

A Project For :

Centerville-Abington Community Schools

Centerville-Abington High School - Cooling Tower Replacement

Centerville Indiana

MPG Project #473004.00

Centerville-Abington Community Schools Board of Trustees

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School Administration

Dr. Mike McCoy - Superintendent
Sean Stevenson - Assistant Superintendent
Kelly VanWinkle - Principal

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7223 Engel Rd. Suite 200
Ft. Wayne, IN 46804
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Structural Engineering Services, LLC
15610 Lima Road
Huntertown, IN 46748
ph. (260) 637-7867
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6534 Constitution Drive
Fort Wayne, Indiana 46804
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Project Location

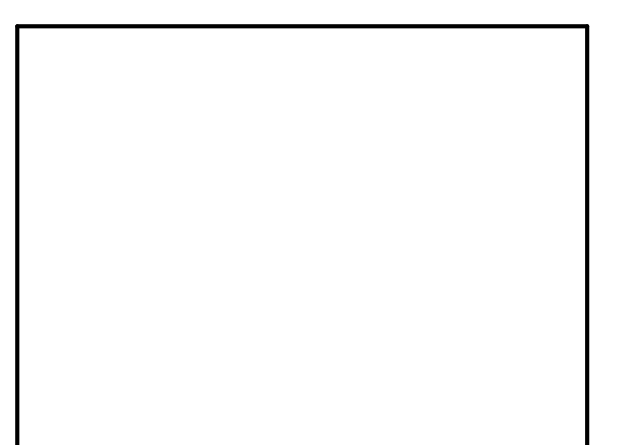
Project Location

Drawing List

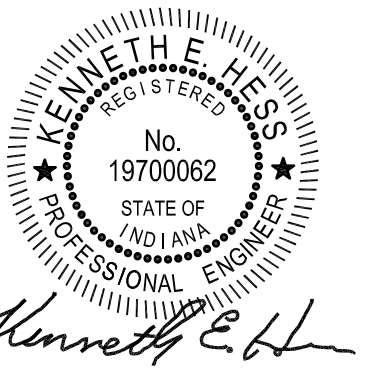
- Structural
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- Architectural
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- Plumbing
 - P1.0 Plumbing Schedules and General Information
- Mechanical
 - M0.1 First Floor Mechanical Demolition Plan
 - M0.2 Second Floor Mechanical Demolition Plan
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 - M2.2 Second Floor Mechanical Plan
 - M2.3 Mechanical Roof Plan
 - M61.0 Mechanical Schedules and General Information
- Electrical
 - E0.0 Electrical General Notes & Information
 - E0.1 First Floor Electrical Demolition Plan
 - E0.2 Second Floor Electrical Demolition Plan
 - E1.1 First Floor Electrical Power Plan
 - E1.2 Second Floor Electrical Power Plan



Commission No. 473004
December 21, 2022

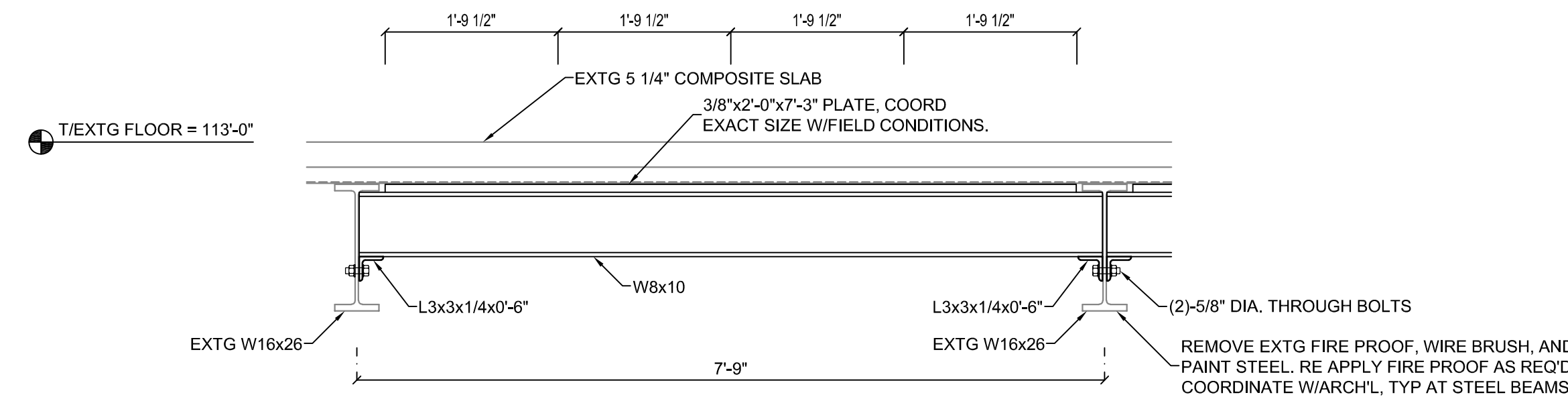


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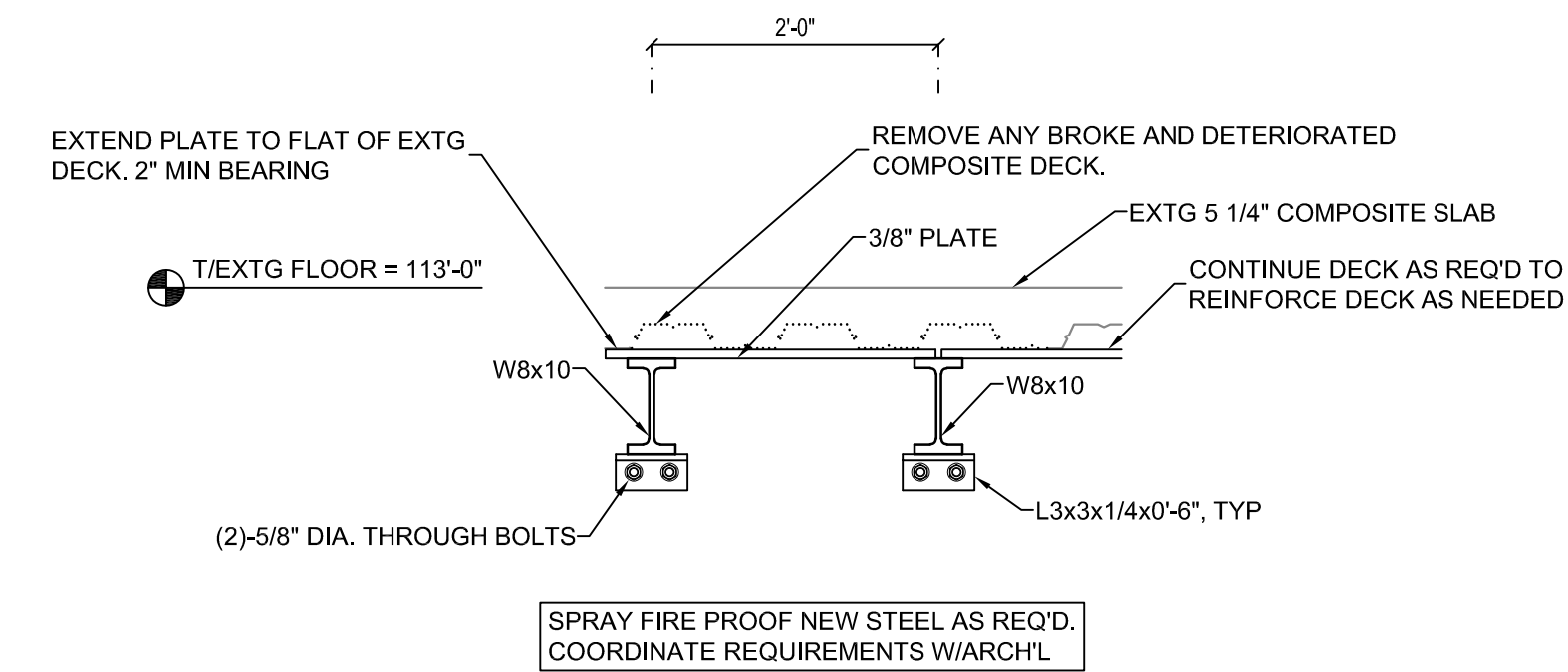


STRUCTURAL STEEL

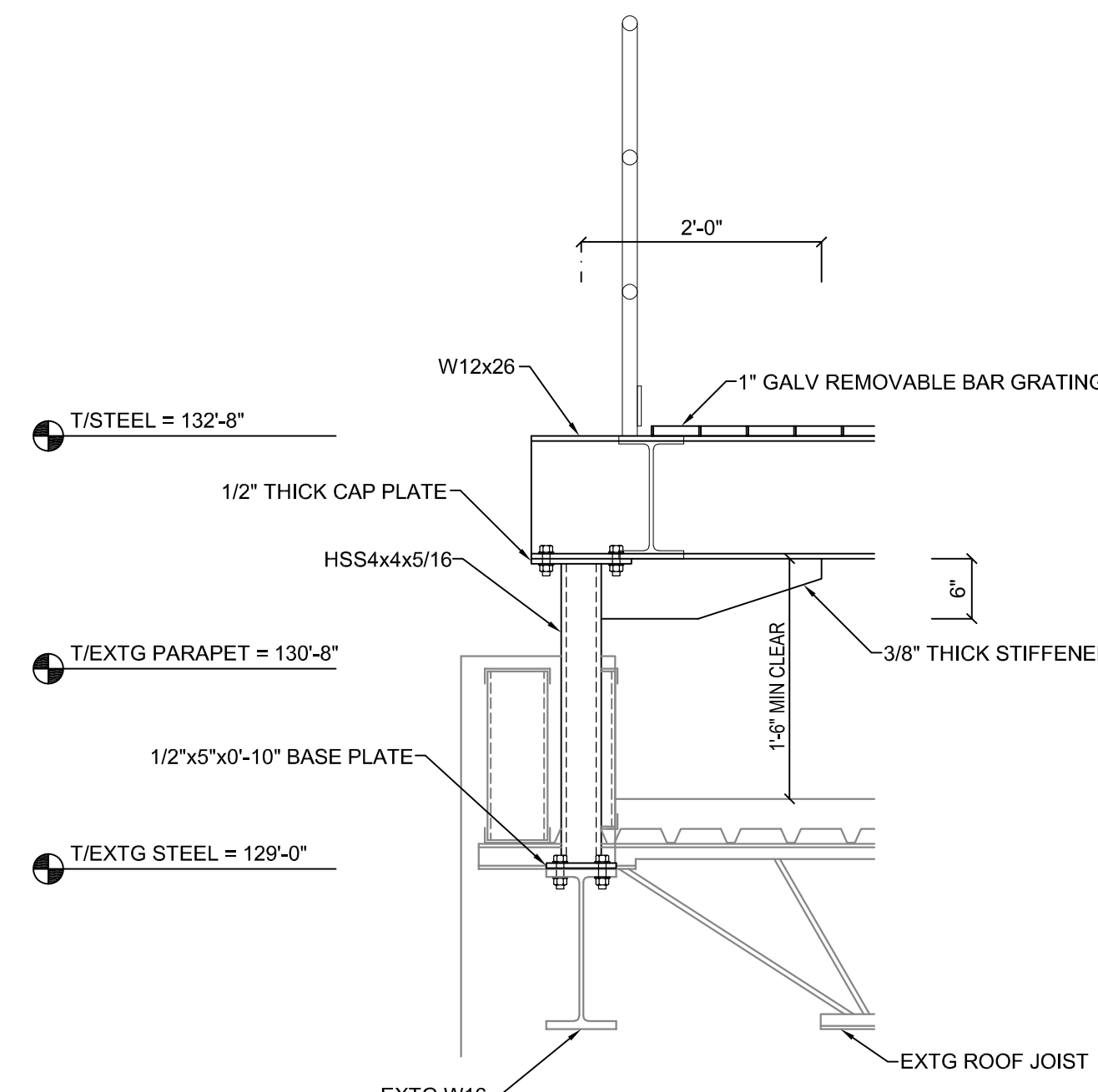
- All structural steel shall be detailed with load transmitting field connections made with bearing-type 3/4" diameter ASTM A-325 bolts (snug-tight) UNO. All high strength bolts shall be designed as bearing "N" type so that continuous special inspection is not needed unless indicated otherwise on drawings. Shop connections shall be welded. Use no more than two bolt diameters for the project UNO. Skip one size between bolt diameters.
- Structural steel material is as follows:
 - Wide flange shapes ASTM A992
 - Structural steel plates and rolled shapes other than wide flange shapes ASTM A36
 - Structural steel tubing ASTM A500, Grade B
- Provide 1/4" beam stiffeners to all beams at center line of columns crossed over by beams except where framed connections of other beams occur.
- Set leveling or bearing plates on cleaned bearing surfaces using wedges or other adjustments as required. Solidly pack open spaces with non-shrink, non-metallic grout.
- Field welds to be made with E70XX electrodes according to AWS. Welded connections using ASTM A992 steel as a base metal shall be made with E70XX low hydrogen electrodes.
- All design, fabrication and erection of structural steel shall be in accordance with AISC and AWS specifications.
- All connections not specifically detailed on contract documents shall be designed and detailed by the structural steel fabricator in compliance with AISC standards. All connections shall be clearly shown on final shop drawings submitted for approval prior to fabrication.
- Lintels not indicated on plans are as follows:
 - Provide angle lintels over all openings and recesses in both interior and exterior walls unless otherwise noted. All lintels for mechanical and electrical openings are not shown. See mechanical and electrical plans for locations of lintels and lengths required for ductwork, pipes, electrical conduits, etc.
 - Angle lintels shall have a minimum end bearing on masonry of 4 1/2", but not less than 1" of such bearing for each foot of opening width. Angles in pairs shall be welded or bolted together with 1/2" diameter bolts at 18" oc. In case of single angle, anchor to concrete or masonry backup with 1/2" diameter expansion type anchors at 18" oc.
 - For 6" block partitions use two (2) 3/8" x 1/2" x 5/16" (LLV) for spans up to 10'-0". For 8" to 10" block partitions use two (2) 1/2" x 3/8" x 5/16" (LLV) for spans up to 7'-0". For spans 7'-0" to 10'-0" use two (2) 1/2" x 3/8" x 5/16" (LLV). For 12" walls use three (3) angles as specified for 8" to 10" walls above.
 - Coordinate masonry rough openings with all trades.
- Shop drawings shall show complete details and schedules for fabrication, layout and erection. Submit shop drawings for approval prior to fabrication.
- All beams and beam lintels shall be field welded to bearing plates with 3/16" fillet weld each side of bottom flange.
- All exposed steel shall be galvanized. See architectural for painting specifications.
- Field drilled holes shall be reamed, cleaned and deburred prior to assembly of the connection.
- Beams with specified camber shall be cambered upward. Beams without specified camber shall be fabricated so that after erection any minor camber due to rolling or shop assembly is upward.
- Thermal cutting shall preferably be done by machine. Hand thermally cut edges subjected to substantial stress or are to be welded, shall be reasonably free of notches or gouges. Notches or gouges larger than 3/16" that remain from cutting shall be removed by grinding. Re-entrant corners shall be shaped notch-free to a radius of at least 1/2".
- Fabricator shall be responsible for design of all connections not specifically detailed on the plans. Where end reaction are not shown on the plans, design simple beam connections for at least 50% of the allowable uniform load given in the beam tables in Chapter 3 of the AISC Steel Construction Manual - Allowable Stress Design (14th Ed.) for the given span and beam size. Use ASD values unless noted otherwise.



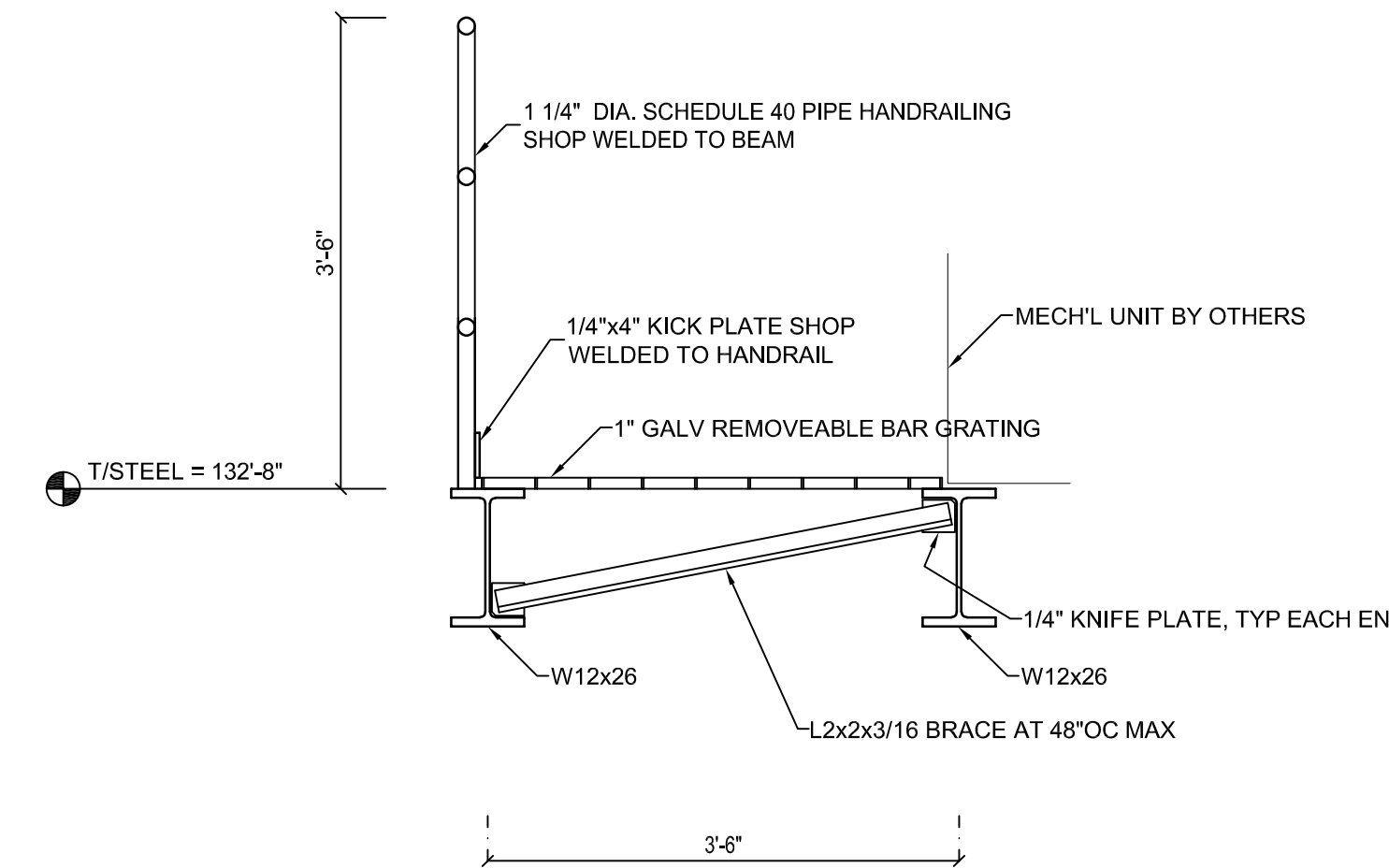
Section 1
SCALE: 3/4" = 1'-0"



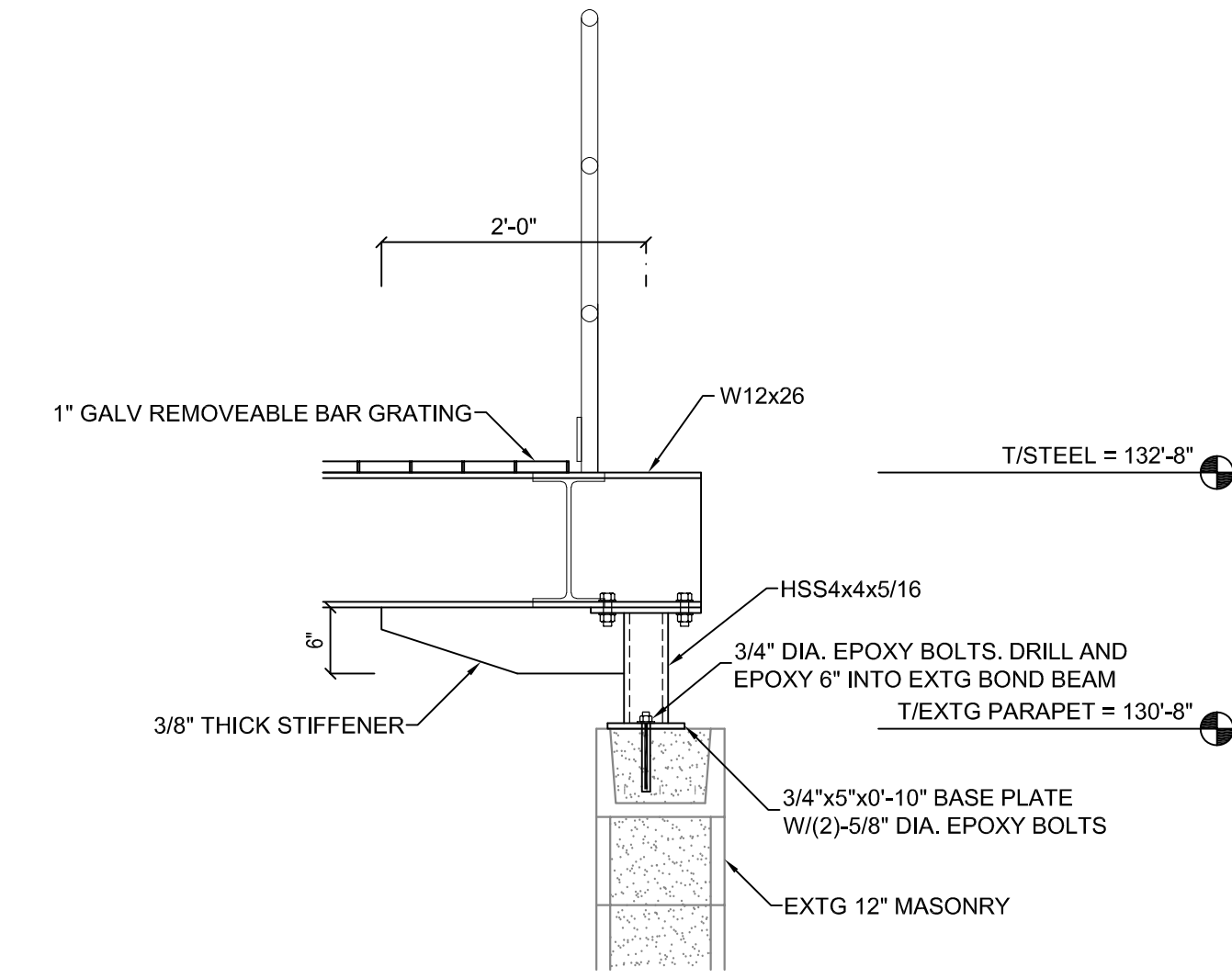
Section 2
SCALE: 3/4" = 1'-0"



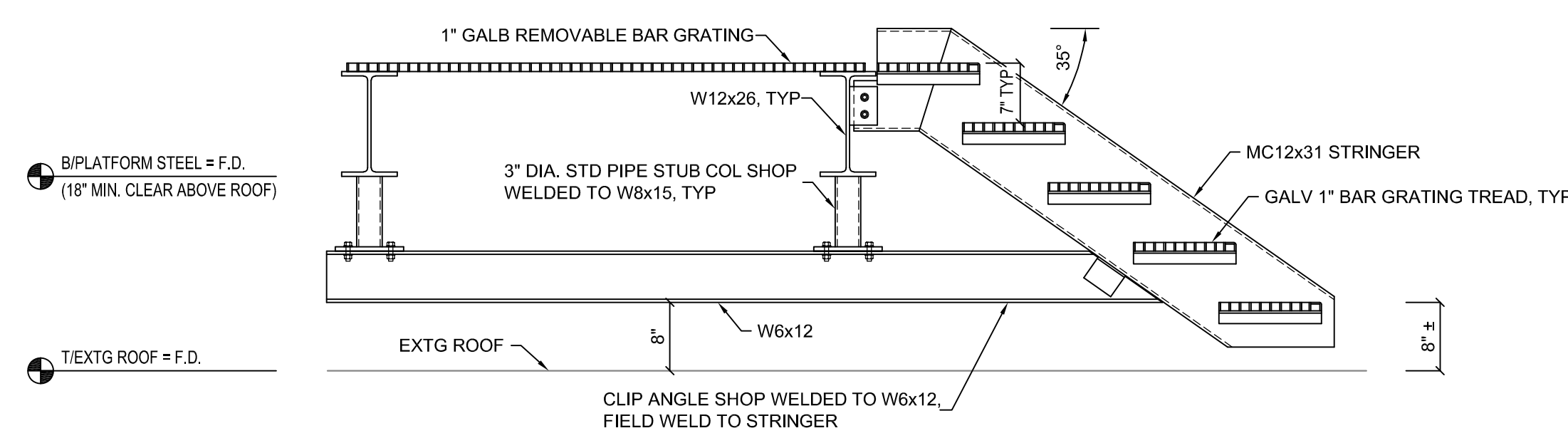
Section 3
SCALE: 3/4" = 1'-0"



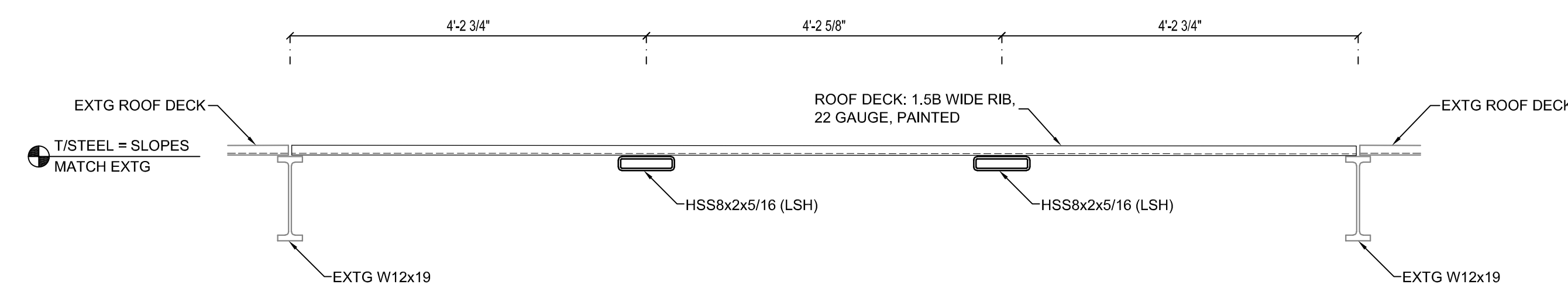
Section 4
SCALE: 3/4" = 1'-0"



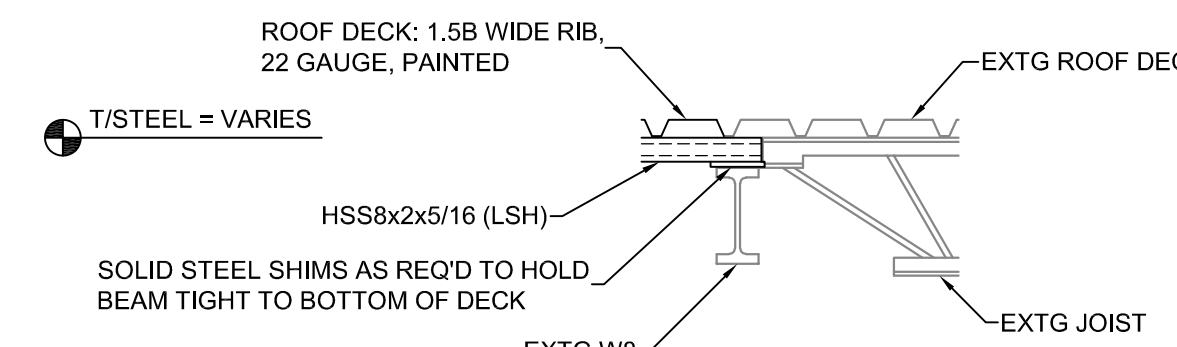
Section 5
SCALE: 3/4" = 1'-0"



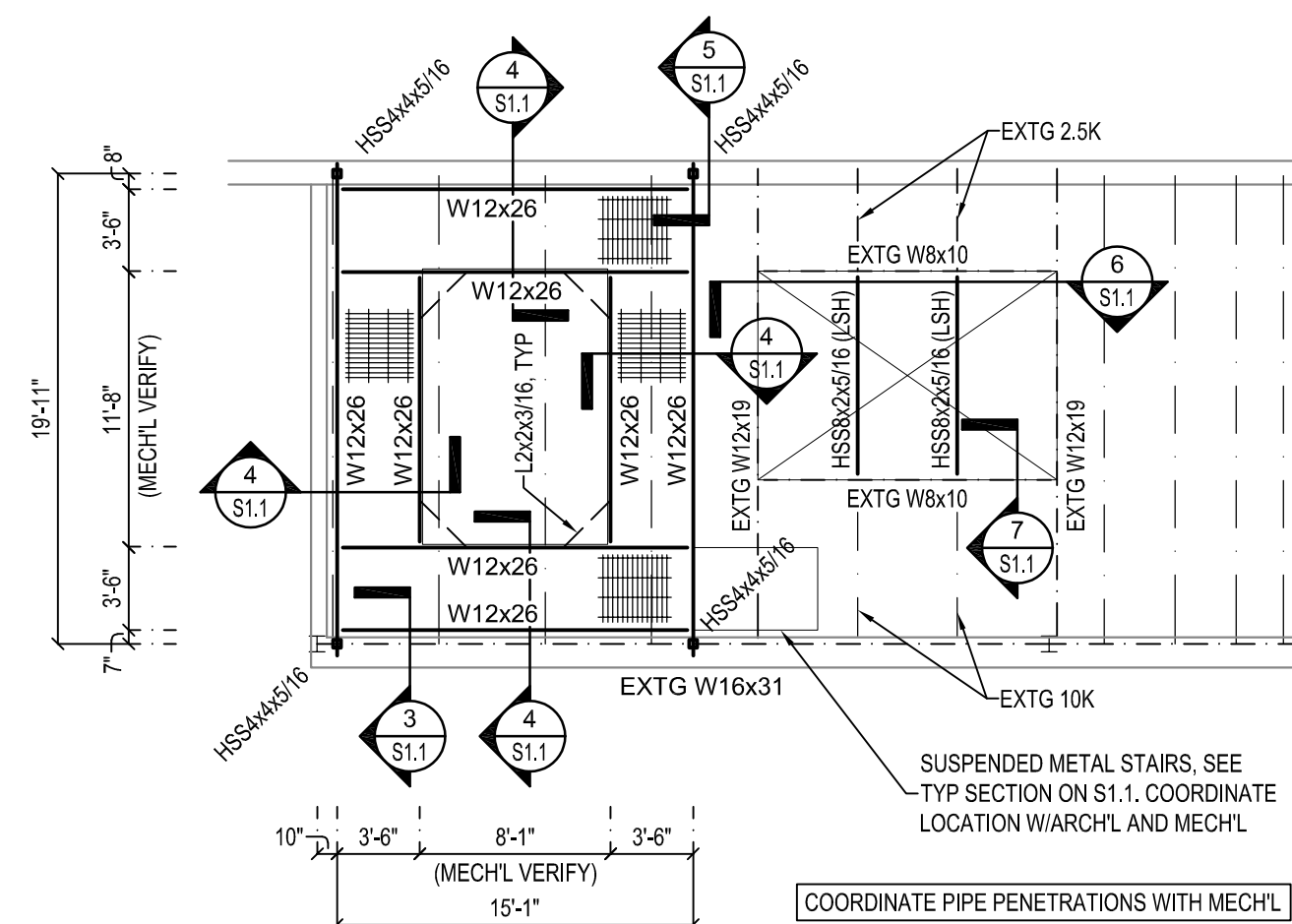
Typical Suspended Stair Section
SCALE: 3/4" = 1'-0"



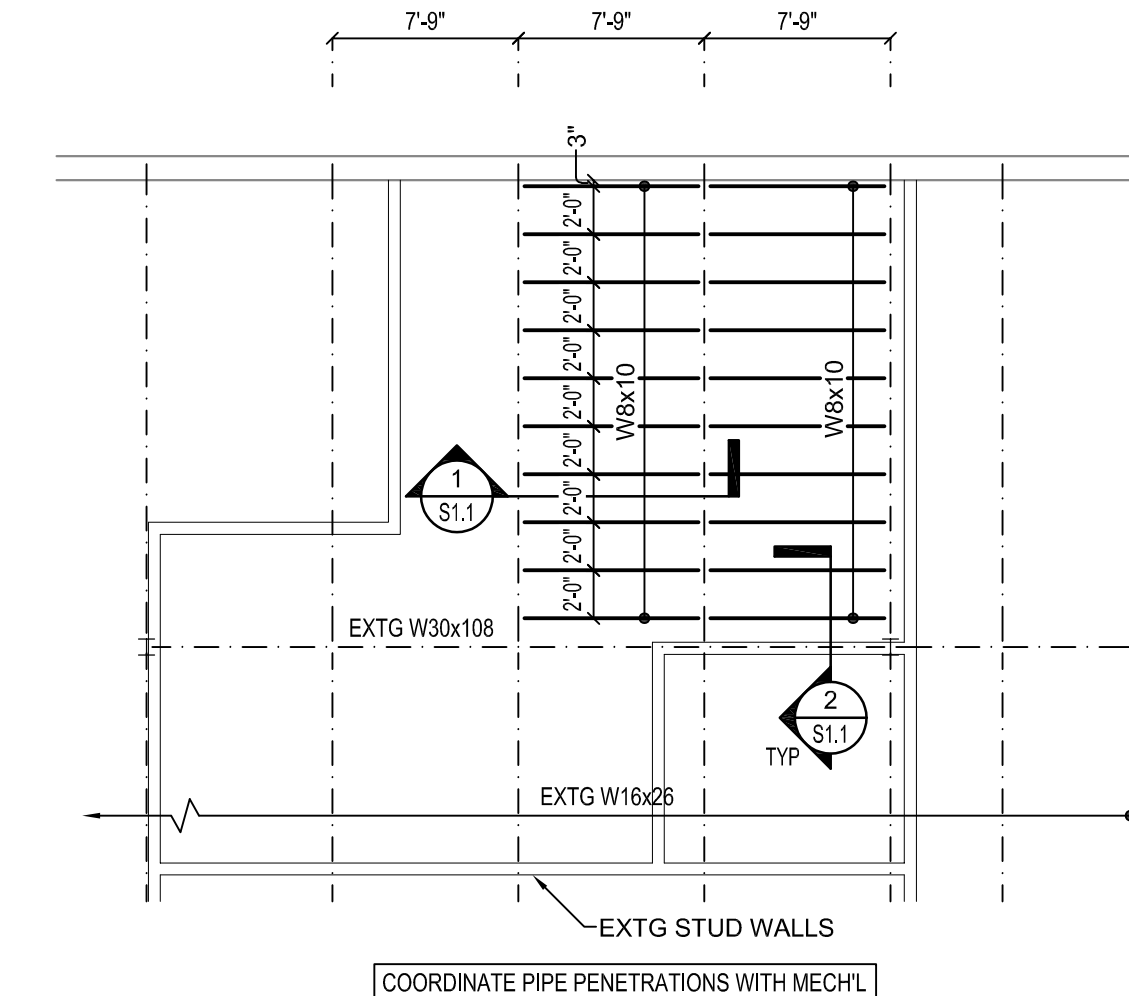
Section 6
SCALE: 3/4" = 1'-0"



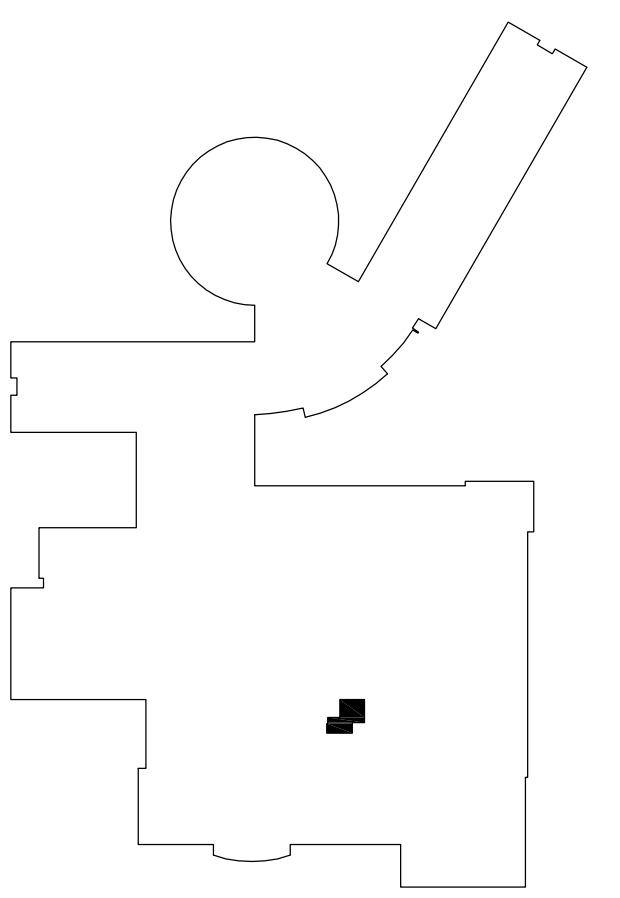
Section 7
SCALE: 3/4" = 1'-0"



Partial Roof Framing Plan
SCALE: 1/8" = 1'-0"



Partial Floor Framing Plan
SCALE: 1/8" = 1'-0"



Key Plan

A PROJECT FOR:



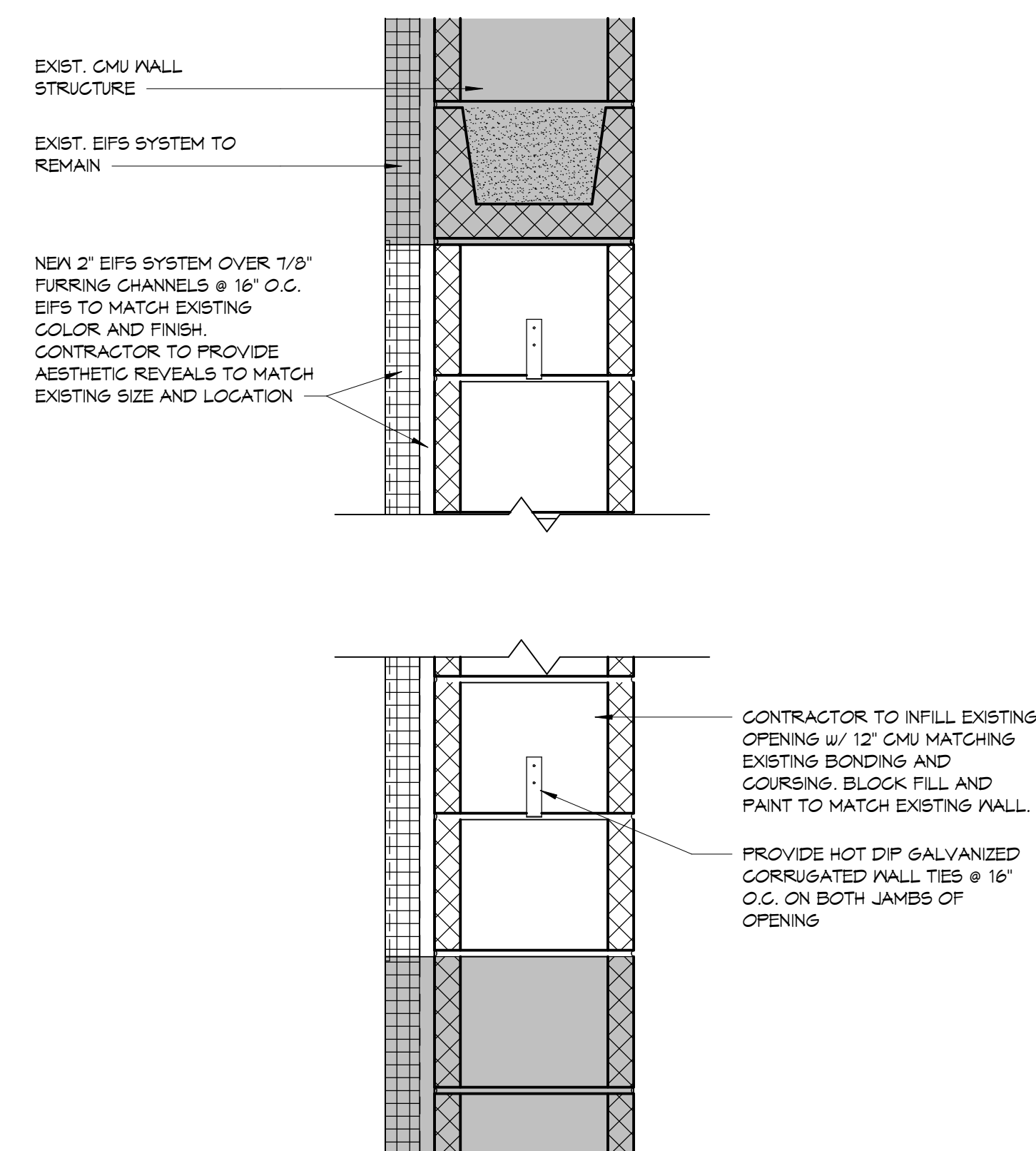
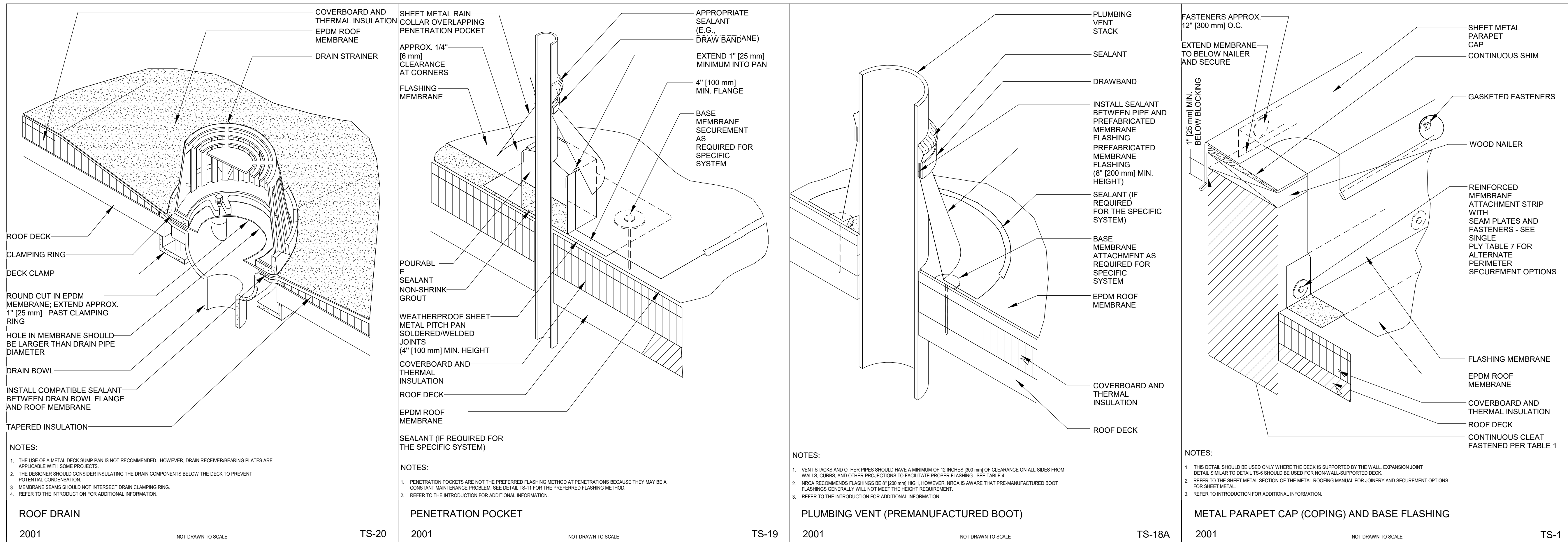
Cooling Tower Replacement for Centerville-Abington High School

The copyright, design, and details are those of the architect. The client is responsible for providing accurate information. The architect is not responsible for any errors or omissions in the drawings. The client is responsible for providing accurate information. The architect is not responsible for any errors or omissions in the drawings.

date	mark	description

Structural Plans, Notes, and Details

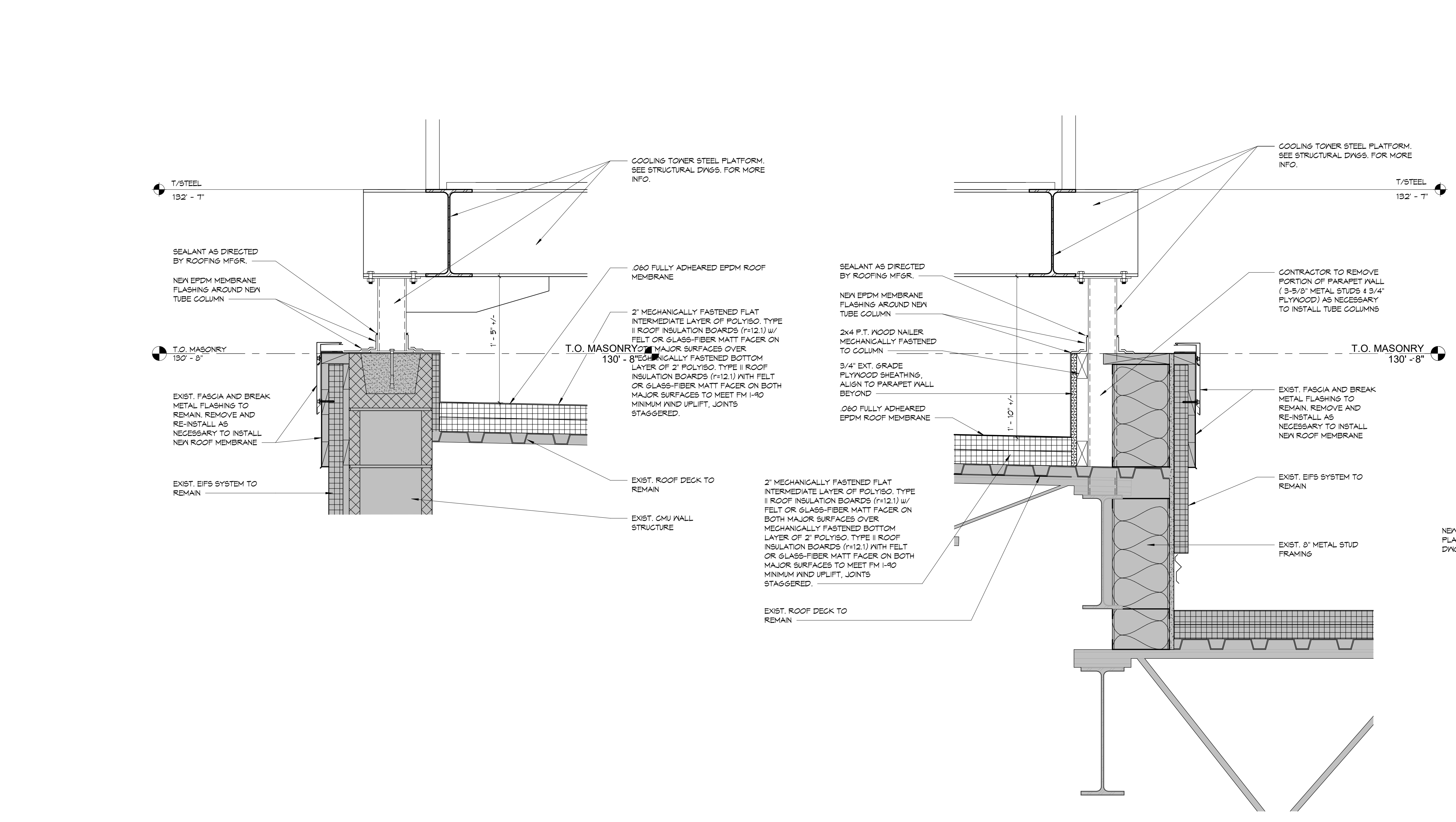
date: December 21, 2022
project: 473004
coordinator: JMO
drawn: EPH
checked: KEH



5 Louver Infill Detail
1 1/2" = 1'-0"

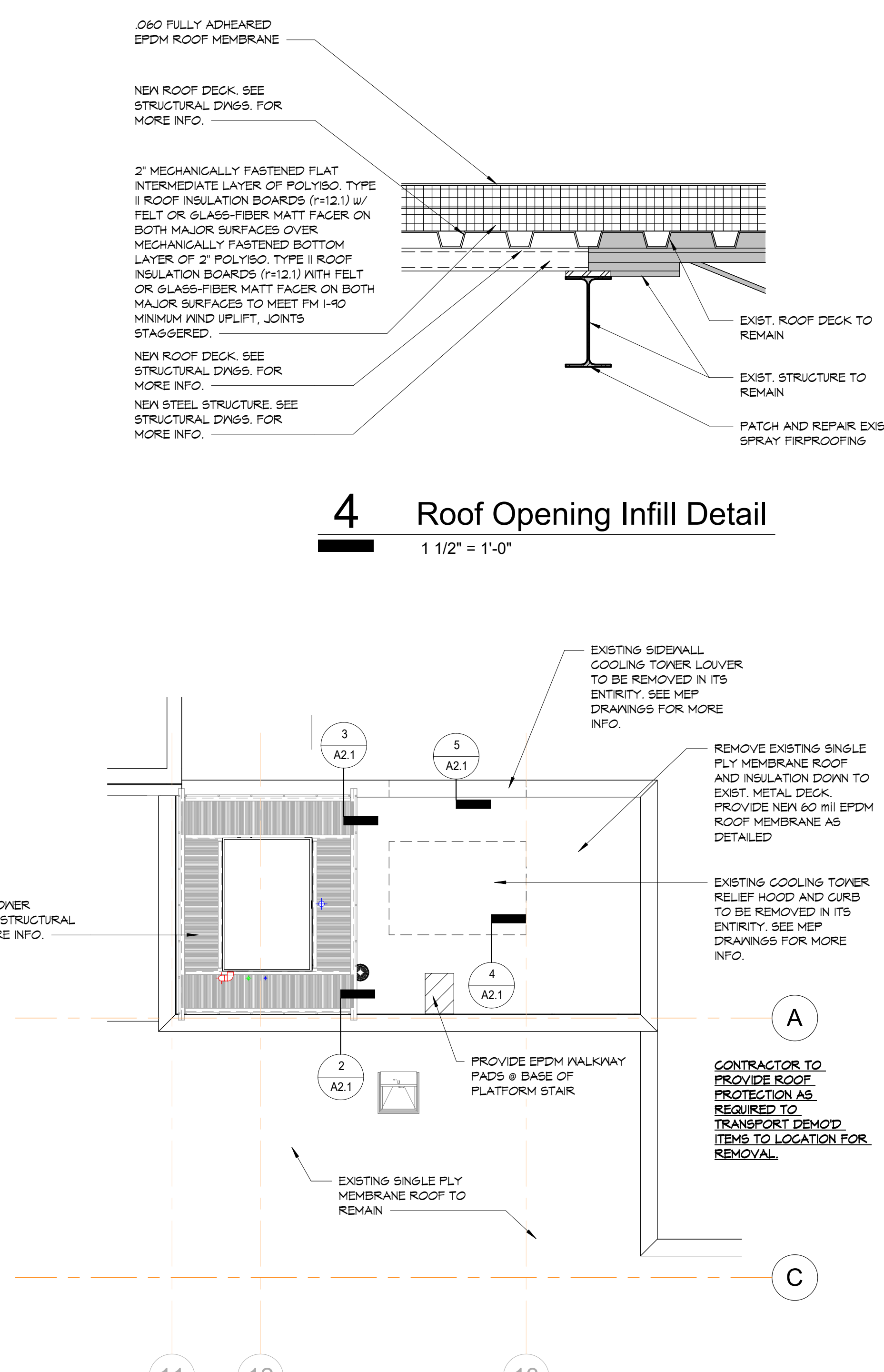
THIS SHEET DEPICTS THE NRCA SUGGESTED EPDM ROOF DETAILS THAT MAY OR MAY NOT BE USED ON THIS PROJECT. IT SHALL BE UNDERSTOOD THAT ALL BIDDERS ARE RESPONSIBLE FOR SELECTING THE PROPER DETAILS FROM THE MANUFACTURER'S MANUAL AND INSTALLING IT PER THEIR SPECIFICATION TO MEET MANUFACTURER'S WARRANTY REQUIREMENTS.

6 Typical Roof Details
12" = 1'-0"



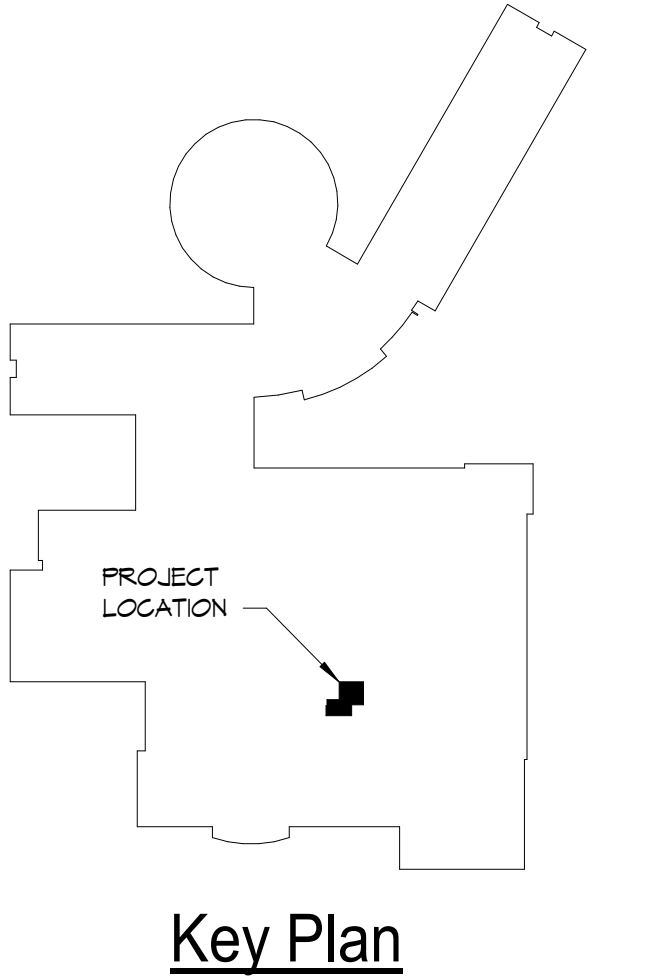
3 Enlarged Parapet Detail
1 1/2" = 1'-0"

2 Enlarged Parapet Detail
1 1/2" = 1'-0"



4 Roof Opening Infill Detail
1 1/2" = 1'-0"

1 Partial Roof Plan
1/8" = 1'-0"



Cooling Tower Replacement for Centerville-Abington High School

mark date description

mark	date	description

Partial Roof Plan and Misc Details

date: December 21, 2022
project: 473004
coordinator: JMO
drawn: CDH
checked: JMO

A2.1

PLUMBING SPECIFICATIONS

ALL WORK SHALL COMPLY WITH ALL STATE, LOCAL, AND NATIONAL CODES.

ALL MATERIALS, EQUIPMENT AND INSTALLATIONS SHALL MEET OR EXCEED THE REQUIREMENTS OF THE STATE ENERGY CODE (ASHRAE STANDARD 90.1 2007)

ALL MATERIAL AND EQUIPMENT SHALL BE NEW. EQUIPMENT, MATERIAL, AND WORKMANSHIP SHALL BE WARRANTED FOR ONE YEAR MINIMUM FROM DATE OF SUBSTANTIAL COMPLETION.

THIS CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS AND INSPECTIONS REQUIRED BY THE AUTHORITIES HAVING JURISDICTION.

CONTRACTOR SHALL COORDINATE ALL ASPECTS WORK OF OTHER TRADES PRIOR TO AND DURING CONSTRUCTION AND INSTALLATION.

VERIFY ALL DIMENSIONS FROM ARCHITECTURAL PLANS AND OR STRUCTURAL PLANS.

ALL PLUMBING AND HVAC EQUIPMENT SHALL BE LISTED FOR ITS USE AND MOUNTED OR HUNG PER MANUFACTURER'S RECOMMENDATIONS AND LISTING.

WHEN A CONFLICT OCCURS BETWEEN PLANS AND NOTES, THE ENGINEER SHALL DETERMINE WHICH GOVERNS. GENERALLY, THE MOST RESTRICTIVE AND COSTLY ALTERNATIVE SHALL TAKE PRECEDENCE.

THIS CONTRACTOR SHALL COORDINATE WITH ALL OTHER TRADES AND PAY FOR ALL CUTTING AND PATCHING FOR HIS WORK AS REQUIRED.

LOCATIONS OF ALL PIPING, DUCTWORK, FIXTURES, AND EQUIPMENT ARE APPROXIMATE ONLY AND MAY BE CHANGED TO MEET ARCHITECTURAL AND STRUCTURAL CONDITIONS AS REQUIRED AND AS APPROVED BY THE ARCHITECT/ENGINEER. PROVIDE ALL OFFSETS AS REQUIRED TO MEET ACTUAL FIELD CONDITIONS.

PROVIDE PIPE AND EQUIPMENT IDENTIFICATION. EQUIPMENT PLASTIC LABELS, MINIMUM 1/16-INCH THICK AND FASTEN WITH RIVETS. PIPE LABELS SHALL BE PRECOILED, SEMI-RIGID PLASTIC FORMED TO COVER FULL CIRCUMFERENCE OF PIPE TO BE ATTACHED TO PIPE WITHOUT FASTENERS OR ADHESIVES. LABEL PIPING EVERY 30- FEET MAXIMUM, DIRECTIONAL CHANGE OR TEE, WHICHEVER IS LEAST.

UNIONS AND VALVES SHALL BE PROVIDED AT CONNECTIONS TO ALL EQUIPMENT.

ALL POTABLE HOT WATER AND COLD WATER LINES SHALL BE COVERED WITH 1/2-INCH CLOSED CELL ELASTOMERIC INSULATION.

ALL POTABLE WATER LINES ABOVE FLOOR SHALL BE TYPE L HARD COPPER WITH WROUGHT FITTINGS WITH "STAYSAFE" SOLDER OR PRESS FIT SYSTEM.

ALL POTABLE WATER PIPING BELOW SLAB SHALL BE TYPE K SOFT COPPER OR PEX. NO FITTINGS WILL BE ALLOWED BELOW SLAB.

ALL ABOVE GRADE NATURAL GAS PIPING SHALL BE BLACK STEEL WITH MALLEABLE FITTING AND SHALL BE GRADED TO DRAIN TO ACCESSIBLE CONDENSATE LEGS.

ALL UNDERGROUND NATURAL GAS PIPING SHALL BE PLASTIC AND SHALL MEET ASTM 25-13 AND 19 STANDARDS AND BE APPROVED FOR NATURAL GAS USE BY LOCAL GAS UTILITY. JOINTS SHALL BE MADE WITH FUSION BUTT WELDS PER DOT STANDARDS OR APPROVED COMPRESSION COUPLINGS. MAINTAIN MINIMUM 30-INCH DEPTH AND INSTALL #12 GAUGE COATED TRACER WIRE. PLASTIC PIPING SHALL NOT BE INSTALLED ABOVE GROUND. PROVIDE AND INSTALL VENTS ABOVE GAS MAIN WHERE MAIN IS INSTALLED BELOW CONCRETE. VERIFY TYPE AND QUANTITY WITH GAS UTILITY.

PROVIDE GAS COCK AT EACH PIECE OF EQUIPMENT USING GAS.

CONTRACTOR SHALL PAY FOR ALL CHARGES BY GAS COMPANY TO PROVIDE COMPLETE SERVICE AS SHOWN ON DRAWINGS.

ALL VALVES SHALL BE FULL PORT BALL VALVES. ALL SHUT OFF VALVES SHALL BE EASILY SEEN AND ACCESSIBLE FROM FLOOR OR LADDER. WHERE VALVES MUST BE INSTALLED WITHIN A WALL OR CHASE, CONTRACTOR SHALL PROVIDE AND INSTALL 8-INCH X 8-INCH MINIMUM ACCESS DOOR.

ALL CONNECTIONS BETWEEN DISSIMILAR PIPE MATERIALS SHALL BE MADE WITH EPDM FITTINGS TO PREVENT GALVANIC ACTION.

CHROME PLATED ESCUTCHEONS SHALL BE PROVIDED AT ALL PIPING PENETRATING FLOORS AND WALLS.

ALL EXPOSED PIPING LOCATED BELOW FIXTURES SHALL BE CHROME PLATED.

PROVIDE AND INSTALL SHOCK ABSORBERS AT COLD AND HOT WATER CONNECTION TO EQUIPMENT AND FIXTURE WITH QUICK CLOSING VALVES AND AT EACH RETROOM GROUP. SIZE AND INSTALL SHOCK ABSORBERS PER FIXTURE GROUP AS RECOMMENDED BY PDI INSTITUTE AND MANUFACTURER.

ALL HORIZONTAL SANITARY DRAINS SHALL BE GIVEN A GRADE OF NOT LESS THAN 1/8-INCH PER FOOT COORDINATE WITH SITE CONTRACTOR AS REQUIRED TO MATCH PIPE INVERTS EXTENDING FROM BUILDING.

ALL INSULATED PIPING SHALL HAVE SADDLES AND UL LISTED HANGERS.

ALL POTABLE WATER LINES SHALL BE TESTED AND DISINFECTED.

HANGING OF PIPING SHALL BE ON NOT MORE THAN 10-FOOT CENTERS WITH 3/8-INCH RODS.

ALL WASTE AND VENT PIPING BELOW SLAB SHALL BE DWV PVC PIPING AND FITTINGS. ALL WASTE AND VENT PIPING ABOVE SLAB AND LOCATED IN AN AIR PLENUM SHALL BE HUBLESS CAST IRON COMPLYING WITH CISPI 301-99.

PAINT ALL EXTERIOR GAS PIPING WITH GRAY RUST INHIBITIVE PAINT.

EXISTING UTILITIES

THE CONTRACTOR SHALL ASSUME ALL RESPONSIBILITIES FOR ALL EXISTING GAS, STORM, AND SANITARY SEWER LINES WITHIN HIS SITE LIMITS.

BEFORE WORKING WITH OR AROUND THE EXISTING UTILITIES, ANY APPLICABLE UTILITY SHALL BE CONTACTED.

ALL EXISTING UTILITIES ENCOUNTERED DURING CONSTRUCTION SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN IN SERVICE. ANY UTILITY THAT CAN BE REMOVED WITHOUT UNDUE INTERRUPTION OF SERVICE MAY BE REMOVED AND REPLACED BY THE CONTRACTOR WITH PERMISSION OF THE OWNER AND THE UTILITY.

THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE AREA AND NO EXTRA COMPENSATION CONNECTED WITH THE UTILITIES WILL BE ALLOWED.

PLUMBING CONTRACTOR FOR BUILDING WILL EXTEND SANITARY, STORM, AND WATER OUT 5- FEET FROM BUILDING.

ACCEPTABLE MANUFACTURERS

WATER SOFTENERS:
CULLIGAN INTERNATIONAL, KINETICO INC., MARLO INC.

NOTE: ELECTRICAL CHARACTERISTICS FOR PLUMBING EQUIPMENT: EQUIPMENT OF DIFFERENT ELECTRICAL CHARACTERISTICS MAY BE FURNISHED PROVIDED SUCH PROPOSED EQUIPMENT IS APPROVED IN WRITING AND CONNECTING ELECTRICAL SERVICES, CIRCUIT BREAKERS, AND CONDUIT SIZES ARE APPROPRIATELY MODIFIED AT THE COST OF THE CONTRACTOR. IF MINIMUM ENERGY RATINGS OR EFFICIENCIES ARE SPECIFIED, EQUIPMENT SHALL COMPLY WITH REQUIREMENTS.

WATER SOFTENER SCHEDULE

TAG	MFG	MODEL	FLOW (GPM)	P.D. (PSI)	CONNECTION SIZE (IN)	RESIN EXCHANGE CAPACITY (GRAINS)	ELECT	REMARKS
WS-1	NELSON	MT 917/00B-64B	6	15.0	3/4"	64000	120V	1, 2, 3, 4

REMARKS:
1. PROVIDE DUPLEX PROGRESSIVE SOFTENERS WITH BRINE RECLAIM KIT.
2. PROVIDE WITH 120V/24V TRANSFORMER.
3. WATER SOFTENER MANUFACTURER SHALL PROVIDE WATER ANALYSIS TO CONFIRM OPERATION WITHIN DESIGN CRITERIA.
4. PROVIDE AND INSTALL WITH FLECK 9100 METER CONTROL, BYPASS, BRINE TANK, BRINE GRID.

PLUMBING SYMBOL SCHEDULE

	BALL VALVE	—SAN—	SANITARY DRAIN ABOVE FLOOR
	BUTTERFLY VALVE	—SAN—	SANITARY DRAIN BELOW FLOOR
	PRESSURE REDUCING STATION	—ST—	STORM DRAIN ABOVE FLOOR
	PRESSURE REDUCING VALVE	—ST—	STORM DRAIN BELOW FLOOR
	GATE VALVE	—G—	GAS
	GLOBE VALVE	-----	VENT
	TEMPERATURE MIXING VALVE	—RAW—	DOMESTIC WATER (RAW)
	GAS COOK	—H—	HOT WATER
	GAS TURRET	-----	HOT WATER REIRC
	COMPRESSED AIR TURRET	-----	HOT WATER REIRC
	CHECK VALVE	BT-	BRINE TANK
	IN LINE PUMP	CO-	CLEANOUT
	STRAINER	DF-	DRINKING FOUNTAIN
	AUTOMATIC FLOW VALVE	EDS-	EMERGENCY DRENCH SHOWER
	MANUAL FLOW CONTROL VALVE	EEW-	EMERGENCY EYE WASH
	UNION	ET-	EXPANSION TANK
	ACTUATOR	EW-	ELECTRIC WATER COOLER
	METER	EWC-	ELECTRIC WATER COOLER
	PIPING DROP	EW-	ELECTRIC WATER HEATER
	INLINE PIPING DROP	FD-	FLOOR DRAIN
	PIPING RISE	GD-	GARBAGE DISPOSER
	PIPE CAP	GWM-	GAS WATER HEATER
	PIPE BREAK		
	WALL CLEANOUT/ END FERRULE CLEANOUT	HB-	HOSE BIBB
	TIE-IN	L-	LAVATORY
	THERMOMETER	MB-	MOP BASIN
	WATER HAMMER ARRESTOR TAG (SHOCK ABSORBER)	RD-	ROOF DRAIN
	SHOCK ABSORBER	RPBP-	REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER
	CLEAN OUT	S-	SINK
	FLOOR DRAIN	SH-	SHOWER
	FLOOR SINK	SP-	SUMP PUMP
	ROOF DRAIN	STT-	STORAGE TANK
	VENT THROUGH ROOF	TD-	TRENCH DRAIN
	WALL HYDRANT/ HOSE BIBB	TMV-	TEMPERATURE MIXING VALVE
	SHOWER HEAD	U-	URNAL
	REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER	VTR-	VENT THROUGH ROOF
		WB-	WALL BOX
		WC-	WATER CLOSET
		WH-	WALL HYDRANT
		YH-	YARD HYDRANT
		*H	SUFFIX INDICATES HANDICAP ACCESSIBLE
		A.F.F.	ABOVE FINISHED FLOOR

GENERAL PLUMBING NOTES

ALL WORK SHALL CONFORM TO STATE AND LOCAL PLUMBING AND BACKFLOW PREVENTION CODES, AND THE REQUIREMENTS OF THE LOCAL WATER UTILITY.

EQUIPMENT, DOMESTIC WATER PIPING, SANITARY WASTE, SANITARY VENT, AND STORM PIPING LAYOUTS ARE SCHEMATIC IN NATURE. CONTRACTOR MUST ADJUST TO FIELD CONDITIONS AND COORDINATE WITH OTHER TRADES DURING CONSTRUCTION BY ADDING OFFSETS AND ELBOWS WHERE REQUIRED.

VACUUM BREAKERS MUST BE INSTALLED ON ALL EXISTING OR PROPOSED HOSE THREAD FITTINGS, INCLUDING BUT NOT LIMITED TO HOSE BIBBS, WALL/ YARD HYDRANTS, MOP/ SERVICE SINKS.

A CROSS-CONNECTION CONTROL DEVICE INSPECTOR SHALL TEST ALL BACKFLOW DEVICES AT THE TIME OF INSTALLATION AND SUBMIT REPORTS TO THE LOCAL WATER UTILITY AS REQUIRED.

ALL WATER LINES 3" AND LARGER MUST BE DISINFECTED PER ANSI/ AWWA C651-92. SAMPLES FROM 2 CONSECUTIVE DAYS MUST BE TAKEN TO AN APPROVED TEST LAB. LAB ANALYSES REPORTS SHALL BE SUBMITTED TO THE LOCAL WATER UTILITY AS REQUIRED FOR COMPLIANCE.

COORDINATE EXACT LOCATION OF ROOF DRAINS WITH ARCHITECTURAL AND STRUCTURAL PLANS.

ALL MATERIALS INSTALLED WITHIN PLENUM SHALL HAVE FLAME SPREAD RATING OF NOT MORE THEN 25 AND A SMOKE DEVELOPED RATING NOT EXCEEDING 50 IN ACCORDANCE WITH STATE CODES.

THIS CONTRACTOR SHALL PROVIDE ALL EQUIPMENT, MATERIALS, AND LABOR FOR CORE DRILLING AS REQUIRED FOR INSTALLATION OF PIPING PENETRATING BUILDING CONSTRUCTION.

TYPE "K" COPPER TUBING SHALL BE USED FOR ALL DOMESTIC SUPPLY PLUMBING BELOW SLAB. NO FITTINGS SUCH AS COUPLINGS, TEES, OR ELBOWS SHALL BE USED BELOW OR WITHIN SLAB.

ALL EQUIPMENT USING NATURAL GAS SHALL HAVE A GAS COCK AND DIRT LEG FOR EACH PIECE OF EQUIPMENT.

REFERENCE ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONS, TYPICAL.

ALL EQUIPMENT AND MATERIALS SHALL BE UL LISTED AND LABELED FOR TYPE OF EQUIPMENT AND MATERIALS FOR WHICH LISTING AND LABELING IS AVAILABLE.

THIS CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE EXACT PIPE ROUTING WITH THE PLUMBING, MECHANICAL, AND ELECTRICAL CONTRACTORS. FIRE PROTECTION CONTRACTOR SHALL PROVIDE AND INSTALL ADDITIONAL DRAINS, FITTINGS, PIPING, AND OFFSETS AS REQUIRED TO ROUTE FIRE SUPPRESSION PIPING AROUND ALL NEW PLUMBING, MECHANICAL, AND ELECTRICAL PIPING AND EQUIPMENT TO BE INSTALLED AS PART OF THIS PROJECT.

THE PLUMBING CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE AND INSTALL ALL THROUGH PENETRATION FIRESTOP SYSTEMS AS REQUIRED TO SEAL WHERE PIPING PENETRATES A FIRE RATED WALL, FLOOR, OR OTHER LISTED ASSEMBLY. THE PLUMBING CONTRACTOR IS TO REVIEW LIFE SAFETY, AND ALL OTHER ARCHITECTURAL, DRAWINGS FOR THE EXACT LOCATION OF FIRE RATED ASSEMBLIES.

COORDINATE ROUTING OF ALL PIPING WITH ELECTRICAL PANEL LOCATIONS. DO NOT ROUTE PIPING OVER ELECTRICAL PANELS AND PROVIDE ALL WORKING CLEARANCES PER ELECTRICAL CODE. COORDINATE ROUTING WITH ELECTRICAL CONTRACTOR. REFER TO ELECTRICAL DRAWINGS FOR PANEL LOCATIONS.

THE PLUMBING CONTRACTOR SHALL BE RESPONSIBLE TO REVIEW, COORDINATE AND INCLUDE ALL DIVISION 22 WORK INDICATED ON ANY OF THE PROJECT DRAWINGS AS WORK OF THIS PROJECT, TO INCLUDE BUT NOT LIMITED TO ARCHITECTURAL, CIVIL, PLUMBING, MECHANICAL, DRAWINGS, ETC.

BUILDING STRUCTURE IS NOT SHOWN. PROVIDE ALL FITTINGS, OFFSETS, AND DRAINS AS REQUIRED FOR INSTALLATION OF FIRE PROTECTION SYSTEM. CONTRACTOR SHALL MOUNT ALL PIPING TIGHT TO BUILDING STRUCTURE.

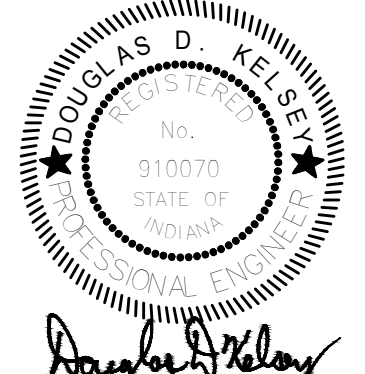
GENERAL CONDITIONS NOTE

ALL CONTRACTORS, BY MAKING THEIR BID, REPRESENT THAT THEY HAVE READ AND UNDERSTAND THE CONSTRUCTION DOCUMENTS. THE CONTRACTOR SHALL REFER TO THE ENTIRE CONSTRUCTION DOCUMENT SET FOR GUIDANCE ON DIMENSIONS, HEIGHTS, DETAILING, ETC. AND INSTALL THEIR WORK SO AS NOT TO INTERFERE WITH THE INSTALLATION OF ANOTHER DISCIPLINE'S WORK OR THE GENERAL INTENT OF THE CONSTRUCTION DOCUMENTS. IN THE EVENT OF A CONFLICT BETWEEN THE SPECIFICATIONS AND/ OR DRAWINGS, THE ARCHITECT SHALL DETERMINE WHICH INFORMATION GOVERNS.

PIPE TRADES NOTE: IN REFERRING TO THIS SHEET YOU ACKNOWLEDGE:
1) REVIEWING THE ENTIRE DRAWING SET INCLUDING ALL 'S', 'T' & 'A' SERIES.
2) COORDINATING WITH THE GENERAL TRADES CONTRACTOR OR C.M. FOR EXACT DETAILING, HEIGHTS, ETC. PRIOR TO INSTALLING WORK.



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A PROJECT FOR:



Cooling Tower Replacement for Centerville-Abington High School School

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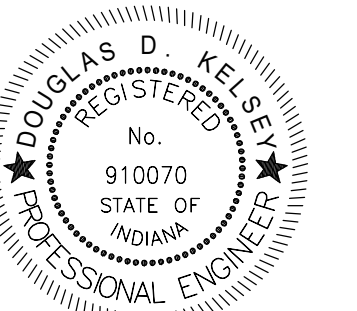
mark	date	description

Plumbing Schedules and General Information

date: December 21, 2022
project: 473004 (222649)
coordinator: SJB
drawn: TEH **P1.0**
checked: DDK

MECHANICAL DEMOLITION PLAN NOTES

- REMOVE TOWER LOOP PUMPS COMPLETE INCLUDING ALL CONTROLS, WIRING, DRAIN PIPING, AND ACCESSORIES. REMOVE 6" TOWER LOOP AND BUILDING LOOP PIPING COMPLETE AND PREPARE FOR NEW WORK. REMOVE EXISTING AIR SEPARATOR AND PREPARE FOR REINSTALLATION.
- BASE BID: EXISTING PLATE HEAT EXCHANGER TO REMAIN. DISCONNECT 6" PIPING AT CLOSEST FITTING AND FLUSH HEAT EXCHANGER.
- ALTERNATE BID #1: REMOVE PLATE HEAT EXCHANGER AND PREPARE PIPING FOR NEW WORK.
- BASE BID: EXISTING PUMPS TO REMAIN.
- ALTERNATE BID #2: REMOVE BUILDING LOOP PUMPS COMPLETE INCLUDING ALL CONTROLS, WIRING, DRAIN PIPING, AND ACCESSORIES.
- CHEMICAL FEEDER AND ASSOCIATED PIPING TO REMAIN. DISCONNECT EXISTING PIPING AS REQUIRED FOR INSTALLATION OF NEW PUMPS AND HYDRIC PIPING. PREPARE PIPING FOR NEW WORK.
- ALL PIPING BEING SUPPORTED FROM STRUCTURE AND DECK ABOVE TO BE REMOVED AS REQUIRED FOR INSTALLATION OF NEW STEEL PLATES AND STRUCTURE. REFER TO ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION.
- REMOVE 2" MAKE-UP WATER PIPING TO POINT INDICATED AND PREPARE FOR NEW WORK.

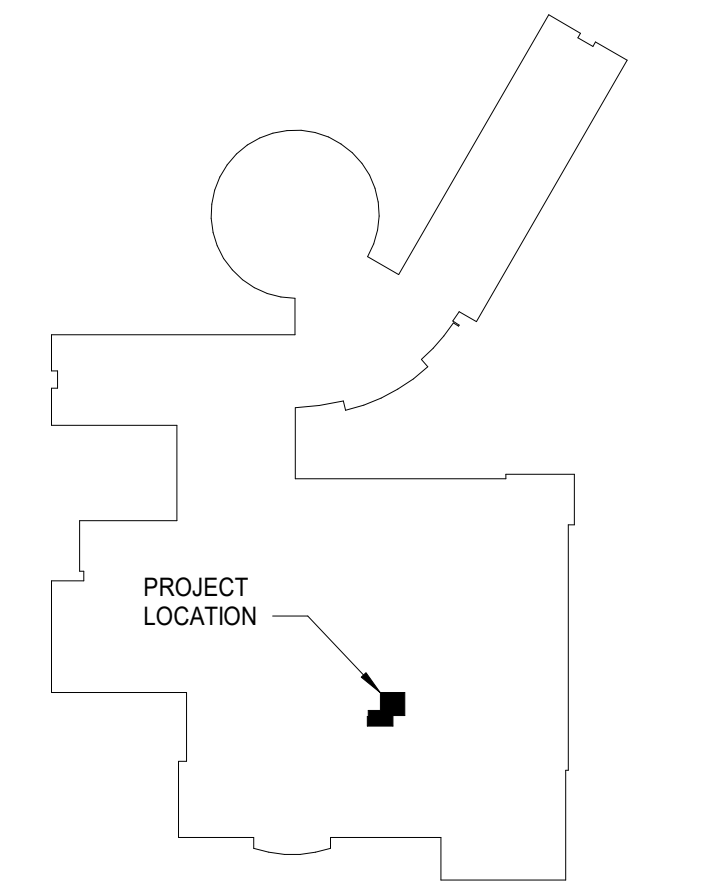
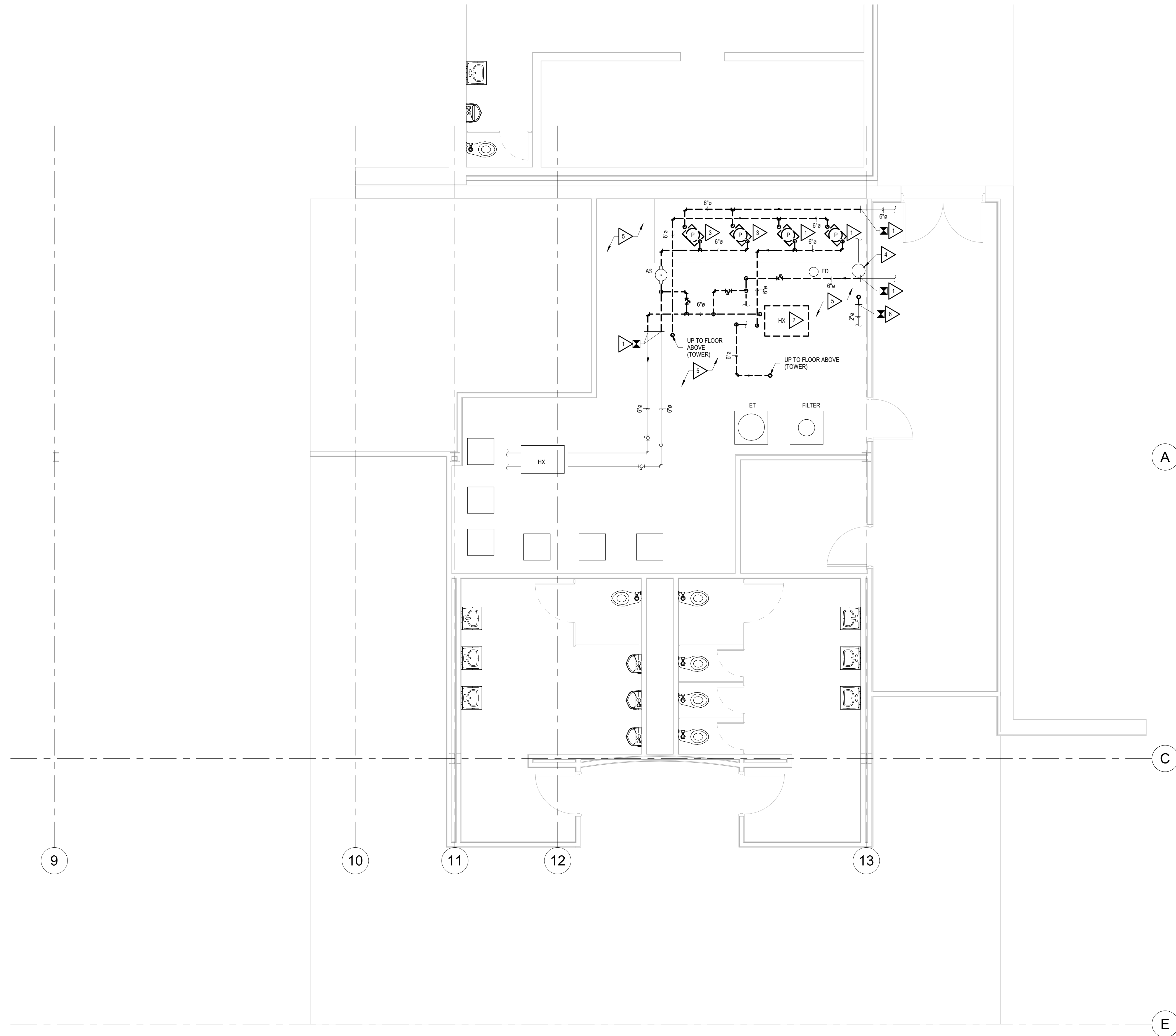


Douglas D. Kelsey
REGISTERED PROFESSIONAL ENGINEER

SCO ENGINEERING, LLC
SOLUTIONS PROVIDED • PROBLEMS SOLVED

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Key Plan

A PROJECT FOR:



Cooling Tower Replacement for
Centerville-Abington High School
School

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mark	date	description

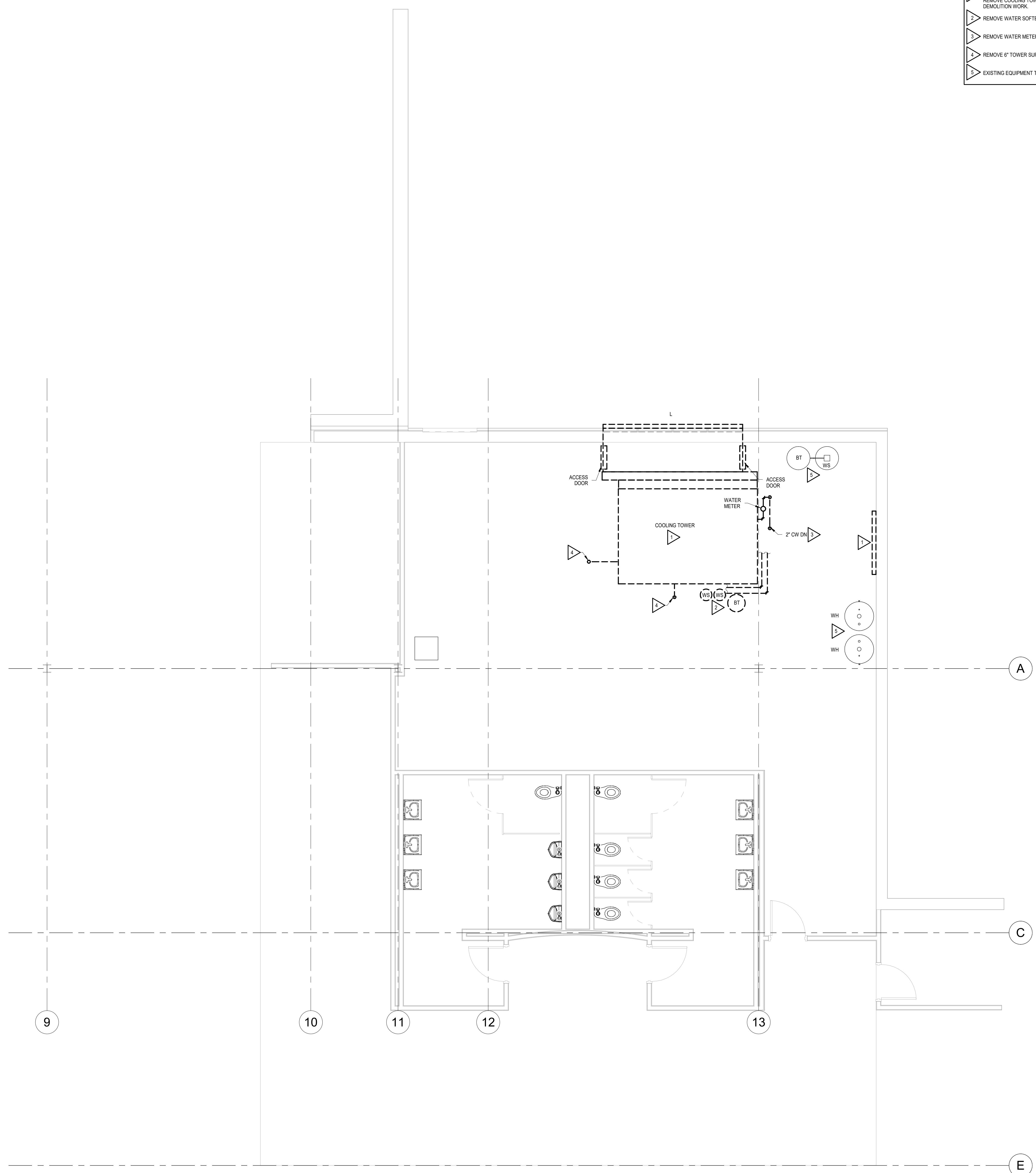
First Floor Mechanical Demolition Plan

date: December 21, 2022
project: (473004) 222649
coordinator: SJB
drawn: TEH **MO.1**
checked: DDK

FIRST FLOOR MECHANICAL DEMOLITION PLAN
SCALE: 1" = 4' (1" = 8')

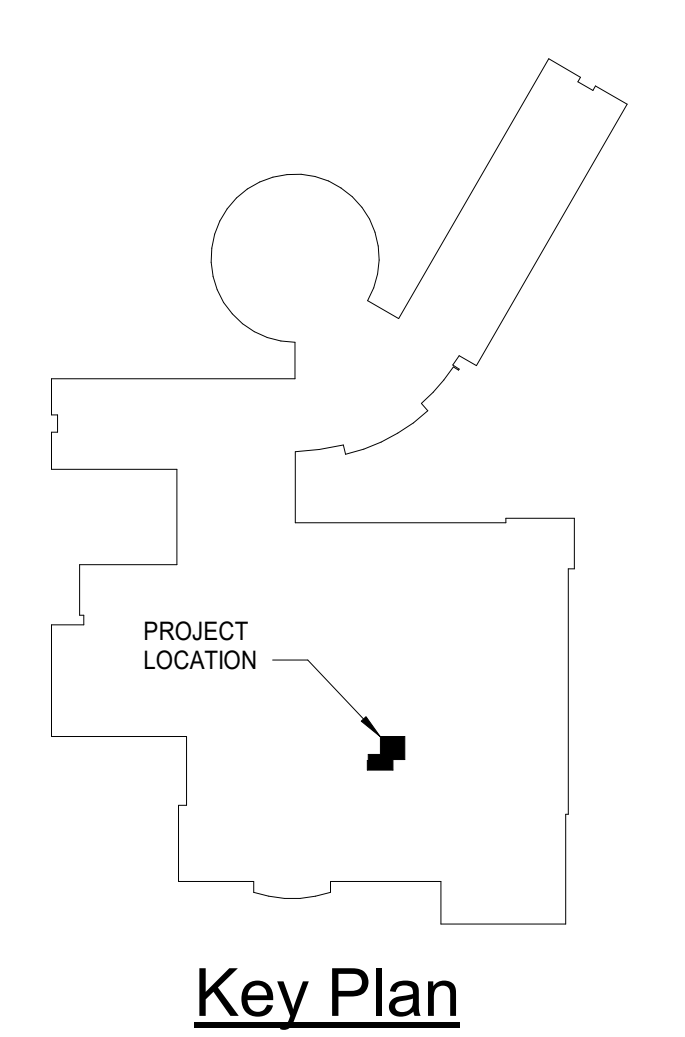
MECHANICAL DEMOLITION PLAN NOTES

- ▲ REMOVE COOLING TOWER COMPLETE INCLUDING ALL CONTROLS, CONTROL PANELS, WIRING, LOUVER, ROOF-HOODS, AND ACCESSORIES. REMOVE COOLING TOWER IN SECTIONS AS REQUIRED. PROTECT ALL ROOF AND STRUCTURE AS REQUIRED FOR REMOVAL PATH OF DEMOLITION WORK.
- ▲ REMOVE WATER SOFTENER AND PIPING ASSOCIATED WITH COOLING TOWER MAKE-UP WATER COMPLETE.
- ▲ REMOVE WATER METER AND 2" MAKE-UP WATER PIPING TO FIRST FLOOR AND PREPARE FOR NEW WORK.
- ▲ REMOVE 6" TOWER SUPPLY AND RETURN PIPING COMPLETE AND PREPARE PIPING FOR NEW WORK.
- ▲ EXISTING EQUIPMENT TO REMAIN.



SECOND FLOOR MECHANICAL DEMOLITION PLAN
 SCALE: 1" = 4'-0"

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A PROJECT FOR:



Cooling Tower Replacement for Centerville-Abington High School

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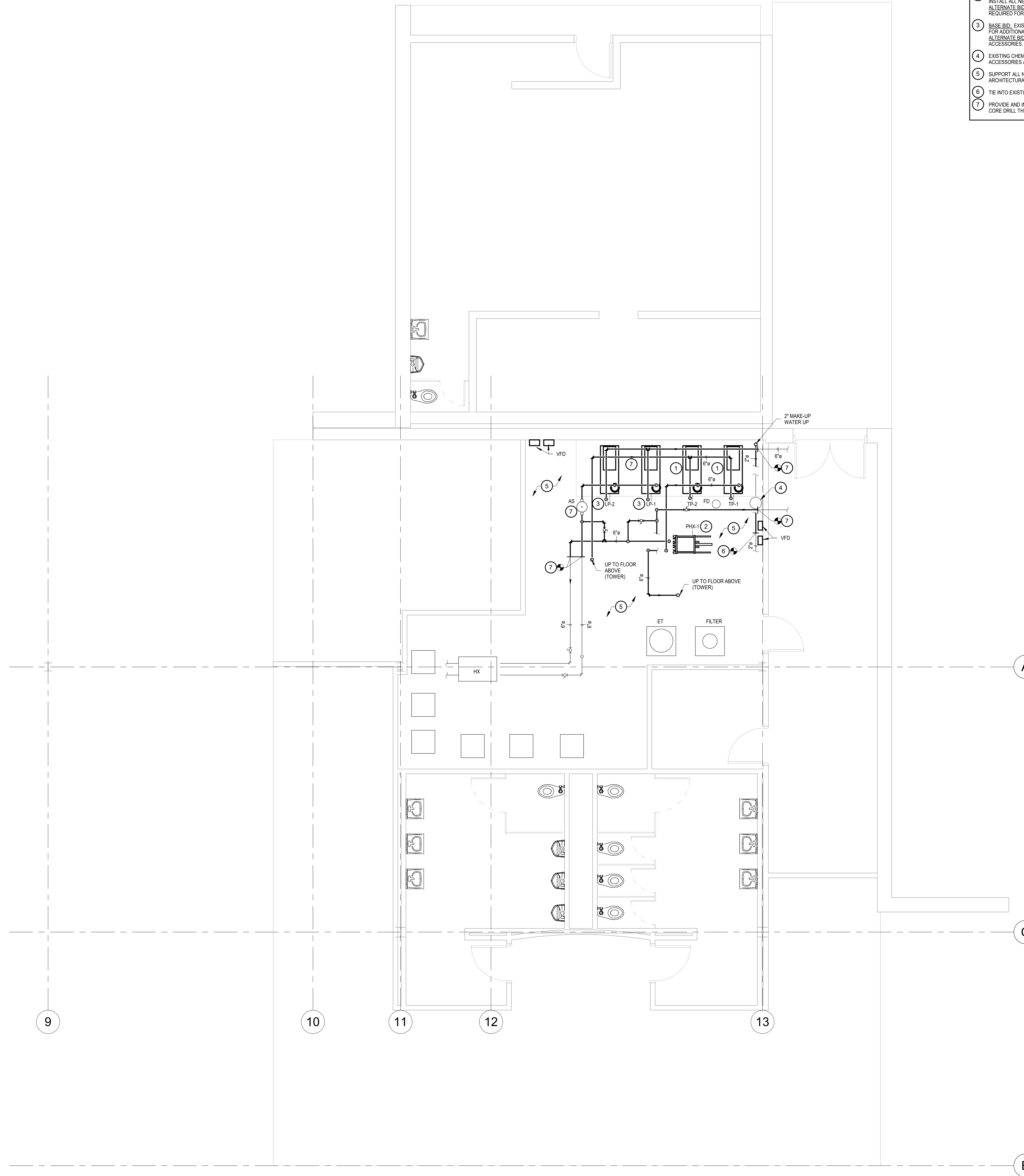
mark	date	description

Second Floor Mechanical Demolition Plan

date: December 21, 2022
 project: (473004) 222649
 coordinator: SJB
 drawn: TEH **M0.2**
 checked: DDK

MECHANICAL PLAN NOTES

- 1 PROVIDE AND INSTALL NEW TOWER LOOP PUMP COMPLETE INCLUDING ALL CONTROLS, WIRING, PIPING AND ACCESSORIES. TIE INTO EXISTING 6" PIPING AT POINT INDICATED. CORE DRILL THROUGH STRUCTURAL STEEL PLATE AND FLOOR AS REQUIRED.
- 2 BASE BID, EXISTING PLATE HEAT EXCHANGER TO REMAIN. FLUSH HEAT EXCHANGER AND RECONNECT EXISTING 6" PIPING. PROVIDE AND INSTALL ALL NECESSARY PIPING AND FITTINGS AS REQUIRED. ALTERNATE BID: PROVIDE AND INSTALL NEW PLATE HEAT EXCHANGER COMPLETE INCLUDING ALL ACCESSORIES, FITTINGS, AND PIPING AS REQUIRED FOR CONNECTION TO EXISTING PIPING.
- 3 BASE BID, EXISTING PUMPS TO REMAIN. EXTEND EXISTING 3/4" DRAIN PIPING TO EXISTING FLOOR DRAIN. REFER TO ARCHITECTURAL PLANS FOR ADDITIONAL INFORMATION. ALTERNATE BID: PROVIDE AND INSTALL NEW BUILDING LOOP PUMP COMPLETE INCLUDING ALL CONTROLS, WIRING, PIPING AND ACCESSORIES.
- 4 EXISTING CHEMICAL FEEDER AND ASSOCIATED PIPING TO REMAIN. PROVIDE AND INSTALL ALL NECESSARY PIPING, FITTINGS, AND ACCESSORIES AS REQUIRED FOR CONNECTION TO NEW PUMPS AND PIPING.
- 5 SUPPORT ALL NEW AND EXISTING PIPING FROM STRUCTURE AFTER STRUCTURAL DECK WORK HAS BEEN COMPLETED. REFER TO ARCHITECTURAL AND STRUCTURAL PLANS FOR ADDITIONAL INFORMATION.
- 6 TIE INTO EXISTING PIPING AND ROUTE AS INDICATED. CORE DRILL THROUGH STRUCTURAL STEEL PLATE AND FLOOR AS REQUIRED.
- 7 PROVIDE AND INSTALL NEW BUILDING LOOP PIPING AND TIE INTO EXISTING 6" PIPING AT POINT INDICATED. INSTALL EXISTING AIR SEPARATOR. CORE DRILL THROUGH STRUCTURAL STEEL PLATE AND FLOOR AS REQUIRED.

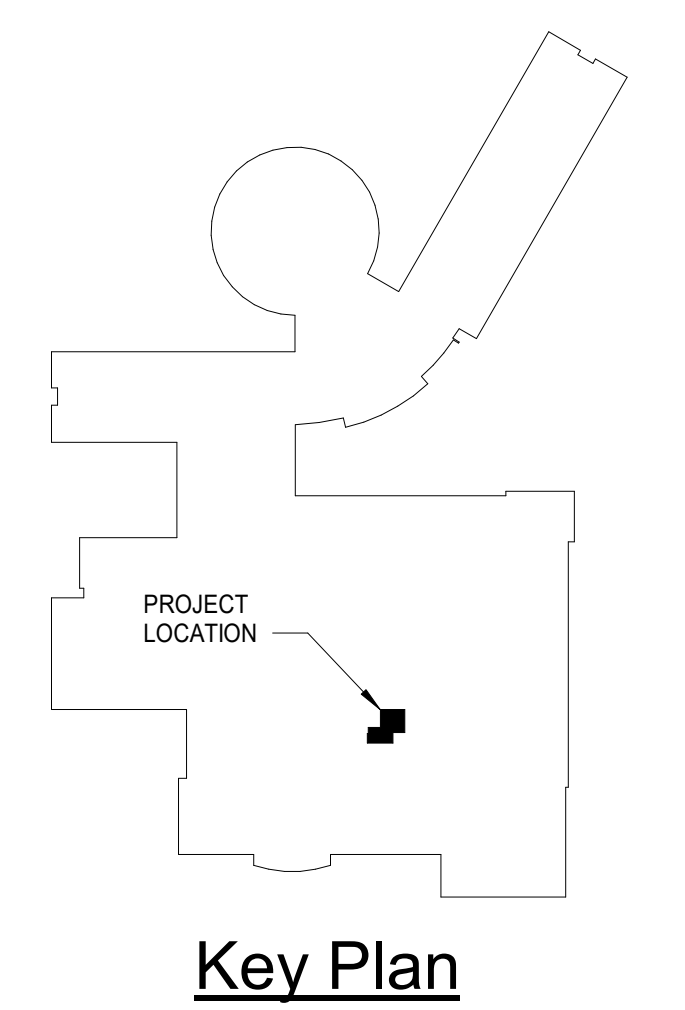


FIRST FLOOR MECHANICAL PLAN
 SCALE: 1" = 4'-0"



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A PROJECT FOR:



Cooling Tower Replacement for Centerville-Abington High School

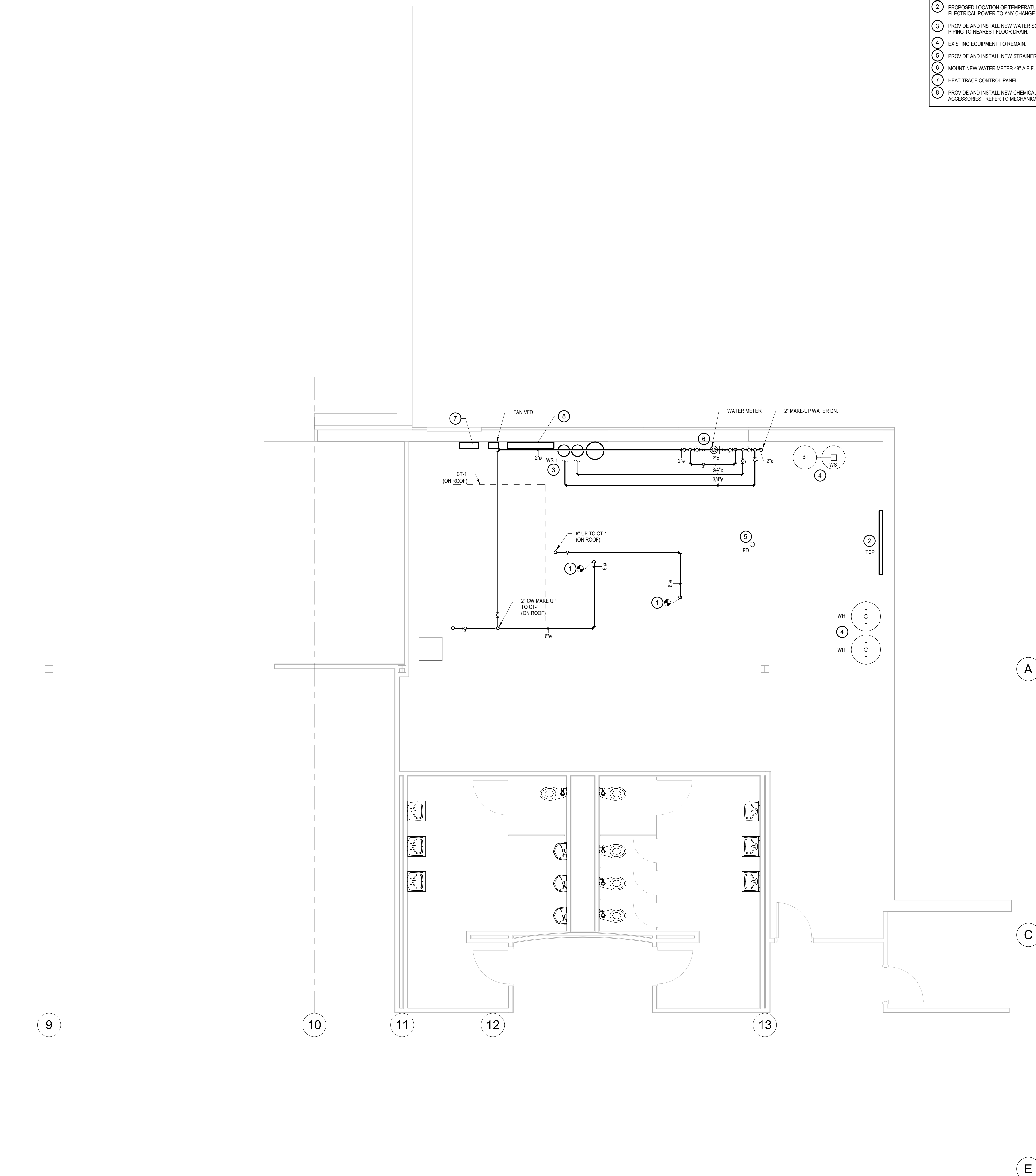
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mark	date	description

First Floor Mechanical Plan

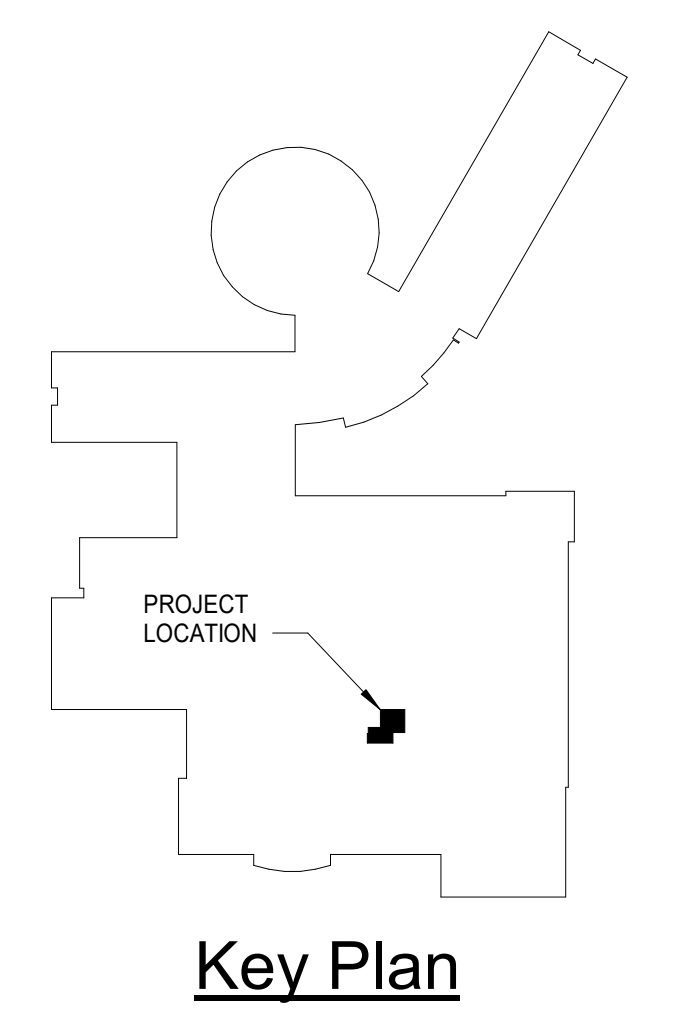
date: December 21, 2022
 project: (473004) 222649
 coordinator: SJB
 drawn: TEH **M2.1**
 checked: DDK

- ### MECHANICAL PLAN NOTES
- 1 ROUTE 6" PIPING AS INDICATED FOR FINAL CONNECTION TO NEW COOLING TOWER LOCATED ON ROOF.
 - 2 PROPOSED LOCATION OF TEMPERATURE CONTROL PANEL. CONTRACTOR IS TO VERIFY QUANTITY AND LOCATION OF PANELS AND PROVIDE ELECTRICAL POWER TO ANY CHANGE IN LOCATION OR ADDITIONAL PANELS.
 - 3 PROVIDE AND INSTALL NEW WATER SOFTENER FOR MAKE-UP WATER COMPLETE INCLUDING ALL PIPING AND ACCESSORIES. ROUTE DRAIN PIPING TO NEAREST FLOOR DRAIN.
 - 4 EXISTING EQUIPMENT TO REMAIN.
 - 5 PROVIDE AND INSTALL NEW STRAINER ON EXISTING FLOOR DRAIN.
 - 6 MOUNT NEW WATER METER 4" A.F.F. PIPING SHOWN HORIZONTAL FOR CLARITY AND CAN BE INSTALLED VERTICALLY AS REQUIRED FOR SPACE.
 - 7 HEAT TRACE CONTROL PANEL.
 - 8 PROVIDE AND INSTALL NEW CHEMICAL FEED AND MONITORING STATION COMPLETE INCLUDING ALL CONTROLS, WIRING, PIPING, AND ACCESSORIES. REFER TO MECHANICAL EQUIPMENT SCHEDULE FOR ADDITIONAL INFORMATION.



SECOND FLOOR MECHANICAL PLAN

SCALE: 1" = 2' 4" = 8" = 16"



A PROJECT FOR:



**Cooling Tower Replacement for
Centerville-Abington High School
School**

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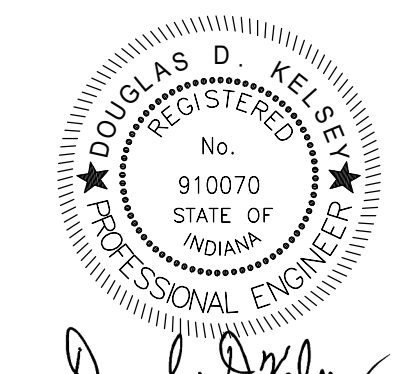
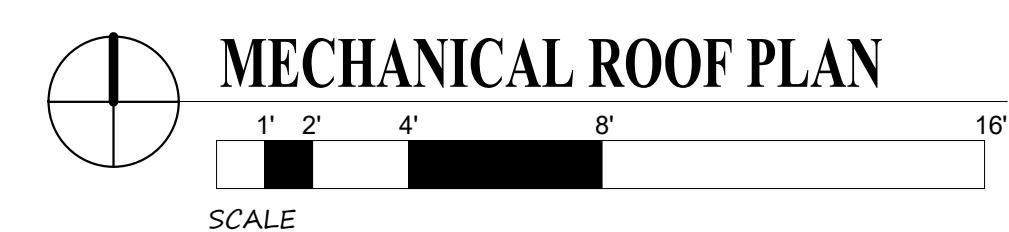
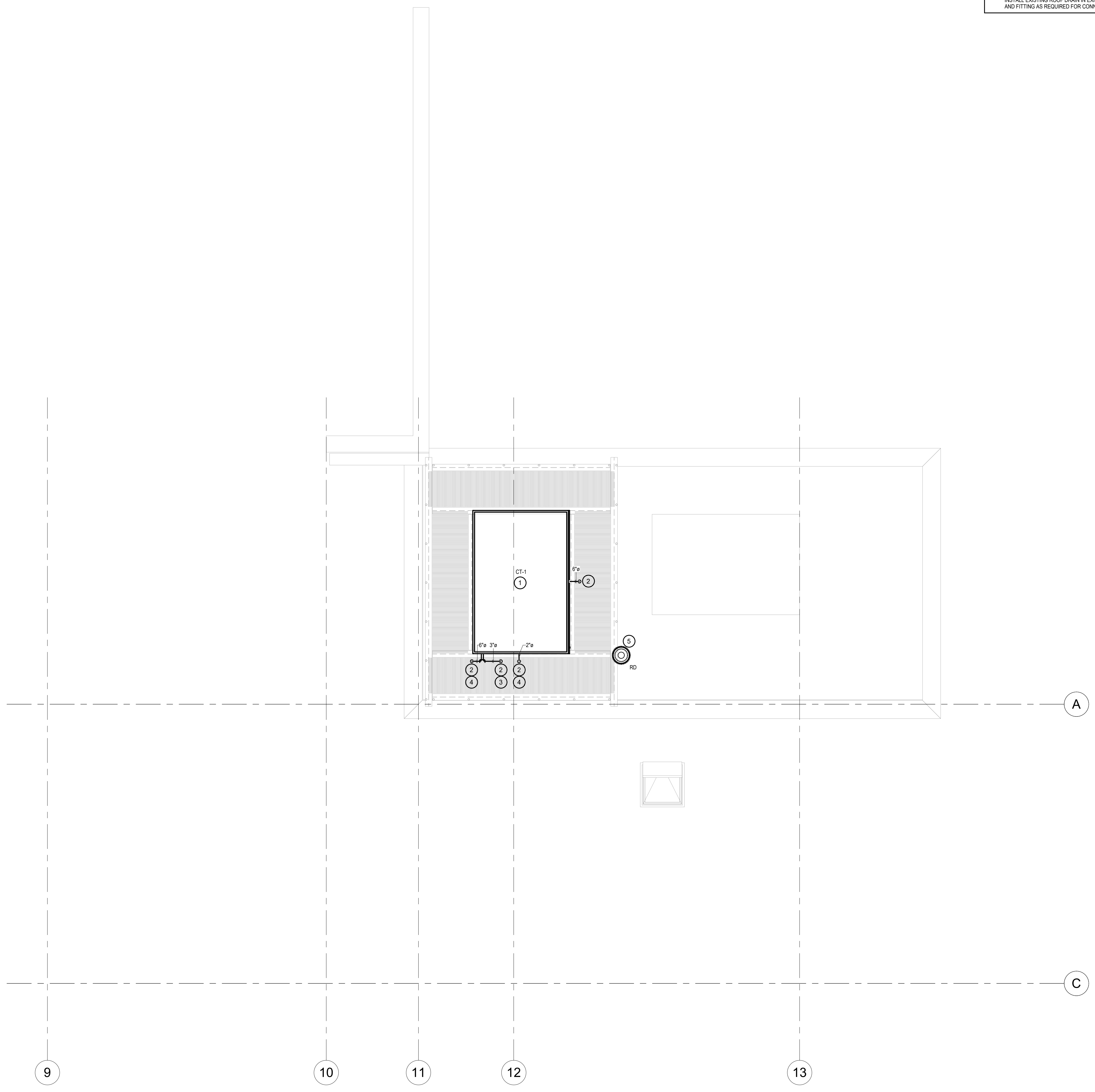
Second Floor Mechanical Plan

date: December 21, 2022
project: (473004) 222649
coordinator: SJB
drawn: TEH
checked: DDK

M2.2

MECHANICAL PLAN NOTES

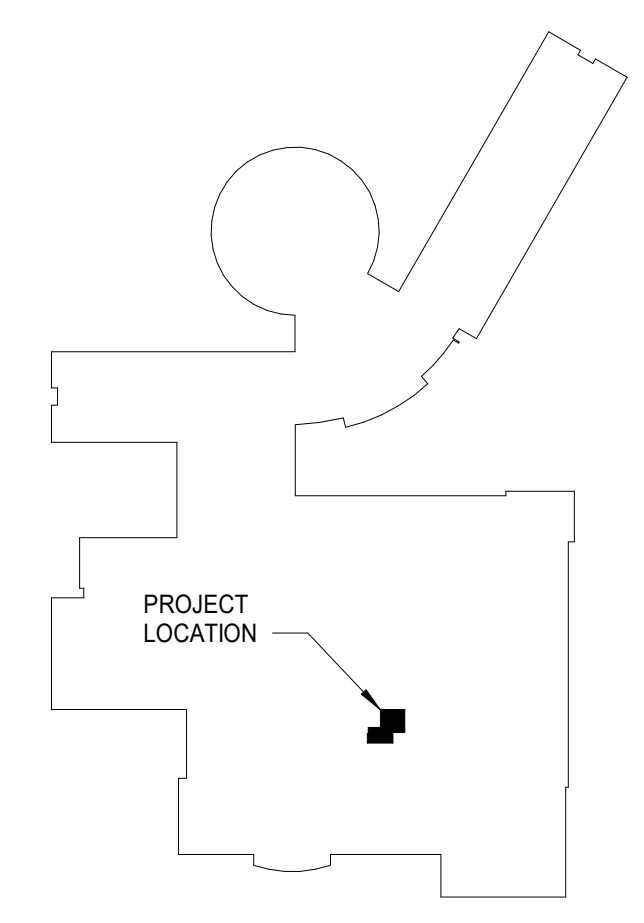
- 1 PROVIDE AND INSTALL NEW COOLING TOWER COMPLETE INCLUDING ALL CONTROLS, WIRING, PIPING AND ACCESSORIES. REFER TO STRUCTURAL AND ARCHITECTURAL PLANS FOR ADDITIONAL INFORMATION.
- 2 COORDINATE ROUTING OF PIPING WITH STRUCTURAL PLATFORM OPENINGS.
- 3 TERMINATE 3" DRAIN PIPING 18" ABOVE ROOF DECK.
- 4 PROVIDE AND INSTALL ELECTRIC HEAT TRACE ON TOWER OUTLET PIPING AND MAKE-UP WATER FILL LINE. INSULATE ALL PIPING RECEIVING HEAT TRACE PER HEAT TRACE MANUFACTURERS RECOMMENDATIONS.
- 5 TEMPORARILY REMOVE EXISTING ROOF DRAIN FOR INSTALLATION OF NEW ROOF. DISCONNECT AND SUPPORT STORM PIPING FROM BELOW. INSTALL EXISTING ROOF DRAIN IN EXISTING LOCATION AFTER NEW ROOF SYSTEM IS INSTALLED. PROVIDE AND INSTALL ALL NECESSARY PIPING AND FITTING AS REQUIRED FOR CONNECTION OF EXISTING STORM PIPING TO ROOF DRAIN.



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Key Plan

A PROJECT FOR:



**Cooling Tower Replacement for
Centerville-Abington High School
School**

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mark	date	description

Mechanical Roof Plan

date: December 21, 2022
project: (473004) 222649
coordinator: SJB
drawn: TEH **M2.3**
checked: DDK

ELECTRICAL SYMBOL SCHEDULE

** ALL DEVICE INDICATED ON SYMBOL SCHEDULE SHALL BE PROVIDED AND INSTALL BY CONTRACTOR PER SPECIFICATIONS. IF AN ITEM IS NOT SPECIFIED PER MANUFACTURE, CONTRACTOR SHALL NOTIFY ENGINEER ON REQUIRED MANUFACTURERS SPECIFICATIONS.

- DEMOLITION PLAN NOTE: X INDICATES A DEMOLITION NOTE FOUND IN THE ELECTRICAL DEMOLITION PLAN NOTE BOX SPECIFIC TO THE DRAWING ON WHICH IT APPEARS. (WILL NOT BE FOUND ON BUILDINGS THAT ARE NEW CONSTRUCTION)
PLAN NOTE: X INDICATES A PLAN NOTE FOUND IN THE ELECTRICAL PLAN NOTE BOX SPECIFIC TO THE DRAWING ON WHICH IT APPEARS.
POWER CONDUIT AND CONDUCTOR SCHEDULE: X INDICATES NOTE ON SCHEDULE DESCRIBING CONDUIT SIZE, CONDUCTOR SIZE AND QUANTITY.
DOUBLE BORDER NOTE BOX: A GENERAL NOTE THAT APPLIES TO THE ENTIRE DRAWING OR DETAIL WHERE IT APPEARS.
DETAIL BUBBLE: XX INDICATES DETAIL NUMBER, YY INDICATES SHEET NUMBER ON WHICH APPEARS. DETAIL BUBBLE WILL NOT BE SHOWN AT EVERY SITUATION ON THE FLOOR PLAN WHERE IT IS REQUIRED TO BE FOLLOWED, IT WILL SHOWN AT SEVERAL LOCATIONS TO GIVE THE CONTRACTOR A TYPICAL IDEA OF THE REQUIREMENTS.
METERBASE AS NOTED
'MSB' MAIN SWITCHBOARD
DISTRIBUTION PANEL
SURFACE MOUNTED PANELBOARD
RECESSED MOUNTED PANELBOARD
INVERSE THERMAL-MAGNETIC CIRCUIT BREAKER UNLESS OTHERWISE NOTED
TRANSFORMER
COMBINATION STARTER AND FUSED DISCONNECT SWITCH; XX INDICATES STARTER NUMBER, REFER TO SCHEDULE.
NONFUSED HEAVY DUTY DISCONNECT SWITCH; XX INDICATES AMPERE RATING
FUSED HEAVY DUTY DISCONNECT SWITCH; XX INDICATES FUSE SIZE
ENCLOSED CIRCUIT BREAKER
FLOOR MOUNTED UNISTRUT STAND, REFER TO DETAIL.
ROOF MOUNTED GALVANIZED UNISTRUT STAND, MOUNTED TO STRUCTURE, PENETRATING ROOF, FLASHED WATER TIGHT
MOTOR CONTROL CENTER
MOTOR
GROUND BUS
TWISTLOCK RECEPTACLE; XX INDICATES REQUIRED AMPERAGE
SPECIAL PURPOSE RECEPTACLE; XX INDICATES REQUIRED AMPERAGE, NEMA CONFIGURATION SHALL MATCH CORD SET OF EQUIPMENT BEING PROVIDED
EXISTING RECEPTACLE
NEW DEVICE AS NOTED WITHIN EXISTING ROUGH-IN AND TERMINATED TO EXISTING BRANCH CIRCUIT
120 VOLT, 20 AMPERE DUPLEX RECEPTACLE. MOUNT AT 16 INCHES ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED
120 VOLT, 20 AMPERE SINGLE RECEPTACLE. MOUNT AT 16 INCHES ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED
120 VOLT, 20 AMPERE ISOLATED GROUND SINGLE OR DUPLEX RECEPTACLE MOUNT AT 16 INCHES ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED. EACH RECEPTACLE SHALL HAVE A DEDICATED GROUNDING CONDUCTOR TERMINATED TO ISOLATED GROUND BUS
120 VOLT, 20 AMPERE DOUBLE DUPLEX RECEPTACLE, MOUNT AT 16 INCHES ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED
120 VOLT, 20 AMPERE DUPLEX RECEPTACLE. MOUNT HORIZONTAL WITHIN CASEWORK TOE-KICK, REFER TO DETAIL
120 VOLT, 20 AMPERE DUPLEX OR SINGLE RECEPTACLE. MOUNT AT 44 INCHES ABOVE FINISHED FLOOR OR 4 INCHES ABOVE CASEWORK/COUNTER, OR 2 INCHES ABOVE CASEWORK/COUNTER WITH BACKSPASH
120 VOLT, 20 AMPERE DUPLEX RECEPTACLE WITH BUILT IN SURGE SUPPRESSION. MOUNT AT 16 INCHES ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED
ELECTRIC CORD AND CABLE REEL, REFER TO DETAIL
120 VOLT, 20 AMPERE TAMPERPROOF DUPLEX RECEPTACLE. MOUNT AT 16 INCHES ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED
120 VOLT, 20 AMPERE SINGLE RECEPTACLE FOR ELECTRIC WATER COOLER. MOUNT SO RECEPTACLE IS CONCEALED BEHIND WATER COOLER COVER
120 VOLT, 20 AMPERE DUPLEX RECEPTACLE WITH GROUND FAULT CIRCUIT INTERRUPTER. MOUNT AT 16 INCHES ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED
120 VOLT, 20 AMPERE DUPLEX RECEPTACLE WITH USB CHARGER PORTS. MOUNT AT 16 INCHES ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED
120 VOLT, 20 AMPERE DUPLEX RECEPTACLE ON OPTIONAL STANDBY CIRCUIT WITH USB CHARGER PORTS. MOUNT AT 16 INCHES ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED
120 VOLT, 20 AMPERE DUPLEX RECEPTACLE ON OPTIONAL STANDBY CIRCUIT. MOUNT AT 16 INCHES ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED
120 VOLT, 20 AMPERE DUPLEX RECEPTACLE WITH GROUND FAULT CIRCUIT INTERRUPTER AND P & S (OR EQUAL) #120 STAINLESS STEEL COVER. MOUNT AT 24 INCHES ABOVE FINISHED GRADE UNLESS OTHERWISE NOTED
INDICATES SINGLE POLE CIRCUITS
INDICATES TWO POLE CIRCUITS
INDICATES THREE POLE CIRCUITS
SURFACE RACEWAY MOUNTED DEVICE, REFER TO DETAILS FOR REQUIRED SURFACE RACEWAY - WHERE HATCHED RECTANGLE SYMBOL IS NOT SHOWN FOR DEVICE LOCATED ON AN EXISTING WALL, SURFACE MOUNTED CONDUIT IS ACCEPTABLE FOR LOCATION
DEVICE OR BRANCH CIRCUIT FEED THAT SHALL BE CUT-IN OR SLOTTED INTO EXISTING SURFACE. WHERE INDICATED ADJACENT TO UNOCCUPIED AREAS, SURFACE CONDUIT MAY BE INSTALLED AND FED THRU WALL INTO BACK OF THE SURFACE DEVICE
HOME RUN TO PANELBOARD
UNDER SLAB OR UNDERGROUND HOME RUN TO PANELBOARD
BRANCH CIRCUIT
UNDER SLAB OR UNDERGROUND BRANCH CIRCUIT

- COIL
THERMOSTAT
RELAY
RED MUSHROOM-HEAD EMERGENCY OFF PUSH BUTTON, MOUNT AT 44 INCHES ABOVE FINISHED FLOOR
ADA ACTUATOR BUTTON PROVIDED BY MANUFACTURER, COORDINATE ROUGH-IN REQUIREMENTS AND MOUNT AT 44 INCHES ABOVE FINISHED FLOOR
EMERGENCY EYE FOR OVERHEAD DOOR
PHOTO CELL
HAIR OR HAND DRYER
FLUSH MOUNTED FLOOR BOX FOR POWER AND TEL/COM, CONTRACTOR SHALL VERIFY EXACT LOCATION PRIOR TO ROUGH-IN/INSTALLATION WITH ARCHITECT. REFER TO DETAIL.
DATA OUTLET: X DENOTES NUMBER OF DATA DROPS PER OUTLET, REFER TO DETAIL
VOICE OUTLET, REFER TO DETAIL
VOICE OUTLET, REFER TO DETAIL, MOUNT AT +4" A.F.F.
VOICE OUTLET (WALL PHONE), REFER TO DETAIL
ANALOG VOICE OUTLET, REFER TO DETAIL
DATA/VOICE OUTLET: X INDICATES NUMBER OF DATA DROPS PER OUTLET, REFER TO DETAIL
120V DOUBLE DUPLEX RECEPTACLE ADJACENT TO DATA OUTLET. X INDICATES NUMBER OF DATA OUTLETS, REFER TO DETAIL.
ANALOG VOICE/VOICE/DATA OUTLET: X INDICATES NUMBER OF DATA OUTLET, REFER TO DETAIL
TEACHERS WORK STATION, REFER TO DETAIL
VIDEO/AUDIO DISTRIBUTION OUTLET, REFER TO DETAIL
TELEVISION DISTRIBUTION OUTLET, REFER TO DETAIL
CONTINUOUS CENTER HUNG RAIL/RUNG ALUMINUM CABLE TRAY
EMT SYSTEMS TEL/COM SLEEVE, PROVIDE WITH ARLINGTON INDUSTRIES EMT BUSHING AND FIRE STOP AT EACH END. X INDICATES INSIDE DIAMETER OF SLEEVE, (Y) INDICATES QUANTITY
SAME AS ABOVE ONLY VERTICAL FROM LOWER LEVEL ACCESSIBLE CEILING CAVITY OR STRUCTURE TO UPPER LEVEL ACCESSIBLE CEILING CAVITY OR STRUCTURE
OPEN RELAY STYLE TEL/COM RACK
FULLY ENCLOSED WITH FRONT AND BACK LOOKING DOOR TEL/COM RACK
SLIDE-OUT/ ROTATING STYLE TEL/COM RACK
WALL MOUNTED/ SWING-OUT STYLE TEL/COM RACK
'MP' INDICATES WEATHERPROOF DEVICE
'WG' INDICATES WIRE GUARDED DEVICE, EXTERIOR WIRE GUARDS SHALL BE STAINLESS STEEL
SCRAMBLE PAD
DOOR MONITOR
CCTV CAMERA
CCTV CAMERA
CCTV CAMERA
DOME LIGHT
NURSE CALL-PATIENT STATION
DOME LIGHT (DOUBLE)
NURSE CALL-EMERGENCY STATION
NURSE CALL-STAFF
NURSE CALL-DUTY
NORMALLY OPEN CONTACTS
NORMALLY CLOSED CONTACTS
DUCT MOUNTED SMOKE DETECTOR WALL MOUNTED REMOTE INDICATOR LABELED BY UNIT AND DUCT FUNCTION
SAME AS ABOVE, ONLY CEILING MOUNTED
FIRE ALARM MAGNETIC OR SEISMOTRONIC DOOR HOLD OPEN. COORDINATE WITH DOOR HARDWARE SCHEDULE, TRANSFORMER TO BE TERMINATED TO NEAREST UNSWITCHED 120V CIRCUIT AS REQUIRED
FIRE ALARM CONTROL PANEL
FIRE ALARM ANNUNCIATOR
FIRE ALARM EXTENDER PANEL, QUANTITY REQUIRED SHALL BE DETERMINED BY FIRE ALARM SYSTEM MANUFACTURER
FIRE ALARM POST INDICATOR VALVE, PROVIDE AND INSTALL SIGNAL MODULE AND TERMINATE TO FACP AS REQUIRED
FIRE SUPPRESSION SYSTEM TAMPER AND FLOW SWITCH
FIRE SUPPRESSION SYSTEM BELL
WALL MOUNTED DUAL-FACE CLOCK
WALL MOUNTED CLOCK
REFER TO JUNCTION BOX SCHEDULE
JUNCTION BOX AS REQUIRED FOR ROUGH-IN OR TERMINATION WHEN NOT SPECIFIED

- 2X2 LUMINAIRE; XX INDICATES FIXTURE TYPE, O INDICATES SWITCH LEG
2X2 LUMINAIRE; XX INDICATES FIXTURE TYPE, O INDICATES SWITCH LEG, LINES INDICATE INSTALLATION ALIGNMENT
2X4 LUMINAIRE; XX INDICATES LUMINAIRE TYPE, O INDICATES SWITCH LEG
1X4 LUMINAIRE, XX INDICATES LUMINAIRE TYPE, O INDICATES SWITCH LEG
'ON-OFF' WITH PILOT LIGHT OR 'OPEN-CLOSE-STOP' PUSH BUTTON STATION
EMERGENCY LUMINAIRE; XX INDICATES LUMINAIRE TYPE, O INDICATES SWITCH LEG, PROVIDE EM BALLAST OR GTD AS REQUIRED
EMERGENCY/NIGHT LIGHT LUMINAIRE; XX INDICATES LUMINAIRE TYPE
STRIP LUMINAIRE; XX INDICATES LUMINAIRE TYPE, O INDICATES SWITCH LEG
STAGGERED STRIP LUMINAIRE, XX INDICATES LUMINAIRE TYPE, O INDICATES SWITCH LEG
TRACK LIGHTING, XX INDICATES LUMINAIRE TYPE, O INDICATED SWITCH LEG
CEILING/SURFACE PENDANT MOUNTED LUMINAIRE; XX INDICATES LUMINAIRE TYPE, O INDICATES SWITCH LEG
WALL/SURFACE MOUNTED LUMINAIRE; XX INDICATES LUMINAIRE TYPE, O INDICATES SWITCH LEG
VOICE OUTLET, REFER TO DETAIL
VOICE OUTLET (WALL PHONE), REFER TO DETAIL
ANALOG VOICE OUTLET, REFER TO DETAIL
DATA/VOICE OUTLET: X INDICATES NUMBER OF DATA DROPS PER OUTLET, REFER TO DETAIL
120V DOUBLE DUPLEX RECEPTACLE ADJACENT TO DATA OUTLET. X INDICATES NUMBER OF DATA OUTLETS, REFER TO DETAIL.
ANALOG VOICE/VOICE/DATA OUTLET: X INDICATES NUMBER OF DATA OUTLET, REFER TO DETAIL
TEACHERS WORK STATION, REFER TO DETAIL
VIDEO/AUDIO DISTRIBUTION OUTLET, REFER TO DETAIL
TELEVISION DISTRIBUTION OUTLET, REFER TO DETAIL
CONTINUOUS CENTER HUNG RAIL/RUNG ALUMINUM CABLE TRAY
EMT SYSTEMS TEL/COM SLEEVE, PROVIDE WITH ARLINGTON INDUSTRIES EMT BUSHING AND FIRE STOP AT EACH END. X INDICATES INSIDE DIAMETER OF SLEEVE, (Y) INDICATES QUANTITY
SAME AS ABOVE ONLY VERTICAL FROM LOWER LEVEL ACCESSIBLE CEILING CAVITY OR STRUCTURE TO UPPER LEVEL ACCESSIBLE CEILING CAVITY OR STRUCTURE
OPEN RELAY STYLE TEL/COM RACK
FULLY ENCLOSED WITH FRONT AND BACK LOOKING DOOR TEL/COM RACK
SLIDE-OUT/ ROTATING STYLE TEL/COM RACK
WALL MOUNTED/ SWING-OUT STYLE TEL/COM RACK
'MP' INDICATES WEATHERPROOF DEVICE
'WG' INDICATES WIRE GUARDED DEVICE, EXTERIOR WIRE GUARDS SHALL BE STAINLESS STEEL
SCRAMBLE PAD
DOOR MONITOR
CCTV CAMERA
CCTV CAMERA
CCTV CAMERA
DOME LIGHT
NURSE CALL-PATIENT STATION
DOME LIGHT (DOUBLE)
NURSE CALL-EMERGENCY STATION
NURSE CALL-STAFF
NURSE CALL-DUTY
NORMALLY OPEN CONTACTS
NORMALLY CLOSED CONTACTS
DUCT MOUNTED SMOKE DETECTOR WALL MOUNTED REMOTE INDICATOR LABELED BY UNIT AND DUCT FUNCTION
SAME AS ABOVE, ONLY CEILING MOUNTED
FIRE ALARM MAGNETIC OR SEISMOTRONIC DOOR HOLD OPEN. COORDINATE WITH DOOR HARDWARE SCHEDULE, TRANSFORMER TO BE TERMINATED TO NEAREST UNSWITCHED 120V CIRCUIT AS REQUIRED
FIRE ALARM CONTROL PANEL
FIRE ALARM ANNUNCIATOR
FIRE ALARM EXTENDER PANEL, QUANTITY REQUIRED SHALL BE DETERMINED BY FIRE ALARM SYSTEM MANUFACTURER
FIRE ALARM POST INDICATOR VALVE, PROVIDE AND INSTALL SIGNAL MODULE AND TERMINATE TO FACP AS REQUIRED
FIRE SUPPRESSION SYSTEM TAMPER AND FLOW SWITCH
FIRE SUPPRESSION SYSTEM BELL
WALL MOUNTED DUAL-FACE CLOCK
WALL MOUNTED CLOCK
REFER TO JUNCTION BOX SCHEDULE
JUNCTION BOX AS REQUIRED FOR ROUGH-IN OR TERMINATION WHEN NOT SPECIFIED

ELECTRICAL SPECIFICATIONS

ELECTRICAL COSTS SHALL CONSIST OF REQUIRED LABOR AND MATERIAL TO COMPLETELY INSTALL ELECTRICAL WORK AS INDICATED ON THESE DRAWINGS.
THE ENTIRE INSTALLATION SHALL CONFORM TO THE LATEST VERSION OF THE NATIONAL ELECTRICAL CODE AND ALL STATE AND LOCAL CODES.
THE ENTIRE ELECTRICAL SYSTEM SHALL BE GROUNDED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE.
SUBMITTALS SHALL BE FORWARDED TO THE ENGINEER FOR REVIEW AND RELEASE FOR THE FOLLOWING MATERIALS: CONDUIT, CONDUIT FITTINGS, WIRE, BOXES, WIRING DEVICES, COVER PLATES, LIGHT FIXTURES, PANELBOARDS, MOTOR STARTERS, SAFETY SWITCHES, AND UNISTRUT.
CONDUIT SHALL BE EMT OR RIGID GALVANIZED CONDUIT (RGC) OF 3/4" MINIMUM TRADE SIZE. EMT FITTINGS SHALL BE OF STEEL CONSTRUCTION WITH INSULATED THROAT. DIE CAST FITTINGS ARE NOT ACCEPTABLE. PANEL FEEDERS AND EXTERIOR EXPOSED CONDUITS SHALL BE RGC, EXTERIOR RGC SHALL HAVE EXPOSED THREADS DECREASED AND SPRAYED WITH (2) COATS OF GALVANIZED SPRAY. UNDER-SLAB, UNDERGROUND BENEATH GRASS, AND UNDERGROUND BENEATH PAVEMENT (WITH CONCRETE ENGAGEMENT) SHALL BE PVC WITH RGC 90% AND STUB-UPS.
NON-METALLIC SHEATH, AC, OR MC CABLE ARE NOT APPROVED WIRING METHODS ON THIS PROJECT.
ALL WIRE SHALL BE COPPER WITH TYPE THW, THHN, THWN, OR XHHW INSULATION, ALL UNDERGROUND CONDUCTORS SHALL BE MET LOCATION RATED. ALL CONDUCTORS SHALL HAVE FACTORY APPLIED COLOR THE ENTIRE LENGTH OF THE INSULATION TO READILY IDENTIFY IT AS A SPECIFIC PHASE, NEUTRAL, OR EQUIPMENT GROUNDING CONDUCTOR AT ANY POINT ALONG ITS ENTIRE LENGTH.
ALL BOXES SHALL BE PRESSED STEEL, SINGLE PIECE (NON-GANGABLE) TYPE.
ALL DEVICE COVER PLATES SHALL BE STAINLESS STEEL.
ALL COVER PLATES FOR DEVICES AND JUNCTION BOXES SHALL HAVE CIRCUIT NUMBERS LABELED WITH INDELIBLE INK MARKER, DEVICE COVERS SHALL BE LABELED ON THE BACK, JUNCTION BOX COVERS SHALL BE LABELED ON THE FRONT.
RECEPTACLES SHALL BE 120 VOLT, 20A, WITH PART NUMBERS AS LISTED BY HUBBELL OR EQUAL BY COOPER, OR P&S. COLOR SHALL BE CHOSEN BY ARCHITECT.
SINGLE RECEPTACLE #HBL5361X
DUPLEX RECEPTACLE #HBL5352Z
4P20 RECEPTACLE #H5352X
SWITCHES SHALL BE 120/277V, 20A, WITH PART NUMBERS AS LISTED BY HUBBELL OR EQUAL BY COOPER, OR P&S. COLOR SHALL BE CHOSEN BY ARCHITECT.
SINGLE POLE #HBL1221
THREE WAY #HBL1223
FOUR WAY #HBL1224
(ADD 'L' SUFFIX FOR KEVED LOOKING TYPE)
LIGHT FIXTURES SHALL BE AS SCHEDULED, WITH ONLY PRE-APPROVED EQUAL FIXTURES ACCEPTABLE.
PANELBOARDS, MOTOR STARTERS, SAFETY SWITCHES (HEAVY DUTY), ETC., SHALL BE AS MANUFACTURED BY G.E., SQUARE D, SIEMENS, OR OUTLER HAMMER. ALL BUS SHALL BE COPPER. ALL CIRCUIT BREAKERS SHALL BE BOLT-ON TYPE. A COMPUTER GENERATED CIRCUIT SCHEDULE SHALL BE PROVIDED IN EACH PANELBOARD.
ALL EQUIPMENT THAT IS TO BE MOUNTED ON MASONRY WALLS SHALL BE MOUNTED ON A 1 1/2" UNISTRUT AT LEAST 7/8" FROM WALL.
EXTERIOR UNISTRUT SHALL BE GALVANIZED WITH CUT ENDS SPRAYED WITH (2) COATS OF GALVANIZED SPRAY.
EXTERIOR CONDUIT SUPPORTS AND FASTENERS SHALL BE STAINLESS STEEL OR HOT-DIPPED GALVANIZED.

POWER CONDUIT AND CONDUCTORS SCHEDULE (CU)

Table with columns: NOTE NO., CONDUIT, CONDUCTORS, GROUND, NOTE NO., CONDUIT, CONDUCTORS, GROUND. Lists various conduit and conductor specifications for different voltages and amperages.

MOTOR CONTROLLER SCHEDULE

Table with columns: STR. TR. NO., EQUIP.MT. SERVED, ROOM LOCATION, EQUIPMENT DATA (HP, FLA, VOLTS, PHASE), STARTER DATA (TYPE, NEMA SIZE, NEMA ENCL.), POWER FACTOR CAPACITOR KVAR, REMARKS. Includes a REMARKS section with details on fuses and capacitor cell fuses.

GENERAL ELECTRICAL NOTES

VERIFY ALL DIMENSIONS FROM THE ARCHITECTURAL PLANS.
DIMENSIONS SHOWN OR NOTED FOR OUTLET BOXES AND DEVICES SHALL BE TO THE BOTTOM OF THE BOX.
COORDINATE LOCATION OF LIGHT FIXTURES IN AREAS OF MECHANICAL DUCTWORK AND PIPING WITH MECHANICAL CONTRACTOR. RELOCATE LIGHT FIXTURES, WIRING AND CONDUIT IF NECESSARY AS DIRECTED BY THE ARCHITECT/ENGINEER.
VERIFY LOCATION OF ALL BACK BOXES IN LABORATORY EQUIPMENT AND BUILT-IN FURNITURE WITH EQUIPMENT SUPPLIER BEFORE ROUGH-IN.
CIRCUIT ARCS SHOWN FROM LIGHT SWITCH TO LIGHT SWITCH INDICATE BRANCH CIRCUIT FEED FOR POWER, SWITCH-LEG BRANCH BETWEEN FIXTURES AND THROUGH TRAVELERS) BETWEEN SWITCHES SHALL BE AS REQUIRED.
VERIFY HEIGHT AND LOCATION OF RECEPTACLES BEHIND ELECTRIC WATER COOLERS WITH THE MECHANICAL CONTRACTOR BEFORE ROUGH-IN.
THE ELECTRICAL DRAWINGS ARE FOR LAYOUT PURPOSES AND DIAGNOSTIC IN NATURE. REFER TO THE ENTIRE CONSTRUCTION DRAWING SET AND SPECIFICATIONS FOR GUIDANCE ON DIMENSIONS, CEILING HEIGHTS, DOOR SWINGS, ROOM FINISHES, STRUCTURAL DETAILS, LOCATIONS OF DUCTWORK, PIPING AND STRUCTURAL MEMBERS. INSTALL THE ELECTRICAL SYSTEMS SO AS NOT TO INTERFERE WITH THE INSTALLATION OR FUNCTION OF ANOTHER DISCIPLINES WORK.
AT NO TIME SHALL A BACK-TO-BACK DEVICE BOX BE USED, DEVICES THAT APPEAR DIAGRAMMATICALLY BACK-TO-BACK ON THE DRAWINGS SHALL BE ROUGH-IN ON OPPOSITE SIDES OF A FRAMING MEMBER OR IN SEPARATE CUI CELLS.
ALL DIMENSIONS OF EXISTING CONSTRUCTION ARE APPROXIMATE. THE ELECTRICAL CONTRACTOR SHALL MAKE ALL NECESSARY FIELD MEASUREMENTS OF EXISTING STRUCTURES, AND EQUIPMENT TO VERIFY DIMENSIONS SHOWN ON THE DRAWINGS PRIOR TO BID. PROVIDE PROPER DIMENSIONS NOT SHOWN PRIOR TO EQUIPMENT FABRICATION. ALL COST FOR MODIFICATIONS OF NEW CONSTRUCTION DUE TO LACK OF CONFIRMATION OF DIMENSIONS BY FIELD MEASUREMENTS SHALL BE BORNE BY THE ELECTRICAL CONTRACTOR.
PROVIDE ADDITIONAL SUPPORT FOR SWITCHES, STARTERS, RACEWAY, GROUNDING SYSTEMS, AND OTHER ELECTRICAL EQUIPMENT WHEREVER THE BUILDING STRUCTURE IS NOT SUITABLE FOR DIRECT MOUNTING.
PROVIDE FIRE STOPPING AROUND ALL ELECTRICAL COMPONENTS PENETRATING FIRE RATED WALLS, FLOORS OR CEILINGS. STI SPECIALTY, 3M, OR MILTI FIRESTOP PRODUCTS SHALL BE INSTALLED PER MANUFACTURERS APPLICATION GUIDE. ALTERNATE MANUFACTURERS MUST RECEIVE ENGINEERS PRIOR APPROVAL.
COORDINATE ALL ELECTRICAL REQUIREMENTS FOR EQUIPMENT WIRING. ANY CHANGES REQUIRED DUE TO EQUIPMENT BEING SUPPLIED OTHER THAN WHAT IS SPECIFIED SHALL BE BORNE BY THE CONTRACTOR WHO INSTICATED THE CHANGE.
SIZING OF BRANCH CIRCUITS AND FEEDERS FOR EQUIPMENT IS BASED ON DESIGN LOADS. PRIOR TO INSTALLATION CONFIRM EXACT LOADS WITH RELEASED SHOP DRAWINGS. BRING DISCREPANCIES TO THE ENGINEERS ATTENTION FOR DESIGN CHANGES PRIOR TO ROUGH-IN.
ALL BRANCH CIRCUITS SHALL BE WIRED WITH A MINIMUM OF 3/4" #12 PHASE CONDUCTOR, #12 GROUNDED (NEUTRAL) CONDUCTOR, AND A #12 EQUIPMENT GROUNDING CONDUCTOR UNLESS NOTED OTHERWISE ON THE PLANS. MULTIWIRE BRANCH CIRCUITS, SHARING A SINGLE GROUNDED CONDUCTOR SHALL NOT BE USED.
WHERE CONDUIT AND WIRING HAS NOT BEEN SHOWN ON THE DRAWINGS THE ARRANGEMENT AND ROUTING OF LIGHTING AND RECEPTACLE BRANCH CIRCUITS WILL BE AT THE CONTRACTORS DISCRETION IN ACCORDANCE WITH GENERALLY ACCEPTED GOOD PRACTICE, N.E.C. REQUIREMENTS AND THE FOLLOWING LIMITATIONS:
EXCEPT WHERE NOTED OTHERWISE, SIZE BRANCH CIRCUIT CONDUCTORS WITHIN THE FOLLOWING MAXIMUM LENGTH LIMITS: (MEASURED TO THE CENTER OF THE LOAD FOR LIGHTING AND MOST REMOTE OUTLET FOR RECEPTACLE CIRCUITS).
CIRCUIT BREAKER, CIRCUIT LENGTH, CONDUCTOR SIZE.
120V, 20A, 65 FEET #12, 110 FEET #10, 165 FEET #8, 270 FEET #6.
PROVIDE #12 AWG MINIMUM FOR ALL 120 VOLT CIRCUITS. PROVIDE ADDITIONAL DERATING PER NEC TABLE 310.15(B)(2)(c) FOR ALL BRANCH CIRCUITS WITH MORE THAN THREE CURRENT CARRYING CONDUCTORS IN A RACEWAY.
HVAC CONTROL WIRING SHALL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR IN ACCORDANCE WITH SPECIFICATIONS UNLESS OTHERWISE NOTED.
THE ELECTRICAL CONTRACTOR SHALL REVIEW ALL SPECIFICATION SECTIONS, EQUIPMENT SCHEDULES, AND/OR DETAILS THROUGHOUT DOCUMENTS THAT PERTAIN TO EQUIPMENT PROVIDED BY OTHERS AND INCLUDE ALL WIRING AND DEVICES REFERENCED IN THEIR BIDS. ELECTRICAL CONTRACTOR SHALL COORDINATE EXACT LOCATION OF THIS EQUIPMENT WITH RESPECTIVE CONTRACTOR PRIOR TO ROUGH-IN.
ALL CONDUIT, BOXES, AND WIRING DEVICES IN ALL AREAS SHALL BE RAN IN CONCEALED SPACES OR RECESSED IN WALLS EXCEPT IN MECHANICAL/ELECTRICAL ROOMS OR WITH SPECIFIC PERMISSION FROM ARCHITECT/ENGINEER.
WHERE PATCHING OF THE EXISTING BUILDING ROOF, FLOORS, WALLS AND/OR CEILINGS ARE REQUIRED TO COMPLETE ELECTRICAL CONSTRUCTION, AND NO RESTORATION IS CALLED FOR BY OTHER CONSTRUCTION TRADES WITHIN DOCUMENTS, THE ELECTRICAL CONTRACTOR SHALL BEAR ENTIRE COST FOR RESTORATION TO MATCH ADJACENT FINISHES. WORK SHALL BE PERFORMED BY PROPER CORRESPONDING ON-SITE CONTRACTOR AND PAID FOR BY ELECTRICAL CONTRACTOR. REFER TO ENTIRE SET OF DRAWINGS AND SPECIFICATIONS FOR COORDINATION.
ELECTRICAL CONTRACTOR SHALL RELOCATE OR REMOVE ANY OR ALL EXISTING SERVICES, POLES, ETC., AS MAY BE REQUIRED TO ACCOMMODATE ANY NEW CONSTRUCTION, UNLESS OTHERWISE NOTED.
ALL WORK SHOWN ON THESE DOCUMENTS IS NEW AND BY THE ELECTRICAL CONTRACTOR UNLESS OTHERWISE NOTED.
ALL EQUIPMENT AND MATERIALS SHALL BE UL LISTED AND LABELED FOR TYPE OF EQUIPMENT AND MATERIALS FOR WHICH LISTING AND LABELING IS AVAILABLE.

GENERAL CONDITIONS NOTE

ALL CONTRACTORS, BY MAKING THEIR BID, REPRESENT THAT THEY HAVE READ AND UNDERSTAND THE CONSTRUCTION DOCUMENTS. THE CONTRACTOR SHALL REFER TO THE ENTIRE CONSTRUCTION DOCUMENT SET FOR GUIDANCE ON DIMENSIONS, HEIGHTS, DETAILING, ETC. AND INSTALL THEIR WORK SO AS NOT TO INTERFERE WITH THE INSTALLATION OF ANOTHER DISCIPLINE'S WORK OR THE GENERAL INTENT OF THE CONSTRUCTION DOCUMENTS. IN THE EVENT OF A CONFLICT BETWEEN THE SPECIFICATIONS AND/OR DRAWINGS, THE ARCHITECT SHALL DETERMINE WHICH INFORMATION GOVERNS.
M/P/E TRADES NOTE: IN REFERRING TO THIS SHEET YOU ACKNOWLEDGE:
1. REVIEWING THE ENTIRE DRAWING SET INCLUDING ALL 'S', 'C' & 'A' SERIES.
2. COORDINATING WITH THE GENERAL TRADES CONTRACTOR OR C.M. FOR EXACT DETAILING, HEIGHTS, ETC. PRIOR TO INSTALLING WORK.
FIRE ALARM DEVICES ARE SHOWN FOR QUANTITY AND GENERAL LOCATION. DEVICES MOUNTED ON CEILINGS AND/OR WALLS MAY REQUIRE UP TO A 24" LATERAL ADJUSTMENT TO AVOID INTERFERENCE WITH OTHER COMPONENTS (SPRINKLER HEADS, DIFFUSERS, LIGHT FIXTURES, DISPLAY WALLS, WHITE BOARDS, ETC.), ANY REQUIRED LATERAL ADJUSTMENT MUST BE BROUGHT TO THE ENGINEER'S ATTENTION AND BE DIRECTED BY THE ENGINEER.

GENERAL ELECTRICAL DEMOLITION NOTES

DASHED ELECTRICAL ITEMS WHICH INCLUDE BUT ARE NOT LIMITED TO: RECEPTACLES, SWITCHES, LIGHT FIXTURES, DISCONNECTS, MOTOR STARTERS, PANELS, OCCUPANCY SENSORS, SPEAKERS, FIRE ALARM DEVICES, AND DATA/VOICE OUTLETS INDICATE EXISTING ITEMS TO REMAIN. DASHED ELECTRICAL ITEMS WITH 'R' SUBSCRIPT OR DEMO NOTE INDICATES EXISTING ELECTRICAL ITEMS TO BE REMOVED ALONG WITH ALL ASSOCIATED BACK BOXES, COVER PLATES, ASSOCIATED COMPONENTS, CONDUIT, CONDUCTORS, AND SUPPORTS BACK TO ORIGINATION, UNLESS OTHERWISE NOTED.
EXISTING ELECTRICAL ITEMS NOT SLATED FOR REMOVAL, SHALL BE FULLY OPERATIONAL AT THE COMPLETION OF CONSTRUCTION. REMOVE AND/OR EXTEND CONDUIT AND CONDUCTORS AS REQUIRED.
EXISTING ELECTRICAL ITEMS INDICATED ON DRAWINGS ARE BELIEVED TO BE A REASONABLE REPRESENTATION OF ACTUAL BUILDING. FIELD VERIFY PRIOR TO BID FOR DETERMINATION OF EXACT QUANTITY AND LOCATION OF ELECTRICAL ITEMS THAT MAY NOT BE SHOWN. THESE DRAWINGS ARE INTENDED TO ONLY BE AN AID FOR BIDDING PURPOSES.
REMOVE ELECTRICAL ITEMS ALONG WITH CONDUIT AND CONDUCTORS FROM WALLS THAT ARE TO BE REMOVED.
REMOVE CONDUIT AND SURFACE RACEWAYS NO LONGER IN USE, CUT EMBEDDED CONDUIT FLUSH WITH EXISTING SURFACE AND FILL WITH NON-SHRINKING GROUT.
WHERE CUTTING OF THE EXISTING BUILDING ROOF, FLOORS, WALLS AND/OR CEILINGS ARE REQUIRED TO COMPLETE ELECTRICAL CONSTRUCTION, AND NO RESTORATION IS CALLED FOR BY OTHER CONSTRUCTION TRADES WITHIN DOCUMENTS, THE ELECTRICAL CONTRACTOR SHALL BEAR ENTIRE COST FOR RESTORATION TO MATCH ADJACENT FINISHES. WORK SHALL BE PERFORMED BY PROPER CORRESPONDING ON-SITE CONTRACTOR AND PAID FOR BY ELECTRICAL CONTRACTOR. REFER TO ENTIRE SET OF DRAWINGS AND SPECIFICATIONS FOR COORDINATION.
REMOVE ABANDONED JUNCTION/OUTLET BOXES IN WALLS, FLOORS, OR CEILINGS THAT ARE TO REMAIN.
DISPOSE OF REMOVED ELECTRICAL COMPONENTS CONTAINING HAZARDOUS MATERIALS, PER EPA, LOCAL AND/OR STATE REQUIREMENTS.
OWNER SHALL HAVE FIRST RIGHT OF REFUSAL ON ALL ITEMS REMOVED.
DUE TO CONSTRUCTION PHASING, IT WILL BE NECESSARY TO DEROUTE SOME EXISTING POWER FEEDERS AND BRANCH CIRCUITS FOR POWER DISTRIBUTION SYSTEMS AND BRANCH CONDUIT AND CABLING FOR SPECIALTY SYSTEMS TO ALLOW FOR NEW CONSTRUCTION TO TAKE PLACE. IT WILL ALSO BE NECESSARY TO TEMPORARILY FEED NEW POWER DISTRIBUTION AND NEW SPECIALTY SYSTEMS FROM EXISTING, AND BACK-FEED EXISTING FROM NEW. SPECIALTY SYSTEMS INCLUDE BUT ARE NOT LIMITED TO FIRE ALARM SYSTEM, PA SYSTEM, CLOCK SYSTEM, ETC. PHASING SHALL BE COORDINATED WITH CONSTRUCTION MANAGER.
ANY EXISTING TO REMAIN RACEWAYS LOCATED ABOVE EXISTING CEILING SPACES, LOCATED IN EXISTING WALLS OR FLOORS WHICH ARE NOT DEPICED ON DOCUMENTS, BUT ARE REQUIRED TO BE RELOCATED AS A PART OF THE OVERALL CONSTRUCTION, SHALL BE RELOCATED AS REQUIRED TO ACCOMMODATE OTHER TRADES.



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A PROJECT FOR:



Cooling Tower Replacement for Centerville-Abington High School

mark date description

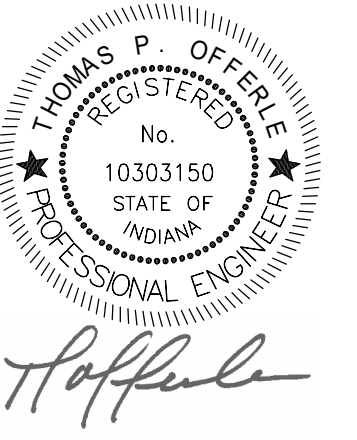
Table with columns: mark, date, description. Includes a date: December 21, 2022 and project: 473004 (222649).

Electrical General Notes & Information

date: December 21, 2022
project: 473004 (222649)
coordinator: SJB
drawn: SB
checked: TPO

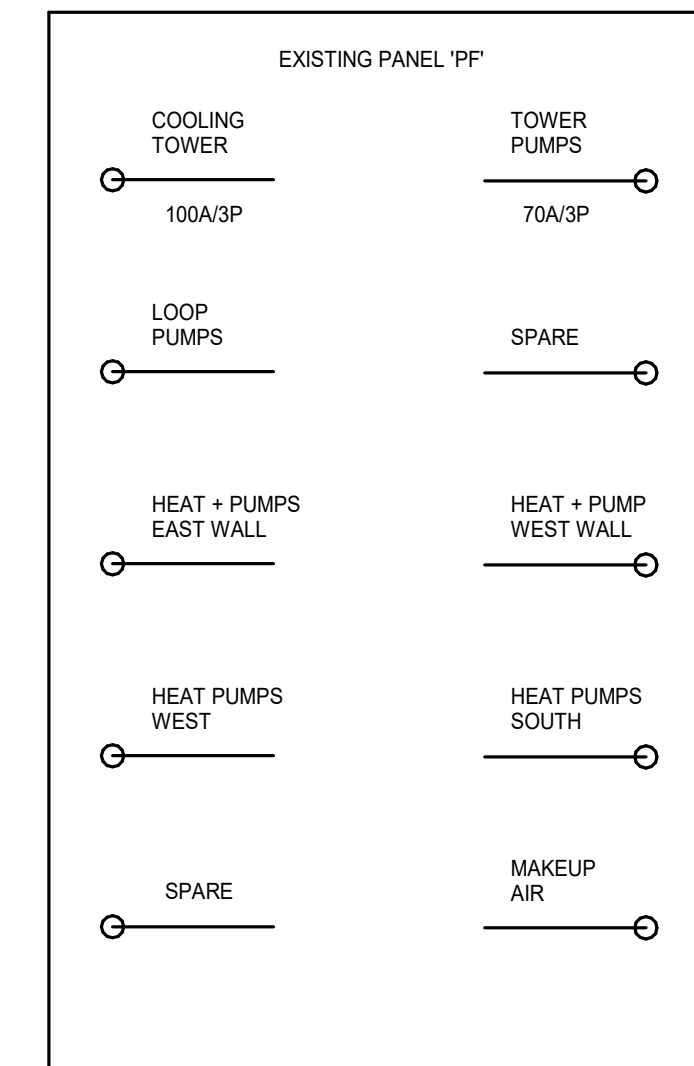
ELECTRICAL DEMOLITION PLAN NOTES

- 1 EXISTING TP-1,2 PUMPS REMOVED BY OTHERS. ELECTRICAL CONTRACTOR SHALL DISCONNECT AND REMOVE ALL CONDUIT AND CONDUCTORS BACK TO RESPECTIVE MOTOR STARTER.
- 2 EXISTING TP-1,2 MOTOR STARTERS SHALL BE DISCONNECTED AND REMOVED. PREPARE EXISTING CONDUCTORS TO BE EXTENDED TO NEW PUMP VSD'S.
- 3 ALTERNATE #2. EXISTING LP-1,2 PUMPS REMOVED BY OTHERS. ELECTRICAL CONTRACTOR SHALL DISCONNECT AND REMOVE ALL CONDUIT AND CONDUCTORS BACK TO RESPECTIVE MOTOR STARTER.
- 4 ALTERNATE #2. EXISTING LP-1,2 MOTOR STARTERS SHALL BE DISCONNECTED AND REMOVED. PREPARE EXISTING CONDUCTORS TO BE EXTENDED TO NEW PUMP VSD'S.
- 5 EXISTING CONDUIT SUPPORTED ON CEILING FOR ALL BRANCH CIRCUITS SHALL BE TEMPORARILY REMOVED FOR CEILING REINFORCEMENT. PREPARE AS REQUIRED FOR RE-INSTALLATION. COORDINATE ALL WORK WITH GENERAL CONTRACTOR. SEE STRUCTURAL DRAWINGS FOR FURTHER INFORMATION.

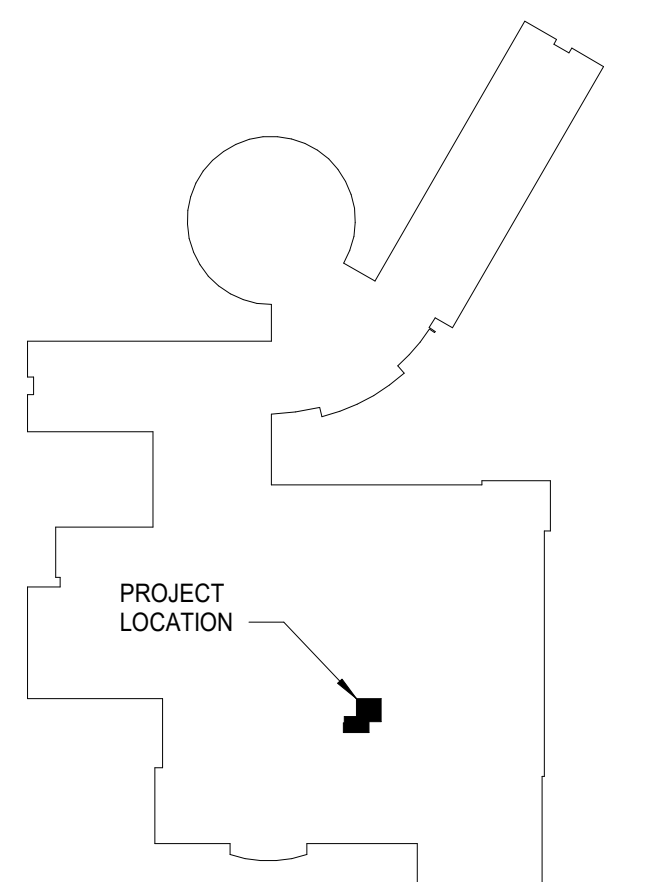
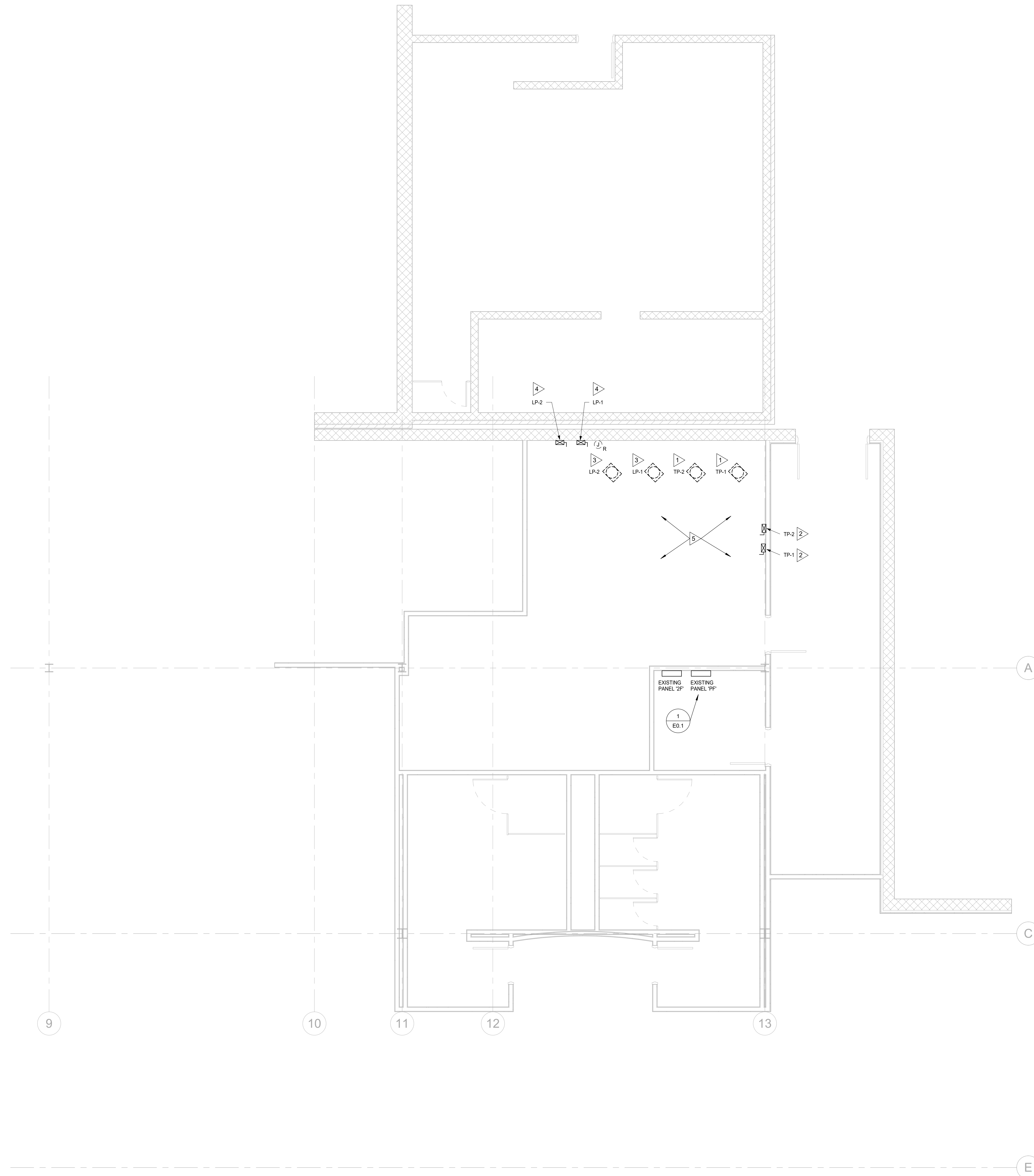


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PANEL 'PF' DETAIL
1 ED.1 NTS



Key Plan

A PROJECT FOR:



Cooling Tower Replacement for
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mark	date	description

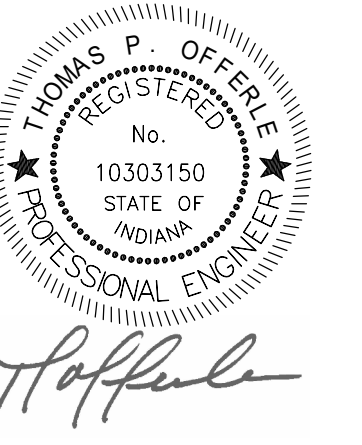
First Floor Electrical Demolition Plan

date: December 21, 2022
project: 487001 (192446)
coordinator: SJB
drawn: SB
checked: TPO

First Floor Electrical Demolition Plan
1/4" = 1'-0"

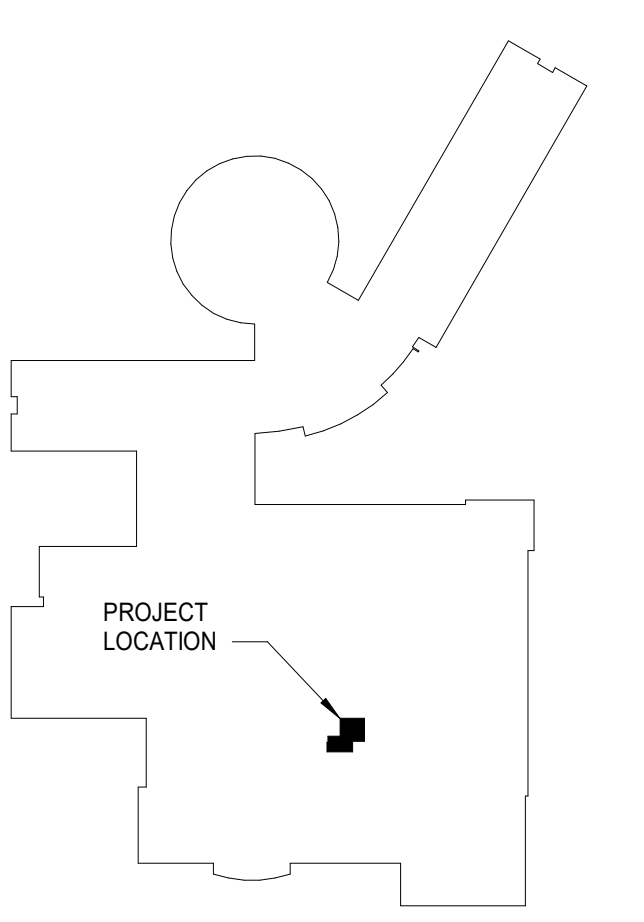
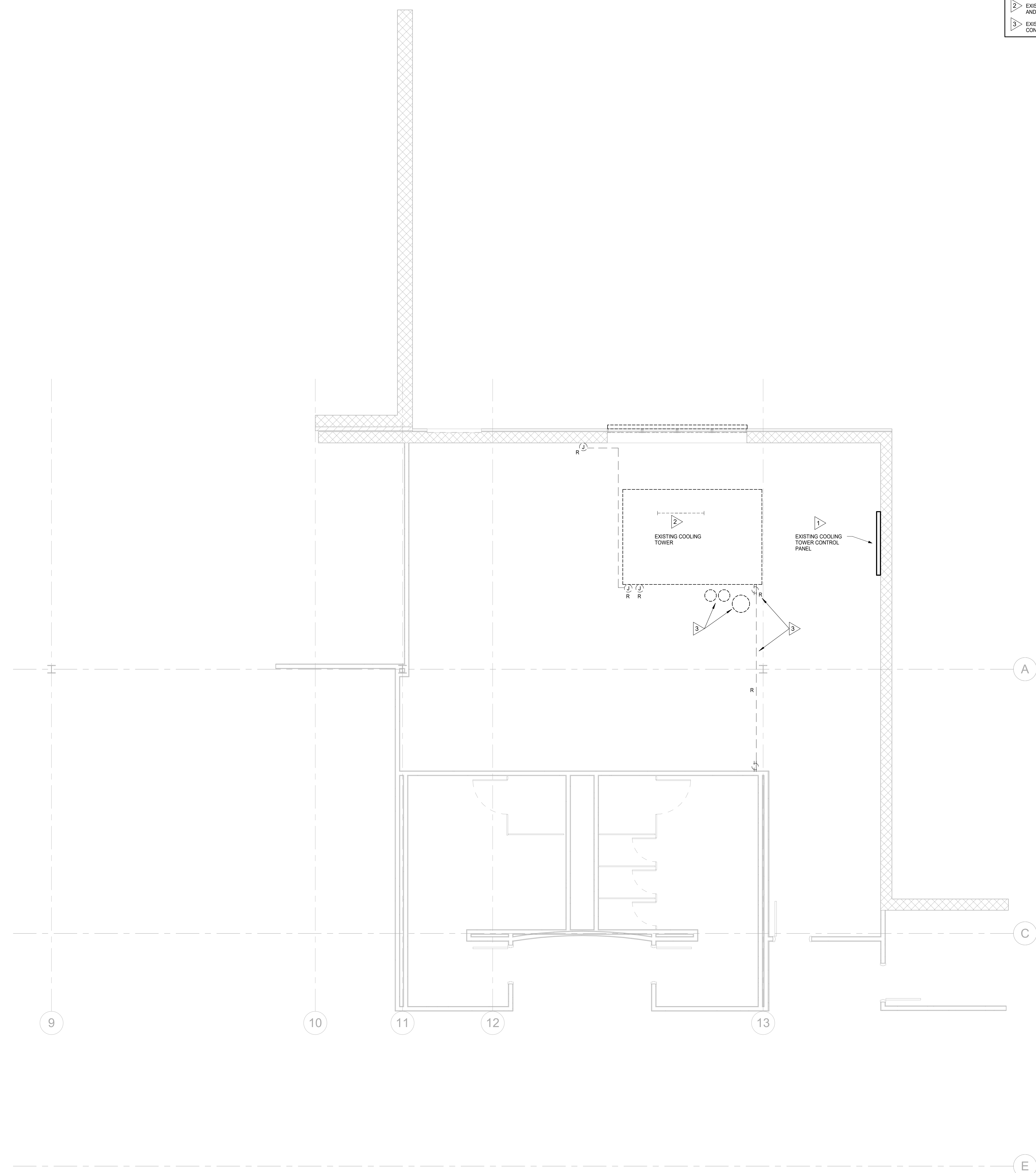
ELECTRICAL DEMOLITION PLAN NOTES

- ▷ EXISTING COOLING TOWER CONTROL PANEL REMOVED BY OTHERS. ELECTRICAL CONTRACTOR SHALL DISCONNECT AND PREPARE CONDUCTORS TO BE TERMINATED TO NEW COOLING TOWER CONTROL PANEL.
- ▷ EXISTING COOLING TOWER REMOVED BY OTHERS. ELECTRICAL CONTRACTOR SHALL DISCONNECT ALL ASSOCIATED ELECTRICAL AND REMOVE ALL CONDUIT AND CONDUCTORS BACK TO ORIGINATION.
- ▷ EXISTING WATER SOFTENER REMOVED BY OTHERS. ELECTRICAL CONTRACTOR SHALL REMOVE RECEPTACLE AND CONDUIT AND CONDUCTORS BACK TO EXISTING RECEPTACLE TO REMAIN.



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Key Plan

A PROJECT FOR:



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mark	date	description

Second Floor Electrical Demolition Plan

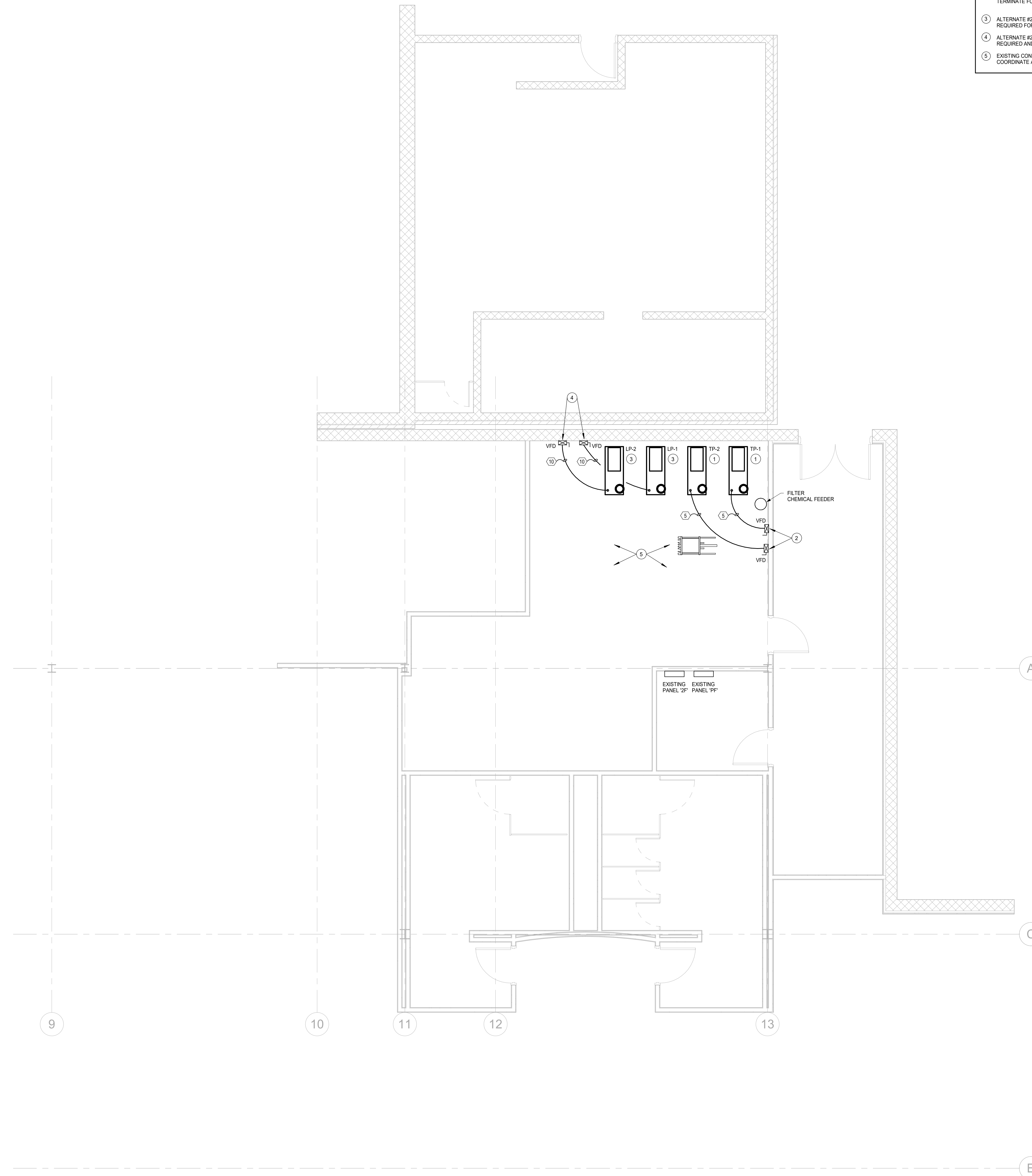
date: December 21, 2022
project: 487001 (192446)
coordinator: SJB
drawn: SB
checked: TPO

Second Floor Electrical Demolition Plan
1/4" = 1'-0"

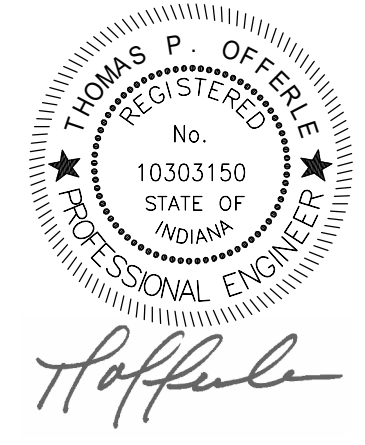
E0.2

ELECTRICAL PLAN NOTES

- 1 NEW TP-1,2 PUMPS PROVIDED AND INSTALLED BY OTHERS. ELECTRICAL CONTRACTOR SHALL TERMINATE AS REQUIRED FOR A COMPLETE AND FUNCTIONAL SYSTEM. COORDINATE ALL WORK WITH MECHANICAL CONTRACTOR.
- 2 VFD'S PROVIDED AND INSTALLED BY OTHERS. ELECTRICAL CONTRACTOR SHALL EXTEND EXISTING CIRCUITS AS REQUIRED AND TERMINATE FOR A COMPLETE AND FUNCTIONAL SYSTEM. COORDINATE ALL WORK WITH MECHANICAL CONTRACTOR.
- 3 ALTERNATE #2: NEW LP-1,2 PUMPS PROVIDED AND INSTALLED BY OTHERS. ELECTRICAL CONTRACTOR SHALL TERMINATE AS REQUIRED FOR A COMPLETE AND FUNCTIONAL SYSTEM. COORDINATE ALL WORK WITH MECHANICAL CONTRACTOR.
- 4 ALTERNATE #2: VFD'S PROVIDED AND INSTALLED BY OTHERS. ELECTRICAL CONTRACTOR SHALL EXTEND EXISTING CIRCUITS AS REQUIRED AND TERMINATE FOR A COMPLETE AND FUNCTIONAL SYSTEM. COORDINATE ALL WORK WITH MECHANICAL CONTRACTOR.
- 5 EXISTING CONDUITS FOR ALL BRANCH CIRCUITS SHALL BE RE-INSTALLED TO CEILING FOR A COMPLETE AND FUNCTIONAL SYSTEM. COORDINATE ALL WORK WITH GENERAL CONTRACTOR.

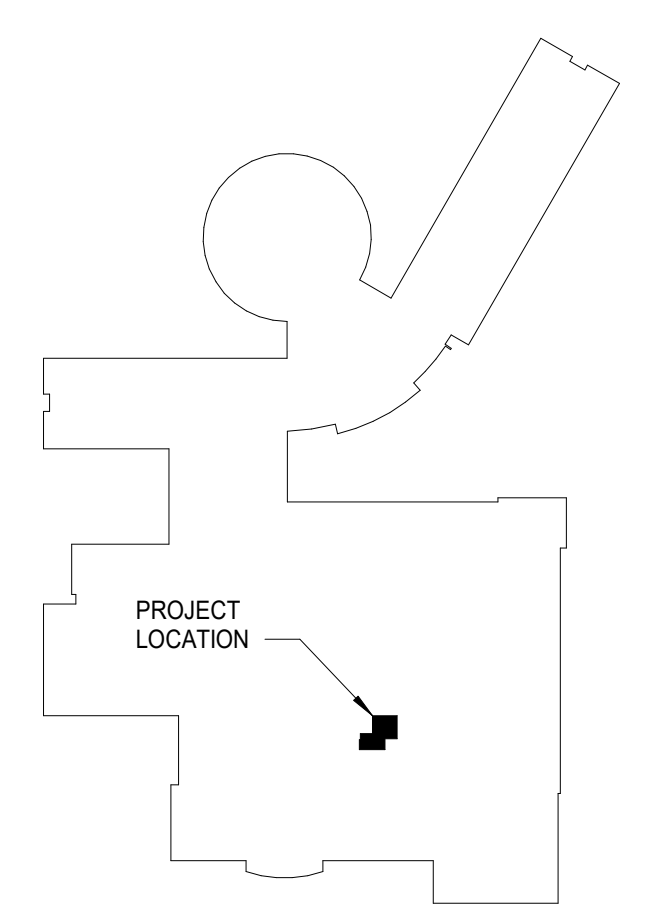


First Floor Electrical Power Plan
1/4" = 1'-0"



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A PROJECT FOR:



Cooling Tower Replacement for
Centerville-Abington High School
School

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mark	date	description

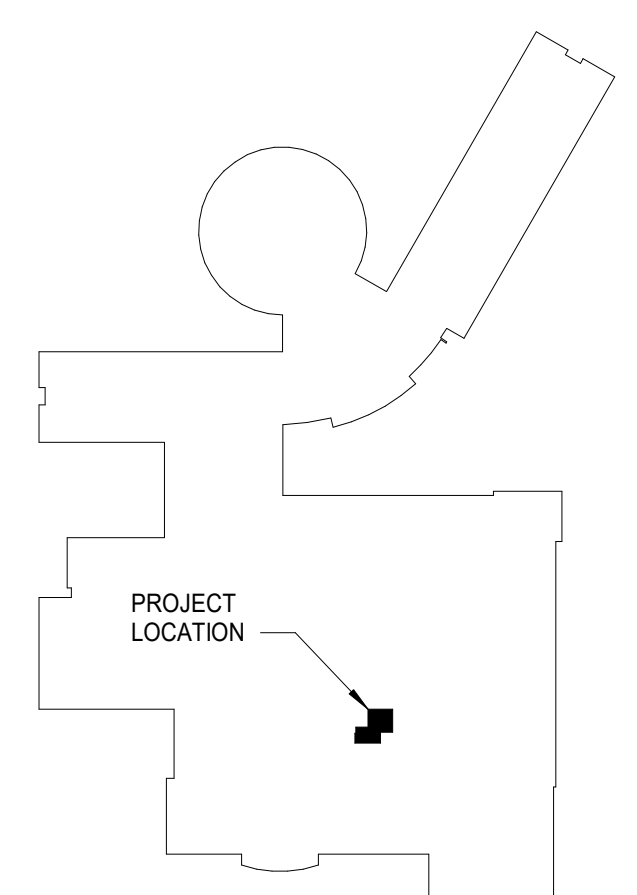
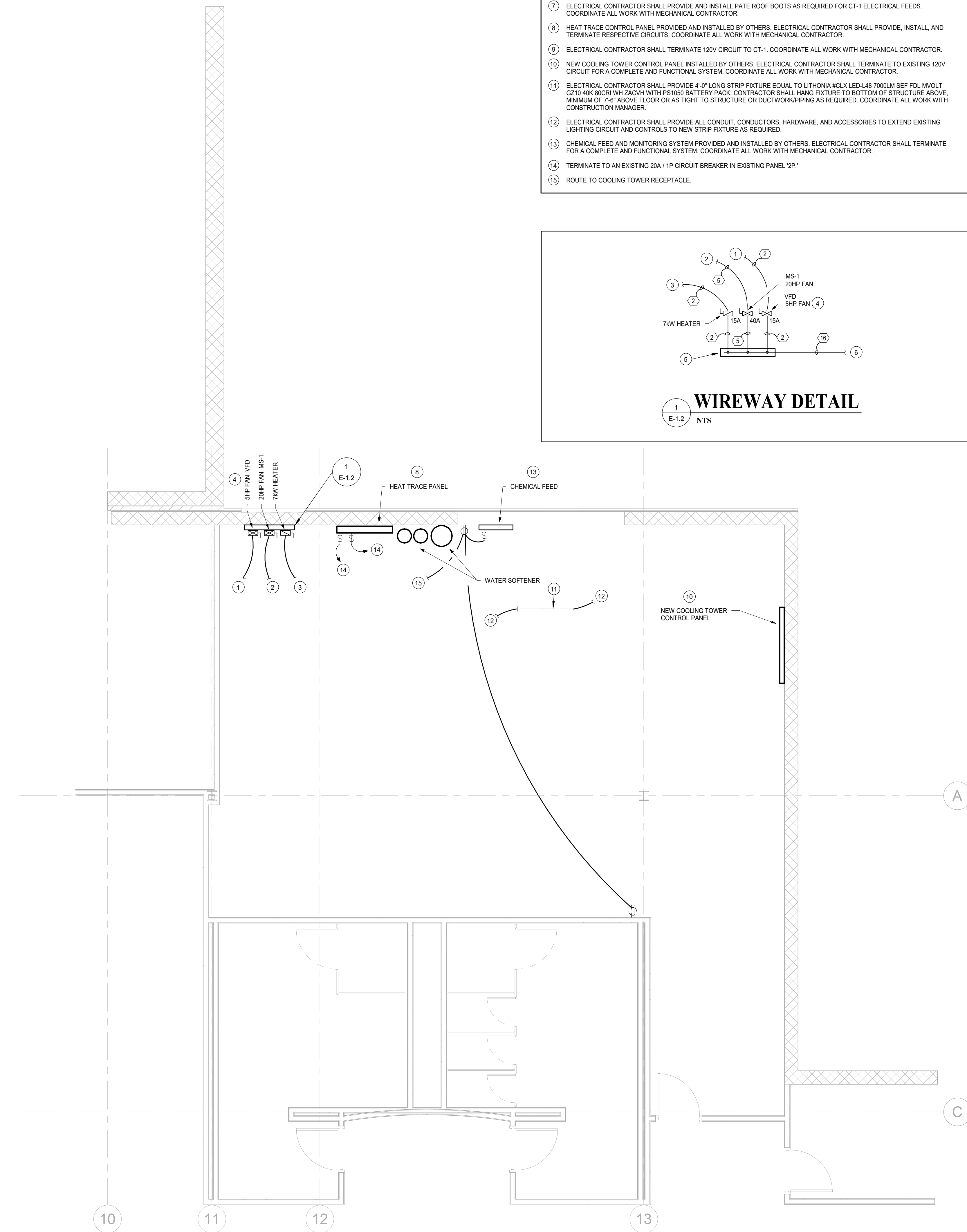
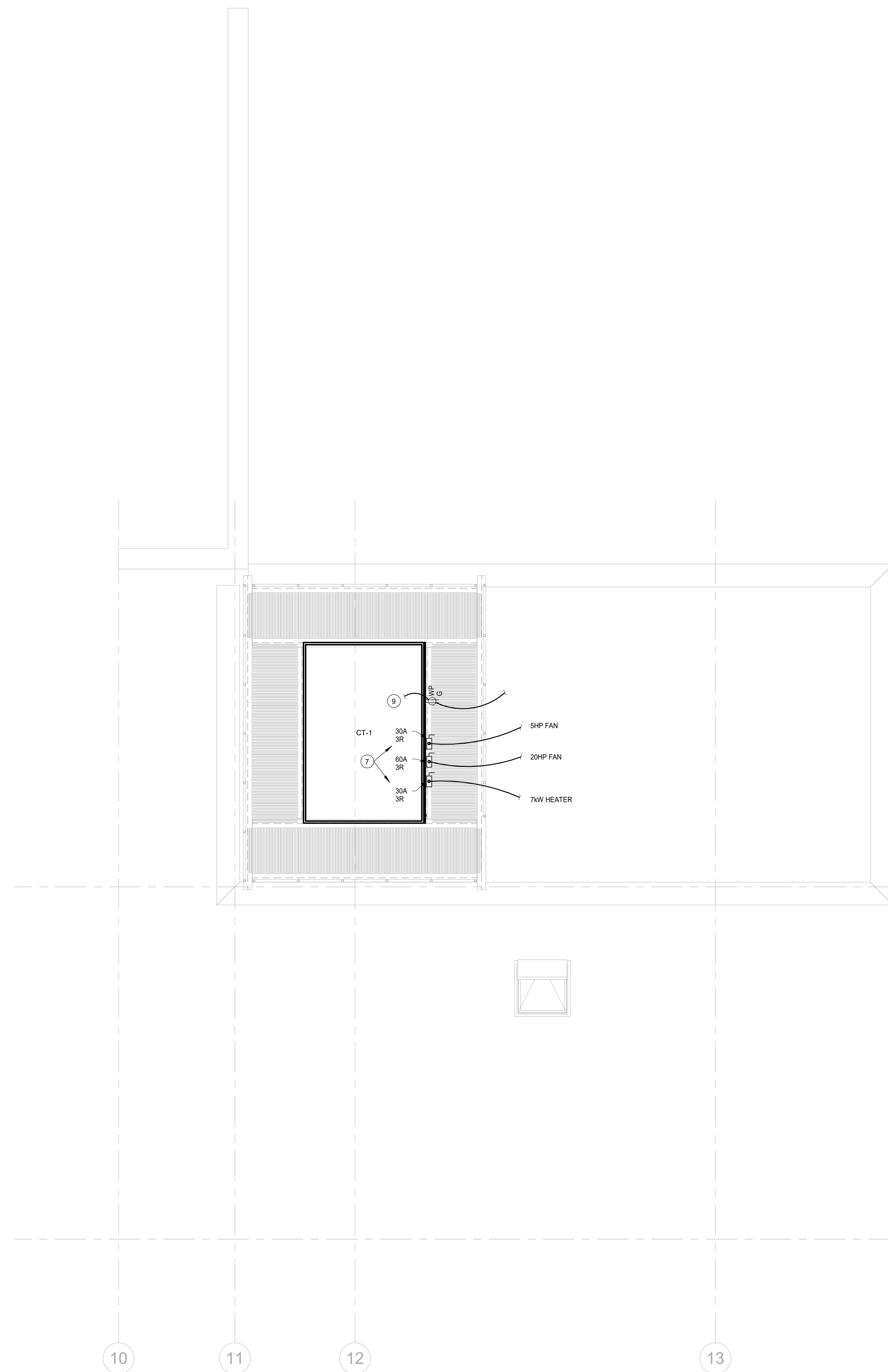
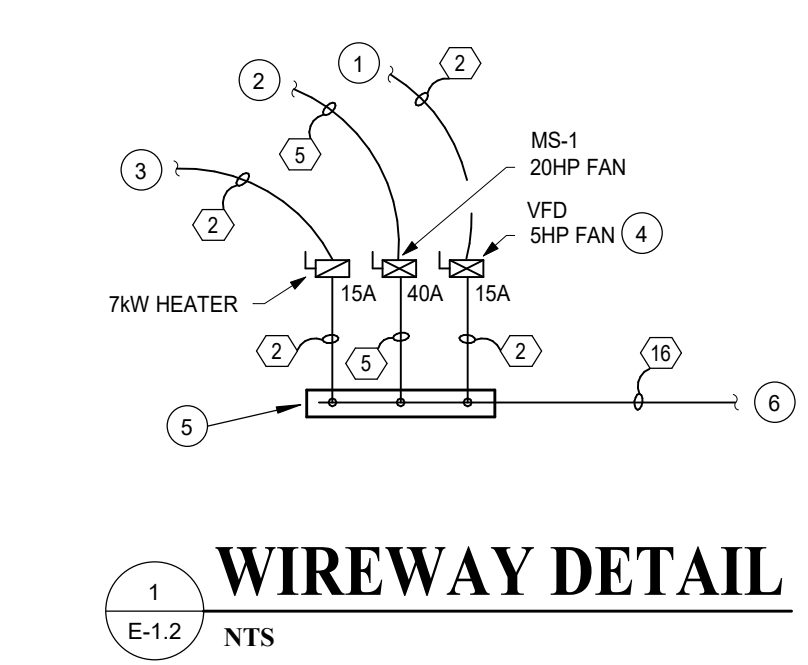
First Floor Electrical Power Plan

date: December 21, 2022
project: 487001 (192446)
coordinator: SJB
drawn: SB **E1.1**
checked: TPO



ELECTRICAL PLAN NOTES

- 1 ELECTRICAL CONTRACTOR SHALL TERMINATE TO CT-1 THRU 30A-NFD AT UNIT FOR A COMPLETE AND FUNCTIONAL SYSTEM.
- 2 ELECTRICAL CONTRACTOR SHALL TERMINATE TO CT-1 THRU 60A-NFD AT UNIT FOR A COMPLETE AND FUNCTIONAL SYSTEM.
- 3 ELECTRICAL CONTRACTOR SHALL TERMINATE TO CT-1 THRU 30A-NFD AT UNIT FOR A COMPLETE AND FUNCTIONAL SYSTEM.
- 4 VFD FOR SHP FAN PROVIDED AND INSTALLED BY OTHERS. ELECTRICAL CONTRACTOR SHALL TERMINATE AS REQUIRED FOR A COMPLETE AND FUNCTIONAL SYSTEM.
- 5 ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL WIREWAY WITH HINGED COVER, SIZE PER N.E.C.
- 6 ELECTRICAL CONTRACTOR SHALL ROUTE BACK TO PANEL "PF" AND TERMINATE TO EXISTING COOLING TOWER FUSIBLE SWITCH FOR A COMPLETE AND FUNCTIONAL SYSTEM.
- 7 ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL PATE ROOF BOOTHS AS REQUIRED FOR CT-1 ELECTRICAL FEEDS. COORDINATE ALL WORK WITH MECHANICAL CONTRACTOR.
- 8 HEAT TRACE PANEL PROVIDED AND INSTALLED BY OTHERS. ELECTRICAL CONTRACTOR SHALL PROVIDE, INSTALL, AND TERMINATE RESPECTIVE CIRCUITS. COORDINATE ALL WORK WITH MECHANICAL CONTRACTOR.
- 9 ELECTRICAL CONTRACTOR SHALL TERMINATE 120V CIRCUIT TO CT-1. COORDINATE ALL WORK WITH MECHANICAL CONTRACTOR.
- 10 NEW COOLING TOWER CONTROL PANEL INSTALLED BY OTHERS. ELECTRICAL CONTRACTOR SHALL TERMINATE TO EXISTING 120V CIRCUIT FOR A COMPLETE AND FUNCTIONAL SYSTEM. COORDINATE ALL WORK WITH MECHANICAL CONTRACTOR.
- 11 ELECTRICAL CONTRACTOR SHALL PROVIDE 4'-0" LONG STRIP FIXTURE EQUAL TO LITHONIA 801X LED-L48 7000LM SEF FDL MVOLT 0310 40K 800R 1W 240VW WITH P191660 BATTERY PACK. CONTRACTOR SHALL MOUNT FIXTURE TO BOTTOM OF STRUCTURE ABOVE. MINIMUM OF 7'-6" ABOVE FLOOR OR AS TIGHT TO STRUCTURE OR DUCTWORK/PIPING AS REQUIRED. COORDINATE ALL WORK WITH CONSTRUCTION MANAGER.
- 12 ELECTRICAL CONTRACTOR SHALL PROVIDE ALL CONDUIT, CONDUCTORS, HARDWARE, AND ACCESSORIES TO EXTEND EXISTING LIGHTING CIRCUIT AND CONTROLS TO NEW STRIP FIXTURE AS REQUIRED.
- 13 CHEMICAL FEED AND MONITORING SYSTEM PROVIDED AND INSTALLED BY OTHERS. ELECTRICAL CONTRACTOR SHALL TERMINATE FOR A COMPLETE AND FUNCTIONAL SYSTEM. COORDINATE ALL WORK WITH MECHANICAL CONTRACTOR.
- 14 TERMINATE TO AN EXISTING 20A / 1P CIRCUIT BREAKER IN EXISTING PANEL "2P"
- 15 ROUTE TO COOLING TOWER RECEPTACLE.



Key Plan

A PROJECT FOR:



Cooling Tower Replacement for
Centerville-Abington High School
School

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mark	date	description

Second Floor Electrical Power Plan

date: December 21, 2022
project: 487001 (192446)
ordinator: SJB
drawn: SB
checked: TPO

Roof Electrical Power Plan
1/4" = 1'-0"

Second Floor Electrical Power Plan
1/4" = 1'-0"