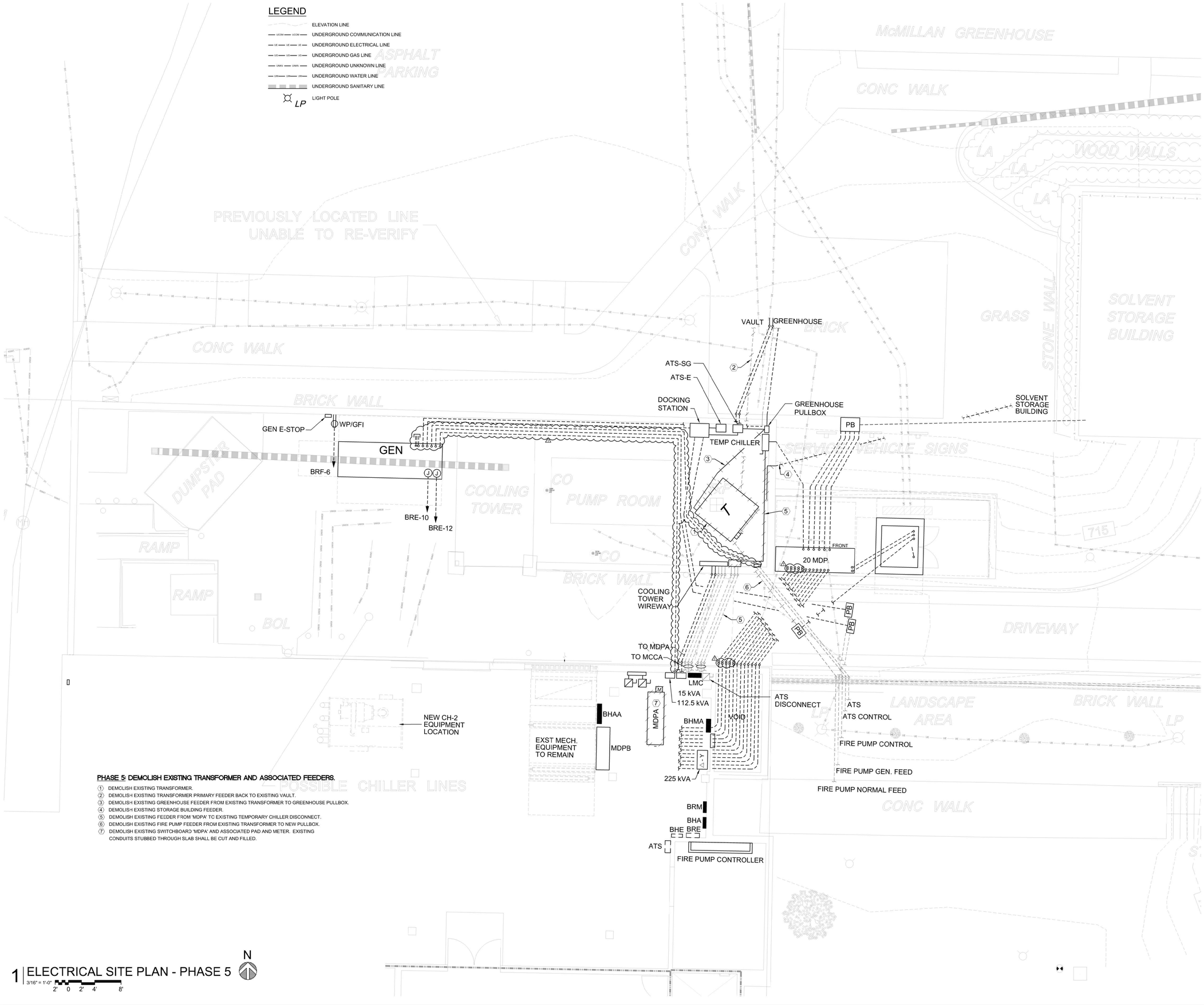

PHASE 5: DEMOLISH EXISTING TRANSFORMER AND ASSOCIATED FEEDERS.

1. DEMOLISH EXISTING TRANSFORMER.
2. DEMOLISH EXISTING TRANSFORMER PRIMARY FEEDER BACK TO EXISTING VAULT.
3. DEMOLISH EXISTING GREENHOUSE FEEDER FROM EXISTING TRANSFORMER TO GREENHOUSE PULLBOX.
4. DEMOLISH EXISTING STORAGE BUILDING FEEDER.
5. DEMOLISH EXISTING FEEDER FROM 'MDPA' TC EXISTING TEMPORARY CHILLER DISCONNECT.
6. DEMOLISH EXISTING FIRE PUMP FEEDER FROM EXISTING TRANSFORMER TO NEW PULLBOX.
7. DEMOLISH EXISTING SWITCHBOARD 'MDPA' AND ASSOCIATED PAD AND METER. EXISTING CONDUITS STUBBED THROUGH SLAB SHALL BE CUT AND FILLED.

1 ELECTRICAL SITE PLAN - PHASE 5

3/16" = 1'-0"

2' 0 2' 4' 8'

N

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NORTH CAROLINA PROFESSIONAL SEAL 038491 ENGINEER DANIEL A. BOLAND

#221.013 10/13/2021

Project Title
UNCC HVAC, Plumbing and Electrical Repairs - McEniry Electrical & Plumbing Package
SCO ID # 20-22572-01A
PM: JOHN BOAL

Date:	Mark:	Description:	By:
08/04/2021	-	100% CD REVIEW SET	DAB
09/28/2021	-	BID SET	DAB
10/13/2021	1	ADDENDUM #2	DAB

ELECTRICAL SITE PLAN - PHASE 5

Sheet Title:

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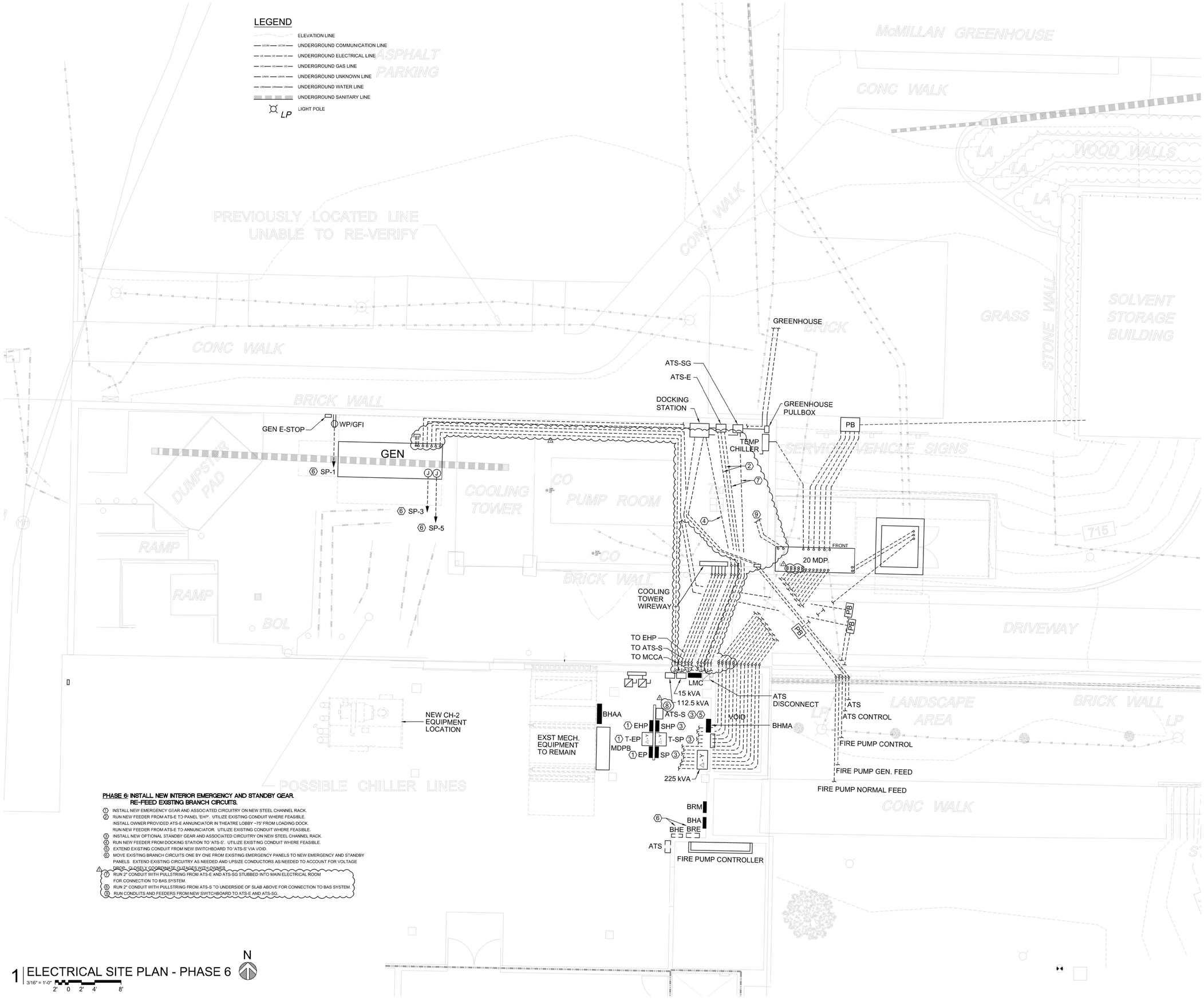
	Sheet No.: E105



PHASE 6: INSTALL NEW INTERIOR EMERGENCY AND STANDBY GEAR. RE-FEED EXISTING BRANCH CIRCUITS.

1. INSTALL NEW EMERGENCY GEAR AND ASSOCIATED CIRCUITRY ON NEW STEEL CHANNEL RACK.
2. RUN NEW FEEDER FROM ATS-E TO PANEL 'EHP'. UTILIZE EXISTING CONDUIT WHERE FEASIBLE. INSTALL OWNER PROVIDED ATS-E ANNUNCIATOR IN THEATRE LOBBY ~75' FROM LOADING DOCK. RUN NEW FEEDER FROM ATS-E TO ANNUNCIATOR. UTILIZE EXISTING CONDUIT WHERE FEASIBLE.
3. INSTALL NEW OPTIONAL STANDBY GEAR AND ASSOCIATED CIRCUITRY ON NEW STEEL CHANNEL RACK.
4. RUN NEW FEEDER FROM DOCKING STATION TO 'ATS-S'. UTILIZE EXISTING CONDUIT WHERE FEASIBLE.
5. EXTEND EXISTING CONDUIT FROM NEW SWITCHBOARD TO 'ATS-S' VIA VOID.
6. MOVE EXISTING BRANCH CIRCUITS ONE BY ONE FROM EXISTING EMERGENCY PANELS TO NEW EMERGENCY AND STANDBY PANELS. EXTEND EXISTING CIRCUITRY AS NEEDED AND UPSIZE CONDUCTORS AS NEEDED TO ACCOUNT FOR VOLTAGE DROP. CLOSELY COORDINATE OUTAGES WITH OWNER.
7. RUN 2" CONDUIT WITH PULLSTRING FROM ATS-E AND ATS-SG STUBBED INTO MAIN ELECTRICAL ROOM FOR CONNECTION TO BAS SYSTEM.
8. RUN 2" CONDUIT WITH PULLSTRING FROM ATS-S TO UNDERSIDE OF SLAB ABOVE FOR CONNECTION TO BAS SYSTEM.
9. RUN CONDUITS AND FEEDERS FROM NEW SWITCHBOARD TO ATS-E AND ATS-SG.

1 ELECTRICAL SITE PLAN - PHASE 6

3/16" = 1'-0"

2' 0 2' 4' 8'

N

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ELECTRICAL SITE PLAN - PHASE 6

Sheet Title:

Proj. No.: 221.013	Scale: AS NOTED
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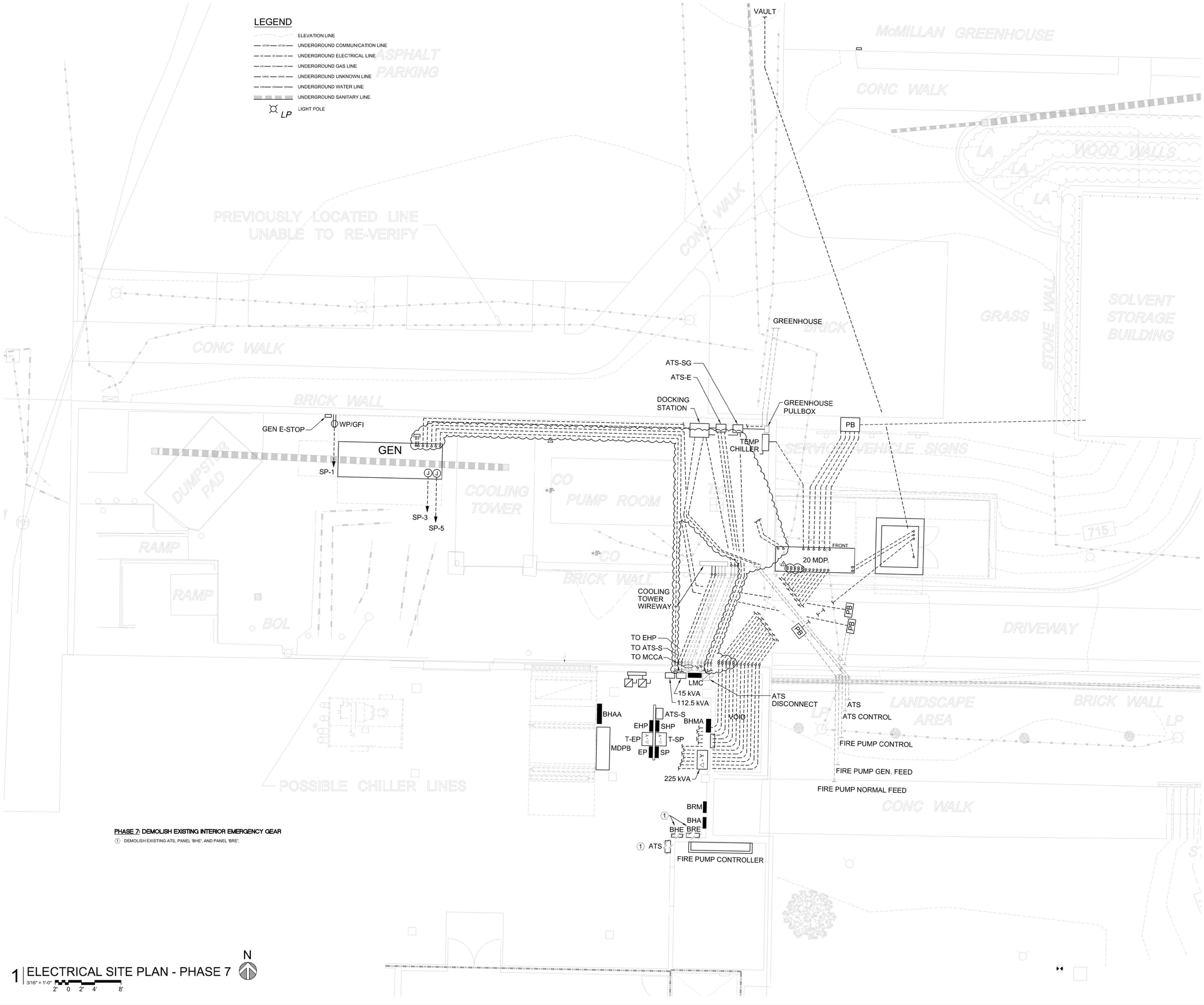
	Sheet No.: E106



PHASE 7: DEMOLISH EXISTING INTERIOR EMERGENCY GEAR

① DEMOLISH EXISTING ATS, PANEL 'BHE', AND PANEL 'BRE'.

1 ELECTRICAL SITE PLAN - PHASE 7
3/16" = 1'-0"
2' 0 2' 4' 8'

N

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ELECTRICAL SITE PLAN - PHASE 7

Sheet Title:

Proj. No.: 221.013	Scale: AS NOTED
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Sheet No.:
E107

LEGEND

- ELEVATION LINE
- UNDERGRCUND COMMUNICATION LINE
- UNDERGRCUND ELECTRICAL LINE
- UNDERGRCUND GAS LINE
- UNDERGRCUND UNKNOWN LINE
- UNDERGRCUND WATER LINE
- UNDERGRCUND SANITARY LINE
- LP LIGHT POLE

GEN.
DUMPSTER PAD
BOILER ROOM
COOLING TOWER
PUMP ROOM
NEW
EX.
FAN-1
FAN-2
CHILLER-2
BHAA
MDPB
MDPA
BHMA
LMC
15 kVA
112.5 kVA
ATS DISCONNECT
225 kVA
BRM
BHA
BHE
BRE
ATS
FIRE PUMP CONTROLLER
GENERATOR
McMILLAN GREENHOUSE
ASPHALT PARKING
CONC WALK
BRICK PAVER PARKING
GRASS
STONE WALL
BRICK WALL
RAMP
DRIVEWAY
LANDSCAPE AREA

ANY PHASE: RE-CONNECT EXISTING CHILLER CIRCUITRY AND EXISTING COOLING TOWER CIRCUITRY.

1. CHILLER-2 IS BEING REPLACED WITH NEW LIKE KIND UNDER ANOTHER CONTRACT. DISCONNECT EXISTING CIRCUITRY FOR DEMOLITION OF EXISTING CHILLER AND RE-CONNECT EXISTING CIRCUIT TO NEW CHILLER UNIT ONCE INSTALLED. EXISTING CONDUIT HAS SEPARATED - REPAIR AS NEEDED.
2. COOLING TOWER FAN CONTROLLERS FAN-1 AND FAN-2 ARE BEING REPLACED IN PLACE WITH NEW VFD'S UNDER ANOTHER CONTRACT. DISCONNECT EXISTING CIRCUITRY FOR DEMOLITION OF EXISTING CONTROLLERS AND RECONNECT EXISTING CIRCUITRY TO NEW VFD'S ONCE INSTALLED.
3. DEMOLISH EXISTING CIRCUITRY FROM COOLING TOWER FAN CONTROLLERS FAN-1 AND FAN-2 TO ASSOCIATED FANS. RUN NEW 3 #10, 1 #10 G, 3/4"C VFD CABLE FROM EACH VFD TO EACH NEW 15HP COOLING TOWER FAN AND PROVIDE FINAL CONNECTION PER MANUFACTURER'S RECOMMENDATIONS. ELECTRICAL CONTRACTOR TO ~~REFORM WORK DUE TO INTERIOR CREATION AND EXTENT OF CONDUIT WORK REQUIRED~~.
4. EXTEND CIRCUITRY FROM EXISTING 5kW COOLING TOWER BASIN HEATER TO NEW BASIN HEATER AND CONNECT PER MANUFACTURER'S RECOMMENDATIONS. RELOCATE DISCONNECTING MEANS AS REQUIRED. FIELD VERIFY EXACT LOCATIONS AND REQUIREMENTS.
5. DISCONNECT EXISTING CIRCUITRY FROM EXISTING HEAT TAPE TO AND RECONNECT TO NEW HEAT TAPE AND TEST PER MANUFACTURER'S RECOMMENDATIONS. FIELD VERIFY EXACT LOCATIONS AND REQUIREMENTS.

1 ELECTRICAL SITE PLAN - ANY PHASE
3/16" = 1'-0"
2' 0 2' 4' 8'
N

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ELECTRICAL SITE PLAN - ANY PHASE

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Sheet No.:
E108

ALL DIMENSIONS AND CONDITIONS MUST BE CHECKED AND VERIFIED ON SITE BY THE CONTRACTOR AND SUB-CONTRACTORS. THE PROJECT MANAGER SHALL BE NOTIFIED IN WRITING OF ANY DISCREPANCIES PRIOR TO PROCEEDING WITH THE WORK.

LIGHTING FIXTURE SCHEDULE

FIXTURE TYPE	DESCRIPTION	MANUFACTURER	LAMPS QTY.	LAMPS TYPE	LAMPS WATTS
XA	WALL-MOUNTED EXIT SIGN WITH LIGHTING HEADS, FLAME RETARDANT, HIGH-IMPACT RESISTANT THERMOPLASTIC HOUSING, RED LETTERS, AND EMERGENCY BATTERY. PROVIDE CHEVRON ARROWS AND NUMBER OF FACES AS INDICATED ON PLANS.	LITHONIA #LQHM-LED-R-SD; EQUALS BY COOPER OR HUBBELL.	2	LED	3 + 5/FACE
XB	WALL-MOUNTED EXIT SIGN WITH LIGHTING HEADS, FLAME RETARDANT, HIGH-IMPACT RESISTANT THERMOPLASTIC HOUSING, RED LETTERS, AND EMERGENCY BATTERY SUITABLE FOR REMOTE HEAD. PROVIDE CHEVRON ARROWS AND NUMBER OF FACES AS INDICATED ON PLANS.	LITHONIA #LQHM-LED-R-HO-SD; EQUALS BY COOPER OR HUBBELL.	2	LED	3 + 5/FACE
XC	WALL-MOUNTED EMERGENCY REMOTE TWIN HEAD.	LITHONIA #ELA-T-QWP-L0309-SD; EQUALS BY COOPER OR HUBBELL.	2	LED	3
XD	WALL-MOUNTED EMERGENCY FIXTURE, FLAME RETARDANT, HIGH-IMPACT RESISTANT THERMOPLASTIC HOUSING, AND EMERGENCY BATTERY.	LITHONIA #ELM4L-UVOLT-LTP-SD; EQUALS BY COOPER OR HUBBELL.	2	SP640L	13
XE	WALL-MOUNTED EMERGENCY FIXTURE, FLAME RETARDANT, HIGH-IMPACT RESISTANT THERMOPLASTIC HOUSING, WET LOCATION LISTED, AND EMERGENCY BATTERY.	LITHONIA #ELM4L-UVOLT-LTP-SD & LITHONIA #WPVS-LRG-W; EQUALS BY COOPER OR HUBBELL.	2	SP640L	13

ELECTRICAL SYMBOL SCHEDULE

NOTE: THIS SCHEDULE IS FOR REFERENCE ONLY. SOME SYMBOLS SHOWN HERE DO NOT APPEAR ELSEWHERE IN THE DRAWINGS. ALSO, ADDITIONAL SYMBOLS MAY BE SHOWN ADJACENT TO RELATED PLAN.

SYMBOL	DESCRIPTION
	CONDUIT AND CIRCUITS
	CONDUIT RUN CONCEALED IN WALL OR ABOVE CEILING, RUN CONDUIT EXPOSED IN UNFINISHED AREAS. RUN CONDUIT CONCEALED WITHIN WALLS, INCLUDING INCLUDING MASONRY WALLS, TO MAXIMUM EXTENT FEASIBLE. RUN CONDUIT PARALLEL AND PERPENDICULAR TO WALL OR STRUCTURE. IT IS NOT PERMITTED TO RUN CONDUIT IN OVERHEAD SLABS ON DECK. RUN CONDUIT CONCEALED UNDERGROUND AND UNDER SLAB OR GRADE FOR EXTERIOR CONDUITS.
	IF SHOWN, CROSS LINES INDICATE NUMBER OF CURRENT CARRYING CONDUCTORS. EQUIPMENT GROUNDING CONDUCTORS ARE GENERALLY NOT INCLUDED IN THE QUANTITY INDICATED.
	CONDUIT RUN BELOW GRADE OR BELOW SLAB ON GRADE
	CONDUIT STUB-OUT BELOW GRADE AND CAP. MARK EXACT LOCATION ON RECORD DRAWINGS.
	HOME RUN TO PANEL - WITH PANEL AND CIRCUIT DESIGNATION.
	CONDUIT TURNING UP.
	CONDUIT TURNING DOWN.
	BOXES
J OR J	JUNCTION OR PULL BOX. SIZE PER N.E.C.
	LIGHTING
	EXIT LIGHT - CEILING MOUNTED, SINGLE FACE WITH DIRECTIONAL ARROWS AS SHOWN ON DRAWINGS. SHADED QUADRANT INDICATES FACE.
	EXIT LIGHT - CEILING MOUNTED, DOUBLE FACE WITH DIRECTIONAL ARROWS AS SHOWN ON THE DRAWINGS.
	EXIT LIGHT - WALL MOUNTED WITH THE TOP OF THE SIGN AT THE SAME ELEVATION AS THE BOTTOM OF THE ARCHITECTURAL SOFFIT IN THE SURROUNDING AREA. SURFACE OR RECESSED AS SCHEDULED WITH DIRECTIONAL ARROWS AS SHOWN ON DRAWINGS.
	EXIT LIGHT WITH EMERGENCY LIGHTING HEADS - WALL MOUNTED WITH THE TOP OF THE SIGN AT THE SAME ELEVATION AS THE BOTTOM OF THE ARCHITECTURAL SOFFIT IN THE SURROUNDING AREA. SURFACE OR RECESSED AS SCHEDULED WITH DIRECTIONAL ARROWS AS SHOWN ON DRAWINGS.
	EXIT LIGHT - END WALL MOUNTED WITH THE TOP OF THE SIGN AT THE SAME ELEVATION AS THE BOTTOM OF THE ARCHITECTURAL SOFFIT IN THE SURROUNDING AREA. SINGLE FACE WITH DIRECTIONAL ARROWS AS SHOWN ON DRAWINGS.
	EXIT LIGHT - END WALL MOUNTED WITH THE TOP OF THE SIGN AT THE SAME ELEVATION AS THE BOTTOM OF THE ARCHITECTURAL SOFFIT IN THE SURROUNDING AREA. DOUBLE FACE WITH DIRECTIONAL ARROWS AS SHOWN ON DRAWINGS.
	OUTLETS
	CONVENIENCE RECEPTACLE - MOUNT 18" AFF. TO CENTER, NEMA 5-20R, DUPLEX
WP/GF	INDICATES RECEPTACLE WITH GFCI PROTECTION AND GASKETED WEATHERPROOF COVER (WP) SUITABLE FOR IN-USE RECEPTACLE. THE (WP) COVER SHALL BE METALLIC.
	EQUIPMENT
	BRANCH CIRCUIT OR DISTRIBUTION PANELBOARD, AS SCHEDULED.
△ – Y	DRY TYPE TRANSFORMER - THREE PHASE, 480-120/208 VOLTS.
	NONFUSIBLE DISCONNECT SWITCH. SIZE IN AMPERES AS SHOWN. OTHERWISE HORSEPOWER RATED TO MATCH OR EXCEED MOTOR.
	FUSIBLE DISCONNECT SWITCH, OTHERWISE SAME AS "".
	ENCLOSED CIRCUIT BREAKER.
M	METER.

ABBREVIATIONS

A	AMPERE
AFF	ABOVE FINISHED FLOOR - MEASURED FROM FLOOR TO CENTER OF DEVICE, EXCEPT AS OTHERWISE SPECIFICALLY NOTED.
ATS	AUTOMATIC TRANSFER SWITCH
BAS	BUILDING AUTOMATION SYSTEM
C	CONDUIT
C.B.	CIRCUIT BREAKER
EC	EMPTY CONDUIT WITH PULL STRING AND INSULATING BUSHINGS.
F	FUSE
FPN	FUSE PER NAMEPLATE REQUIREMENTS
G	GROUND
GF	INDICATES RECEPTACLE CIRCUIT OR MULTIOUTLET ASSEMBLY TO HAVE GROUND FAULT PROTECTION. GENERALLY PROTECTION IS PROVIDED BY GFCI TYPE BREAKER (REQUIRES SEPARATE NEUTRAL PER 120V CIRCUIT). PROVIDE GF RECEPTACLE IF A GFCI BREAKER IS NOT SCHEDULED FOR THE CIRCUIT.
MCB	MAIN CIRCUIT BREAKER
MCM	Kcmil (THOUSAND CIRCULAR MILS)
MLO	MAIN LUGS ONLY
N	NEUTRAL
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NO	NORMALLY OPEN
P	POLE
PH	PHASE
S.C. RATING	BUS BRACE RATING AND SHORT CIRCUIT INTERRUPTING RATING OF BREAKERS WITHIN EQUIPMENT.
SO	SPACE ONLY (WITH PROVISIONS FOR FUTURE OVERCURRENT PROTECTIVE DEVICE)
UON	UNLESS OTHERWISE NOTED
VFD OR VSD	VARIABLE SPEED DRIVE TYPE MOTOR CONTROLLER (PROVIDED UNDER DIVISION 23)
WP	INDICATES DEVICE TO HAVE WEATHERPROOF COVER

GENERAL NOTES: (APPLY TO THIS SHEET ONLY)

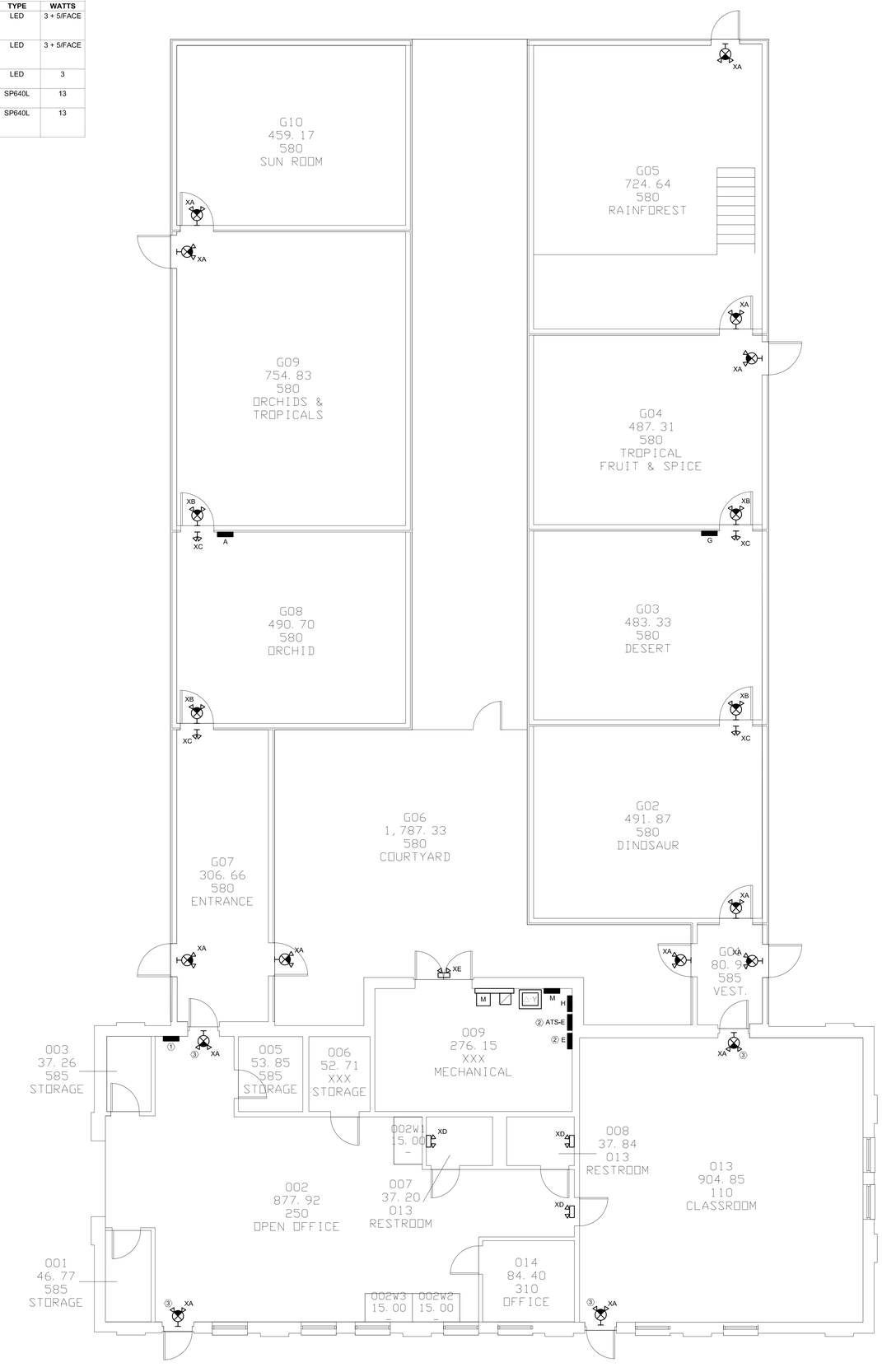
1. LIGHTING FIXTURES SHOWN SHALL BE WIRED TO EXISTING LIGHTING CIRCUIT IN AREA WITH 2#12, #12G, 3/4"C. CIRCUIT SHALL NOT EXCEED 16 AMPS.

GENERAL PROJECT NOTES: (APPLY TO PROJECT)

1. PHASING INDICATED ON SHEETS ARE A STARTING POINT. THE INTENT IS TO COMPLETE THE PROJECT IN SHORTEST SCHEDULE FEASIBLE WHILE MINIMIZING DOWNTIME. WORK MAY BE MOVED TO EARLIER PHASES WHERE COORDINATED WITH AND APPROVED BY OWNER. ALL OUTAGES SHALL BE COORDINATED WITH OWNER. CRITICAL MILESTONES ARE DESCRIBED BELOW TO CLARIFY OVERALL INTENT OF PROJECT.
2. PROJECT CRITICAL MILESTONES:
   A. NEW GENERATOR INSTALLED, OPERATIONAL, AND IS FEEDING EXISTING ATS AND FIRE PUMP IN McENIRY.
   B. NEW SWITCHBOARD INSTALLED, OPERATIONAL, AND IS BACKFEEDING ALL EXISTING EQUIPMENT INDICATED ON NEW RISER EXCEPT FOR NEW TRANSFER SWITCHES.
   C. GREENHOUSE EMERGENCY LIGHTING UPGRADES COMPLETED.
   D. NEW EMERGENCY AND STANDBY EQUIPMENT INSTALLED, OPERATIONAL, AND SERVING EXISTING CIRCUITS.
3. THE STATE ELECTRICAL INSPECTOR WILL BE AVAILABLE TO INSPECT WORK ON TUESDAYS ONLY. WORK SHALL BE SCHEDULED SUCH THAT WORK NEEDING INSPECTION WILL BE READY ON TUESDAYS TO AVOID DELAYS. BELOW ARE THE SPECIFIC ITEMS WE ARE AWARE OF THAT THE STATE ELECTRICAL INSPECTOR WILL WANT TO INSPECT. COORDINATE WHICH OTHER WORK NEEDS INSPECTION WITH THE STATE ELECTRICAL INSPECTOR.
   A. ALL UNDERGROUND CONDUITS AND DUCTBANKS PRIOR TO COVER-UP.
   B. PADS BEFORE EQUIPMENT IS INSTALLED ON THEM.
   C. EQUIPMENT ONCE INSTALLED. INSPECTOR MAY BE WILLING TO INSPECT EQUIPMENT IN ADVANCE.
4. INSPECTIONS SHALL BE REQUESTED OF THE STATE ELECTRICAL INSPECTOR WITH (2) BUSINESS DAYS ADVANCE NOTICE AND OF THE ENGINEER WITH (1) BUSINESS DAY OF ADVANCE NOTICE.

KEY NOTES:

① OWNER-PROVIDED CONTRACTOR-INSTALLED GENERATOR REMOTE ANNUNCIATOR. COORDINATE EXACT LOCATION WITH OWNER.
② SEE GREENHOUSE POWER RISER DIAGRAM ON SHEET E601 FOR SCOPE OF WORK.
③ REPLACE EXISTING EXIT SIGN IN PLACE WITH NEW.



1 ELECTRICAL PLAN - GREENHOUSE
3/16" = 1'-0"
2' 0 2' 4' 8'
N

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ELECTRICAL PLAN - GREENHOUSE

Sheet Title:

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Sheet No.: E109

BRANCH CIRCUIT AND FEEDER SCHEDULE

3-PHASE + NEUTRAL + GROUND

SYMBOL	MINIMUM SIZE CONDUCTORS & CONDUIT
20 Y	4 #12, 1 #12 G, 1/2"C
30 Y	4 #10, 1 #10 G, 3/4"C
50 Y	4 #8, 1 #10 G, 1"C
60 Y	4 #6, 1 #10 G, 1"C
80 Y	4 #4, 1 #8 G, 1 1/4"C
100 Y	4 #3, 1 #8 G, 1 1/4"C
125 Y	4 #1, 1 #6 G, 1 1/2"C
150 Y	4 #1/0, 1 #6 G, 2"C
175 Y	4 #2/0, 1 #4 G, 2"C
200 Y	4 #3/0, 1 #6 G, 2"C
225 Y	4 #4/0, 1 #4 G, 2 1/2"C
250 Y	4-250 MCM, 1 #2 G, 2 1/2"C
300 Y	4-350 MCM, 1 #2 G, 3"C
400 Y	4-500 MCM, 1 #2 G, 3 1/2"C OR 4-500 MCM, 1 #3 G, 3 1/2"C
500 Y	2(4-250 MCM, 1 #2 G, 2 1/2"C)
600 Y	2(4-350 MCM, 1 #1 G, 3"C)
800 Y	2(4-500 MCM, 1 #1/0 G, 3 1/2"C)
1000 Y	3(4-400 MCM, 1 #3/0 G, 3"C)
1200 Y	3(3-600 MCM, 1-350 N, 1 #3/0 G, 3 1/2"C) OR 4(3-350, 1 #4/0 N, 1 #3/0 G, 3"C)
1600 Y	4(3-600 MCM, 1-350 N, 1 #4/0 G, 3 1/2"C) OR 5(3-500 MCM, 1-250 N, 1 #4/0 G, 3"C)
2000 Y	5(3-600 MCM, 1 #350 N, 1-250 G, 3 1/2"C) OR 6(3-500 MCM, 1-250 N, 1-250 G, 3 1/2"C)

NOTE:
ALL CONDUCTORS ARE COPPER, THWN/THHN.

SERVICE GROUND CONDUCTOR SCHEDULE

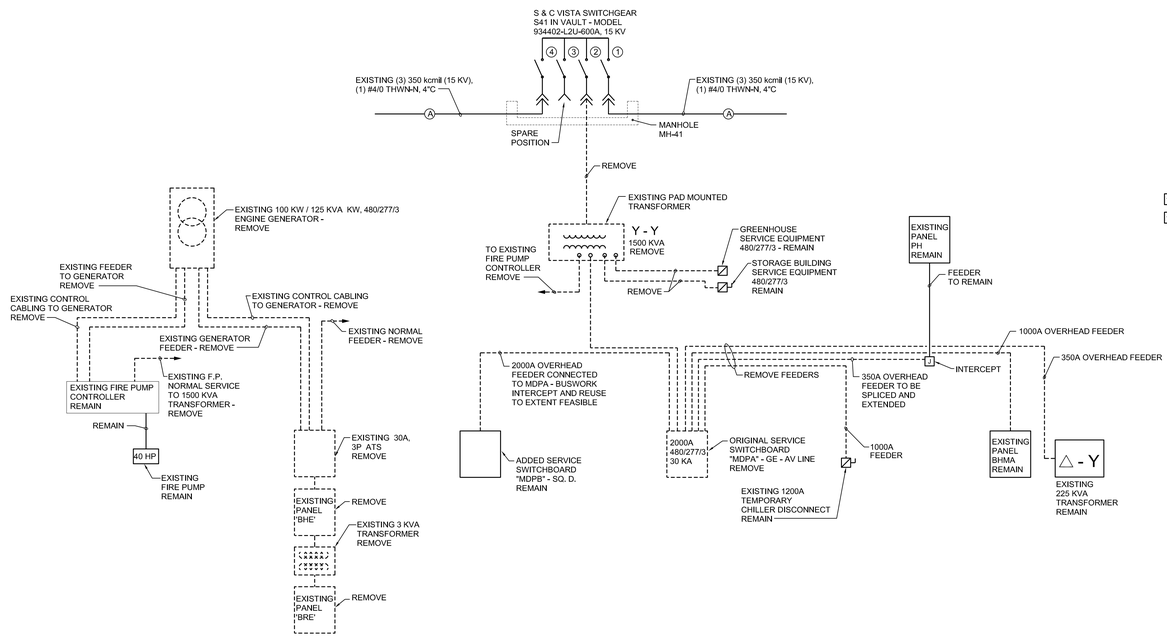
SYMBOL	CONDUCTORS & CONDUIT
60 SG	1 #8 G, 1/2"C
100 SG	1 #8 G, 1/2"C
150 SG	1 #6 G, 1/2"C
200 SG	1 #4 G, 1/2"C
300 SG	1 #2 G, 3/4"C
400 SG	1 #1/0 G, 3/4"C
600 SG	1 #2/0 G, 3/4"C
800 SG	1 #2/0 G, 3/4"C
1000 SG	1 #3/0 G, 3/4"C

BRANCH CIRCUIT AND FEEDER SCHEDULE

3-PHASE CIRCUITS (NO NEUTRAL) + GROUNDING

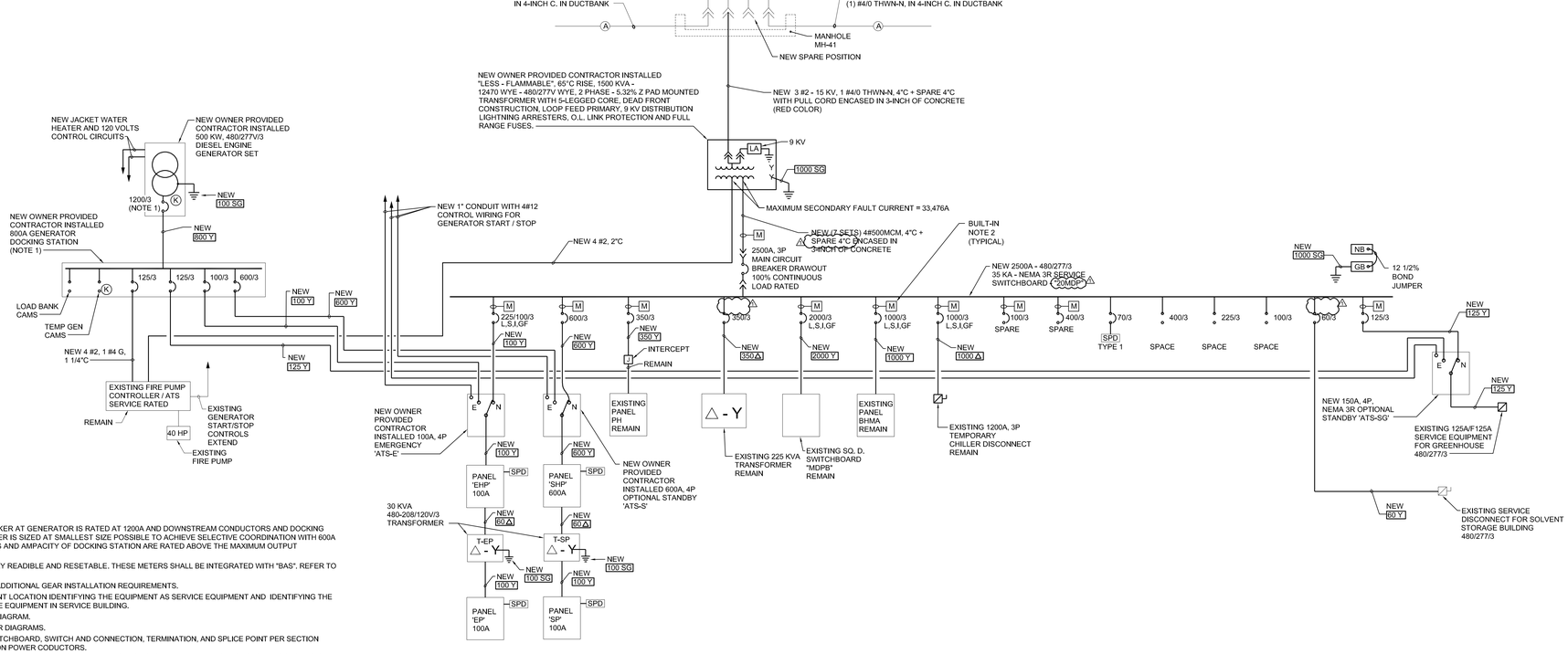
SYMBOL	MINIMUM SIZE CONDUCTORS & CONDUIT
20 △	3 #12,1 #12 G, 1/2"C
30 △	3 #10,1 #10 G, 1/2"C
50 △	3 #8,1 #10 G, 3/4"C
60 △	3 #6,1 #8 G, 3/4"C
80 △	3 #4,1 #8 G, 1"C
100 △	3 #3,1 #8 G, 1 1/4"C
125 △	3 #1,1 #6 G, 1 1/2"C
150 △	3 #1/0,1 #6 G, 2"C
175 △	3 #2/0,1 #6 G, 2"C
200 △	3 #3/0,1 #6 G, 2"C
225 △	3 #4/0,1 #4 G, 2"C
250 △	3-250 MCM,1 #4 G, 2"C
300 △	3-350 MCM,1 #4 G, 2 1/2"C
400 △	3-500 MCM, 1 #3 G, 3"C OR 2(3-3/0, 1 # 3 G, 2"C)
500 △	2(3-250 MCM, 1 #2 G, 2 1/2"C)
600 △	2(3-350 MCM, 1 #1 G, 2 1/2"C)
800 △	2(3-500 MCM, 1 1/0 G, 3"C)
1000 △	3(3-500 MCM, 1 #2/0 G, 3"C) OR 3(3-400 MCM, 1 #2/0 G, 3"C)
1200 △	3(3-600 MCM, 1 #3/0 G, 3"C) OR 4(3-350 MCM, 1 #3/0 G, 2 1/2"C)
1600 △	4(3-600 MCM, 1 #4/0 G, 3 1/2"C) OR 5(3-500 MCM, 1 #4/0 G, 3"C)
2000 △	5(3-600 MCM, 1 #250 G, 3 1/2"C) OR 6(3-500 MCM, 1 #250 G, 3"C)

NOTE:
ALL CONDUCTORS ARE COPPER, THWN/THHN.



ONE-LINE POWER SERVICE DIAGRAM - EXISTING / DEMOLITION

NOT TO SCALE



NOTES:
1. PROVIDE NAMEPLATE STATING "CIRCUIT BREAKER AT GENERATOR IS RATED AT 1200A AND DOWNSTREAM CONDUCTORS AND DOCKING STATION ARE RATED AT 800A. CIRCUIT BREAKER IS SIZED AT SMALLEST SIZE POSSIBLE TO ACHIEVE SELECTIVE COORDINATION WITH 600A BREAKER IN DOCKING STATION. CONDUCTORS AND AMPACITY OF DOCKING STATION ARE RATED ABOVE THE MAXIMUM OUTPUT AMPERAGE OF THE GENERATOR.
2. ELECTRONIC POWER METER SHALL BE LOCALLY READIBLE AND RESETABLE. THESE METERS SHALL BE INTEGRATED WITH "BAS". REFER TO SECTION 262413 FOR SPECIFICATION.
3. SEE DETAILS ON SHEETS E700 AND E701 FOR ADDITIONAL GEAR INSTALLATION REQUIREMENTS.
4. PROVIDE PLAQUE AT EACH SERVICE EQUIPMENT LOCATION IDENTIFYING THE EQUIPMENT AS SERVICE EQUIPMENT AND IDENTIFYING THE LOCATION AND QUANTITY OF REST OF SERVICE EQUIPMENT IN SERVICE BUILDING.
5. POST HERE UNDER GLASS, ONE-LINE POWER DIAGRAM.
6. POST HERE UNDER GLASS, BOTH POWER RISER DIAGRAMS.
7. PROVIDE PLAQUE ON EACH PANELBOARD, SWITCHBOARD, SWITCH AND CONNECTION, TERMINATION, AND SPLICE POINT PER SECTION 260553, IDENTIFYING THE COLOR CODE USED ON POWER CODUCTORS.
8. PROVIDE SELECTIVE COORDINATION AS REQUIRED BY NEC 700 FOR THE EMERGENCY SYSTEM. THE EMERGENCY SYSTEM CONSISTS OF THE MAIN CIRCUIT BREAKER, THE BREAKER SERVING ATS-E IN SWITCHBOARD 20MSB, THE GENERATOR OUTPUT CIRCUIT BREAKER, THE BREAKERS SERVING ATS-E IN THE GENERATOR DOCKING STATION, AND PANELS EHP AND EP. SELECTIVE COORDINATE OF THIS EQUIPMENT SHALL BE PROVIDED WITH PROVIDED BREAKER ADJUSTMENT SETTING OR BY TESTED COMBINATIONS OF CIRCUIT BREAKERS THAT SELECTIVELY COORDINATE. REFER TO 26 05 74 FOR ADDITIONAL REQUIREMENTS.
9. ALL BREAKERS IN "20MDP" SHALL BE LOCKABLE IN THE OFF POSITION.

ONE-LINE POWER SERVICE DIAGRAM - PROPOSED ADDITIONS AND MODIFICATIONS

NOT TO SCALE

LEGEND

- CIRCUIT BREAKER IN SWITCHBOARD
- INDIVIDUALLY ENCLOSED CIRCUIT BREAKER
- FUSED SWITCH
- NON-FUSIBLE SWITCH
- J — JUNCTION BOX
- LA — DISTRIBUTION CLASS LIGHTING ARRESTER
- ATS — AUTOMATIC TRANSFER SWITCH
- GROUNDING ELECTRODE
- 1000 △ — TYPICAL 3-PHASE / 3-WIRE FEEDER
- 1000 Y — TYPICAL 3-PHASE / 4-WIRE FEEDER
- M — POWER METER
- K — KIRK KEY INTERLOCK

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NORTH CAROLINA PROFESSIONAL SEAL 038491 ENGINEER DANIEL A. BOLAND

#221.013 10/13/2021

Project Title
UNCC HVAC, Plumbing and Electrical Repairs - McEniry Electrical & Plumbing Package
SCO ID # 20-22572-01A
PM: JOHN BOAL

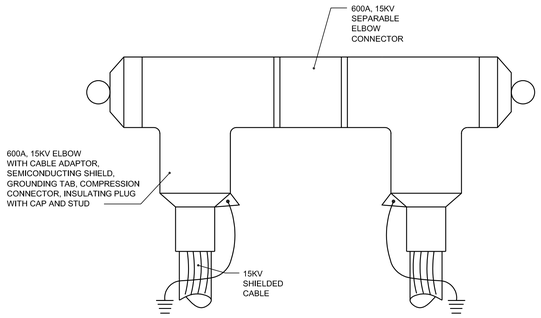
Date:	Mark:	Description:	By:
08/04/2021	-	100% CD REVIEW SET	DAB
09/28/2021	-	BID SET	DAB
10/13/2021	1	ADDENDUM #2	DAB

ONE-LINE POWER SERVICE DIAGRAMS - EXISTING AND NEW

Sheet Title:

Proj. No.: 221.013	Scale: AS NOTED
Date: 08/04/2021	
Drawn By: CADD	Checked: DAB

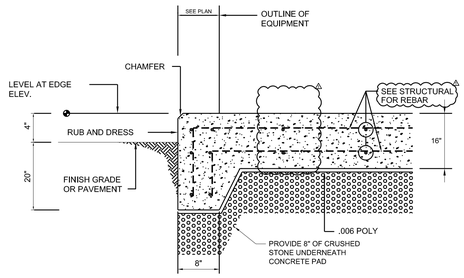
Sheet No.:
E600



1 600A, 15KV, NON-LOAD BREAK, SHIELDED, SUBMERSIBLE, SEPARABLE CABLE SPLICE SYSTEM DETAIL

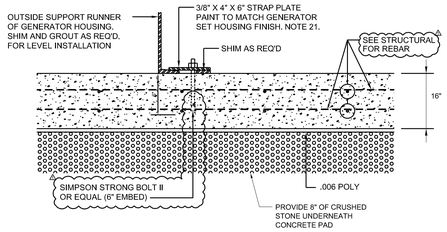
SCALE: NONE

NOTES:
1. ASSEMBLY SHALL MEET ANSI/IEEE STANDARD 386.
2. INSTALL HOLD DOWN BAILS SUPPLIED WITH ELBOWS.
3. ACCOMPLISH WORK IN ACCORDANCE WITH SPLICE SYSTEM MANUFACTURER'S INSTRUCTIONS.



2 GENERATOR SET CONCRETE EQUIPMENT PAD

SCALE: NONE



3 GENERATOR SET ANCHOR DETAIL

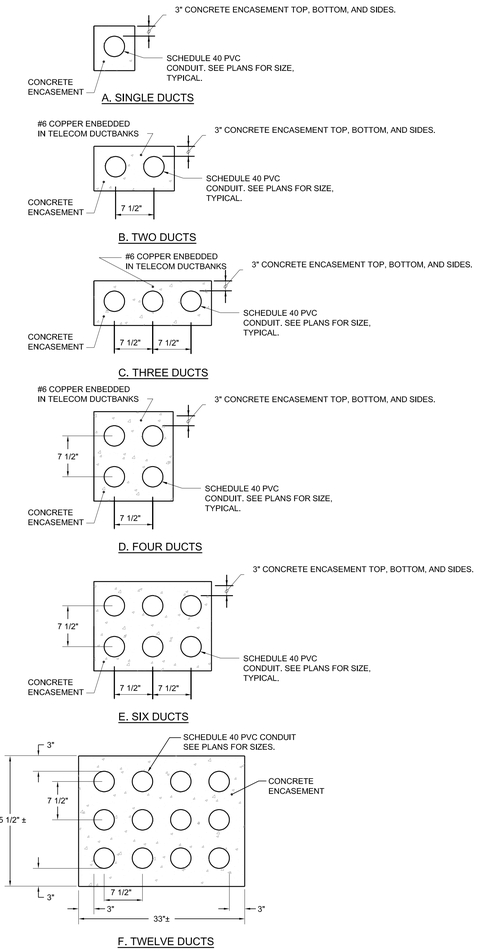
SCALE: NONE

CONSTRUCTION NOTES FOR GENERATOR SET CONCRETE PAD SITEWORK

1. CLEAR AND GRUB VEGETATION AND OTHER ORGANIC MATTER IN AREA FOR SITE WORK. STRIP TOPSOIL FOR ENTIRE DEPTH AND STOCK PILE FOR RESPREADING AT COMPLETION OF THIS PROJECT.
2. THE CONTRACTOR SHALL EMPLOY A TESTING LABORATORY TO CONFIRM AND TO CERTIFY THE SOIL AND CONCRETE REQUIREMENTS AS INDICATED ON THE DRAWINGS AND IN THE PROJECT SPECIFICATIONS.
3. FILLS AND BACKFILLS SHALL BE COMPACTED AS FOLLOWS:
   A. TOP 12 INCHES = 100 PERCENT PER ASTM D698
   B. ALL OTHERS = 95 PERCENT PER ASTM D698
4. FILL MATERIALS SHALL BE SELECT; FREE OF ANY ORGANIC MATTER, DEBRIS, HARD LUMPS, AND ROCK PARTICLES LARGER THAN 2 INCHES. MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE CONTENT SHALL BE 100 POUNDS PER CUBIC FOOT AS DETERMINED BY ASTM D698. PLASTICITY INDEX (P.I.) SHALL NOT EXCEED 15.
5. SOIL BEARING PRESSURE USED IN FOUNDATION DESIGN IS 3000 PSF. HAVE SOILS ENGINEER CONFIRM AND CERTIFY BEARING CONDITIONS.
6. ELEVATIONS SHALL BE THE EDGE OF EXTERIOR CONCRETE PAD.
7. ALL DISTURBED LAWN AREAS SHALL BE SEEDED AND GRASSED.
8. ALL CONCRETE WORK SHALL COMPLY WITH ACI 318.
9. CAST-IN-PLACE CONCRETE SHALL BE 4500 PSI @ 28 DAYS AIR ENTRAINED.
10. REINFORCING STEEL SHALL BE AS FOLLOWS:
    A. REINFORCING BARS: DEFORMED BARS HAVING A MINIMUM YIELD STRENGTH OF 60 KSI (ASTM A615, GRADE 60).
11. CONCRETE COVER FOR REINFORCING SHALL BE AS FOLLOWS:
    A. UNFORMED CONCRETE IN CONTACT WITH THE EARTH = 3 INCHES.
12. CURE CONCRETE FOR A MINIMUM OF SEVEN (7) DAYS WITH LIQUID CURING COMPOUND CONFORMING TO ASTM C-309. ALLOW FOURTEEN (14) DAYS MINIMUM CURING TIME PRIOR TO SETTING GENERATORS.
13. GROUT SHALL BE PRE-MIXED, NON-METALLIC GROUT HAVING A MINIMUM COMPRESSIVE STRENGTH OF 7000 PSI AT 28 DAYS.
14. THE CONTRACTOR SHALL PERFORM A THOROUGH FIELD INSPECTION OF THE EXISTING CONDITIONS PRIOR TO BIDDING THE WORK. THE CONTRACTOR SHALL NOTE AND INCLUDE IN HIS BID ANY EXTRA WORK ITEMS NEEDED TO COMPLETE THIS PROJECT.
15. FIELD VERIFY ALL EXISTING CONDITIONS, ELEVATIONS, AND DIMENSIONS. REPORT FINDINGS AND ANY DISCREPANCIES TO THE ENGINEER FOR EVALUATION PRIOR TO BEGINNING WORK.
16. ALL NEW MATERIALS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS OR INSTRUCTIONS, AND STANDARD INDUSTRY PRACTICES.
17. CONTRACTOR SHALL ERECT AND MAINTAIN ALL SIGNS, BARRICADES, AND OTHER WARNING DEVICES REQUIRED TO SAFELY PREFORM THE WORK.
18. VERIFY CONCRETE PAD SIZE WITH THE GENERATOR SET SUPPLIER PRIOR TO COMMENCING WORK. DIMENSIONS SHOWN HERE ARE ONLY APPROXIMATE.
19. VERIFY EXACT LOCATION OF PAD WITH ARCHITECT PRIOR TO STARTING.
20. VERIFY SPACING AND LOCATION OF ANCHOR BOLTS WITH THE GENERATOR SUPPLIER AND APPROVED SHOP DRAWINGS.
21. STEEL PLATES AND SHIMS SHALL BE A-36 - HOT DIP GALVANIZED.
22. PROVIDE ALL OF THE NECESSARY EARTH MOVING TO PREPARE SITE FOR GENERATOR PAD.

5 GENERATOR MOUNTING DETAIL

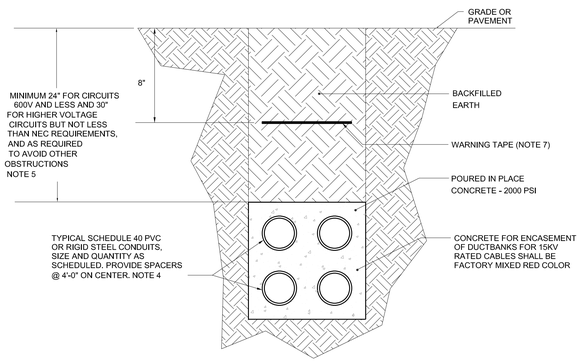
SCALE: NONE



4 TYPICAL DUCTBANK DETAILS

SCALE: NONE

NOTES:
1. UTILITY LOCATION: BEFORE DIGGING, THE CONTRACTOR SHALL VERIFY LOCATIONS OF UTILITIES.
2. UTILITY CROSSINGS: IN ALL AREAS WHERE NEW DUCTBANK CROSSES EXISTING UTILITIES OF ALL TYPES, CONTRACTOR WILL HAND EXCAVATE.
3. ASPHALT AND CONCRETE CUTS: SAW CUT ALONG ROUTE OF PROPOSED DUCTBANK. UNSUITABLE MATERIALS SHALL BE DISPOSED OF LEGALLY AT NO EXPENSE TO THE OWNER.
4. MARKING TAPE: ALL UNDERGROUND RACEWAYS SHALL BE IDENTIFIED BY UNDERGROUND LINE MARKING TAPE LOCATED DIRECTLY ABOVE THE RACEWAY AT 6 TO 8 INCHES BELOW FINISH GRADE. TAPE SHALL BE PERMANENT, BRIGHT-COLORED, CONTINUOUS PRINTED, PLASTIC TAPE COMPOUNDED FOR DIRECT BURIAL NOT LESS THAN 6 INCHES WIDE AND 4 MILS, THICK. PRINTED LEGEND SHALL BE INDICATIVE OF THE GENERAL TYPE UNDERGROUND LINE BELOW.
5. SEE PLANS FOR THE SIZE AND QUANTITY OF CONDUITS IN ALL DUCTBANKS.
6. MINIMUM SEPARATION BETWEEN DUCTBANKS IS 48".
7. DUCTBANKS MAY BE COMBINED UP TO A MAXIMUM OF SIX POWER CONDUITS RATED OVER 30 AMPERES, COMMUNICATION CONDUITS MAY BE COMBINED UP TO A MAXIMUM OF SIX CONDUITS IN A DUCTBANK. DO NOT COMBINE POWER AND COMMUNICATION CONDUITS IN A SINGLE DUCTBANK, MAINTAIN SEPARATION.



5 TYPICAL SECTION THROUGH DUCTBANK RUN

NOT TO SCALE

NOTES:
1. ALL FEEDERS AND SERVICES RUN OUTSIDE REQUIRE CONCRETE ENCASEMENT.
2. CONDUIT STUB-UPS SHALL BE RIGID GALVANIZED STEEL CONDUIT.
3. PROVIDE 3" OR MORE, IF SO NOTED, SEPARATION BETWEEN ADJACENT POWER CONDUITS.
4. USE RIGID STEEL CONDUIT FOR CROSSING UNDER FOUNDATION OR GRADE BEAMS.
5. DEPTH SHALL BE INCREASED TO CROSS UNDER NEW AND EXISTING UTILITY LINES LIKE STEAM, WATER AND SEWAGE, WHEN THESE LINES ARE NOT DEEP ENOUGH TO ALLOW FOR THE STATED MINIMUM DEPTH.
6. WHEN CROSSING UNDER OR OVER STEAM LINE OR STEAM TUNNEL, PROVIDE 4-INCH FIBERBOARD INSULATION OVERLAPPING THE STEAM LINE BY 24" IN EVERY DIRECTION.
7. UNDERGROUND LINE MARKING TAPE SHALL BE PERMANENT, BRIGHT-COLORED, CONTINUOUS PRINTED, PLASTIC TAPE COMPOUNDED FOR DIRECT BURIAL, NOT LESS THAN 6 INCHES WIDE AND 4 MILS THICK. PRINTED LEGEND SHALL BE INDICATIVE OF GENERAL TYPE OF UNDERGROUND LINE BELOW.

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ELECTRICAL DETAILS

Sheet Title:

Proj. No.: 221.013	Scale: AS NOTED
Date: 08/04/2021	
Drawn By: CADD	Checked: DAB
	Sheet No.: E701

GENERAL

1. THESE GENERAL NOTES ARE NOT INTENDED TO REPLACE SPECIFICATIONS (IF PROVIDED). SEE SPECIFICATIONS FOR REQUIREMENTS IN ADDITION TO THE GENERAL NOTES.
2. DO NOT SCALE DIMENSIONS FROM DRAWINGS. THE CONTRACTOR SHALL REQUEST NECESSARY DIMENSIONS NOT SHOWN ON THE DRAWINGS.
3. WHERE A DETAIL IS SHOWN FOR ONE CONDITION, IT SHALL APPLY FOR ALL LIKE OR SIMILAR CONDITIONS EVEN THOUGH NOT SPECIFICALLY REFERENCED ON THE DRAWINGS.
4. WHERE A CONFLICT BETWEEN DRAWINGS AND SPECIFICATIONS OCCURS THE MORE STRINGENT REQUIREMENT SHALL APPLY.
5. IF ANY BIDDER IS IN DOUBT AS TO THE INTENT OF THE DRAWINGS OR SPECIFICATIONS, THEY SHALL REQUEST AN INTERPRETATION IN WRITING PRIOR TO THE SCHEDULED BID DATE.
6. THE CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND GRADE CONDITIONS (BOTH NEW AND EXISTING), REPORTING ANY DISCREPANCIES TO THE ENGINEER OF RECORD PRIOR TO FABRICATION OR PROCEEDING WITH STRUCTURAL WORK.
7. THE CONTRACTOR SHALL COMPARE THE STRUCTURAL DRAWINGS WITH THE ARCHITECTURAL DRAWINGS, AND REPORT ANY DISCREPANCIES TO THE ENGINEER OF RECORD PRIOR TO FABRICATION OR PROCEEDING WITH STRUCTURAL WORK.
8. SEE ARCHITECTURAL DRAWINGS FOR FLOOR ELEVATIONS, FLOOR SLOPES, AND THE LOCATION OF DEPRESSED FLOOR AREAS.

CONTRACTOR RESPONSIBILITY

1. THE STRUCTURAL DRAWINGS AND SPECIFICATIONS (IF PROVIDED) REPRESENT THE FINISHED STRUCTURE, AND, EXCEPT WHERE SPECIFICALLY SHOWN, DO NOT INDICATE THE METHOD OR MEANS OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, PROCEDURES, TECHNIQUES, AND SEQUENCE. ALL APPLICABLE SAFETY REGULATIONS TO BE FOLLOWED STRICTLY.
2. THE STRUCTURE HAS BEEN DESIGNED TO RESIST DESIGN LOADS ONLY AS A COMPLETED STRUCTURE. APPLICATIONS OF CONSTRUCTION LOADS TO THE PARTIALLY COMPLETED STRUCTURE SHALL BE CONSIDERED BY THE CONTRACTOR AND SO INCLUDED IN THE DESIGN OF SHORING, BRACING, FORMWORK, AND ANY OTHER SUPPORTING ELEMENTS PROVIDED FOR CONSTRUCTION OF THE STRUCTURE. DURING ERECTION AND UNTIL ALL PERMANENT CONNECTIONS ARE MADE, THE CONTRACTOR MUST PROVIDE TEMPORARY BRACING FOR THE STRUCTURE IN ALL DIRECTIONS UNTIL THE STRUCTURAL WORK IS COMPLETE.
3. ALL INTERIOR HANGING COMPONENTS (CEILING, DUCTWORK, PIPING, EQUIPMENT, ETC.) SHALL BE COORDINATED BY THE CONTRACTOR TO ENSURE LOADS APPLIED TO THE STRUCTURE DO NOT EXCEED THE LIMITS SHOWN IN THE DESIGN CRITERIA OR ELSEWHERE IN THE DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ADEQUACY OF THE CONNECTIONS TO THE SUPPORTING STRUCTURAL ELEMENTS AND THE ADEQUACY OF THE HANGING SYSTEM TO SUPPORT THE COMPONENTS.
4. ALL ARCHITECTURAL, ELECTRICAL, MECHANICAL, AND PLUMBING COMPONENTS NOT SHOWN ON THE STRUCTURAL DRAWINGS, THAT FRAME TO THE UNDERSIDE OF STRUCTURE ABOVE, SHALL BE DETAILED AND FRAMED BY THE CONTRACTOR TO ALLOW FOR DEFLECTION OF THE STRUCTURAL FRAMING. SEE THE DESIGN CRITERIA FOR THE LIMITS USED IN THE DESIGN.
5. PRINCIPAL OPENINGS IN THE STRUCTURE ARE SHOWN ON THESE DRAWINGS. THE CONTRACTOR SHALL EXAMINE THE ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND PLUMBING DRAWINGS FOR ALL REQUIRED OPENINGS. SUPPORT FRAMING FOR ALL OPENINGS SHALL BE PROVIDED AND INSTALLED PER TYPICAL DETAILS HEREIN WHETHER SHOWN ON THESE DRAWINGS OR NOT. THE CONTRACTOR SHALL VERIFY SIZE AND LOCATION OF ALL OPENINGS WITH ALL SUBCONTRACTORS AND THEIR APPROVED SHOP DRAWINGS PRIOR TO CONSTRUCTION.
6. ALL EXTERIOR WALL AND ROOF COMPONENTS AND CLADDING ENGINEERED BY THE COMPONENT MANUFACTURER ARE TO BE DESIGNED BY THE MANUFACTURER'S ENGINEER FOR COMPONENTS AND CLADDING WIND LOADS NOTED IN THE DESIGN CRITERIA.
7. ALL ARCHITECTURAL, ELECTRICAL, MECHANICAL, AND PLUMBING COMPONENTS ARE TO BE ATTACHED AS REQUIRED BY ASCE/SEI 7 CHAPTER 13, "SEISMIC DESIGN REQUIREMENTS FOR NONSTRUCTURAL COMPONENTS". EACH INDIVIDUAL CONTRACTOR RESPONSIBLE FOR THE COMPONENT MUST PROVIDE PROJECT SPECIFIC DESIGN AND DOCUMENTATION PREPARED BY AN ENGINEER LICENSED IN THE STATE IN WHICH THE PROJECT IS LOCATED. CHAPTER 13 DEFINES THE FORCE REQUIRED TO SUPPORT THE COMPONENT FOR THE ANCHORAGE AND BRACING. THE COST OF PREPARING THIS INFORMATION AND DESIGN SHALL BE INCLUDED IN EACH CONTRACTOR'S BID THAT IS PROVIDING THE COMPONENT.

DESIGN CRITERIA

1. PROJECT LOCATION: 9215 MARY ALEXANDER ROAD, CHARLOTTE, NC 28223
2. APPLICABLE CODES:
   2018 NORTH CAROLINA BUILDING CODE (2015 INTERNATIONAL BUILDING CODE WITH REVISIONS)
   MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES (ASCE/SEI 7-10)
   BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE (ACI 318-14)
   BUILDING CODE REQUIREMENTS|SPECIFICATIONS FOR MASONRY STRUCTURES (ACI 530|530.1-13)
3. RISK CATEGORY: III
4. LIVE LOADS:

	UNIFORM (PSF)	CONCENTRATED (LB)
SLAB ON GRADE	150	NA

5. SNOW LOAD:
   GROUND SNOW LOAD: p_g = 10 PSF
6. WIND LOAD:
   ULTIMATE DESIGN WIND SPEED: V_{ult} = 120 MPH (NOMINAL DESIGN WIND SPEED, V_{asd} = 93 MPH)
   EXPOSURE CATEGORY: B
   COMPONENTS AND CLADDING -
   ALL EXTERIOR WALL AND ROOF COMPONENTS AND CLADDING ENGINEERED BY THE COMPONENT MANUFACTURER ARE TO BE DESIGNED BY THE MANUFACTURER'S ENGINEER FOR COMPONENTS AND CLADDING WIND LOADS AS DETERMINED PER THE GOVERNING BUILDING CODE FOR THE ULTIMATE DESIGN WIND SPEED AND EXPOSURE CATEGORY LISTED ABOVE.
7. SEISMIC LOAD:
   DESIGN METHOD - EQUIVALENT LATERAL FORCE PROCEDURE

S_S	23.1 %g
S_1	10.1 %g
S_{DS}	24.6 %g
S_{D1}	16.1 %g
IMPORTANCE FACTOR	I_e = 1.25
SITE CLASS	D (ASSUMED)
SEISMIC DESIGN CATEGORY	C

8. FUTURE LOADS:
   UNLESS SPECIFICALLY NOTED, THERE ARE NO PROVISIONS MADE FOR FUTURE FLOORS, ROOFS, OR OTHER LOADS.

FOUNDATIONS

1. FOUNDATION DESIGN IS BASED ON THE GEOTECHNICAL INVESTIGATION REPORT BY:
   STEWART, DATED AUGUST 24, 2021
   THE DESIGN NET ALLOWABLE SOIL BEARING PRESSURE IS 3,000 PSF BASED ON THIS REPORT.
2. FOOTINGS SHALL BE CARRIED TO LOWER ELEVATIONS THAN THOSE SHOWN ON THE DRAWINGS IF REQUIRED BY THE GEOTECHNICAL ENGINEER OR TESTING LAB TO REACH SOIL CAPABLE OF PROVIDING THE DESIGN NET ALLOWABLE SOIL BEARING PRESSURE. ALL EXPANSIVE AND/OR LOOSE SOILS BELOW STRUCTURAL FOUNDATIONS SHALL BE REMOVED AND REPLACED AS DIRECTED HEREIN.
3. MINIMUM SUBGRADE PREPARATION REQUIREMENTS ARE AS FOLLOWS:
   1. PREPARE SUBGRADE AND UNDERFLOOR FILL TO A POINT THAT EXTENDS 3'-0" (MINIMUM) BEYOND THE LIMITS OF THE FOUNDATIONS.
   2. COMPACT ALL FILL UNDER SLAB TO 95% MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D698.
   3. PLACE IN LIFTS OF 8" (MAXIMUM) LOOSE THICKNESS WHEN USING LARGE RIDING COMPACTORS (REDUCE THICKNESS AS NECESSARY FOR SMALLER EQUIPMENT).
   4. SLABS ON GRADE SHALL BE SUPPORTED ON A BASE LAYER OF POROUS FILL (WASHED STONE OR CLEAN SAND) WITH A MINIMUM THICKNESS OF 4".
4. FIELD COMPACTION SHALL BE VERIFIED WITH AT LEAST ONE TEST PER 2,000 SQUARE FEET PER LIFT (AT LEAST ONE PER LIFT), IN ACCORDANCE WITH ASTM D1556 (SAND-CONE METHOD), ASTM D6938 (NUCLEAR METHODS, SHALLOW DEPTH), ASTM D2167 (RUBBER BALLOON METHOD), AND/OR ASTM D2937 (DRIVE-CYLINDER METHOD). SEE SPECIFICATIONS FOR OTHER TESTING REQUIREMENTS.
5. WALLS RETAINING SOIL HAVE BEEN DESIGNED UTILIZING THE FOLLOWING PARAMETERS:

MOIST SOIL UNIT WEIGHT	120 PCF
ACTIVE PRESSURE COEFFICIENT	0.33
AT-REST PRESSURE COEFFICIENT	0.55
PASSIVE PRESSURE COEFFICIENT	2.50
COEFFICIENT OF FRICTION	0.35

6. UTILITY LINES SHALL NOT BE PLACED THROUGH OR BELOW FOUNDATIONS WITHOUT APPROVAL OF THE STRUCTURAL ENGINEER. CONTRACTOR SHALL SUBMIT DETAILED DRAWINGS OF ALL SUCH CONDITIONS PRIOR TO CONSTRUCTION.

CONCRETE | REINFORCING STEEL

1. ALL CONCRETE DESIGN AND CONSTRUCTION SHALL CONFORM TO THE REFERENCED EDITION OF THE BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE (ACI 318).
2. CONCRETE MIXTURES AS REQUIRED (BASED ON CLASS DESIGNATION):

CLASS A - FOOTINGS, GRADE/TIE BEAMS	NWC	3,000 PSI
CLASS F - EXTERIOR SLABS ON GRADE, PADS, TOPPINGS	NWC	4,500 PSI
CLASS J - EXTERIOR RETAINING WALLS	NWC	4,500 PSI

3. REINFORCING:
   TYPICAL - ASTM A615, GRADE 60
   DEFORMED BAR ANCHORS - ASTM A496
   WELDED WIRE FABRIC - ASTM A1064 (FLAT SHEETS ONLY)
4. REFER TO THE DRAWINGS FOR REINFORCING LAP REQUIREMENTS. WHERE LAP SPLICES ARE NOT SHOWN, LAP PER ACI 318 OR CRSI STANDARDS.
5. CLEAR COVER FROM FACE OF CONCRETE:
   CAST IN PLACE CONCRETE (MEASURE TO OUTERMOST REINFORCING) -

CONCRETE CAST AGAINST AND EXPOSED TO EARTH	3"
CONCRETE EXPOSED TO EARTH/WEATHER	2" FOR #6 BARS AND LARGER, 1 1/2" ELSE
CONCRETE NOT EXPOSED TO EARTH/WEATHER	3/4" FOR SLABS AND WALLS, 1 1/2" (TO TIES) FOR BEAMS AND COLUMNS

6. PROVIDE REINFORCING IN SLABS ON GRADE, 1-1/2" FROM TOP OF SLAB:
   6" SLABS #3@12"OC EACH WAY
7. PROVIDE VERTICAL DOVETAIL SLOTS AT 24"OC WITH TIES AT 16'OC VERTICALLY IN ALL CONCRETE WALLS BACKING-UP MASONRY VENEER.
8. BAR SUPPORTS FOR CONCRETE EXPOSED TO VIEW SHALL HAVE PLASTIC COATED LEGS OR BE HOT-DIP GALVANIZED AFTER FABRICATION.
9. MECHANICAL AND ELECTRICAL CONDUIT IN SLABS ON GRADE AND ELEVATED SLABS SHALL RUN UNDER TOP LAYER OF SLAB REINFORCING. PROVIDE A MINIMUM OF 1-1/2" CLEAR BETWEEN CONDUITS AND BETWEEN REINFORCING AND ADJACENT CONDUITS PARALLEL TO REINFORCING. IF MAXIMUM SIZE OF CONDUIT EXCEEDS ONE THIRD OF THE SLAB DEPTH, ADDITIONAL FRAMING OR REINFORCING MAY BE NECESSARY AT ENGINEER'S DISCRETION.
10. EMBED PLATES MUST BE SET IN THE FORM BEFORE POURING CONCRETE, NOT PLACED INTO TOP OF WET CONCRETE. THE CONTRACTOR SHALL CONTACT THE ARCHITECT FOR CORRECTIVE DETAILS FOR ANY EMBED PLATES LEFT OUT OF CONCRETE POURS.
11. FOR SLABS ON GRADE, SLAB AND FOOTING REINFORCING SHALL BE HELD IN PLACE BY BAR SUPPORTS WITH SAND PLATES, OR PRECAST CONCRETE BAR SUPPORTS AS DESCRIBED IN CHAPTER 3 OF THE CRSI MANUAL OF STANDARD PRACTICE. BAR SUPPORTS SHALL BE SPACED AT A MAXIMUM OF 4'-0"OC BOTH WAYS. ROCKS, CMU, OR CLAY BRICK WILL NOT BE USED AS SUPPORTS.
12. REBAR SHALL NOT BE HEATED WITH A TORCH IN THE FIELD.

ADHESIVE AND MECHANICAL POST-INSTALLED ANCHORS

1. ANCHOR BOLTS, REINFORCING STEEL, THREADED RODS, STAIR HANDRAILS, AND OTHER EMBEDDED STEEL ITEMS SHALL BE SET INTO HARDENED CONCRETE WITH ADHESIVE OR MECHANICAL POST-INSTALLED ANCHORS ONLY WHERE DETAILED ON THE DRAWINGS OR WHERE APPROVED BY THE ENGINEER OF RECORD.
2. PRE-APPROVED MANUFACTURERS ARE HILTI, SIMPSON STRONG-TIE, AND DEWALT. WHERE DETAILS INDICATE SPECIFIC ADHESIVE OR MECHANICAL POST-INSTALLED ANCHORS, IT IS ACCEPTABLE AT THE CONTRACTOR'S OPTION TO SUBMIT AN ALTERNATE SIMILAR PRODUCT PROVIDED BY A DIFFERENT MANUFACTURER AS LONG AS THE MANUFACTURER'S DATA PROVIDES EQUIVALENT LOAD CAPACITY TO THE ANCHOR SPECIFIED. THE CONTRACTOR SHALL PROVIDE SIGNED AND SEALED CALCULATIONS THAT DEMONSTRATE THE ALTERNATE PRODUCT IS CAPABLE OF MEETING THE PERFORMANCE OF THE SPECIFIED ANCHOR. SUBSTITUTIONS WILL BE EVALUATED BY THEIR HAVING AN ICC-ESR SHOWING COMPLIANCE WITH THE GOVERNING BUILDING CODE FOR SEISMIC USE, LOAD RESISTANCE, INSTALLATION CATEGORY, AND THE AVAILABILITY OF COMPREHENSIVE INSTALLATION INSTRUCTIONS. ADHESIVE ANCHOR EVALUATION WILL ALSO CONSIDER CREEP, IN-SERVICE TEMPERATURE, INSTALLATION TEMPERATURE, MOISTURE CONDITION OF CONCRETE, AND DRILLING METHODS.
3. BASIS OF DESIGN FOR ADHESIVE ANCHORS DETAILED ON THE DRAWINGS INCLUDES THE FOLLOWING PARAMETERS: CRACKED CONCRETE; WATER-SATURATED CONCRETE; BASE MATERIAL BETWEEN 25 AND 100 DEGREES FAHRENHEIT; AND HOLES MADE BY HAMMER DRILL, HOLLOW DRILL BIT SYSTEM, OR CORE-DRILLING.
4. INSTALL ANCHORS PER THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS, AS INCLUDED IN THE ANCHOR PACKAGING. HEED ALL LABEL WARNINGS. INSTALL IN ACCORDANCE WITH APPLICABLE SAFETY LAWS. ALL HOLES SHALL BE DRILLED WITH A DIAMETER NO LARGER THAN 1/8" GREATER THAN THE DIAMETER OF THE ANCHOR BEING INSTALLED. ALL HOLES SHALL BE CLEANED WITH COMPRESSED AIR AND SHALL BE DRY PRIOR TO INSTALLATION OF ADHESIVE. HOLES SHALL BE FREE OF ALL DELETERIOUS MATERIAL SUCH AS LAITANCE, DUST, DIRT, AND OIL.
5. ANCHOR CAPACITY IS DEPENDENT UPON SPACING BETWEEN ADJACENT ANCHORS AND PROXIMITY OF ANCHORS TO EDGE OF CONCRETE. INSTALL ANCHORS IN ACCORDANCE WITH SPACING AND EDGE CLEARANCES INDICATED ON THE DRAWINGS.
6. WHERE ADHESIVE ANCHORS ARE TO BE INSTALLED IN HOLLOW MATERIAL WITH UNKNOWN CAPACITY, THE CONTRACTOR SHALL INSTALL THE ANCHOR IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. THE ADHESIVE SHALL BE INSTALLED IN THE HOLLOW BASE MATERIAL USING SCREEN TUBES SUPPLIED BY THE MANUFACTURER. THE ADHESIVE SHALL BE CAPABLE OF SUSTAINING MINIMUM TENSION AND SHEAR LOAD CAPACITIES NOTED ON THE DRAWINGS MULTIPLIED BY A FACTOR OF SAFETY OF 4. ALL HARDWARE AND MATERIAL SHALL BE SUPPLIED BY THE ANCHOR MANUFACTURER.
7. CONTRACTOR PERFORMING ADHESIVE WORK SHALL BE AN APPROVED CONTRACTOR BY THE MANUFACTURER FURNISHING THE ADHESIVE MATERIALS, AND SHALL HAVE NO LESS THAN FIVE YEARS EXPERIENCE IN THE VARIOUS TYPES OF ADHESIVE RELATED WORK REQUIRED IN THIS PROJECT.
   ALTERNATIVELY, THE CONTRACTOR SHALL ARRANGE FOR A REPRESENTATIVE OF THE ANCHOR MANUFACTURER TO PROVIDE ONSITE INSTALLATION TRAINING FOR ALL ANCHOR PRODUCTS SPECIFIED. DOCUMENTATION THAT ALL PERSONNEL INSTALLING ANCHORS ARE TRAINED SHALL BE SUBMITTED TO THE ENGINEER OR RECORD PRIOR TO THE COMMENCEMENT OF ANCHOR INSTALLATION.

DEMOLITION

1. THE CONTRACTOR SHALL NOTIFY ALL LOCAL AGENCIES HAVING JURISDICTION, AND SHALL OBTAIN ALL NECESSARY PERMITS REQUIRED FOR THE DEMOLITION AND REMOVAL OF THE DEBRIS RESULTING FROM THE DEMOLITION.
2. CONTRACTOR SHALL RETAIN, AT THEIR EXPENSE, A REGISTERED PROFESSIONAL ENGINEER LICENSED IN THE STATE IN WHICH THE PROJECT IS LOCATED, TO DETERMINE ALL CONSTRUCTION PHASE SHORING REQUIREMENTS. CONTRACTOR SHALL SUBMIT TO THE OWNER AND THE ENGINEER OF RECORD, SIGNED AND SEALED DRAWINGS, OUTLINING OPERATIONAL SEQUENCES, SHORING CONCEPTUAL PLANS, METHODS USED FOR THE PROTECTION OF STRUCTURES TO REMAIN AND NEIGHBORING STRUCTURES.
3. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE PROTECTION AND STABILITY OF EXISTING AND NEW STRUCTURES DURING CONSTRUCTION.
4. BEFORE UNDERTAKING ANY DEMOLITION WORK OR ORDERING MATERIAL, ASCERTAIN BY SURVEY THE EXISTING CONDITIONS OF THE PROPERTIES AND BUILDINGS ADJOINING OR IN CLOSE PROXIMITY TO THE PREMISES. THE ARCHITECT SHALL BE NOTIFIED OF ANY DISCREPANCY.
5. PROVIDE AND MAINTAIN BRACING AND SHORING AS NEEDED. KEEP SUPPORTING STRUCTURE IN PLACE DURING NEW CONSTRUCTION AND UNTIL NEW STRUCTURE IS COMPLETED.
6. STORE AND PROTECT ALL MATERIAL TO BE REMOVED AND REUSED.
7. IF SAFETY OR INTEGRITY OF STRUCTURAL SYSTEM APPEARS TO BE COMPROMISED, CEASE OPERATIONS IMMEDIATELY AND NOTIFY THE OWNER AND THE ENGINEER. PROPERLY BRACE AND SUPPORT STRUCTURE BEFORE RESUMING OPERATIONS.
8. ANY DAMAGE OCCURRING TO THE EXISTING STRUCTURE, ADJACENT STRUCTURES, STREETS, SIDEWALKS, UTILITY LINES OR ANY OTHER PUBLIC OR PRIVATE PROPERTIES, SHALL BE REINSTALLED TO THE ORIGINAL CONDITION BY THE CONTRACTOR AT NO COST TO THE OWNER OR THE ENGINEER.
9. ALL OPENINGS IN EXISTING CONSTRUCTION SHALL BE SAW CUT OR DRILLED.
10. ALL EXISTING INFORMATION SHOWN IS REFERENCED FROM EXISTING DRAWINGS PREPARED BY:
    THE FREEMAN-WHITE ASSSOCIATES, INC, DATED MARCH 1974.

EXISTING CONSTRUCTION

1. EXISTING FRAMING INFORMATION SHOWN ON THE STRUCTURAL DRAWINGS HAS BEEN PREPARED BASED ON EITHER SITE VISITS AND/OR EXISTING DRAWINGS. IN LOCATIONS WHERE NEW FRAMING IS CONNECTING TO EXISTING FRAMING, THE CONTRACTOR SHALL VERIFY THE EXISTING CONDITION PRIOR TO SHOP DRAWING CREATION, MATERIAL FABRICATION, OR WORK BEING PERFORMED. SELECTIVE DEMOLITION SHALL BE INCLUDED IF REQUIRED TO VERIFY EXISTING CONDITIONS.
2. DETAILS NOTED ON THE STRUCTURAL DRAWINGS ARE BASED ON ASSUMED CONDITIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD MEASURE EXISTING MEMBERS AT POINT OF CONNECTION, ELEVATIONS, AND LOCATIONS TO ENSURE EXISTING CONSTRUCTION MATCHES DETAILS PROVIDED IN THE STRUCTURAL DRAWINGS.
3. ANY DIMENSIONS SHOWN FROM NEW FRAMING TO EXISTING FRAMING ARE APPROXIMATED AND MUST BE FIELD VERIFIED. PRIOR TO ANY FABRICATION, ALL DIMENSIONS THAT RELATE TO MEMBER DIMENSIONS SHALL BE FIELD VERIFIED.
4. STEEL CONNECTION DESIGN OF NEW FRAMING, UNLESS SPECIFICALLY SHOWN, IS ASSUMED TO BE SIMPLE SHEAR CONNECTIONS AND TO BE WELDED TO THE EXISTING STEEL. DESIGN AND DETAILING OF THE STEEL CONNECTIONS ARE THE RESPONSIBILITY OF THE FABRICATOR, AND ARE COVERED FURTHER IN THE STRUCTURAL STEEL SECTION OF THESE GENERAL NOTES. EXISTING MEMBERS HAVE BEEN REVIEWED BY THE ENGINEER OF RECORD AND ARE CAPABLE (WITH ADDED REINFORCING WHERE DETAILED) OF SUPPORTING THE NEW FRAMING.

REPRODUCTION

1. THE USE OF REPRODUCTIONS OF THESE CONTRACT DRAWINGS BY ANY CONTRACTOR, SUBCONTRACTOR, ERECTOR, FABRICATOR, OR MATERIAL SUPPLIER IN LIEU OF PREPARATION OF SHOP DRAWINGS SIGNIFIES HIS ACCEPTANCE OF ALL INFORMATION SHOWN HEREIN AS CORRECT, AND OBLIGATES HIMSELF TO ANY JOB EXPENSE, REAL OR IMPLIED, ARISING DUE TO ANY ERRORS THAT MAY OCCUR HERE ON.

ABBREVIATIONS

@	AT
&	AND
Ø	DIAMETER
AB	ANCHOR BOLTS
ACI	AMERICAN CONCRETE INSTITUTE
ADDL	ADDITIONAL
ADH	ADHESIVE
AFF	ABOVE FINISHED FLOOR
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
AISI	AMERICAN IRON AND STEEL INSTITUTE
ALT	ALTERNATE
ARCH	ARCHITECT'S / ARCHITECTURAL
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
AWS	AMERICAN WELDING SOCIETY
B/ or BOT	BOTTOM
BCX	BOTTOM CHORD EXTENSION
BFB	BOTTOM FLANGE BRACE
BFF	BELOW FINISHED FLOOR
BLDG	BUILDING
BM	BEAM
BOS	BOTTOM OF STEEL
BRG	BEARING
BTWN	BETWEEN
CANT	CANTILEVER
CJ	CONTROL JOINT
CL	CENTERLINE
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CONST JT	CONSTRUCTION JOINT
CONT	CONTINUOUS
CONTR	CONTRACTOR
COORD	COORDINATE
CTRD	CENTERED
d	NAILS (PENNY)
DBA	DEFORMED BAR ANCHOR
DEFL	DEFLECTION
DEPR	DEPRESSION / DEPRESSED
DET	DETAIL
DIAG	DIAGONAL
DIM	DIMENSION
DIST	DISTANCE
DWG(S)	DRAWING(S)
DWL(S)	DOWEL(S)
EA	EACH
EE	EACH END
EF	EACH FACE
EJ	EXPANSION JOINT
ELEV	ELEVATION
EMBED	EMBEDDED / EMBEDMENT
ENGR	ENGINEER
EOD	EDGE OF DECK
EOS	EDGE OF SLAB
EQ	EQUAL
EQUIP	EQUIPMENT
EW	EACH WAY
EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
FDN	FOUNDATION
FFE	FINISHED FLOOR ELEVATION
FOM	FACE OF MASONRY
FOW	FACE OF WALL
FS	FAR SIDE
FTG	FOOTING
GA	GAUGE
GALV	GALVANIZED
GT	GIRDER TRUSS
HD	HEADED
HI	HIGH
HORIZ	HORIZONTAL
HSS	HOLLOW STRUCTURAL SECTION
INT	INTERIOR
JT	JOINT
K	KIP(S)
KB	KNEE BRACE
KSI	KIPS PER SQUARE INCH
LB	LONG BAR
LBS	POUNDS
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LO	LOW
LOC	LOCATION
LSH	LONG SIDE HORIZONTAL
LSV	LONG SIDE VERTICAL
LWC	LIGHT WEIGHT CONCRETE
MAX	MAXIMUM
MC	MOMENT CONNECTION
MCJ	MASONRY CONTROL JOINT
MECH	MECHANICAL
MFR	MANUFACTURER
MID	MIDDLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MOW	MIDDLE OF WALL
MP	MASONRY PILASTER
No or #	NUMBER
NS	NEAR SIDE
NTS	NOT TO SCALE
NWC	NORMAL WEIGHT CONCRETE
OC	ON CENTER
OPNG	OPENING
OPP	OPPOSITE HAND
PAF	POWDER ACTUATED FASTENER
PED	PEDESTAL
PL	PLATE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	PRESSURE TREATED
P-T	POST-TENSIONED
REF	REFERENCE
REINF	REINFORCING
REQD	REQUIRED
SB	SHORT BAR
SCHD	SCHEDULE
SIM	SIMILAR
SOG	SLAB ON GRADE
SPEC(S)	SPECIFICATION(S)
SQ	SQUARE
STD	STANDARD
STIFF	STIFFENER
STIRR	STIRRUP(S)
STL	STEEL
STR	STRUCTURAL
T/	TOP
TCX	TOP CHORD EXTENSION
TOC	TOP CHORD CONCRETE
TOF	TOP OF FOOTING
TOS	TOP OF STEEL
TOW	TOP OF WALL
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
VIF	VERIFY IN FIELD
W/	WITH
WWF	WELDED WIRE FABRIC
WP	WORK POINT

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NORTH CAROLINA PROFESSIONAL SEAL 26465 ENGINEER LANCE D. MAXIMO
10/13/2021

Project Title
UNCC HVAC, Plumbing and Electrical Repairs - McEniry Electrical & Plumbing Package
SCO ID # 20-22572-01A
PM: JOHN BOAL

Date:	Mark:	Description:	By:
08/31/2021	-	100% CD REVIEW SET	DAB
09/28/2021	-	BID SET	DAB
10/13/2021		ADDENDUM #2	TDM

GENERAL NOTES, ABBREVIATIONS AND SYMBOL LEGEND

Sheet Title:

Proj. No.: 221.013	Scale: AS NOTED
Date: 08/31/2021	
Drawn By: TDM	Checked: LDW

Sheet No.:
S001

ALL DIMENSIONS AND CONDITIONS MUST BE CHECKED AND VERIFIED ON SITE BY THE CONTRACTOR AND SUB-CONTRACTORS. THE PROJECT MANAGER SHALL BE NOTIFIED IN WRITING OF ANY DISCREPANCIES PRIOR TO PROCEEDING WITH THE WORK.