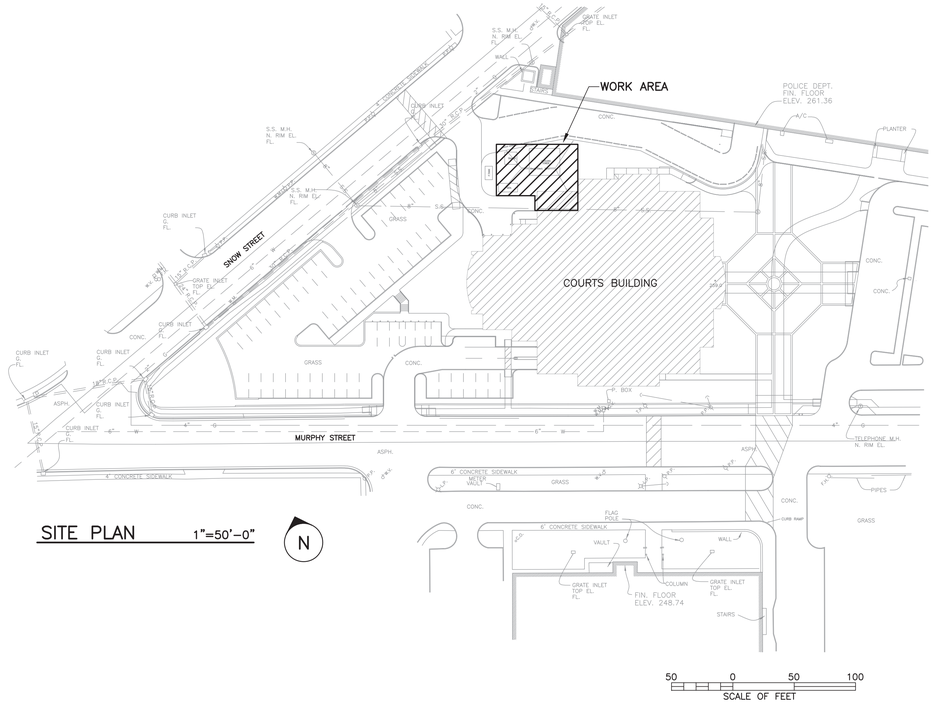
IFB #25-062 Shreveport Municipal Courts Building HVAC Renovations

LAGC Plan Room - North

SHREVEPORT MUNICIPAL COURTS BUILDING
HVAC RENOVATIONS
1244 TEXAS AVENUE
SHREVEPORT, LOUISIANA, 71101

JUNE 13, 2025

INDEX TO DRAWINGS



SITE PLAN 1"=50'-0"

N

CITY OF SHREVEPORT
MAYOR-HON. TOM ARCENEAUX
CITY COUNCIL

DISTRICT
- A - TABATHA H. TAYLOR
- B - GARY BROOKS
- C - JIM TALIAFERRO
- D - GRAYSON BOUCHER
- E - DR. ALAN JACKSON, JR.
- F - JAMES GREEN
- G - URSULA BOWMAN

7324/CS1

JOHN J. GUTH ASSOCIATES, INC.
CONSULTING ENGINEERS
SHREVEPORT, LOUISIANA

JOHN J. GUTH ASSOCIATES, INC.
MECHANICAL AND ELECTRICAL ENGINEERS
208 MILAM STREET SHREVEPORT, LOUISIANA 71101
TEL. 318-221-8638 FAX. 318-221-8717

STATE OF LOUISIANA — MICHAEL S. MIDDLETON — REG. No. 27979 — REGISTERED PROFESSIONAL ENGINEER — MECHANICAL ENGINEERING — 9/9/25

STATE OF LOUISIANA — J. P. FOREMAN — REG. No. 22378 — REGISTERED PROFESSIONAL ENGINEER — ELECTRICAL ENGINEERING — 9/9/25

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HVAC RENOVATIONS
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SHREVEPORT, LOUISIANA, 71101

REVISIONS

JOB NO. 7324

DATE: JUNE 13, 2025

SHEET NO. CS1

OF 1CS

JOHN J. GUTH ASSOCIATES, INC. CONSULTING MECHANICAL AND ELECTRICAL ENGINEERS 208 MILAM STREET SHREVEPORT, LOUISIANA 71101 7324
DESIGNER: MICHAEL S. MIDDLETON P.E.
THOMAS A. HARDMAN
CHECKED BY: MSM, JPF
THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY.

DATE DRAWING LAST SAVED:09/16/25 TIME:11:02:10 DATE DRAWING LAST PLOTTED:09/16/25 TIME:11:02:13

AIR CONDITIONING SYMBOLS

SYMBOL	DESCRIPTION
G	EXISTING GAS LINE
G	NEW GAS LINE
	DOMESTIC COLD WATER
CWS	EXISTING CHILLED WATER SUPPLY
CWS	CHILLED WATER SUPPLY
CWR	EXISTING CHILLED WATER RETURN
CWR	CHILLED WATER RETURN
HWS	EXISTING HEATING WATER SUPPLY
HWR	EXISTING HEATING WATER RETURN
CS	EXISTING CONDENSER WATER SUPPLY
CR	EXISTING CONDENSER WATER RETURN
	GATE VALVE
	SQUARE HEAD BALANCING COCK
	CHECK VALVE
	AUTOMATIC CONTROL VALVE
	BUTTERFLY VALVE
TW	THERMOMETER WELL
	THERMOMETER
	WATER PRESSURE GAUGE WITH COCK
	ELBOW DOWN, ELBOW UP
	TEE DOWN, TEE UP
	CONCENTRIC REDUCER, ECCENTRIC REDUCER
	STRAINER (WITH DRAIN VALVE)
	FLEXIBLE CONNECTOR
	AIR ELIMINATOR OR AIR VENT
A / M1	DETAIL DESIGNATION SHEET WHERE DETAIL IS LOCATED
M1	MECHANICAL NOTE REFERENCE
	POINT OF CONNECTION
	TERMINATION OF DEMOLITION

MAXIMUM HORIZONTAL PIPE SUPPORT AND SHIELD SPACING [a,b,c] ANSI/MSS SP-58-2018 (Table A3) - INSULATED PIPING

NOMINAL PIPE SIZE	MAXIMUM SPACING (feet)	SHIELD LENGTH (inches)	SHIELD THICKNESS (gage)	SHIELD THICKNESS (inches)
1/2" to 1 1/4"	7	12	18	0.048
1 1/2"	9	12	18	0.048
2" TO 3 1/2"	10	12	18	0.048
4"	10	12	16	0.06
5" TO 6"	10	18	16	0.06
8" TO 14"	10	24	14	0.075

PIPING SUPPORT NOTES:

a. All shields shall be MSS type 40. Provide MSS type 39 saddles at each hanger.

b. Band type hangers and insulation with 15 PSI compressive strength.

c. Roller hangers - increase shield thickness to next heavier gage and increase length so that rolling point of contact is in the middle 1/3 of the shield.

PIPING AND FITTING MATERIAL SCHEDULE

SERVICE	PIPE MATERIAL	JOINT TYPE	FITTING MATERIAL	MAXIMUM VERTICAL HANGER SPACING (FEET) 2021 INTERNATIONAL MECHANICAL CODE	REMARKS
DOMESTIC WATER PIPING, ABOVE FIRST FLOOR SLAB	COPPER TYPE 'L' HARD DRAWN **ASTM B - 88**	95-5 SOLDER WITH INTERMEDIATELY CORROSIVE FLUX	WROUGHT COPPER	**10**	INSULATE PER SPECIFICATIONS AND SCHEDULE
GAS PIPING ABOVE GRADE	SCHEDULE 40 BLACKSTEEL **ASTM A-53**	SCREWED THRU 3/4" SIZE, WELDED FOR 1" AND LARGER	MALLEABLE SCREWED TYPE, BUTT WELDED STEEL WHERE REQUIRED	**15**	PAINT TWO COATS TO MATCH EXISTING PIPING
CHILLED WATER PIPING 2 1/2" AND LARGER ABOVE GROUND	SCHEDULE 40 BLACK STEEL **ASTM A-53**	BUTT WELD	WELDED FITTINGS	**15**	INSULATE PER SPECIFICATIONS AND SCHEDULE
HEATING WATER PIPING 2 1/2" AND LARGER ABOVE GROUND	SCHEDULE 40 BLACK STEEL **ASTM A-53**	BUTT WELD	WELDED FITTINGS	**15**	INSULATE PER SPECIFICATIONS AND SCHEDULE

BUILDING MANAGEMENT AND CONTROL SYSTEM (BMCS) POINTS LIST

	HARDWARE: OUTPUT DIGITAL		HARDWARE: OUTPUT ANALOG			HARDWARE: INPUT DIGITAL		HARDWARE: INPUT ANALOG					SOFTWARE									REMARKS
	CONTROL RELAY		POSITION ADJUSTMENT	RPM / HERTZ		CONTACT CLOSURE	CURRENT SENSING RELAY	TEMPERATURE	% RELATIVE HUMIDITY	PRESSURE DROP	FLOW	STATIC PRESSURE		BACnet INTERFACE	SCHEDULED START / STOP	RUN TIME	DAY / NIGHT SETBACK	WARM UP CYCLE	TRENDLOG CAPABILITY	SYSTEM GRAPHICS				
AIR COOLED CHILLER														X	X		X	X		X				
START/STOP COMMAND														X	X		X	X		X				
MODE - OCCUPIED / UNOCCUPIED															X		X			X				1
STATUS - ON/OFF														X						X				1
CHILLED WATER RETURN TEMP								X						X						X				1
CHILLED WATER SUPPLY TEMP								X						X						X				1
CHILLED WATER SUPPLY SETPOINT														X						X				1, 2
PUMP START / STOP	X													X	X					X				1, 2
PUMP STATUS							X							X						X				1
CHILLER FAULT						X								X						X				1
PUMP VFD FAULT						X								X						X				1
OUTDOOR AIR TEMPERATURE								X						X						X				1
MOTORIZED ISOLATION VALVE COMMAND	X		X																	X				1
CHILLER LOAD														X						X				
COMPRESSOR STATUS														X						X				
CHILLED WATER AND CHILLED WATER LOOP PUMP														X	X		X	X		X				
PUMP START / STOP	X													X	X					X				1, 2
PUMP STATUS				X			X							X						X				1
PUMP VFD SPEED COMMAND			X	X										X						X				1
PUMP VFD FAULT						X								X						X				1
CHILLED WATER PRIMARY LOOP																								
CHILLED WATER RETURN TEMP								X						X						X				1
CHILLED WATER SUPPLY TEMP								X						X						X				1
CHILLED WATER SUPPLY SETPOINT														X						X				1, 2

REMARKS:

1. PROVIDE ALL HARDWARE AND PROGRAMMING REQUIRED TO DISPLAY POINT ON THE EXISTING JOHNSON CONTROLS METASYS BMCS FROM THE NEW BMCS.
2. PROVIDE ALL HARDWARE AND PROGRAMMING REQUIRED TO MODIFY POINT ON NEW BMCS THROUGH THE EXISTING JOHNSON CONTROLS METASYS BMCS.

SEQUENCE OF OPERATION

EXISTING JOHNSON CONTROLS, INC. PLANT CONTROL (MAINTAIN ALL EXISTING BMCS SCHEDULES, SEQUENCES, POINTS AND SETPOINTS)

1. REMOVE SENSORS, CONTROLLERS, WIRING, PROGRAMMING ETC. FOR ALL EQUIPMENT BEING DEMOLISHED OR DISABLED.

NEW BACnet PLANT CONTROL

1. PROVIDE NEW PLANT CONTROL FOR ALL NEW EQUIPMENT AND EXISTING EQUIPMENT TO BE REUSED.
2. CONNECT NEW BMCS TO EXISTING JOHNSON CONTROLS METASYS BMCS.
3. PROVIDE NEW CONTROLLERS, SENSORS, ACTUATORS, CONDUIT AND CONDUCTORS FOR NEW AND REUSED EQUIPMENT.

OCCUPIED "ON" MODE

1. THE LEAD CHILLER, LEAD CHILLED WATER LOOP PUMP AND THE LEAD CHILLED WATER PUMP SHALL BE ENERGIZED, THE CHILLER CONTROLS SHALL OPERATE THE CHILLER AS REQUIRED TO MAINTAIN THE "OCCUPIED' CHILLED WATER SUPPLY TEMPERATURE SETPOINT.
2. THE LAG CHILLER SHALL BE ENERGIZED IF THE LEAD CHILLER FAILS TO START.
3. THE LAG CHILLED WATER PUMP SHALL BE ENERGIZED IF THE LEAD PUMP FAILS TO START.
4. THE LAG LOOP PUMP SHALL BE ENERGIZED IF THE LEAD LOOP PUMP FAILS TO START.
5. THE BMCS SHALL ALTERNATE LEAD AND LAG CHILLERS WEEKLY.
6. THE BMCS SHALL ALTERNATE LEAD AND LAG PUMPS WEEKLY.
7. THE EXISTING CHILLED WATER LOOP PUMP PC3 SHALL BE A BACKUP IN THE EVENT BOTH PC1 AND PC2 FAIL TO START.

UNOCCUPIED / NIGHT SETBACK

1. THE LEAD CHILLER, LEAD CHILLED WATER LOOP PUMP AND THE LEAD CHILLED WATER PUMP SHALL BE ENERGIZED, THE CHILLER CONTROLS SHALL OPERATE THE CHILLER AS REQUIRED TO MAINTAIN THE "UNOCCUPIED' CHILLED WATER SUPPLY TEMPERATURE SETPOINT.
2. THE LAG CHILLER SHALL BE ENERGIZED IF THE LEAD CHILLER FAILS TO START.
3. THE LAG CHILLED WATER PUMP SHALL BE ENERGIZED IF THE LEAD PUMP FAILS TO START.
4. THE LAG LOOP PUMP SHALL BE ENERGIZED IF THE LEAD LOOP PUMP FAILS TO START.
5. THE BMCS SHALL ALTERNATE LEAD AND LAG CHILLERS WEEKLY.
6. THE BMCS SHALL ALTERNATE LEAD AND LAG PUMPS WEEKLY.
7. THE EXISTING CHILLED WATER LOOP PUMP PC3 SHALL BE A BACKUP IN THE EVENT BOTH PC1 AND PC2 FAIL TO START.

AIR COOLED CHILLERS

1. CONNECT EACH CHILLER TO START / STOP FUNCTION FROM BMCS INCLUDE PUMP START / STOP
2. CONNECT EACH CHILLER ALARM TO BMCS SYSTEM. PROVIDE CONDUIT, CONDUCTORS PROGRAMMING AND AND ALL ITEMS REQUIRED.
3. INTERLOCK NORMALLY OPEN MOTORIZED SHUTOFF VALVE WITH CHILLER. WHEN CHILLER IS DE-ENERGIZED THE ASSOCIATED CONTROL VALVE SHALL BE POWERED CLOSED.

AIR COOLED CHILLER SCHEDULE

MARK		CHILLER #1 AND #2
LOCATION		YARD
SERVICE		CHILLED WATER
COMPRESSOR TYPE		SCROLL
REFRIGERANT TYPE		R-454B / R-410A / R-32
REFRIGERANT CHARGE	LBS	200
AMBIENT TEMPERATURE	F	105
ACTUAL CAPACITY	TONS	201.25
MIN EER		9.4
MIN NPLV		17.9
EVAPORATOR		
ENTERING WATER TEMPERATURE	F	54
LEAVING WATER TEMPERATURE	F	44
FOULING FACTOR		0.0001
WATER FLOW	GPM	460
WATER PRESSURE DROP (MAXIMUM @ DESIGN)	FT WG	20.0
WATER FLOW - MAXIMUM	GPM	880.0
WATER FLOW - MINIMUM	GPM	265.0
WATER FLOW - PART LOAD MINIMUM	GPM	-
COMPRESSORS		6
MINIMUM NUMBER OF REFRIGERATION CIRCUITS		2
COMPRESSOR TYPE		SCROLL
STARTER TYPE		SEE NOTE 14
ELECTRICAL		
NUMBER OF POWER CONNECTIONS		ONE
VOLTS / PHASE		460V - 3 PH
MCA		470
OCPD		500
SHORT CIRCUIT CURRENT RATING	SCCR	65KA
APPROX OPERATING WEIGHT	LBS	11,000
APPROX DIMENSIONS (L X W X H)	IN	276 X 90 X 100
MANUFACTURER		"YORK" / "QUANTECH"
MODEL NUMBER		YLAA0230HE46XC / QTC3 230
REMARKS		1 THRU 14

REMARKS:

1. PROVIDE LOW SOUND CONDENSER FANS AND COMPRESSOR BLANKETS.
2. PROVIDE WATER FLOW INDICATOR AND PRESSURE RELIEF VALVE.
3. PROVIDE FACTORY INSTALLED EVAPORATOR HEAT TRACE AND INSULATION FOR FREEZE PROTECTION TO -20 DEG F. POWER EVAPORATOR HEAT TRACE FROM 277V-1PH CIRCUIT. STEP DOWN TRANSFORMER REQUIRED FOR 115V-1PH HEAT TRACE VERIFY WITH MFG.
4. PROVIDE NORMALLY OPEN MOTORIZED BUTTERFLY VALVE TO CLOSE WHEN CHILLER IS DE-ENERGIZED. PROVIDE ALL CONTROL AND POWER CONDUIT, WIRING, RELAYS, ETC. NECESSARY TO INTERLOCK WITH CHILLER. PROVIDE NEMA 4X ENCLOSURE FOR VALVE ACTUATOR.
5. PROVIDE FACTORY INSTALLED SERVICE RATED DISCONNECT. IF NOT AVAILABLE PROVIDE FIELD INSTALLED DISCONNECT PER NEC. FIELD INSTALLED DISCONNECT SHALL BE HEAVY DUTY NEMA 3R.
6. PROVIDE UNIT MOUNTED AND WIRED CONTROL TRANSFORMER.
7. PROVIDE WEATHERPROOF 15 AMP GFCI RECEPTACLE.
8. COORDINATE CHILLER CONTROL AND POWER CIRCUIT REQUIREMENTS WITH ELECTRICAL CONTRACTOR.
9. PROVIDE STRAINER WITH FACTORY RECOMENDED MESH SIZE AT CHILLER INLET.
10. PROVIDE ARCHITECTURAL LOUVERED PANELS TO ENCLOSE ENTIRE CHILLER INCLUDING CONDENSER COILS, HEADERS AND COMPRESSOR COMPARTMENT.
11. PROVIDE COMPLETE FIVE YEAR PARTS, LABOR AND REFRIGERANT WARRANTY.
12. PROVIDE LOW AND HIGH AMBIENT ACCESSORIES FOR 0-125 DEG F OPERATION.
13. CHILLER SHALL MEET OR EXCEED NPLV RATING AT DESIGN WITH ACROSS THE LINE STARTER OR HAVE A VFD.
14. PROVIDE LABEL FOR EACH CHILLER. PERMANENTLY AFFIX TO UNIT SO AS NOT TO INTERFER WITH COILS, DOORS, ACCESS PANELS, ETC. INCLUDE THE FOLLOWING INFORMATION ON EACH LABEL;
    - UNIT DESIGNATION OR MARK (FROM SCHEDULE)
    - VOLTAGE / PHASE AND MAX FUSE SIZE (FROM UNIT NAMEPLATE)
    - REFRIGERANT USED AND REFRIGERANT CHARGE (FROM UNIT NAMEPLATE)
    - STARTUP DATE

PUMP SCHEDULE

MARK	SERVICE	TYPE	FLOW GPM	HEAD FEET W.C.	SPEED RPM	PUMP ENERGY INDEX	MOTOR SIZE HP	VOLTAGE	REMARKS
CH1	CHILLER PUMP	END SUCTION FRAME MOUNTED	460	40	1750	0.92	7.5	460V - 3PH	1
CH2	CHILLER PUMP	END SUCTION FRAME MOUNTED	460	40	1750	0.92	7.5	460V - 3PH	1
PC1	CHILLED WATER PRIMARY	VERTICAL IN-LINE	460	60	1750	0.9	10	460V - 3PH	1
PC2	CHILLED WATER PRIMARY	VERTICAL IN-LINE	460	60	1750	0.9	10	460V - 3PH	1

REMARKS

1. PROVIDE VARIABLE FREQUENCY DRIVE.

THERMAL INSULATION SCHEDULE (IECC-2021)

SERVICE	INSULATION	MINIMUM R-VALUE	CONDUCTIVITY RANGE	THICKNESS	FIELD APPLIED JACKET	VAPOR BARRIER	REMARKS
DOMESTIC COLD WATER PIPING (40 TO 60 DEGREES F)	MINERAL FIBER PRE-FORMED	-	0.21 - 0.27 @ 75 DEG F (MEAN TEMP.)	PIPE SIZE 1 1/4" & SMALLER - 0.5" PIPE SIZE 1 1/2 & LARGER - 1"	**SEE NOTES 1,2 AND 3**	YES	GLASS FIBERS BONDED WITH THERMOSETTING RESIN WITH FACTORY APPLIED ALL PURPOSE VAPOR BARRIER. MINIMUM COMPRESSIVE STRENGTH 15 PSI.
HEATING WATER SUPPLY AND RETURN WATER PIPING (141 TO 200 DEGREES F)	MINERAL FIBER PRE-FORMED	-	0.25 - 0.29 @ 125 DEG F (MEAN TEMP.)	PIPE SIZES 1 1/4" & SMALLER - 1.5" PIPE SIZES 1 1/2" & UP - 2"	**SEE NOTE 1**	NO	GLASS FIBERS BONDED WITH THERMOSETTING RESIN WITH FACTORY APPLIED ALL PURPOSE JACKET.
CHILLED WATER SUPPLY AND RETURN WATER PIPING (40 TO 60 DEGREES F)	MINERAL FIBER PRE-FORMED	-	0.21 - 0.27 @ 75 DEG F (MEAN TEMP.)	PIPE SIZES 1 1/4" & SMALLER - 0.5" PIPE SIZES 1 1/2" & UP - 1"	**SEE NOTES 1,2 AND 3**	YES	GLASS FIBERS BONDED WITH THERMOSETTING RESIN WITH FACTORY APPLIED ALL PURPOSE VAPOR BARRIER. MINIMUM COMPRESSIVE STRENGTH 15 PSI.

NOTES:

1. PROVIDE PVC JACKET FOR **ALL** PIPE AND FITTINGS NOT CONCEALED INSIDE WALLS OR ABOVE CEILINGS, UP TO AN ELEVATION OF 8'-0" ABOVE FINISHED FLOOR.
2. PROVIDE ELECTRIC HEAT TRACING FOR ALL EXTERIOR PIPE AND FITTINGS.
3. PROVIDE ALUMINUM JACKET FOR ALL EXTERIOR PIPE AND FITTINGS.

PLUMBING FIXTURE SCHEDULE

FIXTURE DESIG.	MANUF.	FIXTURE	FITTING OR VALVE	STRAINER	TRAP	SUPPLY PIPES	REMARKS
SC FREEZE PROOF SILLCOCK WITH VACUUME BREAKER	WOODFORD ZURN	B-65-C Z-1320				3/4" SIZE	NON-FREEZE TYPE WITH BRASS CASING. PROVIDE HANDLES FOR EACH SILLCOCK. NOTE WALL THICKNESS IN EACH CASE. WHERE WALL THICKNESS WILL NOT PERMIT CASING USE WOODFORD B-74-C, ZURN Z-1345 OR APPROVED EQUAL

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CHECKED BY: MSM

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JOB NO. 7324

DATE: JUNE 13, 2025

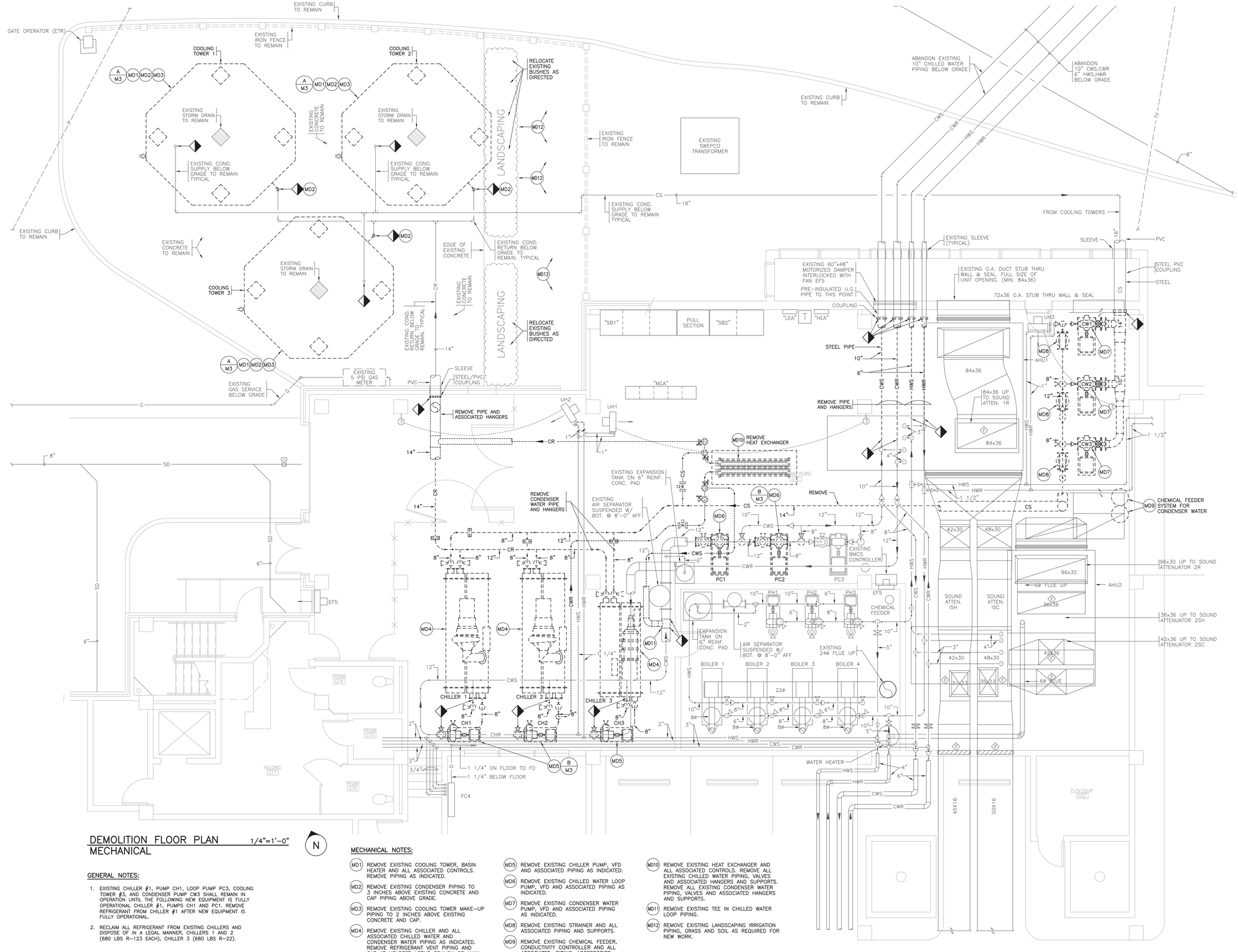
SHEET NO.

M0

OF 4M

DATE DRAWING LAST PLOTTED: 09/15/25 TIME:13:27:22

DATE DRAWING LAST SAVED:08/20/25 TIME:08:09:25



DEMOLITION FLOOR PLAN 1/4"=1'-0"
MECHANICAL

N

GENERAL NOTES:

1. EXISTING CHILLER #1, PUMP CH1, LOOP PUMP PC3, COOLING TOWER #3, AND CONDENSER PUMP CW3 SHALL REMAIN IN OPERATION UNTIL THE FOLLOWING NEW EQUIPMENT IS FULLY OPERATIONAL CHILLER #1, PUMPS CH1 AND PC1. REMOVE REFRIGERANT FROM CHILLER #1 AFTER NEW EQUIPMENT IS FULLY OPERATIONAL.
2. RECLAIM ALL REFRIGERANT FROM EXISTING CHILLERS AND DISPOSE OF IN A LEGAL MANNER, CHILLERS 1 AND 2 (680 LBS R-123 EACH), CHILLER 3 (680 LBS R-22).

MECHANICAL NOTES:

- (MD1) REMOVE EXISTING COOLING TOWER, BASIN HEATER AND ALL ASSOCIATED CONTROLS. REMOVE PIPING AS INDICATED.
- (MD2) REMOVE EXISTING CONDENSER PIPING TO 3 INCHES ABOVE EXISTING CONCRETE AND CAP PIPING ABOVE GRADE.
- (MD3) REMOVE EXISTING COOLING TOWER MAKE-UP PIPING TO 2 INCHES ABOVE EXISTING CONCRETE AND CAP.
- (MD4) REMOVE EXISTING CHILLER AND ALL ASSOCIATED CHILLED WATER AND CONDENSER WATER PIPING AS INDICATED. REMOVE REFRIGERANT VENT PIPING AND CAP AT NEAREST ACTIVE BRANCH OR MAIN.
- (MD5) REMOVE EXISTING CHILLER PUMP, VFD AND ASSOCIATED PIPING AS INDICATED.
- (MD6) REMOVE EXISTING CHILLED WATER LOOP PUMP, VFD AND ASSOCIATED PIPING AS INDICATED.
- (MD7) REMOVE EXISTING CONDENSER WATER PUMP, VFD AND ASSOCIATED PIPING AS INDICATED.
- (MD8) REMOVE EXISTING STRAINER AND ALL ASSOCIATED PIPING AND SUPPORTS.
- (MD9) REMOVE EXISTING CHEMICAL FEEDER, CONDUCTIVITY CONTROLLER AND ALL ASSOCIATED, PIPING, ACCESSORIES AND ELECTRICAL.
- (MD10) REMOVE EXISTING HEAT EXCHANGER AND ALL ASSOCIATED CONTROLS. REMOVE ALL EXISTING CHILLED WATER PIPING, VALVES AND ASSOCIATED HANGERS AND SUPPORTS. REMOVE ALL EXISTING CONDENSER WATER PIPING, VALVES AND ASSOCIATED HANGERS AND SUPPORTS.
- (MD11) REMOVE EXISTING TEE IN CHILLED WATER LOOP PIPING.
- (MD12) REMOVE EXISTING LANDSCAPING IRRIGATION PIPING, GRASS AND SOIL AS REQUIRED FOR NEW WORK.

12" 0" 5' 10'
SCALE: 1/4 INCH = 1 FOOT

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DESIGNER: MICHAEL S. MIDDLETON P.E.
CHECKED BY: MSM

STATE OF LOUISIANA MICHAEL S. MIDDLETON REG. No. 27473 PROFESSIONAL ENGINEER

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JOB NO. 7324

DATE: JUNE 13, 2025

SHEET NO.

M1

OF 4M

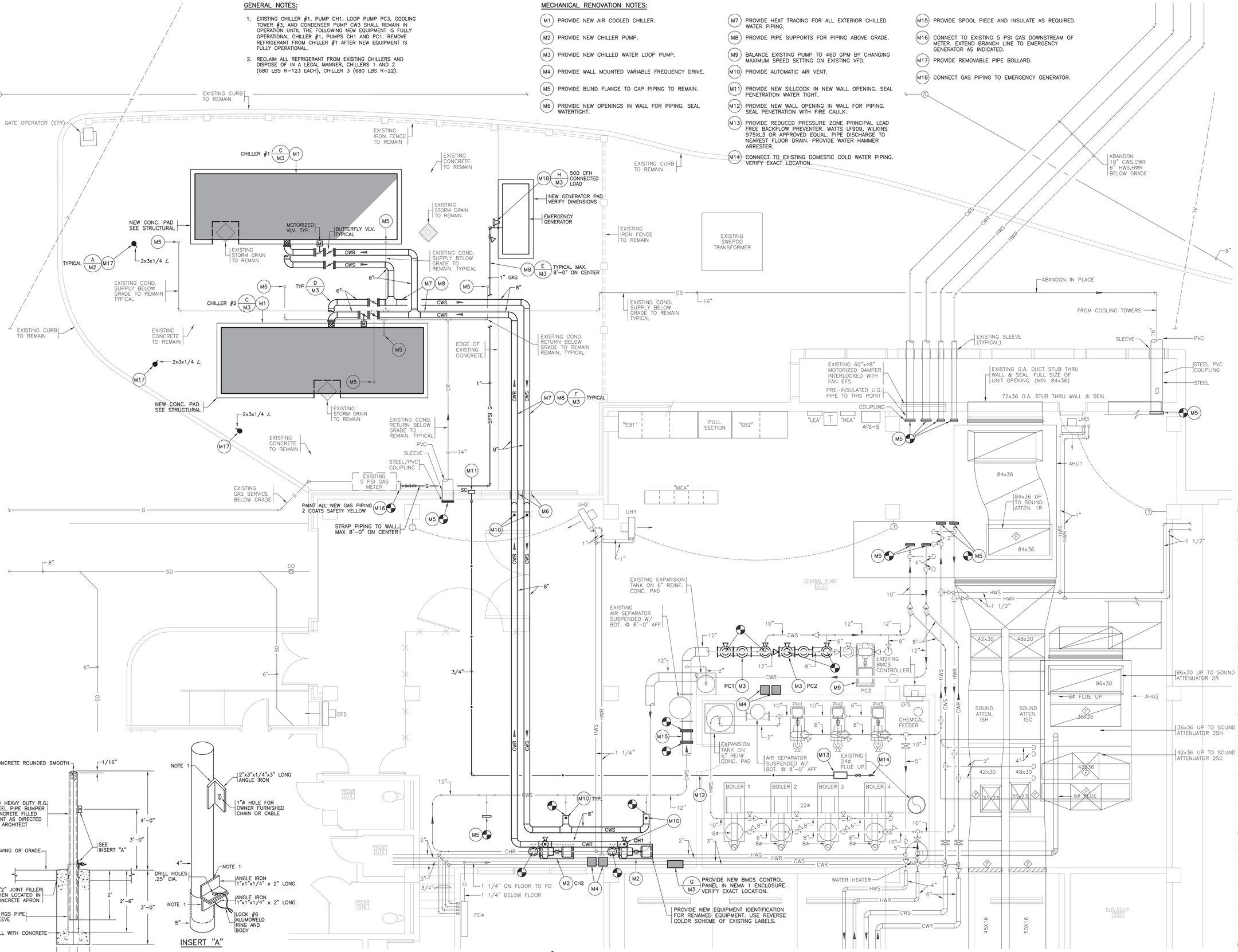
DATE DRAWING LAST SAVED: 09/10/25 TIME:09:22:39
DATE DRAWING LAST PLOTTED: 09/15/25 TIME:13:26:51

GENERAL NOTES:

1. EXISTING CHILLER #1, PUMP CH1, LOOP PUMP PC3, COOLING TOWER #3, AND CONDENSER PUMP CW3 SHALL REMAIN IN OPERATION UNTIL THE FOLLOWING NEW EQUIPMENT IS FULLY OPERATIONAL CHILLER #1, PUMPS CH1 AND PC1. REMOVE REFRIGERANT FROM CHILLER #1 AFTER NEW EQUIPMENT IS FULLY OPERATIONAL.
2. RECLAIM ALL REFRIGERANT FROM EXISTING CHILLERS AND DISPOSE OF IN A LEGAL MANNER, CHILLERS 1 AND 2 (680 LBS R-123 EACH), CHILLER 3 (680 LBS R-22).

MECHANICAL RENOVATION NOTES:

- M1 PROVIDE NEW AIR COOLED CHILLER.
- M2 PROVIDE NEW CHILLER PUMP.
- M3 PROVIDE NEW CHILLED WATER LOOP PUMP.
- M4 PROVIDE WALL MOUNTED VARIABLE FREQUENCY DRIVE.
- M5 PROVIDE BLIND FLANGE TO CAP PIPING TO REMAIN.
- M6 PROVIDE NEW OPENINGS IN WALL FOR PIPING. SEAL WATERTIGHT.
- M7 PROVIDE HEAT TRACING FOR ALL EXTERIOR CHILLED WATER PIPING.
- M8 PROVIDE PIPE SUPPORTS FOR PIPING ABOVE GRADE.
- M9 BALANCE EXISTING PUMP TO 460 GPM BY CHANGING MAXIMUM SPEED SETTING ON EXISTING VFD.
- M10 PROVIDE AUTOMATIC AIR VENT.
- M11 PROVIDE NEW SILLCOCK IN NEW WALL OPENING. SEAL PENETRATION WATER TIGHT.
- M12 PROVIDE NEW WALL OPENING IN WALL FOR PIPING. SEAL PENETRATION WITH FIRE CAULK.
- M13 PROVIDE REDUCED PRESSURE ZONE PRINCIPAL LEAD FREE BACKFLOW PREVENTER. WATTS LF909, WILKINS 975XL3 OR APPROVED EQUAL. PIPE DISCHARGE TO NEAREST FLOOR DRAIN. PROVIDE WATER HAMMER ARRESTER.
- M14 CONNECT TO EXISTING DOMESTIC COLD WATER PIPING. VERIFY EXACT LOCATION.
- M15 PROVIDE SPOOL PIECE AND INSULATE AS REQUIRED.
- M16 CONNECT TO EXISTING 5 PSI GAS DOWNSTREAM OF METER. EXTEND BRANCH LINE TO EMERGENCY GENERATOR AS INDICATED.
- M17 PROVIDE REMOVABLE PIPE BOLLARD.
- M18 CONNECT GAS PIPING TO EMERGENCY GENERATOR.



INSERT "A"

NOTES:
1. ANGLE TO BE WELDED TO PIPE EACH SIDE ALL EXPOSED METAL TO BE PAINTED AS DIRECTED BY ARCHITECT.
2. SEAL GAP BETWEEN CONDUITS WITH DUCT SEAL FOR WATER TIGHT FIT.
3. USE 5" PLUG TO PREVENT CONCRETE FROM COMING UP 5" CONDUIT.

A DETAIL-REMOVABLE PIPE BOLLARD
NO SCALE

RENOVATION FLOOR PLAN 1/4"=1'-0"
MECHANICAL

N

12" 0" 5' 10'
SCALE: 1/4 INCH = 1 FOOT

DATE DRAWING LAST SAVED: 09/12/25 TIME:09:16:08
DATE DRAWING LAST PLOTTED: 09/15/25 TIME:13:26:18

JOHN J. GUTH ASSOCIATES, INC.
MECHANICAL AND ELECTRICAL ENGINEERS 7324
208 MILAM STREET
SHREVEPORT, LOUISIANA 71101
DESIGNER: MICHAEL S. MIDDLETON P.E.
CHECKED BY: MSM

THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY.

STATE OF LOUISIANA MICHAEL S. MIDDLETON REG. No. 27975 PROFESSIONAL ENGINEER

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SHREVEPORT MUNICIPAL COURTS BUILDING
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JOB NO. 7324
DATE: JUNE 13, 2025
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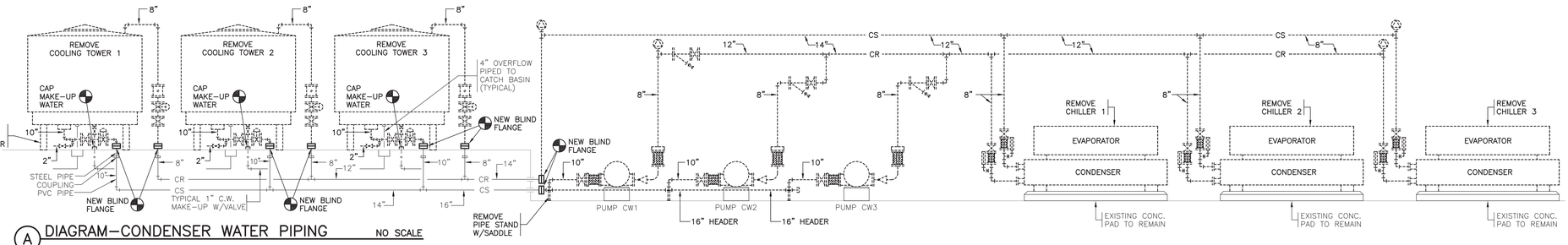
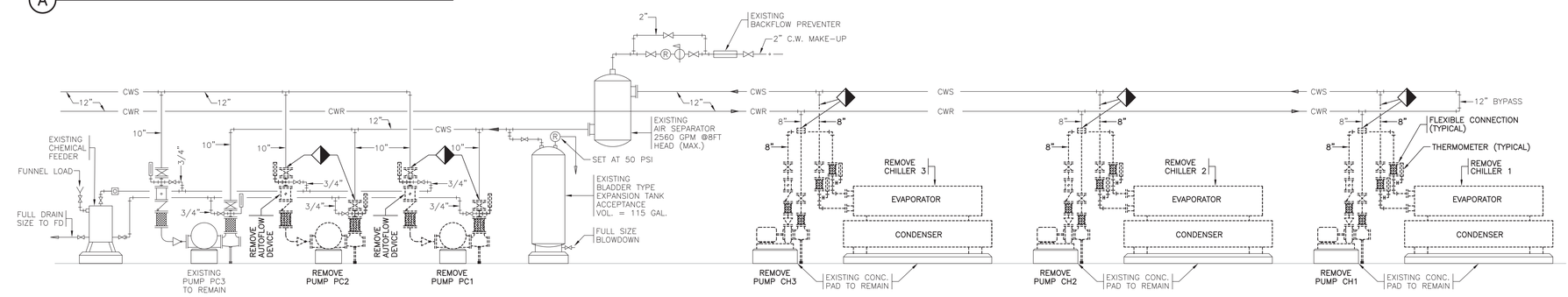
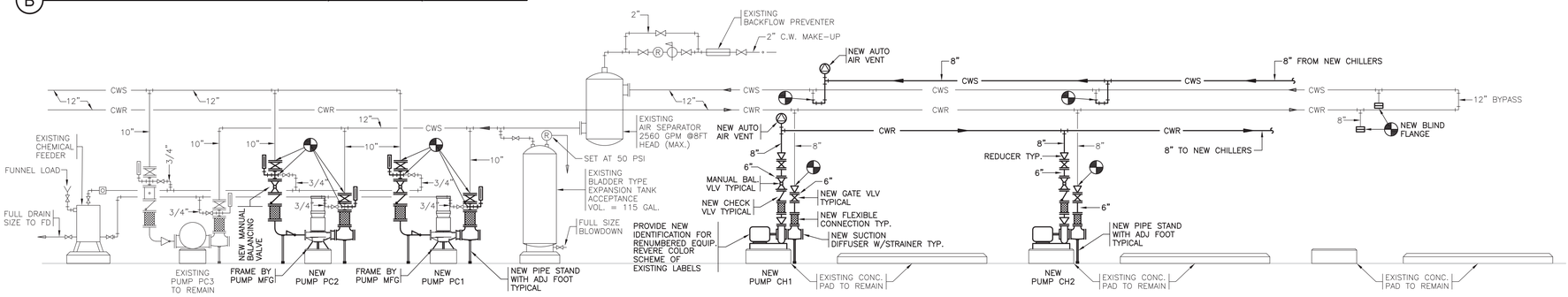


A DIAGRAM–CONDENSER WATER PIPING NO SCALE

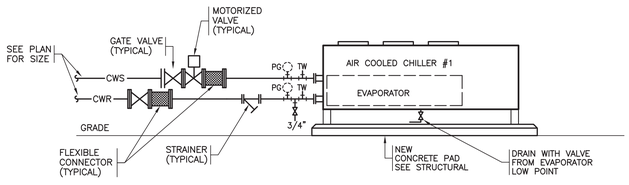


B DIAGRAM–CHILLED WATER PIPING (DEMOLITION) NO SCALE



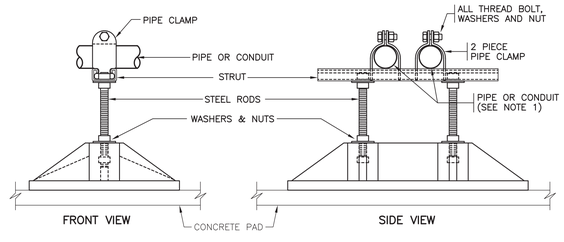
C DIAGRAM–CHILLED WATER PIPING (RENOVATION) NO SCALE

NOTES:
1. RECONNECT NEW PUMPS TO EXISTING CHEMICAL FEEDER.
2. PROVIDE PIPE SUPPORT FOR PUMP DISCHARGE PIPING. SECURE SUPPORT TO EXISTING CONCRETE AS REQUIRED.
3. PROVIDE ECCENTRIC REDUCER ON DISCHARGE OF PUMPS PC1 AND PC2.



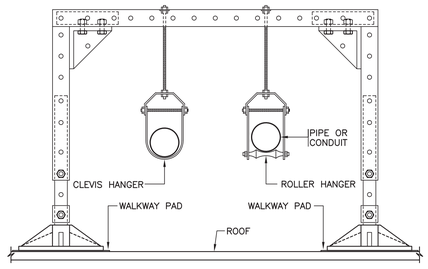
D DETAIL–CHILLED PIPING DIAGRAM NO SCALE

NOTES:
1. AIR COOLED CHILLER #2 IS IDENTICAL.



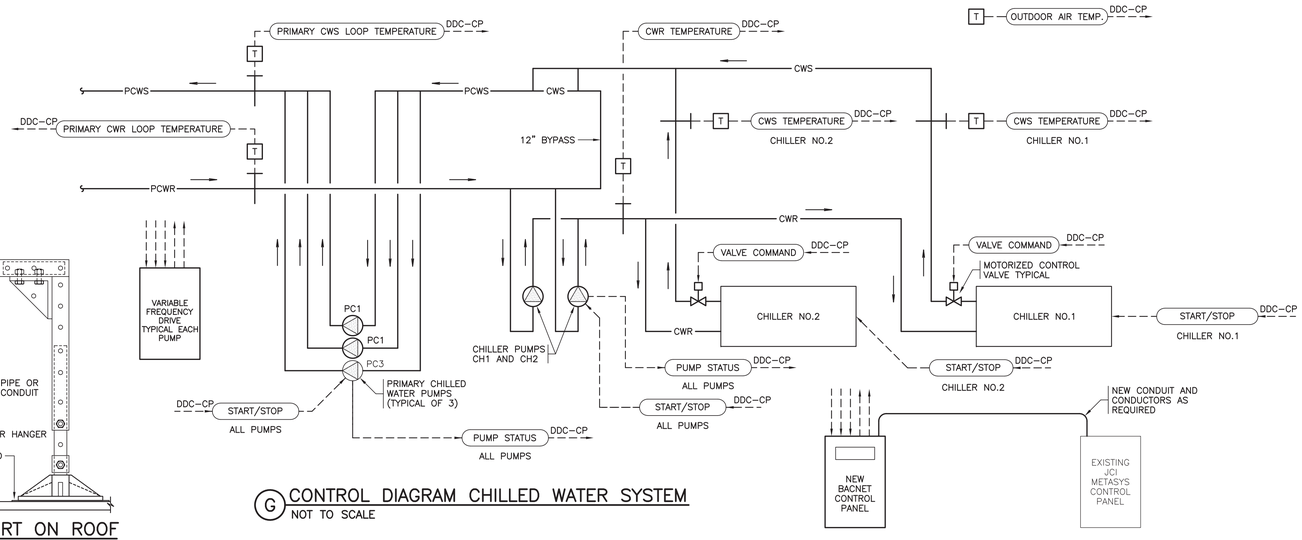
E DETAIL–PIPE & CONDUIT SUPPORT ON CONCRETE PAD
PIPE SIZES 2" AND SMALLER NO SCALE

NOTES:
1. PROVIDE UV STABILIZED NON CONDUCTIVE CUSHION BETWEEN PIPING AND SUPPORTS OF DISSIMILAR METALS.
2. PIPE SUPPORT SHALL BE ONE OF THE FOLLOWING OR APPROVED EQUAL:
   A. PORTABLE PIPE HANGERS, INC. MODEL PP10S.
   B. MAPA PRODUCTS, MODEL MS–3.
   C. MIRO INDUSTRIES, 8–BASE/STRUT–12.
3. ALL STRUTS, RODS, WASHERS, NUTS, BOLTS, CLAMPS, ETC. SHALL BE HOT DIPPED GALVANIZED (ASTM A123).

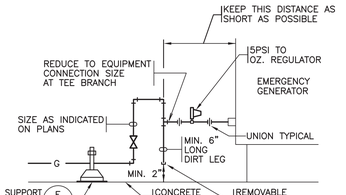


F DETAIL–PIPE & CONDUIT SUPPORT ON ROOF
PIPE SIZES 3" TO 8" NO SCALE

NOTES:
1. PIPE SUPPORT SHALL BE ONE OF THE FOLLOWING OR APPROVED EQUAL:
   A. PORTABLE PIPE HANGERS, INC. MODEL PSE–2–2.
   B. MIRO INDUSTRIES MODEL NO. 8–H2C/R.
2. DETAIL SHOWN FOR MULTIPLE PIPES. FOR SINGLE PIPE PROVIDE ONE OF THE FOLLOWING OR APPROVED EQUAL.
   A. PORTABLE PIPE HANGERS, INC. MODEL PSE–1–2.
   B. MIRO INDUSTRIES MODEL NO. 8–H1C/R.
3. PROVIDE CLEVIS HANGER OR ROLLER HANGER AS NOTED.
4. ALL METAL PARTS SHALL BE HOT DIPPED GALVANIZED (ASTM A123).



G CONTROL DIAGRAM CHILLED WATER SYSTEM
NOT TO SCALE



H DETAIL–CONNECTION OF GAS PIPING TO A/C UNIT NO SCALE

NOTES:
1. ARRANGE PIPING AND SUPPORTS SO THAT EQUIPMENT ACCESS DOORS ARE FULLY OPENABLE.
2. SIZE REGULATOR FOR EQUIPMENT FUEL GAS LOAD.

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CHECKED BY: MSM

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STATE OF LOUISIANA
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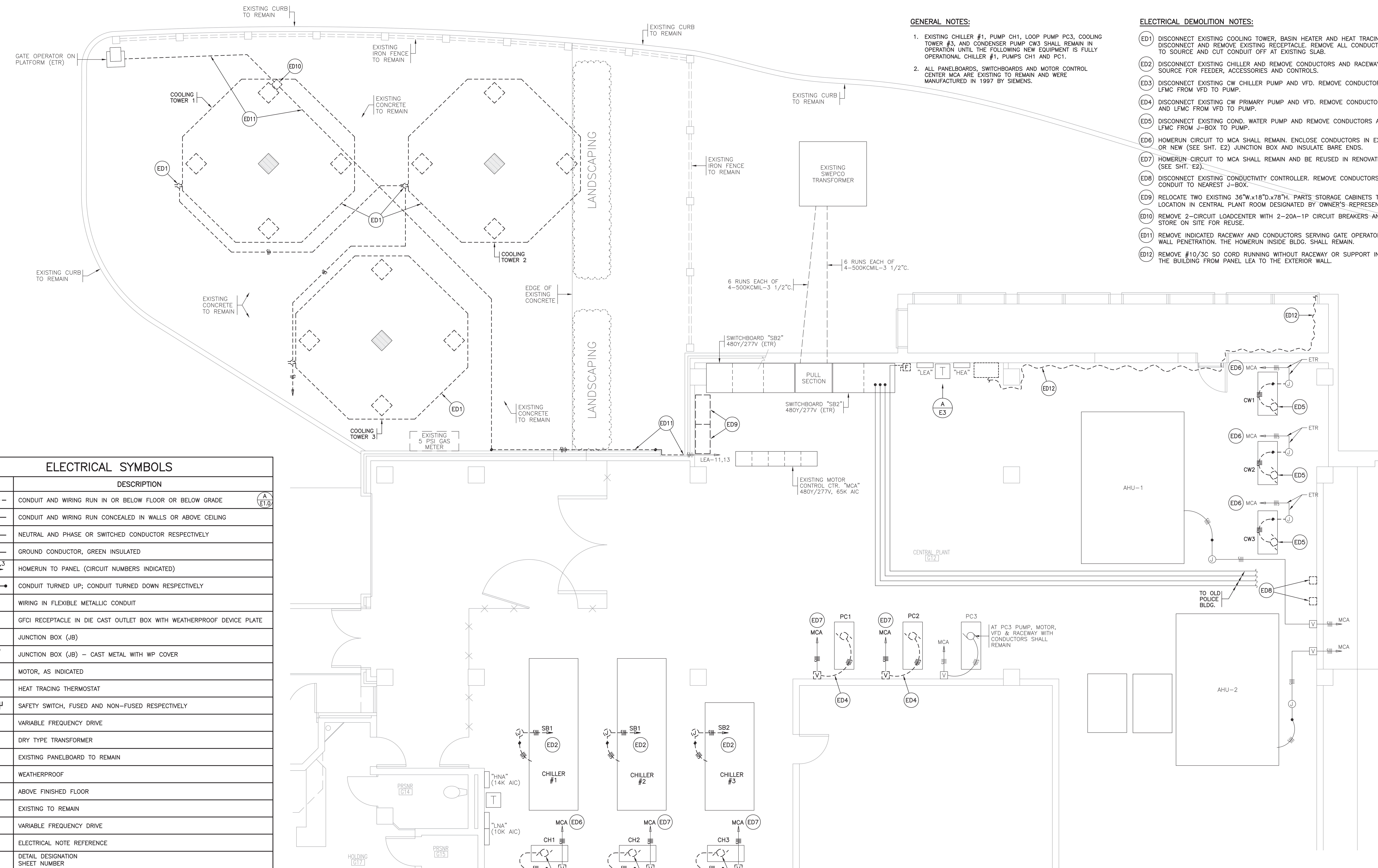


FLOOR PLAN 1/4"=1'-0"
ELECTRICAL DEMOLITION

GENERAL NOTES:

1. EXISTING CHILLER #1, PUMP CH1, LOOP PUMP PC3, COOLING TOWER #3, AND CONDENSER PUMP CW3 SHALL REMAIN IN OPERATION UNTIL THE FOLLOWING NEW EQUIPMENT IS FULLY OPERATIONAL CHILLER #1, PUMPS CH1 AND PC1.
2. ALL PANELBOARDS, SWITCHBOARDS AND MOTOR CONTROL CENTER MCA ARE EXISTING TO REMAIN AND WERE MANUFACTURED IN 1997 BY SIEMENS.

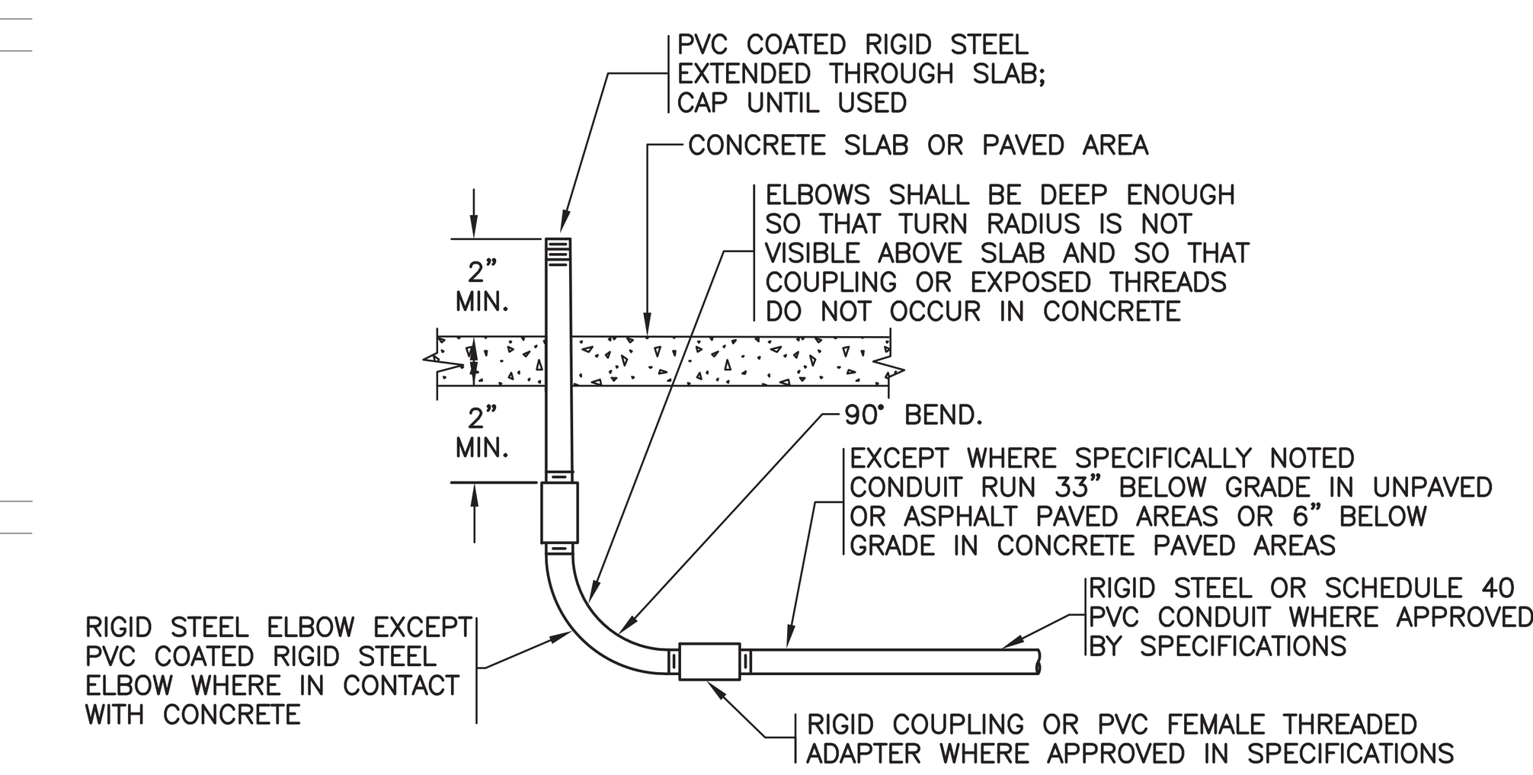
ELECTRICAL DEMOLITION NOTES:

- ED1 DISCONNECT EXISTING COOLING TOWER, BASIN HEATER AND HEAT TRACING. DISCONNECT AND REMOVE EXISTING RECEPTACLE. REMOVE ALL CONDUCTORS TO SOURCE AND CUT CONDUIT OFF AT EXISTING SLAB.
- ED2 DISCONNECT EXISTING CHILLER AND REMOVE CONDUCTORS AND RACEWAY TO SOURCE FOR FEEDER, ACCESSORIES AND CONTROLS.
- ED3 DISCONNECT EXISTING CW CHILLER PUMP AND VFD. REMOVE CONDUCTORS AND LFMC FROM VFD TO PUMP.
- ED4 DISCONNECT EXISTING CW PRIMARY PUMP AND VFD. REMOVE CONDUCTORS AND LFMC FROM VFD TO PUMP.
- ED5 DISCONNECT EXISTING COND. WATER PUMP AND REMOVE CONDUCTORS AND LFMC FROM J-BOX TO PUMP.
- ED6 HOMERUN CIRCUIT TO MCA SHALL REMAIN. ENCLOSE CONDUCTORS IN EXISTING OR NEW (SEE SHT. E2) JUNCTION BOX AND INSULATE BARE ENDS.
- ED7 HOMERUN CIRCUIT TO MCA SHALL REMAIN AND BE REUSED IN RENOVATION (SEE SHT. E2).
- ED8 DISCONNECT EXISTING CONDUCTIVITY CONTROLLER. REMOVE CONDUCTORS AND CONDUIT TO NEAREST J-BOX.
- ED9 RELOCATE TWO EXISTING 36"W.x18"D.x78"H. PARTS STORAGE CABINETS TO LOCATION IN CENTRAL PLANT ROOM DESIGNATED BY OWNER'S REPRESENTATIVE.
- ED10 REMOVE 2-CIRCUIT LOADCENTER WITH 2-20A-1P CIRCUIT BREAKERS AND STORE ON SITE FOR REUSE.
- ED11 REMOVE INDICATED RACEWAY AND CONDUCTORS SERVING GATE OPERATOR TO WALL PENETRATION. THE HOMERUN INSIDE BLDG. SHALL REMAIN.
- ED12 REMOVE #10/3C SO CORD RUNNING WITHOUT RACEWAY OR SUPPORT INSIDE THE BUILDING FROM PANEL LEA TO THE EXTERIOR WALL.

ELECTRICAL SYMBOLS

SYMBOL	DESCRIPTION
	CONDUIT AND WIRING RUN IN OR BELOW FLOOR OR BELOW GRADE
	CONDUIT AND WIRING RUN CONCEALED IN WALLS OR ABOVE CEILING
	NEUTRAL AND PHASE OR SWITCHED CONDUCTOR RESPECTIVELY
	GROUND CONDUCTOR, GREEN INSULATED
L-1,3	HOMERUN TO PANEL (CIRCUIT NUMBERS INDICATED)
	CONDUIT TURNED UP; CONDUIT TURNED DOWN RESPECTIVELY
	WIRING IN FLEXIBLE METALLIC CONDUIT
WP	GFCI RECEPTACLE IN DIE CAST OUTLET BOX WITH WEATHERPROOF DEVICE PLATE
J	JUNCTION BOX (JB)
J WP	JUNCTION BOX (JB) - CAST METAL WITH WP COVER
	MOTOR, AS INDICATED
T H	HEAT TRACING THERMOSTAT
F	SAFETY SWITCH, FUSED AND NON-FUSED RESPECTIVELY
V	VARIABLE FREQUENCY DRIVE
T	DRY TYPE TRANSFORMER
	EXISTING PANELBOARD TO REMAIN
WP	WEATHERPROOF
AFF	ABOVE FINISHED FLOOR
ETR	EXISTING TO REMAIN
VFD	VARIABLE FREQUENCY DRIVE
E1	ELECTRICAL NOTE REFERENCE
A / E1	DETAIL DESIGNATION SHEET NUMBER
E	GENERATOR EMERGENCY SHUTDOWN DEVICE, CENTERLINE @ 48" ABV. GRADE
S	SURGE PROTECTIVE DEVICE (SPD)
G	GENERATOR
ANN	EMERGENCY SYSTEM ANNUNCIATOR, FLUSH MTD., CENTERLINE 48" AFF
A	NORMALLY CLOSED AUXILIARY CONTACT
	MOLDED CASE CIRCUIT BREAKER
SW	MOLDED CASE SWITCH
--ANN--	ANNUNCIATOR WIRING, RACEWAY & CONDUCTORS AS REQUIRED
--ANN/CTL--	ANNUNCIATOR & CONTROL WIRING, RACEWAY & CONDUCTORS AS REQUIRED
LFNC	LIQUIDTIGHT FLEXIBLE NONMETALLIC CONDUIT
ATS	AUTOMATIC TRANSFER SWITCH, MOUNTED WITH TOP @ 72" AFF
GDS	GENERATOR DOCKING STATION, MOUNTED WITH TOP @ 72" ABV. GRADE
GRS C.	GALVANIZED RIGID STEEL CONDUIT

NOTE: DASHED SYMBOLS REPRESENT EXISTING EQUIPMENT TO BE REMOVED UNLESS SPECIFICALLY NOTED OTHERWISE.
SOLID LIGHT SYMBOLS REPRESENT EXISTING EQUIPMENT TO REMAIN AS IS UNLESS SPECIFICALLY NOTED OTHERWISE.
SOLID HEAVY SYMBOLS REPRESENT NEW EQUIPMENT



A DETAIL-CONDUIT PENETRATION THROUGH SLAB NO SCALE

NOTE: WHERE PVC COATING IS REQUIRED, 2 LAYERS OF FIELD APPLIED BITUMINOUS OR PVC TAPE WRAPPING IS ACCEPTABLE.

12" 0" 5' 10'
SCALE: 1/4 INCH = 1 FOOT

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THOMAS A. HARDMAN
CHECKED BY: JPF

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STATE OF LOUISIANA
J. P. FOREMAN
REG. No. 22378
REGISTERED PROFESSIONAL ENGINEER
IN
ELECTRICAL ENGINEERING
9/16/2025

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DATE: JUNE 13, 2025

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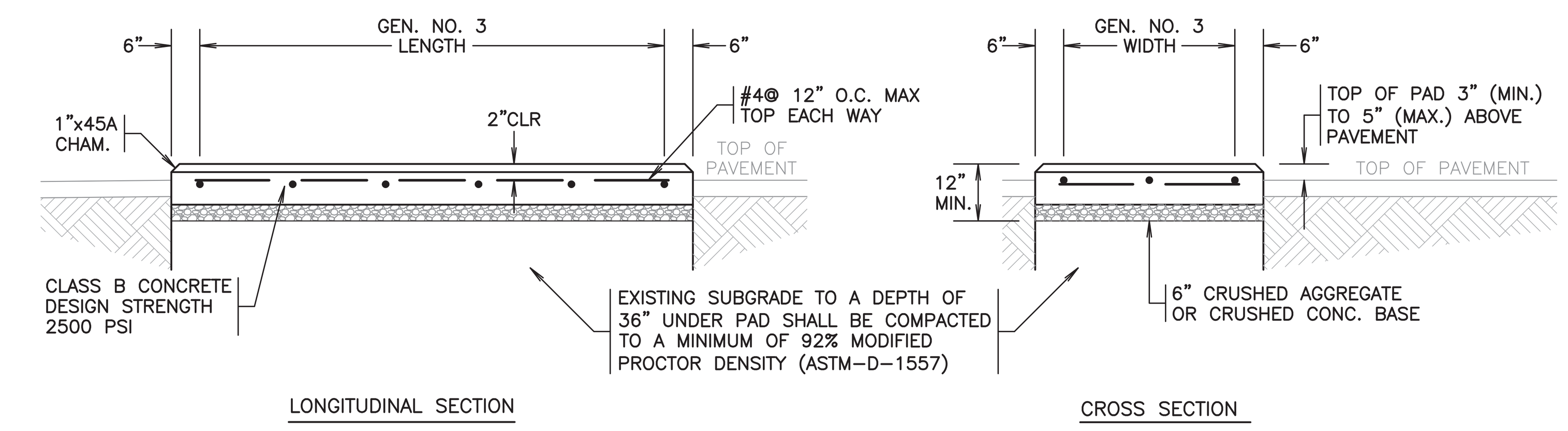
E1



(A) DETAIL–GENERATOR MOUNTING PAD — NO SCALE

NOTES:
1. VERIFY THAT LOCATION OF PAD COMPLIES WITH ALL CLEARANCE REQUIREMENTS OF GENERATOR MANUFACTURER.
2. SECURE GENERATOR TO PAD PER MANUFACTURER'S RECOMMENDATIONS.
3. NOTE THAT PAVEMENT SLOPES DOWN TOWARD CHILLERS.

GENERAL NOTES:

1. PRIOR TO ROUGH–IN VERIFY THAT:
   a. CHILLERS APPROVED FOR INSTALLATION HAVE MCA AND MOCP RATINGS COMPATIBLE WITH FEEDER RATING AND FEEDER CIRCUIT BREAKER RATING INDICATE IN PROJECT DOCUMENTS;
   b. VARIABLE FREQUENCY DRIVES ARE COMPATIBLE WITH THE FEEDER RATING AND FEEDER CIRCUIT BREAKERS INDICATED IN THE PROJECT DOCUMENTS; AND
   c. THE BRANCH CIRCUIT REQUIREMENTS OF THE HEAT TRACING IN THE APPROVED PRODUCT SUBMITTAL ARE COMPATIBLE WITH THE BRANCH CIRCUITS INDICATED IN THE PROJECT DOCUMENTS.
2. UPDATE ALL SWITCHBOARD, PANELBOARD AND MOTOR CONTROL CENTER DIRECTORIES AND LABELS TO REFLECT NEW WORK.
3. SEAL ALL BUILDING WALL PENETRATIONS WATERTIGHT.
4. LOCATE BURIED UTILITIES, PIPING, CONDUCTS, ETC. PRIOR TO EXCAVATING. CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRS TO BURIED ITEMS DAMAGED BY CONTRACTOR ACTIVITIES.
5. PANELS HEA AND LEA MUST BE ENERGIZED DURING NORMAL OCCUPIED TIMES FOR THE BUILDING. SOME OF THE WORK ON THE EMERGENCY SYSTEM MUST BE DONE DURING UNOCCUPIED TIMES, SUCH AS WEEKENDS AND HOLIDAYS.

ELECTRICAL RENOVATION NOTES:

(E1) PROVIDE J–BOX AT END OF FEEDER IN PLACE OF VFD.

(E2) CONNECT VFD TO SERVE PUMPS WITH CIRCUITS AS INDICATED.

(E3) CONNECT HEAT TRACING THERMOSTATS FOR CWS AND CWR PIPING TO SEPARATE CIRCUITS. HEAT TRACING AND THERMOSTATS SHALL BE FURNISHED UNDER DIVISION 23. VERIFY EXACT LOCATIONS OF THERMOSTATS PRIOR TO ROUGH–IN.

(E4) REMOVE 450A–3P CIRCUIT BREAKERS FEEDING EXISTING CHILLERS #1 AND #2 FROM SWITCHBOARD SB1. IN PLACE OF EACH REMOVED CIRCUIT BREAKERS, PROVIDE A 500A–3P, 100K AIC THERMAL–MAGNET CIRCUIT BREAKER. PROVIDE ACCESSORIES AS REQUIRED INCLUDING BUSS CONNECTION KIT AND FRONT COVER WITH CUTOUT FOR CIRCUIT BREAKER HANDLE WITH PAINT MATCHING PAINT FINISH OF EXISTING SWITCHBOARD. THE 400A–3P EXISTING CIRCUIT BREAKER FOR EXISTING CHILLER #3 SHALL REMAIN. REMOVE NAMEPLATES CHILLERS #1, #2 AND #3. PROVIDE NEW NAMEPLATES FOR CHILLERS #1 AND #2 ONLY.

(E5) PROVIDE A 100A–3P 100K AIC CIRCUIT BREAKER IN PREPARED SPACE TO FEED EXISTING PANEL HEA. PROVIDE ENGRAVED NAMEPLATE WITH WHITE BACKGROUND AND BLACK LETTERS IDENTIFYING LOAD SERVED.

(E6) PROVIDE 18"x18"x6" NEMA 4X PULL BOX ON WALL.

(E7) PROVIDE 18"x18"x6"D. NEMA 4X PULL BOX MOUNTED ON ELECTRICAL CHANNEL MOUNTED TO EXISTING CONCRETE PAD.

(E8) AT MCA IN UNITS FOR CHILLER PUMPS CH1 AND CH2, REMOVE EXISTING CIRCUIT BREAKER AND PROVIDE A 30A–3P, 65K AIC CIRCUIT BREAKER AND CONNECT TO EXISTING FEEDER CONDUCTORS. NOTE THAT THE UNIT TO SERVE NEW CHILLER PUMP CH1 HAS AN EXISTING NAMEPLATE WITH LEGEND: "CW CHILLER PUMP NO. 3", BUT PROVIDE A REPLACEMENT NAMEPLATE WITH LEGEND: "CW CHILLER PUMP NO. 1"

(E9) AT MCA IN UNITS FOR CW PRIMARY PUMPS 1 AND 2, REMOVE EXISTING CIRCUIT BREAKER AND PROVIDE A 30A–3P, 65K AIC CIRCUIT BREAKER AND CONNECT TO EXISTING FEEDER CONDUCTORS.

(E10) AT MCA REMOVE ENGRAVED NAMEPLATES FROM UNITS FROM WHICH PUMP LOADS HAVE BEEN DISCONNECTED. PROVIDE ENGRAVED NAMEPLATES WITH WHITE BACKGROUND AND BLACK LETTERS ON UNITS TO WHICH NEW PUMPS ARE CONNECTED. LEGEND ON NAMEPLATE SHALL BE AS PER DESIGNATION USED ON THIS SHEET.

(E11) PROVIDE FOUR 20A–1P, 14K AIC CIRCUIT BREAKERS WITH GROUND FAULT FOR PROTECTION OF EQUIPMENT AT SPACES IN PANEL HNA (SIEMENS TYPE S2):

CKT NO.	BRANCH SIZE	FEEDING
19	2#12,1#12G–1/2"C.	HEAT TAPE ON CWS PIPING
20	2#12,1#12G–1/2"C.	HEAT TAPE IN CHILLER #1
21	2#12,1#12G–1/2"C.	HEAT TAPE ON CWR PIPING
22	2#12,1#12G–1/2"C.	HEAT TAPE IN CHILLER #2

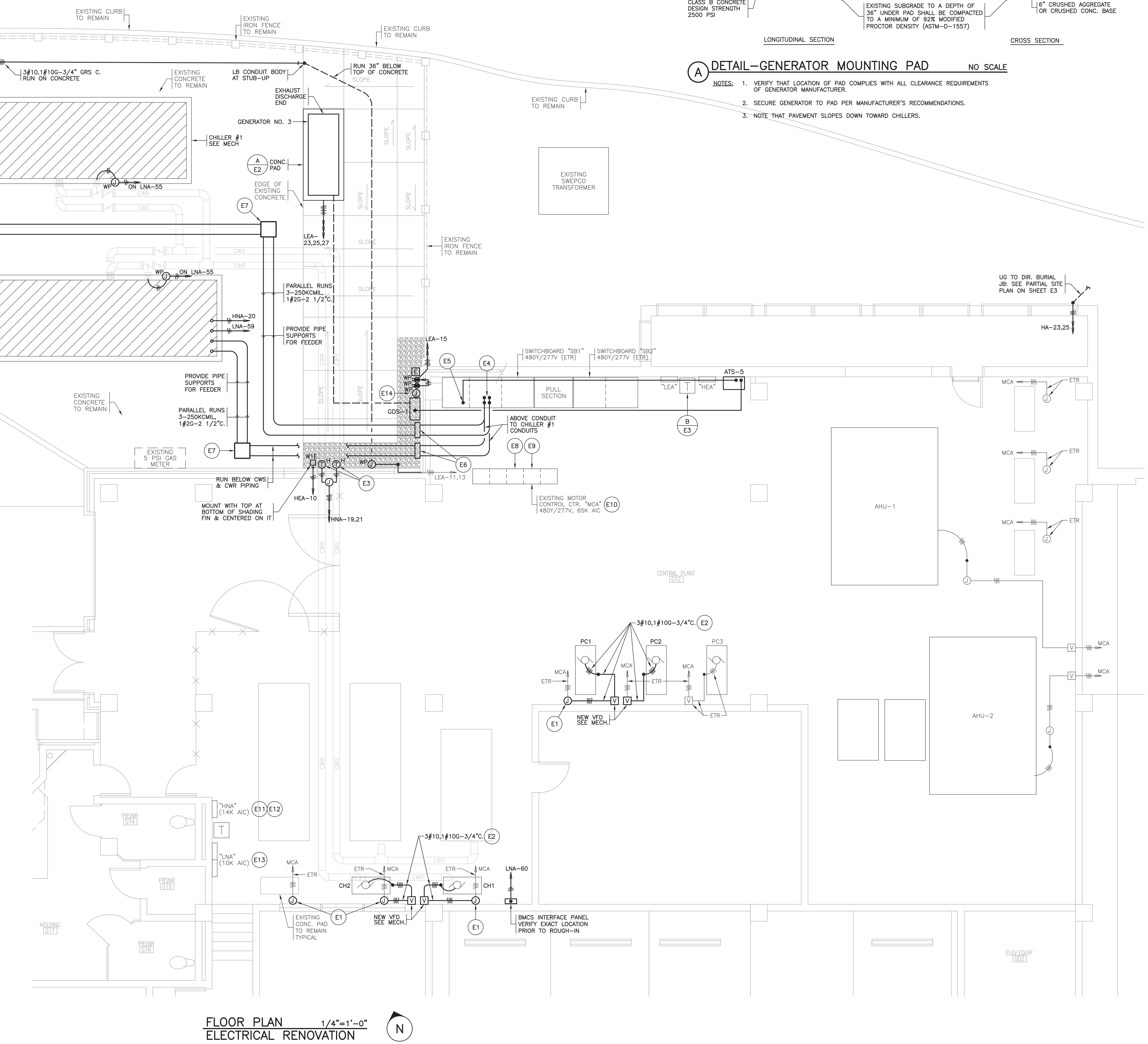
(E12) IN PANEL HNA (SIEMENS TYPE P2) PROVIDE ONE 20A–2P, 14K AIC CIRCUIT BREAKER AT SPACES:

CKT NO.	BRANCH SIZE	FEEDING
23,25	2#8,1#10G–3/4"C.	EXISTING FLAG LTG. FIXTURES

(E13) PROVIDE FOUR 20A–1P, 10K AIC CIRCUIT BREAKERS AT SPACES IN PANEL LNA (SIEMENS TYPE S1):

CKT NO.	BRANCH SIZE	FEEDING
55	2#10,1#10G–1/2"C.	MOTORIZED VALVES
57	2#10,1#10G–1/2"C.	CHILLER #1 RECEPT. & ACCESSORIES
59	2#10,1#10G–1/2"C.	CHILLER #2 RECEPT. & ACCESSORIES
60	2#12,1#12G–1/2"C.	BMCS INTERFACE PANEL

(E14) PROVIDE 8"x8"x4"D. NEMA 3R JUNCTION BOX FOR ANN/CTL WIRING WITH TWO 12–POLE TERMINAL STRIPS (IDEAL IND #89–412 OR EQUAL) MOUNTED VERTICALLY 4" APART, ONE FOR GEN. NO. 3 WIRING AND THE OTHER FOR PORTABLE GENERATOR. PROVIDE 3/4" THREADED NIPPLE THRU HOLE IN BOTTOM WITH 3/4" GRS. C. COUPLING ON OUTSIDE SEALED WITH THREADED PLUG FOR PORTABLE GENERATOR WIRING.



FLOOR PLAN 1/4"=1'–0"
ELECTRICAL RENOVATION

SCALE: 1/4 INCH = 1 FOOT

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E2
OF 3E

DATE DRAWING LAST SAVED: 09/16/25 TIME:11:14:51
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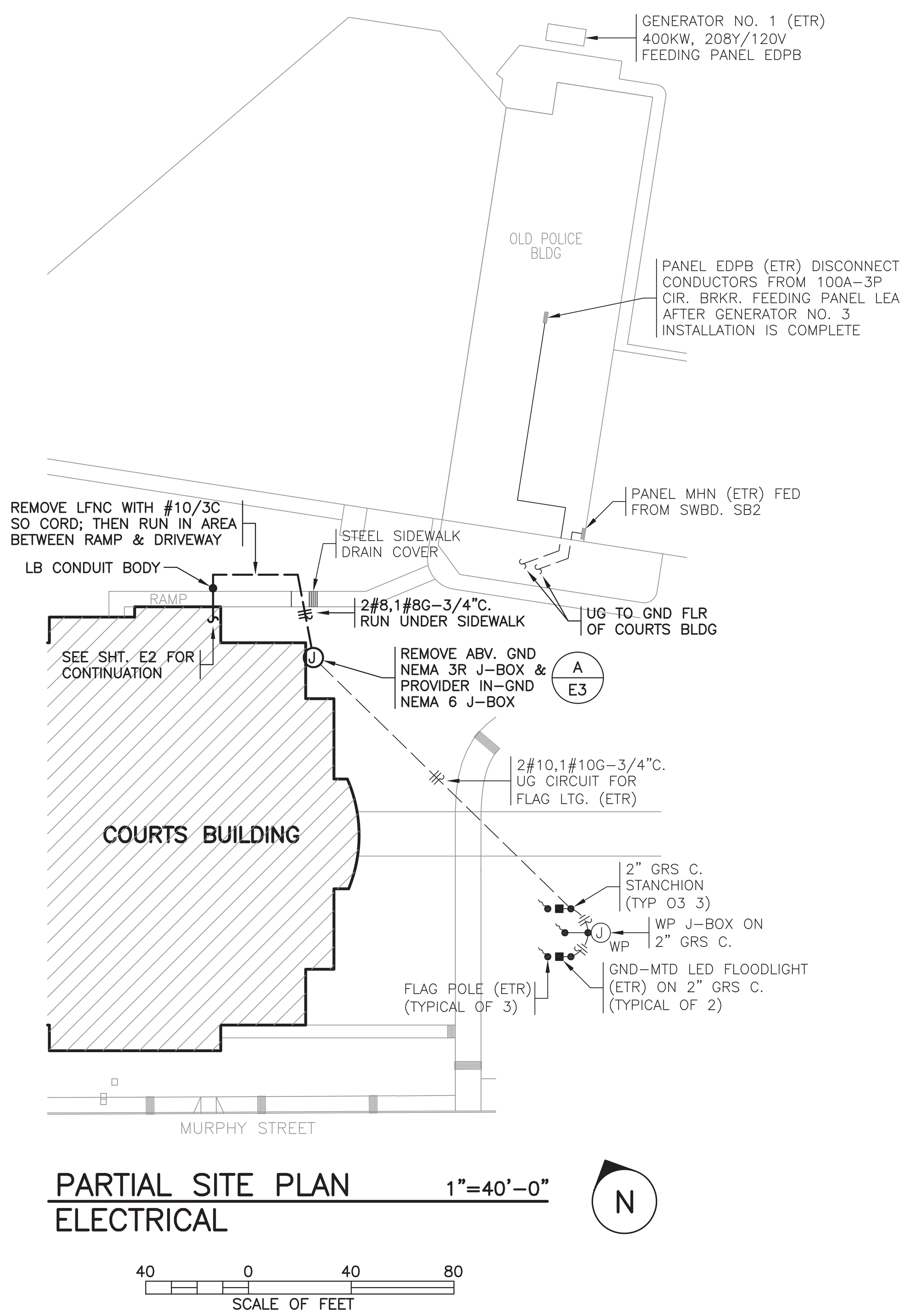


PARTIAL SITE PLAN ELECTRICAL

1"=40'-0"

ENGINE – GENERATOR SET SCHEDULE

GENERATOR NO. 3:
- **KW:** 40
- **PF:** 80%
- **RPM:** 1800
- **DUTY:** CONTINUOUS STANDBY
- **VOLTAGE:**
- **PHASE:** 3
- **WIRES:** 4
- **HERTZ:** 60
- **MINIMUM STARTING KVA:** 76
- **MAXIMUM VOLTAGE DROP AT MINIMUM STARTING KVA:** 30%
- **LOAD STARTING SEQUENCE:**
- **EXCITER:** BRUSHLESS
- **VOLTAGE REGULATOR:** DIGITAL
- **VOLTAGE REGULATION:** ±1%
- **LOAD OUTPUT CIRCUIT BREAKER:** 60A-3P

ENGINE:
- **RPM:** 1800
- **GOVERNOR:** ISOCHRONOUS (ADJUSTABLE 0-7° DROP)
- **FUEL SYSTEM:**
  - **FUEL:** NATURAL GAS
  - **FUEL PIPING:** SEE MECHANICAL DRAWING

STARTING SYSTEM:
- **VOLTAGE:** 12 VOLTS DC
  - **BATTERY:**
    - **TYPE:** LEAD ACID
  - **CHARGER:**
    - **CAPACITY:** 10AMP
    - **TYPE:** TWO RATE, SOLID STATE, CONSTANT VOLTAGE, CURRENT LIMITING WITH AUTO-ADJUSTABLE FLOAT AND EQUALIZE VOLTAGES, TEMPERATURE COMPENSATION AND OVER-VOLTAGE OUTPUT PROTECTION.

COOLING SYSTEM:
- **RADIATOR:** ENGINE MOUNTED
- **JACKET HEATER:**
  - **KW RATING:** 1.0 (MAX.)
  - **ELEC:** 120VAC

MUFFLER:
TYPE: CRITICAL-SILENCING
MIN. ATTENUATION: 38dB AT 300Hz

MOUNTING:
- **TYPE:** STATIONARY
- **HOUSING:** WEATHERPROOF
- **FOUNDATION:** SEE DETAIL
- **VIBRATION ISOLATION:** 1" THK. PAD OF WAFFLE NEOPRENE AND CORK

GENERATOR CONTROLLER:
- **LOCATION:** GENERATOR SET MOUNTED
- **FEATURES:**
  NFPA 110, LEVEL 1 COMPLIANT
  ACCEPTING DRY CONTACT INPUTS
  FOR REMOTE ANNUNCIATION
- **ANNUNCIATOR:**
  NFPA 110, LEVEL 1 COMPLIANT
  PLUS ADDITIONAL ANNUNCIATOR POINT INDICATING PERMANENTLY INSTALLED GENERATOR IS NOT CONNECTED TO ATS

AUTOMATIC TRANSFER SWITCH SCHEDULE

ATS-5

RATINGS:
- **AMPS:** 100A (MOLDED CASE DEVICES)
- **POLES:** 3
- **PHASE:** 3
- **WIRES:** 4
- **HERTZ:** 60
- **UL 1008 WITHSTAND & CLOSING RATING:** 25KA (MIN.)
- **PHYSICAL CHARACTERISTICS:**
  - **TRANSFER ACTION:** CIRCUIT BREAKER (NORMAL)/SWITCH (EMERGENCY)
  - **CONTACTS:** MECHANICALLY HELD
  - **NEUTRAL:** SOLID
  - **ENCLOSURE:** NEMA 1

INDICATORS:
- **POWER SOURCE PILOTS:** (GREEN NORMAL, RED EMERGENCY)

CONTROLS:
- **TIME DELAYS:**
  - **TO START:** 1 SEC (FIELD ADJUSTABLE)
  - **TO TRANSFER:** 2 SEC (FIELD ADJUSTABLE)
  - **TO RETRANSFER:** 30 MIN. (FIELD ADJUSTABLE)
  - **TO STOP:** 5 MIN. (FIELD ADJUSTABLE)
- **SENSORS:**
  - **UNDERVOLTAGE:**
    - **PICKUP:** 97% NORMAL VOLTAGE (FIELD ADJUSTABLE)
    - **DROPOUT:** 90% NORMAL VOLTAGE (FIELD ADJUSTABLE)
    - **TIME DELAY:** 0.5 SEC. (FIXED)
    - **FREQUENCY:** EMERGENCY SOURCE
- **EXERCISER:**
  - **CLOCK:** WITH DAY AND TIME FIELD SETTABLE, DURATION 30 MIN.
  - **SWITCH:** LOAD/NO LOAD SELECTOR
  - **TEST SWITCH:** MANUAL LOAD TRANSFER SIMULATES LOSS OF NORMAL POWER

PANELBOARD AND FEEDER SCHEDULE

MARK	MAINS	BRANCH	BRANCH DES.	BRANCH SIZE	FEEDING
HEA (ETR)	480Y/277V 3ø-4W, S/N 100A MLO 18 CIRCUITS SURFACE MTD. (SEIMENS S2) (F)	1,3,5	3-20A-1P	(ETR)	GND. FLR. LIGHTS (ETR)
		2,4	2-20A-1P	(ETR)	1ST FLR. LIGHTS (ETR)
		6,8	2-20A-1P	(ETR)	2ND FLR. LIGHTS (ETR)
		7,9,11	1-100A-3P (E)		BACKFED MAIN CIRCUIT BREAKER
		10	1-20A-1P	2#12,1#12G-1/2"C. (D)	GENERATOR YARD LIGHTING
		14,16,18	1-50A-3P (E)	4#8,1#10G-3/4"C.	TRANSFORMER LEA (ETR)
		7,9,11-13	5-20A-1P		SPARES
		15,17	2-20A-1P		SPACES ONLY
LEA (ETR)	208Y/120V 3ø-4W, S/N 125A MLO 30 CIRCUITS SURFACE MTD. (SEIMENS S1) (F)	1	1-20A-1P	(ETR)	FIRE ALARM CTL. PNL. (ETR)
		2,4	2-20A-1P	(ETR)	TELE. & DATA EQUIP. (ETR)
		3,5,7	3-20A-1P	(ETR)	RECEPT. (ETR)
		6	1-20A-1P	(ETR)	SECURITY MASTER CTL. PNL. (ETR)
		8,10	2-20A-1P	(ETR)	OH DOORS (ETR)
		9	1-20A-1P		SPARE
		11,13	1-20A-2P	(ETR)	GATE OPERATOR (ETR)
		12	1-20A-1P	(ETR)	RESCUE ASSISTANCE SYS. (ETR)
		14	1-20A-1P		SPARE
		15,17	2-20A-1P (B)	2#10,1#10G-1/2"C.	PORTABLE GEN. RECEPTACLES
		16,18,20	1-100A-3P (B)		BACKFED MAIN CIR. BREAKERS
		19,21	1-30A-2P (C)		SPARE
		22,24	2-20A-1P (A)	2#10,1#10G-1/2"C.	RECEP. & ACC. AT CHILLERS #1 & #2
		23	1-20A-1P (A)	2#12,1#12G-1/2"C. EACH	GEN. NO.3 BLOCK HTR.
		25	1-20A-1P (A)	2#12,1#12G-1/2"C.	GEN. NO.3 BAT. CHARGER
		27	1-20A-1P (A)	2#10,1#10G-1/2"C.	GEN. NO.3 RECEPTACLES & LTS.
		26,28-30	4-20A-1P		SPACES ONLY

PANELBOARD SCHEDULE NOTES:

(A) PROVIDE INDICATED 10K AIC CIRCUIT BREAKER(S) IN PANELBOARD SPACE.
(B) REMOVE EXISTING CIRCUIT BREAKERS FROM INDICATED SPACE AND PROVIDE INDICATED 10K AIC CIRCUIT BREAKER.
(C) EXISTING CIRCUIT BREAKER BECOMES A SPARE AFTER LOAD IS DISCONNECTED IN DEMOLITION.
(D) CONNECT CIRCUIT TO EXISTING CIRCUIT BREAKER.
(E) REMOVE EXISTING CIRCUIT BREAKER FROM INDICATED SPACE AND PROVIDE INDICATED 14K AIC CIRCUIT BREAKER.
(F) PROVIDE GROUND BAR, IF NONE IS INDICATED AND REMOVE BONDING BETWEEN NEUTRAL AND PANELBOARD BOX, IF INSTALLED. ALSO PROVIDE HARDWARE REQUIRED FOR BACKFED MAIN CIRCUIT BREAKERS.

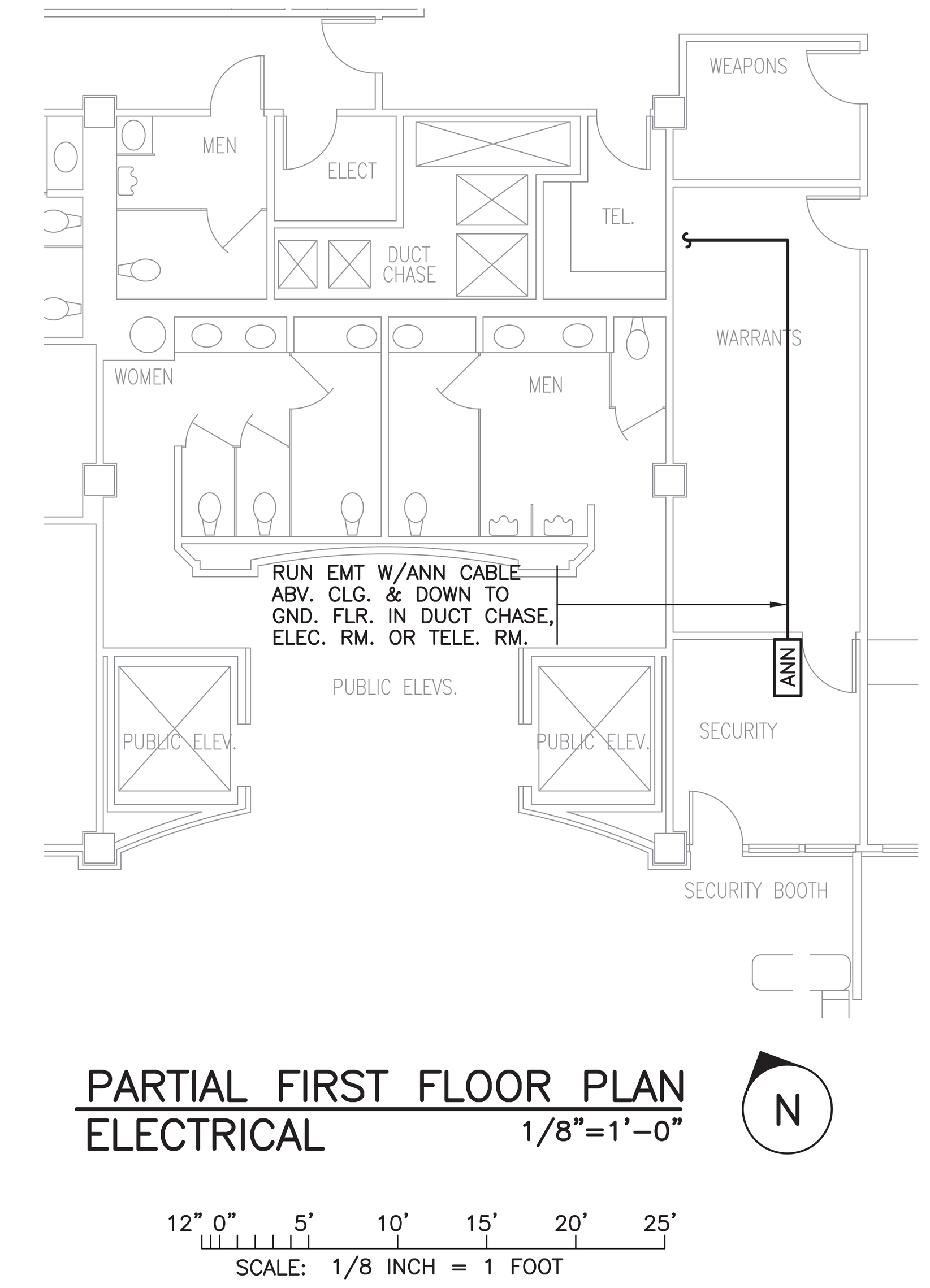
LIGHTING FIXTURE SCHEDULE

MARK	MANUFACTURER	CATALOG NO.	LAMP	MTG.	REMARKS
W1E	LITHONIA U.S. ARCHITECTURAL	DSXW1LEDP740KTFTM MVOLTBBWPIRHSPD RZR-WM2-PLED-IV-FT-40LED-700MA-NW-277-RAL-9005T-MS-F311-EMH1-5C2	LEDS 10,300-11,500 LMS 127 LPW	WALL SEE SHT. E2	CUT-OFF WALLPACK WITH 40K CCT, 70 CRI, SURFACE CONDUIT BACK BOX, 20KV SPD, AND INTEGRAL OUTDOOR PHOTO/MOTION SENSOR FOR LOWER THAN 15-FT. MTG. W/BLUETOOTH TECHNOLOGY; PROVIDE TWO BLUETOOTH REMOTE PROGRAMMING DEVICES AND BLACK FINISH.

GENERATOR DOCKING SWITCH SCHEDULE

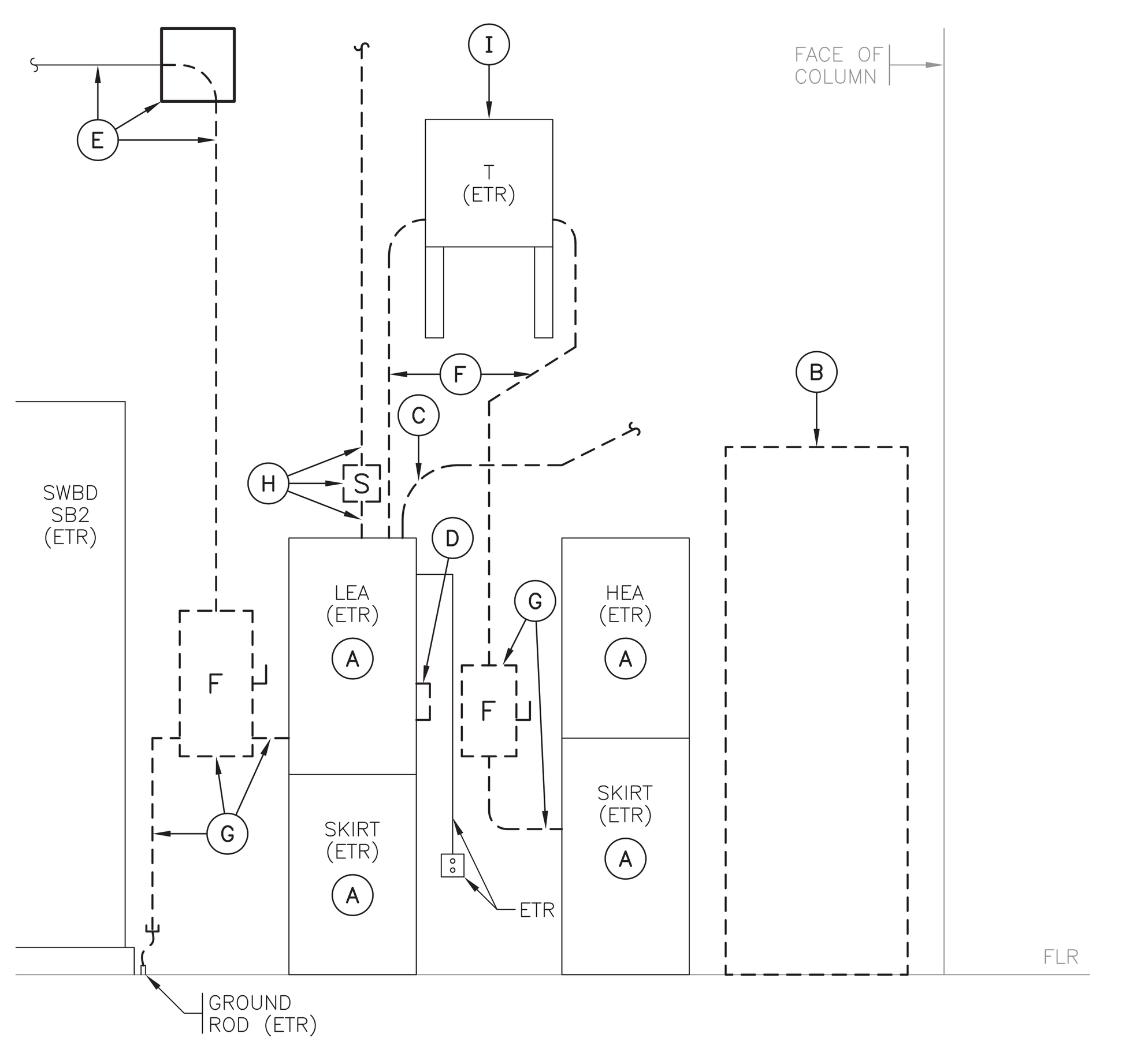
MARK	GENERATOR DISCONNECT		PORTAGE GENERATOR MECHANICAL LUGS	MANUFACTURER & MODEL NUMBER
	PERMANENT	PORTABLE		
GDS-1	100A-3P SWITCH	100A-3P CIR. BRKR.	1 PER PHASE, NEUTRAL & GND	ESL POWER SYSTEMS #SSD2-100S-100H-480-311-D-C EATON NDMP2D30100XRU

NOTES:
1. SWITCH SHALL BE MANUALLY OPERATED MECHANICALLY INTERLOCKED MOLDED CASE DEVICES.
2. PROVIDE PHASE MONITOR AND AUXILIARY CONTACTS TO SIGNAL DISCONNECT OF PERMANENT GENERATOR FROM DOWNSTREAM ATS AS 2020 NEC 700.3(F)(5).
3. PROVIDE PORTAGE GENERATOR LUGS IN SEPARATE COMPARTMENT WITH SAFETY-INTERLOCKED DOOR.
4. PORTABLE GENERATOR DISCONNECT CIRCUIT BREAKERS SHALL BE 100% RATED.
5. SEE SECTION 263610 FOR ADDITIONAL REQUIREMENTS.



PARTIAL FIRST FLOOR PLAN ELECTRICAL

1/8"=1'-0"



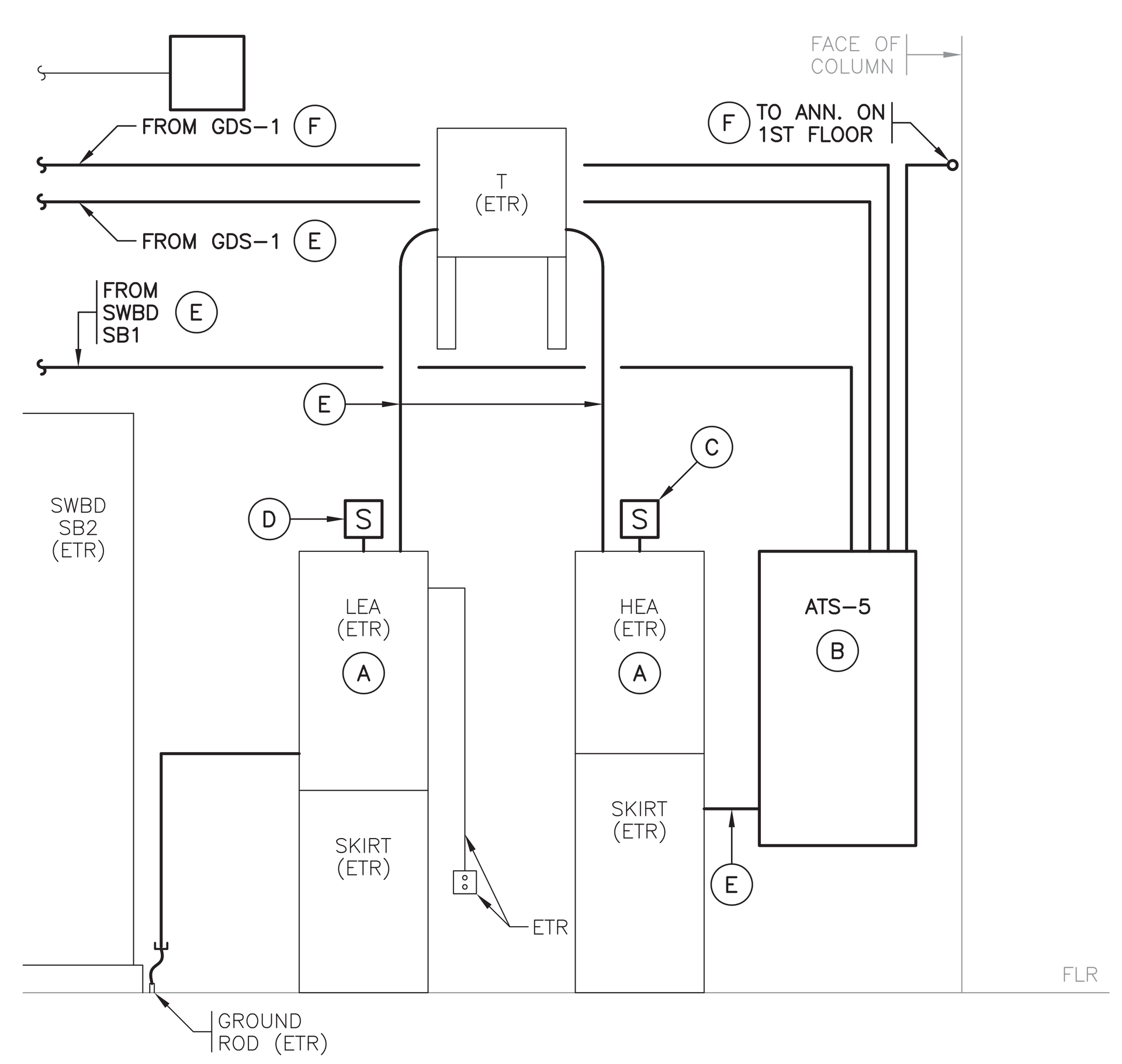
(A) EMERGENCY EQUIPMENT DEMOLITION

NO SCALE

NOTES:
1. UNLESS NOTED EXISTING RACEWAYS AND CONDUCTORS SHALL REMAIN.
2. WORK ITEMS E THRU H SHALL NOT BE PERFORMED UNTIL ALL OF THE NEW EMERGENCY EQUIPMENT IS INSTALLED, TESTED AND READY TO OPERATE.
3. PROVIDE UL LISTED CLOSURES ON ANY OPENINGS IN PANELS AND SKIRTS.

REFERENCE WORK ITEMS:

(A) REPLACE ATTACHMENT HARDWARE FOR COVERS ON PANELBOARDS AND SKIRTS.
(B) RELOCATE 30"W.x18"D.x87"H. SHELVING UNIT TO LOCATION IN CENTRAL PLANT ROOM DESIGNATED BY OWNER'S REPRESENTATIVE.
(C) DISCONNECT FROM PANEL LEA THE #10/3C SO CORD SERVING THE FLOODLIGHTS FOR FLAGS AT FRONT ON BUILDING.
(D) REMOVE WELDING RECEPTACLE MOUNTED TO SIDE OF PANEL LEA.
(E) AFTER DISCONNECTING THIS FEEDER FROM THE 100A-3P CIRCUIT BREAKER IN PANEL EDPB (SEE PARTIAL SITE PLAN ON SHEET E3), PROCEED WITH THE WORK IN THIS NOTE. REMOVE THE VERTICAL RUN OF EMT AND ELBOW INDICATED AND CONDUCTORS LEAVING ABOUT 18" OF EACH CONDUCTOR. PROVIDE A 12"x12"x4"D J-BOX AND COIL SLACK CONDUCTORS IN J-BOX.
(F) REMOVE RACEWAY AND CONDUCTORS ON PRIMARY AND SECONDARY SIDES OF TRANSFORMER.
(G) REMOVE SAFETY SWITCHES AND ASSOCIATED RACEWAYS AND CONDUCTORS.
(H) REMOVE SPD AND ASSOCIATED RACEWAYS AND CONDUCTORS FROM PANEL LEA.
(I) VERIFY THAT TRANSFORMER IS AN AUTOTRANSFORMER (NON-ISOLATING) AND REPORT FINDINGS IN WRITTEN REPORT TO ENGINEER.



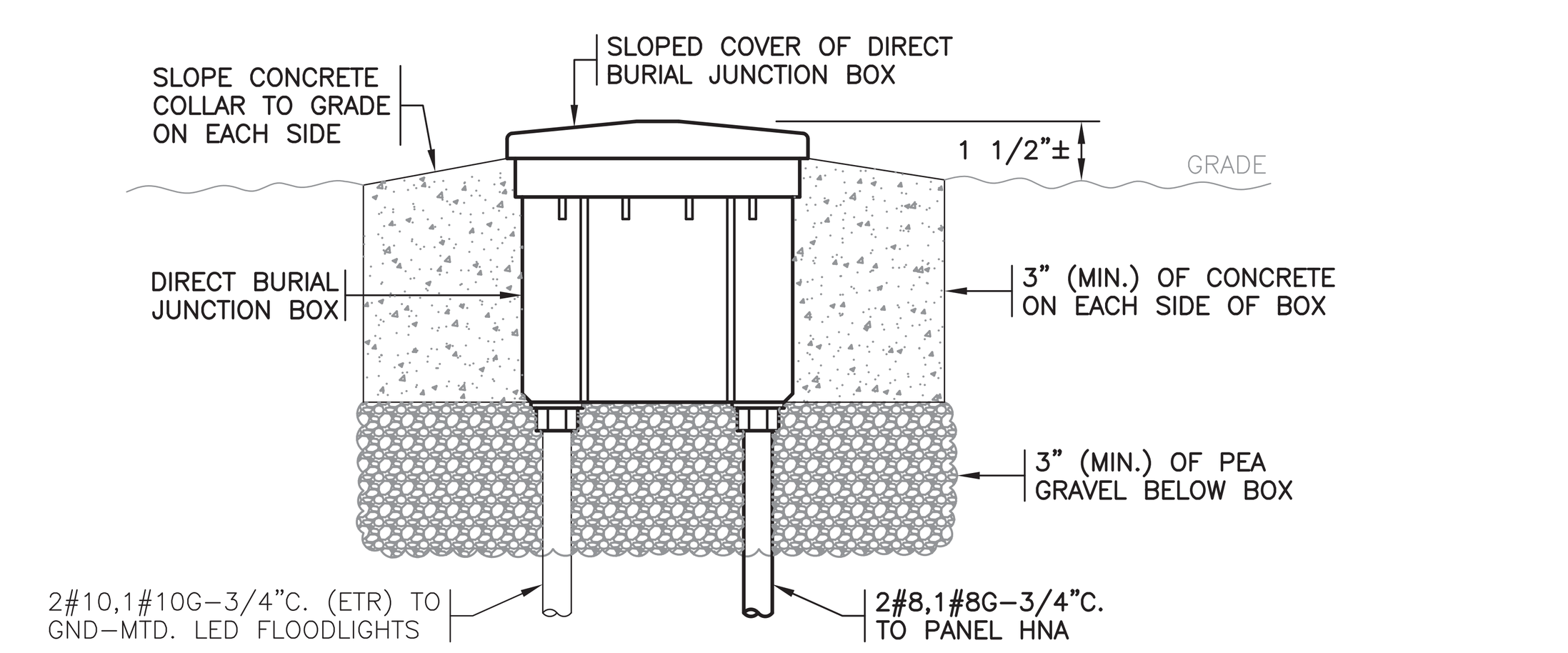
(B) EMERGENCY EQUIPMENT RENOVATION

NO SCALE

NOTES: 1. UNLESS NOTED EXISTING RACEWAYS AND CONDUCTORS SHALL REMAIN.

REFERENCE WORK ITEMS:

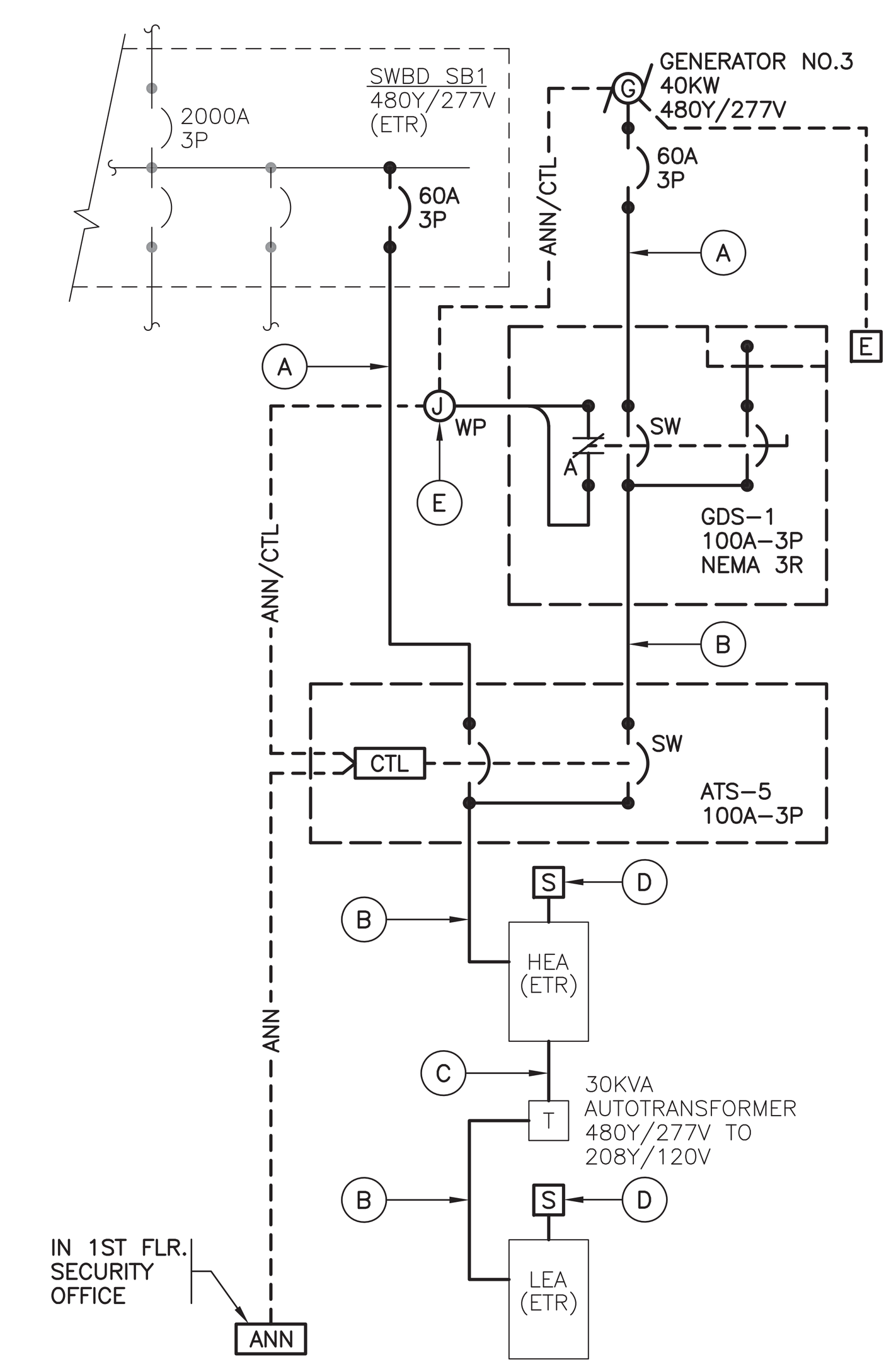
(A) EXISTING PANELBOARDS MODIFIED AND REUSED. SEE SCHEDULES ON SHEET E2.
(B) PROVIDE AUTOMATIC TRANSFER SWITCH. SEE SCHEDULE ON THIS SHEET.
(C) PROVIDE SPD RATED 100KA PER PHASE AT 480Y/277V. SEE SECTION 26 43 12. CONNECT TO MAIN LUGS.
(D) PROVIDE SPD RATED 100KA PER PHASE AT 208Y/120V. SEE SECTION 26 43 12. CONNECT TO MAIN LUGS.
(E) SEE ONE-LINE DIAGRAM ON THIS SHEET FOR CIRCUIT.
(F) SEE ONE-LINE DIAGRAM ON THIS SHEET FOR DETAILS OF CONTROL AND ANNUNCIATOR WIRING.



(C) DIRECT BURIAL JUNCTION BOX INSTALLATION

NO SCALE

NOTES:
1. THE DIRECT BURIAL JUNCTION BOX SHALL BE OF NON-METALLIC COMPOSIT MATERIAL WITH HEAVY DUTY GASKETED COVER, STAINLESS STEEL COVER SCREWS, 19 CUBIC INCH INTERNAL VOLUME (MIN.) AND TWO 3/4" THREADED HUBS IN BOTTOM.
2. PROVIDE SCREW-IN PLUG IN ANY USED HUBS IN BODY OR COVER OF JUNCTION BOX.
3. PROVIDE SILICONE SEALANT OR TEFLON PLUMPING TAPE ON SCREW-IN PLUGS AND THREADED CONDUIT CONNECTIONS TO BOX TO LIMIT GROUND WATER ENTRY INTO JUNCTION BOX.
4. PROVIDE WATERTIGHT CONDUCTOR CONNECTORS INSIDE JUNCTION BOX.
5. PROVIDE UL LISTED DUCT SEALING COMPOUND AT EACH CONDUIT ENTRY.
6. THE DIRECT BURIAL JUNCTION BOX SHALL BE FOCUS INDUSTRIES #DBS-66-JB, KIM #JBR-5 OR APPROVED EQUAL.



(D) ONE-LINE DIAGRAM

NO SCALE

REFERENCE WORK ITEMS:

(A) 4#6,1#10G-1"C.
(B) 4#1,1#8G-1 1/4"C.
(C) 4#8,1#10G-3/4"C.
(D) SEE DETAIL B ON THIS SHEET
(E) J-BOX FOR ANN./CTL WIRING. SEE SHEET E2.

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DESIGNER: THOMAS A. HARDMAN
CHECKED BY: JPF

STATE OF LOUISIANA — J. P. FOREMAN REG. No. 22378 REGISTERED PROFESSIONAL ENGINEER IN ELECTRICAL ENGINEERING

THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY.

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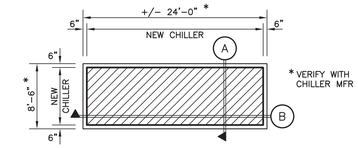
JOB NO. 7324
DATE: JUNE 13, 2025
SHEET NO.
E3
OF 3E

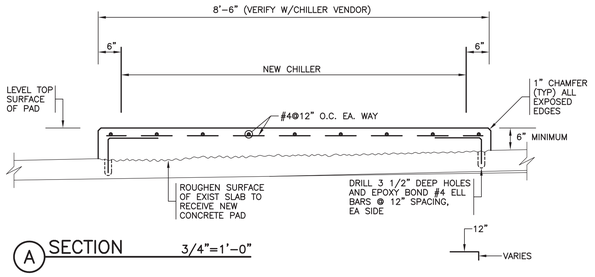
DATE DRAWING LAST SAVED: 09/16/25 TIME:10:57:58
DATE DRAWING LAST PLOTTED: 09/16/25 TIME:10:58:01



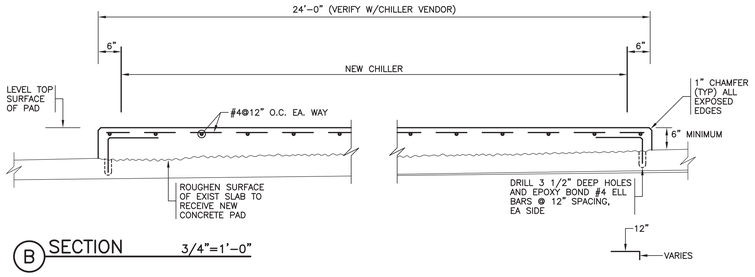
NEW CHILLER BASE 1/8"=1'-0"
CONCRETE PAD PLAN

STRUCTURAL NOTES:

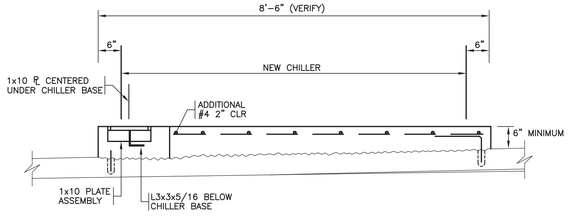
1. ALL CONCRETE SHALL HAVE A MINIMUM 28 DAY STRENGTH OF 3000 PSI.
2. ALL CONCRETE REINFORCING STEEL SHALL CONFORM TO ASTM A615 GR. 60.
3. ALL EPOXY BONDED SHALL CONFORM TO ASTM C881.
4. ALL DIMENSIONS TO EXISTING STRUCTURE, PROPOSED CHILLERS AND GENERATOR SHALL BE VERIFIED PRIOR TO PERFORMING WORK AND DETAILING NEW STEEL AND CONCRETE REINFORCEMENT.
5. ALL STEEL PLATE AND ANGLES SHALL CONFORM TO ASTM A36.
6. ALL EXPOSED STEEL SHALL BE GALVANIZED.
7. ALL WELDING SHALL BE DONE IN ACCORDANCE WITH AWS CODE. ELECTRODES SHALL BE AWS CLASSIFICATION E70XX.



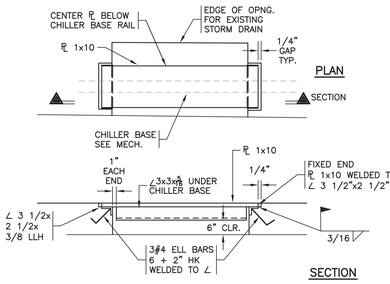
A SECTION 3/4"=1'-0"



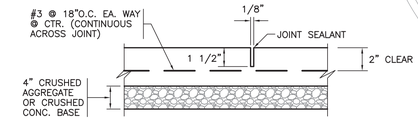
B SECTION 3/4"=1'-0"



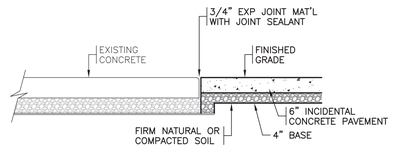
C SECTION 3/4"=1'-0"



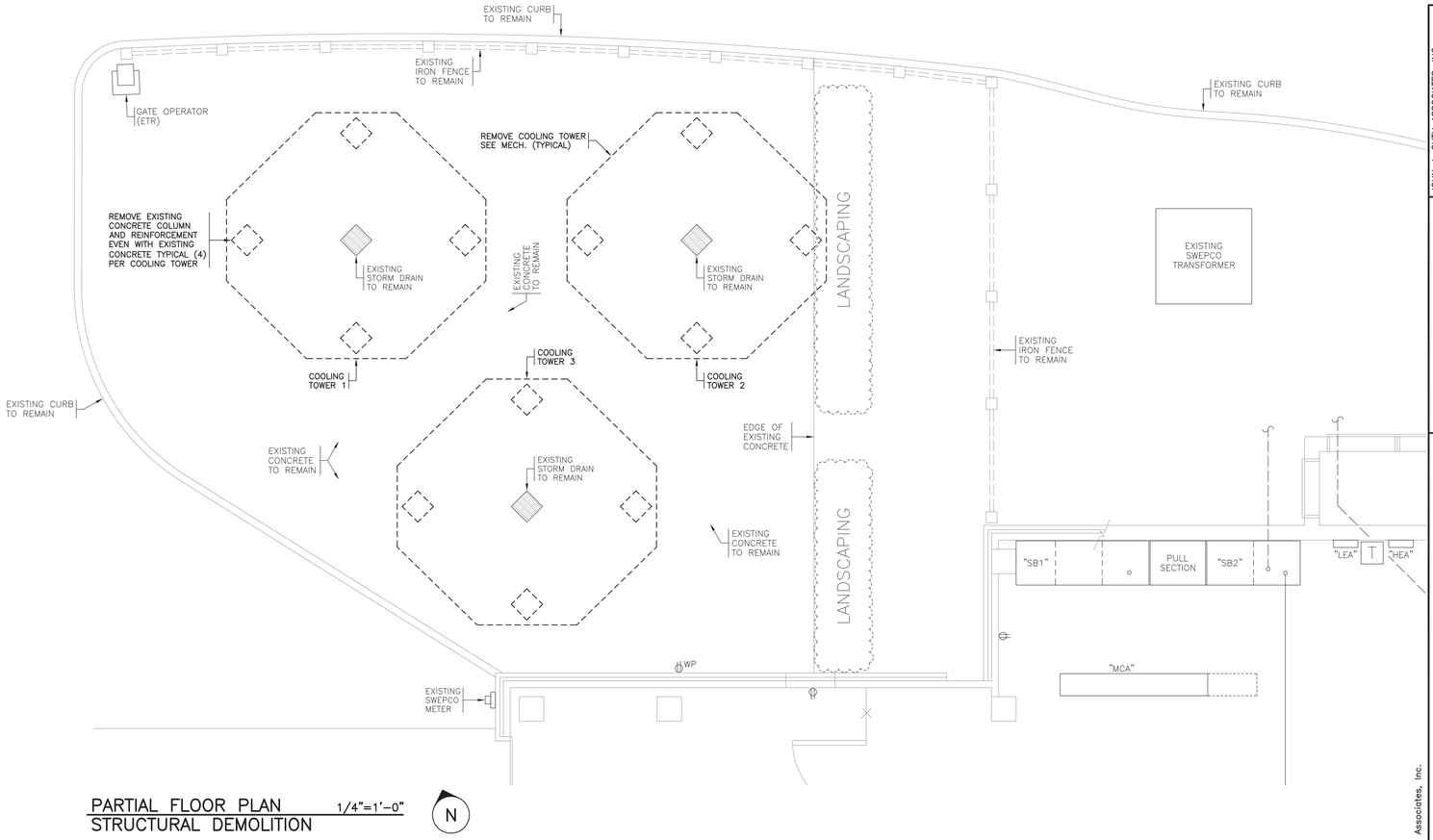
D SECTION NO SCALE



INCIDENTAL PAVEMENT CONTRACTION JOINT DETAIL NO SCALE

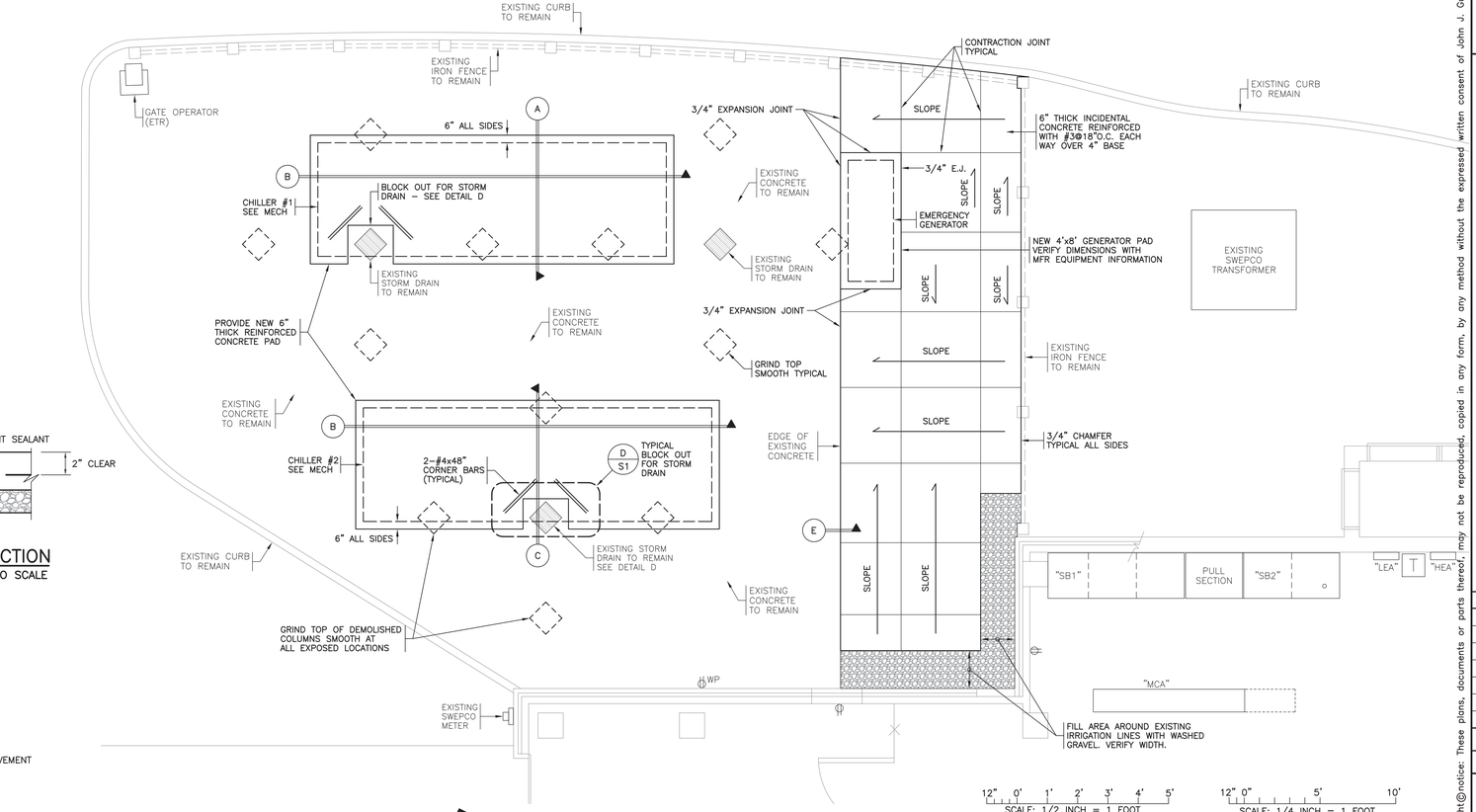


E SECTION 1/2"=1'-0"



PARTIAL FLOOR PLAN 1/4"=1'-0"
STRUCTURAL DEMOLITION

N



PARTIAL FLOOR PLAN 1/4"=1'-0"
STRUCTURAL RENOVATION

N

12" 0' 1' 2' 3' 4' 5'
SCALE: 1/2 INCH = 1 FOOT

12" 0" 5' 10' 15' 20' 25'
SCALE: 1/8 INCH = 1 FOOT

12" 0" 5' 10'
SCALE: 1/4 INCH = 1 FOOT

12" 0' 1' 2' 3'
SCALE: 3/4 INCH = 1 FOOT

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DESIGNER: MATTHEW J. WALLACE, P.E. 7324
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DATE DRAWING LAST PLOTTED: 09/15/25 TIME:13:17:58
DATE DRAWING LAST SAVED: 09/15/25 TIME:13:17:54