GENERAL
1. DESIGN IS IN ACCORDANCE WITH 2021 INTERNATIONAL BUILDING CODE, LOCAL AMENDMENTS, AND APPLICABLE CODE REFERENCED STANDARDS.

2. CONSTRUCTION ACTIVITIES SHALL BE IN ACCORDANCE WITH APPLICABLE OSHA, STATE, AND LOCAL REGULATIONS. THIS DESIGN IS NOT INTENDED TO CONFLICT WITH SAFETY OR APPLICABLE REGULATIONS OR TO RELIEVE THE CONTRACTOR OF COMPLIANCE WITH THESE REQUIREMENTS. IN CASE OF CONFLICT WITH SAFETY OR APPLICABLE REGULATIONS, CONTACT THE ENGINEER FOR GUIDANCE BEFORE PROCEEDING WITH FABRICATION OR CONSTRUCTION.

3. PRIOR TO FABRICATION OR CONSTRUCTION:
   A. REVIEW OTHER DISCIPLINE DRAWINGS AND EQUIPMENT MANUFACTURER DRAWINGS FOR SIZE AND LOCATION OF ALL OPENINGS, DEPRESSIONS, OFFSETS, SLEEVES, CURBS, PADS, INSERTS, EQUIPMENT REQUIREMENTS, ETCETERA, WHICH ARE NOT SHOWN ON STRUCTURAL DRAWINGS.
   B. VERIFY DIMENSIONS AND LOCATIONS OF ALL OPENINGS, DEPRESSIONS, OFFSETS, SLEEVES, CURBS, PADS, INSERTS, EQUIPMENT REQUIREMENTS, ETCETERA.
   C. FIELD VERIFY ALL EXISTING CONDITIONS, INCLUDING LOCATION AND DIMENSIONS OF ALL EXISTING CONSTRUCTION AND UTILITIES.
   D. NOTIFY OWNER'S REPRESENTATIVE OF ANY DISCREPANCIES BETWEEN DISCIPLINES, CONSTRUCTABILITY ISSUES, OR EXISTING CONDITIONS.

4. REMOVE ALL ABANDONED FOUNDATIONS, UTILITIES, PIPELINES, ETCETERA THAT INTERFERE WITH NEW CONSTRUCTION.

5. PLANS, SECTIONS, AND DETAILS ARE NOT TO BE SCALED FOR DETERMINATION OF QUANTITIES, LENGTHS, OR FIT OF MATERIALS.

6. SUPPLY ALL ITEMS FOR ATTACHING MECHANICAL AND ELECTRICAL EQUIPMENT TO THE STRUCTURE TO RESIST ALL LOADS INCLUDING SEISMIC FORCES. ATTACHMENT SHALL BE MADE SO AS NOT TO OVERSTRESS STRUCTURAL MEMBERS. COORDINATE THE ATTACHMENTS AND LOCATIONS OF THE EQUIPMENT WITH THE STRUCTURAL SHOP DRAWINGS.

LOADS
1. LIVE LOADS:
   A. 1750 KW GENERATOR: 430 PSF
   B. WALKWAYS: 100 PSF

FOUNDATION

1. EXCAVATION AND SUBGRADE PREPARATION:
   A. SAW CUT ANY EXISTING PAVEMENT. REMOVE PAVEMENT AND SOIL FROM FOUNDATION AREA TO DEPTH OF REQUIRED GRADE BEAM.
   B. COMPACT THE EXPOSED SUBGRADE USING HAND DIRECTED COMPACTION EQUIPMENT WITH A MINIMUM OF 2 PASSES. SOFT OR PUMPING SUBGRADE AREAS SHALL BE EXCAVATED IN BOTH HORIZONTAL AND VERTICAL DIRECTIONS EXPOSING COMPETENT SUBGRADE. GRADE SHALL BE RESTORED WITH COMPACTED EXCAVATED ONSITE SOIL.
   C. STRUCTURAL FILL SHALL BE TXDOT ITEM 247, GRADE 1 OR 2, TYPE D.
   D. BACKFILL SHALL BE PLACED IN MAXIMUM 4" LOOSE LIFTS FOR HAND-DIRECTED EQUIPMENT. COMPACT TO A MINIMUM OF 95 PERCENT OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D698 (STANDARD PROCTOR), AND AT A MOISTURE CONTENT WITHIN 2 PERCENT OF THE OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM D698. IN-PLACE FIELD DENSITY TESTS SHALL BE CONDUCTED AT A RATE OF ONE TEST PER 3,000 SQUARE FEET FOR EVERY LIFT BUT NOT LESS THAN 2 TESTS.
   E. THE SUBGRADE MOISTURE CONTENT AND DENSITY SHALL BE MAINTAINED DURING CONSTRUCTION.

2. ALL BELOW GRADE FOUNDATION ELEMENTS ARE DESIGNED WITH FORMED SIDES.

3. EXTERIOR SLABS SHALL SLOPE AWAY FROM THE STRUCTURE A MINIMUM OF 1/4" PER FOOT UNLESS NOTED OTHERWISE. GRADING AROUND STRUCTURES SHALL BE SUCH AS TO DRAIN ALL WATER AWAY FROM FOUNDATION.

4. ALL FOUNDATIONS SHALL BEAR ON SOUND, UNDISTURBED, LEVEL EXCAVATIONS. REMOVE ANY AND ALL LOOSE DEBRIS FROM EXPOSED BEARING SURFACE. SUITABLE BEARING MATERIAL SHALL BE VERIFIED BY A GEOTECHNICAL PROFESSIONAL ENGINEER

5. ALLOWABLE NET BEARING PRESSURES USED FOR FOUNDATION DESIGNS ARE AS FOLLOWS:
   A. COMPACTED BACKFILL: 1,500 PSF

CONCRETE
1. CONCRETE CONSTRUCTION SHALL CONFORM TO THE LATEST EDITIONS OF ACI 301 AND ACI 318.

2. CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4,000 PSI

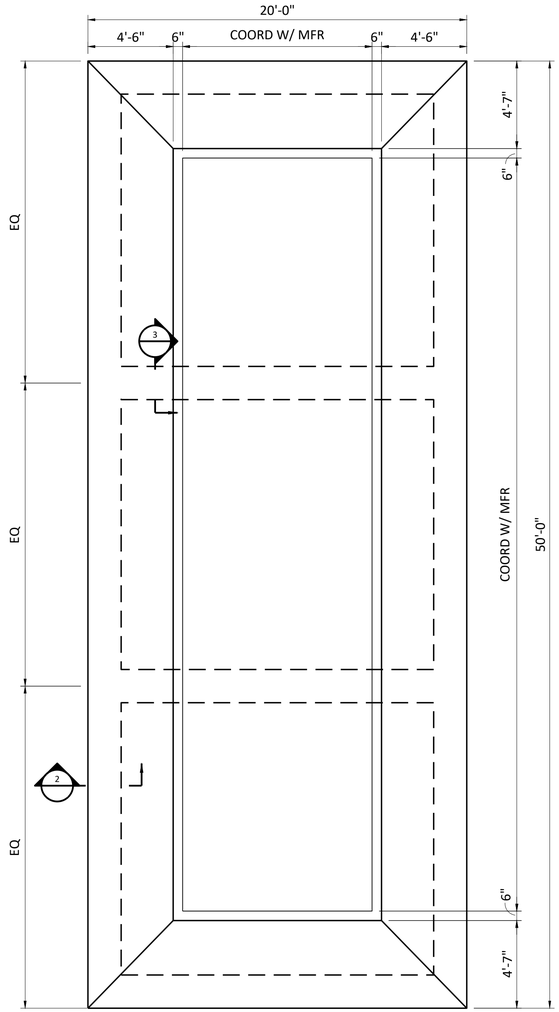
3. ALL REINFORCING SHALL BE IN ACCORDANCE WITH ASTM A615, GRADE 60, DEFORMED.

4. ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 3/4" INSIDE FORMS OR TOOLED TO 3/4" RADIUS ON SLABS UNLESS NOTED OTHERWISE.

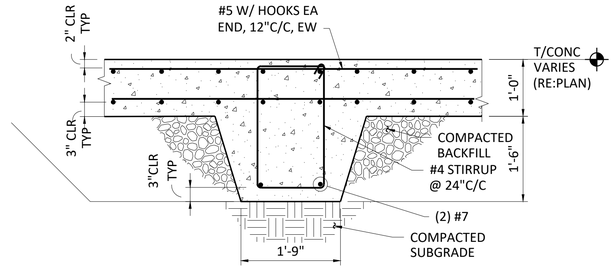
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN OF ALL FORMING, TEMPORARY BRACING AND SHORING.

6. UNLESS NOTED OTHERWISE, HOOKS SHOWN ON DRAWINGS SHALL BE ASSUMED TO BE STANDARD HOOKS PER ACI 318.

7. ALL REINFORCING SHALL BE CONTINUOUS. CONTINUOUS BARS SHALL LAP 48 BAR DIAMETERS OF SMALLER BAR LAPPED, UNLESS NOTED OTHERWISE. ALL REBAR EMBEDMENT LENGTHS SHALL BE 36 BAR DIAMETERS, UNLESS NOTED OTHERWISE.

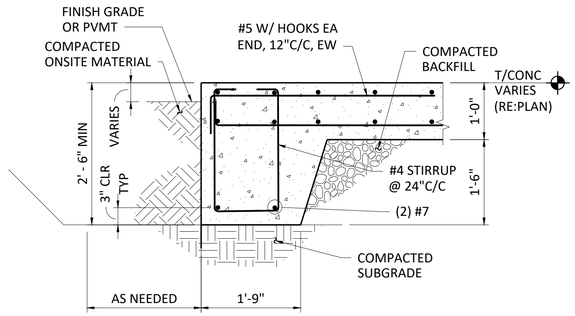


1 GENERATOR FOUNDATION
NOT TO SCALE



DETAIL NOTES:
1. BOTTOM OF BEAMS SHALL BE A CONSTANT ELEVATION. SLOPE TOP AS INDICATED. BELOW EQUIPMENT SLAB SHALL BE FLAT AND LEVEL.

3 INTERIOR SLAB SECTION
3/4"=1'-0"



DETAIL NOTES:
1. BOTTOM OF BEAMS SHALL BE A CONSTANT ELEVATION. SLOPE TOP AS INDICATED. BELOW EQUIPMENT SLAB SHALL BE FLAT AND LEVEL.

2 GENERATOR SLAB SECTION
3/4"=1'-0"

Freese and Nichols, Inc.
Texas Registered Engineering Firm F-2144
STATE OF TEXAS · AMY L. RAINES · 83515 · LICENSED PROFESSIONAL ENGINEER · 7/25/2024
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TRINITY METRO

HRP FACILITY GENERATOR REPLACEMENT

STRUCTURAL

GENERATOR FOUNDATION NOTES, PLAN, AND SECTIONS

F&N JOB NO.	FTA23346-8
DATE	5/29/2024
DESIGNED	ALR
DRAWN	JL
CHECKED	PAB
APPROVED	
FILE NAME	ST-LNC-1750W-PL-FNDN.dwg

NO.	ISSUE	BY	DATE

VERIFY SCALE Bar Scale is one inch on original drawing. If not one inch on this sheet, adjust scale.
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SEQ. 12 OF 20

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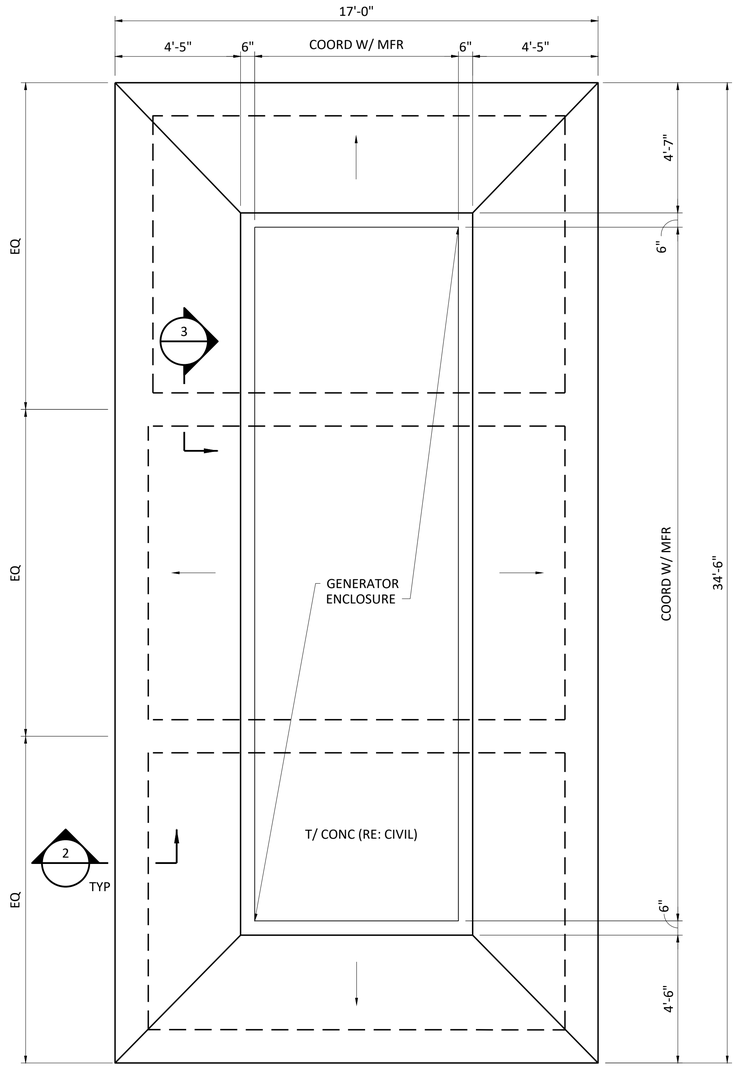
Plot Date: 7/24/2024 4:08 PM Plot By: 08671 Filename: N:\ST\ST-LNC-1750W-PL-FNDN.dwg

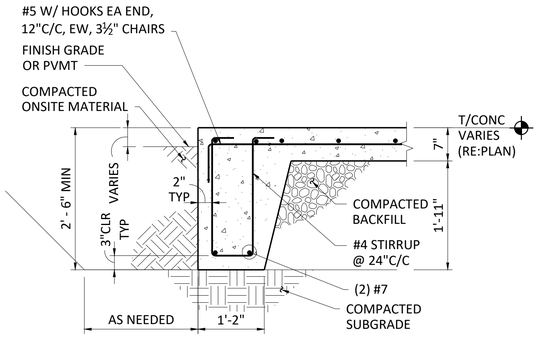
GENERAL
1. REFER TO SHEET HS1.01 FOR ADDITIONAL NOTES.

LOADS
1. LIVE LOADS:
   A. 300 KW GENERATOR: 200 PSF.
   B. WALKWAYS: 100 PSF.



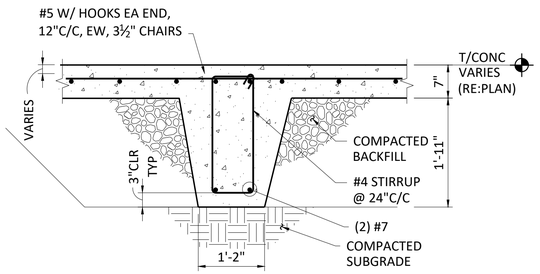
NOTES:
CONCRETE SLAB SHALL SLOPE AWAY A MINIMUM OF 1% FROM GENERATOR ENCLOSURE. TOP OF SLAB MIN 4" ABOVE FINISHED GRADE. MAINTAIN DRAINAGE AWAY FROM SLAB.

1 GENERATOR FOUNDATION
NOT TO SCALE



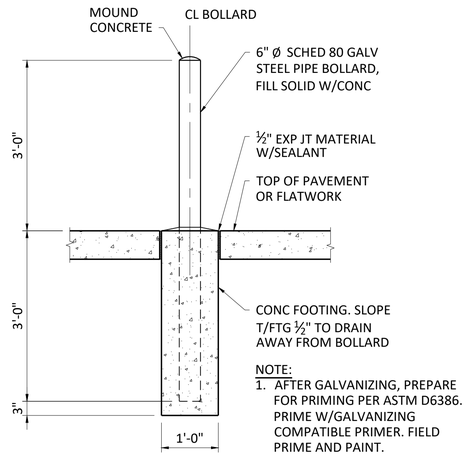
DETAIL NOTES:
1. BOTTOM OF BEAMS SHALL BE A CONSTANT ELEVATION. SLOPE TOP AS INDICATED. BELOW EQUIPMENT SLAB SHALL BE FLAT AND LEVEL.

2 EXTERIOR SLAB SECTION
3/4"=1'-0"



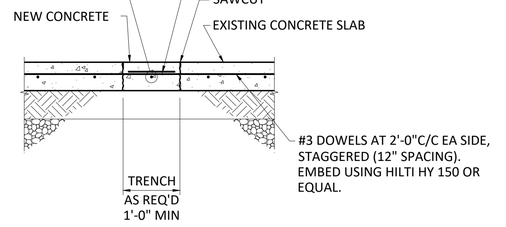
DETAIL NOTES:
1. BOTTOM OF BEAMS SHALL BE A CONSTANT ELEVATION. SLOPE TOP AS INDICATED. BELOW EQUIPMENT SLAB SHALL BE FLAT AND LEVEL.

3 INTERIOR SLAB SECTION
3/4"=1'-0"



NOTE:
1. AFTER GALVANIZING, PREPARE FOR PRIMING PER ASTM D6386. PRIME W/GALVANIZING COMPATIBLE PRIMER. FIELD PRIME AND PAINT.

4 BOLLARD DETAIL
NOT TO SCALE



5 SLAB TRENCHING DETAIL
NOT TO SCALE

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TRINITY METRO

HRP FACILITY GENERATOR REPLACEMENT
STRUCTURAL
GENERATOR FOUNDATION
NOTES, PLAN, AND SECTIONS

F&N JOB NO.	FTA23346-8
DATE	5/29/2024
DESIGNED	ALR
DRAWN	JL
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APPROVED	
FILE NAME	ST-LNC-300W-PL-FNDN.dwg

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Plot Date: 7/24/2024 4:05 PM Plot By: 08671 Filename: N:\ST\ST-LNC-300W-PL-FNDN.dwg

GENERAL ELECTRICAL NOTES:

A. ALL WORK SHALL COMPLY WITH APPLICABLE NATIONAL, STATE AND LOCAL CODES, RULES, REGULATIONS AND REQUIREMENTS OF THE SERVICE UTILITY COMPANY.

B. EXISTING CONDITIONS ARE BASED ON INFORMATION PROVIDED BY SITE SURVEY. HOWEVER, IT IS NOT INTENDED TO BE AN EXACT REPRESENTATION OF ACTUAL CONDITIONS. ELECTRICAL CONTRACTOR TO FIELD VERIFY ALL EXISTING CONDITIONS (WHICH INCLUDE BUT ARE NOT LIMITED TO BREAKER SIZES, WIRE SIZES, CONDUIT SIZES, ETC.) PRIOR TO PURCHASING ANY ELECTRICAL EQUIPMENT. ELECTRICAL CONTRACTOR SHALL ALSO FIELD VERIFY PANELBOARDS TO MAKE SURE THE QUANTITY OF SPARES FOR CIRCUIT BREAKERS IS SUFFICIENT PER ENGINEERS DESIGN. ELECTRICAL CONTRACTOR SHALL VISIT JOB SITE PRIOR TO BIDDING TO ASCERTAIN EXISTING CONDITIONS AND SHALL NOTIFY ARCHITECT OF ANY DISCREPANCIES PRIOR TO BID.

C. ALL CONDUCTORS GREATER THAN 60' IN LENGTH SHALL BE SIZED FOR A MAXIMUM VOLTAGE DROP OF 3% OVER THE TOTAL LENGTH OF THE CIRCUIT CALCULATED AT 80% OF FULL LOAD OF THE OVERCURRENT DEVICE PROTECTING THE CONDUCTOR. CONTRACTOR SHALL PROVIDE PIG-TAIL OR ENCLOSED TERMINATION BLOCKS AS REQUIRED TO LAND CIRCUITS ON DEVICES OR EQUIPMENT.

D. ALL CONDUCTORS SHALL BE COPPER.

E. WHERE CONDUCTOR SIZES ARE NOTED ON DRAWINGS, THAT WIRE SIZE SHALL BE THROUGH THE ENTIRE RUN UNLESS NOTED OTHERWISE.

F. ALL ELECTRICAL HOMERUNS FROM PANELBOARD TO FIRST J-BOX OR DEVICE SERVED SHALL BE IN EMT CONDUIT. MC CABLE IS ALLOWED FOR IN-PLENUM ROUTING TO LIGHT FIXTURES OR IN-WALL ROUTING TO 120V POWER RECEPTACLES AND MUST BE APPROVED BY BUILDING MANAGEMENT. FIXTURE WHIPS SHALL NOT EXCEED SIX FEET.

G. REFER TO ARCHITECTURAL DRAWINGS AND ELEVATIONS FOR DEVICE MOUNTING HEIGHTS AND DIMENSIONED LOCATIONS PRIOR TO ROUGH-IN.

H. COORDINATE WITH OTHER DISCIPLINES PRIOR TO ROUGH-IN.

I. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL NOTES, SYMBOLS AND DETAILS

J. ALL CONDUCTORS, INCLUDING GROUNDING AND GROUNDED CONDUCTORS THAT ARE AWG #4 AND SMALLER SHALL HAVE A PERMANENT INSULATION JACKET COLORED PER THE COLOR SCHEME OUTLINED IN THE SPECIFICATION FOR THE RESPECTIVE CONDUCTOR VOLTAGE.

POWER GENERAL NOTES:

A. NO CONDUCTORS SMALLER THAN AWG #12 SHALL BE USED FOR POWER CIRCUITS GREATER THAN 24 VOLTS AC.

B. NEUTRAL CONDUCTORS SHALL NOT BE SHARED BETWEEN MULTIPLE SINGLE PHASE CIRCUITS. EACH SINGLE PHASE CIRCUIT SHALL HAVE A FULL SIZE DEDICATED NEUTRAL CONDUCTOR.

C. ALL LOW VOLTAGE WIRING INSTALLED IN CEILING SPACE THAT IS ALSO USED IN AIR PLENUM SHALL BE PLENUM RATED CONDUCTOR. WHERE OWNER 'S CONSTRUCTION STANDARDS REQUIRE THAT LOW VOLTAGE WIRING BE RUN IN CONDUIT, CONDUIT SHALL BE PROPERLY LABELED AND SUPPORTED

D. FLEXIBLE CONDUIT SHALL ONLY BE USED FOR LIGHTING FIXTURE WHIPS AND MOTOR CONNECTION. ANY OTHER USE MUST FIRST BE ALLOWED IN WRITING BY THE ENGINEER PRIOR TO INSTALLATION.

E. FLEXIBLE CONDUIT LONGER THAN SIX FEET SHALL NOT BE ALLOWED EXCEPT WHERE SPECIFICALLY AUTHORIZED IN WRITING.

F. ALL SPARE CONDUITS AND EMPTY CONDUITS SHALL HAVE A PULL STRING INSTALLED FOR FUTURE USE. PULL STRING SHALL BE SECURED AT EACH END TO PREVENT ACCIDENTAL REMOVAL.

G. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE SELECTION OF OVERCURRENT/SHORT CIRCUIT PROTECTIVE DEVICES BASED ON CALCULATED PROSPECTIVE FAULT ENERGY AT EACH PANELBOARD PER SPECIFICATION SECTION 26 24 16 AND PROVIDE DEVICES MEETING REQUIRED SHORT CIRCUIT INTERRUPTING CAPACITIES (AIC RATING). PROVIDE OVERCURRENT PROTECTIVE DEVICE PER COORDINATION STUDY PER SPECIFICATION SECTION 26 24 16. THIS MAY BE DONE USING MANUAL METHODS FOR SIMPLE SYSTEMS; HOWEVER, THE USE OF RECOGNIZED COMPUTER PROGRAMS THAT HAVE BEEN VALIDATED SHOULD BE USED FOR LARGER SYSTEMS. THE RESULTS OF THESE COMPUTATIONS AND GRAPHICAL SOLUTIONS SHALL BE SUBMITTED TO THE ENGINEER WHEN DISTRIBUTION EQUIPMENT ARE SUBMITTED. ALL WORK SHALL COMPLY WITH APPLICABLE NATIONAL, STATE AND LOCAL CODES' RULES, REGULATIONS AND REQUIREMENTS OF THE SERVICE UTILITY COMPANY.

H. ALL EXISTING CIRCUITS WITHIN THE SCOPE OF WORK AREA THAT ARE NOT REUSED FOR THIS REMODEL SHALL BE REMOVED BACK TO THE PANELS AND THE PLACARDS SHALL INDICATE THE BREAKERS AS SPARES.

I. PANELBOARD DIRECTORIES SHALL BE COMPLETELY FILLED OUT TO ACCURATELY IDENTIFY EACH CIRCUIT (EXISTING AND NEW CIRCUITS) IN ALL PANELS WITHIN THE SCOPE OF WORK. OBTAIN BUILDING MANAGEMENT/OWNER'S APPROVAL OF IDENTIFICATION. DIRECTORIES SHALL BE TYPEWRITTEN.

J. ALL ELECTRICAL PANELS, TRANSFORMERS, SWITCH BOARDS, MOTOR CONTROL CENTERS AND ALL OTHER ELECTRICAL EQUIPMENT SHALL BE LABELED WITH AN ENGRAVED NAMEPLATE INDICATING THE EQUIPMENT DESIGNATION.

K. ELECTRIC CONNECTIONS TO PANELBOARDS AND BUS DUCTS SHALL BE MADE ONLY WHEN PANELBOARD OR BUS DUCT HAS BEEN DE-ENERGIZED. SCHEDULE DOWN TIME WITH BUILDING MANAGEMENT/OWNER.

L. JUNCTION BOXES AND/OR DEVICE BOXES SHALL NOT BE MOUNTED BACK TO BACK WHEN FLUSH MOUNTED IN A WALL. JUNCTION BOXES AND/OR DEVICE BOXES FLUSH MOUNTED ON OPPOSITE SIDES OF A WALL SHALL NOT BE INSTALLED IN THE SAME STUD SPACE.

M. ANY CONDUIT THAT IS ROUTED UNDERGROUND OR IN-SLAB SHALL BE A MINIMUM OF 1" CONDUIT.

ELECTRICAL SYMBOLS LEGEND

SYMBOL	DESCRIPTION
———	CONDUIT
— —	CONDUIT IN OR UNDER FLOOR
———►	HOMERUN TO PANEL
———○	CONDUIT STUBBED UP
———⊃	CONDUIT STUBBED DOWN
——T——	TELEPHONE SYSTEM CONDUIT
	MOTOR CONNECTION
	DISCONNECT SWITCH
⊠ XX	MAGNETIC MOTOR STARTER. XX-SIZE INDICATED
XX/YY/ZZ	FUSED DISCONNECT SWITCH. XX-SWITCH RATING, YY-FUSE RATING, ZZ-NUMBER OF POLES
	VFD
	METER
	TRANSFORMER
	PANELBOARD
	DISTRIBUTION PANEL/SWITCHBOARD
	WIREWAY
H-1,3,5	ONE (1) THREE-POLE CIRCUIT
	GROUND BAR
	AUTOMATIC TRANSFER SWITCH
	GROUND
	BATTERY
	DELTA-WYE TRANSFORMER
	STANDARD TRANSFORMER
	K-13 TRANSFORMER
	CIRCUIT BREAKER
	FUSE
E / e	INDICATES EXISTING ITEM TO REMAIN
ER / er	INDICATES EXISTING ITEM TO BE RELOCATED
ED / ed	INDICATES EXISTING ITEM TO BE REMOVED
	CONNECT TO EXISTING
	CONTINUATION
SPD	SURGE SUPPRESSION DEVICE

NOTE: NOT ALL SYMBOLS USED - REFER TO FLOOR PLANS

APPLICABLE ELECTRICAL CODES

2020 National Electrical Code
2015 International Energy Conservation Code

APPLICABLE FIRE CODES

FM Global
2021 International Fire Code
NFPA Standards

Purdy - McGuire
Mechanical - Electrical Engineers
17300 North Dallas Parkway
Suite 3000
Dallas, Texas 75248-1147
Firm Registration # F-1511

Tel: 972/239-5357
Fax: 972/239-5231
www.purdy-mcguire.com

PMI JOB NO. 23052.002
PROJECT MGR. SCOTT BROWN

ISSUED FOR BID

Purdy-McGuire, Inc.
Texas Registered Engineering Firm F- 1511

STATE OF TEXAS
D. SCOTT BROWN
89097
LICENSED
PROFESSIONAL ENGINEER
7-24-2024

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801 Cherry Street, Suite 2800
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TRINITY METRO
HRP FACILITY GENERATOR REPLACEMENT
FORT WORTH, TX 76102

ELECTRICAL

ELECTRICAL NOTES & SYMBOLS

F&N JOB NO.					
DATE	7/24/2024				
DESIGNED	PMI				
DRAWN	PMI				
REVISED	PMI				
CHECKED	PMI				

NO.	ISSUE	BY	DATE	FILE NAME

VERIFY SCALE Bar is one inch on original drawing. If not one inch on this sheet, adjust scale. 0 1

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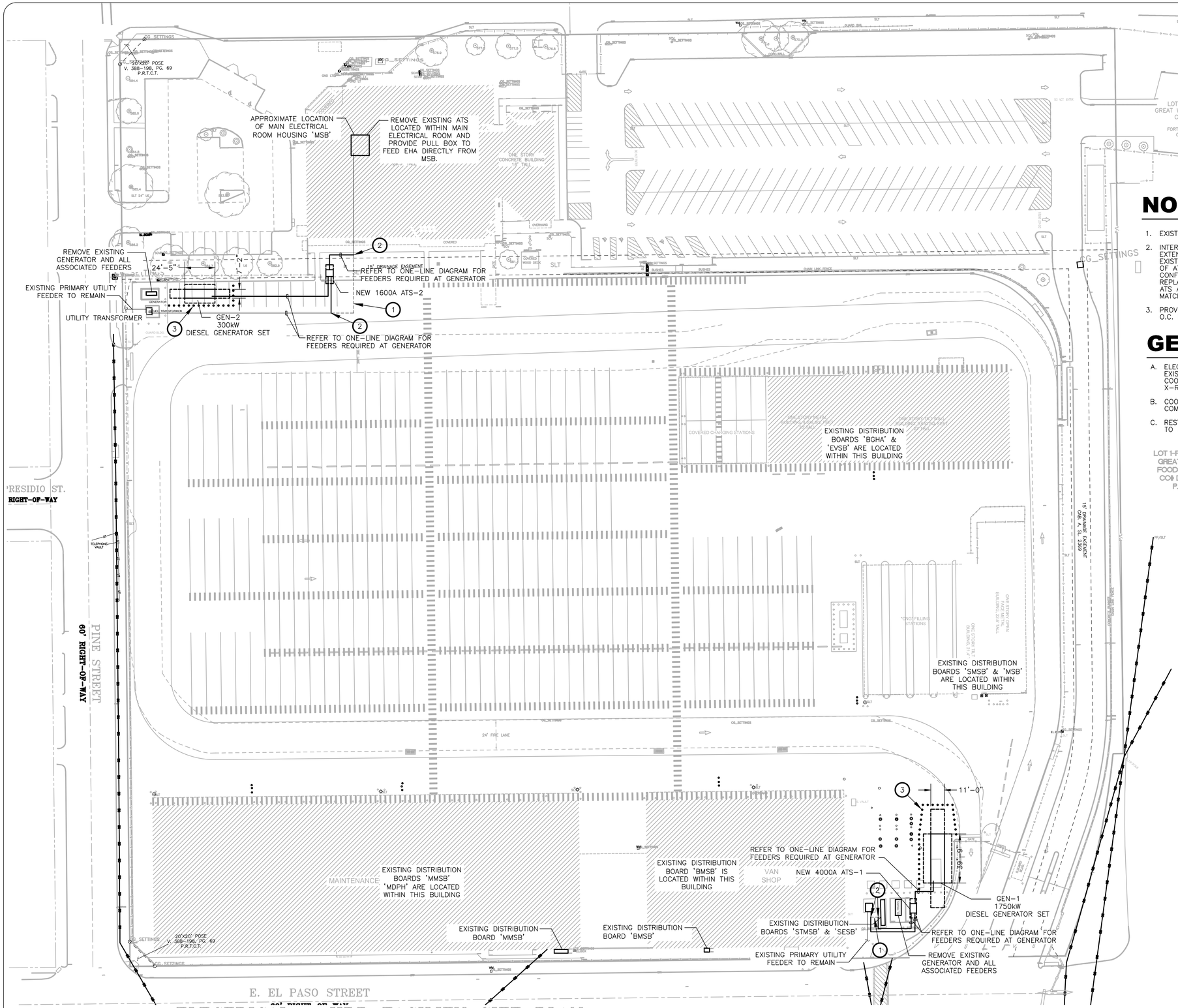
SEQ. 14 of 20



1 ELECTRICAL – HRP FACILITY SITE PLAN
SCALE: 1"=40'-0"

NOTES BY SYMBOL (X):

1. EXISTING UNDERGROUND SECONDARY FEEDER IS TO BE REMOVED.
2. INTERCEPT EXISTING SECONDARY CONDUCTORS AT INDICATED LOCATION AND EXTEND CONDUIT TO NEW ATS–1 LOCATION. DESIGN INTENT IS TO REPLACE EXISTING SECONDARY CONDUCTORS TO SERVE THE POWER FEEDS IN AND OUT OF ATS–1. ELECTRICAL CONTRACTOR SHALL INSPECT EXISTING CONDUIT TO CONFIRM IT CAN BE REUSED. PROVIDE ADD ALTERNATE LINE ITEM PRICING TO REPLACE EXISTING CONDUIT FROM EXISTING UTILITY TRANSFORMER TO NEW ATS AND THE CONDUIT FROM NEW ATS TO EXISTING MAIN SWITCHBOARD. MATCH EXISTING SECONDARY CONDUCTOR IN SIZE AND COUNT.
3. PROVIDE NEW BOLLARDS AS INDICATED. BOLLARDS SHALL BE LOCATED AT 4' O.C. REFER TO STRUCTURAL DRAWINGS FOR INSTALLATION DETAIL.

GENERAL NOTES:

A. ELECTRICAL CONTRACTOR SHALL COORDINATE ALL UNDERGROUND WORK WITH EXISTING UNDERGROUND UTILITIES. CONTRACTOR IS TO TAKE CARE WITH COORDINATING A SURVEY OF EXISTING CONDITIONS AND PERFORM A SLAB X–RAY PRIOR TO ALL DIGGING OR TRENCHING.

B. COORDINATE ALL POWER OUTAGES WITH THE OWNER AND THE UTILITY COMPANY A MINIMUM OF SEVEN DAYS PRIOR TO OUTAGE.

C. RESTORE AREAS REQUIRING EARTHWORK TO CONDITION MATCHING THAT PRIOR TO CONSTRUCTION.

ISSUED FOR BID

Purdy-McGuire, Inc.
Texas Registered Engineering Firm F-1511

STATE OF TEXAS
D. SCOTT BROWN
89097
LICENSED
PROFESSIONAL ENGINEER
7-24-2024

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Fax: 972/239-5231
www.purdy-mcguire.com

PMI JOB NO. 23052.002
PROJECT MGR. SCOTT BROWN

THIS DRAWING SHALL NOT BE REPRODUCED FOR ANY PROJECT OTHER THAN THE PROJECT NOTED IN THE TITLE BLOCK, WITHOUT THE WRITTEN CONSENT OF PURDY-McGUIRE, INC. DALLAS, TX

TRINITY METRO
HRP FACILITY GENERATOR REPLACEMENT
FORT WORTH, TX 76102
ELECTRICAL
ELECTRICAL SITE PLAN

F&N JOB NO.

DATE	7/24/2024
DESIGNED	PMI
DRAWN	PMI
REVISED	PMI
CHECKED	PMI

NO.	ISSUE	BY	DATE	FILE NAME

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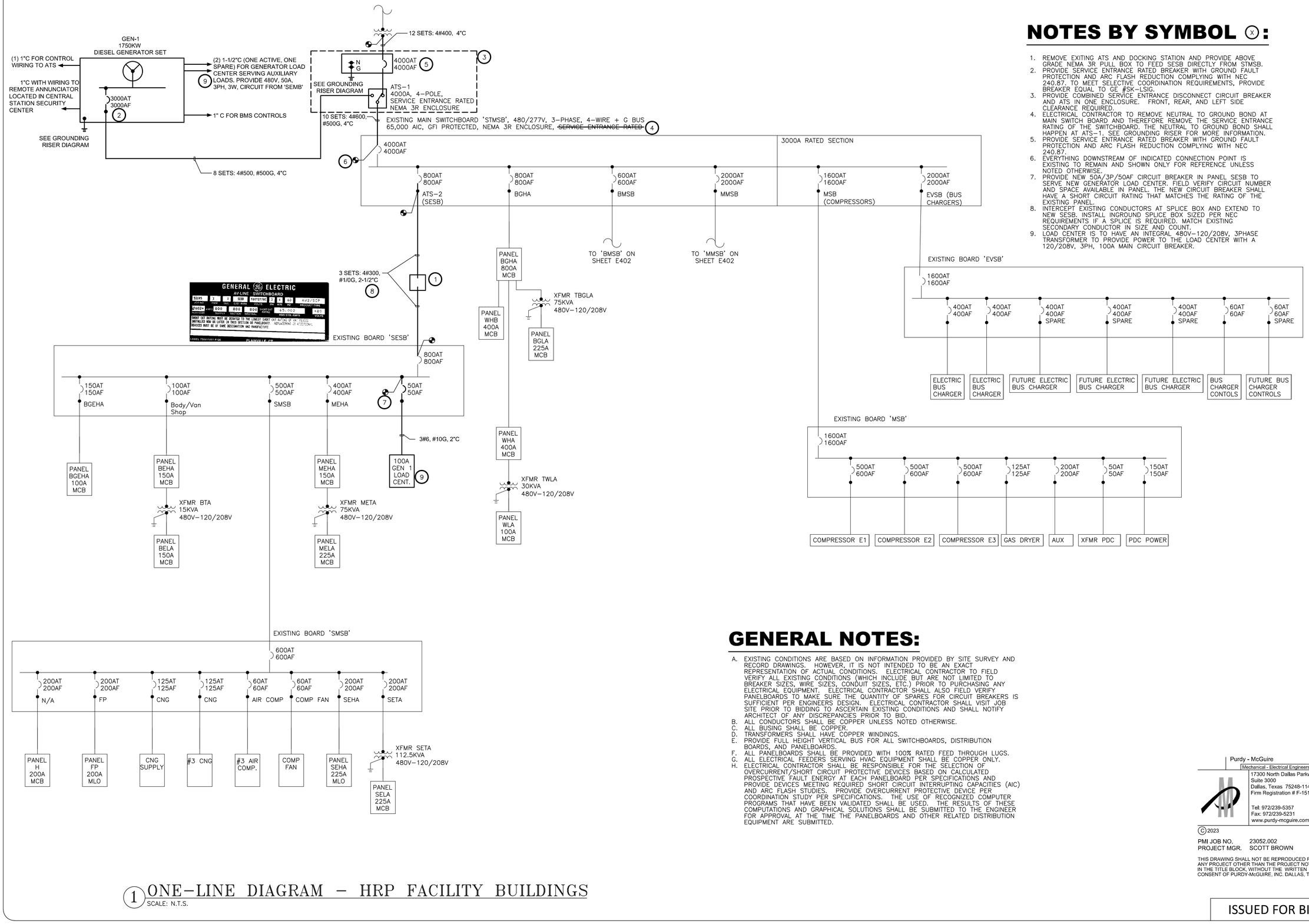
SEQ. 15 of 20



NOTES BY SYMBOL (X):

1. REMOVE EXITING ATS AND DOCKING STATION AND PROVIDE ABOVE GRADE NEMA 3R PULL BOX TO FEED SESB DIRECTLY FROM STMSB.
2. PROVIDE SERVICE ENTRANCE RATED BREAKER WITH GROUND FAULT PROTECTION AND ARC FLASH REDUCTION COMPLYING WITH NEC 240.87. TO MEET SELECTIVE COORDINATION REQUIREMENTS, PROVIDE BREAKER EQUAL TO GE #SK-LSIG.
3. PROVIDE COMBINED SERVICE ENTRANCE DISCONNECT CIRCUIT BREAKER AND ATS IN ONE ENCLOSURE. FRONT, REAR, AND LEFT SIDE CLEARANCE REQUIRED.
4. ELECTRICAL CONTRACTOR TO REMOVE NEUTRAL TO GROUND BOND AT MAIN SWITCH BOARD AND THEREFORE REMOVE THE SERVICE ENTRANCE RATING OF THE SWITCHBOARD. THE NEUTRAL TO GROUND BOND SHALL HAPPEN AT ATS-1. SEE GROUNDING RISER FOR MORE INFORMATION.
5. PROVIDE SERVICE ENTRANCE RATED BREAKER WITH GROUND FAULT PROTECTION AND ARC FLASH REDUCTION COMPLYING WITH NEC 240.87.
6. EVERYTHING DOWNSTREAM OF INDICATED CONNECTION POINT IS EXISTING TO REMAIN AND SHOWN ONLY FOR REFERENCE UNLESS NOTED OTHERWISE.
7. PROVIDE NEW 50A/3P/50AF CIRCUIT BREAKER IN PANEL SESB TO SERVE NEW GENERATOR LOAD CENTER. FIELD VERIFY CIRCUIT NUMBER AND SPACE AVAILABLE IN PANEL. THE NEW CIRCUIT BREAKER SHALL HAVE A SHORT CIRCUIT RATING THAT MATCHES THE RATING OF THE EXISTING PANEL.
8. INTERCEPT EXISTING CONDUCTORS AT SPLICE BOX AND EXTEND TO NEW SESB. INSTALL INGROUND SPLICE BOX SIZED PER NEC REQUIREMENTS IF A SPLICE IS REQUIRED. MATCH EXISTING SECONDARY CONDUCTOR IN SIZE AND COUNT.
9. LOAD CENTER IS TO HAVE AN INTEGRAL 480V-120/208V, 3PHASE TRANSFORMER TO PROVIDE POWER TO THE LOAD CENTER WITH A 120/208V, 3PH, 100A MAIN CIRCUIT BREAKER.

GENERAL NOTES:

A. EXISTING CONDITIONS ARE BASED ON INFORMATION PROVIDED BY SITE SURVEY AND RECORD DRAWINGS. HOWEVER, IT IS NOT INTENDED TO BE AN EXACT REPRESENTATION OF ACTUAL CONDITIONS. ELECTRICAL CONTRACTOR TO FIELD VERIFY ALL EXISTING CONDITIONS (WHICH INCLUDE BUT ARE NOT LIMITED TO BREAKER SIZES, WIRE SIZES, CONDUIT SIZES, ETC.) PRIOR TO PURCHASING ANY ELECTRICAL EQUIPMENT. ELECTRICAL CONTRACTOR SHALL ALSO FIELD VERIFY PANELBOARDS TO MAKE SURE THE QUANTITY OF SPARES FOR CIRCUIT BREAKERS IS SUFFICIENT PER ENGINEERS DESIGN. ELECTRICAL CONTRACTOR SHALL VISIT JOB SITE PRIOR TO BIDDING TO ASCERTAIN EXISTING CONDITIONS AND SHALL NOTIFY ARCHITECT OF ANY DISCREPANCIES PRIOR TO BID.
B. ALL CONDUCTORS SHALL BE COPPER UNLESS NOTED OTHERWISE.
C. ALL BUSING SHALL BE COPPER.
D. TRANSFORMERS SHALL HAVE COPPER WINDINGS.
E. PROVIDE FULL HEIGHT VERTICAL BUS FOR ALL SWITCHBOARDS, DISTRIBUTION BOARDS, AND PANELBOARDS.
F. ALL PANELBOARDS SHALL BE PROVIDED WITH 100% RATED FEED THROUGH LUGS.
G. ALL ELECTRICAL FEEDERS SERVING HVAC EQUIPMENT SHALL BE COPPER ONLY.
H. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE SELECTION OF OVERCURRENT/SHORT CIRCUIT PROTECTIVE DEVICES BASED ON CALCULATED PROSPECTIVE FAULT ENERGY AT EACH PANELBOARD PER SPECIFICATIONS AND PROVIDE DEVICES MEETING REQUIRED SHORT CIRCUIT INTERRUPTING CAPACITIES (AIC) AND ARC FLASH STUDIES. PROVIDE OVERCURRENT PROTECTIVE DEVICE PER COORDINATION STUDY PER SPECIFICATIONS. THE USE OF RECOGNIZED COMPUTER PROGRAMS THAT HAVE BEEN VALIDATED SHALL BE USED. THE RESULTS OF THESE COMPUTATIONS AND GRAPHICAL SOLUTIONS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL AT THE TIME THE PANELBOARDS AND OTHER RELATED DISTRIBUTION EQUIPMENT ARE SUBMITTED.

(1) ONE-LINE DIAGRAM - HRP FACILITY BUILDINGS

SCALE: N.T.S.

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Texas Registered Engineering Firm F-1511

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7-24-2024

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TRINITY METRO
HRP FACILITY GENERATOR REPLACEMENT
FORT WORTH, TX 76102
ELECTRICAL

ELECTRICAL ONE-LINE DIAGRAM

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REVISED	PMI					
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ISSUE						

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www.purdy-mcguire.com

PMI JOB NO. 23052.002
PROJECT MGR. SCOTT BROWN

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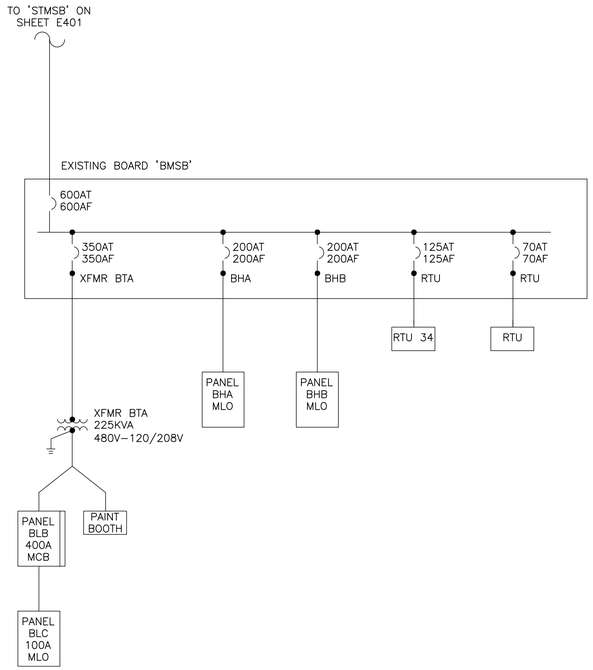

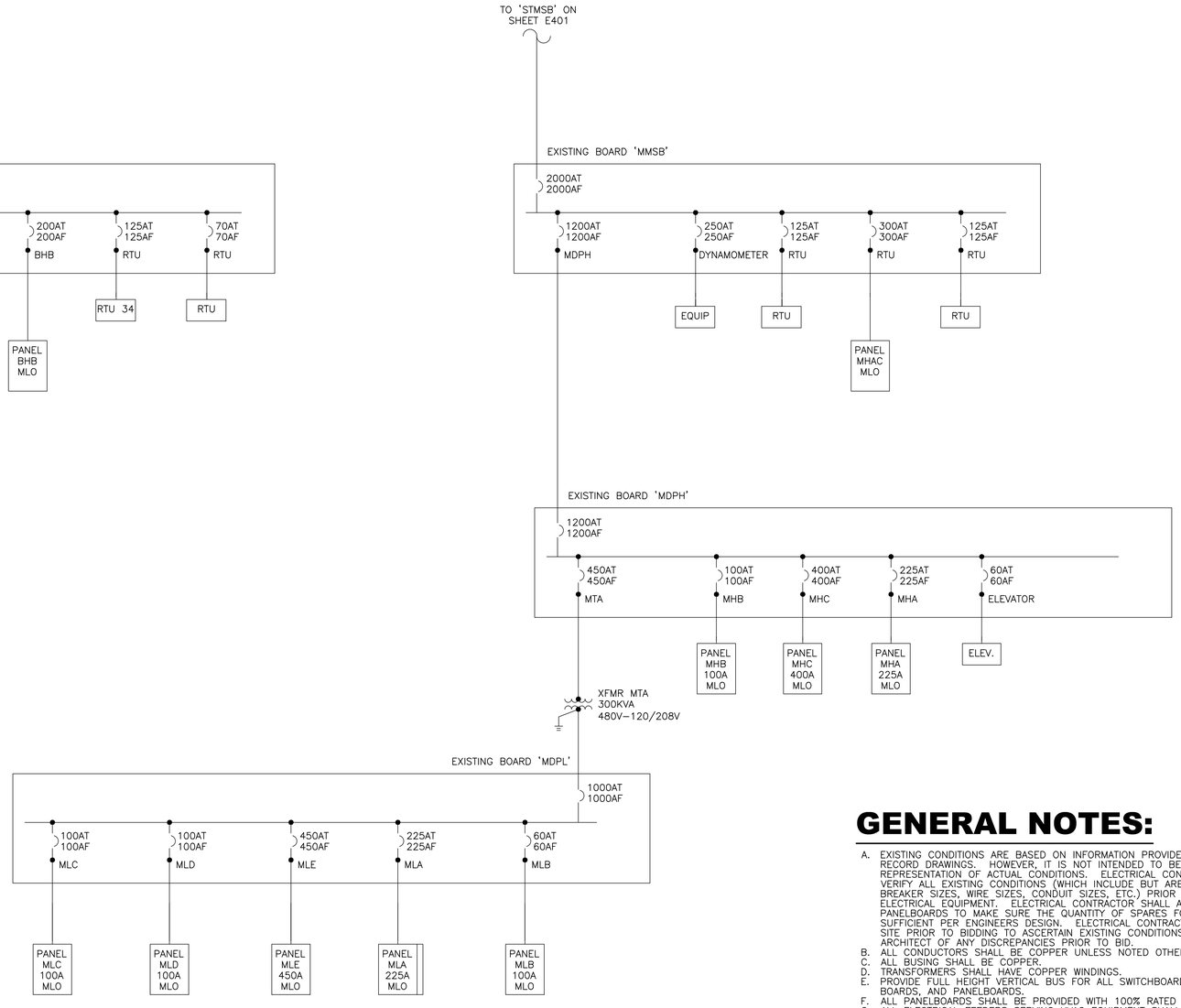

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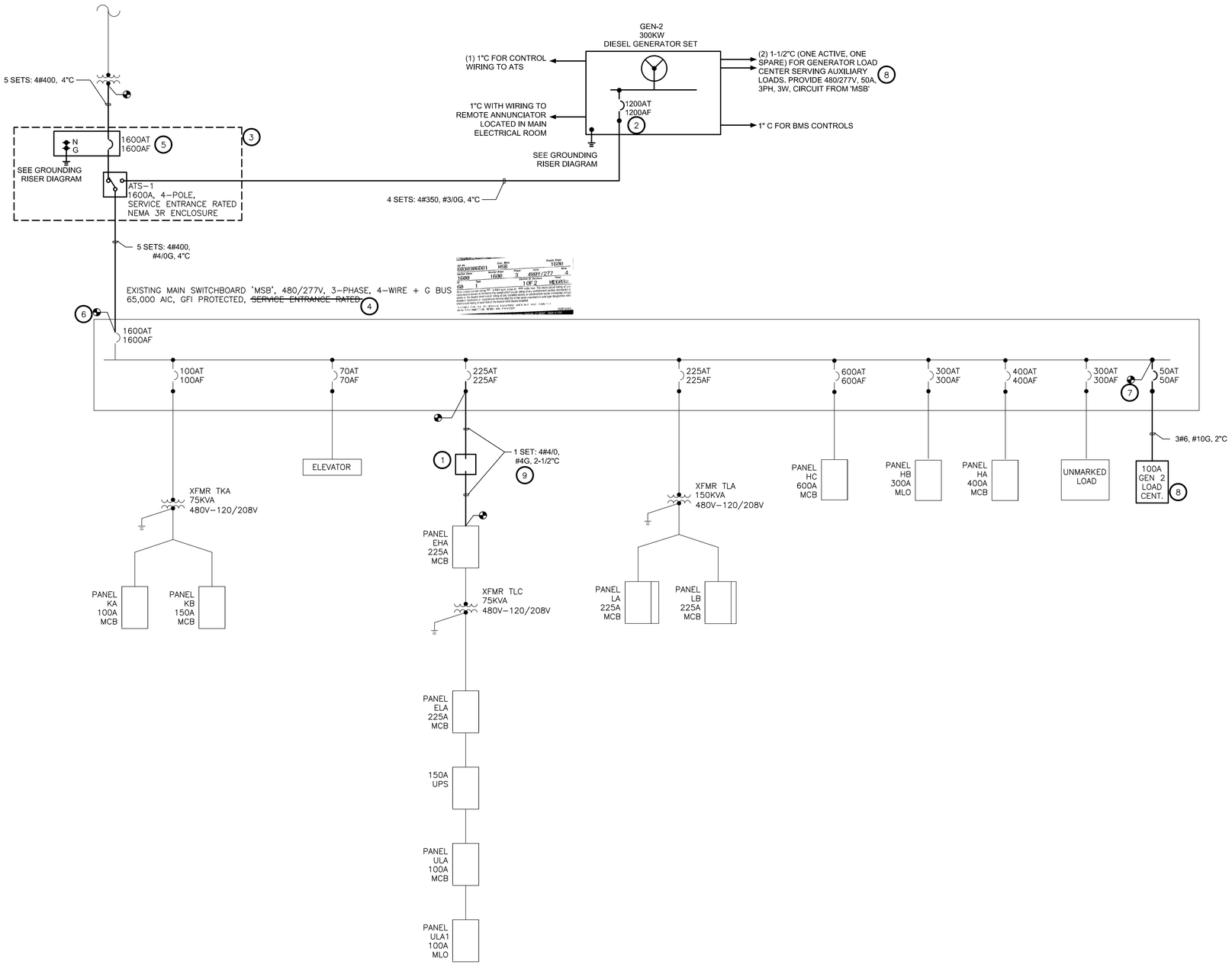

1 ONE-LINE DIAGRAM - HRP BUILDING
SCALE: N.T.S.

NOTES BY SYMBOL ⓧ:

1. REMOVE EXISTING ATS AND DOCKING STATION AND PROVIDE PULL BOX TO FEED EHA DIRECTLY FROM MSB.
2. PROVIDE SERVICE ENTRANCE RATED BREAKER WITH GROUND FAULT PROTECTION AND ARC FLASH REDUCTION COMPLYING WITH NEC 240.87. TO MEET SELECTIVE COORDINATION REQUIREMENTS, PROVIDE BREAKER EQUAL TO GE #SK-LSIG.
3. PROVIDE COMBINED SERVICE ENTRANCE DISCONNECT CIRCUIT BREAKER AND ATS IN ONE ENCLOSURE. FRONT, REAR, AND LEFT SIDE CLEARANCE REQUIRED.
4. ELECTRICAL CONTRACTOR TO REMOVE NEUTRAL TO GROUND BOND AT MAIN SWITCH BOARD AND THEREFORE REMOVE THE SERVICE ENTRANCE RATING OF THE SWITCHBOARD. THE NEUTRAL TO GROUND BOND SHALL HAPPEN AT ATS-1. SEE GROUNDING RISER FOR MORE INFORMATION.
5. PROVIDE SERVICE ENTRANCE RATED BREAKER WITH GROUND FAULT PROTECTION AND ARC FLASH REDUCTION COMPLYING WITH NEC 240.87.
6. EVERYTHING DOWNSTREAM OF INDICATED CONNECTION POINT IS EXISTING TO REMAIN AND SHOWN ONLY FOR REFERENCE UNLESS NOTED OTHERWISE.
7. PROVIDE NEW 50A/3P/50AF CIRCUIT BREAKER IN PANEL MSB TO SERVE NEW GENERATOR LOAD CENTER. FIELD VERIFY CIRCUIT NUMBER AND SPACE AVAILABLE IN PANEL. THE NEW CIRCUIT BREAKER SHALL HAVE A SHORT CIRCUIT RATING THAT MATCHES THE RATING OF THE EXISTING PANEL.
8. LOAD CENTER IS TO HAVE AN INTEGRAL 480V-120/208V, 3PHASE TRANSFORMER TO PROVIDE POWER TO THE LOAD CENTER WITH A 120/208V, 3PH, 100A MAIN CIRCUIT BREAKER.
9. INTERCEPT AND SPLICE EXISTING FEEDERS TO FEED EHA.

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ELECTRICAL ONE-LINE DIAGRAM

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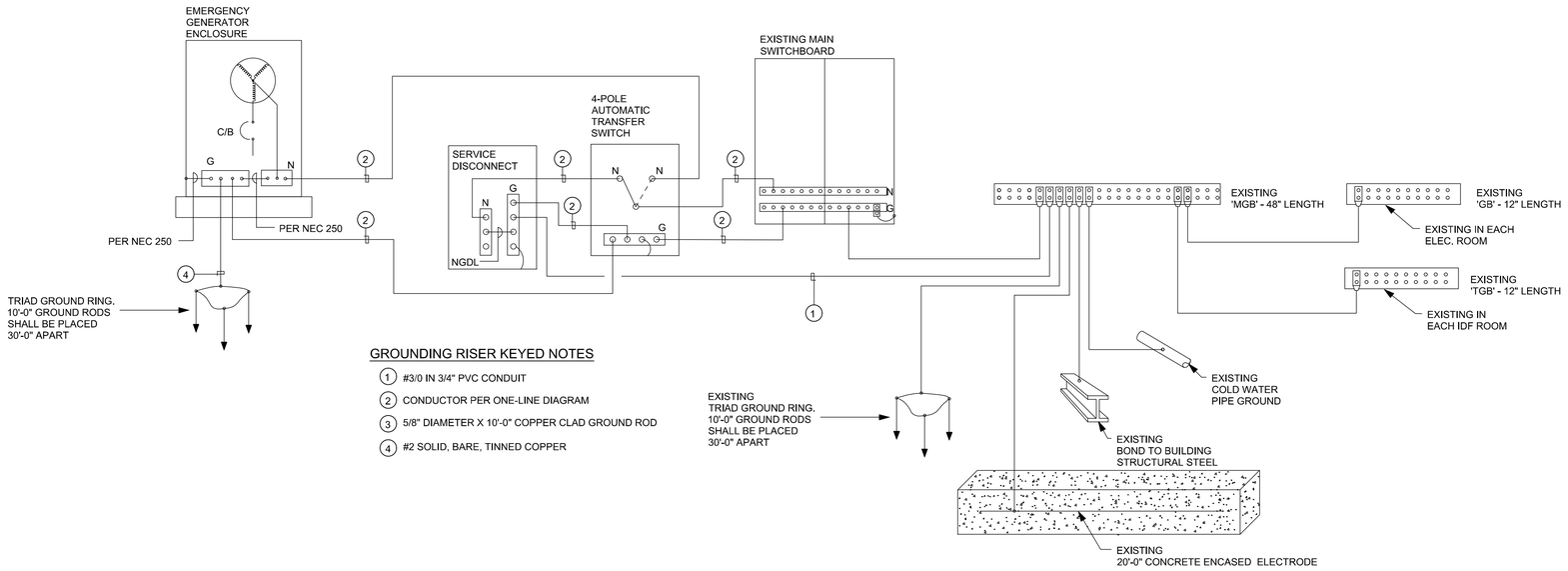
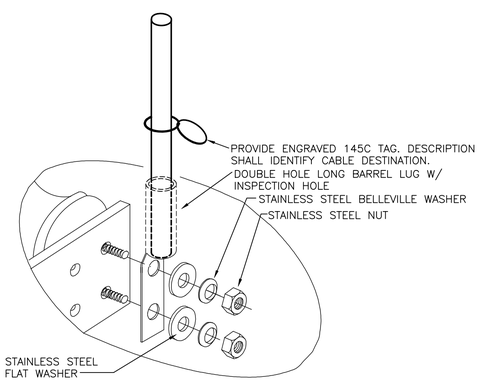


GROUNDING RISER KEYED NOTES

1. #3/0 IN 3/4" PVC CONDUIT
2. CONDUCTOR PER ONE-LINE DIAGRAM
3. 5/8" DIAMETER X 10'-0" COPPER CLAD GROUND ROD
4. #2 SOLID, BARE, TINNED COPPER

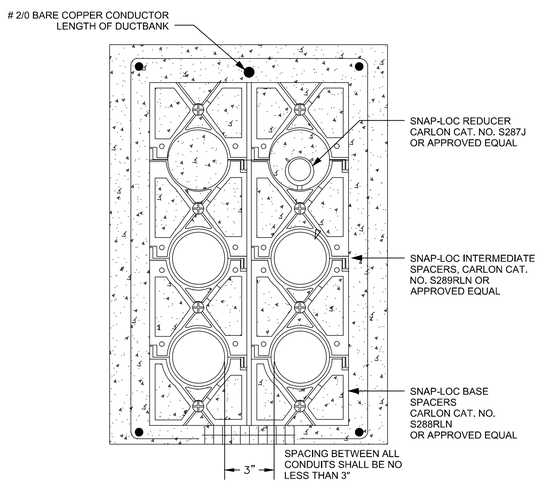
1 TYPICAL GROUNDING RISER DIAGRAM
SCALE: N.T.S.



NOTES:

A. ALL CONNECTIONS TO BE DOUBLE COMPRESSION (CRIMP) TYPE. NO MECHANICAL CONNECTIONS. MINIMUM 4 CRIMPS FOR DOUBLE COMPRESSION FITTING.

2 GROUND BUS BAR CONNECTION DETAIL
SCALE: N.T.S.



3 TYPICAL CONDUIT DUCTBANK DETAIL
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ELECTRICAL
ELECTRICAL DETAILS

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GENERATOR SCHEDULE

DESIGNATION	BASIS OF DESIGN		NOMINAL RATING KW / KVA	PEAK VOLTAGE / FREQUENCY DIP	ALTERNATOR MODEL	EXCITATION TYPE	TEMP RISE AT FULL LOAD (DEGREE C)	ENCLOSURE TYPE	ENCLOSURE FINISH COLOR	FUEL TYPE	TANK SIZE (GALLONS)	TANK TYPE	GALLONS PER HOUR AT FULL LOAD	TOTAL HOURS AT FULL LOAD	VOLTAGE	PHASE	HZ	OVERALL DIMENSIONS INCLUDING ENCLOSURE	CLEARANCES	OVERALL WEIGHT INCLUDING TANK AND FUEL	NOTES
	MANUFACTURER	MODEL / ALTERNATOR																			
GEN-1 (Maintenance Site)	CUMMINS	DQKAA	1750 KW / 2188 KVA	20% / 5%	B801	PMG	125	EXTERIOR RATED WEATHER PROTECTIVE, AND SOUND ATTENUATING TO 75DBA AT 23FT	CUSTOM, PER ARCHITECT	DIESEL	10130	UL 142 DOUBLE WALL, SUB BASE "BELLY" TYPE	121	72HRS	480	3	60	477"L x 120"W x 201"H +52" EACH SIDE FOR PLATFORMS (THESE DIMENSIONS DO NOT INCLUDE THE REQUIRED CLEARANCES)	16' INTAKE, 6' SIDES, 6' DISCHARGE	168,200 LBS	ALL
GEN-2 (HRP Building)	CUMMINS	DQDAC	300 KW / 375 KVA	20% / 5%	B252	PMG	125	EXTERIOR RATED WEATHER PROTECTIVE, AND SOUND ATTENUATING TO 73DBA AT 23FT	CUSTOM, PER ARCHITECT	DIESEL	2050	UL 142 DOUBLE WALL, SUB BASE "BELLY" TYPE	23.1	72HRS	480	3	60	293"L x 86"W x 128"H +52" EACH SIDE FOR PLATFORMS (THESE DIMENSIONS DO NOT INCLUDE THE REQUIRED CLEARANCES)	6' INTAKE, 4' SIDES, 4' DISCHARGE	30,800 LBS	ALL

NOTES:
1. REFER TO GENERATOR AND ATS SPECIFICATIONS FOR MORE INFORMATION.
2. MAINTAIN CLEARANCE ON SIDES, INTAKE END AND DISCHARGE END AS SHOWN ON SCHEDULE.
3. COORDINATE EXACT CONDUIT ROUGH-IN LOCATIONS WITH MANUFACTURER PRIOR TO ROUGH-IN.
4. PROVIDE AN ADDITIONAL REMOTE ANNUNCIATOR FOR MONITORING AND ALARMS. COORDINATE FINAL LOCATION WITH BUILDING ENGINEER.
5. GENERATOR MANUFACTURER SHALL PROVIDE BMS INTEGRATION DEVICES FOR INTEGRATION OF THE GENERATOR AND ALL TRANSFER EQUIPMENT INTO THE BMS. PROVIDE ALL NECESSARY COMPONENTS SO THAT THE BMS CAN MONITOR THE STATUS OF THE GENERATOR AND THE STATUS/ POWER SOURCE FOR ALL TRANSFER EQUIPMENT. COORDINATE INTEGRATION WITH MECHANICAL CONTROLS CONTRACTOR FOR BMS TYPE AND GENERATOR MANUFACTURER. REFER TO MECHANICAL CONTROLS SHEET FOR MORE INFORMATION.
6. GENERATOR SHALL BE PROVIDED WITH INTEGRAL LOAD CENTER TO SERVE ALL AUXILIARY LOADS (RECEPTACLE, LIGHTING, BATTERY CHARGER, HEATERS, ETC). LOAD CENTER SHALL HAVE INTEGRAL 480V – 208/120V, 3PHASE TRANSFORMER TO PROVIDE POWER CENTER WITH A 120/208V, 3PH, 100A MAIN BREAKER WITH AN AIC RATING OF 18KA. REFER TO ONE-LINE FOR POWER CIRCUIT INFORMATION FEEDING LOAD CENTER.
7. GENERATOR MANUFACTURER TO PROVIDE ACCESS PLATFORMS ON BOTH SIDE OF GENERATOR IF NEEDED TO MEET NEC REQUIREMENTS FOR BREAKER HANDLES.
8. PROVIDE FUEL TANK WITH A LOW FUEL ALARM.
9. PROVIDE FUEL TANK WITH A FUEL LEVEL INDICATOR/MONITOR. FUEL LEVEL MONITOR SHALL HAVE THE ABILITY TO CONNECT TO A BUILDING MANAGEMENT SYSTEM (BMS) OR GENERATOR ANNUNCIATOR PANEL OUTPUT.
10. GENERATOR PRICING SHALL INCLUDE A CUSTOM FACTORY PAINTED FINISH COLOR OF THE EXTERIOR ENCLOSURE, TO BE SELECTED BY THE ARCHITECT DURING THE SUBMITTAL PHASE OF THE PROJECT.

TRANSFER SWITCH SCHEDULE

EQUIPMENT NAME	BASIS OF DESIGN		SERVICE ENTRANCE RATED	AIC RATING	ENCLOSURE TYPE	TRANSITION TYPE	AMP RATING	VOLTAGE	POLES	HZ	OVERALL DIMENSIONS INCLUDING ENCLOSURE	CLEARANCES	OVERALL WEIGHT INCLUDING TANK AND FUEL
	MANUFACTURER	MODEL											
ATS-1	ASCO	7000 SERIES	YES	65,000	NEMA 3R	OPEN-TRANSITION	4000A	480/277 WYE	4	60	63"W x 91"D x 100"H (THESE DIMENSIONS DO NOT INCLUDE THE REQUIRED CLEARANCES)	48" FRONT & REAR	3,425 LBS
ATS-2	CUMMINS	CXRF SE	YES	65,000	NEMA 3R	OPEN-TRANSITION	1600A	480/277 WYE	4	60	72"W x 65"D x 93"H (THESE DIMENSIONS DO NOT INCLUDE THE REQUIRED CLEARANCES)	70" FRONT& 48" REAR	3,154 LBS

NOTES:
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