

PALMER COURTHOUSE GENERATOR ADDITION

435 S DENALI STREET PALMER, AK 99645

CONSTRUCTION DOCUMENTS

01/19/2024

PROJECT LOCATION MAP

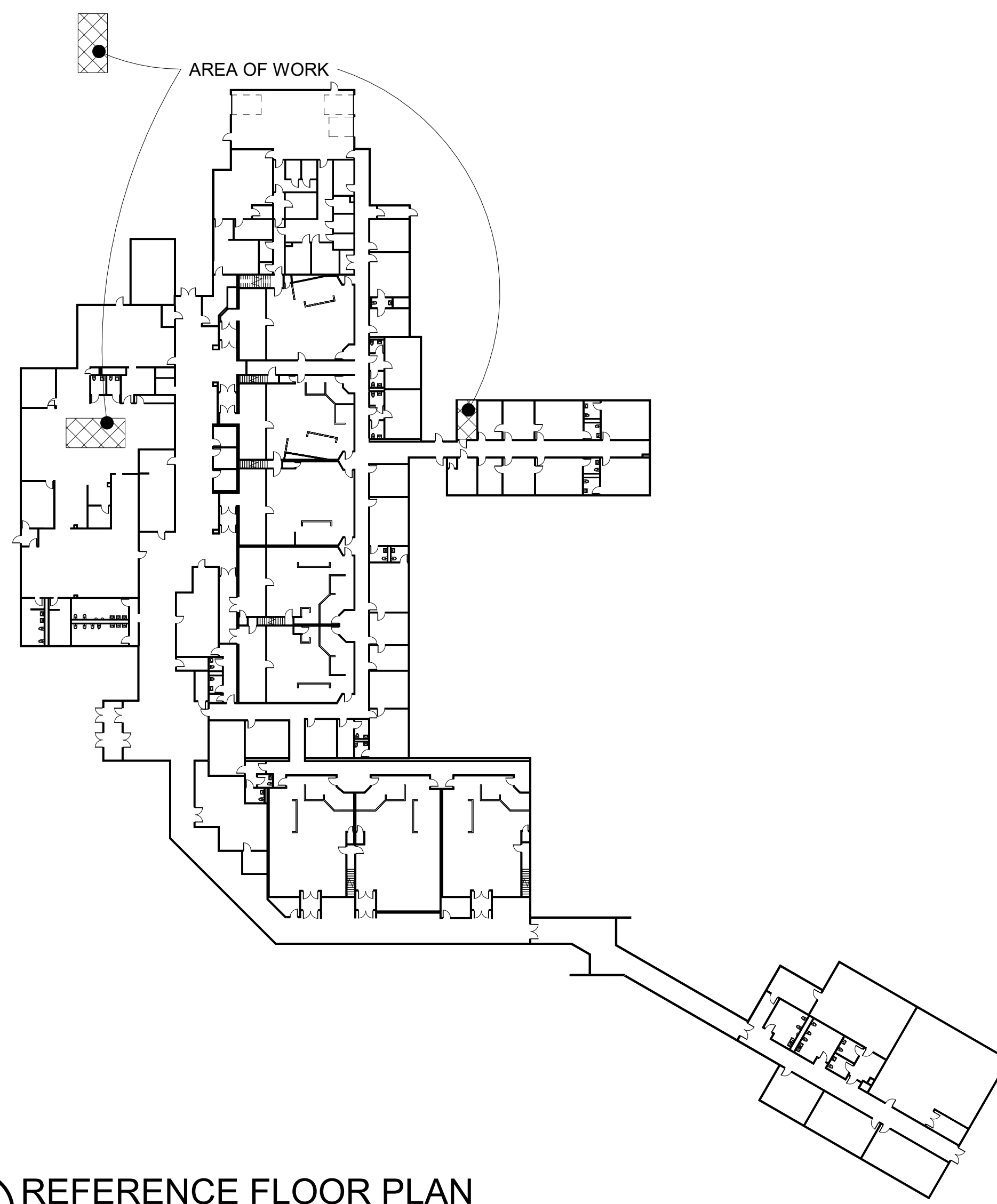


CODE ANALYSIS

PROJECT DESCRIPTION
 THIS PROJECT CONSISTS OF THE PLACEMENT AND CONNECTION OF A PACKAGED GENERATOR MODULE. IT WILL BE LOCATED OUTSIDE, APPROXIMATELY 60 FEET FROM THE EXISTING BUILDING. THIS PROJECT DOES NOT CHANGE ANY EXISTING COMPONENTS, PATHS, FIRE RATINGS, OR OTHER LIFE-SAFETY SYSTEMS.

CODE ANALYSIS
 ORIGINAL CONSTRUCTION: 1996
 SPRINKLERED: YES
 CONSTRUCTION TYPE: V-A
 OCCUPANCY: B - BUSINESS
 A-3 - COURTROOMS

EGRESS PATH: NO MODIFICATIONS
 FIRE RATINGS: NO MODIFICATIONS



1 REFERENCE FLOOR PLAN
 G001

INDEX OF DRAWINGS

GENERAL

G001 COVER SHEET, PROJECT LOCATION MAP, CODE ANALYSIS, DRAWING INDEX

CIVIL

C100 GENERATOR FOUNDATION DETAIL

ELECTRICAL

E001 ELECTRICAL LEGEND
 E101 ELECTRICAL SITE PLAN
 E102 ELECTRICAL REFERENCE PLAN
 E201 ENLARGED DEMOLITION PLANS
 E202 ENLARGED REMODEL PLANS
 E301 DEMOLITION POWER ONE-LINE DIAGRAM
 E302 REMODEL POWER ONE-LINE DIAGRAM
 E401 PANEL SCHEDULES

PROJECT TEAM



421 W. 1st Avenue, Suite 300
 Anchorage, Alaska 99501
 907.563.8474
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MECHANICAL AND ELECTRICAL CONSULTING ENGINEERS
 2522 Arctic Boulevard, Suite 200 Anchorage, AK 99503 (907) 276-0521
 191 E. Swanson Avenue, Suite 101 Wasilla, Alaska 99654 (907) 357-1521



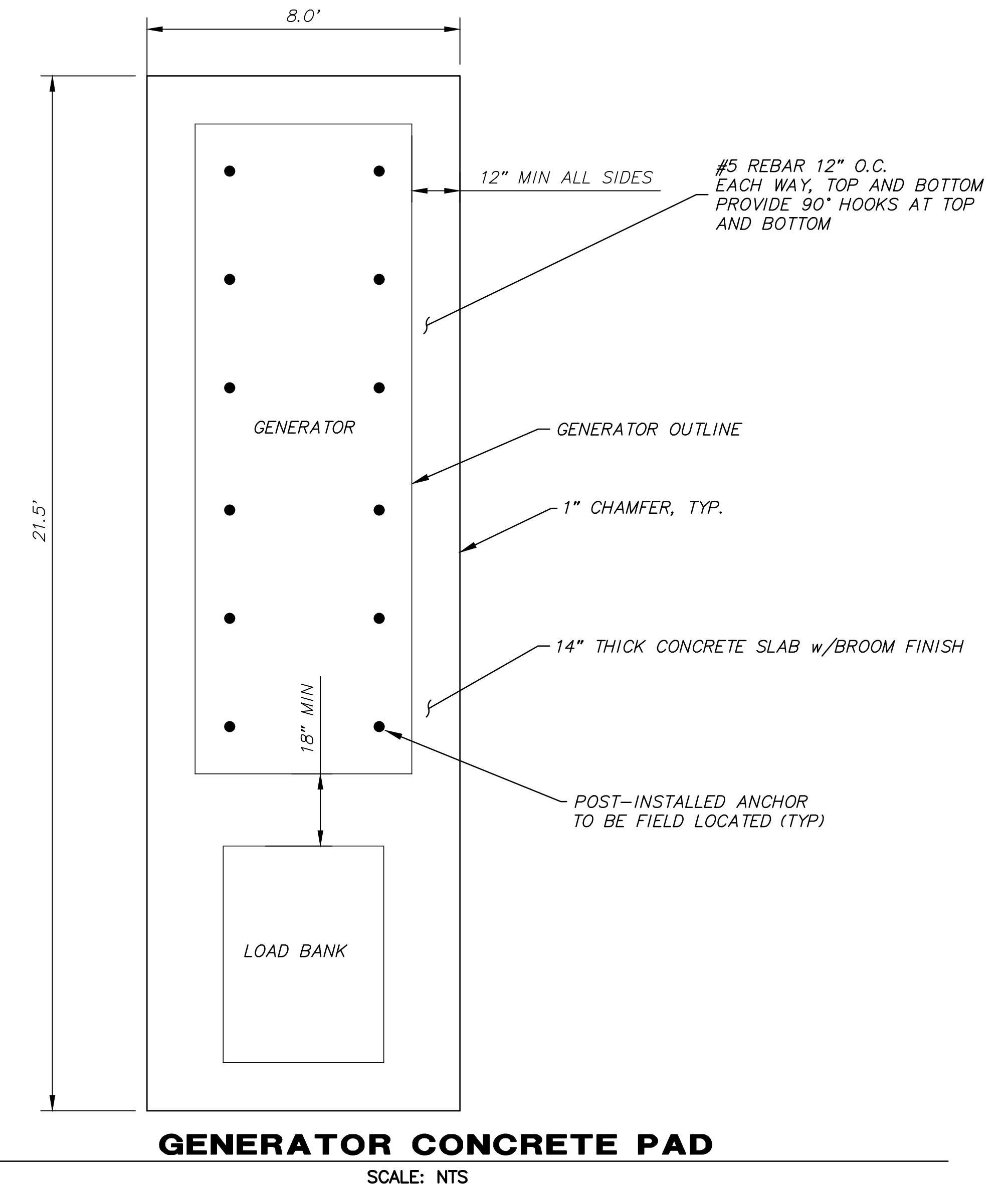
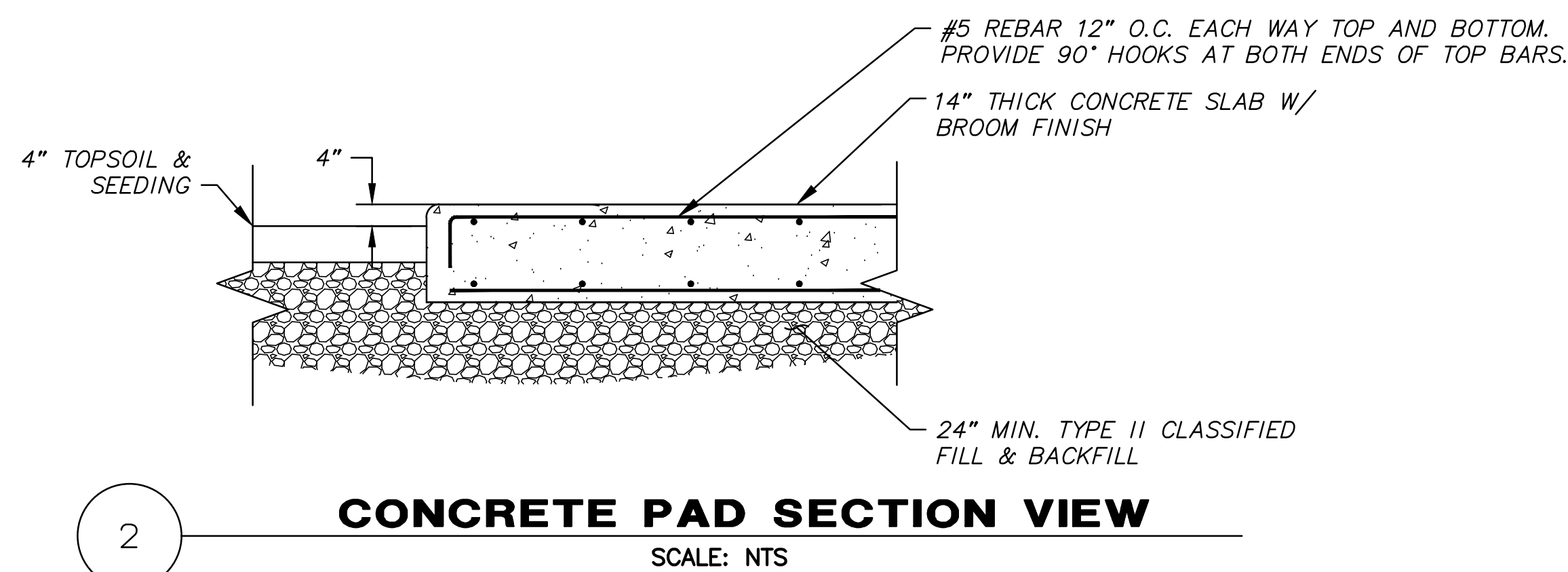
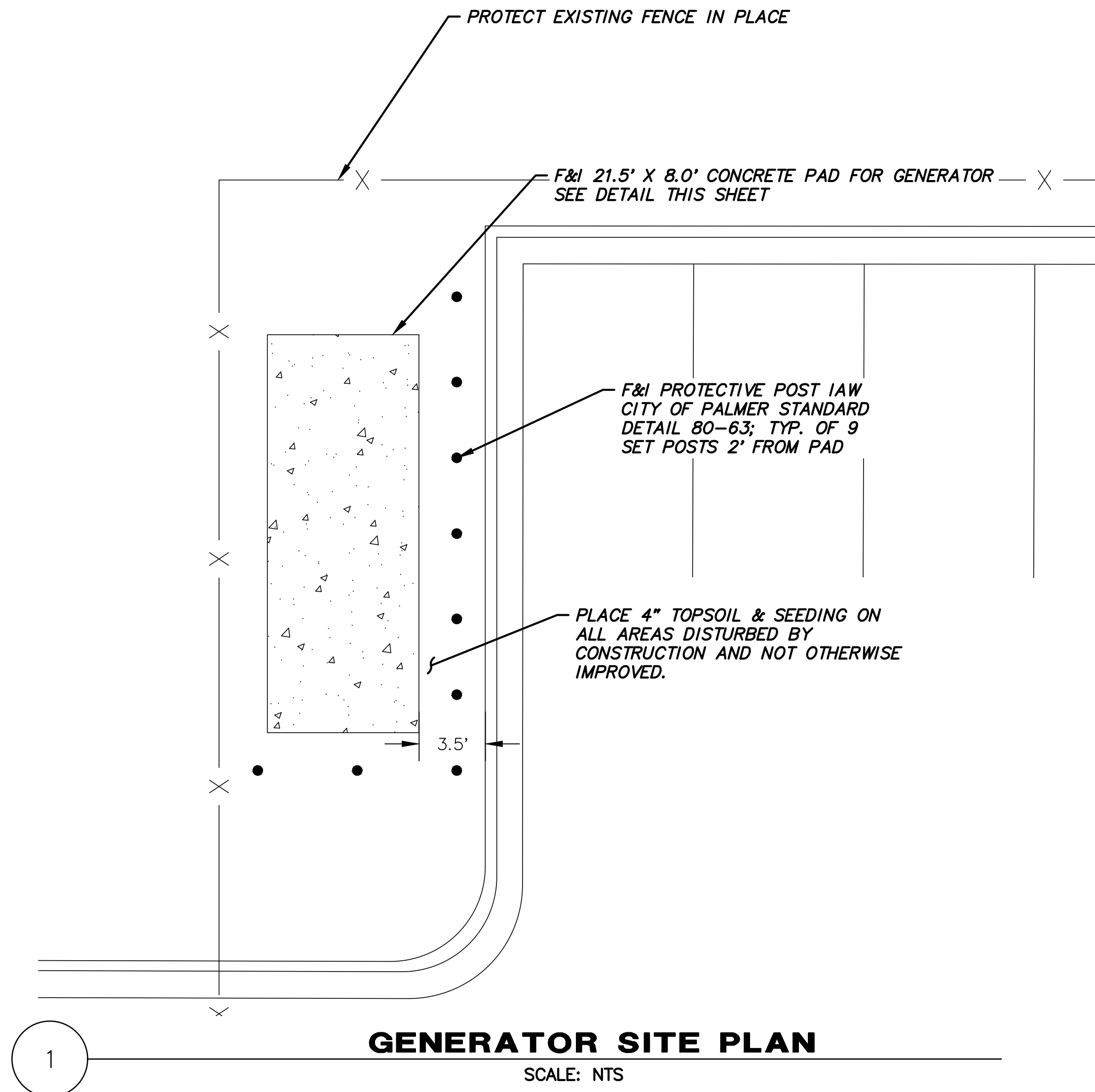
3940 ARCTIC BLVD.
 SUITE 300
 ANCHORAGE, ALASKA
 99503
 PHONE: (907) 562-3252
 #AECL882-AK

FOR:
 ● SUBMITTAL
 ○ PRICING

COVER SHEET,
 PROJECT
 LOCATION MAP,
 CODE ANALYSIS,
 DRAWING INDEX

SHEET NO.
G001

COTTONWOOD AVENUE



NOTE:
1. PRIOR TO INSTALLATION OF CONCRETE PADS, COORDINATE WITH ELECTRICAL COMPONENTS, ANCHOR LOCATION. ADDITIONAL ACCOMMODATIONS MAY BE REQUIRED.

GENERATOR PAD NOTES

GENERAL:

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH CITY OF PALMER STANDARD SPECIFICATIONS (2018.)

CONCRETE:

1. ALL CONCRETE WORK SHALL CONFORM TO ACI-318 AND ACI-301. CEMENT SHALL CONFORM TO ASTM C150, TYPE III. AGGREGATE SHALL CONFORM TO ASTM C33. CONCRETE SHALL BE READY MIXED IN ACCORDANCE WITH ASTM C94 AND SHALL BE DESIGNED FOR A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 3,000 PSI. THE GENERATOR CONCRETE PAD SHALL BE DESIGNED FOR A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4,500 PSI, MAXIMUM WATER TO CEMENT RATIO OF 0.45 AND 6% AIR CONTENT.

REINFORCING STEEL:

1. ALL BARS #4 AND LARGER SHALL BE ASTM A615 (F_y = 60 KSI) DEFORMED BARS. ALL BARS #3 AND SMALLER SHALL BE ASTM A615 (F_y = 40 KSI) DEFORMED BARS. REINFORCING BARS TO BE WELDED SHALL BE ASTM A706. WELDED WIRE FABRIC SHALL BE ASTM A185 DEFORMED WIRE. TACK WELDING OF REINFORCING BARS SHALL NOT BE ALLOWED WITHOUT PRIOR REVIEW OF THE PROCEDURE WITH THE STRUCTURAL ENGINEER. LATEST ACI CODE AND DETAILING MANUAL APPLY.

2. ACCURATELY PLACE OR SUPPORT ALL REINFORCING, INCLUDING WELDED WIRE FABRIC, WITH GALVANIZED METAL CHAIRS, SPACERS OR HANGERS FOR THE FOLLOWING CLEAR CONCRETE CONVERGES:

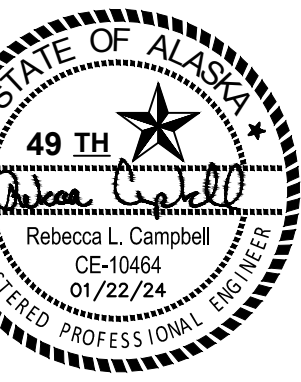
CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH ---- 3"
EXPOSED TO EARTH OR WEATHER ---- 2"

3. SEE DRAWINGS FOR SIZE AND SPACING OF REINFORCING. LAP SPLICE ALL CONCRETE REINFORCING 60 BAR DIAMETERS MINIMUM. LAPS IN WELDED WIRE FABRIC SHALL BE NOT LESS THAN THE SPACING OF CROSS WIRES PLUS 2 INCHES

POST-INSTALLED ANCHORS:

1. INSTALL POST-INSTALLED ANCHORS ONLY AS INDICATED ON THE DRAWINGS AND/OR WITH SPECIFIC WRITTEN APPROVAL OF THE ENGINEER PRIOR TO INSTALLATION
2. EPOXY ANCHORS SHALL BE 1"Ø THREADED ROD WITH 10" EMBEDMENT FOR THE GENERATOR/LOAD BANK PAD, INSTALLED WITH HIT-HY 200-A ADHESIVE BY HILTI PER I.C.C. REPORT ESR-3157. FIELD LOCATE ANCHORS BASED ON MANUFACTURER INSTALLATION GUIDE AND FOUNDATION LAYOUT PLAN.
3. THE CONTRACTOR MAY NOT USE SUBSTITUTES FOR POST-INSTALLED ANCHORS WITHOUT PRIOR APPROVAL OF THE ENGINEER.
4. INSTALL ANCHORS AS OUTLINED IN MANUFACTURER'S SPECIFICATIONS, UTILIZING PROPER SIZE AND TYPE OF DRILL AND PROPER HOLE CLEANING, DRIVING, AND TIGHTENING TECHNIQUES.

FOR:
• SUBMITTAL
• PRICING



**ALASKA COURT
SYSTEM**

**PALMER
COURTHOUSE
GENERATOR
ADDITION**

435 S. DENALI ST.
PALMER AK, 99645

**CONSTRUCTION
DOCUMENTS**

JOB NO. 73144.01
DATE: 1/22/24
PROJ. MGR.: RC
DRAWN BY: MS
REVIEWED BY: RC
REVISIONS:

**GENERATOR
FOUNDATION
DETAIL**

SHEET NO.

C100



ALASKA
COURT SYSTEM

**PALMER
COURTHOUSE
GENERATOR
ADDITION**

435 S DENALI ST,
PALMER, AK 99645

CONSTRUCTION
DOCUMENTS

JOB NO. **M3156**
DATE: **1/19/2024**
PROJ. MGR.: **--**
DRAWN BY: **AWK**
REVIEWED BY: **JAM, SLKB**
REVISIONS:

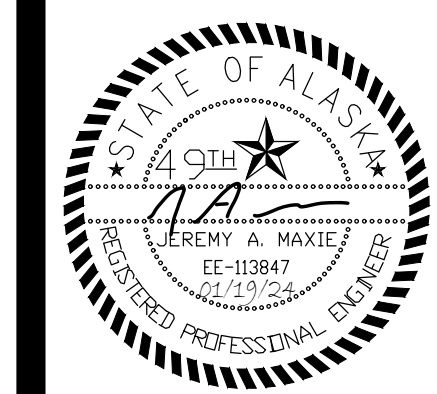
ELECTRICAL
LEGEND

SHEET NO.

E001

LEGEND

\$	SINGLE POLE SWITCH	■	IN GRADE EXTERIOR JUNCTION BOX
—	CONDUIT, CONCEALED	GP	INTERCOM STATION
#10	NUMBER AND SIZE OF WIRES (NO MARKS = 3 #12)	⊕	DUPLX RECEPTACLE TO BE REMOVED (DASHED OR DOTTED LINES INDICATE ITEMS TO BE REMOVED TYPICAL)
A-2	HOMERUN TO PANEL (PANEL AND CIRCUIT No.)	△	NOTE TAG (No. INDICATES NOTE)
—OH/E—	OVERHEAD ELECTRICAL LINE (12470/7200V UON)	AFF	ABOVE FINISHED FLOOR
—SR—	SURFACE RACEWAY	C	CONDUIT
▮	PANEL	E	DENOTES EXISTING ITEM
●	SPECIAL PURPOSE OUTLET	GFCI	GROUND FAULT CIRCUIT INTERRUPTER
⊙	JUNCTION BOX	GRSC	GALVANIZED RIGID STEEL CONDUIT
⊞	EMERGENCY PUSHBUTTON SWITCH	MCB	MAIN CIRCUIT BREAKER
⊞, ⊞	PUSHBUTTON	MLO	MAIN LUGS ONLY
⊙	MOTOR (SIZED AS NOTED)	NEC	NATIONAL ELECTRICAL CODE
\$	FRACTIONAL HORSEPOWER MOTOR STARTER	NTS	NOT TO SCALE
⊞	DISCONNECT SWITCH	TYP	TYPICAL
⊞	DISCONNECT SWITCH (FUSED)	UON	UNLESS OTHERWISE NOTED
⊞	COMBINATION DISCONNECT/MAGNETIC MOTOR STARTER	WP	WEATHERPROOF
▲	PADMOUNT TRANSFORMER		



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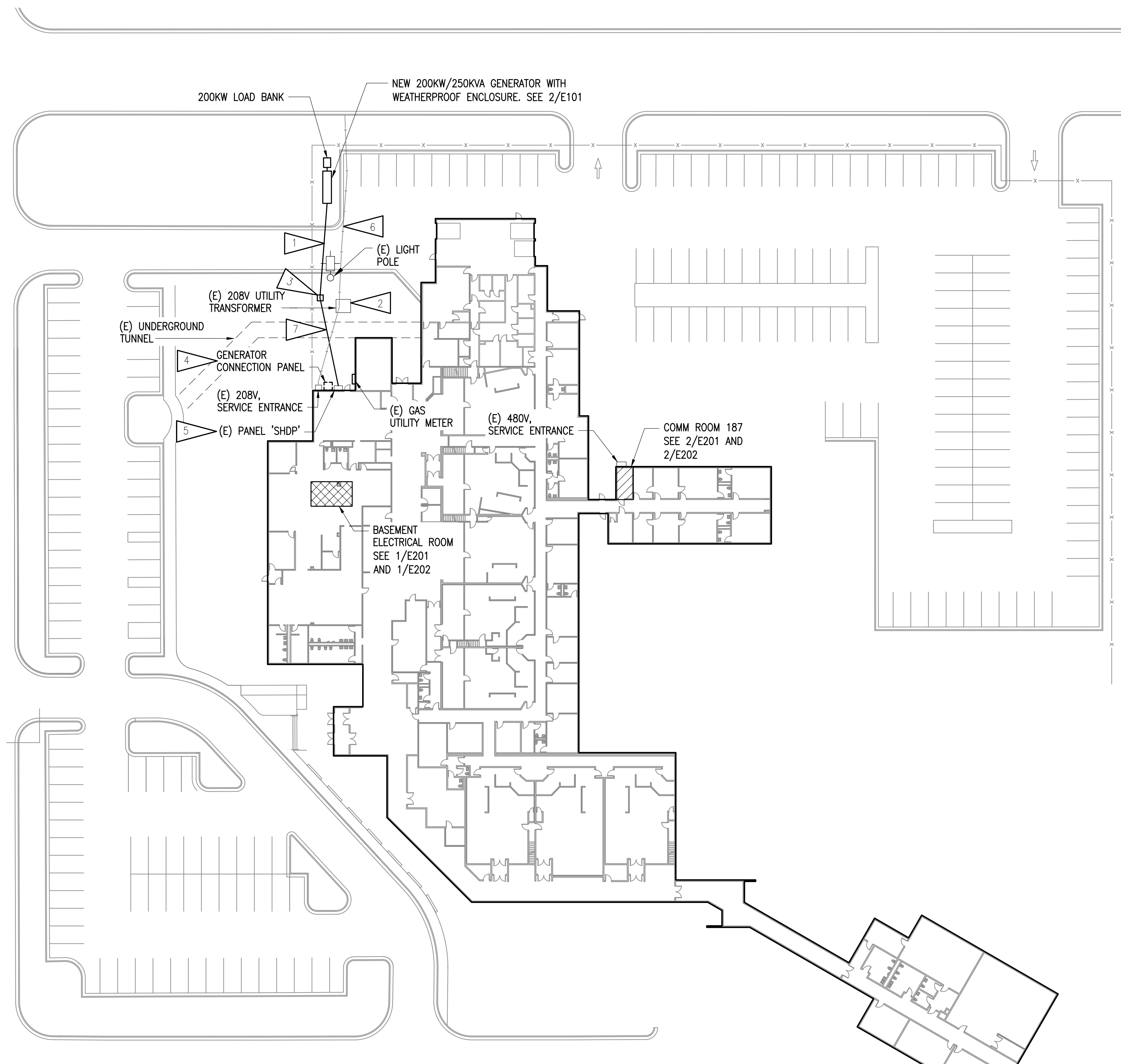
ELECTRICAL
SITE PLAN

SHEET NO.

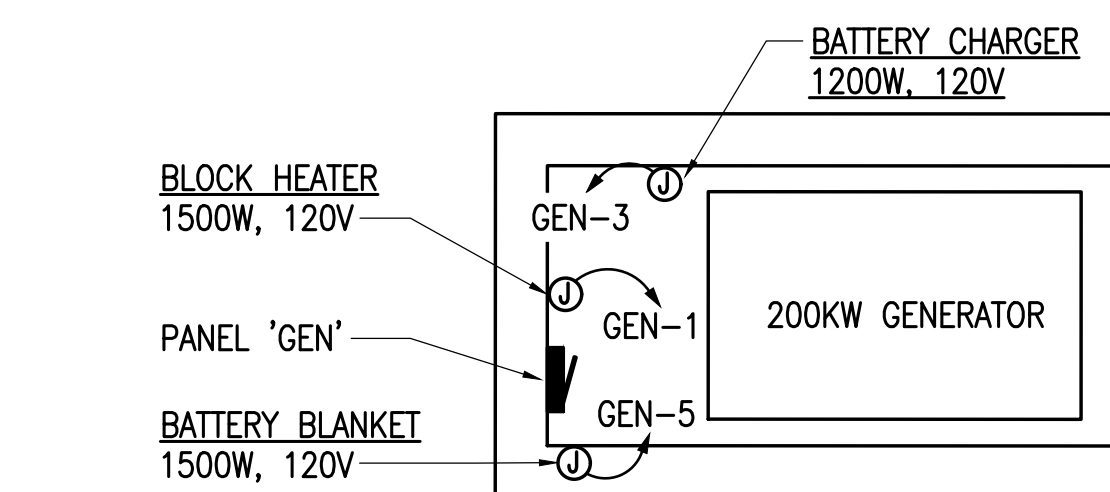
E101

SHEET NOTES:

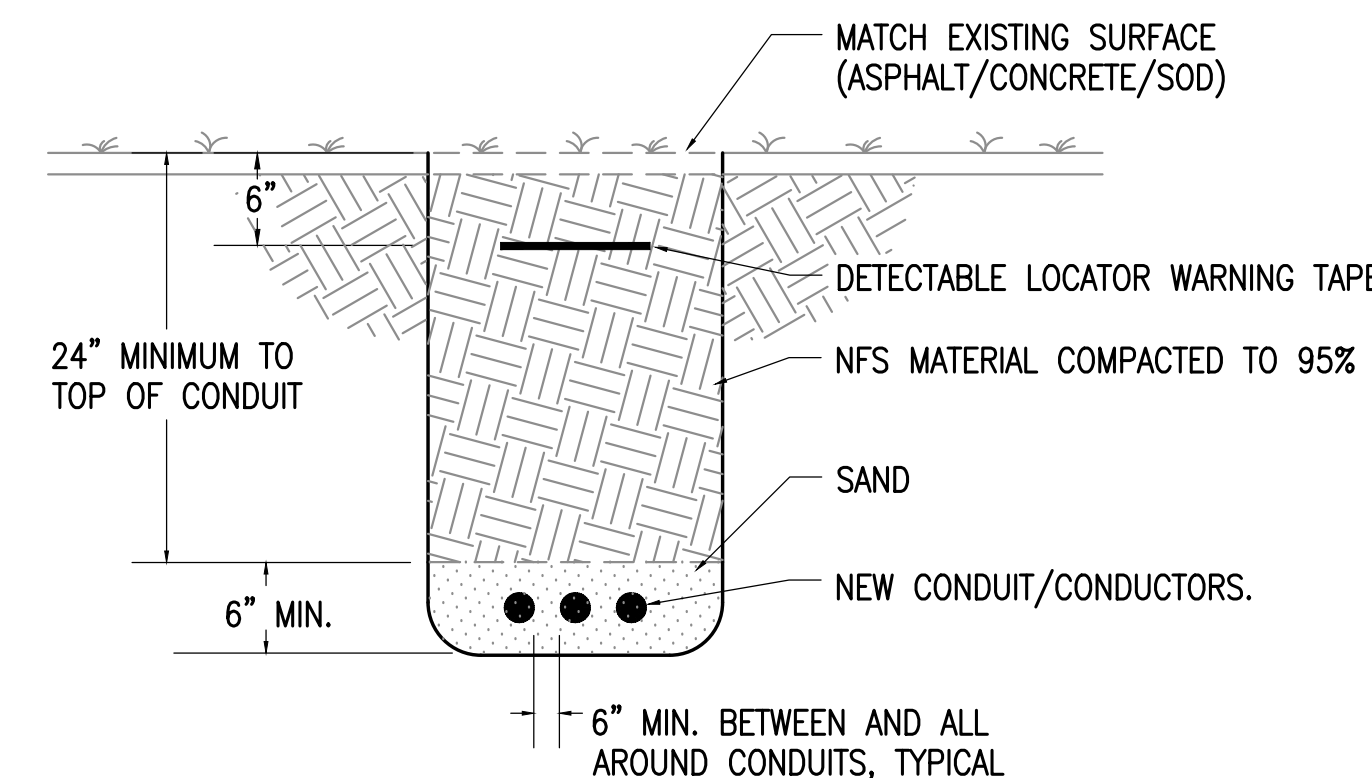
1. UNDERGROUND CONDUIT CONTAINING GENERATOR FEEDER AND 1" C WITH CONTROL WIRING. SEE 1/E302 FOR FEEDER SIZE. SEE 3/E101 FOR TRENCH DETAIL. UTILITY LOCATES AND COORDINATION WITH MATANUSKA ELECTRICAL ASSOCIATION (MEA) SHALL BE PERFORMED PRIOR TO TRENCHING.
2. EXISTING UTILITY TRANSFORMER. ROUTING OF PRIMARY AND SECONDARY CONDUIT SHALL BE CONFIRMED WITH MEA AND APPROVAL RECEIVED PRIOR TO INSTALLATION OF NEW GENERATOR CONDUITS.
3. PROVIDE IN-GRADE JUNCTION BOX AS REQUIRED TO MAKE CONDUIT BENDS AND ROUTE AROUND TRANSFORMER. LOCATION IS SUGGESTED AND FINAL LOCATION SHALL BE DETERMINED ON-SITE BY THE CONTRACTOR. IF A BOX IS NOT REQUIRED FOR ROUTING OR BENDS, IT CAN BE EXCLUDED.
4. REMOVE GENERATOR CONNECTION PANEL AND TURN OVER TO OWNER. PANEL WAS ORIGINALLY INTENDED FOR CONNECTION OF A PORTABLE GENERATOR. PROVIDE JUNCTION BOX IF REQUIRED FOR NEW GENERATOR FEEDER, OTHERWISE TERMINATE DIRECTLY INTO EXISTING PANEL 'SHDP'.
5. EXISTING PANEL SERVES STANDBY DISTRIBUTION EQUIPMENT IN THE BUILDING. CONNECT TO NEW GENERATOR FEEDER. LUBRICATE AND EXERCISE EXISTING CIRCUIT BREAKERS.
6. EXISTING UNDERGROUND UTILITY FEED PER RECORD DRAWINGS.
7. PER MEA, TOP OF TUNNEL IS 24" BELOW GRADE. CONTRACTOR SHALL PROVIDE AS MUCH COVER AS POSSIBLE ABOVE TUNNEL AND MEA SECONDARY CONDUCTORS.



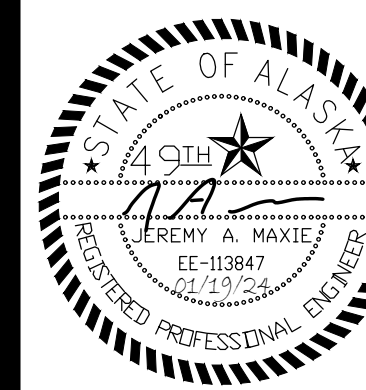
1 ELECTRICAL SITE PLAN
1" = 30'



2 GENERATOR ENCLOSURE
1/4" = 1'-0"



3 TRENCH DETAIL
NO SCALE



ALASKA
COURT SYSTEM

**PALMER
COURTHOUSE
GENERATOR
ADDITION**

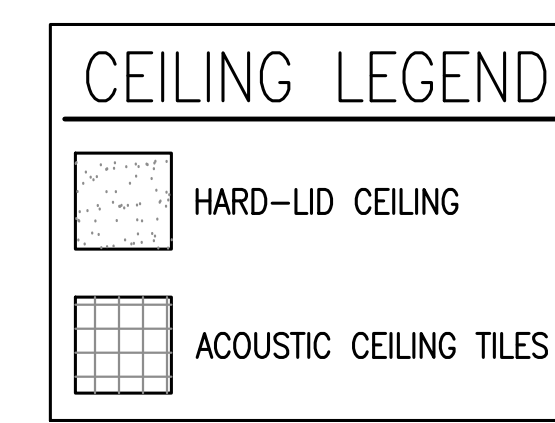
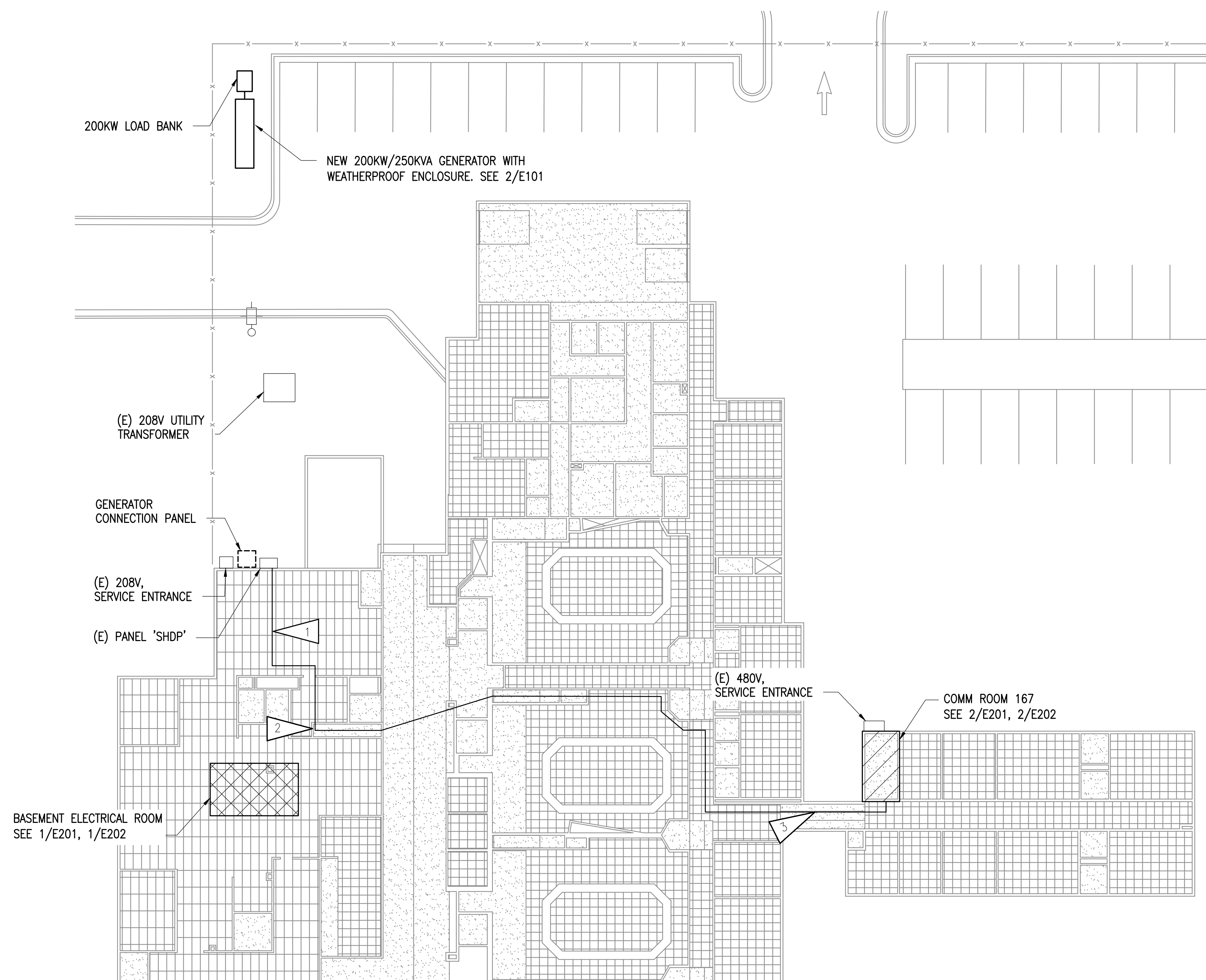
435 S DENALI ST,
PALMER, AK 99645

CONSTRUCTION
DOCUMENTS

JOB NO. M3156
DATE: 1/19/2024
PROJ. MGR.: --
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REVIEWED BY: JAM, SLKB
REVISIONS:

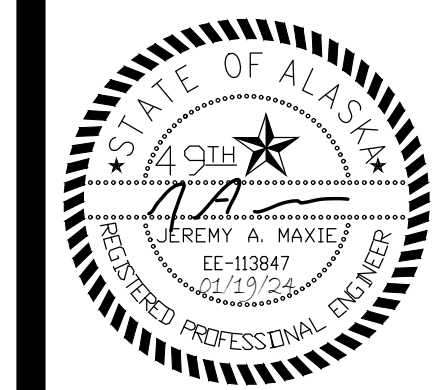
SHEET NOTES:

1. PROPOSED ROUTING FOR 1" C AND CONTROL CIRCUIT FROM GENERATOR TO 480V AUTOMATIC TRANSFER SWITCH LOCATED IN COMM ROOM 187. SEE 2/E202.
2. ROUTE CONDUIT THROUGH BASEMENT STAIRCASE TO CROSS THE ATRIUM.
3. USE OF MC CABLE IS PERMITTED FOR ROUTING ABOVE HARD-LID CEILING.



1 ELECTRICAL REFERENCE PLAN
1/16" = 1'-0"

ELECTRICAL
REFERENCE
PLAN



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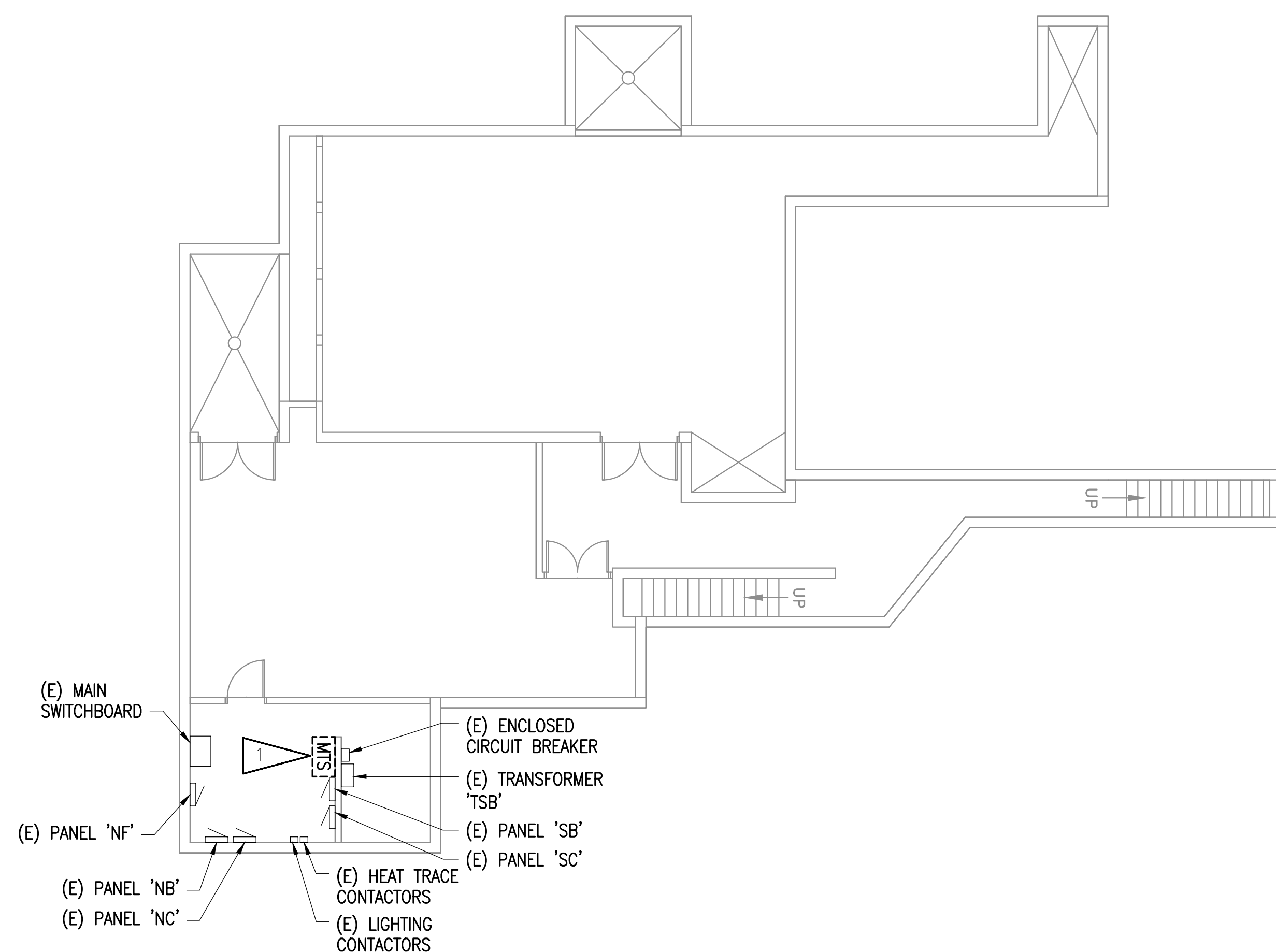
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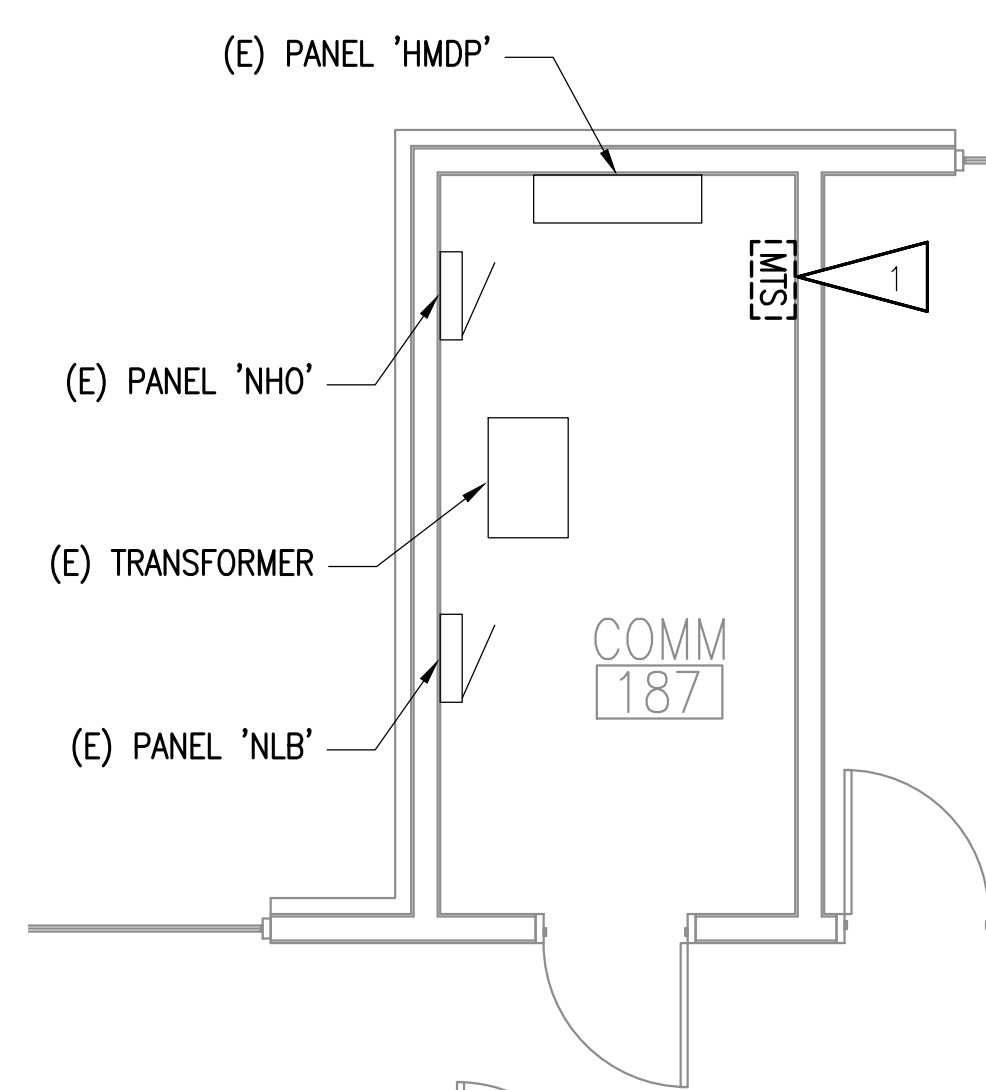
ENLARGED
DEMOLITION
PLANS

SHEET NO.

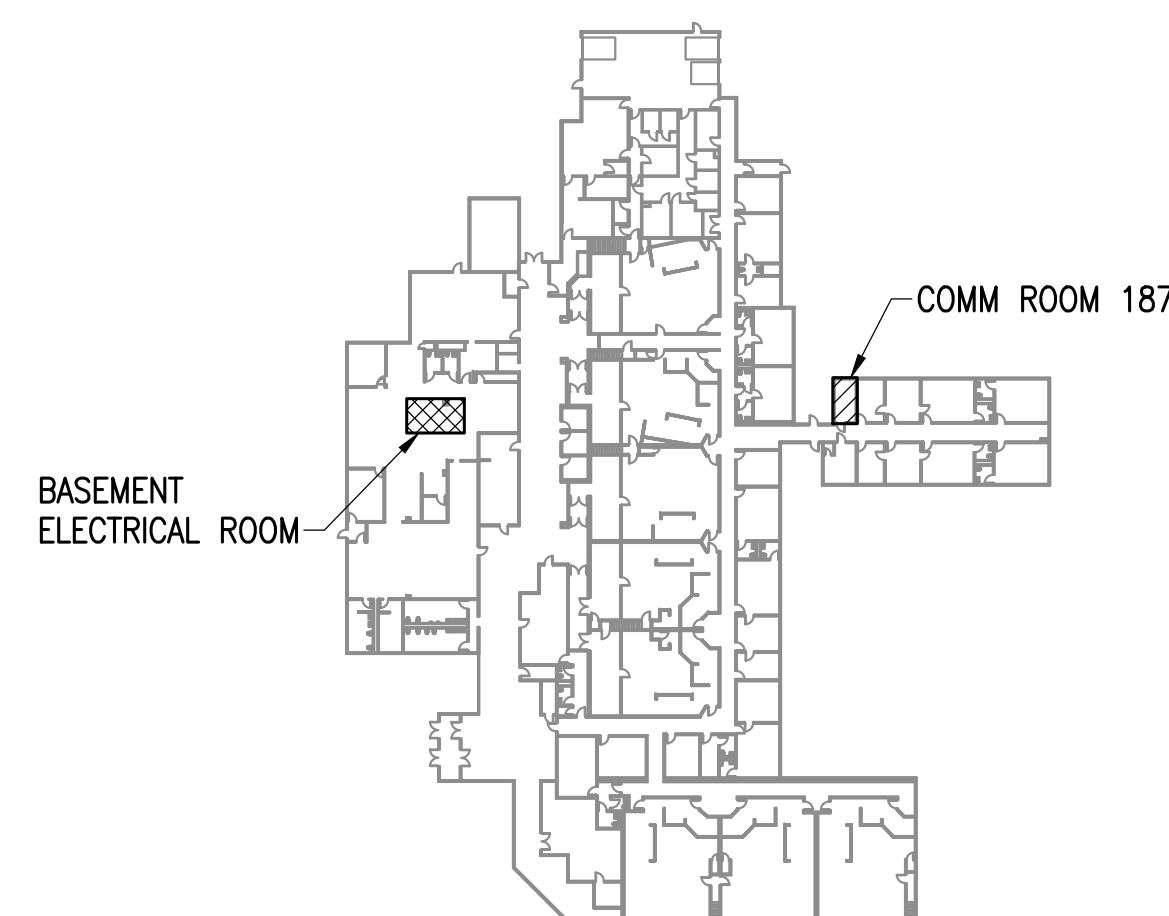
E201



1 ENLARGED BASEMENT ELECTRICAL ROOM DEMOLITION PLAN
1/4"=1'-0"



2 ENLARGED COMM ROOM 187 DEMOLITION PLAN
1/4"=1'-0"



3 KEY PLAN
NO SCALE

GENERAL NOTES:

- THE INFORMATION SHOWN ON THIS DRAWING IS TAKEN FROM AS-BUILT DRAWINGS AND A NON-DESTRUCTIVE WALK THROUGH OF THE FACILITY. THERE IS NO WARRANTY OR GUARANTEE AS TO THE ACCURACY OF THE INFORMATION SHOWN HERE-IN. THE CONTRACTOR SHALL FIELD VERIFY ALL ITEMS SCHEDULED FOR DEMOLITION PRIOR TO START OF WORK.
- THE OWNER SHALL HAVE FIRST RIGHT OF REFUSAL ON ALL SALVAGEABLE MATERIALS. THE CONTRACTOR SHALL DELIVER SALVAGED MATERIALS TO A WAREHOUSE AS DIRECTED BY THE OWNER. THE CONTRACTOR SHALL DISPOSE OF, OFF SITE, ALL UNWANTED MATERIALS.
- DASHED OR DOTTED LINES INDICATE ITEMS TO BE REMOVED. SOLID LINES INDICATE EXISTING ITEMS TO REMAIN.

SHEET NOTES:

- REMOVE MANUAL TRANSFER SWITCH AND TURN OVER TO OWNER. FEEDERS SHALL REMAIN FOR CONNECTION TO NEW EQUIPMENT.



ALASKA
COURT SYSTEM

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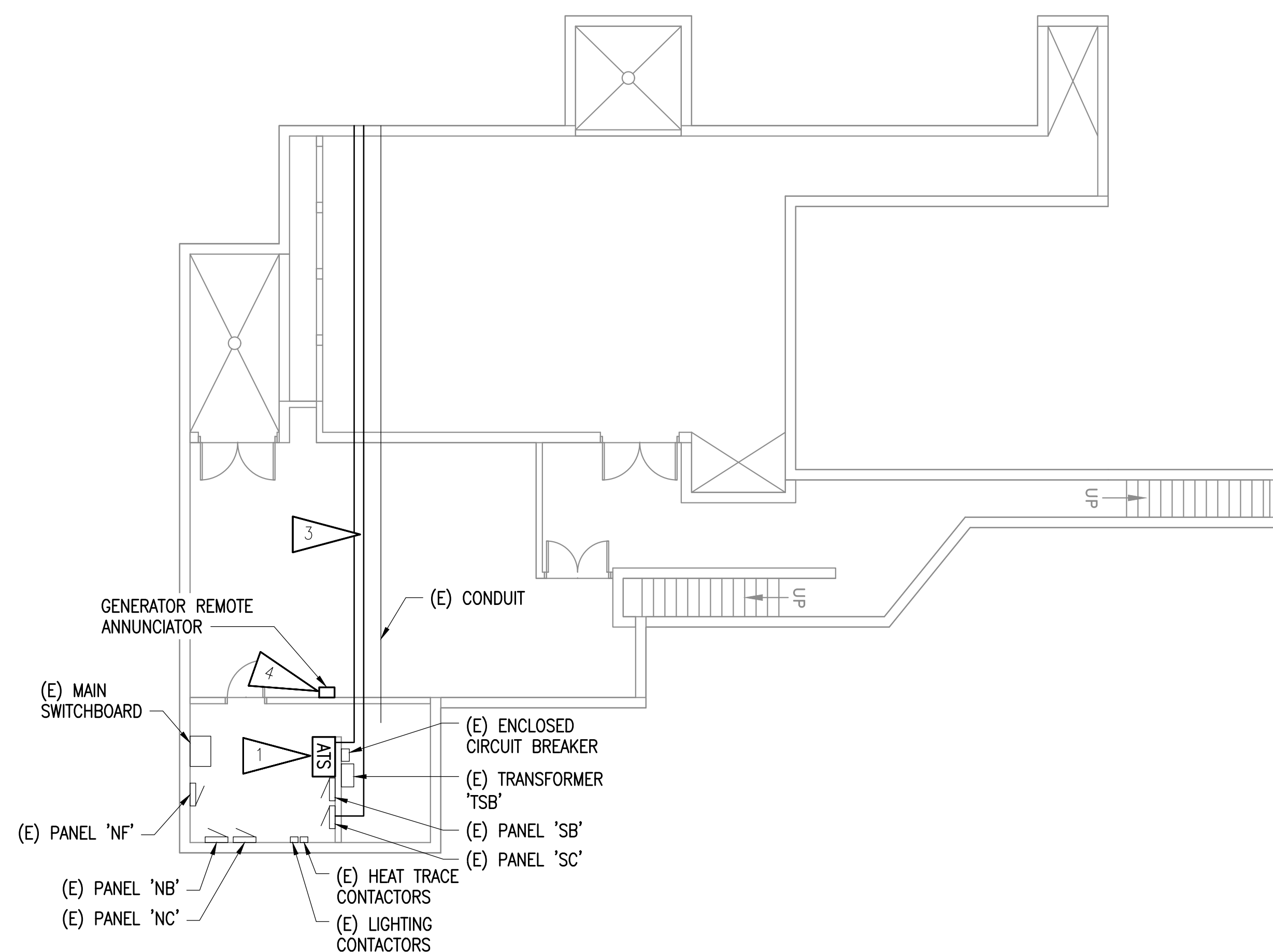
CONSTRUCTION
DOCUMENTS

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DRAWN BY: AWK
REVIEWED BY: JAM, SLKB
REVISIONS:

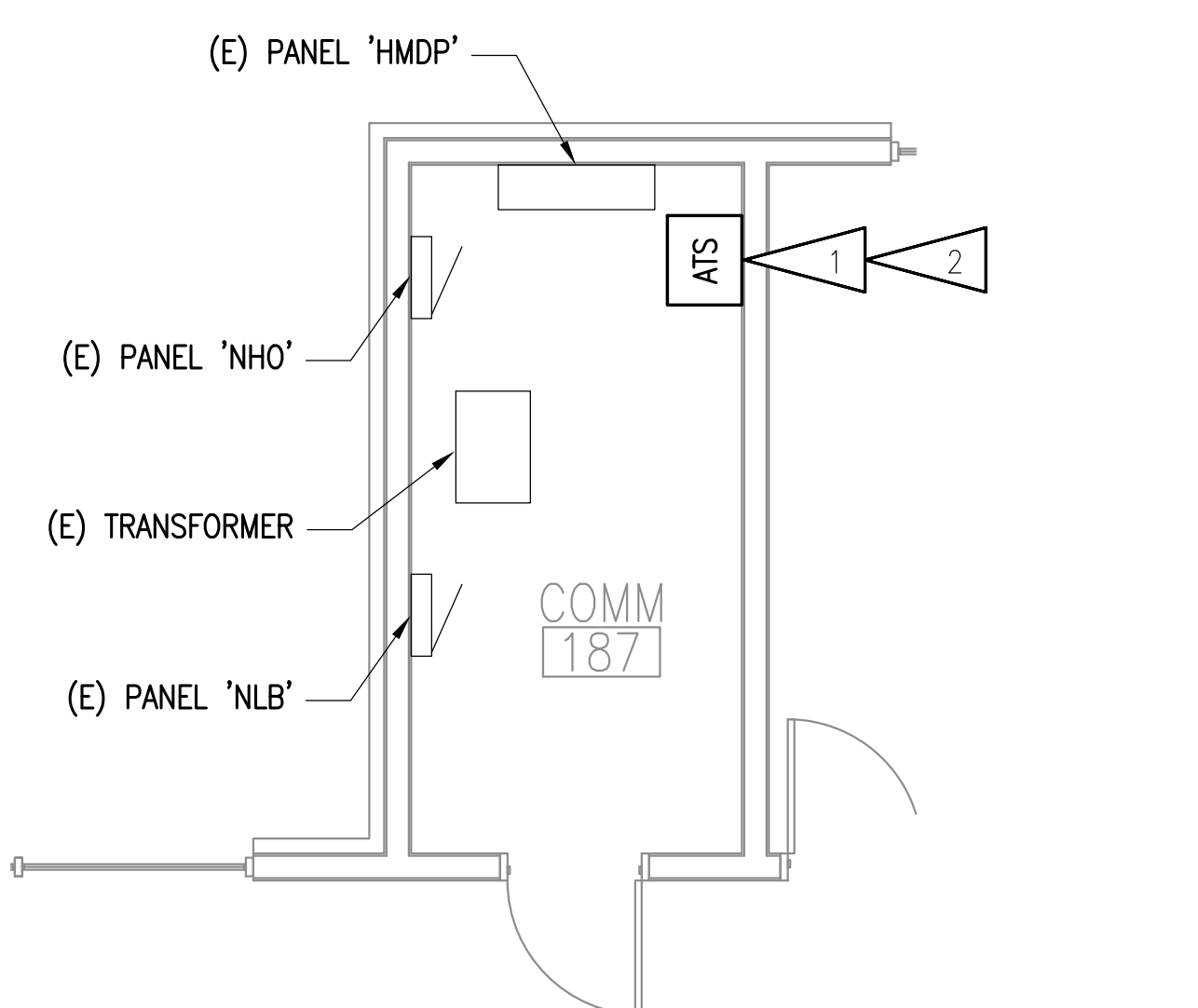
ENLARGED
REMODEL
PLANS

SHEET NO.

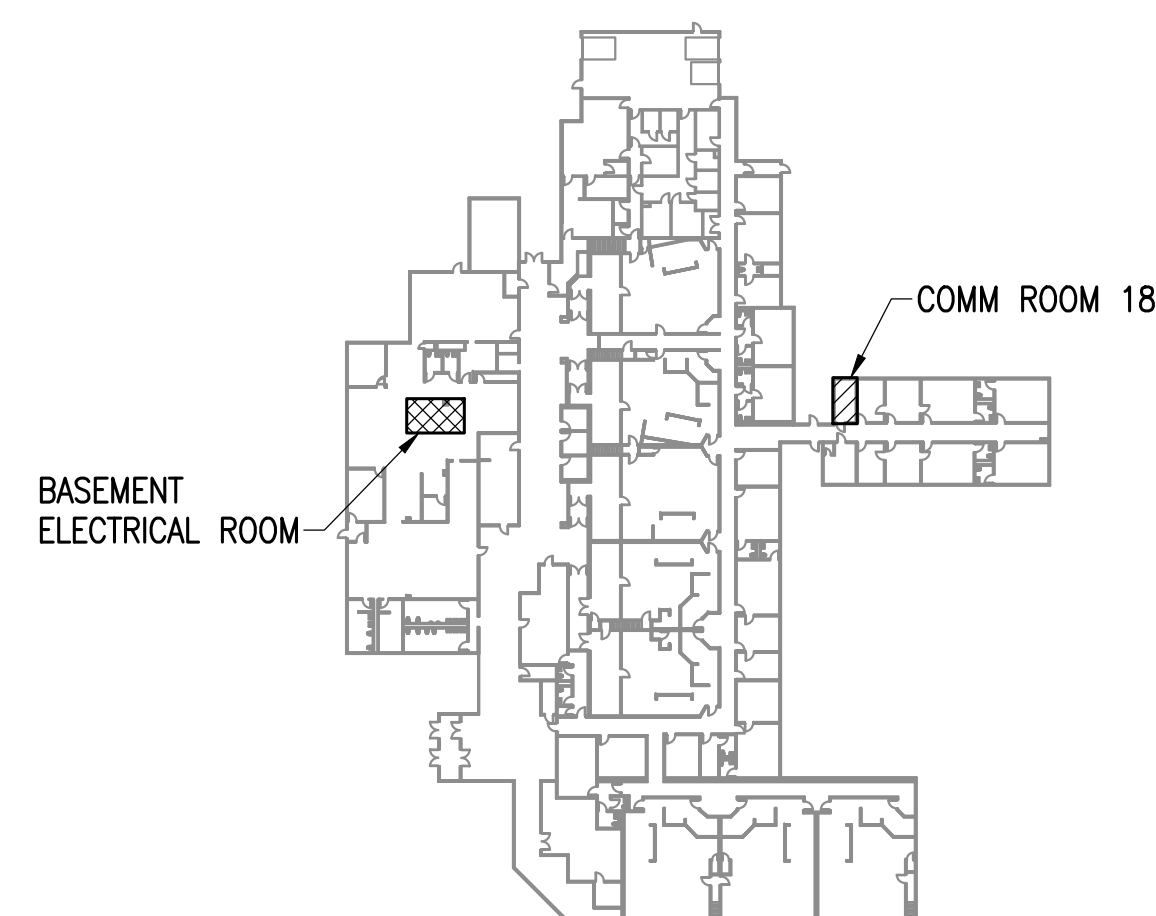
E202



1 ENLARGED BASEMENT ELECTRICAL ROOM REMODEL PLAN
1/4"=1'-0"



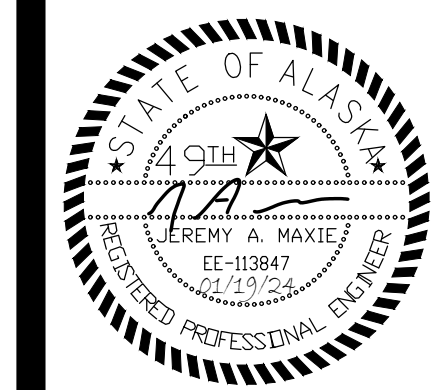
2 ENLARGED COMM ROOM 187 REMODEL PLAN
1/4"=1'-0"



3 KEY PLAN
NO SCALE

SHEET NOTES:

1. NEW AUTOMATIC TRANSFER SWITCH (ATS). EXTEND CONDUIT AND CONDUCTORS AND RECONNECT. PROVIDE CONTROL WIRING TO GENERATOR AND LOAD BANK.
2. IF NEW ATS IS TOO LARGE TO BE MOUNTED IN THE SAME LOCATION AS THE DEMOLISHED MANUAL TRANSFER SWITCH (MTS) AND REQUIRES TO BE RELOCATED, PROVIDE WIREWAY AS REQUIRED TO SUPPORT NEW LOCATION.
3. PROPOSED ROUTING FOR 1" C AND CONTROL CIRCUIT FROM GENERATOR TO 208V AUTOMATIC TRANSFER SWITCH, AND 1" C FROM PANEL 'SC' TO NEW PANEL 'GEN'. BASEMENT ROOMS OPEN TO STRUCTURE. RUN NEW 1" CONDUITS PARALLEL TO EXISTING CONDUIT. CORE-DRILL THROUGH WALLS AS NEEDED.
4. GENERATOR REMOTE ANNUNCIATOR. ROUTE CABLING IN CONDUIT WITH CONTROL CIRCUIT. COORDINATE LOCATION WITH OWNER PRIOR TO ROUGH-IN.



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DOCUMENTS

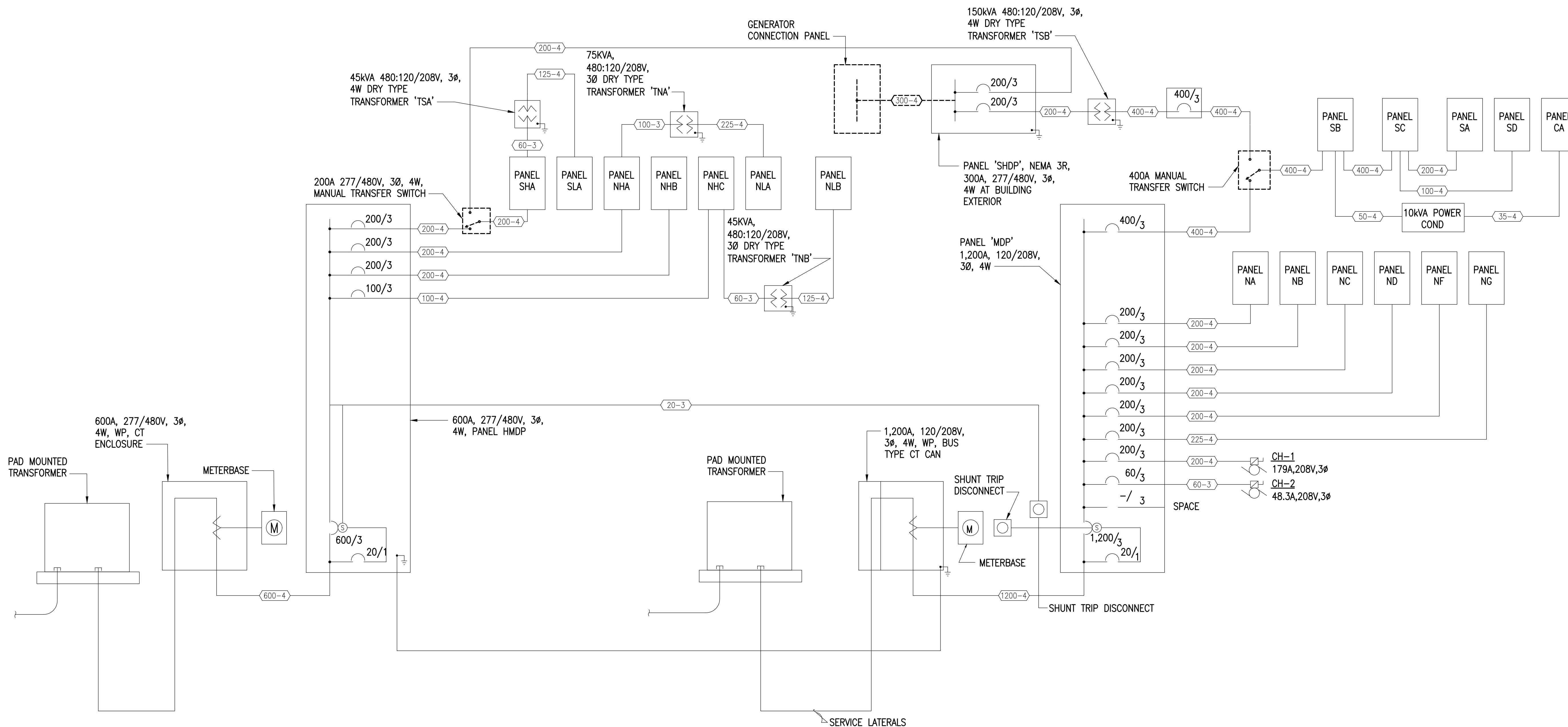
JOB NO. M3156
DATE: 1/19/2024
PROJ. MGR.: --
DRAWN BY: AWK
REVIEWED BY: JAM, SLKB
REVISIONS:

DEMOLITION
POWER ONE-LINE
DIAGRAM

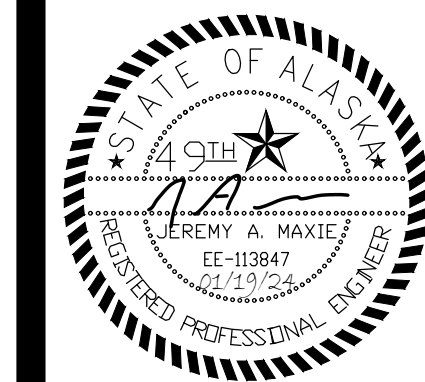
SHEET NO.

E301

FEEDER SCHEDULE			
FEEDER TAG	COND. AMPS	BRKR SIZE	DESCRIPTION
20-3	25A	20A	1/2" C, 3#12, 1#12 GND.
50-4	40A	50A	1" C, 4#8, 1#10 GND.
60-3	55A	60A	1" C, 3#6, 1#8 GND.
100-3	95A	100A	1.25" C, 3#2, 1#8 GND.
125-4	130A	125A	1.5" C, 4#1, 1#6 GND.
200-4	200A	200A	2" C, 4#3/0, 1#6 GND.
225-4	230A	225A	2.5" C, 4#4/0, 1#4 GND.
300-4	310A	300A	3.5" C, 4#350kcmil, 1#2 GND.
400-4	380A	400A	3" C, 4#500kcmil, 1#3 GND.
600-4	620A	600A	(2 EA.) 3" C, 4#350kcmil, 1#1/0 GND.



1 DEMOLITION POWER ONE-LINE DIAGRAM
NO SCALE



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PROJ. MGR.: --
DRAWN BY: AWK
REVIEWED BY: JAM, SLKB
REVISIONS:

REMODEL
POWER ONE-LINE
DIAGRAM

SHEET NO.
E302

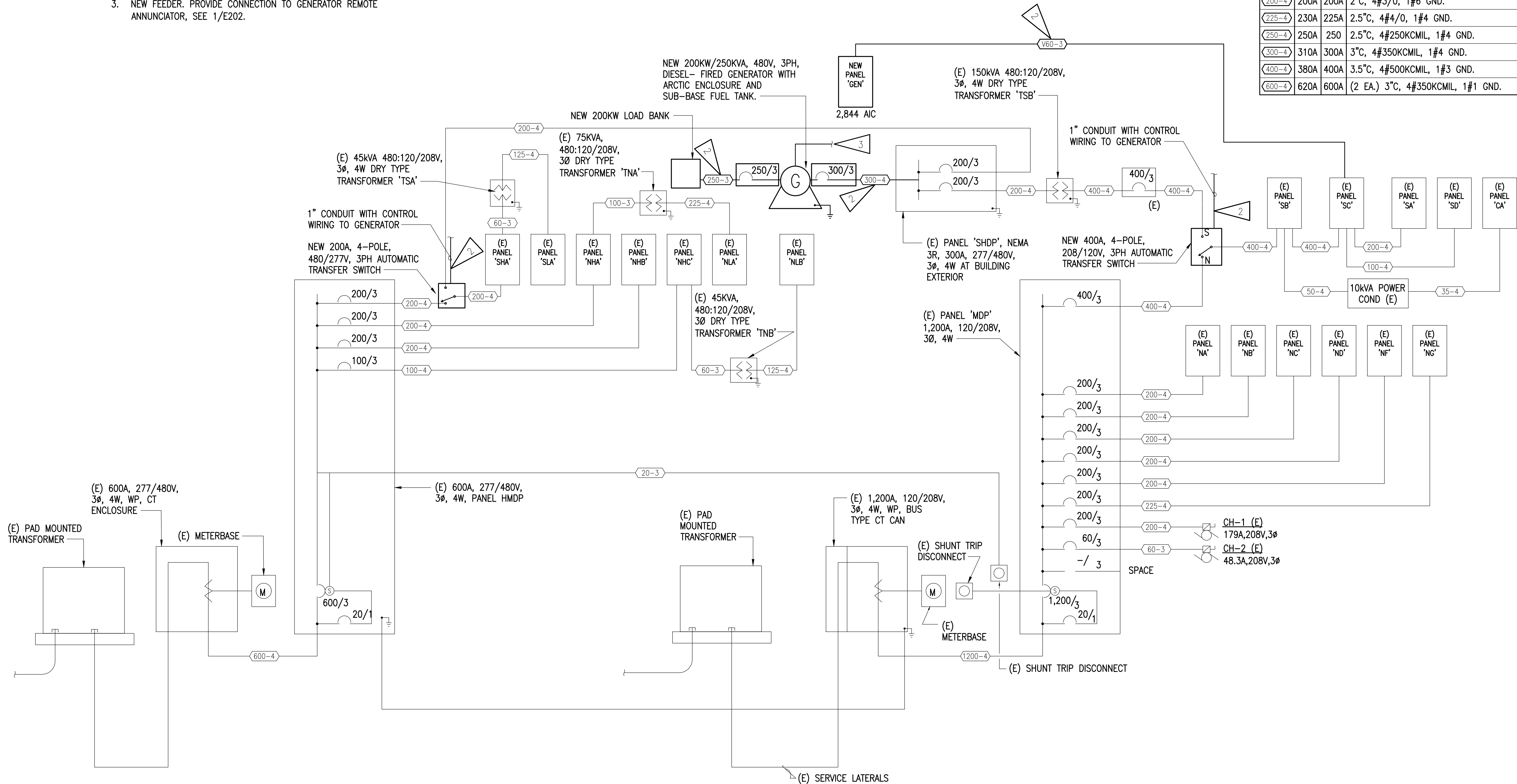
GENERAL NOTES:

1. ALL EQUIPMENT, CONDUIT AND CONDUCTORS ARE EXISTING TO REMAIN UNLESS OTHERWISE NOTED. EXTEND AND CONNECT CONDUIT AND CONDUCTORS TO NEW EQUIPMENT WHERE APPLICABLE.

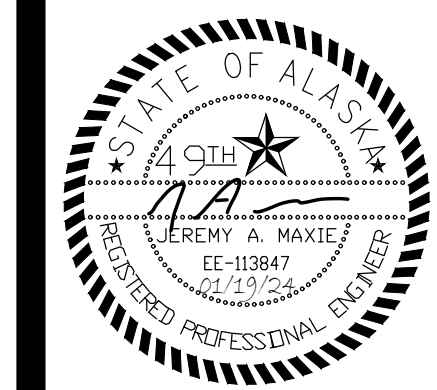
SHEET NOTES

1. CONDUCTORS UPSIZED DUE TO VOLTAGE DROP.
2. PROVIDE NEW CONDUIT AND CONDUCTORS.
3. NEW FEEDER. PROVIDE CONNECTION TO GENERATOR REMOTE ANNUNCIATOR, SEE 1/E202.

FEEDER SCHEDULE			
FEEDER TAG	COND. AMPS	BRKR SIZE	DESCRIPTION
20-3	25A	20A	1/2"C, 3#12, 1#12 GND.
50-4	40A	50A	1"C, 4#8, 1#10 GND.
60-3	55A	60A	1"C, 3#6, 1#8 GND.
V60-3	55A	60A	1"C, 3#2, 1#4 GND.
100-3	95A	100A	1.25"C, 3#2, 1#8 GND.
125-3	125A	125A	1.5"C, 3#1, 1#6 GND.
125-4	130A	125A	1.5"C, 4#1, 1#6 GND.
200-4	200A	200A	2"C, 4#3/0, 1#6 GND.
225-4	230A	225A	2.5"C, 4#4/0, 1#4 GND.
250-4	250A	250	2.5"C, 4#250KCMIL, 1#4 GND.
300-4	310A	300A	3"C, 4#350KCMIL, 1#4 GND.
400-4	380A	400A	3.5"C, 4#500KCMIL, 1#3 GND.
600-4	620A	600A	(2 EA.) 3"C, 4#350KCMIL, 1#1 GND.



1 REMODEL POWER ONE-LINE DIAGRAM
NO SCALE



ALASKA
COURT SYSTEM

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CONSTRUCTION
DOCUMENTS

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PROJ. MGR.: --
DRAWN BY: **AWK**
REVIEWED BY: **JAM, SLKB**
REVISIONS:

PANEL
SCHEDULES

SHEET NO.

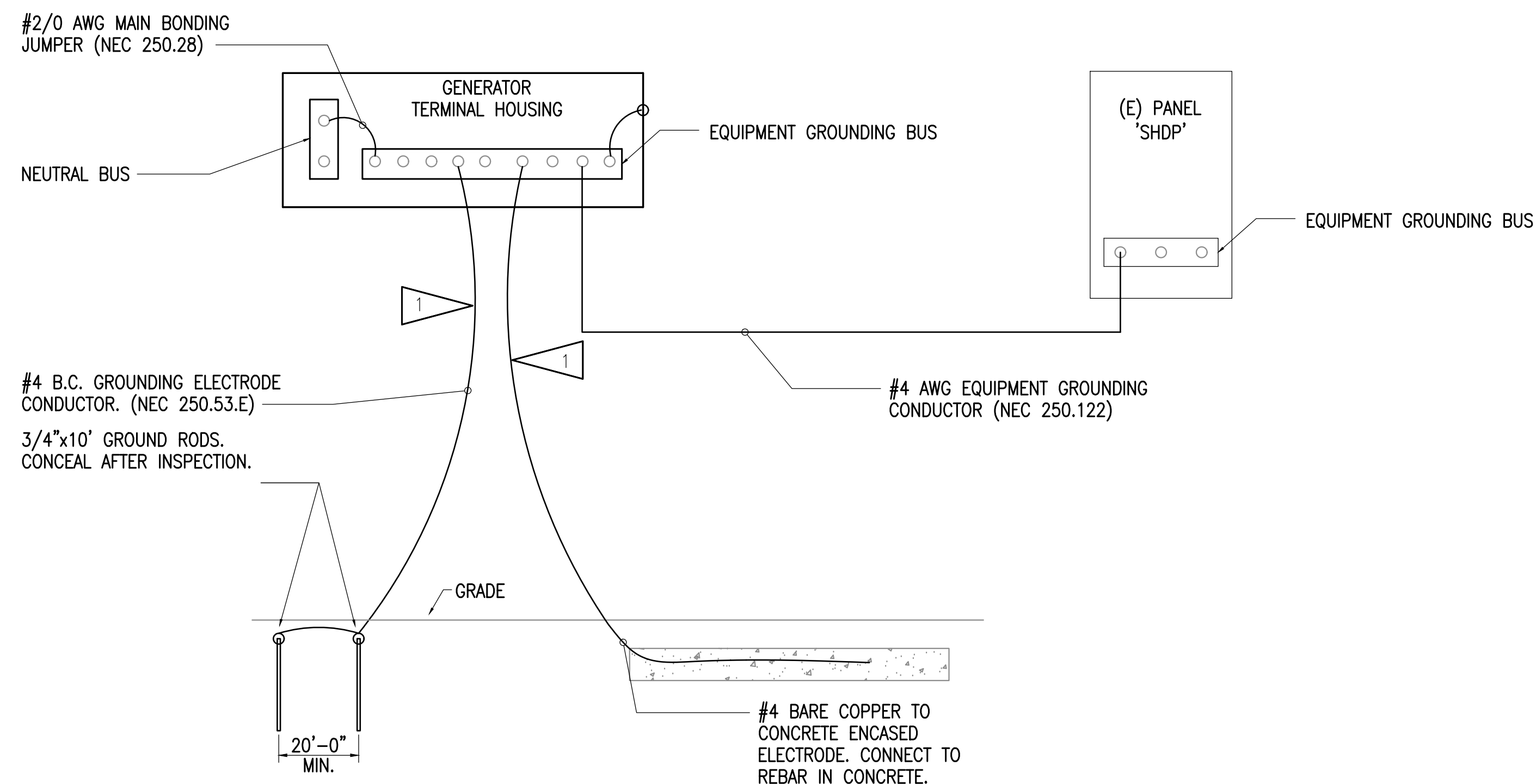
E401

(E) PANEL 'SC'																									
MFR/MODEL: SIEMENS TYPE CDP-7			VOLTS: 120/208V,3PH,4W			ENCLOSURE: NEMA 1			400 A																
NOTE	CIRC	POLE	AMPS	VOLT-AMPS			MTG: SURFACE			AMPS	POLE	CIRC	NOTE												
				A	B	C	TYPE	SERVICE																	
	1	3	15																						
	3	3	15	AA																					
	5	3	15	AA																					
	7	1	20																						
	9	1	20																						
	11	1	20																						
	13	1	20																						
	15	1	20																						
	17	1	30																						
	19	3	60																						
	21	3	60	AA																					
	23	3	60	AA																					
	25	3	100																						
	27	3	100	AA																					
	29	3	100	AA																					
	31	1	20	P-3																					
	33	1	15	DDC PANELS																					
	35	1	15	SPARE																					
A.I.C. RATING: 65,000				2700			1500			FEDR (N) PANEL 'GEN'			FEDR AA												
PANEL NOTES:													PANEL OPTIONS:												
a													MAIN LUGS ONLY												
b																									
c																									
d																									
e																									

(N) PANEL 'GEN'																									
MFR/MODEL: SEIMENS TYPE QP			VOLTS: 120/240V,1PH,3W			ENCLOSURE: NEMA 1			125 A																
NOTE	CIRC	POLE	AMPS	VOLT-AMPS			MTG: SURFACE			AMPS	POLE	CIRC	NOTE												
				A	B	C	TYPE	SERVICE																	
	1	1	20																						
	3	1	20																						
	5	1	20																						
	7																								
	9																								
	11																								
TOTAL V-A				2,700			1,500			4,200 VA															
TOTAL AMPS				23			13			18 A															
A.I.C. RATING: 10,000																									
CONNECTED LOAD IN KVA:				LTG	RECP	MOTR	LG.MT	MISC	SPEC	TOTAL			AMPS												
				0.00	0.00	0.00	0.00	4.20	0.00	4.2 KVA			18 A												
PANEL NOTES:													PANEL OPTIONS:												
a																									
b																									
c																									
d																									
e																									

SHEET NOTES

- CONNECT TO GROUND BUS OR FACTORY-FURNISHED LUGS



1 GROUNDING DETAIL
NO SCALE