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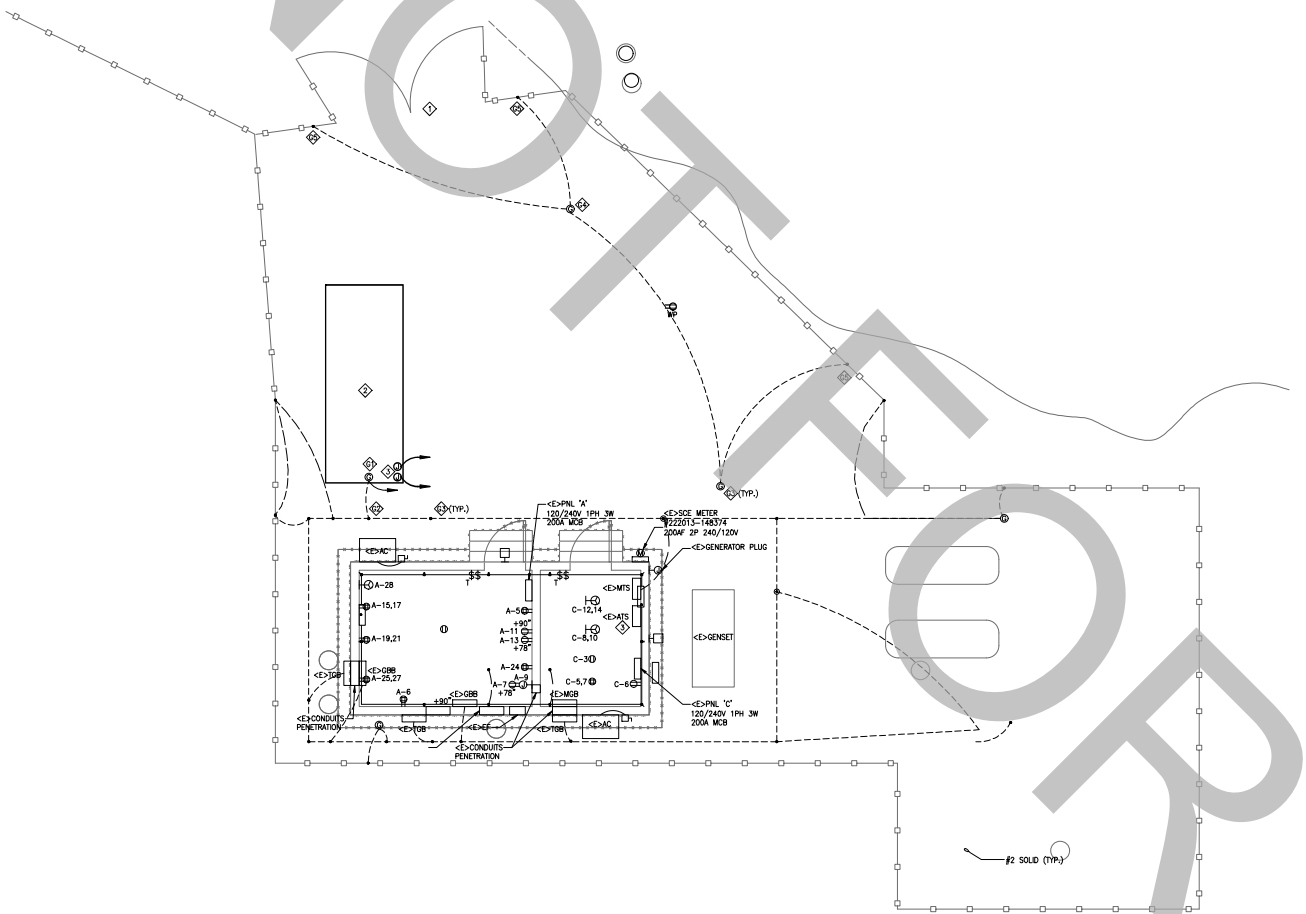

1 ELECTRICAL SITE PLAN PHASE 0 - NEW
SCALE: 1/4" = 1'-0"

GENERAL SHEET NOTES

A. NEW GROUND ROD AT GROUND WELL SHALL BE CONNECTED TO EXISTING SITE GROUNDING AND NEW GROUND LOOP UNDER CONCRETE PAD.

B. CONTRACTOR SHALL PERFORM GROUNDING RESISTANCE TEST PRIOR TO THE CONSTRUCTION AS THE GROUNDING RESISTANCE BASE LINE. CONTRACTOR SHALL PERFORM SECOND GROUNDING RESISTANCE TEST AFTER GROUNDING SYSTEM IS INSTALLED TO CONFIRM THE RESISTANCE IS LESS THAN 5 OHMS. IF IT IS MORE THAN 5 OHMS, CONTRACTOR SHALL PERFORM ADDITIONAL GROUNDING MITIGATION PER BELOW.

C. IF GROUNDING SYSTEM CANNOT REACH 5 OHMS WITH ADDITIONAL GROUNDING PLATES, FURNISH AND INSTALL LYNCONITE II AS BACKFILL TO SURROUND THE XIT SYSTEMS DURING INSTALLATION. IT IS BASED ON NATURAL CLAY FORMED BY VOLCANIC ACTION, SPECIALLY PROCESSED TO BE VERY ELECTRICALLY CONDUCTIVE. LYNCONITE II ENHANCES THE PERFORMANCE OF THE GROUNDING SYSTEM. IT IS MIXED WITH WATER (14 GALS/BAG) UNTIL A SLURRY IS FORMED (SIMILAR TO PANCAKE BATTER) AND PUMPED OR POURED AROUND THE ELECTRODE IN THE HOLE.

D. CONTRACTOR SHALL BE RESPONSIBLE TO SCAN (OR POLE HOLE) UNDERGROUND UTILITIES AND REBAR LOCATION PRIOR TO ANY SAWCUTTING OR TRENCHING.

E. COORDINATE WITH COUNTY OF SAN BERNARDINO FOR SEQUENCE OF REMOVAL OF EXISTING GENERATOR/ATS. MOP SHALL BE SUBMITTED AND APPROVED BY COUNTY OF SAN BERNARDINO PRIOR TO ANY DISCONNECTION/DEMOLITION. PROVIDE TEMPORARY GENERATOR, LIGHTING AND HVAC TO DATA ROOM AS REQUIRED BY COUNTY OF SAN BERNARDINO.

F. ALL SPARE CIRCUIT BREAKERS SHALL BE TAG AND TURN TO "OFF" POSITION.

G. ALL CEILING HUNG CONDUITS SHALL BE SUPPORTED PER DETAIL AND CODE REQUIREMENT.

H. CONTRACTOR IS RESPONSIBLE FOR ALL OBTAINING PERMITS, FEES AND REMOVAL OF ALL DEBRIS/MATERIALS/SOILS PER LOCAL JURISDICTION REQUIREMENT.

I. GROUNDING TASK LIST:
- ***a. EXCAVATE 12"X36" DITCH AS SPECIFIC AROUND THE EQUIPMENT AND BUILDING FOR THE GROUNDING LOOP AND XIT GROUNDING RODS. NOTICE TO EXCAVATION CONTRACTOR: SOIL IN REGION IS HARD AND ROCKY. EXCAVATION OF TRENCH MAY REQUIRE SPECIALIZED EQUIPMENT.
- ***b. INSTALL HORIZONTAL XIT GROUNDING RODS PER MANUFACTURER SPECIFICATIONS OF SPECIFIED LENGTH AND DIAMETER WITH CONCRETE TRAFFIC RATED BOX AND LID AT THE CONNECTION END.
- ***c. INSTALL 4/0 STRANDED COPPER GROUNDING CABLE IN EXCAVATED TRENCH.
- ***d. BACKFILL GROUNDING RODS AND GROUND WIRES EXCAVATION AREA WITH (APPROX. 6" OF) BETONITE MIXTURE PER MANUFACTURE'S SPECIFICATION.
- ***e. BACKFILL EXCAVATED PATH WITH NO.2 CABON FILL.
- ***f. LAND MECHANICAL GROUNDING CABLE TO EQUIPMENT WITH EXOTHERMIC WELDS.
- ***g. ALL COPPER CABLE CONNECTIONS ARE TO BE EXOTHERMIC UNLESS NOTED.
- ***h. EXOTHERMICALLY WELD GROUNDING SYSTEM LEGS TO EXISTING FENCE POSTS ICE BRIDGE. ABOVE GROUND CONNECTIONS TO FENCING SHALL USE NO.2 STRANDED COPPER WIRE WITHIN NON-METALLIC SEAL TIGHT. FENCES AND MOVING OBJECT THAT ARE TO BE GROUNDED SHALL BE INSTALLED SIMILARLY WITH THE ADDITION OF A 12" STRAIN RELIEF LOOP AT EACH PIVOT POINT.
- ***i. IDENTIFY LOCATION OF EXISTING SHELTER AND TOWER HALOS MAKE CONNECTIONS.
- ***j. TRENCH SHALL BE BACKFILLED WITH SPOILS.
- ***k. SPOILS FROM EXCAVATION SHALL BE DISPERSED ON OR NEAR THE SITE AT THE DIRECTION OF THE PROJECT MANAGER. SPOILS IN NO WAY SHALL INTERFERE WITH WATER RUNOFF OR ROADS.
- ***l. TEST NEW GROUNDING SYSTEM PER COUNTY OF SAN BERNARDINO.
- ***m. GROUNDING TEST REPORT SHALL BE SUBMITTED FOR COUNTY AND EEOR REVIEW AND APPROVAL PRIOR TO CLOSE-OUT.

J. LIGHT WEIGHT SLURRY (2 SACKS) SHALL BE INSTALLED ON TOP OF GROUND WIRING AT ALL LOCATIONS.

E. EXISTING GROUND WIRES SHALL BE PROTECTED IN PLACE. IF DAMAGED, CONTRACTOR IS RESPONSIBLE TO REPAIR AND RECONNECT WITH NEW GROUND WIRES/GROUND RODS/GROUND PLATES.

F. CONDUITS SHALL BE STUB UP IN 45 DEGREE FROM UNDERGROUND TO 6" ABOVE FINISH FLOOR. NO 90 DEGREE BEND IS ALLOWED FOR TELECOM/ANTENNA TOWER CABLES.

REFERENCE SHEET NOTES

1. INSTALL FENCES AND GATES PER ARCHITECTURAL PLAN.
2. PROVIDE TEMPORARY DIESEL GENERATOR ON TRAILER (BASIS OF DESIGN PRODUCT: JCB POWER PRODUCTS G70RS, DIMENSION: 189"L X 74"W X 105"H) WITH FULL TANK OF FUEL.
3. PROVIDE 3/4" CONDUIT WITH COMMUNICATION WIRING TO ATS FOR ENGINE START, AND 3/4" CONDUIT WITH COMMUNICATION WIRING TO EXISTING ATS WITHIN BUILDING. COORDINATE WITH MANUFACTURER FOR EXACT REQUIREMENT AND COORDINATE WITH COUNTY FOR BMS SYSTEM TERMINATION FOR MONITORING. PROVIDE POWER CONNECTION TO EXISTING BUILDING PANEL VIA EXISTING ATS PER SINGLE LINE DIAGRAM. BACKUP POWER CUTOVER PROCEDURE AND SCHEDULE SHALL BE COORDINATED WITH COUNTY. DURING BACKUP POWER CUTOVER, CONTRACTOR SHALL PROVIDE PORTABLE GENERATOR VIA EXISTING APPLETON PLUG AS BACKUP POWER PER COUNTY REQUIREMENT.
4. EXISTING AUTOMATIC TRANSFER SWITCH 'ATS'. PROVIDE CONNECTION PER SINGLE LINE DIAGRAM.
5. PROVIDE CIRCUIT BREAKER PER PANEL SCHEDULE FOR GENERATOR BLOCK HEATER AND BATTERY CHARGER.

G1. 10'X3/4" COPPER CLAD GROUND ROD FOR GENERATOR. NEW GROUNDING SYSTEM TO BE BONDED TO EXISTING SITE GROUNDING SYSTEM. FIELD VERIFY EXISTING SITE GROUNDING POINT.

G2. CONNECT GENERATOR GROUNDING WITH GROUNDING GRID.

G3. EXISTING GROUNDING GRID TO REMAIN AND PROTECT IN PLACE.

G4. INSTALL NEW GROUND WELL WITH 10FTx3/4" COPPER CLAD GROUND ROD AND #2 BARE COPPER GROUND WIRE. CONNECT TO EXISTING GRID, FENCES, AND GATES PER PLAN.

G5. CAD-WELD GROUNDING TO FENCES AND GATES.

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305 South 11th Street
San Jose, California 95112-2218
877.725.2755 | 877.925.1477 (f)
WWW.SALASOBRIEN.COM
National Strength. Local Action.

10.10.1237
800MHz UPGRADE SKYLAND PEAK TOWER

ISSUE MARK	DATE	DESCRIPTION
	06/14/23	95% CD
	01/12/24	100% CD

SOBE PROJECT NO:	2102276
DATE:	10/09/21
DRAWN BY:	CADD
CHECKED BY:	AC
APPROVED BY:	AC

SHEET TITLE
ELECTRICAL SITE PLAN PHASE 0 - NEW

SCALE: AS NOTED
THIS DRAWING IS 30" X 42" AT FULL SIZE

E-1.1

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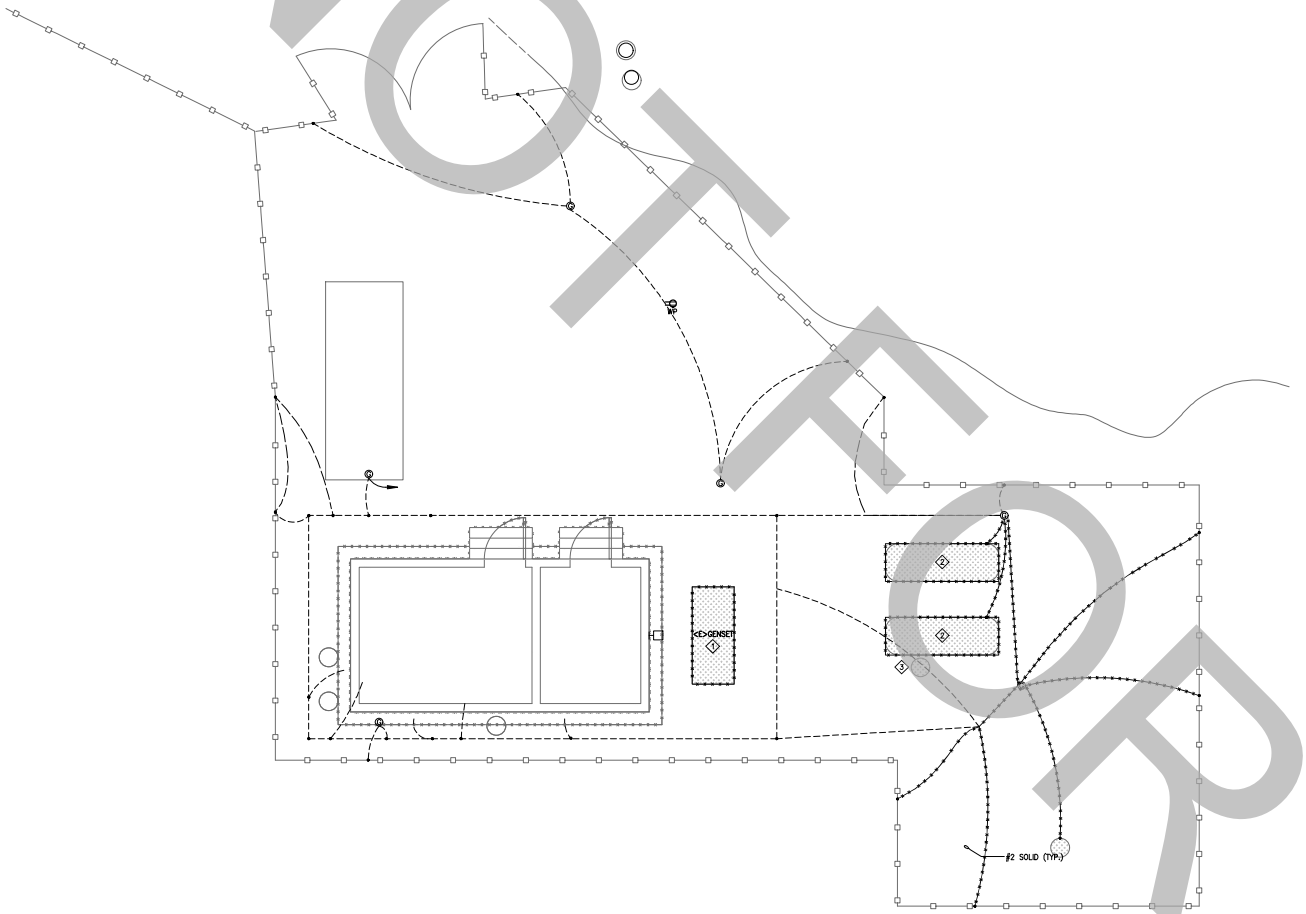

1 ELECTRICAL SITE PLAN PHASE 1 - DEMO
SCALE: 1/4" = 1' - 0"

GENERAL SHEET NOTES

A. CONTRACTOR SHALL SEE SEQUENCE OF CONSTRUCTION AT SUMMARY OF WORK.

B. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING EQUIPMENT/DEVICES/COMPONENTS PRIOR TO ANY DEMOLITION.

C. CONTRACTOR SHALL FIELD VERIFY AND LOCATE ALL EXISTING GROUND GRID AND CONNECTION POINTS PRIOR TO ANY DEMOLITION. EXISTING GROUNDING SYSTEM SHALL BE PROTECTED IN PLACE UON.

D. CONTRACTOR SHALL SUBMIT METHOD OF PROCEDURE (MOP) TO COUNTY OF SAN BERNARDINO FOR APPROVAL PRIOR TO ANY POWER SHUTDOWN/INTERRUPTION. TEMPORARY GENERATOR, AIR CONDITIONING AND LIGHTING SHALL BE PROVIDED DURING POWER SHUTDOWN. TEMPORARY GENERATOR FUEL SHALL BE RESPONSIBLE BY CONTRACTOR.

E. EXISTING GROUND WIRES SHALL BE PROTECTED IN PLACE. IF DAMAGED, CONTRACTOR IS RESPONSIBLE TO REPAIR AND RECONNECT WITH NEW GROUND WIRES/GROUND RODS/GROUND PLATES.

REFERENCE SHEET NOTES

1. REMOVE EXISTING GENERATOR AND DISPOSE PER ENVIRONMENTAL CODE AND COUNTY REQUIREMENT.
2. REMOVE PROPANE TANKS AND ASSOCIATE GAS PIPES PER ENVIRONMENTAL CODE AND COUNTY REQUIREMENT.
3. REMOVE GROUNDING CONNECTION OF PROPANE TANKS.

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SHEET TITLE
ELECTRICAL SITE PLAN PHASE 1 - DEMO

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ED-1.2

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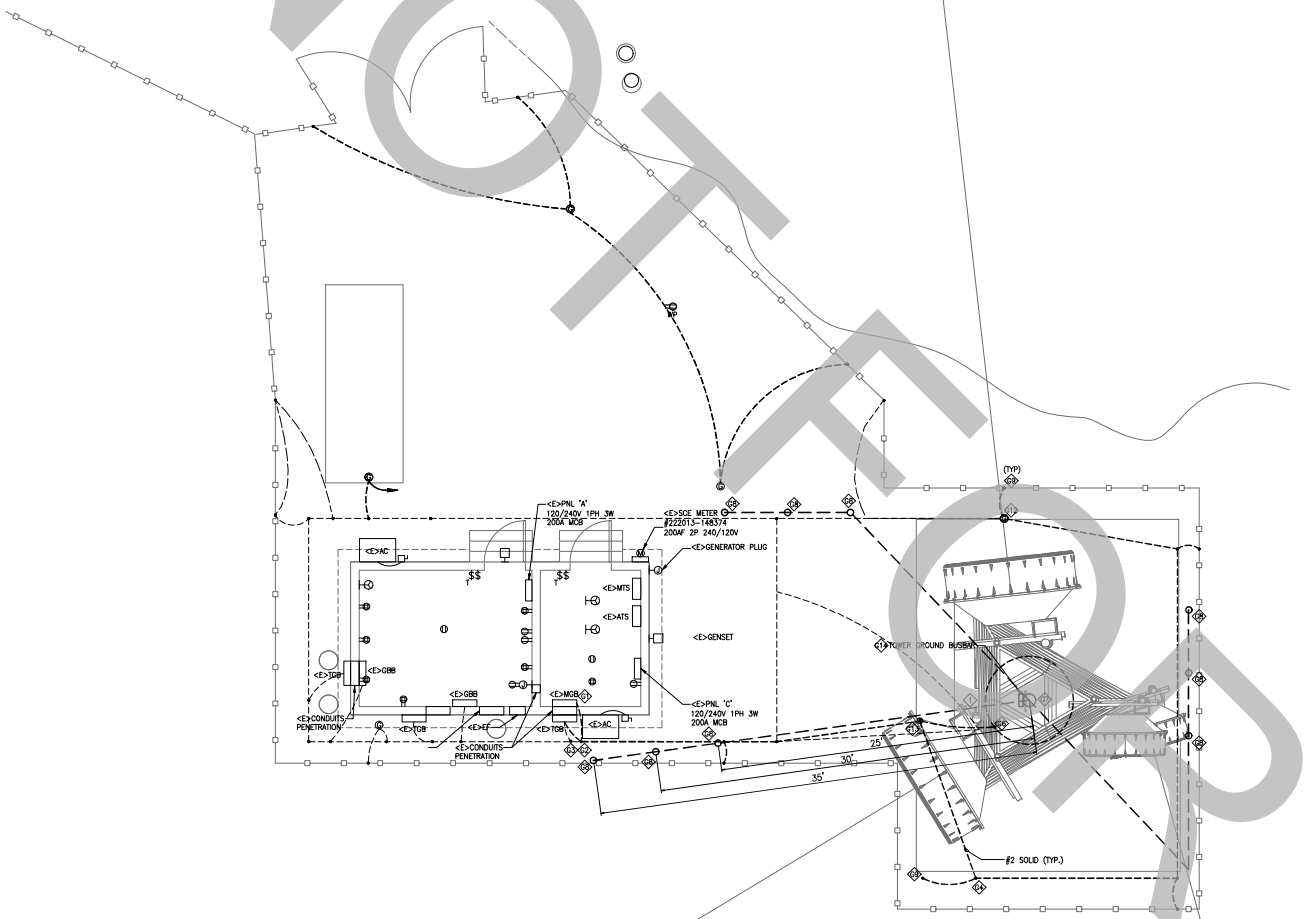

1 ELECTRICAL SITE PLAN PHASE 1 - NEW

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

0 4' 8'

N

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F. CONDUITS SHALL BE STUB UP IN 45 DEGREE FROM UNDERGROUND TO 6" ABOVE FINISH FLOOR. NO 90 DEGREE BEND IS ALLOWED FOR TELECOM/ANTENNA TOWER CABLES.

REFERENCE SHEET NOTES

1. SEE STRUCTURAL PLAN FOR ANTENNA FOUNDATION INSTALLATION. FIELD VERIFY FOR THE ANCHORAGE PREPARATION OF TEMPORARY ICE BRIDGE AND PERMANENT ICE BRIDGE IN FUTURE PHASES.

G1. CONNECT TO EXISTING MASTER GROUND BUS BAR IN BUILDING.

G2. CAD-WELD UNDERGROUND COPPER GRID TO EXISTING AS REQUIRED. FIELD VERIFY TO CONNECTION POINT.

G3. CONNECT TO EXTERIOR GROUND BUS BAR WITH ANTENNA VIA TOWER GROUND BUS BAR PER COUNTY OF SAN BERNARDINO REQUIREMENT.

G4. CAD-WELD 12"X12" COPPER GROUNDING PLATES. FURNISH AND INSTALL ADDITIONAL GROUND PLATE AS REQUIRED TO REACH NO MORE THAN 5 OHMS RESISTANCE.

G5. NOT USED.

G6. UNDERGROUND GROUND RING FOR ANTENNA TOWER PER COUNTY OF SAN BERNARDINO REQUIREMENT.

G7. BONE AND CAD-WELD GROUNDING TO TOWER DOWN CONDUCTORS PER COUNTY OF SAN BERNARDINO REQUIREMENT. EXTEND AND CAD-WELD GROUNDING CONNECTION TO ANTENNA DEVICES/EQUIPMENT AS REQUIRED PER COUNTY OF SAN BERNARDINO.

G8. #2 SOLID TINNED COPPER GROUND RADIALS WITH EARTHING ELECTRODES (GROUND RODS OR PLATES TO ACHIEVE REQUIRED RESISTANCE).

G9. BOND METALLIC DOORS TO UNDERGROUND GROUND RING WITH #2 CABLE.

G10. NOT USED.

G11. NOT USED.

G12. FURNISH AND INSTALL CONCRETE GROUND WELL WITH ELECTRODE FOR TESTING.

G13. FURNISH AND INSTALL GROUNDING ELECTRODE.

G14. TOWER GROUND BUS BAR. CONNECT TO ANTENNA TOWER GROUNDING AND UNDERGROUND GROUNDING GRID PER DETAILS AND COUNTY OF SAN BERNARDINO REQUIREMENT.

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SHEET TITLE
ELECTRICAL SITE PLAN PHASE 1 - NEW

SCALE: AS NOTED
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E-1.2

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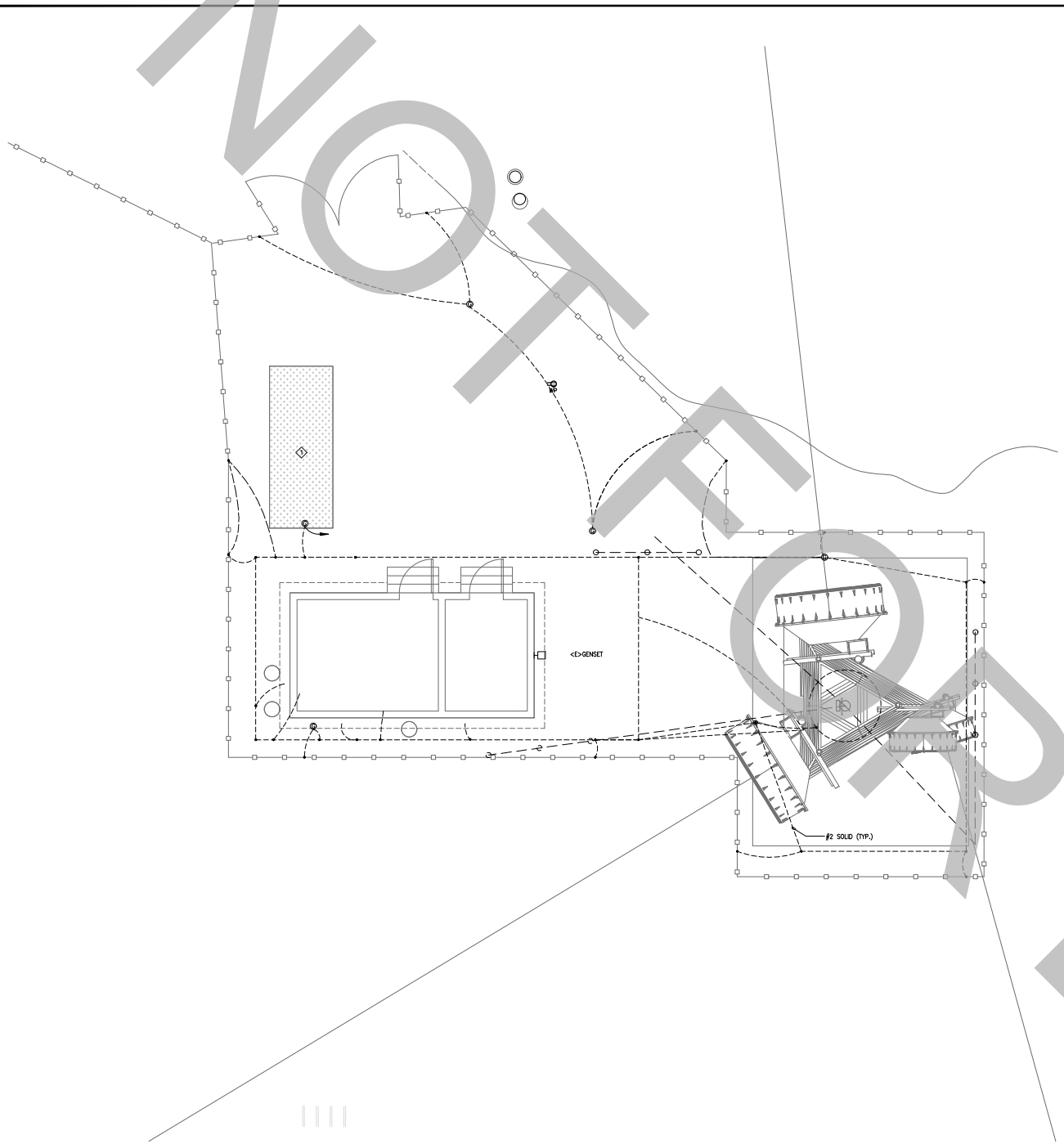

1 ELECTRICAL SITE PLAN PHASE 2 - DEMO
SCALE: 1/4" = 1' - 0"

GENERAL SHEET NOTES

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C. CONTRACTOR SHALL FIELD VERIFY AND LOCATE ALL EXISTING GROUND GRID AND CONNECTION POINTS PRIOR TO ANY DEMOLITION. EXISTING GROUNDING SYSTEM SHALL BE PROTECTED IN PLACE UON.

D. CONTRACTOR SHALL SUBMIT METHOD OF PROCEDURE (MOP) TO COUNTY OF SAN BERNARDINO FOR APPROVAL PRIOR TO ANY POWER SHUTDOWN/INTERRUPTION. TEMPORARY GENERATOR, AIR CONDITIONING AND LIGHTING SHALL BE PROVIDED DURING POWER SHUTDOWN. TEMPORARY GENERATOR FUEL SHALL BE RESPONSIBLE BY CONTRACTOR.

E. EXISTING GROUND WIRES SHALL BE PROTECTED IN PLACE. IF DAMAGED, CONTRACTOR IS RESPONSIBLE TO REPAIR AND RECONNECT WITH NEW GROUND WIRES/GROUND RODS/GROUND PLATES.

REFERENCE SHEET NOTES

1. RELOCATE PORTABLE GENERATOR TO NEW LOCATION PER NEW WORK PLAN. PROVIDE TEMPORARY GENERATOR DURING RELOCATION IF NECESSRY. THERE SHOULD BE BACKUP POWER AVAILABLE ALL THE TIME.

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ED-1.3

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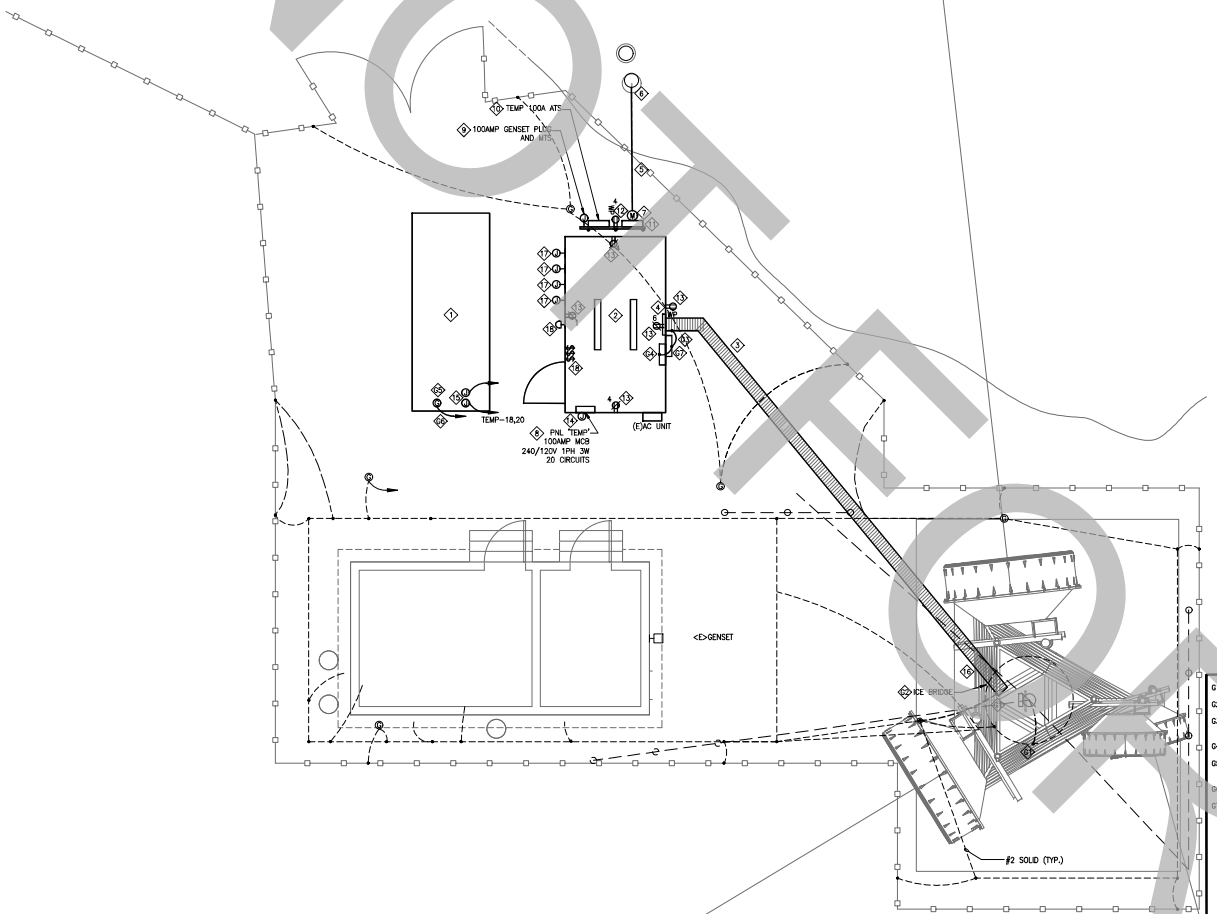

1 ELECTRICAL SITE PLAN PHASE 2 - NEW
SCALE: 1/4" = 1'-0"

G1. FURNISH AND INSTALL GROUNDING CONNECTION TO TEMP ICE BRIDGE.

G2. FURNISH AND INSTALL TEMP ICE BRIDGE.

G3. REMOVE EXISTING GROUND BUSBAR. CONNECT TEMP ICE BRIDGE TO INTERNAL GROUND BUSBAR.

G4. FURNISH AND INSTALL INTERNAL GROUND BUSBAR.

G5. FURNISH AND INSTALL 10FTx3/4" CLAD COPPER GROUND ROD WITH #2 GROUND WIRE CONNECTION FOR GENERATOR GROUNDING.

G6. CONNECT GENERATOR GROUNDING TO EXISTING UNDERGROUND GROUND GRID.

G7. FURNISH AND INSTALL EXTERIOR GROUND BUSBAR MOUNTED TO UNISTRUT RACK (NOT TO THE ENCLOSURE WALL). CONNECT EXTERIOR GROUND BUSBAR WITH INTERNAL.

GENERAL SHEET NOTES

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- ***b. INSTALL HORIZONTAL XIT GROUNDING RODS PER MANUFACTURER SPECIFICATIONS OF SPECIFIED LENGTH AND DIAMETER WITH CONCRETE TRAFFIC RATED BOX AND LID AT THE CONNECTION END.
- ***c. INSTALL 4/0 STRANDED COPPER GROUNDING CABLE IN EXCAVATED TRENCH.
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- ***e. BACKFILL EXCAVATED PATH WITH NO.2 CABON FILL.
- ***f. LAND MECHANICAL GROUNDING CABLE TO EQUIPMENT WITH EXOTHERMIC WELDS.
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E. EXISTING GROUND WIRES SHALL BE PROTECTED IN PLACE. IF DAMAGED, CONTRACTOR IS RESPONSIBLE TO REPAIR AND RECONNECT WITH NEW GROUND WIRES/GROUND RODS/GROUND PLATES.

F. CONDUITS SHALL BE STUB UP IN 45 DEGREE FROM UNDERGROUND TO 6" ABOVE FINISH FLOOR. NO 90 DEGREE BEND IS ALLOWED FOR TELECOM/ANTENNA TOWER CABLES.

L. PROVIDE WATER TIGHT SEAL FOR ALL TEMPORARY BUILDING TOWER CABLE PENETRATION AS REQUIRED BY COUNTY OF SAN BERNARDINO.

REFERENCE SHEET NOTES

1. RELOCATE EXISTING PORTABLE GENERATOR TO NEW LOCATION TO PROVIDE MORE SPACE FOR PHASE 3 PERMANENT BUILDING WORK.
2. CONTRACTOR SHALL TRANSPORT THE OFCI FIBERGLASS PORTABLE TRAILER BUILDING TO SITE. CONTRACTOR SHALL FIELD VERIFY EXISTING FIBERGLASS PORTABLE TRAILER BUILDING DIMENSION, WEIGHT AND TRANSPORTATION METHOD. ANCHOR BUILDING ON GROUND PER STRUCTURAL. CONTRACTOR SHALL REPAIR ANY DAMAGE ON BUILDING PER MANUFACTURER REQUIREMENT.
3. TEMPORARY ICE BRIDGE PER COUNTY REQUIREMENT. SEE ARCH/STRUCTURAL FOR DETAIL. CABLES SHALL HAVE 7FT CLEARANCE.
4. UTILIZE <E>CABLES OUTDUT PENETRATIONS PER COUNTY REQUIREMENT, AND CONNECT TO TEMPORARY ICE BRIDGE ACCORDINGLY. SEE ARCH FOR DETAIL. CABLES SHALL HAVE 7FT CLEARANCE.
5. TEMPORARY OVERHEAD SCE INCOMING FEEDER. COORDINATE WITH SCE FOR EXACT REQUIREMENT. SEE SCE DESIGN PLAN FOR DETAIL.
6. TEMPORARY SCE POWER POINT OF CONNECTION. COORDINATE WITH SCE FOR EXACT REQUIREMENT. SEE SCE DESIGN PLAN FOR DETAIL.
7. TEMPORARY SCE POWER METER ON H-FRAME. SEE SCE DESIGN PLAN FOR REQUIREMENT.
8. TEMPORARY ELECTRICAL PANEL "TEMP" FOR TEMP PORTABLE BUILDING. SEE SINGLE LINE DIAGRAM FOR DETAIL.
9. FURNISH AND INSTALL NEMA-3R MANUAL TRANSFER SWITCH "MTS" (SOURCE 1 - OFF - SOURCE 2) ON H-FRAME MOUNTED. FURNISH AND INSTALL NEMA-3R, 200A, 240/120V, 1PH, 3W CAMLOCK WITH WHILE-IN-USE COVER. (MALE: LOAD, FEMALE: NEUTRAL+GROUND) H-FRAME MOUNTED
10. FURNISH AND INSTALL AUTOMATIC TRANSFER SWITCH "ATS", 100A, 240/120V, 2P, 3W NEMA-3R. PROVIDE SOFT FIBER COVER ON THE ATS DIGITAL SCREEN FOR SUNPROTECTION. PROVIDE CONNECTION PER SINGLE LINE DIAGRAM.
11. H-FRAME WITH CONCRETE FOUNDATIONS PER DETAIL.
12. PROVIDE 20A, 120V, GFCI, RECEPTACLES WITH WEATHERPROOF HEAVY DUTY WHILE-IN-USE COVER. PROVIDE 3/4"C. - 2#12 + 1#12 GND. WIRING.
13. EXISTING RECEPTACLES SHALL REMAIN.
14. UTILIZE (E)JUNCTION BOXES/CONDUIT PENETRATIONS FOR POWER CONNECTION FROM NEW SCE SERVICE TO EXISTING PANEL "TEMP". APPLY WEATHERPROOF CAULKING FOR ANY POTENTIAL WATER LEAKAGE AFTER CONDUCTORS ARE INSTALLED.
15. POWER CONNECTION FOR GENERATOR BLOCK HEATER AND BATTERY CHARGER AND COMMUNICATION WIRING IN CONDUITS TO RESPECTIVE PANEL, BMS, ATS.
16. CONTRACTOR SHALL FIELD VERIFY THE ICE BRIDGE LAYOUT/LOCATION TO COORDINATE WITH PHASE 3 PERMANENT ICE BRIDGE LOCATION/LANDING POINT.
17. CAP UNUSED EXISTING CONDUIT PENETRATIONS FOR ANY WATER AND SNOW PENETRATION.
18. RECONNECT LIGHT SWITCHES WITH EXISTING EXTERIOR LIGHT. INTERIOR LIGHTS ACCORDINGLY.

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800MHz UPGRADE SKYLAND PEAK TOWER

ISSUE MARK	DATE	DESCRIPTION
	06/14/23	95% CD
	01/12/24	100% CD

SOBE PROJECT NO:	2102276
DATE:	10/09/21
DRAWN BY:	CADD
CHECKED BY:	AC
APPROVED BY:	AC

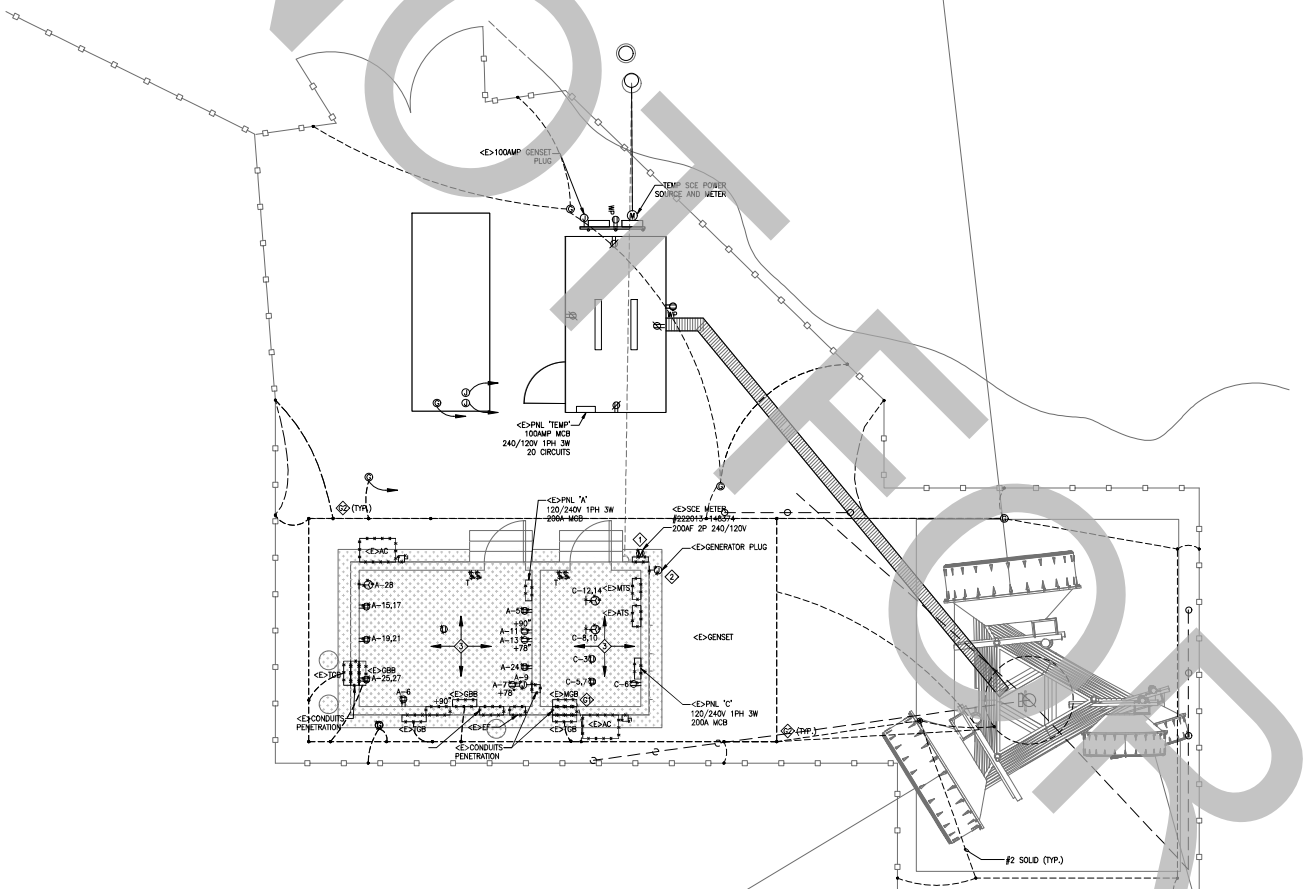
SHEET TITLE
ELECTRICAL SITE PLAN PHASE 2 - NEW

SCALE: AS NOTED
THIS DRAWING IS 30" X 42" AT FULL SIZE

E-1.3

NOT FOR BID

THIS DRAWING IS 30" X 42" AT FULL SIZE. 15" X 21" AT HALF SIZE. © 2015 BY SALAS O'BRIEN ENGINEERS, INC.



1 ELECTRICAL SITE PLAN PHASE 3 - DEMO
SCALE: 1/4" = 1' - 0"

GENERAL SHEET NOTES

A. CONTRACTOR SHALL SEE SEQUENCE OF CONSTRUCTION AT SUMMARY OF WORK.

B. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING EQUIPMENT/DEVICES/COMPONENTS PRIOR TO ANY DEMOLITION.

C. CONTRACTOR SHALL FIELD VERIFY AND LOCATE ALL EXISTING GROUND GRID AND CONNECTION POINTS PRIOR TO ANY DEMOLITION. EXISTING GROUNDING SYSTEM SHALL BE PROTECTED IN PLACE UON.

D. CONTRACTOR SHALL SUBMIT METHOD OF PROCEDURE (MOP) TO COUNTY OF SAN BERNARDINO FOR APPROVAL PRIOR TO ANY POWER SHUTDOWN/INTERRUPTION. TEMPORARY GENERATOR, AIR CONDITIONING AND LIGHTING SHALL BE PROVIDED DURING POWER SHUTDOWN. TEMPORARY GENERATOR FUEL SHALL BE RESPONSIBLE BY CONTRACTOR.

E. IF EXISTING GROUNDING GRID IS DAMAGED, CONTRACTOR IS RESPONSIBLE TO REPLACE AND RECONNECT ACCORDINGLY.

REFERENCE SHEET NOTES

1. COORDINATE WITH SCE TO REMOVE EXISTING METER. COORDINATE WITH COUNTY FOR THE POWER SHUTDOWN SCHEDULE AND SEQUENCE. TEMPORARY TRAILER BUILDING HAS TO BE IN SERVICE COMPLETE BEFORE ANY POWER SHUTDOWN/DEMOLITION OF THIS EXISTING BUILDING.
2. REMOVE EXISTING PORTABLE GENERATOR APPLETON PLUG.
3. DEMOLISH ALL EQUIPMENT OR DEVICES PER COUNTY DIRECTION. RETURN EQUIPMENT/DEVICES BACK TO COUNTY IF COUNTY REQUESTS FOR IT.

G1. REMOVE EXISTING MAIN GROUND BUSBAR FROM UNDERGROUND GROUNDING GRID. EXISTING UNDERGROUND GROUNDING GRID SHALL BE REMAIN. IF IT IS DAMAGED, CONTRACTOR IS RESPONSIBLE TO REPLACE AND RECONNECT ACCORDINGLY.

G2. EXISTING GROUNDING GRID TO REMAIN. IF IT IS DAMAGED, CONTRACTOR IS RESPONSIBLE TO REPLACE AND RECONNECT ACCORDINGLY.

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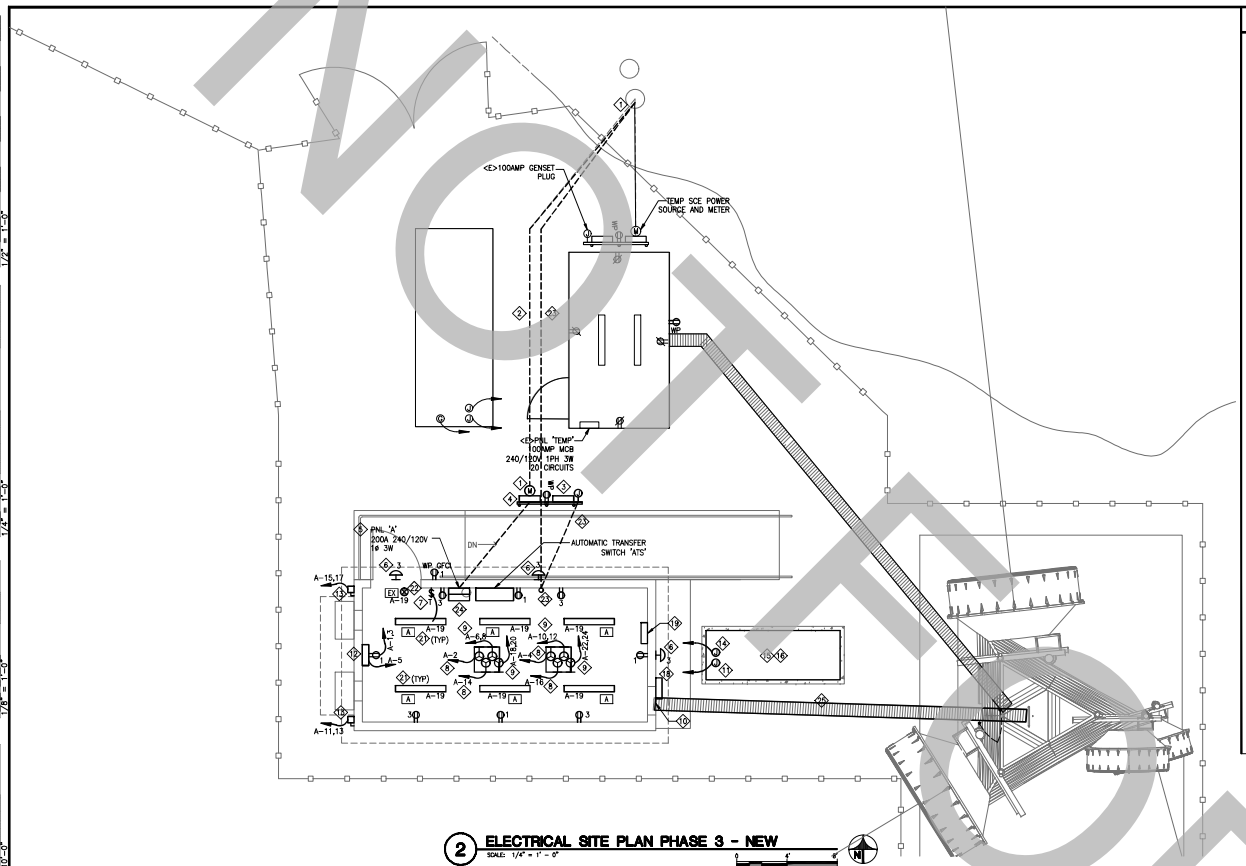
SHEET TITLE
ELECTRICAL SITE PLAN PHASE 3 - DEMO

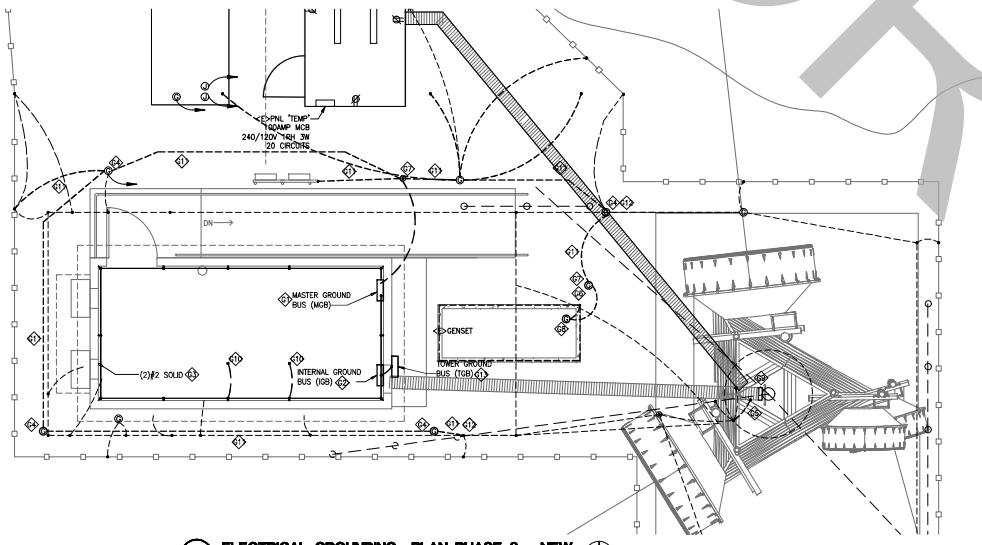
SCALE: AS NOTED
THIS DRAWING IS 30" X 42" AT FULL SIZE

ED-1.4



2 ELECTRICAL SITE PLAN PHASE 3 - NEW

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



1 ELECTRICAL GROUNDING PLAN PHASE 3 - NEW

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

REFERENCE SHEET NOTES

16. CONCRETE HOUSEKEEPING PAD PER STRUCTURAL.
17. NOT USED.
18. TOWER GROUND BUS BAR. SEE GROUNDING PLAN FOR DETAIL.
19. MAIN GROUND BUS BAR. SEE GROUNDING PLAN FOR DETAIL.
20. NOT USED.
21. 4FT LED LINEAR LIGHT FIXTURE (EATON #4SNLED-LDS-34SL-LW-UNV-L840-CD-1-U). COORDINATE WITH WATTSTOPPER FOR CONTROL COMPATIBILITY.
22. EMERGENCY EXIT SIGN (SURE-LITES #CX-6-1)
23. (2) 2" UNDERGROUND CONDUIT FROM BUILDING 6" ABOVEGROUND STUB UP TO EXTERIOR (NEMA-3R) 12"L X 12"W X 6"D JUNCTION BOX AT H-FRAME AND SCE POLE FOR POTENTIAL FIBER POINT OF CONNECTION. VERIFY WITH COUNTY FOR EXACT LOCATION. PROVIDE CONDUIT CAP AT BUILDING STUB UP.
24. PROVIDE TVSS PER SINGLE LINE DIAGRAM.
25. PROVIDE PERMANENT ICE-BRIDGE WITH STRUCTURAL FOOTINGS, GROUNDING CONNECTION. FIELD COORDINATE FOR EXACT LOCATION AND HEIGHT. ICE-BRIDGE SPEC SHALL MEET COUNTY OF SAN BERNARDINO REQUIREMENT AND BE REVIEWED AND APPROVED BY COUNTY OF SAN BERNARDINO.

G1. MASTER GROUND BUS BAR. SEE DETAIL.

G2. INTERNAL GROUND BUS BAR. CONNECT TO ANTENNA VIA TOWER GROUND BUS BAR PER COUNTY OF SAN BERNARDINO REQUIREMENT.

G3. INTERNAL GROUNDING RING 4" BELOW CEILING. CONNECT ALL METAL DOORS/WINDOWS/VENTS/DATA RACKS/LIGHT FIXTURES WITH #6 CABLE PER COUNTY OF SAN BERNARDINO REQUIREMENT.

G4. CAD-WELD 12"X12" COPPER GROUNDING PLATES. FURNISH AND INSTALL ADDITIONAL GROUND PLATE AS REQUIRED TO REACH NO MORE THAN 5 OHMS RESISTANCE.

G5. CAD-WELD GROUNDING TO ICE BRIDGE.

G6. BOND GENERATOR PAD UNDERGROUND RING TO SITE GROUND RING WITH #2 CABLE.

G7. FURNISH AND INSTALL CONCRETE GROUND WELL WITH ELECTRODE FOR TESTING.

G8. GROUNDING ELECTRODE FOR GENERATOR.

G9. TOWER GROUND BUS BAR. CONNECT TO ANTENNA TOWER GROUNDING AND UNDERGROUND GROUNDING GRID PER DETAILS AND COUNTY OF SAN BERNARDINO REQUIREMENT.

G10. CONNECT GROUNDING TO DATA RACKS. COORDINATE WITH IT DEPARTMENT OF COUNTY OF SAN BERNARDINO.

G11. UNDERGROUND #2 SOLID BARE COPPER GROUND WIRE. CONNECT ALL EXISTING AND NEW GROUNDING PLATES/RODS/BUSBARS TOGETHER.

G12. CONNECT NEW GROUND WIRES WITH EXISTING.

G13. EXTERIOR GROUND BUSBAR UNDER ICE-BRIDGE. PROVIDE GROUNDING CONNECTIONS TO ALL METALLIC STRUCTURAL/EQUIPMENT PER COUNTY ISD REQUIREMENT.

GENERAL SHEET NOTES

A. NEW GROUND ROD AT GROUND WELL SHALL BE CONNECTED TO EXISTING SITE GROUNDING AND NEW GROUND LOOP UNDER CONCRETE PAD.

B. CONTRACTOR SHALL PERFORM GROUNDING RESISTANCE TEST PRIOR TO THE CONSTRUCTION AS THE GROUNDING RESISTANCE BASE LINE. CONTRACTOR SHALL PERFORM SECOND GROUNDING RESISTANCE TEST AFTER GROUNDING SYSTEM IS INSTALLED TO CONFIRM THE RESISTANCE IS LESS THAN 5 OHMS. IF IT IS MORE THAN 5 OHMS, CONTRACTOR SHALL PERFORM ADDITIONAL GROUNDING MITIGATION PER BELOW.

C. IF GROUNDING SYSTEM CANNOT REACH 5 OHMS WITH ADDITIONAL GROUNDING PLATES, FURNISH AND INSTALL LYNCONITE II AS BACKFILL TO SURROUND THE XIT SYSTEMS DURING INSTALLATION. IT IS BASED ON NATURAL CLAY FORMED BY VOLCANIC ACTION, SPECIALLY PROCESSED TO BE VERY ELECTRICALLY CONDUCTIVE. LYNCONITE II ENHANCES THE PERFORMANCE OF THE GROUNDING SYSTEM. IT IS MIXED WITH WATER (14 GALS/BAG) UNTIL A SLURRY IS FORMED (SIMILAR TO PANCAKE BATTER) AND PUMPED OR POURED AROUND THE ELECTRODE IN THE HOLE.

D. CONTRACTOR SHALL BE RESPONSIBLE TO SCAN (OR POLE HOLE) UNDERGROUND UTILITIES AND REBAR LOCATION PRIOR TO ANY SAWCUTTING OR TRENCHING.

E. COORDINATE WITH COUNTY OF SAN BERNARDINO FOR SEQUENCE OF REMOVAL OF EXISTING GENERATOR/ATS. MOP SHALL BE SUBMITTED AND APPROVED BY COUNTY OF SAN BERNARDINO PRIOR TO ANY DISCONNECTION/DEMOLITION. PROVIDE TEMPORARY GENERATOR, LIGHTING AND HVAC TO DATA ROOM AS REQUIRED BY COUNTY OF SAN BERNARDINO.

F. ALL SPARE CIRCUIT BREAKERS SHALL BE TAG AND TURN TO "OFF" POSITION.

G. ALL CEILING HUNG CONDUITS SHALL BE SUPPORTED PER DETAIL AND CODE REQUIREMENT.

H. CONTRACTOR IS RESPONSIBLE FOR ALL OBTAINING PERMITS, FEES AND REMOVAL OF ALL DEBRIS/MATERIALS/SOILS PER LOCAL JURISDICTION REQUIREMENT.

I. GROUNDING TASK LIST:
- ***a. EXCAVATE 12"X36" DITCH AS SPECIFIC AROUND THE EQUIPMENT AND BUILDING FOR THE GROUNDING LOOP AND XIT GROUNDING RODS. NOTICE TO EXCAVATION CONTRACTOR: SOIL IN REGION IS HARD AND ROCKY. EXCAVATION OF TRENCH MAY REQUIRE SPECIALIZED EQUIPMENT.
- ***b. INSTALL HORIZONTAL XIT GROUNDING RODS PER MANUFACTURER SPECIFICATIONS OF SPECIFIED LENGTH AND DIAMETER WITH CONCRETE TRAFFIC RATED BOX AND LID AT THE CONNECTION END.
- ***c. INSTALL 4/0 STRANDED COPPER GROUNDING CABLE IN EXCAVATED TRENCH.
- ***d. BACKFILL GROUNDING RODS AND GROUND WIRES EXCAVATION AREA WITH (APPROX. 6" OF) BETONITE MIXTURE PER MANUFACTURE'S SPECIFICATION.
- ***e. BACKFILL EXCAVATED PATH WITH NO.2 CABON FILL.
- ***f. LAND MECHANICAL GROUNDING CABLE TO EQUIPMENT WITH EXOTHERMIC WELDS.
- ***g. ALL COPPER CABLE CONNECTIONS ARE TO BE EXOTHERMIC UNLESS NOTED.
- ***h. EXOTHERMICALLY WELD GROUNDING SYSTEM LEGS TO EXISTING FENCE POSTS ICE BRIDGE. ABOVE GROUND CONNECTIONS TO FENCING SHALL USE NO.2 STRANDED COPPER WIRE WITHIN NON-METALLIC SEAL TIGHT. FENCES AND MOVING OBJECT THAT ARE TO BE GROUNDED SHALL BE INSTALLED SIMILARLY WITH THE ADDITION OF A 12" STRAIN RELIEF LOOP AT EACH PIVOT POINT.
- ***i. IDENTIFY LOCATION OF EXISTING SHELTER AND TOWER HALOS MAKE CONNECTIONS.
- ***j. TRENCH SHALL BE BACKFILLED WITH SPOILS.
- ***k. SPOILS FROM EXCAVATION SHALL BE DISPERSED ON OR NEAR THE SITE AT THE DIRECTION OF THE PROJECT MANAGER. SPOILS IN NO WAY SHALL INTERFERE WITH WATER RUNOFF OR ROADS.
- ***l. TEST NEW GROUNDING SYSTEM PER COUNTY OF SAN BERNARDINO.
- ***m. GROUNDING TEST REPORT SHALL BE SUBMITTED FOR COUNTY AND EEOR REVIEW AND APPROVAL PRIOR TO CLOSE-OUT.

J. LIGHT WEIGHT SLURRY (2 SACKS) SHALL BE INSTALLED ON TOP OF GROUND WIRING AT ALL LOCATIONS.

E. EXISTING GROUND WIRES SHALL BE PROTECTED IN PLACE. IF DAMAGED, CONTRACTOR IS RESPONSIBLE TO REPAIR AND RECONNECT WITH NEW GROUND WIRES/GROUND RODS/GROUND PLATES.

F. CONDUITS SHALL BE STUB UP IN 45 DEGREE FROM UNDERGROUND TO 6" ABOVE FINISH FLOOR. NO 90 DEGREE BEND IS ALLOWED FOR TELECOM/ANTENNA TOWER CABLES.

REFERENCE SHEET NOTES

1. PERMANENT SCE POWER CONNECTION. SCE INCOMING SERVICE PANEL WITH SCE METER AND MAIN CIRCUIT BREAKER ON POLE H-FRAME. COORDINATE WITH SCE FOR EXACT REQUIREMENT.
2. SCE UNDERGROUND FEEDER. SEE SINGLE LINE DIAGRAM AND SCE DESIGN PLAN FOR DETAIL.
3. NEMA-3R MANUAL TRANSFER SWITCH 'MTS' (SOURCE 1 – OFF – SOURCE 2) H-FRAME MOUNTED. FURNISH AND INSTALL NEMA-3R, 200A, 240/120V, 1PH, 3W CAMLOCK WITH WHILE-IN-USE COVER. (MALE: LOAD, FEMALE: NEUTRAL+GROUND) PER COUNTY REQUIREMENT. H-FRAME MOUNTED.
4. H-FRAME STRUCTURE PER STRUCTURAL PLAN. DIMENSION SHALL BE ADJUSTED PER EQUIPMENT SIZE AND LAYOUT.
5. ELECTRICAL PANEL (42 CIRCUITS) WITH MAIN CIRCUIT BREAKER AND TVSS. SEE SINGLE LINE DIAGRAM AND PANEL SCHEDULE FOR DETAIL.
6. ABOVE DOOR SCONE LIGHT (IP66 RATED) (MANUFACTURER: TECH-D #T632LED-10-UN12-35-T2-BZ-G2-PC1-MS-SP10). PROVIDE FULL CUTOFF SHIELD FOR ANY POTENTIAL LIGHT TRESPASSING. CONTROL BY INTEGRATED PHOTOCELL (OFF DURING DAYTIME) AND MOTION SENSON (WITH LIGHT ON DELAY 4 MINS MAX). COORDINATE WITH FORESTRY DEPARTMENT FOR EXACT REQUIREMENT.
7. DIGITAL TIMER SWITCH. (WATTSTOPPER #TS-400-W WITH VISUAL AND AUDIBLE WARNING OPTIONS.) COORDINATE WITH EATON LIGHTING FOR LED CONTROL COMPATIBILITY.
8. 120V NEMA L2-20 RECEPTACLE ABOVE EQUIPMENT RACK WITH 3/4"C-2#12,1#12GND. COORDINATE WITH COUNTY OF SAN BERNARDINO FOR EXACT LOCATION.
9. 208V 1Φ NEMA L6-30 RECEPTACLE ABOVE EQUIPMENT RACK WITH 3/4"C-2#10,1#10GND. COORDINATE WITH COUNTY OF SAN BERNARDINO FOR EXACT LOCATION.
10. ANTENNA TOWER CABLING AND GROUNDING CONDUITS PENETRATION. NO 90 DEGREE BEND IS ALLOWED FOR TELECOM/ANTENNA TOWER CABLES. SEE ARCHITECTURAL AND STRUCTURAL PLAN FOR PENETRATION LOCATION.
11. 1" CONDUIT FOR COMMUNICATION WIRE (Cat5e+PULL STRING) FROM GENERATOR TO ATS FOR GENERATOR START.
    1" CONDUIT FOR COMMUNICATION WIRE (Cat5e+PULL STRING) FROM ATS TO COUNTY ISD BMS FOR GENERATOR STATUS POINTS.
12. POWER CONNECTION FOR LEAD-LAG HVAC CONTROL PANEL WITH TEMPERATURE ALARM. PROVIDE COMMUNICATION WIRING WITH 3/4" CONDUIT TO BMS PER COUNTY OF SAN BERNARDINO REQUIREMENT.
13. 60AMP 240V 2P NEMA-3R HEAVY DUTY DISCONNECT SWITCH WITH 3/4"C-2#6, 1#10GND FOR AC-1 AND AC-2 RESPECTIVELY. DISCONNECT SWITCH SHALL BE INSTALLED OUTSIDE OF HVAC UNIT CAGE. FURNISH AND INSTALL 3/4" CONDUIT WITH CONTROL WIRING BACK TO LEAD-LAG HVAC CONTROL PANEL.
14. 3/4"C-3#12,1#12GND FOR 120V POWER CONNECTION OF BLOCK HEATER AND BATTERY CHARGER OF GENERATOR. COORDINATE WITH GENERATOR MANUFACTURER FOR POINT OF CONNECTION AND EXACT REQUIREMENT.
15. 30kW DIESEL GENERATOR (NOT EXCEEDING 40BHP) WITH:
    - 330GAL (5-DAYS RUNTIME) DOUBLE WALL BELLY TANK AND LEAK DETECTION WITHIN TANK
    - SPILL CONTAINER & OVERFILL FUEL SENSOR
    - LEVEL 2 ENCLOSURE
    - FULL TANK OF FUEL
    - INTEGRATED CIRCUIT BREAKER
    - EPA TIER 4 REQUIREMENT
    - COMPLETE SYSTEM LOAD TEST AND START-UP
    - TEN YEAR WARRANTY
    - STEADY STATE VOLTAGE REGULATION IS TO BE +/- 0.25%

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E-14

NOT FOR BID

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