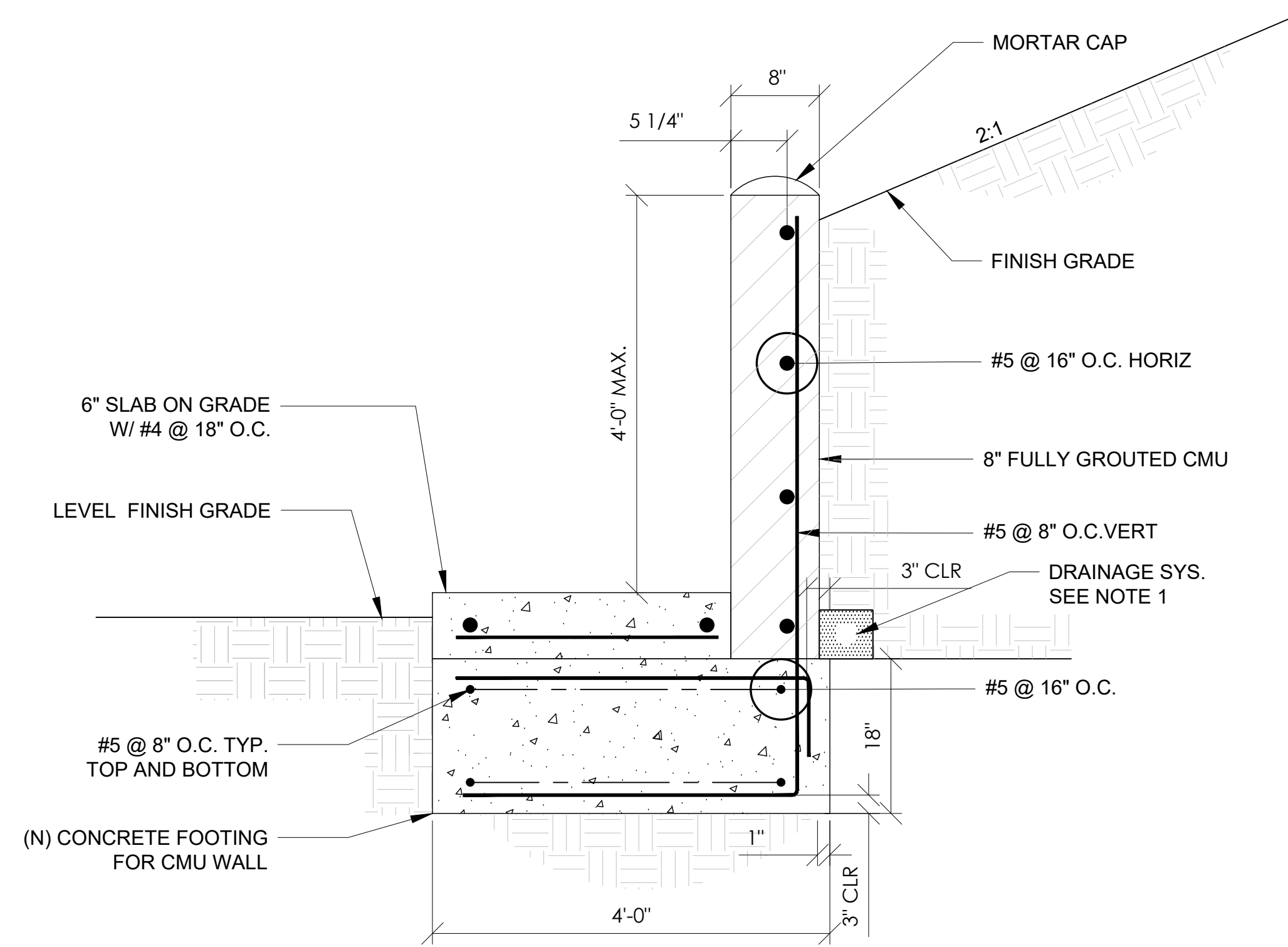
SITE INFORMATION

SITE ADDRESS:
284 FORREST AVE,
FAIRFAX, CA 94930

SHEET TITLE:
SPECIAL INSPECTION NOTES

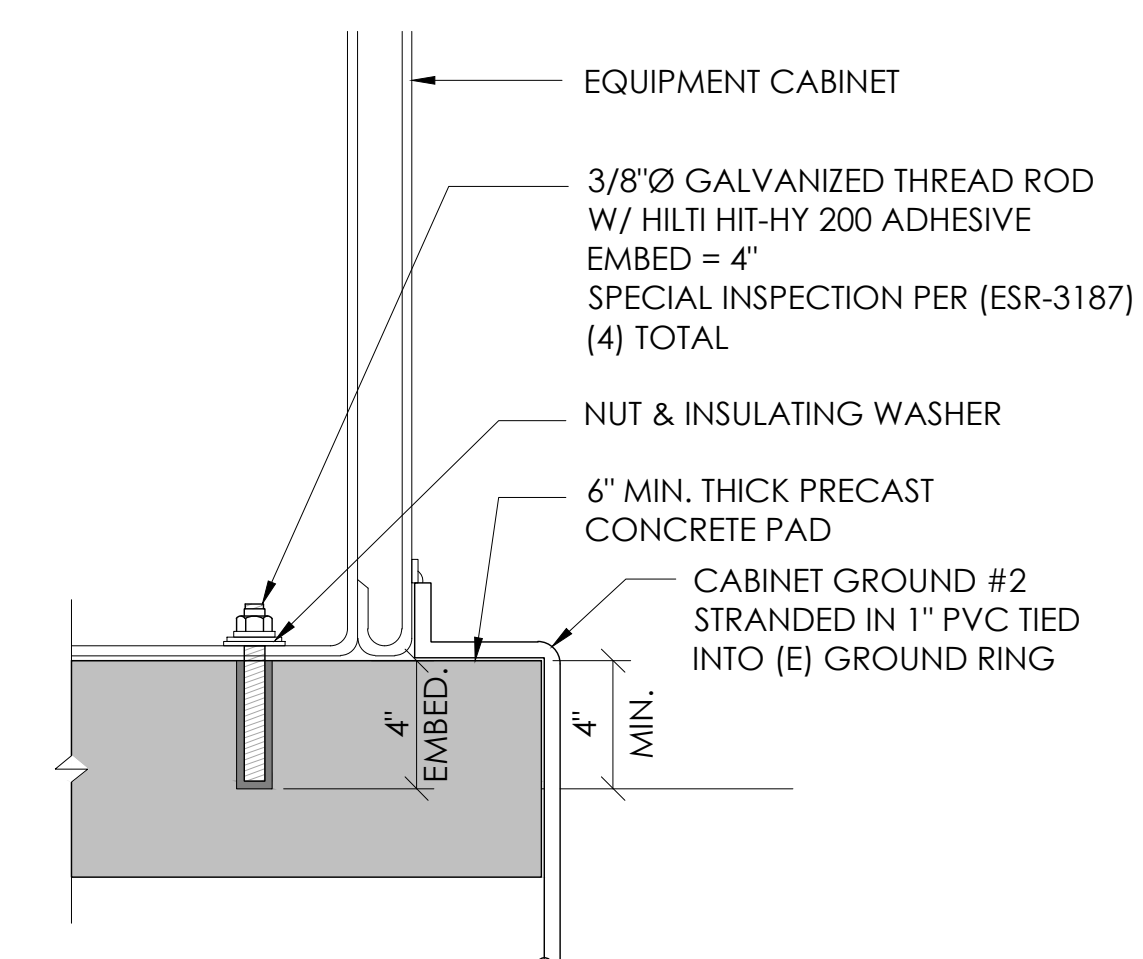
S2

NOTES:
 1-PROVIDE RETAINING WALL DRAINAGE SYSTEM CONSISTING OF 1 CF/FT OF CLEAN COURSE GRAVEL WITH 4" DIAMETER PERFORATED PVC DRAINAGE PIPE WITH 1% GRADIENT TO DRAIN. (OPTIONAL: INSTEAD OF DRAINAGE PIPING, THE HEAD JOINTS IN THE 1ST COURSE MAY BE OMITTED. 1 CF/FT OF CLEAN COURSE GRAVEL IS STILL REQUIRED.)



1 RETAINING WALL 3'-0"
N.T.S.

PLACE CONCRETE PAD MINIMUM 2"
FROM NEARBY CONCRETE PAD(S)



2 ANCHORAGE DETAIL
N.T.S.

COMCAST

3011 COMCAST PLACE
LIVERMORE, CA 94551

alpha
AN ENERSYS COMPANY

3767 ALPHA WAY
BELLINGHAM, WA 98226

J5 INFRASTRUCTURE
PARTNERS

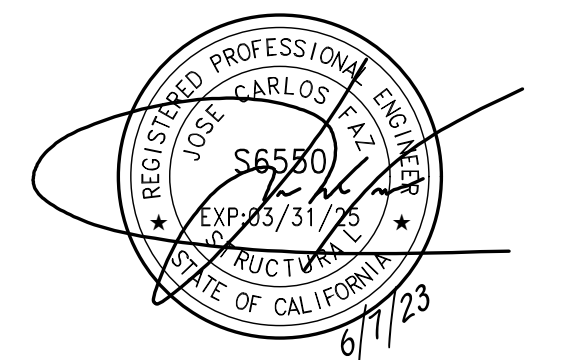
23 MAUCHLY, STE 110
IRVINE, CA 92618

J5 PROGRAM ID: ALP-CA-CPUC
J5 PROJECT ID: P-061764

ISSUE STATUS

REV	DATE	DESCRIPTION	BY
A	05/03/23	90% CD	MG
0	05/19/23	100% CD	MG
1	06/07/23	PCC #1	MJC

SEAL



SITE INFORMATION

SITE ADDRESS:
284 FORREST AVE,
FAIRFAX, CA 94930

SHEET TITLE:
STRUCTURAL
DETAILS

S3



EXISTING SITE PHOTO



LOCATION MAP

P-062212 - 5 BERRY TRL 37.9876735, -122.5959072

Olifant Kastle Investment Man

AE TDA5 SCOPE OF WORK

THIS PROJECT MODIFICATION OF EXISTING CONSISTS OF:

- INSTALLATION OF (2) (N) ALPHA PN-4 POWERNODE SYSTEM ENCLOSURE
- INSTALLATION OF (15) (N) 12V ALPHA 210FTX BATTERIES
- INSTALLATION OF (1) (N) PRECAST CONCRETE PAD
- REMOVAL & REPLACEMENT OF (E) POWER SUPPLY
- INSTALLATION OF CONDUIT BETWEEN (E) AND (N) CABINETS
- ALL ASSOCIATED ELECTRIC WIRES AND CONDUITS TO CONNECT POWERNODE CABINET TO EXISTING ALPHA CABINET



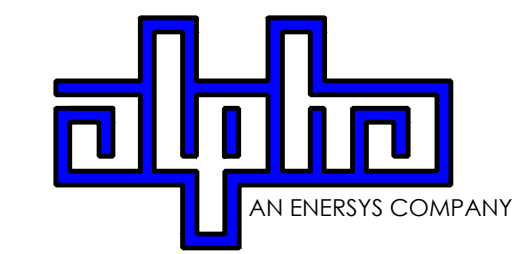
SITE ADDRESS:
185 TAMALPAIS RD
FAIRFAX, 94930

SITE INFORMATION

SITE ADDRESS:	185 Tamalpais Rd FAIRFAX, 94930
LATITUDE/LONGITUDE (NAD 83):	37.62858779, -122.0323292
JURISDICTION:	City of Fairfax
POWER PROVIDER:	
AMP DRAW:	7.42



3011 COMCAST PLACE
LIVERMORE, CA 94551



3767 ALPHA WAY
BELLINGHAM, WA 98226



23 MAUCHLY, STE 110
IRVINE, CA 92618

J5 PROGRAM ID: ALP-CA-CPUC
J5 PROJECT ID: P-062212

ISSUE STATUS

REV	DATE	DESCRIPTION	BY
A	03/10/23	90% CD	HV
0	03/10/23	100% CD	HV
1	07/28/23	REVISED 100% CD	MJC

DRAWING INDEX

SHEET	DESCRIPTION
T1	TITLE SHEET AND SITE PLAN
LS-1	SITE SURVEY
A1	ELEVATIONS
D1	DETAILS
D2	DETAILS
TC1	TRAFFIC CONTROL
S-1	DETAILS
S-2	DETAILS

PROJECT TEAM

OWNER: COMCAST CABLE
3011 COMCAST PLACE
LIVERMORE, CA 94551

ENGINEER/ARCHITECT: J5 INFRASTRUCTURE PARTNERS
MARK MASCUNANA
ARCHITECT/ENGINEER CONTACT
PH: (281) 387-8814
EMAIL: mark.mascunana@j5ip.com
23 MAUCHLY, SUITE 110
IRVINE, CALIFORNIA, 92618

APPLICANT: ALPHA TECHNOLOGIES, INC.
RICHARD A. SEIFF
SERVICE OPERATIONS MANAGER
ENERGY SYSTEMS AMERICAS
PH: (331) 276-0232
EMAIL: rich.seiff@enersys.com

CODE COMPLIANCE

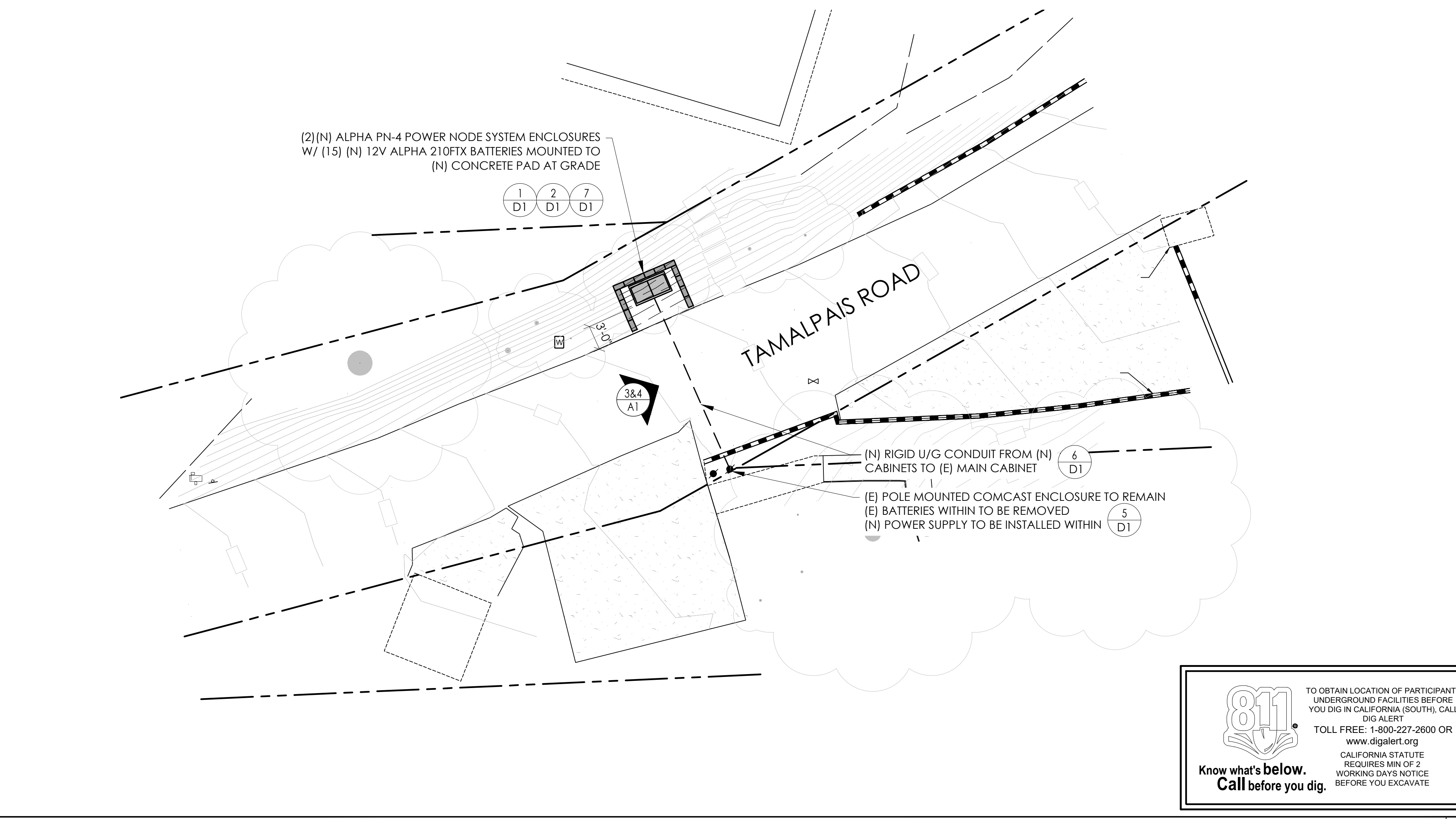
ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.

1. CALIFORNIA BUILDING STANDARDS CODE, 2019 TRIENNIAL EDITION OF TITLE 24, WITH AN EFFECTIVE DATE OF JANUARY 1, 2020.	PART 8 - CALIFORNIA HISTORICAL BUILDING CODE
PART 1 - CALIFORNIA ADMINISTRATIVE CODE	PART 9 - CALIFORNIA FIRE CODE, BASED ON THE 2018 INTERNATIONAL FIRE CODE
PART 2 - CALIFORNIA BUILDING CODE, BASED ON THE 2018 INTERNATIONAL BUILDING CODE	PART 10 - CALIFORNIA EXISTING BUILDING CODE, BASED ON THE 2018 INTERNATIONAL EXISTING BUILDING CODE
PART 2.5 - CALIFORNIA RESIDENTIAL CODE, BASED ON THE 2018 INTERNATIONAL RESIDENTIAL CODE	PART 11 - CALIFORNIA GREEN BUILDING STANDARDS CODE (ALSO KNOWN AS CALGREEN)
PART 3 - CALIFORNIA ELECTRICAL CODE, BASED ON THE 2017 NATIONAL ELECTRICAL CODE	PART 12 - CALIFORNIA REFERENCED STANDARDS CODE
PART 4 - CALIFORNIA MECHANICAL CODE, BASED ON THE 2018 UNIFORM MECHANICAL CODE	2. ANSITIA-222 (REV H)
PART 5 - CALIFORNIA PLUMBING CODE, BASED ON THE 2018 UNIFORM PLUMBING CODE	3. 2018 NFPA 101, LIFE SAFETY CODE
PART 6 - CALIFORNIA ENERGY CODE	4. 2019 NFPA 72, NATIONAL FIRE ALARM AND SIGNALING CODE
PART 7 - VACANT	5. 2019 NFPA 13, STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS

GENERAL CONTRACTOR NOTES

DO NOT SCALE DRAWINGS IF NOT FULL SIZE (24 X 36)

CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT/ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BEAR THE RESPONSIBILITY FOR THE SAME.



811

TO OBTAIN LOCATION OF PARTICIPANTS UNDERGROUND FACILITIES BEFORE YOU DIG IN CALIFORNIA (SOUTH), CALL DIG ALERT

TOLL FREE: 1-800-227-2600 OR www.digalert.org

CALIFORNIA STATUTE REQUIRES MIN OF 2 WORKING DAYS NOTICE BEFORE YOU EXCAVATE

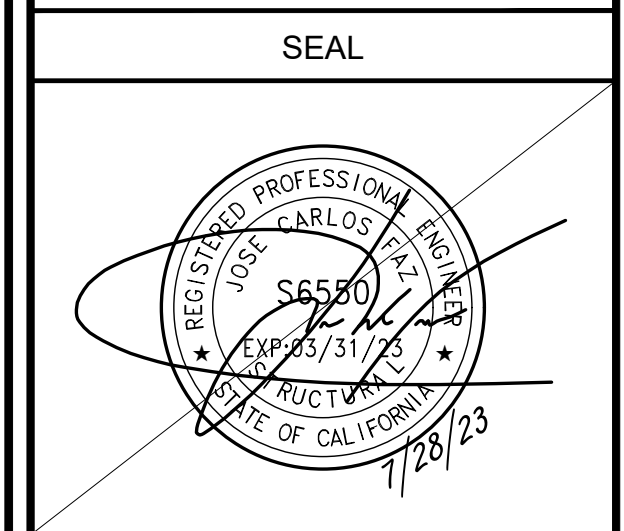
Know what's below.
Call before you dig.

24"x36" SCALE: 1" = 20'-0"
11"x17" SCALE: 1" = 40'-0"

20' 10' 0' 20'

NORTH

SITE PLAN

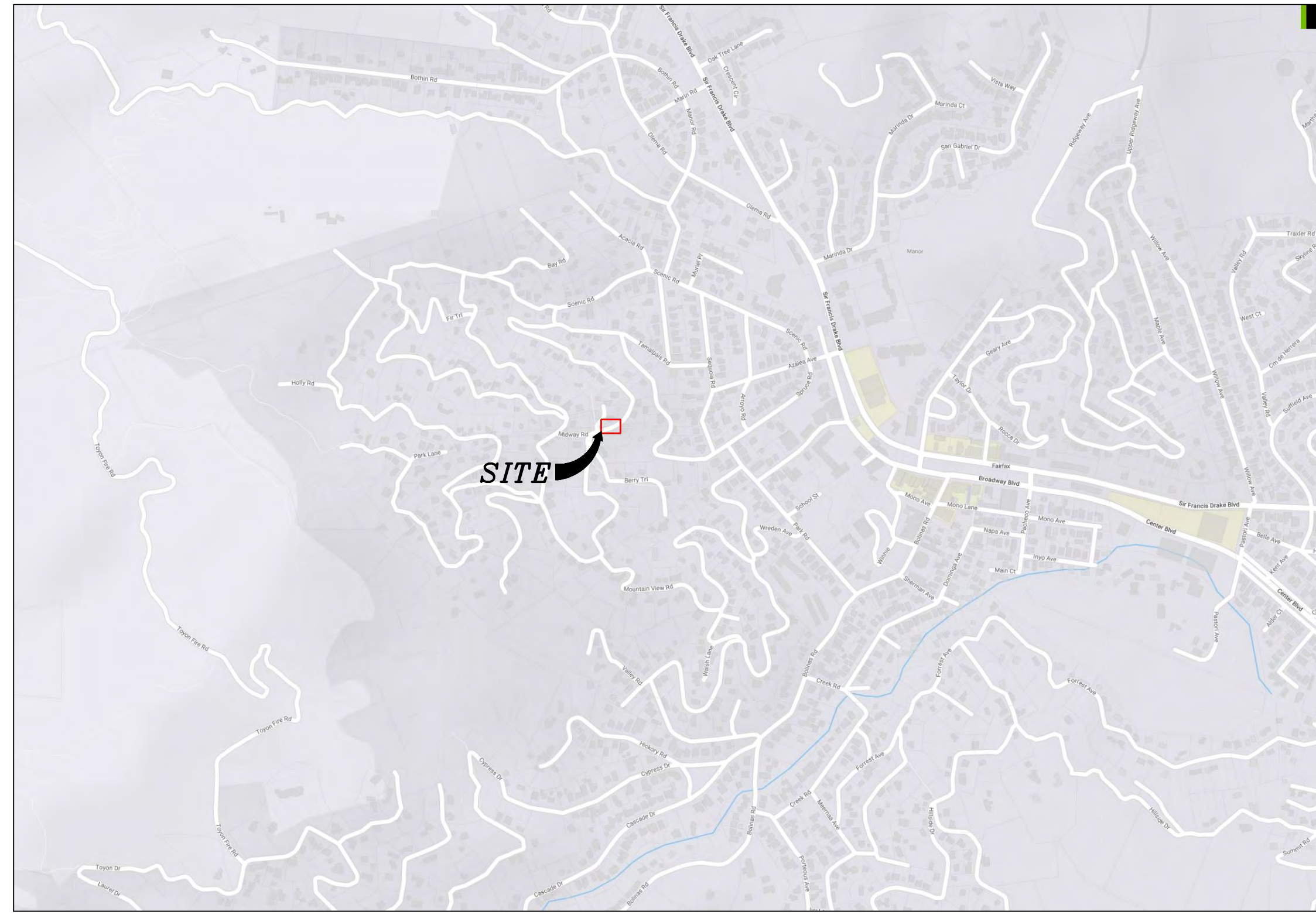


SITE INFORMATION

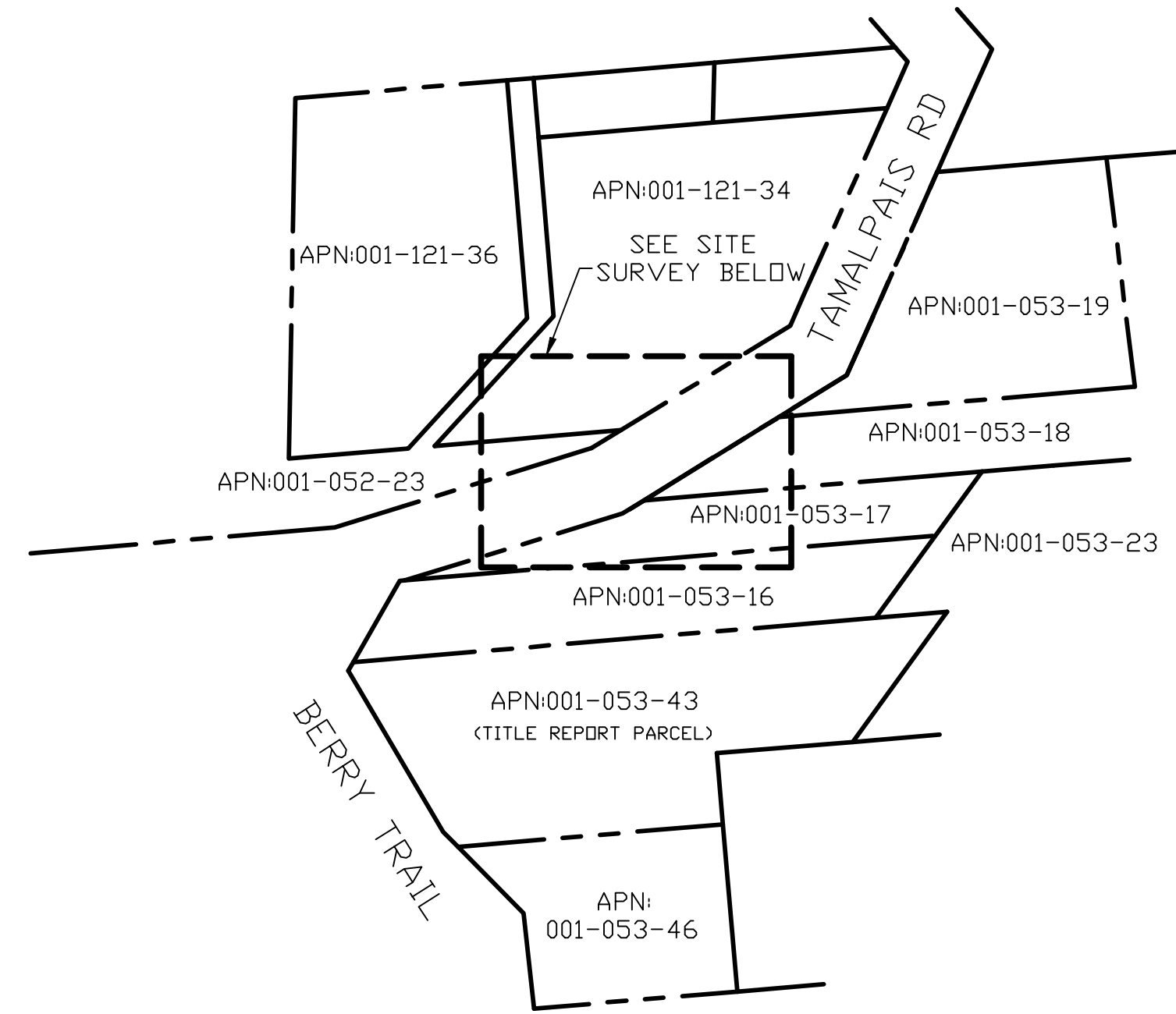
SITE ADDRESS:
185 TAMALPAIS RD,
FAIRFAX, 94930

SHEET TITLE:
TITLE SHEET

T1



VICINITY MAP
N.T.S.



OVERALL SITE
N.T.S.

SURVEY DATE
02/16/2023

BASIS OF BEARING
BEARINGS SHOWN HEREON ARE BASED UPON U.S. STATE PLANE NAD83 COORDINATE SYSTEM CALIFORNIA STATE PLANE COORDINATE ZONE THREE, DETERMINED BY GPS OBSERVATIONS.

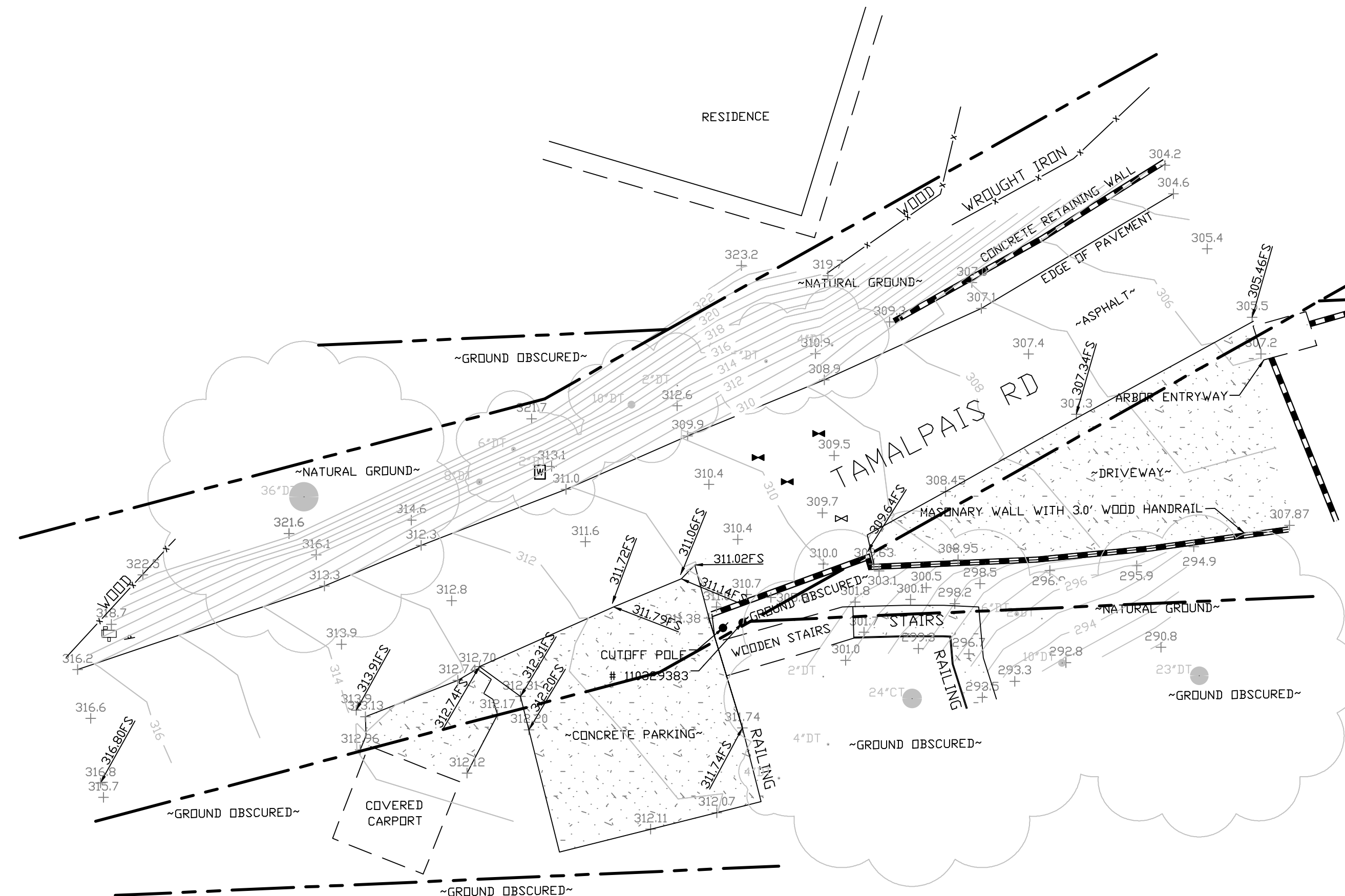
BENCHMARK
PROJECT ELEVATIONS ESTABLISHED FROM GPS DERIVED ORTHOMETRIC HEIGHTS BY APPLICATION OF NGS "GEOID 18" MODELED SEPARATIONS TO ELLIPSOID HEIGHTS DETERMINED BY OBSERVATIONS OF THE "CRN" REAL TIME NETWORK. ALL ELEVATIONS SHOWN HEREON ARE REFERENCED TO NAVD88.

FLOOD ZONE
THIS PROJECT APPEARS TO BE LOCATED WITHIN FLOOD ZONE "X". ACCORDING TO FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP(S), MAP ID #06041C0451E, DATED 03/17/2014.

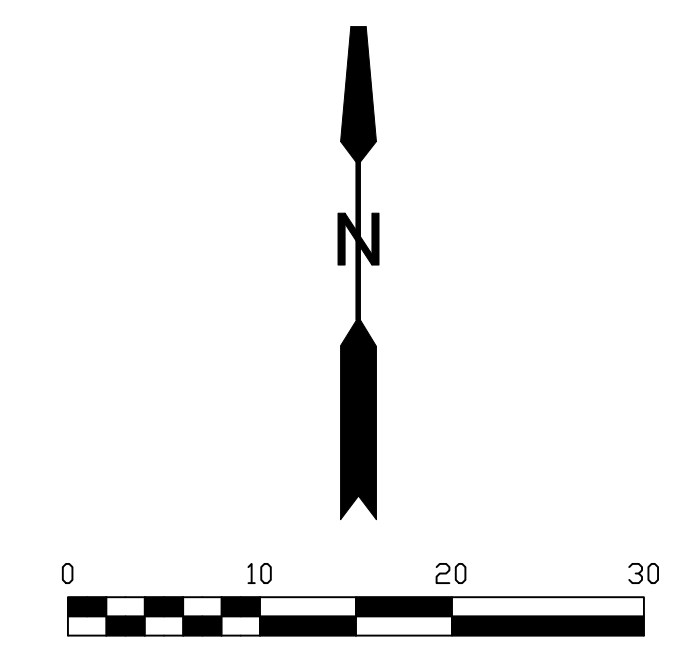
UTILITY NOTES
SURVEYOR DOES NOT GUARANTEE THAT ALL UTILITIES ARE SHOWN OR THEIR LOCATIONS ARE DEFINITE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR AND DEVELOPER TO CONTACT 811 AND ANY OTHER INVOLVED AGENCIES TO LOCATE ALL UTILITIES PRIOR TO CONSTRUCTION. REMOVAL, RELOCATION AND/ OR REPLACEMENT IS THE RESPONSIBILITY OF THE CONTRACTOR.

SURVEYOR'S NOTE
THE LOCATION AND DIMENSIONS SHOWN WERE TAKEN FROM THE MAP(S) RECORDED IN BOOK 14 PAGE 187 OF RECORDS OF SURVEY AND BOOK 19 PAGE 61 OF MAPS, MARIN COUNTY RECORDER AND DOES NOT CONSTITUTE A BOUNDARY SURVEY OF THE PROPERTIES.

TITLE REPORT DESCRIPTION
TITLE REPORT PARCEL
APN: 001-053-43
PREPARED USING AMERICAN TITLE'S TITLE REPORT #5026900-6942902 DATED 01/11/2023;



SITE SURVEY



- LEGEND**
These standard symbols may be found in the drawing.
- CONCRETE
 - PROPERTY LINE
 - CENTER LINE
 - OVERHEAD LINE
 - FENCE
 - ROOF WALL
 - ROCK WALL
 - WATER METER
 - WATER VALVE
 - POWER POLE
 - ELEVATION GRADE
 - GUY WIRE
 - MAILBOX
 - WATER METER
 - SIGN NO STOPPING
 - MANHOLE TELE
 - MANHOLE UTILITY
 - RECTANGLE INLET
 - SHRUB
 - TRUNK
 - CT CONIFEROUS TREE
 - DC DECIDUOUS TREE
 - TC TOP OF CURB
 - FC FACE OF CURB
 - TF TOP OF FENCE
 - TW TOP OF WALL
 - CD CURB DRAIN

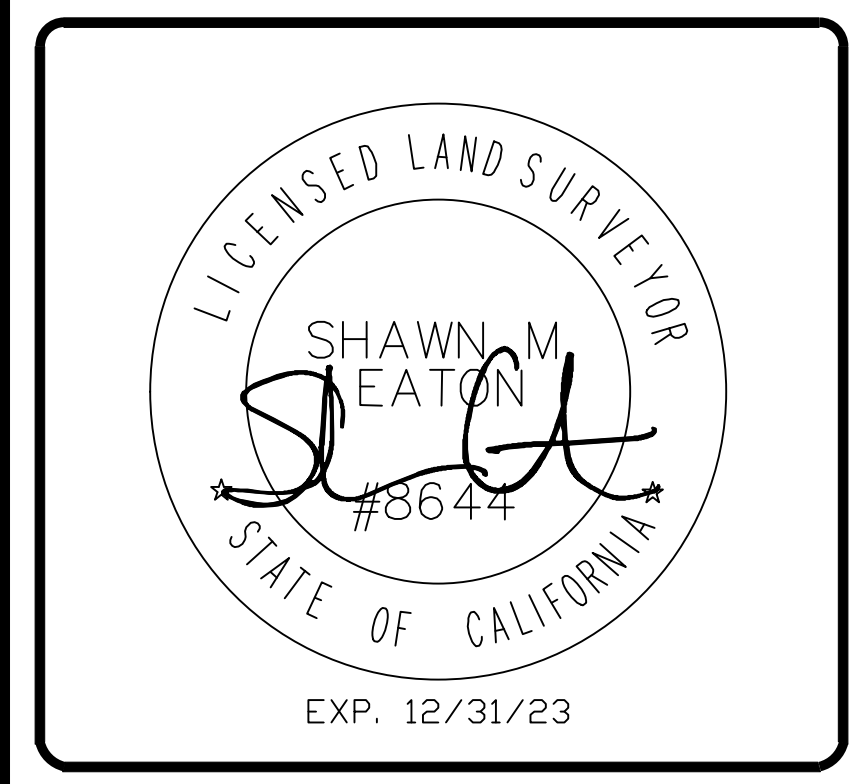
COMCAST
3011 COMCAST PLACE
LIVERMORE, CA 94551

ALPHA
3767 ALPHA WAY
BELLINGHAM, WA 98226

Eaton Land Surveying, Inc.
15604 Magnolia Rd.
Grass Valley, CA. 95949
Ph. 530.830.0038

DRAWN BY: _____ HE
CHECKED BY: _____ SE

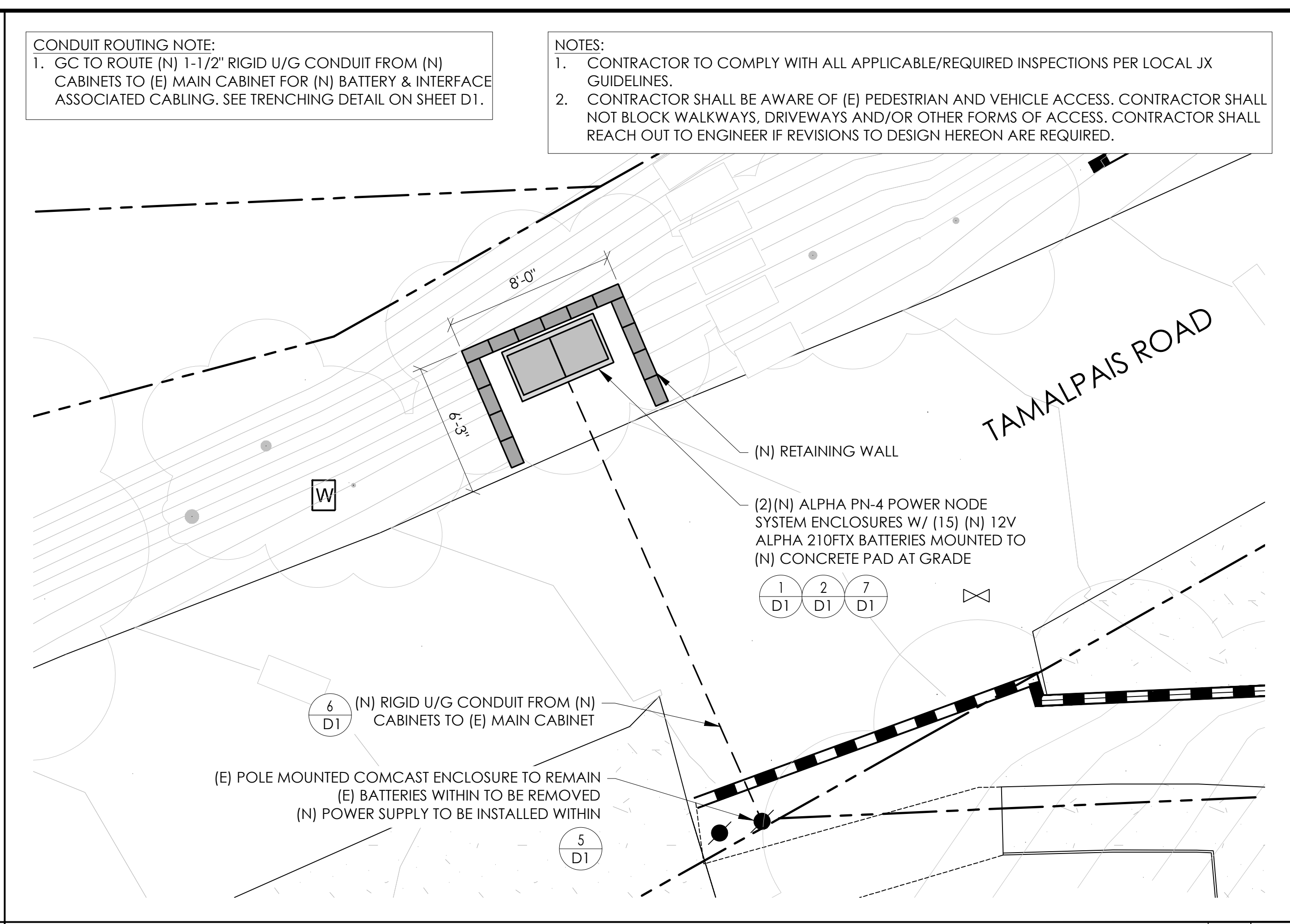
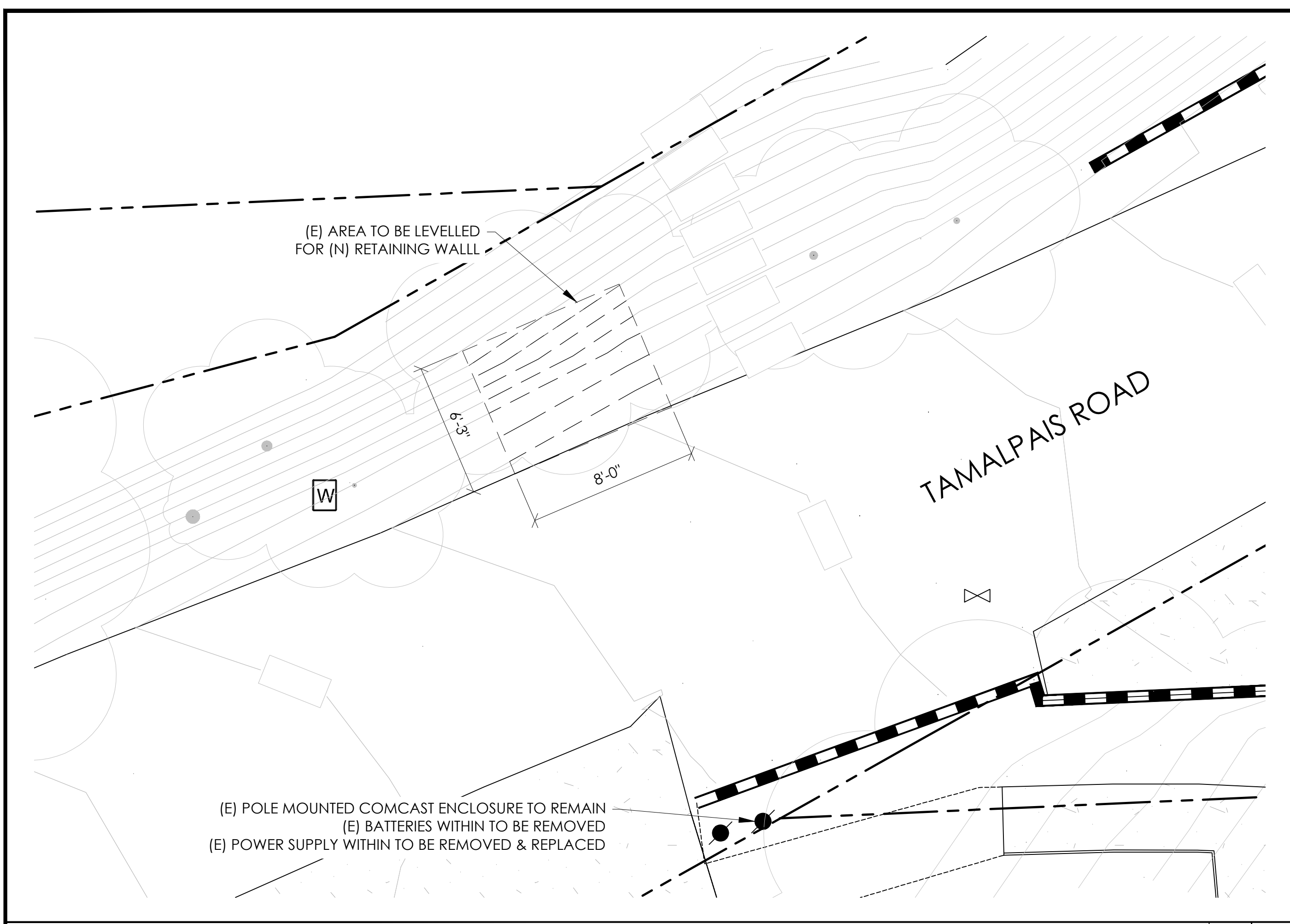
REVISIONS:		
REV	DATE	DESCRIPTION
0	02/24/23	SUBMITTAL



PROJECT INFORMATION:
P-062212
176 TAMALPAIS RD
FAIRFAX, CA. 94930
MARIN COUNTY

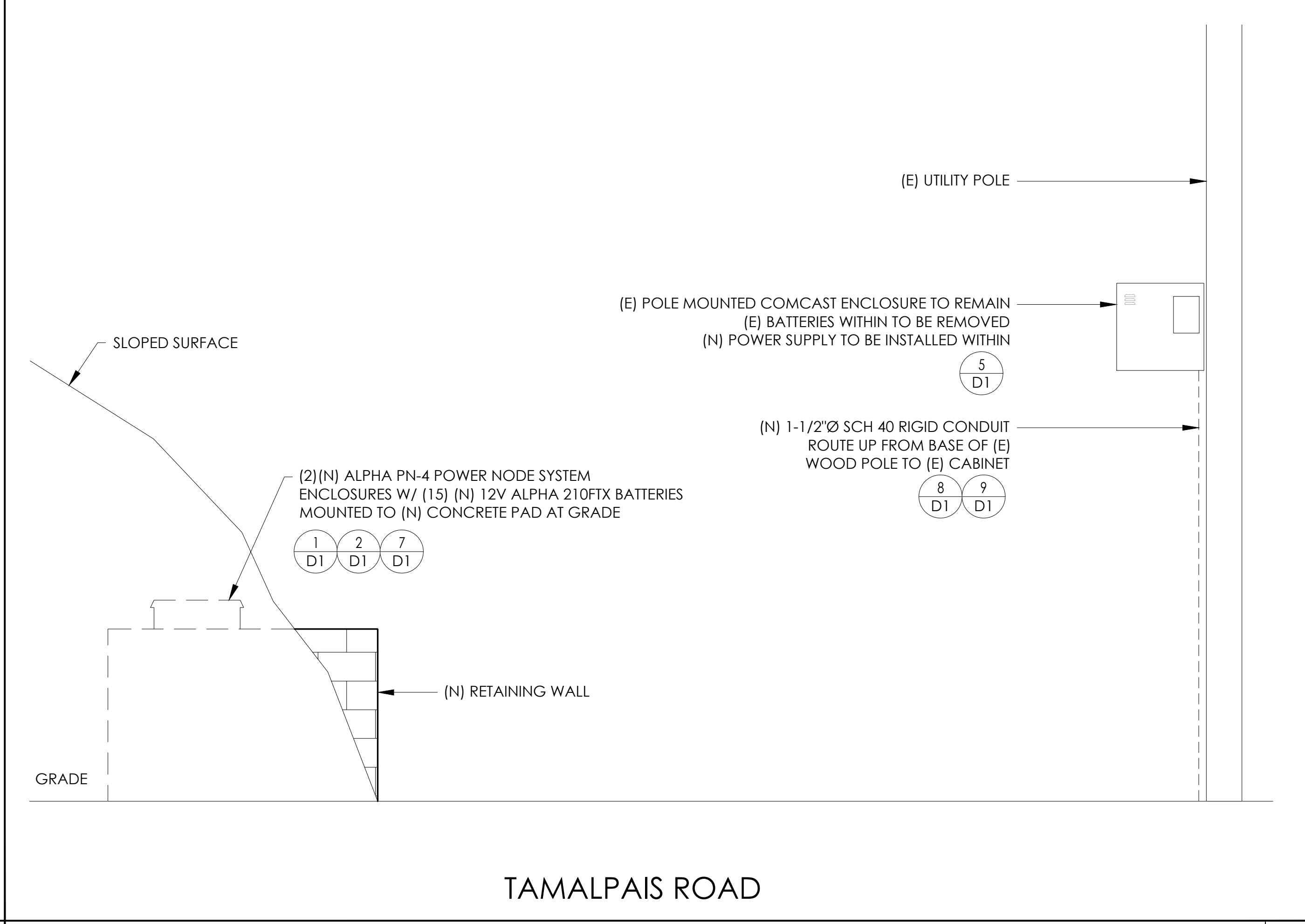
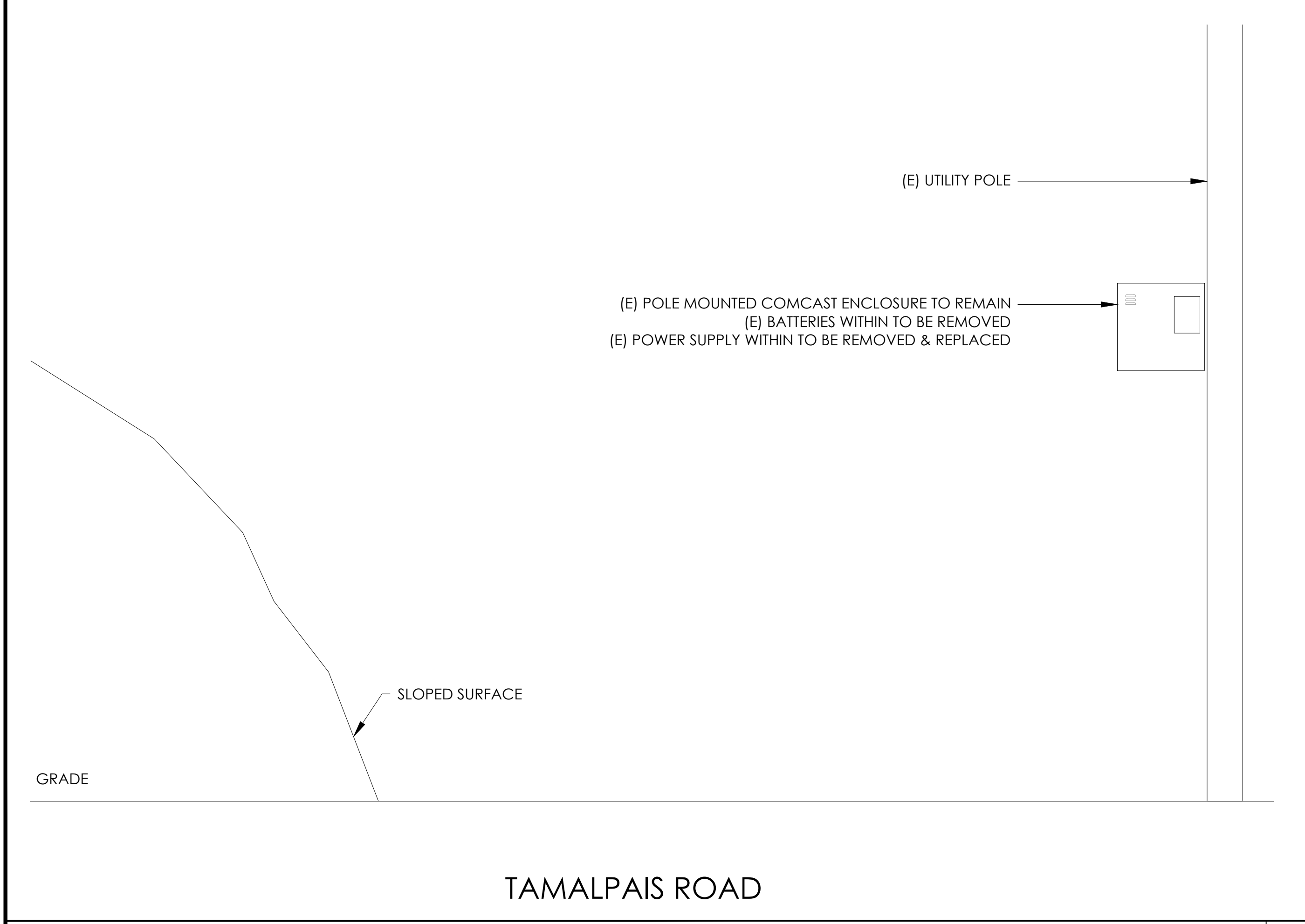
SHEET TITLE:
SITE SURVEY

SHEET NUMBER:
LS-1



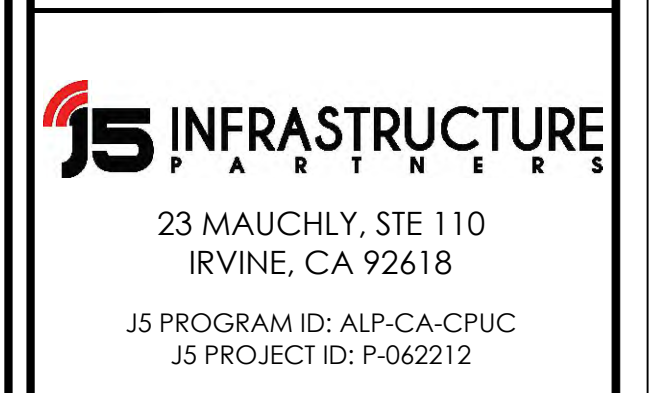
EXISTING ENLARGED SITE PLAN 24"x36" SCALE: 1/4" = 1'-0" 11"x17" SCALE: 1/8" = 1'-0" 4' 3' 2' 1' 0" 4' NORTH 2

PROPOSED ENLARGED SITE PLAN 24"x36" SCALE: 1/4" = 1'-0" 11"x17" SCALE: 1/8" = 1'-0" 4' 3' 2' 1' 0" 4' NORTH 1



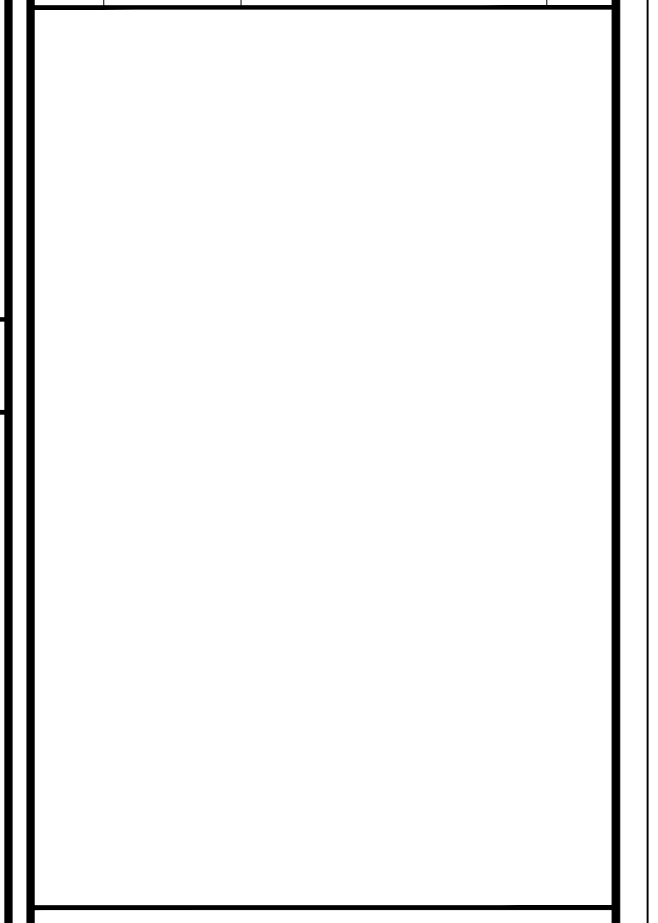
EXISTING ELEVATION 24"x36" SCALE: 1/2" = 1'-0" 11"x17" SCALE: 1/4" = 1'-0" 2' 1' 0" 2' 4

PROPOSED ELEVATION 24"x36" SCALE: 1/2" = 1'-0" 11"x17" SCALE: 1/4" = 1'-0" 2' 1' 0" 2' 3



ISSUE STATUS

REV	DATE	DESCRIPTION	BY
A	03/10/23	90% CD	HV
0	03/10/23	100% CD	HV
1	07/28/23	REVISED 100% CD	MJC



SEAL

SITE INFORMATION

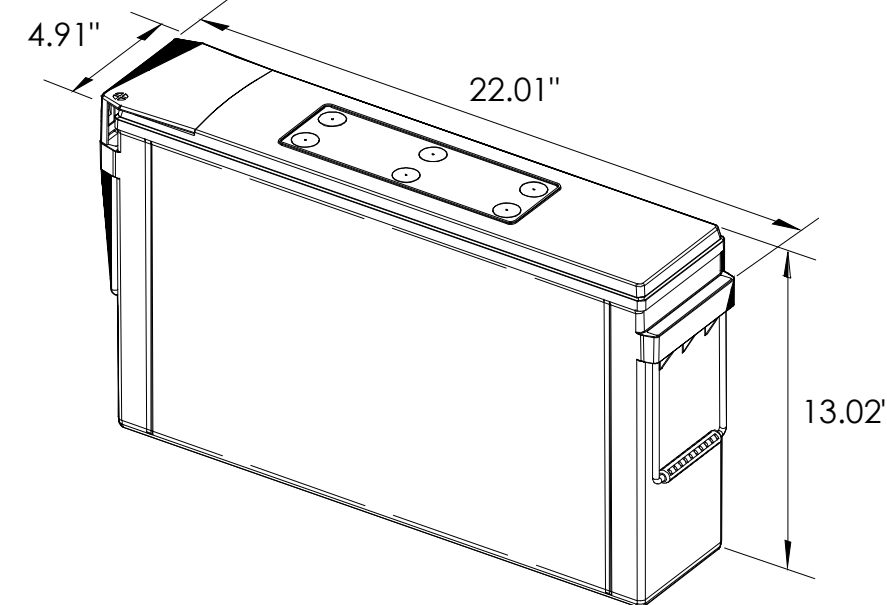
SITE ADDRESS:
185 TAMALPAIS RD,
FAIRFAX, 94930

SHEET TITLE:
ELEVATIONS

A1



ALPHA
210 FIX BATTERY UNIT



EQUIPMENT SPECIFICATIONS (1 UNIT)

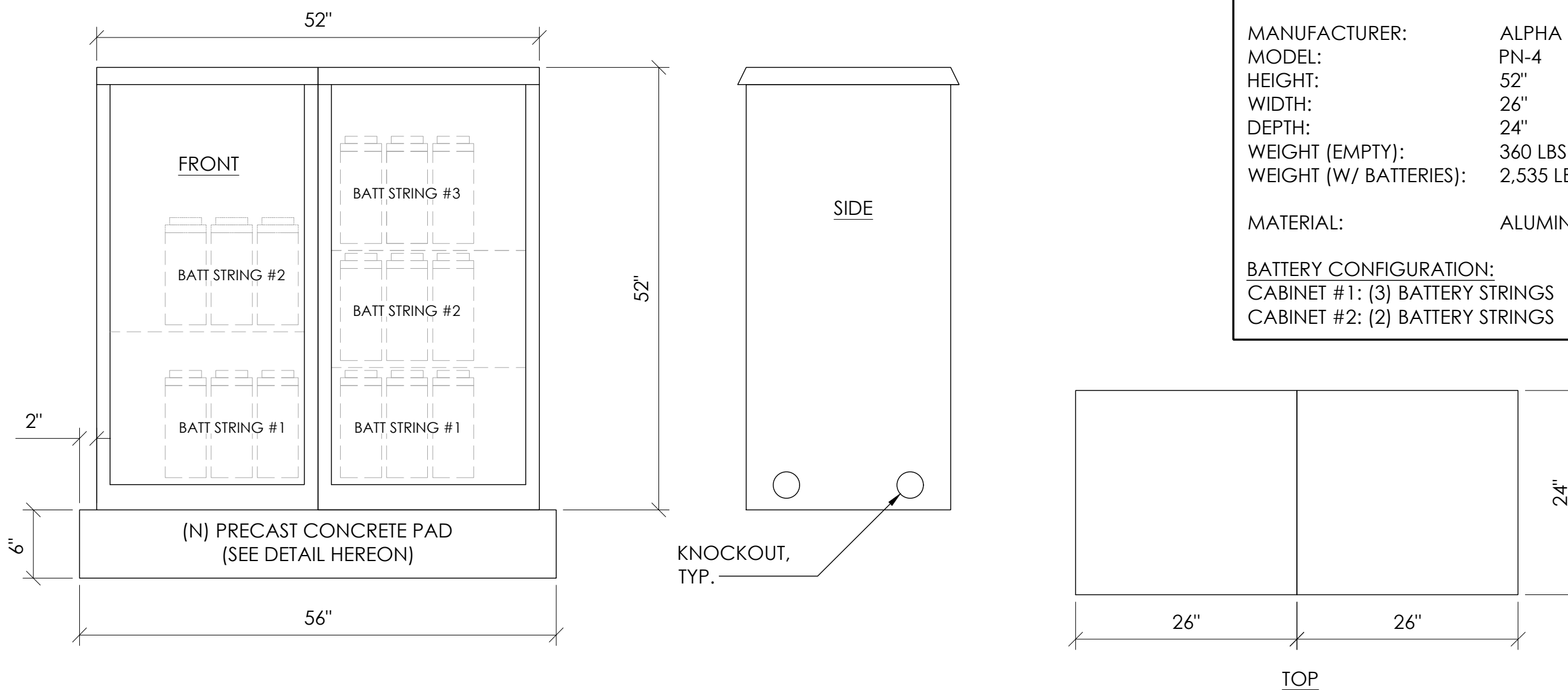
MFG: ALPHA
MODEL: 210 FIX
HEIGHT: 13.02 IN
WIDTH: 4.91 IN
LENGTH: 22.01 IN
WEIGHT: 145 LBS

CABINET SPECIFICATIONS

MANUFACTURER: ALPHA
MODEL: PN-4
HEIGHT: 52"
WIDTH: 26"
DEPTH: 24"
WEIGHT (EMPTY): 360 LBS.
WEIGHT (W/ BATTERIES): 2,535 LBS.

MATERIAL: ALUMINUM

BATTERY CONFIGURATION:
CABINET #1: (3) BATTERY STRINGS
CABINET #2: (2) BATTERY STRINGS

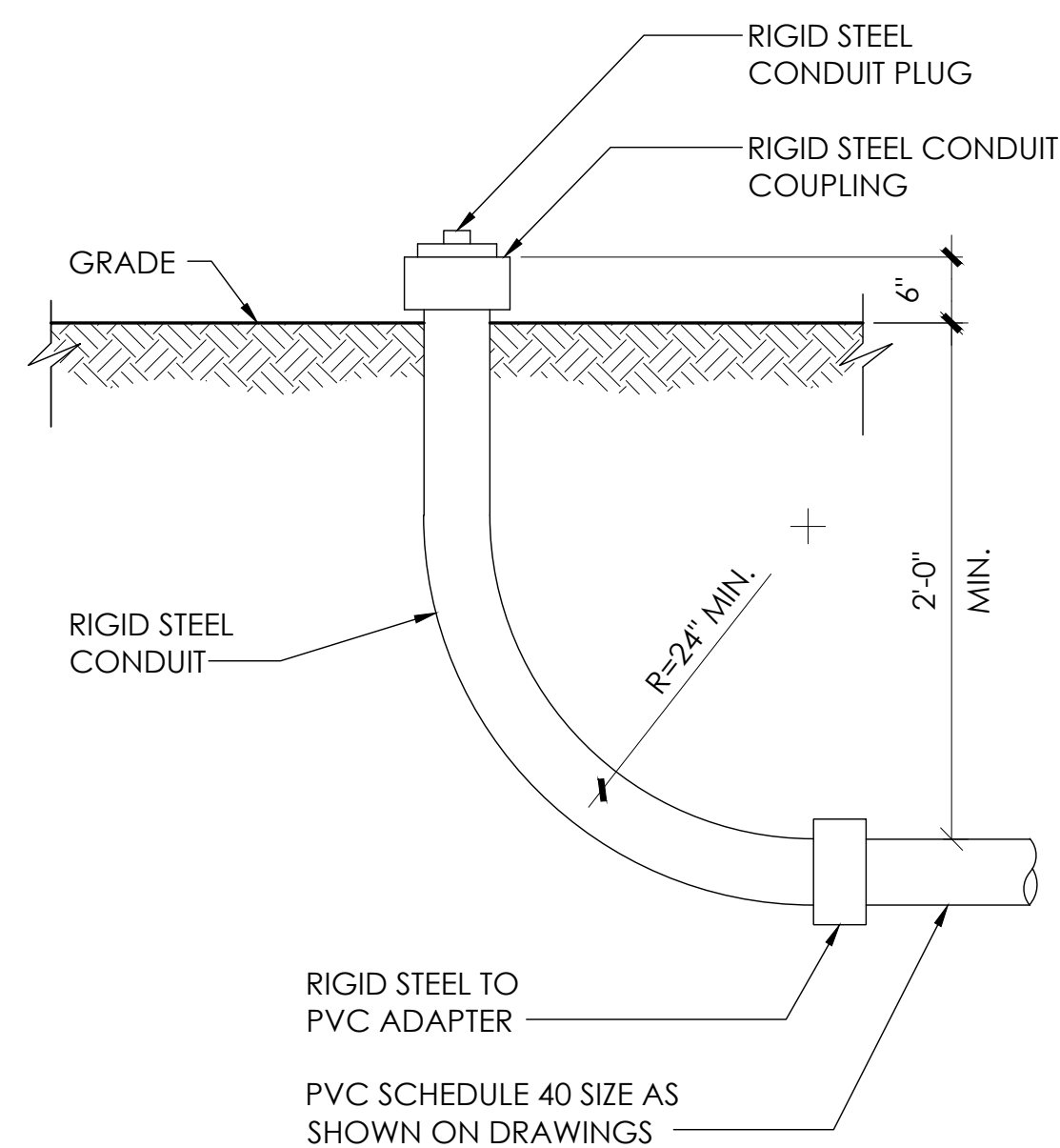


1 DUAL EQUIPMENT CABINET DETAIL
N.T.S.

BATTERY INFORMATION (VRLA TYPE BATTERIES)

INSTALL STATUS	BATTERY MODEL	TOTAL # OF BATTERY UNITS INSTALLED	VOLTAGE (V)	AMP-HOURS (AH)	KWh, Kilowatt-hours = (V*AH)/1000	TOTAL BATTERY CAPACITY, KWh	STATIONARY BATTERY STORAGE SYSTEM THRESHOLD QUANTITY, PER CFC 2019 SECTION 1206	STATIONARY BATTERY STORAGE SYSTEM CODE CHECK	TOTAL ELECTROLYTE VOLUME (GALLONS) PER UNIT	TOTAL ELECTROLYTE BY VOLUME (GALLONS) =
PROPOSED	ALPHACELL 210FTX	15	12	210	2.52	37.8			2.1	31.5
TOTAL		15				37.8	70	CFC 2019 SECTION 1206 DOES NOT APPLY		31.5

7 BATTERY SPECIFICATIONS
N.T.S.



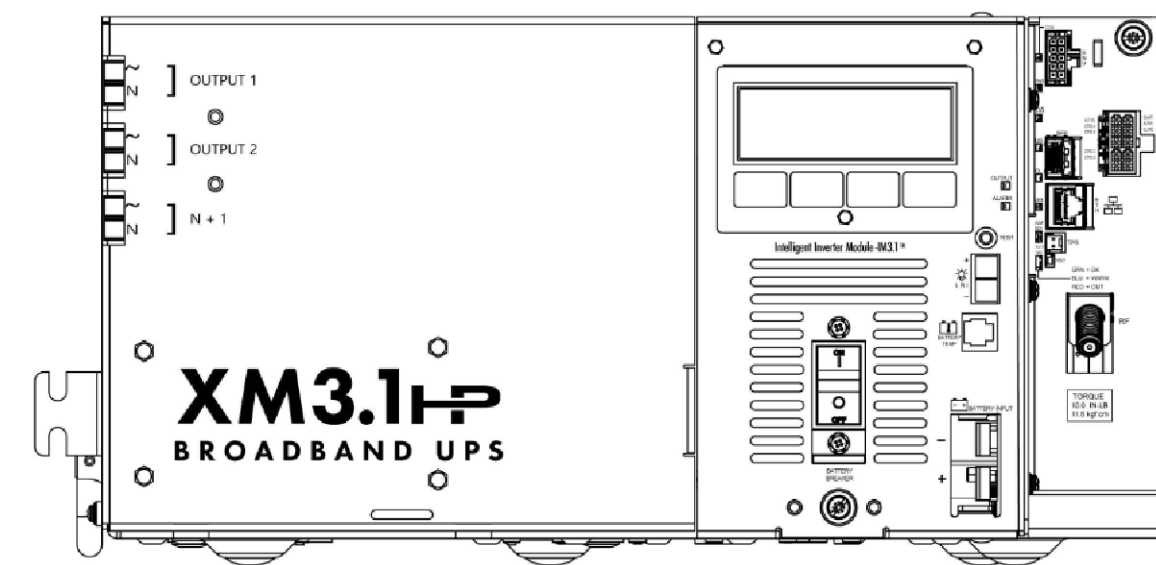
8 STUB-UP DETAIL
N.T.S.

NOTE:
1. USE MANUFACTURER SUPPLIED MOUNTING HARDWARE.

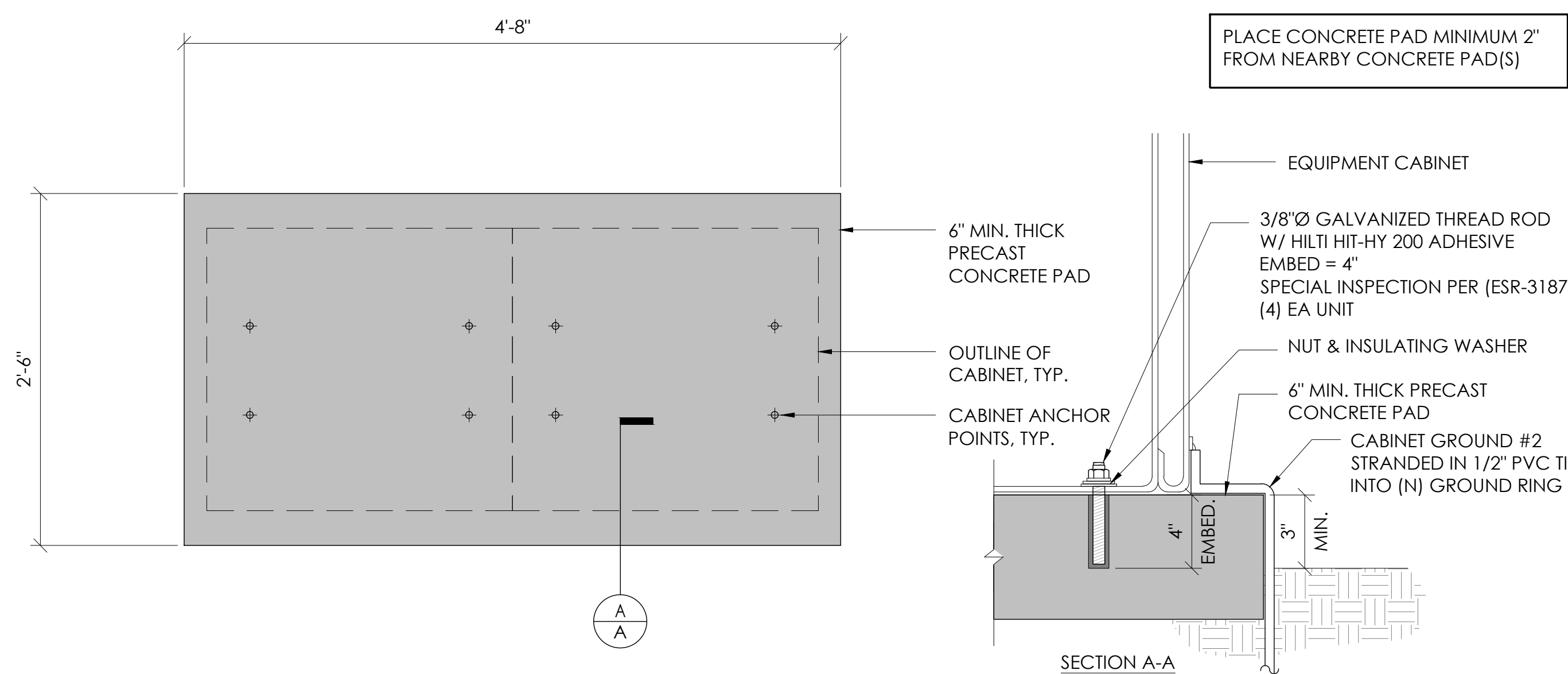
NOMINAL INPUT VOLTAGE: 120V AC
OUTPUT VOLTAGE: 63/89V AC

EQUIPMENT SPECIFICATIONS

MFG: ALPHA
MODEL: XM3.1-HP
HEIGHT: 7.76 IN
WIDTH: 16.43 IN
DEPTH: 10.57 IN
WEIGHT: 61 LBS

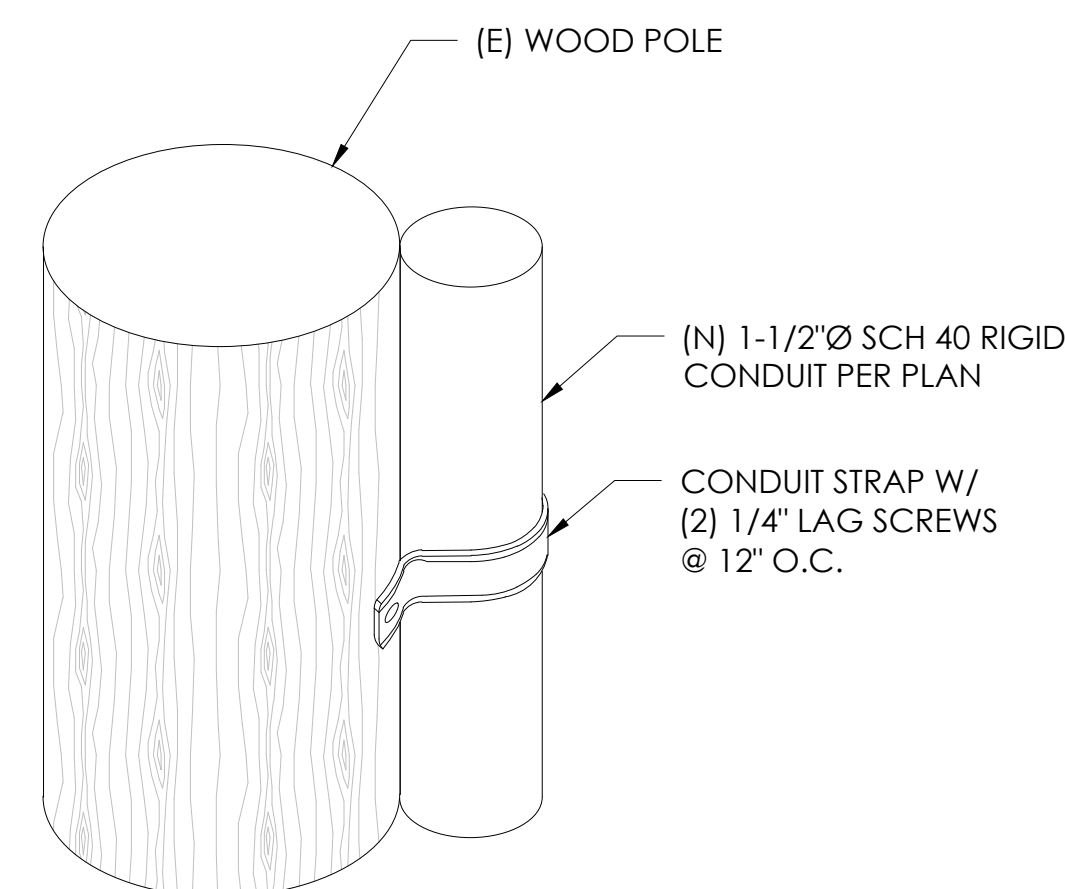


5 POWER SUPPLY DETAIL
N.T.S.



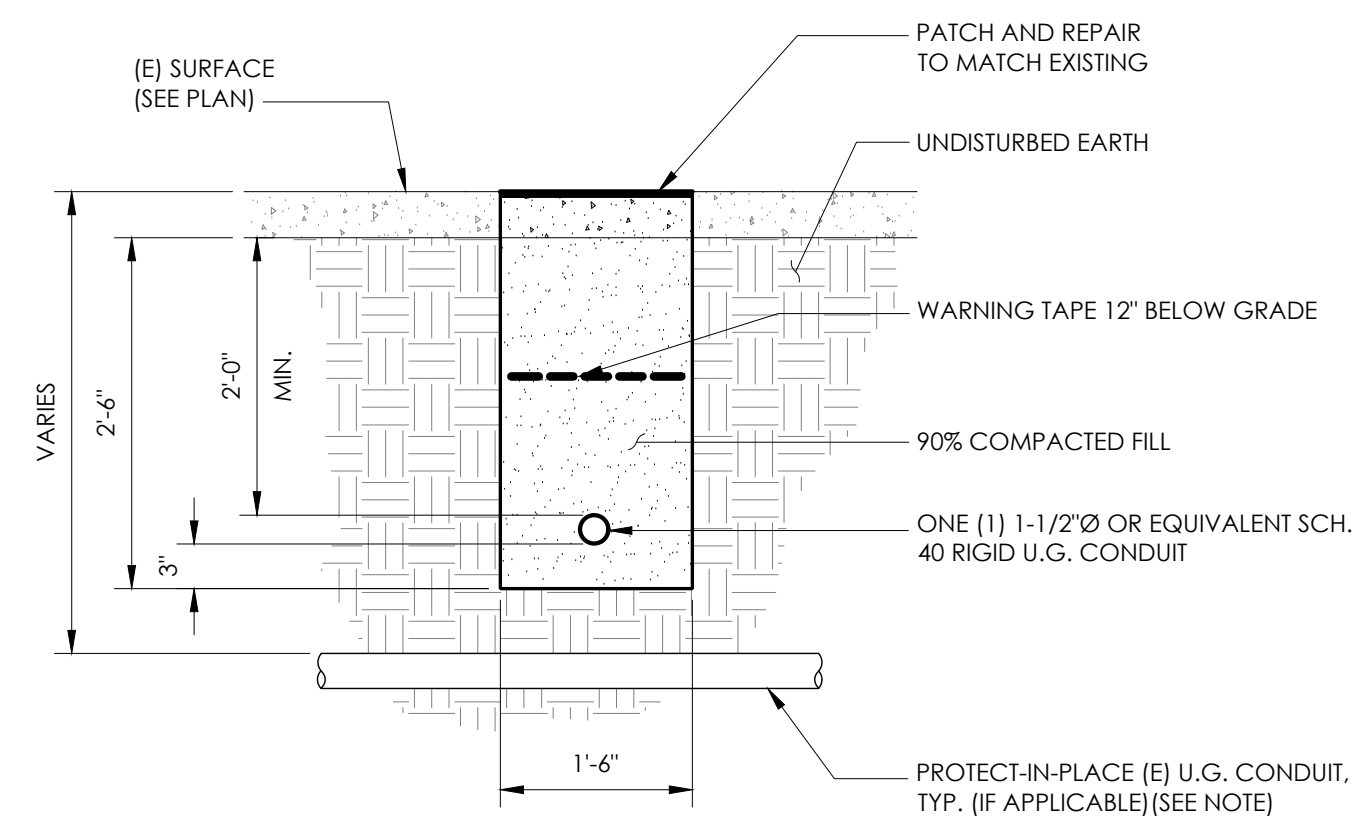
2 CONCRETE PAD & ANCHORAGE DETAIL
N.T.S.

NOTE:
1. CONTRACTOR TO VERIFY RISER MOUNTING REQUIREMENTS W/ POLE OWNER AND/OR POWER COMPANY



9 CONDUIT RISER ATTACHMENT DETAIL
N.T.S.

NOTE:
1. PRIOR TO STARTING CONSTRUCTION, THE CONTRACTOR HAS THE RESPONSIBILITY TO LOCATE ALL EXISTING UTILITIES, CONDUITS WHETHER OR NOT SHOWN ON THE PLANS, AND TO PROTECT THEM FROM DAMAGE.



6 TRENCHING DETAIL
N.T.S.

1/2" x 8' COPPER GROUND ROD, FOUR PLACES, DRIVEN ABOUT 2 FEET (TYPICAL) FROM THE CORNERS OF THE PAD.

#2 BARE COPPER WIRE LOOP TERMINATED TO EACH GROUND ROD AND BURIED BELOW GRADE 2 TO 12 INCHES. CORROSION-PROOF CONNECTIONS (25+ YEAR LIFE-SPAN) AND HARDWARE SUITABLE FOR DIRECT BURIAL MUST BE USED.

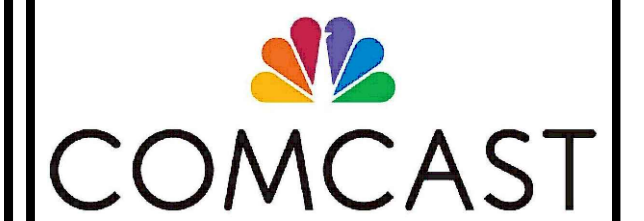
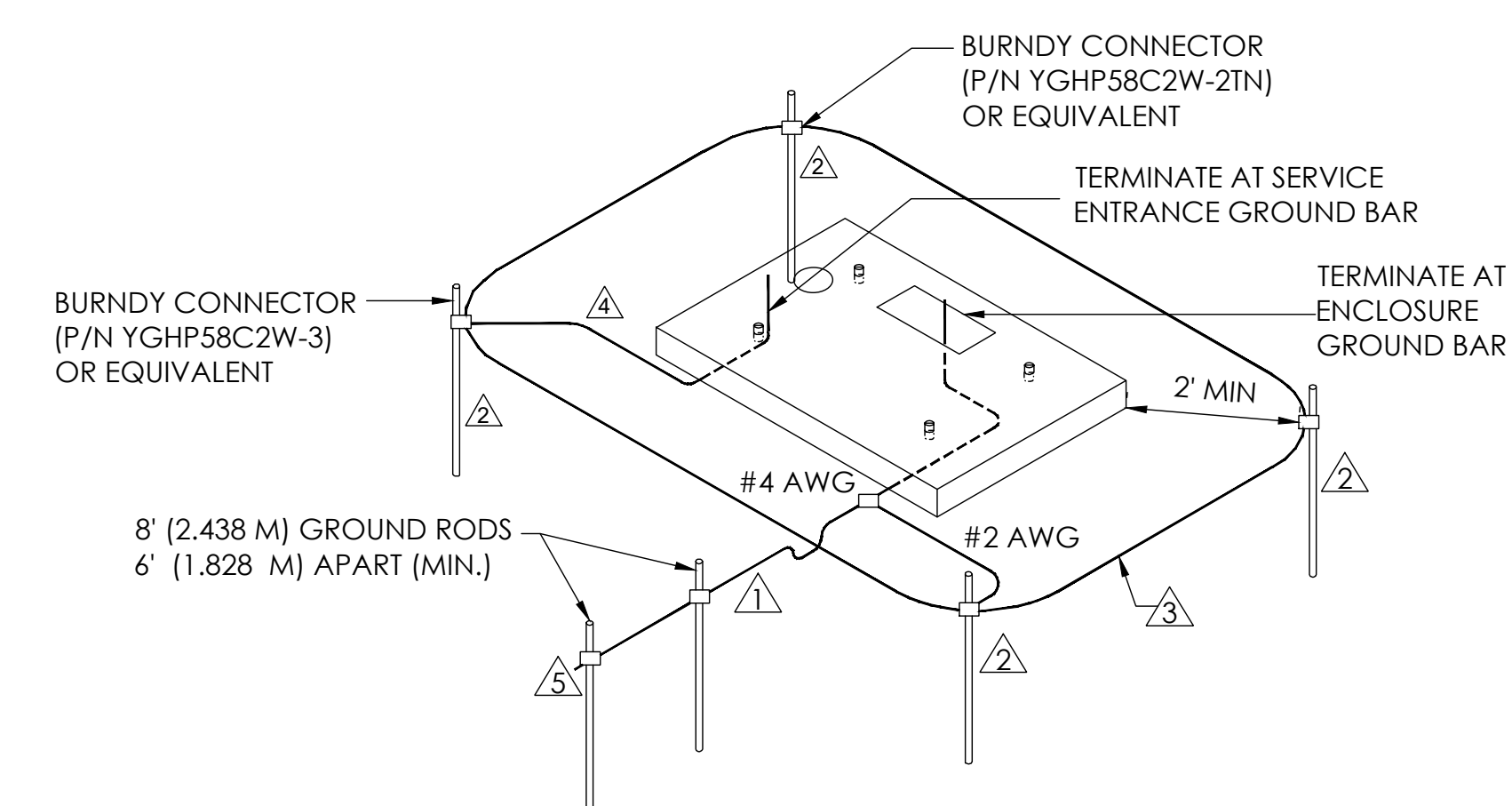
#2 BARE COPPER WIRE FROM LOOP TO ENCLOSURE.

WHEN THE ELECTRICAL SUPPLY IS A PRIMARY SERVICE (NOT A SECONDARY OR FEEDER SERVICE), A #2 BARE COPPER WIRE MUST BOND THE LIGHTNING PROTECTION LOOP TO THE GROUNDING ELECTRODE CONDUCTOR WHERE THEY ARE CLOSEST.

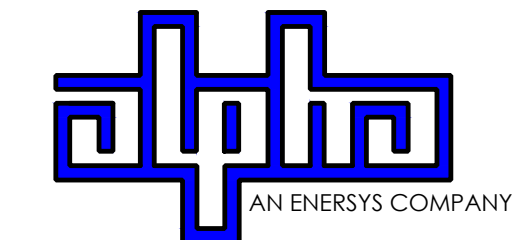
SERVICE GROUNDING (REQUIRED)

#6 BARE COPPER WIRE FROM SERVICE NEUTRAL / GROUND BAR WITH 2 GROUND RODS LOCATED 6' APART.

3 GROUNDING DETAIL
N.T.S.



3011 COMCAST PLACE
LIVERMORE, CA 94551



3767 ALPHA WAY
BELLINGHAM, WA 98226



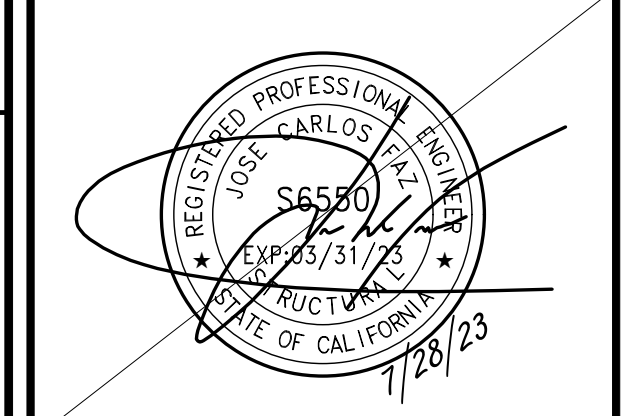
23 MAUCHLY, STE 110
IRVINE, CA 92618

J5 PROGRAM ID: ALP-CA-CPUC
J5 PROJECT ID: P-062212

ISSUE STATUS

REV	DATE	DESCRIPTION	BY
A	03/10/23	90% CD	HV
0	03/10/23	100% CD	HV
1	07/28/23	REVISED 100% CD	MJC

SEAL



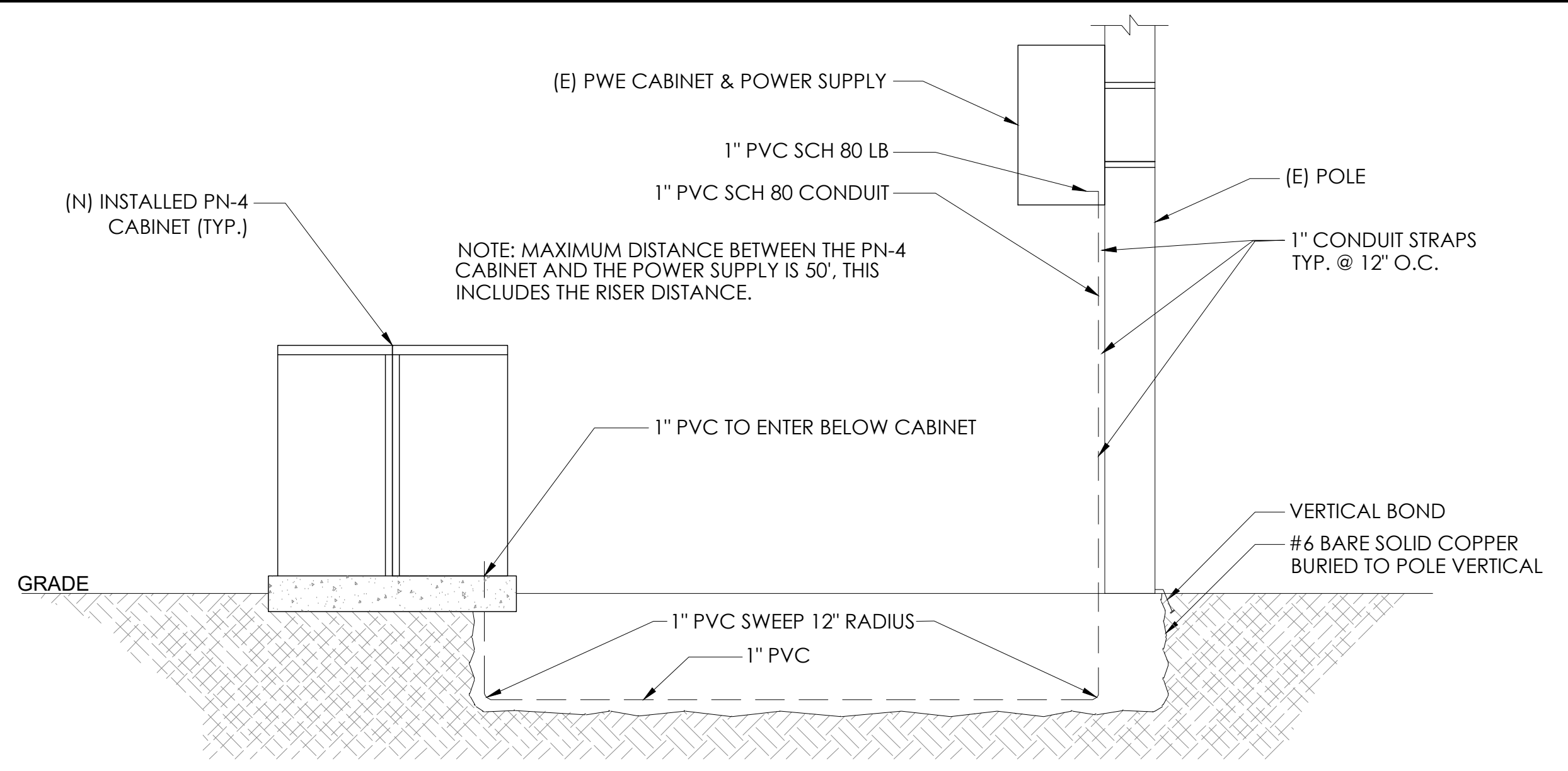
SITE INFORMATION

SITE ADDRESS:
185 TAMALPAIS RD,
FAIRFAX, 94930

SHEET TITLE:

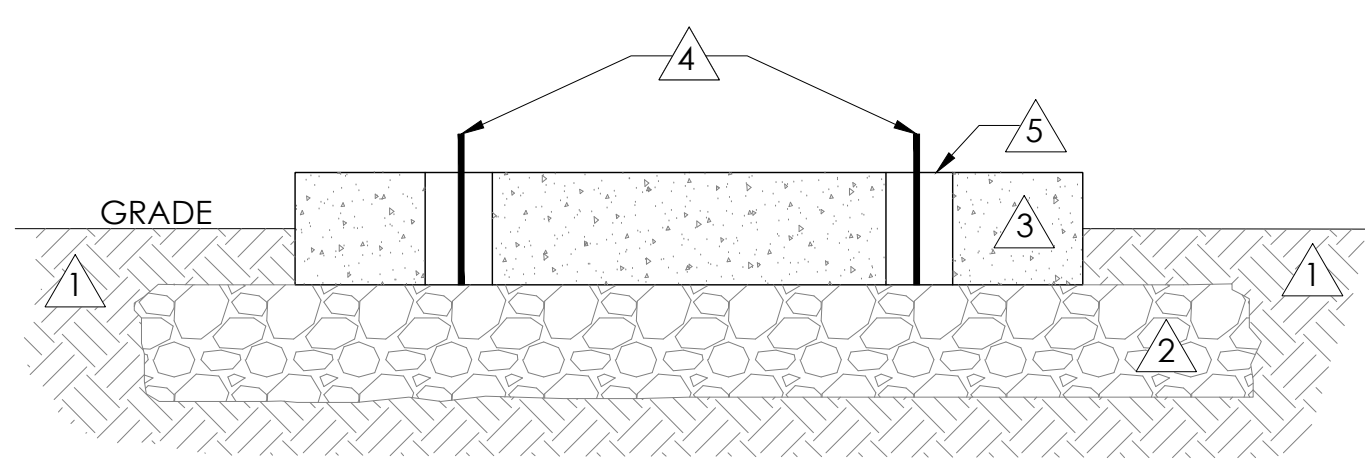
DETAILS

D1

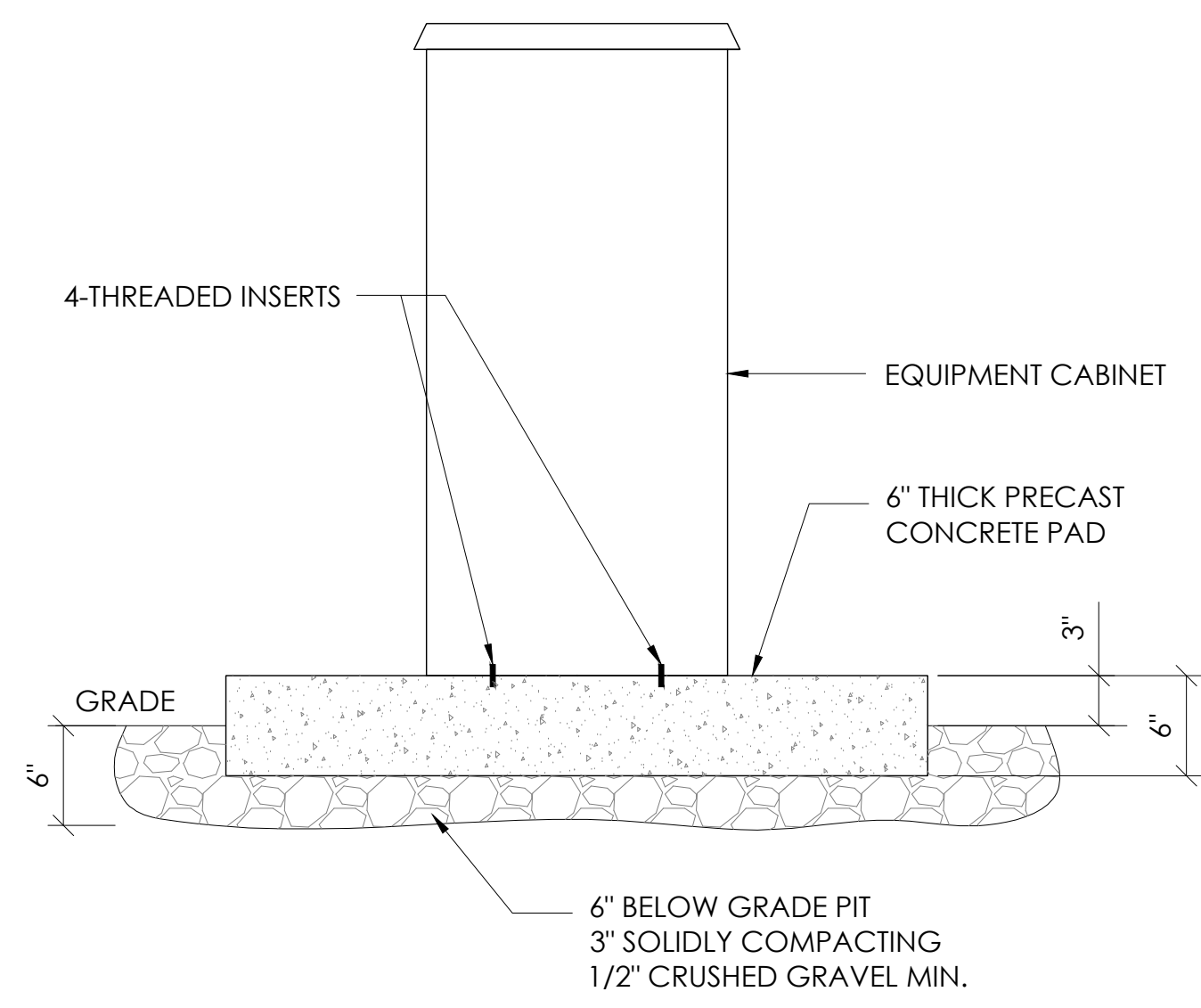


1 CONDUIT/RISER INSTALLATION
N.T.S.

- 1 UNDISTURBED GROUND
- 2 COMPACTED GRAVEL (6" BELOW GRADE)
- 3 CONCRETE PAD (6" THICK)
- 4 1/2" - 4 MOUNTING STUDS FOR THREADED INSERTS
- 5 OPEN AREA FOR UTILITY SWEEPS (OPTIONAL)



3 FOUNDATION BASE FOR PN4
N.T.S.



2 P4 CABINET INSTALLATION
N.T.S.

COMCAST
3011 COMCAST PLACE
LIVERMORE, CA 94551

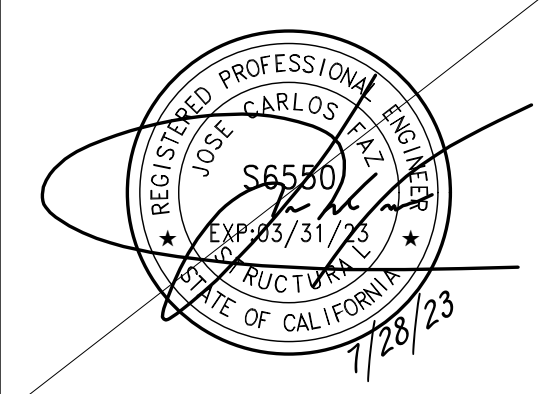
alpha
AN ENERSYS COMPANY
3767 ALPHA WAY
BELLINGHAM, WA 98226

J5 INFRASTRUCTURE PARTNERS
23 MAUCHLY, STE 110
IRVINE, CA 92618
J5 PROGRAM ID: ALP-CA-CPUC
J5 PROJECT ID: P-062212

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REV	DATE	DESCRIPTION	BY
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0	03/10/23	100% CD	HV
1	07/28/23	REVISED 100% CD	MJC

SEAL



SITE INFORMATION

SITE ADDRESS:
185 TAMALPAIS RD,
FAIRFAX, 94930

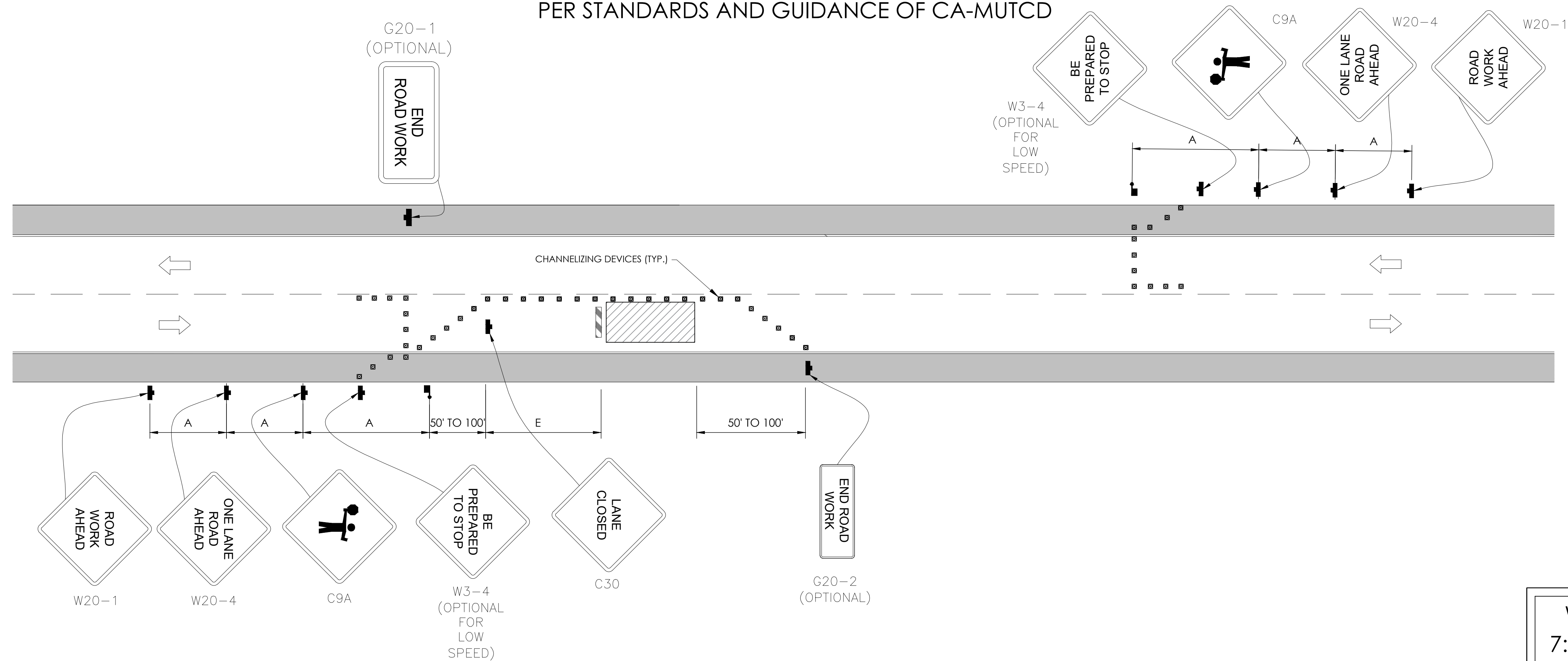
SHEET TITLE:
DETAILS

D2

TRAFFIC CONTROL FOR LANE CLOSURE ON TWO LANE ROAD USING FLAGGERS

WORK AREA TRAFFIC CONTROL HANDBOOK 2019 14TH EDITION

PER STANDARDS AND GUIDANCE OF CA-MUTCD



GENERAL NOTES:

- ALL WORK AND MATERIALS SHALL COMPLY WITH THE CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), 2019.
- ALL STRIPING AND MARKINGS SHALL CONFORM TO THE STATE OF CALIFORNIA 2010 STANDARD PLAN A20A.
- THE CONTRACTOR SHALL PROVIDE FOR ACCESS TO ALL ADJACENT PROPERTIES.
- FLASHING YELLOW BEACONS, TYPE "B", SHALL BE USED ON ALL W20-1 SIGNS AND ON ALL TYPE III BARRICADES GUARDING THE WORK OVERNIGHT.
- ALL SIGNS SHALL BE REFLECTORIZED AND STANDARD SIZE.
- ALL TUBULAR DELINEATORS AND CONES SHALL BE 28" MINIMUM HEIGHT, REFLECTORIZED AND MAINTAINED ERECT IN THE INDICATED POSITION AT ALL TIMES, AND SHALL BE REPAIRED, REPLACED, OR CLEANED AS NECESSARY TO PRESERVE THEIR APPEARANCE AND CONTINUITY, AND SHALL INCLUDE A 12" HIGH-INTENSITY REFLECTORIZED SLEEVE..
- THE CONTRACTOR SHALL MAINTAIN, ON A CONTINUOUS BASIS, ALL SIGNS, DELINEATORS, BARRICADES, ETC., TO ENSURE PROPER FLOW AND SAFETY OF TRAFFIC DURING CONSTRUCTION.
- THE CONTRACTOR SHALL HAVE SIGNS, DELINEATORS, BARRICADES, ETC., PROPERLY INSTALLED PRIOR TO COMMENCING CONSTRUCTION.
- CONSTRUCTION OPERATIONS SHALL BE CONDUCTED IN SUCH A MANNER AS TO CAUSE AS LITTLE INCONVENIENCE AS POSSIBLE TO ABUTTING PROPERTY OWNERS.
- ADDITIONAL TRAFFIC CONTROLS, TRAFFIC SIGNS OR BARRICADING MAY BE REQUIRED IN THE FIELD. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PLACEMENT OF ANY ADDITIONAL DEVICES NECESSARY TO ASSURE THE SAFETY TO THE PUBLIC AT ALL TIMES DURING CONSTRUCTION.
- EXACT LOCATION AND TYPE OF CONSTRUCTION SIGNS SHALL BE DIRECTED BY THE ENGINEER BASED UPON CONSTRUCTION CONDITIONS.
- MOVE DELINEATORS AND/OR CONES TO SIDEWALK DURING NON-WORKING HOURS. REMOVE BARRICADES ETC., FROM TRAVEL LANE.
- REMOVE OR TURN OFF SIGNS DURING NON-WORKING HOURS.
- ALL CONFLICTING LINES, EXISTING CURB PAINT, AND MARKINGS SHALL BE REMOVED BY WET SANDBLASTING OR OTHER APPROVED METHOD PRIOR TO INSTALLATION OF NEW/TEMPORARY STRIPING. ALL CONFLICTING RAISED PAVEMENT MARKERS SHALL BE REMOVED. PAVEMENT THAT IS DAMAGED DUE TO REMOVAL OF MARKERS SHALL BE REPAIRED TO THE SATISFACTION OF THE CITY ENGINEER AND/OR STATE INSPECTOR.
- DIMENSIONS BASED ON GIS MAPPING DATA AND/OR RECORD DRAWINGS AND NOT A SURVEY.
- TIME OF LANE CLOSURE TO BE IN ACCORDANCE WITH REQUIREMENTS OF JURISDICTION.
- ADDITIONAL ADVANCED FLAGGERS MAY BE REQUIRED. FLAGGER SHOULD STAND IN A CONSPICUOUS PLACE, BE VISIBLE TO APPROACHING TRAFFIC. PLACE A MINIMUM OF FOUR CONES AT 40-FT INTERVAL IN ADVANCE OF FLAGGER STATION AS SHOWN.

SPEED MPH (2)	DIMENSION A/B/C ADVANCE WARNING SIGN SPACING (5)	DIMENSION L MERGIN TAPER LENGTH	DIMENSION L/2 SHIFTING TAPER LENGTH	DIMENSION L/3 MINIMUM SHOULDER TAPER	DIMENSION "E" BUFFER SPACE (4-A) AND FLAGGER STATION STOPPING SIGHT DISTANCE (4-B) (0%) (-3%) (-6%)	MAXIMUM CHANNELIZER TAPER SPACING (3)	MAXIMUM CHANNELIZER TANGENT SPACING (3)	MAXIMUM CHANNELIZER CONFLICT SPACING (6)
MPH	FT	ft	ft	ft	ft	ft	ft	ft
25	100	125	65	45	(155) (160) (135)	25	50	12
30	250	180	90	60	(200) (205) (215)	30	60	15
35	250	245	125	85	(250) (260) (275)	35	70	17
40	250	320	160	110	(305) (315) (335)	40	80	20
45	350	540	270	180	(360) (380) (400)	45	90	22
50	350	600	300	200	(425) (450) (475)	50	100	25
55	500	660	330	220	(495) (520) (555)	50	100	25
60	500	720	360	240	(570) (600) (640)	50	100	25
65	500	780	390	260	(645) (685) (730)	50	100	25
1	WORK ON FREEWAYS AND EXPRESSWAYS SHALL MEET THE CALTRANS STANDARD PLANS AND STANDARD SPECIFICATION REQUIREMENTS							
2	POSTED SPEED OR OBSERVED OPERATION SPEED (WHICHEVER IS GREATER)							
3	CHANNELIZER SPACING SHALL BE REDUCED BY HALF AT AREAS WHERE WORK IS TAKING PLACE ON CURVES OR AREAS OF HEAD-ON CONFLICT							
4-A	BUFFER SPACE MAY BE INSERTED IN LOW-SPEED URBAN AREAS AND SHOULD BE INSERTED IN HIGH-SPEED URBAN AND RURAL AREAS							
4-B	THE STOPPING SIGHT DISTANCE SHOULD ENABLE ROAD USERS TO SEE THE PRIMARY FLAGGER STATION AND SAFELY STOP							
5	SIGN SPACING IN RURAL AREAS SHOULD BE 500 FT							
6	** TABLE 6F-101 (CA)							

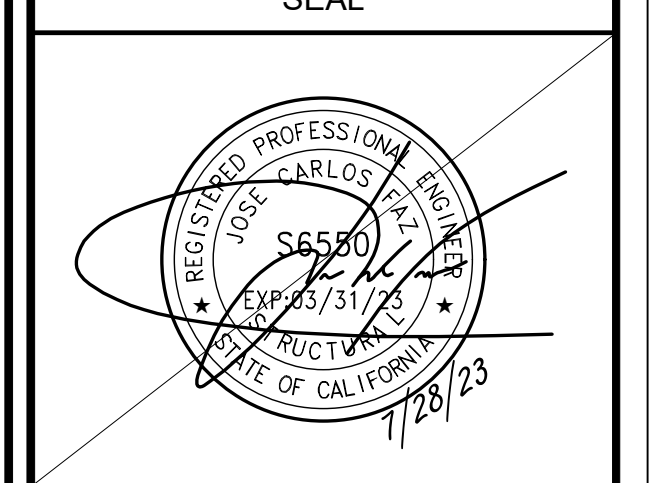
WORK HOURS
7:00AM - 3:30PM



J5 INFRASTRUCTURE PARTNERS
23 MAUCHLY, STE 110
IRVINE, CA 92618
J5 PROGRAM ID: ALP-CA-CPUC
J5 PROJECT ID: P-062212

REV	DATE	DESCRIPTION	BY
A	03/10/23	90% CD	HV
0	03/10/23	100% CD	HV
1	07/28/23	REVISED 100% CD	MJC

SEAL



SITE INFORMATION

SITE ADDRESS:
185 TAMALPAIS RD,
FAIRFAX, 94930

SHEET TITLE:
TRAFFIC CONTROL

TC1

GENERAL DESIGN NOTES:

STRUCTURAL DESIGN IS BASED ON THE CALIFORNIA BUILDING CODE, 2022 EDITION (2021 IBC) AND THE ASCE 7-16 STANDARD

THE CONTRACT STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, SHORING FOR LOADS DUE TO CONSTRUCTION EQUIPMENT, ETC. OBSERVATION VISITS TO THE SITE BY THE STRUCTURAL ENGINEER SHALL NOT INCLUDE INSPECTION OF THE ABOVE STRUCTURAL MEMBERS.

NOTES AND DETAILS ON THE DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL NOTES.

DESIGN LOADS:

WIND:

ULTIMATE WIND SPEED: 92 MPH (3-SEC GUST BASIC WIND SPEED)
RISK CATEGORY: II
EXPOSURE: B

GROUND SNOW LOAD = 0 PSF

SEISMIC:

SEISMIC DESIGN CATEGORY: D
RISK CATEGORY: II
SEISMIC IMPORTANCE FACTOR: 1.0
SS = 1.500 S1 = 0.600
Site Class: "C"
SDS = 1.200 SD1 = 0.680

REINFORCING STEEL NOTES:

- REINFORCING BARS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A-615 GRADE 60.
- ALL REINFORCING BAR BENDS SHALL BE MADE COLD.
- MINIMUM LAP OF WELDED WIRE FABRIC SHALL BE 6 INCHES OR ONE FULL MESH AND ONE HALF, WHICH EVER IS GREATER.
- ALL BARS SHALL BE MARKED SO THEIR IDENTIFICATION CAN BE MADE WHEN THE FINAL IN-PLACE INSPECTION IS MADE.
- REBAR SPLICES ARE TO BE: CLASS "B".
- REINFORCING SPLICES SHALL BE MADE ONLY WHERE INDICATED ON THE DRAWINGS.
- DOWELS BETWEEN FOOTINGS AND WALLS OR COLUMNS SHALL BE THE SAME GRADE, SIZE AND SPACING OR NUMBER AS THE VERTICAL REINFORCING, RESPECTIVELY.

CONCRETE:

- ALL PHASES OF WORK PERTAINING TO THE CONCRETE CONSTRUCTION SHALL CONFORM TO THE "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" (ACI 318 LATEST APPROVED EDITION) WITH MODIFICATIONS AS NOTED IN THE DRAWINGS AND SPECIFICATIONS.
- REINFORCED CONCRETE DESIGN IS BY THE "ULTIMATE STRENGTH DESIGN METHOD", ACI 318-(LATEST EDITION).
- ALL STRUCTURAL CONCRETE SHALL HAVE A MIN. 28-DAY STRENGTH OF 4000 PSI.
- CONCRETE MIX DESIGN SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL WITH THE FOLLOWING REQUIREMENTS:
 - COMPRESSIVE STRENGTH AT AGE 28 DAYS AS SPECIFIED ABOVE.
 - LARGE AGGREGATE-HARDROCK, 3/4" MAXIMUM SIZE CONFORMING TO ASTM C-33.
 - CEMENT-ASTM C-150, TYPE II PORTLAND CEMENT.
 - MAXIMUM SLUMP 5-INCHES MAX WATER CEMENT RATIO 0.5
 - NO ADMIXTURES, EXCEPT FOR ENTRAINED AIR, AND AS APPROVED BY THE ENGINEER.
- CONCRETE MIXING OPERATIONS, ETC. SHALL CONFORM TO ASTM C-94.
- PLACEMENT OF CONCRETE SHALL CONFORM TO ACI STANDARD 614 AND PROJECT SPECIFICATIONS
- CLEAR COVERAGE OF CONCRETE OVER OUTER REINFORCING BARS SHALL BE AS FOLLOWS: CONCRETE POURED DIRECTLY AGAINST EARTH - 3 INCHES CLEAR, STRUCTURAL SLABS - 3/4 INCHES CLEAR (TOP AND BOTTOM), FORMED CONCRETE WITH EARTH BACK FILL - 2 INCHES CLEAR
- ALL REINFORCING BARS, ANCHOR BOLTS AND OTHER CONCRETE INSERTS (AS APPLICABLE) SHALL BE WELL SECURED IN POSITION PRIOR TO PLACING CONCRETE.
- MODULUS OF ELASTICITY OF CONCRETE, WHEN TESTED IN ACCORDANCE WITH ASTM C-460, SHALL BE AT LEAST THE VALUE GIVEN BY THE EQUATIONS IN SECTION 8.5.1. OF ACI 318 FOR THE SPECIFIED 28-DAY STRENGTH.
- SHRINKAGE OF CONCRETE, WHEN TESTED IN ACCORDANCE WITH ASTM C-157, SHALL NOT EXCEED 0.00040 INCHES/INCH.

FOUNDATION NOTES:

- FOOTINGS ARE DESIGNED BASED ON AN ALLOWABLE SOIL BEARING PRESSURE OF 2000 PSF PER THE PROJECT SOILS REPORT:

GEOTECHNICAL ENGINEER: MID PACIFIC ENGINEERING, INC.
REPORT DATE: JULY 28, 2023
JOB NO: 06600-01

- CONTRACTOR SHALL PROVIDE FOR PROPER DE-WATERING OF EXCAVATIONS FROM SURFACE WATER, GROUND WATER, SEEPAGE, ETC.
- FOOTINGS SHALL BE PLACED ACCORDING TO DEPTHS SHOWN ON THE DRAWINGS.
- THE TOP OF FOUNDATION SHALL BE LEVEL AND NON-SLOPING, U.N.O.
- ALL DIMENSIONS SHALL BE VERIFIED BY THE FOUNDATION CONTRACTOR PRIOR TO CONSTRUCTION.
- SOILS TO BE PREPARED PER THE GEOTECHNICAL REPORT PRIOR TO CONSTRUCTION. CLEAR, OVEREXCAVATE, SCARIFY, INSPECT, & RECOMPACT PER GEOTECHNICAL REPORT.

SPECIAL INSPECTIONS / QUALITY ASSURANCE:

- SPECIAL INSPECTIONS SHALL BE REQUIRED FOR:
 - CONCRETE MIX DESIGN & STRENGTH
 - FORMWORK SHAPE, LOCATION, & DIMENSIONS
 - REINFORCEMENT TYPE & PLACEMENT
 - FOUNDATION EXCAVATION
- THE OWNERS SHALL EMPLOY SPECIAL INSPECTORS WHO SHALL PROVIDE ADDITIONAL INSPECTIONS DURING CONSTRUCTION IN ACCORDANCE WITH IBC SECTION 17.
- ALL SPECIAL INSPECTIONS SHALL BE PERFORMED BY AN INDEPENDENT CERTIFIED INSPECTOR FROM AN ESTABLISHED TESTING AGENCY, LICENSED AND APPROVED BY THE BUILDING DEPARTMENT
- THE TESTING AGENCY SHALL SEND COPIES OF ALL STRUCTURAL TESTING AND INSPECTION REPORTS DIRECTLY TO VECTOR STRUCTURAL ENGINEERING AND ALL INTERESTED PARTIES.
- ALL REPORTS SHALL BE DISTRIBUTED ON A MONTHLY BASIS TO THE ENGINEER OF RECORD, OWNER, CONTRACTOR, AND TO THE BUILDING OFFICIAL.
- NO STRUCTURAL OBSERVATION IS REQUIRED. HOWEVER, THE ENGINEER OF RECORD RESERVES THE RIGHT TO MAKE FIELD OBSERVATIONS DURING CONSTRUCTION APPROXIMATELY ONCE PER WEEK.



3011 COMCAST PLACE
LIVERMORE, CA 94551



3767 ALPHA WAY
BELLINGHAM, WA 98226



23 MAUCHLY, STE 110
IRVINE, CA 92618

J5 PROGRAM ID: ALP-CA-CPUC
J5 PROJECT ID: P-062212

ISSUE STATUS

REV	DATE	DESCRIPTION	BY
A	08/04/23	90% CD	JJB
0	08/07/23	100% CD	JJB



831 W. HILLMAN ROAD SUITE 101 PHONE (801) 938-1778
DURHAM, UTAH 84020 WWW.VECTORNE.COM

SEAL



08/07/2023
VSE Project Number: U2314-619-231

SITE INFORMATION

SITE ADDRESS:
185 TAMALPAIS ROAD
FAIRFAX, CA 94930

SHEET TITLE:

DETAILS

S1

ISSUE STATUS

REV	DATE	DESCRIPTION	BY
A	08/04/23	90% CD	JJB
0	08/07/23	100% CD	JJB

SEAL



08/07/2023
VSE Project Number: U2314-619-231

SITE INFORMATION

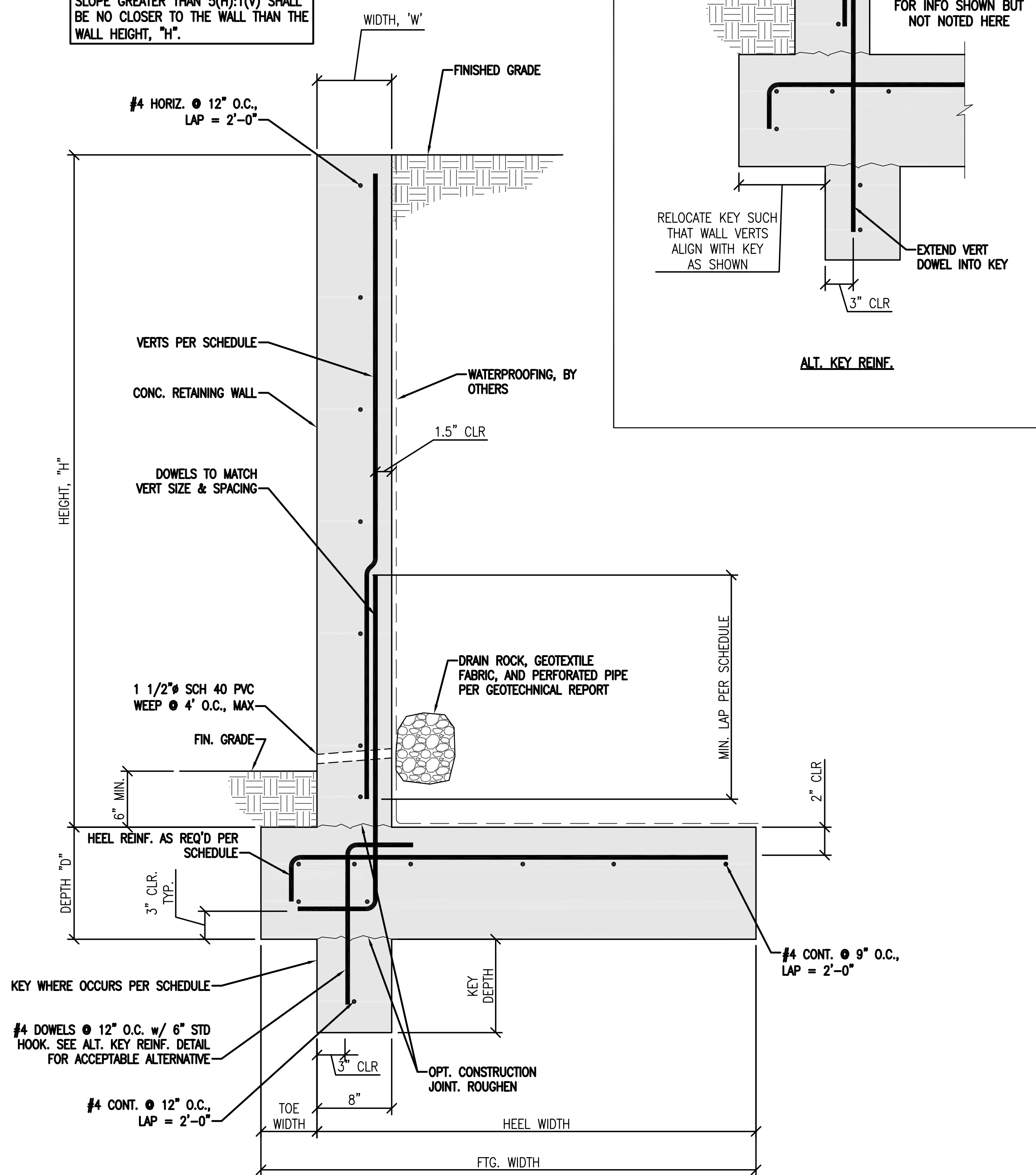
SITE ADDRESS:
185 TAMALPAIS RD
FAIRFAX, CA 94930

SHEET TITLE:
DETAILS

S2

FINISHED GRADE SHALL BE LEVEL WITH TOP OF WALL OR HAVE A MAX SLOPE OF 5(H):1(V). TOE OF ASCENDING SLOPE GREATER THAN 5(H):1(V) SHALL BE NO CLOSER TO THE WALL THAN THE WALL HEIGHT, "H".

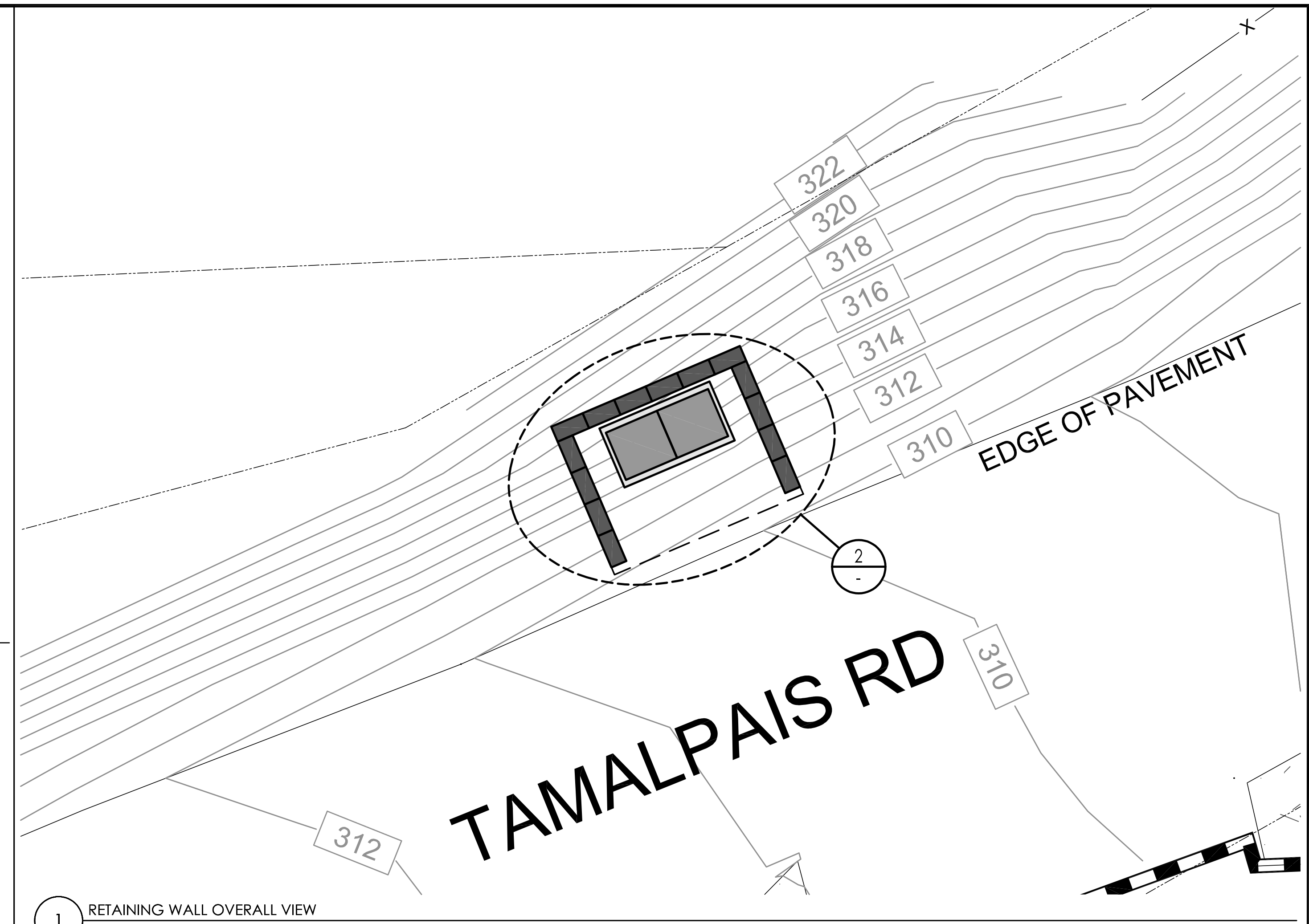
SEE STANDARD DETAIL FOR INFO SHOWN BUT NOT NOTED HERE



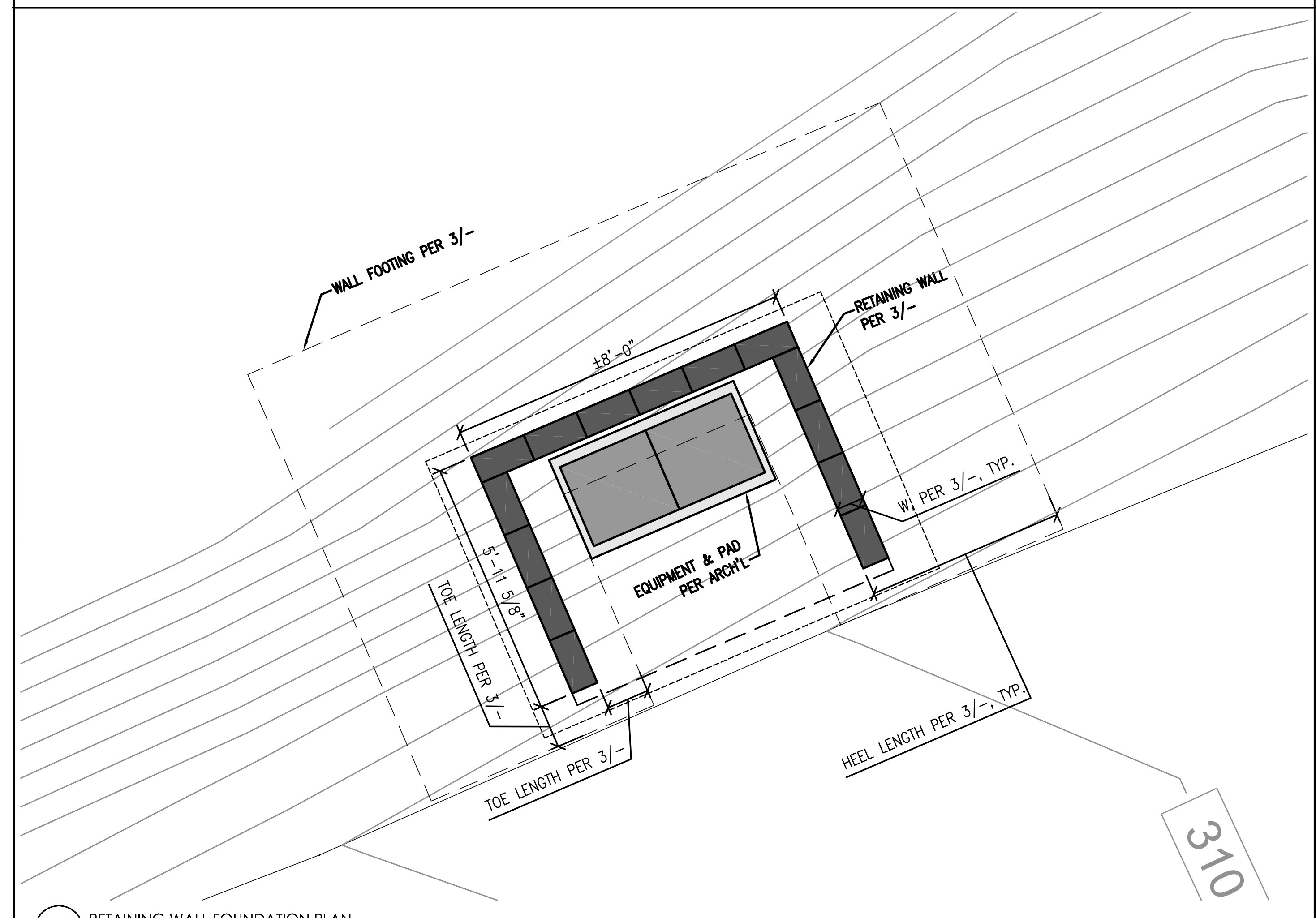
RETAINING WALL SCHEDULE

W	H	D	TOE WIDTH	HEEL WIDTH	FTG WIDTH	LAP	VERTICAL REINF.	HEEL REINF.	KEY	KEY DEPTH
8"	4'-0"	12"	1'-0"	3'-6"	4'-6"	2'-0"	#4 @ 12" O.C.	#5 @ 12" O.C.	NO	N/A
8"	5'-0"	12"	1'-0"	3'-6"	4'-6"	2'-0"	#4 @ 12" O.C.	#5 @ 12" O.C.	YES	6"
8"	6'-0"	12"	1'-0"	4'-0"	5'-0"	2'-0"	#4 @ 12" O.C.	#5 @ 12" O.C.	YES	12"
8"	7'-0"	12"	1'-0"	4'-0"	5'-0"	2'-0"	#4 @ 12" O.C.	#5 @ 12" O.C.	YES	18"
8"	8'-0"	14"	1'-0"	4'-0"	5'-0"	2'-6"	#5 @ 12" O.C.	#5 @ 12" O.C.	YES	24"

3 RETAINING WALL SECTION
N.T.S.



1 RETAINING WALL OVERALL VIEW
N.T.S.



2 RETAINING WALL FOUNDATION PLAN
N.T.S.

EXISTING SITE PHOTO



LOCATION MAP



LUA5 SCOPE OF WORK

- THIS PROJECT MODIFICATION OF EXISTING CONSISTS OF:
- INSTALLATION OF (2) (N) ALPHA PN-4 POWERNODE SYSTEM ENCLOSURES
 - INSTALLATION OF (35) (N) LITHIUM (LI) BATTERIES
 - INSTALLATION OF (1) (N) PRECAST CONCRETE PAD
 - REMOVAL & REPLACEMENT OF (E) POWER SUPPLY
 - ALL ASSOCIATED ELECTRIC WIRES AND CONDUITS TO CONNECT POWERNODE CABINET TO EXISTING ALPHA CABINET
 - POWER METER AND POWER SUPPLY CABINET ARE PRE-EXISTING AND WILL NOT CHANGE. THIS INSTALLATION WILL NOT REQUIRE A NEW POWER SERVICE OR METER

COMCAST

SITE ADDRESS:
1738 SIR FRANCIS DRAKE BLVD
FAIRFAX, CA 94930

COMCAST

3011 COMCAST PLACE
 LIVERMORE, CA 94551

alpha
 AN ENERSYS COMPANY

3767 ALPHA WAY
 BELLINGHAM, WA 98226

J5 INFRASTRUCTURE PARTNERS

23 MAUCHLY, STE 110
 IRVINE, CA 92618

J5 PROGRAM ID: ALP-CA-CPUC
 J5 PROJECT ID: P-061192

SITE INFORMATION

SITE ADDRESS:	1738 SIR FRANCIS DRAKE BLVD FAIRFAX, CA 94930
LATITUDE/LONGITUDE (NAD 83):	37.986808, -122.584302
JURISDICTION:	Fairfax City
POWER PROVIDER:	PG&E
AMP DRAW:	7.22

ISSUE STATUS

REV	DATE	DESCRIPTION	BY
A	04/24/23	90% CD	MG
0	05/19/23	100% CD	MJC
1	06/07/23	PCC #1	MJC

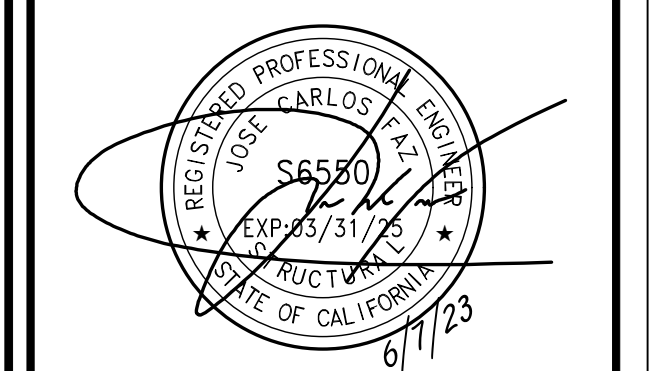
DRAWING INDEX

SHEET	DESCRIPTION
T1	TITLE SHEET AND SITE PLAN
T2	PROJECT INFORMATION & NOTES
LS-1	SITE SURVEY
A1	ENLARGED SITE PLANS & ELEVATIONS
D1	DETAILS
D2	DETAILS
D3.0	HAZMAT NOTE
D3	MANUFACTURER'S SPECIFICATIONS, RATINGS AND LISTINGS OF EACH ESS
D4	ENERGY (BATTERY) MANAGEMENT SYSTEMS AND OPERATION SIGNAGE
D5	INSTALLATION REQUIREMENTS
D6	COMMISSIONING
D7	COMMISSIONING
D8	DECOMMISSIONING
D9	SIGNAGE & NAMEPLATE LABEL
TC1	TRAFFIC CONTROL
S1	STRUCTURAL NOTES
S2	SPECIAL INSPECTION NOTES
S3	STRUCTURAL DETAILS

PROJECT TEAM

OWNER:	COMCAST CABLE 3055 TRIAD PLACE LIVERMORE, CA 94551	ENGINEER/ ARCHITECT:	J5 INFRASTRUCTURE PARTNERS MARK MASCUNANA ARCHITECT/ENGINEER CONTACT PH: (281) 387-8814 EMAIL: mark.mascunana@j5ip.com 23 MAUCHLY, SUITE 110 IRVINE, CALIFORNIA, 92618
APPLICANT:	ALPHA TECHNOLOGIES, INC. RICH SEIFF DIRECTOR OF SERVICES WEST REGION ENERGY SYSTEMS AMERICAS PH: (331) 276-0232 EMAIL: cpucpermits@enersys.com		

SEAL



SITE INFORMATION

SITE ADDRESS:
1738 SIR FRANCIS DRAKE BLVD,
FAIRFAX, CA 94930

SHEET TITLE:

TITLE SHEET

T1

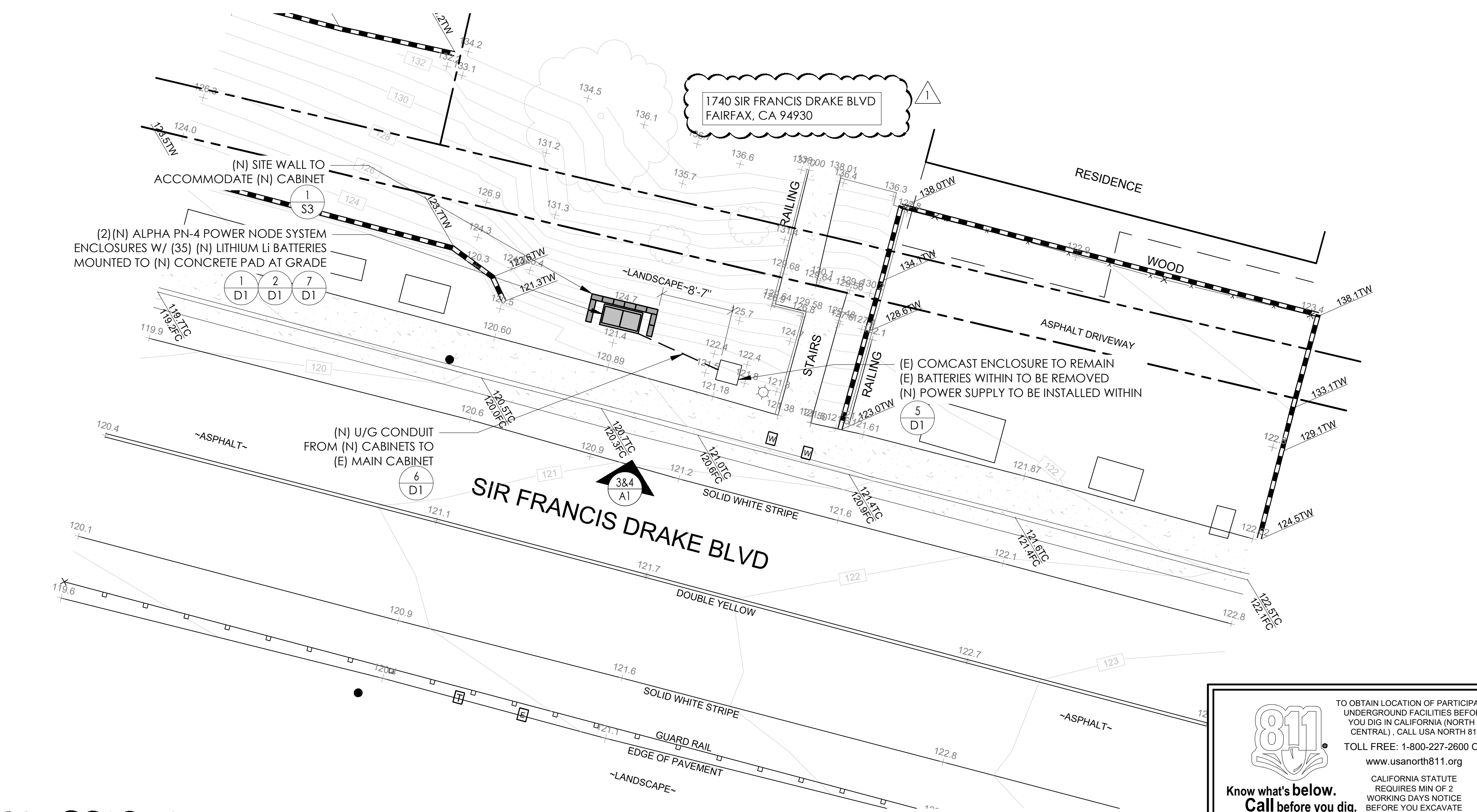
CODE COMPLIANCE

- ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.
1. CALIFORNIA BUILDING STANDARDS CODE: 2022 TRIENNIAL EDITION OF TITLE 24, WITH AN EFFECTIVE DATE OF JANUARY 1, 2023.
 - PART 1 - CALIFORNIA ADMINISTRATIVE CODE
 - PART 2 - CALIFORNIA BUILDING CODE, BASED ON THE 2021 INTERNATIONAL BUILDING CODE
 - PART 2.5 - CALIFORNIA RESIDENTIAL CODE, BASED ON THE 2021 INTERNATIONAL RESIDENTIAL CODE
 - PART 3 - CALIFORNIA ELECTRICAL CODE, BASED ON THE 2020 NATIONAL ELECTRICAL CODE
 - PART 4 - CALIFORNIA MECHANICAL CODE, BASED ON THE 2021 UNIFORM MECHANICAL CODE
 - PART 5 - CALIFORNIA PLUMBING CODE, BASED ON THE 2021 UNIFORM PLUMBING CODE
 - PART 6 - CALIFORNIA ENERGY CODE
 - PART 7 - VACANT
 - PART 8 - CALIFORNIA HISTORICAL BUILDING CODE
 - PART 9 - CALIFORNIA FIRE CODE, BASED ON THE 2021 INTERNATIONAL FIRE CODE
 - PART 10 - CALIFORNIA EXISTING BUILDING CODE, BASED ON THE 2021 INTERNATIONAL EXISTING BUILDING CODE
 - PART 11 - CALIFORNIA GREEN BUILDING STANDARDS CODE (CGBSC; ALSO KNOWN AS CALGREEN)
 - PART 12 - CALIFORNIA REFERENCED STANDARDS CODE
 2. ANSI/TIA-222 (REV H)
 3. 2021 NFPA 101, LIFE SAFETY CODE
 4. 2022 NFPA 72, NATIONAL FIRE ALARM AND SIGNALING CODE
 5. 2022 NFPA 13, STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS

GENERAL CONTRACTOR NOTES

DO NOT SCALE DRAWINGS IF NOT FULL SIZE (24 X 36)

CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT/ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BEAR THE RESPONSIBILITY FOR THE SAME.



SITE PLAN

24"x36" SCALE: 1/8" = 1'-0"
 11"x17" SCALE: 1/16" = 1'-0"

8' 6' 4' 2' 0'

NORTH

TO OBTAIN LOCATION OF PARTICIPANTS UNDERGROUND FACILITIES BEFORE YOU DIG IN CALIFORNIA (NORTH & CENTRAL), CALL USA NORTH 811

TOLL FREE: 1-800-227-2600 OR
 www.usanorth811.org

CALIFORNIA STATUTE REQUIRES MIN OF 2 WORKING DAYS NOTICE BEFORE YOU EXCAVATE

PURPOSE OF THIS WORK

THE CALIFORNIA PUBLIC UTILITIES COMMISSION (CPUC) HAS ISSUED DECISION 21-02-029, ESTABLISHING NEW MEASURES APPLICABLE TO FACILITIES-BASED WIRELINE TELECOMMUNICATIONS PROVIDERS TO HELP ENSURE ACCESS TO VITAL COMMUNICATIONS DURING NATURAL DISASTERS AND ELECTRIC GRID OUTAGES. "FACILITIES-BASED WIRELINE PROVIDERS" ARE THE COMPANIES RESPONSIBLE FOR INFRASTRUCTURE THAT PROVIDES OR OTHERWISE CARRIES 9-1-1, VOICE, TEXT MESSAGES, OR DATA SERVICES. THE DECISION PRIORITIZES RESILIENCY FOR WIRELINE FACILITIES LOCATED IN TIER 2 AND TIER 3 HIGH FIRE THREAT DISTRICTS. THE DECISION ADOPTS SEVERAL NEAR AND LONGER-TERM OBLIGATIONS AIMED AT PREVENTING THE KIND OF COMMUNICATIONS FAILURES THAT HAVE CHALLENGED FIRST RESPONDERS AND CRITICAL FACILITY OPERATORS DURING RECENT WILDFIRES AND PUBLIC SAFETY POWER SHUTOFF (PSPS) EVENTS.

THE EXTENDED RUNTIME LITHIUM (XRT-LI) POWER SYSTEM AS DESCRIBED HEREIN MEETS AND/OR EXCEEDS THE REQUIREMENTS LEVIED BY THE CPUC GOVERNING BODY.

TABLE OF CONTENT

REQUIREMENTS FOR PERMIT SUBMISSION BASED ON THE CALIFORNIA FIRE CODE

1207.1.3 CONSTRUCTION DOCUMENTS

THE FOLLOWING INFORMATION SHALL BE PROVIDED WITH THE PERMIT APPLICATION:

1. LOCATION AND LAYOUT DIAGRAM OF THE ROOM OR AREA IN WHICH THE ESS IS TO BE INSTALLED.	SHEETS T1, A1, D1
2. DETAILS ON THE HOURLY FIRE-RESISTANCE RATINGS OF ASSEMBLIES ENCLOSING THE ESS. 9540A NOTED IN SYSTEM SAFETY AND CERTIFICATIONS. TEST CERTIFICATION IS FOUND ON THE ATTACHMENT COFC_8016142_EN.PDF. TEST PROCEDURES AND DOCUMENTS ARE FOUND IN THE ATTACHMENT 80132092-UL 9540A CHECKLIST.	SHEETS T1, A1, D1
3. THE QUANTITIES AND TYPES OF ESS TO BE INSTALLED.	SHEETS T1, A1, D1, D3
4. MANUFACTURER'S SPECIFICATIONS, RATINGS, AND LISTINGS OF EACH ESS.	SHEETS D1, D3 (RATINGS INCLUDED FOR CABINET, XM3.1, BPM, BCM ONLY).

ESS ELECTRICAL RATINGS ARE AS FOLLOWS:

GROUND MOUNTED ENCLOSURES, SERIES MODELS PN-4LIX, PN-4LIBX ; TYPE 3R.
PN-4LIX + PN-4LIBX (LARGEST SYSTEM 50 BATTERIES)

INPUTS:
VOLTAGE 120 VAC
FREQUENCY 60 HZ
CURRENT 20, 15 A

OUTPUTS:
AC OUTPUT VOLTAGE 89/63 VAC CATV
AC OUTPUT FREQUENCY 60 HZ
AC OUTPUT CURRENT 18 A MAX

BATTERY:
DC (TO XM3.1 - INVERTER MODE) 36 VDC NOMINAL, 55 A MAX
DC (FROM XM3.1 TO INTERNAL BATTERY PACK - CHARGE) 38 A MAX
INTERNAL BATTERY CELL 3.62 VDC 51 AH LITHIUM-ION
INTERNAL BATTERY PACK 36 VDC NOMINAL, 51 AH LITHIUM-ION
SYSTEM UP TO 50 BATTERY PACKS (UP TO 22 SERVICE CABINET, UP TO 28 BATTERY CABINET) 36 VDC NOMINAL, 2514 AH, 90.5 KWH LITHIUM-ION

MAX AMBIENT: 45(°C)

5. DESCRIPTION OF ENERGY (BATTERY) MANAGEMENT SYSTEMS AND THEIR OPERATION.	BCM DETAIL SHEET D3, D4
6. LOCATION AND CONTENT OF REQUIRED SIGNAGE IS ATTACHED.	SHEET D9
7. DETAILS ON FIRE SUPPRESSION, SMOKE OR FIRE DETECTION, THERMAL MANAGEMENT, VENTILATION, EXHAUST, AND DEFLAGRATION VENTING SYSTEMS, IF PROVIDED.	N/A
8. SUPPORT ARRANGEMENT ASSOCIATED WITH THE INSTALLATION, INCLUDING ANY REQUIRED SEISMIC RESTRAINT.	SHEET D5
9. A COMMISSIONING PLAN COMPLYING WITH SECTION 1207.2.1.	SHEETS D5-D7
10. A DECOMMISSIONING PLAN COMPLYING WITH SECTION 1207.2.3.	SHEET D8

CALIFORNIA FIRE CODE

1207.4.5 VEHICLE IMPACT PROTECTION

WHERE ESS ARE SUBJECT TO IMPACT BY A MOTOR VEHICLE, INCLUDING FORKLIFTS, VEHICLE IMPACT PROTECTION SHALL BE PROVIDED IN ACCORDANCE WITH SECTION 312.

ICC, SECTION 312 | VEHICLE IMPACT PROTECTION

312.1 GENERAL

VEHICLE IMPACT PROTECTION REQUIRED BY THIS CODE SHALL BE PROVIDED BU POSTS THAT COMPLY WITH SECTION 312.2 OR BY OTHER APPROVED PHYSICAL BARRIERS THAT COMPLY WITH SECTION 312.3.

312.2 POSTS

GUARD POSTS SHALL COMPLY WITH ALL OF THE FOLLOWING REQUIREMENTS:

1. CONSTRUCTED OF STEEL NOT LESS THAN 4 INCHES (102 mm) IN DIAMETER AND CONCRETE FILLED.
2. SPACED NOT MORE THAN 4 FEET (1219 mm) BETWEEN POSTS ON CENTER.
3. SET NOT LESS THAN 3 FEET (914 mm) DEEP IN A CONCRETE FOOTING OF NOT LESS THAN A 15-INCH (381 mm) DIAMETER.
4. SET WITH THE TOP OF THE POSTS NOT LESS THAN 3 FEET (914 mm) ABOVE GROUND.
5. LOCATED NOT LESS THAN 3 FEET (914 mm) FROM THE PROTECTED OBJECT.

312.3 OTHER BARRIERS

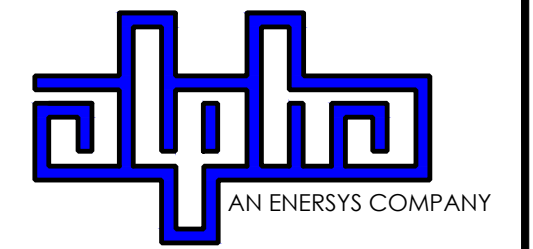
BARRIERS, OTHER THAN POSTS SPECIFIED IN SECTION 312.2, THAT ARE DESIGNED TO RESIST, DEFLECT OR VISUALLY DETER VEHICULAR IMPACT COMMENSURATE WITH AN ANTICIPATED IMPACT SCENARIO SHALL BE PERMITTED WHERE APPROVED.

1207.5.7 VEGETATION PROXIMITY TO ESS

ESS PROXIMITY TO VEGETATION WILL BE COMPLIANT WITH CFC 1207.5.7 EACH SITE WILL BE EVALUATED AT THE TIME OF INSTALLATION AND CORRECTIVE MEASURES WILL TAKE PLACE WITH REGARDS TO TRIMMING VEGETATION.



3011 COMCAST PLACE
LIVERMORE, CA 94551



3767 ALPHA WAY
BELLINGHAM, WA 98226



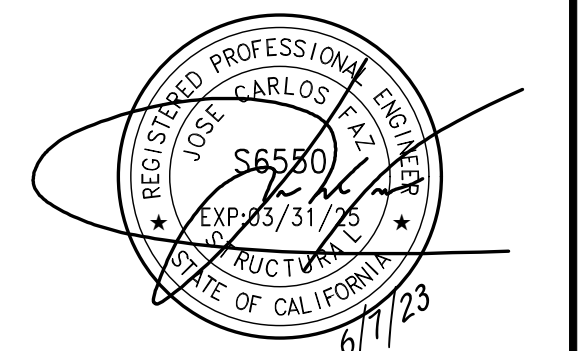
23 MAUCHLY, STE 110
IRVINE, CA 92618

J5 PROGRAM ID: ALP-CA-CPUC
J5 PROJECT ID: P-061192

ISSUE STATUS

REV	DATE	DESCRIPTION	BY
A	04/24/23	90% CD	MG
0	05/19/23	100% CD	MJC
1	06/07/23	PCC #1	MJC

SEAL

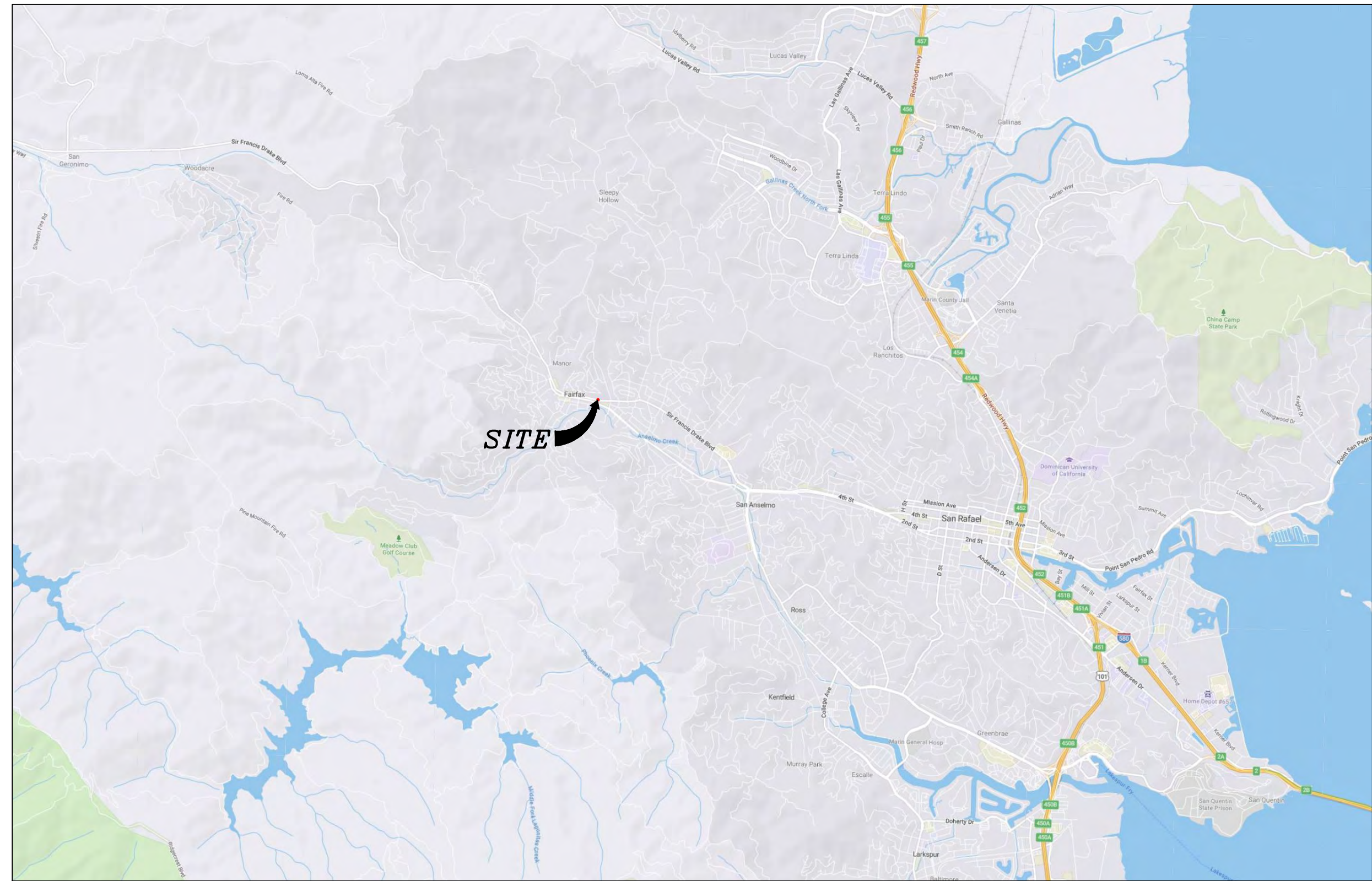


SITE INFORMATION

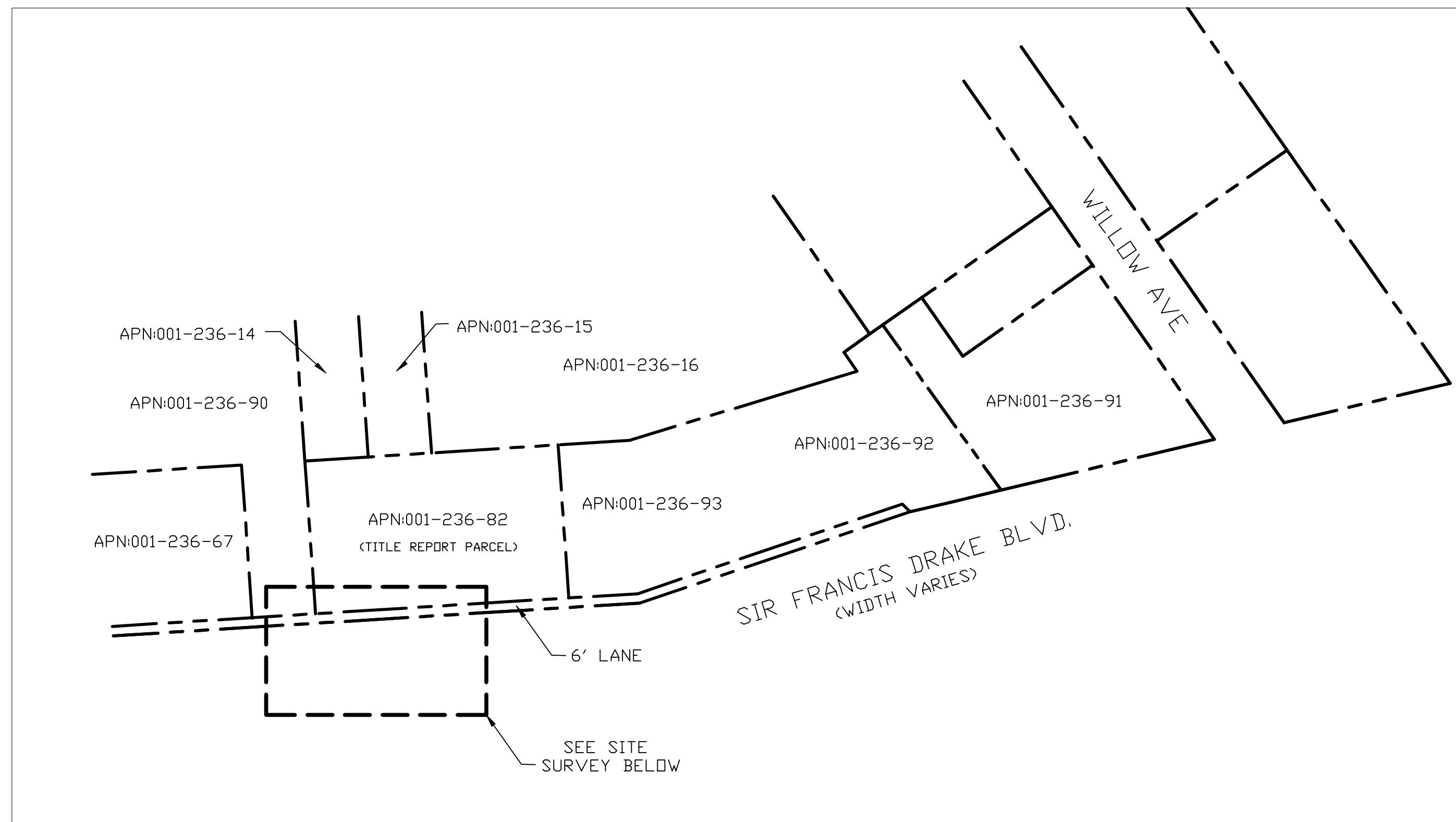
SITE ADDRESS:
1738 SIR FRANCIS DRAKE BLVD,
FAIRFAX, CA 94930

SHEET TITLE:
PROJECT INFORMATION & NOTES

T2



VICINITY MAP
N.T.S.



OVERALL SITE
N.T.S.

SURVEY DATE
01/24/2023

BASIS OF BEARING
BEARINGS SHOWN HEREON ARE BASED UPON U.S. STATE PLANE NAD83 COORDINATE SYSTEM CALIFORNIA STATE PLANE COORDINATE ZONE THREE, DETERMINED BY GPS OBSERVATIONS.

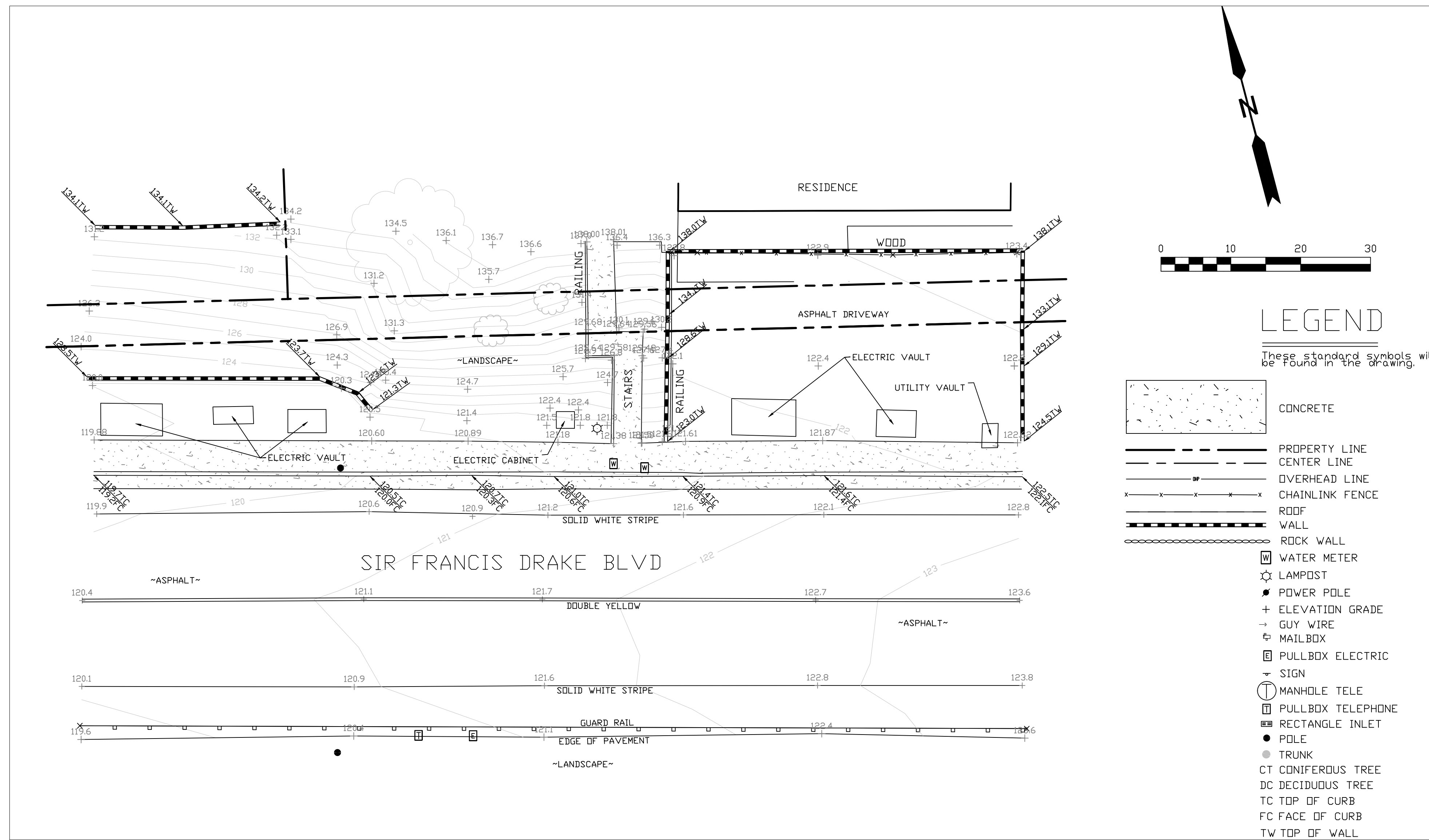
BENCHMARK
PROJECT ELEVATIONS ESTABLISHED FROM GPS DERIVED ORTHOMETRIC HEIGHTS BY APPLICATION OF NGS "GEOID 18" MODELED SEPARATIONS TO ELLIPSOID HEIGHTS DETERMINED BY OBSERVATIONS OF THE "CRN" REAL TIME NETWORK. ALL ELEVATIONS SHOWN HEREON ARE REFERENCED TO NAVD88.

FLOOD ZONE
THIS PROJECT APPEARS TO BE LOCATED WITHIN FLOOD ZONE "X". ACCORDING TO FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP(S), MAP ID #06041C0452E, DATED 03/17/2014.

UTILITY NOTES
SURVEYOR DOES NOT GUARANTEE THAT ALL UTILITIES ARE SHOWN OR THEIR LOCATIONS ARE DEFINITE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR AND DEVELOPER TO CONTACT 811 AND ANY OTHER INVOLVED AGENCIES TO LOCATE ALL UTILITIES PRIOR TO CONSTRUCTION. REMOVAL, RELOCATION AND/ OR REPLACEMENT IS THE RESPONSIBILITY OF THE CONTRACTOR.

SURVEYOR'S NOTE
THE LOCATION AND DIMENSIONS SHOWN WERE TAKEN FROM THE MAP(S) RECORDED IN BOOK 2 PAGE 80 OF MAPS AND BOOK 2018 PAGE 203 OF RECORDS OF SURVEY, MARIN COUNTY RECORDER AND DOES NOT CONSTITUTE A BOUNDARY SURVEY OF THE PROPERTIES.

TITLE REPORT DESCRIPTION
TITLE REPORT PARCEL
APN: 001-236-82
PREPARED USING AMERICAN TITLE'S TITLE REPORT #5026900-6942888 DATED 01/12/2023;



SITE SURVEY

North arrow pointing up.

Graphic scale: 0, 10, 20, 30 feet.

LEGEND
These standard symbols will be found in the drawing.

- [Pattern] CONCRETE
- PROPERTY LINE
- - - CENTER LINE
- - - OVERHEAD LINE
- x-x-x-x-x CHAINLINK FENCE
- ROOF
- WALL
- ROCK WALL
- [Symbol] WATER METER
- [Symbol] LAMPOST
- [Symbol] POWER POLE
- + ELEVATION GRADE
- - - GUY WIRE
- [Symbol] MAILBOX
- [Symbol] PULLBOX ELECTRIC
- [Symbol] SIGN
- [Symbol] MANHOLE TELE
- [Symbol] PULLBOX TELEPHONE
- [Symbol] RECTANGLE INLET
- [Symbol] POLE
- [Symbol] TRUNK
- CT CONIFEROUS TREE
- DC DECIDUOUS TREE
- TC TDP OF CURB
- FC FACE OF CURB
- TW TOP OF WALL

COMCAST
3011 COMCAST PLACE
LIVERMORE, CA 94551

ALPHA
3767 ALPHA WAY
BELLINGHAM, WA 98226

Eaton Land Surveying, Inc.
15604 Magnolia Rd.
Grass Valley, CA. 95949
Ph. 530.830.0038

DRAWN BY: HE
CHECKED BY: SE

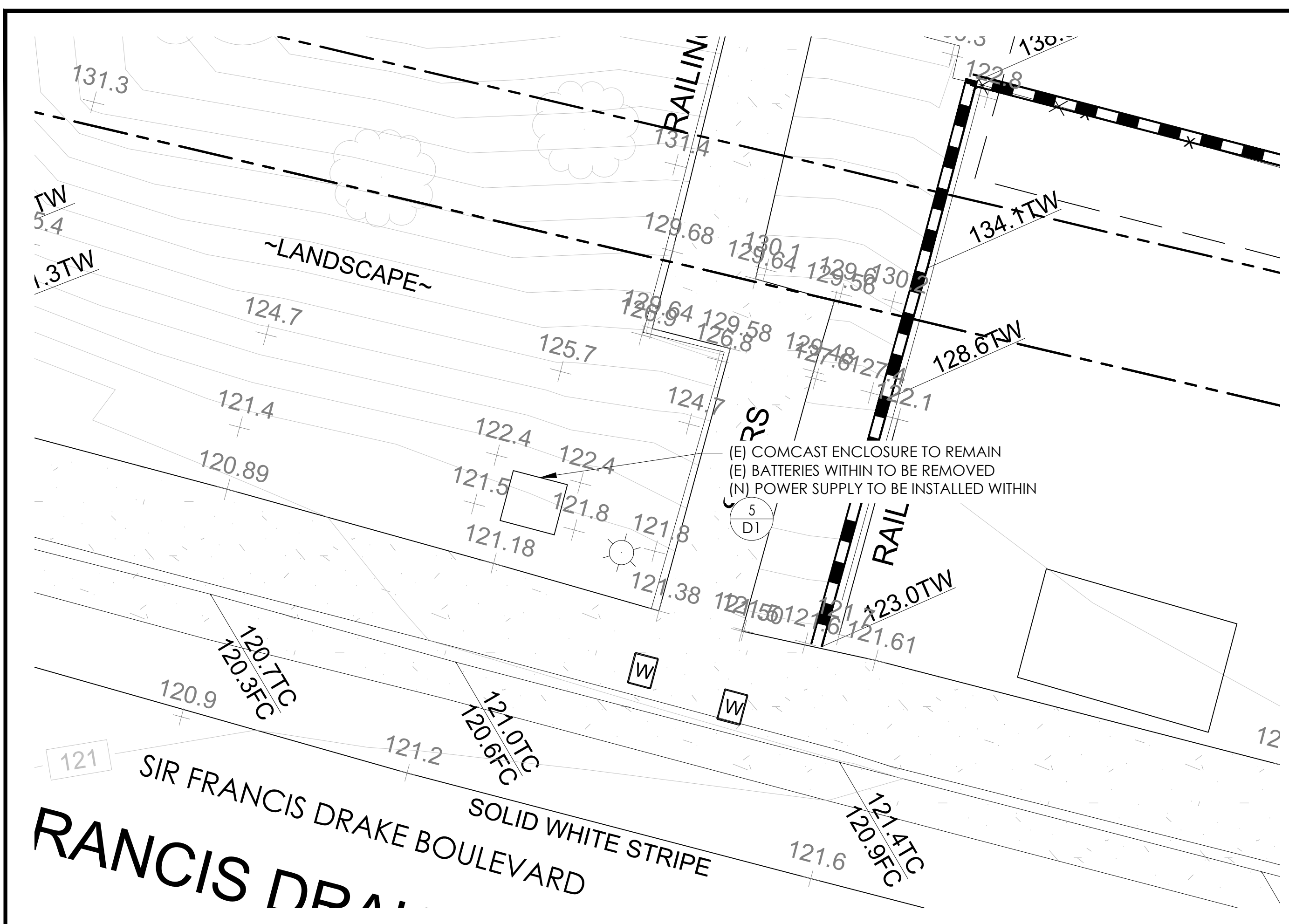
REVISIONS:		
REV	DATE	DESCRIPTION
0	01/27/22	SUBMITTAL

LICENSED LAND SURVEYOR
SHAWN M. EATON
#8644
STATE OF CALIFORNIA
EXP. 12/31/23

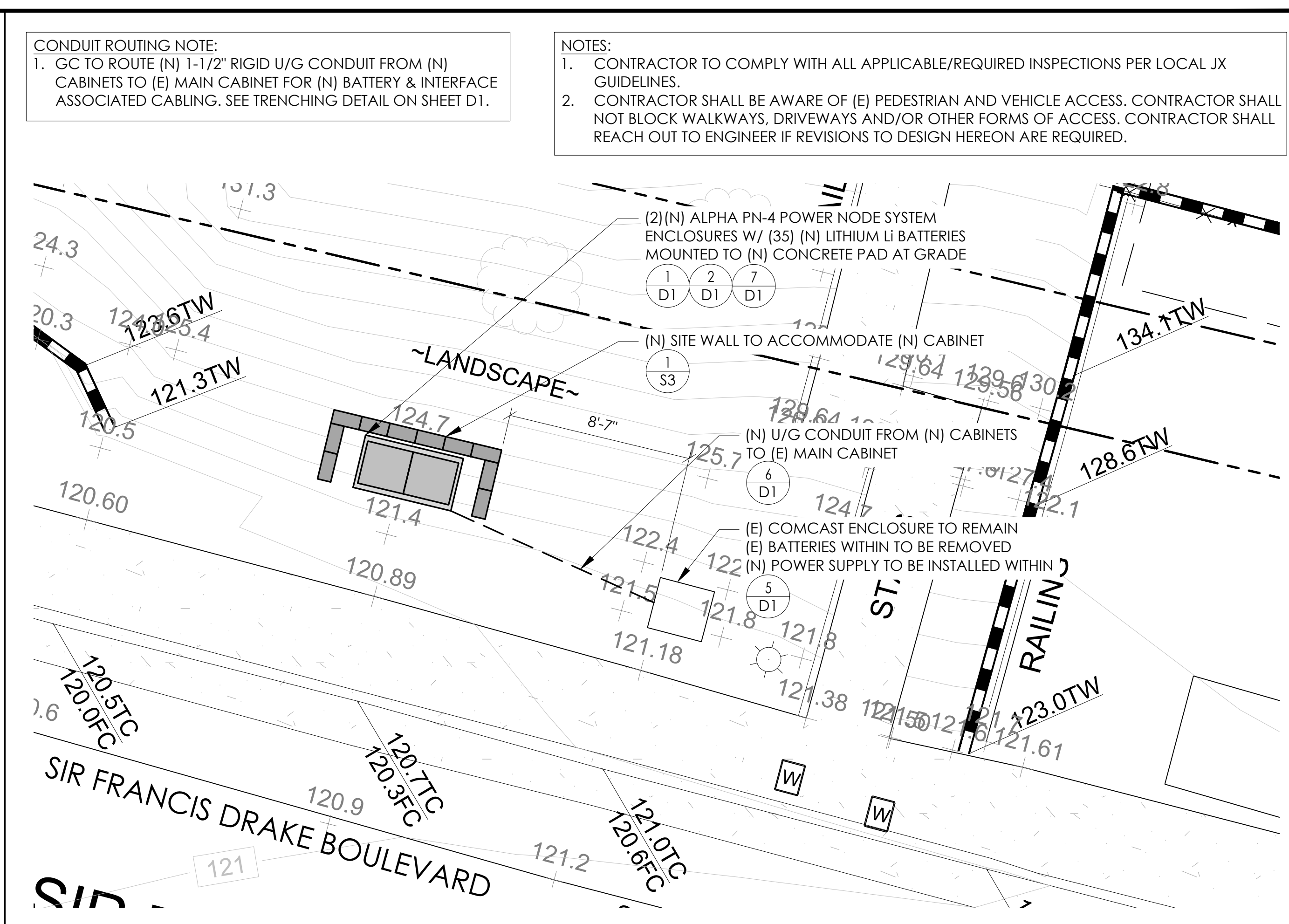
PROJECT INFORMATION:
P-061192
1738 SIR FRANCIS DRAKE BLVD.
FAIRFAX, CA. 94930
MARIN COUNTY

SHEET TITLE:
SITE SURVEY

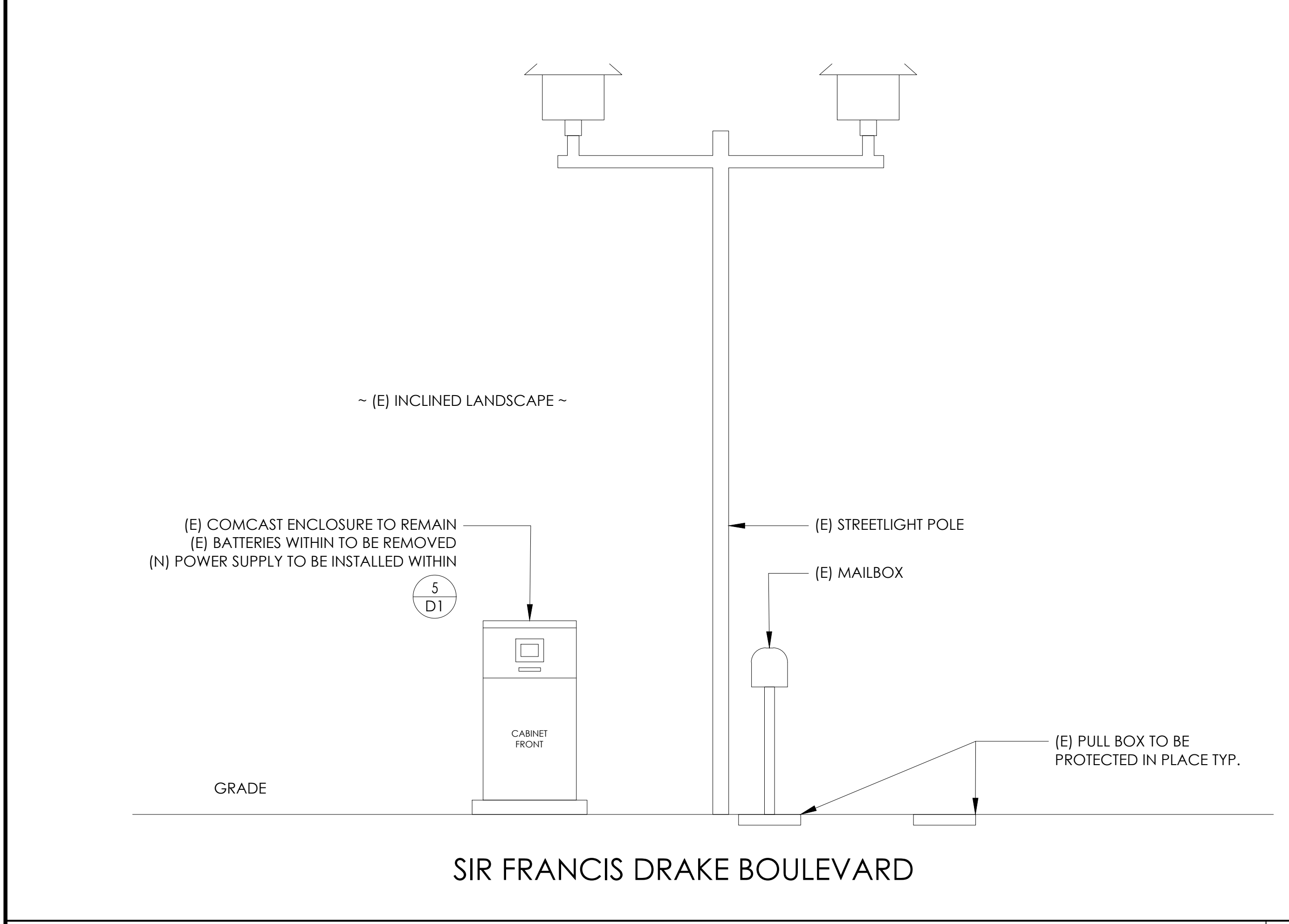
SHEET NUMBER:
LS-1



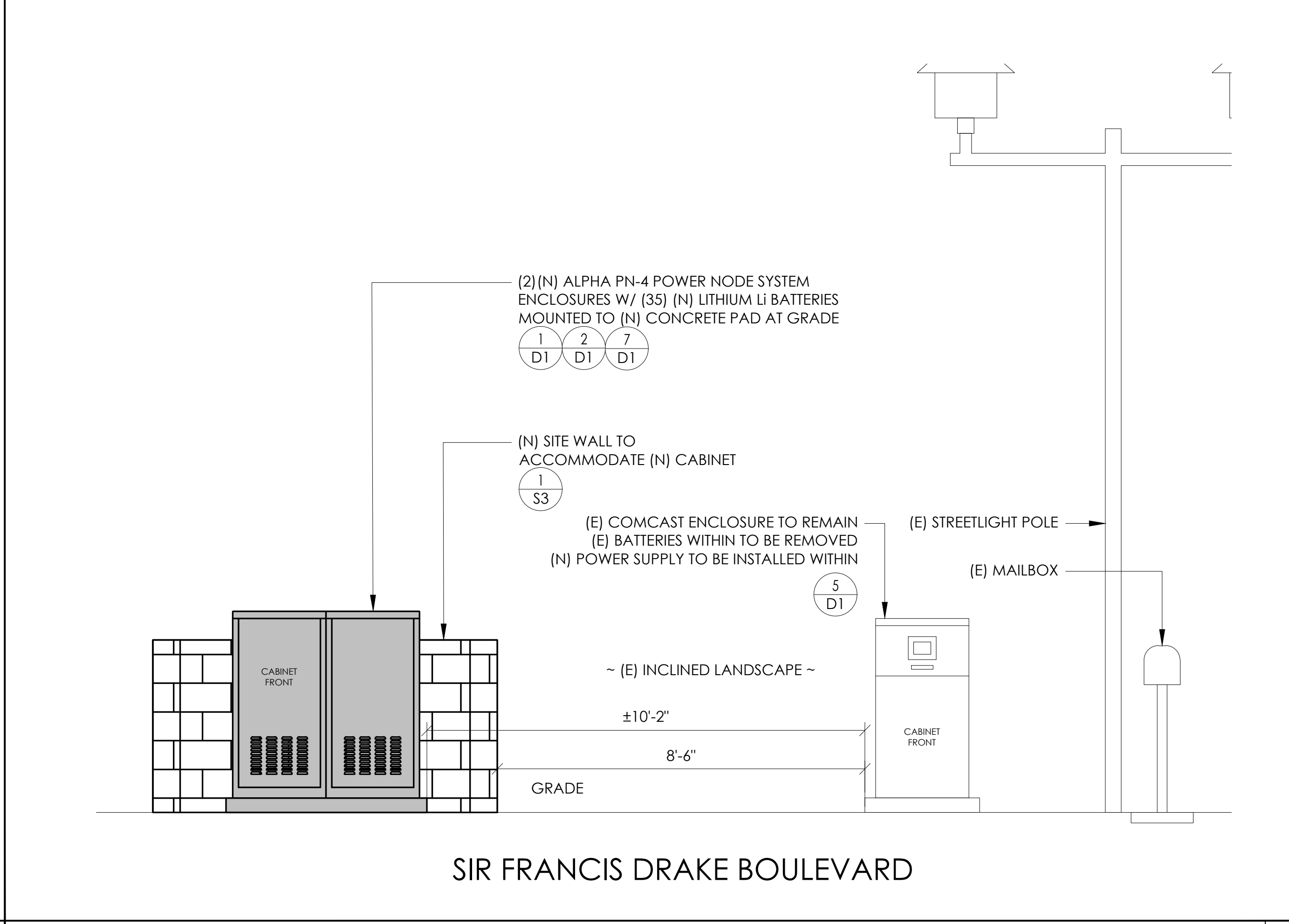
EXISTING ENLARGED SITE PLAN 24"x36" SCALE: 1/4" = 1'-0" 11"x17" SCALE: 1/8" = 1'-0" 4' 3' 2' 1' 0" NORTH 2



PROPOSED ENLARGED SITE PLAN 24"x36" SCALE: 1/4" = 1'-0" 11"x17" SCALE: 1/8" = 1'-0" 4' 3' 2' 1' 0" NORTH 1



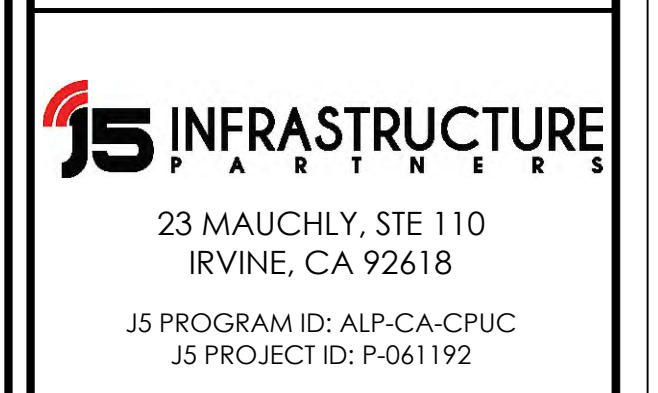
EXISTING ELEVATION 24"x36" SCALE: 1/2" = 1'-0" 11"x17" SCALE: 1/4" = 1'-0" 2' 1' 0" 2' 4



PROPOSED ELEVATION 24"x36" SCALE: 1/2" = 1'-0" 11"x17" SCALE: 1/4" = 1'-0" 2' 1' 0" 2' 3

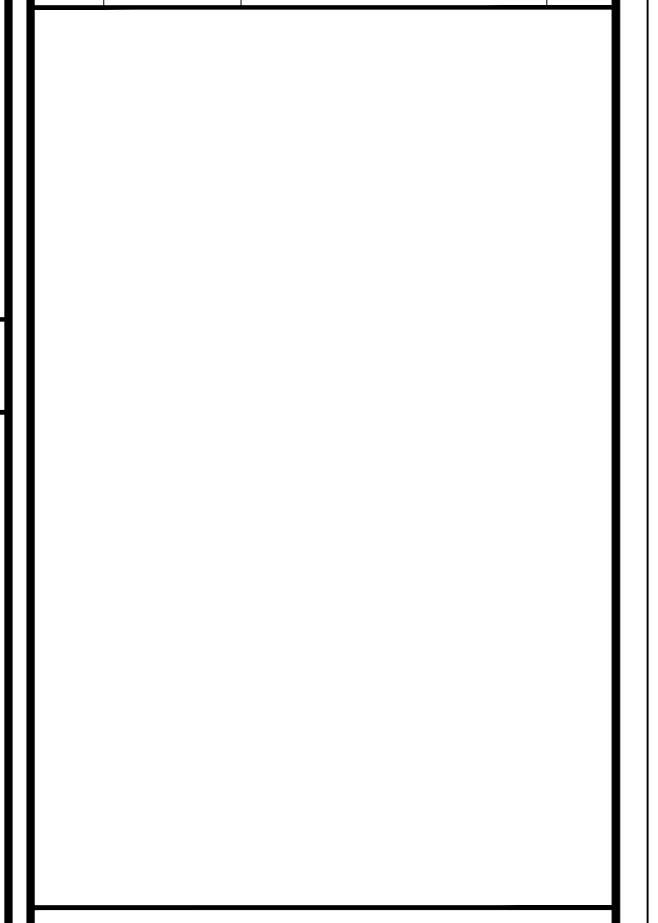
CONDUIT ROUTING NOTE:
1. GC TO ROUTE (N) 1-1/2" RIGID U/G CONDUIT FROM (N) CABINETS TO (E) MAIN CABINET FOR (N) BATTERY & INTERFACE ASSOCIATED CABLING. SEE TRENCHING DETAIL ON SHEET D1.

NOTES:
1. CONTRACTOR TO COMPLY WITH ALL APPLICABLE/REQUIRED INSPECTIONS PER LOCAL JX GUIDELINES.
2. CONTRACTOR SHALL BE AWARE OF (E) PEDESTRIAN AND VEHICLE ACCESS. CONTRACTOR SHALL NOT BLOCK WALKWAYS, DRIVEWAYS AND/OR OTHER FORMS OF ACCESS. CONTRACTOR SHALL REACH OUT TO ENGINEER IF REVISIONS TO DESIGN HEREON ARE REQUIRED.



ISSUE STATUS

REV	DATE	DESCRIPTION	BY
A	04/24/23	90% CD	MG
0	05/19/23	100% CD	MJC
A	06/07/23	PCC #1	MJC

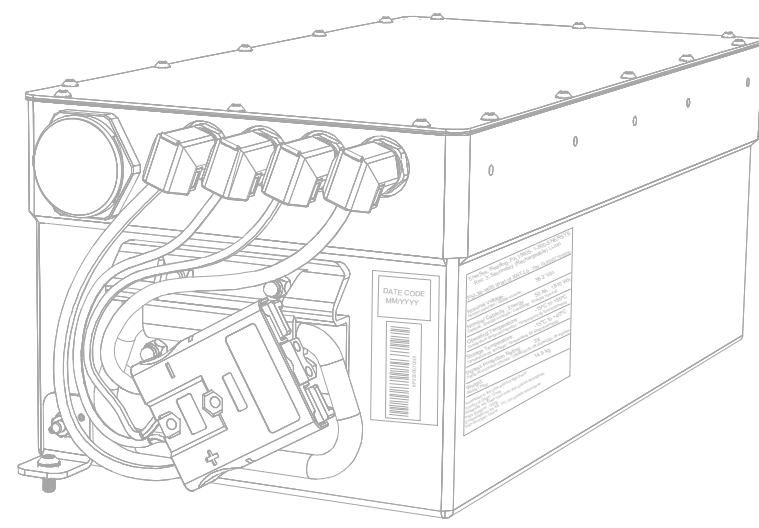


SEAL

SITE INFORMATION

SITE ADDRESS:
1738 SIR FRANCIS DRAKE BLVD,
FAIRFAX, CA 94930

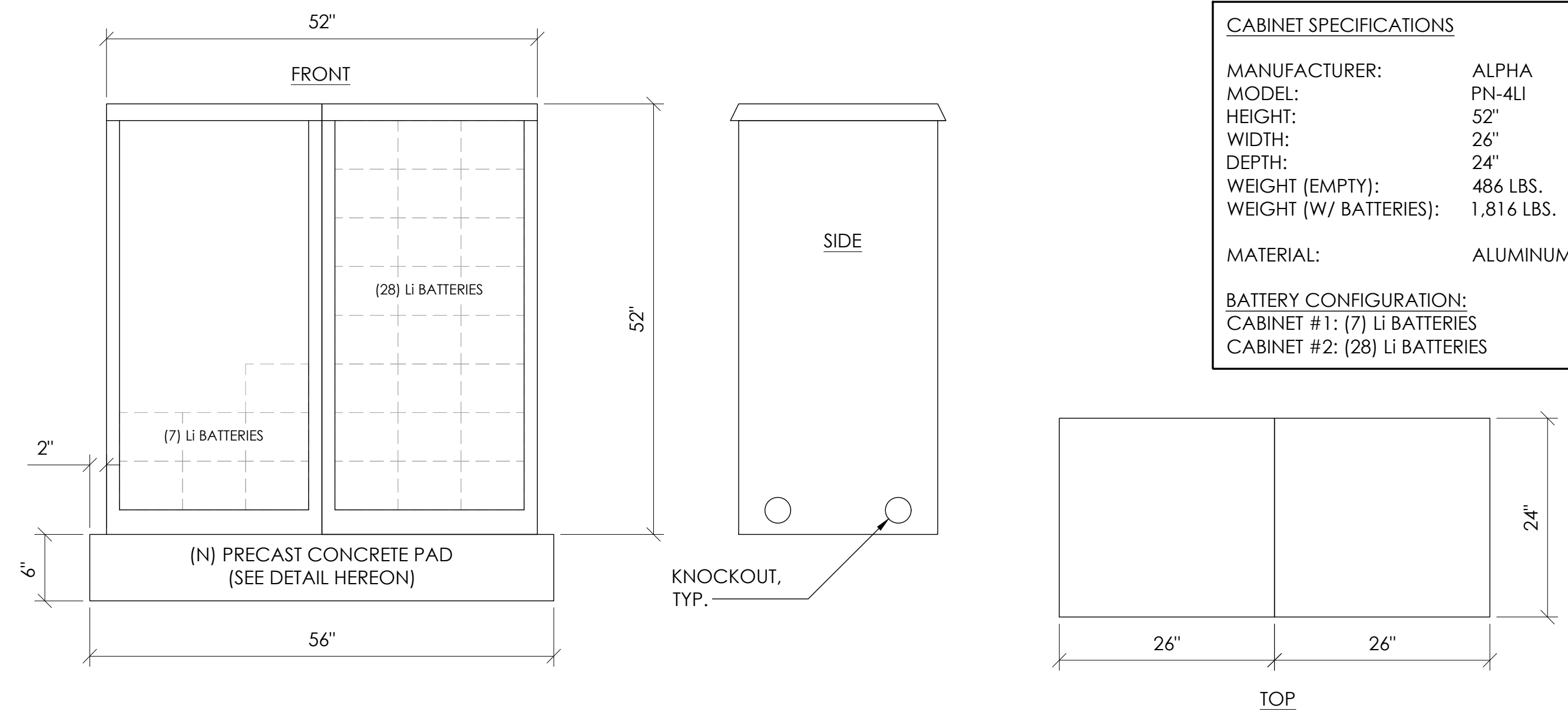
SHEET TITLE:
ENLARGED SITE PLANS & ELEVATIONS
A1



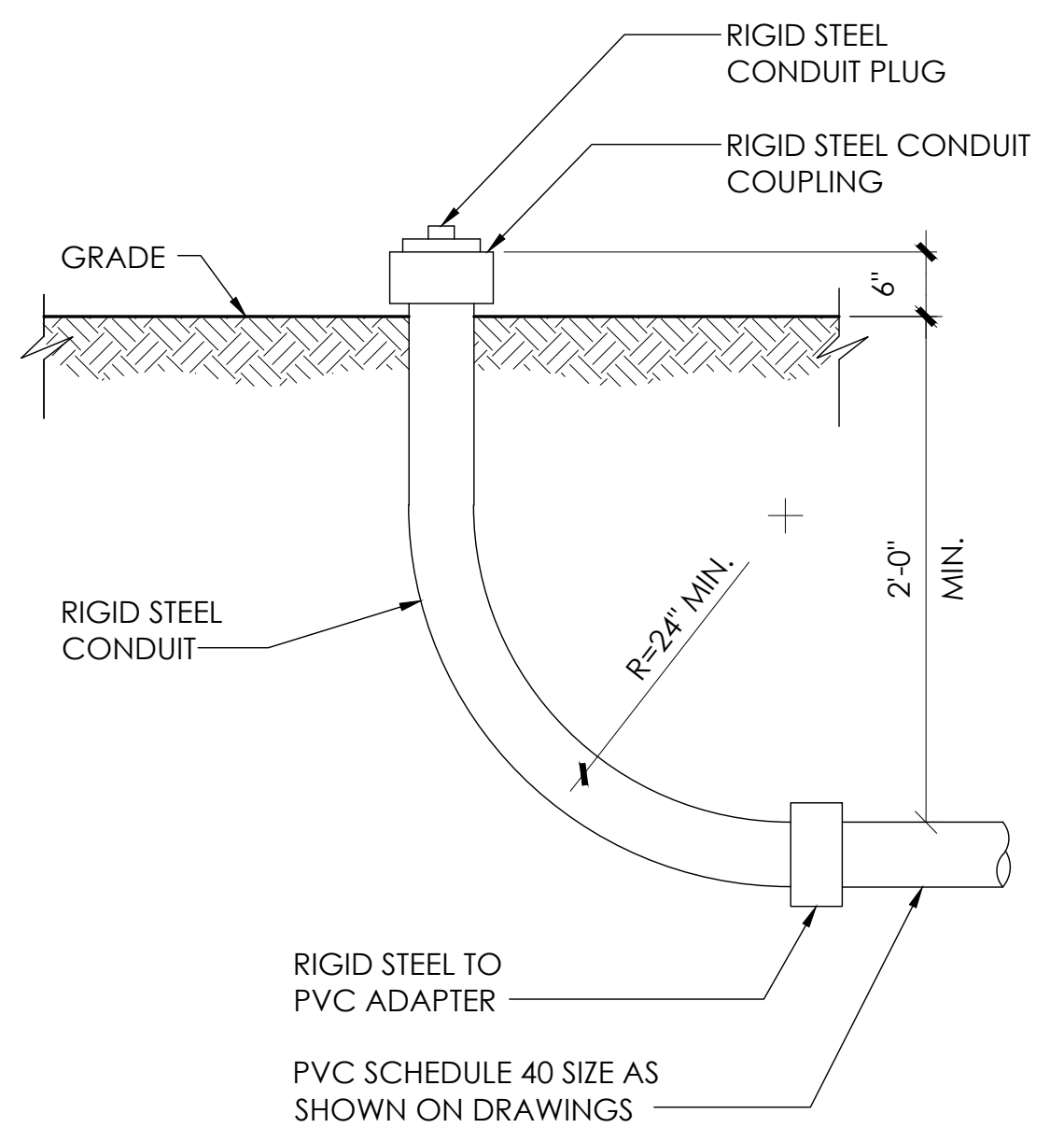
EQUIPMENT SPECIFICATIONS (1 UNIT)	
MFG:	POWERSAFE
MODEL:	PSI-36-1800
HEIGHT:	5.27 IN
WIDTH:	6.57 IN
LENGTH:	13.54 IN
WEIGHT:	32.8 LBS

BATTERY INFORMATION (LITHIUM TYPE BATTERIES)										
INSTALL STATUS	BATTERY MODEL	TOTAL # OF BATTERY UNITS INSTALLED	VOLTAGE (V)	AMP-HOURS (AH)	KWh, Kilowatt-hours = (V*AH)/1000	TOTAL BATTERY CAPACITY, KWh	STATIONARY BATTERY STORAGE SYSTEM THRESHOLD QUANTITY, PER CFC 2019 SECTION 1206	STATIONARY BATTERY STORAGE SYSTEM CODE CHECK	TOTAL ELECTROLYTE VOLUME (GALLONS) PER UNIT	TOTAL ELECTROLYTE BY VOLUME (GALLONS) =
PROPOSED	POWERSAFE PSI-36-1800	35	36	50	1.8	63			0	0
TOTAL		35				63	20	CFC 2022 SECTION 1207 APPLIES		0

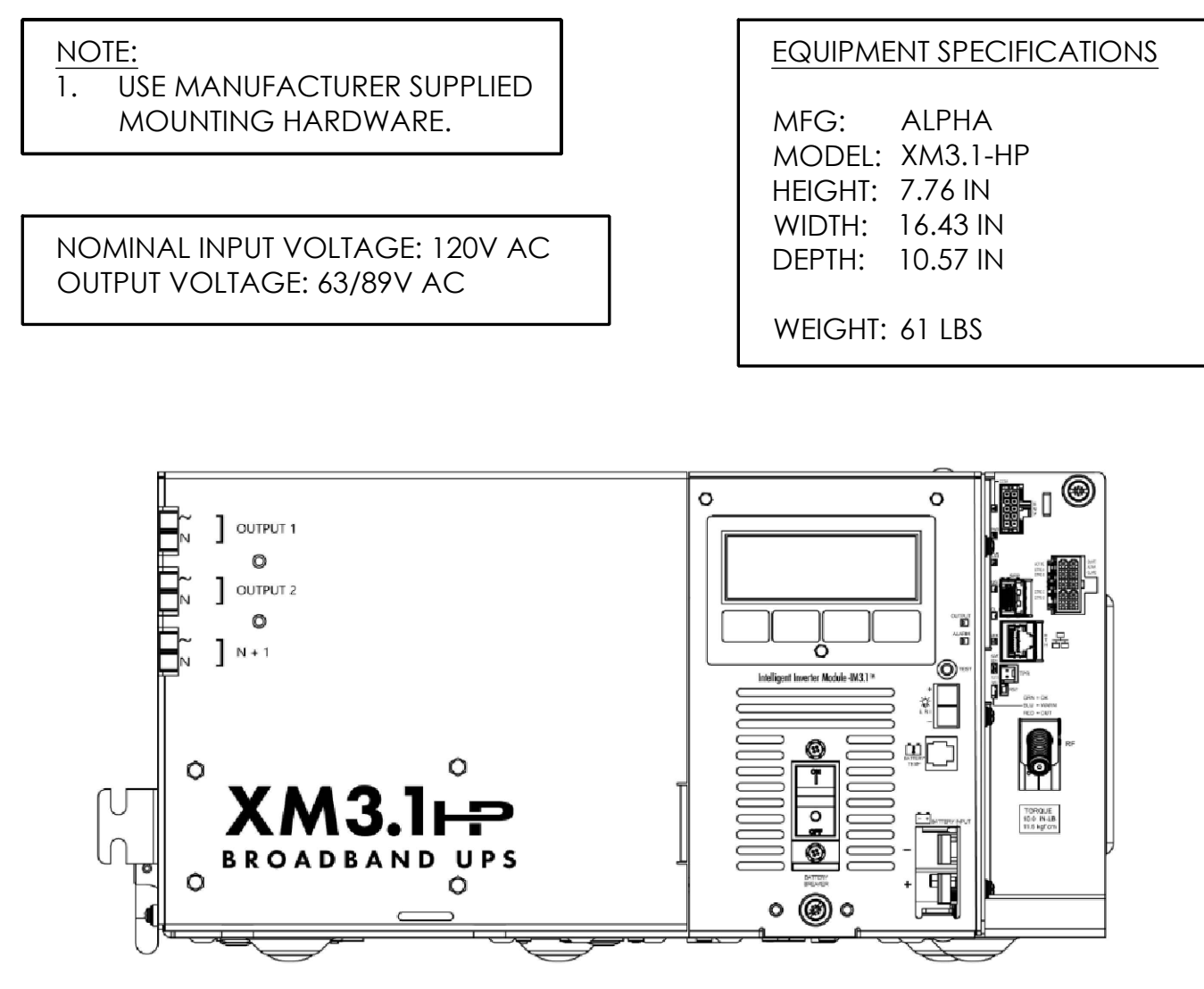
7 LITHIUM BATTERY SPECIFICATIONS
N.T.S.



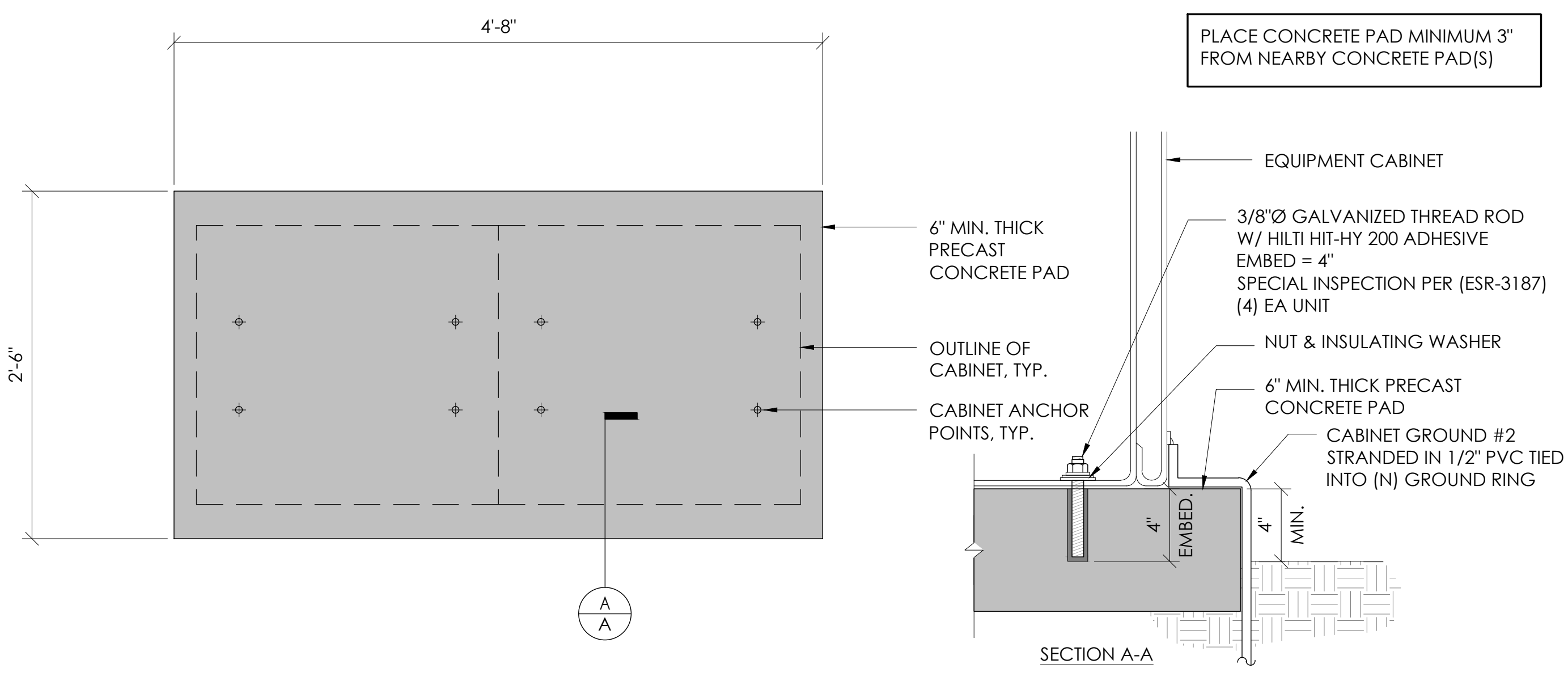
1 DUAL EQUIPMENT CABINET DETAIL
N.T.S.



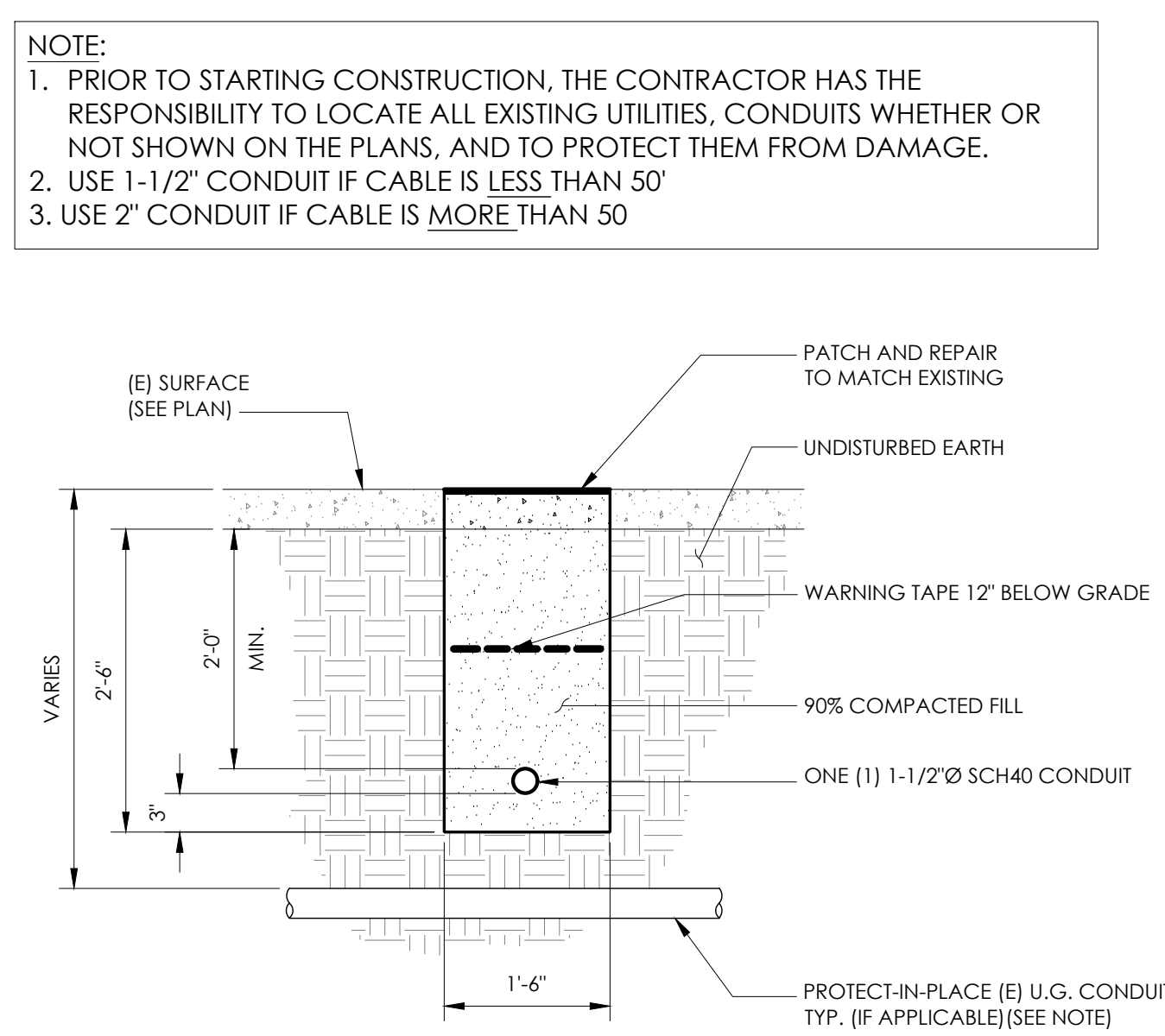
8 STUB-UP DETAIL
N.T.S.



5 POWER SUPPLY DETAIL
N.T.S.



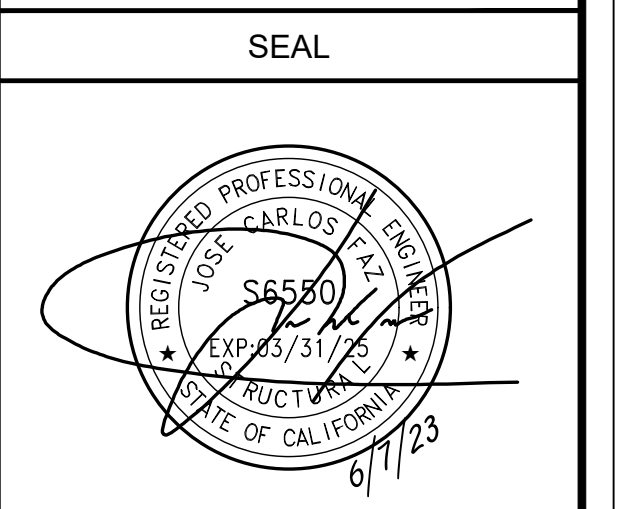
2 CONCRETE PAD & ANCHORAGE DETAIL
N.T.S.



6 TRENCHING DETAIL
N.T.S.



ISSUE STATUS			
REV	DATE	DESCRIPTION	BY
A	04/24/23	90% CD	MG
0	05/19/23	100% CD	MJC
A	06/07/23	PCC #1	MJC

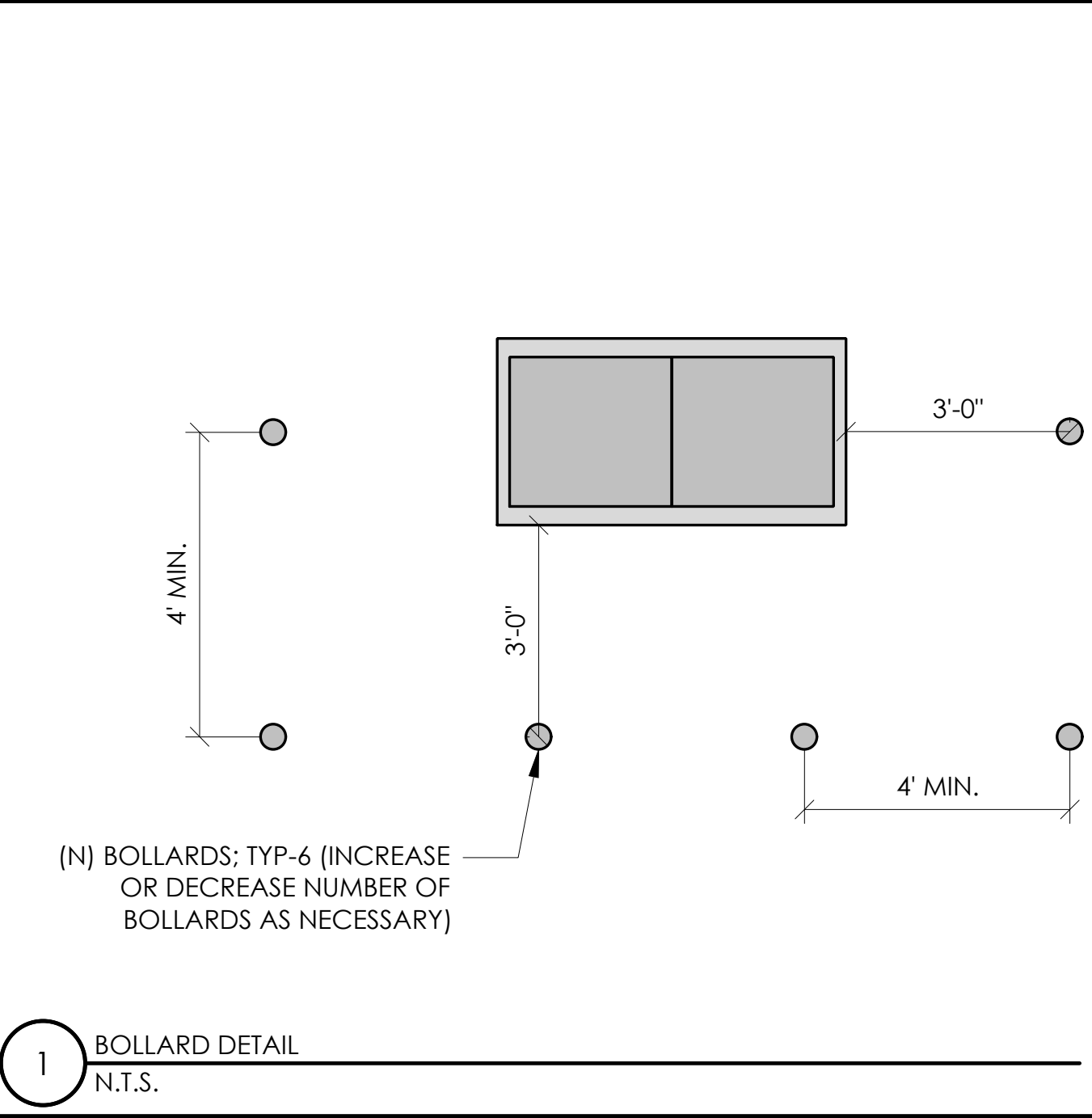


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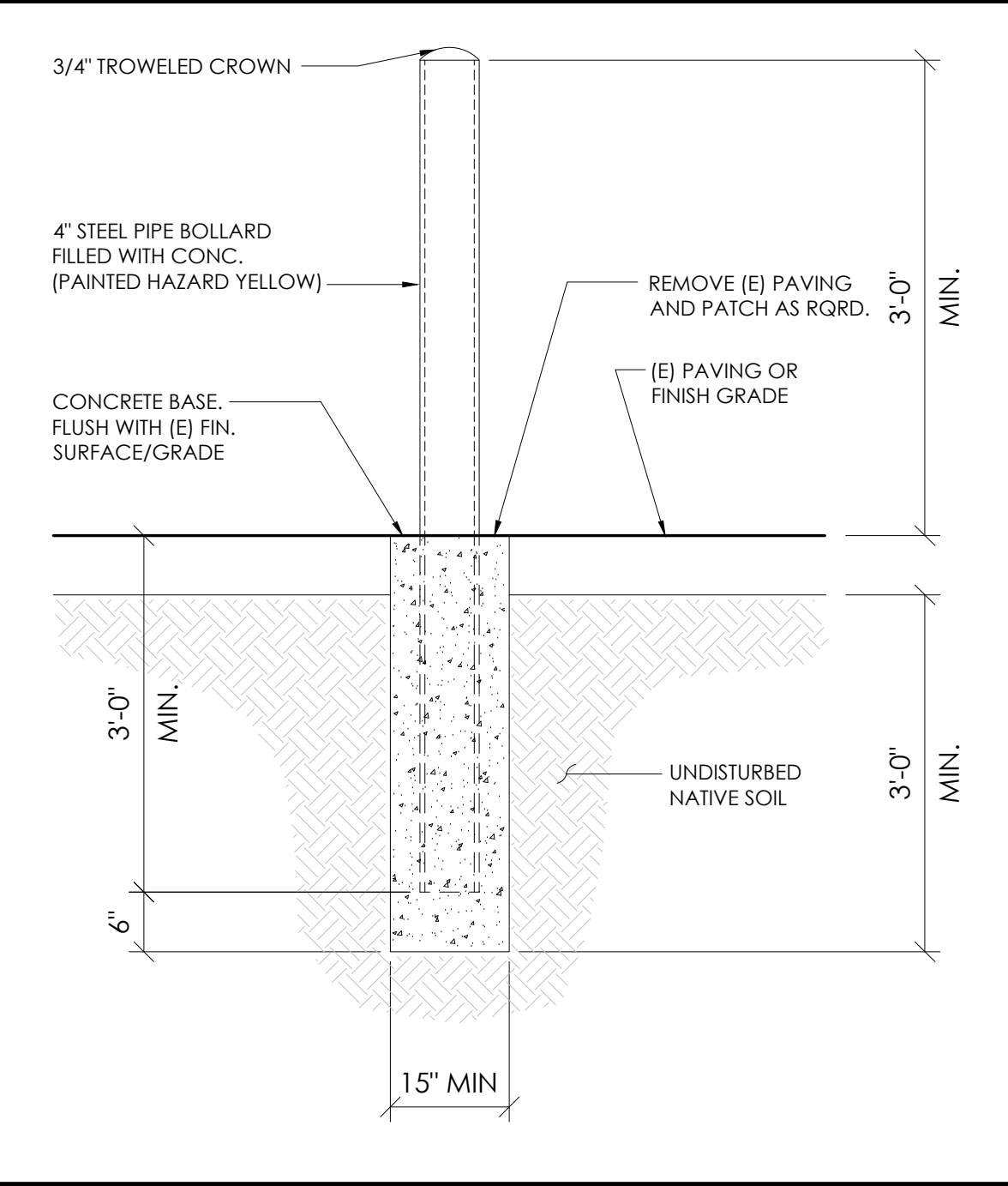
SITE ADDRESS:
 1738 SIR FRANCIS DRAKE BLVD,
 FAIRFAX, CA 94930

SHEET TITLE:
DETAILS

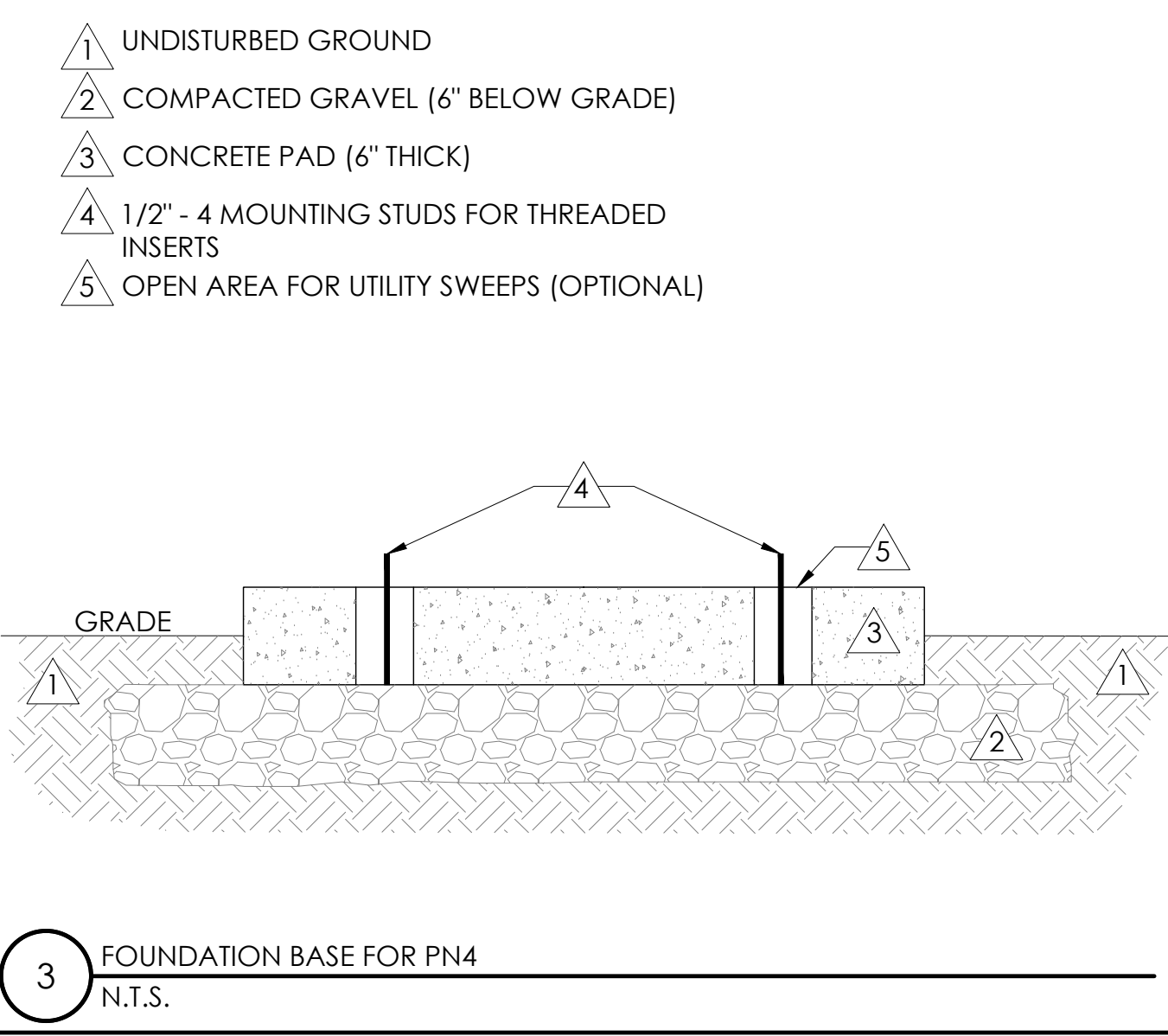
D1



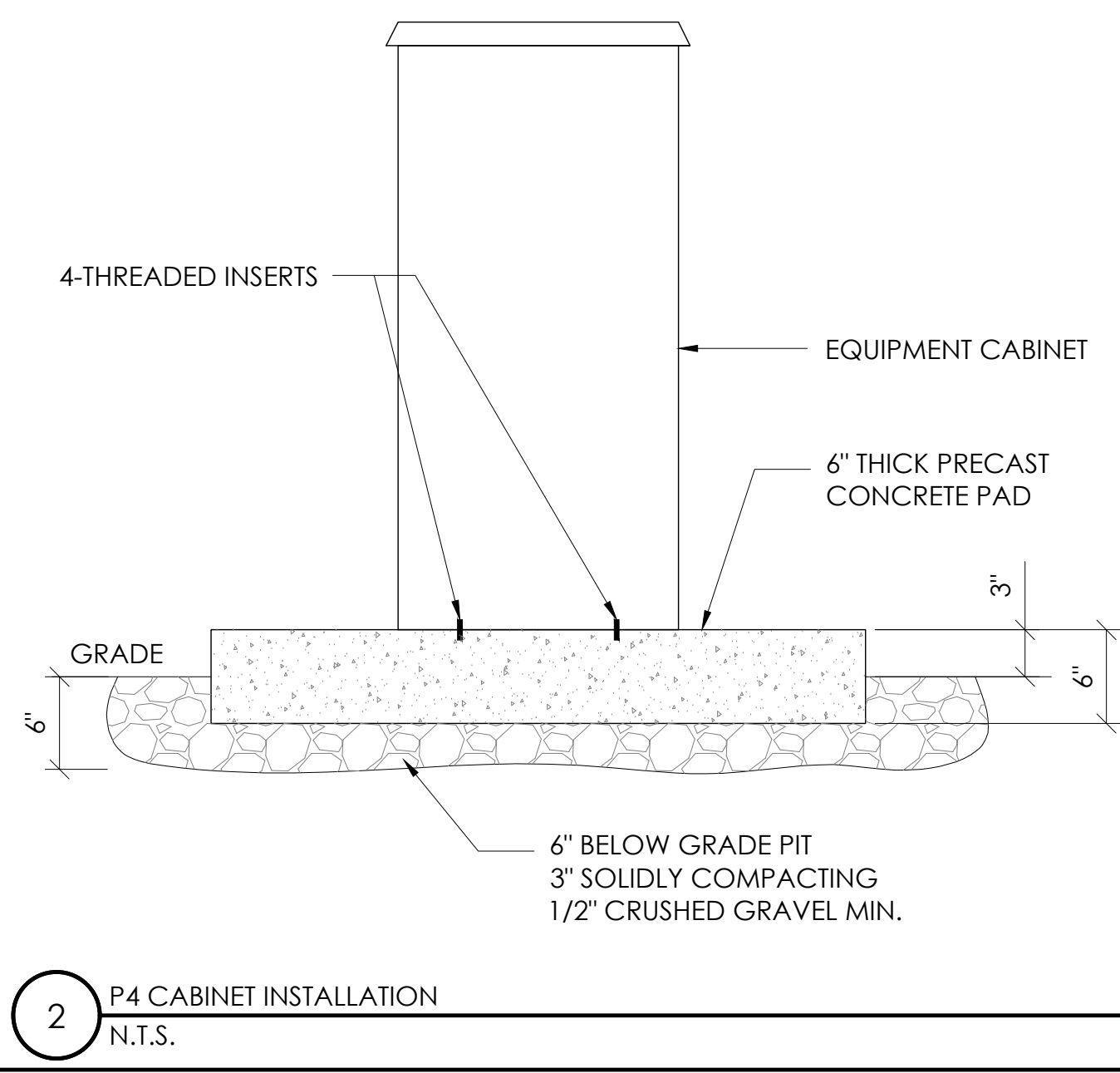
1 BOLLARD DETAIL
N.T.S.



2 P4 CABINET INSTALLATION
N.T.S.

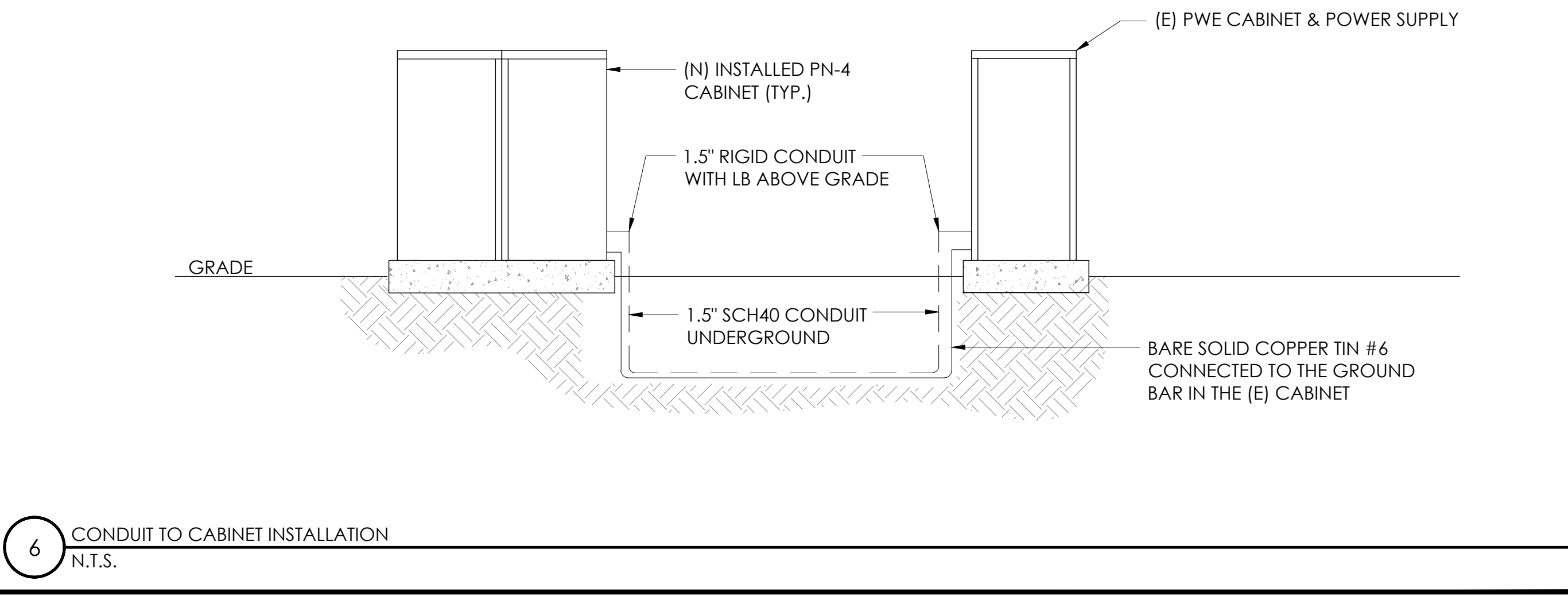


3 FOUNDATION BASE FOR PN4
N.T.S.

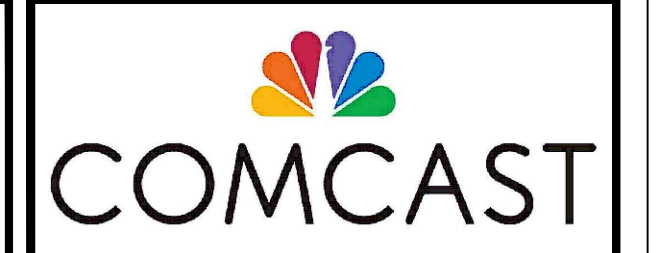


2 P4 CABINET INSTALLATION
N.T.S.

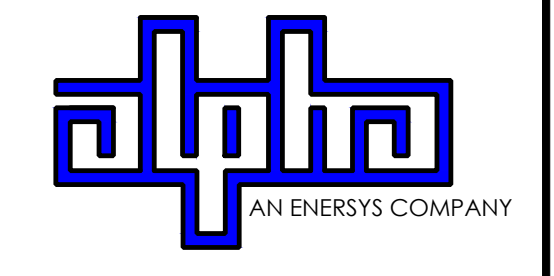
NOTE:
1. USE 1-1/2" CONDUIT IF CABLE IS LESS THAN 50'
2. USE 2" CONDUIT IF CABLE IS MORE THAN 50'



6 CONDUIT TO CABINET INSTALLATION
N.T.S.



3011 COMCAST PLACE
LIVERMORE, CA 94551



3767 ALPHA WAY
BELLINGHAM, WA 98226

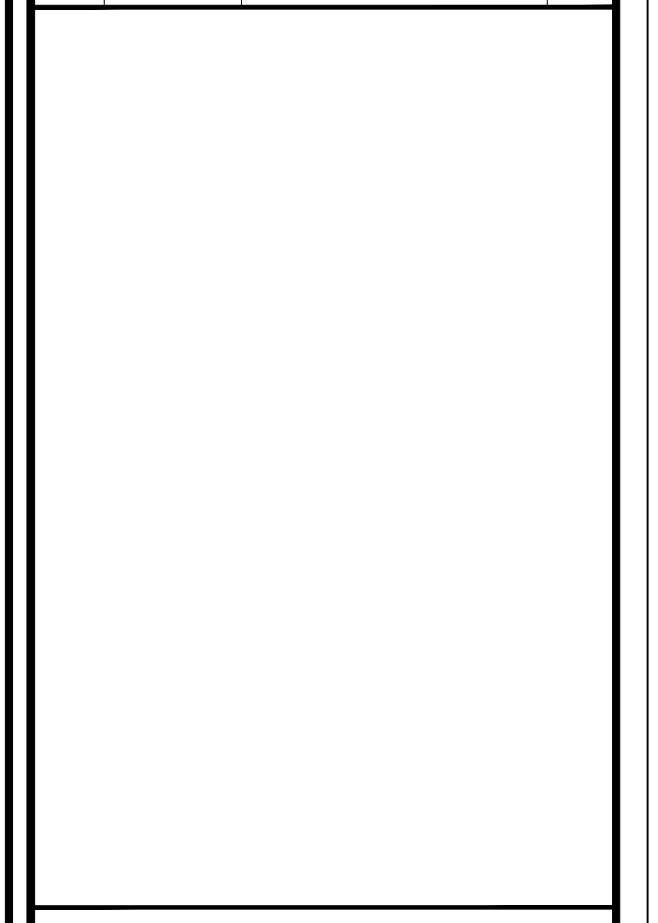


23 MAUCHLY, STE 110
IRVINE, CA 92618

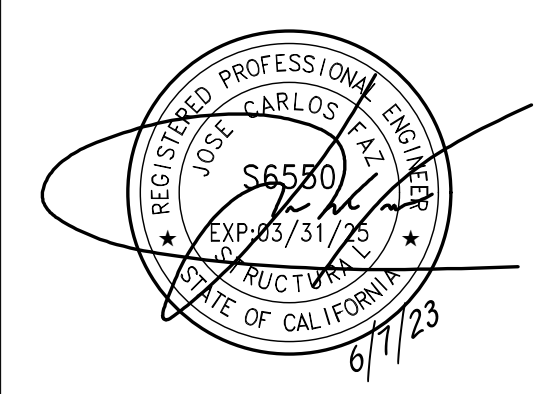
J5 PROGRAM ID: ALP-CA-CPUC
J5 PROJECT ID: P-061192

ISSUE STATUS

REV	DATE	DESCRIPTION	BY
A	04/24/23	90% CD	MG
0	05/19/23	100% CD	MJC
1	06/07/23	PCC #1	MJC



SEAL



SITE INFORMATION

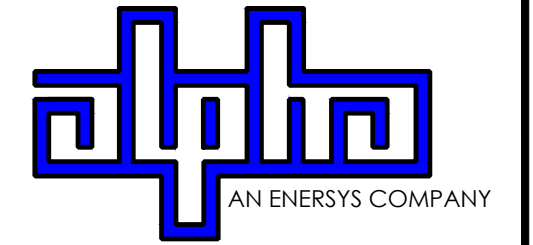
SITE ADDRESS:
1738 SIR FRANCIS DRAKE
BLVD,
FAIRFAX, CA 94930

SHEET TITLE:
DETAILS

D2



3011 COMCAST PLACE
LIVERMORE, CA 94551



3767 ALPHA WAY
BELLINGHAM, WA 98226



23 MAUCHLY, STE 110
IRVINE, CA 92618

J5 PROGRAM ID: ALP-CA-CPUC
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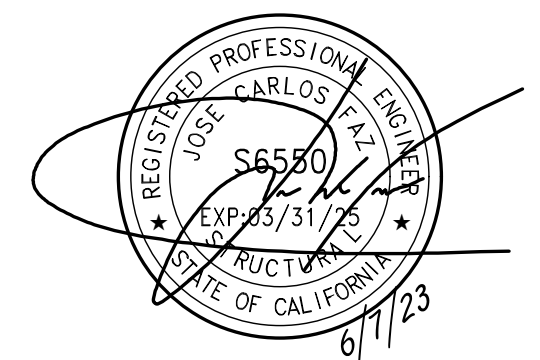
HAZMAT NOTE:

COMCAST HAS DETERMINED THAT THE LITHIUM BATTERY SYSTEMS DEPLOYED AT THE CPUC-MANDATED 72-HOUR BACKUP POWER SITES, BELOW THE HAZARDOUS MATERIALS REPORTING THRESHOLD ESTABLISHED BY (I) CALEPA IN THE BATTERY REPORTING GUIDANCE FOR UNIFIED PROGRAM AGENCIES MARCH 10, 2022 EDITION, AND (II) THE MATERIAL BREAKDOWN PROVIDED IN THE MANUFACTURER'S SAFETY DATA SHEET.

THESE SYSTEMS HAVE A MAXIMUM OF 50 SMALL LITHIUM BATTERIES, WHICH HAVE APPROXIMATELY 14.6% OF ELECTROLYTE WEIGHT BY VOLUME, OR 0.28 GALLONS PER BATTERY, AND CONTAINS A MAXIMUM OF 14 GALLONS OF ELECTROLYTE MATERIAL—BELOW THE REQUIRED REPORTABLE THRESHOLD OF 55 GALLONS.

COMCAST WILL CONTINUE TO ASSESS ANY FURTHER REPORTING REQUIREMENTS REQUIRED BY EACH LOCAL JURISDICTION.

SEAL



SITE INFORMATION

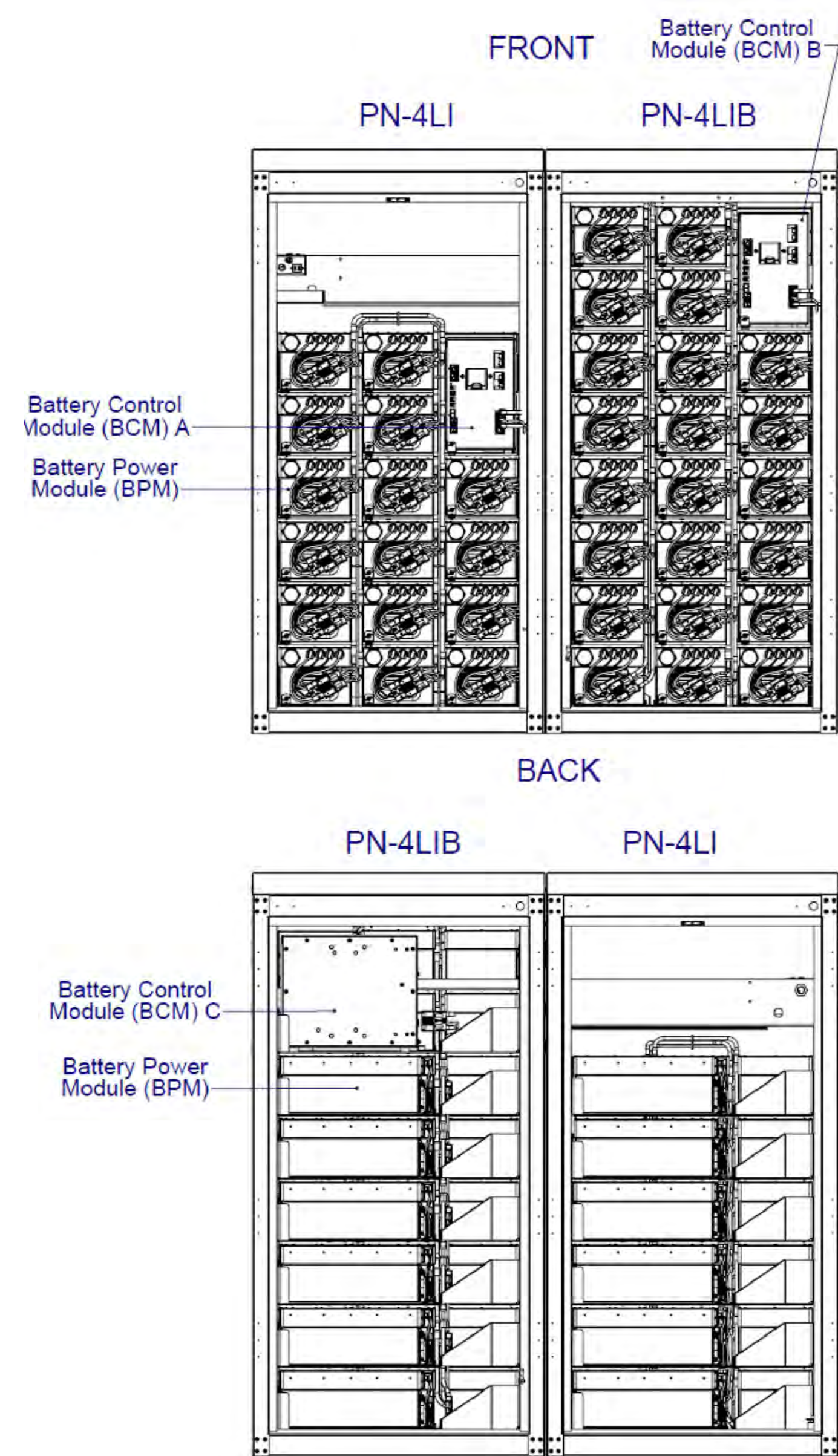
SITE ADDRESS:
1738 SIR FRANCIS DRAKE
BLVD,
FAIRFAX, CA 94930

SHEET TITLE:

HAZMAT NOTE

D3.0

System Operation	
Normal Operating Temperature ¹	32°F to 113°F (0°C to 45°C)
Safe Functioning Temperature Range ²	5°F to 131°F (-15°C to 55°C)
Non-destructive Temperature Range ³	-40°F to 167°F (-40°C to 75°C)
Abnormal Temperature Range ⁴	Less than -40°F (-40°C) and greater than 167°F (75°C)
Charge/Discharge Temperature (Upper Limit)	131°F (55°C)
Charge/Discharge Temperature (Lower Limit)	-9.4°F (-23°C)
Charge/Discharge Rating	40.7V @ 44A
The following values are based on cell manufacturer specifications at 1C discharge rate at 25°C:	
System (fully populated w/ 3 BCMs and 50 BPMs) Rated Usable Energy Capacity	81.3 kWh (@ 40.7V maximum)
Battery String (1 BCM and 22 BPMs) Rated Energy Capacity	35.8 kWh (@ 40.7V maximum)
Battery Power Module (BPM) Rated Energy Capacity	1.6 kWh (@ 40.7V maximum)
Battery Electrical Ratings	
Battery Voltage	30.0VDC to 40.7VDC
Battery Current	39A limit (BCM is based on the fuse)
Power Supply (XM3.1-918-HP) Electrical Ratings - Fine Mode Parameters	
Nominal AC Input Voltage	120VAC (factory ordered)
Nominal Input Frequency	60Hz
Input Frequency Tolerance	±3%
Input Voltage Operating Range Tolerance	-25% to +15%
Input Voltage Range	90VAC to 138VAC
Output Voltage	63/89VAC
Output Voltage Regulation (Based on Nominal Input Voltage at 50% Load, 25°C)	-2.5 to +1%
Maximum Rated Output Current	18A
Maximum Output Power ⁵	1620VA
Fine Mode Parameters ⁶	Maximum rated output current
Line Mode Efficiency	Up to 94%
Standby Efficiency	Up to 91%
Output Waveform	Quasi-square wave
Short Circuit Protection	<150% of max current rating
Transfer Characteristics	Uninterrupted output
Battery Voltage	36VDC



2.0 Power System, continued

2.1 Battery System

2.1.1 Battery Power Module (BPM)

The Battery Power Module (BPM, also known as an EnerSys PowerSafe® ION 36-1800 lithium battery, PSI-36-1800) is a single, field replaceable high density lithium-ion battery engineered to maximize battery capacity in a compact form factor. The BPM provides superior energy density and performance ideal for cable broadband outside plant applications. The integrated Battery Management System (BMS) is optimized for performance with the Alpha® XM3.1-HP™ Intelligent Broadband UPS, ensuring proper charging and integration with a remote management system.

The BPM provides high energy density for extended runtimes. The system manages charge and discharge flows of energy, while reporting operating parameters and status remotely. Low self-discharge and fast recharge rates make the modules both storage and deployment friendly. The BMS provides additional levels of protection - overvoltage, undervoltage, and overcurrent - while managing cell balancing and temperatures to help maintain the BPM's overall State of Health (SoH).

2.1.1.1 BPM Features and Specifications

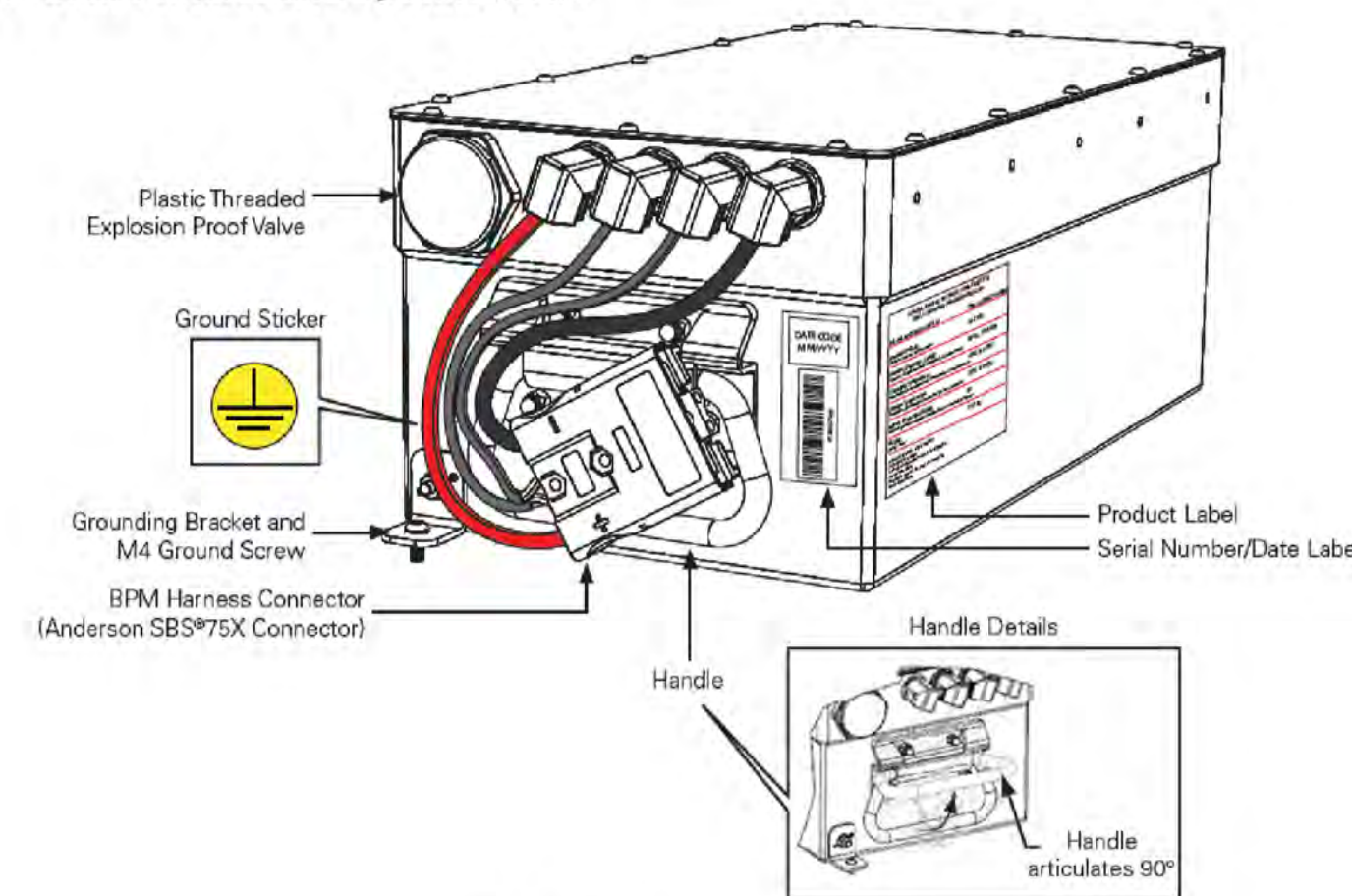


Fig. 2-2. Battery Power Module (BPM)

2.0 Power System, continued

2.1.1.2 Battery Identification and Labels

Battery Power Module (BPM) Specifications	
Nominal Voltage	36V
Operating Voltage Range	30.0V to 40.7V
Maximum Discharge Current	30A
Maximum Charge Current	30A
Capacity	50 Ah
Energy	1810 Wh
Module Operating Temperature (Charge)	-4°F to 131°F (-20°C to +55°C)
Module Operating Temperature (Discharge)	-22°F to 131°F (-30°C to +55°C)
Sealing - Designed To	IP64
Weight	32.8 lbs (14.9 kg)
Dimensions (H x L x W)	5.27" x 13.54" x 6.57" (134 mm x 317 mm x 167 mm)
Self-discharge	Retention ≥ 85%, Recovery ≥ 90%, 28 days at 20 °C or 7 days at 55 °C at ambient module temperature
Terminal Type	Anderson SBS75X Connector
Lifting Handle	Folding pull handle
AC Impedance @ 1 kHz (40% SOC, 25°C)	< 6 mΩ
Communication Protocol	isoSPI
Certifications	Compliant with UN 38.3, UL® 1973

Table 2-2. Battery Power Module (BPM) Specifications

2.1.1.3 BPM Storage and Shelf Life

The optimal storage temperature for the BPM ranges from 5°F to 131°F (-15°C to +55°C).

Notice of FCC Compliance

Per FCC 47 CFR 15.21: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Per FCC 47 CFR 15.105: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at their own expense.

System Safety and Certifications

Certification	Type
UL® 9540	Energy Storage System (ESS) Requirements
UL® 9540a	Standard for Test Method for Evaluating Thermal Runaway Fire Propagation in Battery Energy Storage Systems
UL® 1973	Batteries for Use in Light Electric Rail (LER) and Stationary Applications
UN 38.3	Transportation Testing for Lithium Batteries and Cells
IEC 62368	Audio/Video, information and communication technology equipment; Telecommunication products: network infrastructure equipment
ISO® 13849-1:2015	Functional safety; Safety-related Parts of Control Systems

2.1.2 Battery Control Module (BCM)

The Battery Control Module (BCM, also known as an EnerSys PowerSafe® ION battery management system, model PSI-36-BMS) manages and monitors a series of BPMs, and coordinates with the XM3.1-HP™ power supply.

2.1.2.1 BCM Features and Specifications

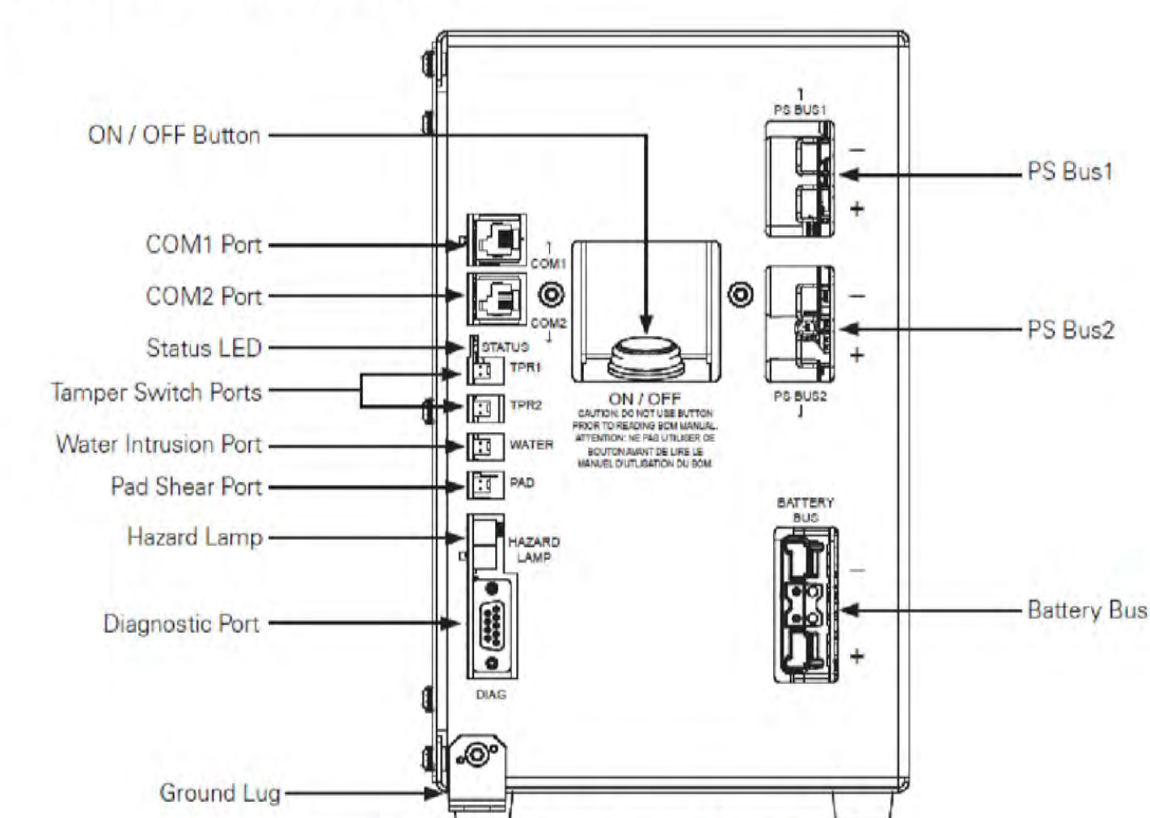


Fig. 2-3. Battery Control Module (BCM)

Battery Control Module (BCM) Features

ON / OFF Button	Direct control of BCM power. <ul style="list-style-type: none"> Short press (one second) turns the BCM on. Long press (three seconds) turns the BCM off, unless charging/discharging is occurring. Always use the Link-Up process, described in Section 5.6.1, Link-Up, to power up the battery system.
COM1 Port	Communications link to the power supply, or to the downstream BCM. The LED adjacent to this connector indicates whether the port is receiving power from the power supply.
COM2 Port	Communications link to the next BCM. A termination plug (p/n ATL400844-001) shall be installed in the last BCM.
Status LED	A pair of LEDs (green and red) indicating the status of the BCM, as described in Section 2.1.2.3, Status LED.
Tamper Switch Ports	Connections for door switches, to indicate if the cabinet is being accessed. TPR1 is for the front door, and TPR2 is for the rear door of the cabinet it is inserted in.
Water Intrusion Port	Connection for optional water intrusion switch; normally unused.
Pad Shear Port	Connection for optional pad shear detection switch; normally unused.
Hazard Lamp	Connection for optional external indicator lamp indicating a potential safety hazard in approaching the cabinet. The LED adjacent to this connector also indicates the possible hazard condition.
Diagnostic Port	Connection for service access to the BCM. This connector is reserved for use by trained Alpha/EnerSys personnel only.
Ground Lug	Earth ground connection between the BCM and the cabinet shelf.
PS Bus1	Power cable link to the power supply, or to the upstream BCM.
PS Bus2	Power cable link to the downstream BCM. This opening should remain covered for the last BCM, to avoid accidental contact with the power terminals.
Battery Bus	Combined power and communications cable to the string of Battery Power Modules (BPMs).

Battery Control Module (BCM) Specifications

Nominal DC Input Voltage	36.2V
Operating Voltage Range	30.0V to 40.7V
Maximum Continuous Discharge Current	39A
Maximum Continuous Charge Current	39A
Maximum Voltage	40.7V
Module Operating Temperature	-4 to 185°F (-20 to 85°C) (Note: Derating occurs before or up to extremes.)
Weight	16.5 lbs (7.5 kg)
Dimensions (H x L x W)	10.38" x 6.39" x 13.15" (264 mm x 162 mm x 334 mm)
Connectors	
To Battery Pack	6 Position SBS75X Connector
To Inverter / Parallel BCM	2 Position Anderson™ PP75 Connector
Communication Protocol	Alpha RS-485; CAN 2.0
Safety Certification	Compliant with UL® 1973

Table 2-4. Battery Control Module (BCM) Specifications

2.1.2.2 Status LED

The red/green pair status LED is the primary indicator of the BCM's status, showing whether the BCM is powered, the batteries are online for backup use, and whether the BCM is communicating with the power supply as follows:

Status	BCM Powered?	Batteries online?	Communicating with power supply?
Off	No	No	Not specified
Solid GREEN	Yes	Yes	Yes
Blinking GREEN	Yes	Yes	No
Blinking RED	Yes	No	Yes
Blinking GREEN and RED	Yes	No	No

Table 2-5. Status LED Functions

The COM LED, next to the COM1 connector, is lit GREEN when there is a communications voltage from the power supply. Communications is not possible if this LED is not lit.

The Hazard LED, next to the Hazard Lamp connector, blinks RED when there is a potential safety concern in approaching the cabinet. This occurs when the temperature within the battery modules is critically high.

2.1.2.3 ON / OFF Button

The push-button on the front of the BCM turns the BCM on or off. To turn the BCM on, press the button for one second and then release it. The status LED should begin blinking red, indicating that the BCM is powered but the batteries are not online, or the LED will blink alternating green and red if the BCM is not communicating with a power supply. If the BCM is communicating with an XM3.1-HP™ power supply, the power supply will detect the BCM startup, and automatically perform a "Link-Up" operation (as described in Section 5.6.1, Link-Up) to bring the BCM batteries online.

To turn the BCM off, verify that the system is not actively being charged or discharged. Press the ON/OFF button for three seconds and then release it. If the batteries were online (solid green status LED), the status LED will begin blinking red, and after a short pause there is an audible sound as the contactors open. After a few seconds, the BCM should turn off and the status LED goes dark.

If the BCM status LED is solid green and a three-second press does not result in a red blinking LED, it usually means that the BCM is presently charging or discharging. Ensure the charging or discharging is finished, or else command the BCM(s) to turn off from the "Batteries" web page.

NOTICE:

As noted above, the OFF function will not work if the battery system is charging or discharging.

COMCAST

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LIVERMORE, CA 94551

alpha
AN ENERSYS COMPANY

3767 ALPHA WAY
BELLINGHAM, WA 98226

J5 INFRASTRUCTURE
PARTNERS

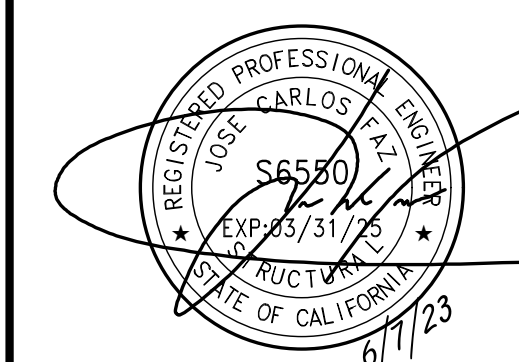
23 MAUCHLY, STE 110
IRVINE, CA 92618

J5 PROGRAM ID: ALP-CA-CPUC
J5 PROJECT ID: P-061192

ISSUE STATUS

REV	DATE	DESCRIPTION	BY
A	04/24/23	90% CD	MG
0	05/19/23	100% CD	MJC
	06/07/23	PCC #1	MJC

SEAL



SITE INFORMATION

SITE ADDRESS:
1738 SIR FRANCIS DRAKE
BLVD,
FAIRFAX, CA 94930

SHEET TITLE:
MANUFACTURER'S
SPECIFICATIONS, RATINGS
AND LISTINGS OF EACH ESS

D3

2.2 Theory of Operation

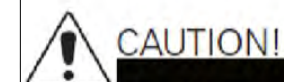
The battery subsystem is comprised of one or more strings (A, B, and C) of Battery Power Modules (BPM) connected in parallel. Each string is monitored and controlled by a Battery Control Module (BCM). Strings A and B may contain 3 to 22 power modules each, and String C may contain 6 power modules as described in Table 5-1.

Each BPM has maximum continuous charge and discharge limits based on the cell manufacturer limitations and an internal BPM fuse. Cell limits are determined based on temperature and state of charge (SOC). The limit for the BPM is established by the value that is smaller between the cell limit and the fuse limit.

Each BCM has maximum continuous charge and discharge limits based on an internal fuse. In the event that the maximum BCM charge or discharge limit exceeds the combined BPMs' limits due to configuration or operating conditions (e.g. only one BPM is connected to the string, cold temperatures, etc.) the BCM will act to disconnect to protect itself and the BPMs.

The maximum charging and discharging limit for the battery subsystem is based on the combined current limits of the number of connected BCM strings.

2.2.1 Charging



The Battery Management System (BMS) tracks the battery's condition and automatically assesses the best charging parameters based on present conditions. These parameters can be communicated to the inverter/charger using the CANBUS connection. There is no "typical" BMS charging cycle due to the adaptive nature for each unique situation.

2.2.1.1 Battery Power Module (BPM)

Battery Power Module Continuous Charge Limits as a Function of Temperature and User SOC																					
Temp. (°C) /SOC (%)	0%	5%	10%	15%	20%	25%	30%	35%	40%	45%	50%	55%	60%	65%	70%	75%	80%	85%	90%	95%	
-30°C	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-20°C	4	4	4	4	4	3.5	3.5	3	3	3	2.5	2.5	2	2	1.5	1.5	1	1	1	1	1
-10°C	10	10	10	10	10	10	10	10	7.5	7.5	7.5	6	6	6	5	4.5	4	3.5	3	3	3
0°C	25.5	25.5	25.5	25.5	25.5	25.5	25.5	17.8	17.8	17.8	15.3	15.3	15.3	11.5	11.5	11.5	7.5	7.5	7.5	7.5	7.5
10°C	30	30	30	30	30	30	30	30	30	30	25.5	25.5	25.5	20.4	20.4	20.4	15.3	15.3	15.3	15.3	15.3
25°C	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	25.5	25.5	25.5	25.5	25.5
45°C	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26
55°C	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5

Table 2-10, Battery Power Module Continuous Charge Limits as a Function of Temperature and User SOC

2.2.1.2 System and Battery String Level

System Level Maximum Continuous Charge Limits Scalable for User SOC																					
Temp. (°C) /SOC (%)	0%	5%	10%	15%	20%	25%	30%	35%	40%	45%	50%	55%	60%	65%	70%	75%	80%	85%	90%	95%	100%
-30°C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
-20°C	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.1
-10°C	1.4	1.4	1.5	1.6	1.7	1.7	1.8	1.8	1.8	1.7	1.5	1.4	1.3	1.2	1.1	0.9	0.8	0.7	0.6	0.4	0.4
0°C	3.7	3.7	3.7	3.6	3.6	3.5	3.5	3.4	3.4	3.4	3.4	3.4	3.2	3.0	2.9	2.7	2.5	2.2	2.0	1.8	1.4
10°C	6.0	6.0	5.8	5.7	5.5	5.3	5.2	5.0	4.9	5.1	5.3	5.4	5.1	4.8	4.6	4.3	4.0	3.7	3.4	3.0	2.4
25°C	10.0	10.0	10.1	10.2	10.3	10.4	10.5	10.6	10.7	10.8	10.9	11.0	10.4	9.8	9.3	8.5	7.7	6.9	6.1	5.2	4.0
45°C	3.1	3.1	3.1	3.1	3.1	3.2	3.2	3.2	3.3	3.3	3.3	3.4	3.4	3.3	3.4	3.4	3.5	3.5	3.6	3.1	3.1
50°C	2.0	2.0	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.4	2.1
55°C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 2-11, System Level Maximum Continuous Charge Limits Scalable for User SOC

For total BPMs of 2 to 22, limits are equal to the lesser of 44.1 A or the value in the scalable table above multiplied by the total number of battery power modules in system.

For total BPMs of 23 to 44, limits are equal to the lesser of 72.5 A or the value in the scalable table above multiplied by the total number of battery power modules in system.

For total BPMs of 45 to 50, limits are equal to the lesser of 82.3 A or the value in the scalable table above multiplied by the total number of battery power modules in system.



The same values above also applies to the battery string level of maximum continuous charge limits that are scalable for user SOC. Limits are equal to the lesser of 44.1A or value in scalable table multiplied by the total number of battery power modules in the string.

2.2.1.3 Battery Control Module (BCM)

The maximum continuous charging current for BCM is 44.1A. In the event that the connected BPMs have an aggregated lower charging limit, the BCM will disconnect when the lower limits has been exceeded for protection.

2.2.1.4 Battery Subsystem

The maximum continuous charging current limits for the battery subsystem take into account imbalance factors to ensure reliable operation and may be less than the summation of max limits for all the connected BCM strings.

2.2.2 Discharging

2.2.2.1 Battery Power Module (BPM)

Battery Power Module Continuous Discharge Limits as a Function of Temperature and User SOC																					
Temp. (°C) /SOC (%)	5%	10%	15%	20%	25%	30%	35%	40%	45%	50%	55%	60%	65%	70%	75%	80%	85%	90%	95%		
-30°C	0	5	10	20	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26
-20°C	5.2	18.9	29.2	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
-10°C	10	25	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
0°C	18	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
10°C	25.5	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
25°C	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
45°C	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
55°C	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10

Table 2-12, Battery Power Module Continuous Discharge Limits as a Function of Temperature and User SOC

2.2.2.2 System and Battery String Level

System Level Maximum Continuous Discharge Limits Scalable for User SOC																					
Temp. (°C) /SOC (%)	0%	5%	10%	15%	20%	25%	30%	35%	40%	45%	50%	55%	60%	65%	70%	75%	80%	85%	90%	95%	100%
-30°C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
-20°C	0.0	0.5	0.9	1.2	1.5	1.9	2.2	2.6	2.8	2.7	2.6	2.5	2.4	2.4	2.4	2.3	2.3	2.3	2.3	2.3	2.3
-10°C	0.0	1.7	3.0	4.2	5.4	6.6	7.8	9.0	9.8	9.4	9.0	8.7	8.6	8.4	8.3	8.2	8.2	8.2	8.2	8.2	8.2
0°C	0.0	3.2	4.7	6.0	7.3	8.6	9.9	11.2	12.2	12.0	11.8	11.7	11.6	11.5	11.4	11.4	11.4	11.4	11.4	11.4	11.4
10°C	0.0	4.6	6.4	7.8	9.2	10.7	12.1	13.5	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6
25°C	0.0	8.9	10.5	11.2	11.9	12.8	13.3	14.1	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6	14.6
45°C	0.0	9.6	10.8	10.8	10.9	10.9	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
50°C	0.0	6.1	6.9	7.0	7.1	7.2	7.3	7.4	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
55°C	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 2-13, System Level Maximum Continuous Discharge Limits Scalable for User SOC

For total BPMs of 2 to 22, limits are equal to the lesser of 44.1 A or the value in the scalable table above multiplied by the total number of battery power modules in system.

For total BPMs of 23 to 44, limits are equal to the lesser of 72.5 A or the value in the scalable table above multiplied by the total number of battery power modules in system.

For total BPMs of 45 to 50, limits are equal to the lesser of 82.3 A or the value in the scalable table above multiplied by the total number of battery power modules in system.



The same values above also applies to the battery string level of maximum continuous discharge limits that are scalable for user SOC. Limits are equal to the lesser of 44.1A or value in scalable table multiplied by the total number of battery power modules in the string.

2.2.2.3 Battery Control Module (BCM)

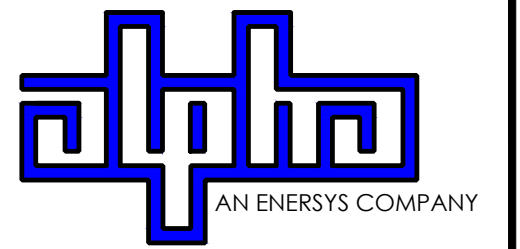
The maximum continuous discharging current for BCM is 44.1A. In the event that the connected BPMs have an aggregated lower discharging limit, the BCM will disconnect when the lower limits has been exceeded for protection.

2.2.2.4 Battery Subsystem

The maximum continuous discharging current limits for the battery subsystem take into account imbalance factors to ensure reliable operation and may be less than the summation of max limits for all the connected BCM strings.



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LIVERMORE, CA 94551



3767 ALPHA WAY
BELLINGHAM, WA 98226



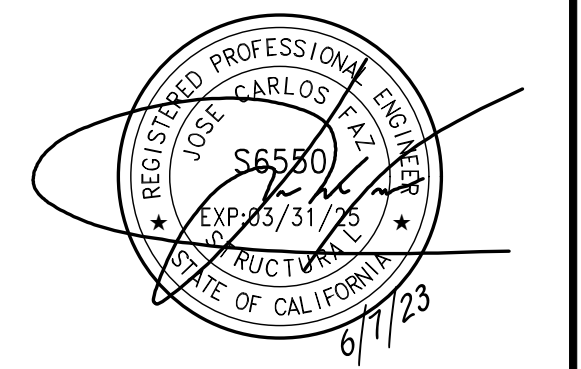
23 MAUCHLY, STE 110
IRVINE, CA 92618

J5 PROGRAM ID: ALP-CA-CPUC
J5 PROJECT ID: P-061192

ISSUE STATUS

REV	DATE	DESCRIPTION	BY
A	04/24/23	90% CD	MG
0	05/19/23	100% CD	MJC
1	06/07/23	PCC #1	MJC

SEAL



SITE INFORMATION

SITE ADDRESS:
1738 SIR FRANCIS DRAKE
BLVD,
FAIRFAX, CA 94930

SHEET TITLE:
ENERGY (BATTERY)
MANAGEMENT SYSTEMS
AND OPERATION

D4

2.1.3 BPM and BCM Safety

Each battery string is comprised of a BCM and multiple BPMs. An active Battery Management System (BMS) is incorporated within each BCM string to provide protection against overcurrent, overvoltage, over-discharge, and over-temperature conditions. The BCM and BPMs incorporate passive overcurrent protection in the form of fuses. The BMS communicates operating limits to the connected XM3.1-HP™ power supply via CAN communications. The BMS self-protects in case these limits are violated.

WARNING! EXPLOSION, ELECTROCUTION OR FIRE HAZARD

- Only use EnerSys® approved charging sources.
- A battery can present a risk of electric shock, burns from high short-circuit current, fire, or explosion. Observe proper precautions.
- Ensure the cables are properly sized.
- Ensure clearance requirements are strictly enforced around the batteries.
- Ensure the area around the batteries is well ventilated and clean of debris.
- Never allow a spark or flame near the batteries.
- Always use insulated tools. Avoid dropping tools onto batteries or other electrical parts.
- Do not charge battery below -9.4°F (-23°C).
- Follow the appropriate listed procedure for removing/replacing battery modules within this system.
- Do not stick fingers or tools in BCM.
- Remove jewelry before accessing the system.
- Do not use BPMs or BCMs with external signs of damage.

CAUTION! EQUIPMENT DAMAGE

- Failure to install or use this product as instructed can result in damage to the product that may not be covered under the limited warranty.
- Do not break into or tear apart BPMs.
- This product has no user-replaceable parts, including fuses. It is only serviceable by qualified personnel. An open fuse should be returned to EnerSys for evaluation.
- Only install BPMs and BCMs per the procedure. Do not connect them together in any other manner, or to other batteries.

WARNING! FUMES & ELECTROLYTE HAZARD

- Any gelled or liquid emissions from a battery is an electrolyte, which is harmful to the skin and eyes. In the event of an electrolyte leak, do not come in contact with the electrolyte. Immediately disconnect the battery and properly dispose of it.
- If electrolyte contacts the skin, wash immediately and thoroughly with water. If electrolyte enters the eyes, wash thoroughly for 10 minutes with clean water or a special neutralizing eye wash solution and seek immediate medical attention.
- If the battery material is released, remove operators from area until the battery cools and fumes dissipate. Provide maximum ventilation to clear out hazardous gasses. Avoid skin and eye contact or inhalation of vapors. Remove spilled liquid with absorbent cloth and dispose of according to local codes.

ATTENTION:

- See Fig. 2-2 and 2-3 for silkscreen labels.
- Install this product in accordance with local electrical, building, fire, and other codes or utility requirements.
- Use with copper conductors rated 75°C minimum.
- If installed in the United States, all wiring methods shall be in accordance with the National Electrical Code® (NFPA 70), NESC® and California General Order Codes.
- If installed in Canada, all wiring methods shall be in accordance with the Canadian Electrical Code, C22.1, Current Edition.
- Wear complete eye and clothing protection when working with batteries.
- Do not expose to rain or spray.
- Fire suppression equipment must be available in case of fire. The minimum required equipment for this installation is a type ABC fire extinguisher.

2.1.3.1 BPM and BCM Disposal and Recycling

WARNING! EXPLOSION & FIRE HAZARD

Do not dispose of the BPM or BCM by fire. Disposal or recycling of this battery shall be managed in accordance with approved local, state, and federal requirements. Consult state environmental agencies and/or the federal EPA.

Disposal or recycling of this battery shall be managed in accordance with approved local, state, and federal requirements. Consult state environmental agencies and/or federal EPA.

Do not dismantle, incinerate, or crush batteries.

In case of irreparable failure or end of life, the battery must be taken out of operation in a controlled manner (contact Alpha for more details). The battery should not be dismantled by the customer. Specialized handling and recycling are required for damaged products. Do not dispose of waste batteries as unsorted municipal waste.

Alpha®, in line with government regulations, will accept the Extended Runtime Lithium-ion (XRTLi) system batteries at specific facilities for disposal. Contact your local Alpha representative for specific recycling instructions per region.

2.1.3.2 System Safety and Certifications

The XRTLi system has been certified to the following standards:

System Safety and Certifications	
Certification	Type
UL® 9540	Energy Storage System (ESS) Requirements
UL® 9540a	Standard for Test Method for Evaluating Thermal Runaway Fire Propagation in Battery Energy Storage Systems
UL® 1973	Batteries for Use in Light Electric Rail (LER) and Stationary Applications
UN 38.3	Transportation Testing for Lithium Batteries and Cells
IEC 62368	Audio/Video, information and communication technology equipment; Telecommunication products; network infrastructure equipment
ISO® 13849-1:2015	Functional safety; Safety-related Parts of Control Systems

4.2 Enclosure Mounting Procedure

ATTENTION:

Seismic rated anchors MUST be used when securing the enclosure to the pad, and there must be at least 3" between the co-located PN-4LI cabinets and other structures. Alpha® recommends using seismic rated anchors such as the HILTI® HSL4/HSL4-G (or equivalent). Contact your Alpha representative for more information.

The enclosure bolts directly to the concrete pad. Mounting holes are provided in the base of the internal enclosure rack to accommodate the pad's 3/8" stainless or galvanized anchor bolts.

1. If installing two cabinets, place a Poron gasket (Alpha p/n 648-023-10-001) around the 2.5" knockout on the top front of the PN-4LIB22 or PN-4LIB28 before attaching cabinets. See figure below.
2. Place vapor barrier material on pad and make cutouts for anchoring hardware and other openings as necessary. A 25+ year vapor barrier MUST be used between the concrete and enclosure base to inhibit moisture ingress and to prevent corrosion caused by concrete-to-metal contact.
3. With no less than two field personnel lifting the enclosure, position it above the concrete pad and slowly lower it into position over the pad's 3/8" anchor bolts.
4. Secure the enclosure using stainless, galvanized (or better) flat washers, lock washers and 3/8" nuts at each mounting bolt.

NOTICE:

Enclosures must be mounted flush with a smooth surface. If the concrete pad is uneven or has bumps, cracks or other imperfections, the installer is responsible for correcting these defects prior to installing the enclosure.

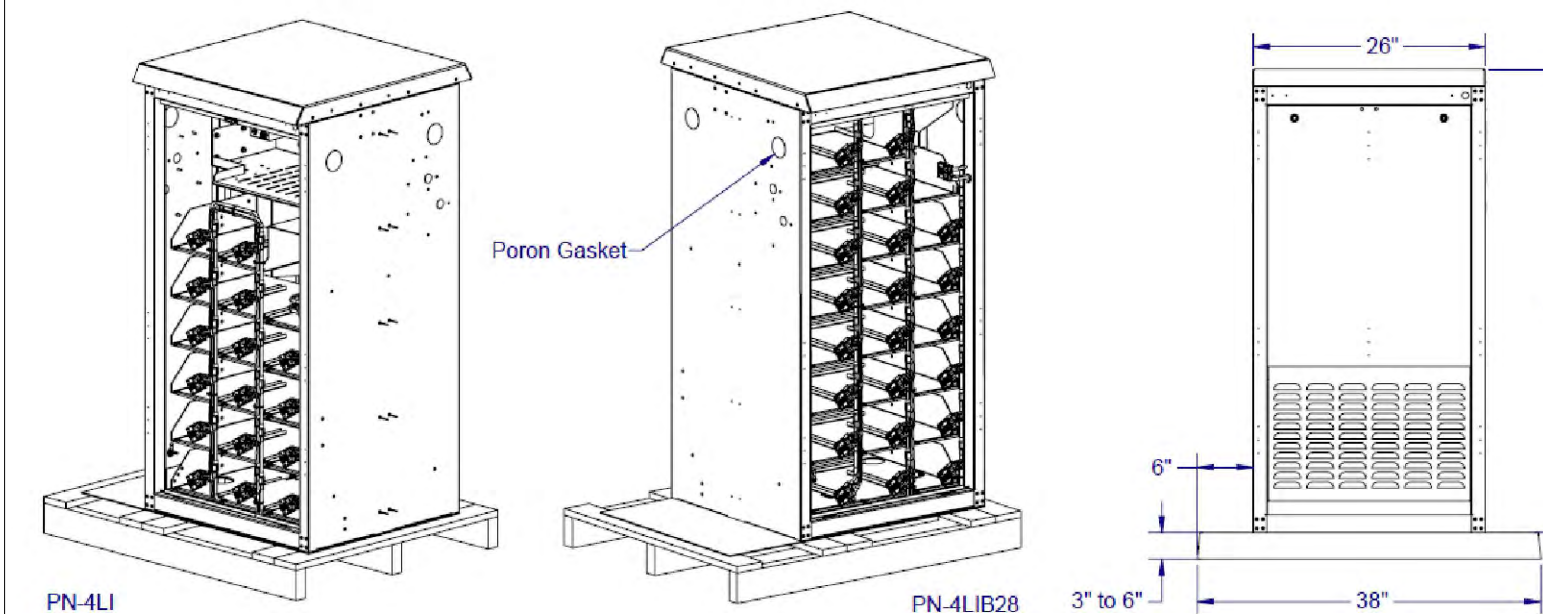
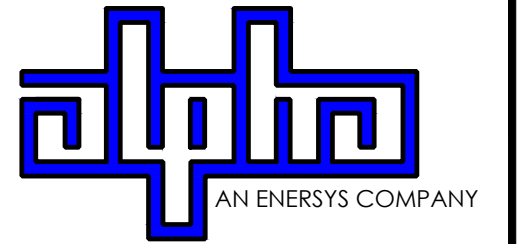


Fig. 4.1, Poron Gasket Location

Fig. 4.2, PN-4LI Mounted to Prepared Pad


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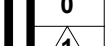
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J5 INFRASTRUCTURE PARTNERS

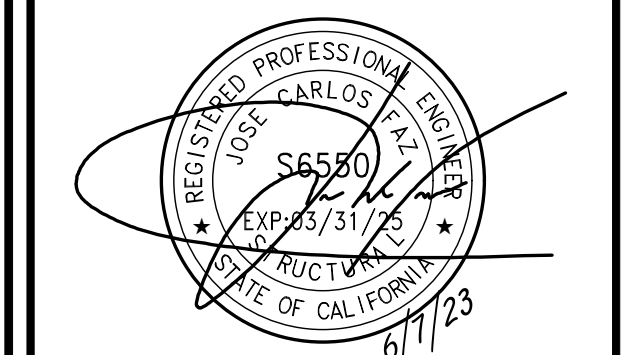
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J5 PROGRAM ID: ALP-CA-CPUC
J5 PROJECT ID: P-061192

ISSUE STATUS

REV	DATE	DESCRIPTION	BY
A	04/24/23	90% CD	MG
0	05/19/23	100% CD	MJC
	06/07/23	PCC #1	MJC

SEAL



SITE INFORMATION

SITE ADDRESS:
1738 SIR FRANCIS DRAKE
BLVD,
FAIRFAX, CA 94930

SHEET TITLE:

**INSTALLATION
REQUIREMENTS**

D5

5.0 System Installation

NOTICE:

Before going on-site, ensure laptop or tablet contains the latest XM3.1-HP™ XRT power supply and BCM support software.

WARNING! ELECTRICAL & FIRE HAZARD

- Installer must wear the correct PPE when installing batteries. Failure to do so may result in injury or death.
- Failure to install and/or use this equipment as instructed in the system documents can result in a hazard to personnel or damage to the equipment. This system is only serviceable by qualified personnel.

CAUTION!

Do not install, charge or reconcile battery below 0°C. Failure to follow this will damage equipment.

WARNING! ELECTRICAL HAZARD

When working with any electrical equipment, touch the enclosure to remove any self-generated static charges before working on the system.

Required Tools and Equipment:

- Insulated tools (size and setting based on battery manufacturer torque specification)
- Safety glasses or face shield
- Rubber gloves
- Disposable gloves
- Chest shield
- Box or bag for storing cables and hardware while out in the field
- Infrared temperature probe
- Infrared imager
- True RMS voltmeter
- Digital multimeter (DMM)
- Battery Reconciliation Device (BRD) (p/n 018-00003-20-001)
- Tools for troubleshooting isoSPI communication wires on BPM wire harness:
 - SBS*75X auxiliary contact insertion tool: *PM1002G1*
 - SBS*75X auxiliary contact extraction tool: *PM1003G1*
 - SBS*75X auxiliary contact insertion inspection tool: *PM1003GX*
- Spotlight360™ laptop or tablet (Android OS capable with USB OTG), USB OTG adapter
- WiFi router
- Barcode scanner
- Ethernet cable, connected to the laptop, for interaction with the power supply element of the backup power system
- Lawical CANUSB interface adapter, connected to a USB port on the laptop, for low-level communications with the BCM

5.2 XM3.1-HP™ Power Supply Installation Procedure

NOTICE:

If upgrading existing plant services with the XRT-Li power system, follow your company's policy of providing an alternate power source to the cable plant during this procedure. The process used in this installation will create an interruption of the existing power source. Alpha® recommends using a service power supply such as the APP-9015S.

NOTICE:

To allow adequate ventilation, ensure the power supply is placed approximately 2' from the front edge of the shelf.

The following procedure is for installing an XM3.1-HP™ power supply in the same cabinet as the BPMs. If the power supply exists in a separate cabinet, proceed to the next section.

1. Ensure the cabinets are completely installed, including being bolted to the pad and enclosure grounding, before proceeding.
2. Turn the disconnect or main breaker on. Test the AC mains voltage at the outlets.
3. Install the SPI or SPI-RF in the back of the cabinet. Connect the HFC hardline to the SPI. Leave the AUX/MAIN switch in the AUX position.
4. Mount LAP surge suppressor. If the center screw is installed in the left side outlet, remove and discard it. Insert the LAP into the lower left outlet and install the longer supplied screw through the LAP and into the outlet to secure it.
5. Place the power supply in the cabinet.
6. Mount the RF surge suppressor and ground it appropriately. Connect the plant RF cable to the input of the surge suppressor. Connect a short RF jumper cable to the output of the RF surge suppressor. (Do not connect this to the power supply at this time.) Alpha recommends tightening the RF cable on the power supply and the surge suppressor connectors to a torque setting of 10in-lb ± 1in-lb.
7. If Spotlight360™ is not available or being used, record the XM3.1-HP power supply serial number. Even with existing sites, the serial number must be recorded.
8. Optional: Connect the XM3.1-HP power supply ground wire to the enclosure. Torque to 10in-lb ± 1in-lb.
9. Plug in the short IEA power cord into the XM3.1-HP power supply. DO NOT connect the cord to the service outlet or to the LAP at this time.

Other power supply connections will be mentioned in subsequent sections.

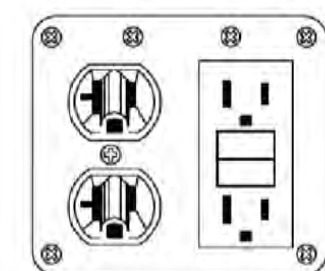


Fig. 5-2, Input Power Panel

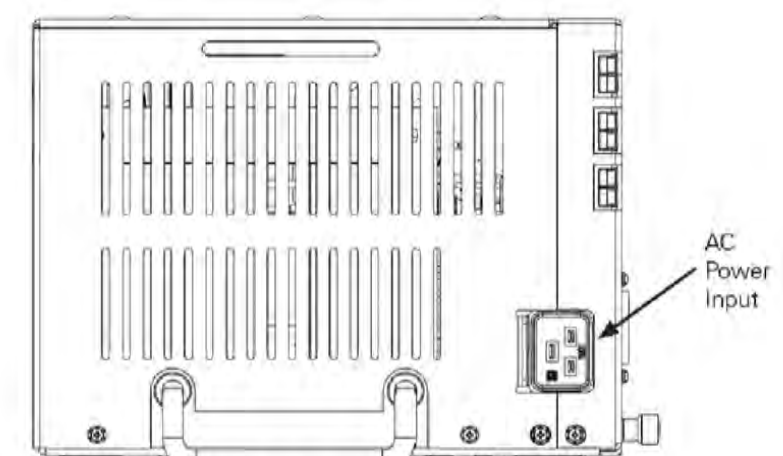


Fig. 5-3, XM3.1-HP AC Power Input Location (Side View)

5.3 BCM Installation Procedure

1. Place BCM A in its designated spot in the PN-4LI or PN-4LIB22, which is the left cabinet in a two cabinet installation. If the configuration calls for BCM B and/or BCM C, place those in the right cabinet, a PN-4LIB28, depending on the configuration. If using a single PN-4LIB28 with an external power supply, BCM A and BCM B will be located within the PN-4LIB28 cabinet.
2. Secure BCMs to the enclosure(s) via the ground securing screw. Torque to 75 in-lb (8.5 Nm). Do not connect the Battery Bus connector, but confirm all DC wiring is accessible.

5.4 BPM Installation Procedure

NOTICE:

Do not carry the BPM via the harness. Only use the handle located on the front when transporting.

NOTICE:

Before installing the BPMs, refer to Table 5-1 for BPM configurations under BCMs. BPMs must be placed in their appropriate slots under their corresponding BCM (ex: BPM A1 must go into the slot designated for BPM A1.) Do not skip the order. Skipping modules will cause operational issues.

1. Install all the Battery Power Modules (BPMs) by lifting via the handle and sliding into position (see figure below). Refer to work order for system configuration and BPM placement. Ensure the battery harness is out of the way when installing the BPMs.
2. Secure all BPMs in place in the enclosure with the ground securing screw. Torque to 75 in-lb (8.5 Nm).

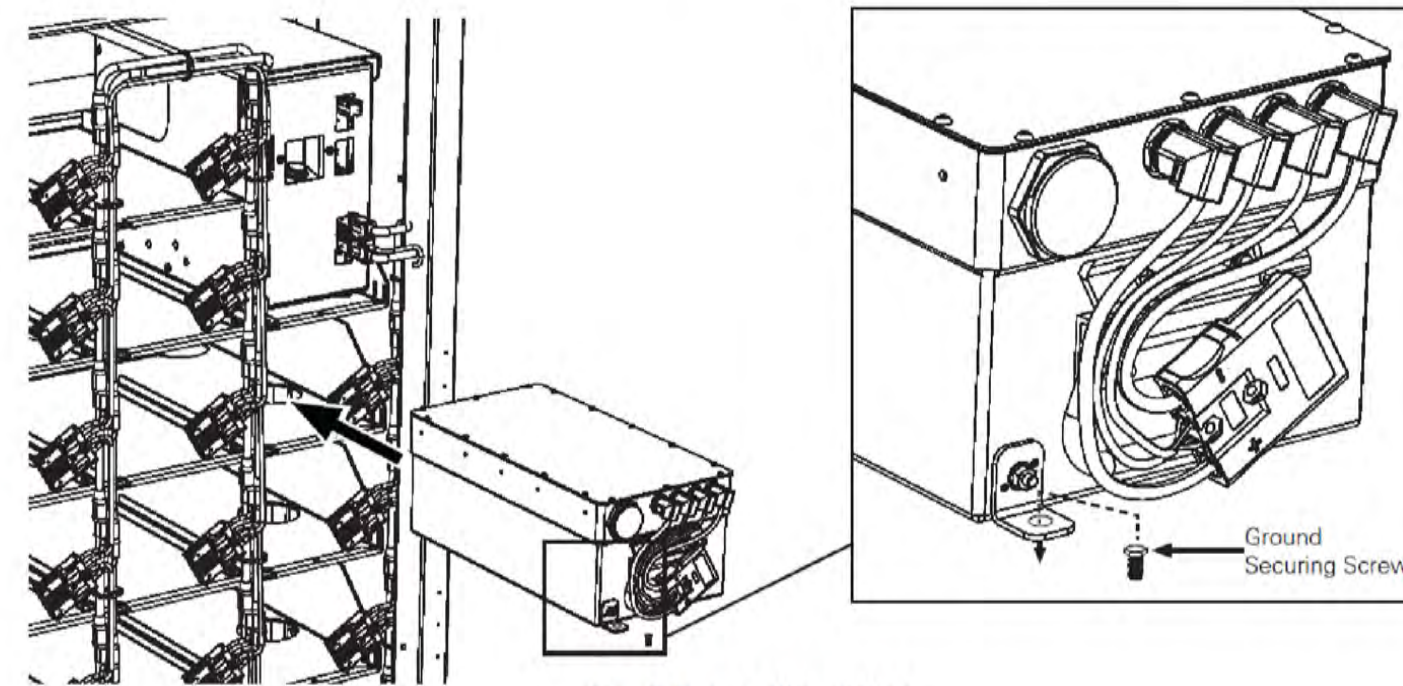


Fig. 5-4, Installing BPM

5.0 System Installation, continued

The following table describes the required varying configurations and the number of BPMs under BCM A, BCM B and BCM C, and optimized configuration for load balancing. Note that the higher number of BPMs fall under BCM A, and the BCM C should always contain six BPMs in a string.

Total BPMs	Cabinets	BCM A	BCM B
3	1	3	
4	1	4	
5	1	5	
6	1	6	
7	1	7	
8	1	8	
9	1	9	
10	1	10	
11	1	11	
12	1	12	
13	1	13	
14	1	14	
15	1	15	
16	1	16	
17	1	17	
18	1	18	
19	1	19	
20	1	20	
21	1	21	
22	1	22	
23	2	12	11
24	2	12	12
25	2	13	12
26	2	13	13
27	2	14	13
28	2	14	14
29	2	15	14
30	2	15	15
31	2	16	15
32	2	16	16
33	2	17	16
34	2	17	17
35	2	18	17
36	2	18	18
37	2	19	18
38	2	19	19
39	2	20	19
40	2	20	20
41	2	21	20
42	2	21	21
43	2	22	21
44	2	22	22

Total BPMs	Cabinets	BCM A	BCM B	BCM C
45	2	20	19	6
46	2	20	20	6
47	2	21	20	6
48	2	21	21	6
49	2	22	21	6
50	2	22	22	6

5.4.1 Verifying Ground Integrity

In order to ensure UL® compliance for the field installation, all modules must be grounded. Following this process will confirm the modules are grounded correctly.

1. Set digital multimeter (DMM) to continuity or Ohm testing.
2. Attach the common (-) lead to a ground reference point such as the ground on the cabinet door.
3. Use the test lead and touch each BCM front screw on the faceplate next to the ON / OFF button. The reading on the DMM should be less than 2 Ohms.
4. Use the test lead, touch each BPM metal handle. The reading on the DMM should be less than 2 Ohms.

5.4.2 Inter-Cabinet Cable Connections

1. Ensure the XM3.1-HP™ power supply battery circuit breaker is turned off.
2. Install DC battery cables between the power supply and BCM A. If installed, route cables from BCM A to BCM B, and from BCM B to BCM C. Ensure cables are routed so they don't interfere with the removal of any BPM or ability to close the door. Note that some cables will be routed through the conduit between the cabinets.
3. Using the gray system COM cable, connect the XM3.1-HP power supply COM port to the BCM A COM1 port.
4. If additional BCMs are present in the cabinet(s), the BCM A COM2 connects to BCM B COM1 using a system COM cable. BCM B COM2 connects to BCM C COM1.
5. When the final connection is made, place the RS485 Communication Termination in the last connected BCM COM2 port.
6. Install tamper cables. The front door should be connected to TPR1 and the back door to TPR2 ports. They are not polarity dependent, but the connector is polarized. Note that it is easy to connect the tamper cables incorrectly. Verify the connector is centered prior to pushing them in.
7. Do not connect a tamper cable to the second BCM in a cabinet (either BCM B or BCM C).

NOTICE:

The TPR (tamper) port on the XM3.1-HP™ power supply in a PN-4LI cabinet is not used.

5.4.3 Reconciliation and BPM Connections

NOTICE:

The following instructions utilize the Battery Reconciliation Device (BRD) during the reconciliation process. If using a digital multimeter (DMM) in place of a BRD, see Section 5.4.4, Reconciliation and BPM Connections with a Digital Multimeter.

After the ground integrity has been verified, the BPMs must be reconciled in order to bring their states of charge to a common level. This reconciliation process must be performed in the recommended temperature range for normal operation (0°C - 45°C) of the XRT-Li power system, as noted in Table 2-1.

To give a basic overview of BPM connection process, the cabinet wire harness must be connected to the last BPM in the string (ex: If there are sixteen batteries in string A, connect only BPM A16.) Working backwards from the last BPM, test the unconnected BPM to ensure it is safe to connect to the BPM(s) already attached to the wire harness. Once verified, the BPM can be connected to the harness and the technician can move on to the next unconnected BPM. Repeat this process until all the BPMs in the string are checked and connected.

WARNING! ELECTRICAL HAZARD

BPMs must be reconciled before installing/attaching to Bus. Failure to do so will result in equipment damage such as a blown fuse.

1. Ensure the battery bus cable is NOT plugged into a BCM. As indicated on Table 5-1, based on the count shown for this string (A, B or C), connect cabinet-integrated BPM harness connector (BPM bus) to the highest numbered BPM connector shown in that table.
2. To ensure proper State of Charge (SoC) levels, a reconciliation of these components must be performed. Connect the Battery Reconciliation Device (BRD) starting from the next to last BPM. Place the cabinet's SBS*75X Anderson connector into the BRD's BPM bus port.
3. Place the next to last BPM's harness connector into BRD's BPM port.
4. Check BRD display to verify that two BPMs are detected. (See Fig. 5-5.) This should reflect the BPM connected to the BRD BPM port and subsequent BPMs in the string.
5. On-site verify the meter's operation and calibration: Turn on your digital multimeter (DMM), set mode to DC volts, automatic or manual range above 42VDC. With the BRD connected to the BPMs, place meter's common lead in the CMN- (common negative) test point on the BRD, place the meter's positive lead in the 5VDC+ test point, and verify your meter displays 5.0VDC ±0.05V. Remove meter leads from test point.

NOTICE:

There are three important voltages in this process: the voltage of the BPM under test, the voltage of the BPM string, and the delta in voltage between them. The steps included in this section identify the correct way to measure and understand these voltages to allow a non-destructive direct connection.

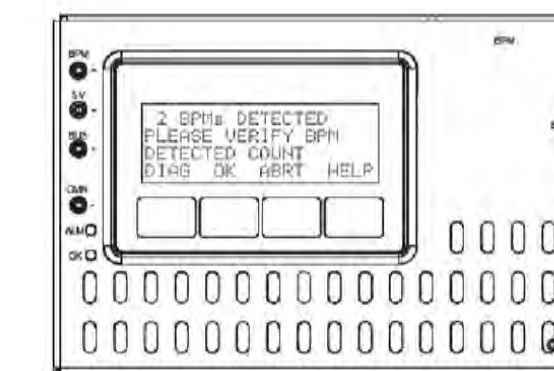
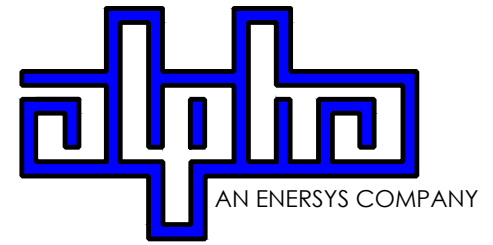


Fig. 5-5, BPM Detection Screen on BRD



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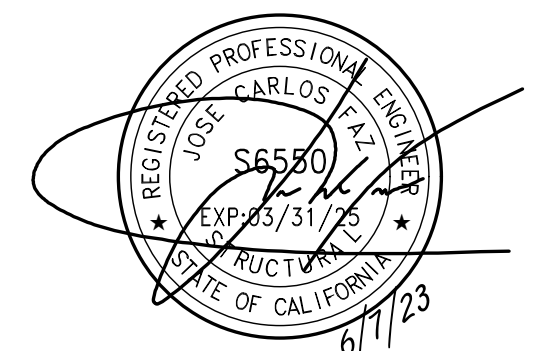
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ISSUE STATUS

REV	DATE	DESCRIPTION	BY
A	04/24/23	90% CD	MG
0	05/19/23	100% CD	MJC
	06/07/23	PCC #1	MJC

SEAL



SITE INFORMATION

SITE ADDRESS:
1738 SIR FRANCIS DRAKE
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SHEET TITLE:

COMMISSIONING

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CAUTION!
The BRD may become hot to the touch when in use.

NOTICE:
The BRD uses "buzzer logic"; when the BRD is inactive and not reconciling, an audible buzz will notify the technician. This buzzing will start at five minutes of inactivity then four minutes, three minutes, two minutes, and then every minute it is inactive, and it will beep once per interval.

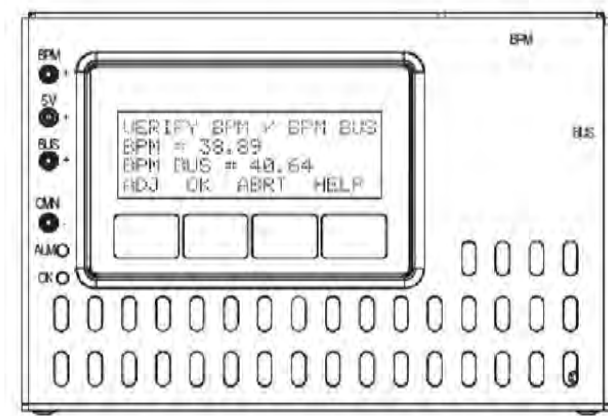


Fig. 5-6, Verifying BPM / BPM BUS

NOTICE:
If a few BPMs are widely different in voltage, spare BPMs can be substituted to speed up reconciliation.

- Use the previously on-site calibrated DMM to verify BPM voltage. Place meter's common lead in the CMN- test point on the BRD, place the meter's positive lead in the BPM+ test point, and verify your meter displays between 30 and 41VDC. Verify the BRD displayed value. If the difference between the DMM and BRD readings are greater than 0.03VDC, press the **ADJ** softkey on the BRD to adjust the voltage closer to what the DMM measures. Use the arrow softkeys to adjust the displayed values. If the difference is within spec, press the **OK** button. (See Fig. 5-6 to Fig. 5-8 for reference.)
- Use the previously on-site calibrated DMM to verify BPM BUS+ voltage. Place meter's common lead in the CMN- test point on the BRD, place the meter's positive lead in the BUS+ test point, and verify your meter displays between 30 and 41VDC. Verify the BRD displayed value. If the difference between the DMM and BRD readings are greater than 0.03VDC, press the **ADJ** softkey on the BRD to adjust the voltage closer to what the DMM measures. If the difference is within spec, press the **OK** button.

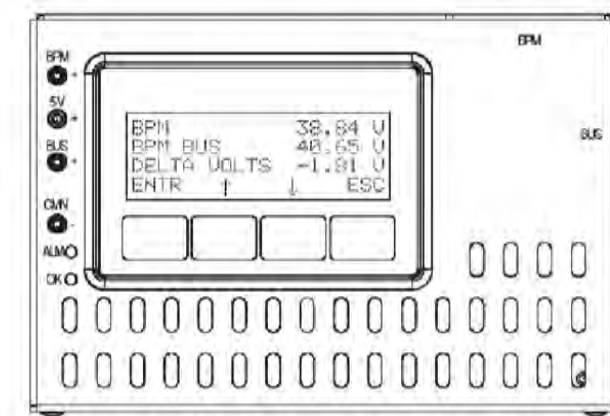


Fig. 5-7, BRD Screen - BPM, BPM BUS and Delta Voltage Readings

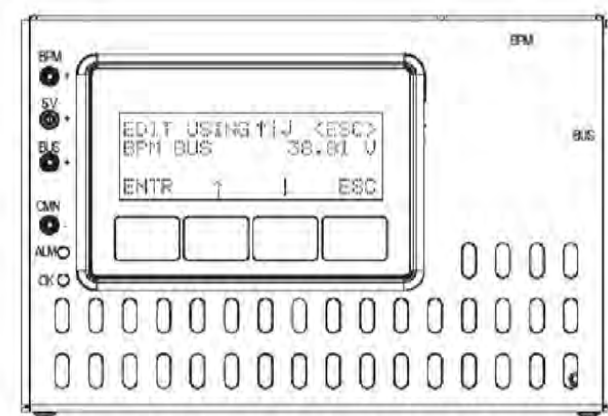


Fig. 5-8, BRD Screen - Voltage Adjustment

5.0 System Installation, continued

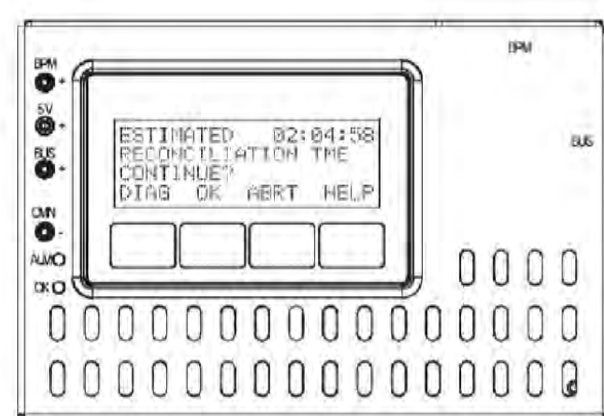


Fig. 5-9, BRD Screen - Reconciliation Estimated Time

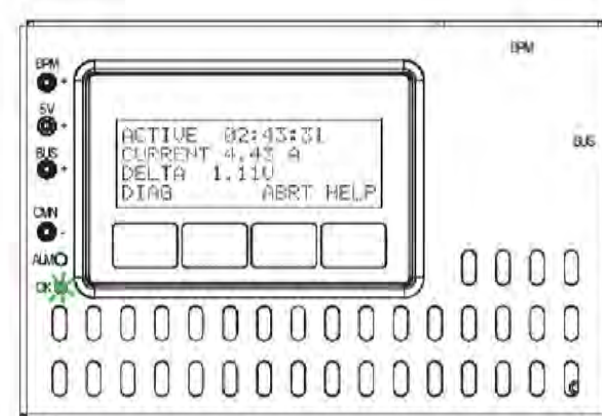


Fig. 5-10, BRD Screen - Reconciliation in Progress

- Reconciliation will start - the green LED will blink during this process (Fig. 5-10). The top line on the BRD display will show an estimated time (Fig. 5-9). Ordinarily this is a rapid process unless the BPMs are not already balanced to a common charge level. During this process, the BRD may become warm to the touch. Reconciliation is done when the BRD's OK green LED lights up solid (Fig. 5-11).

NOTICE:
The Abort (**ABRT**) function is always available on the display screen of the BRD. If there is an emergency or if any issue arises during the reconciliation process, press the **ABRT** softkey to stop reconciliation.

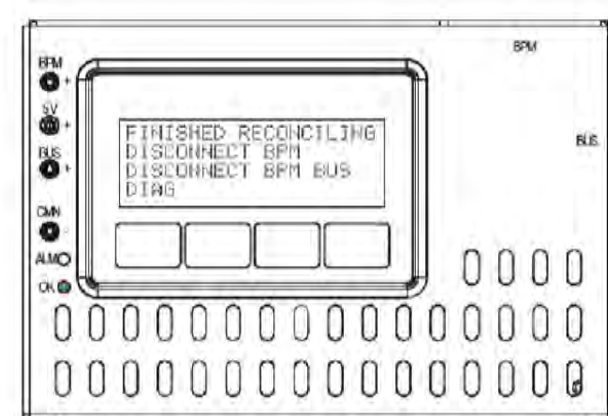


Fig. 5-11, BRD Screen - Reconciliation Complete

- Check the voltage by placing one of the DMM probes in the BPM+ jack on the BRD and the other probe in the BUS+ jack. Verify the voltage delta is less than 0.10VDC. If it is, press the **OK** softkey on the BRD. If it is not less than 0.10VDC, press the **RTRY** softkey to retry balancing.
- Disconnect the BRD. Connect the BPM to the BPM Bus.
- Continue with the next lower numbered BPM in the chain (example: BPM 14 and BPM BUS string connector 14). Connect BPM BUS cabinet-integrated connector to the previously on-site calibrated BRD BUS port, and connect the BPM to the BPM port on the BRD.
- Use the previously on-site calibrated DMM to verify delta voltage displayed on the BRD. If the difference is within 11.0V, press the **OK** softkey twice.

5.0 System Installation, continued

- Reconciliation will start - the green LED will blink during this process (Fig. 5-9). The top line on the BRD display will show an estimated time (Fig. 5-10). Ordinarily this is a rapid process unless the BPMs are not already balanced to a common charge level. (Displayed on BRD.) During this process, the BRD may become warm to the touch. Reconciliation is done when the BRD's OK green LED lights up solid.
- Check the voltage on the DMM. Verify the voltage delta is less than 0.10VDC. If it is, press the **OK** softkey on the BRD. If it is not less than 0.10VDC, press the **RTRY** softkey to retry balancing.
- Disconnect the BRD. Connect the BPM to the BCM Bus.
- Repeat steps 10 to 15 for the remainder of the BPMs in the string, ending with BPM1.
- Verify BPM count displayed on BRD matches the count expected on this string. If this matches, continue to next step.
- Connect the BPM string battery wire harness, connector A0, B0 or C0, into its corresponding BCM.
- After reconciling all the BPMs behind BCM A, repeat this process for BCM B and BCM C, where applicable.

NOTICE:
BCM reconciliation can occur on different BPM strings simultaneously if required. More than one reconciliation in a single string is not allowed.

- Proceed to **Section 5.5, Battery Management System (BMS) Configuration/Firmware Installation Procedure.**

5.4.4 Manual Reconciliation and BPM Connections with a Digital Multimeter

This reconciliation process must be performed in the recommended temperature range for normal operation (0°C - 45°C) of the XRT-Li power system, as noted in Table 2-1.

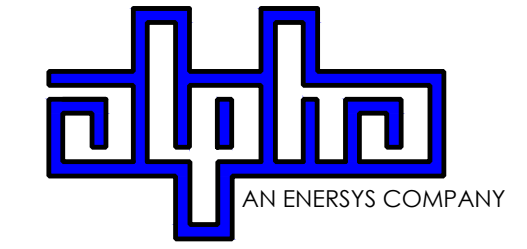
BPMs have an operational range and the BPM DC terminal voltages must be within a tolerable voltage range before connection, to limit the amount of instantaneous current across the connections between the BPM and the other BPMs on the DC BPM bus. Connections outside the tolerable voltage range will result in equipment damage. To confirm the delta in voltage is a simple process of measuring the terminals of each connector.

This process proceeds from the highest numbered BPM applicable to the string to BPM1.

- Ensure the BPM bus cable is NOT plugged into the BCM. Set digital multimeter (DMM) to DC volts in a sub 50VDC range or automatic.
 - Using a known calibration source, confirm meter is reading accurately.
 - Check each BPM you are planning to connect to the system. (All BPMs).
 - Place the Common, or negative lead of the DMM to the negative "-" terminal of the SBS®75X connector on the BPM you plan to connect.
 - Place the Positive (V+) lead of the DMM to the positive "+" terminal of the SBS®75X connector on the BPM you plan to connect.
 - When a good connection is indicated check the voltage indicated on the DMM.
 - Record the voltage using an appropriate method.
 - Is the voltage below 25VDC?
 - Check connections.
 - If connections are good, the BPM is suspect; return to depot for evaluation.
 - Is the voltage above 42VDC?
 - Check your DMM against a known source.
 - Reconciliation may be problematic as this voltage is outside of the normal operating range. Note serial number and voltage reading, and proceed with reconciliation.
 - If a few BPMs are widely different in voltage, spare BPMs can be substituted to speed up reconciliation.
 - After confirming the highest numbered BPM displays a voltage above 25 and below 42 VDC, connect it to its BPM bus connector.
 - Check the BPM bus voltage you are planning to connect to the system. (2nd and remaining).
 - Place the Common, or negative lead of the DMM to the negative "-" terminal of the SBS®75X connector on the BPM bus you plan to connect to.
 - Place the Positive (V+) lead of the DMM to the positive "+" terminal of the SBS®75X connector on the BPM bus terminal you plan to connect the BPM to.
 - Visually inspect the voltage, it should be between 25 and 42 VDC.
 - Follow recommendations in step 3 if voltages are outside of this range.
 - Record the voltage using an appropriate method.
 - Compare the recorded reading to the next lowest numbered BPM.
 - If the difference in voltage is less than 100mVDC (0.100VDC), connect the BPM module to the BPM BUS.
 - If the voltage of the BPM is more than 100mV below the BPM BUS, charge the BPM with an approved charging source until it is within 100mV of the BPM bus.
 - If the voltage of the BPM is 100mV above the BPM bus, discharge the BPM using an approved method until it is within 100mV of the BPM bus.
 - When the voltage difference is <100mV between the BPM and BPM bus connect the BPM module to the BPM bus using the corresponding connector.
- 5.0 System Installation, continued**
- Follow steps 5 and 6 for the remaining BPMs on this BPM bus.
 - Follow this process for the remaining BPM / BCM strings in the system.
 - Proceed to next section for BMS firmware installation.



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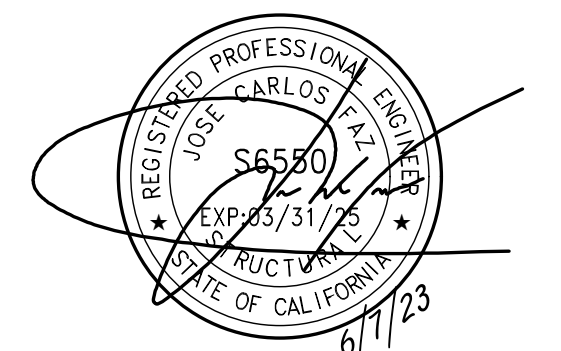
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ISSUE STATUS

REV	DATE	DESCRIPTION	BY
A	04/24/23	90% CD	MG
0	05/19/23	100% CD	MJC
	06/07/23	PCC #1	MJC

SEAL



SITE INFORMATION

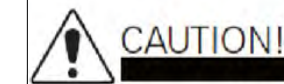
SITE ADDRESS:
1738 SIR FRANCIS DRAKE
BLVD,
FAIRFAX, CA 94930

SHEET TITLE:

COMMISSIONING

D7

6.4 Decommissioning



CAUTION!

Decommissioning **MUST** be performed by trained personnel. Failure to follow the procedures could result in equipment damage or personal injury.

ATTENTION:

Refer to **Section 2.3.1, BCM and BPM Safety** for more information and safety guidelines.

6.4.1 Overview

The decommissioning process is comprised of five major components:

1. An approved concrete support structure for ground mount cabinets.
2. Utility and HFC components and conduits.
3. One or more painted aluminum cabinet(s) with steel doors and battery support structure inside.
4. A utility connected HFC compatible inverter/charger that may be contained within a battery or pole cabinet. The voltages of this device include a utility provided 120VAC input, an HFC 89VAC NESCC compliant low voltage output to the cable plant or devices and a nominal 36VDC battery string voltage.
5. A 36VDC high density Li-ion battery system sharing the same cabinet with the inverter charger or be distributed between multiple cabinets. The system sizes range from just a few kWh of available storage to 81kWh of storage. The battery systems are comprised of one to three sets of 6 to 22 Battery Power Modules (BPMs) connected to a Battery Control Module (BCM) resulting in a complete end to end Battery Management System (BMS).

Depending on the type of decommissioning, each type requires a different approach.

- Decommissioning for redeployment of the system or components
 - Decommissioning of the entire system
 - Decommissioning of components
 - Repurposing of the site
 - Decommissioning a defective or damaged system
- Decommissioning of Lithium Ion BPMs or BCMs or BPMs and BCMs.
 - Decommissioning of the BCMs
 - Decommissioning for routine disposal of BPMs
 - Decommissioning of exhausted modules
 - Decommissioning of defective or damaged modules
 - Replacement and recommissioning items.

Carriage of High Density Lithium-ion Battery Power Modules:

In the above definitions there are 2 types of BPM handling, routine and defective. Routine handling can leverage normal lithium-ion carriage, defective modules must be carried in an EnerSys® approved high density Li-ion carrier and methods.

6.4.2 Decommissioning System with a Normal or Exhausted Battery System

Procedure:

1. Visit the site, deploy appropriate safety systems, unlock, and open the on-site cabinets. It is important that the technician determines the state of charge (SOC) of the system, which can be easily obtained from the XM3.1-HP™ power supply's Smart Display, if operational.
2. Open the HFC inverter/charger battery breaker, open the AC disconnect and remove the AC utility plug from the receptacle inside the cabinet. Remove the other electrical connections from the HFC inverter/charger, including the PP30 output connection, the PP50 battery connection, the RF or fiber communications cables, and all other connecting cables.
3. Remove the HFC XM3.1-HP power supply inverter/charger from the cabinet and dispose of it in an appropriate manner.
4. Disconnect the battery system. Remove each of the (1 to 3) BPMs' DC interconnection cables by pulling and removing the PP50 connected #6 AWG cables from each BCM. Remove the communications cable, tamper and other smaller cables connected to each BCM. The next step is for the tech to remove each of the BCMs BPM 0 bus connectors from the front of those units by pulling the Anderson™ SBS75X connectors from the front of the BCMs. Remove the ground screws that attach each BCM to the cabinet. Remove each of the BCMs and dispose of them using an approved method.
5. Gather and collect loose wiring.
6. If not completed earlier, determine the SOC of the BPMs; this can be accomplished using a DVM and measuring the bus voltage at the removed Anderson SBS75X connector terminals:
 - DC voltage >42VDC (>91%SOC) modules may be in an overcharge condition – use appropriate ground shipping.
 - DC voltage less than 42VDC but over 32VDC (91%>SOC>30%), batteries in a good or low state of charge n – use typical battery containers and ground transportation.
 - DC voltage less than 32VDC, batteries in a good or exhausted condition – use typical battery containers and ground or Air transportation.
7. Once the SOC has been determined continue to disconnect each of the BPMs from its BPM BUS connection by separating the Anderson™ SBS75X connectors.
8. When all the BPM connectors are disconnected, remove BPMs by removing the ground screw from each unit and then using the handle remove the module from the cabinet and place it in an appropriate container and dispose of it properly using the methods related to the BPMs reported SOC.
9. Populate the containers with the approved count of BPMs and note the total nameplate power being loaded in a cargo vehicle. Note not to exceed the cargo vehicles total rating for both weight and power capacity when loading. Ensure that loads are secure and loaded in such a way that their weight is distributed as required by the vehicle for safe operation.
10. Any BPM with a known electrical, physical, or thermal event related damage must be placed in an approved EnerSys® Lithium containment system and shipped to the factory for disposition. These containers will be designated for a particular population, do not exceed that population. Ship according to the EnerSys approved method for that battery condition and count. These containers must be labeled as required. Follow the above rules for battery container loading and securing as well as assuring the shipping method follows the directions outlined for suspect lithium battery transportation.
11. Remove the remainder of the HFC components from the cabinet including the SPI, hardline, RF and optical cables from the cabinet. Battery harnesses may be removed from the cabinet. Gather components and wire and dispose of these items appropriately.
12. Have the Utility disconnect the AC service from the cabinet and remove the meter and decommission the service.
13. Remove the cabinet securing bolts from poles and the concrete pad. Remove the cabinet and dispose of them using appropriate means.
14. Remove concrete pad and conduit if required.
15. Entire system decommissioning complete.

NOTICE:

If the system is to be recommissioned, move the equipment to the new site and recommission as outlined in **Section 5.0, System Installation**.

NOTICE:

Repurposing the decommissioned site to handle VRLA or VRLA with generators will require the removal of all BPMs, BCMs and cabinets as shown in the procedure above to allow a properly outfitted VRLA cabinet to be put in its place. The concrete pad, electrical service, HFC cabling, and conduit can be left in place and reused.

6.4.3 Suspect Module Decommissioning

The following subsections describe the removal of a single or multiple suspect items on the site.

Procedure for removing/replacing XM3.1-HP™ power supply powering the site:

1. Visit the site, deploy appropriate safety systems, unlock, and open the on-site cabinets. It is important that the technician determines the state of charge (SOC) of the system, which can be easily obtained from the XM3.1-HP power supply's Smart Display, if operational.
2. Open the HFC inverter/charger battery breaker, open the AC disconnect and remove the AC utility plug from the receptacle inside the cabinet. Remove the other electrical connections from the HFC inverter/charger, including the PP30 output connection, the PP50 battery connection, the RF or fiber communications cables, and all other connecting cables.
3. Remove the HFC XM3.1-HP power supply inverter/charger from the cabinet and dispose of it in an appropriate manner.
4. Replace the XM3.1-HP power supply following the installation manual, if required.

Procedure for removing/replacing one or more BCMs:

1. Visit the site, deploy appropriate safety systems, unlock, and open the on-site cabinets. It is important that the technician determines the state of charge (SOC) of the system, which can be easily obtained from the XM3.1-HP power supply's Smart Display, if operational. Open the HFC inverter/charger battery breaker.
2. On the BCM to be removed, depress the BCM ON/OFF button for 3 seconds. The BCM should shut down and Status LED will turn off. Note that all the BCMs will likely be shut down from the event. Carefully remove the wires from the front of the BCM – the PP50 DC interconnect cables, the Comms cables, the tamper cable, and other sense cables. Remove the SBX™75X BPM bus cable from the front of the BCM. Remove the ground screw and remove the BCM.
3. If the BCM is to be replaced, see **Section 6.3.2, BCM (p/n GL0005910-0000)** to install the replacement BCMs.
4. If the BCM is not to be replaced, the BPMs will also have to be decommissioned. The cables may have to be re-routed as required to ensure connections to additional BCM and BPM chains.
5. Place the defective BCM in an appropriate container and dispose of according to local codes.

Procedure for decommissioning one or more BPMs, but the system will still be operational:

1. Visit the site, deploy appropriate safety systems, unlock, and open the on-site cabinets. It is important that the technician determines the state of charge (SOC) of the system, which can be easily obtained from the XM3.1-HP power supply's Smart Display, if operational. Open the HFC inverter/charger battery breaker.
2. On the BCM hosting the BPM to be removed, depress the BCM ON/OFF button for 3 seconds. The BCM should shut down and Status LED will turn off. Note that all the BCMs will likely be shut down from the event. Remove the SBX™75X BPM bus cable from the front of the BPM connector to be removed. Remove the ground screw from the decommissioned BPM and remove the BPM from the enclosure.
3. Place the removed BPM in the appropriate container (based on the systems SOC) as shown in the system BPM decommissioning section.

Procedure for replacing defective BPM in the chain:

1. A replacement BPM will be assigned to the site. Record the replacement BPM's serial number information.
2. Take the BPM in the BPM #1 slot in the affected chain and move it to the previously removed BPM location by disconnecting the SBS™75X connectors on the # 1 BPM and BPM bus. Remove the #1 BPM ground screw and remove the #1 BPM from the #1 slot.
3. Place the #1 BPM in the previously removed BPM slot. Secure the BPM using the appropriate ground screw.
4. Connect the SBS75X connections. (The #1 BPM will be at the same SOC as the rest of the BPMs in this chain. This can be confirmed with a DVM or the BRD). When the SOC is confirmed or reconciliation is complete, attach the BPM to the BPM bus location.
5. Update the serial number information related to this slot.
6. Place a new BPM in the # 1 slot. Follow the reconciliation procedure and use a BRD or other approved method to bring the replacement BPM to the correct SOC and voltage related to that BPM bus chain.
7. Ensure the BRD indicates the correct count of BPM devices for this chain. Connect the #0 BPM by plugging into the associated BPM's SBS75X slot.
8. Update the #1BPM serial number data in the records.

Procedure for removing a decommissioned BPM without replacement – creating a smaller string with one less BPM:

1. Shutdown and disconnect the SBS75x cables in the above section.
2. Remove the BPM as indicated in the above section.
3. Take the last BPM in the chain and place it in the removed BPM slot (unless it is in the last BPM chain location) following the above reconciliation and documentation steps.
4. Reinsert the SBS75X BPM #0 connector in the front of the BCM.
5. The BCM will have to be reprogrammed with the new lower count of BPMs on the bus; see **Section 5.5, Battery Management System (BMS) Configuration/Firmware Installation Procedure**.
6. Dispose of the BPM in the manner shown in the first section depending on its SOC.
7. Perform a Link-up procedure. See **Section 5.6.1, Link-Up**.

COMCAST

3011 COMCAST PLACE
LIVERMORE, CA 94551

AN ENERSYS COMPANY

3767 ALPHA WAY
BELLINGHAM, WA 98226

J5 INFRASTRUCTURE PARTNERS

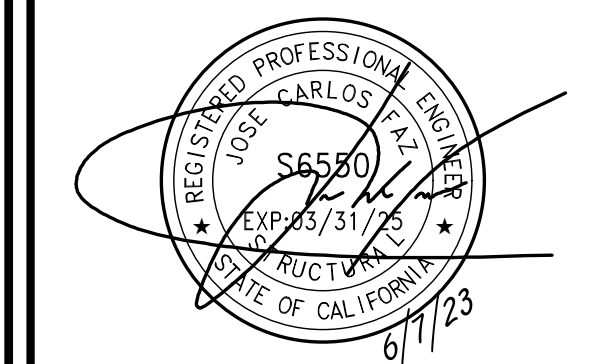
23 MAUCHLY, STE 110
IRVINE, CA 92618

J5 PROGRAM ID: ALP-CA-CPUC
J5 PROJECT ID: P-061192

ISSUE STATUS

REV	DATE	DESCRIPTION	BY
A	04/24/23	90% CD	MG
0	05/19/23	100% CD	MJC
1	06/07/23	PCC #1	MJC

SEAL



SITE INFORMATION

SITE ADDRESS:
1738 SIR FRANCIS DRAKE
BLVD,
FAIRFAX, CA 94930

SHEET TITLE:

DECOMMISSIONING

D8

2.1.3.3 BPM and BCM Identification and Labels

The battery serial numbers are located in two places on the battery case. The first is on the front of the battery. The manufacturing date is also located on this label below the serial number. The second is on the positive terminal side towards the rear of the battery.

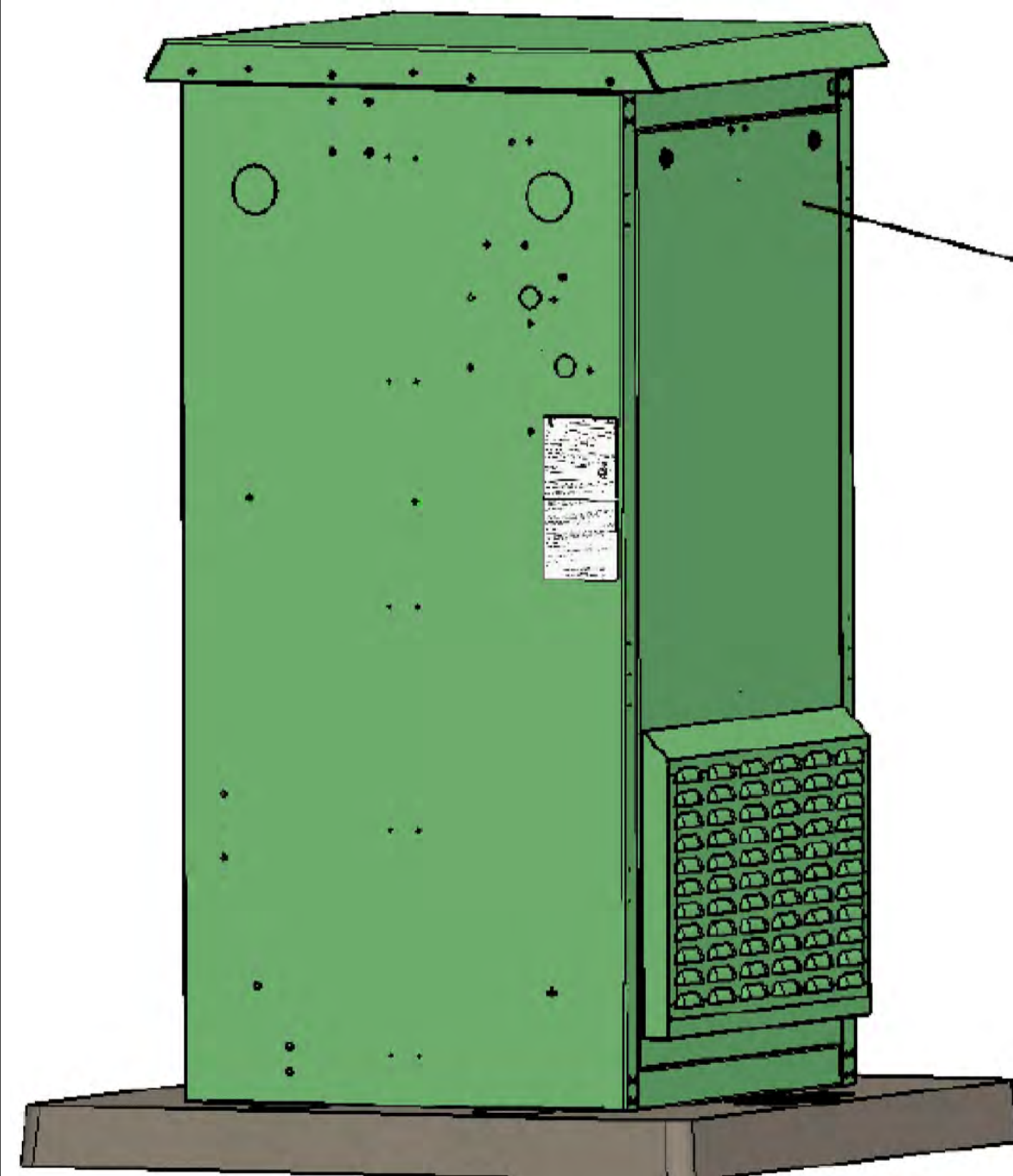
The BPM and BCM have the following labels and identification:

BCM and BPM Identification and Labels	
Label/Symbol	Indication
	Indicates a hazard.
	Indicates high voltage.
	Read/refer to manual.
	Recycle electrical equipment according to WEEE (Waste Electrical and Electronic Equipment) directive.
	Recycle and dispose of battery according to Hazardous Material Regulations for Class 9 Miscellaneous.
	Lithium-ion battery can be recycled. Follow local regulations for recycling.
	Grounding
	DC Voltage

Table 2-7, BCM and BPM Identification and Labels

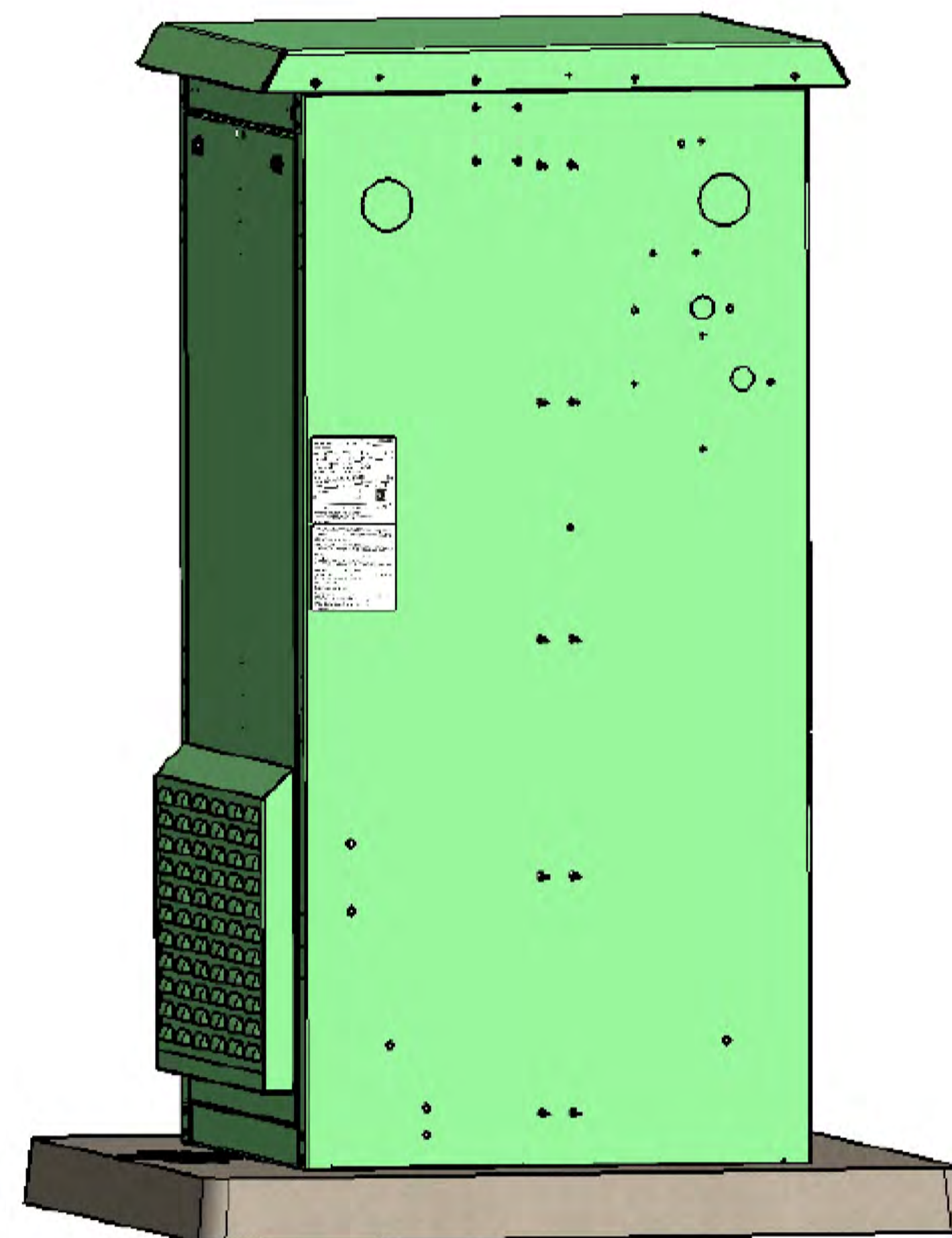
XRT-Li Nameplate Labels

The nameplate labels are affixed to the left side of the PN-4LI cabinet.



XRT-Li Nameplate Labels

The nameplate labels are affixed to the right side of the PN-4LIB cabinet.



alpha POWER SUPPLY EQUIPMENT
ENERGY STORAGE SYSTEM

INPUT VAC HZ A. MAX VA MAX
 OUTPUT VAC HZ A. MAX VA MAX
 DC CHARGER VDC NOM. A. MAX
 DC INVERTER VDC NOM. A. MAX
 MAX SYSTEM DC SCRR: 1250A @ 15ms
 ENERGY OUTPUT THIS UNIT AS INSTALLED KWH KWH MAX
 ENERGY OUTPUT SYSTEM AS INSTALLED KWH KWH MAX
 MODEL DATE CODE FACTORY CODE
 CONFIGURATION
 S/N

SA [®]
C US
161172

RAINFROOF TYPE 3R ENCLOSURE

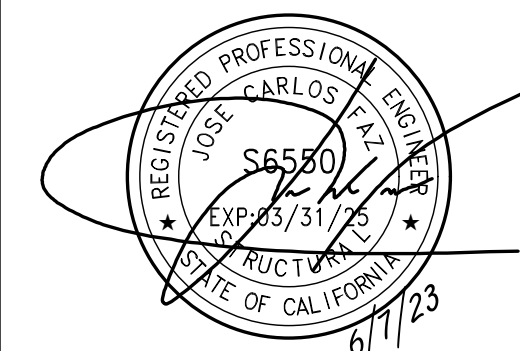
To be installed by qualified service personnel only, in accordance with applicable local and/or state electrical codes, including consideration of a dedicated grounding rod.
 D'être installé par une personne qualifiée suivant les codes électrique locaux et/ou nationaux applicable prenant en considération d'une tige de mise à la terre.
 950-00040-19-001 A

CAUTION: To reduce the risk of electric shock and fire, a circuit breaker/service disconnect switch must be installed ahead of this equipment on the enclosure when the equipment is not provided with a service entrance. Refer to installation instructions for details.
ATTENTION: Un disjoncteur/sectionneur de branchement doit être installé sur le cabinet devant l'équipement pour réduire le risque de choc électrique et d'incendie lorsque l'appareil ne dispose pas d'une entrée de service. Lisez les instructions d'installation pour plus de détails.
CAUTION: This unit has more than one power supply connection point. To reduce risk of electric shock, before servicing disconnect both the AC input breaker and the battery circuit switching device.
ATTENTION: Ce cabinet a plus d'un point de connexion d'alimentation. Pour réduire le risque de choc électrique, déconnecter la fois l'entrée du disjoncteur AC et le dispositif de commutation de circuit de la batterie.
WARNING: Hazardous voltage circuits. Risk of electric shock. Hazardous live parts inside this unit are energized from the battery supply even when the input AC power is disconnected.
AVERTISSEMENT: Circuits à tension élevée. Risque de choc électrique. Pièces sous tension dangereuses à l'intérieur de cet appareil sont alimentées à partir de l'alimentation de la batterie même lorsque l'alimentation secteur d'entrée est débranché.
WARNING: To reduce the risk of injury, read all instructions.
AVERTISSEMENT: Veuillez lire toutes les instructions pour réduire le risque de blessures.
 Ambient temperature range / Plage de température ambiante: +45C to -15C.
 Weight / Poids: 1,200 lbs / 544 kg MAX.
 Technology utilized in ESS is Li-ion.
 La technologie utilisée dans l'ESS est le Li-ion.
 For use with CATV equipment.
 À utiliser avec l'équipement CATV.
 This enclosure is designed to be used with Alpha Technologies power supply modules.
 Ce cabinet est désigné pour être utilisée avec les modules d'alimentation de Alpha Technologies.
 This equipment meets the unit level performance criteria of UL 9540A.
 Cet équipement répond aux critères de performance au niveau le appareil de UL 9540A.
 Technical Support / Assistance technique: 1-800-863-3364 950-00045-19-001 A

ISSUE STATUS

REV	DATE	DESCRIPTION	BY
A	04/24/23	90% CD	MG
0	05/19/23	100% CD	MJC
	06/07/23	PCC #1	MJC

SEAL



SITE INFORMATION

SITE ADDRESS:
1738 SIR FRANCIS DRAKE
BLVD,
FAIRFAX, CA 94930

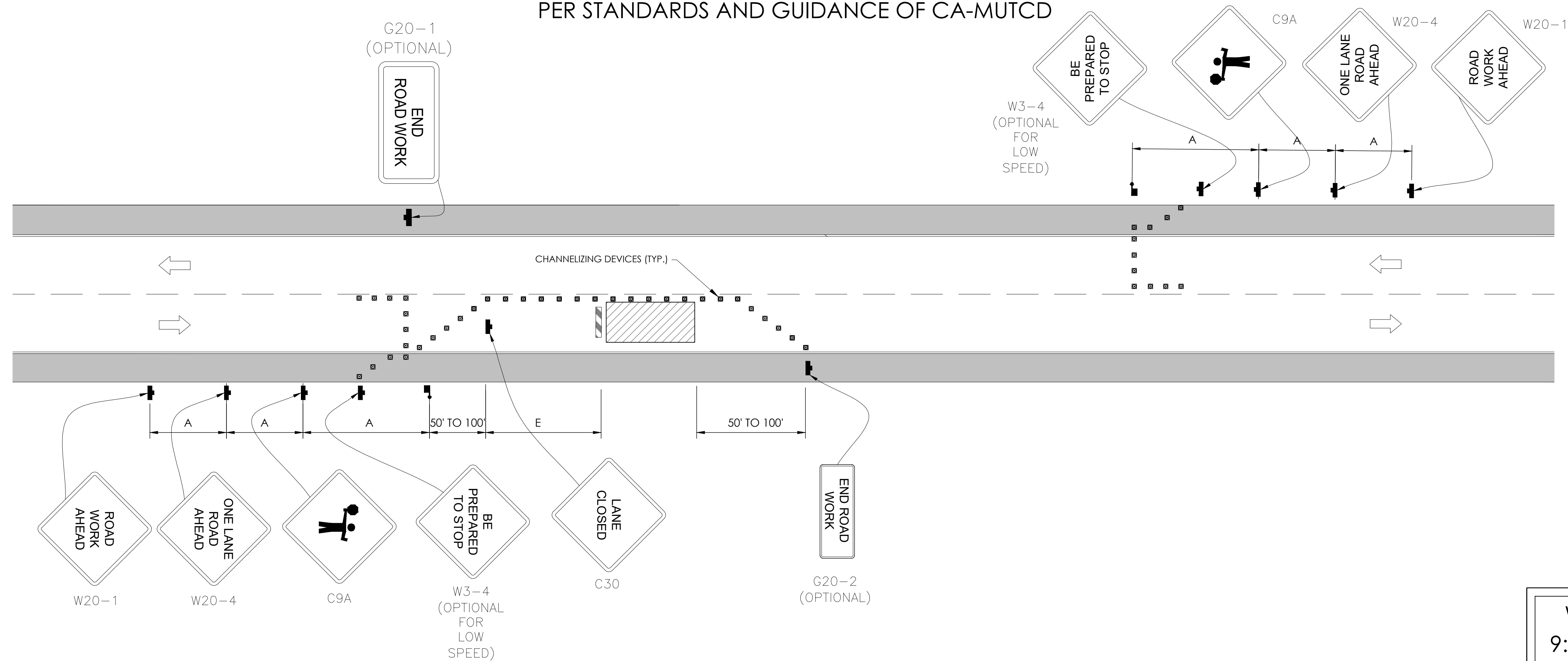
SHEET TITLE:
**SIGNAGE &
NAMEPLATE LABEL**

D9

TRAFFIC CONTROL FOR LANE CLOSURE ON TWO LANE ROAD USING FLAGGERS

WORK AREA TRAFFIC CONTROL HANDBOOK 2019 14TH EDITION

PER STANDARDS AND GUIDANCE OF CA-MUTCD



GENERAL NOTES:

- ALL WORK AND MATERIALS SHALL COMPLY WITH THE CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), 2014 EDITION.
- ALL STRIPING AND MARKINGS SHALL CONFORM TO THE STATE OF CALIFORNIA 2010 STANDARD PLAN A20A.
- THE CONTRACTOR SHALL PROVIDE FOR ACCESS TO ALL ADJACENT PROPERTIES.
- FLASHING YELLOW BEACONS, TYPE "B", SHALL BE USED ON ALL W20-1 SIGNS AND ON ALL TYPE III BARRICADES GUARDING THE WORK OVERNIGHT.
- ALL SIGNS SHALL BE REFLECTORIZED AND STANDARD SIZE.
- ALL TUBULAR DELINEATORS AND CONES SHALL BE 28" MINIMUM HEIGHT, REFLECTORIZED AND MAINTAINED ERECT IN THE INDICATED POSITION AT ALL TIMES, AND SHALL BE REPAIRED, REPLACED, OR CLEANED AS NECESSARY TO PRESERVE THEIR APPEARANCE AND CONTINUITY, AND SHALL INCLUDE A 12" HIGH-INTENSITY REFLECTORIZED SLEEVE..
- THE CONTRACTOR SHALL MAINTAIN, ON A CONTINUOUS BASIS, ALL SIGNS, DELINEATORS, BARRICADES, ETC., TO ENSURE PROPER FLOW AND SAFETY OF TRAFFIC DURING CONSTRUCTION.
- THE CONTRACTOR SHALL HAVE SIGNS, DELINEATORS, BARRICADES, ETC., PROPERLY INSTALLED PRIOR TO COMMENCING CONSTRUCTION.
- CONSTRUCTION OPERATIONS SHALL BE CONDUCTED IN SUCH A MANNER AS TO CAUSE AS LITTLE INCONVENIENCE AS POSSIBLE TO ADJUTING PROPERTY OWNERS.
- ADDITIONAL TRAFFIC CONTROLS, TRAFFIC SIGNS OR BARRICADING MAY BE REQUIRED IN THE FIELD. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PLACEMENT OF ANY ADDITIONAL DEVICES NECESSARY TO ASSURE THE SAFETY TO THE PUBLIC AT ALL TIMES DURING CONSTRUCTION.
- EXACT LOCATION AND TYPE OF CONSTRUCTION SIGNS SHALL BE DIRECTED BY THE ENGINEER BASED UPON CONSTRUCTION CONDITIONS.
- MOVE DELINEATORS AND/OR CONES TO SIDEWALK DURING NON-WORKING HOURS. REMOVE BARRICADES ETC., FROM TRAVEL LANE.
- REMOVE OR TURN OFF SIGNS DURING NON-WORKING HOURS.
- ALL CONFLICTING LINES, EXISTING CURB PAINT, AND MARKINGS SHALL BE REMOVED BY WET SANDBLASTING OR OTHER APPROVED METHOD PRIOR TO INSTALLATION OF NEW/TEMPORARY STRIPING. ALL CONFLICTING RAISED PAVEMENT MARKERS SHALL BE REMOVED. PAVEMENT THAT IS DAMAGED DUE TO REMOVAL OF MARKERS SHALL BE REPAIRED TO THE SATISFACTION OF THE CITY ENGINEER AND/OR STATE INSPECTOR.
- DIMENSIONS BASED ON GIS MAPPING DATA AND/OR RECORD DRAWINGS AND NOT A SURVEY.
- TIME OF LANE CLOSURE TO BE IN ACCORDANCE WITH REQUIREMENTS OF JURISDICTION.
- ADDITIONAL ADVANCED FLAGGERS MAY BE REQUIRED. FLAGGER SHOULD STAND IN A CONSPICUOUS PLACE, BE VISIBLE TO APPROACHING TRAFFIC. PLACE A MINIMUM OF FOUR CONES AT 40-FT INTERVAL IN ADVANCE OF FLAGGER STATION AS SHOWN.

SPEED MPH (2)	DIMENSION A/B/C ADVANCE WARNING SIGN SPACING (5)	DIMENSION L MERGIN TAPER LENGTH	DIMENSION L/2 SHIFTING TAPER LENGTH	DIMENSION L/3 MINIMUM SHOULDER TAPER	DIMENSION "E" BUFFER SPACE (4-A) AND FLAGGER STATION STOPPING SIGHT DISTANCE (4-B) (0%) (-3%) (-6%)	MAXIMUM CHANNELIZER TAPER SPACING (3)	MAXIMUM CHANNELIZER TANGENT SPACING (3)	MAXIMUM CHANNELIZER CONFLICT SPACING (6)
MPH	FT	ft	ft	ft	ft	ft	ft	ft
25	100	125	65	45	(155) (160) (135)	25	50	12
30	250	180	90	60	(200) (205) (215)	30	60	15
35	250	245	125	85	(250) (260) (275)	35	70	17
40	250	320	160	110	(305) (315) (335)	40	80	20
45	350	540	270	180	(360) (380) (400)	45	90	22
50	350	600	300	200	(425) (450) (475)	50	100	25
55	500	660	330	220	(495) (520) (555)	50	100	25
60	500	720	360	240	(570) (600) (640)	50	100	25
65	500	780	390	260	(645) (685) (730)	50	100	25
1	WORK ON FREEWAYS AND EXPRESSWAYS SHALL MEET THE CALTRANS STANDARD PLANS AND STANDARD SPECIFICATION REQUIREMENTS							
2	POSTED SPEED OR OBSERVED OPERATION SPEED (WHICHEVER IS GREATER)							
3	CHANNELIZER SPACING SHALL BE REDUCED BY HALF AT AREAS WHERE WORK IS TAKING PLACE ON CURVES OR AREAS OF HEAD-ON CONFLICT							
4-A	BUFFER SPACE MAY BE INSERTED IN LOW-SPEED URBAN AREAS AND SHOULD BE INSERTED IN HIGH-SPEED URBAN AND RURAL AREAS							
4-B	THE STOPPING SIGHT DISTANCE SHOULD ENABLE ROAD USERS TO SEE THE PRIMARY FLAGGER STATION AND SAFELY STOP							
5	SIGN SPACING IN RURAL AREAS SHOULD BE 500 FT							
6	** TABLE 6F-101 (CA)							

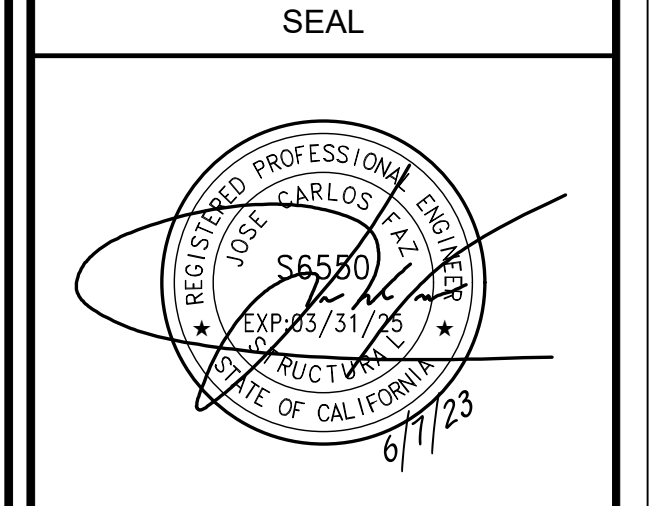
WORK HOURS
9:00AM - 3:00PM



J5 INFRASTRUCTURE PARTNERS
23 MAUCHLY, STE 110
IRVINE, CA 92618
J5 PROGRAM ID: ALP-CA-CPUC
J5 PROJECT ID: P-061192

ISSUE STATUS			
REV	DATE	DESCRIPTION	BY
A	04/24/23	90% CD	MG
0	05/19/23	100% CD	MJC
A	06/07/23	PCC #1	MJC

SEAL



SITE INFORMATION

SITE ADDRESS:
1738 SIR FRANCIS DRAKE BLVD,
FAIRFAX, CA 94930

SHEET TITLE:
TRAFFIC CONTROL

TC1

STRUCTURAL NOTES

A. STRUCTURAL DESIGN CRITERIA

- THE STRUCTURAL DESIGN HAS BEEN PERFORMED IN ACCORDANCE WITH THE 2022 CALIFORNIA BUILDING CODE (BUILDING CODE).
- WIND DESIGN DATA

ULTIMATE WIND SPEED	V = 92 mph
RISK CATEGORY	II
EXPOSURE CATEGORY	C
- SEISMIC DESIGN DATA

RISK CATEGORY	II
SEISMIC IMPORTANCE FACTOR	I _e = 1.0
MAPPED SPECTRAL ACCELERATION	S _s = 1.500
MAPPED SPECTRAL ACCELERATION	S ₁ = 0.600
SITE CLASS	D
DESIGN SPECTRAL ACCELERATION	S ₀₅ = 1.200
DESIGN SPECTRAL ACCELERATION	S ₀₁ = 0.680
SEISMIC DESIGN CATEGORY	D

B. GENERAL

- SPECIFIC NOTES AND DETAILS ON THE STRUCTURAL DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS.
- STRUCTURAL DRAWINGS SHALL NOT BE SCALED. COORDINATE DIMENSION, ELEVATION, SLOPE, AND DRAINAGE REQUIREMENTS WITH THE ARCHITECTURAL DRAWINGS.
- STANDARDS REFERENCED ON THE STRUCTURAL DRAWINGS REFER TO THE EDITION APPLICABLE UNDER THE APPLICABLE BUILDING CODE.
- THE RESPONSIBILITY FOR THE REVIEW AND COORDINATION OF DRAWINGS AND SPECIFICATIONS PRIOR TO THE START OF RELATED CONSTRUCTION SHALL BEAR ON THE CONTRACTOR. DISCREPANCIES THAT EXIST SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IN A TIMELY MANNER, PRIOR TO START OF RELATED CONSTRUCTION.
- WORK PERFORMED IN CONFLICT WITH THE STRUCTURAL DRAWINGS OR APPLICABLE BUILDING CODE REQUIREMENTS SHALL BE CORRECTED AT THE EXPENSE OF THE CONTRACTOR.
- EXISTING CONDITIONS SHALL BE VERIFIED BEFORE STARTING RELATED WORK. EXISTING CONDITIONS THAT ARE NOT REFLECTED ON THE STRUCTURAL DRAWINGS OR THAT DEVIATE FROM THE MAXIMUM OR MINIMUM DIMENSIONS INDICATED SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IN A TIMELY MANNER. SUCH CONDITIONS MAY INCLUDE CONFLICT IN GRADES, ADVERSE SOIL CONDITIONS, PRESENCE OF GROUND WATER, UNCOVERED OR UNEXPECTED EXISTING CONSTRUCTION CONFIGURATIONS, ETC.
- MATERIALS AND WORKMANSHIP SHALL CONFORM TO REQUIREMENTS OF APPLICABLE REGULATIONS AND THE BUILDING CODE AS AMENDED AND ADOPTED BY THE BUILDING OFFICIAL.
- LOADS TO THE BUILDING AND/OR EXISTING STRUCTURES EXCEEDING THE LOADS INDICATED ON THE PLANS, OR ANY LOADS EXCEEDING 400 POUNDS THAT ARE NOT INDICATED ON THE STRUCTURAL DRAWINGS SHALL BE REPORTED TO THE ENGINEER.

C. TEMPORARY WORK AND SITE SAFETY

- THE STRUCTURAL DRAWINGS SHOW THE REQUIREMENTS FOR THE COMPLETED STRUCTURE ONLY. TEMPORARY WORKS REQUIRED TO COMPLETE THE CONSTRUCTION PROCESS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE STRUCTURAL ENGINEER SHALL NOT BE RESPONSIBLE FOR THE DESIGN OR FIELD VERIFICATION OF TEMPORARY AND ANCILLARY WORK.
- THE RESPONSIBILITY FOR SAFETY IN AND AROUND THE JOBSITE SHALL BEAR ON THE CONTRACTOR. PROPER AND SAFE METHODS OF CONSTRUCTION SHALL BE EMPLOYED AT ALL TIMES INCLUDING THE STABILIZING OF INCOMPLETE STRUCTURES, FORMWORK, SHORING, RESHORING, FALSEWORK, PLATFORMS, SCAFFOLDING, BARRIERS, WALKWAYS, ETC. AND INCLUDING CONTROL OF THE INTENSITY, DURATION AND LOCATION OF CONSTRUCTION LOADS.
- THE RESPONSIBILITY FOR THE DESIGN AND INSTALLATION OF ALL CRIBBING, SHEATHING, UNDERPINNING, AND SHORING REQUIRED TO SAFELY RETAIN ALL GRADES AND STRUCTURES SHALL BEAR ON THE CONTRACTOR.
- CONSTRUCTION MATERIALS SHALL BE SPREAD OUT IF PLACED ON A STRUCTURE. LOADS SHALL NOT EXCEED THE DESIGN LIVE LOAD INDICATED. WHERE THE STRUCTURE HAS NOT ATTAINED FINAL DESIGN STRENGTH, ADEQUATE SHORING AND OR BRACING SHALL BE INSTALLED.

D. FOUNDATIONS

- THE RECOMMENDATIONS PROVIDED IN THE GEOTECHNICAL INVESTIGATION REPORT SHALL BE FOLLOWED:

FIRM: MEP
DATE: 03/29/2023
REFERENCE NO.: 06104-01
- DEVIATIONS IN GEOTECHNICAL CONDITIONS FROM THOSE DESCRIBED IN THE GEOTECHNICAL REPORT SHALL BE REPORTED TO THE STRUCTURAL AND GEOTECHNICAL ENGINEERS IN A TIMELY MANNER.
- SPECIAL INSPECTION AND TESTING IS REQUIRED IN ACCORDANCE WITH SECTIONS 1704 AND 1705 OF THE BUILDING CODE AND THE "STATEMENT OF SPECIAL INSPECTIONS" ON THESE CONSTRUCTION DOCUMENTS.
- THE MAXIMUM ALLOWABLE SOIL BEARING PRESSURE SHALL BE 2000 psf. THE RESULTING ALLOWABLE BEARING VALUE MAY BE INCREASED BY 1/3 FOR WIND AND SEISMIC LOAD CASES.
- THE EXPANSION INDEX HAS BEEN DETERMINED TO BE GREATER THAN 50 AND THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT HAVE BEEN INCORPORATED INTO THESE DRAWINGS.
- THE EXPANSION INDEX HAS BEEN DETERMINED TO BE 50 OR LESS AND NO SPECIAL DESIGN RECOMMENDATIONS ARE REQUIRED.

- FOOTING AND UTILITY TRENCH BACKFILL SHALL BE MECHANICALLY COMPACTED IN LAYERS SUBJECT TO THE APPROVAL OF THE GEOTECHNICAL ENGINEER. FLOODING WILL NOT BE PERMITTED.
- LOOSE SOIL AND FILL MATERIAL SHALL BE COMPACTED ACCORDING TO THE REQUIREMENTS OF THE SOILS REPORT.
- COMPACTION TEST REPORTS FOR FILL BY A QUALIFIED TESTING LAB SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER, GEOTECHNICAL ENGINEER AND BUILDING OFFICIAL PRIOR TO REQUESTING FOUNDATION INSPECTION.
- FOOTING DEPTHS INDICATED ON THE STRUCTURAL DRAWINGS ARE BELIEVED TO BE IN SUITABLE BEARING MATERIALS AND ARE INDICATED FOR COST ESTIMATING PURPOSES ONLY. THE GEOTECHNICAL ENGINEER MAY REQUIRE FOUNDATION DEPTHS TO BE INCREASED. THE RESPONSIBILITY FOR CONFORMING TO THE GEOTECHNICAL REPORT RECOMMENDATIONS REGARDING DEPTH OF FOOTINGS SHALL BEAR ON THE CONTRACTOR.
- ANCHOR BOLTS, DOWELS AND HOLD-DOWN ANCHORS SHALL BE TIED IN PLACE PRIOR TO FOUNDATION INSPECTION.
- WALLS RETAINING EARTH SHALL BE DRAINED AND BACKFILLED ACCORDING TO THE RECOMMENDATIONS WITHIN THE GEOTECHNICAL REPORT.
- BACKFILLING BEHIND RETAINING WALLS SHALL NOT BEGIN UNTIL WALLS HAVE BEEN CURED FOR A MINIMUM OF 14 DAYS.
- SHORING SHALL BE INSTALLED AT THE TOP OF RESTRAINED RETAINING WALLS PRIOR TO BACKFILLING. SHORING SHALL REMAIN IN PLACE UNTIL THE PERMANENT STRUCTURAL SUPPORTING MEMBERS ARE IN PLACE. FOR CONCRETE SUPPORTING MEMBERS, SHORING TO REMAIN IN PLACE FOR A MINIMUM OF 7 DAYS AFTER CONCRETE PLACEMENT.
- SLABS ON GRADE THAT RESTRAIN THE BOTTOM OF RETAINING WALLS SHALL BE IN PLACE PRIOR TO BACKFILLING OF THE WALLS.

E. REINFORCING STEEL

- DETAILING, FABRICATION AND ERECTION OF REINFORCING BARS SHALL BE PREFORMED IN ACCORDANCE WITH ACI 315, "DETAILS AND DETAILING OF CONCRETE REINFORCEMENTS."
- REINFORCING BARS SHALL CONFORM TO ASTM A 615, GRADE 60, U.O.N.
- U.O.N., REINFORCING BAR LAP SPLICES SHALL BE:

NW & LW CONCRETE MASONRY (CMU)	CLASS B (18" MIN) 64 BAR DIA. (24" MIN)
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- DETAILS OF REINFORCEMENT SHALL COMPLY WITH THE PROVISIONS OF ACI 318.
- WHERE HOOKS ARE ILLUSTRATED AS 90-DEGREE HOOKS, 180-DEGREE HOOKS MAY BE USED IN LIEU OF 90-DEGREE HOOKS.
- REINFORCING BARS FOR CONCRETE SHALL BE PROVIDED WITH THE FOLLOWING MINIMUM COVER:

CONCRETE CAST AGAINST EARTH	3"
FORMED CONCRETE EXPOSED TO EARTH / WEATHER	
#5 OR SMALLER	1 1/2"
#6 OR LARGER	2"
SLABS (#11 AND SMALLER)	3/4"
- VERTICAL WALL BARS SHALL BE ACCURATELY POSITIONED AND SECURED AT THE CENTER OF THE WALL, U.O.N.

F. REINFORCED CONCRETE

- CONCRETE CONSTRUCTION SHALL CONFORM WITH CHAPTER 19 OF THE BUILDING CODE AND TO THE PROVISIONS OF ACI 318.
- THE STRUCTURAL DESIGN OF FOOTINGS SHOWN ON THESE DRAWINGS IS BASED ON A SPECIFIED COMPRESSIVE STRENGTH, F_c, NOT MORE THAN 2,500 psi.
- WATER MAY BE ADDED TO CONCRETE ON-SITE TO OBTAIN SPECIFIED SLUMPS PROVIDED THAT IT IS ADDED WITHIN ONE HOUR OF BATCHING AND SITE-ADDED WATER IS SPECIFIED ON THE BATCH REPORT. SITE-ADDED WATER SHALL NOT COMPROMISE THE STRENGTH OR SLUMP OF THE CONCRETE.
- CONCRETE SHALL NOT BE PLACED BEYOND 1-1/2 HOURS FOLLOWING BATCHING.
- PROJECTING CORNERS OF SLABS, BEAMS, WALLS, COLUMNS, ETC., SHALL BE FORMED WITH A 3/4" CHAMFER U.O.N.
- WHERE CONCRETE IS PLACED AGAINST EXISTING CONCRETE SURFACES, THE EXISTING CONCRETE SURFACES SHALL BE THOROUGHLY CLEANED AND ROUGHENED TO A MINIMUM AMPLITUDE OF 1/4-INCH. A CONCRETE BONDING AGENT SHALL BE APPLIED TO THE EXISTING CONCRETE SURFACE.
- READY MIX CONCRETE SHALL BE MIXED AND DELIVERED IN ACCORDANCE WITH ASTM C 94.
- CEMENT SHALL CONFORM TO ASTM C 150 TYPE I OR II, LOW ALKALI.
- FLYASH SHALL CONFORM TO ASTM C 618, CLASS F. FLYASH SHALL BE LIMITED TO NO MORE THAN 20% OF THE TOTAL WEIGHT OF CEMENTITIOUS MATERIALS IN THE CONCRETE, U.O.N.
- AGGREGATES FOR NORMAL WEIGHT CONCRETE SHALL CONFORM TO ASTM C 33.
- NORMAL WEIGHT CONCRETE SHALL HAVE A MAXIMUM DRY DENSITY OF 150 pcf.
- MINIMUM CONCRETE COMPRESSIVE STRENGTHS AT 28 DAYS, MAXIMUM SLUMPS, AND MAXIMUM WATER/CEMENT RATIOS SHALL BE AS FOLLOWS:

DESCRIPTION	MIN 28 DAY F _c	SLUMP	MAX W/C RATIO
SHALLOW FOUNDATIONS	3,500 psi	4" +/- 1"	0.52
SLABS ON GRADE	3,000 psi	4" +/- 1"	0.45
- SLUMPS INDICATED ARE PRIOR TO PLASTICIZER ADDITIVES.
- CONCRETE EXPOSED TO WEATHER SHALL BE AIR ENTRAINED.

G. REINFORCED CONCRETE MASONRY (CMU)

- MASONRY CONSTRUCTION SHALL CONFORM TO CHAPTER 21 OF THE BUILDING CODE AND ACI 530.1.
- SPECIAL INSPECTION AND TESTING IS REQUIRED IN ACCORDANCE WITH SECTIONS 1704 AND 1705 OF THE BUILDING CODE AND THE "STATEMENT OF SPECIAL INSPECTIONS" ON THESE CONSTRUCTION DOCUMENTS.
- CONCRETE MASONRY CONSTRUCTION SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF F_m = 2,000 psi, U.O.N.
- CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C 90, MEDIUM WEIGHT, SINGLE OPEN-END UNITS, U.O.N.
- MORTAR SHALL CONFORM TO ASTM C 270, TYPE "S".
- GROUT SHALL CONFORM TO ASTM C 476. GROUT MIXES SHALL BE DESIGNED BY A QUALIFIED TESTING LABORATORY AND APPROVED BY THE ENGINEER.
- STRENGTH VERIFICATION OF MASONRY SHALL BE BY THE UNIT STRENGTH METHOD IN ACCORDANCE WITH ACI 530.1, SECTION 1.4B.2.b. MASONRY COMPONENTS SHALL HAVE THE FOLLOWING STRENGTHS:

DESCRIPTION	MINIMUM COMPRESSIVE STRENGTH
MASONRY UNITS	2,000 psi
GROUT	2,000 psi
- VERTICAL BARS IN WALLS SHALL BE PLACED IN THE CENTER OF THE WALL UNLESS OTHERWISE INDICATED. VERTICAL BARS SHALL BE TIED OR OTHERWISE FIXED IN POSITION AT THE TOP AND BOTTOM AND AT INTERVALS OF NOT MORE THAN 200 BAR DIAMETERS.
- HORIZONTAL BARS SHALL BE PLACED IN BOND BEAM UNITS.
- CONDUITS OR PIPES SHALL NOT OCCUR IN SAME CELL AS REINFORCING BARS.
- MASONRY UNITS SHALL BE PLACED IN A RUNNING BOND PATTERN, U.O.N.
- MASONRY CELLS SHALL BE SOLID GROUTED, U.O.N.
- A GROUT POUR SHALL BE THE TOTAL HEIGHT OF MASONRY THAT IS GROUTED PRIOR TO THE ERECTION OF ADDITIONAL MASONRY. A GROUT POUR SHALL NOT EXCEED THE HEIGHT LIMITS GIVEN IN ACI 530.1, TABLE 7 AND MAY CONSIST OF ONE OR MORE GROUT LIFTS.
- A GROUT LIFT SHALL BE THE HEIGHT OF GROUT THAT IS PLACED IN A SINGLE, CONTINUOUS OPERATION BEFORE CONSOLIDATION OF GROUT. GROUT LIFTS SHALL NOT EXCEED 5'-4" IN HEIGHT UNLESS THE FOLLOWING CONDITIONS ARE MET:
- MASONRY IS ALLOWED TO CURE FOR A MINIMUM OF 4 HOURS PRIOR TO GROUTING
- GROUT SLUMP IS MAINTAINED BETWEEN 10 AND 11 INCHES AS VERIFIED BY TESTING
- LIFTS ARE LIMITED TO A HEIGHT BETWEEN HORIZONTAL BOND BEAMS, OR A MAXIMUM OF 12'-8".
- GROUT SHALL BE CONSOLIDATED BY MECHANICAL VIBRATION. WHERE LIFTS EXCEED 12 INCHES, GROUT SHALL BE RE-CONSOLIDATED BY MECHANICAL VIBRATION AFTER INITIAL WATER LOSS AND SETTLEMENT.
- INSPECTION AND CLEAN OUT HOLES SHALL BE PROVIDED AT THE BASE OF GROUTED CELLS WHERE A GROUT POUR EXCEEDS 5'-4" IN HEIGHT. HOLE SPACING SHALL NOT EXCEED 32 INCHES ON CENTER.
- WHEN GROUTING IS STOPPED FOR ONE HOUR OR LONGER, HORIZONTAL CONSTRUCTION JOINTS SHALL BE FORMED BY STOPPING THE GROUT POUR 1-1/2" BELOW TOP OF THE UPPERMOST UNIT.

H. POST-INSTALLED ADHESIVE ANCHORS

- SPECIAL INSPECTION AND TESTING IS REQUIRED IN ACCORDANCE WITH SECTIONS 1704 AND 1705 OF THE BUILDING CODE AND THE "STATEMENT OF SPECIAL INSPECTIONS" ON THESE CONSTRUCTION DOCUMENTS.
- ADHESIVE ANCHOR INSTALLERS SHALL BE TRAINED BY A QUALIFIED REPRESENTATIVE OF THE ADHESIVE MANUFACTURER ON THE PROPER PROCEDURES AND TECHNIQUES FOR INSTALLATION.
- ADHESIVE SHALL BE STORED ON THE JOBSITE IN A COOL, DRY LOCATION IN CONFORMANCE WITH THE MANUFACTURER'S REQUIREMENTS.
- ADHESIVE ANCHORS SHALL NOT BE USED FOR OVERHEAD INSTALLATION.
- POST-INSTALLED ADHESIVE ANCHORS SHALL BE AS FOLLOWS, U.O.N.

MATERIAL	ANCHOR
NW & LW CONCRETE	HILTI HIT-HY 200 V3 (ESR-4868)
SOLID GROUTED CMU	HILTI HIT-HY 270 (ESR-4143)
- POST-INSTALLED ADHESIVE ANCHORS SHALL BE AS FOLLOWS, U.O.N.

MATERIAL	ANCHOR
NW & LW CONCRETE	SIMPSON SET-XP (ESR-2508)
SOLID GROUTED CMU	SIMPSON SET-XP (ER-265)
- THREADED RODS FOR ADHESIVE ANCHORS SHALL CONFORM TO ASTM F1554 GR 36, UNO. NUTS FOR ANCHOR RODS SHALL CONFORM TO ASTM A563, GR A HEX.
- ANCHORS SHALL BE OF THE TYPE, DIAMETER, AND MINIMUM DIMENSIONAL REQUIREMENTS (EMBEDMENT, SPACING, AND EDGE DISTANCE) AS INDICATED ON THE DRAWINGS.
- ANCHORS SHALL BE INSTALLED IN HOLES DRILLED WITH DRILLING EQUIPMENT OF THE TYPE REQUIRED IN THE MANUFACTURER'S PUBLISHED EVALUATION REPORT. HOLES SHALL BE CLEANED IN CONFORMANCE WITH THE ANCHOR MANUFACTURER'S INSTRUCTIONS.
- WHEN INSTALLING ANCHORS IN EXISTING REINFORCED CONCRETE OR MASONRY, AVOID CUTTING OR DAMAGING THE EXISTING REINFORCING BARS.
- WHEN INSTALLING ANCHORS INTO PRESTRESSED CONCRETE (PRE- OR POST-TENSIONED), LOCATE THE PRESTRESSED TENDONS BY USING A NON-DESTRUCTIVE METHOD PRIOR TO INSTALLATION. AVOID CUTTING OR DAMAGING THE TENDONS.

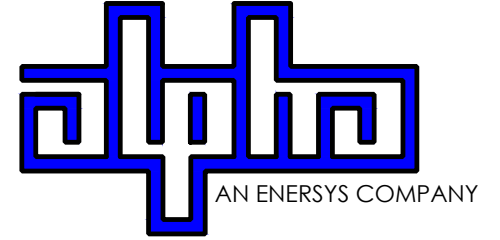
STRUCTURAL ABBREVIATIONS

THE STRUCTURAL DRAWINGS MAY INCLUDE THE FOLLOWING STANDARD ABBREVIATIONS:

(E)	EXISTING
(N)	NEW
(P)	PROPOSED
B.N.	BOUNDARY NAILING
BLOG	BUILDING
BM	BEAM
BOTT	BOTTOM
BRG	BEARING
CFS	COLD-FORMED STEEL
CJP	COMPLETE JOINT PENETRATION
CL	CENTERLINE
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CONT	CONTINUOUS
CTR	CENTER
CTSK	COUNTERSUNK
DBL	DOUBLE
Do	DITTO/DO OVER
E.N.	EDGE NAILING
EA	EACH
EQUIP	EQUIPMENT
F.N.	FIELD NAILING
FRP	FIBER-REINFORCED POLYMER
FTG	FOOTING
GALV	GALVANIZED
GLB	GLULAM BEAM / MEMBER
HGR	HANGER
HORIZ	HORIZONTAL
HSS	HOLLOW STEEL SECTION
INT	INTERIOR
k	KIP(S) = 1,000 lb
lb	POUND(S)
MFR	MANUFACTURER
MTL	METAL
O.H.	OPPOSITE HAND / MIRROR
OC	ON CENTER
PL	PLATE
psf	POUNDS PER SQUARE FOOT
P-T	POST-TENSIONED
REINF	REINFORCEMENT
PSL	PARALLEL STRAND LUMBER
REQ'D	REQUIRED
SHTG	SHEATHING
SMS	SHEET METAL SCREW
SQ	SQUARE
STIFF	STIFFENER
STL	STEEL
T&B	TOP & BOTTOM
T&G	TONGUE & GROOVE
THK	THICK
TPL	TRIPLE
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
VIF	VERIFY IN FIELD
W/	WITH



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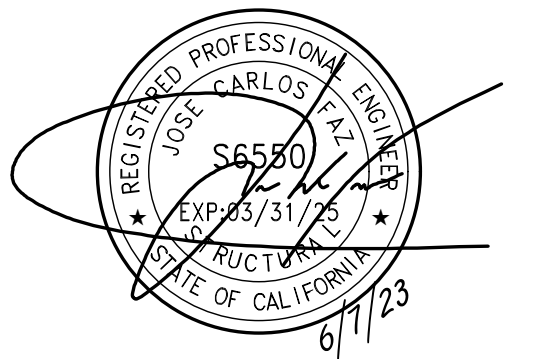
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ISSUE STATUS

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SITE INFORMATION

SITE ADDRESS:
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SHEET TITLE:
**STRUCTURAL
NOTES**

S1

SPECIAL INSPECTION AND TESTING PROGRAM

A. GENERAL

- NOTICE TO THE APPLICANT, OWNER, OWNER'S AGENT, ARCHITECT OR ENGINEER OF RECORD: BY USING THESE PERMITTED CONSTRUCTION DRAWINGS FOR CONSTRUCTION OR INSTALLATION OF THE WORK SPECIFIED HEREIN, YOU AGREE TO COMPLY WITH THE REQUIREMENTS OF THE BUILDING OFFICIAL FOR SPECIAL INSPECTIONS, STRUCTURAL OBSERVATIONS, CONSTRUCTION MATERIAL TESTING AND OFF-SITE FABRICATION OF BUILDING COMPONENTS CONTAINED IN THE STATEMENT OF SPECIAL INSPECTIONS AND AS REQUIRED BY CONSTRUCTION CODES.
- NOTICE TO THE CONTRACTOR, BUILDER, INSTALLER, SUBCONTRACTOR OR OWNER-BUILDER: BY USING THESE PERMITTED CONSTRUCTION DRAWINGS FOR CONSTRUCTION OR INSTALLATION OF THE WORK SPECIFIED HEREIN, YOU ACKNOWLEDGE THAT YOU ARE AWARE OF THE REQUIREMENTS CONTAINED IN THE STATEMENT OF SPECIAL INSPECTIONS. YOU AGREE TO COMPLY WITH THE REQUIREMENTS OF THE BUILDING OFFICIAL FOR SPECIAL INSPECTIONS, STRUCTURAL OBSERVATIONS, CONSTRUCTION MATERIAL TESTING AND OFF-SITE FABRICATION OF BUILDING COMPONENTS CONTAINED IN THE STATEMENT OF SPECIAL INSPECTIONS AND AS REQUIRED BY CONSTRUCTION CODES.
- THE OWNER OR OWNER'S AGENT, OTHER THAN THE CONTRACTOR, SHALL EMPLOY SPECIAL INSPECTION AND TESTING AGENCIES TO PROVIDE INSPECTIONS DURING CONSTRUCTION ON THE TYPES OF WORK LISTED IN THE STATEMENT OF SPECIAL INSPECTIONS.
- SPECIAL INSPECTION SHALL BE PERFORMED IN ADDITION TO INSPECTION BY THE BUILDING OFFICIAL AS REQUIRED IN SECTION 110 OF THE BUILDING CODE. SPECIAL INSPECTION SHALL NOT BE A SUBSTITUTE FOR INSPECTION BY THE BUILDING OFFICIAL.
- WHEN WORK IN MORE THAN ONE CATEGORY OF WORK REQUIRING SPECIAL INSPECTION OR TESTING IS TO BE PERFORMED SIMULTANEOUSLY, OR THE GEOGRAPHIC LOCATION OF THE WORK IS SUCH THAT IT CANNOT BE OBSERVED IN ACCORDANCE WITH THE STATEMENT OF SPECIAL INSPECTIONS AND SECTION 1704 OF THE BUILDING CODE, IT SHALL BE THE SPECIAL INSPECTION AGENCY'S RESPONSIBILITY TO EMPLOY A SUFFICIENT NUMBER OF INSPECTORS TO ASSURE THAT THE REQUIRED WORK IS INSPECTED.
- THE SPECIAL INSPECTION AGENCY SHALL BE APPROVED BY THE BUILDING OFFICIAL FOR INSPECTION OF THE PARTICULAR TYPE OF CONSTRUCTION OR OPERATION REQUIRING SPECIAL INSPECTION. EXCEPTIONS:
 - WHEN THIS REQUIREMENT FOR AGENCY APPROVAL IS WAIVED BY THE BUILDING OFFICIAL.
- THE CONSTRUCTION MATERIALS TESTING AGENCY SHALL BE APPROVED BY THE BUILDING OFFICIAL FOR THE TESTING OF MATERIALS, SYSTEMS, COMPONENTS AND EQUIPMENT.
- PRIOR TO THE START OF CONSTRUCTION, THE SPECIAL INSPECTION AND TESTING AGENCIES SHALL SUBMIT DOCUMENTATION TO THE BUILDING OFFICIAL DEMONSTRATING THE COMPETENCE AND RELEVANT EXPERIENCE OR TRAINING OF THE SPECIAL INSPECTORS WHO WILL PERFORM THE SPECIAL INSPECTIONS AND TESTS DURING CONSTRUCTION.
- EACH CONTRACTOR RESPONSIBLE FOR THE CONSTRUCTION OF THE MAIN WIND- OR SEISMIC-FORCE-RESISTING SYSTEM, DESIGNATED SEISMIC SYSTEM, OR WIND- OR SEISMIC-RESISTING COMPONENT LISTED IN THE STATEMENT OF SPECIAL INSPECTIONS SHALL SUBMIT A STATEMENT OF RESPONSIBILITY TO THE OWNER (OR OWNER'S DESIGNATED AGENT) AND BUILDING OFFICIAL PRIOR TO COMMENCEMENT OF WORK. THE CONTRACTOR'S STATEMENT OF RESPONSIBILITY SHALL CONTAIN ACKNOWLEDGEMENT OF AWARENESS OF THE SPECIAL REQUIREMENTS CONTAINED IN THE STATEMENT OF SPECIAL INSPECTIONS AND TESTING.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE SPECIAL INSPECTION OR TESTING AGENCIES AT LEAST ONE WORKING DAY PRIOR TO PERFORMING ANY WORK THAT REQUIRES SPECIAL INSPECTION.
- WORK REQUIRING SPECIAL INSPECTION OR TESTING THAT IS INSTALLED OR COVERED WITHOUT THE APPROVAL OF THE BUILDING OFFICIAL IS SUBJECT TO REMOVAL OR EXPOSURE AT THE CONTRACTOR'S EXPENSE.

B. REQUIRED REPORTS:

- THE SPECIAL INSPECTION AGENCY SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE.
- SPECIAL INSPECTION REPORTS SHALL INDICATE WHETHER THE WORK INSPECTED WAS, OR WAS NOT PERFORMED IN CONFORMANCE WITH THE APPROVED CONSTRUCTION DOCUMENTS.
- THE CONSTRUCTION MATERIALS TESTING AGENCY SHALL FURNISH REPORTS TO THE BUILDING OFFICIAL AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE.
- MATERIAL TESTING REPORTS SHALL INDICATE WHETHER THE TESTED MATERIALS CONFORM, OR DO NOT CONFORM, TO THE REQUIREMENTS OF THE APPROVED CONSTRUCTION DOCUMENTS.
- DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION.
- IF DISCREPANCIES ARE NOT CORRECTED, THE DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OFFICIAL AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE PRIOR TO COMPLETION OF THAT PHASE OF WORK.
- A FINAL REPORT DOCUMENTING THE REQUIRED SPECIAL INSPECTIONS, MATERIAL TESTING AND CORRECTION OF ANY DISCREPANCIES NOTED IN THE INSPECTIONS SHALL BE SUBMITTED AT A POINT IN TIME AGREED UPON, PRIOR TO THE START OF WORK, BY THE PERMIT APPLICANT AND THE BUILDING OFFICIAL.

C. CONTINUOUS AND PERIODIC SPECIAL INSPECTIONS:

- WHERE CONTINUOUS SPECIAL INSPECTION IS REQUIRED, THE SPECIAL INSPECTOR SHALL CONTINUOUSLY PROVIDE FULL-TIME INSPECTION OF THE WORK.
- WHERE PERIODIC SPECIAL INSPECTION IS REQUIRED, THE SPECIAL INSPECTOR NEED NOT BE CONTINUOUSLY PRESENT DURING THE WORK WHERE PERIODIC INSPECTION IS INDICATED. AS A MINIMUM, PERIODIC SPECIAL INSPECTION SHALL OCCUR DAILY.

D. OFF-SITE FABRICATION:

- SPECIAL INSPECTION AND TESTING IS REQUIRED FOR THE OFF-SITE FABRICATION OF STRUCTURAL LOAD-BEARING OR LATERAL LOAD RESISTING MEMBERS AND REINFORCING ASSEMBLIES, UNLESS THE FABRICATION IS PERFORMED BY AN APPROVED FABRICATOR.
- AN APPLICATION FOR OFF-SITE FABRICATION MUST BE SUBMITTED TO THE BUILDING OFFICIAL FOR APPROVAL PRIOR TO COMMENCING ANY FABRICATION WORK REQUIRING SPECIAL INSPECTION OR TESTING.
- A CERTIFICATE OF COMPLIANCE FOR OFF-SITE FABRICATION MUST BE SUBMITTED BY THE FABRICATOR TO THE SPECIAL INSPECTION OR TESTING AGENCY PRIOR TO FABRICATION, AND SUBMITTED TO THE BUILDING OFFICIAL PRIOR TO ERECTION OF PREFABRICATED COMPONENTS.
- SPECIAL INSPECTION SHALL INCLUDE VERIFICATION THAT THE FABRICATOR MAINTAINS DETAILED FABRICATION AND QUALITY CONTROL PROCEDURES THAT PROVIDE A BASIS FOR INSPECTION CONTROL OF WORKMANSHIP AND THE FABRICATOR'S ABILITY TO CONFORM TO THE APPROVED CONSTRUCTION DOCUMENTS AND REFERENCED STANDARDS.
- SPECIAL INSPECTION SHALL INCLUDE REVIEW OF THE PROCEDURES FOR COMPLETENESS AND ADEQUACY RELATIVE TO THE REQUIREMENTS OF THE BUILDING CODE.

STATEMENT OF SPECIAL INSPECTIONS AND TESTING

DESCRIPTION OF TYPE OF INSPECTION REQUIRED	CONTINUOUS	PERIODIC	FOOT-NOTE
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MASONRY (ACI 530 LEVEL B QUALITY ASSURANCE)			
CERTIFICATES OF MATERIALS COMPLIANCE PRIOR TO THE START OF WORK		X	
MASONRY CONSTRUCTION AT THE START OF WORK		X	1
REINFORCING STEEL MATERIAL		X	
PLACEMENT OF REINFORCING STEEL PRIOR TO DELIVERY OF GROUT		X	
PLACEMENT OF CAST-IN ANCHORS PRIOR TO DELIVERY OF GROUT		X	2
MASONRY CONSTRUCTION DURING COURSE OF WORK		X	3
MASONRY CONSTRUCTION PRIOR TO GROUTING		X	
GROUT PLACEMENT	X		
GROUT SLUMP DURING GROUT PLACEMENT (IF LIFTS GREATER THAN 5'-0" ARE USED)	X		
PREPARATION OF GROUT SPECIMENS DURING CONSTRUCTION (IF USING UNIT STRENGTH METHOD)		X	
TESTING OF GROUT STRENGTH DURING CONSTRUCTION (IF USING UNIT STRENGTH METHOD)		X	

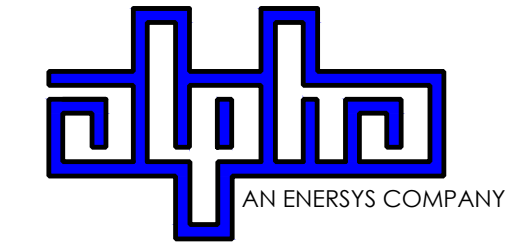
POST-INSTALLED ANCHORS			
JOBSITE STORAGE OF ADHESIVE PRIOR TO INSTALLATION FOR CONFORMANCE WITH MANUFACTURER'S REQUIREMENTS		X	1
INSTALLATION OF ADHESIVE ANCHORS IN HORIZONTALLY OR UPWARDLY-INCLINED ORIENTATIONS	X		1
INSTALLATION OF ADHESIVE ANCHORS IN DOWNWARD VERTICAL ORIENTATIONS		X	1

FOOTNOTES FOR STATEMENT OF SPECIAL INSPECTIONS

SPECIAL INSPECTION FOR POST-INSTALLED ANCHORS SHALL COMPLY WITH THE REQUIREMENTS SPECIFIED IN THE EVALUATION APPROVAL



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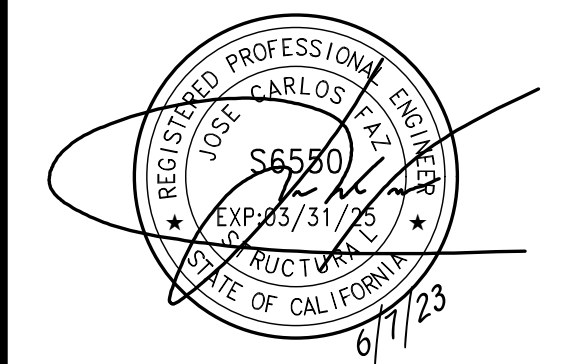
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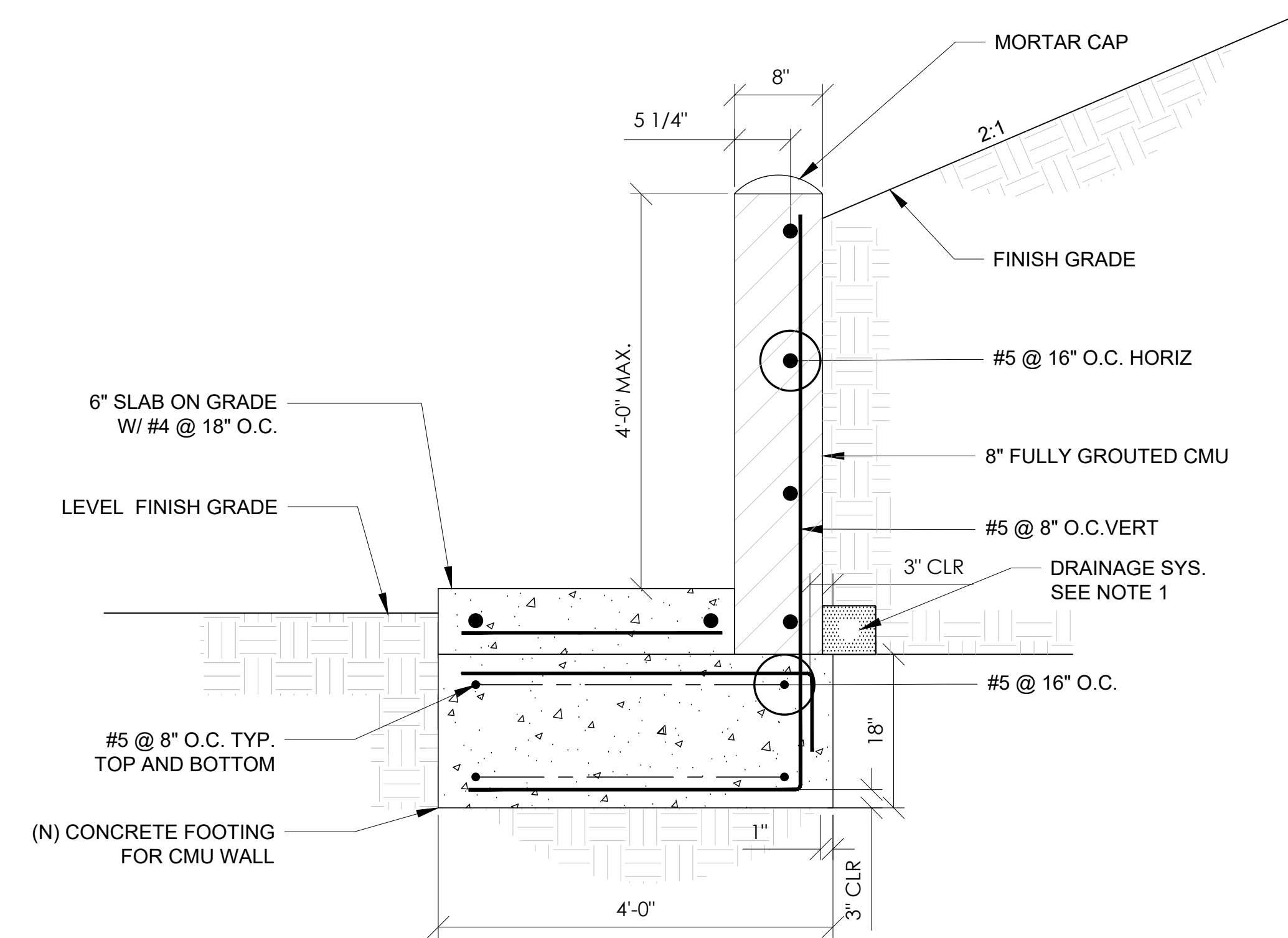
SITE INFORMATION

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SHEET TITLE:
**SPECIAL
INSPECTION NOTES**

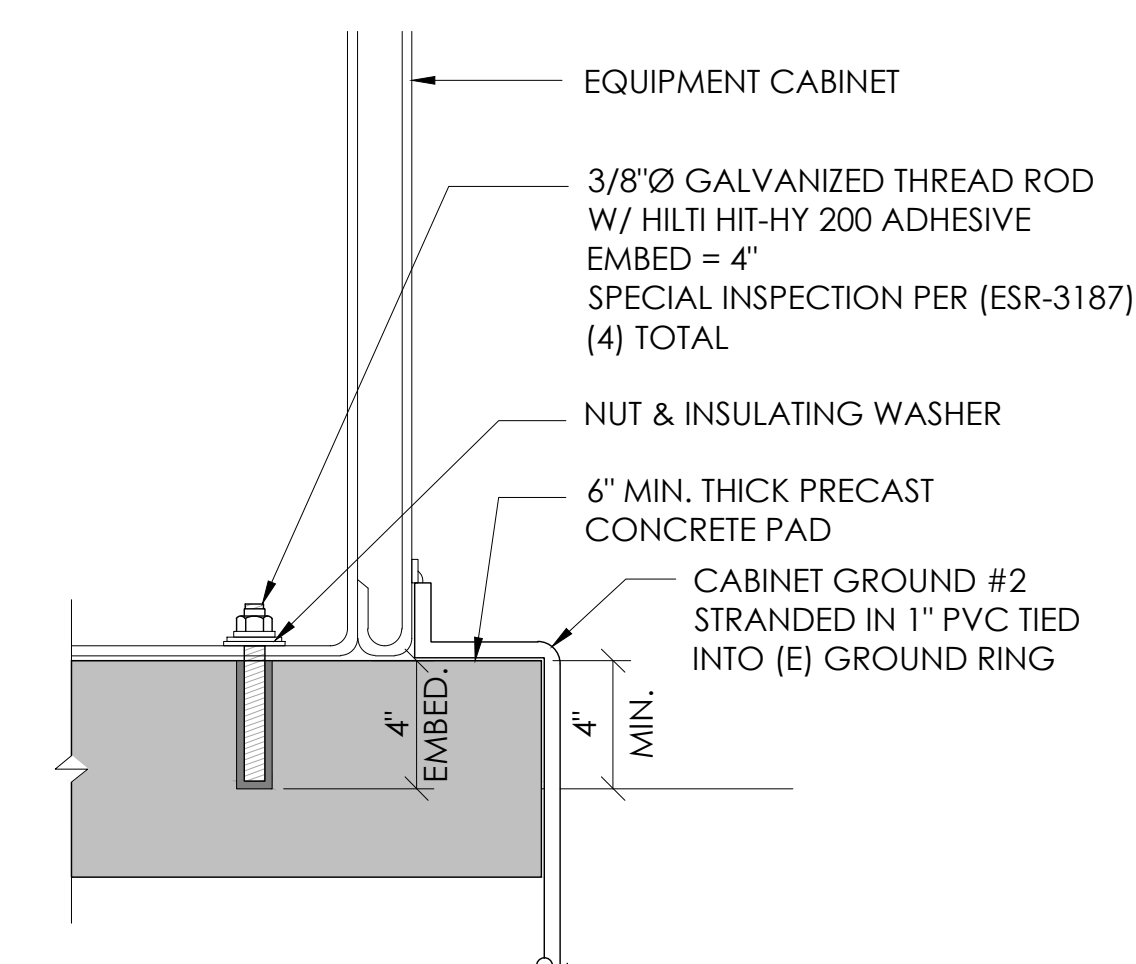
S2

NOTES:
 1-PROVIDE RETAINING WALL DRAINAGE SYSTEM CONSISTING OF 1 CF/FT OF CLEAN COURSE GRAVEL WITH 4" DIAMETER PERFORATED PVC DRAINAGE PIPE WITH 1% GRADIENT TO DRAIN. (OPTIONAL: INSTEAD OF DRAINAGE PIPING, THE HEAD JOINTS IN THE 1ST COURSE MAY BE OMITTED. 1 CF/FT OF CLEAN COURSE GRAVEL IS STILL REQUIRED.)



1 RETAINING WALL 3'-0"
N.T.S.

PLACE CONCRETE PAD MINIMUM 2"
FROM NEARBY CONCRETE PAD(S)



2 ANCHORAGE DETAIL
N.T.S.

COMCAST

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J5 INFRASTRUCTURE
PARTNERS

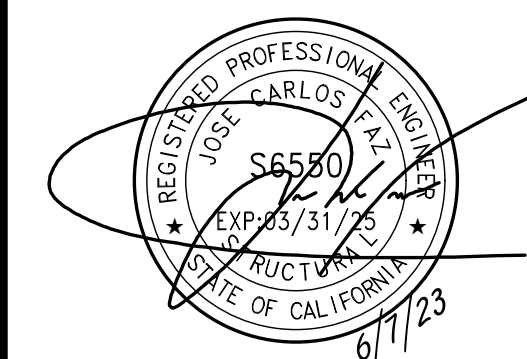
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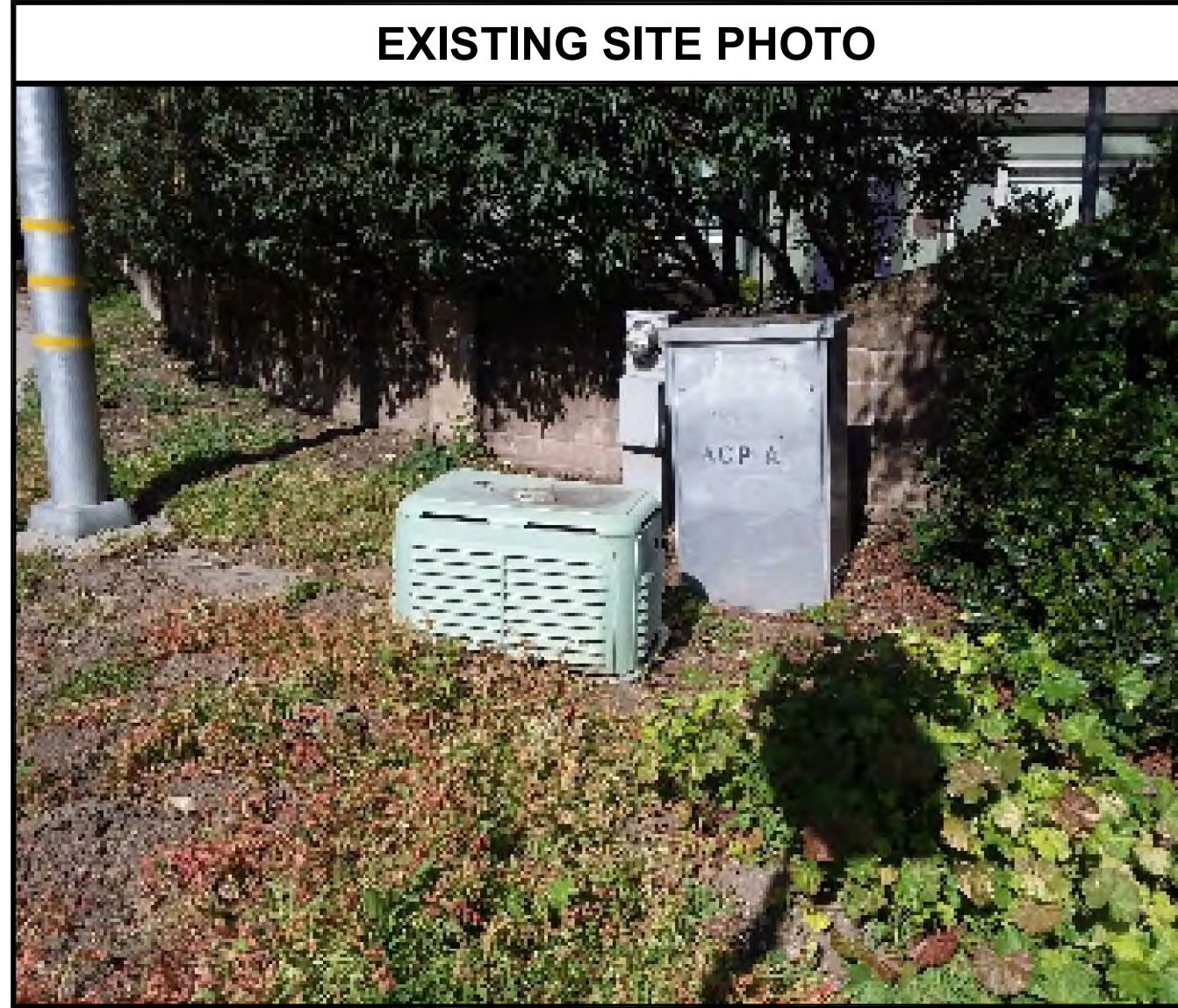


SITE INFORMATION

SITE ADDRESS:
1738 SIR FRANCIS DRAKE
BLVD,
FAIRFAX, CA 94930

SHEET TITLE:
**STRUCTURAL
DETAILS**

S3



EXISTING SITE PHOTO



LOCATION MAP

UGTDUA6 SCOPE OF WORK

THIS PROJECT MODIFICATION OF EXISTING CONSISTS OF:

- INSTALLATION OF (2) (N) ALPHA PN-4 POWERNODE SYSTEM ENCLOSURE
- INSTALLATION OF (12) (N) 12V ALPHA 210FTX BATTERIES
- INSTALLATION OF (1) (N) PRECAST CONCRETE PAD
- REMOVAL & REPLACEMENT OF (E) POWER SUPPLY
- INSTALLATION OF CONDUIT BETWEEN (E) AND (N) CABINETS
- ALL ASSOCIATED ELECTRIC WIRES AND CONDUITS TO CONNECT POWERNODE CABINET TO EXISTING ALPHA CABINET

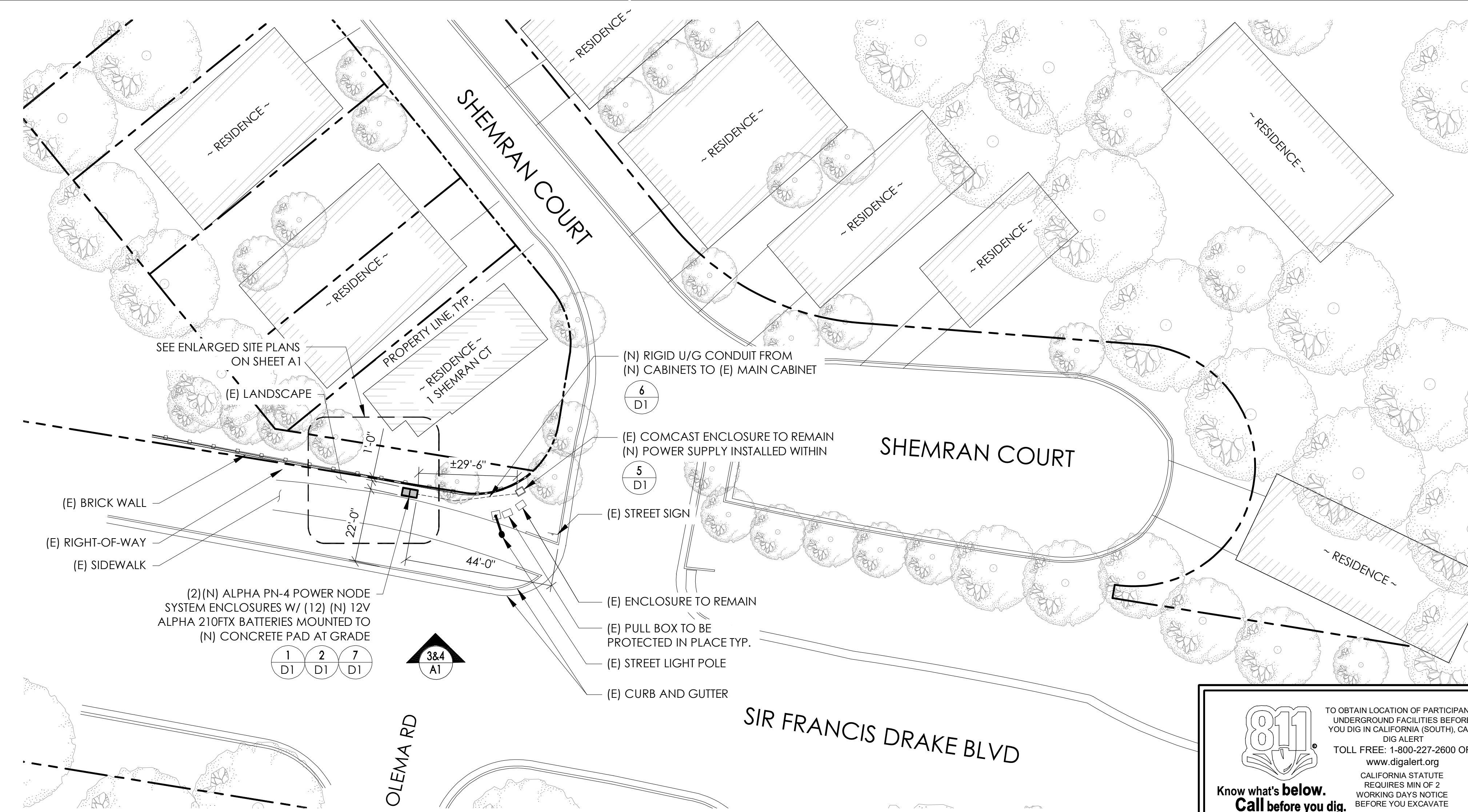


**SITE ADDRESS:
1 SHEMRAN CT
FAIRFAX, CA 94930**

SITE INFORMATION	
SITE ADDRESS:	1 SHEMRAN CT FAIRFAX, CA 94930
LATITUDE/LONGITUDE (NAD 83):	38.0003383, -122.6045015
JURISDICTION:	City of Fairfax
POWER PROVIDER:	PG&E
AMP DRAW:	8.13



ISSUE STATUS			
REV	DATE	DESCRIPTION	BY
A	10/05/21	90% CD	JW
0	03/21/23	100% CD	AB
1	05/10/23	MODEL REDESIGN	MZ
2	06/06/23	PCC #1	JG
3	06/30/23	100% CD	FG



SITE PLAN

DRAWING INDEX	
SHEET	DESCRIPTION
T1	TITLE SHEET AND SITE PLAN
LS-1	SITE SURVEY
A1	ELEVATIONS
D1	DETAILS
D2	DETAILS
TC1	TRAFFIC CONTROL

PROJECT TEAM		
OWNER:	COMCAST CABLE 3011 COMCAST PLACE LIVERMORE, CA 94551	ENGINEER/ ARCHITECT:
APPLICANT:	ALPHA TECHNOLOGIES, INC. RICHARD A. SEIFF SERVICE OPERATIONS MANAGER ENERGY SYSTEMS AMERICAS PH: (331) 276-0232 EMAIL: rich.seiff@enersys.com	J5 INFRASTRUCTURE PARTNERS MARK MASCUNANA ARCHITECT/ENGINEER CONTACT PH: (281) 387-8814 EMAIL: mark.mascunana@j5p.com 23 MAUCHLY, SUITE 110 IRVINE, CALIFORNIA, 92618

CODE COMPLIANCE

ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.

1. CALIFORNIA BUILDING STANDARDS CODE, 2019 TRIENNIAL EDITION OF TITLE 24, WITH AN EFFECTIVE DATE OF JANUARY 1, 2020.

2. CALIFORNIA ADMINISTRATIVE CODE, PART 1 - CALIFORNIA EXISTING BUILDING CODE, PART 2 - CALIFORNIA BUILDING CODE, BASED ON THE 2018 INTERNATIONAL BUILDING CODE.

3. CALIFORNIA ELECTRICAL CODE, BASED ON THE 2017 NATIONAL ELECTRICAL CODE.

4. CALIFORNIA MECHANICAL CODE, BASED ON THE 2018 INTERNATIONAL MECHANICAL CODE.

5. CALIFORNIA PLUMBING CODE, BASED ON THE 2018 INTERNATIONAL PLUMBING CODE.

6. CALIFORNIA ENERGY CODE, PART 7 - VACANT.

7. CALIFORNIA HISTORICAL BUILDING CODE.

8. CALIFORNIA FIRE CODE, BASED ON THE 2018 INTERNATIONAL FIRE CODE.

9. CALIFORNIA EXISTING BUILDING CODE, BASED ON THE 2018 INTERNATIONAL EXISTING BUILDING CODE.

10. CALIFORNIA GREEN BUILDING STANDARDS CODE (ALSO KNOWN AS CALGREEN).

11. CALIFORNIA REFERENCED STANDARDS CODE.

12. ANSII/ISA-222 (REV H).

13. NFPA 101, LIFE SAFETY CODE.

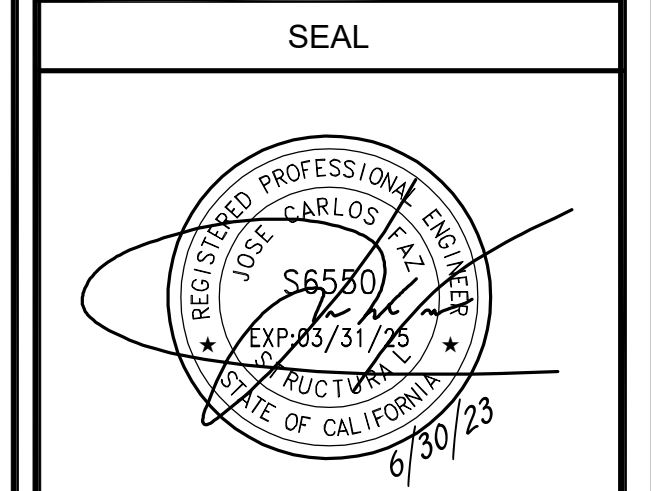
14. NFPA 72, NATIONAL FIRE ALARM AND SIGNALING CODE.

15. NFPA 13, STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS.

GENERAL CONTRACTOR NOTES

DO NOT SCALE DRAWINGS IF NOT FULL SIZE (24 X 36)

CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT / ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BEAR THE RESPONSIBILITY FOR THE SAME.

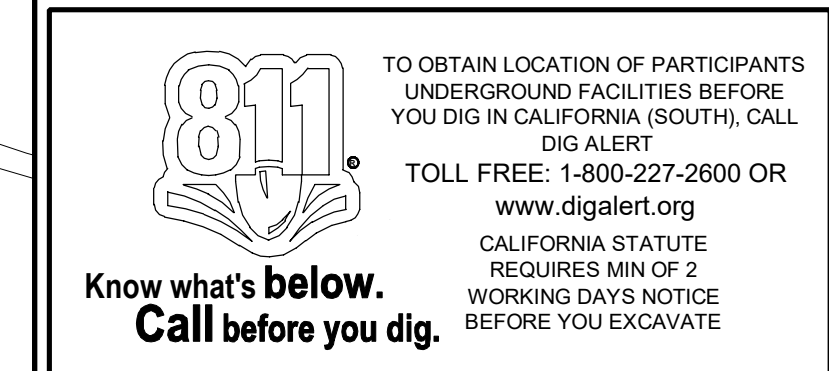


**SITE ADDRESS:
1 SHEMRAN CT,
FAIRFAX, CA 94930**

APN:
174-111-84

SHEET TITLE:
T1

24"x36" SCALE: 1" = 20'-0"
11"x17" SCALE: 1" = 40'-0"

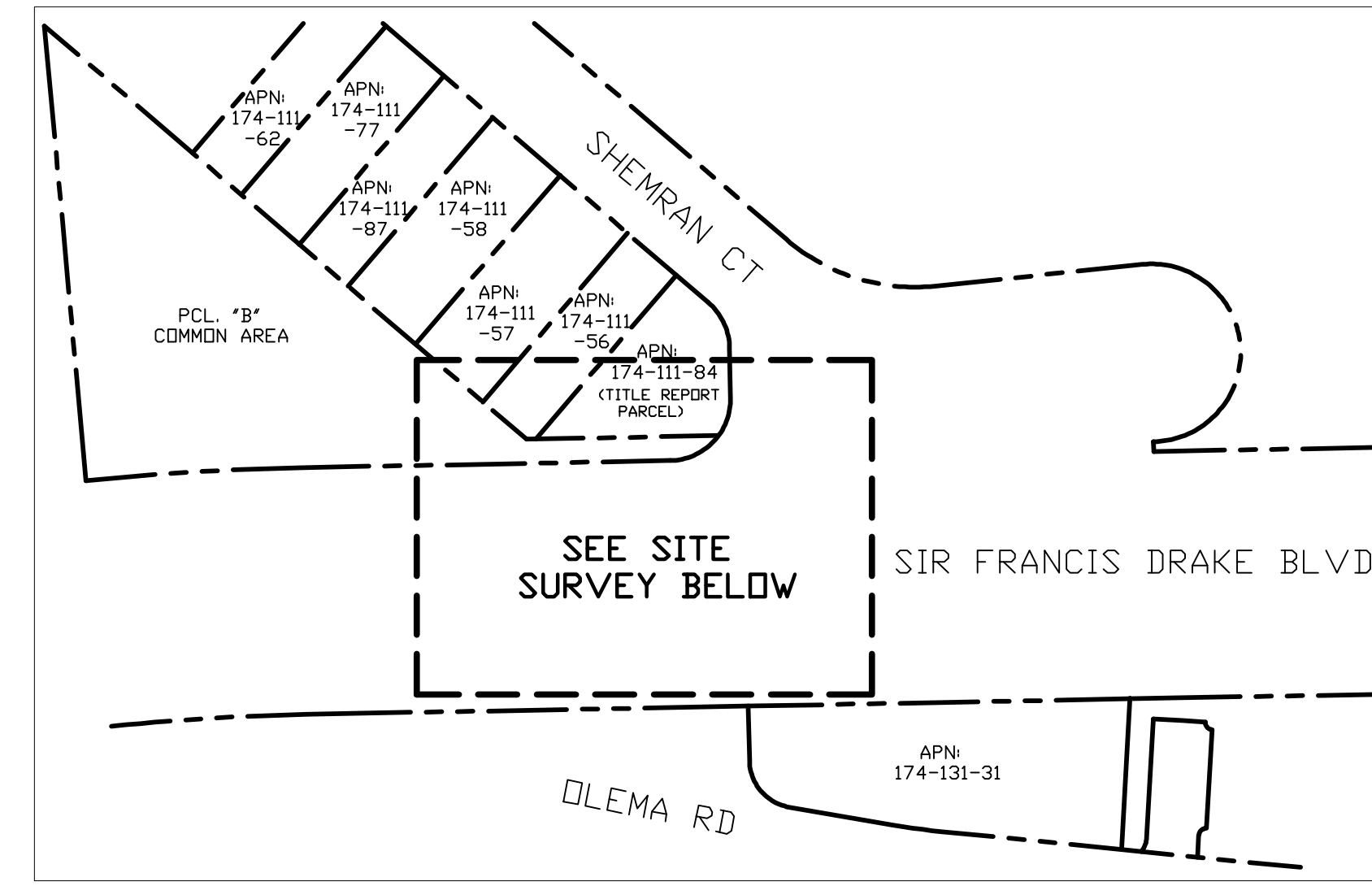




VICINITY MAP
N.T.S.



SITE



OVERALL SITE
N.T.S.

SURVEY DATE
06/23/2023

BASIS OF BEARING
BEARINGS SHOWN HEREON ARE BASED UPON U.S. STATE PLANE NAD83 COORDINATE SYSTEM CALIFORNIA STATE PLANE COORDINATE ZONE THREE, DETERMINED BY GPS OBSERVATIONS.

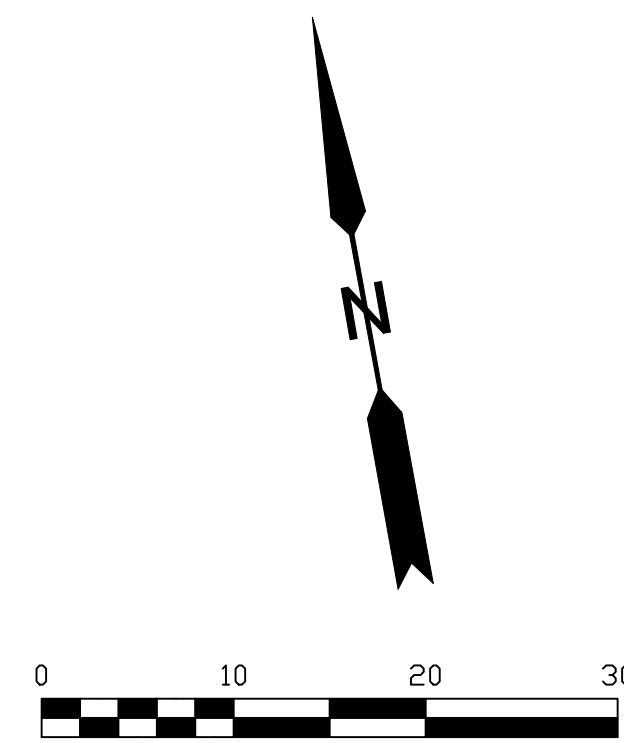
BENCHMARK
PROJECT ELEVATIONS ESTABLISHED FROM GPS DERIVED ORTHOMETRIC HEIGHTS BY APPLICATION OF NGS 'GEOID 18' MODELED SEPARATIONS TO ELLIPSOID HEIGHTS DETERMINED BY OBSERVATIONS OF THE 'CRTN' REAL TIME NETWORK. ALL ELEVATIONS SHOWN HEREON ARE REFERENCED TO NAVD88.

FLOOD ZONE
THIS PROJECT APPEARS TO BE LOCATED WITHIN FLOOD ZONE 'X'. ACCORDING TO FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP(S), MAP ID #06041C0288D, DATED 05/04/2009.

UTILITY NOTES
SURVEYOR DOES NOT GUARANTEE THAT ALL UTILITIES ARE SHOWN OR THEIR LOCATIONS ARE DEFINITE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR AND DEVELOPER TO CONTACT 811 AND ANY OTHER INVOLVED AGENCIES TO LOCATE ALL UTILITIES PRIOR TO CONSTRUCTION. REMOVAL, RELOCATION AND/OR REPLACEMENT IS THE RESPONSIBILITY OF THE CONTRACTOR.

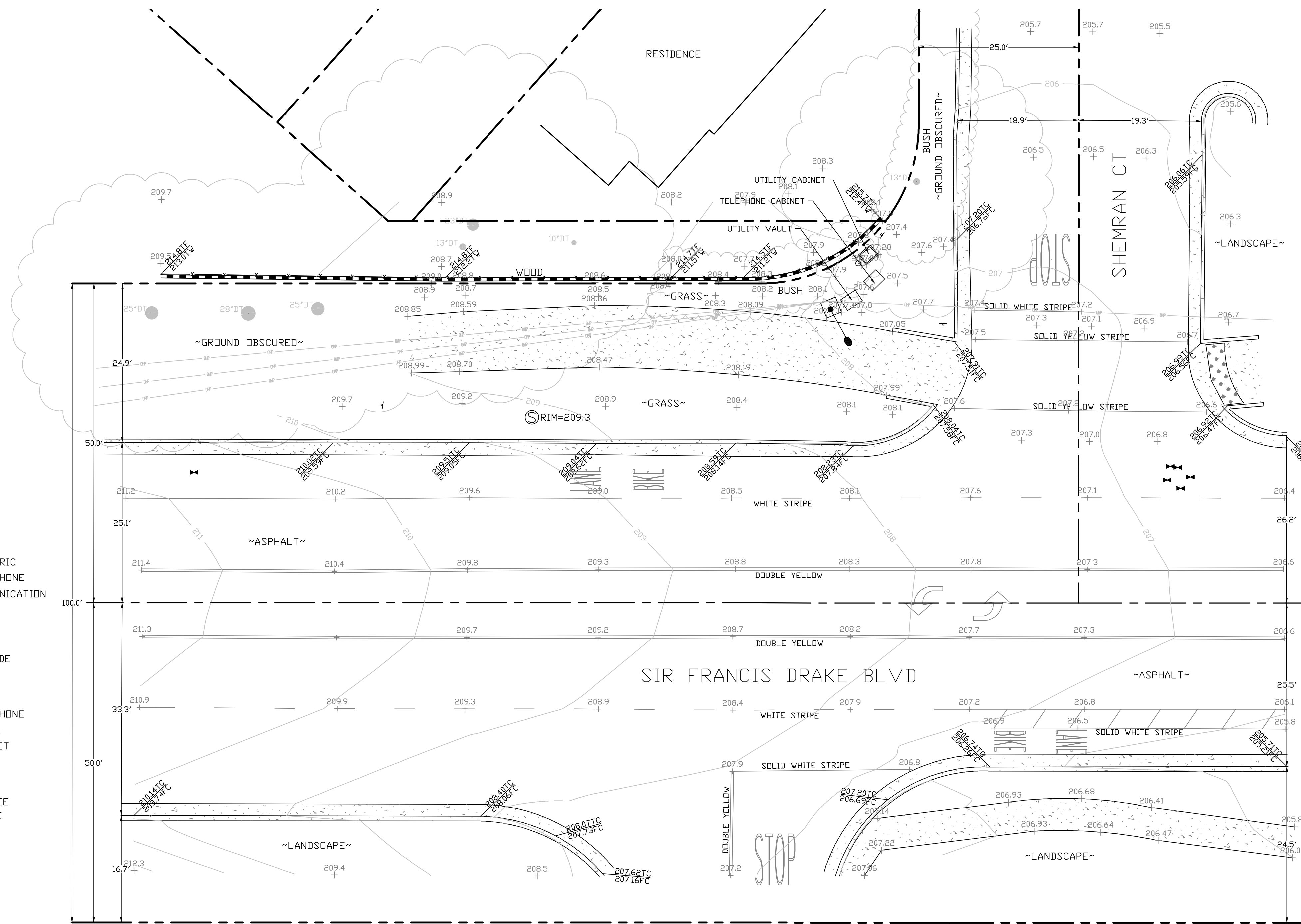
SURVEYOR'S NOTE
THE LOCATION AND DIMENSIONS SHOWN WERE TAKEN FROM THE MAP(S) RECORDED IN BOOK(S) 13 PAGE(S) 61 OF MAPS MARIN COUNTY RECORDER AND DOES NOT CONSTITUTE A BOUNDARY SURVEY OF THE PROPERTIES.

TITLE REPORT DESCRIPTION
TITLE REPORT PARCEL
APN: 174-111-84
PREPARED USING AMERICAN TITLE'S TITLE REPORT #5026900-7003352 DATED 06/13/2023;



LEGEND
These standard symbols may be found in the drawing.

	CONCRETE
	PROPERTY LINE
	CENTER LINE
	OVERHEAD LINE
	FENCE HEADER
	ROOF WALL
	ROCK WALL
	PULLBOX ELECTRIC
	PULLBOX TELEPHONE
	PULLBOX COMMUNICATION
	WATER METER
	WATER VALVE
	POWER POLE
	ELEVATION GRADE
	GUY WIRE
	MAILBOX
	SIGN
	MANHOLE TELEPHONE
	MANHOLE SEWER
	RECTANGLE INLET
	FIRE HYDRANT
	SHRUB
	TRUNK
	CT CONIFEROUS TREE
	DT DECIDUOUS TREE
	TC TOP OF CURB
	FC FACE OF CURB
	TF TOP OF FENCE
	TW TOP OF WALL
	CD CURB DRAIN



SITE SURVEY

COMCAST
3011 COMCAST PLACE
LIVERMORE, CA 94551

ALPHA
3767 ALPHA WAY
BELLINGHAM, WA 98226

Eaton Land Surveying, Inc.
15604 Magnolia Rd.
Grass Valley, CA. 95949
Ph. 530.830.0038

DRAWN BY: HE
CHECKED BY: SE

REVISIONS:

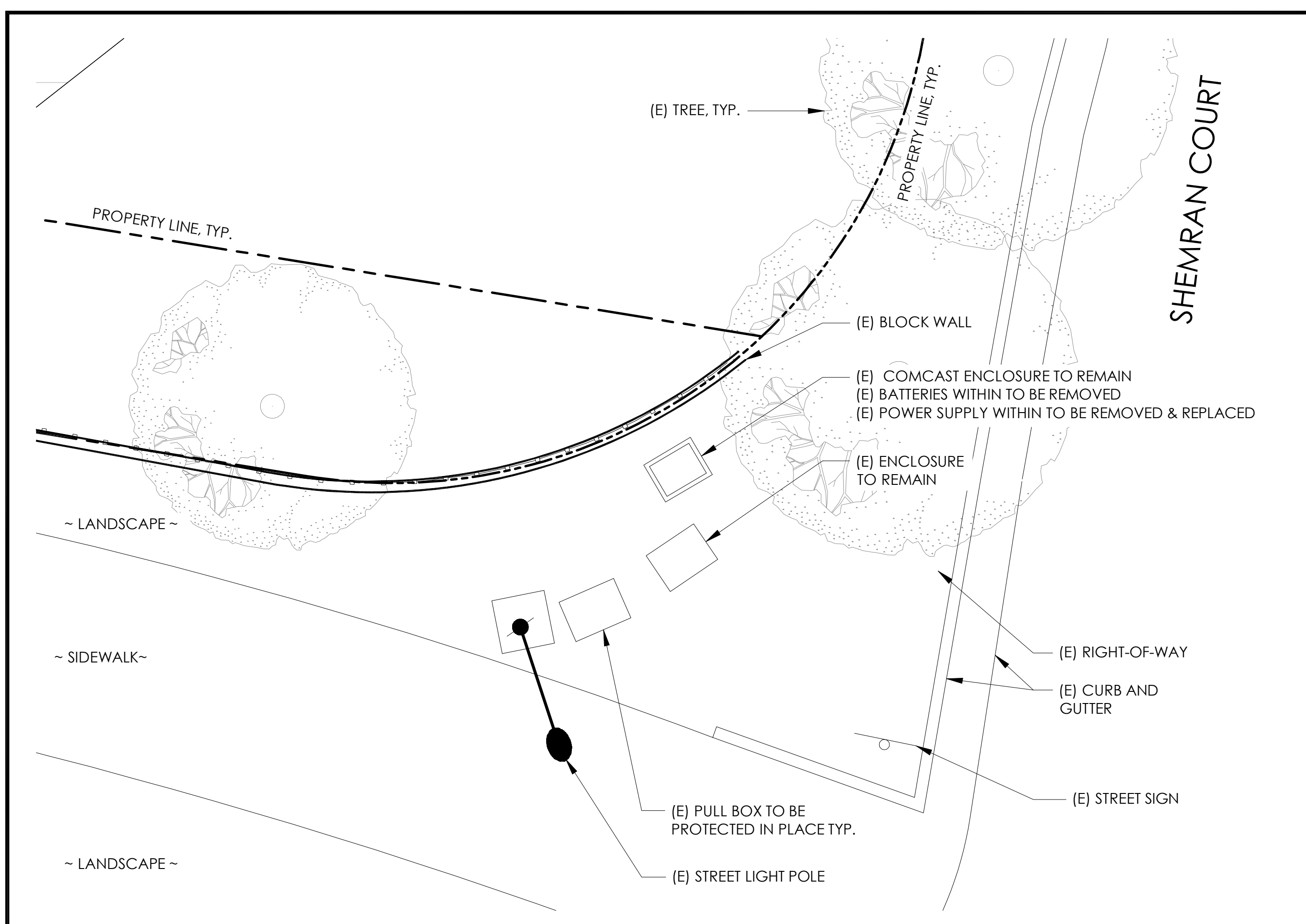
REV	DATE	DESCRIPTION
0	06/28/23	SUBMITTAL



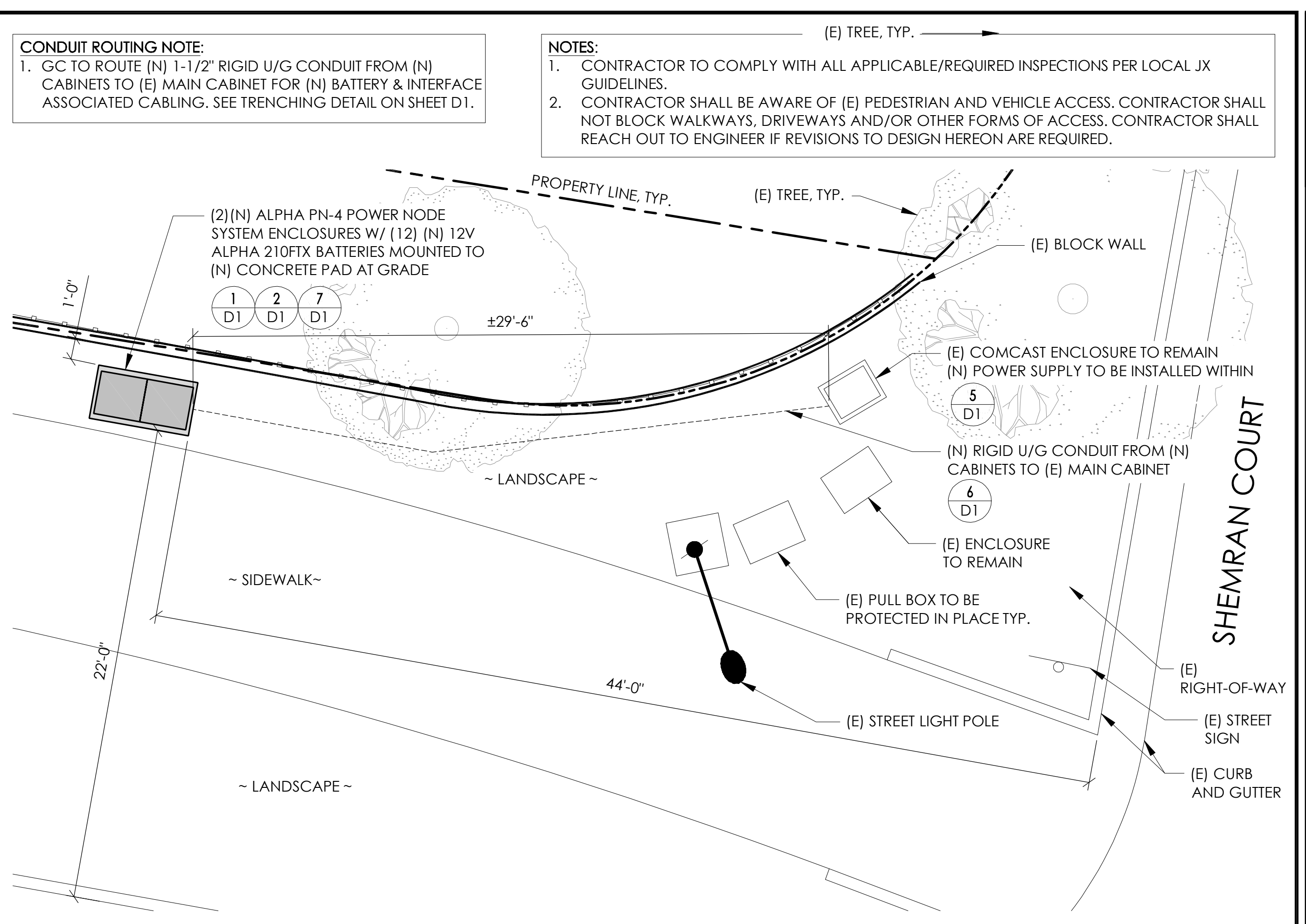
PROJECT INFORMATION:
P-060621
1 SHEMRAN CT.
FAIRFAX, CA. 94930
MARIN COUNTY

SHEET TITLE:
SITE SURVEY

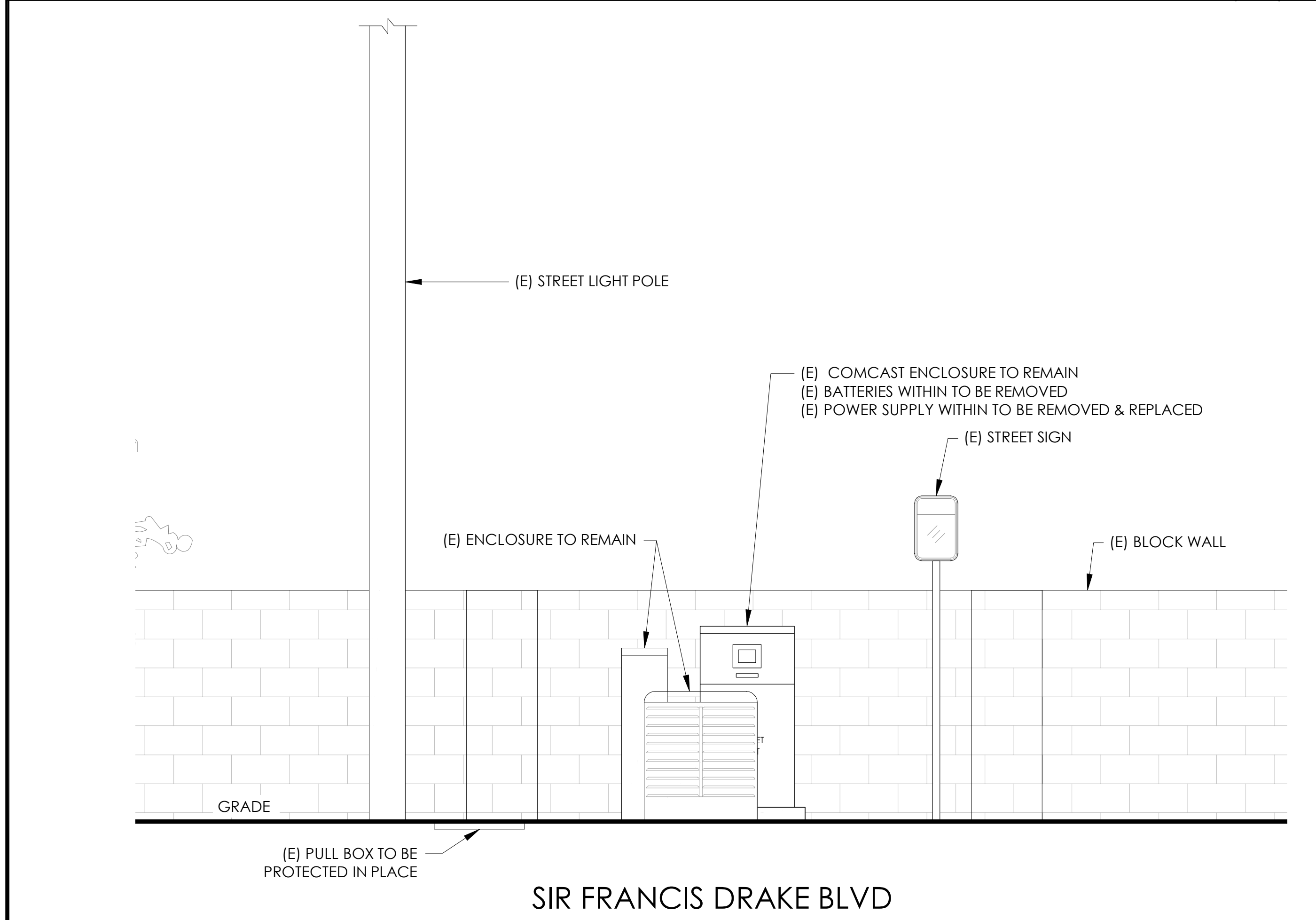
SHEET NUMBER:
LS-1



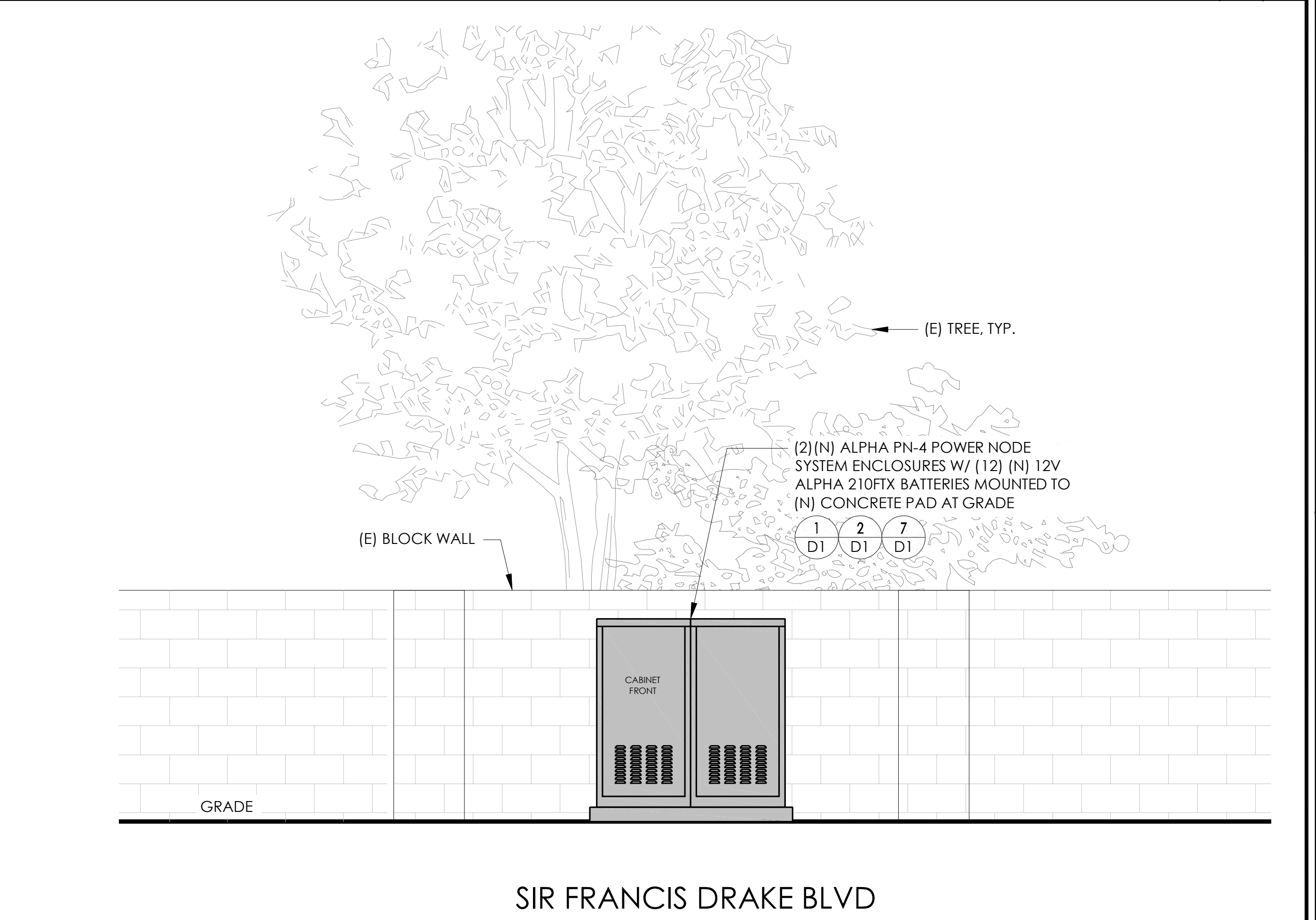
EXISTING ENLARGED SITE PLAN 24"x36" SCALE: 1/4" = 1'-0" 11"x17" SCALE: 1/8" = 1'-0" 4" 3" 2" 1" 0" NORTH 2



PROPOSED ENLARGED SITE PLAN 24"x36" SCALE: 1/4" = 1'-0" 11"x17" SCALE: 1/8" = 1'-0" 4" 3" 2" 1" 0" NORTH 1



EXISTING ELEVATION 24"x36" SCALE: 1/2" = 1'-0" 11"x17" SCALE: 1/4" = 1'-0" 2" 1" 0" 2" 4



PROPOSED ELEVATION 24"x36" SCALE: 1/2" = 1'-0" 11"x17" SCALE: 1/4" = 1'-0" 2" 1" 0" 2" 3

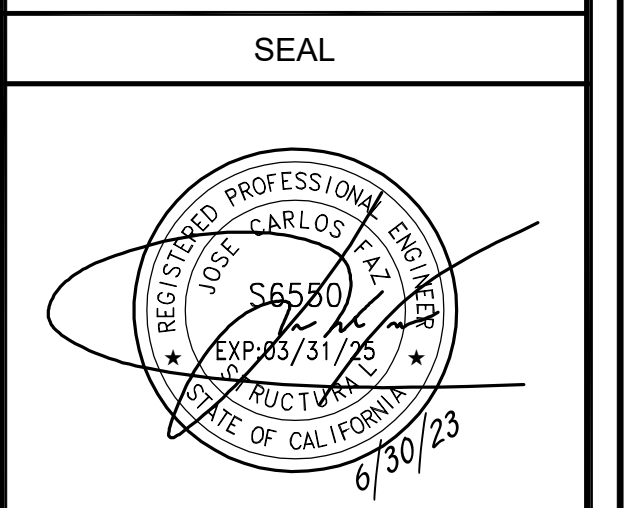
CONDUIT ROUTING NOTE:
 1. GC TO ROUTE (N) 1-1/2" RIGID U/G CONDUIT FROM (N) CABINETS TO (E) MAIN CABINET FOR (N) BATTERY & INTERFACE ASSOCIATED CABLING. SEE TRENCHING DETAIL ON SHEET D1.

NOTES:
 1. CONTRACTOR TO COMPLY WITH ALL APPLICABLE/REQUIRED INSPECTIONS PER LOCAL JX GUIDELINES.
 2. CONTRACTOR SHALL BE AWARE OF (E) PEDESTRIAN AND VEHICLE ACCESS. CONTRACTOR SHALL NOT BLOCK WALKWAYS, DRIVEWAYS AND/OR OTHER FORMS OF ACCESS. CONTRACTOR SHALL REACH OUT TO ENGINEER IF REVISIONS TO DESIGN HEREON ARE REQUIRED.



ISSUE STATUS

REV	DATE	DESCRIPTION	BY
A	10/05/21	90% CD	JW
0	03/21/23	100% CD	AB
1	05/10/23	MODEL REDESIGN	MZ
2	06/06/23	PCC #1	JG
3	06/30/23	100% CD	FG



SITE INFORMATION

SITE ADDRESS:
1 SHEMRAN CT,
FAIRFAX, CA 94930

APN:
174-111-84

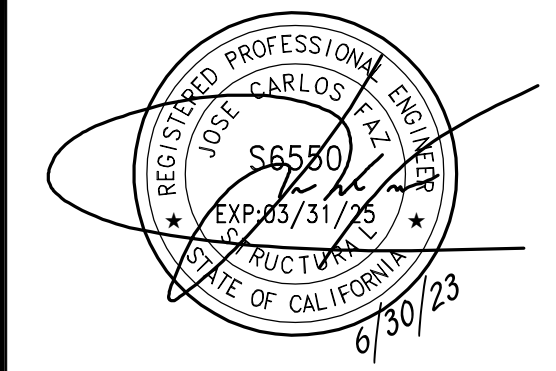
SHEET TITLE:
ELEVATIONS

A1

ISSUE STATUS

REV	DATE	DESCRIPTION	BY
A	10/05/21	90% CD	JW
0	03/21/23	100% CD	AB
1	05/10/23	MODEL REDESIGN	MZ
2	06/06/23	PCC #1	JG
3	06/30/23	100% CD	FG

SEAL



SITE INFORMATION

SITE ADDRESS:
1 SHEMRAN CT,
FAIRFAX, CA 94930

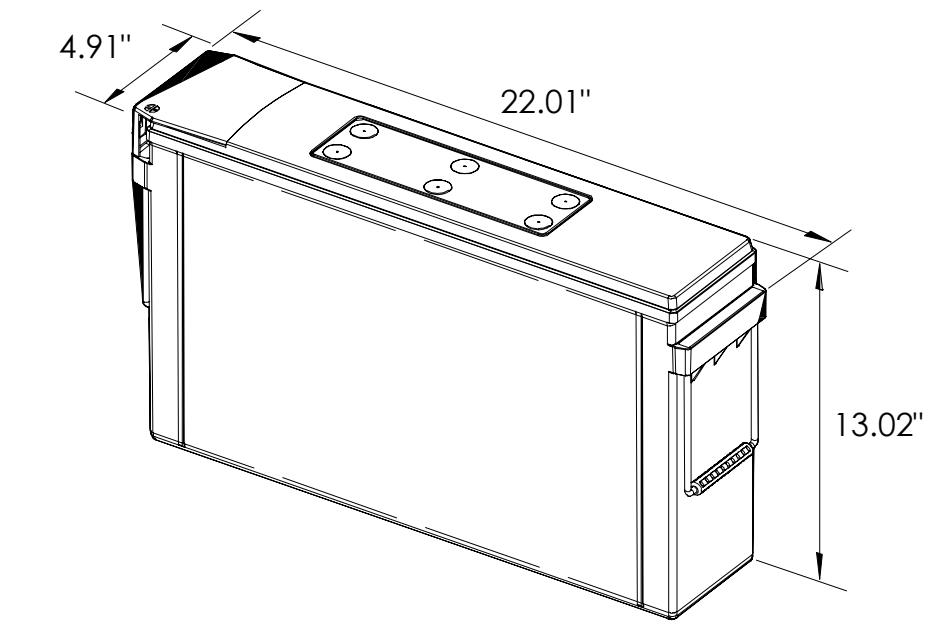
APN:
174-111-84

SHEET TITLE:
DETAILS

D1



ALPHA
210 FTX BATTERY UNIT

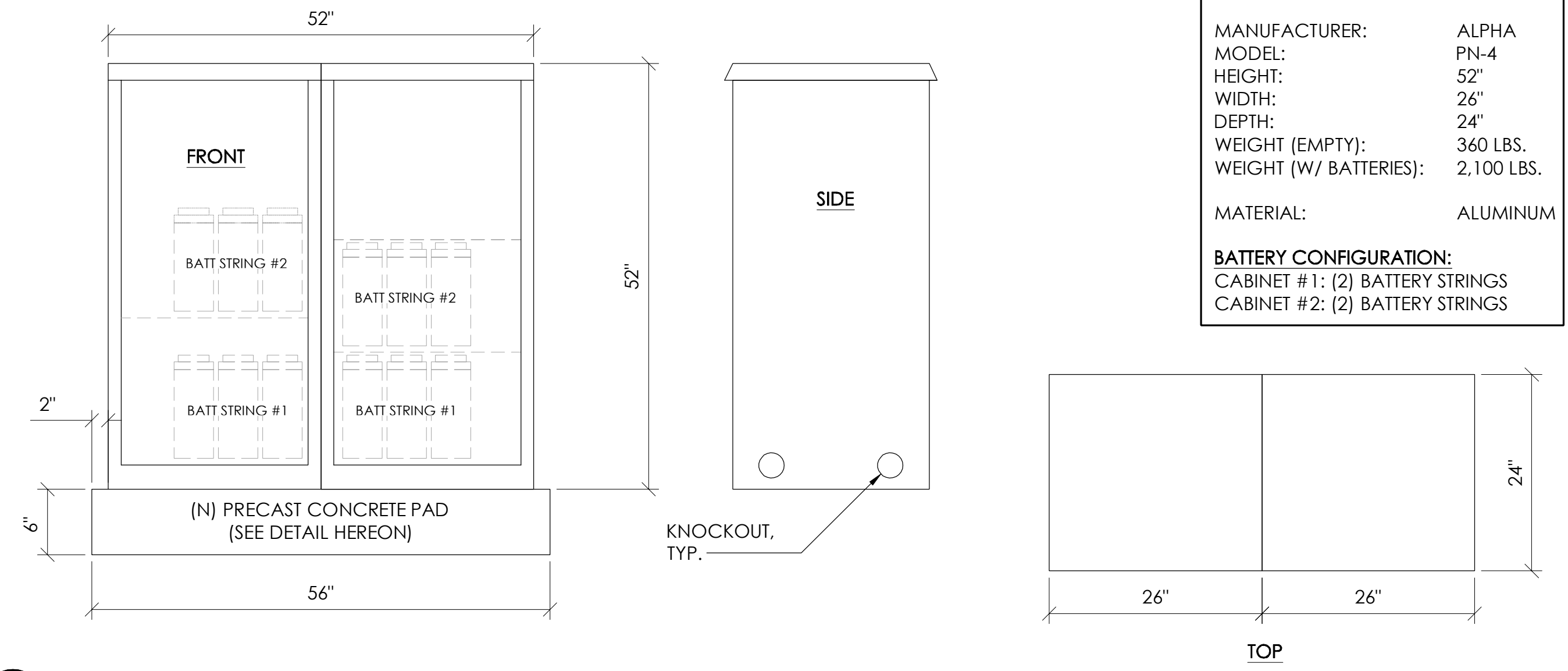


EQUIPMENT SPECIFICATIONS (1 UNIT)	
MFG:	ALPHA
MODEL:	210 FTX
HEIGHT:	13.02 IN
WIDTH:	4.91 IN
LENGTH:	22.01 IN
WEIGHT:	145 LBS

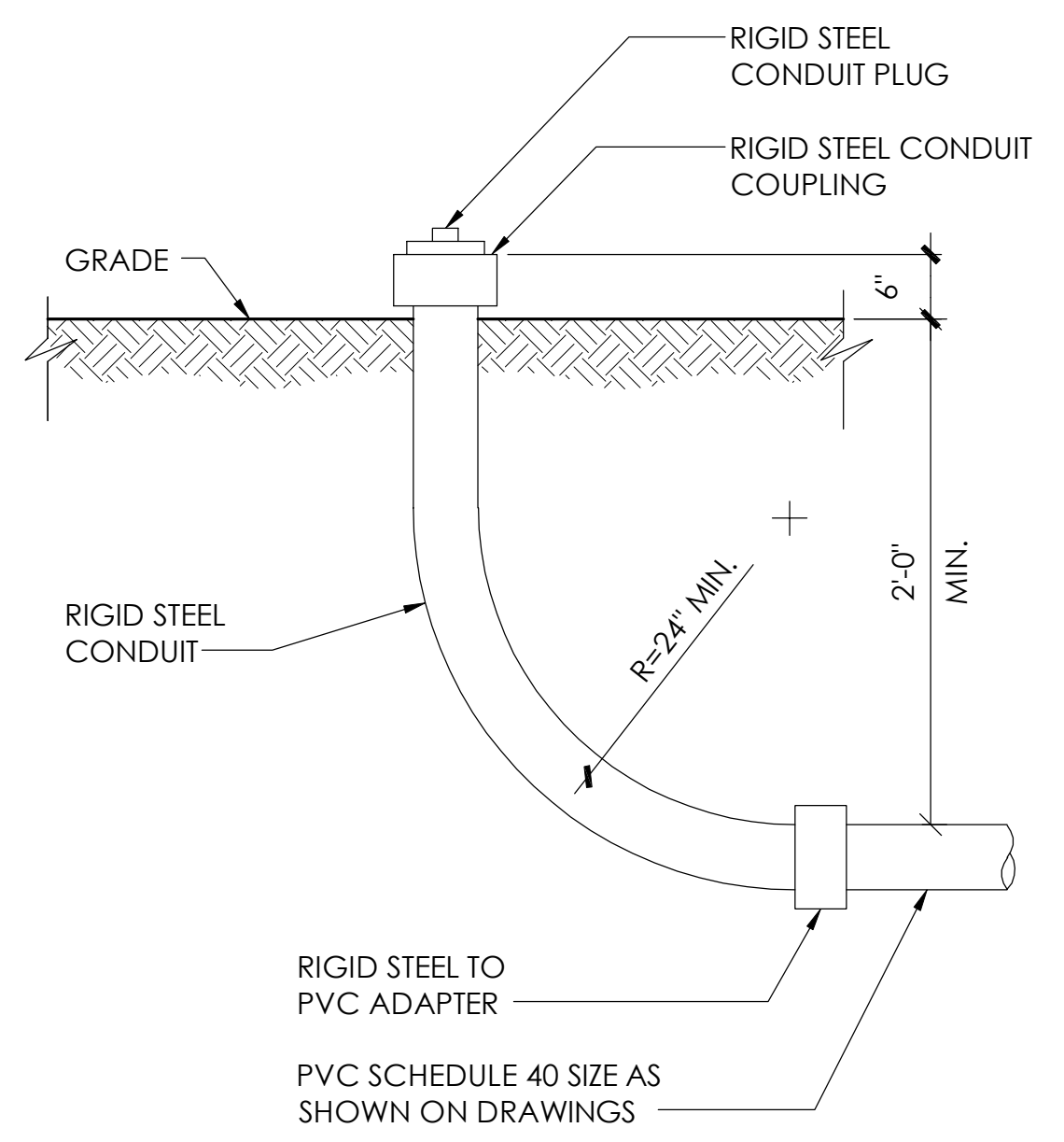
BATTERY INFORMATION (VRLA TYPE BATTERIES)										
INSTALL STATUS	BATTERY MODEL	TOTAL # OF BATTERY UNITS INSTALLED	VOLTAGE (V)	AMP. HOURS (AH)	KWh, Kilowatt-hours = (V*AH)/1000	TOTAL BATTERY CAPACITY, KWh	STATIONARY BATTERY STORAGE SYSTEM THRESHOLD QUANTITY, PER CFC 2019 SECTION 1206	STATIONARY BATTERY STORAGE SYSTEM CHECK	TOTAL ELECTROLYTE VOLUME (GALLONS) PER UNIT	TOTAL ELECTROLYTE BY VOLUME (GALLONS) =
PROPOSED	ALPHACELL 210FTX	12	12	210	2.52	30.24			2.1	25.2
TOTAL		12				30.24	70	CFC 2019 SECTION 1206 DOES NOT APPLY		25.2

7 BATTERY SPECIFICATIONS
N.T.S.

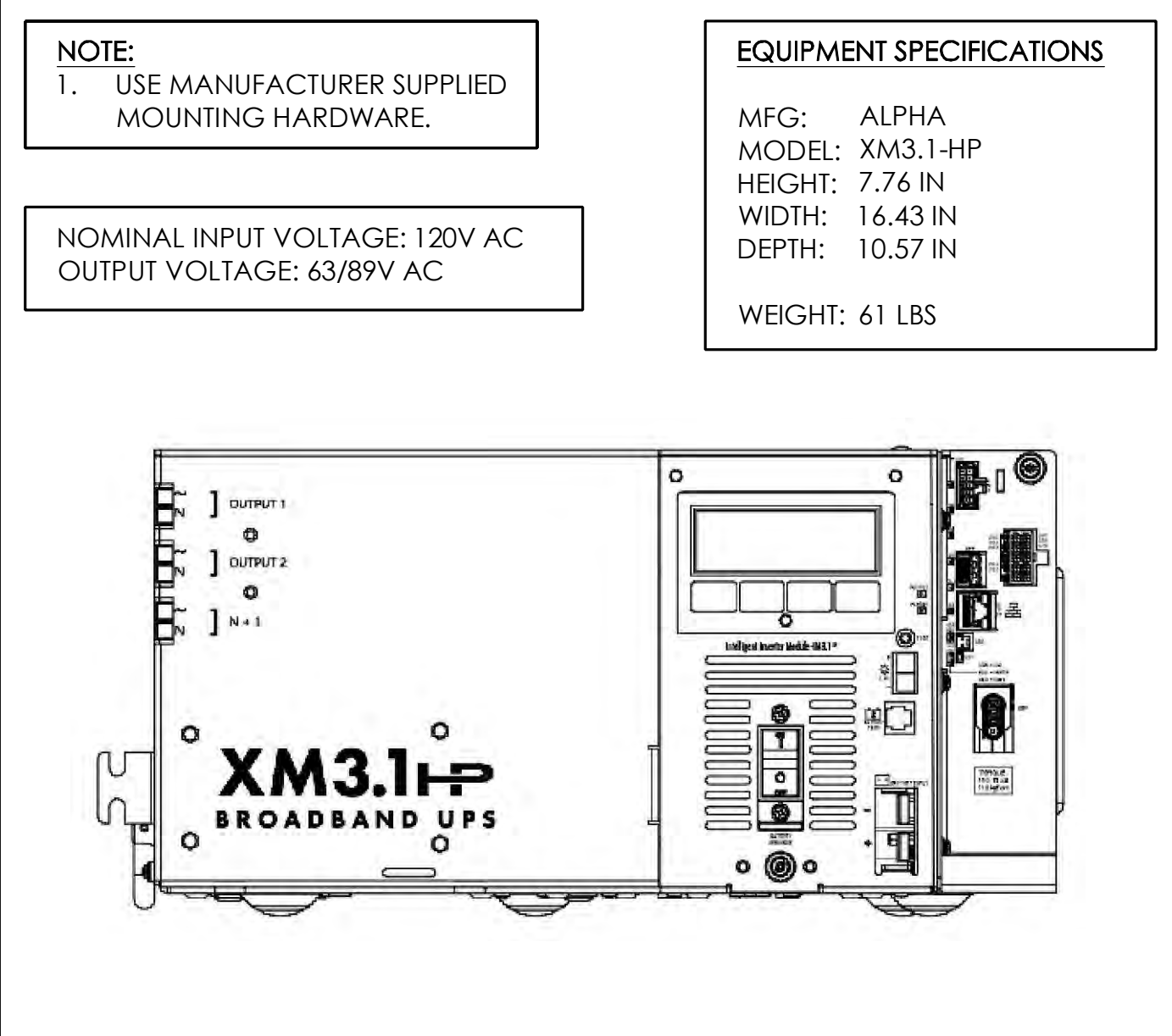
1 DUAL EQUIPMENT CABINET DETAIL
N.T.S.



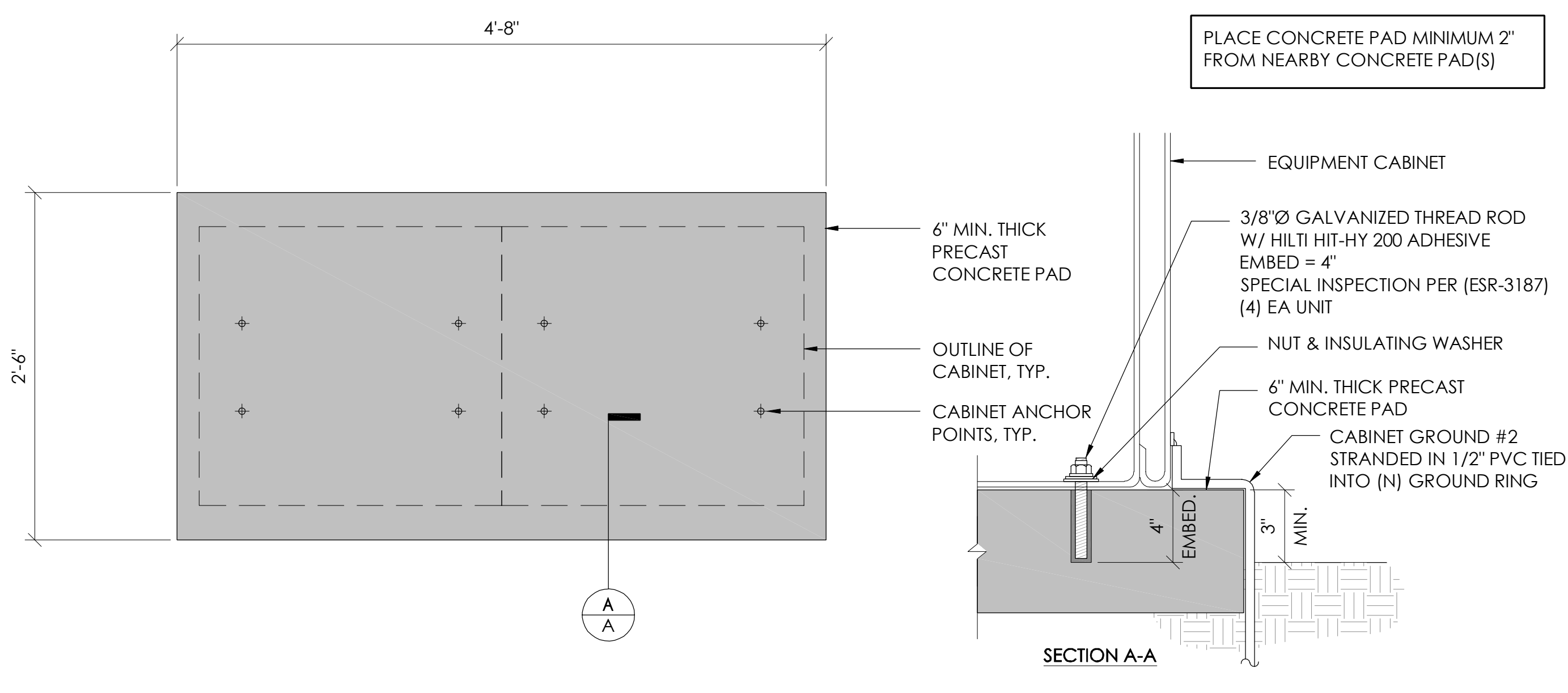
CABINET SPECIFICATIONS	
MANUFACTURER:	ALPHA
MODEL:	PN-4
HEIGHT:	52"
WIDTH:	26"
DEPTH:	24"
WEIGHT (EMPTY):	360 LBS.
WEIGHT (W/ BATTERIES):	2,100 LBS.
MATERIAL:	ALUMINUM
BATTERY CONFIGURATION:	
CABINET #1:	(2) BATTERY STRINGS
CABINET #2:	(2) BATTERY STRINGS



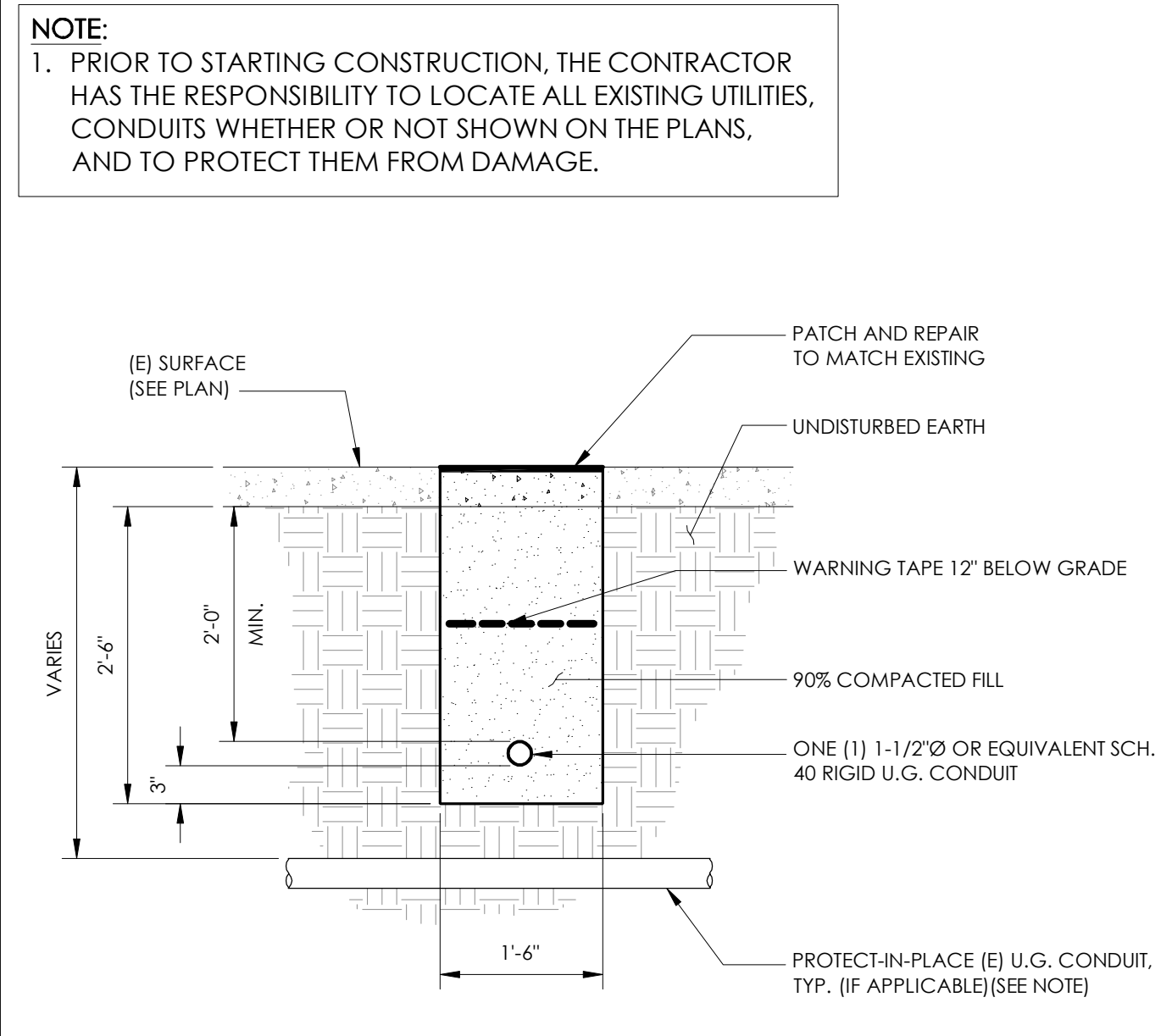
8 STUB-UP DETAIL
N.T.S.



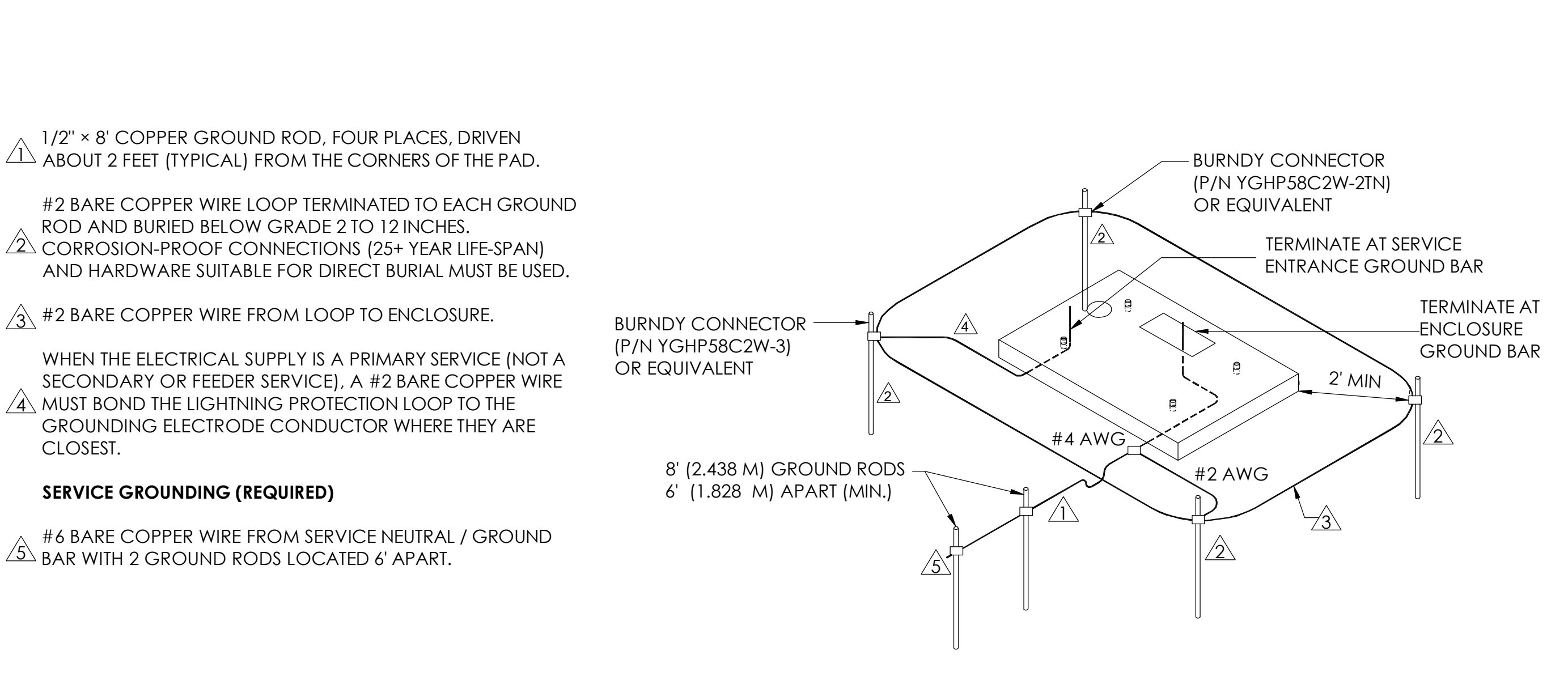
5 POWER SUPPLY DETAIL
N.T.S.



2 CONCRETE PAD & ANCHORAGE DETAIL
N.T.S.



6 TRENCHING DETAIL
N.T.S.



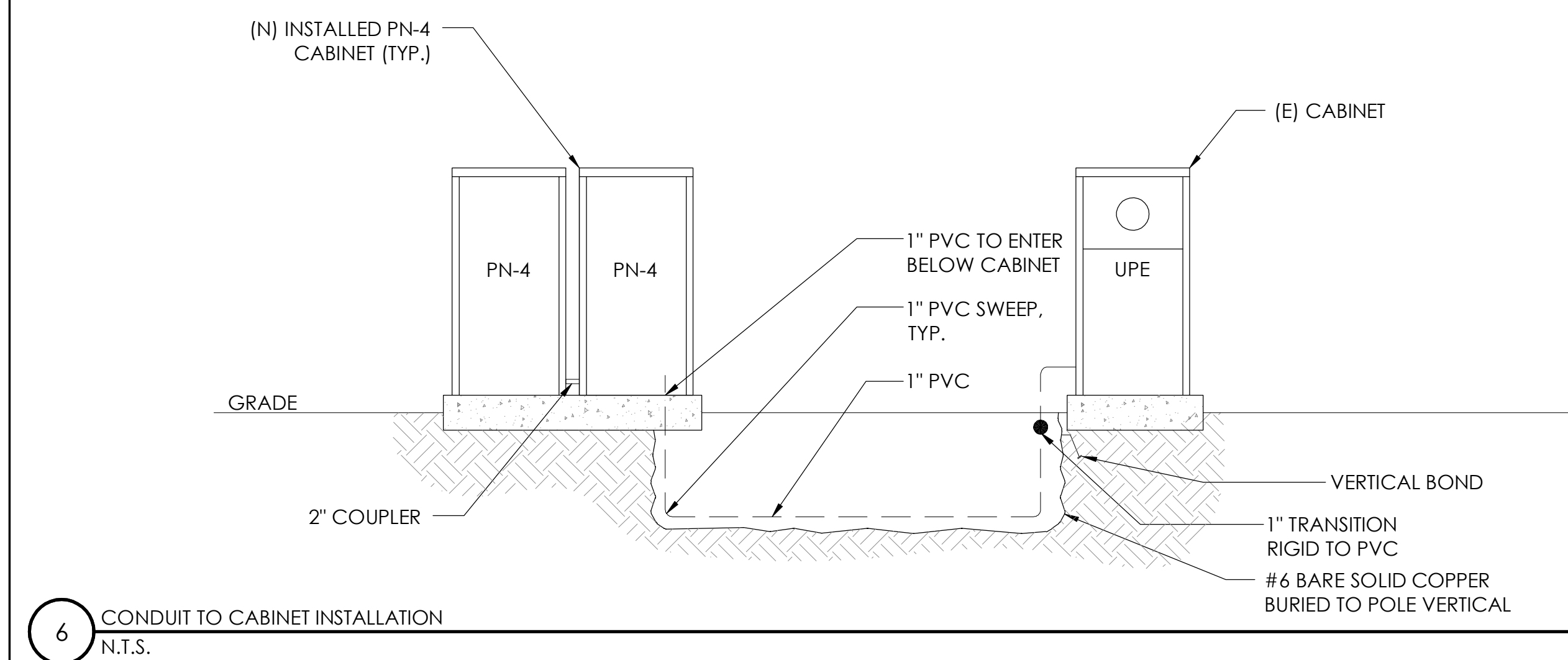
4 GROUNDING DETAIL
N.T.S.

NOTE:
1. PRIOR TO STARTING CONSTRUCTION, THE CONTRACTOR HAS THE RESPONSIBILITY TO LOCATE ALL EXISTING UTILITIES, CONDUITS WHETHER OR NOT SHOWN ON THE PLANS, AND TO PROTECT THEM FROM DAMAGE.

- 1/2" x 8' COPPER GROUND ROD, FOUR PLACES, DRIVEN ABOUT 2 FEET (TYPICAL) FROM THE CORNERS OF THE PAD.
- #2 BARE COPPER WIRE LOOP TERMINATED TO EACH GROUND ROD AND BURIED BELOW GRADE 2 TO 12 INCHES.
- CORROSION-PROOF CONNECTIONS (25+ YEAR LIFE-SPAN) AND HARDWARE SUITABLE FOR DIRECT BURIAL MUST BE USED.
- #2 BARE COPPER WIRE FROM LOOP TO ENCLOSURE.
- WHEN THE ELECTRICAL SUPPLY IS A PRIMARY SERVICE (NOT A SECONDARY OR FEEDER SERVICE), A #2 BARE COPPER WIRE MUST BOND THE LIGHTNING PROTECTION LOOP TO THE GROUNDING ELECTRODE CONDUCTOR WHERE THEY ARE CLOSEST.
- SERVICE GROUNDING (REQUIRED)**
- #6 BARE COPPER WIRE FROM SERVICE NEUTRAL / GROUND BAR WITH 2 GROUND RODS LOCATED 6' APART.

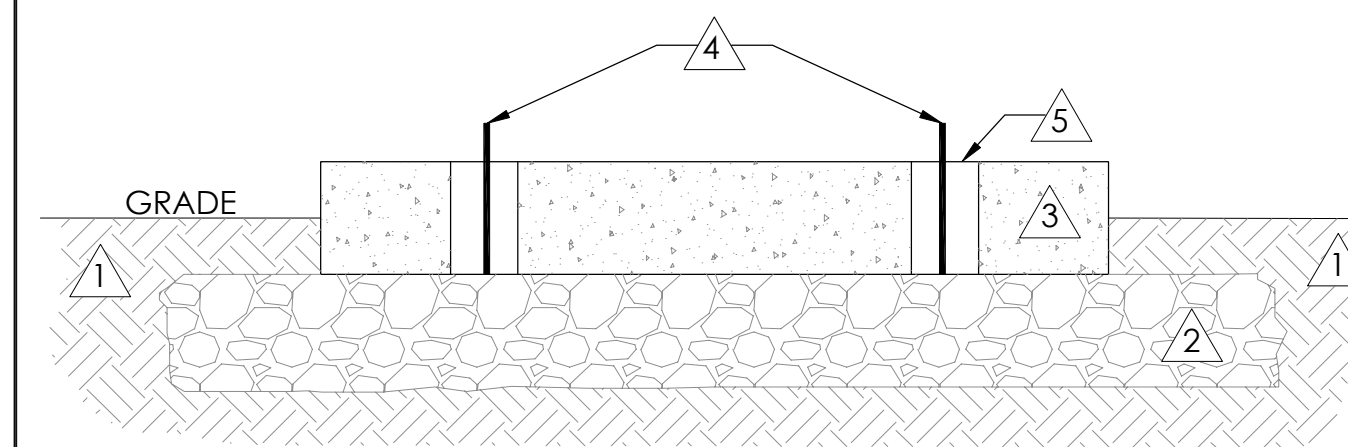
ISSUE STATUS

REV	DATE	DESCRIPTION	BY
A	10/05/21	90% CD	JW
0	03/21/23	100% CD	AB
1	05/10/23	MODEL REDESIGN	MZ
2	06/06/23	PCC #1	JG
3	06/30/23	100% CD	FG

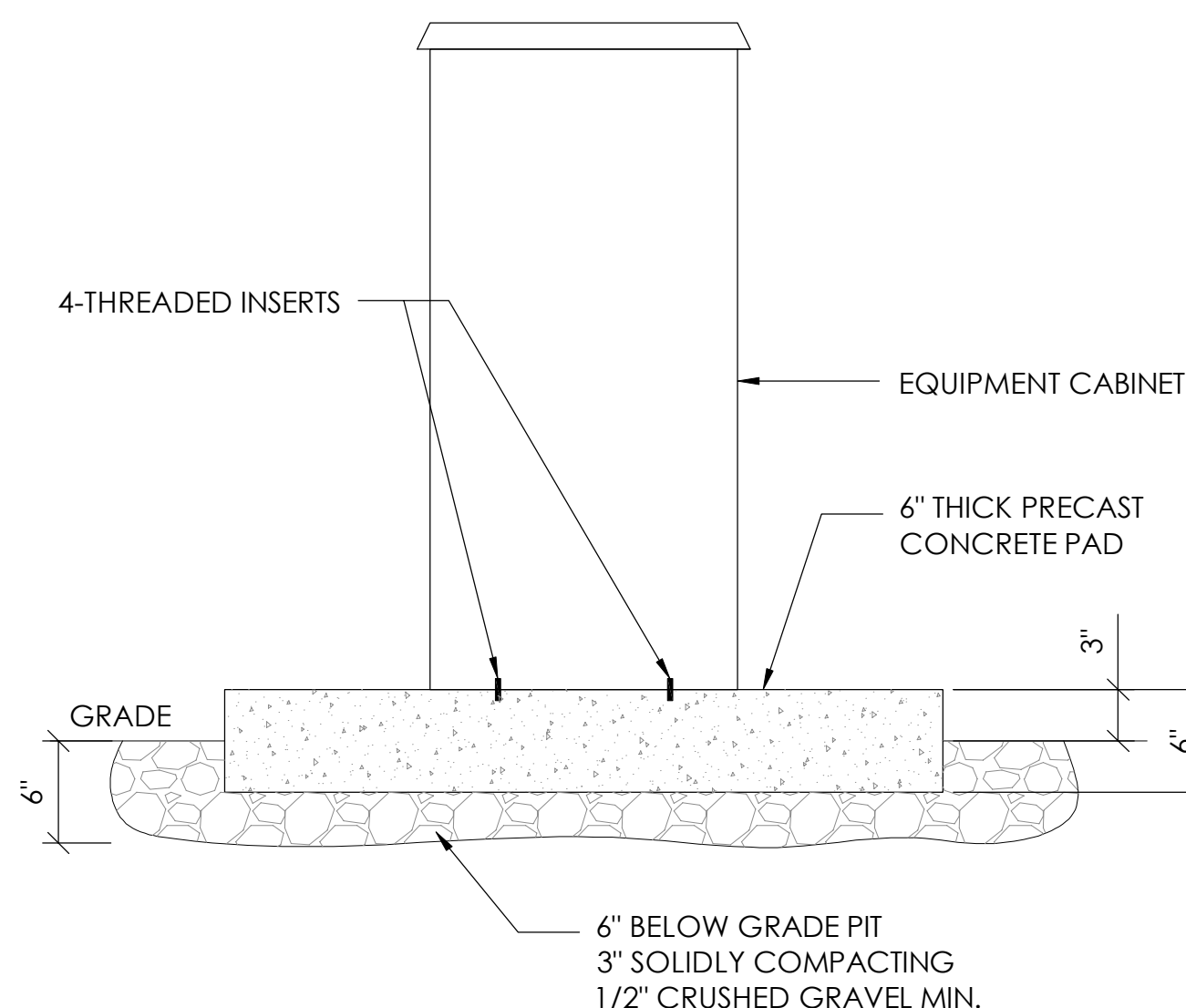


6 CONDUIT TO CABINET INSTALLATION
N.T.S.

- 1 UNDISTURBED GROUND
- 2 COMPACTED GRAVEL (6" BELOW GRADE)
- 3 CONCRETE PAD (6" THICK)
- 4 1/2" - 4 MOUNTING STUDS FOR THREADED INSERTS
- 5 OPEN AREA FOR UTILITY SWEEPS (OPTIONAL)

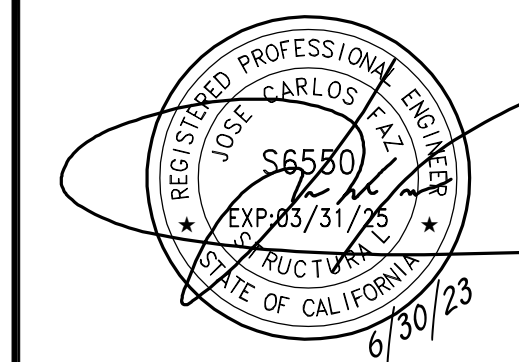


3 FOUNDATION BASE FOR PN4
N.T.S.



2 P4 CABINET INSTALLATION
N.T.S.

SEAL



SITE INFORMATION

SITE ADDRESS:
1 SHEMRAN CT,
FAIRFAX, CA 94930

APN:
174-111-84

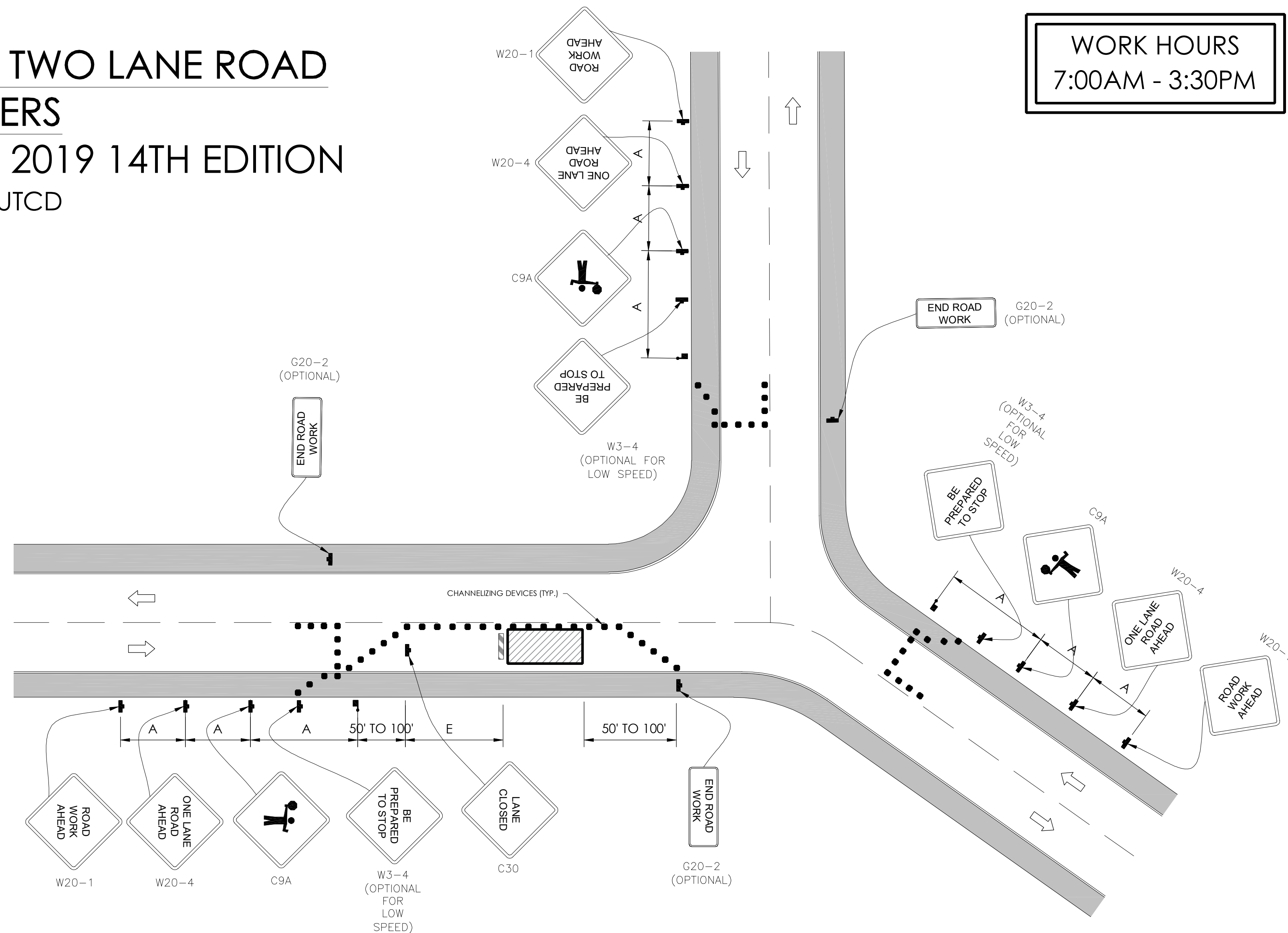
SHEET TITLE:

DETAILS

D2

TRAFFIC CONTROL FOR LANE CLOSURE ON TWO LANE ROAD INTERSECTION USING FLAGGERS

WORK AREA TRAFFIC CONTROL HANDBOOK 2019 14TH EDITION PER STANDARDS AND GUIDANCE OF CA-MUTCD



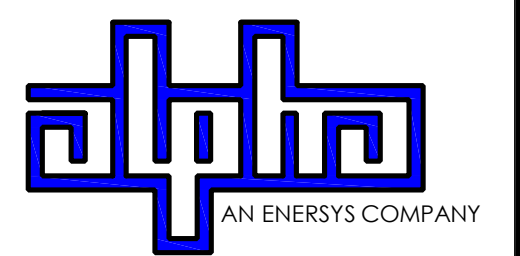
GENERAL NOTES:

1. ALL WORK AND MATERIALS SHALL COMPLY WITH THE CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), 2019.
2. ALL STRIPING AND MARKINGS SHALL CONFORM TO THE STATE OF CALIFORNIA 2010 STANDARD PLAN A20A.
3. THE CONTRACTOR SHALL PROVIDE FOR ACCESS TO ALL ADJACENT PROPERTIES.
4. FLASHING YELLOW BEACONS, TYPE "B", SHALL BE USED ON ALL W20-1 SIGNS AND ON ALL TYPE III BARRICADES GUARDING THE WORK OVERNIGHT.
5. ALL SIGNS SHALL BE REFLECTORIZED AND STANDARD SIZE.
6. ALL TUBULAR DELINEATORS AND CONES SHALL BE 28" MINIMUM HEIGHT, REFLECTORIZED AND MAINTAINED ERECT IN THE INDICATED POSITION AT ALL TIMES, AND SHALL BE REPAIRED, REPLACED, OR CLEANED AS NECESSARY TO PRESERVE THEIR APPEARANCE AND CONTINUITY, AND SHALL INCLUDE A 12" HIGH-INTENSITY REFLECTORIZED SLEEVE..
7. THE CONTRACTOR SHALL MAINTAIN, ON A CONTINUOUS BASIS, ALL SIGNS, DELINEATORS, BARRICADES, ETC., TO ENSURE PROPER FLOW AND SAFETY OF TRAFFIC DURING CONSTRUCTION.
8. THE CONTRACTOR SHALL HAVE SIGNS, DELINEATORS, BARRICADES, ETC., PROPERLY INSTALLED PRIOR TO COMMENCING CONSTRUCTION.
9. CONSTRUCTION OPERATIONS SHALL BE CONDUCTED IN SUCH A MANNER AS TO CAUSE AS LITTLE INCONVENIENCE AS POSSIBLE TO ABUTTING PROPERTY OWNERS.
10. ADDITIONAL TRAFFIC CONTROLS, TRAFFIC SIGNS OR BARRICADING MAY BE REQUIRED IN THE FIELD. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PLACEMENT OF ANY ADDITIONAL DEVICES NECESSARY TO ASSURE THE SAFETY TO THE PUBLIC AT ALL TIMES DURING CONSTRUCTION.
11. EXACT LOCATION AND TYPE OF CONSTRUCTION SIGNS SHALL BE DIRECTED BY THE ENGINEER BASED UPON CONSTRUCTION CONDITIONS.
12. MOVE DELINEATORS AND/OR CONES TO SIDEWALK DURING NON-WORKING HOURS. REMOVE BARRICADES ETC., FROM TRAVEL LANE.
13. REMOVE OR TURN OFF SIGNS DURING NON-WORKING HOURS.
14. ALL CONFLICTING LINES, EXISTING CURB PAINT, AND MARKINGS SHALL BE REMOVED BY WET SANDBLASTING OR OTHER APPROVED METHOD PRIOR TO INSTALLATION OF NEW/TEMPORARY STRIPING. ALL CONFLICTING RAISED PAVEMENT MARKERS SHALL BE REMOVED. PAVEMENT THAT IS DAMAGED DUE TO REMOVAL OF MARKERS SHALL BE REPAIRED TO THE SATISFACTION OF THE CITY ENGINEER AND/OR STATE INSPECTOR.
15. DIMENSIONS BASED ON GIS MAPPING DATA AND/OR RECORD DRAWINGS AND NOT A SURVEY.
16. TIME OF LANE CLOSURE TO BE IN ACCORDANCE WITH REQUIREMENTS OF JURISDICTION.
17. ADDITIONAL ADVANCED FLAGGERS MAY BE REQUIRED. FLAGGER SHOULD STAND IN A CONSPICUOUS PLACE, BE VISIBLE TO APPROACHING TRAFFIC. PLACE A MINIMUM OF FOUR CONES AT 40-FT INTERVAL IN ADVANCE OF FLAGGER STATION AS SHOWN.

SPEED MPH (2)	DIMENSION A/B/C ADVANCE WARNING SIGN SPACING (5)	DIMENSION L MERGIN TAPER LENGTH	DIMENSION L/2 SHIFTING TAPER LENGTH	DIMENSION L/3 MINIMUM SHOULDER TAPER	DIMENSION "E" BUFFER SPACE (4-A) AND FLAGGER STATION STOPPING SIGHT DISTANCE (4-B) (0%) (-3%) (-6%)	MAXIMUM CHANNELIZER TAPER SPACING (3)	MAXIMUM CHANNELIZER TANGENT SPACING (3)	MAXIMUM CHANNELIZER CONFLICT SPACING (6)
MPH	FT	ft	ft	ft	ft	ft	ft	ft
25	100	125	65	45	(155) (160) (135)	25	50	12
30	250	180	90	60	(200) (205) (215)	30	60	15
35	250	245	125	85	(250) (260) (275)	35	70	17
40	250	320	160	110	(305) (315) (335)	40	80	20
45	350	540	270	180	(360) (380) (400)	45	90	22
50	350	600	300	200	(425) (450) (475)	50	100	25
55	500	660	330	220	(495) (520) (555)	50	100	25
60	500	720	360	240	(570) (600) (640)	50	100	25
65	500	780	390	260	(645) (685) (730)	50	100	25
1	WORK ON FREEWAYS AND EXPRESSWAYS SHALL MEET THE CALTRANS STANDARD PLANS AND STANDARD SPECIFICATION REQUIREMENTS							
2	POSTED SPEED OR OBSERVED OPERATION SPEED (WHICHEVER IS GREATER)							
3	CHANNELIZER SPACING SHALL BE REDUCED BY HALF AT AREAS WHERE WORK IS TAKING PLACE ON CURVES OR AREAS OF HEAD-ON CONFLICT							
4-A	BUFFER SPACE MAY BE INSERTED IN LOW-SPEED URBAN AREAS AND SHOULD BE INSERTED IN HIGH-SPEED URBAN AND RURAL AREAS							
4-B	THE STOPPING SIGHT DISTANCE SHOULD ENABLE ROAD USERS TO SEE THE PRIMARY FLAGGER STATION AND SAFELY STOP							
5	SIGN SPACING IN RURAL AREAS SHOULD BE 500 FT							
6	** TABLE 6F-101 (CA)							



3011 COMCAST PLACE
LIVERMORE, CA 94551



3767 ALPHA WAY
BELLINGHAM, WA 98226



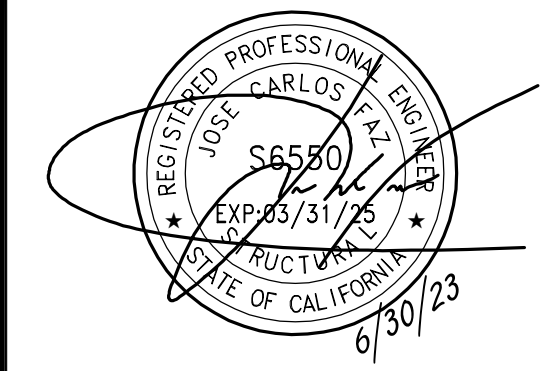
23 MAUCHLY, STE 110
IRVINE, CA 92618

J5 PROGRAM ID: ALP-CA-CPUC
J5 PROJECT ID: P-060621

ISSUE STATUS

REV	DATE	DESCRIPTION	BY
A	10/05/21	90% CD	JW
0	03/21/23	100% CD	AB
1	05/10/23	MODEL REDESIGN	MZ
2	06/06/23	PCC #1	JG
3	06/30/23	100% CD	FG

SEAL



SITE INFORMATION

SITE ADDRESS:
1 SHEMRAN CT,
FAIRFAX, CA 94930

APN:
174-111-84

SHEET TITLE:

TRAFFIC CONTROL

TC1