

INTERIOR AND EXTERIOR RENOVATION

JEFFERSON BARRACKS READINESS CENTER

ST. LOUIS, MISSOURI

OWNER: STATE OF MISSOURI
MIKE KEHOE
GOVERNOR

DEPARTMENT OF MISSOURI
NATIONAL GUARD

PROJECT
MANAGEMENT: OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES
MANAGEMENT,
DESIGN AND CONSTRUCTION

DESIGNER: CASCO DIVERSIFIED CORP.

PROJECT NUMBER: T2504-03

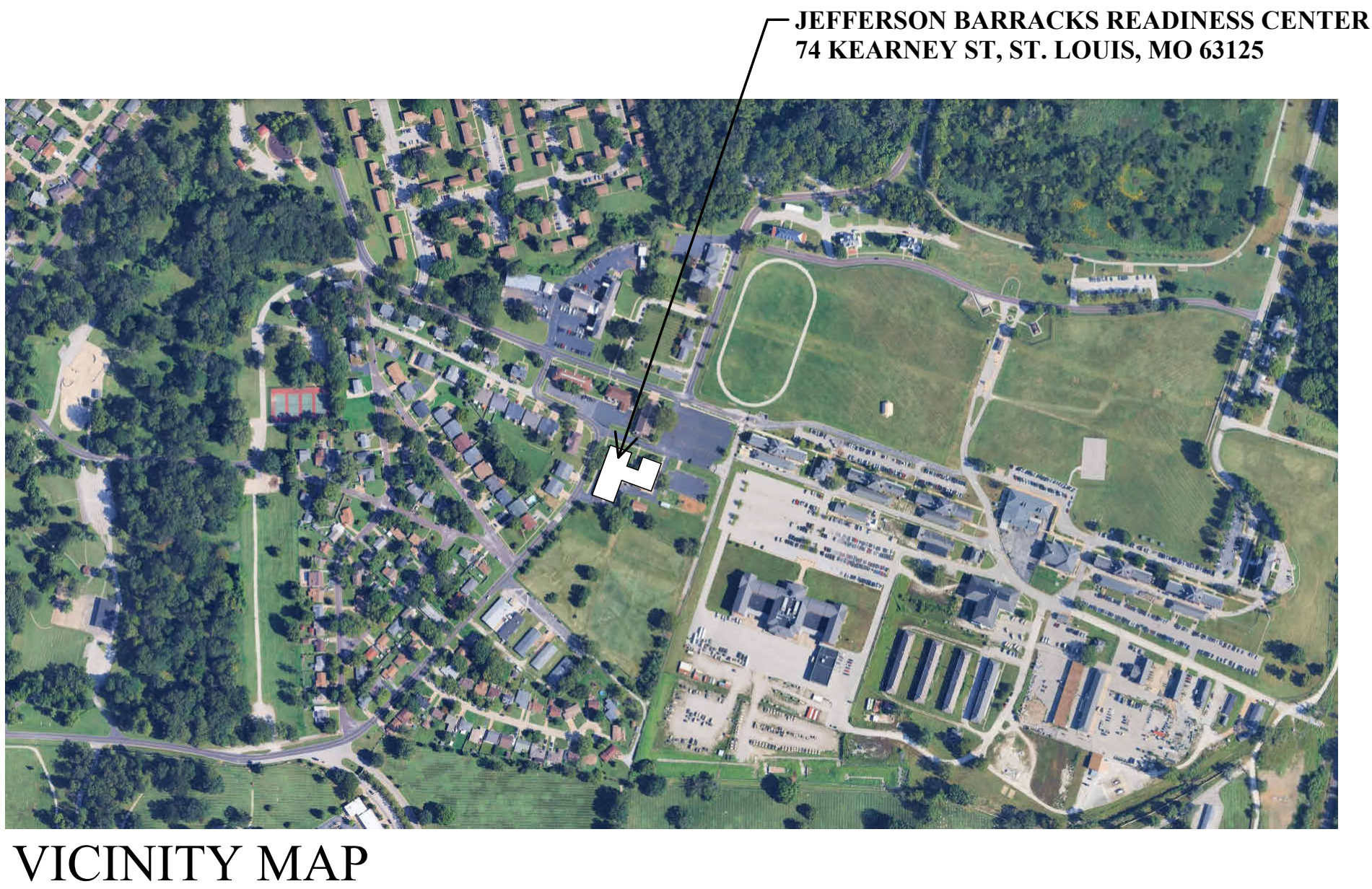
SITE NUMBER: 6303

ASSET NUMBERS: 8136303050

CASCO

12 SUNNEN DR. SUITE 100
ST. LOUIS, MO 63143
ARCHITECTS / ENGINEERS
314-821-1100

CASCO DIVERSIFIED CORPORATION
MISSOURI STATE CERTIFICATE OF AUTHORITY #000613 (ENG)
MISSOURI STATE CERTIFICATE OF AUTHORITY #000329 (ARCH)



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SHEET NUMBER:

G-001

SHEET 1 OF 51
08/04/2026

GENERAL PROJECT
SYMBOLS LEGEND

	SECTION LINE CALLOUT WITH DETAIL AND SHEET NUMBER		BATT INSULATION
	DETAIL CALLOUT WITH DETAIL AND SHEET NUMBER (SIMILAR)		RIGID INSULATION
	EXTERIOR ELEVATION CALLOUT WITH DETAIL AND SHEET NUMBER		WOOD GRAIN
	INTERIOR ELEVATION CALLOUT WITH DETAIL AND SHEET NUMBER		SAND / PLASTER / GYPSUM
	NORTH ARROW		CONCRETE
	LEVEL NAME AND ELEVATION CALLOUT		PLYWOOD
	SPOT ELEVATION		EARTH / SUBGRADE
	COLUMN GRID CALLOUT		ROCK / GRAVEL
	VIEW TITLE WITH NUMBER AND SCALE		EXISTING WALL
	KEYNOTE WITH NUMBER		NEW WALL
	DOOR TAG		DEMOLISHED WALL
	WINDOW TAG		FIRE RATED WALL
	PARTITION TAG/TYPE		
	ROOM TAG		

ABBREVIATIONS LEGEND:

AFF	ABOVE FINISHED FLOOR	EG	EXISTING GROUND	LT	LEFT	RM	ROOM
ADA	AMERICANS WITH DISABILITY ACT	EJ	EXPANSION JOINT	LVC	LENGTH OF VERTICAL CURVE	RO	ROUGH OPENING
ALUM	ALUMINUM	EL OR ELEV	ELEVATION	MFG	MANUFACTURING	ROW	RIGHT OF WAY
∠	ANGLE	EP	END POINT	MFR	MANUFACTURER	RSCD	ROUGH SAWN CEDAR
APPROX	APPROXIMATE	EW	EACH WAY	MAX	MAXIMUM	SAN	SANITARY (SEWER)
@	AT	EQ	EQUAL	MH	MAN HOLE	SCH	SCHEDULE
BM	BEAM	EQ SP	EQUALLY SPACED	MO	MASONRY OPENING	SCHED	SCHEDULED
BRG HT	BEARING HEIGHT	EQUIP	EQUIPMENT	MR	MOISTURE RESISTANT	SECT	SECTION
BOT	BOTTOM	EVCE	END VERTICAL CURVE ELEVATION	MTL	METAL	SHT	SHEET
B.O.	BOTTOM OF	EVCS	END VERTICAL CURVE STATION	MIN	MINIMUM	SIM	SIMILAR
B.O.C.	BOTTOM OF CEILING	EXIST.	EXISTING	MON	MONUMENT	SS	STORM SEWER
BLDG	BUILDING	EXP	EXPANSION	N	NORTHING	SS	SERVICE SINK
BLK	BLOCK	FE	FIRE EXTINGUISHER	NIC	NOT IN CONTRACT	SST	STAINLESS STEEL
BP	BEGINNING POINT	FFE	FINISH FLOOR ELEVATION	NTS	NOT TO SCALE	STA	STATION
BVCE	BEGIN VERTICAL CURVE ELEVATION	FIN	FINISH	NO.	NUMBER	STL	STEEL
BVCS	BEGIN VERTICAL CURVE STATION	FCO	FLOOR CLEAN OUT	OC	ON CENTER	SQ	SQUARE
CI	CAST IRON	FD	FLOOR DRAIN	OPNG	OPENING	SW	SIDE WALK
CJ	CONTROL JOINT	FG	FINISH GRADE	OD	OUTSIDE DIAMETER	THK	THICK
CLG	CEILING	FL	FLOW LINE	OH	OPPOSITE HAND	TOC	TOP OF CONCRETE
CL	CENTERLINE	FLR	FLOOR	PL	PLATE STEEL	TOC	TOP OF CURB
C/C	CENTERLINE TO CENTERLINE	FT	FEET	PERF	PERFORATED	TOW	TOP OF WALL
CLR	CLEAR	FV	FEET	PI	POINT OF INTERSECTION	TOF	TOP OF FOOTING
CO	CLEAN OUT	GALV	GALVANIZED	PLWD	PLYWOOD	TOFND	TOP OF FOUNDATION
CONC	CONCRETE	GND	GROUND	PNT	POINT	TOS	TOP OF STEEL
CFM	CUBIC FEET PER MINUTE	GWB	GYPSUM WALL BOARD	PP	POWER POLE	TYP	TYPICAL
CMP	CORRUGATED METAL PIPE	HM	HOLLOW METAL	PT	POINT OF TANGENCY	UNDR	UNDER
CNTRS	CENTERS	HB	HOSE BIB OR WALL HYDRANT	REF	PRE-FINISHED	UNO	UNLESS NOTED OTHERWISE
CONST	CONSTRUCTION	HOR	HORIZONTAL	PVC	POLYVINYL CHLORIDE	VC	VERTICAL CURVE
DIA	DIAMETER	ID	INSIDE DIAMETER	PVI	POINT VERTICAL INTERSECTION	VERT	VERTICAL
DND	DO NOT DISTURB	IE	INVERT ELEVATION	R	RADIUS	VOL	VOLUME
DS	DOWNSPOUT	INV	INVERT	RT	RIGHT	WCO	WATER CLEAN OUT
DTL	DETAIL	INSUL	INSULATION	RCWY OR RW	RACEWAY	WWF	WELDED WIRE FABRIC
E	EASTING	IP	IRON PIN	REINF	REINFORCEMENT	W/	WITH
EF	EXHAUST FAN	JST	JOIST	RCP	REFLECTED CEILING PLAN		
		L	LOUVER				

GENERAL NOTES

1. AN ASBESTOS SURVEY WAS CONDUCTED IN AREAS WHERE DEMOLITION AND CONSTRUCTION WILL TAKE PLACE. ASBESTOS MATERIAL HAS BEEN IDENTIFIED THROUGHOUT THE FLOORING, INTERIOR/ EXTERIOR WINDOW CAULKING, AND CHALKBOARD MASTIC PUCK. THE CONTRACTOR IS TO USE EXTREME CAUTION WHEN WORKING IN THESE AREAS AND COORDINATE DEMOLITION WITH AN ABATEMENT CONTRACTOR WHERE REMOVAL OF ASBESTOS MATERIAL IS SPECIFIED. COORDINATION EFFORTS SHALL INCLUDE COMMUNICATION WITH OWNER, STAFF, AND ARCHITECT PRIOR TO START OF WORK. SEE SPECIFICATIONS FOR MORE INFORMATION.
2. A LEAD-BASED PAINT SURVEY WAS CONDUCTED IN AREAS WHERE DEMOLITION AND CONSTRUCTION WILL TAKE PLACE. LEAD-BASED PAINT HAS BEEN IDENTIFIED IN THE EXTERIOR FASCIA, EXTERIOR STAIR HANDRAIL/ FENCING TO THE MECHANICAL ROOM, INTERIOR STAIRS/ HANDRAIL/ BASEBOARD IN THE MECHANICAL ROOM, AND FINALLY THE STEEL SUPPORT BEAM IN THE KITCHEN. THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN WORKING IN THESE AREAS AND COORDINATE WORK WITH A PROPERLY LICENSED LEAD ABATEMENT OR LEAD SAFE CONTRACTOR WHERE DISTURBANCE OR REMOVAL IS REQUIRED. ALL WORK SHALL COMPLY WITH APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS. COORDINATION EFFORTS SHALL INCLUDE COMMUNICATION WITH OWNER, STAFF, AND ARCHITECT PRIOR TO START OF WORK. SEE SPECIFICATIONS FOR MORE INFORMATION.
3. ALL NEW BUILDING MATERIALS TO BE OF NON-COMBUSTIBLE OR WOOD FIRE RETARDANT TREATED MATERIAL.
4. THE CONTRACTOR SHALL COMPLY WITH FEDERAL ENVIRONMENTAL AND OCCUPATIONAL HEALTH AND SAFETY ADMINISTRATION REGULATIONS AND ALL LOCAL AND STATE HEALTH DEPARTMENT REQUIREMENTS AND RECOMMENDATIONS REGARDING MOLD AND MILDEW.
5. IN THE EVENT THE CONTRACTOR DISCOVERS, AT ANY TIME THE PRESENCE OF MOLD AND / OR MILDEW, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER'S REPRESENTATIVE AND THE ARCHITECT / ENGINEER OF RECORD, IN WRITING, OF THE CONCERNS AND/OR SUSPICIONS.
6. THE GENERAL CONTRACTOR SHALL CONTAIN ALL CONSTRUCTION ACTIVITY (WHICH SHALL INCLUDE STORAGE OF MATERIALS AND EQUIPMENT) WITHIN THE LIMITS OF CONSTRUCTION OR WITHIN THE DESIGNATED STAGING AREA.
7. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY SURFACES DAMAGED BY CONSTRUCTION ACTIVITY THAT IS UNDER THE CONTROL OF THE GENERAL CONTRACTOR (THIS INCLUDES ALL SUBCONTRACTOR WORK). REPAIRS SHALL MATCH EXISTING MATERIALS AND BE APPROVED BY THE OWNER.
8. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO FABRICATION.
9. THE CONTRACTOR SHALL ENSURE THAT ALL MOISTURE AND DEBRIS HAVE BEEN ELIMINATED PRIOR TO INSTALLING NEW MATERIALS AND PREPARE SURFACE IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS. REFERENCE SPECIFICATIONS FOR FURTHER DIRECTION.
10. SHOULD THE CONTRACTOR OBSERVE ANY DETERIORATED MATERIALS OR DAMAGED STRUCTURAL CONDITIONS, THE ARCHITECT AND OWNER SHALL BE NOTIFIED.
11. ANY EQUIPMENT NOT IDENTIFIED TO BE REMOVED IS TO REMAIN UNLESS NOTED OTHERWISE.
12. THE CONTRACT WORK SHALL INCLUDE FURNISHING ALL MATERIALS, EQUIPMENT, TOOLS, LABOR & SERVICES NECESSARY FOR COMPLETION OF THE PROJECT.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE QUALITY OF WORKMANSHIP & FOR COMPLIANCE WITH THE DESIGN. THE GENERAL CONTRACTOR SHALL CORRECT ALL ERRORS & DEVIATIONS AS REQUESTED BY THE OWNER.
14. THE CONTRACTOR SHALL VERIFY ALL RELEVANT DIMENSIONS AND EXISTING CONDITIONS BEFORE PROCEEDING WITH THE AFFECTED WORK AND NOTIFY THE ARCHITECT OF ANY DISCREPANCIES IMMEDIATELY. ALL DISCREPANCIES SHALL BE RESOLVED PRIOR TO PROCEEDING WITH AFFECTED WORK.
15. SHOULD ANY OF THE DETAILED INSTRUCTION ON THE DRAWINGS CONFLICT WITH THE NOTES OR SPECIFICATIONS OR WITH EACH OTHER, THE STRICTEST PROVISION SHALL APPLY.
16. JOB SITE CLEANING: DURING DEMOLITION & CONSTRUCTION, THE JOB SITE SHALL BE CLEANED ON A DAILY BASIS, INCLUDING REMOVAL OF TRASH, RUBBLE, DEBRIS & ORGANIZATION OF MATERIALS & EQUIPMENT. UPON COMPLETION OF THE WORK, THE JOB SITE SHALL BE THOROUGHLY CLEANED, INCLUDING AREAS OF THE BUILDING MADE DIRTY BY CONSTRUCTION WORK. THE G.O. SHALL REMOVE TRASH, RUBBLE, TOOLS, EQUIPMENT & EXCESS MATERIALS FROM THE PREMISES. THE BUILDING IS TO BE LEFT IN A CLEAN CONDITION, AT THE END OF THE WORK DAY.
17. THE GENERAL CONTRACTOR IS TO PROVIDE SUPERVISION OF ALL TRADES / SUBS, AS WELL AS ON-SITE SUPERVISION.
18. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL DUMPSTERS REQUIRED FOR EXECUTION OF THE PROJECT SCOPE INCLUDING DISPOSAL OF ALL NON-REUSED FIXTURES.
19. IF ROOF PENETRATIONS ARE REQUIRED ON EXISTING ROOF, THEN THE CONTRACTOR SHALL EMPLOY A ROOFING CONTRACTOR TO MAINTAIN EXISTING WARRANTIES. SEE SPECIFICATIONS FOR ROOF WARRANTIES.

21. ALL WORK SHALL BE ERRECTED AND INSTALLED PLUMB, LEVEL, SQUARE AND TRUE AND IN PROPER ALIGNMENT, U.N.O.
22. ALL DIMENSIONS ARE TO WALL FACE. DIMENSIONS NOTED "HOLD" MUST BE ACCURATELY MAINTAINED, AND SHALL NOT VARY MORE THAN +/- 1/8" WITHOUT WRITTEN INSTRUCTION FROM ARCHITECT. "ALIGN" MEANS TO ACCURATELY LOCATE FINISHED FACES IN THE SAME PLANE. DIMENSIONS NOTED "CLEAR" ARE MINIMUM DIMENSIONS WHICH MUST BE MAINTAINED WITHOUT EXCEPTION. DIMENSIONS MARKED +/- MEAN A VARIANCE NOT GREATER THAN 1 INCH. VERIFY DIMENSIONS EXCEEDING TOLERANCE WITH THE ARCHITECT. ALL DIMENSIONS TO THE EXTERIOR WINDOWS WALL ARE TO THE FINISH FACE OF WALL BELOW SILL, U.N.O.
23. CONTRACTOR TO COORDINATE POWER OUTAGES WITH STAFF PRIOR TO SHUT-DOWNS.

SUMMARY OF WORK

THE SCOPE OF WORK INCLUDES SELECTIVE DEMOLITION, RENOVATION, AND NEW CONSTRUCTION WITHIN THE EXISTING CLASSROOM WING, RESTROOM AREAS, KITCHEN SUPPORT SPACES, AND ASSOCIATED BUILDING SYSTEMS, AS INDICATED ON THE DRAWINGS AND SPECIFIED HEREIN. THE WORK INCLUDES RECONFIGURATION OF THE EXISTING RESTROOMS, CLASSROOMS, AND STORAGE ROOMS TO CREATE ENLARGED RESTROOM FACILITIES, SEPARATE SHOWER ROOMS, AND A SHARED LOCKER ROOM, INCLUDING ALL ASSOCIATED ARCHITECTURAL, STRUCTURAL, MECHANICAL, PLUMBING, AND ELECTRICAL MODIFICATIONS REQUIRED FOR A COMPLETE AND OPERATIONAL INSTALLATION. THE WORK FURTHER INCLUDES DEMOLITION AND REPLACEMENT OF SEVEN EXISTING WEST WALL BAYS LOCATED BETWEEN STRUCTURAL COLUMNS, CONSISTING OF CONCRETE MASONRY KNEEWALLS AND ALUMINUM STOREFRONT WINDOW ASSEMBLIES, WITH NEW BLAST-RESISTANT WALL AND STOREFRONT SYSTEMS. ADDITIONAL WINDOWS, DOORS, AND WALL BAY REPLACEMENTS ARE INCLUDED AS INDICATED IN THE BASE BID AND ALTERNATE NO. 1. EXISTING SKYLIGHTS SHALL BE REMOVED AND REPLACED WITH PREFABRICATED INSULATED CURB COVER ASSEMBLIES. ALL ROOMS AND CORRIDORS WITHIN THE RENOVATION AREA SHALL RECEIVE NEW INTERIOR FINISHES INCLUDING ACOUSTICAL CEILING SYSTEMS, LED LIGHTING FIXTURES, FLOOR FINISHES, WALL FINISHES, AND RELATED ACCESSORIES.

THE WORK ALSO INCLUDES MODIFICATION OF EXISTING CORRIDOR WALL ASSEMBLIES TO CREATE TWO 2-HOUR FIRE-RESISTANCE-RATED BARRIERS COMPLETE WITH FIRE-RATED DOORS, FRAMES, AND HARDWARE, IN COMPLIANCE WITH APPLICABLE LIFE SAFETY CODE REQUIREMENTS. MECHANICAL IMPROVEMENTS INCLUDE INSTALLATION OF NEW ROOFTOP UNITS TO PROVIDE CENTRALIZED AIR CONDITIONING AND UPGRADED HEATING SYSTEMS SERVING THE CLASSROOM WING AND CAFETERIA, TOGETHER WITH REPLACEMENT OF THE EXISTING CAFETERIA HOOD AND ASSOCIATED KITCHEN EXHAUST SYSTEM. PLUMBING WORK INCLUDES INSTALLATION OF TWO NEW WATER HEATERS, HOT WATER STORAGE TANK, WATER SOFTENER, RECIRCULATION PUMP, PIPING, AND ACCESSORIES WITHIN THE BASEMENT MECHANICAL ROOM, AS WELL AS REPLACEMENT OF SANITARY WASTE PIPING EXTENDING TO THE EXISTING SEWER LATERAL LOCATED IN THE ENTRY COURTYARD. EXISTING SANITARY PIPING NOT DESIGNATED FOR REUSE SHALL BE ABANDONED IN PLACE UNLESS OTHERWISE INDICATED ON THE DRAWINGS.

ELECTRICAL WORK INCLUDES REPLACEMENT OF EXISTING ELECTRICAL PANELS SERVING THE ENTIRE BUILDING, INCLUDING GYMNASIUM AND KITCHEN EQUIPMENT, INSTALLATION OF DEDICATED CIRCUITS FOR TELECOMMUNICATIONS, SECURITY, AND ALARM SYSTEMS, AND INSTALLATION OF NEW RECEPTACLES IN CLASSROOMS AS REQUIRED BY CODE. EACH CLASSROOM SHALL RECEIVE A MINIMUM OF THREE NEW DATA OUTLETS. THE WORK ALSO INCLUDES INSTALLATION OF NEW CONDUIT PATHWAYS AND CATEGORY 6 CABLING TO THE NEW SERVER ROOM, INCLUDING ALL TERMINATIONS AND TESTING. STRUCTURAL WORK INCLUDES MODIFICATIONS NECESSARY TO SUPPORT NEW ROOFTOP UNIT OPENINGS AND ASSOCIATED ROOF FRAMING. THE EXISTING BUILDING IS GENERALLY CONSTRUCTED OF LOAD-BEARING MASONRY WALLS, GRADE BEAMS, AND COMPOSITE ROOF DECK CONSTRUCTION, AND THE CONTRACTOR SHALL COORDINATE ALL DEMOLITION AND NEW CONSTRUCTION ACTIVITIES TO MAINTAIN STRUCTURAL INTEGRITY THROUGHOUT THE DURATION OF THE WORK.

ALTERNATE 1

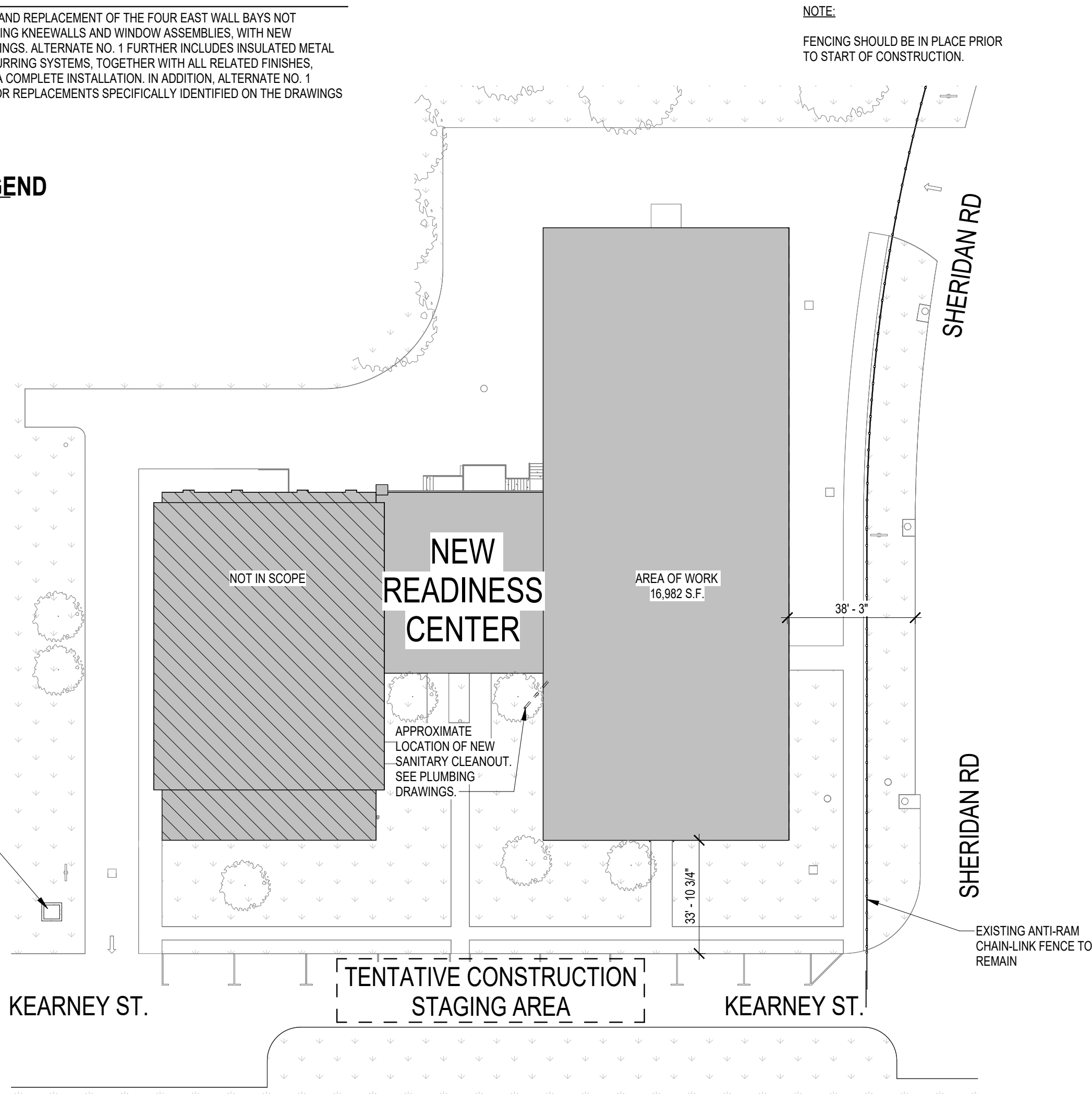
ALTERNATE NO. 1 CONSISTS OF DEMOLITION AND REPLACEMENT OF THE FOUR EAST WALL BAYS NOT INCLUDED IN THE BASE BID, INCLUDING EXISTING KNEEWALLS AND WINDOW ASSEMBLIES, WITH NEW CONSTRUCTION AS INDICATED ON THE DRAWINGS. ALTERNATE NO. 1 FURTHER INCLUDES INSULATED METAL STUD FRAMING AND GYPSUM BOARD WALL FURRING SYSTEMS, TOGETHER WITH ALL RELATED FINISHES, ACCESSORIES, AND WORK NECESSARY FOR A COMPLETE INSTALLATION. IN ADDITION, ALTERNATE NO. 1 INCLUDES ALL ADDITIONAL WINDOW AND DOOR REPLACEMENTS SPECIFICALLY IDENTIFIED ON THE DRAWINGS AS PART OF THE ALTERNATE SCOPE.

LIFE SAFETY PLAN LEGEND

- 2 HOUR FIRE BARRIER
- AREA NOT IN SCOPE

APPROXIMATE LOCATION OF NEW TRANSFORMER AND 85"x72" CONCRETE PAD. SEE ELECTRICAL DRAWINGS FOR MORE INFORMATION.

G.O. TO COORDINATE FINAL PLACEMENT OF TRANSFORMER PAD WITH ELECTRICAL CONTRACTOR.



ARCHITECTURAL SITE PLAN
SCALE: 1" = 30'-0"

STATE OF MISSOURI
MIKE KEHOE
GOVERNOR

CASCO DIVERSIFIED CORPORATION
ARCHITECTURAL
LICENSE # 000329
EXP. DATE: 12/31/2027



Professional of Record:
MICHAEL S. SUNDERMEYER
LICENSE # 2014026855
EXP. DATE: 12/31/2026

OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES
MANAGEMENT,
DESIGN AND CONSTRUCTION

DEPARTMENT OF MISSOURI
NATIONAL GUARD

INTERIOR AND EXTERIOR
RENOVATION

JEFFERSON BARRACKS
READINESS CENTER
74 KEARNEY ST.
ST. LOUIS, MO 63125

PROJECT # T2504-03
SITE # 6303
FACILITY #8136303050

REVISIONS

No.	Description	Date
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ISSUE DATE:08/04/2026

DWG FILE #: 2605562
DRAWN BY: MJM
CHECKED BY: RAR
DESIGNED BY: MJM

SHEET TITLE:
LEGEND, GEN. NOTES, AND
ABBREVIATIONS

SHEET NUMBER:

G-002

SHEET 2 OF 51
08/04/2026

CASCO

12 SUMNER DRIVE, SUITE 100, ST. LOUIS, MO 63103
T 314-621-1100

GENERAL NOTES:

DESIGN:

BUILDING CODE - ASCE 7-22/2024 INTERNATIONAL BUILDING CODE

1.

EXISTING ROOF DEAD LOAD
MINIMUM ROOF LIVE LOAD
TRIBUTARY AREA 0 TO 200 SQ. FT.
TRIBUTARY AREA 201 TO 600 SQ. FT.
TRIBUTARY AREA OVER 600 SQ. FT.

= 25 PSF

= 20 PSF
= 20(1.2-0.001A) PSF
= 12 PSF
2.

SNOW LOADS:
- GROUND SNOW LOAD, P_g

= 20 PSF
3.

WIND LOADS:
- ULTIMATE WIND SPEED (3 SEC. GUST), V_{ult}
- BASIC WIND SPEED, V_{asd}
- RISK CATEGORY
- BUILDING CATEGORY
- OVERALL EXPOSURE CATEGORY

= 108 MPH
= 87 MPH
= II
= ENCLOSED SIMPLE DIAPHRAGM
= C
4.

SEISMIC:
- RISK CATEGORY
- SEISMIC IMPORTANCE FACTOR, I_e
- MAPPED SPECTRAL RESPONSE COEFFICIENTS
S_s
S₁
- SITE CLASS
- SPECTRAL RESPONSE COEFFICIENTS
SDS
SD1
- SEISMIC DESIGN CATEGORY

= II
= 1.0

= 0.65
= 0.19
= D (ASSUMED)

= 0.46
= 0.26
= D

CONCRETE NOTES

- CONCRETE MIXTURES SHALL STRICTLY COMPLY WITH SECTION 4 OF ACI 301-20 AND CHAPTER 19 OF ACI 318-14.
1.

CONCRETE MIX DESIGNS SHALL BE SUBMITTED FOR REVIEW A MINIMUM OF ONE WEEK PRIOR TO THE CONCRETE PLACEMENT.
2.

ALL CONCRETE SHALL BE NORMAL-WEIGHT (DENSITY=145 PCF).
3.

THE COARSE AGGREGATE GRADATION SHALL BE #57 OR LARGER UNLESS RESTRICTED BY ACI 301-20.
4.

EXPOSURE CATEGORY - F (FREEZING AND THAWING):
 - INTERIOR FLOOR SLAB
 - ALL EXTERIOR STRUCTURAL CONCRETE
 - FOUNDATIONS (INTERIOR & EXTERIOR)
 - ALL EXTERIOR FLAT WORK (SLABS)

F0 (f_c = 3,000 PSI)
F2
F2
F3
5.

EXPOSURE CATEGORY - S (SULFATE):
 - ALL CONCRETE IN CONTACT WITH SOIL

S0
6.

EXPOSURE CATEGORY - W (IN CONTACT WITH WATER):
 - ALL EXTERIOR CONCRETE

W0
7.

EXPOSURE CATEGORY - C (CORROSION PROTECTION OF REINFORCEMENT):
 - ALL EXTERIOR CONCRETE

C1
8.

FORMWORK AND FORMWORK ACCESSORIES SHALL STRICTLY COMPLY WITH SECTION 2 OF ACI 301-20.
9.

REINFORCEMENT AND REINFORCEMENT SUPPORTS SHALL STRICTLY COMPLY WITH SECTION 3 OF ACI 301-20.
10.

HANDLING, PLACING, AND CONSTRUCTING SHALL STRICTLY COMPLY WITH SECTION 5 OF ACI 301-20.
11.

CONCRETE REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60, UNLESS NOTED OTHERWISE.
12.

CONCRETE REINFORCING STEEL TO BE WELDED SHALL CONFORM TO ASTM A706.
13.

THE MINIMUM CONCRETE CLEAR COVER OVER REINFORCING STEEL, UNLESS NOTED OTHERWISE, SHALL BE:
 - UNFORMED SURFACE IN CONTACT WITH THE GROUND..... 3 IN.
 - FORMED SURFACES EXPOSED TO EARTH OR WEATHER:
 - #6 BARS AND LARGER..... 2 IN.
 - #5 BARS AND SMALLER..... 1 1/2 IN.
 - FORMED SURFACES NOT EXPOSED TO EARTH OR WEATHER:
 - BEAMS, GIRDERS, AND COLUMNS..... 1 1/2 IN.
 - SLABS, WALLS, AND JOISTS..... 3/4 IN.
 - #11 BARS AND SMALLER..... 1 1/2 IN.
 - #14 AND #18 BARS..... 1 1/2 IN.
14.

ALL BASE PLATES, ANCHOR BOLTS, SUPPORT ANGLES, ETC., WHICH ARE BELOW GRADE SHALL BE COVERED WITH A MINIMUM OF 3" OF CONCRETE.
15.

ALL LAP SPLICES SHALL BE IN ACCORDANCE WITH THE FOLLOWING TABLE, UNLESS NOTED OTHERWISE. WHERE CLASSES ARE NOT CALLED OUT ON DRAWINGS, USE CLASS "B" SPLICES.

CONCRETE REINFORCING LAP SPICE SCHEDULE						
BAR SIZE	TENSION SPLICES (IN.)				COMPRESSION SPLICES (IN.)	
	A	B	A	B		
#3	22	28	17	22	12	
#4	29	37	22	29	15	
#5	36	47	28	36	19	
#6	43	56	33	43	23	
#7	63	81	48	63	27	
#8	72	93	55	72	30	

-COMPRESSION DOWEL EMBEDMENT: 22 BAR DIAMETERS LAP
-WELDED WIRE FABRIC: ONE SPACING OF CROSS WIRES PLUS 2" LAP

REINFORCED MASONRY:

1.

1THE REINFORCED CONCRETE MASONRY FOR THIS PROJECT HAS BEEN DESIGNED AND DETAILED IN ACCORDANCE WITH THE ALLOWABLE STRESS DESIGN METHOD OF THE BUILDING CODE REQUIREMENTS AND SPECIFICATION FOR MASONRY STRUCTURES.
2.

REINFORCED MASONRY SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH, f_m, OF 2000 PSI. MASONRY UNITS SHALL BE NORMAL WEIGHT BLOCK CONFORMING TO ASTM C90 AND SHALL HAVE A MINIMUM NET AREA COMPRESSIVE STRENGTH OF 2000 PSI. MORTAR SHALL CONFORM TO ASTM C270, TYPE S. GROUT SHALL CONFORM TO ASTM C476 AND SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 2000 PSI. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60, UNLESS NOTED OTHERWISE. REINFORCING STEEL TO BE WELDED SHALL CONFORM TO ASTM A706.
4.

CONTINUOUS WIRE REINFORCING (JOINT REINFORCING) SHALL BE GALVANIZED TRUSS OR LADDER TYPE FORMED FROM 9 GAUGE COLD - DRAWN STEEL WIRE COMPLYING WITH ASTM A82. JOINT REINFORCING SHALL BE SPACED AT 16" O.C. VERTICALLY IN ALL MASONRY WALLS.
5.

ALL REINFORCED CELLS, ALL CELLS BELOW GRADE AND ALL CELLS BELOW FINISH FLOOR SHALL BE GROUTED SOLID.
6.

WHEN A FOUNDATION DOWEL DOES NOT LINE UP WITH A VERTICAL BLOCK CORE, IT SHALL NOT BE SLOPED MORE THAN ONE HORIZONTAL IN 6 VERTICAL. DOWELS MAY BE GROUTED INTO A CELL IN VERTICAL ALIGNMENT, EVEN THOUGH IT IS IN AN ADJACENT CELL TO THE VERTICAL WALL REINFORCING. GROUT THE CELL FOR THE FULL HEIGHT OF THE DOWEL.
7.

REINFORCING STEEL SHALL BE CENTERED IN THE MASONRY UNIT CELL, UNLESS NOTED OTHERWISE.
8.

VERTICAL REINFORCING BARS SHALL HAVE A MINIMUM GROUT COVER OF 1/2 OF AN INCH TO THE INSIDE FACE OF MASONRY UNIT AND A MINIMUM TOTAL MASONRY COVER NOT LESS THAN TWO INCHES.
9.

PARALLEL ADJACENT VERTICAL REINFORCING BARS SHALL HAVE A MINIMUM CLEAR DISTANCE NOT LESS THAN 1 1/2 BAR DIAMETERS NOR 1 1/2 INCHES.
10.

VERTICAL CELLS THAT WILL BE GROUTED SHALL HAVE A VERTICAL ALIGNMENT TO MAINTAIN A CONTINUOUS UNOBSTRUCTED CELL AREA NOT LESS THAN 3"x4".
11.

GROUTING SHALL BE STOPPED 1-1/2" BELOW THE TOP OF A COURSE SO AS TO FORM A KEY AT THE POUR JOINT.
12.

GROUTING OF MASONRY BEAMS OVER OPENINGS SHALL BE DONE IN ONE CONTINUOUS OPERATION.
13.

ALL BOLTS, ANCHORS, ETC., INSERTED IN THE WALLS, SHALL BE GROUTED SOLID INTO POSITIONSPLICED REINFORCING BARS SHALL BE LAPPED A MINIMUM OF 72 BAR DIAMETERS.

SUBGRADE PREPARATION NOTE

1.

ALL EXPOSED AND/OR DISTURBED GRANULAR BASE AREAS SHALL BE COMPACTED TO A MINIMUM OF 95% OF OPTIMUM DENSITY IN ACCORDANCE WITHASTM D 1557 AT OPTIMUM MOISTURE CONTENT AND TO A MINIMUM DEPTH OF 8" - ALL SUBGRADE SOIL AREAS EXPOSED BY EXCAVATIONS AND GRADING SHALL BE COMPACTED TO A MINIMUM OF 95% OF OPTIMUM DENSITY IN ACCORDANCE WITHASTM D 1557 AT OPTIMUM MOISTURE CONTENT AND TO A MINIMUM DEPTH OF 12" - FILL WHERE REQUIRED SHALL BE PLACED IN LIFTS NOT TO EXCEED 6" LOOSE MEASURE AND SHALL BE COMPACTED AS OUTLINED ABOVE - THE ON SITE TESTING COMPANY SHALL PROVIDE TESTING AND INSPECTION OF THE SOIL WORK PRIOR TO PLACING CONCRETE

STRUCTURAL STEEL:

1.

STEEL SHALL CONFORM TO THE FOLLOWING GRADES:
WIDE FLANGE SHAPES
CHANNELS, ANGLES, PLATES, ETC. (UNO)
STRUCTURAL TUBE
STEEL PIPE
THREADED RODS
BOLTS
WELDING ELECTRODES

A992 OR A572 GR. 50 (F_y = 50)
A36 (F_y = 36)
A500 (F_y=46)
A53 (F_y=35)
F1554, A36 OR A307
A325
E70XX
2.

ALL STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH THE AISC CODE OF STANDARD PRACTICE (360-05), EXCEPT AS MODIFIED IN THESE NOTES AND THE PROJECT SPECIFICATIONS.
3.

ALL STRUCTURAL STEEL TO HAVE A SHOP GRADE PRIMER UNLESS NOTED OTHERWISE.(GRAY)
- MISCELLANEOUS:

1.

NO CHANGE IN SIZE OR DIMENSION OF STRUCTURAL MEMBERS SHALL BE MADE WITHOUT THE WRITTEN APPROVAL OF THE PROFESSIONAL OF RECORD.
2.

STRUCTURAL DRAWINGS ARE INTENDED TO BE USED WITH ARCHITECTURAL AND MECHANICAL DRAWINGS. CONTRACTOR IS RESPONSIBLE FOR COORDINATING SUCH REQUIREMENTS INTO THEIR SHOP DRAWINGS AND WORK.
3.

NO OPENINGS SHALL BE MADE IN ANY STRUCTURAL MEMBER WITHOUT THE WRITTEN APPROVAL OF THE PROFESSIONAL OF RECORD.
4.

DO NOT SCALE THESE DRAWINGS, USE DIMENSIONS.
5.

THE CONTRACTOR SHALL INFORM THE PROFESSIONAL OF RECORD IN WRITING OF ANY DEVIATION FROM THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL NOT BE RELIEVED OF THE RESPONSIBILITY OF SUCH DEVIATION BY THE PROFESSIONAL OF RECORD REVIEW OF SHOP DRAWINGS, PRODUCT DATA, ETC., UNLESS THE CONTRACTOR HAS SPECIFICALLY INFORMED THE PROFESSIONAL OF RECORD OF SUCH DEVIATION AT THE TIME OF SUBMISSION, AND THE PROFESSIONAL OF RECORD HAS GIVEN WRITTEN APPROVAL TO THE SPECIFIC DEVIATION.
6.

ANY DETAIL TITLED AS A TYPICAL DETAIL IS APPLICABLE THROUGHOUT THE DESIGN DRAWINGS. THESE DETAILS ARE DEFINED AS GENERAL STANDARDS THAT ARE USUALLY NOT IDENTIFIED BY SPECIFIC REFERENCE WITHIN THE DRAWINGS. THESE DETAILS MAY BE MODIFIED OR SUPERSEDED BY SPECIFIC DETAILS THAT ARE REFERENCED WITHIN THE DRAWINGS.
7.

THE CONTRACTOR IS RESPONSIBLE FOR LIMITING THE AMOUNT OF CONSTRUCTION LOAD IMPOSED UPON THE STRUCTURAL FRAMING. CONSTRUCTION LOADS SHALL NOT EXCEED THE DESIGN CAPACITY OF THE FRAMING AT THE TIME THE LOADS ARE IMPOSED.
8.

"FD" = FIELD DETERMINE, CONTRACTOR TO PROVIDE DIMENSION TO STEEL DETAILER

EXISTING CONSTRUCTION:

1.

WORK SHOWN IS NEW UNLESS INDICATED AS EXISTING.
2.

EXISTING CONSTRUCTION SHOWN IS BASED UPON ASSUMED EXISTING CONDITIONS AND CAN BE USED FOR BIDDING PURPOSES. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING JOB CONDITIONS, REVIEW ALL DRAWINGS AND VERIFY DIMENSIONS, ELEVATIONS, AND MEMBER SIZES PRIOR TO CONSTRUCTION OR MATERIAL PURCHASE. THE CONTRACTOR SHALL NOTIFY THE PROFESSIONAL OF RECORD IN WRITING OF ALL DISCREPANCIES AND EXCEPTIONS BEFORE PROCEEDING WITH THE WORK.
3.

THE REMOVAL, CUTTING, DRILLING, ETC. OF EXISTING CONSTRUCTION SHALL BE PERFORMED WITH GREAT CARE IN ORDER NOT TO JEOPARDIZE THE STRUCTURAL INTEGRITY OF THE BUILDING. IF STRUCTURAL MEMBERS OR MECHANICAL, ELECTRICAL, OR ARCHITECTURAL FEATURES NOT INDICATED FOR REMOVAL INTERFERE WITH THE NEW WORK, THE PROFESSIONAL OF RECORD SHALL BE IMMEDIATELY NOTIFIED AND PRIOR WRITTEN APPROVAL SHALL BE OBTAINED BEFORE REMOVAL OR MODIFICATION OF MEMBERS.
4.

THE CONTRACTOR SHALL RESTORE ALL EXISTING INCIDENTAL CONSTRUCTION REQUIRED TO BE REMOVED TO ACCOMMODATE THE ERECTION OF THE NEW JOIST CONSTRUCTION TO ITS ORIGINAL WORKING CONDITION.
5.

THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE MEANS & METHOD OF ALL DEMOLITION WORK & FOR PROVIDING ALL NECESSARY TEMPORARY SHORING, BRACING & PROTECTION AS NECESSARY FOR SAFETY, STABILITY & PROTECTION OF ALL BUILDING ELEMENTS & STRUCTURE DURING CONSTRUCTION & DEMOLITION.

DEMOLITION SHORING NOTE:

THE GENERAL CONTRACTOR IS SOLELY RESPONSIBLE FOR THE MEANS AND METHODS OF ALL DEMOLITION WORK AND FOR PROVIDING ALL NECESSARY SHORING, BRACING, AND PROTECTION AS NECESSARY FOR THE SAFETY, STABILITY, AND PROTECTION OF ALL BUILDING ELEMENTS AND STRUCTURE DURING CONSTRUCTION AND DEMOLITION. THE EXISTING STRUCTURE AS A WHOLE IS DEPENDANT UPON DIAPHRAGM ACTION OF THE EXISTING METAL ROOF DECK AND THE ATTACHMENT OF SUCH TO THE EXISTING BUILDING WALLS AND/OR EXISTING STEEL FRAMES FOR OVERALL LATERAL STABILITY. THE GENERAL CONTRACTOR SHALL RETAIN AND PAY FOR SERVICES OF A REGISTERED PROFESSIONAL ENGINEER LICENSED IN THE STATE WHERE THE STRUCTURE IS LOCATED TO PROVIDE THE DESIGN(S) NECESSARY TO MAINTAIN STABILITY OF THE EXISTING STRUCTURE CONTINUOUSLY THROUGHOUT THE DEMOLITION AND CONSTRUCTION PHASES. THE DESIGN SHALL BE BASED ON THE FORCES PRESCRIBED FOR BUILDINGS BY THE CURRENTLY ADOPTED AND ENFORCED BUILDING CODE(S) INCLUDING ALL LOCAL AMENDMENTS. THE DRAWINGS AND CALCULATIONS SHALL BE SIGNED AND SEALED AND SUBMITTED TO CASCO PRIOR TO COMMENCEMENT OF THE DEMOLITION PHASE. THE TEMPORARY PARTITION DETAILS INCLUDED IN THE CASCO CONSTRUCTION DOCUMENTS ARE INTENDED TO PROVIDE MOISTURE AND LIMITED THERMAL PROTECTION AND ARE DESIGNED TO RESIST BUILDING CODE PRESCRIBED OUT-OF-PLANE FORCES. THESE PARTITIONS ARE NOT DESIGNED OR DETAILED TO PROVIDE RESISTANCE TO IN-PLANE FORCES AND SHALL NOT BE RELIED UPON FOR SUCH.

SPECIAL INSPECTIONS:

1.

THE OWNER WILL EMPLOY THE SERVICES OF ONE OR MORE SPECIAL INSPECTORS TO PROVIDE SPECIAL INSPECTIONS DURING CONSTRUCTION FOR THE REQUIRED SPECIAL INSPECTION ITEMS.
2.

THE SPECIAL INSPECTOR SHALL BE A QUALIFIED PERSON WHO SHALL DEMONSTRATE COMPETENCE, TO THE SATISFACTION OF THE BUILDING OFFICIAL AND THE REGISTERED DESIGN PROFESSIONAL RESPONSIBLE FOR THE DESIGN OF THE STRUCTURE, FOR INSPECTION OF THE PARTICULAR TYPE OF CONSTRUCTION OR OPERATION REQUIRING SPECIAL INSPECTION.
3.

DUTIES AND RESPONSIBILITIES OF THE SPECIAL INSPECTOR:

A.

THE SPECIAL INSPECTOR SHALL OBSERVE THE WORK ASSIGNED FOR CONFORMANCE WITH THE APPROVED DESIGN DRAWINGS AND SPECIFICATIONS. THE INSPECTOR MAY NOT ALTER, MODIFY, ENLARGE OR WAVE ANY OF THE REQUIREMENTS OF THE DOCUMENTS.

B.

THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, THE PROFESSIONAL-OF-RECORD, AND THE CONTRACTOR. ALL DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. THEN, IF UNCORRECTED, SUBMIT A COMPLETE LIST OF ALL OUTSTANDING DISCREPANCIES ON A WEEKLY BASIS TO THE OWNER, THE BUILDING OFFICIAL, AND THE PROFESSIONAL-OF-RECORD, UNTIL ALL CORRECTIONS HAVE BEEN COMPLETED.

C.

THE SPECIAL INSPECTOR SHALL SUBMIT A FINAL SIGNED REPORT STATING WHETHER THE WORK REQUIRING SPECIAL INSPECTION WAS, TO THE BEST OF THE INSPECTOR'S KNOWLEDGE, IN CONFORMANCE WITH THE APPROVED PLANS AND SPECIFICATIONS AND THE APPLICABLE WORKMANSHIP PROVISIONS OF THE BUILDING CODE.
4.

WHERE SPECIAL INSPECTION REQUIREMENTS DUPLICATE THE REQUIREMENTS OF OTHER SPECIFIED TESTING, DUPLICATE INSPECTIONS SHALL NOT BE REQUIRED.
5.

STRUCTURAL OBSERVATION AS DEFINED IN CHAPTER 17 OF THE BUILDING CODE) IS NOT REQUIRED, UNLESS SPECIFICALLY REQUIRED BY THE BUILDING OFFICIAL.
6.

SPECIAL INSPECTIONS SHALL BE PROVIDED IN ACCORDANCE WITH THE FOLLOWING TABLE:

SPECIAL INSPECTIONS SCHEDULE			
SPECIAL INSPECTION		FREQ.	REFERENCED STANDARD
CONCRETE CONSTRUCTION:			
1.	INSPECT REINFORCEMENT, INCLUDING PRESTRESSING TENDONS, AND VERIFY PLACEMENT.	PERIODIC	ACI 318-14: Ch. 20, 25.2, 25.3, 26.5.1-26.5.3 IBC 2015: 1908.4
2.	INSPECT ANCHORS CAST IN CONCRETE.	PERIODIC	ACI 318-14: 17.8.2
3.	INSPECT ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS		
a.	ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS	CONT.	ACI 318-14: 17.8.2.4
b.	MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED IN 4.a	PERIODIC	ACI 318-14: 17.8.2
4.	VERIFY USE OF REQUIRED DESIGN MIX.	PERIODIC	ACI 318-14: Ch. 19, 26.4.3, 26.4.4 IBC 2015: 1904.1, 1904.2, 1908.2, 1908.3
5.	PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE.	CONT.	ASTM C172-10 ASTM C31-12 ACI 318-14: 26.4.5, 26.12 IBC 2015: 1908.10
6.	INSPECT CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES.	CONT.	ACI 318-14: 26.4.5 IBC 2015: 1908.6, 1908.7, 1908.8
7.	VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.	PERIODIC	ACI 318-14: 26.4.7-26.4.9 IBC 2015: 1908.9
8.	INSPECT ERECTION OF PRECAST CONCRETE MEMBERS.	PERIODIC	ACI 318-14: Ch. 26.8
9.	VERIFY IN-SITU CONCRETE STRENGTH, PRIOR TO STRESSING OF TENDONS IN POST-TENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS.	PERIODIC	ACI 318-14: 26.10.2
10.	INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED.	PERIODIC	ACI 318-14: 26.10.1(b)
MASONRY CONSTRUCTION:			
1.	AS MASONRY CONSTRUCTION BEGINS, THE FOLLOWING SHALL BE VERIFIED TO ENSURE COMPLIANCE:		
a.	A. PROPORTIONS OF SITE PREPARED MORTAR.	PERIODIC	ACI 530.1/ASCE 6/TMS 602-Art. 2.6A
b.	B. CONSTRUCTION OF MORTAR JOINTS.	PERIODIC	ACI 530.1/ASCE 6/TMS 602-Art. 3.3B
c.	C. LOCATION OF REINFORCEMENT AND CONNECTORS.	PERIODIC	ACI 530.1/ASCE 6/TMS 602: Art. 3.4, 3.6A
2.	THE INSPECTION PROGRAM SHALL VERIFY:		
a.	SIZE AND LOCATION OF STRUCTURAL ELEMENTS.		ACI 530.1/ASCE 6/TMS 602-Art.3.3G
b.	TYPE, SIZE, AND LOCATION OF ANCHORS, INCLUDING OTHER DETAILS OF ANCHORAGE OF MASONRY TO STRUCTURAL MEMBERS, FRAMES, OR OTHER CONSTRUCTION.		ACI 530/ASCE 5/TMS 402-SEC. 1.2.2(e), 2.1.4, 3.1.6, 1.12, 2.1.10.6.2, 3.2.3.4(f)
c.	SPECIFIED SIZE, GRADE, AND TYPE OF REINFORCEMENT	PERIODIC	ACI 530.1/ASCE 6/TMS 602: Sec. 1.12; ACI 530.1/ASCE 6/TMS 602-Art. 2.4, 3.4
3.	PRIOR TO GROUTING, THE FOLLOWING SHALL BE VERIFIED TO ENSURE COMPLIANCE:		
a.	A. GROUT SPACE IS CLEAN.	PERIODIC	ACI 530.1/ASCE 6/TMS 602-Art. 3.2D
b.	PLACEMENT OF REINFORCEMENT AND CONNECTORS.	PERIODIC	ACI 530/ASCE 5/TMS 402-Sec. 1.12; ACI 530.1/ASCE 6/TMS 602-Art. 3.4
c.	PROPORTIONS OF SITE PREPARED GROUT.	PERIODIC	ACI 530.1/ASCE 6/TMS 602-Art. 2.6B
d.	CONSTRUCTION OF MORTAR JOINTS.	PERIODIC	ACI 530.1/ASCE 6/TMS 602-Art. 3.3B
4.	GROUT PLACEMENT SHALL BE VERIFIED TO ENSURE COMPLIANCE WITH CODE AND CONSTRUCTION DOCUMENT PROVISIONS.	CONT.	ACI 530/ASCE 6/TMS 602-Art. 3.5
5.	PREPARATION OF ANY REQUIRED GROUT SPECIMENS, MORTAR SPECIMENS, AND/OR PRISMS SHALL BE OBSERVED.	CONT.	ACI 530/ASCE 6/TMS 602-ART. 1.4, AND IBC SEC. 2105.2.2 AND 2105.3
6.	COMPLIANCE WITH REQUIRED INSPECTION PROVISIONS OF THE CONSTRUCTION DOCUMENTS AND THE APPROVED SUBMITTALS SHALL BE VERIFIED.	PERIODIC	ACI 530/ASCE 6/TMS 602-ART. 1.5.
STEEL CONSTRUCTION:			
1.	STRUCTURAL STEEL	---	QUALITY ASSURANCE REQUIREMENTS OF AISC 360-10: Ch. N
a.	REVIEW THE MATERIAL TEST REPORTS AND CERTIFICATIONS FOR COMPLIANCE WITH THE CONSTRUCTION DOCUMENTS		aisc 360-10: N3.2
b.	INSPECTION OF WELDING		aisc 360-10: N5.4, N5.5 AWS D1.1
1)	INSPECTION TASKS PRIOR TO WELDING		aisc 360-10: TABLE N5.4-1
2)	INSPECTION TASKS DURING WELDING		aisc 360-10: TABLE N5.4-2
3)	INSPECTION TASKS AFTER WELDING		aisc 360-10: TABLE N5.4-3
c.	INSPECTION OF HIGH-STRENGTH BOLTING		aisc 360-10: N5.6 RCSC 2009
1)	INSPECTION TASKS PRIOR TO BOLTING		aisc 360-10: TABLE N5.6-1
2)	INSPECTION TASKS DURING BOLTING		aisc 360-10: TABLE N5.6-2
3)	INSPECTION TASKS AFTER BOLTING		aisc 360-10: TABLE N5.6-3
d.	INSPECT ANCHOR RODS AND OTHER EMBEDMENTS SUPPORTING STRUCTURAL STEEL PRIOR TO PLACEMENT OF CONCRETE FOR DIAMETER, GRADE, TYPE, AND LENGTH OF ANCHOR ROD OR EMBEDDED ITEM, AND EXTENT OR DEPTH OF EMBEDMENT INTO CONCRETE		APPROVED CONSTRUCTION DOCUMENTS
2.	COLD-FORMED STEEL DECK		QUALITY ASSURANCE REQUIREMENTS OF SDI QA/QC-2011
3.	COLD-FORMED STEEL TRUSSES SPANNING 60 FEET OR GREATER		
a.	TEMPORARY INSTALLATION RESTRAINT/BRACING		APPROVED TRUSS SUBMITTAL PACKAGE
b.	PERMANENT INDIVIDUAL TRUSS MEMBER RESTRAINT/BRACING		

STATE OF MISSOURI
MIKE KEHOE
GOVERNOR

CASCO DIVERSIFIED CORPORATION
ENGINEERING
LICENSE #: 000613
EXP. DATE: 12/31/27



Professional of Record:

MICHAEL T. LEE
LICENSE #: 025090
EXP. DATE: 12/31/27

OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES
MANAGEMENT,
DESIGN AND CONSTRUCTION

DEPARTMENT OF MISSOURI
NATIONAL GUARD

INTERIOR AND EXTERIOR
RENOVATION

JEFFERSON BARRACKS
READINESS CENTER
74 KEARNEY ST.
ST. LOUIS, MO 63125

PROJECT # T2504-03
SITE # 6303
FACILITY #8136303050

REVISIONS

No. Description Date

ISSUE DATE:08/04/2026

DWG FILE #: 2605562
DRAWN BY: DJW
CHECKED BY: MTL
DESIGNED BY: Designer

SHEET TITLE:
GENERAL NOTES

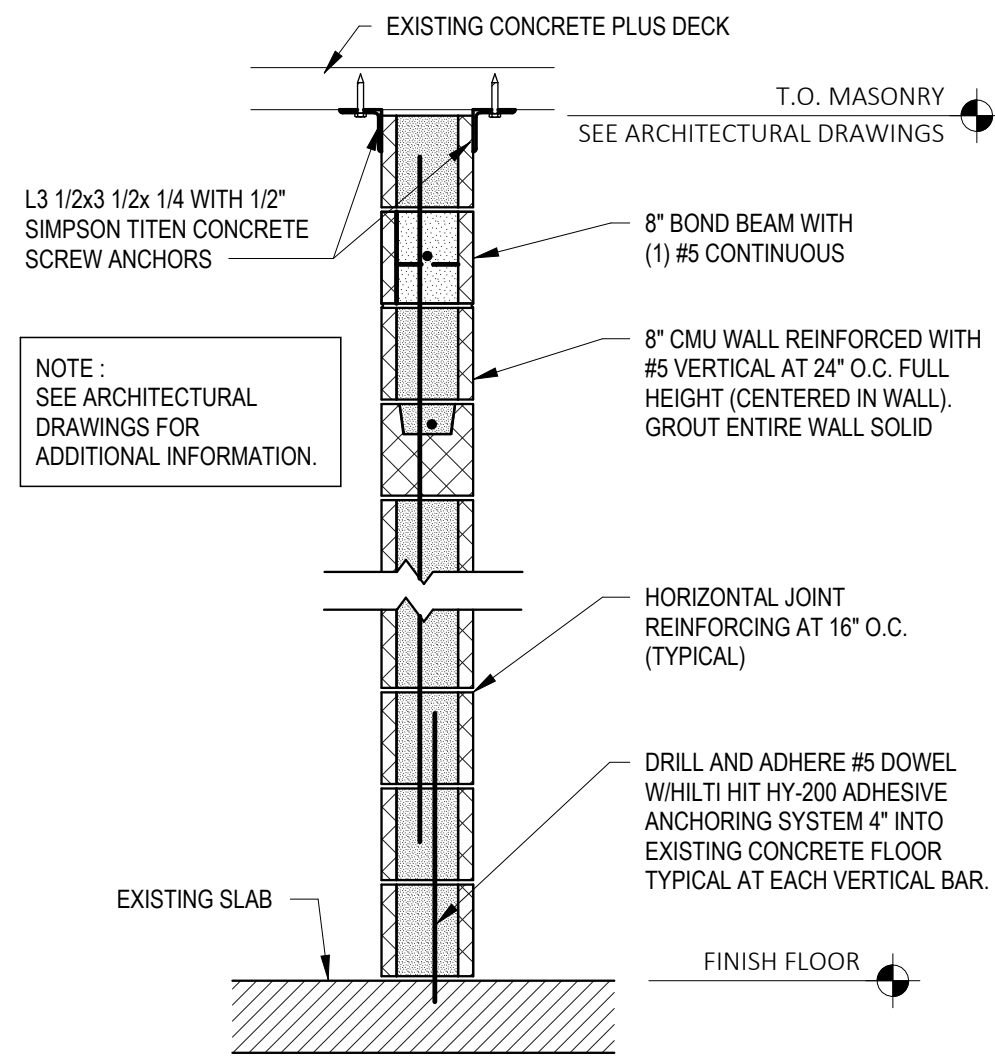
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S-001

SHEET 3 OF 51
08/04/2026

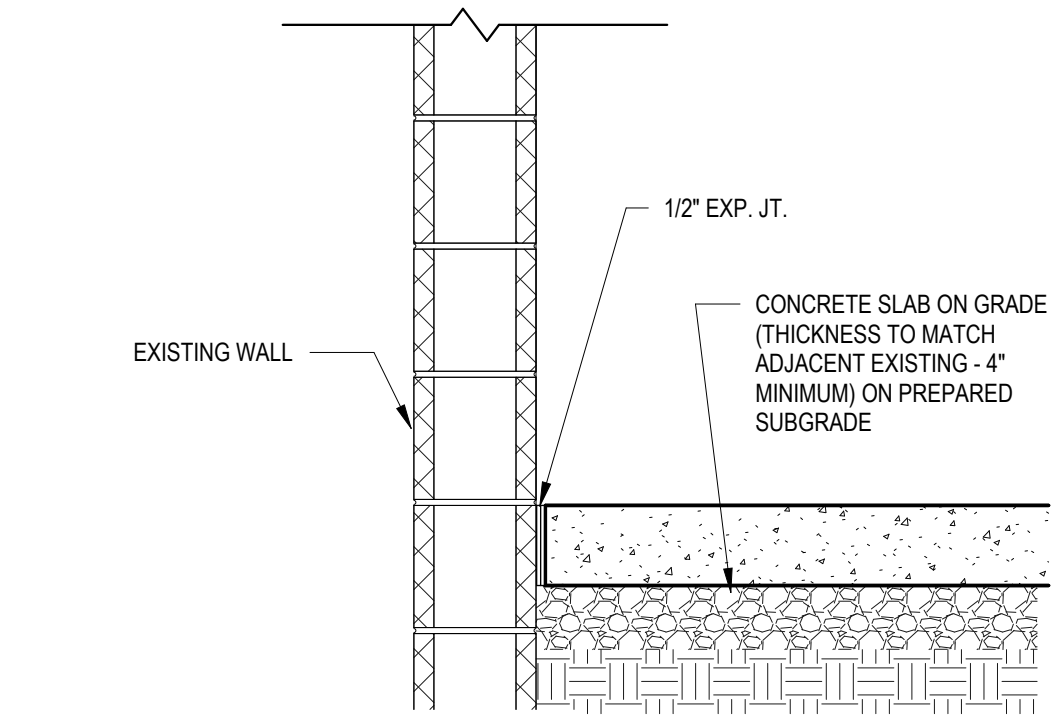
CASCO

12 SUMNER DRIVE, SUITE 100, ST. LOUIS, MO 63104
T 314-621-1100



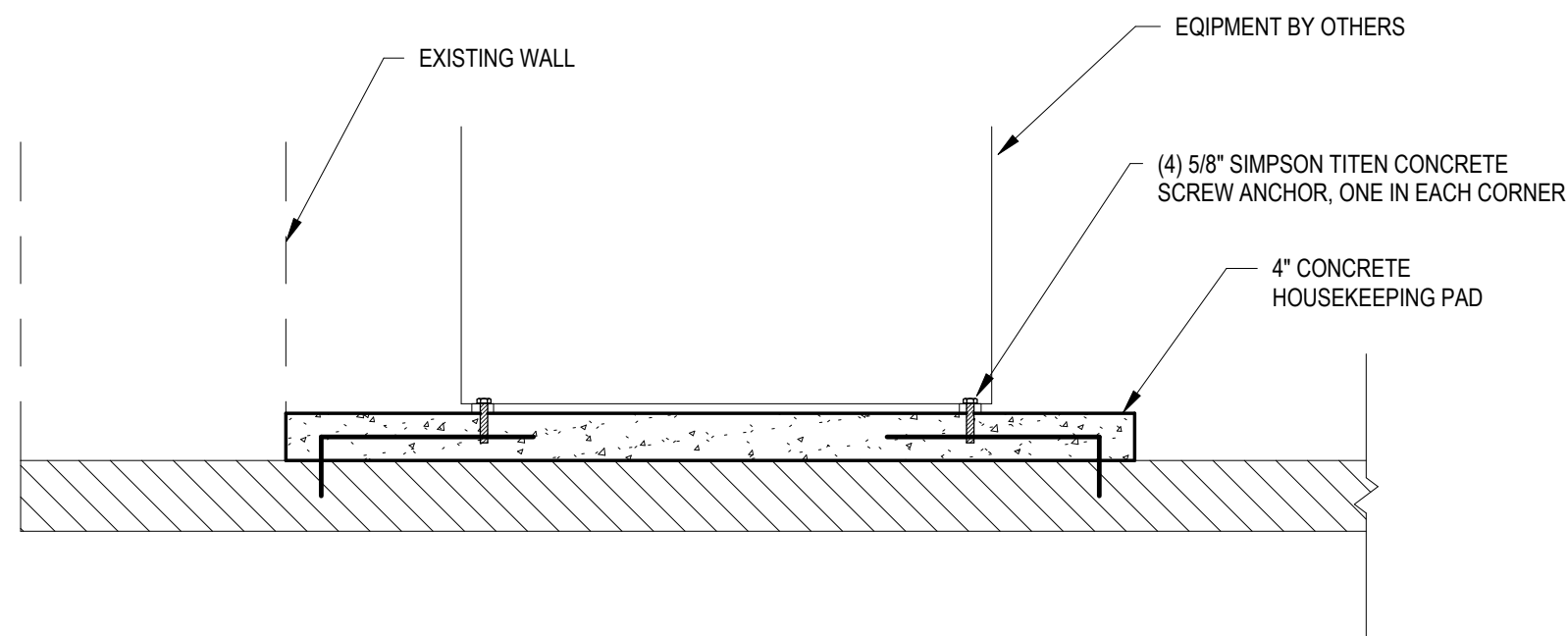
8 CMU INTERIOR WALL

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



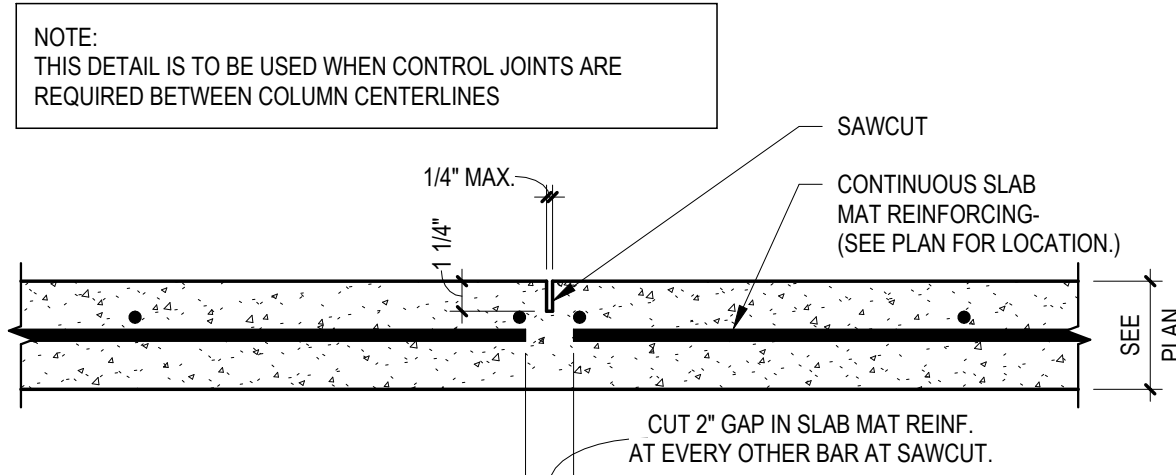
7 DETAIL

SCALE: 1" = 1'-0"



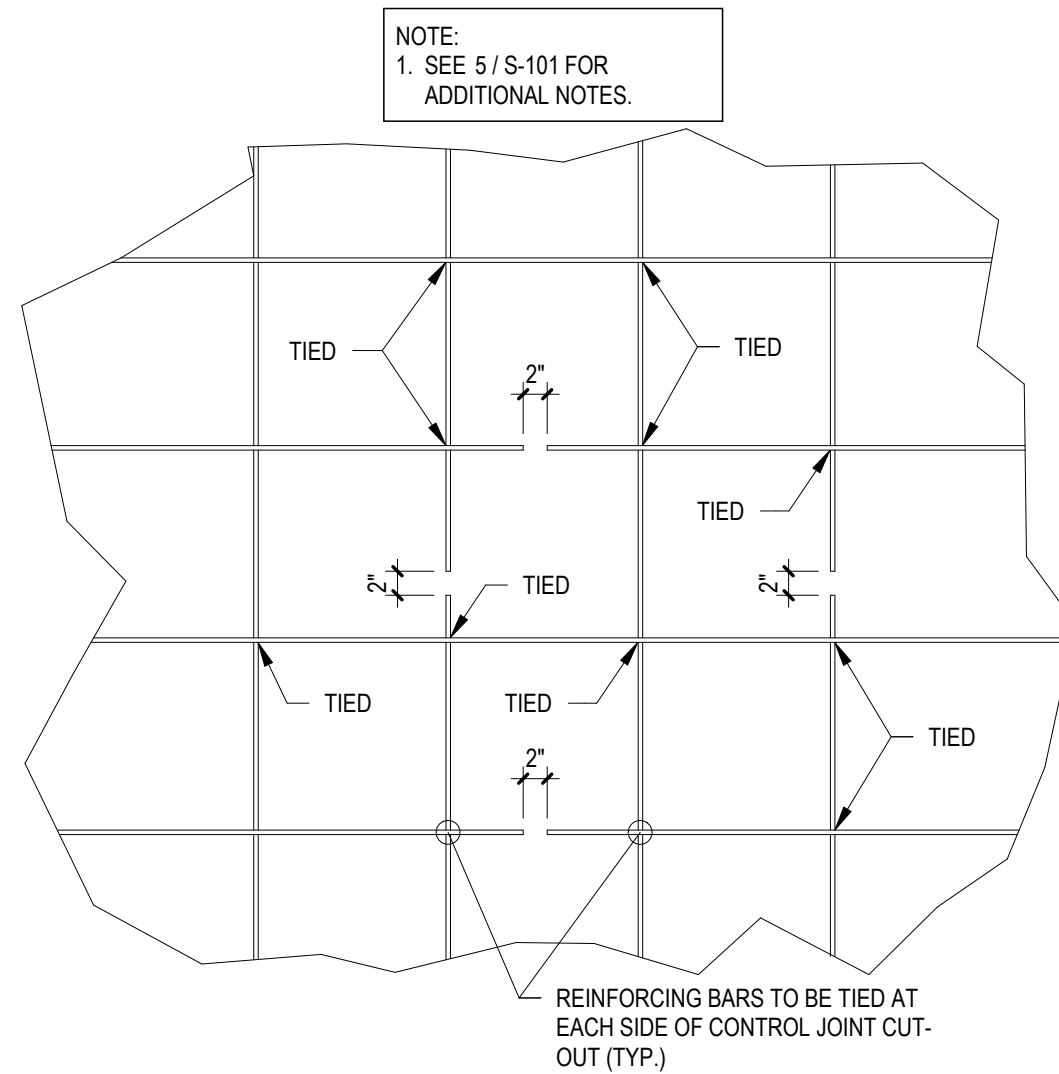
6 HOUSEKEEPING PAD

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



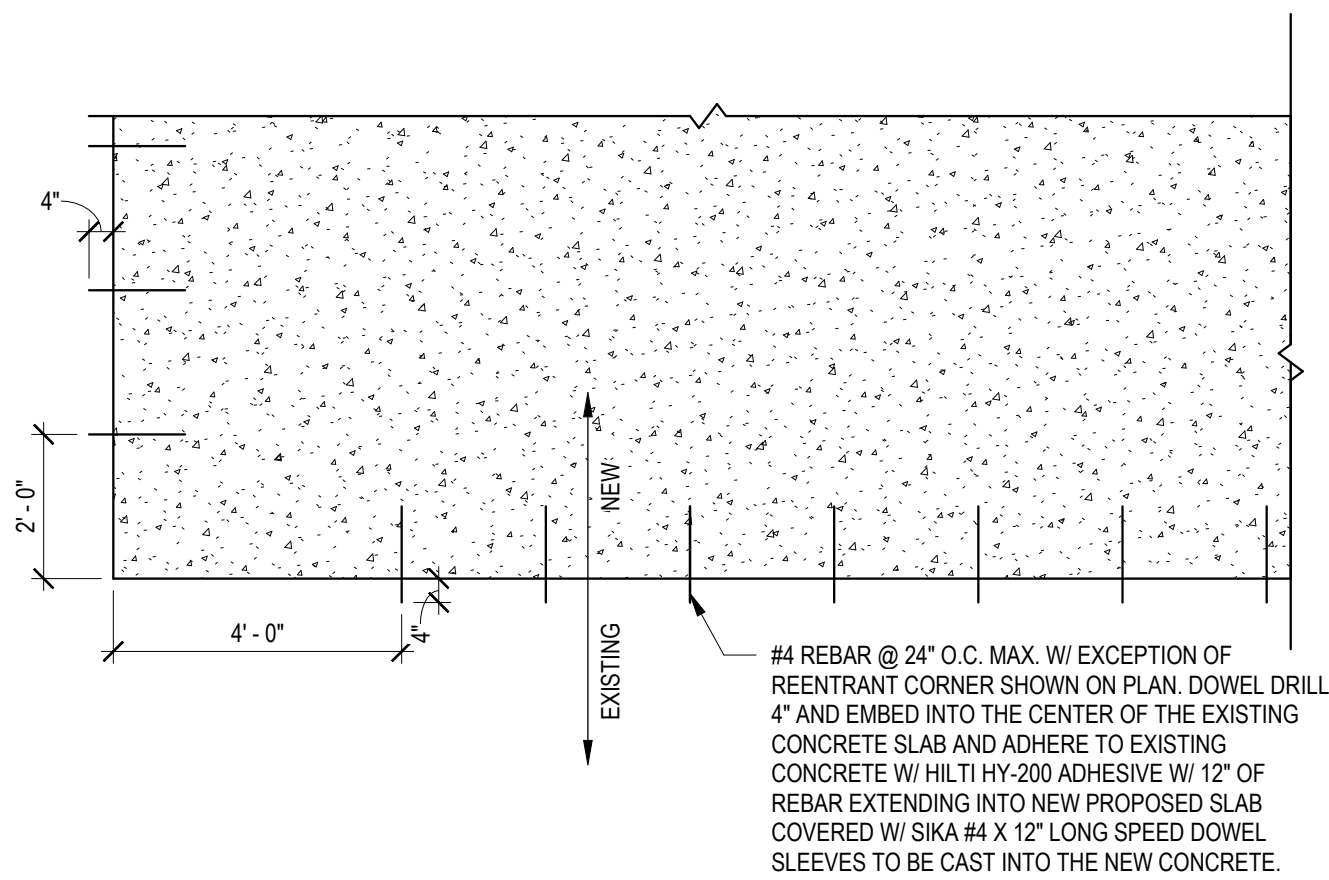
5 TYP. INTERMEDIATE
CONTROL JOINT DETAIL

SCALE: NOT TO SCALE



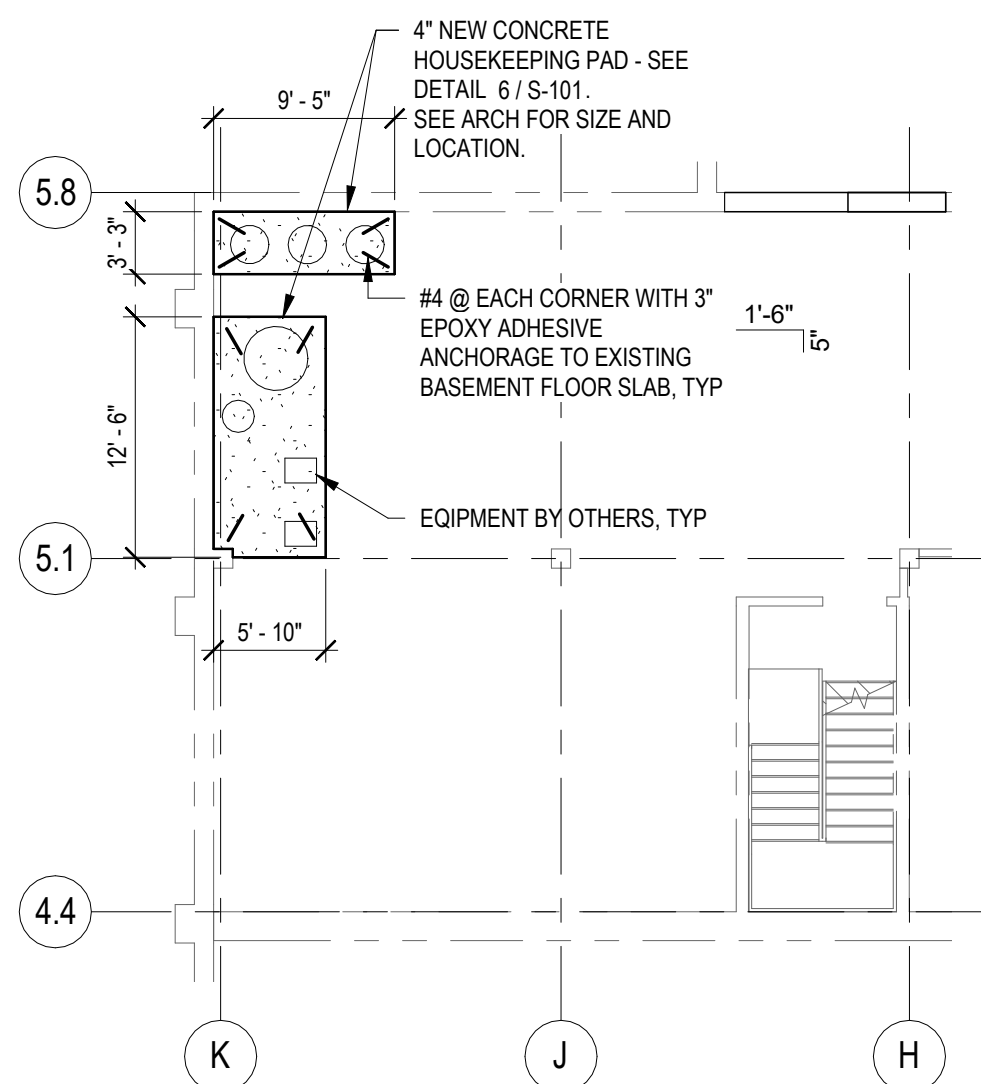
4 TYP. SLAB REINFORCING AT
SAWED CONTROL JOINTS

SCALE: NOT TO SCALE



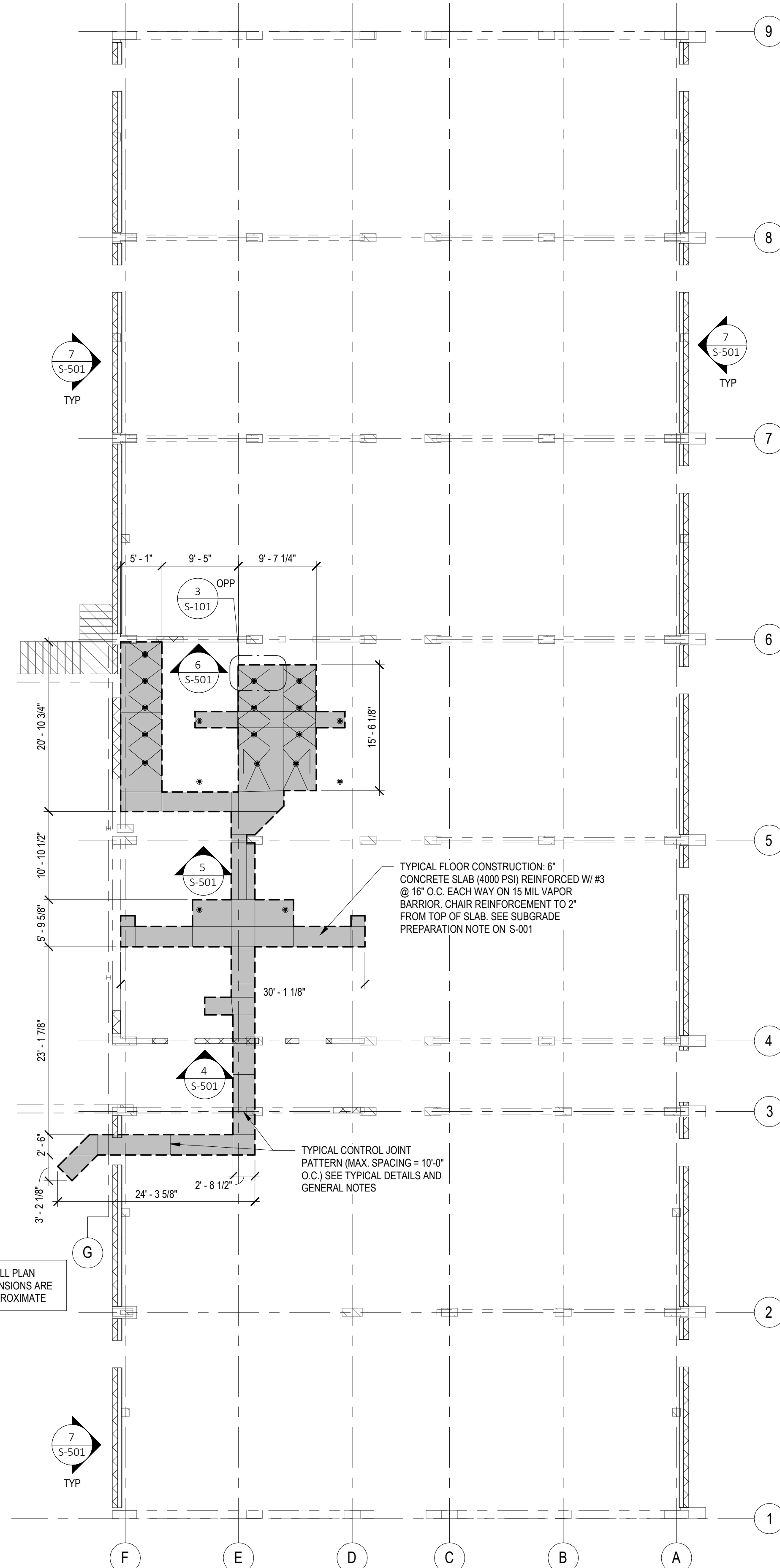
3 ENLARGED DOWEL PLAN

SCALE: 3/8" = 1'-0"



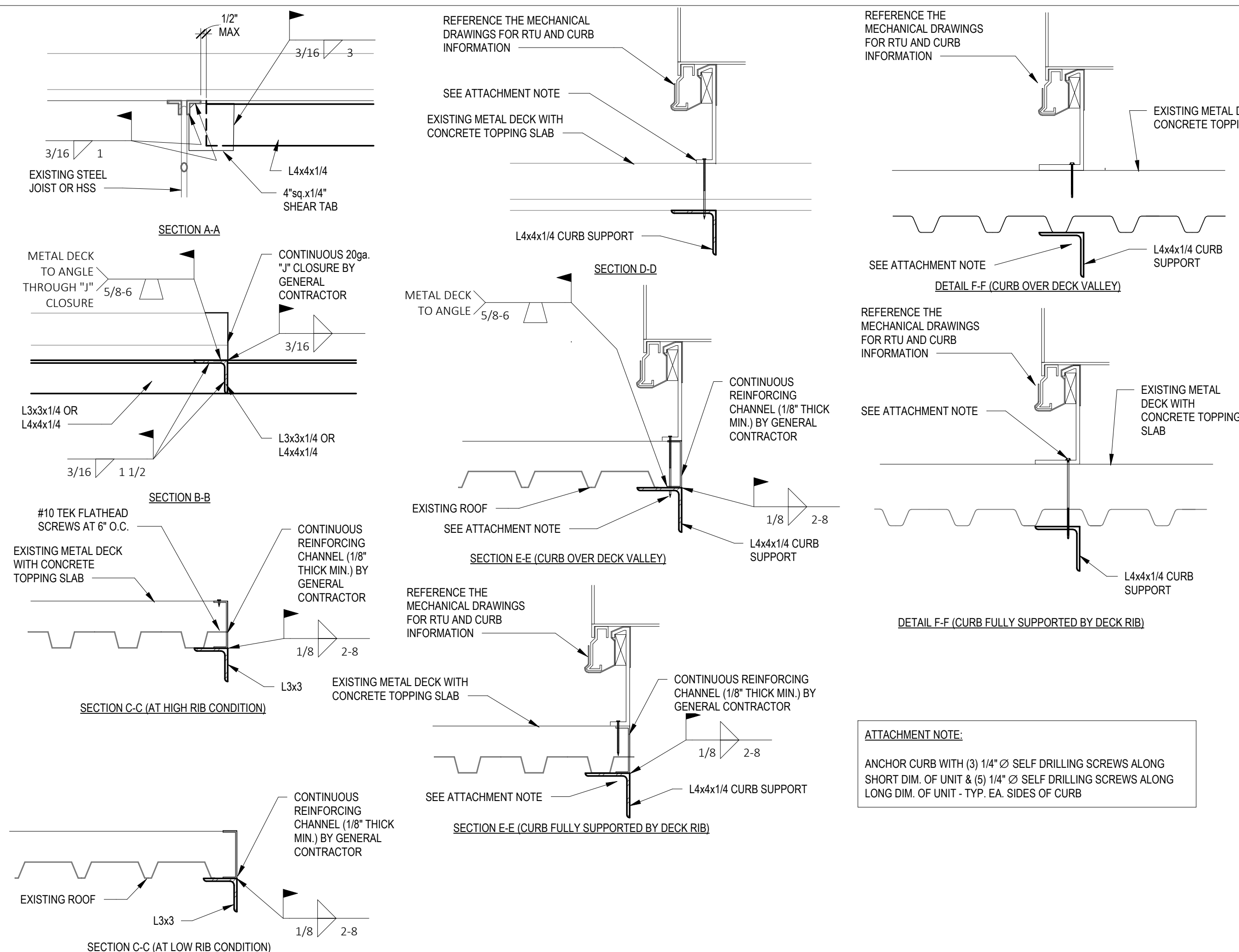
2 PARTIAL EXISTING BASEMENT PLAN

SCALE: 1" = 10'-0"



1 PARTIAL EXISTING FOUNDATION PLAN

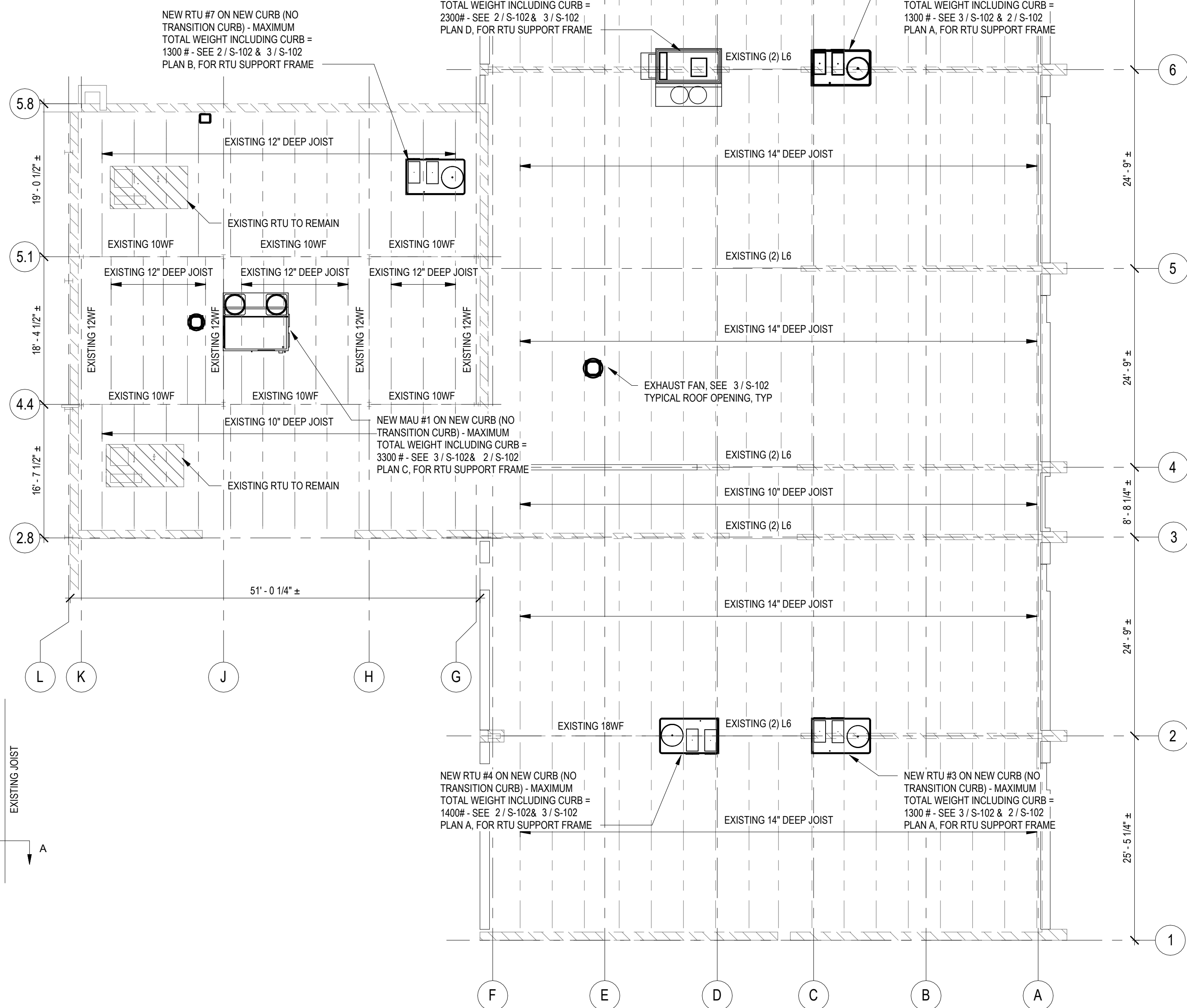
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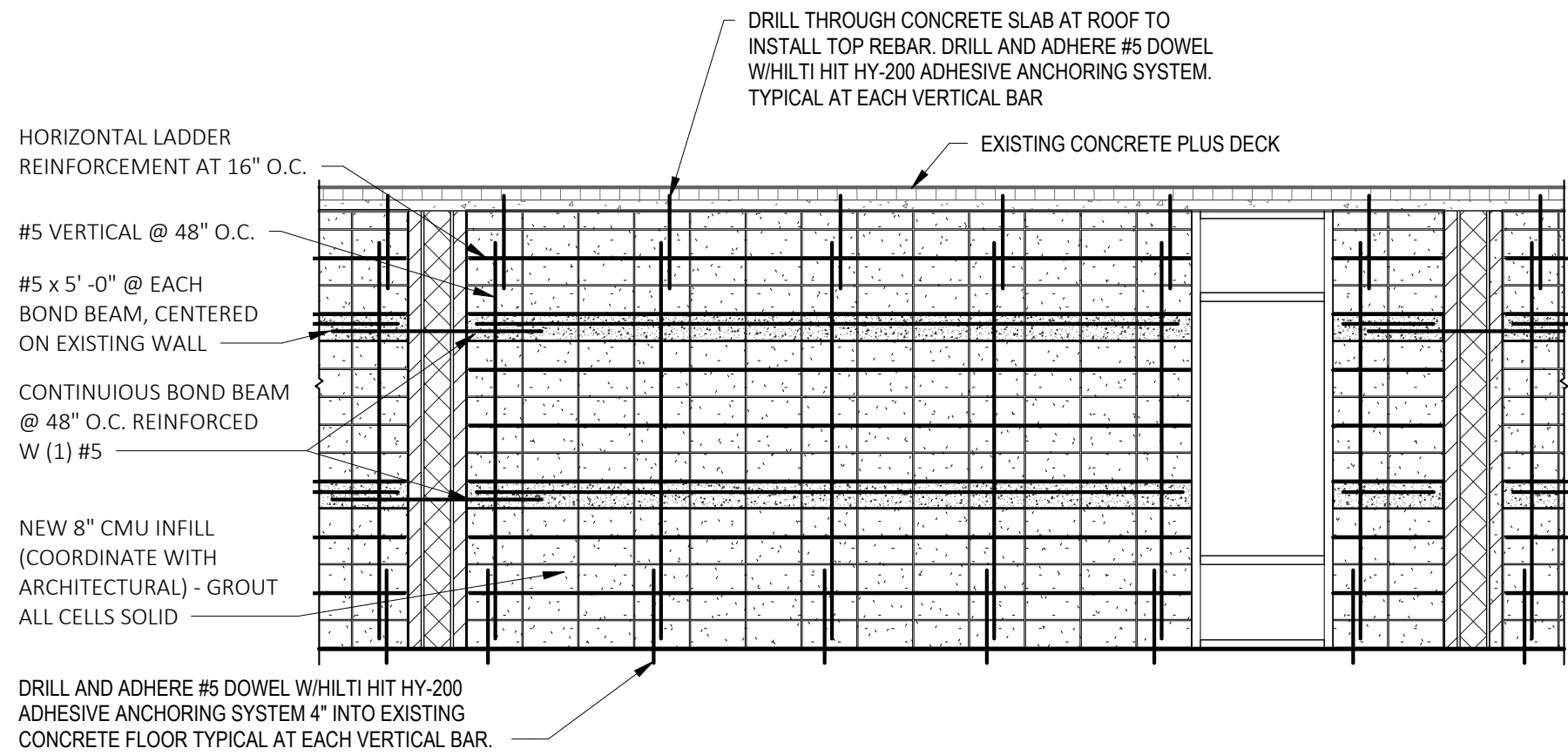


2
S-102

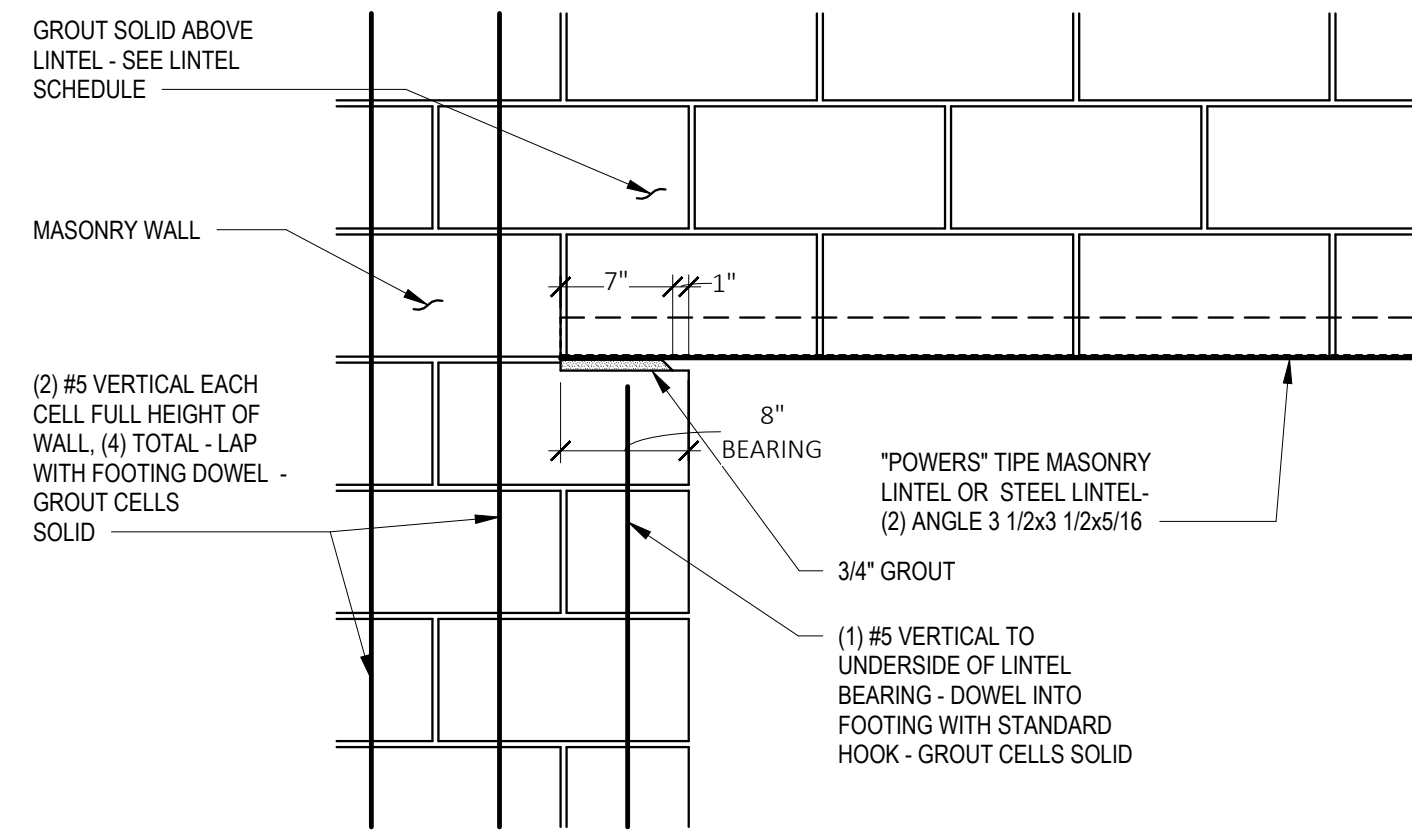
TYPICAL JOIST LOAD STRUT DETAIL

SCALE: 1" = 1'-0"

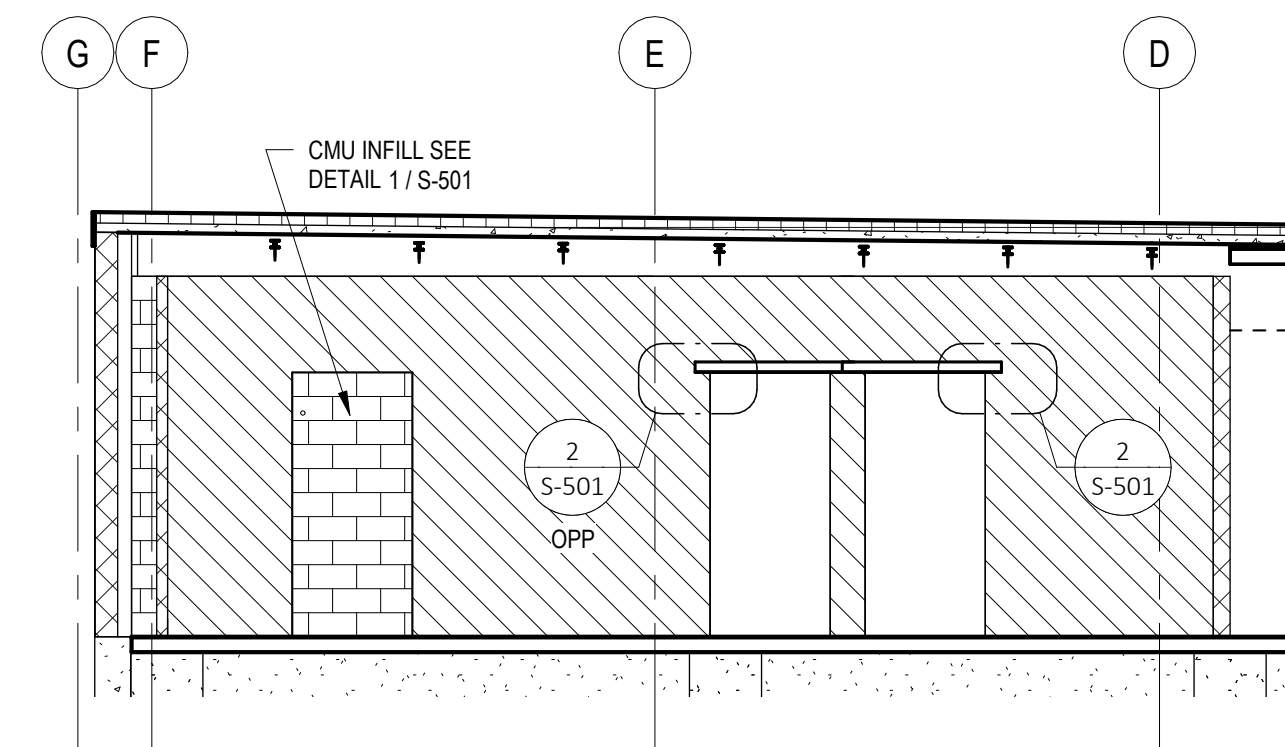




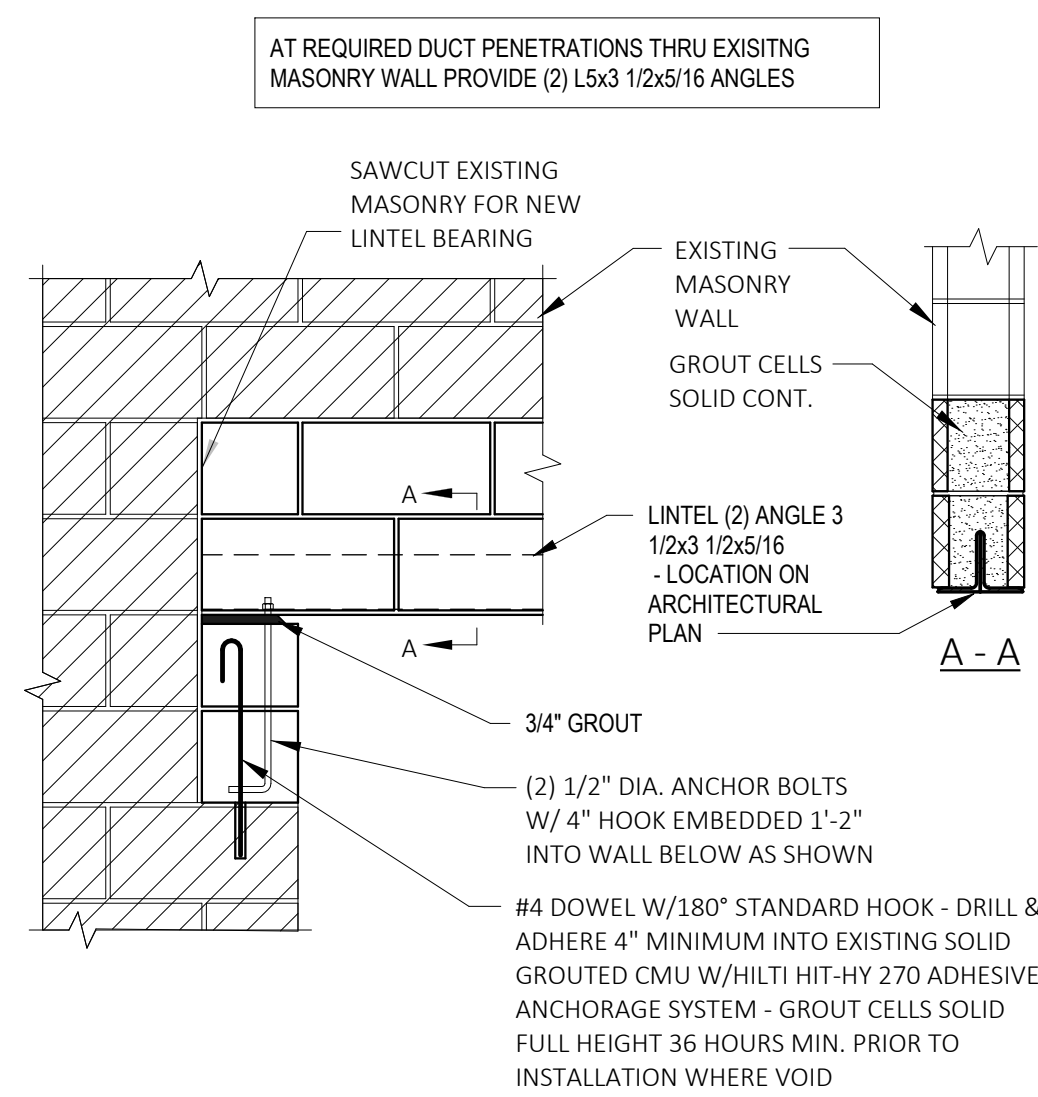
7 TYPICAL EXTERIOR WALL INFILL ELEVATION
SCALE: 1/4" = 1'-0"



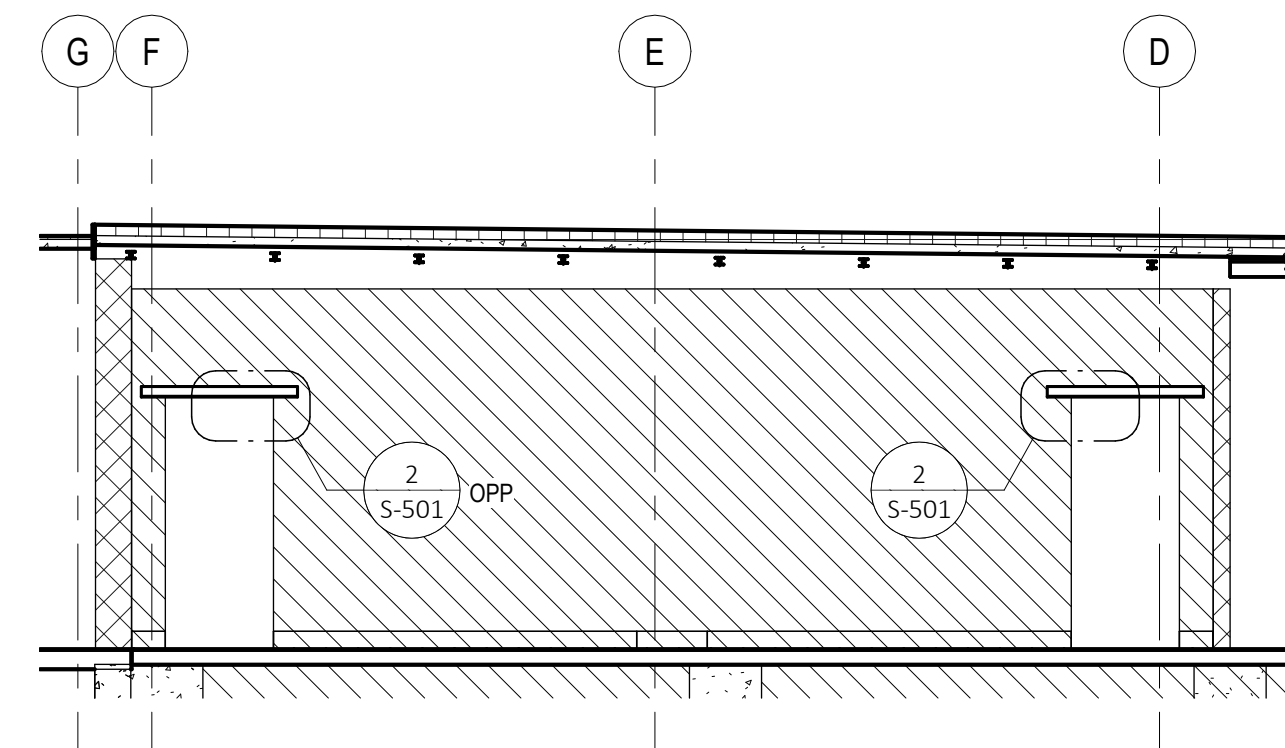
3 TYPICAL LINTEL BEARING DETAIL
SCALE: 1" = 1'-0"



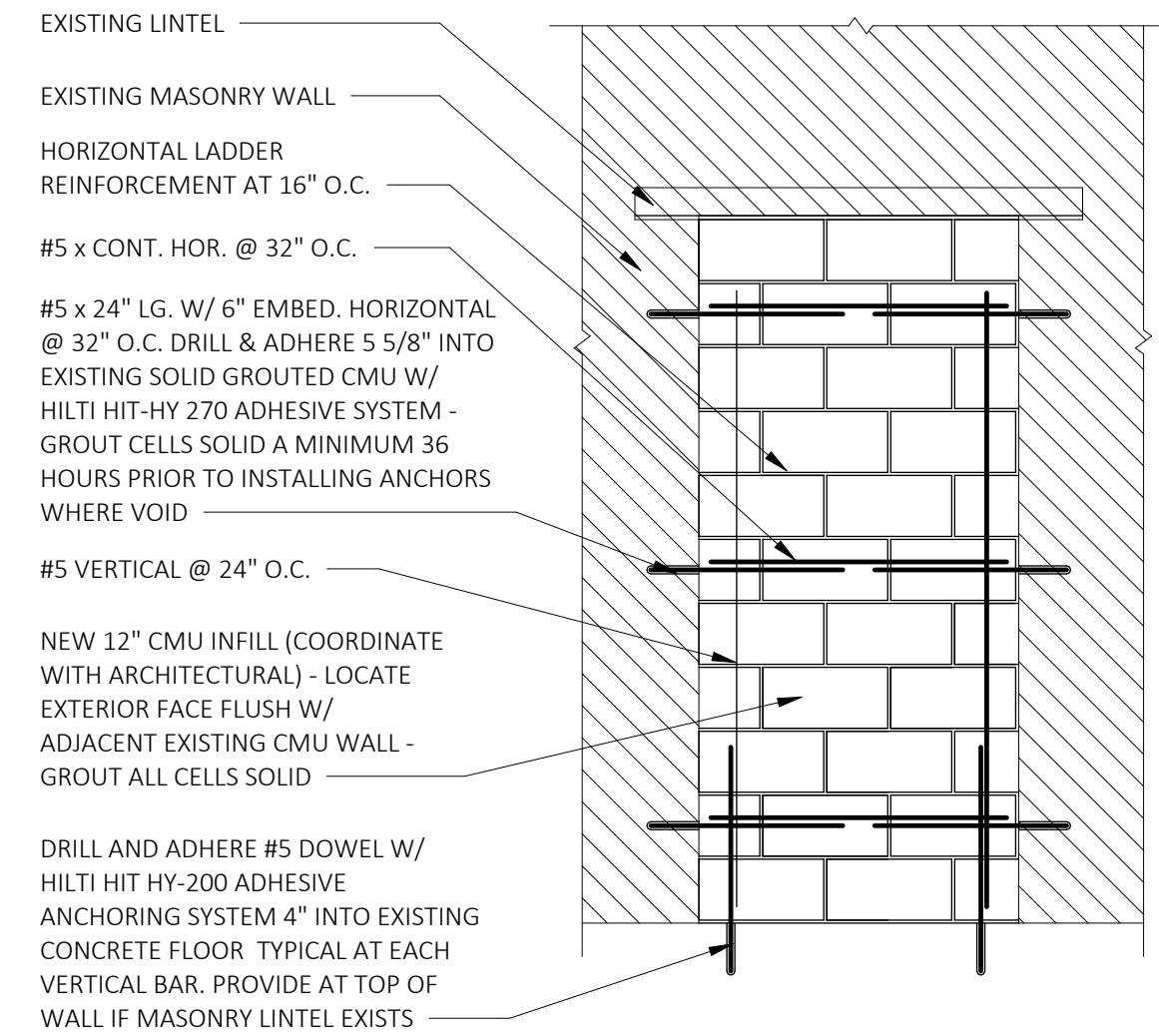
6 ELEVATION
SCALE: 3/16" = 1'-0"



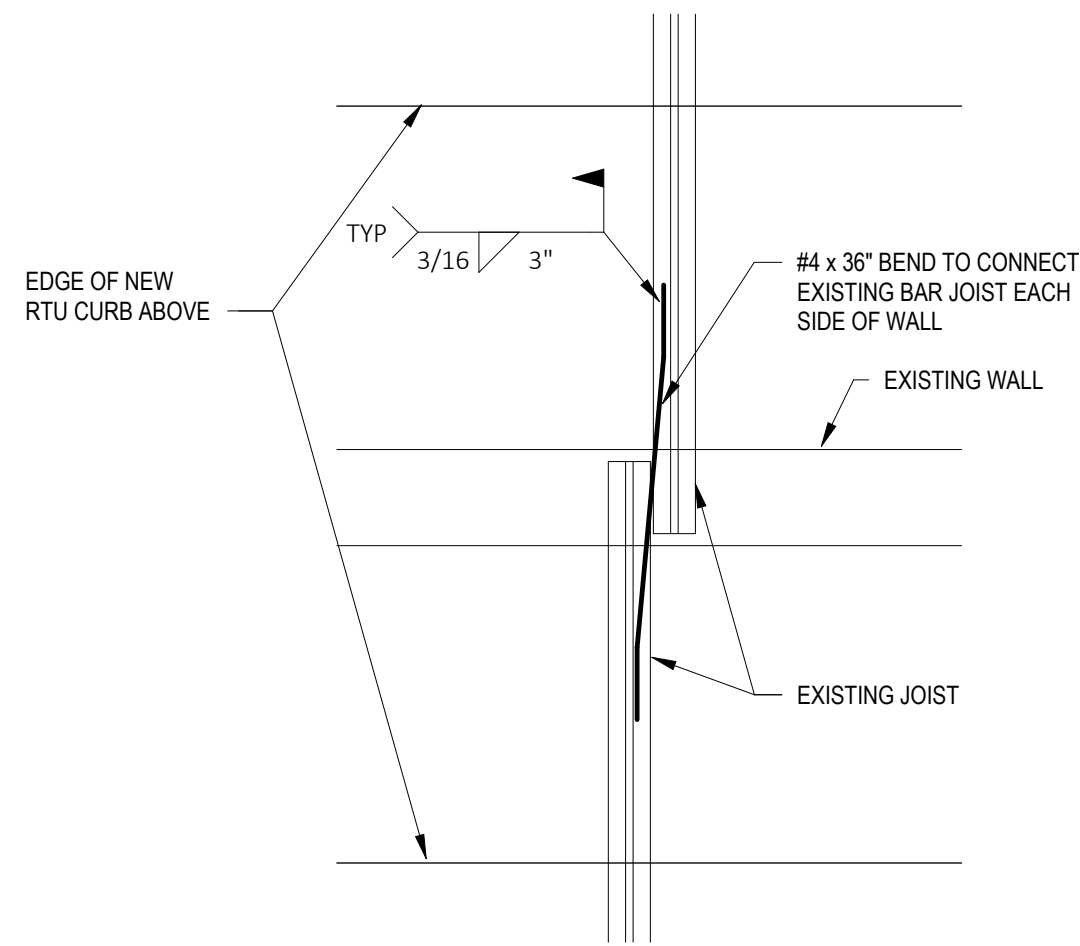
2 LINTEL BEARING DETAIL AT EXISTING
SCALE: 3/4" = 1'-0"



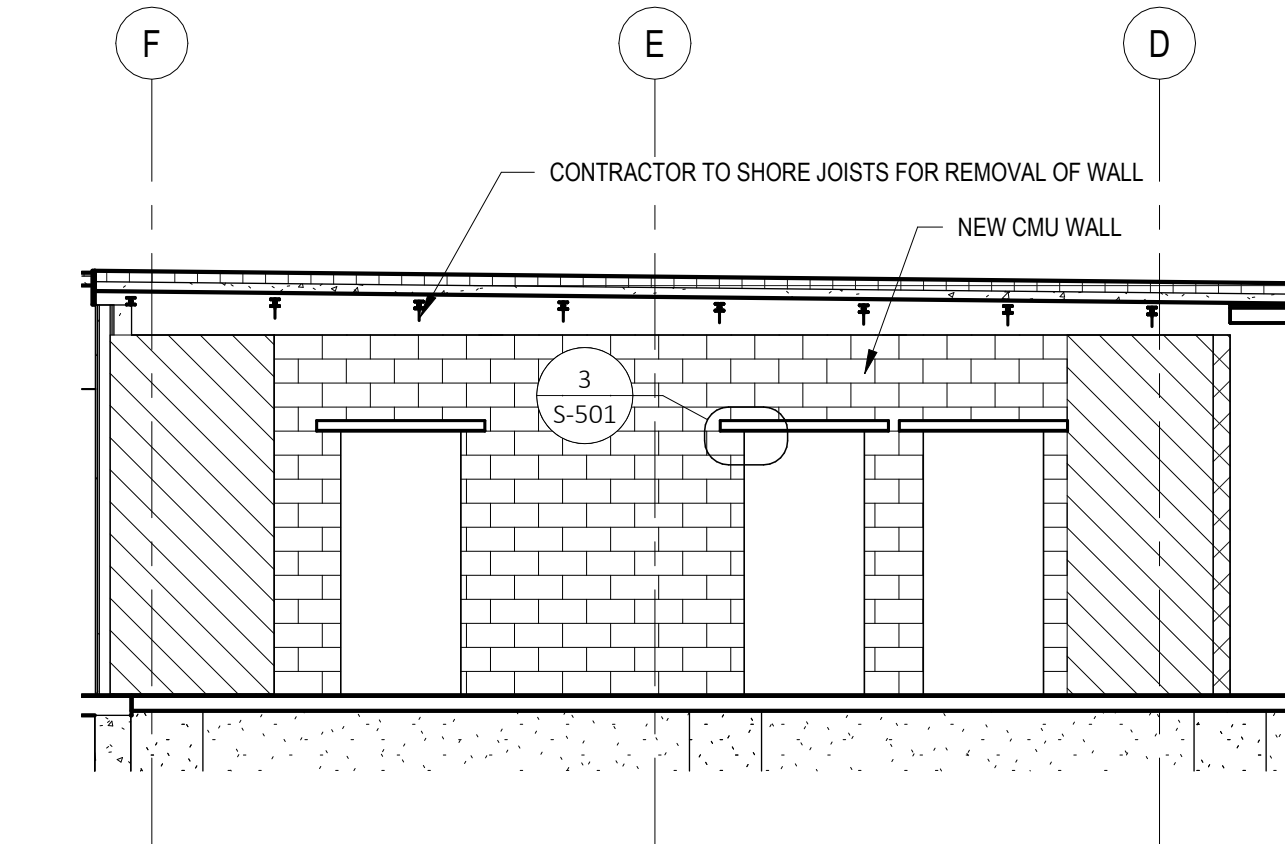
5 ELEVATION
SCALE: 3/16" = 1'-0"



1 MASONRY WALL INFILL DETAIL
SCALE: 1/2" = 1'-0"



8 DETAIL
SCALE: 3/4" = 1'-0"



4 ELEVATION
SCALE: 3/16" = 1'-0"

REVISIONS

No.	Description	Date
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ISSUE DATE:08/04/2026

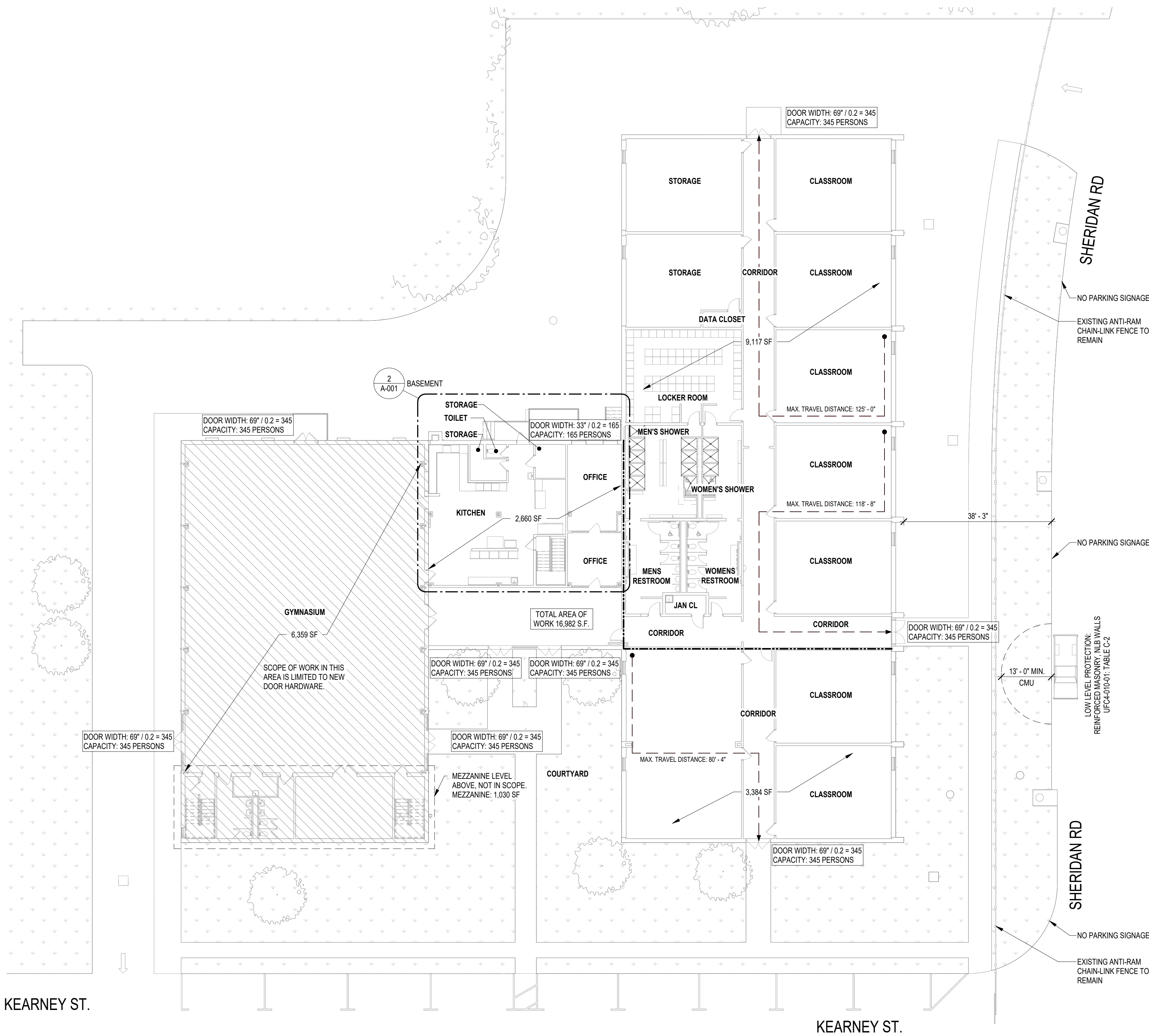
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DRAWN BY: DJW
CHECKED BY: MTL
DESIGNED BY: MTL

SHEET TITLE:
DETAILS

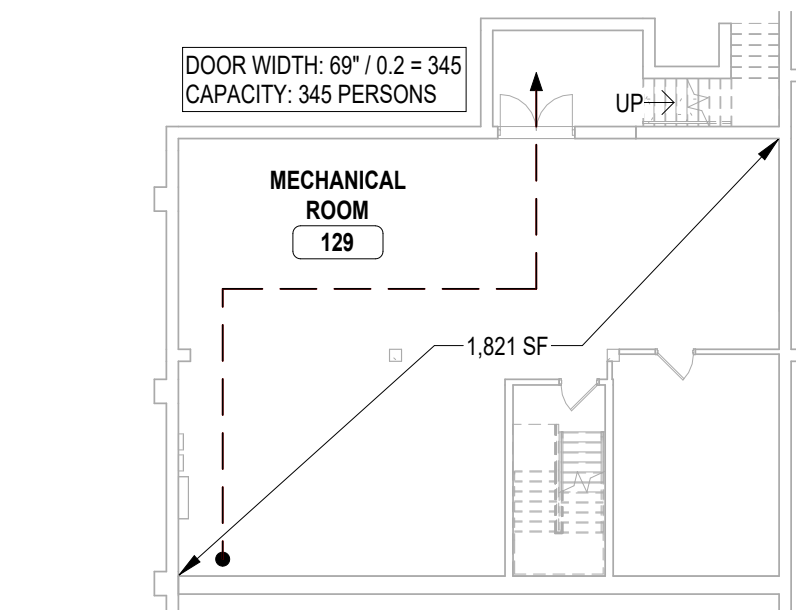
SHEET NUMBER:

S-501

SHEET 6 OF 51
08/04/2026



LIFE SAFETY PLAN
SCALE: 1/16" = 1'-0"
EL: 100'-0"



**LIFE SAFETY PLAN
- MECHANICAL ROOM**
SCALE: 1/16" = 1'-0"
EL: 89'-0"

LIFE SAFETY PLAN LEGEND
--- 2 HOUR FIRE BARRIER
AREA NOT IN SCOPE

PROJECT CODES

2024 INTERNATIONAL BUILDING CODE
2024 INTERNATIONAL EXISTING BUILDING CODE
2024 INTERNATIONAL FIRE CODE
2023 NATIONAL ELECTRICAL CODE (NFPA 70)
2024 INTERNATIONAL MECHANICAL CODE
2024 INTERNATIONAL PLUMBING CODE
2024 INTERNATIONAL FUEL GAS CODE
2024 INTERNATIONAL ENERGY CONSERVATION CODE

CODE DATA

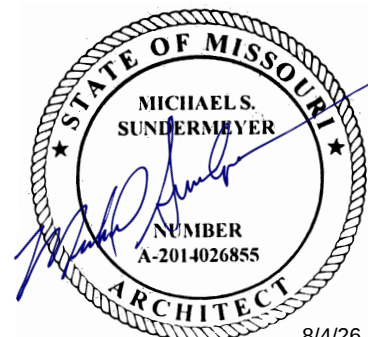
		CODE REF	
USE GROUP:	BUSINESS	IBC- 310.3	
USE GROUPS:	B: OFFICES (BUSINESS AREAS) A-3: GYM A-2: KITCHEN S-2: STORAGE & MECHANICAL BATHROOMS CIRCULATION	IBC- 1004.5	
OCCUPANT LOAD CALC: TOTAL OCCUPANTS: 189 BASEMENT SQFT: 1,821 SF MAIN FLOOR SQFT: 22,550 SF	MECHANICAL ROOM (IBC 506.1.3) OCCUPANT TOTAL AREA S-2 1,886 SF CIRCULATION 135 SF TOTAL 1,821 SF	FLOOR AREA/OCC. 300 SF/OCC. (NET)	CALCULATION 1,686 SF/300 6 6
	FIRST FLOOR OCCUPANT TOTAL AREA B 8,715 SF A-3 5,329 SF A-2 1,054 SF S-2 1,448 SF BATHROOMS 1,731 SF CIRCULATION 3,243 SF TOTAL 21,520 SF	FLOOR AREA/OCC. 150 SF/OCC. (GROSS) 50 SF/OCC. (GROSS) 200 SF/OCC. (GROSS) 300 SF/OCC. (NET)	CALCULATION 8,715 SF/150 53 107 6 5 ---
	MEZZANINE (IBC 506.1) OCCUPANT LOAD B 764 SF CIRCULATION 266 SF TOTAL 1,030 SF	FLOOR AREA/OCC. 150 SF/OCC. (GROSS)	CALCULATION 764 SF/150 6 6
CONSTRUCTION TYPE:	II-B	IBC- 602.3	
BLDG. AREA (ACTUAL/ALLOW)	(GROSS) 22,550 SF / 23,000 SF	IBC- 505.1 IBC- 506.2 IBC- 506.1.3 IBC- 903	
FIRE AREA LIMITATIONS	12,000 SF MAX FIRE AREA FOR NON-SPRINKLERED BUILDING 22,550 SF > 12,000SF : 2 HOUR FIRE BARRIER REQUIRED TO DIVIDE AREA		
TABULAR HEIGHT LIMITATION: HEIGHT INCREASE:	B: 55'-0" NONE	IBC- 504.3	
BLDG. HEIGHT ACTUAL	25' - 5"		
PLUMBING REQUIREMENTS:	MEN TOILET: 1 PER 25 FOR THE FIRST 50, 1 FOR THE REMAINDER EXCEEDING 50 LAVATORIES: 1 PER 40 FOR THE FIRST 80, 1 PER 80 FOR THE REMAINDER EXCEEDING 80 WOMEN TOILET: 1 PER 25 FOR THE FIRST 50, 1 FOR THE REMAINDER EXCEEDING 50 LAVATORIES: 1 PER 40 FOR THE FIRST 80, 1 PER 80 FOR THE REMAINDER EXCEEDING 80 GENERAL DRINKING FOUNTAIN: 1 PER 100 SERVICE SINK: 1 SERVICE SINK	IBC- 2902.1	
PROPOSED PLUMBING:	MEN TOILET: 6 LAVATORIES: 3 WOMEN TOILET: 5 LAVATORIES: 3 GENERAL DRINKING FOUNTAIN: 2 SERVICE SINK: 1		
EXIT REQUIREMENTS:	189 OCC. x 0.20 = 37.8" MIN. TOTAL EXITS SIZE	IBC- 1005.3.2	
FIRE SUPPRESSION SYSTEM:	NONE	IBC- 903	
FIRE ALARM SYSTEM:	MANUAL FIRE ALARM SYSTEM	IBC- 907.2.9	

CODE RELATED NOTES

- LEVEL 2 ALTERATIONS INCLUDE THE ADDITION OR ELIMINATION OF ANY DOOR OR WINDOW, THE RECONFIGURATION OR EXTENSION OF ANY SYSTEM, OR THE INSTALLATION OF ADDITIONAL EQUIPMENT, AND SHALL APPLY WHERE THE WORK AREA IS EQUAL TO OR LESS THAN 50 PERCENT OF THE BUILDING AREA.
 - WORK AREA: PORTION OR PORTIONS OF A BUILDING CONSISTING OF ALL RECONFIGURED SPACES AS INDICATED ON THE CONSTRUCTION DOCUMENTS. WORK AREA EXCLUDES OTHER PORTIONS OF THE BUILDING WHERE WORK IS REQUIRED BY THE INTERNATIONAL EXISTING BUILDING CODE. IBC- 2024
- BUILDING WILL BE SEPARATED BY A 2-HOUR FIRE BARRIER BETWEEN THE NEW RESTROOMS AND EXISTING OFFICES AND HALLWAY AT CLASSROOMS.
- NEWLY INSTALLED ELECTRICAL EQUIPMENT SHALL COMPLY WITH THE REQUIREMENTS OF SECTION 806.
- THE LENGTH OF DEAD-END CORRIDORS IN NEWLY CONSTRUCTED SPACES SHALL ONLY BE REQUIRED TO COMPLY WITH THE PROVISIONS OF SECTION 804.8.
- GUARDRAILS/ HANDRAILS IN STAIRWAYS SHALL COMPLY WITH REQUIREMENTS OF SECTION 802.5.1 AND 802.5.2 IN ALL WORK AREAS.
 - 802.5.1: EVERY PORTION OF A FLOOR, SUCH AS A BALCONY OR A LOADING DOCK, THAT IS MORE THAN 30 INCHES ABOVE THE FLOOR OR GRADE BELOW AND IS NOT PROVIDED WITH GUARDS, OR THOSE IN WHICH THE EXISTING GUARDS ARE JUDGED TO BE IN DANGER OF COLLAPSING, SHALL BE PROVIDED WITH GUARDS
 - 802.5.2: WHERE THERE ARE NO GUARDS OR WHERE EXISTING GUARDS MUST BE REPLACED, THE GUARDS SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE.
- OCCUPANCY REQUIREMENTS INCLUDE A FIRE ALARM SYSTEM THAT SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 803.1.1.1 THROUGH 803.4.1.6. EXISTING ALARM-NOTIFICATION APPLIANCES SHALL BE AUTOMATICALLY ACTIVATED THROUGHOUT THE BUILDING, WHERE THE BUILDING IS NOT EQUIPPED WITH FIRE ALARM SYSTEM, ALARM NOTIFICATION APPLIANCES WITHIN THE WORK AREA SHALL BE PROVIDED AND AUTOMATICALLY ACTIVATED.
- SUPPLEMENTAL FIRE ALARM SYSTEM REQUIREMENTS, WHERE THE WORK AREA ON ANY FLOOR EXCEEDS 50% OF THAT FLOOR AREA, SECTION 803.4.1 SHALL APPLY THROUGHOUT THE FLOOR.
- 803.2.2 - WORK AREAS THAT HAVE EXITS OR CORRIDORS SERVING AN OCCUPANT LOAD GREATER THAN 30 SHALL BE PROVIDED WITH AUTOMATIC SPRINKLER PROTECTION WHERE BOTH OF THE FOLLOWING CONDITIONS OCCUR:
 - THE WORK AREA IS REQUIRED TO BE PROVIDED WITH AUTOMATIC SPRINKLER PROTECTION IN ACCORDANCE WITH IBC AS APPLICABLE TO NEW CONSTRUCTION.
 - THE WORK AREA EXCEEDS 50% OF THE FLOOR AREA.
- FIRE ALARMS - SPRINKLER OR NON-SPRINKLERED
- 804 MEANS OF EGRESS
 - WHERE THE WORK AREA AND THE MEANS OF EGRESS SERVING IT COMPLIES WITH NFPA101
 - MEANS OF EGRESS COMPLYING WITH THE REQUIREMENTS OF THE BUILDING CODE UNDER WHICH THE BUILDING WAS CONSTRUCTED SHALL BE CONSIDERED TO BE COMPLIANT MEANS OF EGRESS IF, IN THE OPINION OF THE CODE OFFICIAL, THEY DO NOT CONSTITUTE A DISTINCT HAZARD TO LIFE.
 - 804.4 REFUGE AREAS - WHERE ALTERATIONS AFFECT THE CONFIGURATION OF THE AREA UTILIZED AS A REFUGE AREA, THE CAPACITY OF THE REFUGE AREA SHALL NOT BE REDUCED BELOW THE REQUIRED CAPACITY OF THE REFUGE AREA FOR HORIZONTAL EXITS IN ACCORDANCE WITH SECTION 1026.4 OF THE IBC.
 - 804.5 NUMBER OF EXITS OR ACCESS TO EXITS SHALL BE IN ACCORDANCE WITH SECTIONS 804.5.1 THROUGH 804.5.3.
 - EXITS SHALL BE BASED ON OCCUPANCY AND OCCUPANT LOAD, AND COMPLY WITH SECTIONS 804.5.1.1 AND 804.5.1.2, AND IBC 1006.3.4(2).
- SITE PLANNING STANDARDS (UFC 4-010-01)
 - 3-2.1.1: THIS STANDARD DOES NOT ESTABLISH THE REQUIREMENT FOR CLEAR ZONES.
 - FIGURE 3-1: 20FT MIN STANDOFF DISTANCE IN INNER CLEAR ZONE; 50FT AGGREGATE STANDOFF IN OUTER CLEAR ZONE.
 - 3-3.3: ELECTRICAL AND MECHANICAL EQUIPMENT MAY BE LOCATED WITHIN UNOBSTRUCTED SPACES IF THEY DO NOT PROVIDE OPPORTUNITIES FOR CONCEALMENT OF EXPLOSIVES AS DESCRIBED IN UFC 4-010-01 OR IF THEY ARE ENCLOSED.
 - 3-11: GLAZING THAT IS IN COMPLIANCE WITH THIS STANDARD IS NOT REQUIRED TO BE DESIGNED OR CONSTRUCTED FOR BLAST RESISTANCE. IT IS ONLY INTENDED TO MINIMIZE HAZARDOUS GLAZING FRAGMENTS.
 - 3-12.2: WHERE THE MAIN ENTRANCE FACES UNCONTROLLED VANTAGE POINTS, EITHER USE A DIFFERENT ENTRANCE AS THE MAIN ENTRANCE OR SCREEN THAT ENTRANCE TO LIMIT THE ABILITY OF POTENTIAL AGGRESSORS TO TARGET PEOPLE ENTERING AND LEAVING THE BUILDING USING MITIGATION SUCH AS WALLS, PRIVACY FENCING, OR VEGETATION.
 - 3-17.2: ALL AIR INTAKES TO BE AT LEAST 10FT ABOVE THE GROUND
 - 4-2.4: KEEP AREAS WITHIN 33FT OF ALL EXPEDITIONARY STRUCTURES FREE OF ITEMS OTHER THAN THOSE THAT ARE PART OF UTILITIES AND OTHER SUPPORTING INFRASTRUCTURE. DO NOT ALLOW ROADWAYS AND TRASH CONTAINERS WITH UNOBSTRUCTED SPACES. ALLOWING PARKING WITHIN UNOBSTRUCTED SPACES WILL BE DETERMINED BY SECURITY PERSONNEL.

STATE OF MISSOURI
MIKE KEHOE
GOVERNOR

CASCO DIVERSIFIED CORPORATION
ARCHITECTURAL
LICENSE #: 000329
EXP. DATE: 12/31/2027



Professional of Record:
MICHAEL S. SUNDERMEYER
LICENSE #: 2014026855
EXP. DATE: 12/31/2026

CASCO

12 SUNDERMEYER DRIVE, SUITE 100, ST. LOUIS, MO 63143
T 314-621-1100

OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES
MANAGEMENT,
DESIGN AND CONSTRUCTION

DEPARTMENT OF MISSOURI
NATIONAL GUARD

INTERIOR AND EXTERIOR
RENOVATION

JEFFERSON BARRACKS
READINESS CENTER
74 KEARNEY ST.
ST. LOUIS, MO 63125

PROJECT # T2504-03
SITE # 6303
FACILITY #8136303050

REVISIONS

No.	Description	Date
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ISSUE DATE: 08/04/2026

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CHECKED BY: RAR
DESIGNED BY: MJM

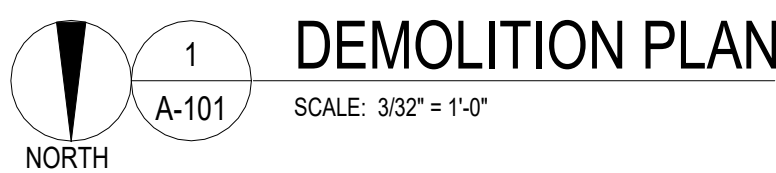
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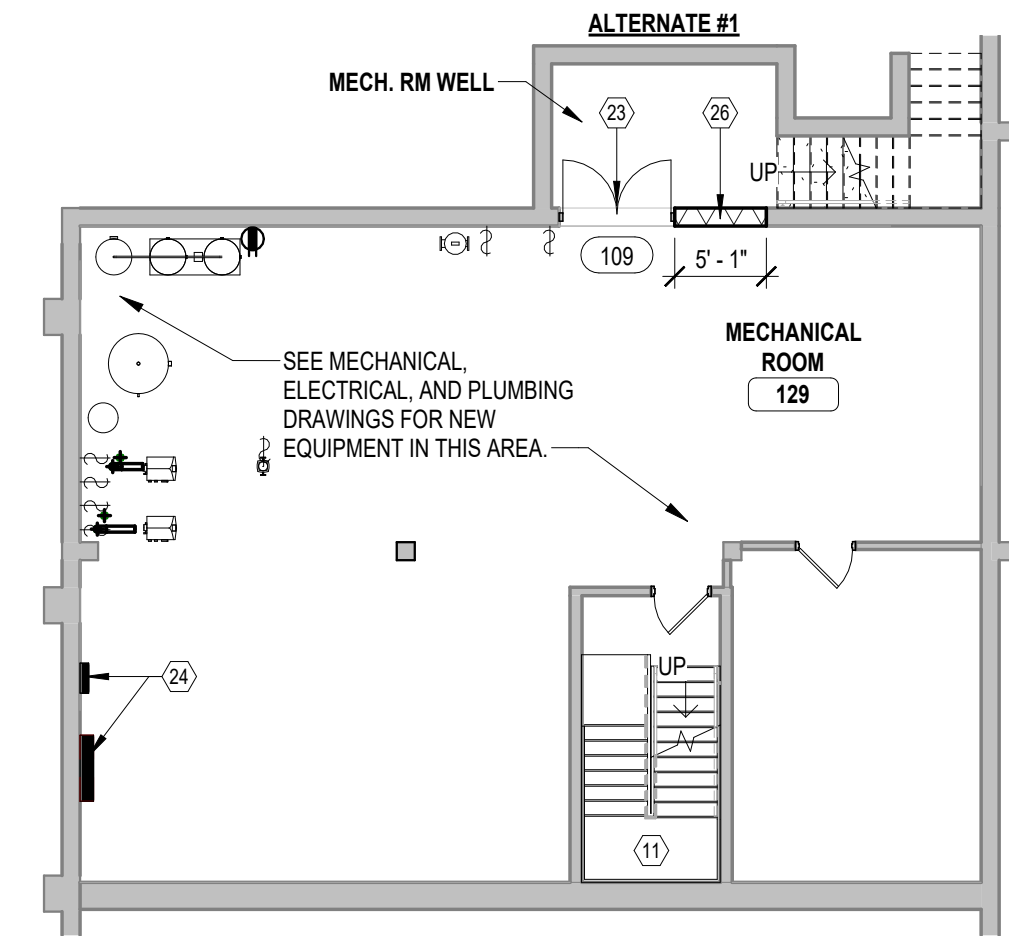
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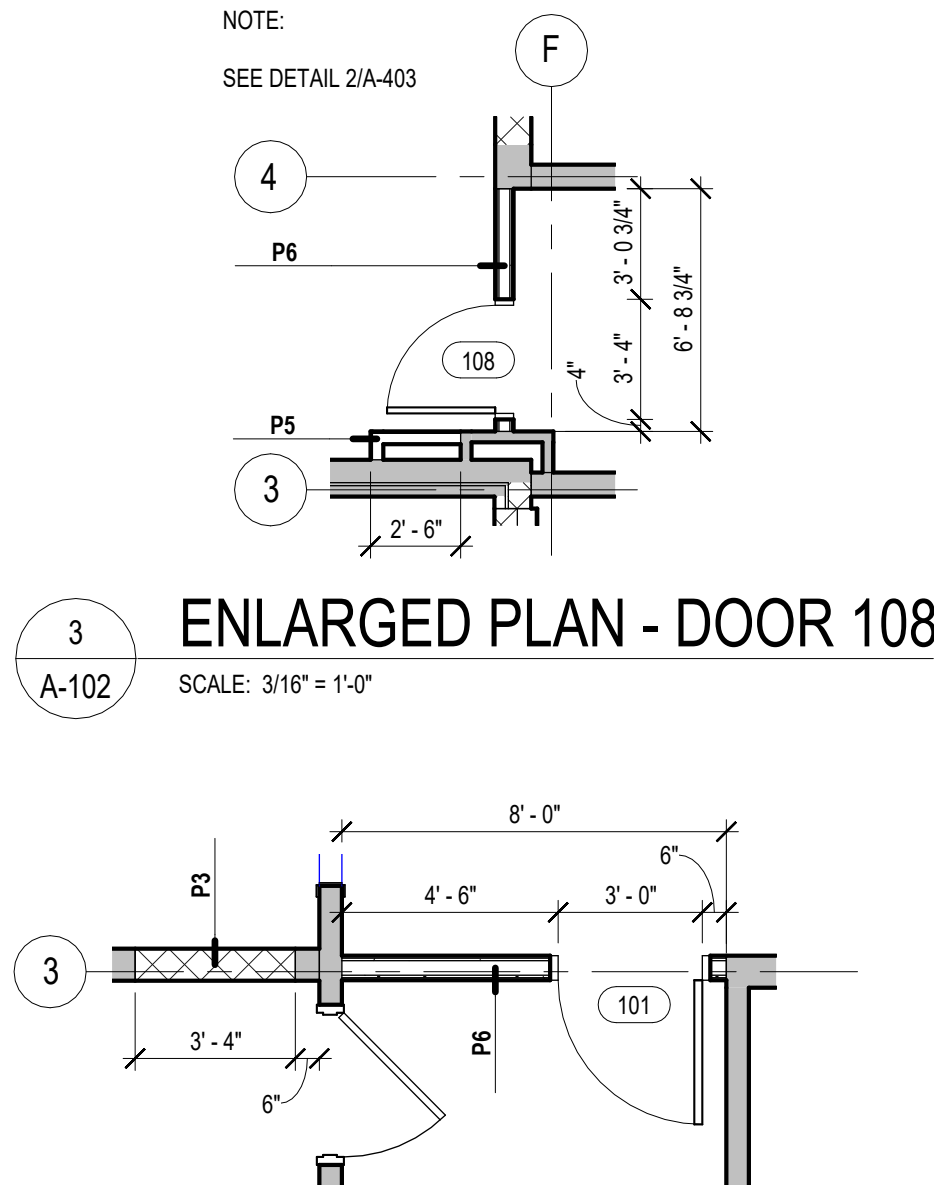
SHEET 7 OF 51
08/04/2026

 EXISTING CONSTRUCTION TO REMAIN
 EXISTING WALLS, DOORS, ETC. TO BE REMOVED
 AREA NOT IN SCOPE
 SLAB CUT

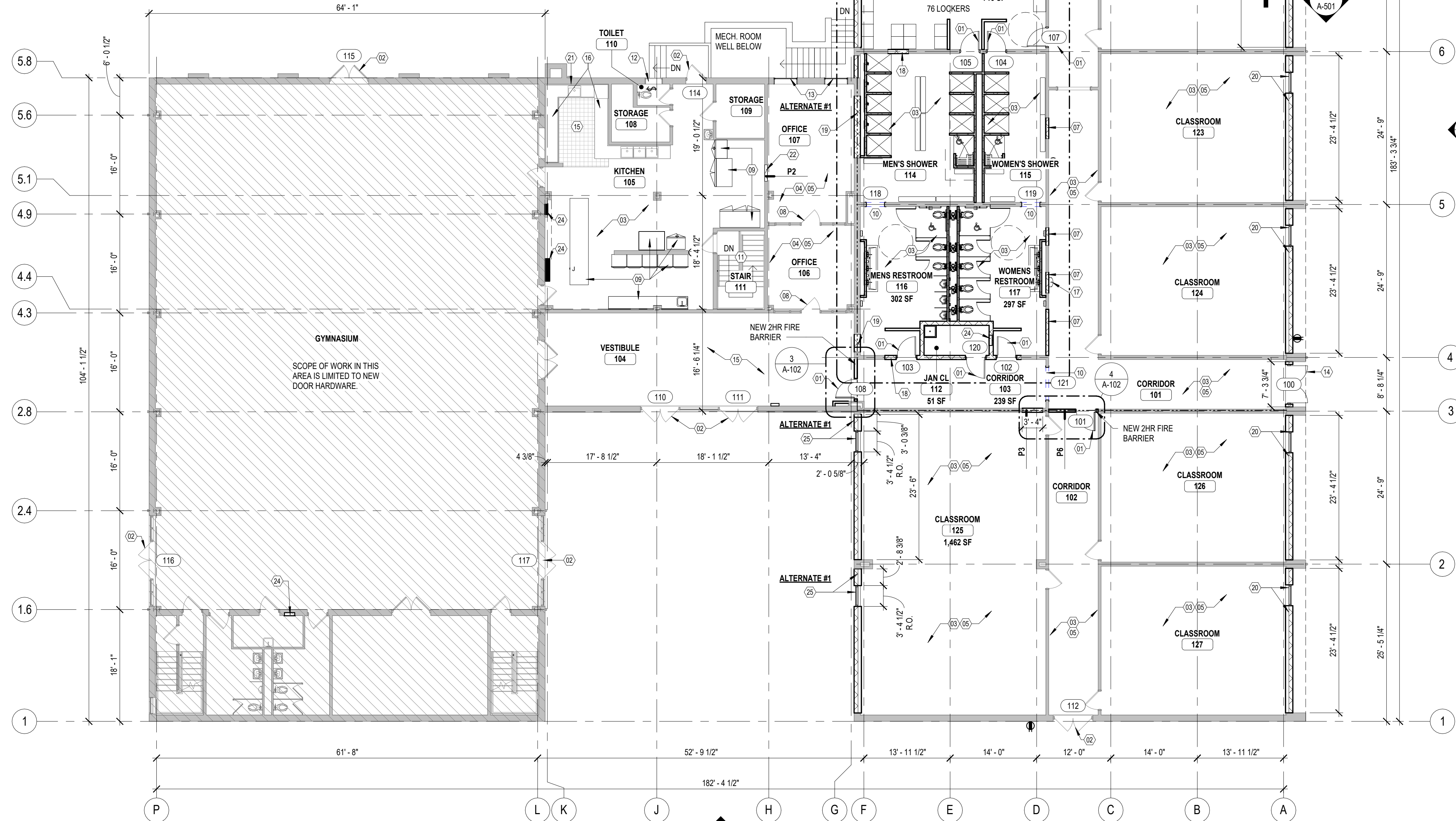




MECHANICAL ROOM
SCALE: 3/32" = 1'-0"
NORTH



ENLARGED PLAN - DOOR 101
SCALE: 1/4" = 1'-0"



FLOOR PLAN
SCALE: 3/32" = 1'-0"
NORTH

NOTE:

SEE DETAIL 2/A-403

ENLARGED PLAN - DOOR 108

SCALE: 3/16" = 1'-0"

ENLARGED PLAN - DOOR 101

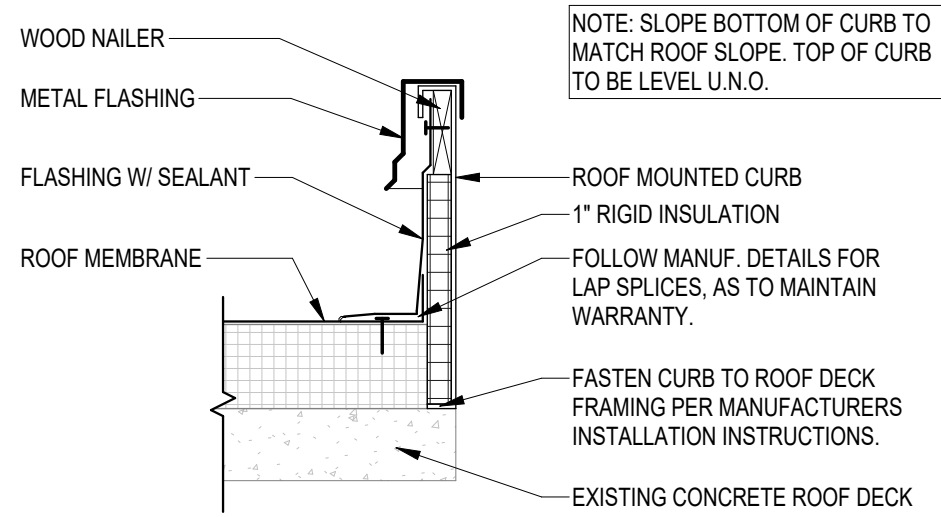
SCALE: 1/4" = 1'-0"

GENERAL CONSTRUCTION NOTES:

1. FIELD VERIFY EXISTING CONDITIONS, DIMENSIONS, AND MATERIALS PRIOR TO BEGINNING WORK. DISCREPANCIES BETWEEN DRAWINGS AND DISCIPLINES MUST BE REPORTED TO THE ARCHITECT IMMEDIATELY.
2. DO NOT SCALE DRAWINGS - WRITTEN OR FIGURED DIMENSIONS TAKE PRECEDENCE OVER SCALE MEASUREMENTS. DIMENSIONS ARE TO /FROM FINISH FACE OR WALL OF COLUMN LINE.
3. CONTRACTOR MUST COMPLY WITH OSHA STANDARDS AND MAINTAIN A SAFE WORK ENVIRONMENT.
4. ALL MATERIALS SHALL BE NEW AND INSTALLED PER MANUFACTURER SPECIFICATIONS FOR ADHERENCE, BLOCKING REQUIREMENTS, AND LEVEL OF FINISH.
5. SEE FINISH SCHEDULE SHEET A-601 FOR PAINT, FLOOR COATINGS AND FINISHES, VINYL WALL BASE, ETC.
6. CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF EXISTING CONSTRUCTION AND PUBLIC AREAS DURING CONSTRUCTION. ANY DAMAGE TO EXISTING FINISHES TO REMAIN MUST BE REPAIRED TO ITS ORIGINAL STATE, AND THE SITE MAINTAINED IN A CLEAN AND SAFE MANNER.
7. SEE FINISH SCHEDULE AND FINISH LEGEND ON SHEET A-601.
8. AT ABANDONED POWER AND DATA OUTLETS, INSTALL NEW STAINLESS STEEL COVER PLATES.
9. SEE SHEET A-403 FOR NEW PARTITION TYPES.

FIRST FLOOR KEYED NOTES

- 01 INSTALL NEW DOOR, SEE DOOR AND HARDWARE SCHEDULE. PAINT DOOR AND FRAME, SEE FINISH SCHEDULE ON SHEET A-601.
- 02 INSTALL NEW DOOR HARDWARE ON EXISTING DOOR, SEE HARDWARE SCHEDULE ON SHEET A-601.
- 03 APPLY EPOXY FLOOR FINISH PER FINISH SCHEDULE ON SHEET A-601.
- 04 INSTALL NEW LVT, PER FINISH SCHEDULE.
- 05 INSTALL 6" VINYL BASE PER FINISH SCHEDULE. FOLLOW MANUFACTURER DIRECTIONS FOR INSTALLATION OVER EXISTING GLAZED BLOCK, SEE SPECIFICATIONS AND FINISH SCHEDULE.
- 06 CONTRACTOR TO INSTALL OWNER PROVIDED LOCKERS.
- 07 INFILL OPENINGS WITH NEW 6" CMU, MATCH HORIZONTAL STACK BOND PATTERN. SEE DETAIL 1/A-501. FINISH PER SCHEDULE, SHEET A-601.
- 08 CLEAN AND RECONDITION EXISTING WOOD DOORS AND FRAMES. CLEAN HARDWARE TO ENSURE PROPER WORKING FUNCTION. SEE SPECIFICATIONS.
- 09 INSTALL KITCHEN EQUIPMENT IN ORIGINAL LOCATIONS, CONNECT TO POWER SOURCE. TEST TO ENSURE PROPER WORKING FUNCTION. NOTIFY OWNER AND ARCHITECT OF ANY EQUIPMENT FAILURES. SEE ELECTRICAL DRAWINGS.
- 10 INSTALL NEW FLAT JAMB HOLLOW METAL FRAME, PAINT ACCORDING TO FINISH SCHEDULE. SEE SHEET A-601.
- 11 PAINT EXISTING HANDRAIL, STRINGERS, NOSINGS, AND RISERS. DO NOT SAND WHEN REFINISHING. SEE FINISH SCHEDULE AND ABATEMENT SPECIFICATIONS.
- 12 EXISTING WINDOW TO REMAIN.
- 13 INSTALL NEW FIXED WINDOW. SEE WINDOW TYPES 6/A-202.
- 14 INSTALL NEW BLAST RESISTANT FRAME, DOOR, AND HARDWARE. SEE SPECIFICATIONS.
<



3
A-103
NEW ROOF CURB
SCALE: 1 1/2" = 1'-0"

DEMO ROOF PLAN KEYED NOTES [#]

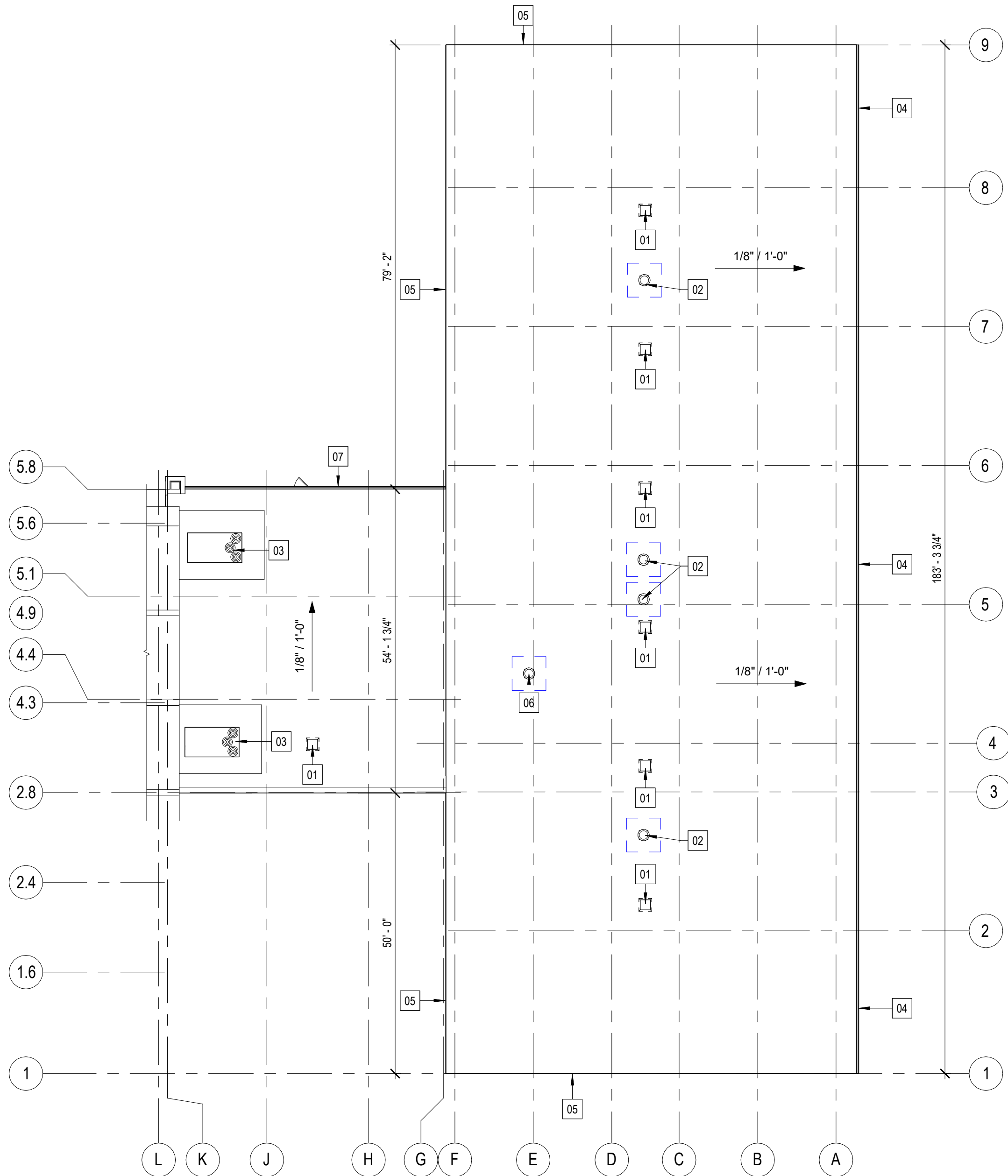
- 01 REMOVE AND DISPOSE OF EXISTING SKYLIGHTS. REPLACE WITH INSULATED CURB COVER.
- 02 REMOVE AND DISPOSE OF EXISTING EXHAUST FAN. REPLACE WITH INSULATED CURB COVER. SEE MECHANICAL DRAWINGS FOR MORE INFORMATION.
- 03 EXISTING RTU TO REMAIN.
- 04 REMOVE AND DISPOSE OF SOFFIT, GUTTERS, DOWNSPOUTS, AND FASCIA PANELS.
- 05 REMOVE AND DISPOSE OF FASCIA AND COPING.
- 06 REMOVE EXISTING EXHAUST FAN. EXISTING ROOF PENETRATION TO BE REUSED FOR NEW EXHAUST FAN. SEE MECHANICAL DRAWINGS FOR MORE INFORMATION.
- 07 EXISTING GUTTER TO REMAIN.

ROOF PLAN KEYED NOTES [X]

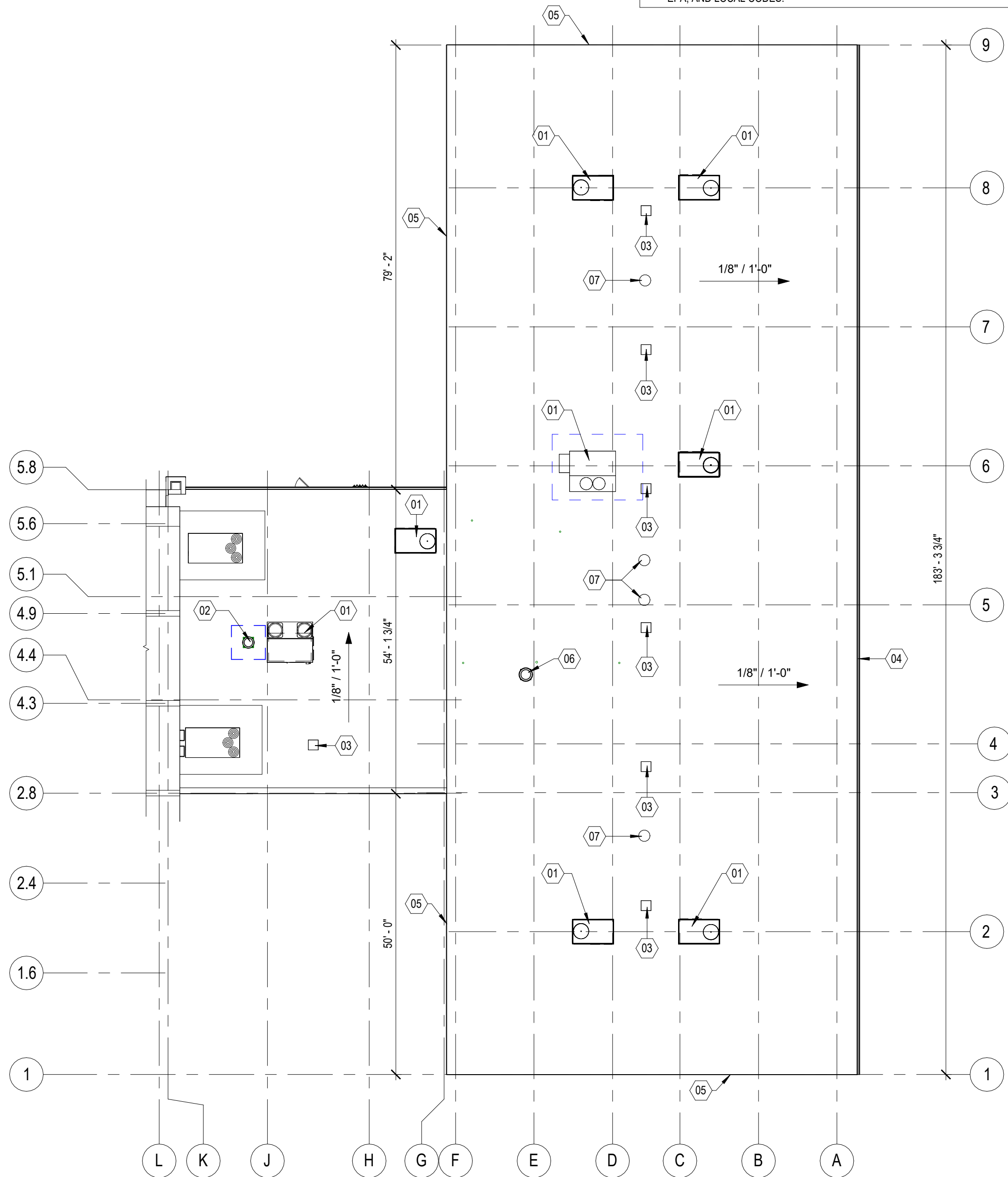
- 01 NEW RTU. REFER TO MECHANICAL DRAWINGS FOR MORE INFORMATION.
- 02 NEW EXHAUST FAN. REFER TO MECHANICAL DRAWINGS FOR MORE INFORMATION.
- 03 CURB CAPS. SEE MECHANICAL DRAWINGS FOR MORE INFORMATION.
- 04 NEW PREFABRICATED METAL GUTTER.
- 05 PREFINISHED METAL COPING. SEE DETAIL 5/A-502.
- 06 NEW EXHAUST FAN. REUSE EXISTING ROOF PENETRATION. REFER TO MECHANICAL DRAWINGS FOR MORE INFORMATION.
- 07 EXISTING ROOF PENETRATION TO BE CAPPED. SEE MECHANICAL DRAWINGS FOR MORE INFORMATION.

GENERAL CONSTRUCTION NOTES:

1. EXISTING TPO ROOFING SYSTEM IS UNDER MANUFACTURER WARRANTY. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING TPO ROOFING MEMBRANE, FLASHING, AND INSULATION FROM DAMAGE DURING DEMO AND CONSTRUCTION.
2. ALL WORK PERTAINING TO THE EXISTING ROOF, INCLUDING PENETRATIONS, ALTERATION, OR REPAIRS, SHALL BE PERFORMED BY A MANUFACTURER-CERTIFIED CONTRACTOR TO MAINTAIN THE EXISTING WARRANTY.
3. PROVIDE 1/2" PLYWOOD SHEATHING OVER 2" INSULATION BOARD (OR APPROVED EQUAL) ON ALL ROOF PATHS USED BY TRADESMEN FOR PROTECTION OF EXISTING TPO MEMBRANE.
4. PROVIDE TEMPORARY BARRICADES, DUST CONTROL, AND PROTECTION FOR EXISTING STRUCTURES, DEVICES, AND UTILITIES TO REMAIN.
5. DO NOT ALLOW CONSTRUCTION DEBRIS, TOOLS, OR MATERIALS TO BE STORED ON THE ROOF.
6. IF TPO IS DAMAGED DURING DEMO AND/OR CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY STOP WORK IN THE AFFECTED AREA AND NOTIFY THE OWNER AND ARCHITECT.
7. FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO STARTING DEMOLITION WORK.
8. COORDINATE UTILITY SHUT-DOWNS WITH OWNER ONE WEEK PRIOR TO SHUT DOWN.
9. PRIOR TO DEMOLITION WORK, ABATE ALL MATERIALS WITH LEAD BASED PAINT. SEE ABATEMENT SPECIFICATIONS.
10. CONTRACTOR TO PROVIDE SHORING AND SUPPORT TO EXISTING STRUCTURE DURING DEMOLITION AND CONSTRUCTION. DO NOT REMOVE STRUCTURAL ELEMENTS UNTIL TEMPORARY SUPPORTS ARE IN PLACE.
11. REMOVE INDICATED MATERIALS. SHOWN DASHED AND NOTED IN KEYED NOTES, INCLUDING ITEMS WITHIN WALLS, U.N.O.
12. REMOVE ALL DEBRIS FROM THE SITE REGULARLY AND DISPOSE OF IT LEGALLY. TURN OVER ANY SALVAGED ITEMS TO OWNER.
13. REMOVE OR RELOCATE EXISTING ELECTRICAL CONDUIT PER ELECTRICAL DRAWINGS AND SPECIFICATIONS.
14. REMOVE OR RELOCATE PLUMBING PIPING PER PLUMBING DRAWINGS AND SPECIFICATIONS.
15. PATCH AND REPAIR ANY EXISTING SURFACES AFFECTED BY DEMOLITION TO MATCH ADJACENT OR NEW CONSTRUCTION SPECIFICATIONS.
16. CONTRACTOR TO MAINTAIN A CLEAN AND SAFE SITE IN ACCORDANCE WITH OSHA, EPA, AND LOCAL CODES.



1
A-103
DEMO ROOF PLAN @ KITCHEN AND CLASSROOM WING
SCALE: 1 1/16" = 1'-0"



2
A-103
ROOF PLAN @ KITCHEN AND CLASSROOM WING
SCALE: 1 1/16" = 1'-0"

STATE OF MISSOURI
MIKE KEHOE
GOVERNOR

CASCO DIVERSIFIED CORPORATION
ARCHITECTURAL
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Professional of Record:
MICHAEL S. SUNDERMEYER
LICENSE #: 2014026855
EXP. DATE: 12/31/2026

CASCO
12 SUNDER DRIVE, SUITE 100, ST. LOUIS, MO 63143
T 314-601-1100

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JEFFERSON BARRACKS
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74 KEARNEY ST.
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PROJECT # T2504-03
SITE # 6303
FACILITY #8136303050

REVISIONS

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ISSUE DATE: 08/04/2026

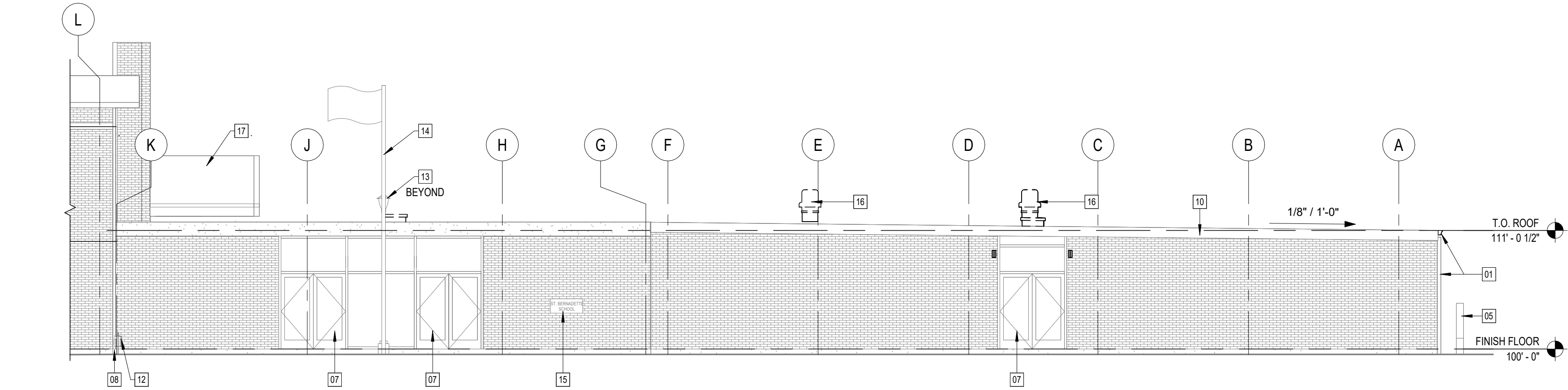
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DESIGNED BY: MJM

SHEET TITLE:
ROOF PLANS

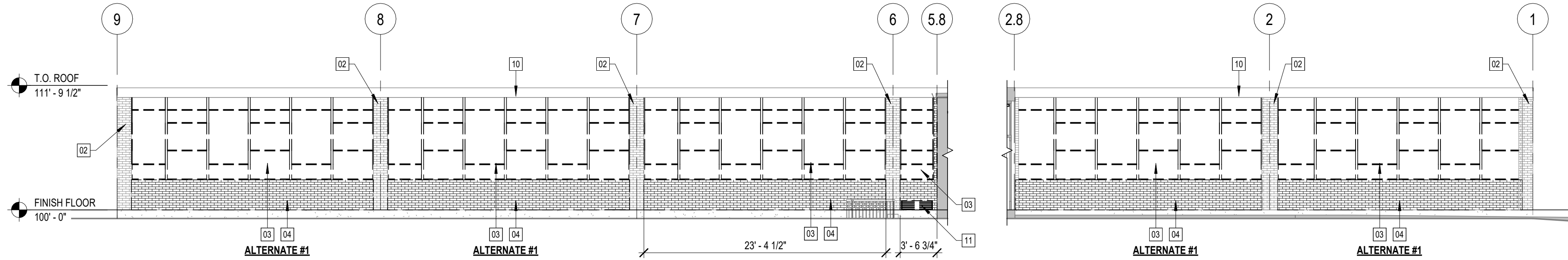
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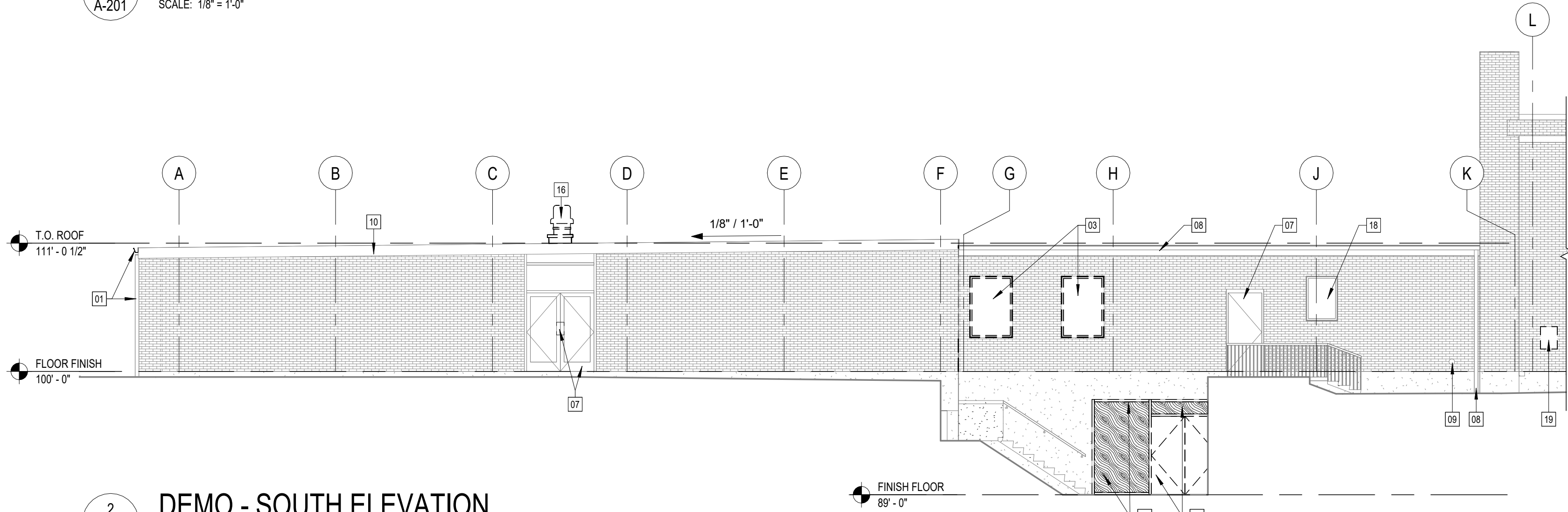
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08/04/2026



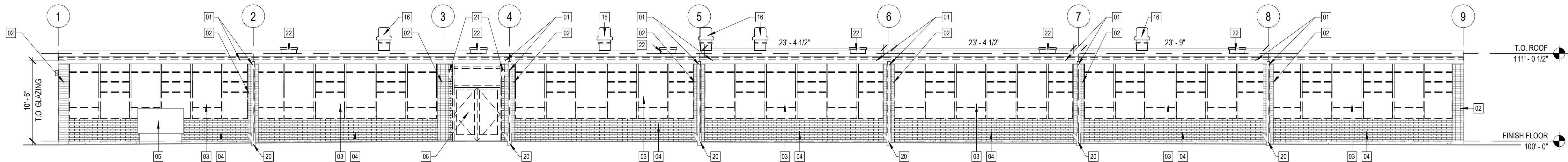
4 DEMO - NORTH ELEVATION
A-201 SCALE: 1/8" = 1'-0"



3 DEMO - EAST ELEVATION
A-201 SCALE: 1/8" = 1'-0"



2 DEMO - SOUTH ELEVATION
A-201 SCALE: 1/8" = 1'-0"



1 DEMO - WEST ELEVATION
A-201 SCALE: 1/8" = 1'-0"

GENERAL DEMOLITION NOTES:

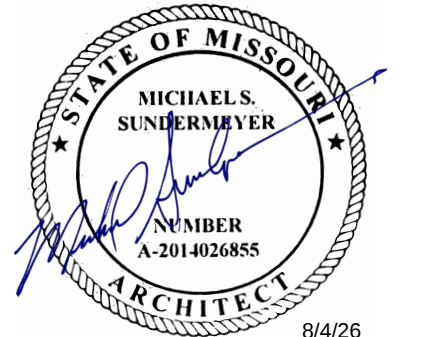
1. FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO STARTING DEMOLITION WORK.
2. CONTRACTOR TO SCAN CONCRETE SLAB AND FOOTINGS PRIOR TO MAKING ANY CUTS.
3. PROVIDE TEMPORARY BARRICADES, DUST CONTROL, AND PROTECTION FOR EXISTING STRUCTURES, DEVICES, AND UTILITIES TO REMAIN.
4. COORDINATE UTILITY SHUT-DOWNS WITH OWNER ONE WEEK PRIOR TO SHUT DOWN.
5. PRIOR TO DEMOLITION WORK, ABATE ALL HAZARDOUS MATERIALS PER ABATEMENT SPECIFICATIONS.
6. CONTRACTOR TO PROVIDE SHORING AND SUPPORT TO EXISTING STRUCTURE DURING DEMOLITION AND CONSTRUCTION. DO NOT REMOVE STRUCTURAL ELEMENTS UNTIL TEMPORARY SUPPORTS ARE IN PLACE.
7. REMOVE INDICATED MATERIALS. SHOWN DASHED AND NOTED IN KEYED NOTES, INCLUDING ITEMS WITHIN WALLS, U.N.O.
8. REMOVE ALL DEBRIS FROM THE SITE REGULARLY AND DISPOSE OF IT LEGALLY. TURN OVER ANY SALVAGED ITEMS TO THE OWNER.
9. REMOVE AND DISPOSE OF WINDOW AIR CONDITIONING UNITS.
10. REMOVE EXISTING ELECTRICAL CONDUIT UNLESS NOTED OTHERWISE PER ELECTRICAL DRAWINGS AND SPECIFICATIONS.
11. REMOVE PLUMBING PIPING PER PLUMBING DRAWINGS AND SPECIFICATIONS.
12. PATCH AND REPAIR ANY EXISTING SURFACES AFFECTED BY DEMOLITION TO MATCH ADJACENT OR NEW CONSTRUCTION SPECIFICATIONS.
13. CONTRACTOR TO MAINTAIN A CLEAN AND SAFE SITE IN ACCORDANCE WITH OSHA, EPA, AND LOCAL CODES.

DEMO ELEVATION KEYED NOTES

- 01 REMOVE EXISTING WOOD SOFFIT, GUTTER, AND DOWNSPOUT. CLEAN AND REPAIR AS NEEDED FOR NEW GUTTER, SOFFIT, AND METAL FASCIA INSTALLATION. SEE ABATEMENT SPECIFICATIONS.
- 02 EXISTING MASONRY COLUMN TO REMAIN.
- 03 REMOVE AND DISPOSE OF EXISTING WINDOWS.
- 04 REMOVE AND DISPOSE OF EXISTING BLOCK WALL.
- 05 EXISTING SIGNAGE TO REMAIN.
- 06 REMOVE AND DISPOSE OF DOOR AND FRAME. PREPARE OPENING FOR NEW DOOR/FRAME (SEE DOOR SCHEDULE), U.N.O.
- 07 REMOVE EXISTING DOOR HARDWARE. SEE DOOR SCHEDULE ON SHEET A-601.
- 08 EXISTING GUTTER AND DOWNSPOUT TO REMAIN.
- 09 EXISTING HOLE TO BE INFILLED WITH CONCRETE.
- 10 REMOVE EXISTING SOFFIT. CLEAN AND REPAIR AS NEEDED FOR NEW SOFFIT AND METAL FASCIA INSTALLATION. SEE ABATEMENT SPECIFICATION.
- 11 REMOVE AND DISPOSE OF EXISTING LOUVER.
- 12 EXISTING GAS METER TO REMAIN.
- 13 EXISTING LIGHT POLE TO REMAIN.
- 14 EXISTING FLAG POLE TO REMAIN.
- 15 EXISTING STONE PLAQUE TO REMAIN.
- 16 REMOVE EXISTING EXHAUST FAN. SEE MECHANICAL DRAWINGS FOR MORE INFORMATION.
- 17 EXISTING RTU TO REMAIN.
- 18 EXISTING WINDOW TO REMAIN.
- 19 EXISTING ELECTRICAL PANEL TO BE REMOVED. SEE ELECTRICAL DRAWINGS FOR MORE INFORMATION.
- 20 EXISTING PVC CONNECTION TO STORM DRAIN TO REMAIN.
- 21 REMOVE AND DISPOSE OF EXISTING WALL MOUNTED LIGHT FIXTURES.
- 22 REMOVE EXISTING SKYLIGHTS. REPLACE WITH INSULATED CURB COVER.
- 23 REMOVE AND DISPOSE OF EXISTING PLYWOOD AND FRAME.
- 24 REMOVE AND DISPOSE OF EXISTING DOORS AND PLYWOOD TRANSOM PANEL.

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ISSUE DATE:08/04/2026

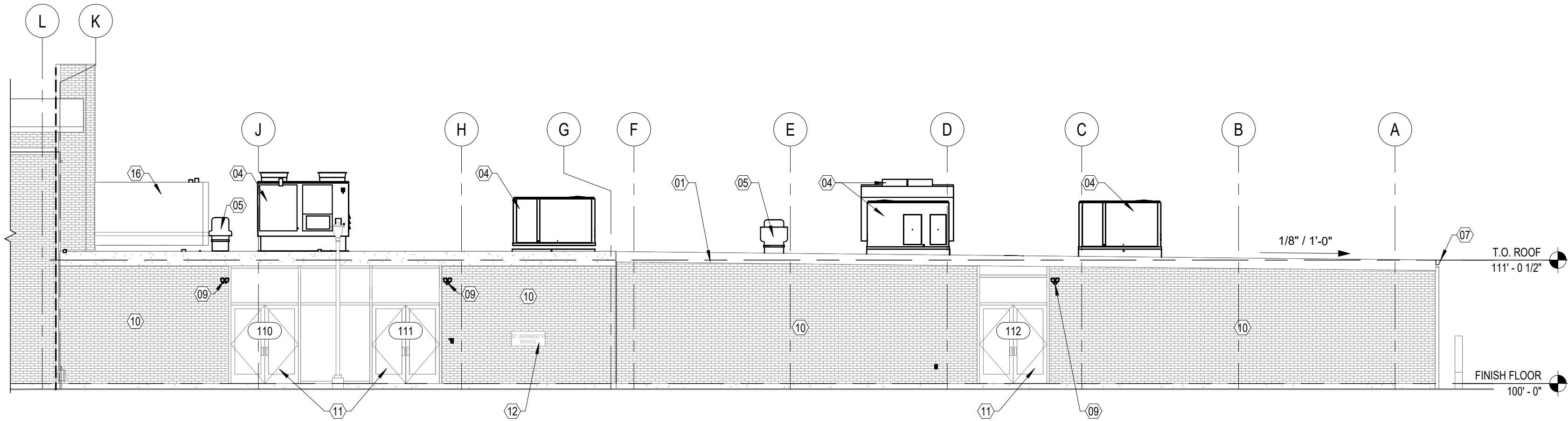
DWG FILE #: 2605562
DRAWN BY: MJM
CHECKED BY: RAR
DESIGNED BY: MJM

SHEET TITLE:
DEMO EXTERIOR ELEVATION

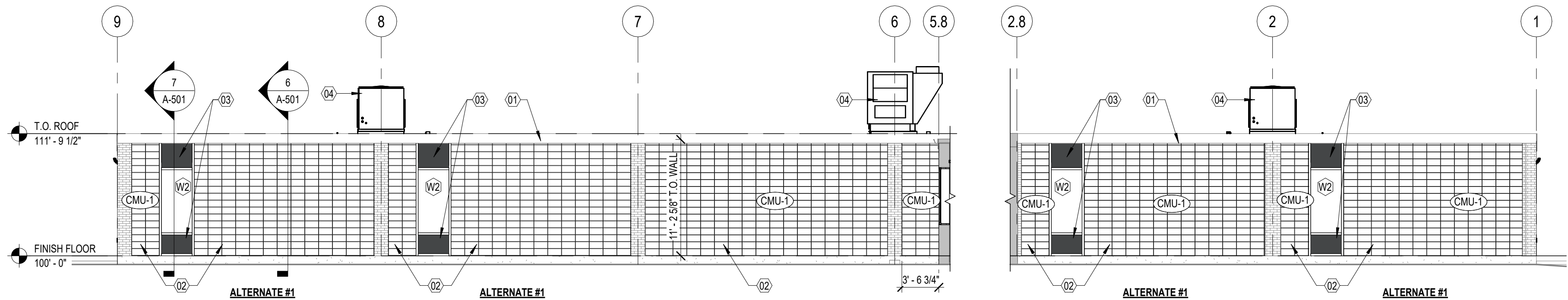
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A-201

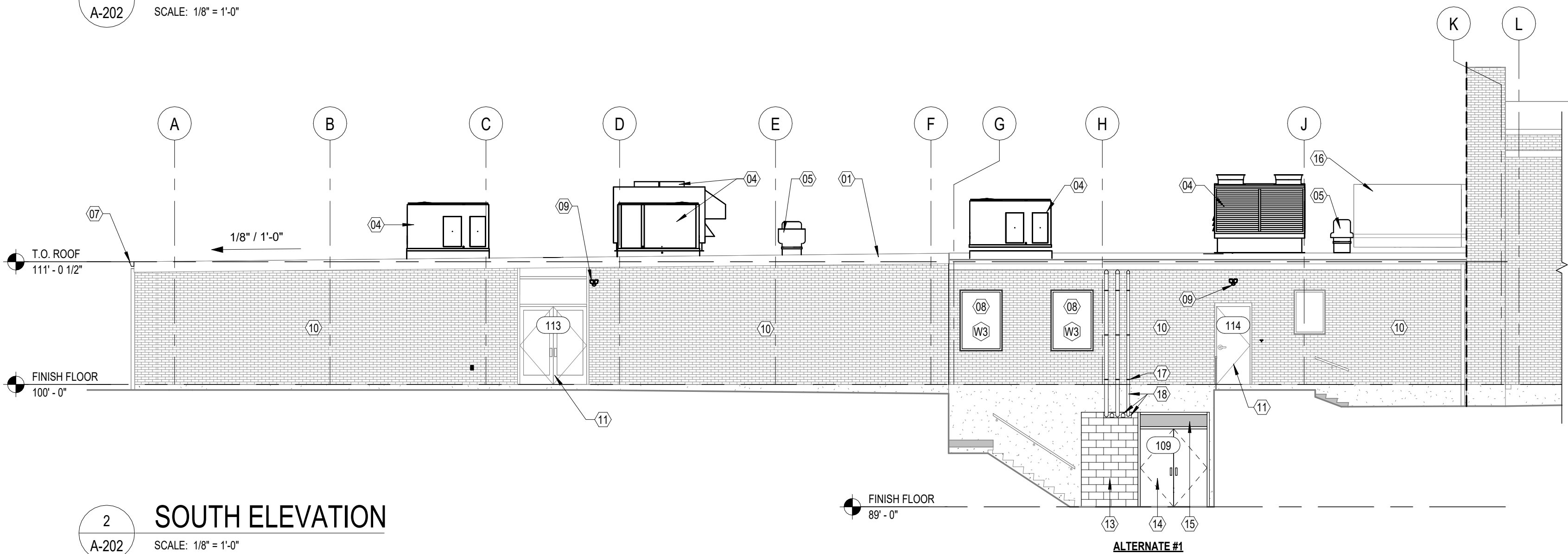
SHEET 11 OF 51
08/04/2026



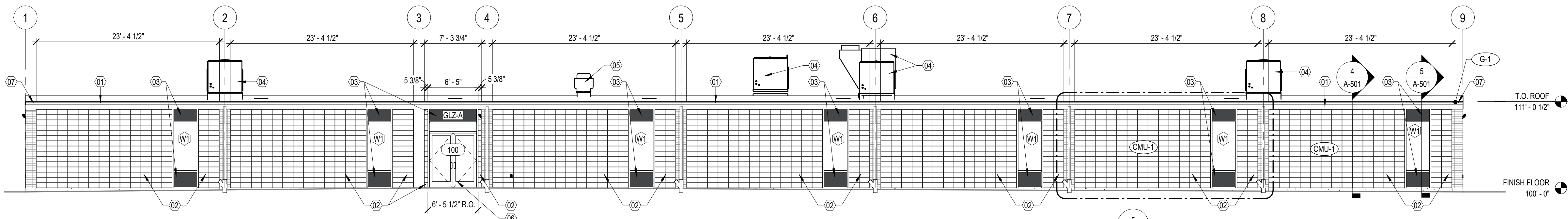
4 NORTH ELEVATION
A-202 SCALE: 1/8" = 1'-0"



3 EAST ELEVATION
A-202 SCALE: 1/8" = 1'-0"



2 SOUTH ELEVATION
A-202 SCALE: 1/8" = 1'-0"



1 WEST ELEVATION
A-202 SCALE: 1/8" = 1'-0"

ELEVATION KEYED NOTES

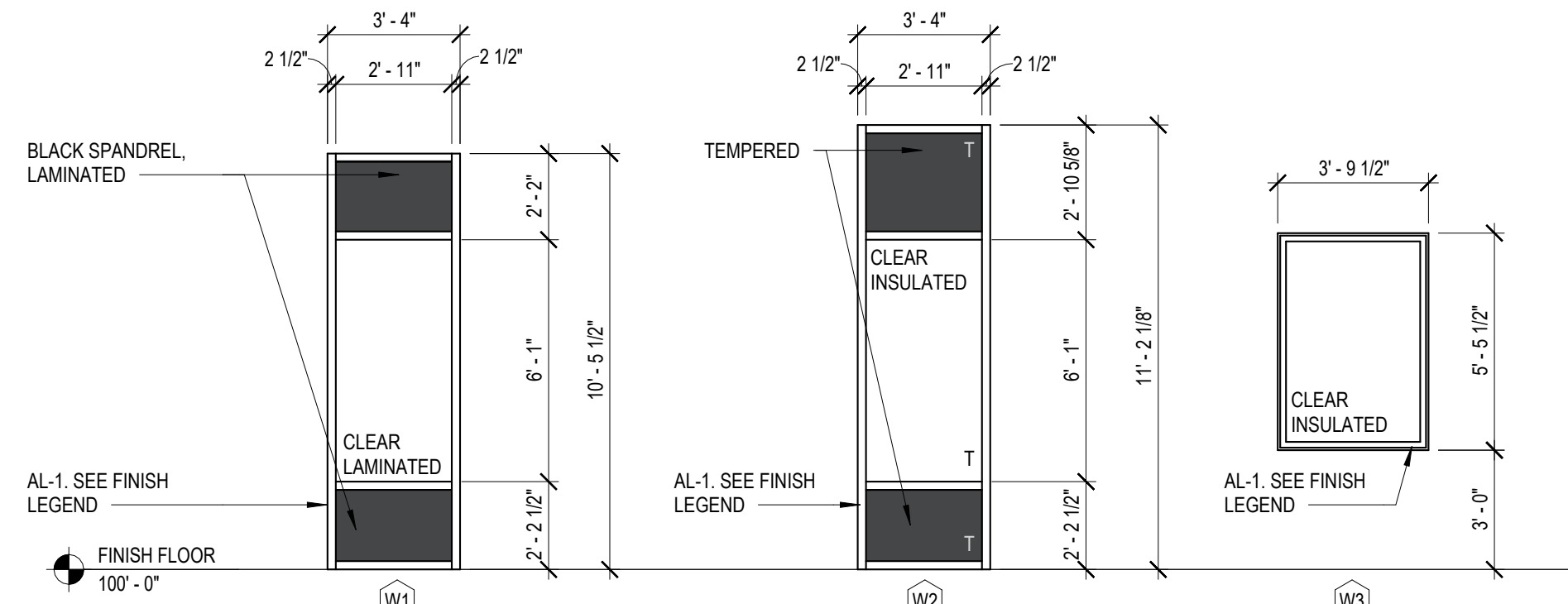
- NEW PREFINISHED METAL FASCIA AND SOFFIT.
- NEW GROUND FACE CMU. SEE EXTERIOR MATERIAL LEGEND ON THIS SHEET.
- NEW SPANDREL GLASS, PAINTED BLACK. SEE WINDOW TYPES ON THIS SHEET.
- NEW RTU. REFER TO MECHANICAL DRAWINGS FOR MORE INFORMATION.
- NEW EXHAUST. REFER TO MECHANICAL DRAWINGS FOR MORE INFORMATION.
- NEW BLAST MITIGATING FRAME, DOORS, AND HARDWARE SYSTEM. SEE DOOR SCHEDULE ON SHEET A-601.
- NEW PREFINISHED METAL GUTTER. SEE EXTERIOR MATERIAL FINISH LEGEND ON THIS SHEET.
- INSTALL NEW FIXED WINDOW. SEE WINDOW TYPES ON THIS SHEET.
- NEW WALL MOUNTED EXTERIOR LIGHT. REFER TO ELECTRICAL DRAWINGS FOR MORE INFORMATION.
- POWER WASH EXISTING BRICK.
- INSTALL NEW DOOR HARDWARE. SEE DOOR SCHEDULE SHEET A-601.
- EXISTING MONUMENT TO REMAIN.
- INFILL OPENING WITH NEW 12" CMU. ALTERNATE #1.
- INSTALL NEW FRAME, DOOR, AND HARDWARE. ALTERNATE #1.
- INFILL EXISTING TRANSOM WITH INSULATED METAL PANEL. ALTERNATE #1.
- EXISTING RTU TO REMAIN.
- VERTICAL PIPE SUPPORTS. MOUNT TO MASONRY
- NEW PIPES THROUGH OPENING IN MASONRY WALL. INSTALL WATERTIGHT SEAL AND METAL COVER PLATE WITH PRE-CUT SLOTS FIT TO PIPES. REFER TO MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION.

GENERAL CONSTRUCTION NOTES:

- FIELD VERIFY EXISTING CONDITIONS, DIMENSIONS, AND MATERIALS PRIOR TO BEGINNING WORK. DISCREPANCIES BETWEEN DRAWINGS AND DISCIPLINES MUST BE REPORTED TO THE ARCHITECT IMMEDIATELY.
- DO NOT SCALE DRAWINGS - WRITTEN OR FIGURED DIMENSIONS TAKE PRECEDENCE OVER SCALE MEASUREMENTS. DIMENSIONS ARE TO IF FROM FINISH FACE OR WALL OF COLUMN LINE.
- CONTRACTOR MUST COMPLY WITH OSHA STANDARDS AND MAINTAIN A SAFE WORK ENVIRONMENT.
- ALL MATERIALS SHALL BE NEW AND INSTALLED PER MANUFACTURER SPECIFICATIONS FOR ADHERENCE, BLOCKING REQUIREMENTS, AND LEVEL OF FINISH.
- SEE FINISH SCHEDULE SHEET A-601 FOR PAINT, FLOOR COATINGS AND FINISHES, VINYL WALL BASE, ETC.
- CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF EXISTING CONSTRUCTION AND PUBLIC AREAS DURING CONSTRUCTION. ANY DAMAGE TO EXISTING FINISHES TO REMAIN MUST BE REPAIRED TO ITS ORIGINAL STATE, AND THE SITE MAINTAINED IN A CLEAN AND SAFE MANNER.
- SEE FINISH SCHEDULE AND FINISH LEGEND ON SHEET A-601.
- AT ABANDONED POWER AND DATA OUTLETS, INSTALL NEW STAINLESS STEEL COVER PLATES.
- SEE SHEET A-403 FOR NEW PARTITION TYPES.

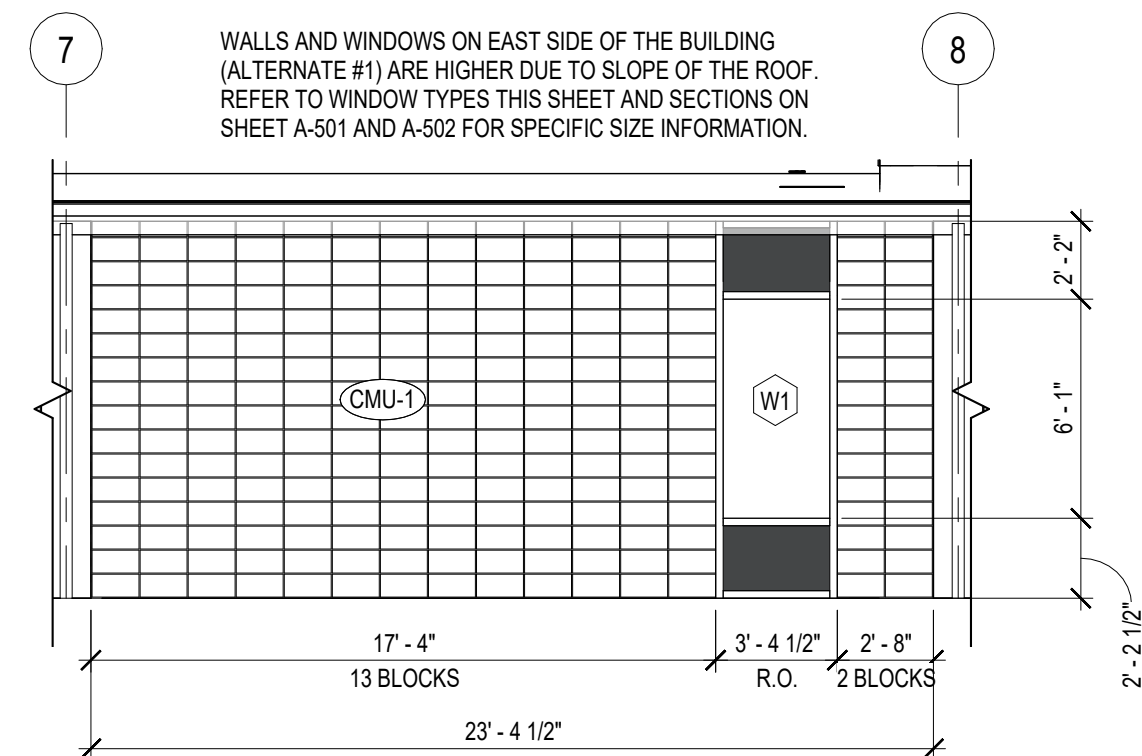
EXTERIOR MATERIAL LEGEND

- (CMU-1) CONCRETE MASONRY UNIT (CMU); BEST BLOCK MIDWEST BLOCK - GROUND FACE CMU - COLOR: #9 CREAM
- (G-1) PREFINISHED METAL GUTTER: DIMENSIONAL METALS INC. - COLOR: BROWN



6 WINDOW TYPES
A-202 SCALE: 1/4" = 1'-0"

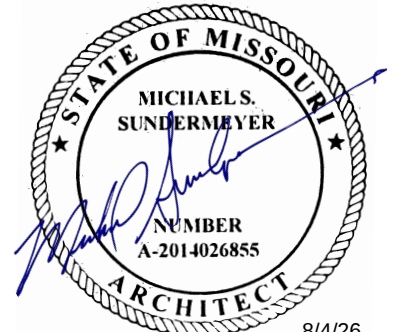
NOTE:
WALLS AND WINDOWS ON EAST SIDE OF THE BUILDING (ALTERNATE #1) ARE HIGHER DUE TO SLOPE OF THE ROOF. REFER TO WINDOW TYPES THIS SHEET AND SECTIONS ON SHEET A-501 AND A-502 FOR SPECIFIC SIZE INFORMATION.



5 WEST ELEVATION - TYP. INFILL
A-202 SCALE: 3/16" = 1'-0" (EAST ELEV. - ALTERNATE #1)

STATE OF MISSOURI
MIKE KEHOE
GOVERNOR

CASCO DIVERSIFIED CORPORATION
ARCHITECTURAL
LICENSE #: 000329
EXP. DATE: 12/31/2027



Professional of Record:
MICHAEL S. SUNDERMEYER
LICENSE #: 2014026855
EXP. DATE: 12/31/2026

OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES
MANAGEMENT,
DESIGN AND CONSTRUCTION

DEPARTMENT OF MISSOURI
NATIONAL GUARD

INTERIOR AND EXTERIOR
RENOVATION

JEFFERSON BARRACKS
READINESS CENTER
74 KEARNEY ST.
ST. LOUIS, MO 63125

PROJECT # T2504-03
SITE # 6303
FACILITY #8136303050

REVISIONS

No.	Description	Date
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ISSUE DATE:08/04/2026

DWG FILE #: 2605562
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CHECKED BY: RAR
DESIGNED BY: MJM

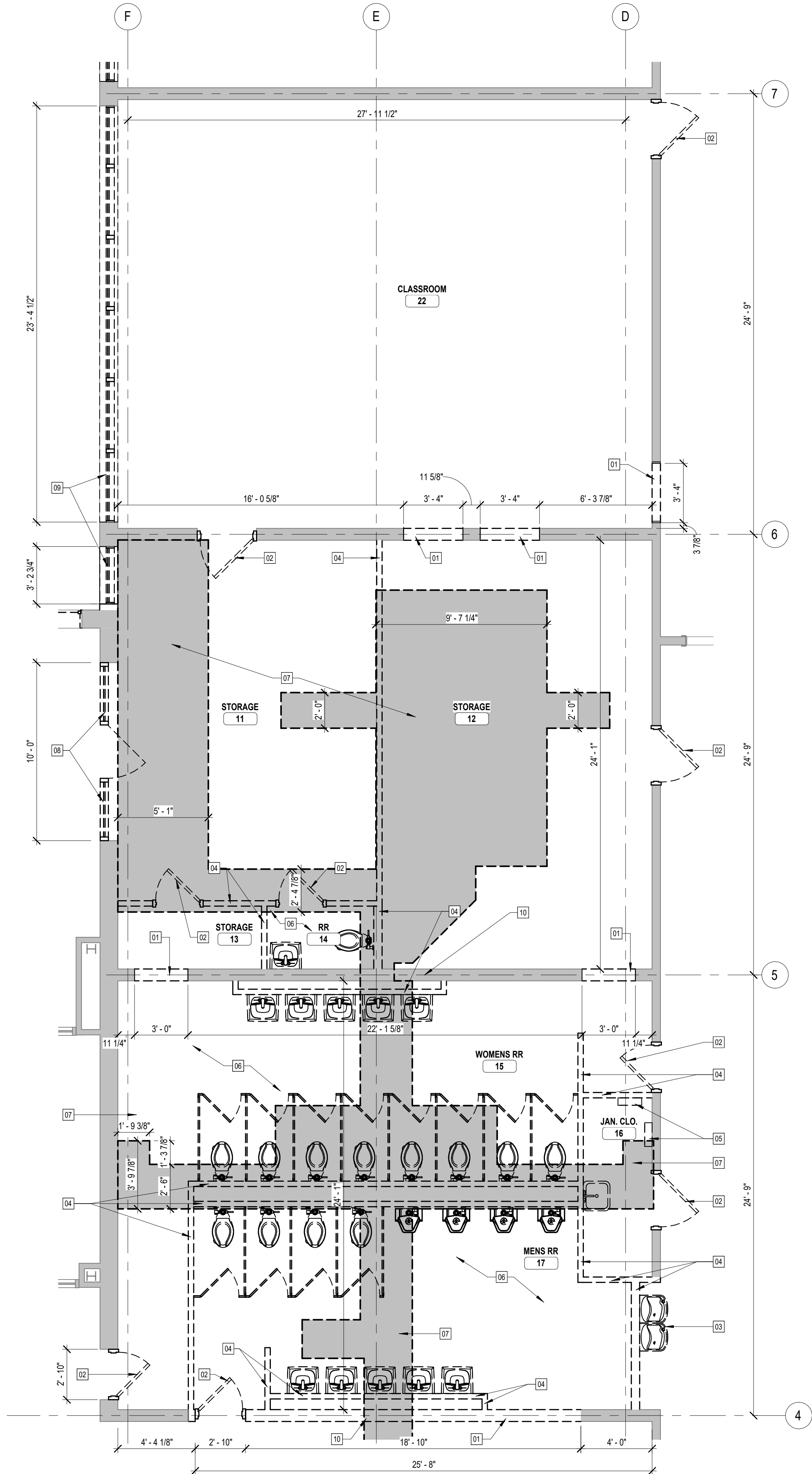
SHEET TITLE:
EXTERIOR ELEVATION

SHEET NUMBER:

A-202

SHEET 12 OF 51
08/04/2026

CASCO
12 SUMNER DRIVE, SUITE 100, ST. LOUIS, MO 63143
T 314.621.1100



1
A-401

DEMOLITION - ENLARGED PLAN

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

DEMOLITION PLAN LEGEND

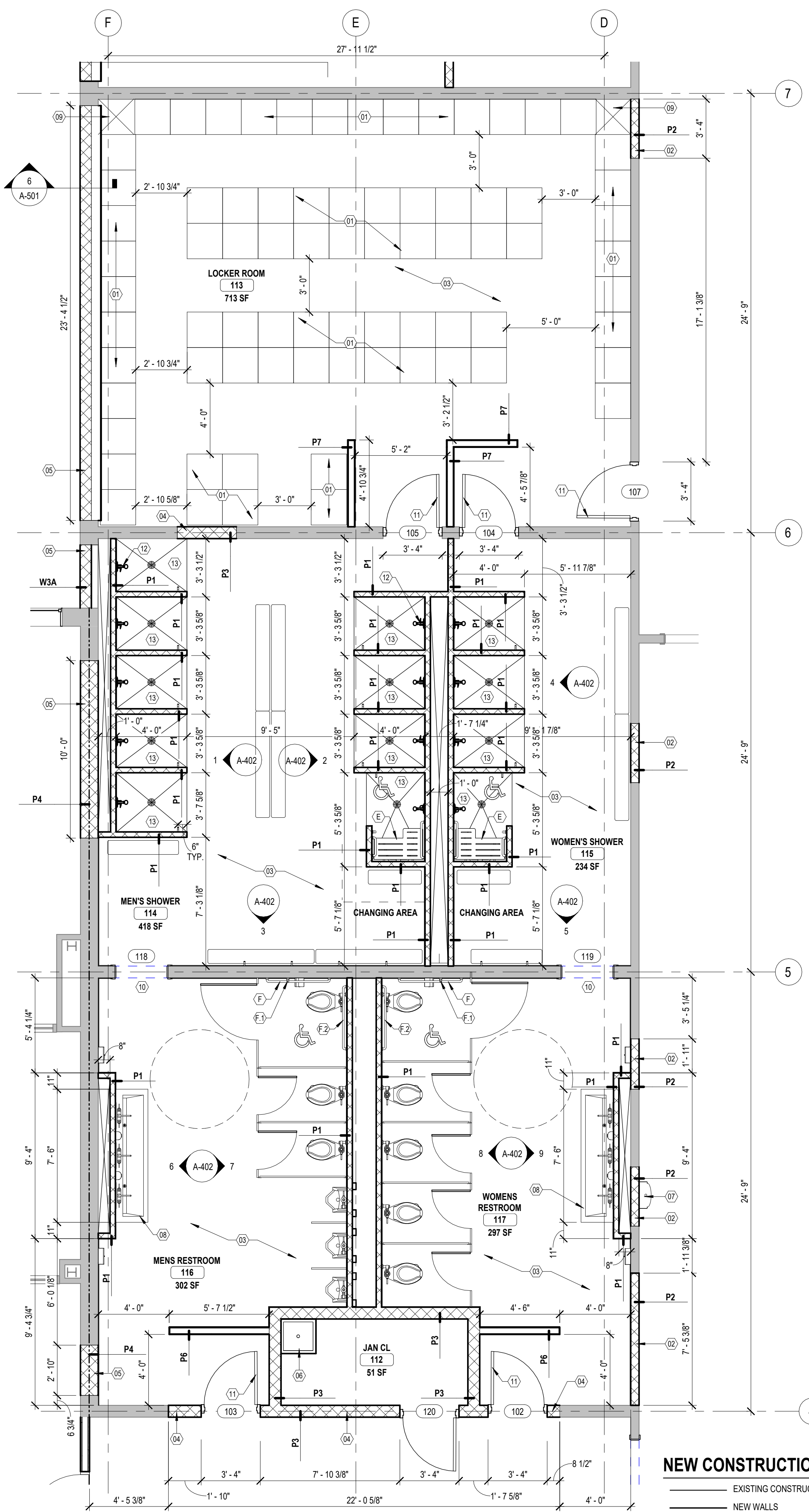
- EXISTING CONSTRUCTION TO REMAIN
- EXISTING WALLS, DOORS, ETC. TO BE REMOVED
- AREA NOT IN SCOPE
- SLAB CUT



2
A-401

RESTROOM, SHOWER, & LOCKER ROOM

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



NEW CONSTRUCTION PLAN LEGEND

- EXISTING CONSTRUCTION TO REMAIN
- NEW WALLS
- 2 HOUR FIRE BARRIER
- AREA NOT IN SCOPE
- EXISTING WALL (NO WORK)

GENERAL DEMOLITION NOTES:

- FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO STARTING DEMOLITION WORK.
- CONTRACTOR TO SCAN CONCRETE SLAB AND FOOTINGS PRIOR TO MAKING ANY CUTS.
- PROVIDE TEMPORARY BARRICADES, DUST CONTROL, AND PROTECTION FOR EXISTING STRUCTURES, DEVICES, AND UTILITIES TO REMAIN.
- COORDINATE UTILITY SHUT-DOWNS WITH OWNER ONE WEEK PRIOR TO SHUT DOWN.
- PRIOR TO DEMOLITION WORK, ABATE ALL HAZARDOUS MATERIALS PER ABATEMENT SPECIFICATIONS.
- CONTRACTOR TO PROVIDE SHORING AND SUPPORT TO EXISTING STRUCTURE DURING DEMOLITION AND CONSTRUCTION. DO NOT REMOVE STRUCTURAL ELEMENTS UNTIL TEMPORARY SUPPORTS ARE IN PLACE.
- REMOVE INDICATED MATERIALS, SHOWN DASHED AND NOTED IN KEYED NOTES, INCLUDING ITEMS WITHIN WALLS, U.N.O.
- REMOVE ALL DEBRIS FROM THE SITE REGULARLY AND DISPOSE OF IT LEGALLY. TURN OVER ANY SALVAGED ITEMS TO THE OWNER.
- REMOVE AND DISPOSE OF WINDOW AIR CONDITIONING UNITS.
- REMOVE EXISTING ELECTRICAL CONDUIT UNLESS NOTED OTHERWISE PER ELECTRICAL DRAWINGS AND SPECIFICATIONS.
- REMOVE PLUMBING PIPING PER PLUMBING DRAWINGS AND SPECIFICATIONS.
- PATCH AND REPAIR ANY EXISTING SURFACES AFFECTED BY DEMOLITION TO MATCH ADJACENT OR NEW CONSTRUCTION SPECIFICATIONS.
- CONTRACTOR TO MAINTAIN A CLEAN AND SAFE SITE IN ACCORDANCE WITH OSHA, EPA, AND LOCAL CODES.

DEMO PLAN KEYED NOTES

- REMOVE PORTION OF CMU WALL FOR NEW OPENING.
- EXISTING DOOR, HARDWARE, AND FRAME ASSEMBLY TO BE REMOVED. PREPARE FOR INFILL.
- REMOVE AND DISPOSE OF EXISTING DRINKING FOUNTAINS.
- EXISTING WALL AND ASSOCIATED ACCESSORIES TO BE REMOVED.
- EXISTING ELECTRICAL PANELS TO BE REMOVED.
- REMOVE AND DISPOSE OF EXISTING PLUMBING FIXTURES AND RELATED ITEMS TYP.
- CONCRETE CUTS IN FLOOR FOR NEW SANITARY PIPING. NEW SANITARY PIPING TO BE ROUTED UNDER FOOTING OR THROUGH THE DESIGNATED AREA PROVIDED IN DETAIL 2/A-501.
- EXISTING WOOD DOOR AND FRAME SYSTEM TO BE REMOVED. PREPARE FOR INFILL.
- REMOVE EXISTING WINDOWS AND BLOCK WALL. PREPARE OPENING FOR INFILL.
- NEW SANITARY PIPING TO BE ROUTED UNDER FOOTING OR THROUGH THE DESIGNATED AREA PROVIDED IN DETAIL 1/A-501.

GENERAL CONSTRUCTION NOTES:

- FIELD VERIFY EXISTING CONDITIONS, DIMENSIONS, AND MATERIALS PRIOR TO BEGINNING WORK. DISCREPANCIES BETWEEN DRAWINGS AND DISCIPLINES MUST BE REPORTED TO THE ARCHITECT IMMEDIATELY.
- DO NOT SCALE DRAWINGS - WRITTEN OR FIGURED DIMENSIONS TAKE PRECEDENCE OVER SCALE MEASUREMENTS. DIMENSIONS ARE TO FROM FINISH FACE OR WALL OF COLUMN LINE.
- CONTRACTOR MUST COMPLY WITH OSHA STANDARDS AND MAINTAIN A SAFE WORK ENVIRONMENT.
- ALL MATERIALS SHALL BE NEW AND INSTALLED PER MANUFACTURER SPECIFICATIONS FOR ADHERENCE, BLOCKING REQUIREMENTS, AND LEVEL OF FINISH.
- SEE FINISH SCHEDULE SHEET A-601 FOR PAINT, FLOOR COATINGS AND FINISHES, VINYL WALL BASE, ETC.
- CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF EXISTING CONSTRUCTION AND PUBLIC AREAS DURING CONSTRUCTION. ANY DAMAGE TO EXISTING FINISHES TO REMAIN MUST BE REPAIRED TO ITS ORIGINAL STATE, AND THE SITE MAINTAINED IN A CLEAN AND SAFE MANNER.
- SEE FINISH SCHEDULE AND FINISH LEGEND ON SHEET A-601.
- AT ABANDONED POWER AND DATA OUTLETS, INSTALL NEW STAINLESS STEEL COVER PLATES.
- SEE SHEET A-403 FOR NEW PARTITION TYPES.

PLAN KEYED NOTES

- CONTRACTOR TO INSTALL OWNER PROVIDED LOCKERS. 24" X 24" LOCKERS TYP.
- INFILL OPENINGS WITH NEW 6" CMU, MATCH HORIZONTAL STACK BOND PATTERN.
- APPLY EPOXY FLOOR FINISH PER FINISH SCHEDULE.
- INFILL OPENINGS WITH NEW 8" CMU, MATCH HORIZONTAL STACK BOND PATTERN.
- INFILL WALL. SEE SPECIFICATIONS AND DETAIL 6/A-501 FOR MORE INFORMATION.
- MOP SINK. SEE PLUMBING DRAWINGS FOR MORE INFORMATION.
- INSTALL NEW WALL MOUNTED WATER BOTTLE FILLER. SEE SPECIFICATIONS FOR MORE INFORMATION.
- TROUGH SINK. SEE SPECIFICATIONS AND PLUMBING DRAWINGS FOR MORE INFORMATION.
- FILLER PANEL.
- INSTALL NEW FLAT JAMB HOLLOW METAL FRAME. PAINT ACCORDING TO FINISH SCHEDULE. REFERENCE STRUCTURAL DRAWINGS FOR INFORMATION REGARDING INSTALLATION OF NEW STEEL ANGLES.
- INSTALL NEW DOOR, SEE DOOR AND HARDWARE SCHEDULE. PAINT FRAME, SEE FINISH SCHEDULE.
- TYPICAL SHOWER HEAD AND SHOWER CONTROLS. SEE PLUMBING DRAWINGS AND SPEC FOR MORE INFORMATION.
- NEW CONCRETE POUR SLOPED 1/4" FOR PROPER DRAINAGE.

STATE OF MISSOURI MIKE KEHOE GOVERNOR

CASCO DIVERSIFIED CORPORATION
ARCHITECTURAL
LICENSE # 000329
EXP. DATE: 12/31/2027



Professional of Record:
MICHAEL S. SUNDERMEYER
LICENSE # 2014026855
EXP. DATE: 12/31/2026

CASCO

12 SUNNEDRIVE SUITE 100, ST. LOUIS, MO 63143 T 314-621-1100

OFFICE OF ADMINISTRATION DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION

DEPARTMENT OF MISSOURI
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INTERIOR AND EXTERIOR RENOVATION

JEFFERSON BARRACKS
READINESS CENTER
74 KEARNEY ST.
ST. LOUIS, MO 63125

PROJECT # T2504-03
SITE # 6303
FACILITY #8136303050

REVISIONS

No.	Description	Date
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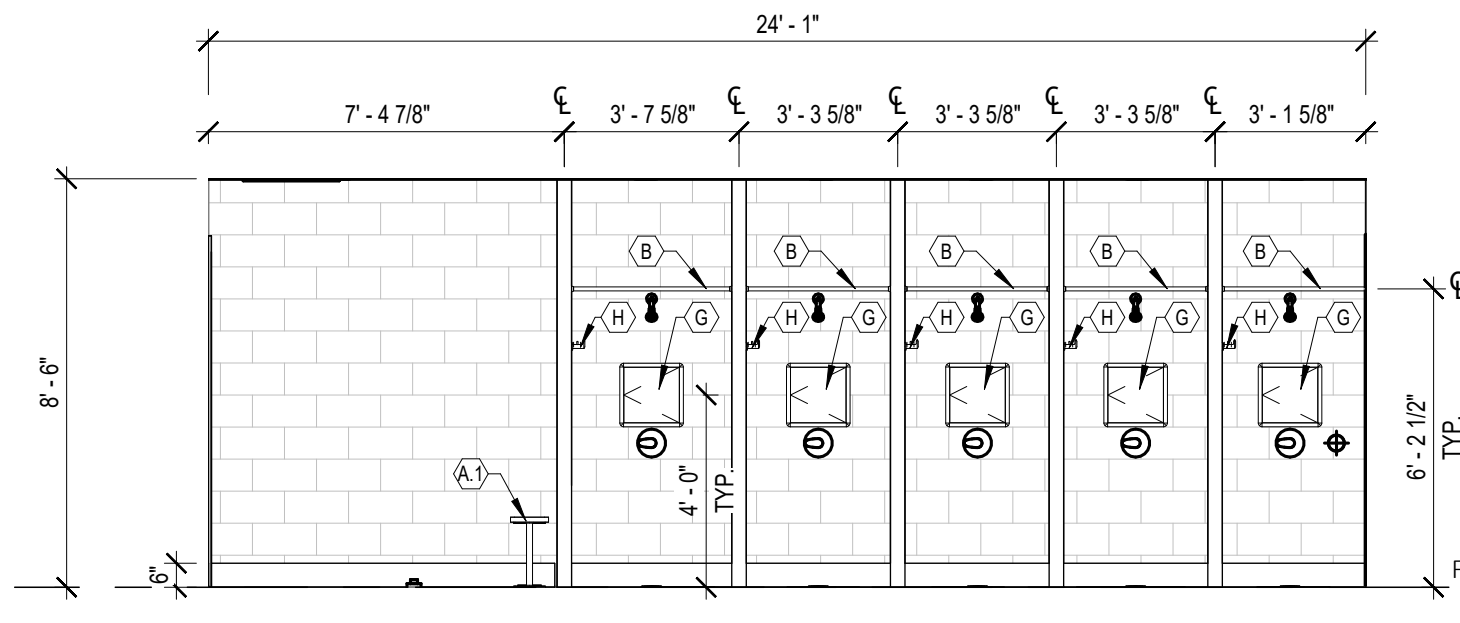
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DESIGNED BY: MJM

SHEET TITLE:
ENLARGED FLOOR PLANS

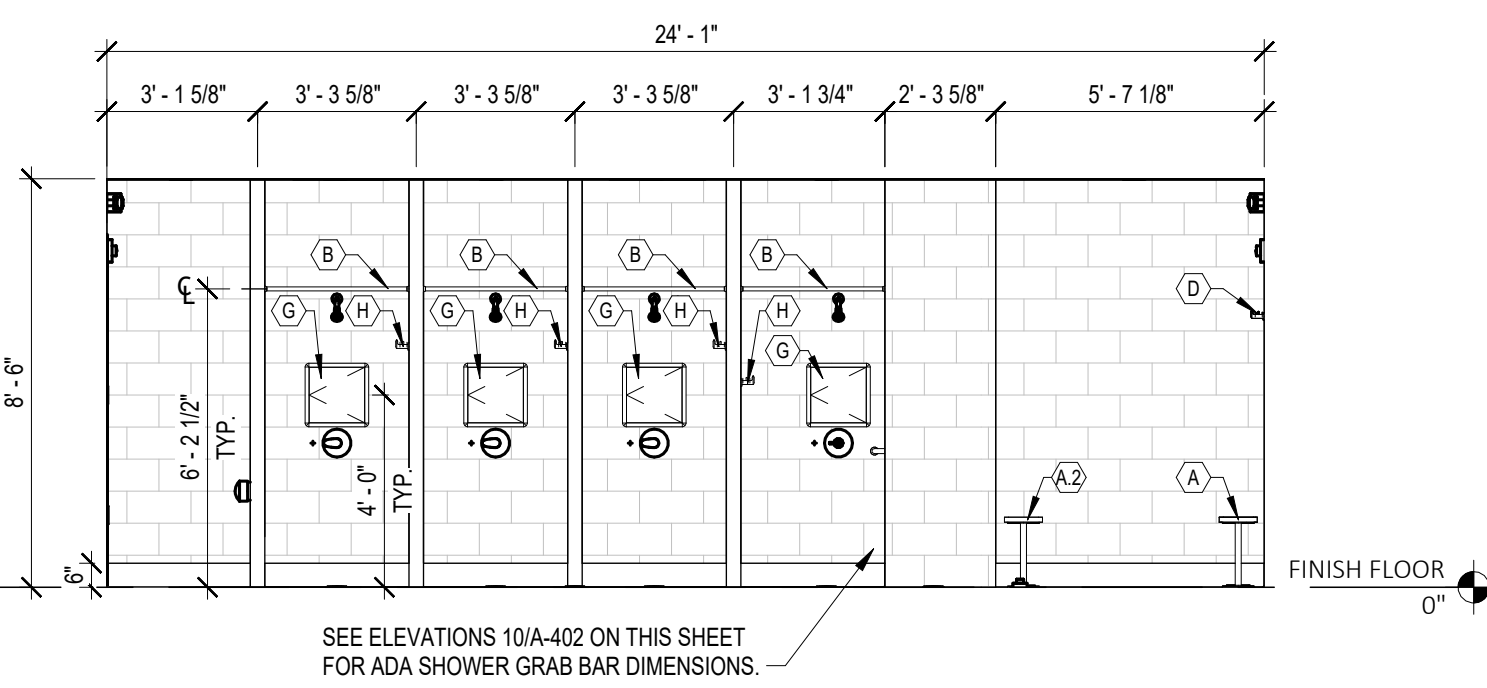
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A-401

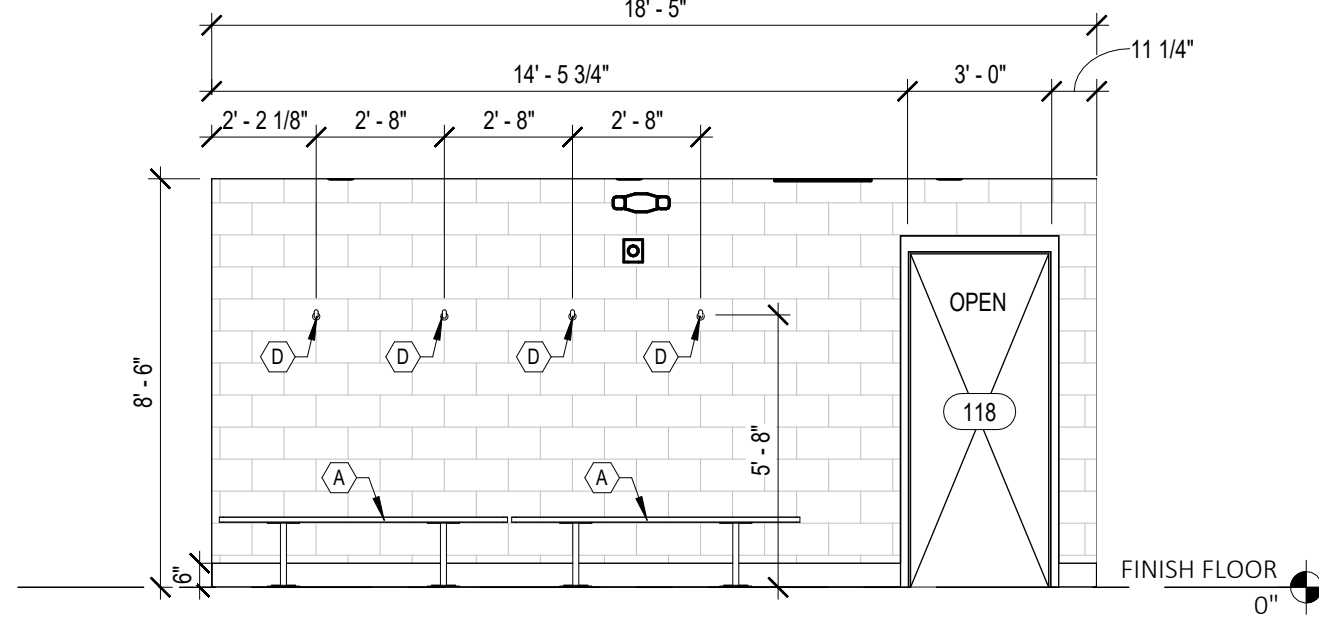
SHEET 13 OF 51
08/04/2026



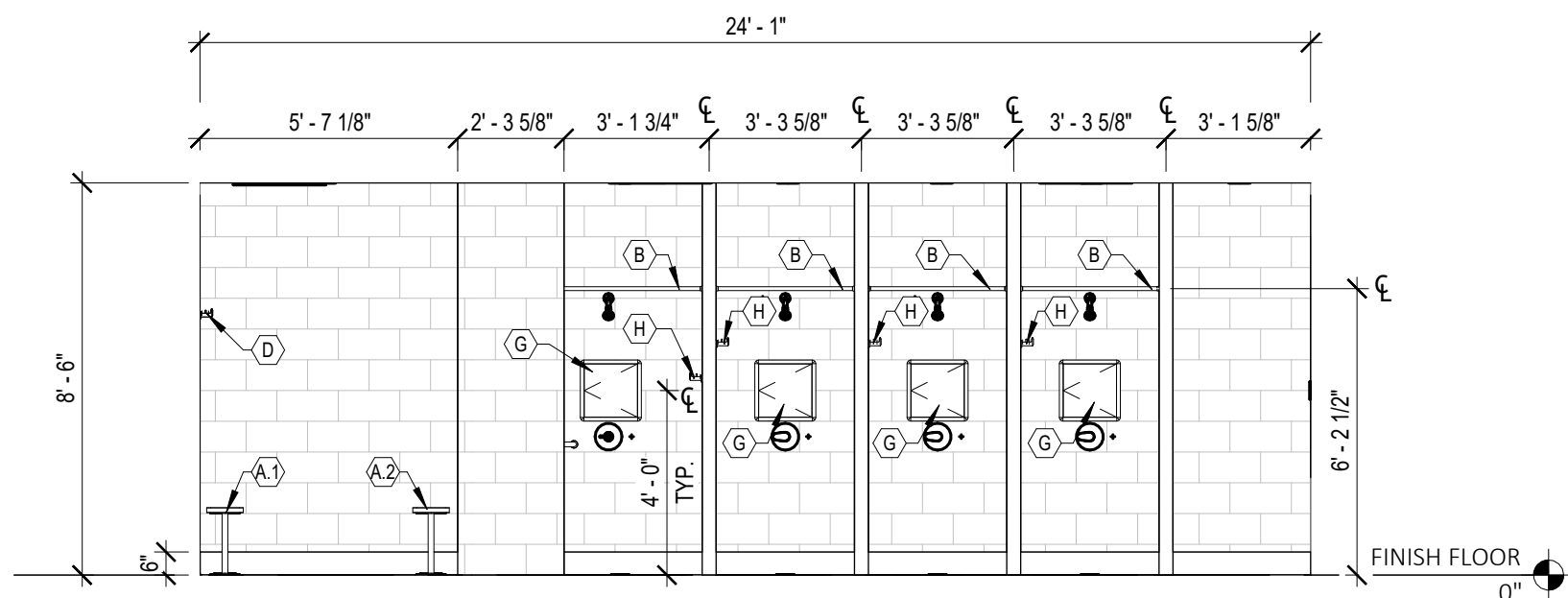
1 ELEVATION - MEN'S SHOWER
SCALE: 1/4" = 1'-0"



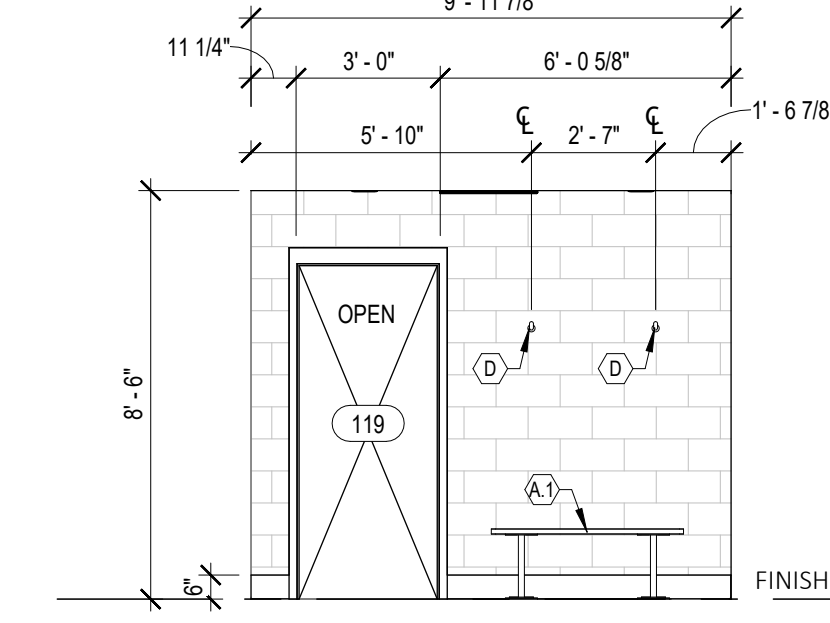
2 ELEVATION - MEN'S SHOWER
SCALE: 1/4" = 1'-0"



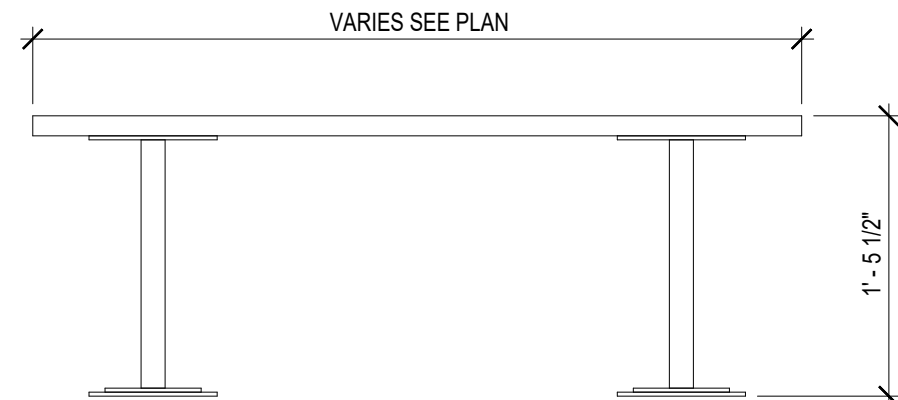
3 ELEVATION - MEN'S SHOWER
SCALE: 1/4" = 1'-0"



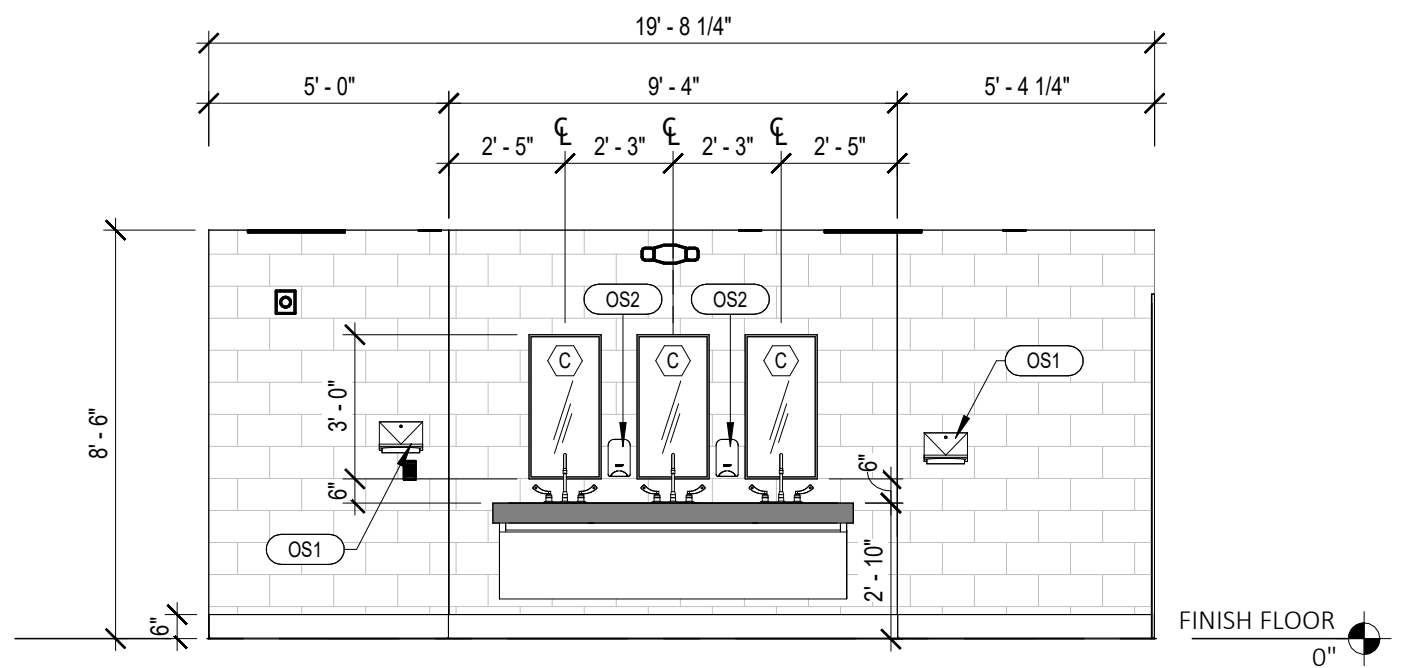
4 ELEVATION - WOMEN'S SHOWER
SCALE: 1/4" = 1'-0"



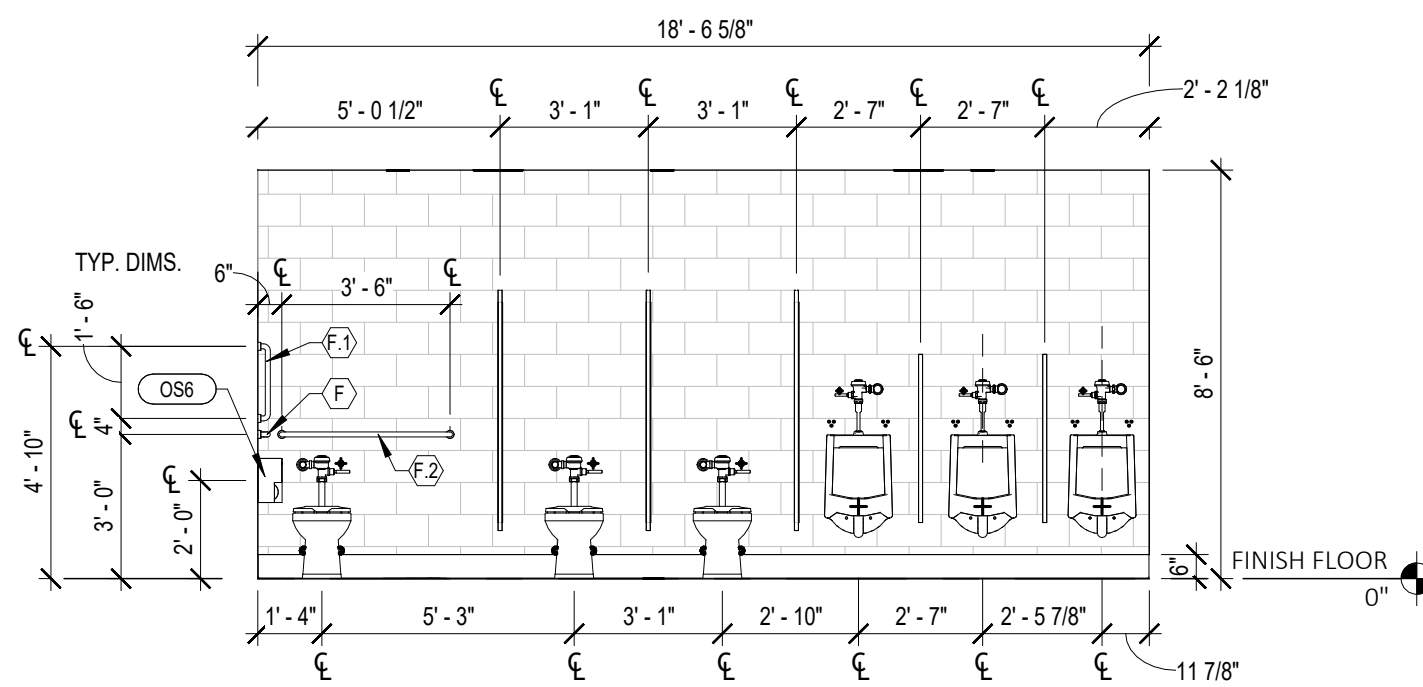
5 ELEVATION - WOMEN'S SHOWER
SCALE: 1/4" = 1'-0"

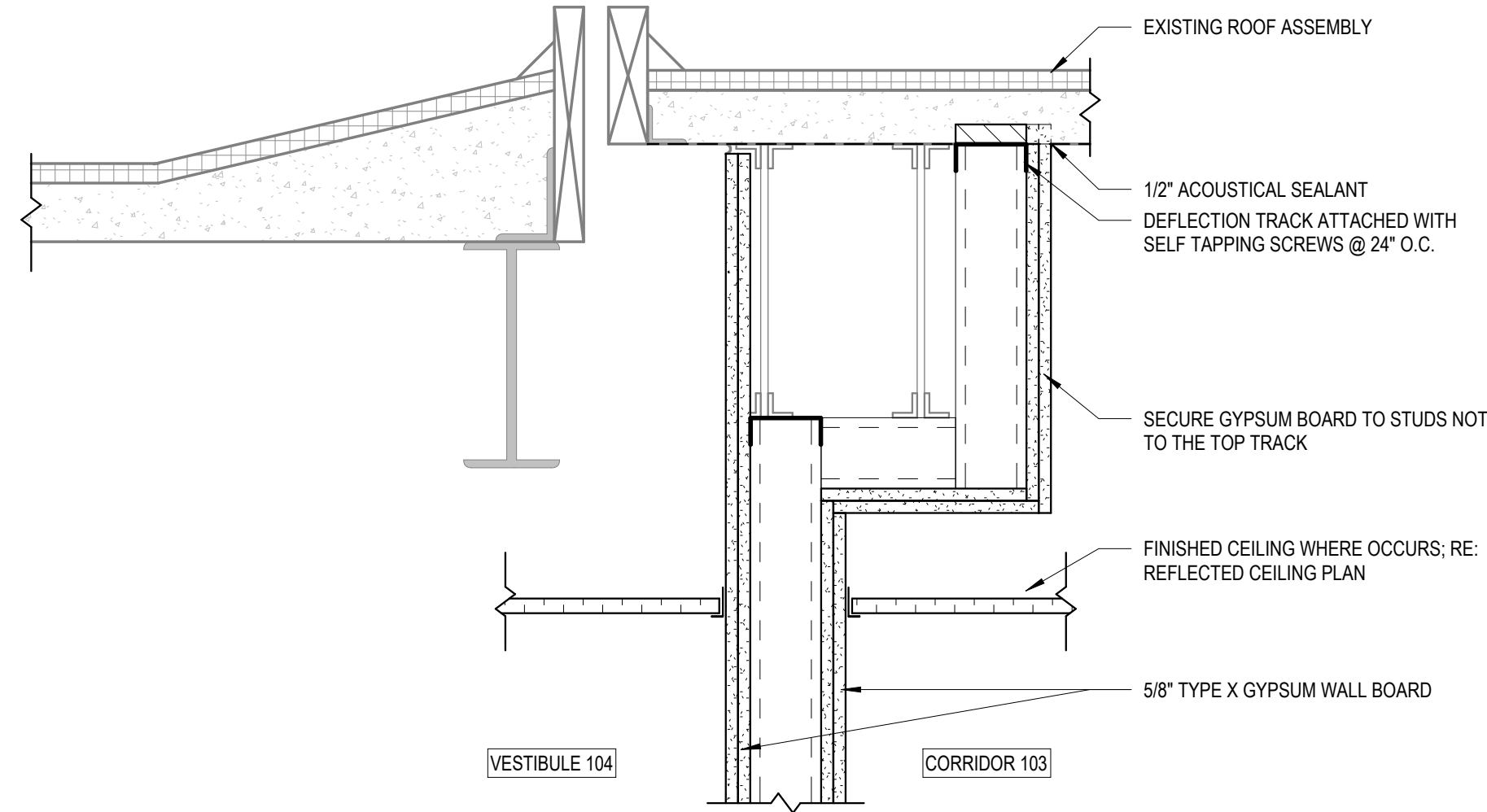


10 SHOWER BENCH
SCALE: 1" = 1'-0"

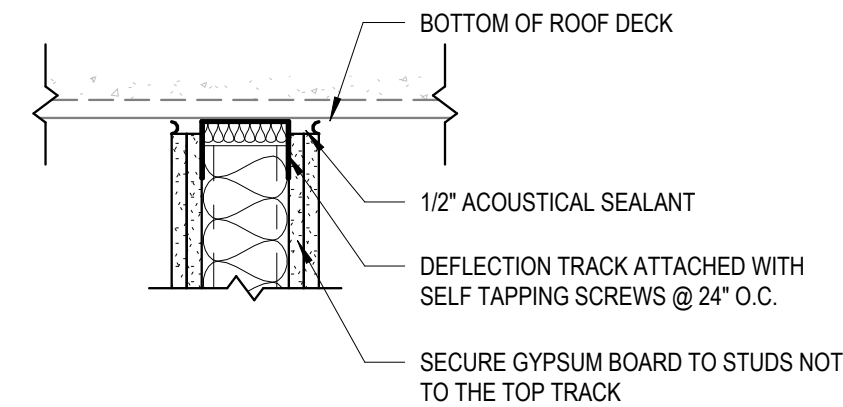
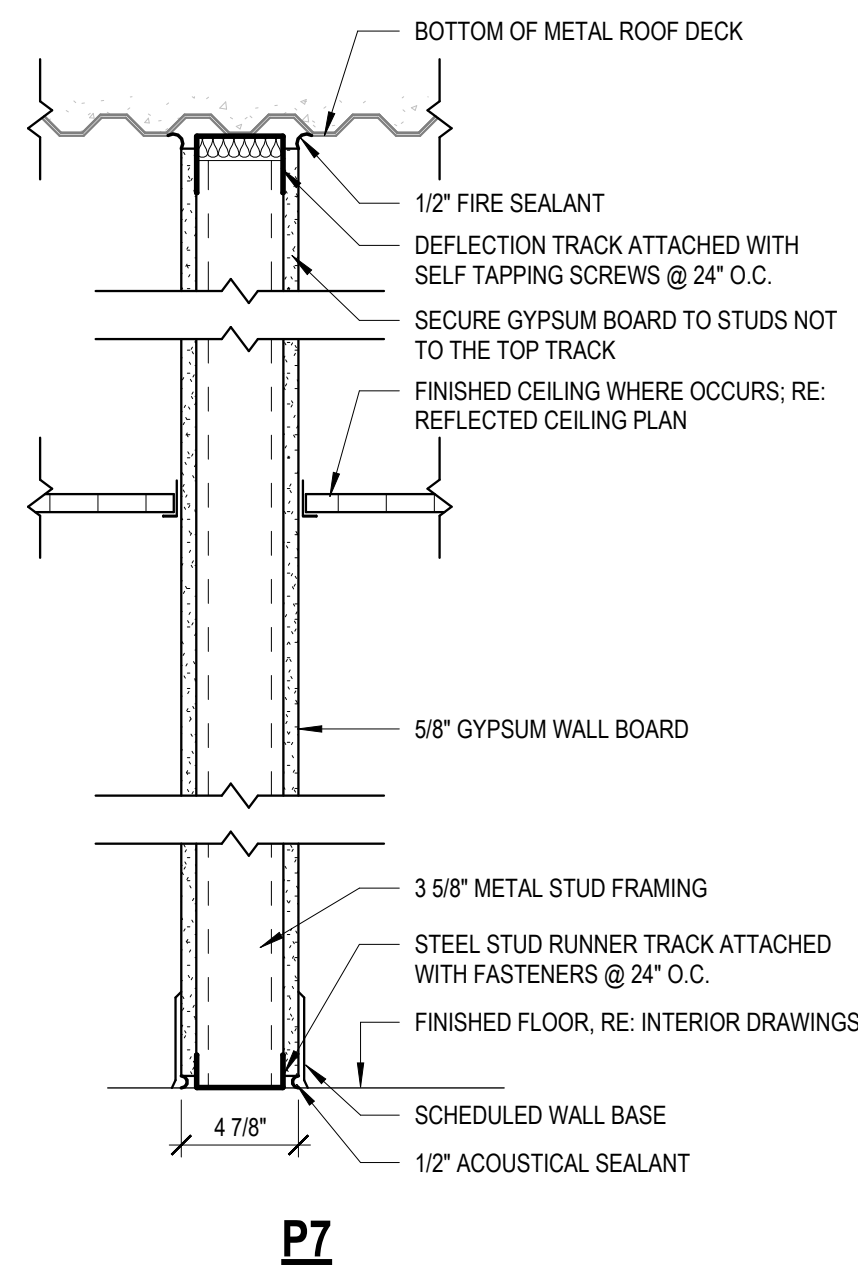
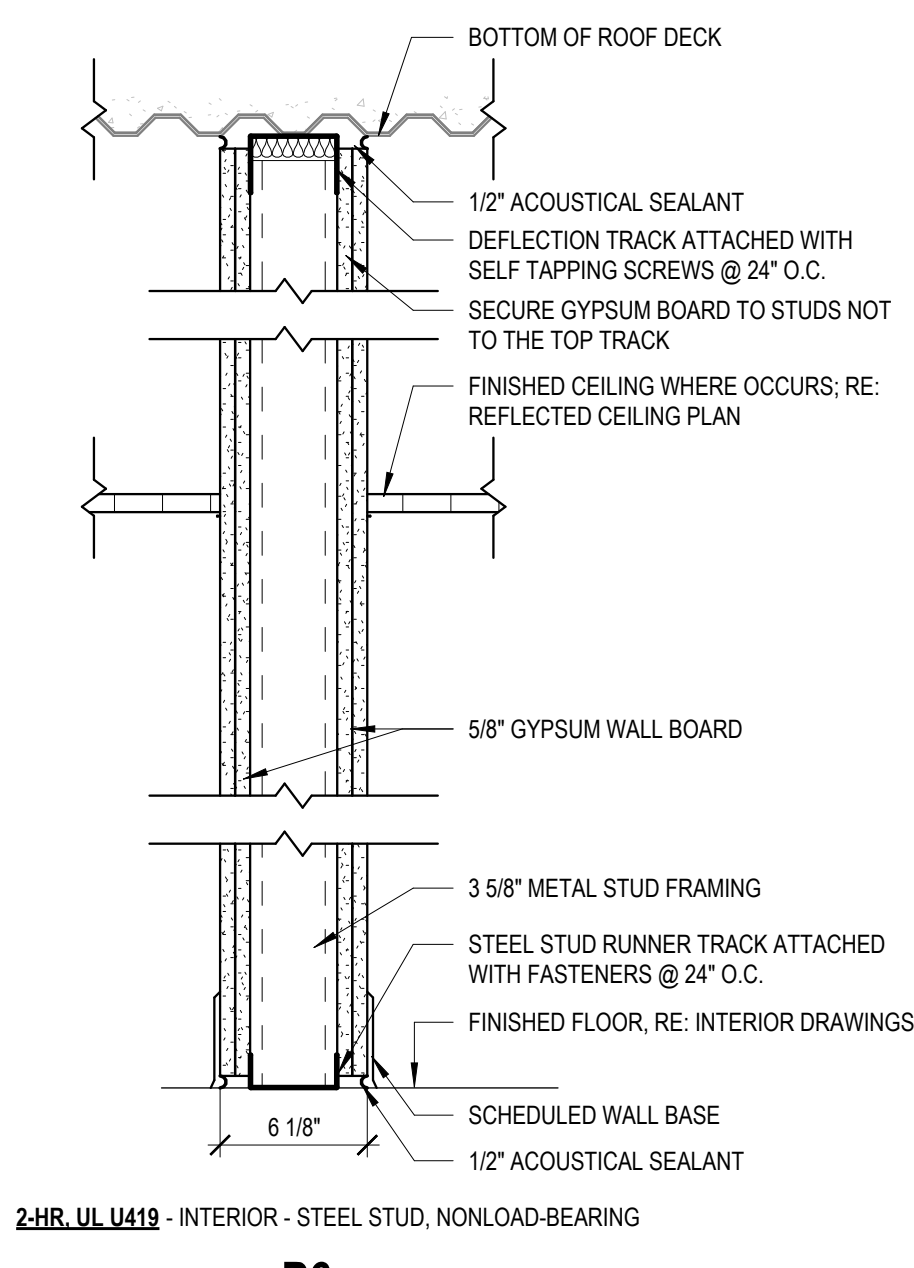
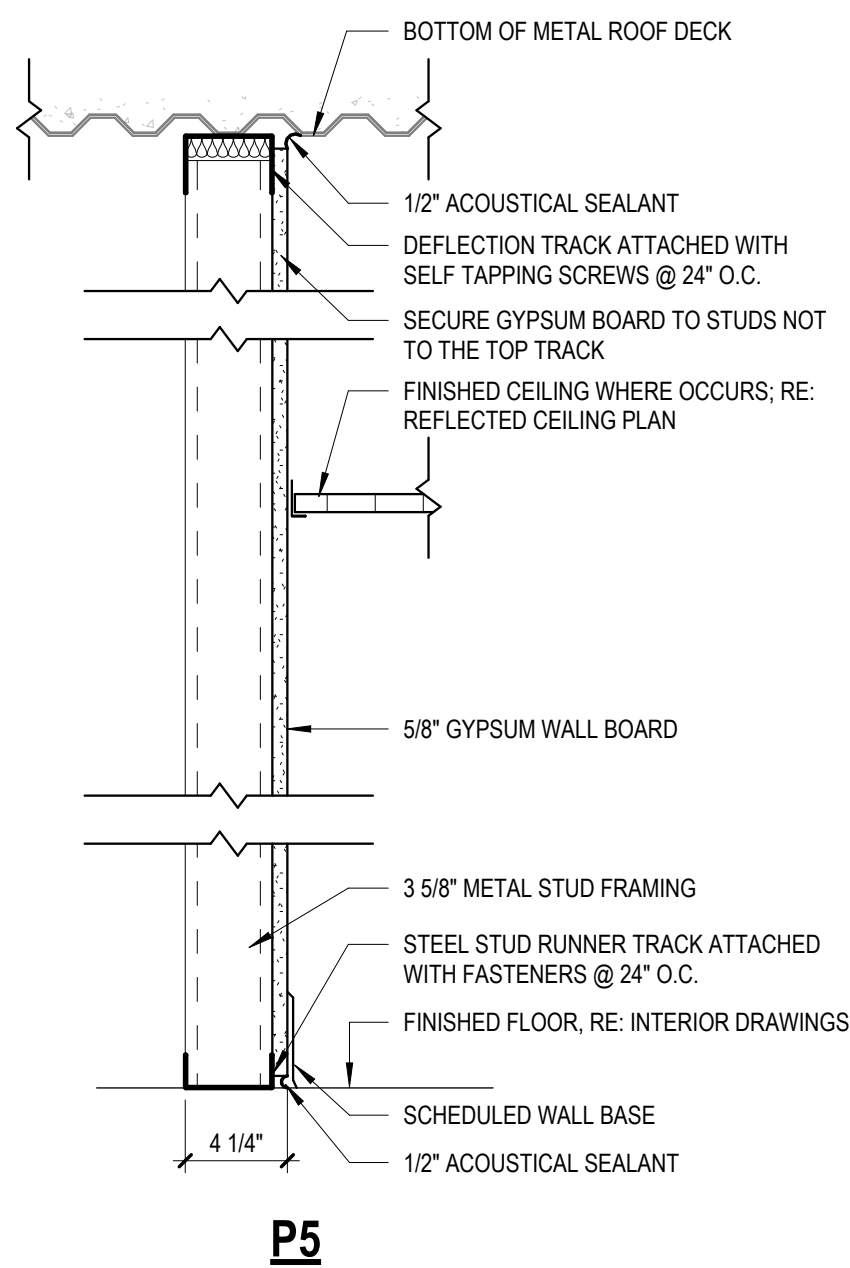
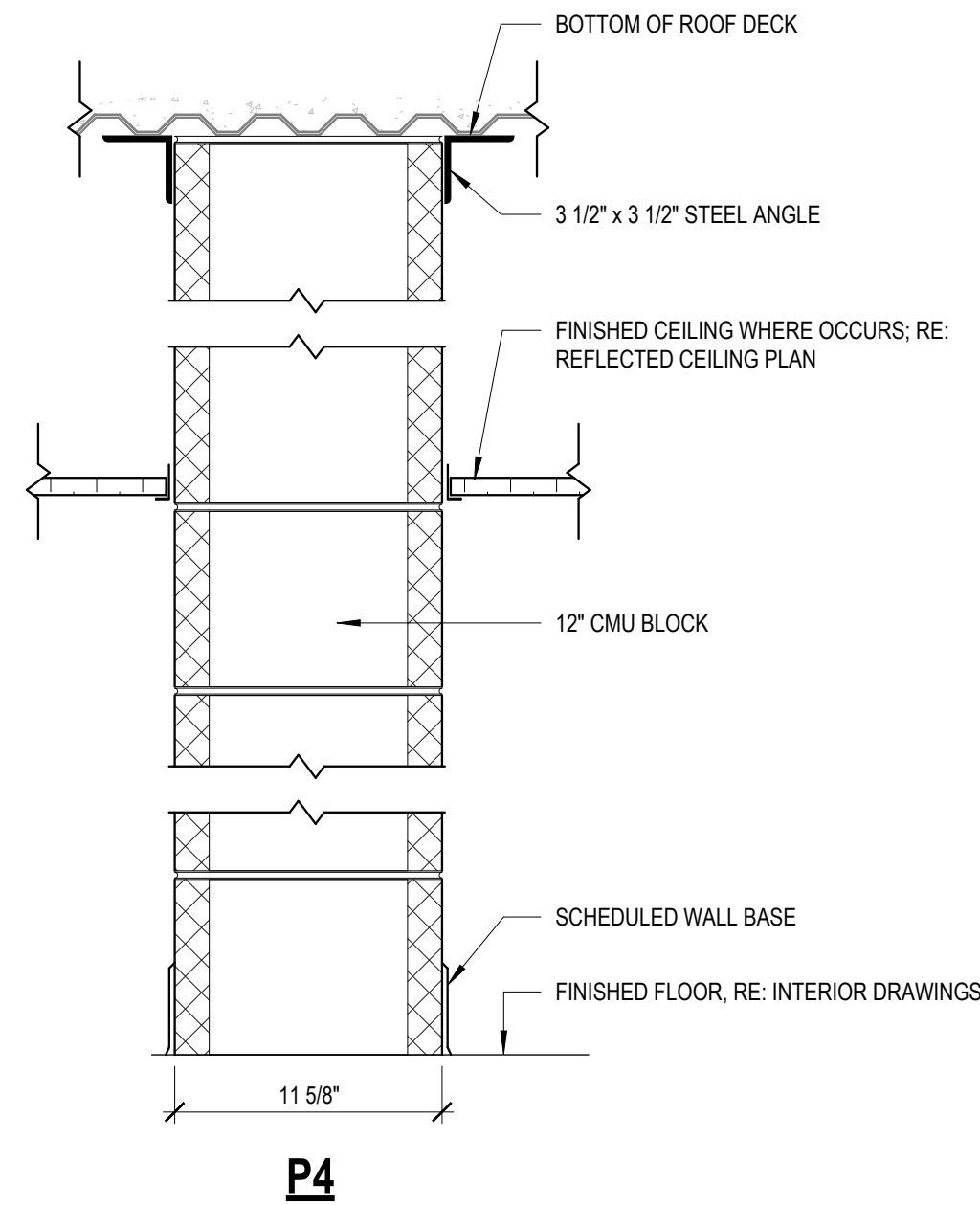
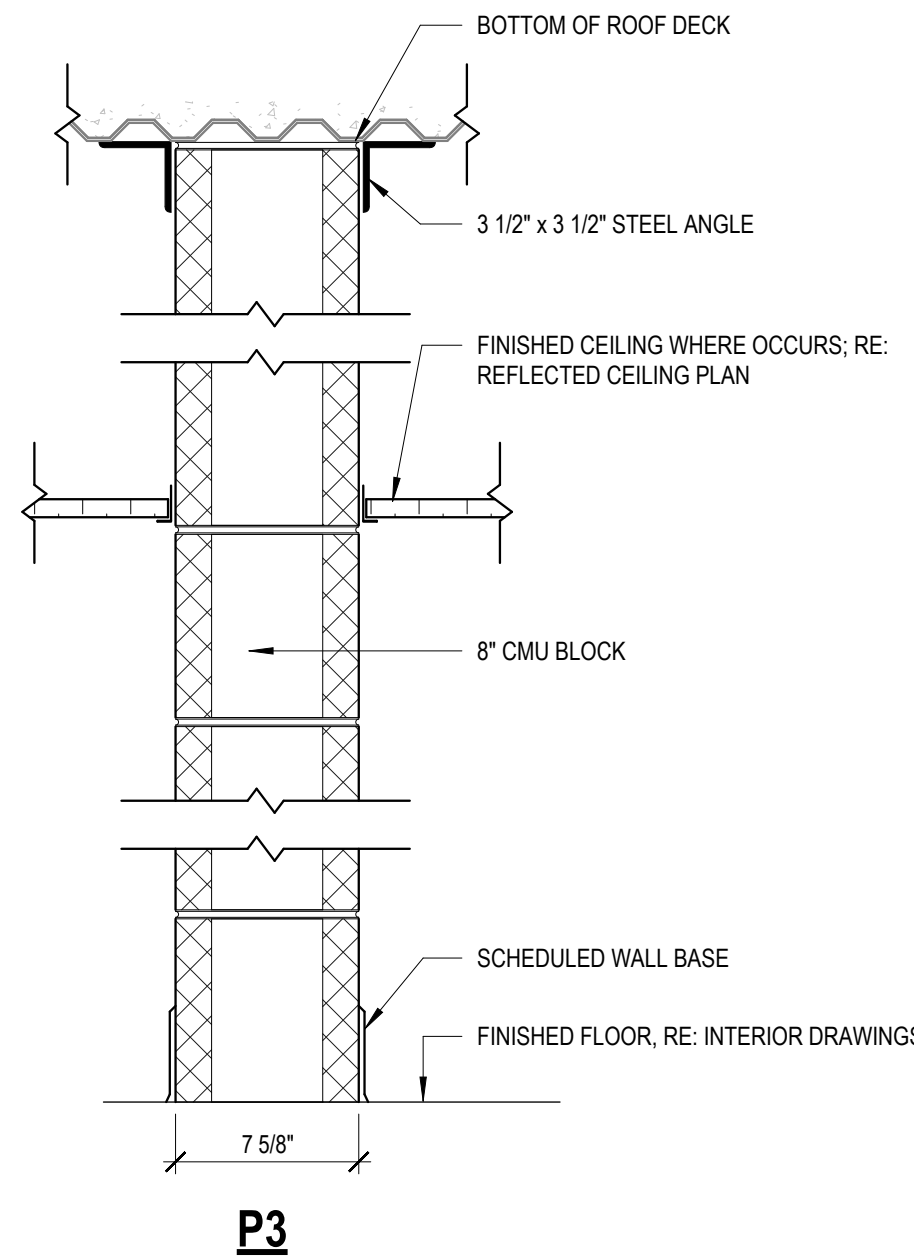
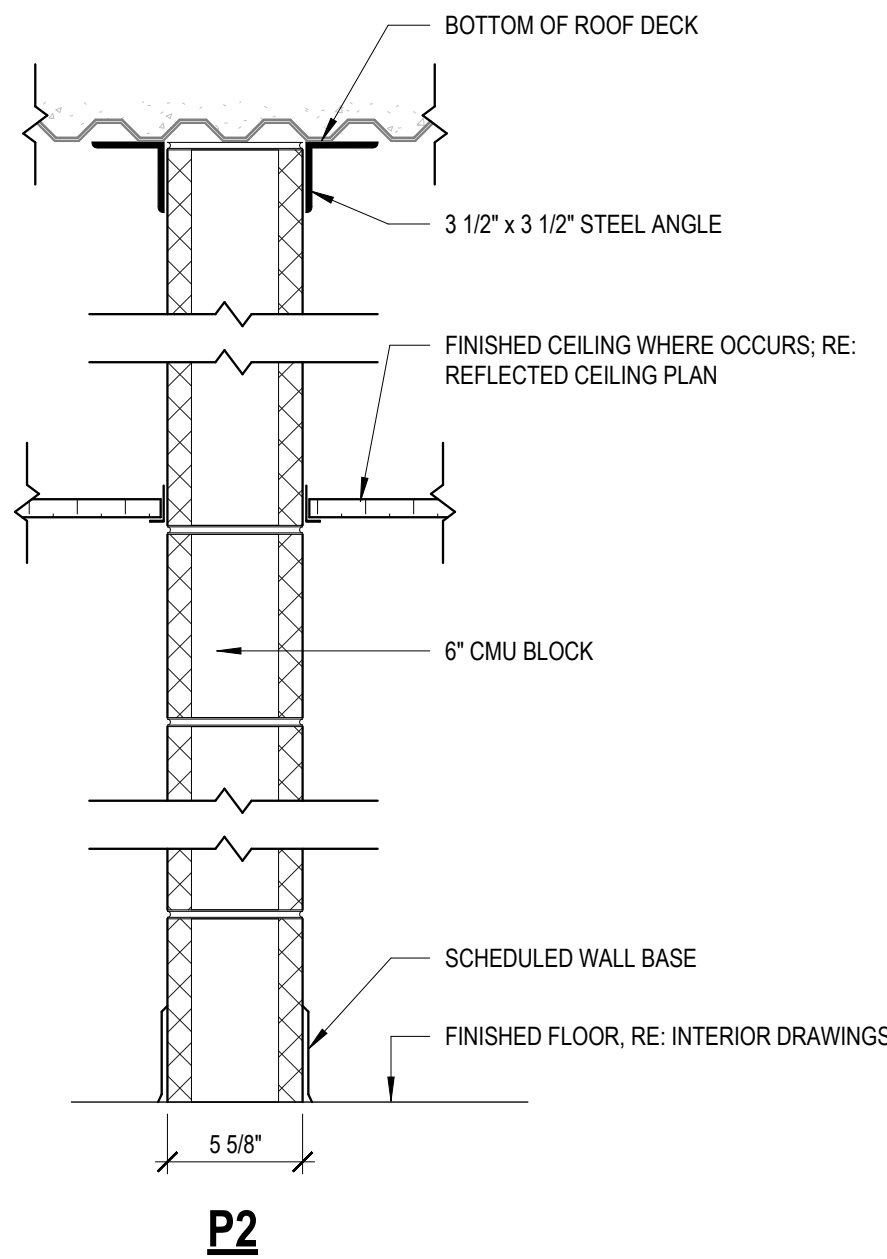
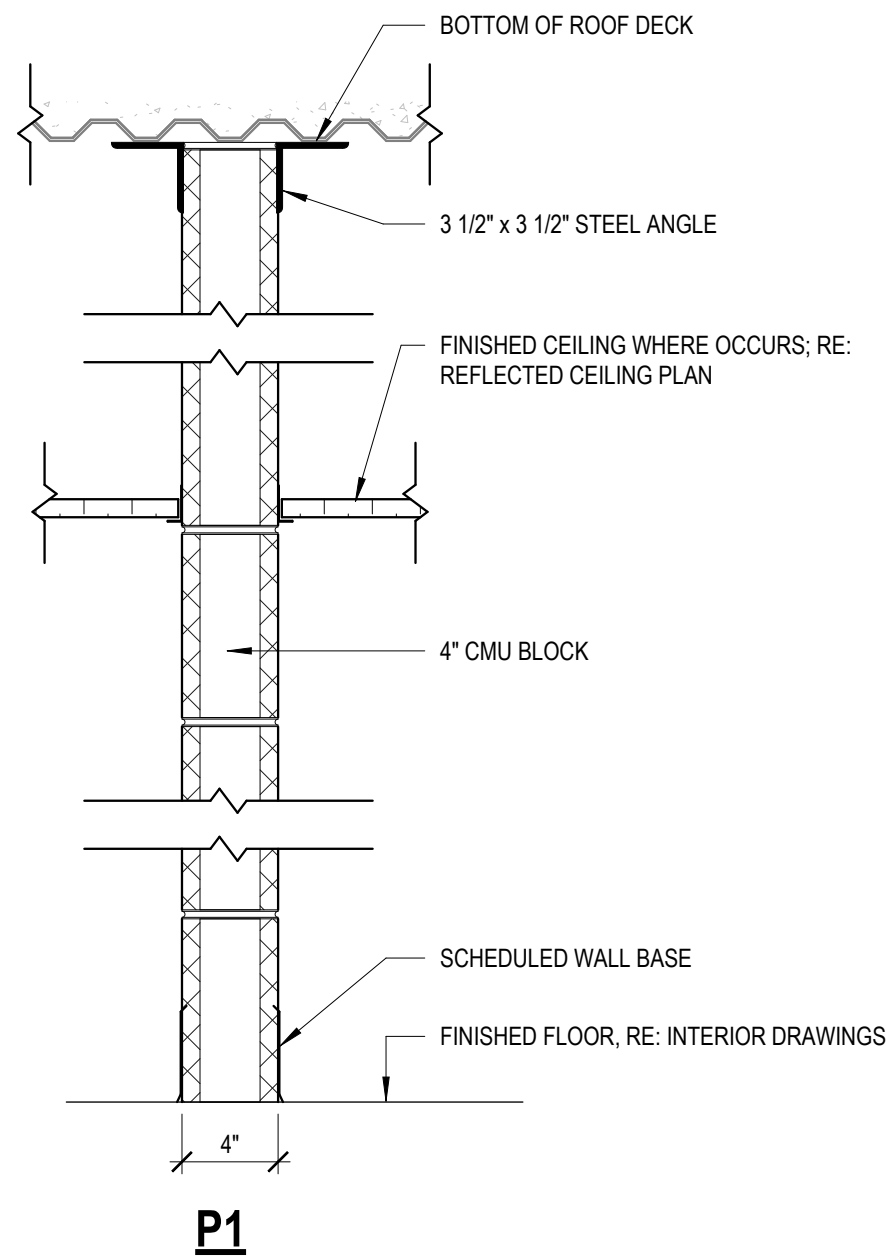


6 ELEVATION - MEN'S RESTROOM
SCALE: 1/4" = 1'-0"





2
A-403
DETAIL AT 2-HOUR WALL
SCALE: 1 1/2" = 1'-0"



1
A-403
PARTITION TYPES
SCALE: 1 1/2" = 1'-0"

GENERAL PARTITION NOTES

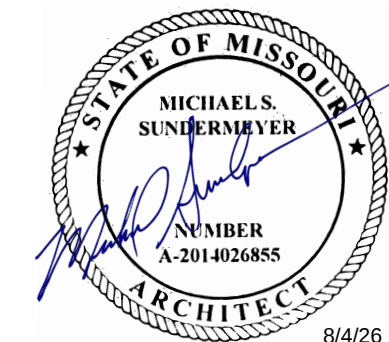
- FOR WALL FINISHES SEE ROOM FINISH SCHEDULE ON SHEET A-601.
- PROVIDE SOUND ATTENUATING INSULATION AT ALL STUD WALL PARTITIONS SURROUNDING TOILETS AND MECHANICAL EQUIPMENT ROOMS, WHETHER OR NOT SHOWN IN PARTITION TYPES.
- FOR LOCATION OF FIRE RESISTIVE PARTITIONS, SEE LIFE SAFETY PLAN, IN ADDITION TO INFORMATION GIVEN ON INDIVIDUAL PARTITION TYPES.
- AT ALL PARTITIONS SCHEDULED TO HAVE A FIRE RATING, PROVIDE NECESSARY COMPONENTS TO MEET THE RATING BUT NO LESS THAN, CONTINUOUS BATT INSULATION, FIRE RATED CAULK AROUND PERIMETERS AND OPENINGS.
- U.N.O., PROVIDE METAL STUDS OF 0.0375 in (20 ga.) THICKNESS FOR GYPSUM WALL PARTITIONS AND CEMENTITIOUS BACKER BOARD PARTITIONS.
- INTERIOR GYPSUM BOARD PARTITIONS SHALL CONFORM WITH ASTM C754 FOR MAXIMUM STUD HEIGHT AND SPACING. U.N.O., PROVIDE GYPSUM PARTITION ASSEMBLIES TO WITHSTAND A MINIMUM PRESSURE OF 5 PSF AT L360.
- PROVIDE SEALANT BEAD BETWEEN HOLLOW METAL FRAMES AND GYPSUM BOARD.

PARTITION TYPE SUBCATEGORIES

- A. BEST BLOCK MIDWEST BLOCK - EXTERIOR GROUND FACE CMU - COLOR: #9 CREAM

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DRAWN BY: MJM
CHECKED BY: RAR
DESIGNED BY: MJM

SHEET TITLE:
PARTITION TYPES

SHEET NUMBER:

A-403

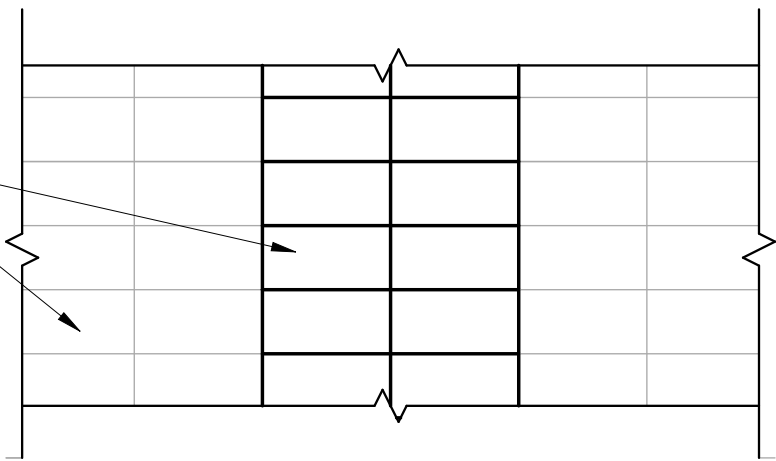
SHEET 15 OF 51
08/04/2026

NOTE:

REQUIRED INFILL DIFFERS BY
OPENING SIZE. REFER TO SHEETS
A-102 AND A-401 FOR INFILL
LOCATIONS.

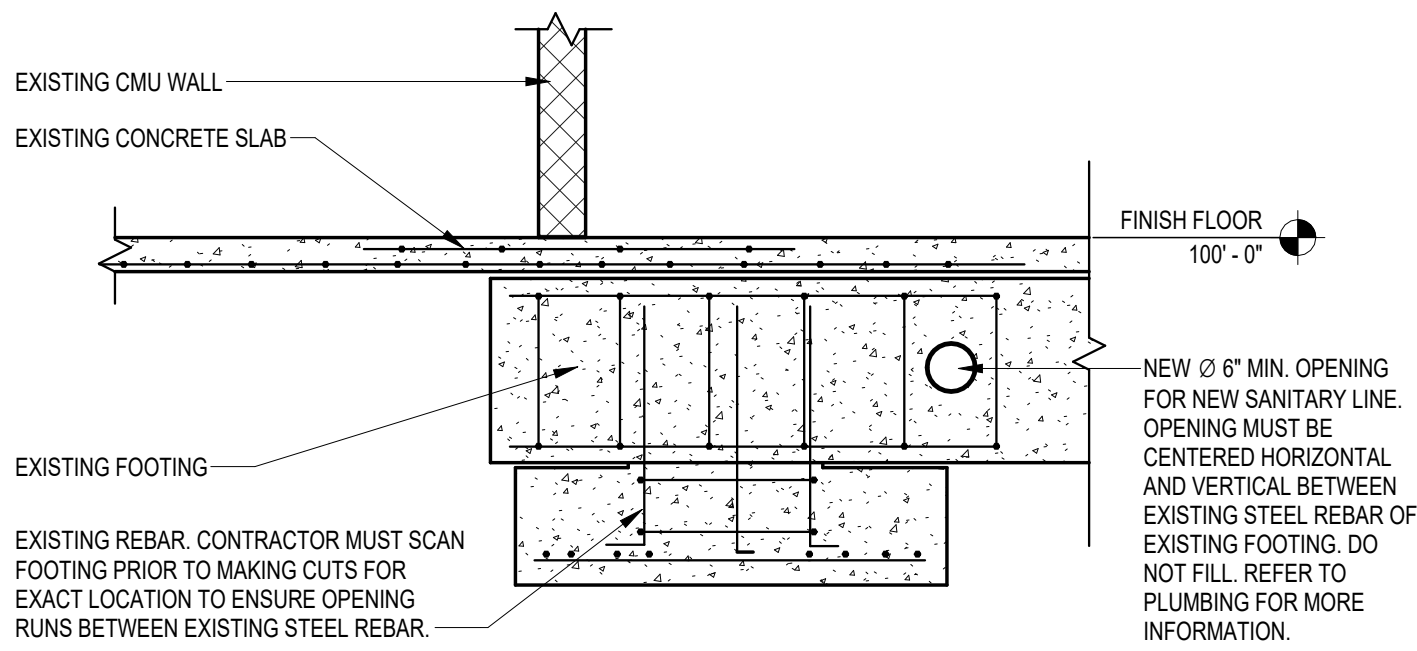
NEW CMU INFILL. PAINT
TO MATCH EXISTING.

EXISTING CMU WALL TO REMAIN.



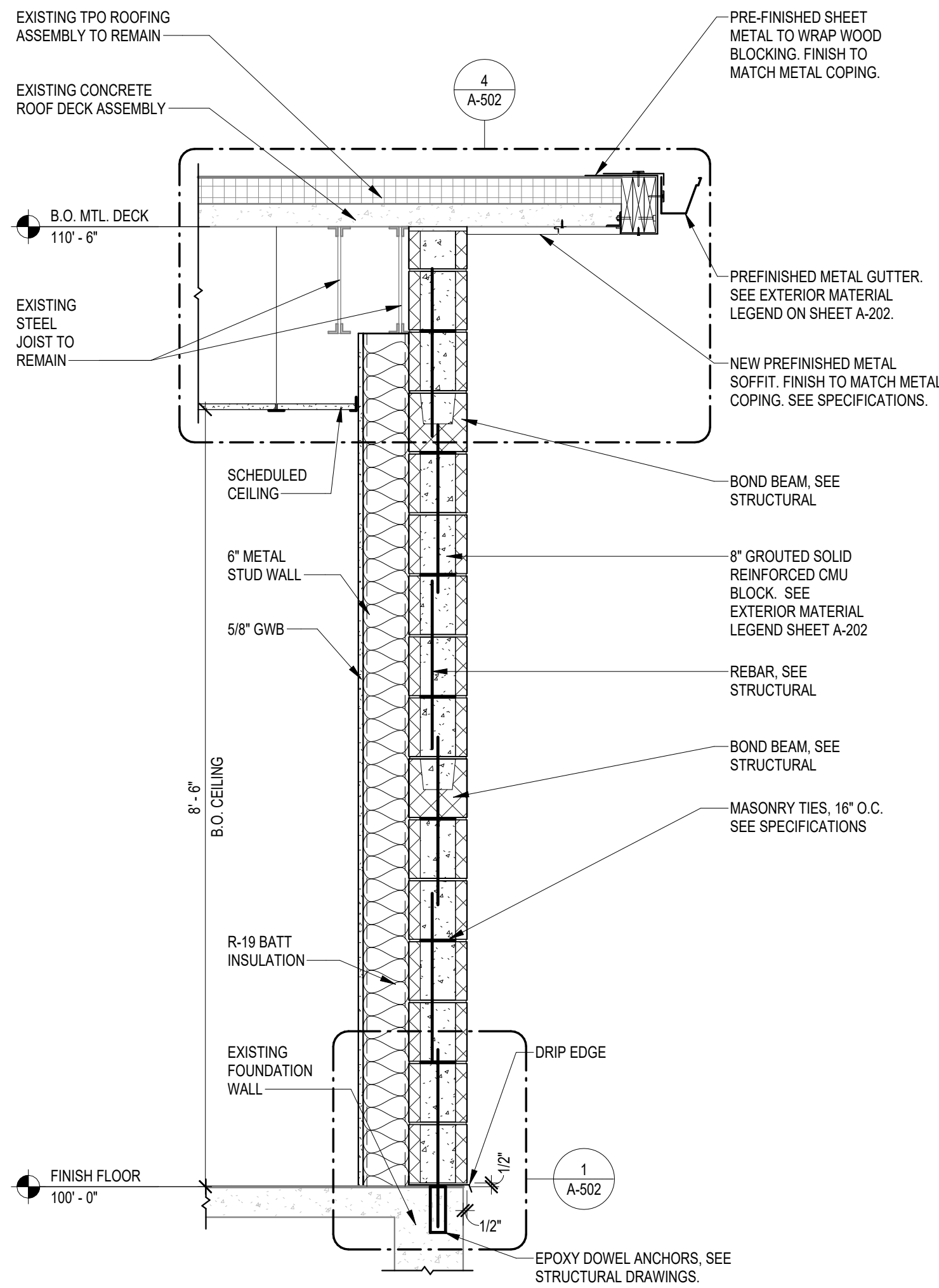
1 TYP. CMU WALL INFILL

SCALE: 1/2" = 1'-0"



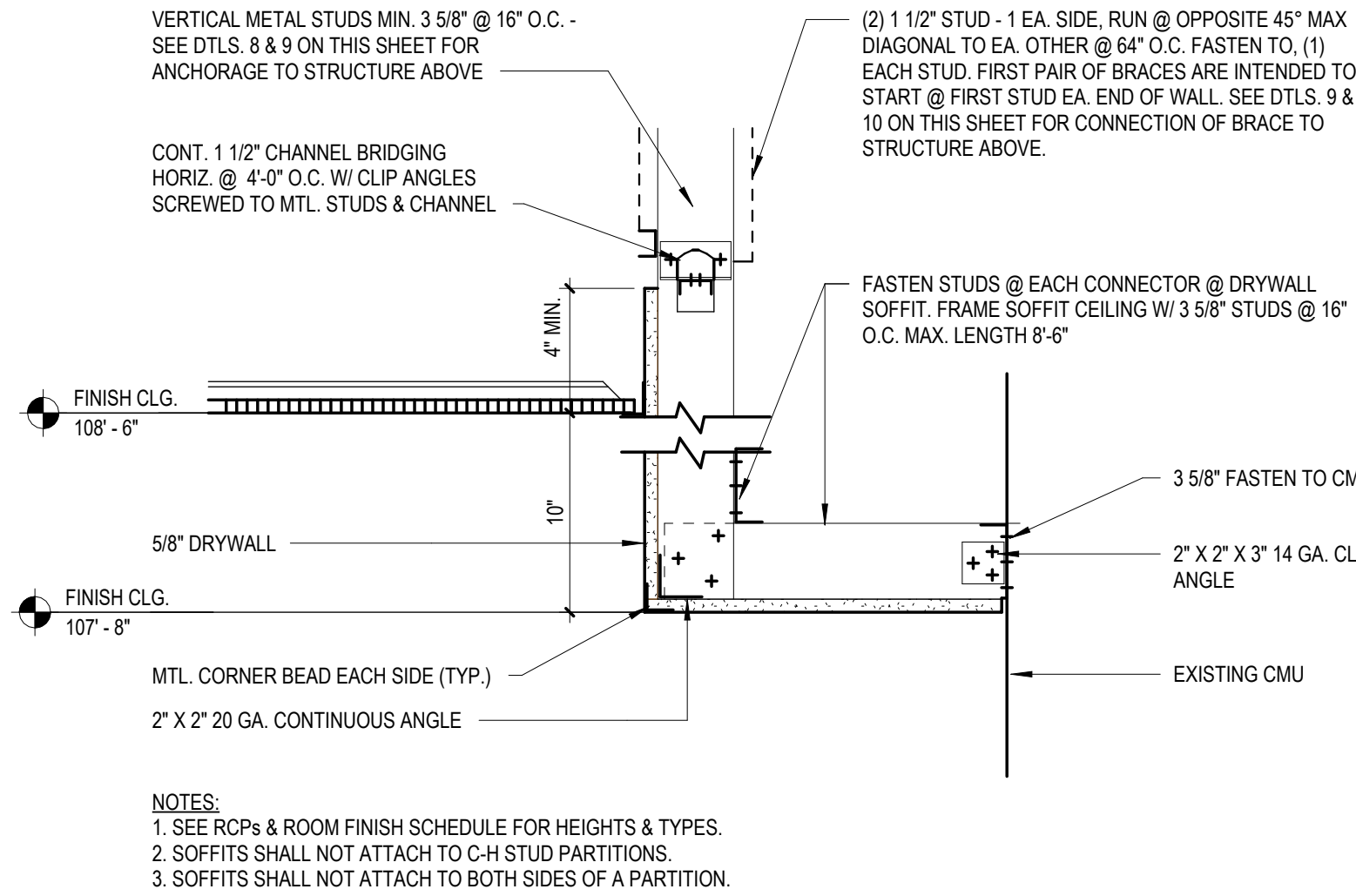
2 PIPE PENETRATION @ FND. WALL DETAIL

SCALE: 1/2" = 1'-0"



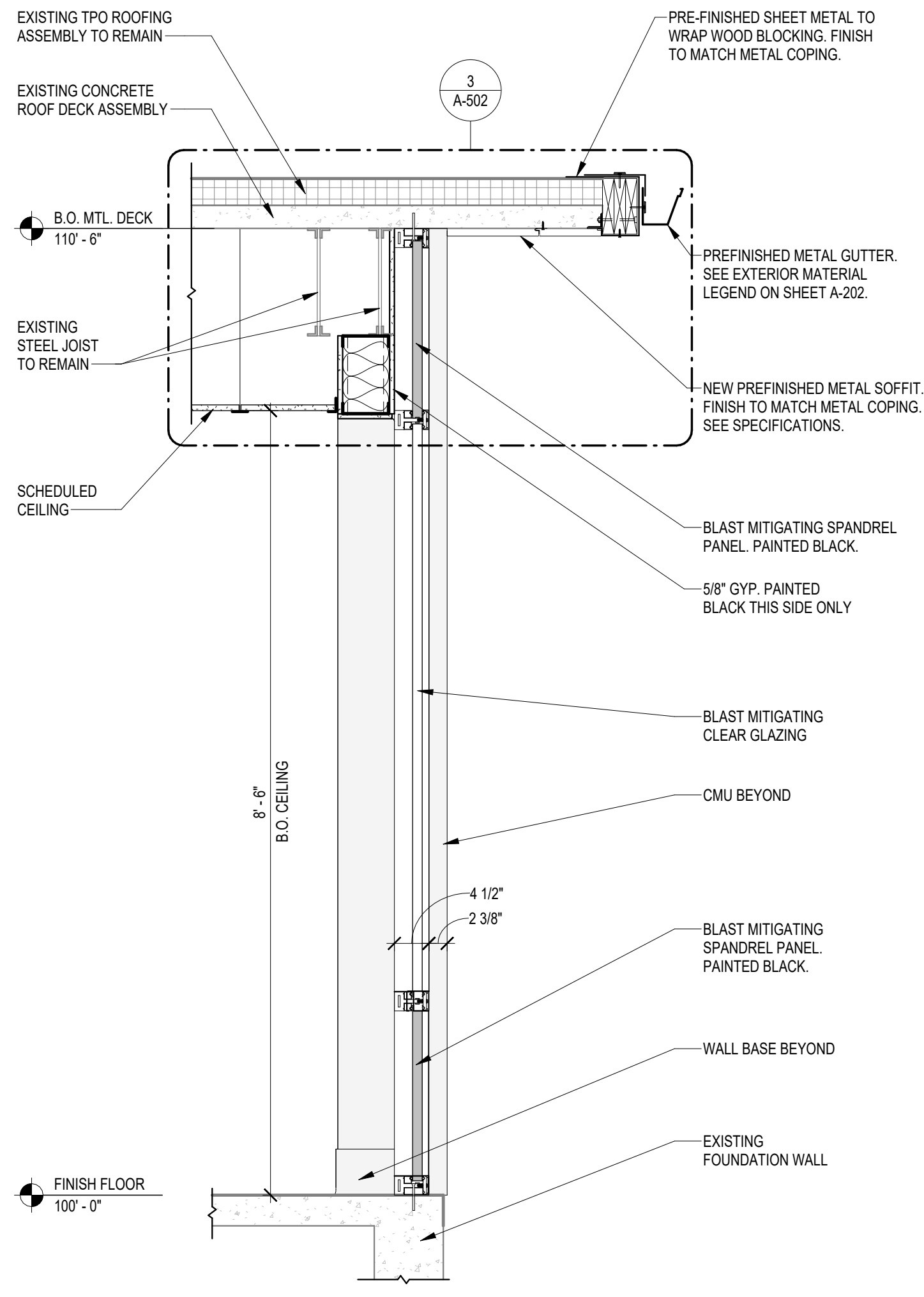
4 BLAST RESISTANT WALL (LOW SIDE)

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



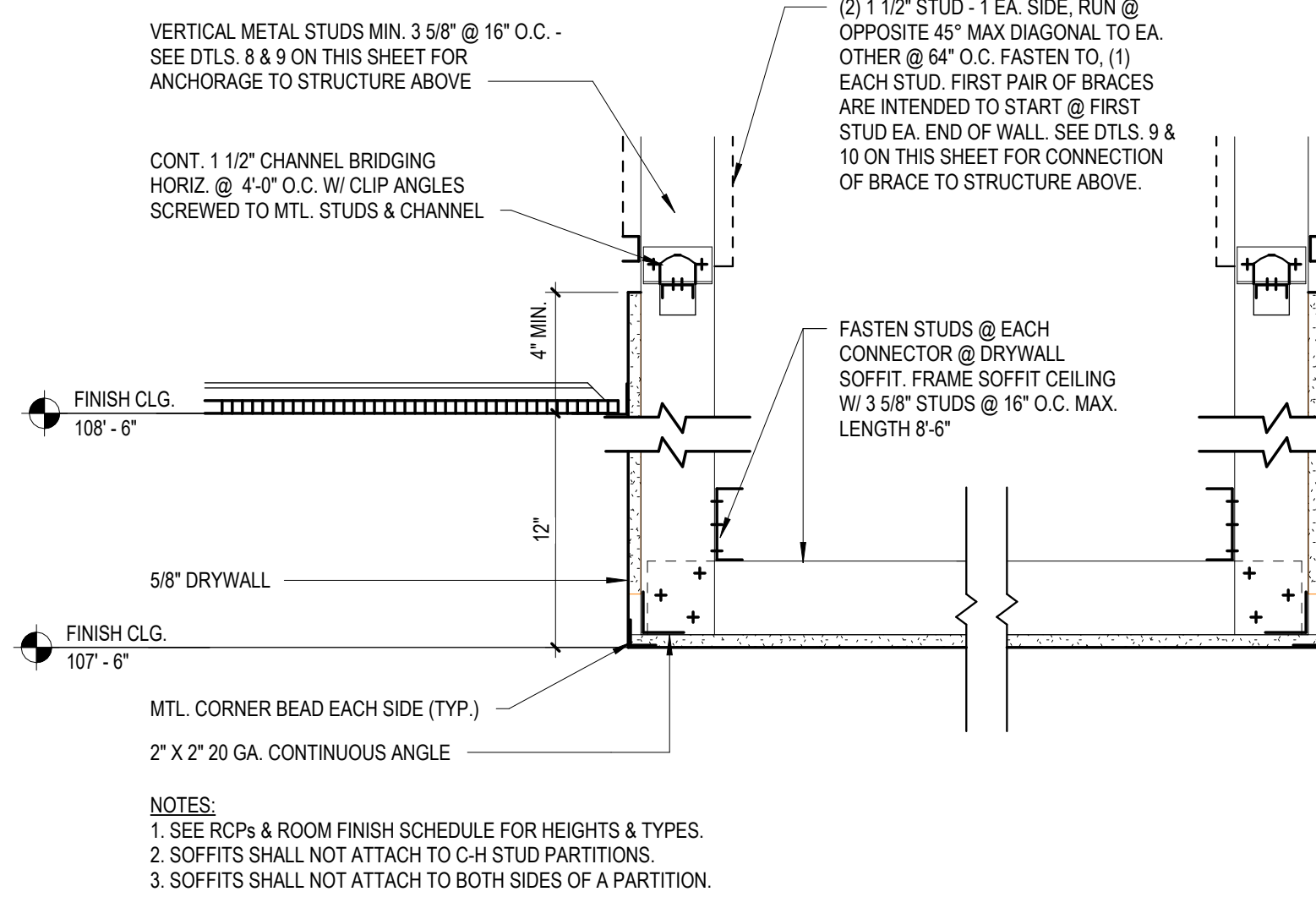
3 DROP SOFFIT BELOW CEILING DETAIL (TYP)

SCALE: 1 1/2" = 1'-0"



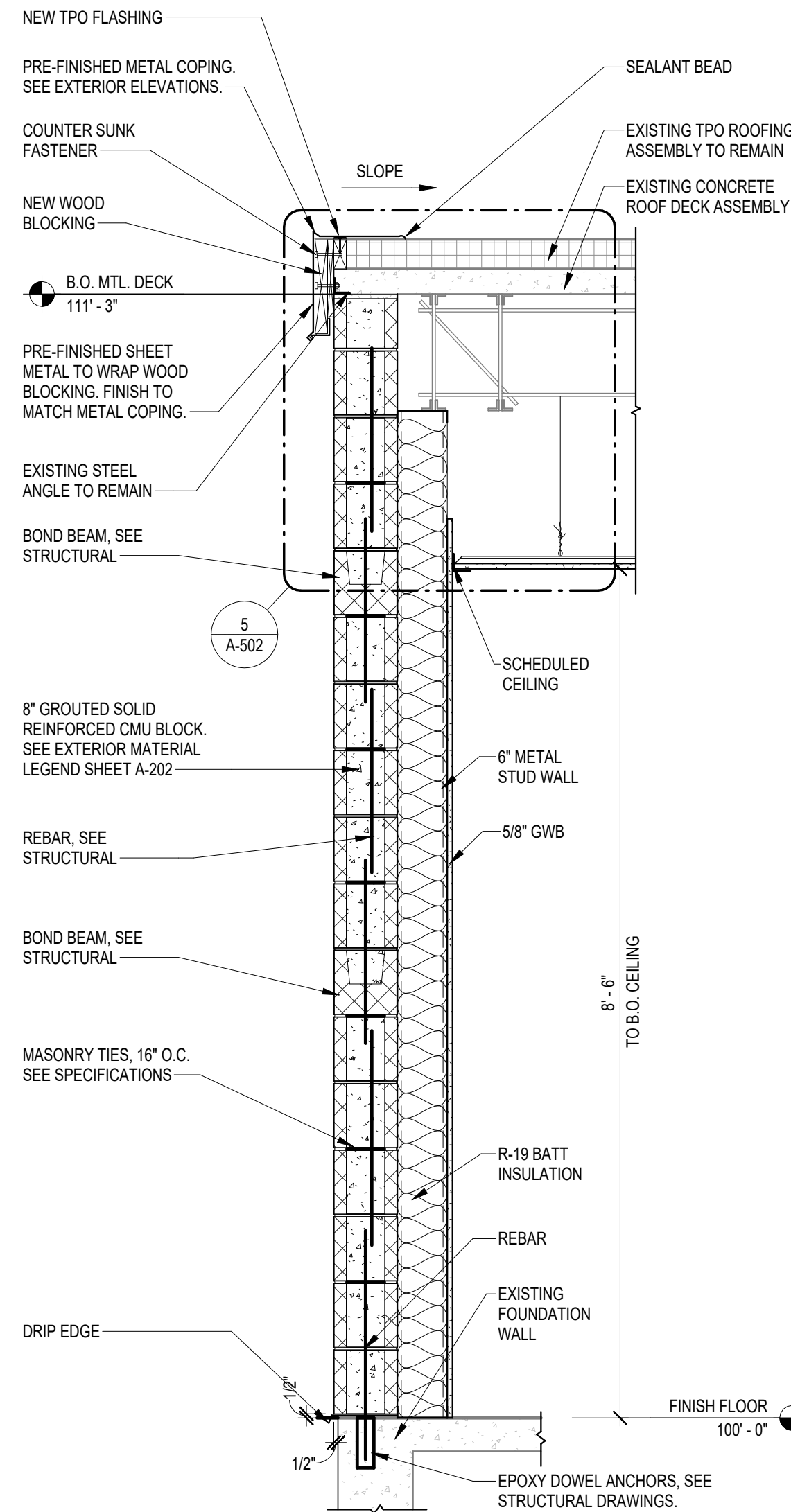
5 BLAST RESISTANT WINDOW (LOW SIDE)

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



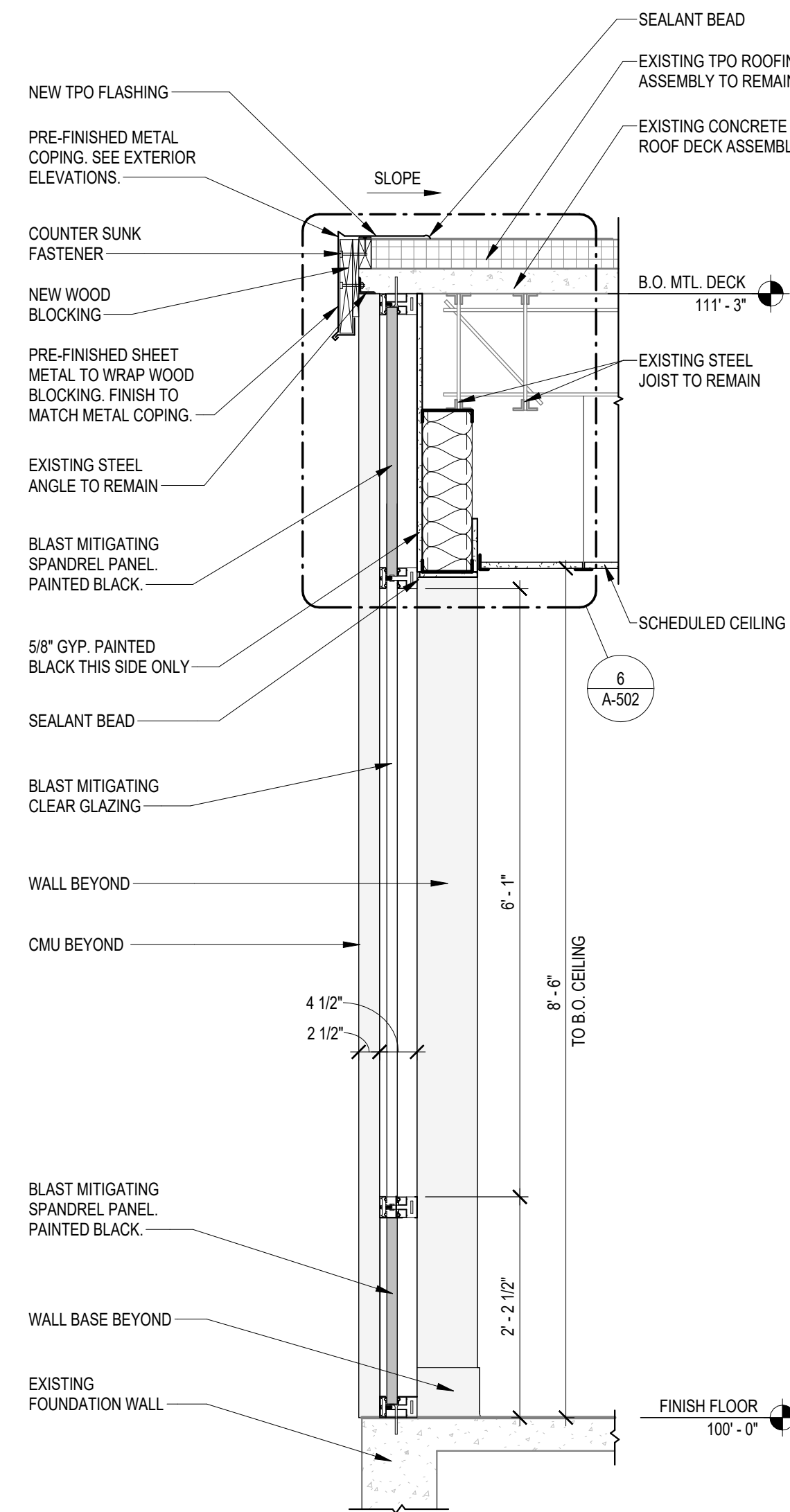
8 DROP SOFFIT BELOW CEILING DETAIL (RM 125)

SCALE: 1 1/2" = 1'-0"



6 REINFORCED CMU WALL (HIGH SIDE)

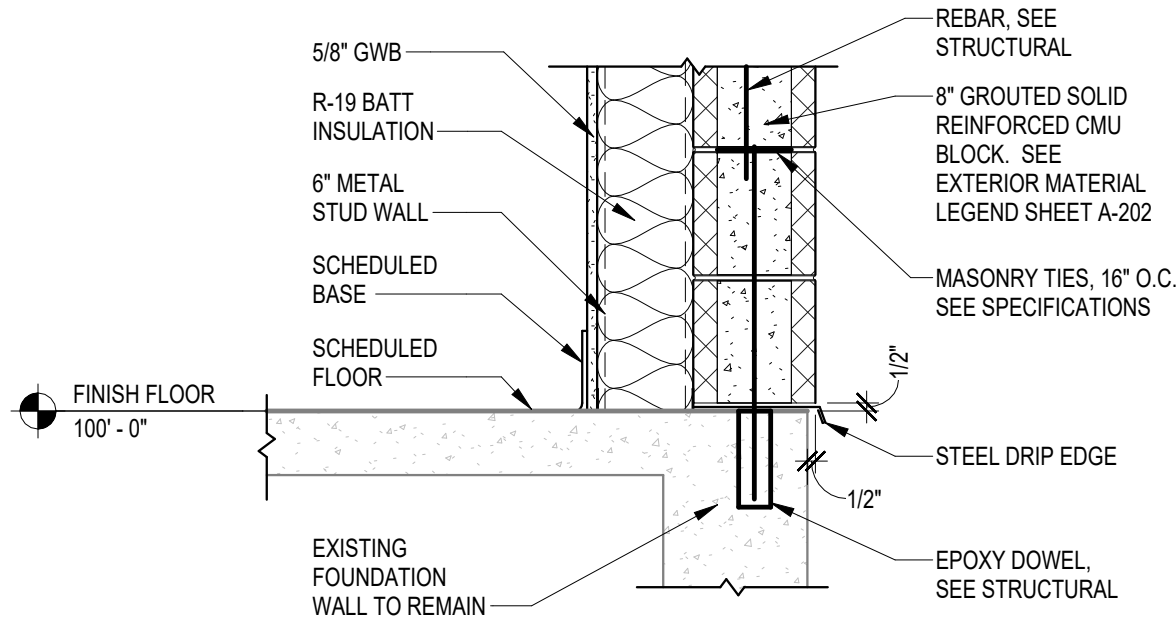
SCALE: 3/4" = 1'-0"



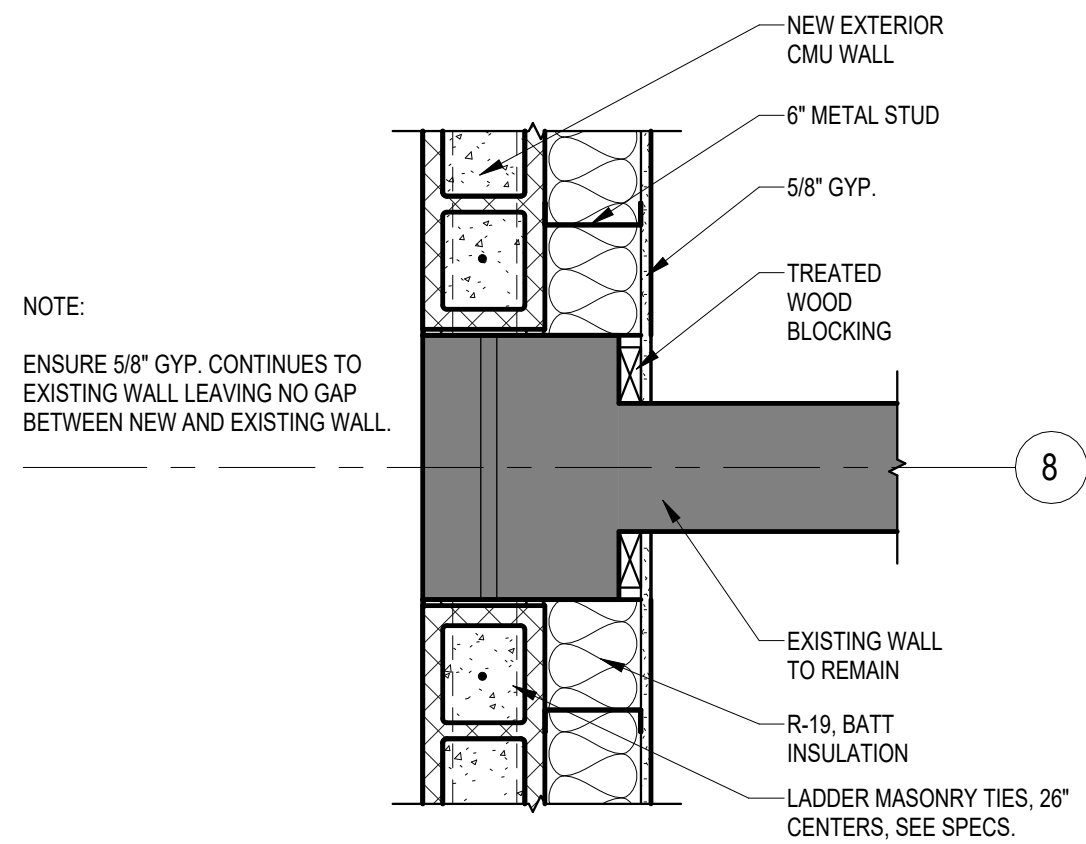
7 SECTION THRU WINDOW (HIGH SIDE)

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

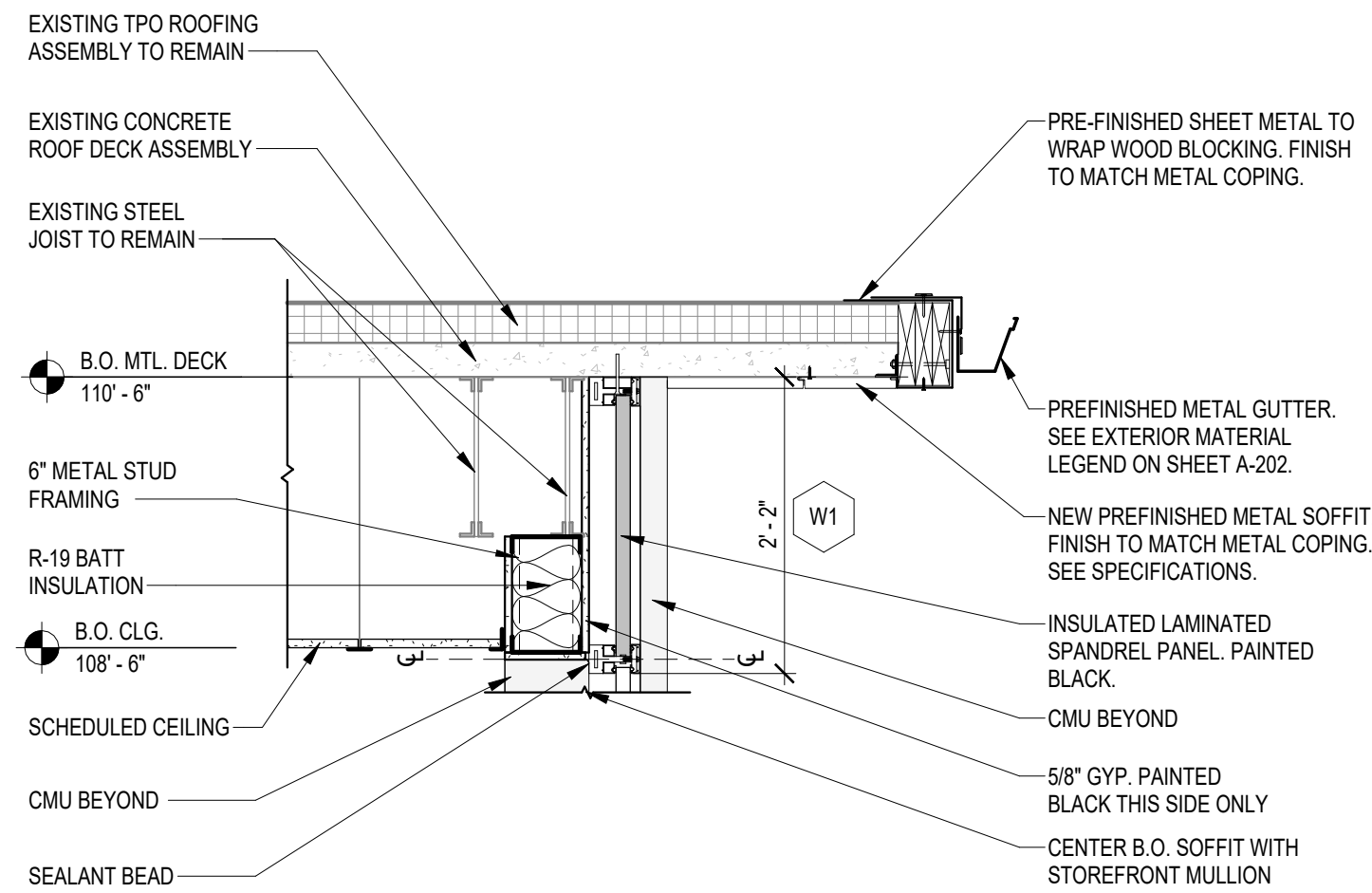




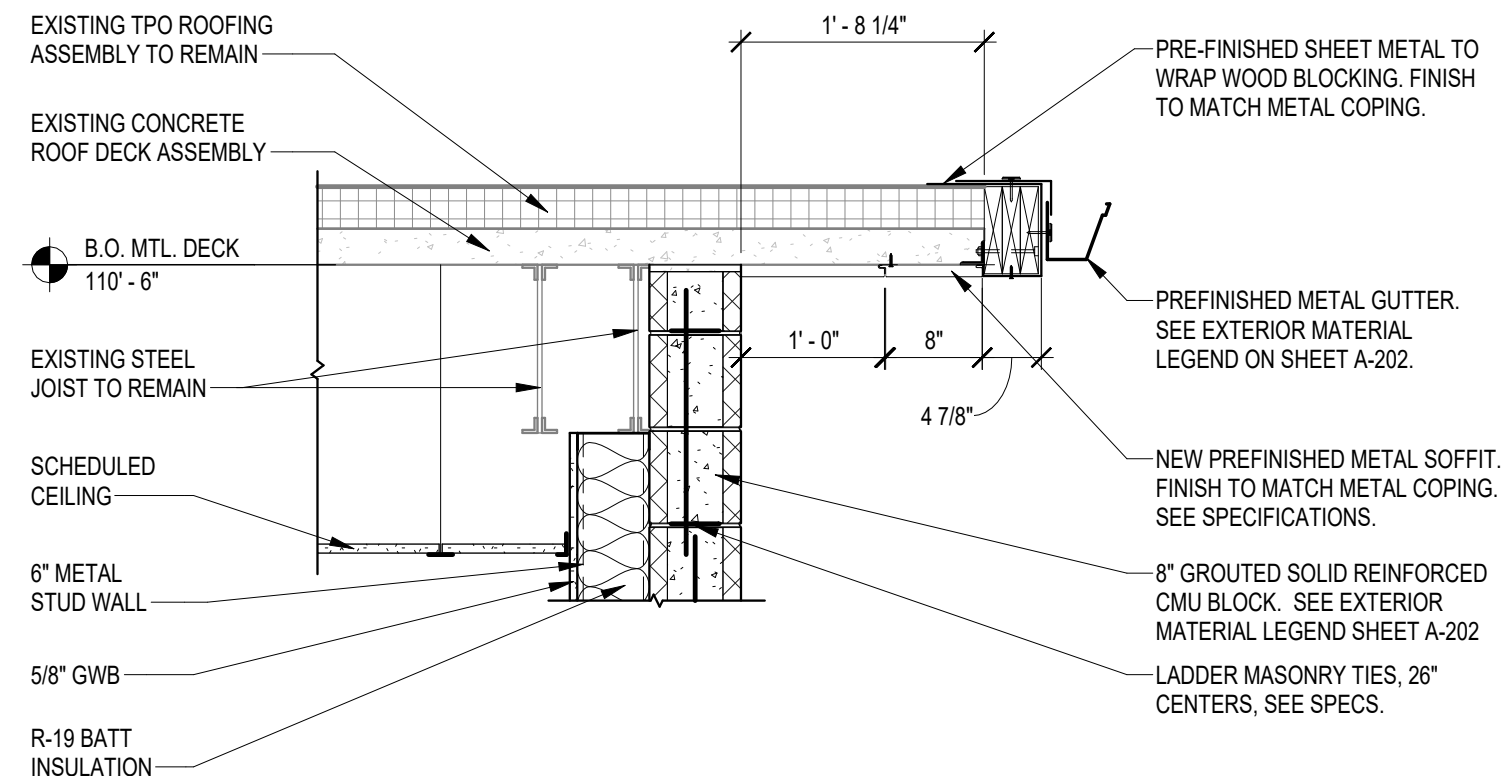
1 TYP. BLAST RESISTANT WALL BASE
SCALE: 1" = 1'-0"



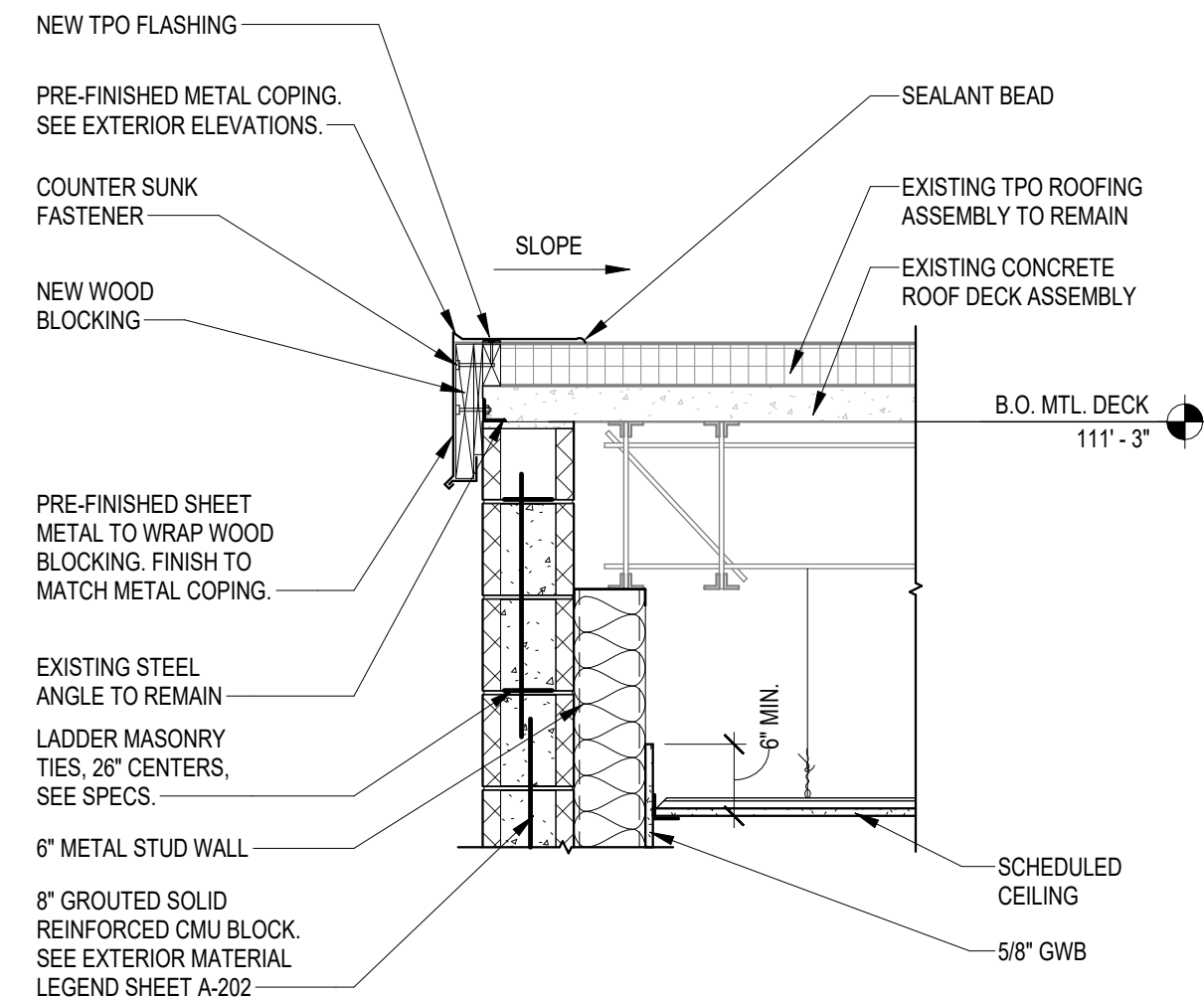
2 TYP. CLASSROOM WALL FURRING
SCALE: 1" = 1'-0"



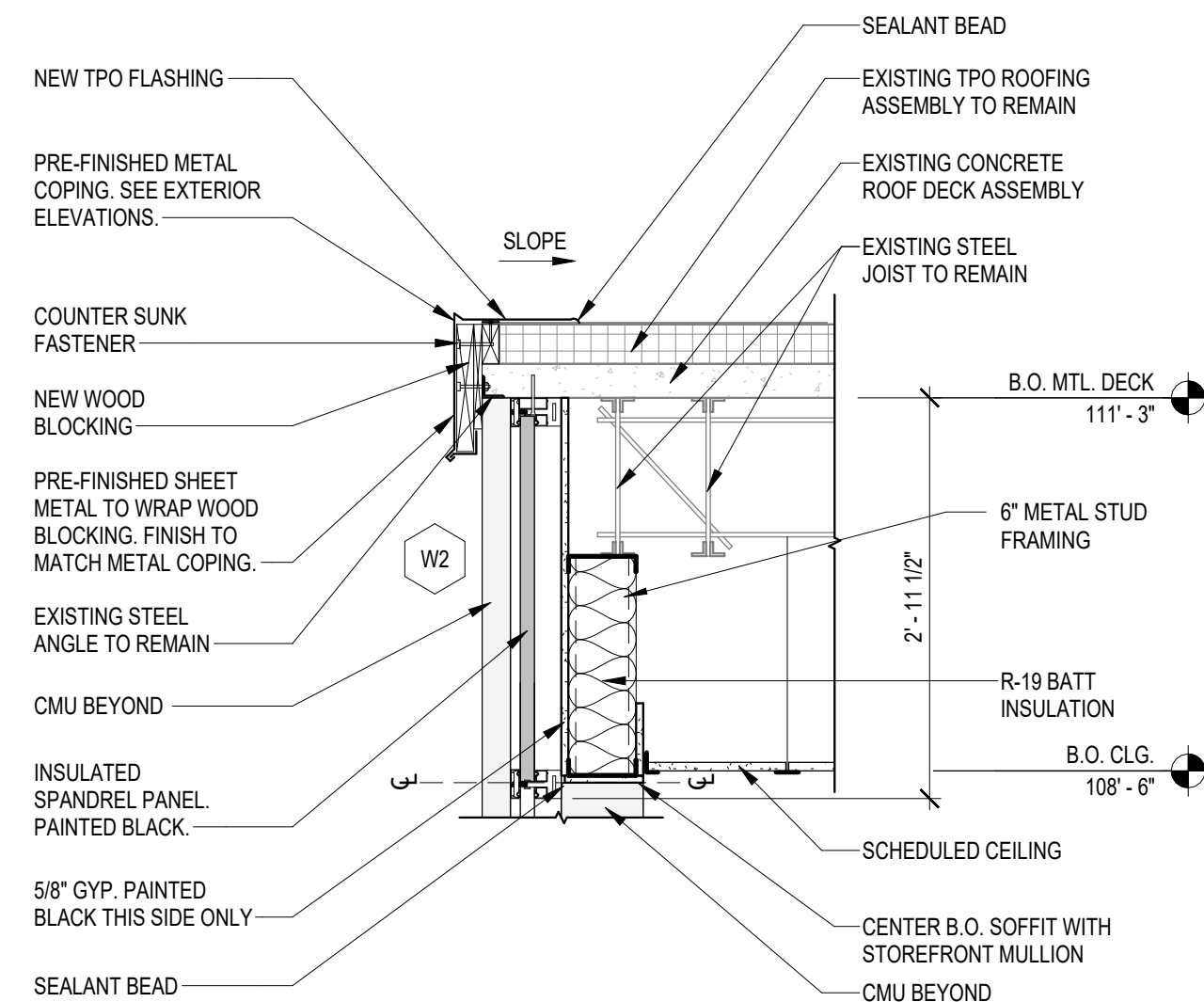
3 ROOF EDGE @ CMU WALL (LOW SIDE)
SCALE: 3/4" = 1'-0"



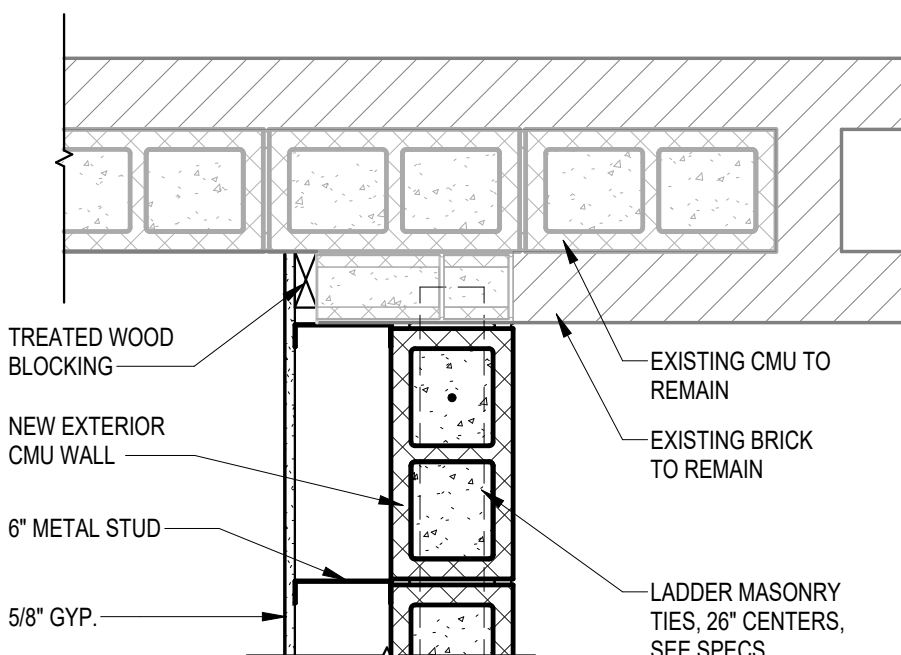
4 ROOF EDGE @ CMU WALL (LOW SIDE)
SCALE: 3/4" = 1'-0"



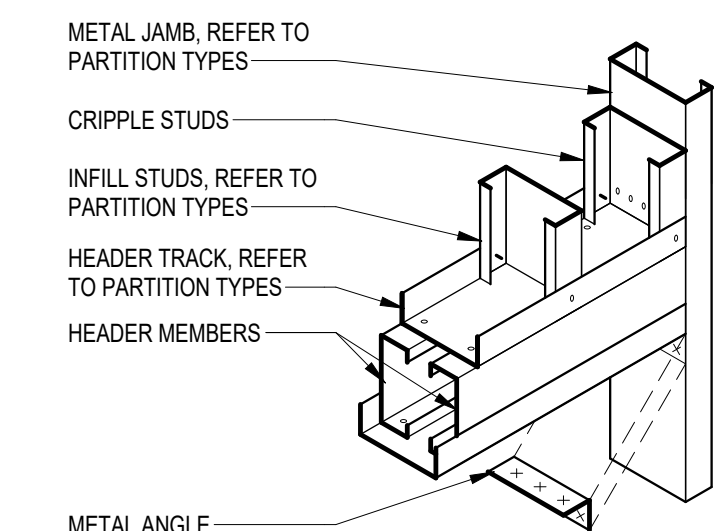
5 ROOF EDGE @ CMU WALL (HIGH SIDE)
SCALE: 3/4" = 1'-0"



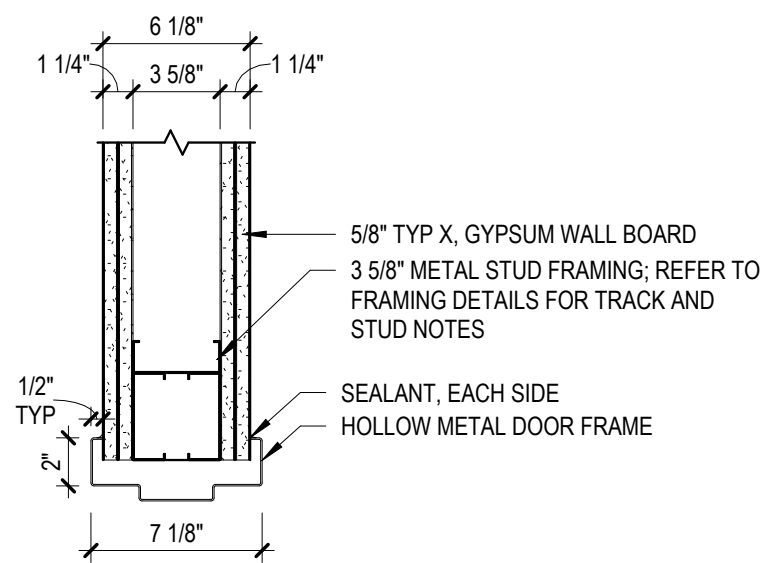
6 ROOF EDGE @ WINDOW (HIGH SIDE)
SCALE: 3/4" = 1'-0"



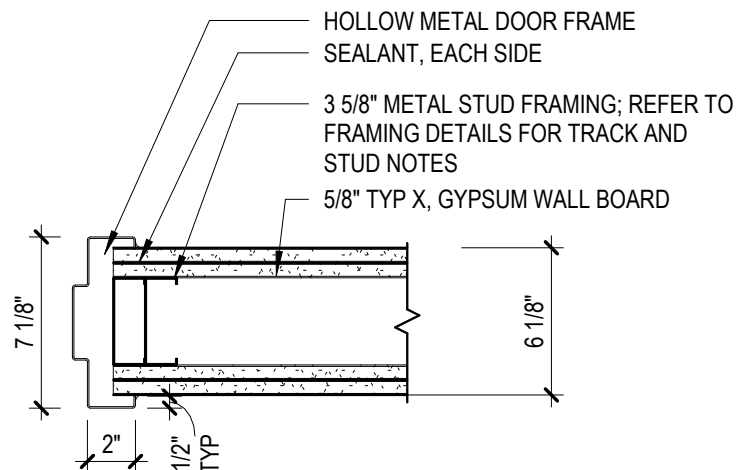
7 TYP. EXT. CMU WALL JOINT
SCALE: 1" = 1'-0"



8 BOX HEADER
SCALE: 1 1/2" = 1'-0"



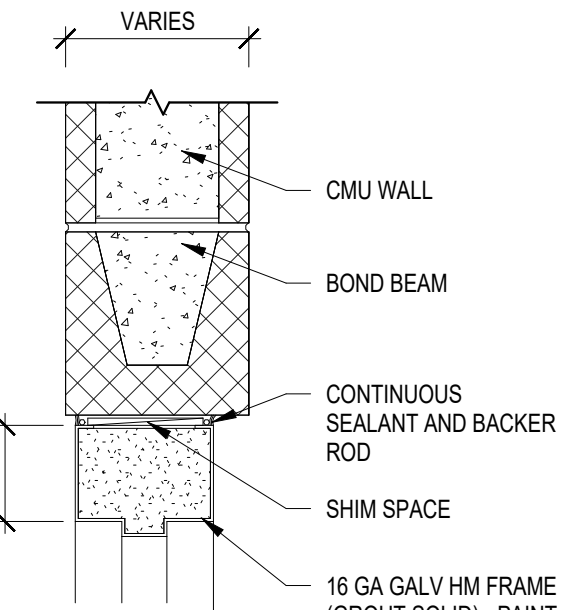
HEAD



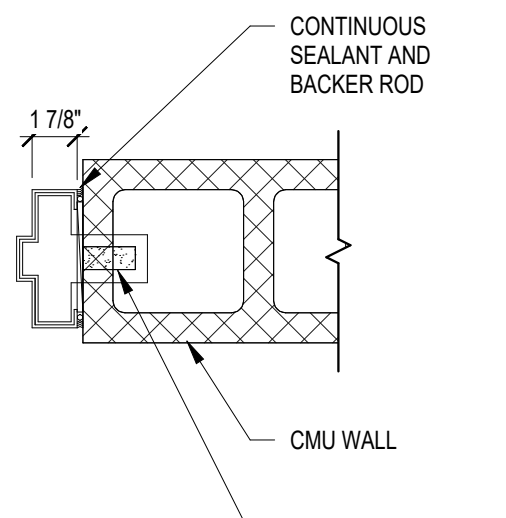
JAMB

1 HEAD & JAMB DTL - H1/J1

A-601 SCALE: 1 1/2" = 1'-0"



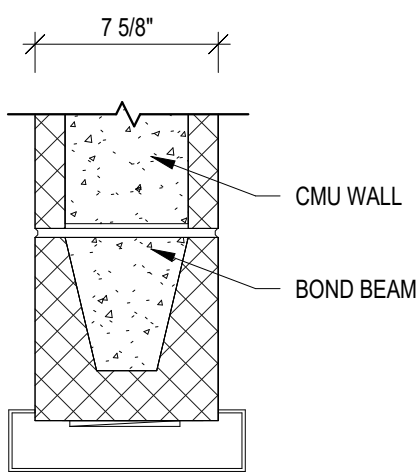
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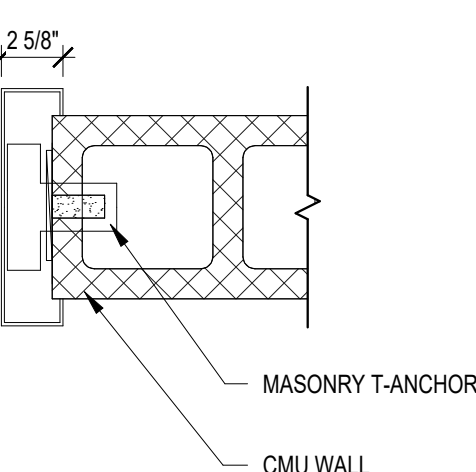
JAMB

2 HEAD & JAMB DTL - H2/J2

A-601 SCALE: 1 1/2" = 1'-0"



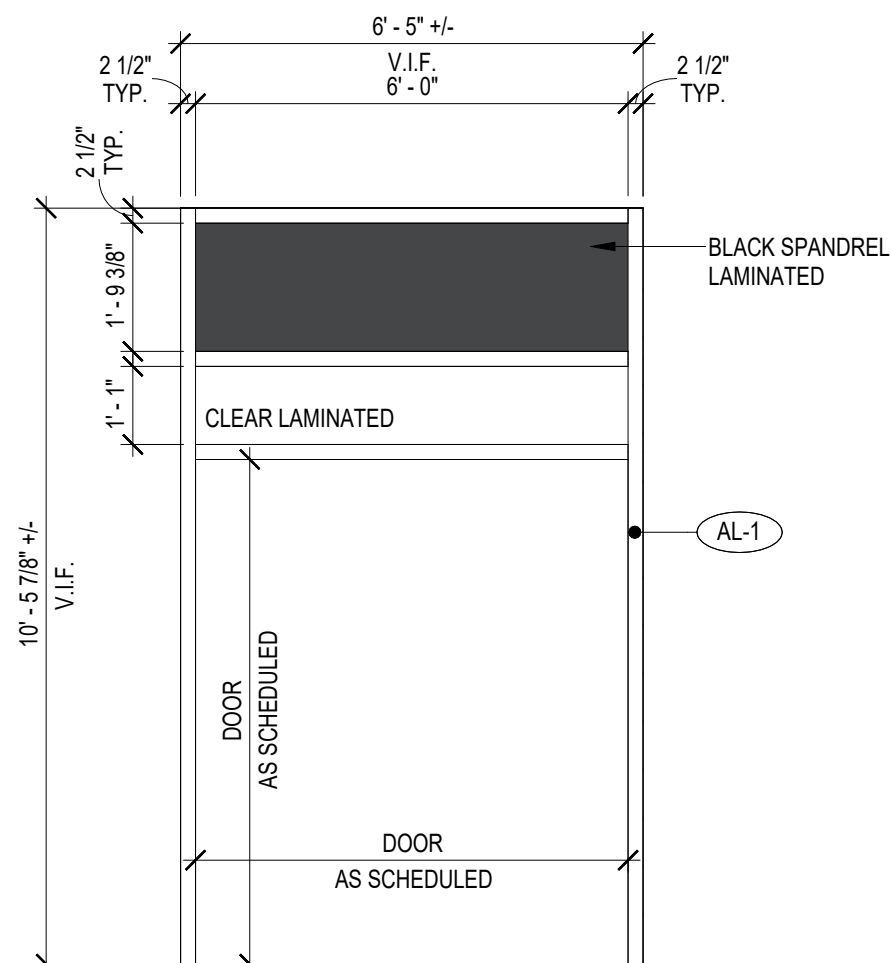
HEAD



JAMB

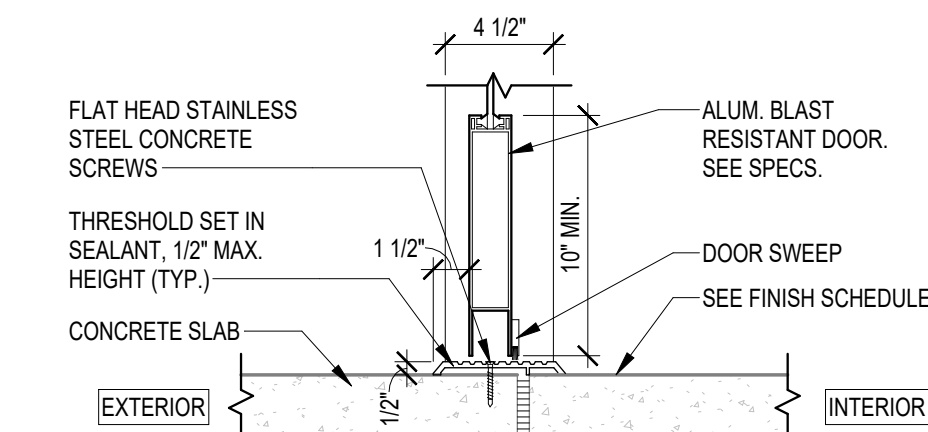
3 HEAD & JAMB DTL - H3/J3

A-601 SCALE: 1 1/2" = 1'-0"



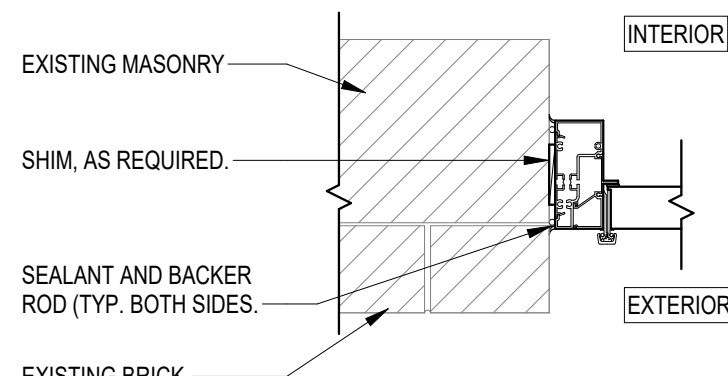
9 STOREFRONT FRAME (F-3)

A-601 SCALE: 3/8" = 1'-0"



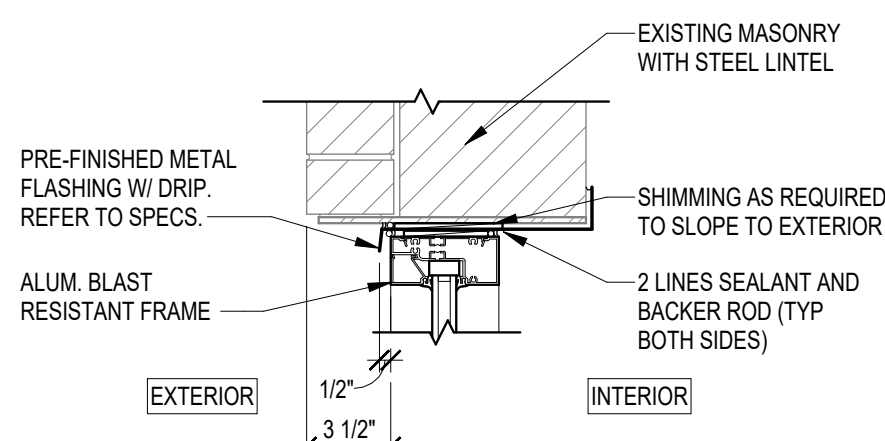
4 STOREFRONT DOOR SILL

A-601 SCALE: 1 1/2" = 1'-0"



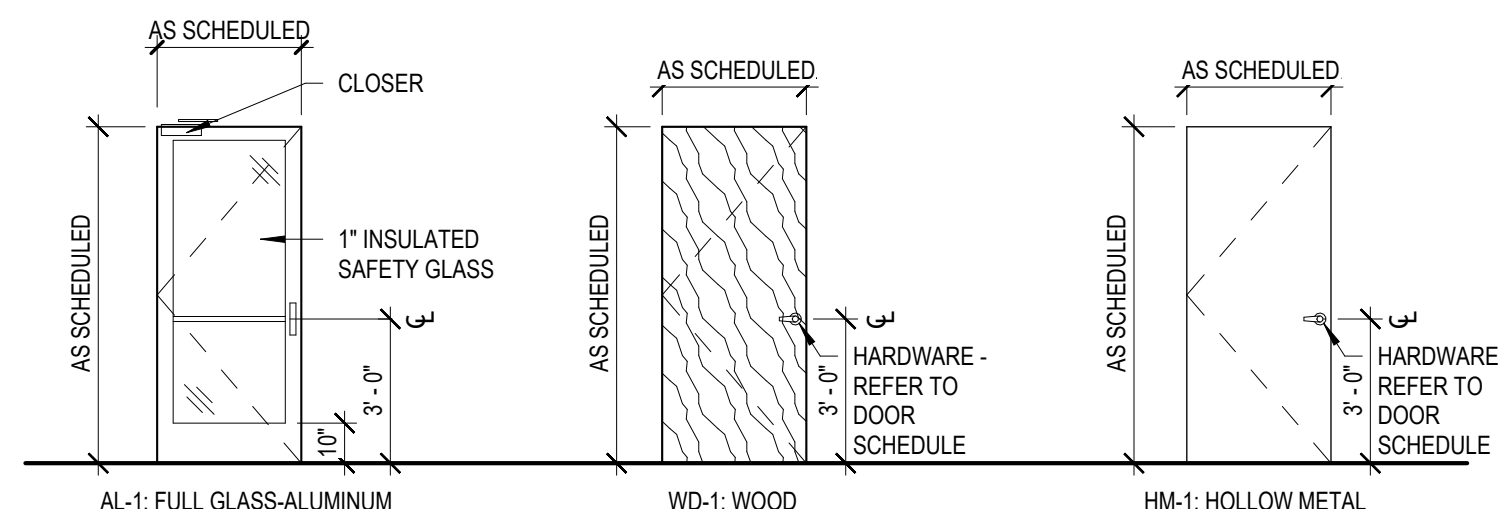
5 STOREFRONT JAMB (J4)

A-601 SCALE: 1 1/2" = 1'-0"



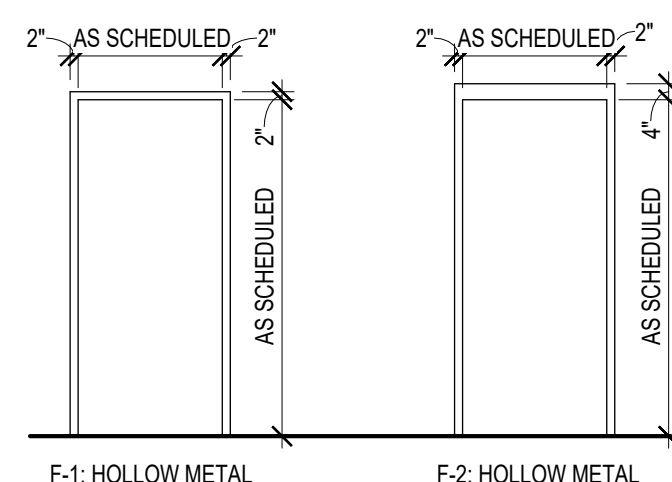
6 STOREFRONT HEADER (H4)

A-601 SCALE: 1 1/2" = 1'-0"



7 DOOR TYPES

A-601 SCALE: 1/4" = 1'-0"



8 FRAME TYPES

A-601 SCALE: 1/4" = 1'-0"

DOOR AND FRAME SCHEDULE

DOOR #	DOOR NOMINAL			FRAME DETAILS			RATING	HARDWARE SETS	REMARKS
	TYPE	WIDTH	HEIGHT	TYPE	HEAD	JAMB			
100	AL-1	PR 3' - 0"	7' - 0"	F3	H4	J4		09	
101	WD-1	3' - 0"	7' - 0"	F1	H1	J1	90 MIN.	04	
102	HM-1	3' - 0"	7' - 0"	F2	H2	J2		05	7,10,12
103	HM-1	3' - 0"	7' - 0"	F2	H2	J2		05	7,10
104	HM-1	3' - 0"	7' - 0"	F2	H2	J2		06	7,10,12
105	HM-1	3' - 0"	7' - 0"	F2	H2	J2		06	7,10
106	HM-1	3' - 0"	7' - 0"	F2	H2	J2		07	
107	WD-1	3' - 0"	7' - 0"	F2	H2	J2		05	7,11,12
108	WD-1	3' - 0"	7' - 0"	F1	H1	J1	90 MIN.	04	11
109	HM-1	PR 3' - 0"	7' - 0"	F2	H2	J2		10	
110	EXISTING AL	PR 3' - 0"	7' - 0"	EXISTING	EXISTING	EXISTING		03A	
111	EXISTING AL	PR 3' - 0"	7' - 0"	EXISTING	EXISTING	EXISTING		03	1,2,3,4,5,6,7,8
112	EXISTING AL	PR 3' - 0"	7' - 0"	EXISTING	EXISTING	EXISTING		03B	
113	EXISTING AL	PR 3' - 0"	7' - 0"	EXISTING	EXISTING	EXISTING		03B	
114	EXISTING HM	3' - 0"	7' - 0"	EXISTING	EXISTING	EXISTING		02	
115	EXISTING HM	PR 3' - 0"	7' - 0"	EXISTING	EXISTING	EXISTING		11	
116	EXISTING AL	PR 3' - 0"	7' - 0"	EXISTING	EXISTING	EXISTING		01	
117	EXISTING AL	PR 3' - 0"	7' - 0"	EXISTING	EXISTING	EXISTING		01	
118	-	3' - 0"	7' - 0"	F2	H3	J3		-	9
119	-	3' - 0"	7' - 0"	F2	H3	J3		-	9
120	HM-1	3' - 0"	7' - 0"	F2	H2	J2		08	12
121	-	5' - 4"	7' - 0"	F2	H3	J3		-	9

NOTE: SEE SPECIFICATIONS FOR HARDWARE SETS.

FINISH SCHEDULE

NUMBER	Name	FLOORING		WALL FINISH				CEILING	REMARKS
		FLOORING MATERIAL	WALL BASE	NORTH WALL	EAST WALL	SOUTH WALL	WEST WALL	FINISH	
100	CORRIDOR	EP-1	VB-1	PT-3	PT-3	PT-3	PT-3	C-1	
101	CORRIDOR	EP-1	VB-1	PT-3	PT-3	PT-3	PT-3	C-1	
102	CORRIDOR	EP-1	VB-1	PT-3	PT-3	PT-3	PT-3	C-1	
103	CORRIDOR	EP-1	VB-1	PT-3	PT-3	PT-3	PT-3	C-1	
104	VESTIBULE	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	C-1	
105	KITCHEN	EP-1	EP-1	PT-1	PT-1	PT-1	PT-1	C-1	
106	OFFICE	LVT-1	TBD	PT-2	PT-2	PT-2	PT-2	C-1	LVT TO BE COLOR MATCHED TO EXISTING WOOD TONE.
107	OFFICE	LVT-1	TBD	PT-2	PT-2	PT-2	PT-2	C-1	LVT TO BE COLOR MATCHED TO EXISTING WOOD TONE.
108	STORAGE	EP-1	VB-1	PT-2	PT-2	PT-2	PT-2	C-1	
109	STORAGE	EP-1	VB-1	PT-2	PT-2	PT-2	PT-2	C-1	
110	TOILET	EP-1	EP-1	PT-1	PT-1	PT-1	PT-1	C-1	
111	STAIR	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	-EXISTING - METAL DECK	STAIR 111 AND RELATED COMPONENTS TO BE SEALED. SEE ABATEMENT SPEC FOR APPLICATION DETAILS.
112	JAN CL	EP-1	EP-1	PT-2	PT-2	PT-2	PT-2	EXISTING - METAL DECK	
113	LOCKER ROOM	EP-1	EP-1	PT-1	PT-1	PT-1	PT-1	C-2	
114	MENS SHOWER	EP-1	EP-1	PT-1	PT-1	PT-1	PT-1	C-2	
115	WOMENS SHOWER	EP-1	EP-1	PT-1	PT-1	PT-1	PT-1	C-2	
116	MENS RESTROOM	EP-1	EP-1	PT-1	PT-1	PT-1	PT-1	C-2	
117	WOMENS RESTROOM	EP-1	EP-1	PT-1	PT-1	PT-1	PT-1	C-2	
118	STORAGE	EP-1	VB-1	PT-2	PT-2	PT-2	PT-2	C-1	
119	CLASSROOM	EP-1	VB-1	PT-2	PT-2	PT-2	PT-2	C-1	
120	STORAGE	EP-1	VB-1	PT-2	PT-2	PT-2	PT-2	C-1	
121	CLASSROOM	EP-1	VB-1	PT-2	PT-2	PT-2	PT-2	C-1	
122	CLASSROOM	EP-1	VB-1	PT-2	PT-2	PT-2	PT-2	C-1	
123	CLASSROOM	EP-1	VB-1	PT-2	PT-2	PT-2	PT-2	C-1	
124	CLASSROOM	EP-1	VB-1	PT-2	PT-2	PT-2	PT-2	C-1	
125	CLASSROOM	EP-1	VB-1	PT-2	PT-2	PT-2	PT-2	C-1	
126	CLASSROOM	EP-1	VB-1	PT-2	PT-2	PT-2	PT-2	C-1	
127	CLASSROOM	EP-1	VB-1	PT-2	PT-2	PT-2	PT-2	C-1	
128	DATA CLOSET	EP-1	VB-1	PT-2	PT-2	PT-2	PT-2	EXISTING - METAL DECK	
129	MECHANICAL ROOM	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING TO REMAIN	EXISTING - METAL DECK	

FINISH LEGEND (BASIS OF DESIGN, SEE SPECIFICATIONS FOR APPROVED EQUIVALENTS)

KEY NAME	TYPE	MANUFACTURER	SERIES	COLOR/FINISH	SIZE	REMARKS
BASE						
EP-1	EPOXY	SHERWIN WILLIAMS	DECO FLAKE	KIWI SKIN GP6750FKS	6"	
VB-1	VINYL BASE	JOHNSONITE	COLOR MATCH	283 TOAST	6"	
CEILINGS						
C-1	ACOUSTIC CEILING TILE	ARMSTRONG	FINE FISSURED	WHITE	24"W X 48"W	SECOND LOOK STYLE
C-2	GYP. BD. CEILING	-	-	WHITE	-	-
DOOR/FRAME						
AL-1	PRE-FINISHED ALUM.	-	-	BROWN	-	
EXTERIOR BLOCK						
EXT. BL.	EXTERIOR BLOCK	BEST BLOCK MIDWEST BLOCK	GROUND FACE CMU	#9 CREAM	8"X8"X16"	
FLOORING						
EP-1	EPOXY	SHERWIN WILLIAMS	DECO FLAKE (EPOXY)	KIWI SKIN GP6750FKS		
LVT-1	LUXURY VINYL TILE	PATCRAFT	BASIS OF DESIGN	BASIS OF DESIGN	-	COLOR TO BE MATCHED TO EXISTING WOOD DURING DD REVIEW MEETING.
GUTTER						
G-1	PREFAB METAL GUTTER	DIMENSIONAL METALS INC.		BROWN		
PAINT						
PT-1	PAINT	SHERWIN WILLIAMS	RESUWALL FX (EPOXY PAINT)	ORIGAMI SW7636	-	KITCHEN, LOCKER ROOM, SHOWERS, AND BATHROOM. SEE FINISH SCHEDULE.
PT-2	PAINT	SHERWIN WILLIAMS	LATEX / EGGSHELL	CITY LOFTS SW7631	-	CLASSROOMS. SEE FINISH SCHEDULE.
PT-3	PAINT	SHERWIN WILLIAMS	LATEX / EGGSHELL	ON THE ROCKS SW7671	-	CORRIDORS. SEE FINISH SCHEDULE.
PT-4	PAINT	SHERWIN WILLIAMS	LATEX / FLAT	CEILING WHITE	-	FOR SOFFITS IN CLASSROOMS. COLOR MATCH NEW ACT.
PT-5	PAINT	SEE SPEC	SEALER	PRIMER		SEALER FOR STAIR 111 COMPONENTS. SEE ABATEMENT SPEC FOR APPLICATION DETAILS.

REMARKS

- EXISTING STOREFRONT DOOR AND FRAME TO REMAIN; VERIFY EXISTING HARDWARE PREP IS COMPATIBLE WITH NEW HARDWARE - MANUAL OR ELECTRIFIED LOCKSET/STRIKE, OR PROVIDE NEW ANSI PREP AS REQUIRED.
- PROVIDE ELECTRIFIED MORTISE LOCKSET OR ELECTRIC STRIKE AT EXISTING NARROW-STILE ALUMINUM DOOR, FAIL-SECURE — DOOR REMAINS FREE-EGRESS AT ALL TIMES VIA EXISTING LEVER/PADDLE HARDWARE; KEYPAD CONTROLS ENTRY SIDE ONLY. SEE SPECIFICATIONS.
- PROVIDE SURFACE-MOUNTED OR FLUSH-MOUNT DIGITAL KEYPAD (STANDALONE CONTROLLER OR WIRED TO ACCESS CONTROL PANEL) AT LATCH SIDE OF DOOR, 44" AFF TO CENTER, ADA-COMPLIANT. SEE SPECIFICATIONS.
- PROVIDE LOW-VOLTAGE POWER TRANSFER (ELECTRIC HINGE, DOOR LOOP, OR WIRELESS POWER TRANSFER DEVICE) TO ROUTE WIRING ACROSS DOOR LEAF TO FRAME (EXISTING DOORS WHERE NO FACTORY-WIRED HINGE EXISTS).
- PROVIDE CLASS 2 LOW-VOLTAGE POWER SUPPLY/TRANSFORMER (12/24VDC, RATED FOR CONNECTED LOAD) — LOCATE ABOVE ACCESSIBLE CEILING WITHIN 20'-0" OF OPENING; CONNECT TO DEDICATED 120V CIRCUIT BY ELECTRICAL CONTRACTOR.
- PROVIDE LOW-VOLTAGE WIRING (18-22 AWG PER LOCK MANUFACTURER) FROM POWER SUPPLY TO KEYPAD AND ELECTRIFIED LOCK, ROUTED IN CONDUIT/RACEWAY.
- COORDINATE FINAL LOW-VOLTAGE DEVICE LOCATIONS, CONDUIT ROUTING, AND POWER SUPPLY SIZING WITH HARDWARE SUPPLIER'S WIRING DIAGRAM (BHMA/DOOR HARDWARE SET SUBMITTAL) PRIOR TO ROUGH-IN.
- ALL ACCESS CONTROL WIRING TO COMPLY WITH NFPA 70 (NEC) CLASS 2 REQUIREMENTS; FREE EGRESS OPERATION TO COMPLY WITH IBC 1010.1.9 / NFPA 101.
- FRAMED OPENING ONLY, NO DOOR.
- NEW HOLLOW METAL DOORS AND FRAMES TO BE PAINT-GRIP GALVANIZED AND FIELD PAINTED.
- NEW WOOD DOOR TO MATCH STAIN COLOR OF EXISTING WOOD DOORS.
- PROVIDE 3/4" UNDERCUT.

STATE OF MISSOURI
MIKE KEHOE
GOVERNORCASCO DIVERSIFIED CORPORATION
ARCHITECTURAL
LICENSE #: 000329
EXP. DATE: 12/31/2027Professional of Record:
MICHAEL S. SUNDERMEYER
LICENSE #: 2014026855
EXP. DATE: 12/31/2026OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES
MANAGEMENT,
DESIGN AND CONSTRUCTIONDEPARTMENT OF MISSOURI
NATIONAL GUARDINTERIOR AND EXTERIOR
RENOVATIONJEFFERSON BARRACKS
READINESS CENTER
74 KEARNEY ST.
ST. LOUIS, MO 63125PROJECT # T2504-03
SITE # 6303
FACILITY #8136303050

REVISIONS

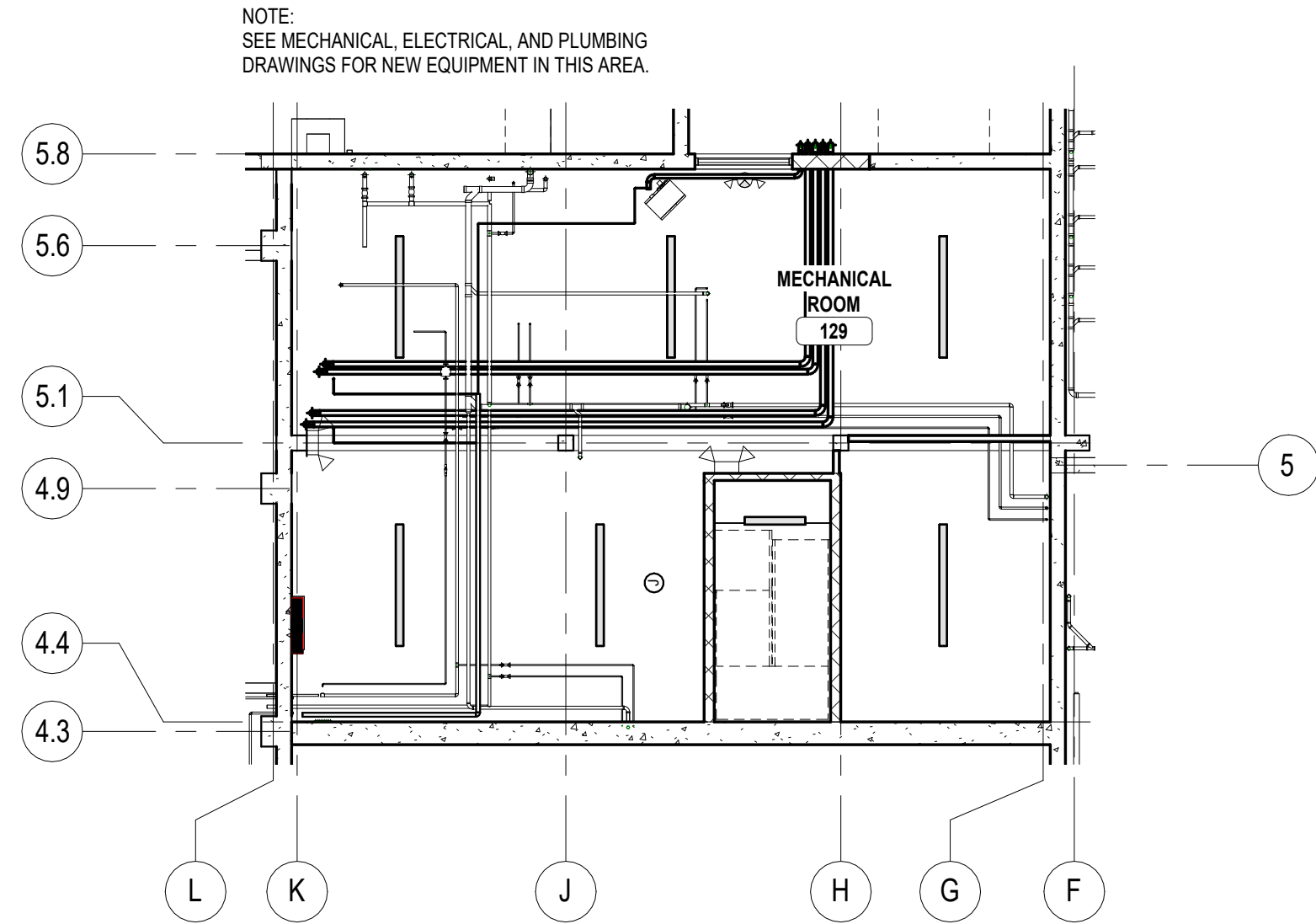
No. Description Date

ISSUE DATE:08/04/2026

DWG FILE #: 2605562
DRAWN BY: MJM
CHECKED BY: RAR
DESIGNED BY: MJMSHEET TITLE:
DOOR & FINISH SCHEDULE

SHEET NUMBER:

A-601
SHEET 18 OF 51
08/04/2026CASCO
12 SUMNER DRIVE, SUITE 100, ST. LOUIS, MO 63143
T 314-621-1100



2 MECHANICAL ROOM
A-701
SCALE: 3/32" = 1'-0"



1 REFLECTED CEILING PLAN
A-701
SCALE: 3/32" = 1'-0"

GENERAL CONSTRUCTION NOTES:

1. REFER TO ELECTRICAL DRAWINGS FOR LIGHTING FIXTURE SPECIFICATIONS, TYPES, DESCRIPTIONS, POWER AND DATA LOCATIONS, AND ANY ADDITIONAL ELECTRICAL NOTES.
2. CENTER FULL CEILING TILES IN ROOM (BOTH DIRECTIONS) ON DRAWINGS UNLESS DIMENSIONED OR NOTED OTHERWISE (WHERE APPLICABLE).
3. INSTALL DUCTWORK AND MECHANICAL PIPING TIGHT TO UNDERSIDE OF CONCRETE DECK, WITH SPACE TO AVOID VIBRATION.
4. LIGHT FIXTURES, REGISTERS, SPEAKERS, RECESSED FIXTURES AND SIMILAR CEILING ELEMENTS, SHALL BE CENTERED WITHIN THE SCORED 2'-0" X 2'-0" PATTERN OF THE 2'-0" X 4'-0" CEILING TILE IN BOTH DIRECTIONS AND SHALL ALIGN WITH ADJACENT FIXTURES, DEVICES OR HEADS IN A RUN OR ROW, U.N.O. (WHERE APPLICABLE).
5. CONTRACTOR TO COORDINATE LOCATION OF ACCESS PANELS IN RESTROOMS FOR MECHANICAL / PLUMBING VALVE ACCESS IN THE FIELD. PAINT TO MATCH CEILING.
6. COORDINATE SCHEDULING OF WORK WITH DATA/TELEPHONE INSTALLER. INSTALL CEILING TILES AFTER DATA/TELEPHONE CABLES HAVE BEEN INSTALLED.
7. EXPOSED CONDUIT SERVING NEW CEILING-MOUNTED LIGHTING SHALL BE ALIGNED STRAIGHT, MINIMIZE ANGLES, AND BE PREPARED FOR PAINT FINISH.
8. PAINT ALL EXPOSED STRUCTURAL ELEMENTS, DUCTWORK, PIPING AND ELECTRICAL CONDUIT TO MATCH CEILING (OR WALL, IF APPLICABLE) U.N.O.
9. ALL LAMP COLOR TEMPERATURES TO BE CONSISTENT FOR ALL FIXTURE TYPES.
10. ALL NEW LAY-IN CEILING TO BE 8'-6" A.F.F. UNLESS NOTED OTHERWISE.
11. ALL NEW GYPSUM BOARD SOFFITS TO BE 7'-8" A.F.F. UNLESS NOTED OTHERWISE.
12. ALL RESTROOM CEILINGS TO BE NEW MOISTURE RESISTANT GYPSUM BOARD AT 8'-6" A.F.F. UNLESS NOTED OTHERWISE.
13. PROVIDE BLOCKING ABOVE CEILING REQUIRED FOR ALL CEILING MOUNTED EQUIPMENT. PROVIDE SUPPORT FOR LIGHT FIXTURES PER MANUFACTURERS REQUIREMENTS.

REFLECTED CEILING PLAN LEGEND

REFER TO A-603 FOR ROOM FINISHES

- EXISTING CONSTRUCTION TO REMAIN
- NEW WALLS, SOFFITS, ETC.
- NEW GYPSUM BOARD CEILING
- NEW LAY-IN CEILING
- EXPOSED CEILING
- AREA NOT IN SCOPE
- 2'-0" x 4'-0" LIGHT FIXTURE
- 8" x 8'-0" LIGHT FIXTURE
- SUPPLY DUCT

ENSURE NEW PREFINISHED METAL SOFFIT SPLICE ALIGNS WITH NEW WINDOW EDGE. SEE DETAILS 3 & 4 ON SHEET A-502.

STATE OF MISSOURI
MIKE KEHOE
GOVERNOR

CASCO DIVERSIFIED CORPORATION
ARCHITECTURAL
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Professional of Record:
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JEFFERSON BARRACKS
READINESS CENTER
74 KEARNEY ST.
ST. LOUIS, MO 63125

PROJECT # T2504-03
SITE # 6303
FACILITY #8136303050

REVISIONS

No.	Description	Date
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ISSUE DATE: 08/04/2026

DWG FILE #: 2605562
DRAWN BY: MJM
CHECKED BY: RAR
DESIGNED BY: MJM

SHEET TITLE:
REFLECTED CEILING PLAN

SHEET NUMBER:

A-701

SHEET 19 OF 51
08/04/2026

CASCO
12 SUNDER DRIVE, SUITE 100, ST. LOUIS, MO 63143
T 314-601-1100

PLUMBING GENERAL NOTES:

1. THE DRAWINGS HAVE BEEN PREPARED UTILIZING EXISTING DRAWINGS AND BUILDING OBSERVATIONS AND MAY NOT FULLY DEPICT ALL AS-BUILT CONDITIONS. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO SUBMITTING BIDS. NOTIFY THE ENGINEER IN WRITING IMMEDIATELY SHOULD A MAJOR DISCREPANCY OR OMISSION BE FOUND BETWEEN EXISTING CONDITIONS UNCOVERED DURING DEMOLITION AND THOSE INDICATED. ACCEPTANCE OF THE CONTRACT MEANS THE INSTALLER ACCEPTS EXISTING CONDITIONS.
2. THE GENERAL LOCATIONS OF NEW FIXTURES, EQUIPMENT, PIPING, AND ASSOCIATED ITEMS SHOWN ON THE DRAWINGS ARE SCHEMATIC. CONTRACTOR SHALL SEE ARCHITECTURAL PLANS AND FIELD VERIFY EXACT LOCATION AND ELEVATION OF ALL WORK. ALL ELBOWS, FITTINGS, ETC., IN PIPING ARE NOT NECESSARILY INDICATED TO CLEAR ALL NEW AND EXISTING JOB OBSTRUCTIONS. PROVIDE OFFSETS, FITTINGS, TRANSITIONS, EXTENSIONS, ETC., AS REQUIRED FOR A CODE COMPLIANT, COMPLETE AND FUNCTIONAL SYSTEM.
3. CONTRACTOR SHALL COORDINATE WITH OTHER TRADES TO PREVENT THE INSTALLATION OF CONDUITS, PIPING, LIGHTING, OR OTHER OBSTRUCTIONS UNDER OR ADJACENT TO HVAC EQUIPMENT THAT OBSTRUCTS ACCESS TO COILS, MOTORS, VALVES, FILTERS, ETC., OR OTHER HVAC COMPONENTS NEEDING MAINTENANCE OR OPERATIONS ACCESS. CONTRACTOR SHALL REMOVE AND REPLACE PIPING, HANGERS, ETC. THAT ARE INSTALLED WITHIN THE WORKING CLEARANCES OF OTHER EQUIPMENT AT NO ADDITIONAL COST TO THE OWNER.
4. COORDINATE ALL PLUMBING WASTE AND WATER LINE LOCATIONS WITH MECHANICAL EQUIPMENT. SEE MECHANICAL DRAWINGS FOR EXACT LOCATIONS OF ALL MECHANICAL EQUIPMENT.
5. THE CONTRACTOR SHALL VISIT THE PROJECT SITE AND VERIFY LOCATIONS, ELEVATIONS AND SIZES OF ALL UTILITIES AT SITE PRIOR TO PROCEEDING WITH WORK. INVESTIGATE EXISTING SYSTEMS AND STRUCTURE FOR BEST POSSIBLE ROUTING OF PIPING SYSTEMS. NO ALLOWANCE FOR ADDITIONAL FUNDS WILL BE MADE BECAUSE OF A FAILURE TO BECOME FAMILIAR WITH EXISTING CONDITIONS.
6. IF THESE PLANS ARE NOT CLEARLY UNDERSTOOD, THE CONTRACTOR SHALL REQUEST AND OBTAIN THE ENGINEER'S WRITTEN EXPLANATION AND/OR INTERPRETATION PRIOR TO SUBMITTING BIDS.
7. NO CHANGES IN CONTRACT PRICE WILL BE ALLOWED FOR MINOR CHANGES IN LAYOUT OR LOCATION REQUIRED TO AVOID INTERFERENCES, OBSTRUCTIONS, ETC. CONTRACT PRICE CHANGES WILL BE CONSIDERED ONLY FOR CHANGES IN THE SCOPE OF THE PROJECT REQUIREMENTS. ALL SUCH SCOPE CHANGES AND PRICE REVISIONS MUST BE AUTHORIZED IN WRITING.
8. COORDINATE PLUMBING WITH ALL MECHANICAL DUCTWORK AND PIPING AND SPRINKLER PIPING BEFORE COMMENCEMENT OF WORK.
9. WHERE PIPE SIZES ARE NOT SHOWN ON PLANS, SEE SIZES SHOWN ON ISOMETRICS. IF PIPE SIZES ON PLANS CONFLICT WITH SIZES SHOWN ON ISOMETRIC DIAGRAMS, SIZES ON DIAGRAMS SHALL TAKE PRECEDENCE.
10. NO PIPING SHALL BE INSTALLED IN OR ABOVE ELECTRICAL, ELEVATOR MACHINE OR GENERATOR ROOMS UNLESS OTHERWISE INDICATED.
11. FIRE BARRIER AND PIPE PENETRATIONS: PROVIDE PIPE SLEEVES AND FIRE-STOPPING ASSEMBLIES AT ALL FIRE-RATED FLOOR SLAB AND WALL PENETRATIONS. REFER TO ARCHITECTURAL PLANS FOR LOCATIONS OF FIRE WALLS AND FIRE BARRIERS. SLEEVE AND FIRE STOPPING METHOD SHALL MEET THE REQUIREMENTS FOR MAINTAINING THE REQUIRED WALL/FLOOR FIRE RATING. SEE SPECIFICATIONS.
12. CHROME PLATED ESCUTCHEONS SHALL BE PROVIDED AT ALL LOCATIONS WHERE PIPES PENETRATE WALLS IN EXPOSED LOCATIONS.
13. CONTRACTOR SHALL COORDINATE EXACT LOCATION OF ROOF, OVERFLOW, AND FLOOR DRAINS WITH ARCHITECTURAL AND STRUCTURAL PLANS.
14. PIPING ON PLANS IS SHOWN FOR GENERAL ARRANGEMENT. SEE DETAILS FOR CONNECTIONS TO EQUIPMENT.
15. PROVIDE SEISMIC BRACING AS REQUIRED FOR ALL PIPING AND EQUIPMENT. SEISMIC BRACING AND MOUNTING OF EQUIPMENT SHALL BE IN COMPLIANCE WITH THE REQUIREMENTS OF APPLICABLE SECTIONS OF THE INTERNATIONAL BUILDING CODE AND THE PROJECT SPECIFICATIONS.
16. LABEL ALL PIPING CLEARLY. PIPING LABELS SHALL INCLUDE THE SYSTEM TYPE AND FLOW DIRECTION. ALL VALVES SHALL BE TAGGED. REFER TO SPECIFICATIONS: A MINIMUM OF ONE LABEL PER PIPE SHALL BE VISIBLE IN EACH ROOM. LABELS SHALL BE SPACED AT A 25' MAXIMUM IN CORRIDORS.
17. EXPOSED PLUMBING ROUGH-IN PIPING TO FIXTURES SHALL BE CHROME PLATED UNLESS OTHERWISE INDICATED.
18. PROVIDE STOP VALVES AT ALL PLUMBING FIXTURES.
19. PROVIDE ISOLATION VALVES ON ALL HOT AND COLD WATER LINES SERVICING MULTIPLE FIXTURES OR EQUIPMENT.
20. ALL CLEANOUTS IN INTERIOR ROOMS AND TENANT SPACES SHALL BE CHROME PLATED.
21. PROVIDE WATER HAMMER ARRESTORS ON BOTH HOT AND COLD WATER BRANCH LINES BETWEEN THE LAST TWO FIXTURES SERVED BY THAT BRANCH.
22. DIELECTRIC UNIONS SHALL BE USED WHEN JOINING DISSIMILAR METALS.
23. SLOPE STORM AND OVERFLOW PIPING 1/8" PER FT. IN DIRECTION OF FLOW UNLESS OTHERWISE INDICATED.
24. SLOPE ALL SANITARY PIPES SMALLER THAN 4" AT 1/4" PER FT. AND SANITARY PIPES 4" OR LARGER AT 1/8" PER FT. UNLESS OTHERWISE INDICATED.
25. SPACES ABOVE CEILINGS ARE RETURN AIR PLENUMS UNLESS OTHERWISE INDICATED ON HVAC PLANS. PIPING AND INSULATION IN CEILING PLENUMS SHALL HAVE A FLAME SPREAD OF 25 OR LESS AND A SMOKE DEVELOPED RATING OF 50 OR LESS AS DETERMINED IN ACCORDANCE WITH ASTM STANDARD E-84.
26. THIS CONTRACTOR SHALL KEEP A SET OF "AS-BUILT" PRINTS ON THE JOB SITE AT ALL TIMES AND SHALL KEEP THEM UP TO DATE. THESE PRINTS SHALL BE AVAILABLE FOR REVIEW BY THE OWNER, ARCHITECT OR ENGINEERS AT ALL TIMES.
27. COORDINATE STAGING WITH THE OWNER'S REPRESENTATIVE.
28. ALL WORK SHALL COMPLY WITH THE OWNERS INTERIM LIFE SAFETY MEASURES POLICY.

PLUMBING GENERAL DEMOLITION NOTES:

1. THESE GENERAL DEMOLITION NOTES APPLY TO ALL DEMOLITION WORK.
2. DEMOLISH PIPING, FIXTURES, AND EQUIPMENT SHOWN CROSS HATCHED OR NOTED ON THE DRAWINGS.
3. THESE DRAWINGS MAY NOT FULLY DEPICT ALL AS-BUILT CONDITIONS. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO SUBMITTING BIDS. NOTIFY THE ENGINEER AT ONCE SHOULD A DISCREPANCY OR OMISSION BE FOUND.
4. CONTRACTOR SHALL LOCATE, IDENTIFY AND PROTECT EXISTING PLUMBING AND OTHER SERVICES PASSING THROUGH DEMOLITION AREA AND SERVING OTHER AREAS OUTSIDE THE DEMOLITION LIMITS. CONTRACTOR SHALL MAINTAIN SERVICES TO AREAS OUTSIDE THE DEMOLITION LIMITS. WHEN SERVICES MUST BE INTERRUPTED, INSTALL TEMPORARY SERVICES FOR AFFECTED AREAS.
5. CONTRACTOR SHALL USE CAUTION WHEN REMOVING PIPING, EQUIPMENT AND FIXTURES TO AVOID DAMAGE TO ELECTRICAL WIRING THAT IS TO REMAIN. NOTIFY GC AND EC IF WIRING IS FOUND ATTACHED TO PIPING.
6. WHEREVER EXISTING EQUIPMENT, PIPING, ETC., ARE TO BE REMOVED, SUCH REMOVAL SHALL INCLUDE ALL ANCHORS, HANGERS, FOUNDATIONS, ETC., UNLESS NOTED OTHERWISE. AFTER REMOVAL, FLOORS, WALLS AND CEILINGS SHALL BE PATCHED AND FINISHED TO MATCH ADJOINING SURFACES.
7. WHERE ITEMS ARE REMOVED, UTILITIES AND THE AREA FROM WHICH THE ITEMS HAVE BEEN REMOVED SHALL BE LEFT IN SUCH A MANNER THAT IS SAFE FOR BOTH PEOPLE AND PROPERTY ON A DAILY BASIS.
8. SEE ARCHITECTURAL DRAWINGS FOR ARCHITECTURAL DEMOLITION. REFER TO MEP AND SPRINKLER DEMOLITION PLANS FOR MEP AND SPRINKLER DEMOLITION.
9. MEP DEMOLITION WORK: VERIFY EXISTING SERVICES TO REMAIN. ALL NECESSARY CARE SHALL BE TAKEN DURING DEMOLITION TO PREVENT DAMAGE TO PLUMBING, ELECTRICAL, AND MECHANICAL SYSTEMS TO REMAIN. DUCTWORK, PIPING, ELECTRICAL LINES, AND PLUMBING SERVING OTHER AREAS SHALL PROVIDE FOR UNINTERRUPTED SERVICE TO THOSE AREAS UNLESS PRIOR WRITTEN APPROVAL IS RECEIVED FROM THE OWNER. COORDINATE ALL SUCH WORK WITH THE GENERAL CONTRACTOR AND OWNER'S ON SITE REPRESENTATIVE.
10. COORDINATE WORK THAT AFFECTS EXISTING SYSTEMS (DRAINING, SHUT-DOWNS, ETC.) WITH THE OWNER AT LEAST 72 HOURS BEFORE PERFORMING THE WORK. SHUT-DOWNS AFFECTING AREAS OUTSIDE THE PROJECT SCOPE SHALL NOT BE PERFORMED UNTIL WRITTEN PERMISSION IS OBTAINED FROM THE OWNER.
11. IN CASES WHERE PIPING AND/OR EQUIPMENT IS REMOVED OR MODIFIED, CAP OR PLUS PIPING SYSTEMS AS REQUIRED TO MAINTAIN THE INTEGRITY OF THE SYSTEM(S). REMOVE THE PIPING TO A POINT WHERE IT IS ABOVE OR BEHIND A WALL OR CEILING, BELOW A FLOOR SLAB, ETC. IN ORDER TO RESTORE THE WALL, CEILING OR FLOOR TO THE REQUIRED FINISHED CONDITION.
12. THE OWNER MAINTAINS ALL SALVAGE RIGHTS OF FIXTURES, EQUIPMENT AND MATERIALS REMOVED. HOWEVER, REMOVE AND PROPERLY DISPOSE OF ALL FIXTURES, EQUIPMENT AND MATERIALS NOT CLAIMED BY THE OWNER.
13. THESE DRAWINGS HAVE BEEN PREPARED UTILIZING EXISTING BUILDING DRAWINGS AND MAY NOT SHOW ALL CONDITIONS. CONTRACTOR SHALL VISIT THE SITE PRIOR TO BID SUBMISSION AND BECOME FAMILIAR WITH ALL EXISTING CONDITIONS. CONTRACTOR WILL NOT BE ALLOWED ADDITIONAL TIME OR FUNDS DUE TO FAILURE TO BECOME FAMILIAR WITH ALL EXISTING CONDITIONS.

PLUMBING SYSTEM ABBREVIATIONS

AB	ABOVE FINISHED CEILING	IE	INVERT ELEVATION
AFF	ABOVE FINISHED FLOOR	IN	INCHES
AP	ACCESS	IRH	INFRARED HEATER
AD	ADJUSTABLE	INST	INSTALLED
AS	AIR SEPARATOR	JS	JANITOR SINK
ANSI	AMERICAN NATIONAL STANDARD INSTITUTE	JT	JOINT
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS	K	CONDUCTIVITY (BT/5F/1" THICKNESS)
ASPE	AMERICAN SOCIETY OF PLUMBING ENGINEERS	KW	KILOWATT
ASTM	AMERICAN SOCIETY OF TESTING MATERIALS	KWH	KILOWATT- HOUR
AD	AREA DRAIN		
ARCH	ARCHITECT, ARCHITECTURAL	L	LAVATORY
		LWT	LEAVING WATER TEMPERATURE
BW	BACKWATER VALVE	LWCO	LOW WATER CUT-OFF
BFP	BACKFLOW PREVENTER		
B	BOILER	MBH	1000 BTU/HR
BOD	BOTTOM OF DUCT	MFCR	MANUFACTURER
BOP	BOTTOM OF PIPE	MAX	MAXIMUM
BOS	BOTTOM OF STEEL	MC	MECHANICAL CONTRACTOR
BHP	BRAKE HORSEPOWER	MIN	MINIMUM
BTU	BRITISH THERMAL UNITS	MV	MIXING VALVE
BLDG	BUILDING	MS	MOP SINK / MOP SERVICE SINK
CAP	CAPACITY	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
CI	CAST IRON	NC	NOISE CRITERIA
CLG	CEILING	NIC	NOT IN CONTRACT
CC	CENTER LINE	NO	NORMALLY OPEN
CC	CENTER TO CENTER	NC	NORMALLY CLOSED
CPVC	CHLORINATED POLYVINYL CHLORIDE	NTS	NOT TO SCALE
CIRC	CIRCULATING		
CP	CIRCULATING PUMP	OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMIN.
CO	CLEANOUT	OS	OIL SEPARATOR
CSS	CLINICAL SERVICE SINK	OD	OVERFLOW DRAIN
CW	COLD WATER		
CA	COMPRESSED AIR	PLBG	PLUMBING
CONN	CONNECTION	PC	PLUMBING CONTRACTOR
CV	CONTROL VALVE	POC	POINT OF CONNECTION
CFH	CUBIC FEET PER HOUR	PVC	POLYVINYL CHLORIDE
		PD	PRESSURE DROP
DA	DIAMETER	PP	PROPYLENE
DRV	DIGITAL RECIRCULATING MIXING VALVE	PROVIDE	FINISH AND INSTALL
DW	DISHWASHER	P	PUMP
DCW	DOMESTIC COLD WATER	PD	PUMP DISCHARGE
DHW	DOMESTIC HOT WATER	QTY	QUANTITY
DHW140	DOMESTIC HOT WATER 140°F		
DHW140	DOMESTIC HOT WATER 140°F RETURN	RCP	RECIRCULATING PUMP
DHWR140	DOMESTIC HOT WATER 140°F RETURN	RBPFP	REDUCED PRESSURE BACKFLOW PREVENTER
DCBFP	DOUBLE CHECK BACKFLOW PREVENTER	RE	REFERENCE, REFER
DN	DOWN	RV	RELIEF VALVE
DS	DOWNSPOUT	REQD	REQUIRED
D	DRAIN	RTN	RETURN
DF	DRINKING FOUNTAIN	REV	REVISION, REVISE
		RPM	REVOLUTIONS PER MINUTE
EFF	EFFICIENCY	RH	ROOF DRAIN
EFC	ELECTRICAL CONTRACTOR		
EWIC	ELECTRIC WATER COOLER	SAN	SANITARY
EW	ELECTRIC WATER HEATER	SS	SANITARY SEWER
EWS	EMERGENCY EYEWASH	SH	SHOWER
ESV	EMERGENCY SHUT-OFF VALVE	SD	SHOWER DRAIN
EMS	ENERGY MANAGEMENT SYSTEM	S	SINK
EAT	ENTERING WATER TEMPERATURE	SPEC	SPECIFICATION
EXIST	EXISTING	STD	STANDARD
ESP	EXTERNAL STATIC PRESSURE	SC	STORM CONDUCTOR
ET	EXPANSION TANK	STL	STEEL
		SP	STATIC PRESSURE
FM	FACTORY MOUNTED	ST	STORM
FT	FEET	SV	SOLENOID VALVE
FPM	FEET PER MINUTE	SS	SOIL STACK
FIN	FINISH		
FPC	FIRE PROTECTION CONTRACTOR	TC	TEMPERATURE CONTROLLER
FCO	FLOOR CLEANOUT	TDV	TRIPLE DUTY VALVE
FD	FLOOR DRAIN	TOP	TOP OF PIPE
FH	FLOOR HYDRANT	TS	TAMPER SWITCH
FS	FLOOR SINK	TSP	TOTAL STATIC PRESSURE
FLS	FLOW SWITCH	TW	TEMPERED WATER
FLR	FLOOR	TXV	THERMAL EXPANSION VALVE
FLR	FLOOR	TYP	TYPICAL
FA	FROM ABOVE		
FB	FROM BELOW	U	URINAL
FURN	FURNISHED	UF	UNDERFLOOR
FLA	FULL LOAD AMPS	UL	UNDERWRITERS LABORATORIES, INC
		UON	UNLESS OTHERWISE NOTED
GAL	GALLONS	V	VENT
GPM	GALLONS PER MINUTE	VD	VARIABLE FREQUENCY DRIVE
GW/H	GAS WATER HEATER	VTR	VENT THRU ROOF
GAL	GALVANIZED	VERT	VERTICAL
GC	GENERAL CONTRACTOR		
GCO	GRADE CLEAN OUT	W	WASTE
GI	GREASE INTERCEPTOR	WPD	WATER PRESSURE DROP(F.T. H2O)
		WC	WATER CLOSET
HP	HORSEPOWER	WCO	WALL CLEANOUT
HB	HOSE BIBB	WH	WALL HYDRANT
HW	HOT WATER	WH	WATER HEATER
HWCP	HOT WATER CIRCULATING PUMP		
HR	HOUR	YH	YARD HYDRANT
HD	HUB DRAIN		

PLUMBING SYMBOLS LEGEND

	TEE (SIDE OUTLET UP)
	TEE (SIDE OUTLET DOWN)
	ELBOW (TURNED UP)
	ELBOW (TURNED DOWN)
	VALVE IN DROP
	VALVE IN RISE
	VALVE IN CENTER DROP
	DIRECTION OF FLOW
	DIRECTION OF SLOPE DOWN
	UNION
	PIPE ANCHOR
	PIPE GUIDE
	EXPANSION JOINT
	CONCENTRIC REDUCER
	ECCENTRIC REDUCER
	STRAINER WITH BLOWDOWN VALVE
	CHECK VALVE
	BALL VALVE
	BUTTERFLY VALVE
	CHECK VALVE
	PRESSURE REDUCING VALVE
	BALANCING VALVE
	DOUBLE CHECK BACKFLOW PREVENTER
	GLOBE VALVE
	FLOW ARROW
	GAUGE COCK
	CAP ON END OF LINE
	BLIND FLANGE
	FLOW SWITCH
	GAS REGULATOR
	PRESSURE GAUGE WITH GAUGE COCK
	THERMOMETER
	FLOW METER
	GAS REGULATOR
	PIPE FLANGE
	THERMOMETER WELL
	PRESSURE RELIEF VALVE
	WALL CLEANOUT
	FLOOR CLEANOUT
	GRADE CLEANOUT
	HOSE BIBB
	P-TRAP
	FLOOR DRAIN
	FLOOR SINK
	METER
	OVERFLOW DRAIN(XXX) INDICATES AREA OF COVERAGE IN SQUARE FEET
	ROOF DRAIN(XXX) INDICATES AREA OF COVERAGE IN SQUARE FEET

MISCELLANEOUS SYMBOLS

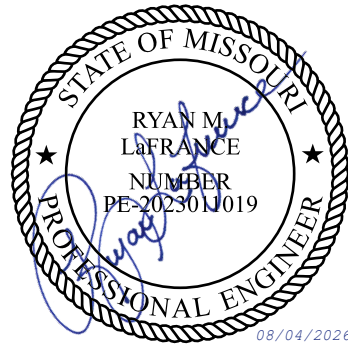
	EQUIPMENT OR PLUMBING FIXTURE DESIGNATION
	(DETAIL NUMBER) DETAIL DESIGNATION
	(SHEET NUMBER WHERE DETAIL IS FOUND)
	(SECTION NUMBER) SECTION DESIGNATION
	(SHEET NUMBER WHERE SECTION IS FOUND)
	KEYED NOTES
	REVISIONS
	ACCESS PANEL (AP)
	NEW CONNECTION

PLUMBING SYMBOLS LEGEND

	AW	ACID WASTE
	CA	COMPRESSED AIR (NON-MEDICAL)
	CD	CONDENSATE DRAIN
	DECON	DECONTAMINATION PIPING(DOUBLE WALL)
	DI	DEIONIZED WATER
	---	DOMESTIC COLD WATER
	---	DOMESTIC HOT WATER (120°F)
	---	DOMESTIC HOT WATER RETURN (120°F)
	F	FIRE LINE
	FR	FUEL RETURN
	FS	FUEL SUPPLY
	GW	GREASE WASTE
	G	NATURAL GAS
	NPW	NON POTABLE WATER
	OD	OVERFLOW DRAIN (STORM WATER SECONDARY DRAIN)(ABOVE FLOOR)
	RO	REVERSE OSMOSIS
	V	SANITARY VENT
	SS	SANITARY WASTE
	SD	STORM DRAIN- STORM WATER PRIMARY DRAIN (BELOW FLOOR)
	SSD	SUBSURFACE DRAIN
	SPD	SUMP PUMP DISCHARGE
	TS	TEMPERED WATER SUPPLY
	TR	TEMPERED WATER RETURN

STATE OF MISSOURI
MIKE KEHOE
GOVERNOR

CASCO DIVERSIFIED CORPORATION
ENGINEERING
LICENSE #: 000613
EXP. DATE: 12/31/2027



Professional of Record:
RYAN M. LAFRANCE
LICENSE #: PE-2023011019
EXP. DATE: 12/31/2027

CASCO
12 SUMNER DRIVE, SUITE 100, ST. LOUIS, MO 63104
T 314-621-1100

OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES
MANAGEMENT,
DESIGN AND CONSTRUCTION

DEPARTMENT OF
MISSOURI NATIONAL
GUARD

INTERIOR AND EXTERIOR
RENOVATION

JEFFERSON BARRACKS
READINESS CENTER
74 KEARNEY ST.
ST. LOUIS, MO 63125

PROJECT # T2504-03
SITE # 6303
FACILITY #8136303050

REVISIONS

No.	Description	Date
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ISSUE DATE:08/04/2026

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DRAWN BY: SJL
CHECKED BY: RML
DESIGNED BY:

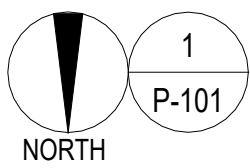
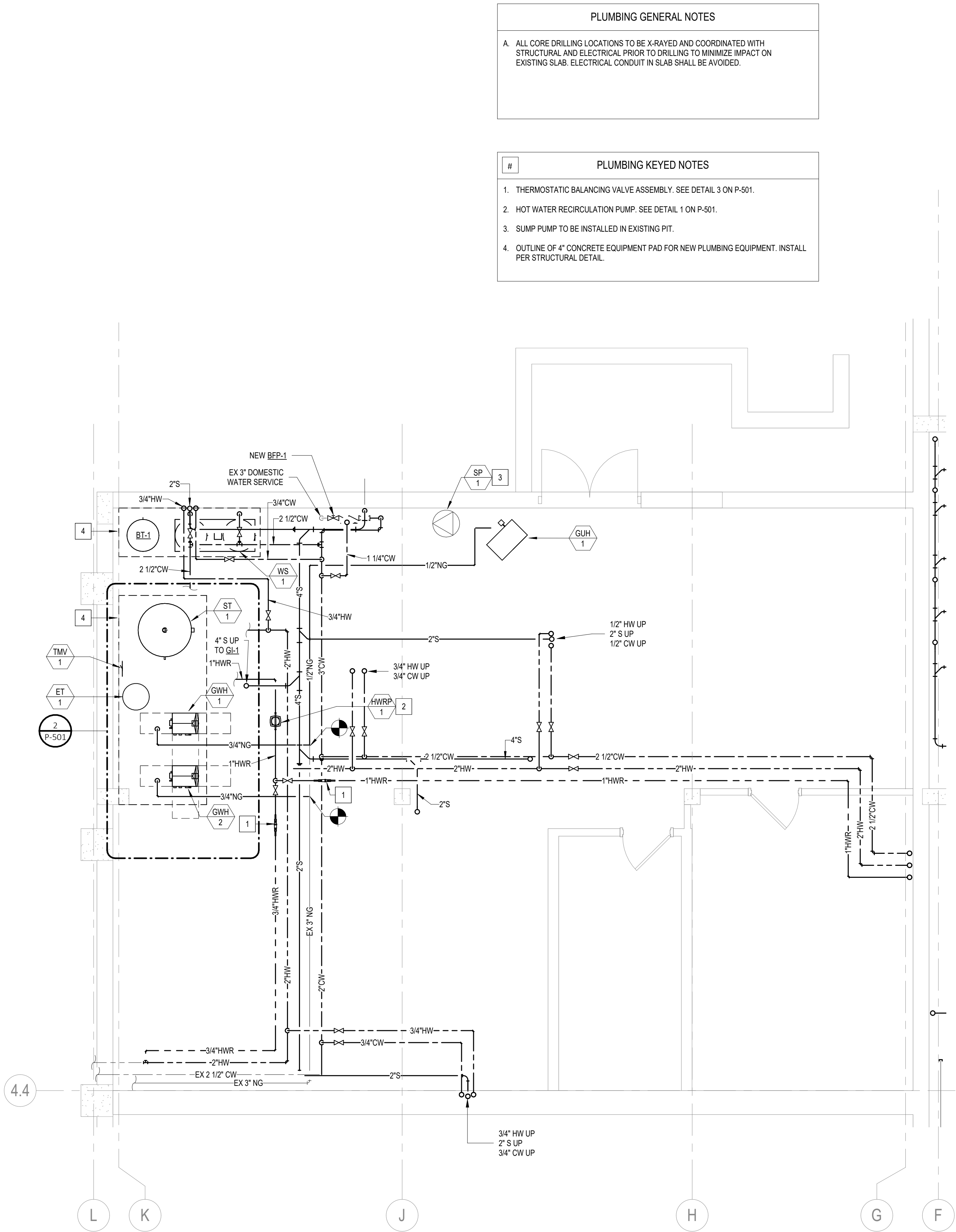
SHEET TITLE:

PLUMBING GENERAL NOTES,
LEGENDS, & SYMBOLS

SHEET NUMBER:

P-001

SHEET 20 OF 51
08/04/2026



PLUMBING MECHANICAL ROOM PLAN

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

- PLUMBING GENERAL NOTES

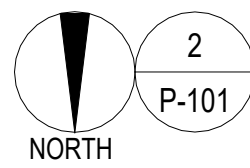
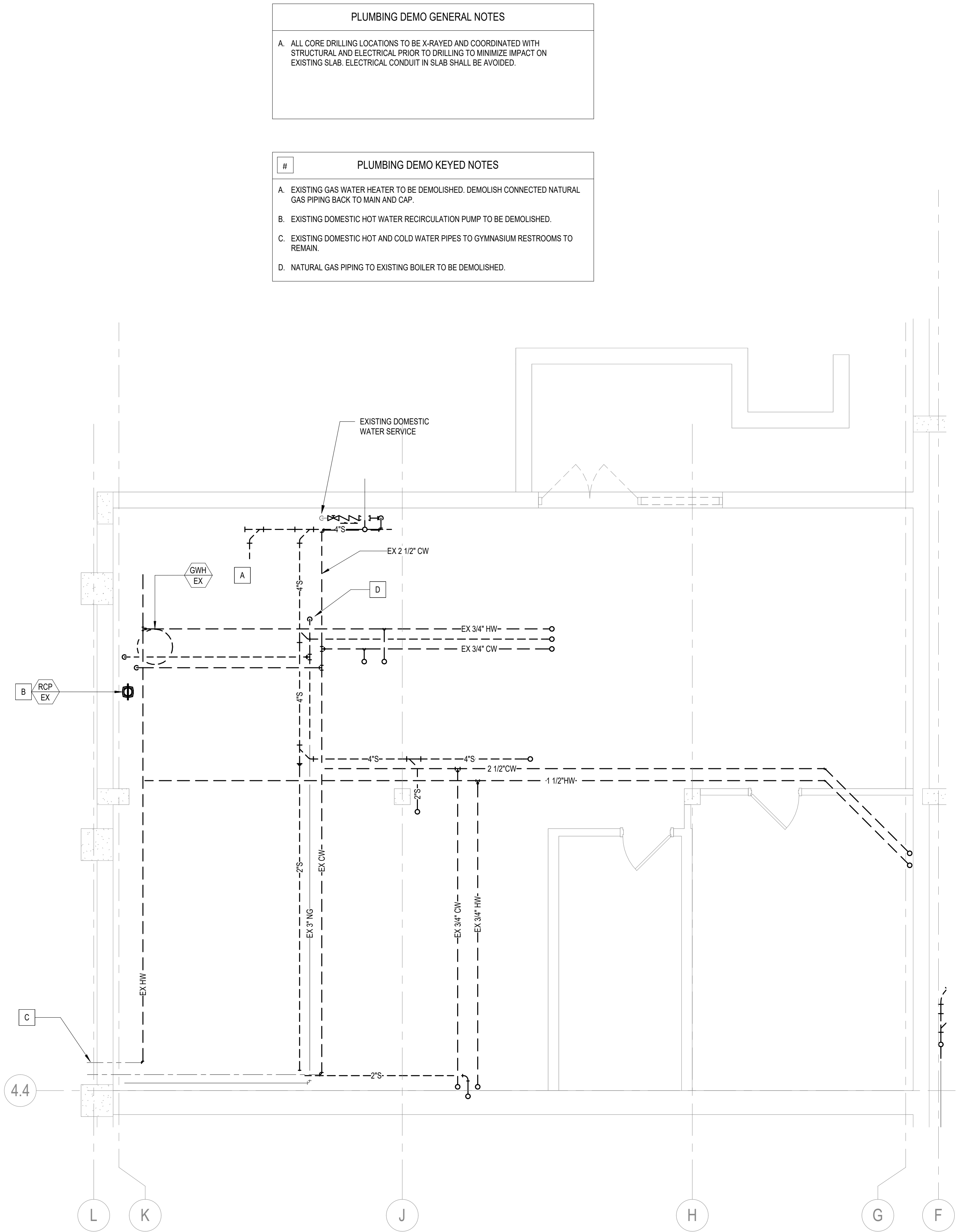
A. ALL CORE DRILLING LOCATIONS TO BE X-RAYED AND COORDINATED WITH STRUCTURAL AND ELECTRICAL PRIOR TO DRILLING TO MINIMIZE IMPACT ON EXISTING SLAB. ELECTRICAL CONDUIT IN SLAB SHALL BE AVOIDED.
- PLUMBING KEYED NOTES

1. THERMOSTATIC BALANCING VALVE ASSEMBLY. SEE DETAIL 3 ON P-501.

2. HOT WATER RECIRCULATION PUMP. SEE DETAIL 1 ON P-501.

3. SUMP PUMP TO BE INSTALLED IN EXISTING PIT.

4. OUTLINE OF 4" CONCRETE EQUIPMENT PAD FOR NEW PLUMBING EQUIPMENT. INSTALL PER STRUCTURAL DETAIL.



PLUMBING DEMO MECHANICAL ROOM PLAN

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

- PLUMBING DEMO GENERAL NOTES

A. ALL CORE DRILLING LOCATIONS TO BE X-RAYED AND COORDINATED WITH STRUCTURAL AND ELECTRICAL PRIOR TO DRILLING TO MINIMIZE IMPACT ON EXISTING SLAB. ELECTRICAL CONDUIT IN SLAB SHALL BE AVOIDED.
- PLUMBING DEMO KEYED NOTES

A. EXISTING GAS WATER HEATER TO BE DEMOLISHED. DEMOLISH CONNECTED NATURAL GAS PIPING BACK TO MAIN AND CAP.

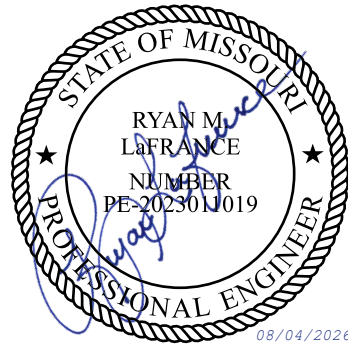
B. EXISTING DOMESTIC HOT WATER RECIRCULATION PUMP TO BE DEMOLISHED.

C. EXISTING DOMESTIC HOT AND COLD WATER PIPES TO GYMNASIUM RESTROOMS TO REMAIN.

D. NATURAL GAS PIPING TO EXISTING BOILER TO BE DEMOLISHED.

STATE OF MISSOURI
MIKE KEHOE
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Professional of Record:
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LICENSE # PE-2023011019
EXP. DATE: 12/31/2027

CASCO

12 SINNEN DRIVE, SUITE 100, ST. LOUIS, MO 63143 T 314-601-1100

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FACILITY #8136303050

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No.	Description	Date

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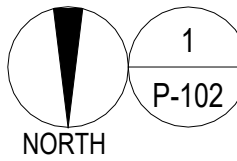
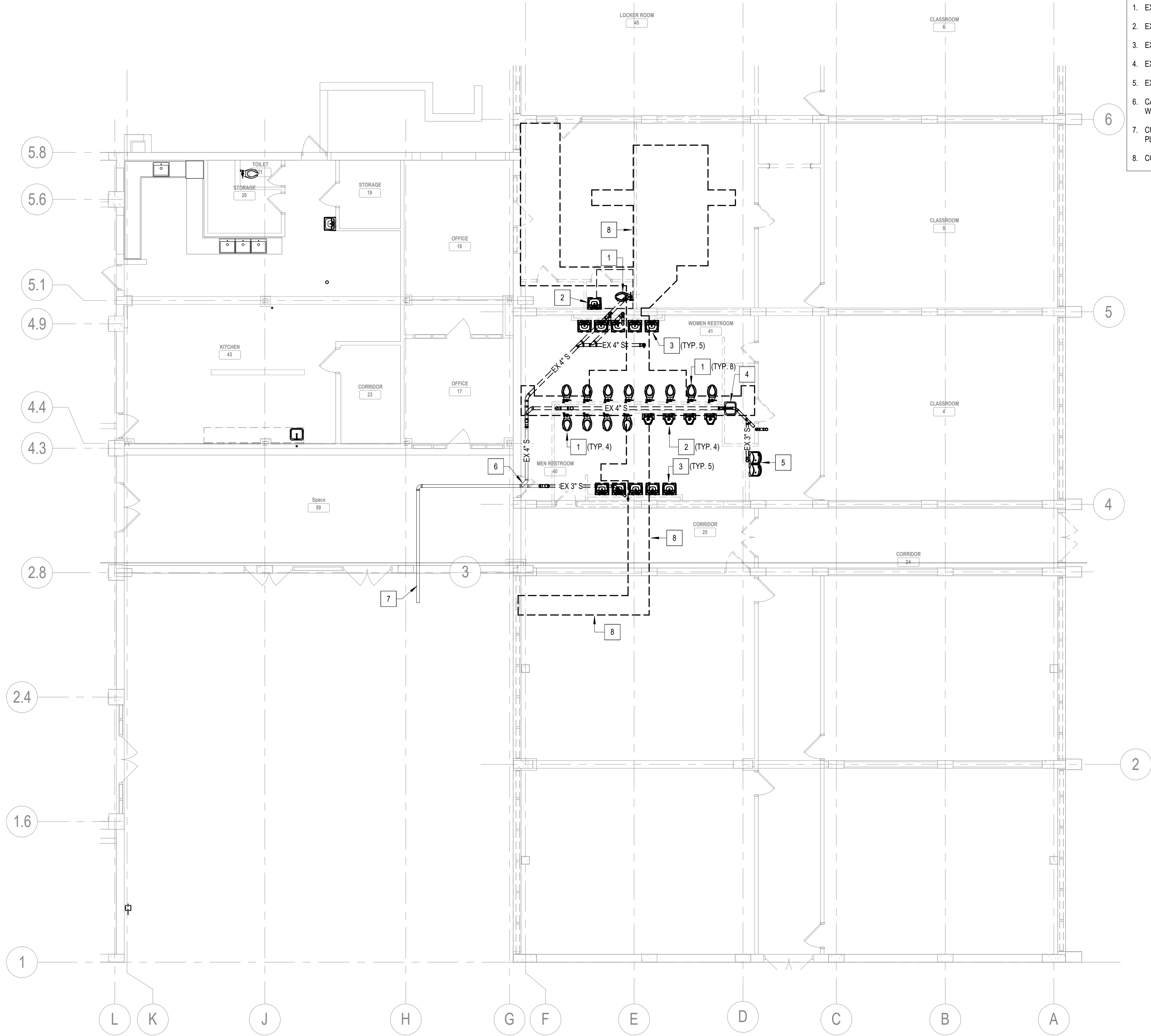
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CHECKED BY: RML
DESIGNED BY:

SHEET TITLE:
PLUMBING BASEMENT PLAN

SHEET NUMBER:

P-101

SHEET 21 OF 51
08/04/2026



1
P-102

SANITARY DEMO PLAN SOUTH

SCALE: 1/8" = 1'-0"

PLUMBING GENERAL NOTES

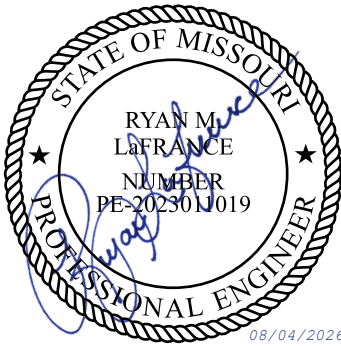
- A. ALL CORE DRILLING LOCATIONS TO BE X-RAYED AND COORDINATED WITH STRUCTURAL AND ELECTRICAL PRIOR TO DRILLING TO MINIMIZE IMPACT ON EXISTING SLAB. ELECTRICAL CONDUIT IN SLAB SHALL BE AVOIDED.
- B. LOCATION OF EXISTING SANITARY PIPING IS APPROXIMATE BASED ON EXISTING DRAWINGS. CONTRACTOR TO VERIFY EXACT LOCATION OF SANITARY PIPING AND UTILITIES PRIOR TO STARTING WORK.
- C. EXISTING SYSTEMS DESIGNATED TO REMAIN SHALL BE PROTECTED FROM DAMAGE AND FROM THE ENTRY OF DUST, DEBRIS, AND OTHER FOREIGN MATERIALS THROUGHOUT CONSTRUCTION. ANY DAMAGE TO EXISTING SYSTEMS RESULTING FROM CONSTRUCTION ACTIVITIES SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
- D. ABANDONED SANITARY PIPING BELOW GRADE SHALL BE BACKFILLED WITH FLOWABLE FILL CONCRETE RATED FOR 1500 PSI. PIPES WILL BE CAPPED AND ABANDONED.

PLUMBING KEYED NOTES

1. EXISTING WATER CLOSET TO BE DEMOLISHED.
2. EXISTING URINAL TO BE DEMOLISHED.
3. EXISTING LAVATORY TO BE DEMOLISHED.
4. EXISTING SERVICE SINK TO BE DEMOLISHED.
5. EXISTING ELECTRIC WATER COOLER TO BE DEMOLISHED.
6. CAP SANITARY PIPE BELOW FLOOR AND ABANDON IN PLACE. FILL ABANDONED PIPE WITH FLOWABLE FILL CONCRETE.
7. CUT SANITARY PIPE 5'-0" OUTSIDE BUILDING AND CAP EXISTING PIPE. ABANDON IN PLACE AND PREPARE SANITARY PIPE TO STREET FOR NEW CONNECTION.
8. CONCRETE FLOOR CUT BOUNDARY.

STATE OF MISSOURI
MIKE KEHOE
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LICENSE # PE-2023011019
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12 SINNEN DRIVE, SUITE 100, ST. LOUIS, MO 63143 T 314-621-1100

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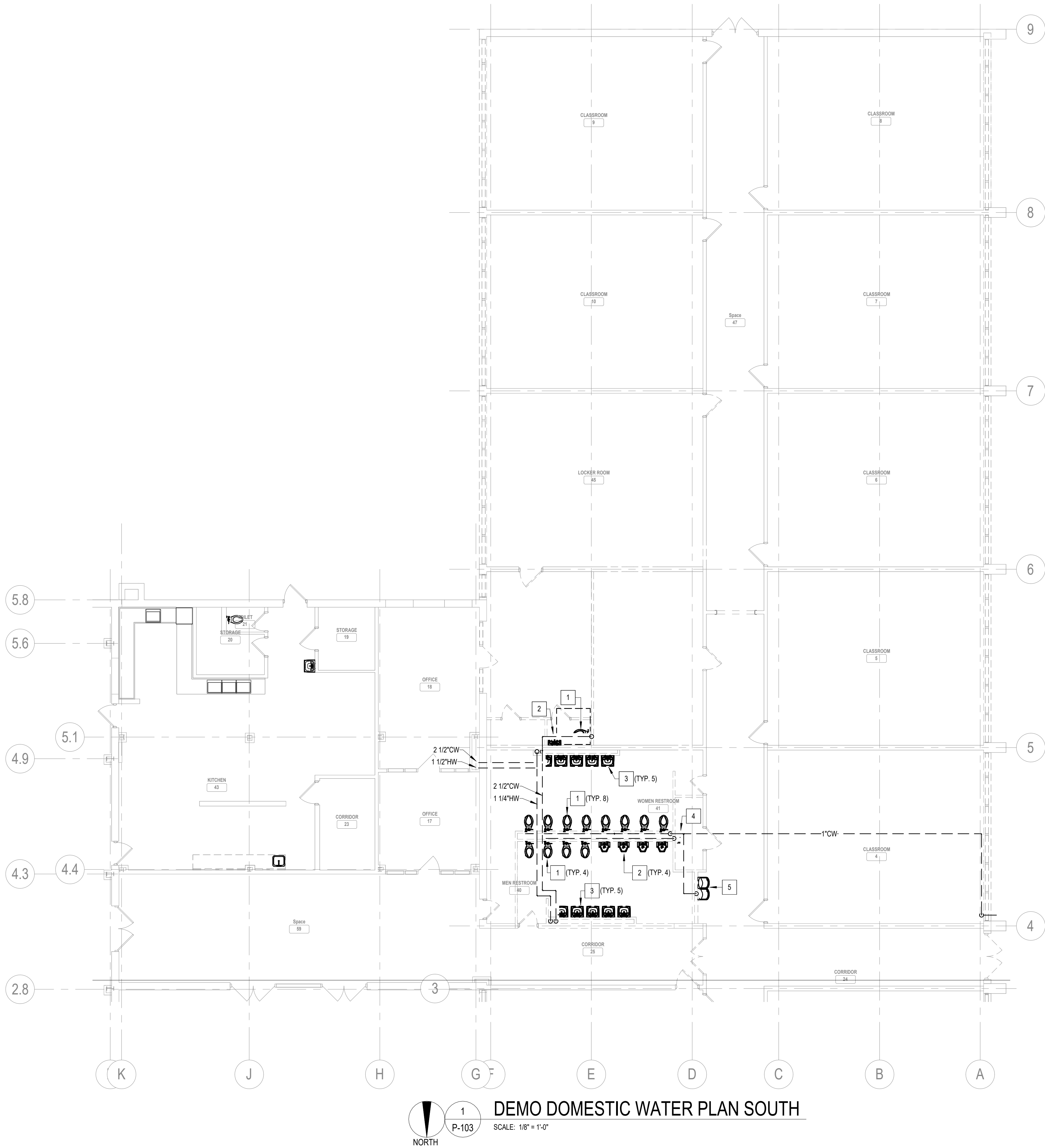
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DRAWN BY: SJL
CHECKED BY: RML
DESIGNED BY:

SHEET TITLE:
PLUMBING SANITARY & VENT
DEMO PLAN

SHEET NUMBER:

P-102

SHEET 22 OF 51
08/04/2026



- PLUMBING GENERAL NOTES
- A. EXISTING SYSTEMS DESIGNATED TO REMAIN SHALL BE PROTECTED FROM DAMAGE AND FROM THE ENTRY OF DUST, DEBRIS, AND OTHER FOREIGN MATERIALS THROUGHOUT CONSTRUCTION. ANY DAMAGE TO EXISTING SYSTEMS RESULTING FROM CONSTRUCTION ACTIVITIES SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
- PLUMBING KEYED NOTES
- #

1. EXISTING WATER CLOSET TO BE DEMOLISHED.

2. EXISTING URINAL TO BE DEMOLISHED.

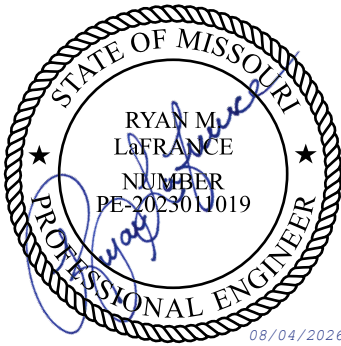
3. EXISTING LAVATORY TO BE DEMOLISHED.

4. EXISTING SERVICE SINK TO BE DEMOLISHED.

5. EXISTING ELECTRIC WATER COOLER TO BE DEMOLISHED.

STATE OF MISSOURI
MIKE KEHOE
GOVERNOR

CASCO DIVERSIFIED CORPORATION
ENGINEERING
LICENSE #: 000613
EXP. DATE: 12/31/2027



Professional of Record:
RYAN M. LAFRANCE
LICENSE #: PE-2023011019
EXP. DATE: 12/31/2027

CASCO

12 SINNEN DRIVE, SUITE 100, ST. LOUIS, MO 63143 T 314-601-1100

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RENOVATION

JEFFERSON BARRACKS
READINESS CENTER
74 KEARNEY ST.
ST. LOUIS, MO 63125

PROJECT # T2504-03
SITE # 6303
FACILITY #8136303050

REVISIONS

No.	Description	Date
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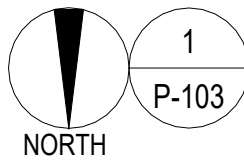
DWG FILE #: 2605562
DRAWN BY: SJL
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DESIGNED BY:

SHEET TITLE:
PLUMBING DOMESTIC WATER
DEMO PLAN

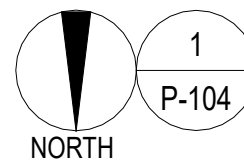
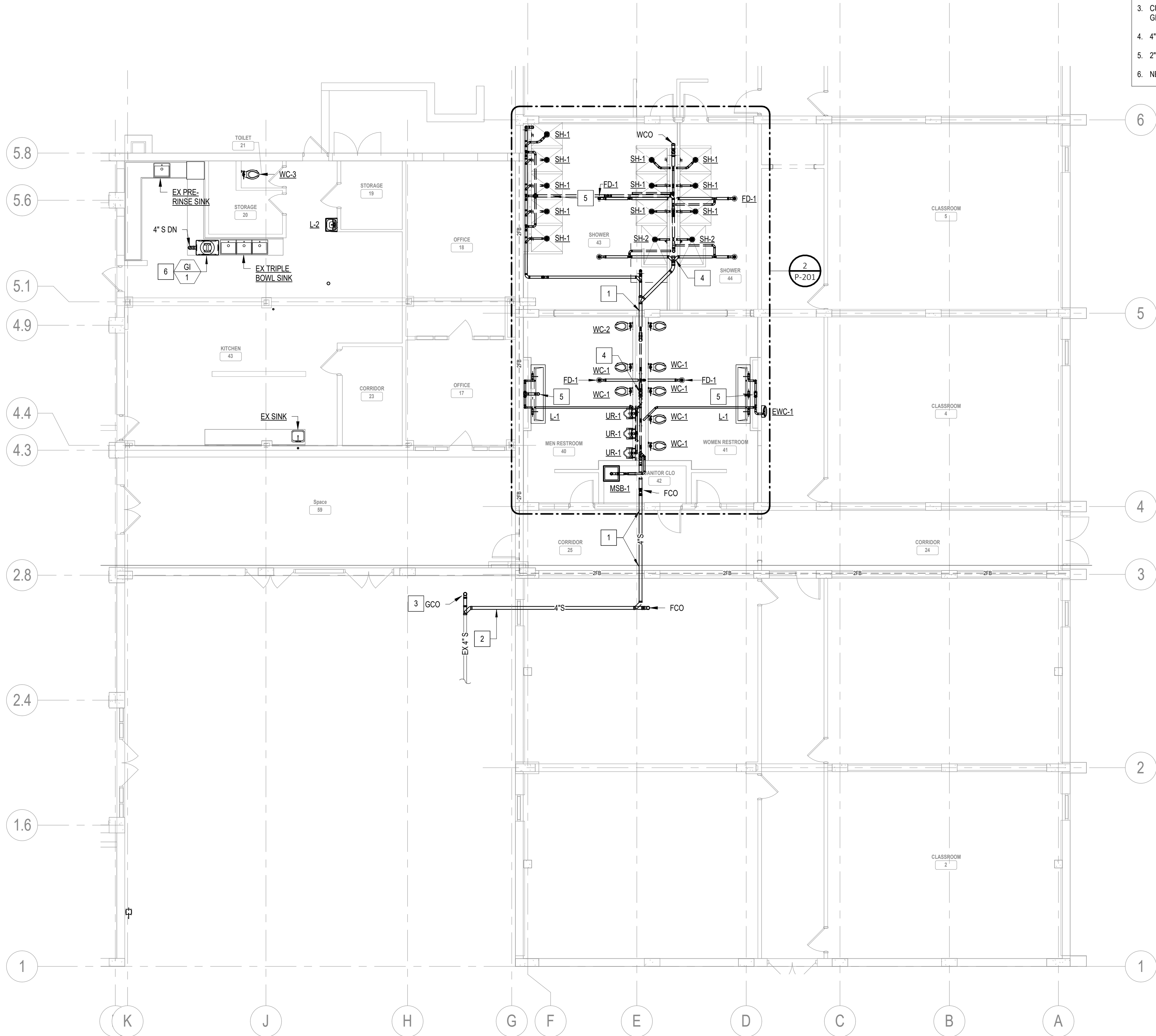
SHEET NUMBER:

P-103

SHEET 23 OF 51
08/04/2026



DEMO DOMESTIC WATER PLAN SOUTH
SCALE: 1/8" = 1'-0"



SANITARY PLAN SOUTH
SCALE: 1/8" = 1'-0"

PLUMBING GENERAL NOTES

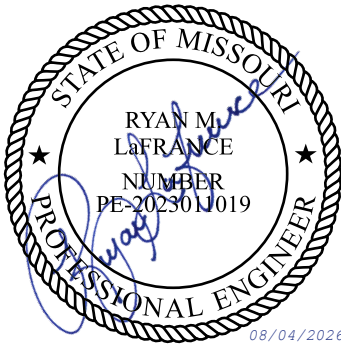
- A. ALL CORE DRILLING LOCATIONS TO BE X-RAYED AND COORDINATED WITH STRUCTURAL AND ELECTRICAL PRIOR TO DRILLING TO MINIMIZE IMPACT ON EXISTING SLAB. ELECTRICAL CONDUIT IN SLAB SHALL BE AVOIDED.
- B. ABANDONED SANITARY PIPING BELOW GRADE SHALL BE BACKFILLED WITH FLOWABLE FILL CONCRETE RATED FOR 1500 PSI. PIPES WILL BE CAPPED AND ABANDONED.

PLUMBING KEYED NOTES

1. CONTRACTOR SHALL X-RAY SANITARY PIPING PENETRATIONS THROUGH GRADE BEAMS PRIOR TO DRILLING THROUGH. PIPE SHALL BE LOCATED VERTICALLY IN THE MIDDLE 1/3 OF THE GRADE BEAM. LOCATE PIPE HORIZONTALLY IN THE MIDDLE OF REBAR REINFORCEMENT.
2. CONNECT TO EXISTING SANITARY SEWER IN COURTYARD. CONTRACTOR TO VERIFY EXACT LOCATION OF EXISTING SEWER LATERAL PRIOR TO EXCAVATION.
3. CUT EXISTING SANITARY PIPE IN COURTYARD. INSTALL NEW GRADE CLEANOUT IN GRASS AREA.
4. 4" VENT UP TO 4" VENT THROUGH ROOF.
5. 2" VENT UP TO 3" VENT THROUGH ROOF.
6. NEW ON-FLOOR GREASE INTERCEPTOR.

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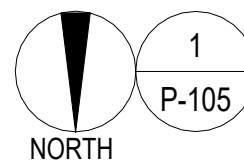
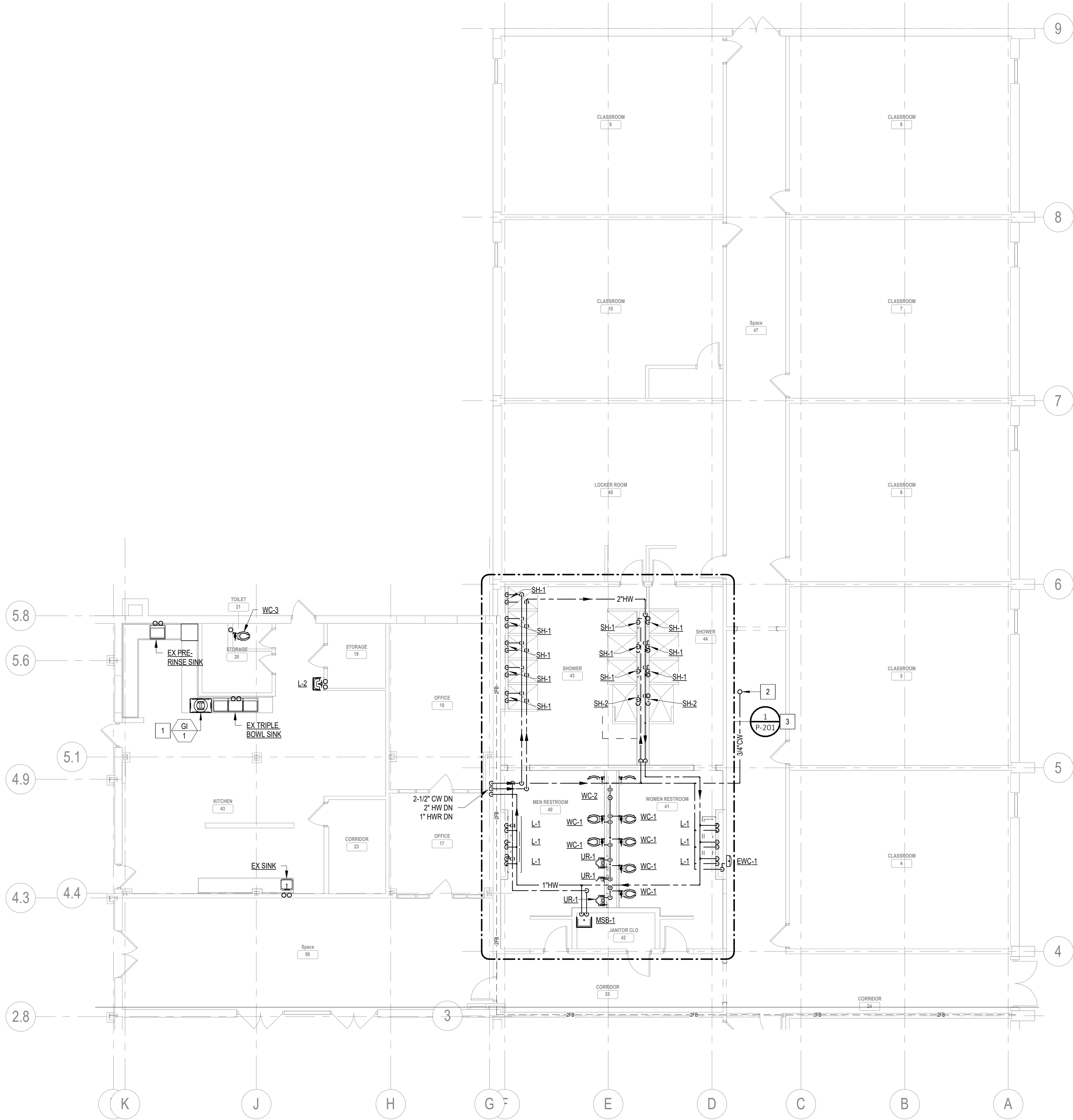
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DRAWN BY: SJL
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DESIGNED BY:

SHEET TITLE:
PLUMBING SANITARY & VENT
PLAN

SHEET NUMBER:

P-104

SHEET 24 OF 51
08/04/2026



DOMESTIC WATER PLAN SOUTH

SCALE: 1/8" = 1'-0"

PLUMBING GENERAL NOTES

A. ALL CORE DRILLING LOCATIONS TO BE X-RAYED AND COORDINATED WITH STRUCTURAL AND ELECTRICAL PRIOR TO DRILLING TO MINIMIZE IMPACT ON EXISTING SLAB. ELECTRICAL CONDUIT IN SLAB SHALL BE AVOIDED.

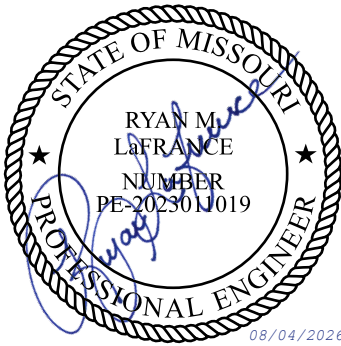
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PLUMBING KEYED NOTES

1. INSTALL NEW GREASE INTERCEPTOR UNDER EXISTING KITCHEN EQUIPMENT. CORE DRILL HOLE THROUGH FLOOR AND CONNECT OUTLET TO SANITARY IN BASEMENT CEILING SPACE.
2. 3/4" DOMESTIC COLD WATER UP TO ROOF HYDRANT RH-1.
3. REFERENCE SHEET P-201 FOR ENLARGED PLAN.

STATE OF MISSOURI
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Professional of Record:
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LICENSE #: PE-2023011019
EXP. DATE: 12/31/2027

CASCO

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PROJECT # T2504-03
SITE # 6303
FACILITY #8136303050

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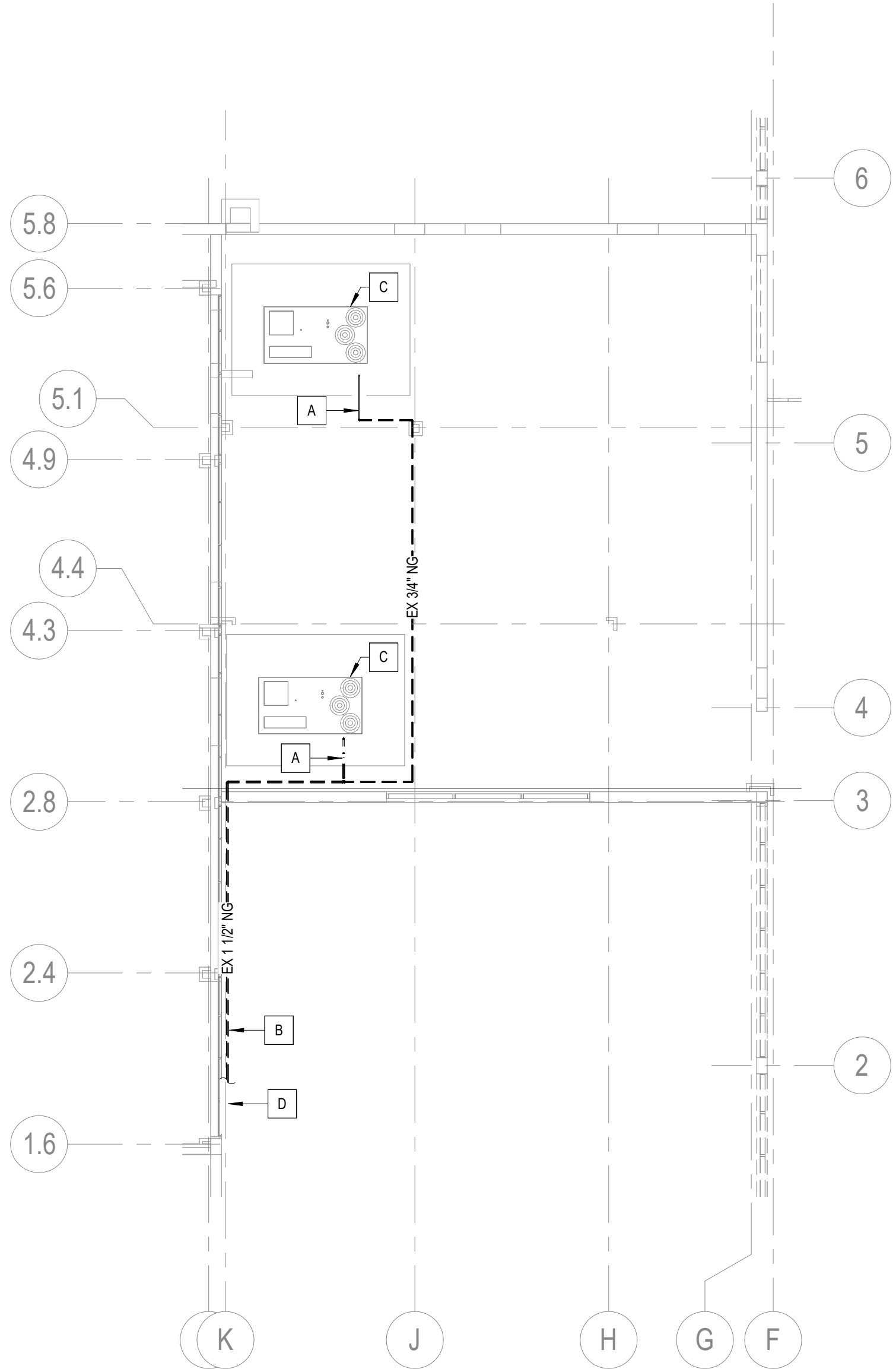
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SHEET TITLE:
PLUMBING DOMESTIC WATER
PLAN

SHEET NUMBER:

P-105

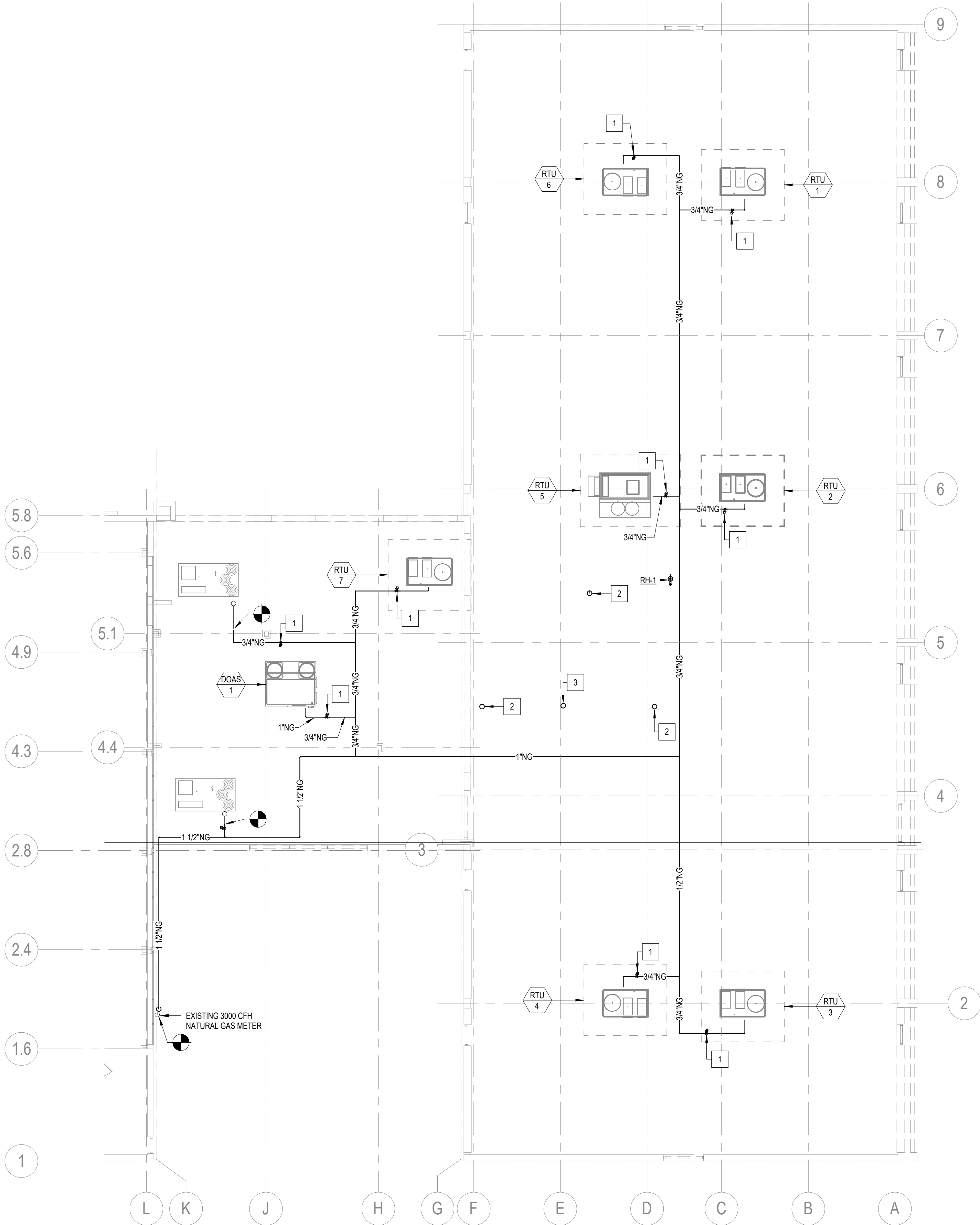
SHEET 25 OF 51
08/04/2026



2
P-106

DEMO PLUMBING ROOF PLAN

SCALE: 3/32" = 1'-0"



1
P-106

PLUMBING ROOF PLAN

SCALE: 3/32" = 1'-0"

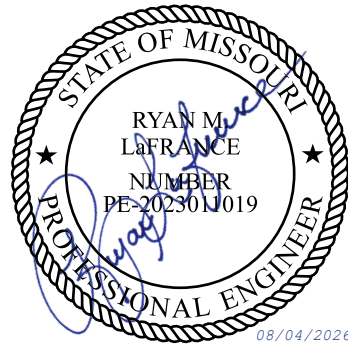
#	PLUMBING DEMO KEYED NOTES
1.	EXISTING PIPING TO REMAIN.
2.	DEMOLISH EXISTING PIPING BACK TO METER.
3.	EXISTING UNIT TO REMAIN.
4.	EXISTING METER TO REMAIN.

#	PLUMBING KEYED NOTES
1.	NEW GAS PRESSURE REGULATOR VALVE. REFERENCE DETAIL 7 ON P-501 FOR CONNECTION TO EQUIPMENT.
2.	3\" VENT THROUGH ROOF.
3.	4\" VENT THROUGH ROOF.

PLUMBING GENERAL NOTES
A. ALL CORE DRILLING LOCATIONS TO BE X-RAYED AND COORDINATED WITH STRUCTURAL AND ELECTRICAL PRIOR TO DRILLING TO MINIMIZE IMPACT ON EXISTING SLAB. ELECTRICAL CONDUIT IN SLAB SHALL BE AVOIDED.
B. NEW NATURAL GAS PIPING LOAD 2.622 MBH @ 2 PSI, 1 PSI DROP OVER 250 LINEAR FEET.

STATE OF MISSOURI
MIKE KEHOE
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Professional of Record:
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LICENSE # PE-202301019
EXP. DATE: 12/31/2027

CASCO

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PROJECT # T2504-03
SITE # 6303
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SHEET TITLE:
PLUMBING ROOF PLAN

SHEET NUMBER:

P-106

SHEET 26 OF 51
08/04/2026



2
P-201

SHEET 27 OF 51
08/04/2026

REVISIONS

No.	Description	Date
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ISSUE DATE:08/04/2026

DWG FILE #: 2605562
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SHEET TITLE:
PLUMBING DETAILS

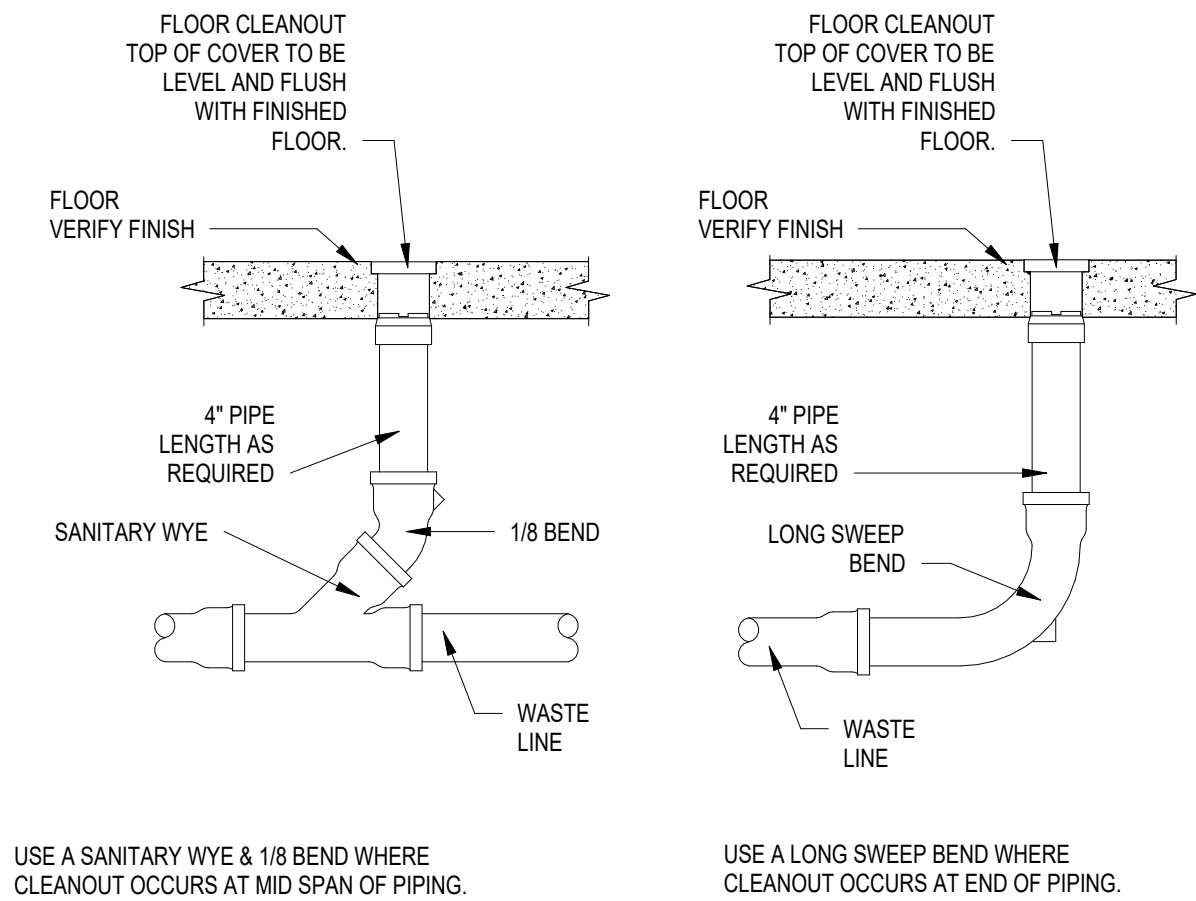
SHEET NUMBER:

P-501

SHEET 28 OF 51
08/04/2026

8 FLOOR CLEANOUT DETAIL

P-501 SCALE: 1/8" = 1'-0"

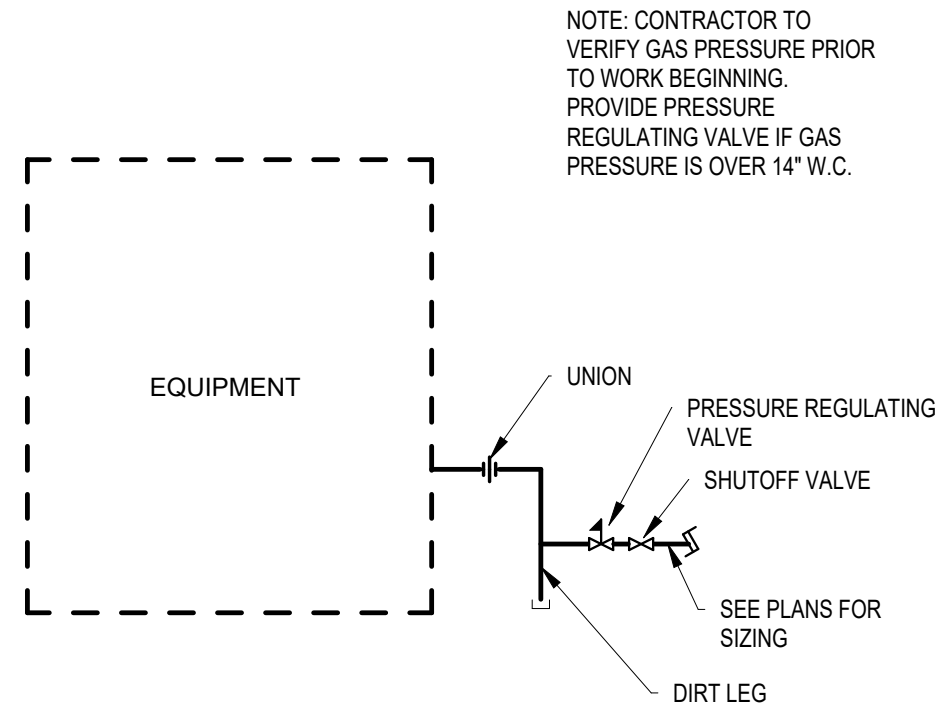


USE A SANITARY WYE & 1/8 BEND WHERE CLEANOUT OCCURS AT MID SPAN OF PIPING.

USE A LONG SWEEP BEND WHERE CLEANOUT OCCURS AT END OF PIPING.

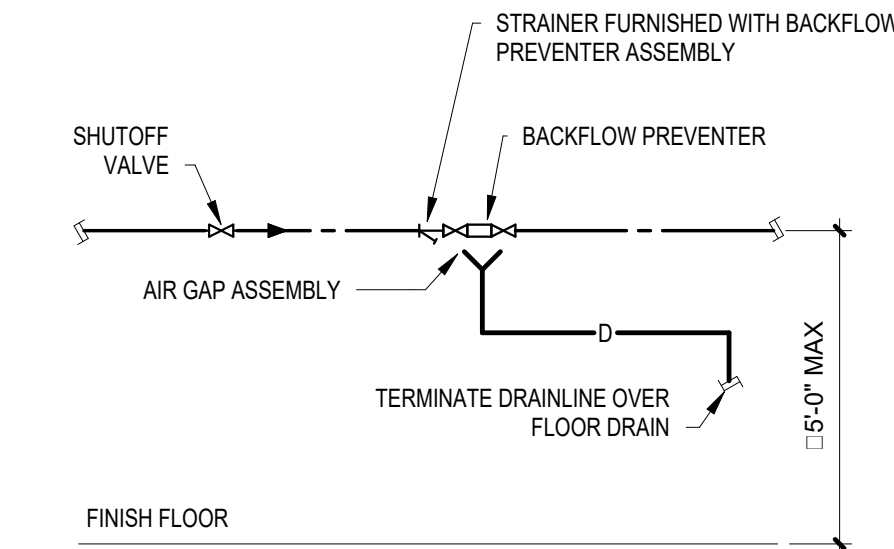
7 GAS CONNECTION AT EQUIPMENT

P-501 SCALE: NONE



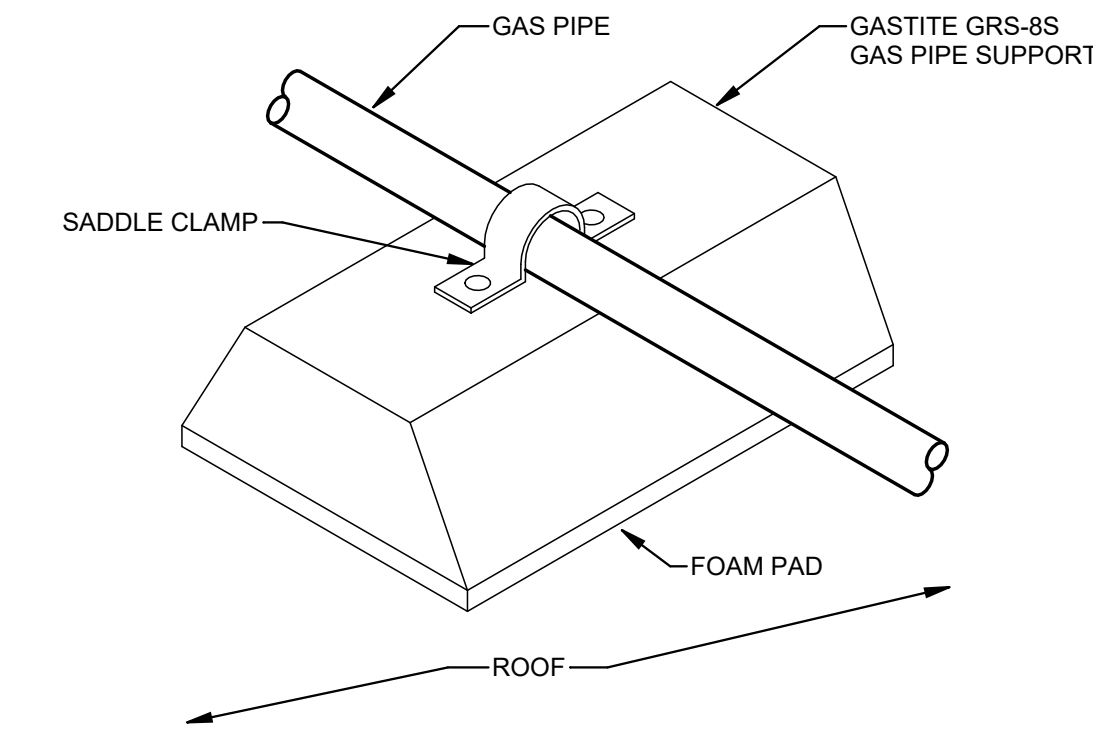
6 BACKFLOW PREVENTER

P-501 SCALE: NONE



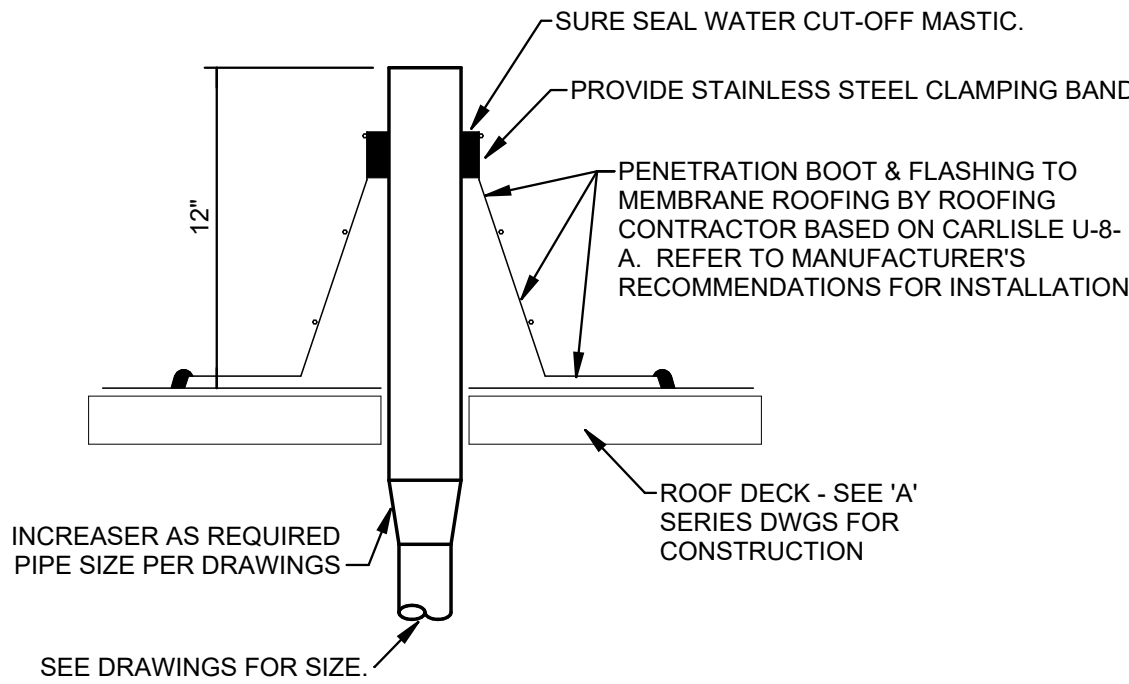
10 GAS PIPE ROOF SUPPORT

P-501 SCALE: NONE



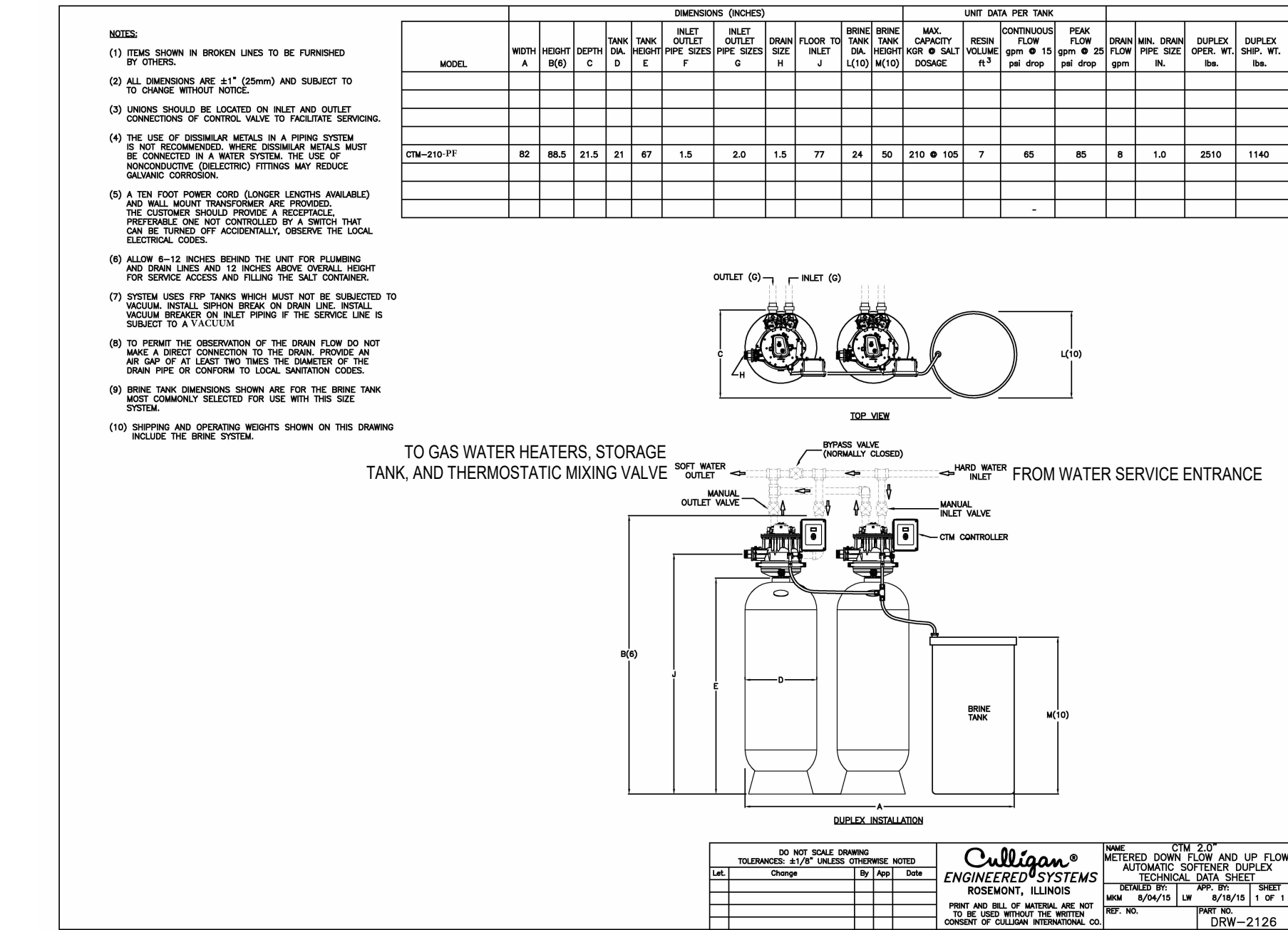
9 VENT THRU FLAT ROOF

P-501 SCALE: NONE



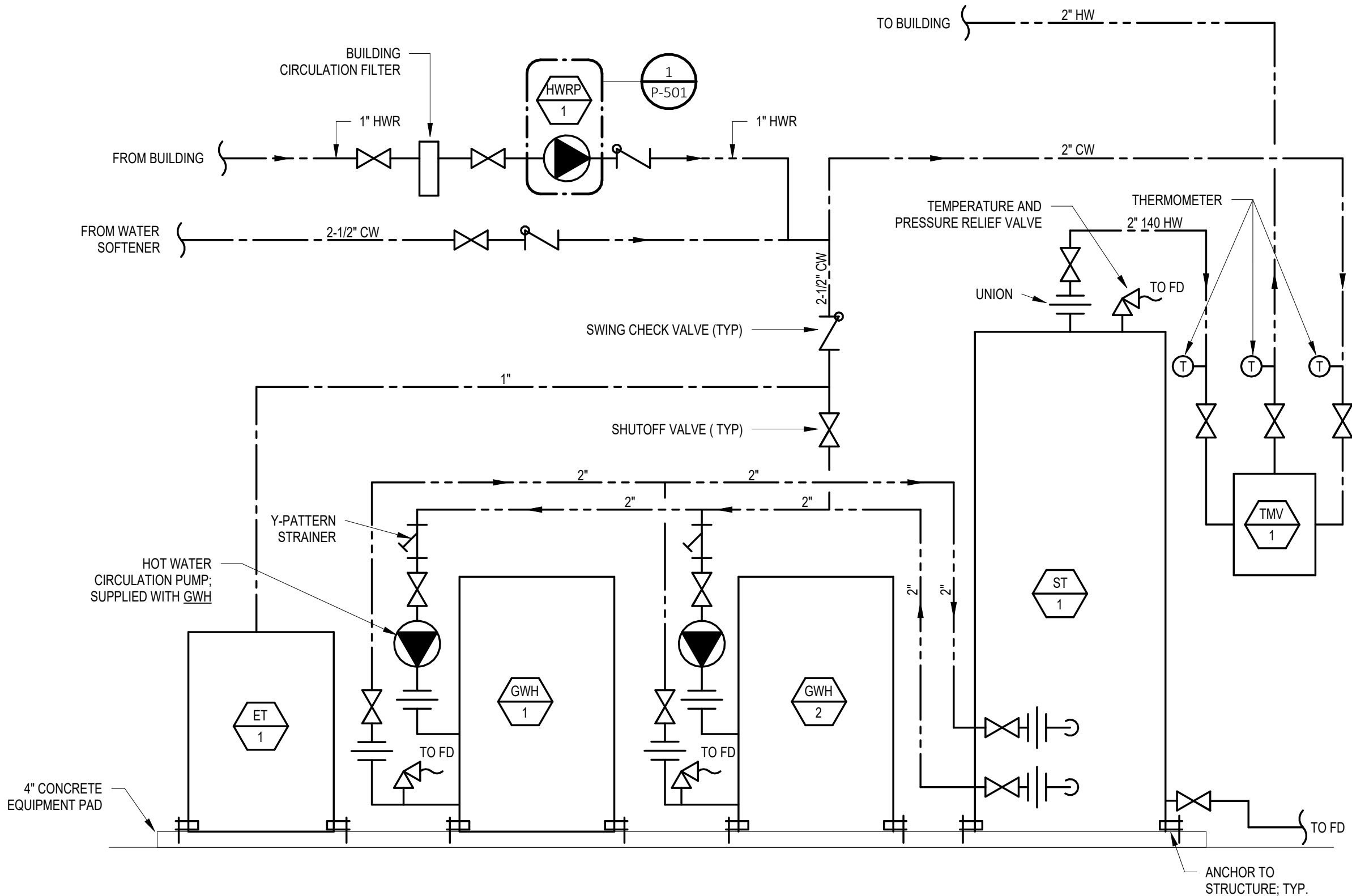
5 WATER SOFTENER DETAIL

P-501 SCALE: NONE



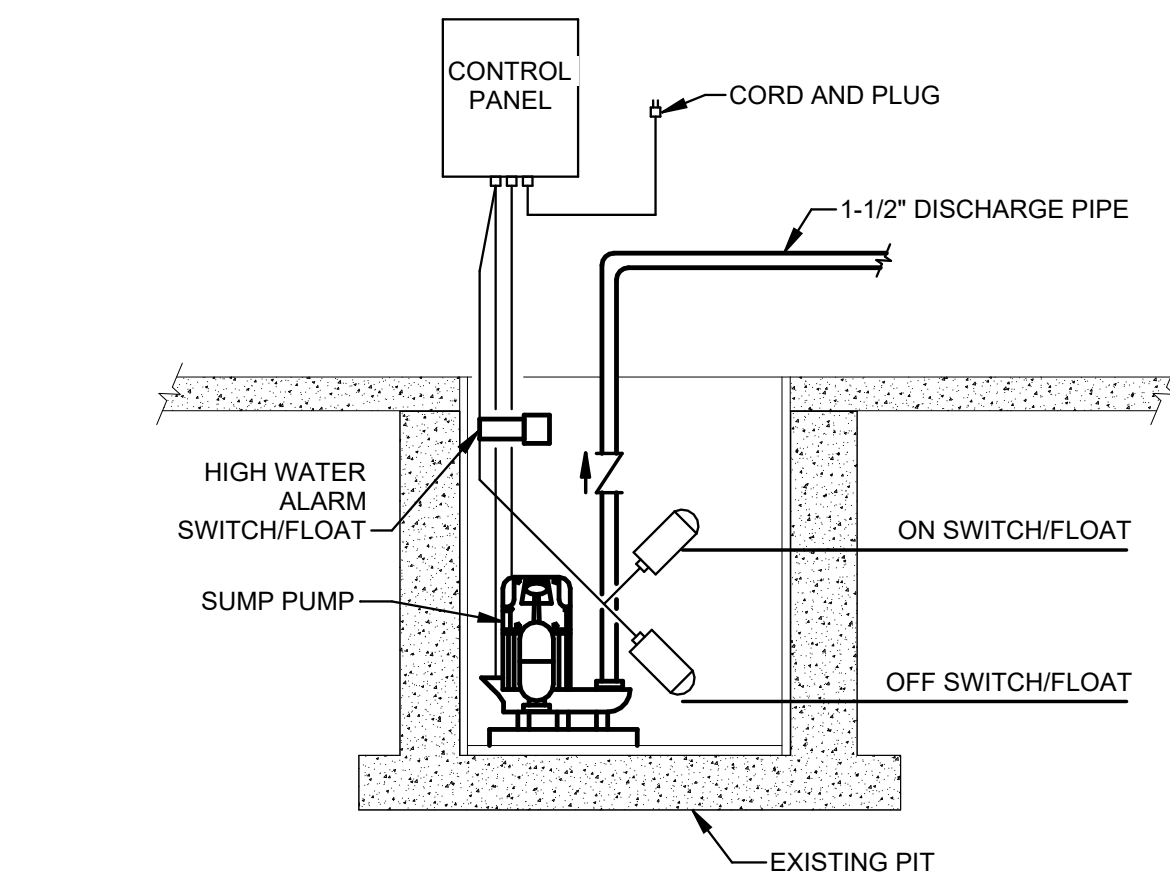
2 WATER HEATER, STORAGE TANK, AND THERMOSTATIC MIXING VALVE PIPING DIAGRAM

P-501 SCALE: NONE



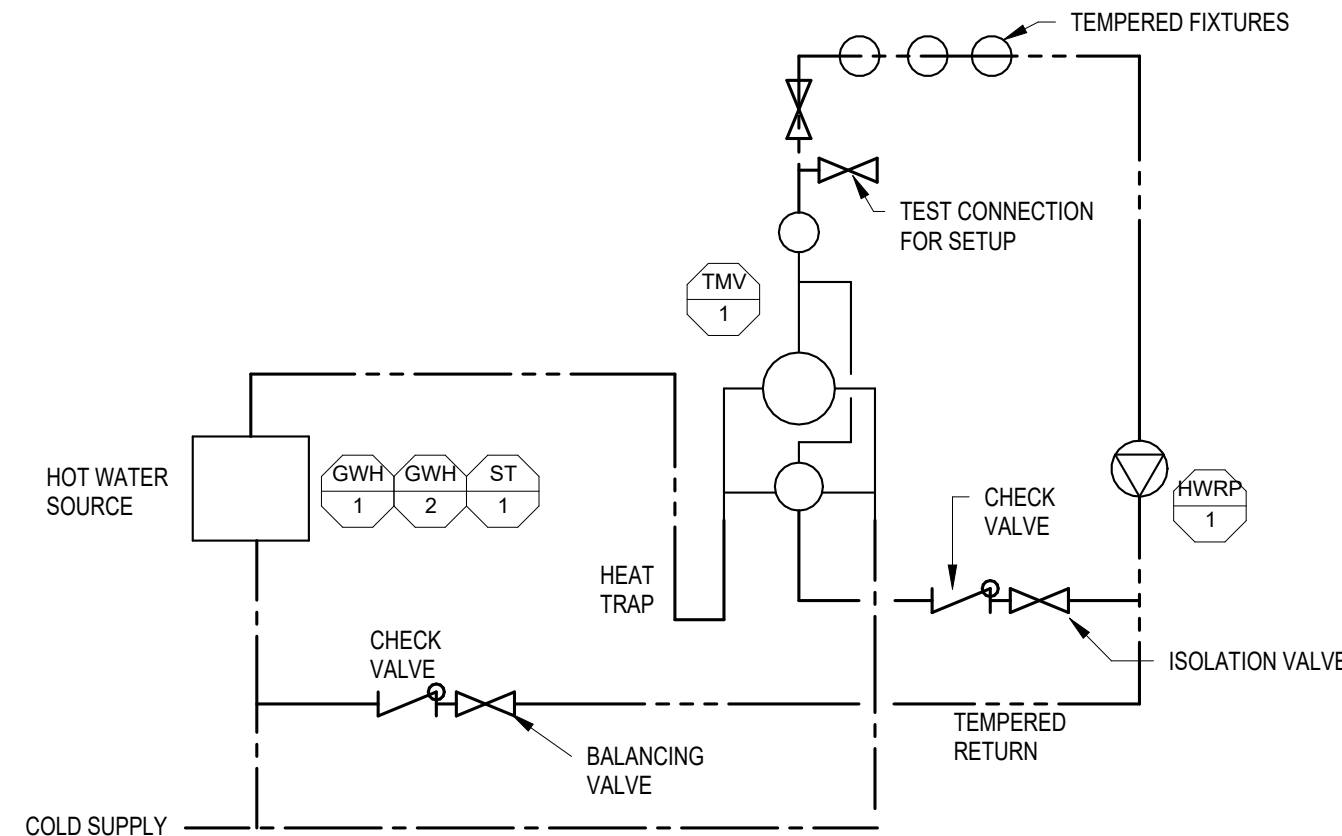
4 SUBMERSIBLE SUMP PUMP

P-501 SCALE: NONE



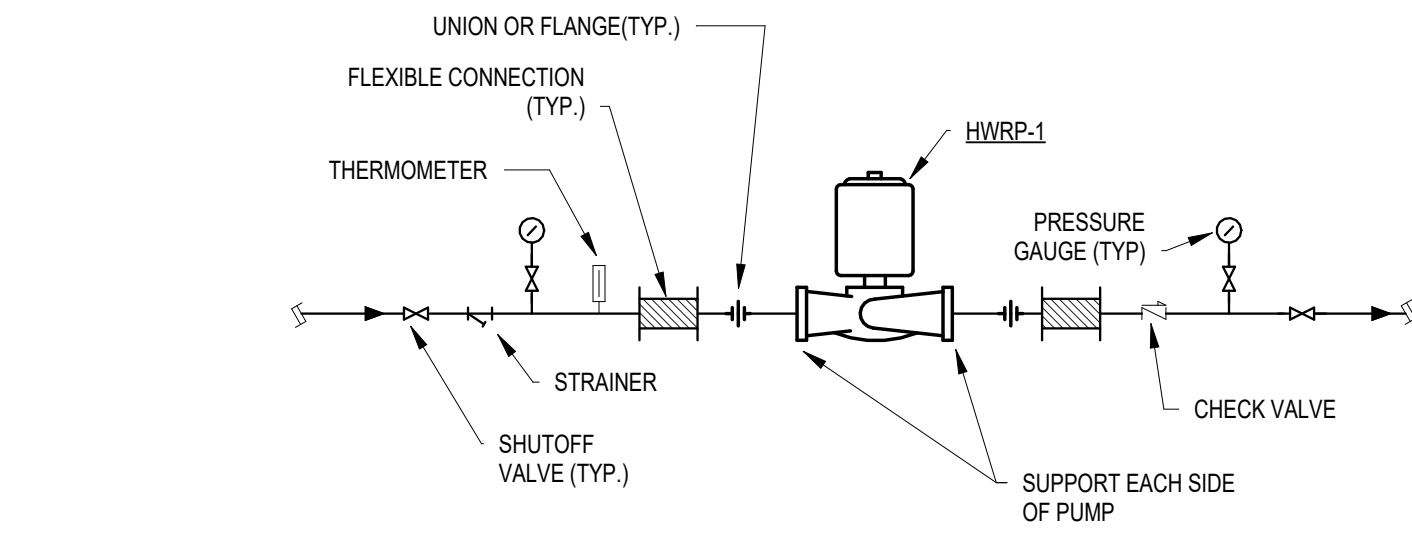
3 THERMOSTATIC MIXING VALVE DETAIL

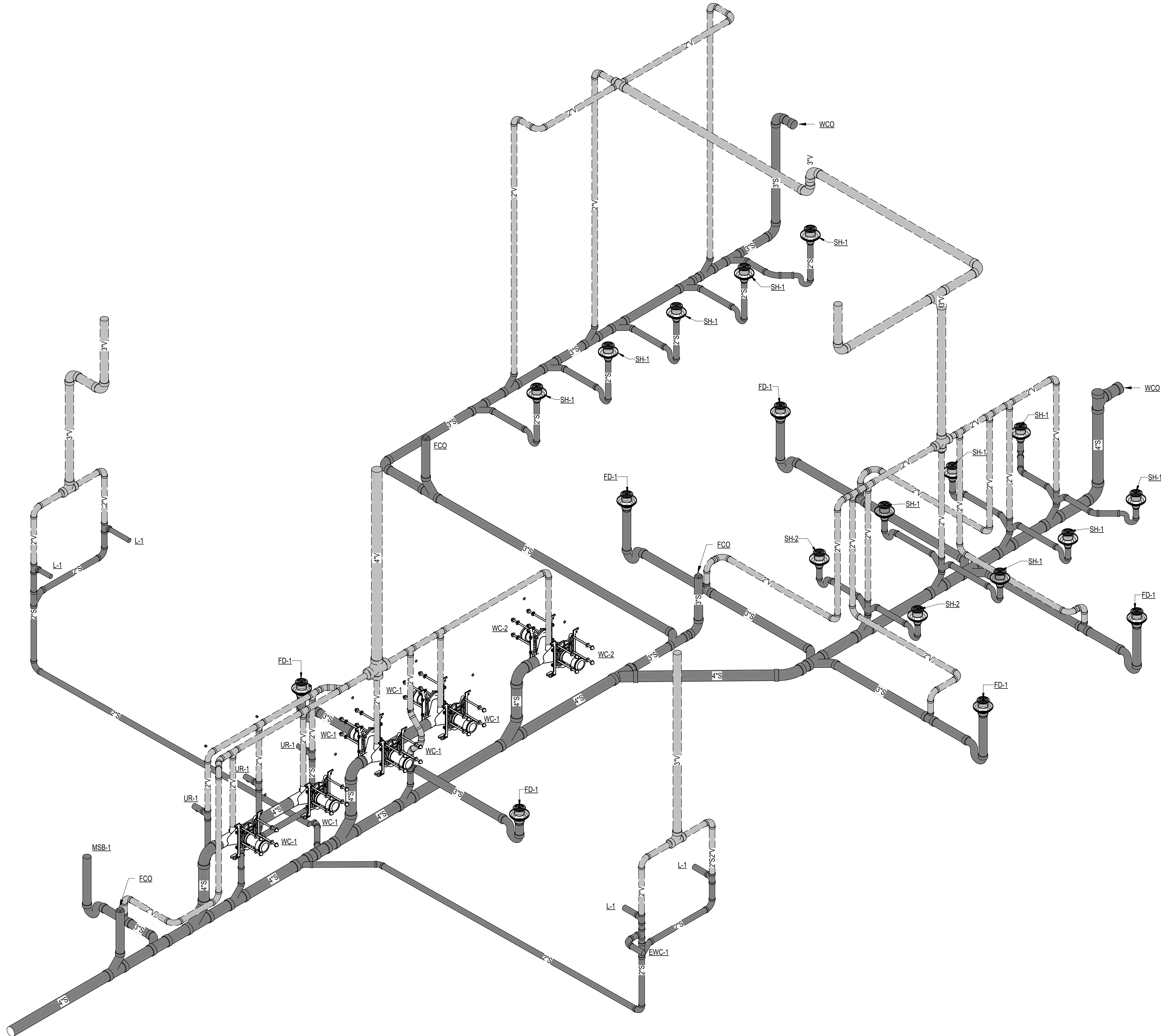
P-501 SCALE: NONE



1 HOT WATER RECIRCULATING PUMP

P-501 SCALE: NONE





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PROJECT # T2504-03
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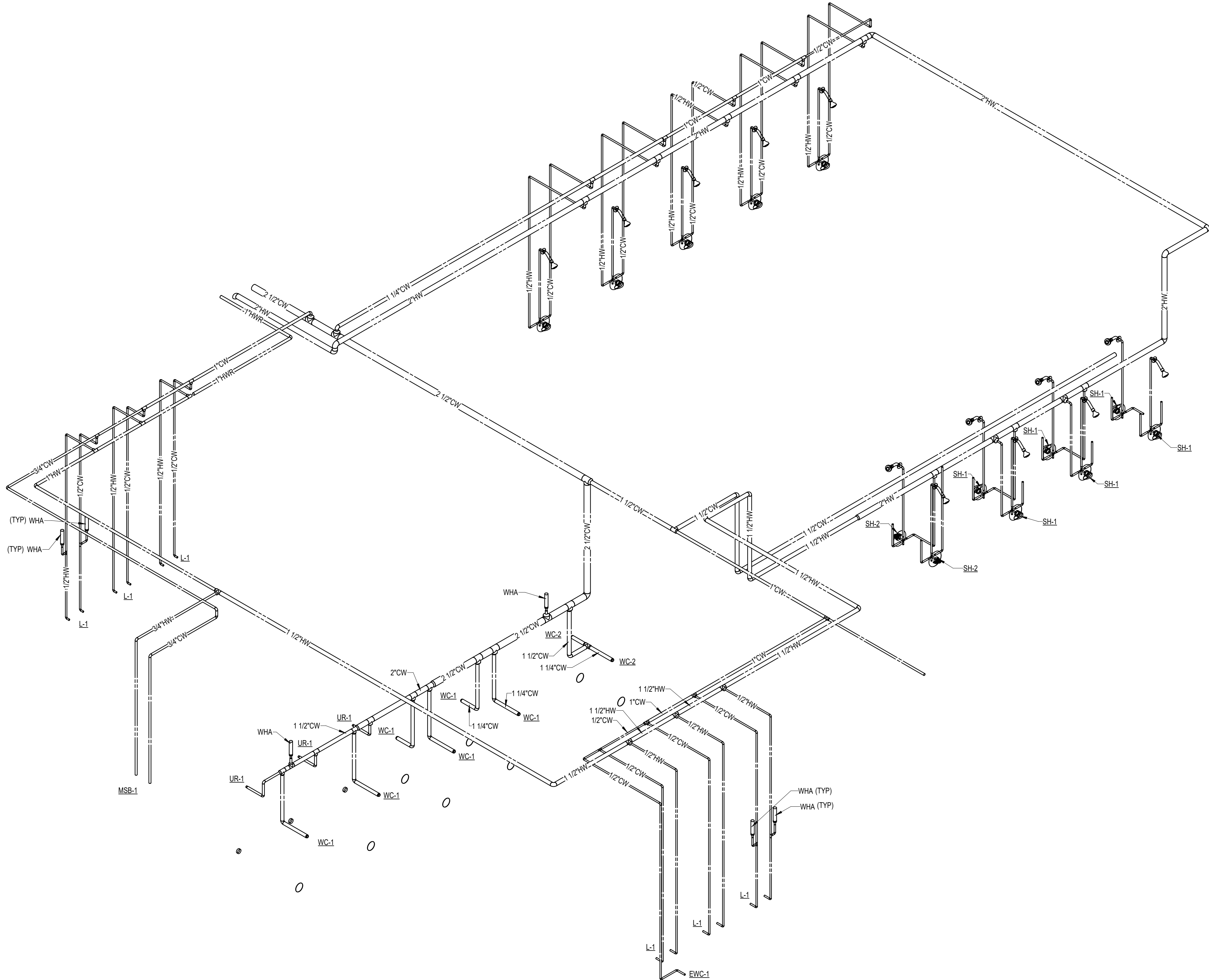
SHEET TITLE:

PLUMBING SANITARY
ISOMETRIC

SHEET NUMBER:

P-502

SHEET 29 OF 51
08/04/2026

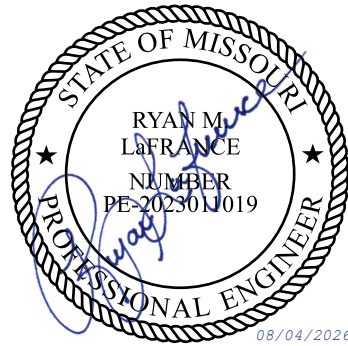


PLUMBING GENERAL NOTES

A. ALL QUICK CLOSING VALVES SHALL BE SUPPLIED WITH WATER HAMMER ARRESTORS ON BOTH HOT AND COLD SUPPLY.

STATE OF MISSOURI
MIKE KEHOE
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Professional of Record:
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LICENSE # PE-202301019
EXP. DATE: 12/31/2027

CASCO

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SHEET TITLE:
PLUMBING DOMESTIC WATER
ISOMETRIC

SHEET NUMBER:

P-503

SHEET 30 OF 51
08/04/2026

PLUMBING FIXTURE SCHEDULE									
MARK	MANUFACTURER	MODEL	ACCESSORIES	CARRIER	CONNECTION SIZES				NOTES
					CW	HW	SAN	VENT	
WC-1, 2	AMERICAN STANDARD SLOAN	AFWALL 2257.101 ROYAL 111-1.6	FLUSH VALVE HANDLE TO OPEN SIDE OF ROOM	JR SMITH 0211	1-1/4"	-	4"	2"	1, 2
WC-3	AMERICAN STANDARD SLOAN	MADERA 3461.001 ROYAL 111-1.6	ADA HEIGHT, FLUSH VALVE HANDLE TO OPEN SIDE OF ROOM	-	1-1/4"	-	4"	2"	1, 2
UR-1, 2	AMERICAN STANDARD SLOAN	WASHBROOK 6590.001 ROYAL 186-1.0	FLUSH VALVE HANDLE TO OPEN SIDE OF ROOM	JR SMITH 0616	1"	-	2"	2"	-
L-1	- MOEN	- GLYDE TV6173	-	-	1/2"	1/2"	2"	2"	3, 9
L-2	AMERICAN STANDARD MOEN	DECORUM 9024.004EC GLYDE TV6173	ADA HEIGHT	ZURN Z1231-79	1/2"	1/2"	2"	2"	3, 9
SH-1	- MOEN	- CHATEAU POSI-TEMP TL2388EP	-	-	1/2"	1/2"	2"	2"	4, 10, 15
SH-2	- MOEN	- CHATEAU POSI-TEMP TL2388EP	ADA COMPLIANT	-	1/2"	1/2"	2"	2"	4, 10, 15
MSB-1	FIAT T&S	MSB2424 B-0665-CRBSTRVR	-	-	1/2"	1/2"	3"	2"	5, 6
EW-1	ELKAY	-	BOTTLE FILLER WITH CHILLER, 8 GPH CHILLING CAPACITY, ADA	-	1/2"	-	2"	2"	-
GCO	JR SMITH	-	-	-	-	-	-	-	-
FCO	JR SMITH	4020	-	-	-	-	-	-	-
CO	JR SMITH	9775	-	-	-	-	-	-	-
BFP-1	WATTS	994-OSY-FS-4	BACKFLOW PREVENTER	-	3"	-	-	-	-
FD-1	JR SMITH	2005L	ROUND TOP, VANDAL PROOF,	-	-	-	3"	-	11
FS-1	JR SMITH	3100Y-CHL	FULL GRATE	-	-	-	4"	-	8
RH-1	WOODFORD HYDRANT	SRH-MS	-	-	3/4"	-	-	-	13
VHA	SIOUX CHIEF	HYDRARESTER 650	-	-	-	-	-	-	14
NOTES: 1. FLOOR MOUNT FLUSH VALVE TOILET, VITREOUS CHINA, EVERCLEAN SURFACE, ELONGATED BOWL, SIPHON JET, 1.6 GPF. 2. FLUSH VALVE HANDLE TO OPEN SIDE OF ROOM. 3. REFER TO ARCHITECTURAL FOR MOULDED STONE TROUGH LAVATORY, (2) 1-1/4" TRAPS, 1/4" ANGLE STOPS, PROVIDE WITH (3) FAUCETS. 4. SINGLE HANDLE, CHROME FINISH, ADJUSTABLE TEMPERATURE STOP, 1.75 GPM. 5. MOLDED STONE BASIN, 10" WALLS, STAINLESS STEEL DRAIN BODY, HOSE AND HOSE BRACKET, MOP HANGER, STAINLESS STEEL BUMPER GUARD. 6. 8" WALL MOUNT FAUCET, CHROME PLATED BRASS BODY, INTEGRAL VACUUM BREAKER AND CHECK VALVES, LEVER HANDLES. 7. SQUARE TOP FLOOR DRAIN, NICKEL BRONZE STRAINER, VANDAL PROOF, PROVIDE WITH TRAP GUARD, ASSE 1072 CERTIFIED. 8. SQUARE FLOOR SINK, NICKEL BRONZE GRATE, LIGHT TRAFFIC RATED, ALUMINUM DOME STRAINER, VANDAL PROOF SCREWS. 9. PROVIDE ASSE 1070 THERMOSTATIC MIXING VALVE. 10. PROVIDE ASSE 1016 THERMOSTATIC MIXING VALVE, PRESSURE AND TEMPERATURE TYPE. 11. ROUND TOP FLOOR DRAIN, NICKEL BRONZE STRAINER, VANDAL PROOF, PROVIDE WITH TRAP GUARD, ASSE 1072 CERTIFIED. 12. INSTALL WITH FD-1 DRAIN. 13. FREEZELESS ROOF HYDRANT WITH INTEGRAL ASSE 1052 BACKFLOW PREVENTER. 14. ASSE 1010 WATER HAMMER ARRESTOR, TYPE L COPPER TUBE BODY, MAX WORKING TEMPERATURE 250°F AND MAX WORKING PRESSURE 350 PSIG. REFERENCE SPECIFICATION SECTION 224100 FOR EQUIVALENT MANUFACTURERS.									

WATER SOFTENER SCHEDULE												
MARK	MANUFACTURER	MODEL	TYPE	GRAINS CAPACITY	RESIN CU/FT	BACKWASH RATE GPM	FLOW RATE		ELECTRICAL			REMARKS
							CONTINUOUS @ 15 PSI LOSS	PEAK @ 25 PSI LOSS	VOLTAGE	PHASE	FREQ	
WS-1	CULLIGAN	CTM-210	DUPLEX	210,000	7	5	65	85	120	1	60	ALL
BT-1	CULLIGAN	BT-1	24" X 50"	-	-	-	-	-	-	-	-	-
NOTES: 1. 2" CONTROL VALVE 2. INTEGRAL FLOW METER, VACUUM BREAKER, AND PRESSURE RELIEF VALVE.									EQUIVALENTS: 1. MARLO 2. WATTS 3. REFERENCE SPEC SECTION 223100 FOR ADDITIONAL MANUFACTURERS			

SUMP PUMP SCHEDULE												
MARK	MANUFACTURER	MODEL	DISCHARGE SIZE	GPM	PUMP HEAD (FT)	RPM	ELECTRICAL					REMARKS
							HP	VOLTAGE	PHASE	MCA	MOCP	
SP - 1	LIBERTY	250 SERIES	1-1/2"	10	20	3450	1/3	115	1	--	-	ALL
NOTES: 1. HIGH/LOW WATER FLOAT ACTIVATION. 2. CAST IRON SUBMERSIBLE PUMP. 3. EX. SUMP PIT. 4. NEMA 1 INDOOR SIMPLEX CONTROL PANEL WITH THREE FLOAT SWITCHES AND HIGH WATER ALARM.								EQUIVALENTS: 1. ZOELLER 2. GRUNDFOS 3. REFERENCE SECTION 221429 FOR ADDITIONAL MANUFACTURERS				

HOT WATER RETURN PUMP SCHEDULE											
MARK	MANUFACTURER	MODEL	FLUID	SERVICE	IMPELLER DIAMETER	FLOW	PUMP HEAD	ELECTRICAL			REMARKS
								HP	VOLTAGE	PHASE	
HWRP - 1	BELL & GOSSETT	ECOCIRC 20-18	WATER	HW RECIRC	3/4"	7 GPM	30 FT	1/10	115	1	ALL
NOTES: 1. PROVIDE THERMOSTAT AT PUMP OUTLET. 2. STAINLESS STEEL BODY, FLANGED CONNECTIONS. 3. SEE DETAIL 2/P-501.										EQUIVALENTS: 1. TACO 2. GRUNDFOS 3. ARMSTRONG	

GAS WATER HEATER SCHEDULE									
MARK	MANUFACTURER	MODEL	TANK VOLUME	HEAT SOURCE	MBH	ELECTRICAL			REMARKS
						VOLTAGE	PHASE	FREQ	
GWH-1	LOCHINVAR	AWN286PM	ST-1	GAS	285	120	1	60	ALL
GWH-2	LOCHINVAR	AWN286PM	ST-1	GAS	285	120	1	60	ALL
NOTES: 1. 5:1 TURNDOWN 2. SEALED COMBUSTION 3. 1/2 HP, 120 V RECIRCULATING PUMP PROVIDED WITH UNIT. 4. AUDIBLE ALARM. 5. CONDENSATE NEUTRALIZATION KIT. 6. HIGH AND LOW GAS PRESSURE SWITCHES W/ MANUAL RESET. EQUIVALENTS: 1. A.O. SMITH 2. BRADFORD WHITE 3. STATE WATER HEATER									

THERMOSTATIC MIXING VALVE SCHEDULE								
MARK	MANUFACTURER	MODEL	FLOW	MIN. FLOW	PSI DROP	INLET	OUTLET	REMARKS
TMV-1	LEONARD	TM-820B-LF-DT	40	1 GPM	10	1"	1-1/4"	ALL
NOTES: 1. PROVIDE THERMOSTAT AT HOT WATER INLET AND OUTLET. 2. OUTLET TEMPERATURE NOT TO EXCEED 120 DEGREES F. 3. LEAD FREE BRASS CONSTRUCTION.							EQUIVALENTS: 1. WATTS 2. ARMSTRONG 3. POWERS	

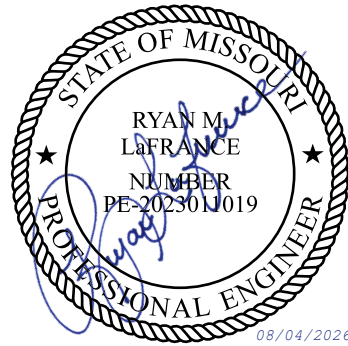
GREASE INTERCEPTOR SCHEDULE								
MARK	MANUFACTURER	MODEL	LIQUID CAPACITY	GREASE CAPACITY	INLET	OUTLET	VENT	REMARKS
GI - 1	SCHIER	GB2	20 GALLON	119 LBS	4"	4"	-	ALL
EQUIVALENTS: 1. GRAVITY DRAINAGE HYDROMECHANICAL GREASE INTERCEPTOR. 2. ON-FLOOR INSTALLATION. EQUIVALENTS: 1. MIFAB 2. JAY R SMITH 3. ZURN								

EXPANSION TANK SCHEDULE					
MARK	MANUFACTURER	MODEL	TANK VOLUME	ACCEPTANCE VOLUME	REMARKS
ET - 1	AMTROL	ST-30VC-DD	16.5	11.2	ALL
NOTES: 1. DIAPHRAGM EXPANSION TANK. 2. FACTORY PRE-CHARGED. EQUIVALENTS: 1. BELL & GOSSETT 2. TACO 3. WATTS					

STORAGE TANK SCHEDULE				
MARK	MANUFACTURER	MODEL	TANK VOLUME	REMARKS
ST - 1	LOCHINVAR	RG40318	318 GALLON	ALL
NOTES: 1. ASME RATED, GLASS LINED, INSULATED, AND JACKETED STORAGE TANK. 2. 125 PSI WORKING PRESSURE. EQUIVALENTS: 1. A.O. SMITH 2. BRADFORD WHITE 3. STATE WATER HEATER				

STATE OF MISSOURI
MIKE KEHOE
GOVERNOR

CASCO DIVERSIFIED CORPORATION
ENGINEERING
LICENSE # 000613
EXP. DATE: 12/31/2027



Professional of Record:
RYAN M. LAFRANCE
LICENSE # PE-2023011019
EXP. DATE: 12/31/2027

CASCO

12 SINNENDRIVE, SUITE 100, ST. LOUIS, MO 63143 T 314-601-1100

OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES
MANAGEMENT,
DESIGN AND CONSTRUCTION

DEPARTMENT OF

MISSOURI NATIONAL
GUARD

INTERIOR AND EXTERIOR
RENOVATION

JEFFERSON BARRACKS
READINESS CENTER
74 KEARNEY ST,
ST. LOUIS, MO 63125

PROJECT # T2504-03
SITE # 6303
FACILITY #8136303050

REVISIONS

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DESIGNED BY:

SHEET TITLE:
PLUMBING SCHEDULES

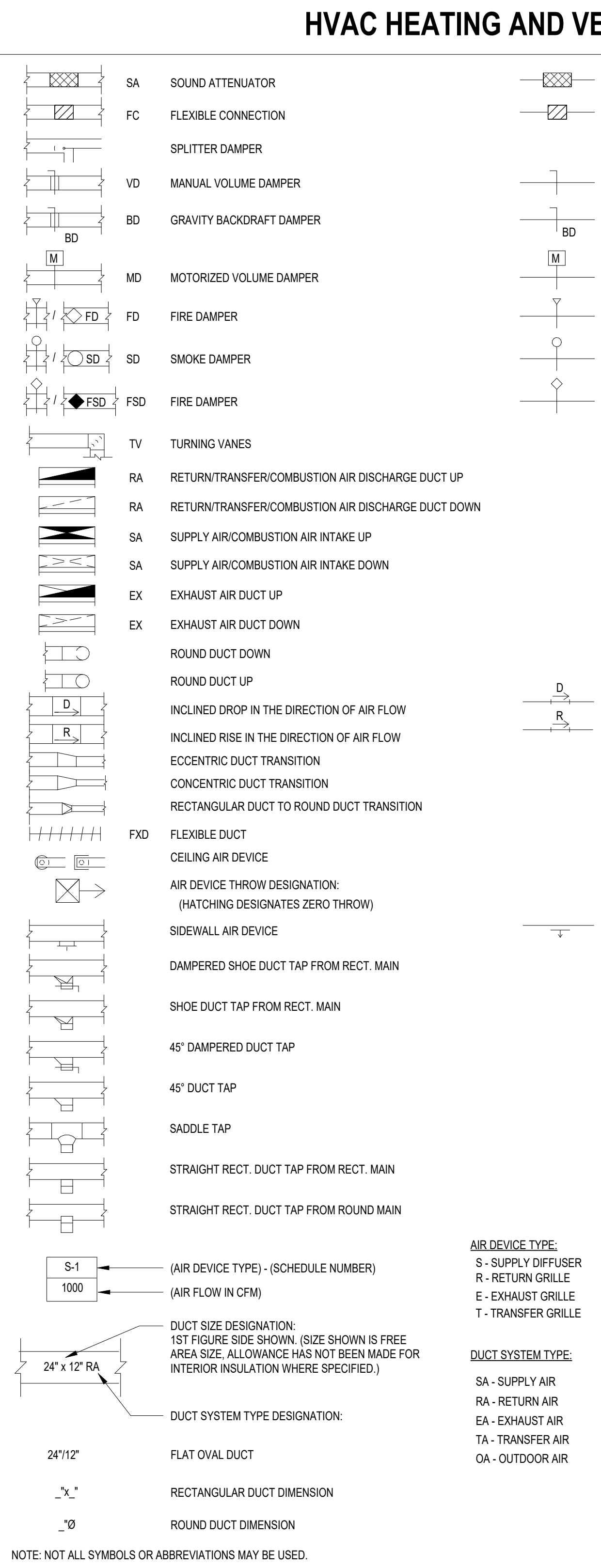
SHEET NUMBER:

P-601

SHEET 31 OF 51
08/04/2026

1. THESE PLANS ARE DIAGRAMMATIC IN NATURE SINCE THEY REFLECT ONLY THE AVAILABLE INFORMATION OBTAINED FROM EXISTING PLANS, SPECIFICATIONS, AND FIELD SURVEYS. THE EXACT LOCATION OF EXISTING DUCTWORK, PIPING, AND EQUIPMENT MAY DEViate FROM THE LOCATION INDICATED ON THE DRAWINGS. THE CONTRACTOR SHALL BE PREPARED TO MAKE SOME ALTERATIONS TO NEW AND/OR EXISTING SERVICES TO FIT ACTUAL JOB CONDITIONS.
2. THE SPACE ALLOWED FOR MECHANICAL (HVAC, PLUMBING, FIRE PROTECTION) AND ELECTRICAL WORK ABOVE THE SUSPENDED CEILING IS CRITICAL AND REQUIRES COORDINATION BETWEEN TRADES. CONTRACTORS SHALL THOROUGHLY FAMILIARIZE THEMSELVES WITH THE ARCHITECTURAL, STRUCTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS PRIOR TO FABRICATION OR INSTALLATION OF ANY MATERIALS. DUCTWORK SHALL BE HUNG AS CLOSE AS POSSIBLE TO THE STRUCTURE ABOVE UNLESS INDICATED OTHERWISE. REWORK OF PIPING, DUCTWORK, EQUIPMENT LOCATION, CONDUIT, ETC. AS A RESULT OF POOR PLANNING, COORDINATION, OR SCHEDULING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
3. ANY HOLES LEFT IN EXISTING WALL CONSTRUCTION DUE TO DEMOLITION OR NEW WORK SHALL BE PATCHED TO MATCH EXISTING CONDITIONS.
4. PIPES/DUCTS/ETC. PENETRATING EXTERIOR WALLS AND ROOFS SHALL BE SEALED WEATHER PROOF AND SLOPE AWAY FROM THE BUILDING.
5. CONTRACTOR TO FIRESTOP ALL PENETRATIONS THRU FIRE-RATED FLOORS AND WALLS CREATED BY DEMOLITION OR NEW WORK WITH APPROVED UL LISTED ASSEMBLY.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF ANY FRAMING REVISIONS, EQUIPMENT LOCATIONS, ADDITION OF CONTROLS, ELECTRICAL CIRCUITING REVISIONS, ETC. THAT RESULT FROM USING EQUIPMENT OTHER THAN INDICATED ON THE DRAWINGS. APPROVAL OF THE SHOP DRAWINGS BY THE ENGINEER WILL NOT WAIVE THE CONTRACTOR OF THIS RESPONSIBILITY.
7. THE CONTRACTOR SHALL HAVE THE FINAL RESPONSIBILITY FOR SYSTEM START UP AND TURN OVER TO THE OWNER.
8. ALL ITEMS INCLUDED ON THESE DRAWINGS AND THE SPECIFICATIONS SHALL BE INCLUDED IN THE CONTRACTORS BID. IF THE CONTRACTOR DOES NOT CLEARLY UNDERSTAND THESE PLANS OR IS NOT SURE OF THEIR MEANING, THE CONTRACTOR SHOULD OBTAIN THE ENGINEER'S WRITTEN EXPLANATION AND INTERPRETATION PRIOR TO BID TIME. THE CONTRACTOR WILL BE HELD TO THE INTERPRETATION OF THE ENGINEER.
9. FIRE CAULK ALL PENETRATIONS THRU FIRE RATED PARTITIONS TO MAINTAIN FIRE RATING OF PARTITION.
10. CAULK ALL PENETRATIONS THRU WALLS TO MINIMIZE SOUND PENETRATION THRU WALLS.
11. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE ALL TEMPERATURE CONTROL SYSTEM REQUIREMENTS.
12. ANY DAMAGE TO THE SITE (SIDEWALKS, CURBS, ETC) OR TO THE BUILDING AS A RESULT OF WORK PERFORMED UNDER THIS CONTRACT SHALL BE FIXED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
13. CONTRACTOR WILL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING OF ROOFS/WALLS/FLOORS AND CORE DRILLS REQUIRED TO COMPLETE THEIR RESPECTIVE WORK.
14. THE OWNER SHALL HAVE FIRST SALVAGE RIGHTS OF EQUIPMENT AND MATERIALS REMOVED. ALL EQUIPMENT AND MATERIALS NOT CLAIMED BY THE OWNER SHALL BE REMOVED FROM THE PREMISES BY THE CONTRACTORS.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ANY TEMPORARY FENCING AROUND THE LIFT SITE DURING LIFTS.
16. OWNER SHALL BE RESPONSIBLE FOR REMOVING ALL ASBESTOS-CONTAINING MATERIAL ASSOCIATED WITH THIS PROJECT.
17. PROVIDE FLEXIBLE CONNECTIONS ON ALL PIPING PENETRATIONS BACK TO BACK 2 HOUR RATED FIRE WALLS TO ALLOW FOR EXPANSION BETWEEN THE WALLS.
18. ALL EXISTING MECHANICAL EQUIPMENT, DUCTWORK, ETC. THAT SERVES SPACES ON OTHER FLOORS SHALL REMAIN AS IS. DO NOT DISCONNECT OR REMOVE ANY EQUIPMENT NOT SHOWN IN THESE PLANS.
19. REMOVE AND RE-INSTALL EXISTING LAY-IN CEILING AS REQUIRED TO COMPLETE ALL DEMOLITION AND NEW WORK. REPLACE CEILING TILES DAMAGED DURING CONSTRUCTION WITH NEW TILES MATCHING EXISTING.
20. THESE PLANS ARE DIAGRAMMATIC IN NATURE. SINCE THEY REFLECT ONLY THE AVAILABLE INFORMATION OBTAINED FROM EXISTING PLANS, SPECIFICATIONS, AND FIELD SURVEYS. THE EXACT LOCATION OF EXISTING DUCTWORK, PIPING, AND EQUIPMENT MAY DEViate FROM THE LOCATION INDICATED ON THESE DRAWINGS. THE CONTRACTOR SHALL BE PREPARED TO MAKE SOME ALTERATIONS TO NEW AND/OR EXISTING SERVICES TO FIT ACTUAL JOB CONDITIONS.
21. ITEMS SHOWN BOLD AND/OR DASHED ON THE DEMOLITION SHEETS INDICATE ITEMS TO BE DEMOLISHED.
22. CROSS HATCHING INDICATES ITEMS TO BE REMOVED.
23. THE OWNER SHALL HAVE FIRST SALVAGE RIGHTS OF EQUIPMENT AND MATERIALS REMOVED. ALL EQUIPMENT AND MATERIALS NOT CLAIMED BY THE OWNER SHALL BE REMOVED FROM THE PREMISES BY THE CONTRACTORS.
24. CONTRACTOR SHALL DISPOSE ALL ITEMS BEING DEMOLISHED OR REMOVED (BUT NOT RETAINED BY OWNER) PER ALL FEDERAL, STATE, AND LOCAL CODES, RULES AND REGULATIONS.
25. THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE A MINIMUM OF SEVEN DAYS PRIOR TO THE BEGINNING OF WORK THAT INVOLVES ACTIVITY ON THE ROOF.
26. TRAFFIC OVER THE EXISTING ROOF SURFACES SHALL BE KEPT TO AN ABSOLUTE MINIMUM.
27. THE CONTRACTOR AND THE OWNER'S REPRESENTATIVE SHALL INSPECT THE EXPOSED ROOFING MEMBRANE SYSTEM PRIOR TO THE START OF CONSTRUCTION. ANY PREVIOUS DAMAGE OR DEFECTS OF THE ROOFING SYSTEM SHALL BE DOCUMENTED IN WRITING AND APPROVED PHOTOGRAPHS.
28. THE CONTRACTOR SHALL PLACE MINIMUM OF 48" WIDE, 1/2" THICK APPROVED PROTECTION BOARDS (1 LAYER) MADE OF CONSTRUCTION GRADE PLYWOOD (ORIENTED STRAND BOARD WILL BE ACCEPTABLE) ON TOP OF HEAVY DUTY TRAP OVER ALL MEMBRANE ROOFING THAT WILL HAVE CONSTRUCTION TRAFFIC. THIS ROOF PROTECTION SHALL BE PROVIDED FOR THE ENTIRE AREA WITHIN THE LIMITS OF THE WALKWAY PROTECTION. THIS SHALL ALSO BE PROVIDED THE FORM OF A WALKWAY FROM THE ROOF ACCESS DOOR TO THE PROTECTED CONSTRUCTION AREA.
29. STORAGE OF MATERIALS ON EXISTING ROOF WILL NOT BE ALLOWED.
30. THE CONTRACTOR SHALL REMOVE DAILY ALL PROJECT DEBRIS FROM ALL ROOFING SURFACES. THE CONTRACTOR SHALL ADVISE THE OWNER'S REPRESENTATIVE WHEN WORK ON THE ROOF IS COMPLETE AND THE PROTECTION BOARDS HAVE BEEN REMOVED. THE CONTRACTOR AND THE OWNER'S REPRESENTATIVE SHALL EXAMINE ALL ROOF SURFACES WHERE WORK HAS OCCURRED AND WILL REPAIR ALL DEFECTS NOT PREVIOUSLY DOCUMENTED.
31. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO THE BUILDING, ROOF, STRUCTURAL FRAMING, ETC. INCURRED DURING CONSTRUCTION.
32. THE CONTRACTOR SHALL VERIFY WARRANTY OF THE EXISTING MEMBRANE ROOFING SYSTEM. THE CONTRACTOR SHALL UTILIZE A LICENSED APPLICATOR OF THE EXISTING ROOFING SYSTEM TO PERFORM ALL ROOFING WORK AND TO REPAIR ANY AND ALL DAMAGE. UPON COMPLETION, THE CONTRACTOR SHALL OBTAIN A LETTER FROM THE ROOF MANUFACTURER STATING THAT THE EXISTING WARRANTY REMAINS IN FULL FORCE AND EFFECT.

30. NOTE. ALL DUCTWORK OFFSETS ARE NOT SHOWN. THE CONTRACTOR SHALL MODIFY DUCTS AND OFFSETS TO COORDINATE WITH THE BUILDING STRUCTURE AND ALL TRADE REQUIREMENTS.
31. ALL DUCTWORK SHALL BE CONSTRUCTED AND INSTALLED PER THE LATEST VERSION OF THE S.M.A.C.N.A. H.V.A.C. DUCT CONSTRUCTION STANDARDS, UNLESS SPECIFIED MORE STRINGENTLY IN THESE CONSTRUCTION DOCUMENTS. MINIMUM DUCT GAGE SHALL BE 24.
32. ALL RECTANGULAR DUCTS SHALL BE SUPPLIED WITH TURNING VANES, WHETHER SHOWN ON DOCUMENTS OR NOT. TURNING VANES SHALL BE: SINGLE THICKNESS MOUNTED TO PREFABRICATED VANE RAIL WITH AN INSIDE TURNING RADIUS NO LESS THAN 1/2 THE WIDTH OF THE DUCT (AS DEFINED BY ASHRAE).
33. RECTANGULAR DUCTWORK SHALL BE SUPPORTED PER THE S.M.A.C.N.A. STANDARDS AND AT EACH CHANGE IN DIRECTION.
34. PROVIDE MANUAL, SINGLE BLADE, BALANCING DAMPERS WITH LOCKING QUADRANT AND INTEGRAL POSITION INDICATOR ON ALL RUNOUTS TO SUPPLY AND EXHAUST AIR DEVICES. -EXCEPT THOSE LOCATED IN AREAS WITH PLASTER CEILINGS AND ARE NOT ACCESSIBLE (DAMPER SHALL BE INTEGRAL WITH THE AIR DEVICE IN THESE CASES.)
35. PROVIDE MANUAL OPPOSED BLADE DAMPERS WITH LOCKING QUADRANT AND INTEGRAL POSITION INDICATOR ON ALL RECTANGULAR BRANCH DUCTS AND AIR DEVICE RUNOUTS THAT EXCEED 12" IN HEIGHT.
36. MANUAL SPLITTER DAMPERS ARE NOT ACCEPTABLE.
37. NOT ALL OF THE ACCESS DOORS IN THE DUCT SYSTEMS OR PLENUMS ARE SHOWN. PROVIDE ACCESS DOORS IN ALL DUCT SYSTEMS OR PLENUMS WHERE REQUIRED TO ACCESS AND MAINTAIN MOTORIZED OR AUTOMATIC DAMPER BLADES AND LINKAGES.
38. ALL DUCTWORK SHALL BE SUPPORTED FROM ROOF OR FLOOR STRUCTURE ABOVE. DUCTWORK SHALL NOT LAY ON TOP OF CEILING OR LIGHT FIXTURES.
39. FLEXIBLE DUCT RUNOUTS TO AIR DEVICES SHALL NOT EXCEED 5'-0" IN LENGTH. FLEXIBLE RUNOUTS SHALL BE TRIMMED TO THE MINIMUM LENGTH NECESSARY TO MAKE THE CONNECTION.
40. WHERE DAMPER ACTUATORS ARE MOUNTED TO DUCTWORK OR PLENUMS PROVIDE A HEAVY GAGE BASE PLATE, ANGLE STIFFENERS, OR MOUNTING AS REQUIRED TO ELIMINATE DEFLECTION OF DUCTWORK DURING ACTUATOR OPERATION.
41. FLEXIBLE DUCT CONNECTIONS TO EQUIPMENT ARE NOT SHOWN ON THE DRAWINGS. PROVIDE EXTRA WIDE FLEXIBLE CONNECTIONS ON THE SUPPLY DUCT AND THE RETURN DUCT OF EACH MAKE-UP AIR UNIT, ROOFTOP UNIT, AND EACH AIR HANDLING UNIT. PROVIDE STANDARD FLEXIBLE CONNECTIONS ON ALL BLOWER COILS, EXHAUST FANS, SUPPLY FANS, AND DUCT COLLECTOR.
42. PROVIDE 45° FLARED TAKEOFFS FOR ALL RECTANGULAR BRANCH CONNECTIONS TO THE MAIN DUCT.
43. ALL DAMPER ACTUATORS FOR DUCT SYSTEMS OR EQUIPMENT THAT COMMUNICATES DIRECTLY WITH THE OUTDOORS SHALL BE SPRING RETURN TYPE TO CLOSE IN THE EVENT OF A POWER FAILURE.
44. DUCT DIMENSIONS NOTED ON THE DRAWINGS ARE NET FREE AREA. WHERE ACOUSTIC LINER IS INDICATED OR SPECIFIED THE SHEET METAL SIZE MUST BE INCREASED TO ACCOMMODATE THE LINER.
45. ALL DUCT RUNOUTS TO AIR DEVICES ARE TO BE THE SAME SIZE AS THE NECK OF THE AIR DEVICE UNLESS NOTED OTHERWISE.
46. DIRECTIONAL ARROWS ON AIR DEVICES INDICATE THROWS FOR AIR DEVICE. VERIFY PROPER ADJUSTMENT OF THROW DEFLECTION VANES OF ALL AIR DEVICES PRIOR TO BEGINNING BALANCING. WHERE NO ARROWS ARE SHOWN, THROW SHALL BE 4-WAY.
47. CONTRACTOR SHALL BALANCE EACH AREA OF COMPLETED WORK. THE CONTRACTOR SHALL BALANCE SUPPLY, RETURN, AND EXHAUST AIR FLOWS AT EACH AIR DEVICE AFFECTED BY RENOVATION TO QUANTITY INDICATED ON THE DRAWINGS. SUBMIT FINAL BALANCE REPORT TO ENGINEER FOR APPROVAL.
48. ALL NEW DUCT CONNECTIONS TO EXISTING DUCTWORK SHALL BE SEALED AIRTIGHT.



— CS —	CONDENSING WATER SUPPLY
— CR —	CONDENSING WATER RETURN
— DTS —	DUAL TEMPERATURE SUPPLY
— DTR —	DUAL TEMPERATURE RETURN
— FOS —	FUEL OIL SUPPLY
— FOR —	FUEL OIL RETURN
— FOV —	FUEL OIL VENT
— MWL —	MAKE - UP WATER LINE
— D —	DRAIN LINE (OTHER THAN PLUMBING)
— VL —	VENT LINE (OTHER THAN PLUMBING)
— RD —	REFRIGERANT DISCHARGE
— RL —	REFRIGERANT LIQUID
— RS —	REFRIGERANT SUCTION
— G —	GAS
— CWS —	CHILLED WATER SUPPLY
— CWR —	CHILLED WATER RETURN
— CA —	COMPRESSED AIR
— LPS —	LOW PRESSURE STEAM
— MPS —	MEDIUM PRESSURE STEAM
— LPC —	LOW PRESSURE CONDENSATE
— MPC —	MEDIUM PRESSURE CONDENSATE
— HPS —	HIGH PRESSURE STEAM
— HPC —	HIGH PRESSURE CONDENSATE
— CPD —	CONDENSATE PUMP DISCHARGE
— HWS —	HEATING WATER SUPPLY
— HWR —	HEATING WATER RETURN

	(EQUIPMENT NAME) EQUIPMENT OR PLUMBING FIXTURE DESIGNATION (EQUIPMENT NUMBER)
	(RISER INDICATION P=PLUMBING, P=KITCHEN, P=A/CID) RISER DESIGNATION (RISER NUMBER)
	(DETAIL NUMBER) DETAIL DESIGNATION (SHEET NUMBER WHERE DETAIL IS FOUND)
	(SECTION NUMBER) SECTION DESIGNATION (SHEET NUMBER WHERE SECTION IS FOUND)
	KEYED NOTES
	REVISIONS
	ACCESS PANEL
	NEW CONNECTION
	AIR FLOW MEASURING STATION
	CONSTANT VOLUME REGULATOR

	GV	GATE VALVE
	CV	CHECK VALVE
	GLV	GLOBE VALVE
	BLV	BALL VALVE
	STR	STRAINER
	U	UNION
	BC	BALANCING COCK
	SOC	SHUT-OFF COCK
	SLV	SOLENOID VALVE
	BFV	BUTTERFLY VALVE
	FS	FLOW SWITCH
		VALVE W/ SUPERVISORY SWITCH
	FCV	FLOW CONTROL VALVE (GPM INDICATED)
	T&PR	TEMPERATURE AND PRESSURE RELIEF VALVE
	PG	PRESSURE GAUGE
	TH	THERMOMETER (TUBE OR DIAL AS INDICATED)
	PRV	PRESSURE REDUCING VALVE
		DIRECTION OF FLOW
		ANCHORS
		PIPE GUIDES
	MV	MOTORIZED VALVE
	DV	DIAPHRAGM VALVE
	LPV	LUBRICATED VALVE
	HEV	HOSE END VALVE
	SWV	STOP AND WASTE VALVE
	TWV	3- WAY VALVE (MIXING OR BY-PASS AS INDICATED)
		PETES PLUG
	RV	RELIEF VALVE
	FC	FLEXIBLE PIPE CONNECTION
	AVM	AIR VENT (MANUAL)
	AVA	AIR VENT (AUTOMATIC)
	EX	EXPANSION JOINT
	CCR	CONCENTRIC REDUCER
		TEE (SIDE OUTLET UP)
		TEE (SIDE OUTLET DOWN)
		ELBOW (TURNED UP)
		ELBOW (TURNED DOWN)
	BMD	COMBINATION BALANCING & MEASURING DEVICE
	ECR	ECCENTRIC REDUCER
	FMD	FLOW MEASURING DEVICE
		STEAM TRAP
		BALANCING VALVE
		FLEXIBLE CONNECTION
		ELBOW
		TEE

FFE	FINISH FLOOR ELEVATION
AFF	ABOVE FINISH FLOOR
TE	TOP ELEVATION
BE	BOTTOM ELEVATION
FL	FLOW LINE
INV	INVERT ELEVATION
Q	CENTER LINE
GC	GENERAL CONSTRUCTION CONTRACTOR
HAC	HEATING & AIR CONDITIONING CONTRACTOR
PC	PLUMBING CONTRACTOR
EC	ELECTRICAL CONTRACTOR
ACS	AUTOMATIC CONTROL SUB-CONTRACTOR
FPC	FIRE PROTECTION CONTRACTOR
HSC	HALON SUB-CONTRACTOR
KEC	KITCHEN EQUIPMENT CONTRACTOR
MC	MECHANICAL CONTRACTOR
TCC	TEMPERATURE CONTROL CONTRACTOR

Professional of Record:
RYAN M. LAFRANCE
LICENSE #: PE-202301101
EXP. DATE: 12/31/2027

T:314-821-1100

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READINESS CENTER
74 KEARNEY ST,
ST. LOUIS, MO 63125

PROJECT # T2504-03
SITE # 6303
FACILITY #8136303050

No.	Description	Date
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ISSUE DATE:08/04/2026

DWG FILE #: 2605562
DRAWN BY: SJL
CHECKED BY: RML
DESIGNED BY:

MECHANICAL GENERAL
NOTES, LEGENDS, & SYM

M-001

SHEET 32 OF 51
08/04/2026

SEISMIC RISK CATEGORY: II											SEISMIC DESIGN CATEGORY: D
LISTING OF EQUIPMENT AND SYSTEM COMPONENTS	IMPORTANCE FACTOR (IP)	ANCHORAGE TO FLOORS, ROOFS, ETC.		SWAY BRACING		LOCATION OF PROFESSIONALLY SEALED ANCHORAGE AND SWAY BRACING DETAILS				NOTES	
		NOT PROVIDED	PROVIDED	NOT PROVIDED	PROVIDED	ON CONST. DOCUMENTS		SUBSEQUENT SUBMITTAL			
						DWG. NO.	SPEC. SECT.	SHOP DWGS.	SEP. PERMIT		
KITCHEN GREASE HOOD (HD-1,2)	1.5	-	X	-	-	-	-	-	-	4	
KITCHEN EXHAUST FAN (EF-2)	1.5	-	X	-	-	-	-	-	-	4	
ROOF MOUNTED EQUIPMENT (>400 LBS)	1.0	-	X	-	-	-	-	-	-	4	
ROOF MOUNTED EQUIPMENT (<400 LBS)	1.0	X	-	X	-	-	-	-	-	1	
DUCTWORK	1.0	X	-	X	-	-	-	-	-	3,4	
AIR DEVICES	1.0	X	-	X	-	-	-	-	-	2	
UNIT HEATERS	1.0	X	-	X	-	-	-	-	-	-	

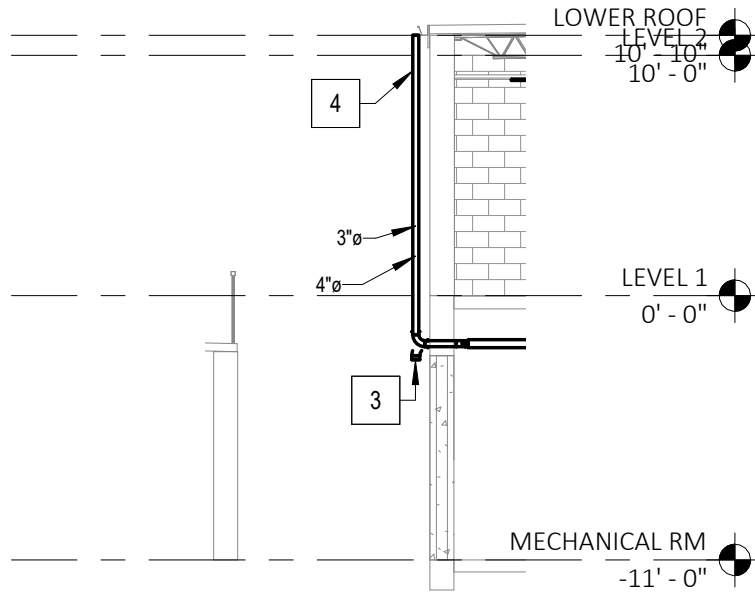
- ASCE 07-22 TABLE 13.1-1 CATEGORY D: GENERAL EXEMPTION: MECHANICAL AND ELECTRICAL COMPONENTS IN SEISMIC DESIGN CATEGORY D WITH A COMPONENT IMPORTANCE FACTOR IP=1.0 AND THE COMPONENT WEIGHS 400 LBS OR LESS.
- ASCE 07-22 TABLE 13.1-1 CATEGORY D: GENERAL EXEMPTION: MECHANICAL AND ELECTRICAL COMPONENTS IN SEISMIC DESIGN CATEGORYd WITH A COMPONENT IMPORTANCE FACTOR IP=1.0 AND THE COMPONENT WEIGHS 20 LB OR LESS OR 5 LB/FT FOR DISTRIBUTED SYSTEMS.
- ASCE 07-22 13.6.6.2 DUCT SYSTEM EXEMPTIONS: LOCATIONS WHERE PROVISIONS ARE MADE TO AVOID IMPACT WITH OTHER DUCTS OR MECHANICAL COMPONENTS OR TO PROTECT THE DUCTS IN THE EVENT OF SUCH IMPACT, THE DISTRIBUTION SYSTEM IS POSITIVELY ATTACHED TO THE STRUCTURE, AND HVAC DUCTS HAVE A CROSS-SECTIONAL AREA OF LESS THAT 6 SQ. FT AND WEIGHT 20 LBS./FT OR LESS.
- COMPONENTS SHALL BE POSITIVELY ATTACHED TO STRUCTURE.

MECHANICAL GENERAL NOTES
A. ALL CORE DRILLING LOCATIONS TO BE X-RAYED AND COORDINATED WITH STRUCTURAL AND ELECTRICAL PRIOR TO DRILLING TO MINIMIZE IMPACT ON EXISTING SLAB. ELECTRICAL CONDUIT IN SLAB SHALL BE AVOIDED.

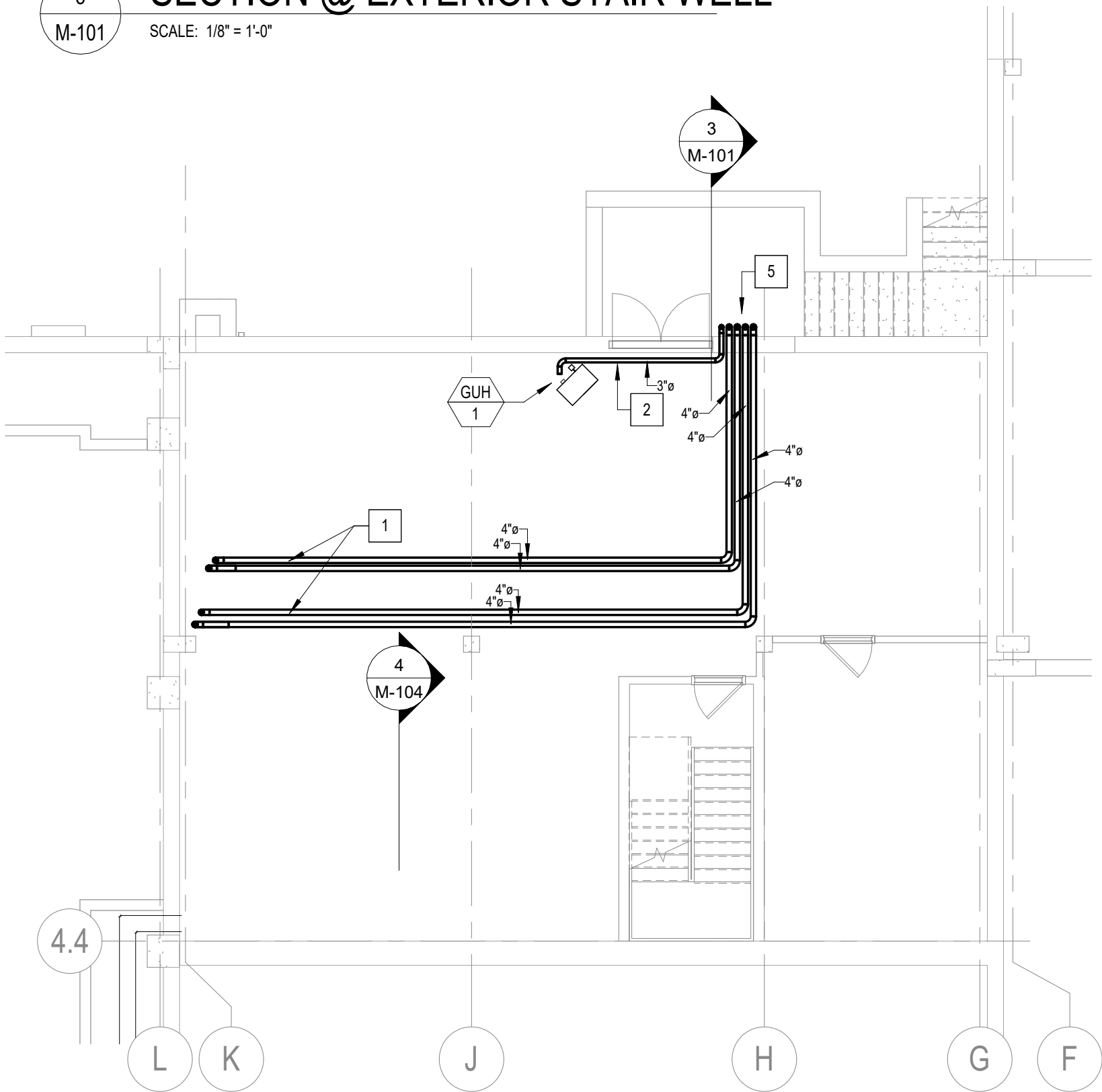
X	MECHANICAL KEYED NOTES
1.	WATER HEATER FLUE AND COMBUSTION AIR PIPES. REFERENCE P-100 FOR EXACT WATER HEATER LOCATIONS.
2.	GAS UNIT HEATER POWERED EXHAUST.
3.	COMBUSTION AIR INTAKE FOR GAS WATER HEATER. TERMINATE PER MANUFACTURER'S INSTRUCTIONS.
4.	TERMINATE FLUE EXHAUST AT ROOF LEVEL. MAINTAIN 10 FOOT SEPARATION BETWEEN EXHAUST AND MECHANICAL UNIT FRESH AIR INTAKES. TERMINATE PER MANUFACTURER'S INSTRUCTIONS.
5.	REFERENCE ARCHITECTURAL DETAIL FOR PENETRATION OF FLUE/COMBUSTION AIR INTAKE PIPING THROUGH IN-FILLED BLOCK WALL.

MECHANICAL DEMO GENERAL NOTES
A. ALL CORE DRILLING LOCATIONS TO BE X-RAYED AND COORDINATED WITH STRUCTURAL AND ELECTRICAL PRIOR TO DRILLING TO MINIMIZE IMPACT ON EXISTING SLAB. ELECTRICAL CONDUIT IN SLAB SHALL BE AVOIDED.

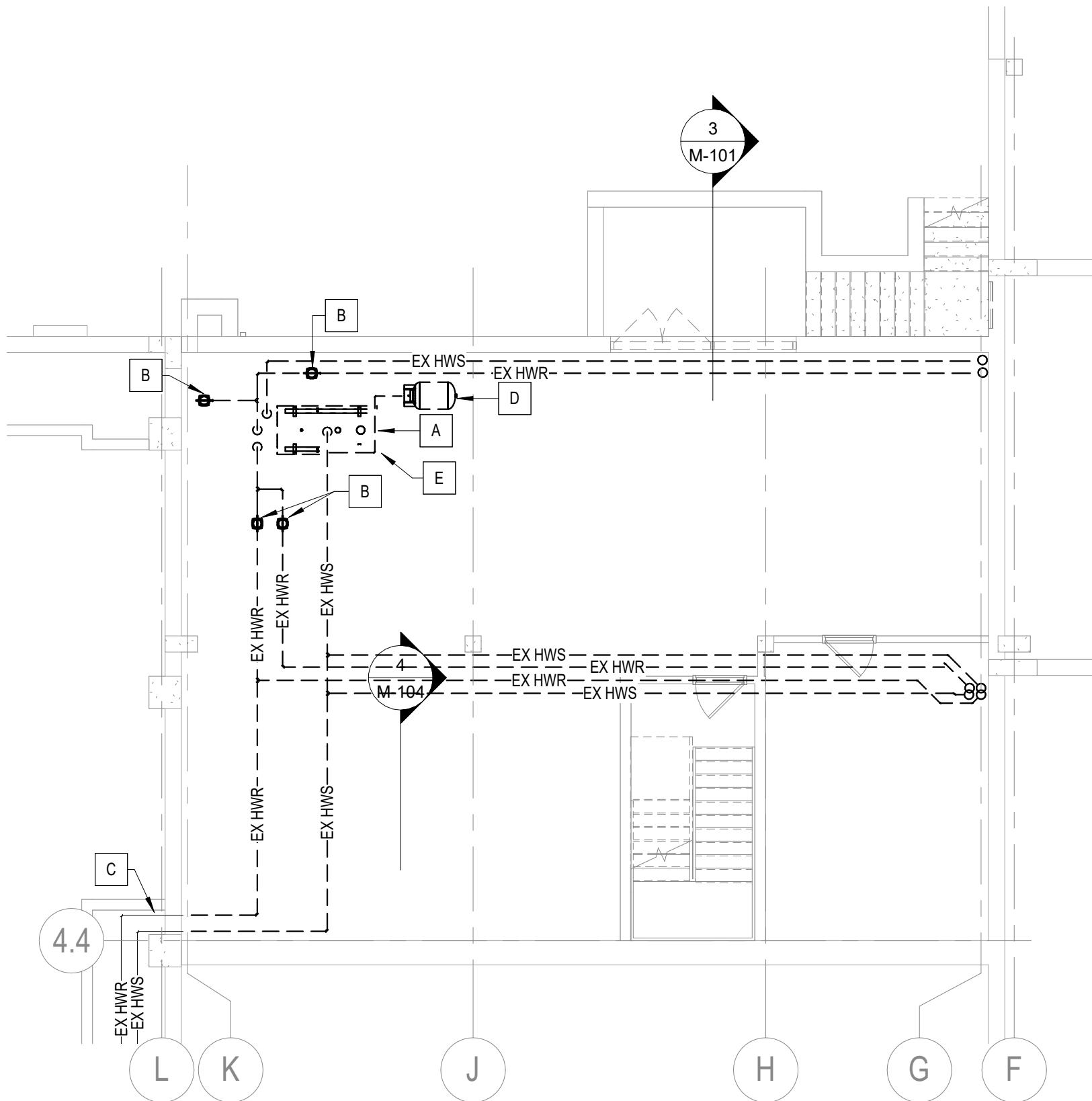
X	MECHANICAL DEMO KEYED NOTES
A.	EXISTING BOILER TO BE DEMOLISHED. ALL CONNECTED HYDRONIC HOT WATER PIPING TO BE DEMOLISHED.
B.	EXISTING HYDRONIC HOT WATER RETURN PUMP TO BE DEMOLISHED.
C.	CUT AND CAP HYDRONIC HOT WATER PIPING IN TUNNEL. ABANDON PIPING IN TUNNEL.
D.	DEMOLISH BOILER EXPANSION TANK SUSPENDED FROM CEILING.
E.	DEMOLISH HYDRONIC BACKFLOW PREVENTER.



3
M-101
SECTION @ EXTERIOR STAIR WELL
SCALE: 1/8" = 1'-0"



2
M-101
MECHANICAL BASEMENT PLAN
SCALE: 1/8" = 1'-0"



1
M-101
MECHANICAL DEMO BASEMENT PLAN
SCALE: 1/8" = 1'-0"

STATE OF MISSOURI
MIKE KEHOE
GOVERNOR

CASCO DIVERSIFIED CORPORATION
ENGINEERING
LICENSE #: 000613
EXP. DATE: 12/31/2027



Professional of Record:
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CASCO

12 SINNEN DRIVE, SUITE 100, ST. LOUIS, MO 63143 T 314-601-1100

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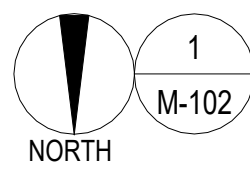
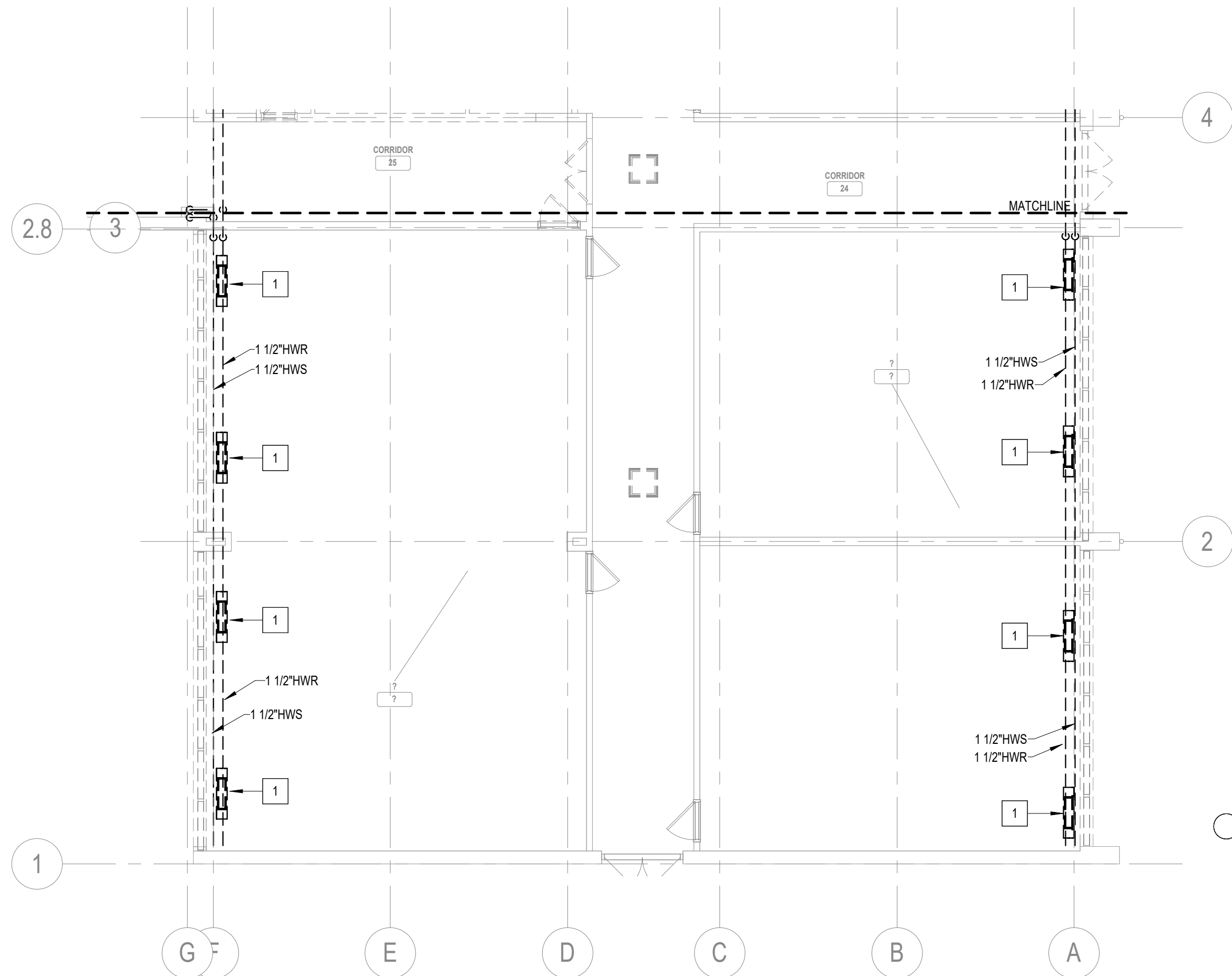
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SHEET TITLE:
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SHEET NUMBER:

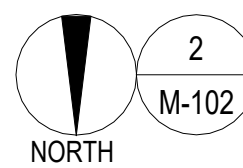
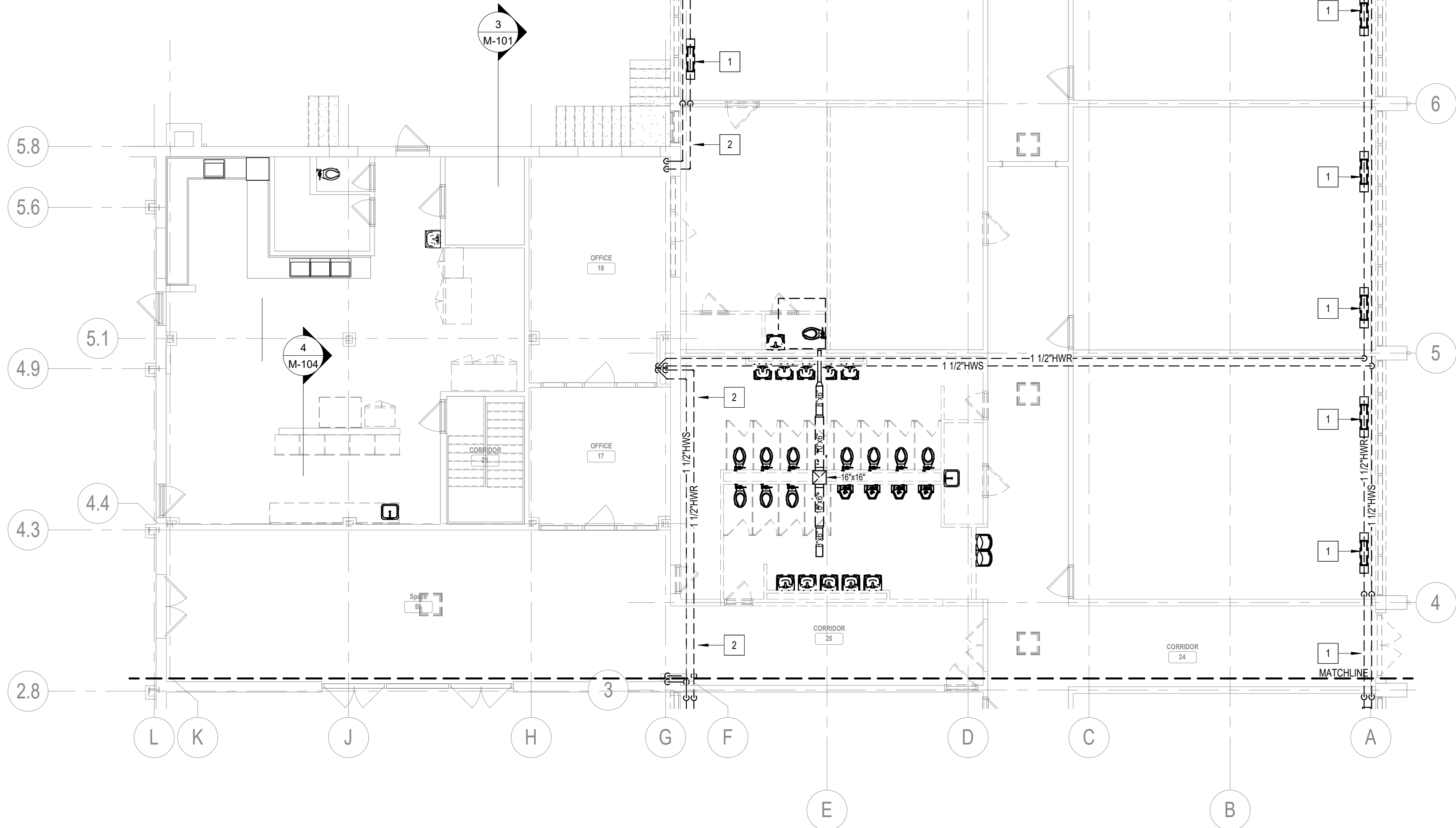
M-101

SHEET 33 OF 51
08/04/2026



MECHANICAL DEMOLITION FLOOR PLAN - NORTH

SCALE: 1/8" = 1'-0"



MECHANICAL DEMOLITION FLOOR PLAN - SOUTH

SCALE: 1/8" = 1'-0"

MECHANICAL DEMO GENERAL NOTES

A. ALL CORE DRILLING LOCATIONS TO BE X-RAYED AND COORDINATED WITH STRUCTURAL AND ELECTRICAL PRIOR TO DRILLING TO MINIMIZE IMPACT ON EXISTING SLAB. ELECTRICAL CONDUIT IN SLAB SHALL BE AVOIDED.

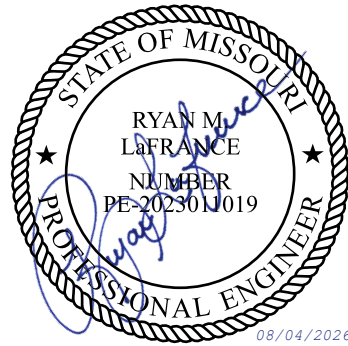
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MECHANICAL DEMO KEYED NOTES

1. EXISTING RADIATOR SHALL BE DEMOLISHED. ALL HYDRONIC HEATING PIPING SHALL BE DEMOLISHED. REPAIR AND PAINT HYDRONIC PIPING WALL PENETRATIONS TO MATCH NEW WORK.
2. DEMOLISH HYDRONIC PIPING BACK TO BOILER.

STATE OF MISSOURI
MIKE KEHOE
GOVERNOR

CASCO DIVERSIFIED CORPORATION
ENGINEERING
LICENSE #: 000613
EXP. DATE: 12/31/2027



Professional of Record:
RYAN M. LAFRANCE
LICENSE #: PE-2023011019
EXP. DATE: 12/31/2027

CASCO

12 SUMNER DRIVE, SUITE 100, ST. LOUIS, MO 63143 T 314-621-1100

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INTERIOR AND EXTERIOR
RENOVATION

JEFFERSON BARRACKS
READINESS CENTER
74 KEARNEY ST.
ST. LOUIS, MO 63125

PROJECT # T2504-03
SITE # 6303
FACILITY #8136303050

REVISIONS

No.	Description	Date
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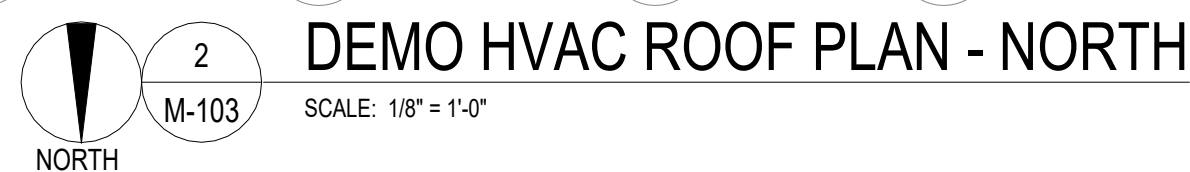
DWG FILE #:	2605562
DRAWN BY:	SJL
CHECKED BY:	RML
DESIGNED BY:	

SHEET TITLE:
MECHANICAL DEMO FLOOR
PLAN

SHEET NUMBER:

M-102

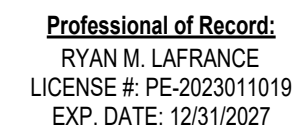
SHEET 34 OF 51
08/04/2026



A. THESE DRAWINGS MAY NOT FULLY DEPICT AS-BUILT CONDITIONS. NOTIFY THE ENGINEER AT ONCE SHOULD A DISCREPANCY OR OMISSION BE FOUND THAT WILL IMPACT THE WORK TO BE COMPLETED.

1. EXISTING ROOFTOP UNIT TO REMAIN.
2. DEMOLISH EXISTING EXHAUST FAN AND CURB.
3. EXISTING SKYLIGHT SHALL BE DEMOLISHED. REFERENCE ARCHITECTURAL PLANS FOR DEMOLITION SCOPE. PROVIDE CURB CAP RATED FOR 600 LBS/SF.
4. EXISTING EXHAUST FAN SHALL BE DEMOLISHED. PROVIDE CURB CAP RATED FOR 600 LBS/SF.

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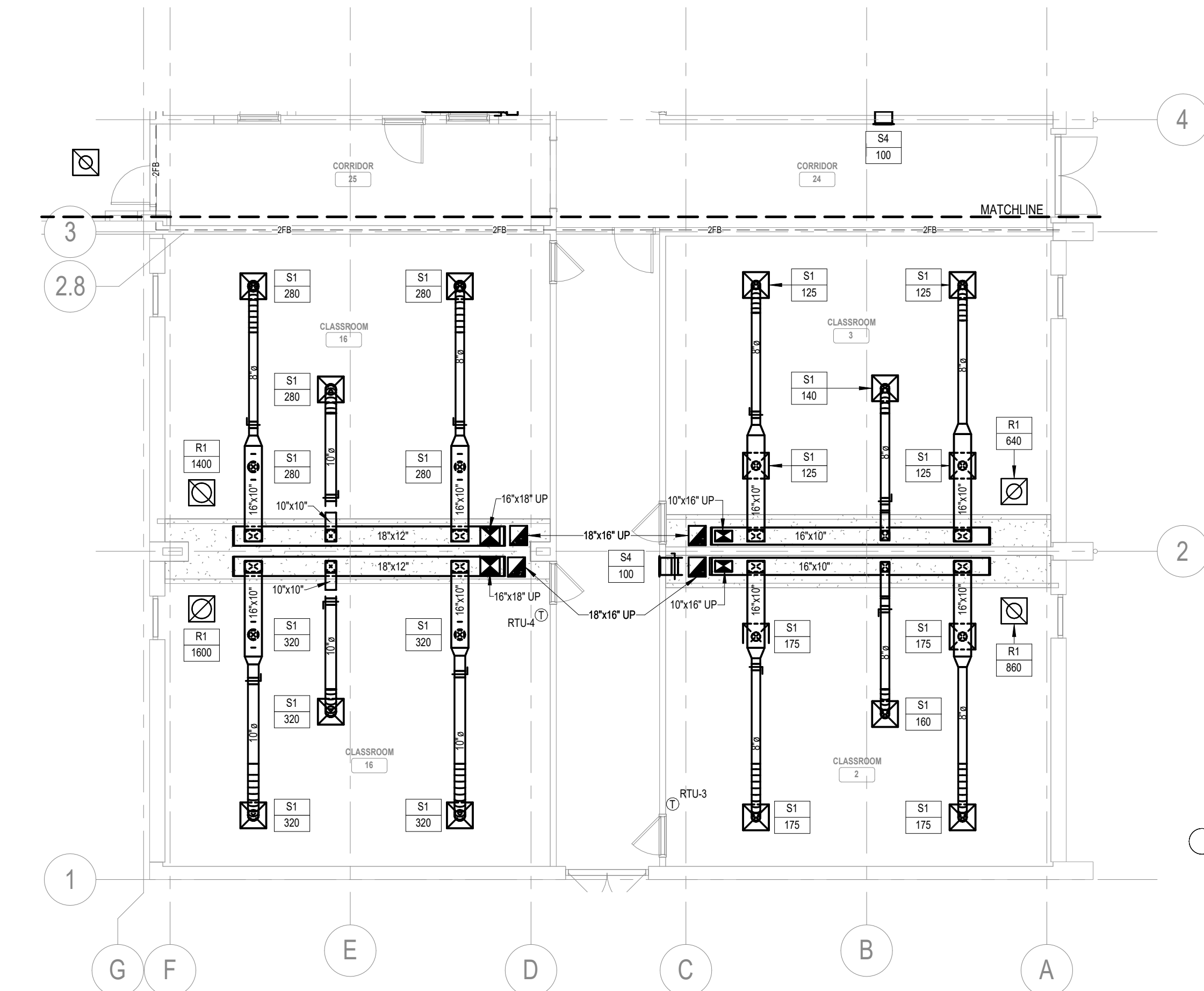
DWG FILE #: 2605562
DRAWN BY: SJL
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DESIGNED BY:

SHEET TITLE:
MECHANICAL DEMO ROOF
PLAN

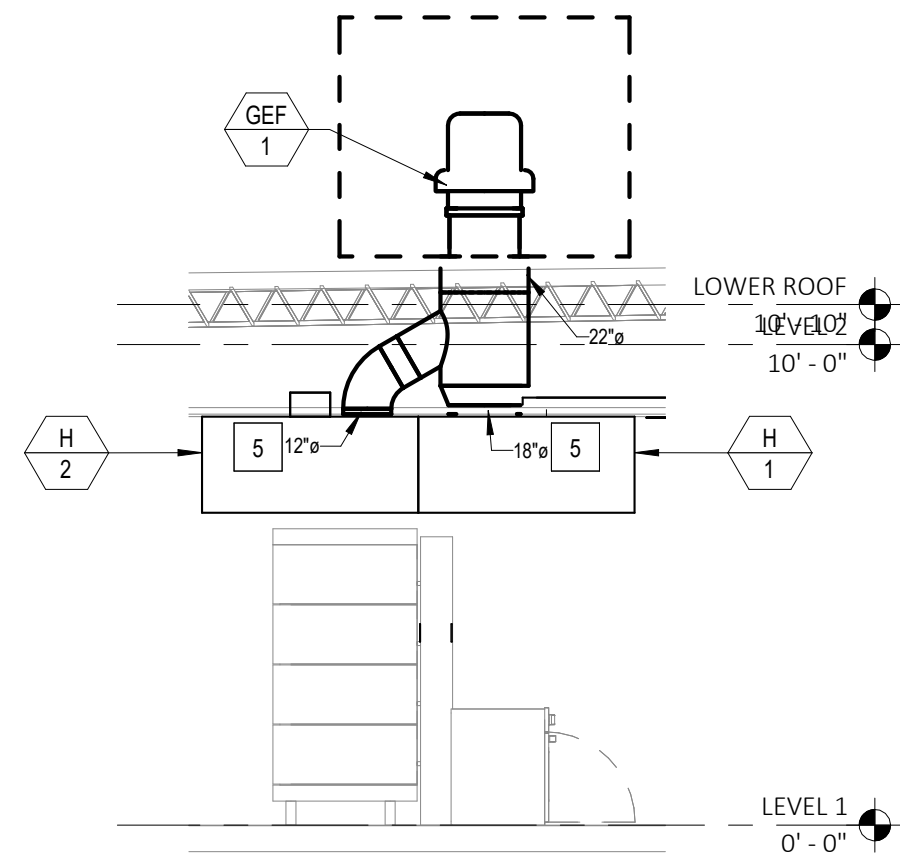
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M-103

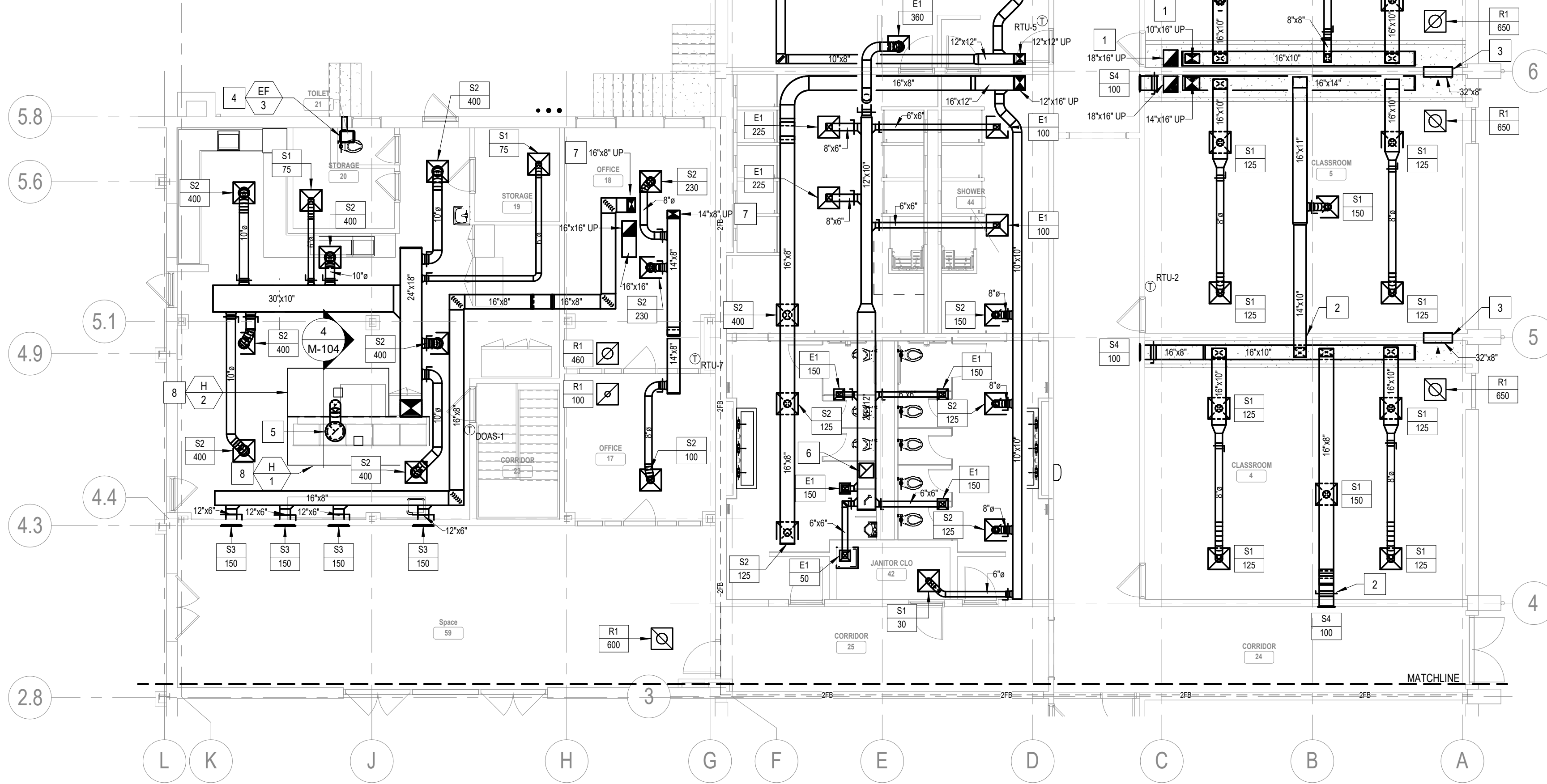
SHEET 35 OF 51
08/04/2026



MECHANICAL FLOOR PLAN - NORTH
SCALE: 1/8" = 1'-0"



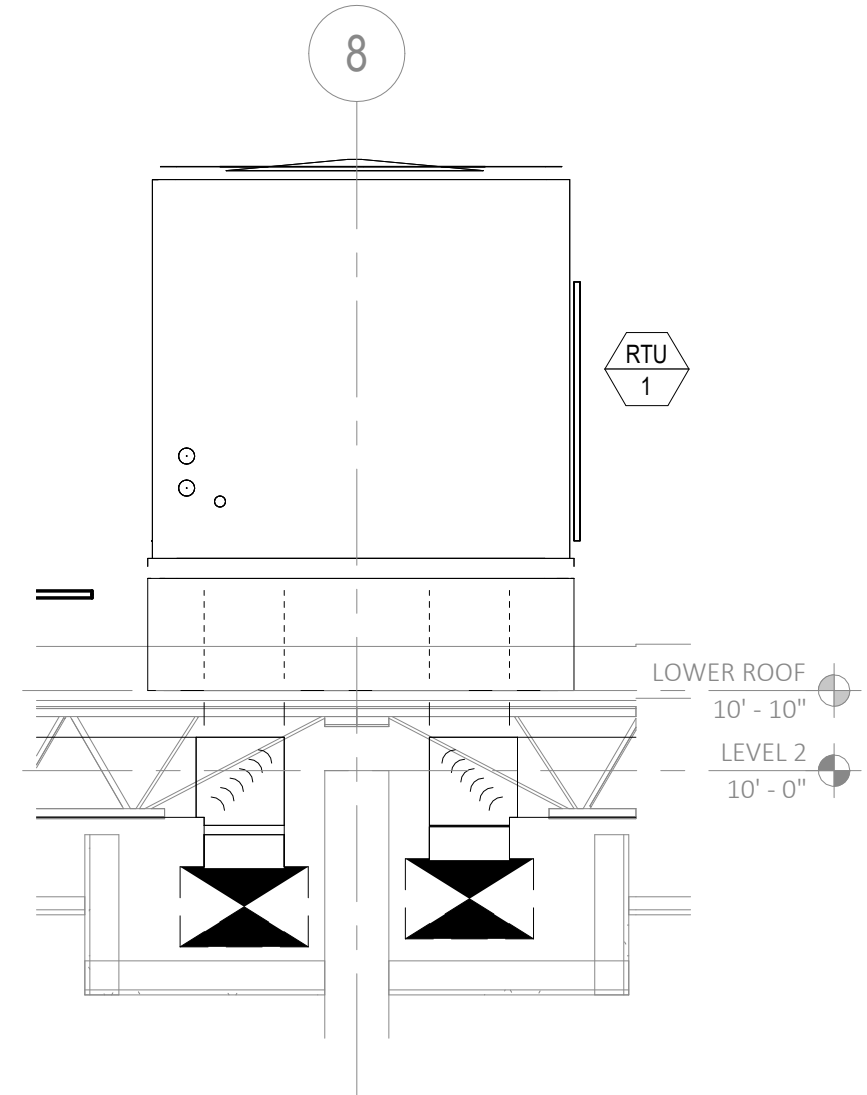
SECTION @ EXHAUST HOODS
SCALE: 1/4" = 1'-0"



MECHANICAL FLOOR PLAN - SOUTH
SCALE: 1/8" = 1'-0"

- MECHANICAL GENERAL NOTES
- ALL CORE DRILLING LOCATIONS TO BE X-RAYED AND COORDINATED WITH STRUCTURAL AND ELECTRICAL PRIOR TO DRILLING TO MINIMIZE IMPACT ON EXISTING SLAB. ELECTRICAL CONDUIT IN SLAB SHALL BE AVOIDED.
 - ALL SUPPLY AIR DEVICES SHALL HAVE ADJUSTABLE BALANCING DAMPER INSTALLED AT TAP OFF MAIN SUPPLY AIR DUCT.
 - ROOM OUTSIDE AIR CALCULATIONS RUN ON EXPECTED OCCUPANCY OF 15 PEOPLE OR LESS BASED ON OCCUPANCY NUMBERS PROVIDED BY OWNER.

- MECHANICAL KEYED NOTES
- DUCT UP TO BOTTOM-OUTLET PLENUM CURB SERVING RTU ABOVE. FIELD-CUT DUCT PENETRATION IN BOTTOM-OUTLET PLENUM CURB AS REQUIRED TO COORDINATE WITH DUCTWORK LOCATION BELOW. (TYPICAL)
 - SUPPLY DUCT PENETRATION THROUGH STRUCTURAL CMU BLOCK WALL. PENETRATION IS INTENDED TO BE THROUGH REMOVAL OF ONE CMU BLOCK. LOCATION SHALL BE FIELD VERIFIED PER REQUIREMENTS ON STRUCTURAL DRAWINGS.
 - RETURN TRANSFER PENETRATION THROUGH STRUCTURAL CMU BLOCK WALL. PENETRATION IS INTENDED TO BE THROUGH REMOVAL OF TWO CMU BLOCKS. LOCATION SHALL BE FIELD VERIFIED PER REQUIREMENTS ON STRUCTURAL DRAWINGS.
 - CEILING MOUNTED EXHAUST FAN WITH SIDEWALL EXHAUST TERMINATION CAP.
 - 22" GREASE DUCT EXHAUST UP TO GEF-1. PROVIDE PRE-MANUFACTURED UL LISTED GREASE DUCT LISTED FOR ZERO CLEARANCE TO COMBUSTIBLE INSTALLATION.
 - 16" x 16" EXHAUST AIR DUCT UP TO EF-1.
 - DUCT UP IN TO RTU-7 PLENUM CURB.
 - PRIOR TO ORDERING THE HOOD, CONTRACTOR SHALL VERIFY STRUCTURAL FRAMING, EXHAUST FAN LOCATION, AND DUCT ROUTING. AND SHALL COORDINATE THE REQUIRED EXHAUST CONNECTION LOCATION(S) WITH THE HOOD MANUFACTURER TO PREVENT STRUCTURAL CONFLICTS AND MINIMIZE FIELD MODIFICATIONS.



CLASSROOM DUCTWORK SOFFIT
SECTION (TYP.)
SCALE: 1/2" = 1'-0"

STATE OF MISSOURI
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Professional of Record:
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LICENSE # PE-202301019
EXP. DATE: 12/31/2027

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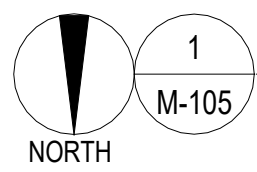
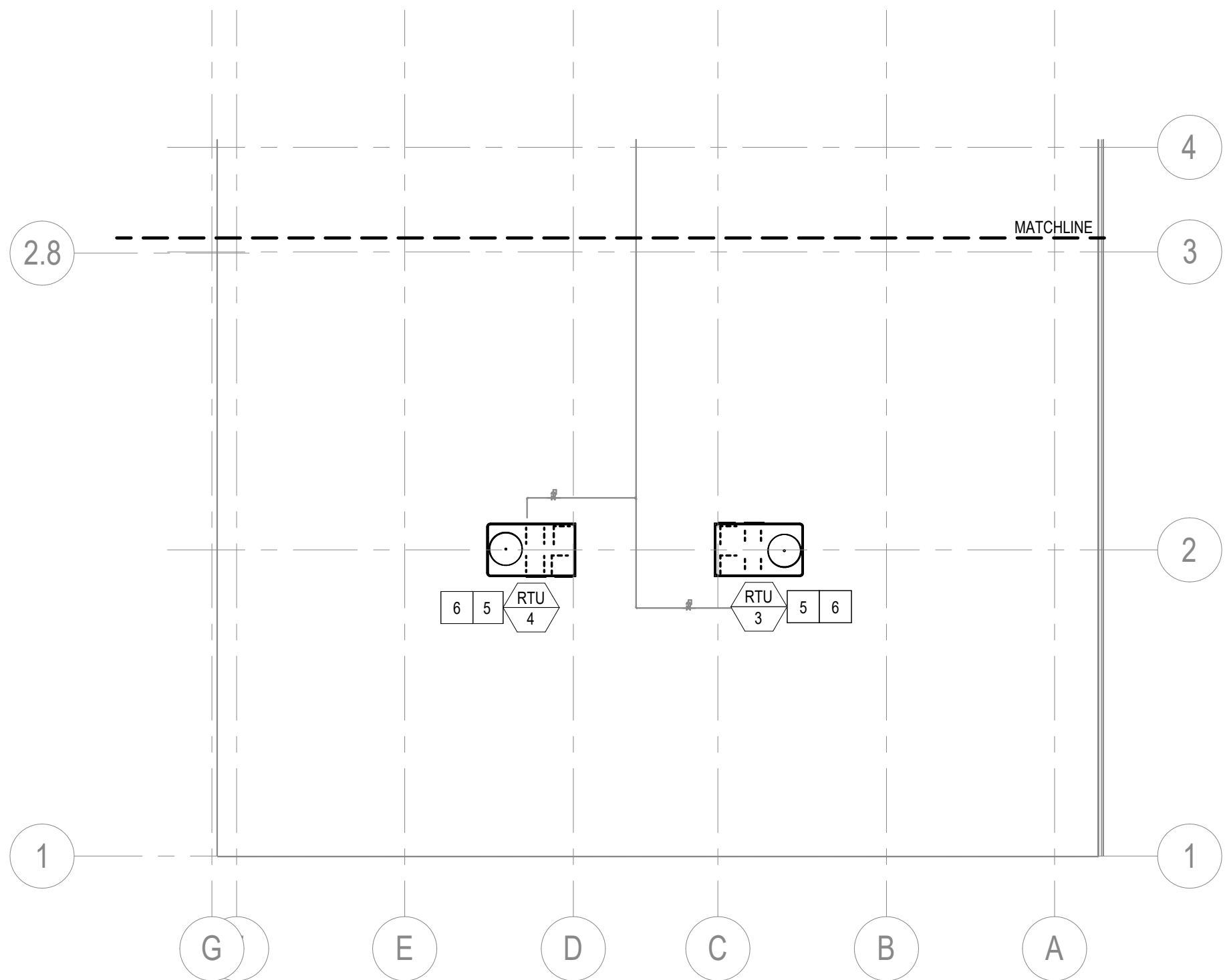
DWG FILE #: 2605562
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CHECKED BY: RML
DESIGNED BY:

SHEET TITLE:
MECHANICAL FLOOR PLAN

SHEET NUMBER:

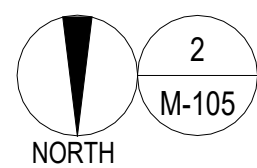
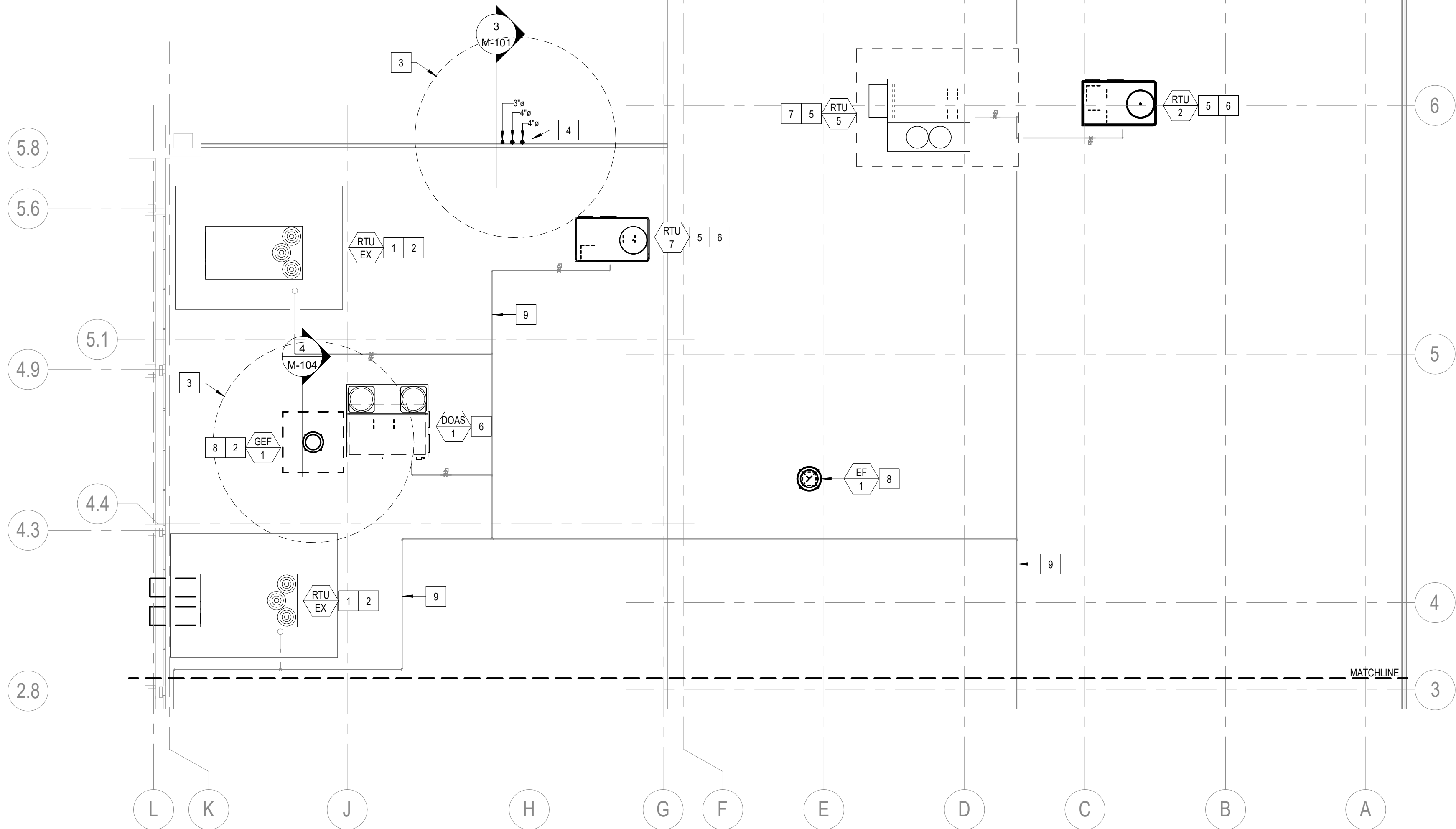
M-104

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08/04/2026



MECHANICAL ROOF PLAN - NORTH

SCALE: 3/32" = 1'-0"



MECHANICAL ROOF PLAN - SOUTH

SCALE: 1/8" = 1'-0"

MECHANICAL GENERAL NOTES

- A. EXISTING ROOFTOP UNITS DESIGNATED TO REMAIN SHALL BE PROTECTED THROUGHOUT CONSTRUCTION FROM DAMAGE DUE TO ROOFING MODIFICATIONS, CONSTRUCTION ACTIVITIES, AND THE ENTRY OF DUST, DEBRIS, MOISTURE, AND OTHER FOREIGN MATERIALS. ANY DAMAGE RESULTING FROM CONSTRUCTION SHALL BE REPAIRED OR THE AFFECTED EQUIPMENT REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

MECHANICAL KEYED NOTES

1. EXISTING RTU SERVING GYMNASIUM.
2. CONTROLS CONTRACTOR SHALL INTERLOCK EXISTING GYMNASIUM ROOF TOP UNITS TO OPERATE IN CONJUNCTION WITH GREASE EXHAUST FAN (GEF) WHILE KITCHEN EXHAUST HOODS ARE ACTIVE.
3. EXHAUST AIR BOUNDARY. ALL EXHAUST EQUIPMENT SHALL NOT BE INSTALLED WITHIN 10 FEET OF ANY FRESH AIR INTAKES.
4. TERMINATE EXHAUST AT ROOF LEVEL, 10 FEET CLEAR OF MECHANICAL FRESH AIR INTAKES.
5. TERMINATE MECHANICAL ROOF TOP EQUIPMENT CONDENSATE ONTO ROOF IN DIRECTION OF NEAREST GUTTER.
6. NEW ROOF TOP UNIT PER SCHEDULE.
7. NEW DOMESTIC OUTDOOR AIR SUPPLY UNIT PER SCHEDULE.
8. NEW EXHAUST FAN PER SCHEDULE.
9. GAS PIPING PER PLUMBING DRAWINGS (TYP).

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SHEET TITLE:
MECHANICAL ROOF PLAN

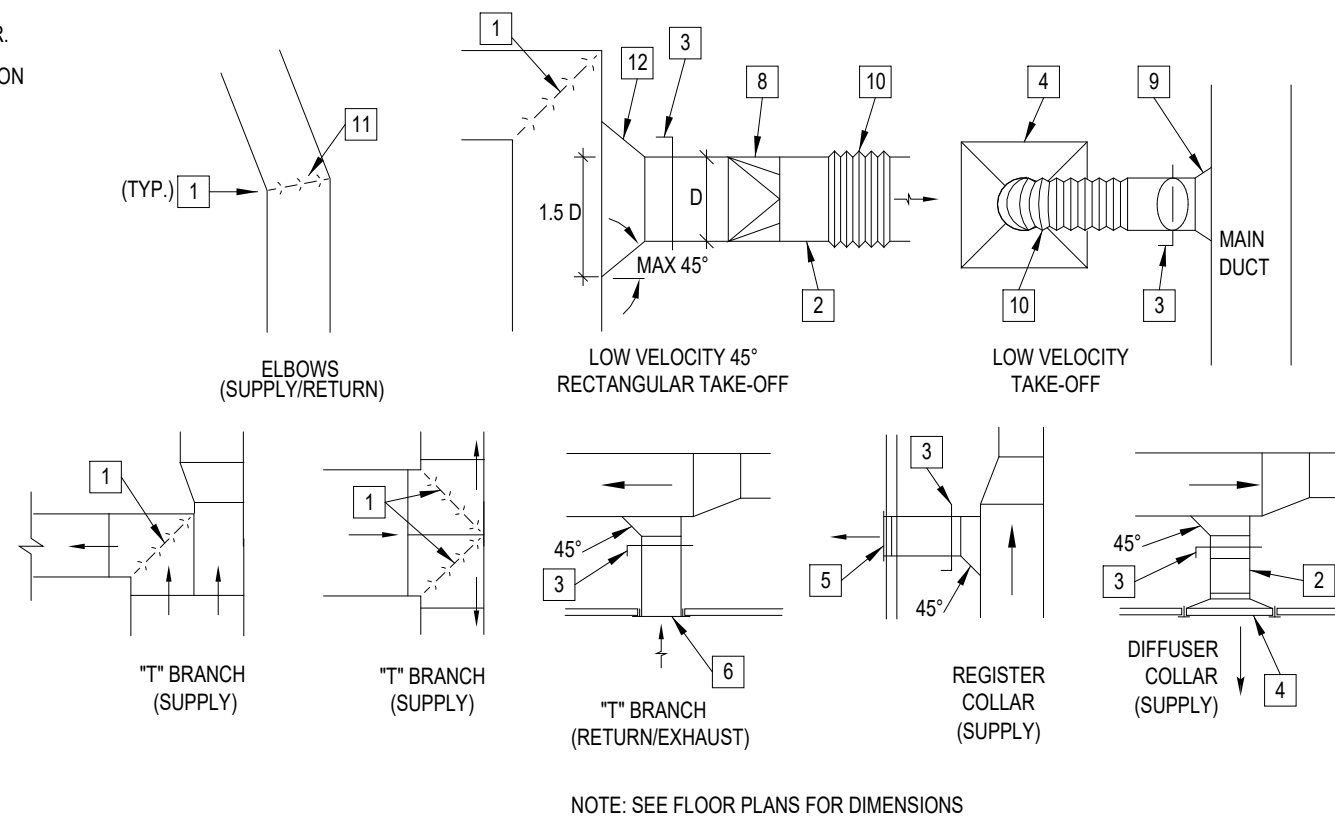
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M-105

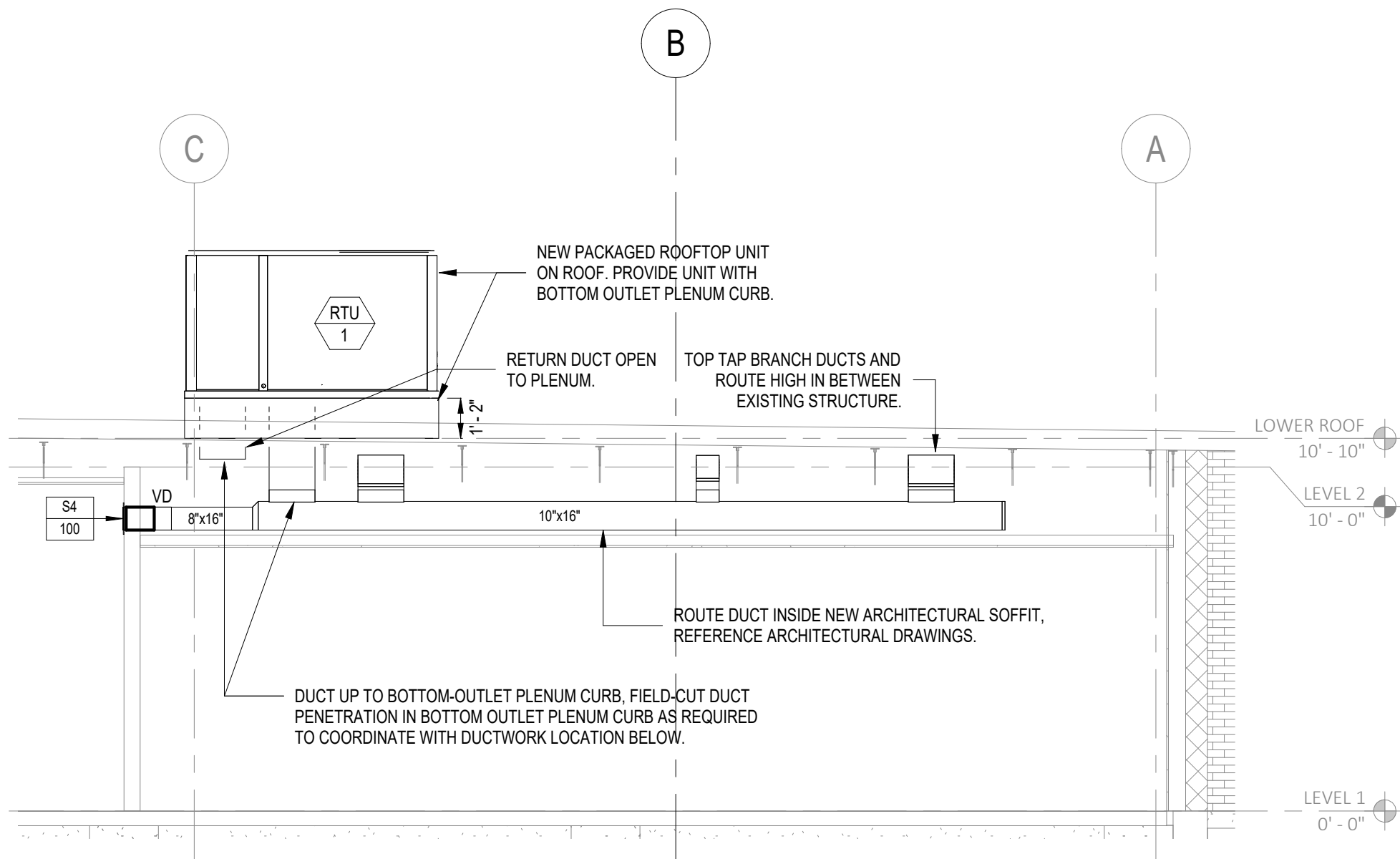
SHEET 37 OF 51
08/04/2026

KEYED NOTES

- 1 SINGLE THICKNESS TURNING IN 90° ELBOW.
- 2 RIGID OR FLEX COLLAR CONNECTION TO DIFFUSER.
- 3 VOLUME DAMPER (WHERE SHOWN) WITH INSULATION STANDOFF AND LOCKING QUADRANT (DURO DYNE SRST SERIES)
- 4 SUPPLY AIR LAY-IN TYPE CEILING DIFFUSER.
- 5 EXHAUST/RETURN AIR FLUSH MOUNT SIDEWALL GRILLE.
- 6 EXHAUST/RETURN AIR FLUSH MOUNT CEILING GRILLE.
- 7 CONT. WELD FOR SHOP-MADE FITTINGS
- 8 RECTANGULAR TO ROUND TRANSITION
- 9 CONICAL BELLMOUTH FITTING WITHOUT SCOOP
- 10 FLEX DUCT 5' MAXIMUM LENGTH
- 11 SINGLE THICKNESS TURNING VANES IN ALL ELBOWS 30° AND GREATER
- 12 PROVIDE 45° TAKEOFF ON BOTH ENDS FOR SUPPLY BRANCH CONNECTION TO MAIN SUPPLY DUCT TO ALLOW AIR FLOW FROM EITHER DIRECTION.



NOTE: SEE FLOOR PLANS FOR DIMENSIONS

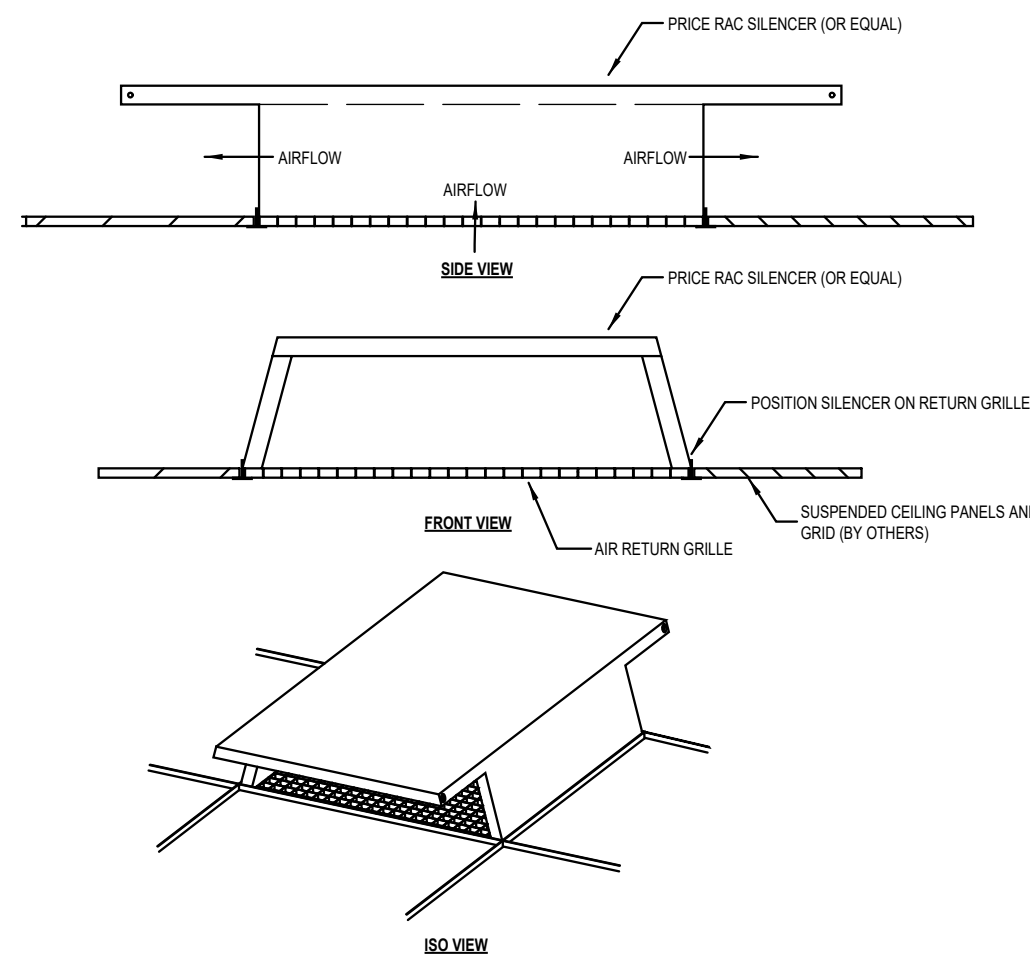


DUCTWORK FITTINGS DETAIL

9
M-501
SCALE: NOT TO SCALE

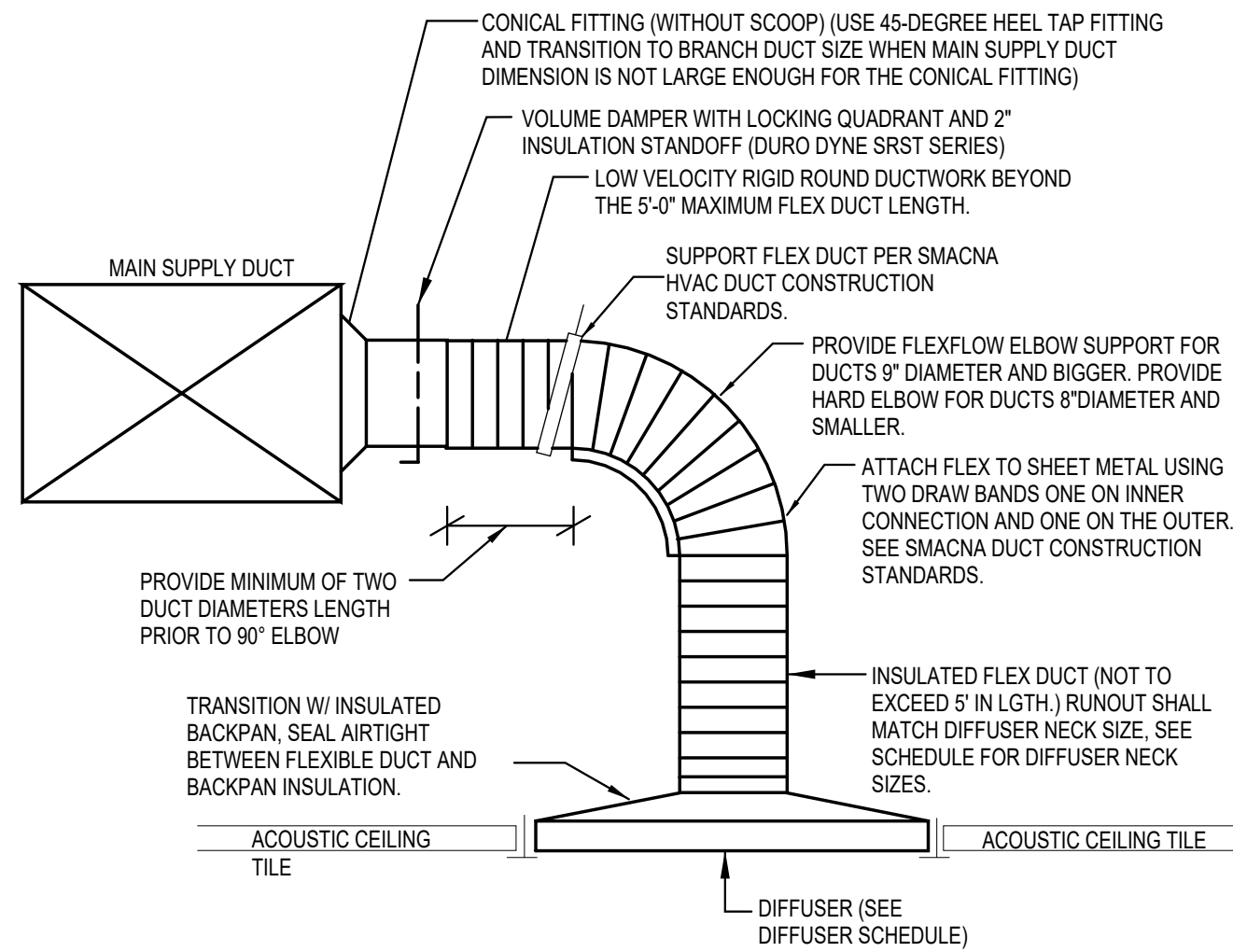
CLASSROOM DUCTWORK ELEVATION (TYP.)

8
M-501
SCALE: 1/4" = 1'-0"



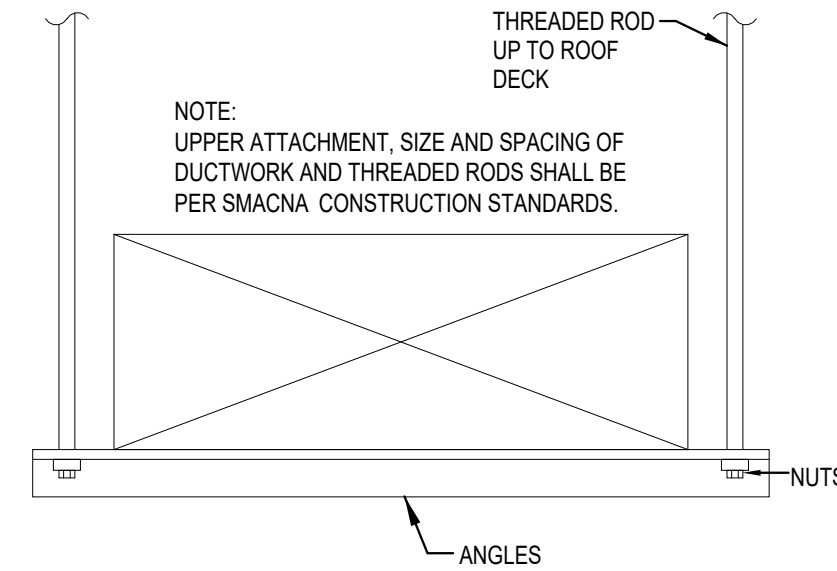
PLENUM RETURN AIR SILENCER

5
M-501
SCALE: NOT TO SCALE



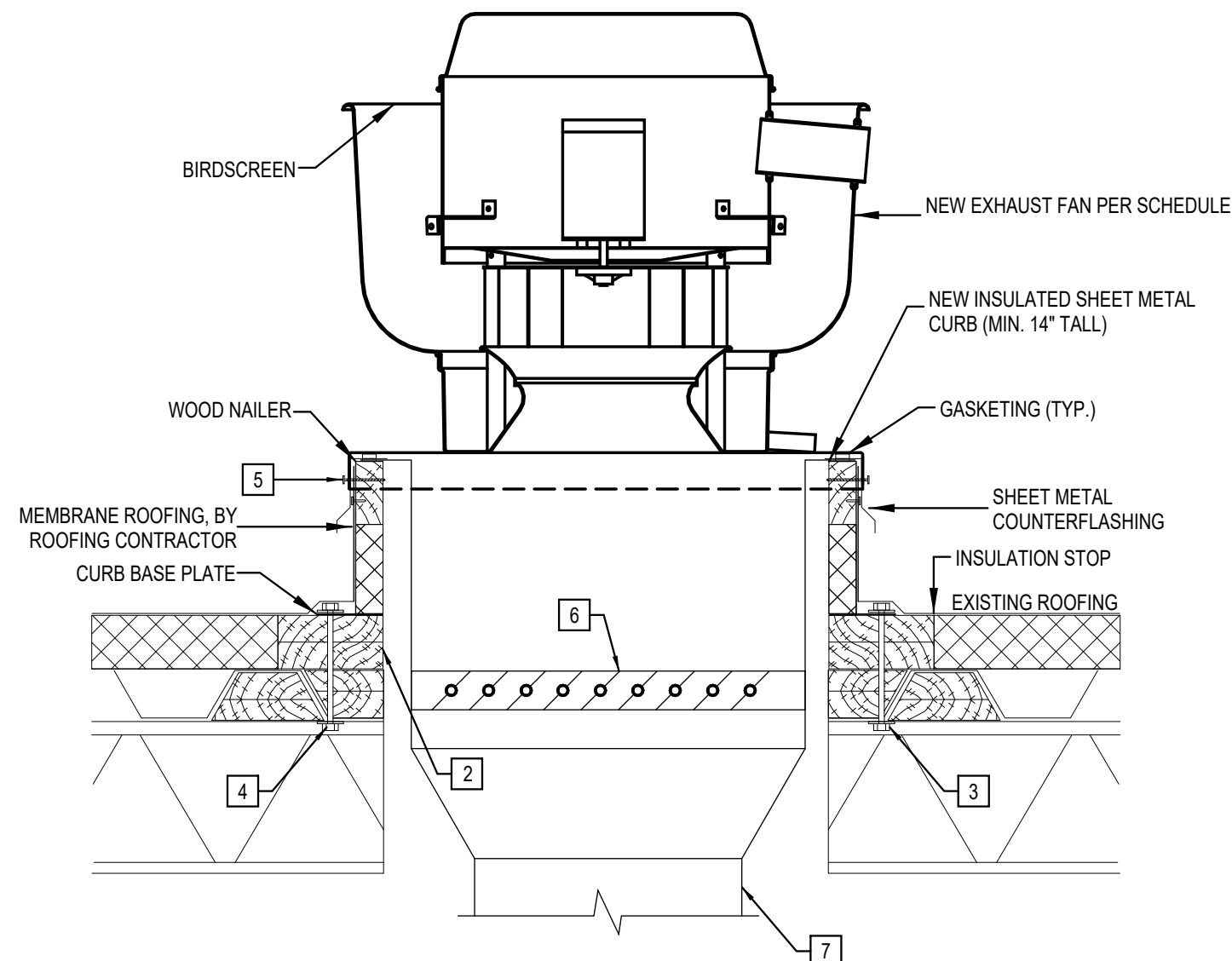
AIR DEVICE TAKE OFF

4
M-501
SCALE: NOT TO SCALE



DUCTWORK TRAPEZE SUPPORT DETAIL

3
M-501
SCALE: NOT TO SCALE

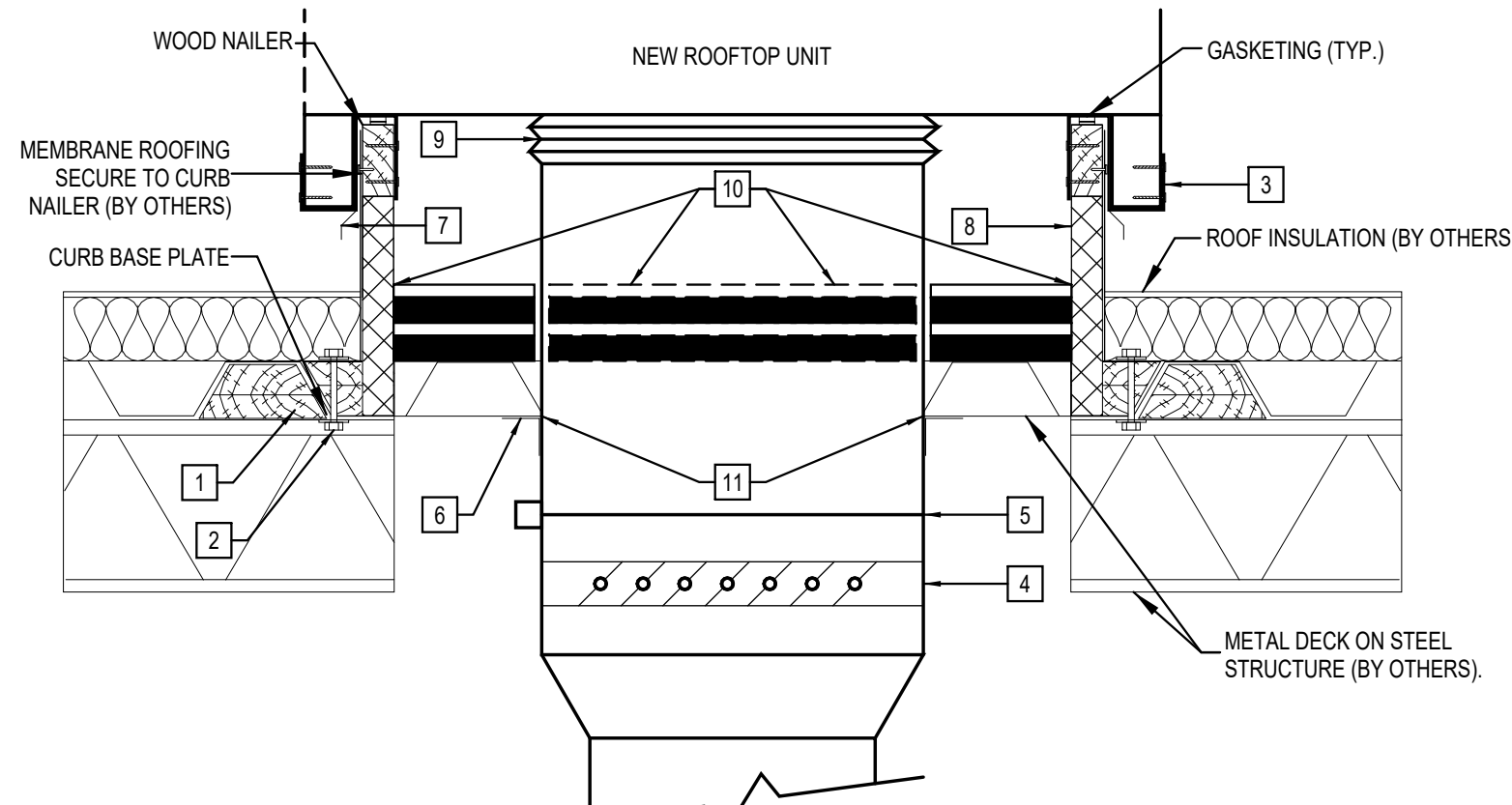


UPBLAST EXHAUST FAN ON NEW CURB

2
M-501
SCALE: NOT TO SCALE

NOTES

- 1 REINFORCE METAL DECK WITH TIGHTLY FIT TREATED WOOD BLOCKING.
- 2 INSTALL TREATED WOOD BLOCKING TO MATCH ROOF INSULATION THICKNESS.
- 3 ANCHOR CURB TO STRUCTURE WITH 1/2" THROUGH BOLT, PLATE WASHER, AND NUT MIN. 2 PER SIDE @ 12" O.C.
- 4 ANCHOR CURB TO EXISTING STRUCTURE BELOW OR PROVIDE SUPPLEMENTAL ANGLE FRAMING AS REQUIRED FOR FAN INSTALLATION.
- 5 MECHANICALLY ANCHOR FAN TO CURB @ 12" O.C ON ALL SIDES.
- 6 GRAVITY BACKDRAFT DAMPER AT ROOF LEVEL.
- 7 DUCTWORK CONNECTION TO FAN SHALL BE FULL SIZE OF CURB FLANGED OVER CURB RIM. TRANSITION TO DUCT SIZE SHOWN ON THE PLAN.



ROOFTOP UNIT ON CURB

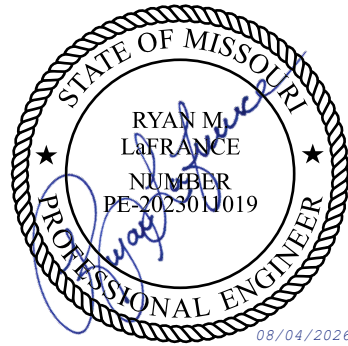
1
M-501
SCALE: NOT TO SCALE

NOTES

- 1 REINFORCE METAL DECK WITH TIGHTLY FIT TREATED WOOD BLOCKING.
- 2 ANCHOR CURB TO STRUCTURE PER STRUCTURAL DRAWINGS.
- 3 ROOFTOP EQUIPMENT WIND RESTRAINT CLIP FURNISHED BY CURB MANUFACTURER. MECHANICALLY ANCHOR UNIT TO CURB PER CURB MANUFACTURER'S INSTALLATION INSTRUCTIONS.
- 4 ROOFTOP UNIT ISOLATION DAMPER PER SCHEDULE (WHERE REQUIRED SEE FLOOR PLANS).
- 5 SUPPLY/RETURN AIR SMOKE DUCT DETECTOR.
- 6 ANGLE IRON FRAMING AROUND DUCT OPENING.
- 7 COUNTER FLASHING REQUIRED IF SUPPORTED EQUIPMENT DOES NOT HAVE BUILT-IN COUNTER FLASHING. ANCHOR TO CURB NAILER.
- 8 PREFABRICATED INSULATED SHEET METAL CURB.
- 9 FLEXIBLE DUCT CONNECTION, FULL SIZE OF UNIT CONNECTION, TRANSITION TO DUCT SIZE SHOWN ON PLANS BELOW ROOF LEVEL.
- 10 (1) LAYER OF 5/8" TYPE-X GYPSUM BOARD, (1) LAYER OF 4" THICK, 3 PCF UNFACED BOARD INSULATION (OWENS CORNING TYPE 703 OR EQUAL), (1) LAYER OF 5/8" TYPE-X GYPSUM BOARD, (1) LAYER OF 4" THICK, 3 PCF UNFACED BOARD INSULATION (OWENS CORNING TYPE 703 OR EQUAL), 4 LAYERS TOTAL ACROSS ENTIRE INTERIOR SPACE OF CURB. STAGGER TAPE JOINTS ON DRYWALL. SEAL AROUND CURB INSIDE PERIMETER WITH SILICONE SEALANT.
- 11 DUCT OPENING (MAX 1" GAP). FILL VOID WITH FIBERGLASS INSULATION AND WITH BACKER ROD AND SILICONE SEALANT.

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SHEET TITLE:
MECHANICAL DETAILS

SHEET NUMBER:

M-501

SHEET 38 OF 51
08/04/2026

DOAS SCHEDULE																																					
MARK	MANUFACTURER	MODEL	BLOWER	TOTAL CFM	MAX OUTSIDE AIR CFM	RETURN AIR CFM	WEIGHT (LBS)	EXT. STATIC PRESSURE	ELECTRICAL					DX COOLING						NATURAL GAS HEATING				A2L MINIMUM ROOM VOLUME			NOTES										
									HP	VOLT	PHASE	MCA	MOCP	OUTSIDE AIR		MIXED AIR		LEAVING AIR		CAPACITY		GAS	INPUT BTUS	OUTPUT BTUS	TEMP RISE	ROOM AREA (SQ. FT)		AIRFLOW (CFM)	HEIGHT (FT)								
														DB	WB	DB	WB	DB	WB	SENSIBLE	LATENT																
DOAS - 1	CAPTIVEAIRE	CAS-HVAC3	-	3,000	3,000	-	3,224	1.0	3.0	208 V	3	133.4 A	150 A	90.9°F	79.4°F	90.9°F	79.4°F	51.2°F	51.2°F	290.3 MBH	129.3 MBH	NATURAL	400,000	324,000	100°F	719.6	1295	7.2	ALL								
NOTES: 1. INVERTER SCROLL COMPRESSOR WITH INTEGRATED OIL SENSOR. 2. DIRECT DRIVE, VARIABLE SPEED PLENUM BLOWER WITH FACTORY VFD. 3. REFRIGERATION PRESSURE MONITORING ON HIGH AND LOW PRESSURE SIDE OF SYSTEM INCLUDED THROUGH DIGITAL INTERFACE. 4. EC MOTOR CONDENSING FANS. 5. ELECTRONIC EXPANSION VALVE. 6. SUCTION LINE ACCUMULATOR. 7. AVERAGING INTAKE, EVAP AND DISCHARGE TEMPERATURE SENSORS (DISCHARGE SENSOR TO BE FACTORY MOUNTED WITHIN UNIT.) 8. VARIABLE SPEED COMPRESSOR WITH FACTORY VFD. 9. FACTORY PROGRAMMED A2L LEAK DETECTION AND MITIGATION.									10. 2" EXTERIOR DUAL-WALL CONSTRUCTION W/ R-13 INSULATION. 11. 81% EFFICIENT FURNACE, WITH MODULATING INDUCER TO MAINTAIN CONSTANT COMBUSTION EFFICIENCY ACROSS FIRING RANGE. 6:1 TURNDOWN WITH NG. 12. SUPPLY CFM MONITORING INTEGRAL TO UNIT WITH CFM MEASUREMENT INCLUDED THROUGH DIGITAL INTERFACE. 13. 0°F LOW AMBIENT OPERATION 14. HAIL GUARD FOR CONDENSING COIL. 15. DOWN DISCHARGE / NO RETURN. 16. MINIMUM ROOM AREA ASSUMED 7.2' SUPPLY DIFFUSER HEIGHT AND IS CALCULATED PER UL60335-2-40 4TH ED. VALUES BASED ON FACTORY CHARGE. ACTUAL SITE CHARGE MAY DIFFER. 17. SCRR RATING OF 10K AMP. 18. 18" ROOF CURB. 19. FACTORY DEMAND CONTROL VENTILATION/SINGLE ZONE VAV MAKEUP AIR FOR HOOD CONTROLLER.																			ALTERNATE DOAS MANUFACTURERS 1. GREENHECK 2. TRANE 3. DAIKIN									

ROOFTOP UNIT SCHEDULE																												
MARK	MANUFACTURER	MODEL	SUPPLY FAN									COOLING						HEATING				ELECTRICAL				WEIGHT	NOTES	
												CAPACITY (MBH)		DX COOLING								CIRCUIT #1						
			CFM	OA CFM	DRIVE	ESP	TSP	HP	RPM	FILTER	CHANGEOUT PD	TOTAL	SENS.	EAT (DB/WB)	LAT (DB/WB)	AIR PD	FACE AREA	FACE VELOCITY	CAPACITY (MBH)	EAT	LAT	AIR PD	VOLTS	PHASE	MCA			MOCP
RTU -1	TRANE	YZK060	1,700	240	DIRECT	1.0 IN H2O	1.044 IN H2O	3	928	2" MERV 8	1.0 IN H2O	55.5	35.2	75°F / 66°F	54°F / 54°F	-	11.84 SQ FT	139 FT/MIN	100.0	60°F	104°F	-	208 V	3 PH	35.0 A	50 A	1,145± LBS	1-14, 16, 17, 19, 20, 24, 25
RTU - 2	TRANE	YZK072	2,250	360	DIRECT	1.0 IN H2O	1.155 IN H2O	3	1,041	2" MERV 8	1.0 IN H2O	67.4	42.6	76°F / 66°F	56°F / 55°F	-	11.84 SQ FT	160 FT/MIN	120.0	57°F	104°F	-	208 V	3 PH	42.0 A	60 A	1,145± LBS	1-14, 16, 17, 19, 20, 24, 25
RTU - 3	TRANE	YZK060	1,600	240	DIRECT	1.0 IN H2O	1.020 IN H2O	3	900	2" MERV 8	1.0 IN H2O	55.0	33.8	76°F / 66°F	55°F / 54°F	-	11.84 SQ FT	127 FT/MIN	100.0	58°F	107°F	-	208 V	3 PH	35.0A	50 A	1,145± LBS	1-14, 16, 17, 19, 20, 24, 25
RTU - 4	TRANE	YZK102	3,000	240	DIRECT	1.0 IN H2O	1.442 IN H2O	3	1,312	2" MERV 8	1.0 IN H2O	93.0	60.0	74°F / 64°F	55°F / 54°F	-	11.84 SQ FT	253 FT/MIN	150.0	64°F	102°F	-	208 V	3 PH	48.0 A	70 A	1,223± LBS	1-14, 16, 17, 19, 20, 24, 25
RTU - 5	GREENHECK	RV-40	1,510	1,510	DIRECT	0.5 IN H2O	0.692 IN H2O	1	907	2" MERV 8	0.5 IN H2O	128.2	61.4	95°F / 79°F	54°F / 54°F	-	11.81 SQ FT	128 FT/MIN	200.0	6°F	99°F	-	208 V	3 PH	54.7 A	60 A	2,190± LBS	1-10, 15, 17-19, 21-24, 26
RTU - 6	TRANE	YZK072	2,100	100	DIRECT	1.0 IN H2O	1.185 IN H2O	3	1,082	2" MERV 8	1.0 IN H2O	67.0	44.0	75°F / 65°F	56°F / 54°F	-	11.84 SQ FT	177 FT/MIN	120.0	62°F	105°F	-	208 V	3 PH	42.0 A	60 A	1,145± LBS	1-14, 16, 17, 19, 20, 24, 25
RTU - 7	TRANE	YZK036	1,150	100	DIRECT	1.0 IN H2O	1.01 IN H2O	3	870	2" MERV 8	1.0 IN H2O	34.0	22.0	74°F / 65°F	56°F / 55°F	-	11.84 SQ FT	97 FT/MIN	100.0	64°F	127°F	-	208 V	3 PH	23.0 A	30 A	1,136± LBS	1-14, 16, 17, 19, 20, 24, 25
NOTES: 1. VARIABLE SPEED, DIRECT DRIVE SUPPLY FAN. 2. INVERTER DUTY MOTOR. 3. VARIABLE SPEED COMPRESSOR WITH FACTORY VFD. 4. FACTORY DISCONNECT. 5. CLOGGED FILTER AND CONDENSATE OVERFLOW SWITCH. 6. SINGLE ZONE VAV. 7. SYMBIO 700 FACTORY CONTROLLER. 8. 7-DAY AUTOMATIC SWITCH OVER PROGRAMMABLE THERMOSTAT. 9. MODULATING HOT GAS REHEAT. 10. CONDENSER HAIL GUARD. 11. RETURN AIR SMOKE DETECTOR. 12. COMPARATIVE ENTHALPHY ECONOMIZER WITH BAROMETRIC RELIEF DAMPER. 13. 18" BOTTOM OUTLET PLENUM CURB. FIELD CUT SUPPLY/RETURN OPENINGS. 14. TWO STAGE HEAT. 15. 18" STANDARD CURB. 16. LOW AMBIENT CONTROLS. 17. UNIT POWERED CONVENIENCE OUTLET WITH INDEPENDENT DISCONNECT. 18. LOW LEAKAGE OUTDOOR AIR DAMPER. 19. PHASE LOSS AND PHASE REVERSE MONITOR. 20. FROSTAT. 21. STAINLESS STEEL CONDENSATE DRAIN PAN. 22. DOUBLE WALL CONSTRUCTION, 1" INJECTED FOAM, R-13, GALVANIZED STEEL LINER. 23. INDIRECT FIRED NATURAL GAS STAINLESS STEEL FURNACE WITH 16:1 TURNDOWN. 24. FACTORY PROGRAMMED A2L LEAK DETECTION AND MITIGATION. 25. CONDENSATE DRAIN PAN. 26. SUPPLY AIR SMOKE DETECTOR.																												
ALTERNATE RTU MANUFACTURERS 1. DAIKIN 2. CARRIER 3. YORK																												

NATURAL GAS UNIT HEATER SCHEDULE								
MARK	MANUFACTURER	MODEL	BTUH	BTUH OUTPUT	GAS CONNECTION	VENT CONNECTION	CFM	REMARKS
GUH - 1	MODINE	HD	60,000	49,800	1/2"	3"	990	1-6
NOTES: 1. CEILING MOUNT INSTALLATION. 2. FACTORY MOUNTED UNIT DISCONNECT. 3. FACTORY MOUNTED THERMOSTAT. 4. FACTORY INSTALLED MANUAL RESET THERMAL CUTOUT.			5. LINE VOLTAGE THERMOSTAT. 6. FACTORY CONTROLLER.			ALTERNATE UNIT HEATER MANUFACTURERS 1. REZNOR 2. LENNOX 3. BEACON MORRIS		

AIR DEVICE SCHEDULE							
MARK	MATERIAL	NECK SIZE (IN.)	PANEL SIZE (IN.)	DIFFUSER TYPE	FRAME TYPE	FINISH	REMARKS
S - 1	STEEL	NOTE 4	24"X24"	SQUARE PLAQUE	LAY-IN	STANDARD WHITE	1 - 3
S - 2	ALUMINUM	NOTE 4	24"X24"	SQUARE PLAQUE	SURFACE MOUNT	STANDARD WHITE	1, 2
S - 3	STEEL	12" X 6"	12"X6"	WALL MOUNT	WALL MOUNT	STANDARD WHITE	2
S - 4	STEEL	NOTE 4	12"X12"	WALL MOUNT	WALL MOUNT	STANDARD WHITE	1 - 3
R - 1	STEEL	NOTE 4	24"X24"	LOUVERED GRILL, 45° FIXED BLADE	LAY-IN	STANDARD WHITE	1 - 5
R - 2	ALUMINUM	NOTE 4	24"X24"	LOUVERED GRILL, 45° FIXED BLADE	SURFACE MOUNT	STANDARD WHITE	1 - 3
E - 1	ALUMINUM	NOTE 4	12"X12"	LOUVERED GRILL, 45° FIXED BLADE	SURFACE MOUNTED	STANDARD WHITE	1,2
E - 2	ALUMINUM	NOTE 4	24"X24"	LOUVERED GRILL, 45° FIXED BLADE	SURFACE MOUNTED	STANDARD WHITE	1,2
NOTES: 1. FOIL FACED INSULATED DIFFUSER BACKPAN WITH 1" FIBERGLASS INSULATION. 2. INTEGRAL OPPOSED BLADE DAMPER. 3. LAY-IN T-BAR CEILING FRAME 4. NECK SIZE PER PLAN. 5. RETURN AIR SILENCER ON PLENUM RETURNS.							

EXHAUST FAN SCHEDULE												
MARK	MANUFACTURER	MODEL	CFM	TSP (IN. H2O)	DRIVE	ELECTRICAL					WEIGHT	REMARKS
						HP	RPM	VOLTAGE	PHASE	FLA		
EF - 1	GREENHECK	G-140-VG	1,660	1.0	DIRECT	1	1,338	208	3	3.6	88± LBS	1, 7, 8, 12
GEF - 1	CAPTIVEAIRE	DU240HFA	4,650	2.25	DIRECT	5	1,079	208	3	15.8	322± LBS	1-9
EF - 2	GREENHECK	SP-B80	50	.5	DIRECT	-	900	115	1	.16	10± LBS	10, 11
NOTES: 1. STEEL WEATHERHOOD 2. 1" DRAIN CONNECTION 3. 1" DIRECT MOUNT ISOLATORS, ISOLATOR SPRING, RESTRAINED 4. NEMA PREMIUM EFFICIENT MOTOR AND VARIABLE FREQUENCY DRIVE 5. GREASE TRAP AND CLEAN OUT PORT 6. HIGH TEMP CURB SEAL RATED AT 1500°F 7. MOTOR STARTER WITH OVERLOAD PROTECTION PROVIDED BY ELECTRICAL CONTRACTOR. 8. NEW ROOF CURB. 9. UL LISTED FOR GREASE EXHAUST APPLICATION. 10. CEILING MOUNTED FAN. 11. SIDEWALL TERMINATION KIT WITH BIRD SCREEN. 12. ECM VARIABLE SPEED MOTOR.												
ALTERNATE EXHAUST FAN MANUFACTURERS 1. LOREN COOK 2. CAPTIVEAIRE 3. TWIN CITY FAN & BLOWER												

KITCHEN HOOD SCHEDULE																		
MARK	MANUFACTURER	MODEL	LENGTH	MAX COOKING TEMP	TYPE	APPLIANCE DUTY	DESIGN CFM/FT	TOTAL EXHAUST CFM	EXHAUST PLENUM							HOOD CONSTRUCTION	HOOD CONFIG	
									RISER(S)								END TO END	ROW
									WIDTH	LENGTH	HEIGHT	DIA	CFM	VELOCITY	STATIC PRSSURE			
H - 1	CAPTIVEAIRE	6024 ND-2	13' - 6"	600°F	1	HEAVY	222	3000	-	-	4"	18"	3000	1698	-1.246"	430 SS	ALONE	FRONT
H - 2	CAPTIVEAIRE	6024 ND-2	9' - 6"	600°F	1	MEDIUM	174	1650	-	-	4"	12"	1650	2101	-1.074	430 SS	ALONE	FRONT

KITCHEN HOOD SCHEDULE (CONT.)																
MARK	FILTER(S)					LIGHTS				UTILITY CABINET(S)					FIRE SYSTEM PIPING	HOOD HANGING WEIGHT
	TYPE	QUANTITY	HEIGHT	LENGTH	EFFICIENCY @ 7 MICRONS	QUANTITY	TYPE	WIRE GUARD	LOCATION	SIZE	FIRE SYSTEM		ELECTRICAL	SWITCHES		
											TYPE	SIZE	MODEL #	QUANTITY		
H - 1	CAPTIVEAIRE SOLO FILTER	10	16"	16"	85%	4	RECESSED ROUND	NO	-	-	-	-	-	-	YES	673 LBS
H - 2	CAPTIVEAIRE SOLO FILTER	7	16"	16"	85%	3	RECESSED ROUND	NO	LEFT	12"x60"x24"	TANK FS	4.0/4.0/4.0	DCV-111	1 LIGHT, 1 FAN	YES	915 LBS
HOOD H-1 OPTIONS: 1. FIELD WRAPPER 18.00" HIGH, FRONT, LEFT, RIGHT, BACK. 2. FINISHED BACK - GROUND/POLISH 162" LONG 3. STRUCTURAL FRONT PANEL 4. FACTORY INSTALLED FIRE SUPPRESSION.																
HOOD H-2 OPTIONS: 1. FIELD WRAPPER 18.00" HIGH, FRONT, LEFT, RIGHT, BACK. 2. FINISHED BACK - GROUND/POLISH 114" LONG 3. STRUCTURAL FRONT PANEL 4. RISER SENSOR INSTALL 6" PLENUM. 5. FACTORY INSTALLED FIRE SUPPRESSION.																
ALTERNATE RTU MANUFACTURERS 1. GREENHECK 2. HALTON 3. ACCUREX																

HVAC DUCTWORK SCHEDULE								
DUCT SYSTEM	LOCATION	PRESSURE CLASS *wg	MATERIAL	GAGE	INSULATION			
					TH	TYPE	D	JACKET
SUPPLY AIR	CONCEALED, INDOOR	+2"	G90 GALVANIZED STEEL	PER SMACNA	PER SPEC	PER SPEC	PER SPEC	PER SPEC
RETURN AIR	CONCEALED, INDOOR	-2"	G90 GALVANIZED STEEL	PER SMACNA	PER SPEC	PER SPEC	PER SPEC	PER SPEC
EXHAUST AIR	CONCEALED, INDOOR	-2"	G90 GALVANIZED STEEL	PER SMACNA	PER SPEC	PER SPEC	PER SPEC	PER SPEC
GREASE EXHAUST	CONCEALED, INDOOR	-4"	NOTE 1	PER SMACNA	PER SPEC	PER SPEC	PER SPEC	PER SPEC
1. PRE-MANUFACTURED UL LISTED GREASE DUCT LISTED FOR ZERO CLEARANCE TO COMBUSTIBLE INSTALLATION.								

GENERAL CONTROLS NOTES

1. THE SEQUENCES OF OPERATION SHOWN ON THESE DRAWINGS ARE INTENDED TO BE IMPLEMENTED USING THE EQUIPMENT MANUFACTURERS STANDARD FACTORY-MOUNTED CONTROLLERS. CONTRACTOR SHALL FURNISH COMPLETE FACTORY CONTROL PACKAGES CAPABLE OF PERFORMING THE SEQUENCES INDICATED WITHOUT THE USE OF A BUILDING AUTOMATION SYSTEM (BAS), UNLESS OTHERWISE NOTED.
2. MECHANICAL CONTRACTOR SHALL FURNISH, INSTALL, WIRE, PROGRAM, AND COMMISSION ALL THERMOSTATS, ZONE SENSORS, DISCHARGE-AIR SENSORS, HUMIDITY SENSORS, RELAYS, TRANSFORMERS, ACTUATORS, CONTROL WIRING, AND OTHER CONTROL DEVICES REQUIRED FOR A COMPLETE AND OPERATIONAL CONTROL SYSTEM UNLESS SPECIFICALLY INDICATED OTHERWISE.
3. PROVIDE ALL FIELD CONTROL WIRING BETWEEN EQUIPMENT, THERMOSTATS, SENSORS, CONTROL DEVICES, AND ASSOCIATED ACCESSORIES REQUIRED TO EXECUTE THE SEQUENCES OF OPERATION INDICATED ON THESE DRAWINGS.
4. WHERE EQUIPMENT IS SPECIFIED WITH FACTORY CONTROLS, PROVIDE ALL REQUIRED FACTORY-INSTALLED CONTROLLERS, SENSORS, SAFETIES, RELAYS, INTERFACE DEVICES, AND PROGRAMMING NECESSARY TO PERFORM THE SEQUENCES OF OPERATION SHOWN.
5. CONTROL DIAGRAMS SHOWN ARE SCHEMATIC ONLY AND ARE NOT INTENDED TO SHOW EVERY RELAY, TRANSFORMER, TERMINAL BLOCK, INTERPOSING RELAY, POWER SUPPLY, SENSOR, OR CONTROL DEVICE REQUIRED FOR PROPER OPERATION. CONTRACTOR SHALL FURNISH ALL ADDITIONAL COMPONENTS REQUIRED FOR A COMPLETE AND FUNCTIONAL INSTALLATION.
6. UNLESS SPECIFICALLY NOTED OTHERWISE, MECHANICAL CONTRACTOR SHALL FURNISH ALL RELAYS, TRANSFORMERS, CONTACTORS, CONTROL DEVICES, AND ASSOCIATED WIRINGS REQUIRED FOR EXHAUST FAN OPERATION IN ACCORDANCE WITH THE SEQUENCES OF OPERATION.
7. KITCHEN GREASE EXHAUST FAN CONTROLS SHALL BE FURNISHED BY THE KITCHEN HOOD MANUFACTURER. MECHANICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL FIELD WIRING, RELAYS, TRANSFORMERS, AND INTERCONNECTING DEVICES REQUIRED BETWEEN THE HOOD CONTROL PANEL, EXHAUST FANS, MAKEUP-AIR UNIT, FIRE-SUPPRESSION SYSTEM, AND ASSOCIATED EQUIPMENT TO PROVIDE A COMPLETE AND OPERATIONAL SYSTEM.
8. COORDINATE ALL REQUIRED INTERLOCKS BETWEEN EXHAUST FANS, MAKEUP-AIR UNITS, ROOFTOP UNITS, SMOKE DETECTORS, FIRE-ALARM SYSTEM, KITCHEN HOOD CONTROLS, AND FIRE-SUPPRESSION SYSTEM TO ACHIEVE THE SEQUENCES OF OPERATION INDICATED ON THE DRAWINGS.
9. MECHANICAL CONTRACTOR SHALL PROVIDE CONTROLS AND INTERLOCKS REQUIRED TO OPERATE THE DESIGNATED GYM ROOFTOP UNITS AS SUPPLEMENTAL MAKEUP AIR WHENEVER THE KITCHEN HOOD EXHAUST SYSTEM IS OPERATING. CONTRACTOR SHALL FURNISH, INSTALL, WIRE, PROGRAM, AND COMMISSION ALL RELAYS, TRANSFORMERS, CONTROL WIRING, INTERFACE DEVICES, AND OTHER MATERIALS NECESSARY TO ACCOMPLISH THE SEQUENCE OF OPERATION INDICATED ON THE DRAWINGS AND PROVIDE A COMPLETE AND OPERATIONAL SYSTEM.

EF-1 CONTROL SEQUENCE -- PUBLIC RESTROOMS, SHOWER ROOMS, AND LOCKER ROOM

THE VARIABLE-SPEED EXHAUST FAN SHALL OPERATE IN CONJUNCTION WITH DOAS UNIT RTU-5 AND SHALL MAINTAIN THE SERVED RESTROOMS, SHOWER ROOMS, AND LOCKER ROOM AT A NEGATIVE PRESSURE RELATIVE TO ADJACENT BUILDING AREAS.

OCCUPIED MODE:
UPON INITIATION OF THE OCCUPIED SCHEDULE, RTU-5 SHALL BE ENABLED AND THE EXHAUST FAN SHALL START. THE EXHAUST FAN SHALL OPERATE CONTINUOUSLY THROUGHOUT THE OCCUPIED PERIOD. FAN SPEED SHALL BE ADJUSTED AND BALANCED TO PROVIDE THE SCHEDULED EXHAUST AIRFLOW AND MAINTAIN THE SERVED SPACES AT THE SPECIFIED NEGATIVE PRESSURE. THE EXHAUST FAN SHALL BE PROVEN OPERATIONAL BEFORE, OR SIMULTANEOUSLY WITH, ENABLING NORMAL SUPPLY AIRFLOW FROM RTU-5.

UNOCCUPIED/SETBACK MODE:
DURING UNOCCUPIED PERIODS, THE EXHAUST FAN SHALL BE DISABLED WHEN RTU-5 IS DISABLED. WHEN RTU-5 IS ENABLED BY ITS UNOCCUPIED OR SETBACK CONTROLS, THE EXHAUST FAN SHALL ALSO BE ENABLED AND OPERATE AT THE SCHEDULED SETBACK SPEED. THE EXHAUST FAN SHALL CYCLE ON AND OFF WITH RTU-5 DURING SETBACK OPERATION.

INTERLOCKS AND SAFETIES:
RTU-5 AND THE EXHAUST FAN SHALL BE ELECTRICALLY OR ELECTRONICALLY INTERLOCKED. UPON FAILURE OR LOSS OF PROOF OF EXHAUST FAN OPERATION, RTU-5 SHALL BE DISABLED OR ITS SUPPLY AIRFLOW SHALL BE REDUCED AS REQUIRED TO PREVENT THE SERVED SPACES FROM BECOMING POSITIVELY PRESSURIZED. PROVIDE AN ADJUSTABLE TIME DELAY TO ALLOW THE EXHAUST FAN TO START AND ESTABLISH AIRFLOW BEFORE RTU-5 BEGINS NORMAL SUPPLY OPERATION.

THE EXHAUST FAN ECM DRIVE SHALL BE PROVIDED WITH ADJUSTABLE OCCUPIED AND SETBACK SPEED SETTINGS. FINAL FAN SPEEDS SHALL BE ESTABLISHED DURING TESTING, ADJUSTING, AND BALANCING TO PROVIDE THE SCHEDULED AIRFLOW QUANTITIES AND MAINTAIN THE REQUIRED NEGATIVE PRESSURE RELATIONSHIP.

EF-2 CONTROL SEQUENCE

THE CEILING-MOUNTED RESTROOM EXHAUST FAN SHALL BE INTERLOCKED WITH THE ROOM LIGHTING CIRCUIT. WHEN THE RESTROOM LIGHT SWITCH IS PLACED IN THE ON POSITION, THE EXHAUST FAN SHALL ENERGIZE SIMULTANEOUSLY AND OPERATE CONTINUOUSLY WHILE THE LIGHT REMAINS ON. WHEN THE LIGHT SWITCH IS TURNED OFF, THE EXHAUST FAN SHALL DE-ENERGIZE AND STOP. THE EXHAUST FAN SHALL OPERATE INDEPENDENTLY AND SHALL NOT REQUIRE A SEPARATE WALL SWITCH OR OCCUPANCY SENSOR UNLESS OTHERWISE INDICATED ON THE DRAWINGS.

KITCHEN HOOD SEQUENCE OF OPERATIONS:

THE HOOD CONTROL PANEL IS CAPABLE OF OPERATING IN ONE OR MORE OF THE FOLLOWING STATES AT ANY GIVEN TIME:

- AUTOMATIC: THE SYSTEM OPERATES BASED ON THE DIFFERENTIAL BETWEEN ROOM TEMPERATURE AND THE TEMPERATURE AT THE HOOD CAVITY OR EXHAUST DUCT COLLAR. FANS ACTIVATE AT A CONFIGURABLE TEMPERATURE DIFFERENTIAL THRESHOLD. DEPENDING ON THE JOB CONFIGURATION EACH FAN ZONE CAN BE CONFIGURED AS STATIC OR DYNAMIC. THESE TEMPERATURES REFER TO WHETHER A VARIABLE MOTOR (SUCH AS EC MOTORS OR VFD DRIVEN MOTORS) MODULATE WITH TEMPERATURE. IF THE FAN(S) IS EQUIPPED WITH VARIABLE SPEED FANS AND THE ZONE IS DEFINED AS "DYNAMIC", THESE WILL MODULATE WITHIN A USER-DEFINED RANGE BASED ON THE TEMPERATURE DIFFERENTIAL. PANELS EQUIPPED WITH VARIABLE SPEED FANS AND A FAN ZONE DEFINED AS "STATIC", FANS WILL RUN AT A SET SPEED CALCULATED FOR THE DRIVE. DEMAND CONTROL VENTILATION SYSTEMS ARE CAPABLE OF MODULATING EXHAUST AND MAKE UP AIR FAN SPEEDS PER THE REQUIREMENTS OUTLINED IN IECC 403.7.5 (2021).
- MANUAL: THE SYSTEM OPERATES BASED ON HUMAN INPUT FROM AN HMI.
- SCHEDULE: A WEEKLY SCHEDULE CAN BE SET TO RUN FANS FOR A SPECIFIED PERIOD THROUGHOUT THE DAY. THERE ARE THREE OCCUPIED TIMES PER DAY TO ALLOW FOR THE USER TO SET UP A TIME THAT IS SUITABLE TO THEIR NEEDS. ANY TIME THAT IS WITHIN THE DEFINED OCCUPIED TIME, THE SYSTEM WILL RUN AT MODULATION MODE AND FOLLOW THE FAN PROCEDURE ALGORITHM BASED ON TEMPERATURE DURING THIS TIME. DURING UNOCCUPIED TIME, THE SYSTEM WILL HAVE AN EXTRA OFFSET TO PREVENT UNINTENDED ACTIVATION OF THE SYSTEM DURING A TIME WHERE THE SYSTEM IS NOT BEING OCCUPIED.
- OTHER: THE SYSTEM OPERATES BASED ON THE INPUT FROM AN EXTERNAL SOURCE (DDC, BMS OR HARD-WIRED INTERLOCK).
- FIRE: UPON ACTIVATION OF THE HOOD FIRE SUPPRESSION SYSTEM, THE EXHAUST FAN WILL COME ON OR CONTINUE TO TO RUN, THE HOOD MAKEUP AIR WILL SHUTDOWN, AND A SIGNAL WILL BE SENT FOR ACTIVATING THE SHUNT TRIP BREAKER PROVIDED BY THE ELECTRICIAN. FUEL GAS WILL SHUT OFF VIA A MECHANICAL/ELECTRICAL GAS VALVE ACTUATED BY THE HOOD FIRE SUPPRESSION SYSTEM.

OCCUPIED HOURS WITH HOODS OFF: UNIT TO BE ON TO PROVIDE CODE MINIMUM VENTILATION DURING OCCUPIED HOURS. UNIT TO RUN IN HEAT/COOL/DEHUMIDIFICATION/BLOWER AS NEEDED TO MAINTAIN SPACE TEMPERATURE AND HUMIDITY SET POINTS.

OCCUPIED HOURS WITH HOODS ON: UNIT TO BE ON AT 100% OA. UNIT TO RUN IN HEAT/COOL/DEHUMIDIFICATION/BLOWER BASED OFF OF INTAKE AND SPACE CONDITIONS TO MAINTAIN SPACE TEMPERATURE AND HUMIDITY SET POINTS.

UNOCCUPIED: UNIT TO CYCLE ON & OFF AS NEEDED AT 0% OA TO MAINTAIN SETBACK TEMPERATURE AND HUMIDITY SET POINTS.

THE EXHAUST AND DOMESTIC OUTDOOR AIR SUPPLY FANS SHALL MODULATE TOGETHER UNDER CONTROL OF THE HOOD CONTROL PANEL TO MAINTAIN THE PROGRAMMED AIRFLOW RELATIONSHIP THROUGHOUT THE OPERATING RANGE.

GYMNASIUM RTU OPERATION DURING HOOD OPERATION: UPON ACTIVATION OF THE KITCHEN HOOD EXHAUST SYSTEM, THE TWO EXISTING GYMNASIUM ROOFTOP UNITS (RTU-GYM-1 AND RTU-GYM-2) SHALL BE ENABLED THROUGH A HARD-WIRED INTERLOCK OR CONTROLS INTERFACE. EACH ROOFTOP UNIT SHALL OPERATE CONTINUOUSLY DURING HOOD OPERATION AND SHALL INCREASE THE OUTDOOR-AIR INTAKE TO THE MAXIMUM PROGRAMMED POSITION, OR TO THE POSITION REQUIRED BY THE TEST AND BALANCE CONTRACTOR, TO PROVIDE ADDITIONAL OUTDOOR AIR FOR MAINTAINING THE BUILDING PRESSURE RELATIONSHIP. THE INTENT IS TO OFFSET THE KITCHEN EXHAUST AIRFLOW AND MAINTAIN THE BUILDING AT A NEUTRAL TO SLIGHTLY POSITIVE PRESSURE RELATIVE TO OUTDOORS. THE OUTDOOR-AIR DAMPER POSITION SHALL BE FIELD ADJUSTABLE DURING TESTING AND BALANCING.

BUILDING PRESSURIZATION: DURING KITCHEN HOOD OPERATION, THE HOOD CONTROL PANEL SHALL PROVIDE AN ENABLE SIGNAL TO THE EXISTING GYMNASIUM ROOFTOP UNITS. THE ROOFTOP UNITS SHALL OPERATE WITH INCREASED OUTDOOR-AIR VENTILATION AS DESCRIBED ABOVE TO SUPPLEMENT THE DEDICATED MAKEUP AIR UNIT. FINAL OUTDOOR-AIR DAMPER POSITIONS SHALL BE ESTABLISHED DURING TESTING AND BALANCING TO MAINTAIN THE BUILDING AT NEUTRAL TO SLIGHTLY POSITIVE PRESSURE WHILE ALL KITCHEN EXHAUST SYSTEMS ARE OPERATING.

RTU-1, 2, 3, 4, 6, 7 SEQUENCE OF OPERATIONS

OCCUPIED:
DURING OCCUPIED PERIODS, THE SUPPLY FAN SHALL RUN CONTINUOUSLY AND THE MIXED AIR DAMPERS SHALL OPEN TO MAINTAIN MINIMUM VENTILATION REQUIREMENTS. THE GAS HEAT SHALL BE ENABLED AND CONTROLLED TO MAINTAIN THE ACTIVE SPACE TEMPERATURE SETPOINT. IF THE DISCHARGE AIR TEMPERATURE SENSOR FAILS, THE DX COOLING AND THE GAS HEAT SHALL CONTROL TO MAINTAIN THE ACTIVE SPACE TEMPERATURE SETPOINT AND AN ALARM SHALL ANNUNCIATE AT THE UNIT. IF THE SPACE TEMPERATURE SENSOR FAILS, THE MECHANICAL COOLING SHALL BE DISABLED, THE MECHANICAL HEATING SHALL BE DISABLED, AND AN ALARM SHALL ANNUNCIATE AT THE UNIT.

UNOCCUPIED:
DURING THE UNOCCUPIED PERIODS, THE SUPPLY FAN SHALL BE DISABLED, THE OUTSIDE AIR DAMPER SHALL CLOSE, THE MECHANICAL COOLING SHALL BE DISABLED, THE MECHANICAL HEATING SHALL BE DISABLED, TO CONSERVE ENERGY.
WHEN THE SPACE TEMPERATURE IS ABOVE THE UNOCCUPIED COOLING SETPOINT OF 85.0 DEG. F (ADJ.) THE SUPPLY FAN THE OUTSIDE AIR DAMPER SHALL OPEN IF ECONOMIZING IS ENABLED AND REMAIN CLOSED IF ECONOMIZING IS DISABLED, AND THE MECHANICAL COOLING SHALL BE ENABLED. WHEN THE SPACE TEMPERATURE FALLS BELOW THE UNOCCUPIED COOLING SETPOINT OF 85.0 DEG. F (ADJ.) MINUS THE UNOCCUPIED DIFFERENTIAL OF 4.0 DEG. F (ADJ.)
THE SUPPLY FAN THE OUTSIDE AIR DAMPER SHALL CLOSE, AND THE MECHANICAL COOLING SHALL BE DISABLED.
WHEN THE SPACE TEMPERATURE IS BELOW THE UNOCCUPIED HEATING SETPOINT OF 60.0 DEG. F (ADJ.) THE SUPPLY FAN AND THE MECHANICAL HEATING SHALL BE ENABLED. WHEN THE SPACE TEMPERATURE RISES ABOVE THE UNOCCUPIED HEATING SETPOINT OF 60.0 DEG. F (ADJ.) PLUS THE UNOCCUPIED DIFFERENTIAL OF 4.0 DEG. F (ADJ.) THE SUPPLY FAN THE MECHANICAL HEATING SHALL BE DISABLED.

HEAT/COOL MODE:
WHEN THE SPACE TEMPERATURE RISES ABOVE THE OCCUPIED COOLING SETPOINT THE MODE SHALL TRANSITION TO COOLING. WHEN THE SPACE TEMPERATURE FALLS BELOW THE OCCUPIED HEATING SETPOINT THE MODE SHALL TRANSITION TO HEATING. WHEN THE SPACE TEMPERATURE IS ABOVE THE OCCUPIED COOLING SETPOINT OR BELOW THE OCCUPIED HEATING SETPOINT THE MODE SHALL REMAIN IN ITS LAST STATE. IF THE SPACE TEMPERATURE SENSOR FAILS THE MODE SHALL REMAIN IN ITS LAST STATE AND AN ALARM SHALL ANNUNCIATE AT THE UNIT. IF THE LOCAL AND COMMUNICATED SETPOINTS FAIL THE CONTROLLER SHALL DISABLE THE SUPPLY FAN AND AN ALARM SHALL ANNUNCIATE AT THE UNIT.

DEHUMIDIFICATION:
THE UNIT SHALL BE IN DEHUMIDIFICATION MODE IF THE SPACE HUMIDITY IS ABOVE THE DEHUMIDIFICATION SETPOINT. IN THE DEHUMIDIFICATION MODE, THE SUPPLY AIR FAN SHALL BE ENABLED, THE OUTSIDE AIR DAMPER SHALL BE COMMANDED TO MINIMUM POSITION, AND THE UNIT CONTROLLER SHALL ENERGIZE MECHANICAL COOLING AND THE HOT GAS REHEAT COIL SHALL MODULATE. FACTORY INSTALLED HOT GAS REHEAT SHALL ALLOW APPLICATION OF DEHUMIDIFICATION. DEHUMIDIFICATION SHALL BE ALLOWED ONLY WHEN THE OUTSIDE AIR TEMPERATURE IS ABOVE 40.0 DEG. F AND BELOW 100.0 DEG. F. THE ECONOMIZER OUTSIDE AIR DAMPER SHALL DRIVE TO MINIMUM POSITION DURING DEHUMIDIFICATION.

ECONOMIZER:
ENABLE (COMPARATIVE DRY BULB): OUTSIDE AIR (OA) TEMPERATURE SHALL BE COMPARED WITH SPACE TEMPERATURE. THE ECONOMIZER SHALL ENABLE WHEN OA TEMPERATURE IS LESS THAN SPACE TEMPERATURE - 2.0 DEG. F. THE ECONOMIZER SHALL DISABLE WHEN OA TEMPERATURE IS GREATER THAN SPACE TEMPERATURE.
OPERATION: THE SUPPLY AIR SENSOR SHALL MEASURE THE DRY BULB TEMPERATURE OF THE AIR LEAVING THE EVAPORATOR COIL WHILE ECONOMIZING. WHEN ECONOMIZING IS ENABLED AND THE UNIT IS OPERATING IN THE COOLING MODE, THE ECONOMIZER DAMPER SHALL MODULATE BETWEEN ITS MINIMUM POSITION AND 100% TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. MINIMUM POSITION SHALL BE CALCULATED BASED ON SUPPLY FAN SPEED. IF THE SUPPLY AIR TEMPERATURE STARTS TO FALL BELOW SUPPLY AIR TEMPERATURE SETPOINT, THE OUTDOOR DAMPER SHALL BE AT MINIMUM POSITION. COMPRESSORS SHALL BE DELAYED FROM OPERATING UNTIL THE ECONOMIZER HAS OPENED TO 100% FOR 5 MINUTES.

SUPPLY FAN:
THE SUPPLY FAN SHALL BE ENABLED WHILE IN THE OCCUPIED MODE AND CYCLED ON DURING THE UNOCCUPIED MODE. THE UNIT CONTROLLER SHALL VARY THE SUPPLY FAN SPEED TO OPTIMIZE MINIMUM FAN SPEED IN ALL COOLING AND HEATING MODES. A DIFFERENTIAL PRESSURE SWITCH SHALL MONITOR THE DIFFERENTIAL PRESSURE ACROSS THE FAN. IF THE SWITCH DOES NOT OPEN WITHIN 40 SECONDS AFTER A REQUEST FOR FAN OPERATION A FAN FAILURE ALARM SHALL ANNUNCIATE AT THE UNIT. THE UNIT SHALL STOP, REQUIRING A MANUAL RESET.

RELIEF AIR AND BUILDING PRESSURE CONTROL:
THE BAROMETRIC RELIEF DAMPERS SHALL OPEN WITH INCREASED BUILDING PRESSURE, AS THE BUILDING PRESSURE INCREASES, THE PRESSURE IN THE UNIT RETURN SECTION ALSO INCREASES, OPENING THE DAMPERS AND RELIEVING AIR.

FILTER STATUS:
A DIFFERENTIAL PRESSURE SWITCH SHALL MONITOR THE DIFFERENTIAL PRESSURE ACROSS THE FILTER(S) WHEN THE FAN IS RUNNING. IF THE SWITCH CLOSES DURING NORMAL OPERATION A DIRTY FILTER ALARM SHALL ANNUNCIATE AT THE UNIT.

CONDENSATE OVERFLOW SHUTDOWN:
THE UNIT SHALL SHUT DOWN IN RESPONSE TO A SIGNAL FROM THE CONDENSATE OVERFLOW SENSOR. THE SENSOR SHALL BE INTERLOCKED TO THE UNIT COOLING CONTROLLER FOR IMMEDIATE SHUTDOWN OF COOLING.

REFRIGERANT MITIGATION MODE:
THE UNIT CONTROLLER SHALL MONITOR THE LEAK DETECTION SYSTEM EVERY 5 SECONDS. WHEN A LEAK IS DETECTED, MITIGATION SHALL BE ACTIVATED.

IN OCCUPIED MODE, THE SUPPLY FAN SHALL REMAIN OPERATIONAL, AND THE COMPRESSOR(S), ELECTRIC HEATING, FUEL-FIRED HEATING, ELECTROSTATIC DEVICES, AND ANY OTHER IGNITION DEVICE STARTERS SHALL BE DISABLED, AND ACTIVATE MECHANICAL VENTILATION (IF ITS REQUIRED BY SECTION 7.6.4 OF THE ASHRAE STANDARD). FOR THE DURATION OF THE MITIGATION PROCESS PLUS AN ADDITIONAL 5 MINUTES.

IN UNOCCUPIED MODE, THE SUPPLY FAN SHALL REMAIN OPERATIONAL, AND THE COMPRESSOR(S), ELECTRIC HEATING, FUEL-FIRED HEATING, ELECTROSTATIC DEVICES, AND ANY OTHER IGNITION DEVICE STARTERS SHALL BE DISABLED, AND ACTIVATE MECHANICAL VENTILATION (IF ITS REQUIRED BY SECTION 7.6.4 OF THE ASHRAE STANDARD). FOR THE DURATION OF THE MITIGATION PROCESS PLUS AN ADDITIONAL 5 MINUTES.

RTU-5 SEQUENCE OF OPERATIONS

FACTORY CONTROLLER: CONTROLLER SHALL BE PROVIDED WITH REQUIRED SENSORS AND PROGRAMMING FOR ROOFTOP UNIT. CONTROLLER SHALL BE FACTORY PRE-PROGRAMMED, MOUNTED AND TESTED. CONTROLLER SHALL HAVE A LCD READOUT FOR CHANGING SET POINTS AND MONITORING UNIT OPERATION.

UNIT START COMMAND (UNIT WILL BE ENABLED PER PROGRAMMABLE THERMOSTAT):
• FACTORY MOUNTED AND WIRED OUTDOOR AIR DAMPER ACTUATOR IS POWERED
• SUPPLY FAN STARTS AFTER AFTER A (ADJ.) DELAY.
• TEMPERING OPTIONS TO FUNCTION AS DESCRIBED BELOW.

UNIT STOP COMMAND (OR DE-ENERGIZED):
• SUPPLY FAN, EXHAUST FAN AND TEMPERING OPTIONS DE-ENERGIZED.
• OUTDOOR AIR DAMPER ACTUATOR IS SPRING RETURN CLOSE.

OCCUPIED/UNOCCUPIED MODES: SHALL BE BASED ON A 7-DAY TIME CLOCK INTERNAL TO THE CONTROLLER. THE SCHEDULE SHALL BE SET BY THE END USER. WHEN A USER INITIATES AN OVERRIDE INPUT, THE CONTROLLER WILL SWITCH FROM OCCUPIED TO OCCUPIED MODE. THE CONTROLLER WILL RETURN TO THE SCHEDULED OCCUPIED/UNOCCUPIED MODE AFTER THE OVERRIDE TIME HAS EXPIRED. IF INTERNAL TIME CLOCK IS DISABLED, A REMOTE CONTACT OR A BMS CAN CONTROL THE OCCUPIED/UNOCCUPIED MODE.

OCCUPIED MODE:
• DAMPER CONTROL PER BELOW.
• SUPPLY FAN ON.
• HEATING PER BELOW.
• COOLING PER BELOW.

UNOCCUPIED MODE: UNIT CYCLES ON/OFF TO MAINTAIN MINIMUM (60°F) AND MAXIMUM (90°F) SETPOINTS (ADJ.).
• SUPPLY FAN CYCLES
• OUTDOOR AIR DAMPER CYCLES OPEN/CLOSED.

MORNING WARMUP/COOL DOWN: PRIOR TO OCCUPANCY, THE UNIT WILL RUN USING THE WARMUP OR COOL DOWN SEQUENCE UNTIL THE OCCUPIED SET POINT IS ACHIEVED. THE HEATING OR COOLING MODE MUST NOT BE LOCKED OUT AND THE SPACE TEMPERATURE IS BELOW OR ABOVE SET POINT BY THE UNOCCUPIED HYSTERESIS (ADJ.) (THIS SEQUENCE MUST BE FIELD CONFIGURED.)

SUPPLY BLOWER SEQUENCE: THE SUPPLY BLOWER IS PROVIDED WITH A FACTORY MOUNTED VARIABLE FREQUENCY DRIVE. THE SUPPLY BLOWER SPEED WILL BE CONTROLLED WITH THE FOLLOWING SEQUENCE. MINIMUM SUPPLY FAN TURNDOWN IS 50% OF THE DESIGN MAXIMUM OPERATION.

CONSTANT VOLUME-ADJ. SETPOINT: THE SUPPLY BLOWER WILL OPERATE AT A CONSTANT SPEED SET POINT (ADJ.) DURING OPERATION.

COOLING SEQUENCE: THE COOLING IS CONTROLLED TO MAINTAIN THE SUPPLY TEMPERATURE SET POINT. THE MECHANICAL COOLING WILL BE LOCKED OUT WHEN THE OUTSIDE AIR IS < 55 F (ADJ.).

PACKAGED DX COOLING (INVERTER SCROLL): THE CONTROLLER WILL PROVIDE A MODULATING SIGNAL FOR COOLING. FROM 0-100% THE INVERTER SCROLL WILL BE CONTROLLED TO MAINTAIN DISCHARGE TEMPERATURE. THE ELECTRONIC EXPANSION VALVE WILL MODULATE TO MAINTAIN 8 OF SUPERHEAT.

MODULATING HEAD PRESSURE CONTROL: LEAD CONDENSER FAN WILL HAVE AN EC MOTOR AND WILL MODULATE TO MAINTAIN A HEAD PRESSURE SET POINT.

DEHUMIDIFICATION CONTROL SEQUENCE: DEHUMIDIFICATION TO BE ENABLED AND ONCE ENABLED THE COOLING COIL WILL BE CONTROLLED BASED ON THE FOLLOWING SEQUENCES. THE MECHANICAL COOLING WILL BE LOCKED OUT WHEN THE OUTSIDE AIR IS < 55 F (ADJ.)

SPACE SET POINT CONTROL (ROOM RH): WHEN IN DEHUMIDIFICATION MODE THE CONTROLLER WILL ADJUST THE COLD COIL LEAVING AIR TEMPERATURE SET POINT BETWEEN THE MINIMUM (ADJ.) AND THE MAXIMUM (ADJ.) LIMITS, TO SATISFY THE DESIRED ROOM RELATIVE HUMIDITY SET POINT. ADJUSTABLE LOCALLY.

DEHUMIDIFICATION ENABLE: DEHUMIDIFICATION MODE TO BE ENABLED BASED ON THE OUTSIDE AIR DEW POINT CONDITION. WHEN THE OUTSIDE AIR DEW POINT IS GREATER THAN THE DESIRED SET POINT (ADJ.), THE UNIT WILL OPERATE IN DEHUMIDIFICATION MODE.

MODULATING HOT GAS REHEAT SEQUENCE: DURING DEHUMIDIFICATION THE MODULATING GHRH IS CONTROLLED TO MAINTAIN THE SUPPLY TEMPERATURE SET POINT.

REHEAT SEQUENCE: WHILE THE UNIT IS IN DEHUMIDIFICATION MODE THE OUTDOOR AIR WILL BE REHEATED VIA MODULATING HOT GAS REHEAT FOR SPACE NEUTRAL APPLICATIONS.

MODULATING HOT GAS REHEAT: THE CONTROLLER WILL MODULATE THE HOT GAS REHEAT REHEAT VALVE WITH A 0-10 V. SIGNAL TO MAINTAIN THE SUPPLY TEMPERATURE SET POINT (ADJ.).

HEATING SEQUENCE: THE HEATING IS CONTROLLED TO MAINTAIN THE SUPPLY TEMPERATURE SET POINT. THE HEATING WILL BE LOCKED OUT WHEN THE OUTSIDE AIR IS > 80 F (ADJ.).

INDIRECT GAS FURNACE: THE CONTROLLER WILL MODULATE THE INDIRECT GAS FURNACE TO MAINTAIN THE SUPPLY TEMPERATURE SET POINT (ADJ.).

TEMPERATURE CONTROL SEQUENCE: THE UNIT WILL MAINTAIN THE SUPPLY AIR DISCHARGE SETPOINT PER THE FOLLOWING. ADJUSTABLE LOCALLY.

ROOM RESET: THE CONTROLLER WILL RESET THE SUPPLY AIR TEMPERATURE SET POINT TO MAINTAIN THE ROOM TEMPERATURE SET POINT (ADJ.).

SUPPLY DISCHARGE TEMPERATURE CONTROL: THE SUPPLY SETPOINT WILL BE A CONSTANT TEMPERATURE SETPOINT FROM THE CONTROLLER (ADJ.). ADJUSTABLE LOCALLY.

BUILDING FREEZE PROTECTION: IF THE SUPPLY AIR TEMPERATURE DROPS BELOW 35 F (ADJ.) FOR 300S (ADJ.), THE CONTROLLER WILL DE-ENERGIZE THE UNIT AND ACTIVATE THE ALARM OUTPUT.

UNIT LEAK DETECTION AND MITIGATION: THE UNIT WILL BE EQUIPPED WITH REFRIGERANT LEAK DETECTION SENSORS. THESE SENSORS ALONG WITH THE FOLLOWING SEQUENCE OF OPERATION ARE REQUIRED PER UL60335-2-40.

REFRIGERANT LEAK DETECTED IN AIR TUNNEL: IF A REFRIGERANT LEAK IS DETECTED IN THE AIR TUNNEL, THE SUPPLY FAN WILL OPERATE AT MINIMUM AIRFLOW REQUIREMENT. OUTSIDE AIR DAMPER WILL BE OPENED, AND COMPRESSORS ARE DISABLED TO REDUCE LEAKAGE RATE. THIS OPERATION IS REQUIRED IN ORDER TO MOVE STAGNANT REFRIGERANT FROM WITHIN THE UNIT, DUCT, AND SPACE ENSURING PROPER DILUTION OF THE REFRIGERANT. THIS OPERATION IS REQUIRED EVEN IF THE UNIT IS CALLED TO BE OFF. AFTER LEAK DETECTION IS CLEARED, THE UNIT WILL GO BACK TO NORMAL OPERATION. EXCEPTION TO THIS OPERATION IS WHEN THE UNIT IS RECEIVING AN ACTIVE FIRE ALARM SIGNAL AT THE UNIT CONTROLLER. IF UNIT CONTROLLER IS RECEIVING A FIRE ALARM INPUT, THE UNIT WILL NOT OPERATE THE LEAK MITIGATION SUPPLY FAN SEQUENCE. DRY ALARM CONTACTS AVAILABLE TO ALLOW THE BUILDING (BY OTHERS) TO PERFORM EXTERNAL MITIGATION ACTIONS WHEN NECESSARY. THESE BY OTHER EXTERNAL ACTIONS INCLUDE OPENING OF ZONE DAMPERS IN THE DUCTWORK, DISABLING DUCT MOUNTED ELECTRIC RESISTANCE HEATERS, AND/OR ENABLING ADDITIONAL MECHANICAL VENTILATION IF REQUIRED PER ASHRAE 15.

REFRIGERANT LEAK DETECTED IN COMPRESSOR COMPARTMENT: IF A REFRIGERANT LEAK IS DETECTED IN THE COMPRESSOR COMPARTMENT AND THE UNIT IS CONFIGURED WITH AN INDIRECT GAS FURNACE, THE FURNACE WILL BE DISABLED WHILE LEAK DETECTION IS ACTIVE. AFTER LEAK DETECTION IS CLEARED, THE UNIT WILL GO BACK TO NORMAL OPERATION.

ALARMS INDICATION: THE CONTROLLER WILL DISPLAY ALARMS AND HAVE ONE DIGITAL OUTPUT FOR REMOTE INDICATION OF AN ALARM CONDITION. POSSIBLE ALARMS INCLUDE:

SUPPLY AND EXHAUST AIR ALARM: THE CONTROLLER MONITORS THE PROVING SWITCH ON EACH BLOWER AND SENDS AN ALARM IN THE CASE OF EITHER BLOWER PROVING SWITCH NOT ENGAGING.

DX ALARM: THE CONTROLLER MONITORS THE REFRIGERANT PRESSURE. IN THE CASE OF LOW REFRIGERANT PRESSURE THE COMPRESSORS WILL SHUT DOWN UNTIL REFRIGERANT PRESSURE RETURNS TO NORMAL VALUES AND THE CONTROLLER WILL SEND AN ALARM IN THE CASE OF HIGH REFRIGERANT PRESSURE THE COMPRESSORS WILL SHUT DOWN, REQUIRING A MANUAL RESET AND THE CONTROLLER WILL SEND A ALARM.

TEMPERATURE SENSOR ALARM: THE CONTROLLER SENDS AN ALARM IN THE CASE OF A FAILED AIR TEMPERATURE SENSOR.

ACCESSORIES: THE FOLLOWING ACCESSORIES WILL BE INCLUDED WITH THE UNIT TO EXPAND THE FUNCTIONALITY OR USABILITY OF THE CONTROLLER.

PHASE AND BROWNOUT PROTECTION: FACTORY MOUNTED AND WIRED COMPONENT WHICH MONITORS THE MAIN POWER COMING INTO THE UNIT. IF A PHASE DROPS OUT, OR IF THE INCOMING VOLTAGE EXCEEDS THE ACCEPTABLE RANGE, THE COMPONENT WILL TURN OFF THE UNIT TO HELP PROTECT THE ELECTRICAL SYSTEMS.

CONDENSATE OVERFLOW UNIT SHUTDOWN: FACTORY MOUNTED CONDENSATE OVERFLOW SWITCH WIRED TO THE UNIT CONTROLLER. THE CONTROLLER MONITORS THE CONDENSATE OVERFLOW SWITCH. IF THE WATER LEVEL IN THE DRAIN PAN REACHES A CERTAIN LEVEL, THE UNIT WILL SHUTDOWN AND SEND AN ALARM.

AIRFLOW MONITORING: THE SUPPLY FAN WILL HAVE AN AIRFLOW MONITORING PRESSURE TAP ON THE INLET CONE. THE DIFFERENTIAL PRESSURE ACROSS THE FAN CONE IS CONVERTED TO AN AIRFLOW READING BY USING THE ENERGY CONSERVATION PRINCIPLE AND THE FAN WHEEL K-FACTOR. THE AIRFLOW CAN BE MONITORED VIA THE LCD AND BAS.

DAMPER END SWITCH: DAMPER END SWITCHED WILL BE PROVIDED TO ENSURE THE SUPPLY AND EXHAUST FANS DO NOT ENABLE UNTIL THE DAMPERS ARE PROVEN OPEN.

STATE OF MISSOURI
MIKE KEHOE
GOVERNOR

CASCO DIVERSIFIED CORPORATION
ENGINEERING
LICENSE # 000613
EXP. DATE: 12/31/2027

Professional of Record:
RYAN M. LAFRANCE
LICENSE # PE-2023011019
EXP. DATE: 12/31/2027

OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES
MANAGEMENT,
DESIGN AND CONSTRUCTION

DEPARTMENT OF
MISSOURI NATIONAL
GUARD

INTERIOR AND EXTERIOR
RENOVATION

JEFFERSON BARRACKS
READINESS CENTER
74 KEARNEY ST.
ST. LOUIS, MO 63125

PROJECT # T2504-03
SITE # 6303
FACILITY #8136303050

REVISIONS

No.	Description	Date
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ISSUE DATE:08/04/2026

DWG FILE #: 2605562
DRAWN BY: SJL
CHECKED BY: RML
DESIGNED BY:

SHEET TITLE:
MECHANICAL CONTROLS

SHEET NUMBER:
M-602
SHEET 40 OF 51
08/04/2026

GENERAL CONSTRUCTION NOTES

- ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR NECESSARY PERMITS, LICENSES, INSPECTIONS AND FEES FROM THE LOCAL AUTHORITIES HAVING JURISDICTION. CONTRACTOR SHALL BE LICENSED BY LOCAL AND/OR STATE AUTHORITIES HAVING JURISDICTION.
- ALL MATERIAL AND WORKMANSHIP SHALL CONFORM TO THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA), NATIONAL ELECTRICAL CODE (NEC), INTERNATIONAL BUILDING CODE (IBC) AND OTHER APPLICABLE LOCAL, STATE AND NATIONAL CODES.
- ALL ELECTRICAL MATERIALS USED ON THIS PROJECT SHALL BE "UL" LISTED AND LABELED.
- THE ENTIRE ELECTRICAL SYSTEM AND ALL ELECTRICAL EQUIPMENT SHALL BE GROUNDED IN STRICT ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND AS SHOWN ON THE DRAWINGS. PROVIDE A GROUND WIRE IN EACH POWER CONDUIT, SIZED PER THE NEC.
- CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING A COMPLETE SYSTEM PER CONTRACT DRAWINGS AND ENSURING THAT THE SYSTEM IS OPERATIONAL UPON JOB COMPLETION, PRIOR TO TURNOVER.
- CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH ALL OTHER TRADES AND DISCIPLINES TO AVOID CONFLICTS AND TO VERIFY ALL EQUIPMENT CONNECTIONS. COORDINATE ALL WIRING DEVICE LOCATIONS AND ELEVATIONS INDICATED ON THE PLANS WITH THE OWNER, ARCHITECT AND FINAL FURNITURE/EQUIPMENT LAYOUTS, PRIOR TO ROUGH-IN.
- CONTRACTOR SHALL GUARANTEE ALL LABOR AND MATERIALS INSTALLED OR FURNISHED UNDER THIS CONTRACT FOR A PERIOD OF NOT LESS THAN ONE YEAR AFTER FINAL ACCEPTANCE OF THE BUILDING.
- MAINTAIN AND VERIFY ELECTRICAL EQUIPMENT CLEARANCES AND WORKING SPACE PER NEC.
- PROVIDE ELECTRICAL SYSTEMS WITH IDENTIFICATION AS INDICATED IN THE SPECIFICATIONS AND REQUIRED BY THE NEC.
- IF ANYTHING ON THE PLANS IS NOT IN COMPLIANCE WITH NATIONAL, STATE OR LOCAL CODES, THE ENGINEER SHALL BE ADVISED BY THE ELECTRICAL CONTRACTOR DURING THE BIDDING PROCESS. THERE ARE TO BE NO CHANGES TO THE CONTRACT DOCUMENTS WITHOUT WRITTEN PERMISSION FROM THE ENGINEER.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MEANS AND METHODS FOR NEW WORK, SAFETY, ETC., IN ACCORDANCE WITH ALL AUTHORITIES HAVING JURISDICTION. (I.E. OSHA, NEC, ETC.)
- THE CONTRACTOR SHALL REFER TO ARCHITECTURAL DRAWINGS FOR PHASING AND SCHEDULING OF THIS PROJECT. COORDINATE WITH OWNER'S FIELD REPRESENTATIVE.
- VERIFY ALL INDICATED DIMENSIONS BY FIELD MEASUREMENTS. NOTIFY ENGINEER OF ANY DISCREPANCIES.
- PROVIDE ACCESS PANELS OR DOORS WHERE EQUIPMENT OR DEVICES ARE REQUIRED TO BE ACCESSIBLE ARE CONCEALED BEHIND INACCESSIBLE SURFACES.
- PRIOR TO TURNOVER, THE CONTRACTOR SHALL REMOVE ALL RUBBISH, DIRT, DEBRIS AND STAINS ON THEIR WORK OR CAUSED BY THEIR WORK AND SHALL THOROUGHLY CLEAN ALL EQUIPMENT, FIXTURES, DEVICES, ETC. CONTRACTOR SHALL REPLACE, TOUCH-UP OR REFINISH THE FACTORY FINISH ON EQUIPMENT, FIXTURES, DEVICES, ETC. MARRED DURING SHIPMENT, INSTALLATION OR CONSTRUCTION.
- PANELBOARD SHALL BE EQUIPPED WITH BOLT-ON TYPE BREAKERS, PHENOLIC NAME TAGS AND KEYED LOCK AND LATCH. EACH PANEL SHALL BE PROVIDED WITH TWO KEYS WITH ALL PANELS KEYED ALIKE. ALL CIRCUIT BREAKERS USED TO LIGHT FIXTURES SHALL BE TYPE SWD AND SHALL BE APPROVED FOR THE PURPOSE. ALL CIRCUIT BREAKERS SERVING HVAC EQUIPMENT SHALL BE HACR TYPE.
- ALL CIRCUITS INDICATED ON THESE DRAWINGS ARE 20A, 1P CIRCUIT BREAKERS IN PANELS UNLESS NOTED OTHERWISE. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER IDENTIFICATION AND LABELING OF ALL CIRCUIT BREAKERS. EACH PANELBOARD SHALL BE EQUIPPED WITH A TYPE WRITTEN CIRCUIT DIRECTORY.
- MINIMUM WIRE SIZE SHALL BE #12 AWG UNLESS OTHERWISE NOTED. MINIMUM CONDUIT SIZE SHALL BE 1/2" UNLESS OTHERWISE NOTED. ALL CONDUIT BELOW SLABS OR EXTERIOR TO BUILDING SHALL BE MINIMUM 1". PROVIDE A NYLON/POLY PULL CORD IN ALL EMPTY CONDUITS.
- ELECTRICAL CONTRACTOR SHALL PROVIDE TYPE THHN OR THWN COPPER CONDUCTORS FOR ALL INTERIOR BUILDING WIRE AND SHALL PROVIDE TYPE XHHW-2 COPPER CONDUCTORS FOR ALL EXTERIOR FEEDERS AND BRANCH CIRCUITS.
- VOLTAGE DROP MINIMUM WIRE SIZING (20A CIRCUIT) USE: 120V CIRCUIT OVER 100' SHALL BE #10 MINIMUM; 120V CIRCUIT OVER 175' SHALL BE #8 MINIMUM; 208V CIRCUIT OVER 200' SHALL BE #10 MINIMUM; 277V CIRCUIT OVER 200' SHALL BE #10 MINIMUM. MINIMUM WIRE SIZE FOR ANY 20A BRANCH CIRCUIT SHALL BE #12. FURTHERMORE, CONSIDER ALL DERATING OF CONDUCTORS AS REQUIRED IN ACCORDANCE WITH THE APPLICABLE NEC.
- ELECTRICAL CONTRACTOR SHALL HAVE THE OPTION OF GROUPING HOME RUNS IN ONE CONDUIT, PER THE REQUIREMENTS OF SECTION 310 OF THE NATIONAL ELECTRICAL CODE. NO MORE THAN FOUR (4) CIRCUITS SHALL BE ALLOWED TO BE GROUPED AND INSTALLED IN A SINGLE JUNCTION BOX. EC SHALL BE RESPONSIBLE FOR INCREASING CONDUCTOR SIZE AND DERATING. HOME RUNS WITH MORE THAN THREE CIRCUITS SHALL BE #10 AWG. CONDUCTOR MINIMUM. PROVIDE DEDICATED NEUTRALS FOR EACH PHASE CONDUCTOR AND CONSIDER THEM AS A CURRENT CARRYING CONDUCTOR FOR DERATING.
- ALL HOME RUNS SHALL BE IN EMT CONDUIT. MC CABLE IS PERMITTED ABOVE CEILINGS FROM HOMERUNS TO FIXTURES AND WIRING DEVICES WITHIN WALLS AND FURRED COLUMNS. REFER TO ELECTRICAL SPECIFICATIONS FOR MORE DETAILED INFORMATION.
- SUPPORT ALL CONDUITS FROM STRUCTURAL WALLS, SLABS, MEMBERS AND ROOF JOISTS. DO NOT SUPPORT CONDUITS FROM CEILING TIE WIRES, DUCTWORK, PIPING, ROOF DECK OR OTHER NON-STRUCTURAL MEMBERS.
- SUPPORTING OF ELECTRICAL CONDUITS: THE INDIVIDUAL BRANCH CIRCUIT CONDUIT AND ASSOCIATED 4" X 4" JUNCTION BOXES MAY BE SUPPORTED FROM FLOOR/ROOF JOISTS. ALL LARGER FEEDER CONDUITS AND/OR CLUSTER OR GROUPS OF BRANCH CIRCUIT CONDUITS SHALL BE SUPPORTED ON STEEL TRAPEZE WITH STEEL CHANNEL ATTACHED TO STEEL OR WOOD JOIST/BEAMS WITH PROPER ATTACHMENTS. NO SUPPORT SHALL BE ATTACHED TO THE ROOF DECK (NO EXCEPTIONS). HANG CONDUIT FROM TOP CHORD OF BAR JOIST WHEN ATTACHING HOME RUNS TO JOIST.
- INTERIOR AND EXTERIOR LIGHT FIXTURES SHALL BE FURNISHED AND INSTALLED AS SHOWN ON THE DRAWINGS AND AS CALLED OUT IN THE LIGHTING FIXTURE SCHEDULE.
- ALL WIRING DEVICES SHALL BE FLUSH MOUNTED, UNLESS NOTED OTHERWISE. ALL CONDUIT SHALL BE RUN WITHIN WALL CAVITIES, BELOW FLOOR AND ABOVE CEILINGS. SURFACE MOUNTED ELECTRICAL WORK SHALL NOT BE USED UNLESS SPECIFICALLY NOTED ON THE PLANS.
- ALL WALL AND CEILING FIXTURES AND DEVICES SHALL BE INDEPENDENTLY AND SECURELY MOUNTED SO THEY ARE NOT DEPENDENT ON CEILING FINISH FOR SUPPORT AND CAN NOT BE ROTATED OR DISPLACED. FIXTURES AND DEVICES MOUNTED IN SUSPENDED ACOUSTICAL CEILING TILE SHALL HAVE CHANNEL SUPPORTS ACROSS THE MAIN GRID RUNNERS OR GRID SUPPORTS SECURELY ANCHORED SO AS NOT TO CAUSE TILE TO SAG OR SO FIXTURE OR DEVICE CAN NOT BE LIFTED, ROTATED OR DISPLACED.
- ALL OPENINGS IN FIRE AND/OR SMOKE RATED WALLS, FLOORS, AND PARTITIONS FOR CONDUITS SHALL BE SEALED WITH RED FIRE RESISTANT FOAM OR PUTTY TO MAINTAIN THE FIRE AND/OR SMOKE RATING. ALL OPENINGS IN FIRE RATED AND/OR SMOKE WALLS, FLOORS, AND PARTITIONS FOR CABLING SHALL BE SEALED WITH WIREMOLD FLAMESTOPPER, STI E2-PATH, HILTI SPEED SLEEVE OR EQUIVALENT.
- RECEPTACLES/WIRING DEVICES SHALL NOT BE INSTALLED BACK-TO-BACK. INSTALL ON OPPOSITE SIDES OF WALL STUDS, WHERE DEVICES EXIST ALONG FIRE WALLS, COVER WITH UL LISTED PUTTY PACKS.
- REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF LIGHT FIXTURES, DIMENSIONAL LOCATION OF FIXTURES IN DRYWALL CEILING, ETC. LOCATION OF FLOOR BOXES AND RECEPTACLES, INCLUDING MOUNTING HEIGHTS. ALL RECEPTACLES AND COVER PLATE COLORS SHALL BE APPROVED BY ARCHITECT.
- OWNER RESERVES THE RIGHT TO RELOCATE ANY LIGHT FIXTURE, RECEPTACLE, ETC., BEFORE BEING INSTALLED 10'-0" FROM LOCATION AS SHOWN ON PLANS AT NO ADDITIONAL EXPENSE TO THE OWNER.
- NO CONDUIT OR CABLES SHALL BE INSTALLED EXPOSED IN FINISHED AREA. NON-CEILING AREA CONDUITS SHALL BE INSTALLED EXPOSED IN A NEAT WORKMAN LIKE MANNER AND SHALL BE PAINTED TO MATCH ADJACENT FINISHES.
- TELEPHONE, IT, AUDIO, VIDEO, SECURITY AND FIRE ALARM CABLE WIRING IN WALLS AND FLOOR SHALL BE ROUTED IN CONDUIT FROM DEVICE/JUNCTION BOX TO ABOVE AN ACCESSIBLE CEILING OR IN ATTIC SPACE; 1" EMT MINIMUM. NO SPLICING OF TELEPHONE OR DATA CABLES SHALL BE PERMITTED. ALL CABLES SHALL BE BUNDLED AND SUPPORTED FROM STRUCTURE ABOVE; NO MORE THAN 60" O.C. DO NOT LAY CABLES ON CEILING SYSTEM. PROVIDE J-HOOKS AND/OR CABLE TRAY SYSTEM. MAINTAIN 12" CLEARANCE ABOVE CEILING. COLOR CODE EACH CABLE BY USAGE.
- ALL SIGNAL AND CONTROL CABLES SHALL BE MINIMUM #18 STRANDED COPPER, UNLESS NOTED OTHERWISE. ALL CONNECTIONS AND SPLICES TO BE MADE BY USE OF "STA-KON" CONNECTORS AND TERMINAL STRIPS. PROVIDE SHORT CIRCUIT RATING OF REPLACEMENT EQUIPMENT TO MATCH EXISTING OR AS NOTED ON THESE DRAWINGS. PROVIDE ARC-FLASH LABEL FOR REPLACEMENT AND NEW EQUIPMENT. PROVIDE COORDINATION STUDY DEMONSTRATING NEW AND REPLACEMENT EQUIPMENT IS COORDINATED WITH EXISTING EQUIPMENT THAT IS IMMEDIATELY UPSTREAM AND DOWNSTREAM.
- FIRE ALARM SYSTEM REWORK SHALL BE BY A LICENSED FIRE ALARM CONTRACTOR. CONTRACTOR SHALL BE RESPONSIBLE FOR THE FINAL DESIGN.

GENERAL DEMOLITION NOTES

- THE ELECTRICAL CONTRACTOR SHALL REMOVE, CAP AND/OR RELOCATE EQUIPMENT, OUTLETS, CONDUIT, WIRE, TC, AS SHOWN AND SPECIFIED ON THE DRAWINGS, AND AS MAY BECOME NECESSARY BECAUSE OF EXISTING FIELD CONDITIONS. IT SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO VISIBLY EXAMINE ALL EXISTING WALLS DESIGNATED FOR REMOVAL OR MODIFICATION TO DETERMINE THE CONDUIT AND THE WIRING THAT WILL REQUIRE CAPPING AND/OR REMOVAL. THE CONTRACTOR SHALL BE HELD TO HAVING VISITED THE SITE AND TAKEN ALL EXISTING CONDITIONS INTO CONSIDERATION.
- PROTECT ADJACENT MATERIALS INDICATED TO REMAIN. INSTALL AND MAINTAIN DUST AND NOISE BARRIERS TO KEEP DIRT, DUST, AND NOISE FROM BEING TRANSMITTED TO ADJACENT AREAS. REMOVE PROTECTION AND BARRIERS AFTER DEMOLITION OPERATIONS ARE COMPLETE.
- LOCATE, IDENTIFY, AND PROTECT ELECTRICAL SERVICES PASSING THROUGH DEMOLITION AREA AND SERVING OTHER AREAS OUTSIDE THE DEMOLITION LIMITS. MAINTAIN SERVICES TO AREAS OUTSIDE DEMOLITION LIMITS. WHEN SERVICES MUST BE INTERRUPTED, INSTALL TEMPORARY SERVICES FOR AFFECTED AREAS.
- MAINTAIN AND PROTECT EXISTING BUILDING SERVICES WHICH TRANSIT THE AREA AFFECTED BY SELECTIVE DEMOLITION.
- MAINTAIN CIRCUIT CONTINUITY TO ALL EXISTING FIXTURES, EQUIPMENT, OUTLETS, ETC., TO REMAIN IN USE WHETHER NOTED ON THE PLANS OR NOT. FIELD VERIFY EXISTING ITEMS TO REMAIN IN USE. WIRING FOR EXISTING CIRCUITS WHICH MUST BE RE-ROUTED OR WHICH ARE PARTIALLY ABANDONED, SHALL BE RECONNECTED TO SERVICE THE REMAINING OUTLETS ON THE CIRCUIT.

ELECTRICAL SYMBOLS LEGEND

ELECTRICAL GENERAL NOTES

- ALL MOUNTING HEIGHTS ARE TO THE CENTER OF THE REFERENCED FIXTURE/DEVICE, UNLESS OTHERWISE NOTED.
- ALL MOUNTED HEIGHTS ARE STANDARD UNLESS OTHERWISE NOTED.

LIGHTING FIXTURE GENERAL NOTES

- ALPHA-NUMERIC DESIGNATIONS DENOTES TYPE; SEE LIGHTING FIXTURE SCHEDULE FOR DESCRIPTION.
- SEE LIGHTING FIXTURE SCHEDULE FOR FIXTURE DESCRIPTION AND MOUNTING HEIGHTS.

LIGHTING FIXTURES

A1	CEILING MOUNTED LUMINAIRE
B2	WALL MOUNTED LUMINAIRE
C3	CEILING MOUNTED OR PENDANT MOUNTED LUMINAIRE
D4	WALL MOUNTED LUMINAIRE
	CEILING MOUNTED (LEFT) AND WALL MOUNTED (RIGHT) EXIT SIGNS. SHADED PORTION INDICATES FACE; WITH DIRECTIONAL ARROW(S) AS INDICATED
	COMBINATION EXIT LIGHT WITH EMERGENCY LIGHTING HEADS
	WALL MOUNTED EMERGENCY LIGHT
	BOLLARD FIXTURE
	LIGHT POLE WITH SINGLE HEAD LUMINAIRE
	LIGHT POLE WITH MULTIPLE HEADS (NUMBER OF HEADS AS INDICATED BY SYMBOL)
	SHADING DENOTES NIGHT LIGHT (NL) FIXTURE
	SHADING DENOTES EMERGENCY LIGHT (EM) FIXTURE
	FIXTURE CIRCUITRY NOTATION: LB-1 - PANEL AND CIRCUIT NUMBER TO WHICH FIXTURE IS CONNECTED a,b - LETTER(S) OF SWITCH(ES) CONTROLLING FIXTURE NL - NIGHT LIGHT (UNSWITCHED CIRCUIT)

WIRING DEVICES

§ XX	SWITCH - "XX" INDICATES SWITCH TYPE, EACH TYPE IS DESCRIBED AS BELOW:	
2	DOUBLE POLE WALL SWITCH - AS ABOVE	D § DIMMER SWITCH - AS ABOVE, 1000 WATT RATING OR 0-10V AS REQUIRED
3	THREE-WAY SWITCH - AS ABOVE	OS § WALL MOUNTED OCCUPANCY SENSOR SWITCH - AS ABOVE. "OS2" INDICATES DUAL RELAY
4	FOUR-WAY SWITCH - AS ABOVE	FC § FAN CONTROL SWITCH - AS ABOVE
§	KEY OPERATED SWITCH - AS ABOVE	P § SWITCH WITH PILOT LIGHT - AS ABOVE
T	WALL BOX TIMER SWITCH - AS ABOVE	M § MANUAL MOTOR STARTER WITH OVERLOAD PROTECTION - MOUNT ON SIDE OF UNIT OR AT 46" AFF

D	DIMMER CONTROLLER, AS NOTED ON PLAN
TS	TIME SWITCH - MOUNT 60" AFF
PC/L	PHOTOCELL WALL MOUNTED (LEFT) OR CEILING MOUNTED (RIGHT)
LC	LIGHTING CONTROLLER
OS	CEILING MOUNTED OCCUPANCY SENSOR SWITCH. "OS2" INDICATES DUAL RELAY
VS	JUNCTION BOX OR POINT OF CONNECTION - MOUNT 18" AFF OR AT HEIGHT REQUIRED BY RESPECTIVE EQUIPMENT ITEM MFR
	CEILING MOUNTED VACCANCY SENSOR. MANUAL ON/OFF
	DUPLEX RECEPTACLE - MOUNT 18" AFF
	QUADPLEX RECEPTACLE - AS ABOVE
	SINGLEPLEX RECEPTACLE - AS ABOVE
	DUPLEX RECEPTACLE AS ABOVE - SPLIT WIRED, TOP HALF SWITCHED
	GFI DUPLEX RECEPTACLE - AS ABOVE
	GFI QUADPLEX RECEPTACLE - AS ABOVE
	CEILING MOUNTED DUPLEX RECEPTACLE, FLUSH IN CEILING
	FLOOR MOUNTED DUPLEX RECEPTACLE WITH BRASS PLATE AND CARPET FLANGE
	RECEPTACLE - "XX" INDICATES RECEPTACLE TYPE, EACH TYPE IS DESCRIBED BELOW: AC - ABOVE COUNTER RECEPTACLE - AS ABOVE, 42" AFF UNLESS NOTED OTHERWISE CR - CONTROLLED RECEPTACLE GFI - GROUND FAULT CURRENT INTERRUPTING HG - HOSPITAL GRADE TP - TEMPER PROOF USB - RECEPTACLE WITH USB OUTLETS WP - WEATHER PROOF
	SPECIAL PURPOSE OUTLET - AS ABOVE. TYPE AS REQUIRED BY RESPECTIVE EQUIPMENT MFR
	PLUG-IN STRIP - AS ABOVE
	COMBINATION POWER & DATA/VOICE FLOOR BOX OR POKE THRU - "FF" INDICATES FURNITURE FEED
	POWER POLE WITH 120 VOLT DUPLEX RECEPTACLES
	POWER POLE, TWO COMPARTMENT - ONE WITH 120 VOLT DUPLEX RECEPTACLES AND ONE WITH TELEPHONE OUTLETS
	POWER POLE, TWO COMPARTMENT - ONE WITH 120 VOLT DUPLEX RECEPTACLES AND ONE WITH DATA OUTLETS
	POWER POLE, TWO COMPARTMENT - ONE WITH 120 VOLT DUPLEX RECEPTACLES AND ONE WITH DATA AND TELEPHONE OUTLETS

MOTORS AND EQUIPMENT

30/20/3	DISCONNECT SWITCH, FUSED (LEFT) OR NON-FUSED (RIGHT) AS INDICATED - MOUNT 60" AFF. 30/20/3 INDICATES SWITCH AMPS/FUSE AMPS/POLES
	MOTOR STARTER, NEMA SIZE TO SUIT EQUIPMENT SERVED, WITH HAND-OFF-AUTO SELECTOR SWITCH
	COMBINATION MOTOR STARTER, AS ABOVE AND DISCONNECT SWITCH
	ENCLOSED CIRCUIT BREAKER; AMPS/POLES RATING AS INDICATED
	CONTROL PANEL FOR EQUIPMENT ITEM INDICATED ON PLAN
	VARIABLE FREQUENCY DRIVE FOR EQUIPMENT ITEM INDICATED ON PLAN
	MULTIPLE PUSH BUTTONS - MOUNT 46" AFF, AS INDICATED
	ELECTRIC MOTOR
	NEW BRANCH CIRCUIT PANELBOARD - MOUNT TOP 78" AFF
	EXISTING BRANCH CIRCUIT PANELBOARD
	SWITCHBOARD, DISTRIBUTION PANEL OR MOTOR CONTROL CENTER
	DRY-TYPE TRANSFORMER
	KILOWATT HOUR METER BASE

CIRCUITRY DESIGNATIONS

	BRANCH CIRCUITRY: ARROW INDICATES HOME RUN TO PANEL. SHORT SLASH MARKS INDICATE "HOT" WIRES, LONG SLASH MARK INDICATES "NEUTRAL" WIRE, LONG SLASH WITH SOLID CIRCLE INDICATES GREEN GROUNDING CONDUCTOR
	BRANCH CIRCUITRY AS ABOVE, CONCEALED IN FLOOR SLAB OR UNDERGROUND
	BRANCH CIRCUITRY AS ABOVE, CONCEALED IN WALLS OR ABOVE CEILINGS
	CIRCUITRY UP (LEFT) AND CIRCUITRY DOWN (RIGHT)

AUXILIARY SYSTEMS

S	SPEAKER - CEILING MOUNTED
SM	SPEAKER - WALL MOUNT 84" AFF
INT	SPEAKER - CEILING MOUNTED SOUND MASKING
V	INTERCOM STATION - MOUNT 46" AFF
M	VOLUME CONTROL - MOUNT 46" AFF
MT	DUPLEX MICROPHONE OUTLET - MOUNT 18" AFF
M	DUPLEX MICROPHONE OUTLET - FLOOR MOUNTED
TC	MICROPHONE OUTLET - CEILING MOUNTED FOR CORD HUNG DEVICE
	TIME CLOCK
	PUSHBUTTON, TRIPLE (LEFT) AND SINGLE (RIGHT) AS INDICATED - MOUNT 46" AFF
	BELL - MOUNT 84" AFF
	VOICE OUTLET - MOUNT 18" AFF; W INDICATES WALL MOUNT 46" AFF
	DATA OUTLET - MOUNT 18" AFF
	FLOOR MOUNTED DATA OUTLET
	COMBINATION VOICE & DATA OUTLET - MOUNT 18" AFF
	FLOOR MOUNTED COMBINATION VOICE & DATA OUTLET
	WIRELESS ACCESS POINT - CEILING MOUNTED
	TELEPHONE TERMINAL BOARD - 3/4" FIRE RETARDANT PLYWOOD, 4' x 8'
	TELEPHONE TERMINAL CABINET 24" x 36" x 6" (UNO) WITH FIRE RETARDANT PLYWOOD BACK AND HINGED DOOR WITH KEY LOCK
	RECESSED T.V. OUTLET - MOUNT BEHIND TV LOCATION
	CLOCK OUTLET - MOUNT 78" AFF
	GENERATOR ANNUNCIATOR PANEL

ONE-LINE DIAGRAMS

	TRANSFORMER
	CURRENT TRANSFORMER
	POTENTIAL TRANSFORMER
	PANEL (1 OR 2 SECTIONS AS INDICATED)
	FUSE - 30 = DISCONNECT SWITCH AMP RATING (20) = FUSE RATING
	MOLDED CASE CIRCUIT BREAKER - 30 = AMP FRAME "AF" RATING (20) = AMP FRAME "AT" RATING
	CIRCUIT BREAKER, DRAWOUT TYPE - AS ABOVE
	KILOWATT HOUR METER
	SHUNT TRIP
	GROUND FAULT RELAY
	GROUND FAULT PROTECTION
	AUTOMATIC TRANSFER SWITCH
	POTHEAD
	STRESS CONES
	LIGHTNING ARRESTER
	VOLTMETER
	VOLTMETER SWITCH
	AMMMETER
	AMMMETER SWITCH
	PLUG-IN DISCONNECT SWITCH, FUSED: 30 = DISCONNECT SWITCH AMP RATING (20) = FUSE RATING
	MOTOR STARTER, SINGLE SPEED, 0 = STARTER SIZE
	MOTOR STARTER, MULTIPLE SPEED, 0 = STARTER SIZE
	ALTERNATING MOTOR CONTROLLER
	KIRK KEY INTERLOCK

SECURITY SYSTEM

IAP	INTRUSION ALARM PANEL
KP	KEY PAD
MD	MOTION DETECTOR
C	DOOR CONTACT
DH	MAGNETIC DOOR HOLD
PP	PUSH PLATE
ADO	AUTOMATIC DOOR OPERATOR
CR	CARD READER/PROX READER
SCP	SECURITY CONTROL PANEL
RTE	REQUEST TO EXIT
IC	INTERCOM
ES	ELECTRIC STRIKE (FURNISHED BY DIVISION 8)
EH	ELECTRIFIED HARDWARE (FURNISHED BY DIVISION 8)
ML	MAGNETIC LOCK (FURNISHED BY DIVISION 8)
GB	GLASS BREAK SENSOR
	VIDEO SURVEILLANCE CAMERA
A	DURESS/HOLD UP ALARM
P	PANIC BUTTON
PB	PUSH BUTTON

NURSE CALL SYSTEMS

N	NURSE CALL PUSH BUTTON, UNLESS NOTED OTHERWISE
NCPP	NURSE CALL CONTROL PANEL
	NURSE CALL LIGHT MOUNTED AT 90" UNLESS NOTED OTHERWISE

FIRE ALARM SYSTEM

FACP	FIRE ALARM CONTROL PANEL - MOUNT TOP 72" AFF
FAAP	FIRE ALARM ANNUNCIATOR PANEL - MOUNT TOP 72" AFF
DACP	DIGITAL ALARM COMMUNICATOR TRANSMITTER
FAPS	FIRE ALARM POWER SUPPLY - MOUNTED 72" AFF
F	MANUAL PULL STATION - MOUNT 46" AFF
SD	SMOKE DETECTOR - CEILING MOUNTED
SS	SINGLE STATION SMOKE ALARM - CEILING MOUNTED - "CO" INDICATES COMBINATION CARBON MONOXIDE ALARM
SD	DUCT MOUNTED SMOKE DETECTOR WITH SAMPLING TUBES
F	DUCT MOUNTED SMOKE DETECTOR'S REMOTE ANNUNCIATOR LAMP AND TEST SWITCH-MOUNT ON CEILING, (UNO)
H	HEAT DETECTOR - CEILING MOUNTED
CO	CARBON MONOXIDE DETECTOR - CEILING MOUNTED
W	WALL MOUNTED VISUAL STROBE - MOUNT 80" AFF TO BOTTOM OF FLASHER; (NUMERALS INDICATE CANDELA)
W	WALL MOUNTED HORN OR SPEAKER - MOUNT 80" AFF; SHADING DENOTES COMBINATION AUDIBLE/VISUAL APPLIANCE (NUMERALS INDICATE CANDELA)
W	VISUAL STROBE - CEILING MOUNTED; (NUMERALS INDICATE CANDELA). FINISH TO MATCH CEILING
W	HORN OR SPEAKER - CEILING MOUNTED; SHADING DENOTES COMBINATION AUDIBLE/VISUAL APPLIANCE. (NUMERALS INDICATE CANDELA). FINISH TO MATCH CEILING
W	CHIME - MOUNT 90" AFF, AS ABOVE
F	EXTERIOR FA BELL - MOUNT 90" AFF
F	FIRE ALARM MAGNETIC DOOR HOLDER
R	INTERFACE RELAY FOR CODE REQUIRED ACTION, OR AS NOTED ON PLANS; SEE SPECIFICATION
CM	CONTROL MODULE FOR CODE REQUIRED ACTION; SEE SPECIFICATION
MM	MONITOR MODULE FOR CODE REQUIRED ACTION, OR AS NOTED ON PLANS; SEE SPECIFICATION
TS	SPRINKLER TAMPER SWITCH (FURNISHED BY FPC)
FS	SPRINKLER FLOW SWITCH (FURNISHED BY FPC)
PS	SPRINKLER PRESSURE SWITCH (FURNISHED BY FPC)

ABBREVIATIONS

AC	ABOVE COUNTER; +42" AFF UNLESS NOTED OTHERWISE
AIC	AMP INTERRUPTING CURRENT
AFC	AVAILABLE FAULT CURRENT
AFF	ABOVE FINISHED FLOOR
AFIA/FCI	ARC FAULT CIRCUIT INTERRUPTER TYPE DEVICE
ATS	AUTOMATIC TRANSFER SWITCH
CATV	CABLE TELEVISION
EC	ELECTRICAL CONTRACTOR
ELEV	ELEVATOR CONTRACTOR
EM	EMERGENCY
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
EX	EXISTING
FLA	FULL LOAD AMPS
FPC	FIRE PROTECTION CONTRACTOR
FSS	FUSIBLE SAFETY SWITCH
GC	GENERAL CONTRACTOR
GF/GFCI	GROUND FAULT CIRCUIT INTERRUPTER TYPE DEVICE
HID	HIGH INTENSITY DISCHARGE
IG	ISOLATED GROUND TYPE DEVICE
KEC	KITCHEN EQUIPMENT CONTRACTOR
MAX	MAXIMUM
MC	MECHANICAL CONTRACTOR
MFR	MANUFACTURER
MH	MOUNTING HEIGHT
MIN	MINIMUM
NF	NON-FUSED SWITCH
NTS	NOT TO SCALE
PC	PLUMBING CONTRACTOR
RT	RAINTIGHT
TP	TAMPER PROOF TYPE DEVICE
TCC	TEMPERATURE CONTROL CONTRACTOR
Typ	TYPICAL
UNO	UNLESS NOTED OTHERWISE
UPS	UNINTERRUPTABLE POWER SUPPLY
USB	UNIVERSAL SERIES BUS PORT
WP	WEATHERPROOF

MISCELLANEOUS

XX #	MECHANICAL EQUIPMENT ITEM IDENTIFICATION PER EQUIPMENT SCHEDULE ON DRAWINGS
	MISCELLANEOUS EQUIPMENT NUMBER. SEE MISCELLANEOUS EQUIPMENT SCHEDULE
#	KEYNOTE SYMBOL

STATE OF MISSOURI MIKE KEHOE GOVERNOR

CASCO DIVERSIFIED CORPORATION
ENGINEERING
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EXP. DATE: 12/31/2027



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LICENSE #: 2017000321
EXP. DATE: 12/31/2027

CASCO
12 SUMNER DRIVE, SUITE 100, ST. LOUIS, MO 63104
T 314-821-1100

OFFICE OF ADMINISTRATION DIVISION OF FACILITIES MANAGEMENT, DESIGN AND CONSTRUCTION

DEPARTMENT OF MISSOURI NATIONAL GUARD

INTERIOR AND EXTERIOR RENOVATION

JEFFERSON BARRACKS
READINESS CENTER
74 KEARNEY ST.
ST. LOUIS, MO 63125

PROJECT # T2504-03 SITE # 6303 FACILITY #8136303050

REVISIONS

No.	Description	Date
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ISSUE DATE:08/04/2026

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DRAWN BY: MHK
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DESIGNED BY: MHK

SHEET TITLE:

ELECTRICAL GENERAL NOTES & ABBREVIATIONS

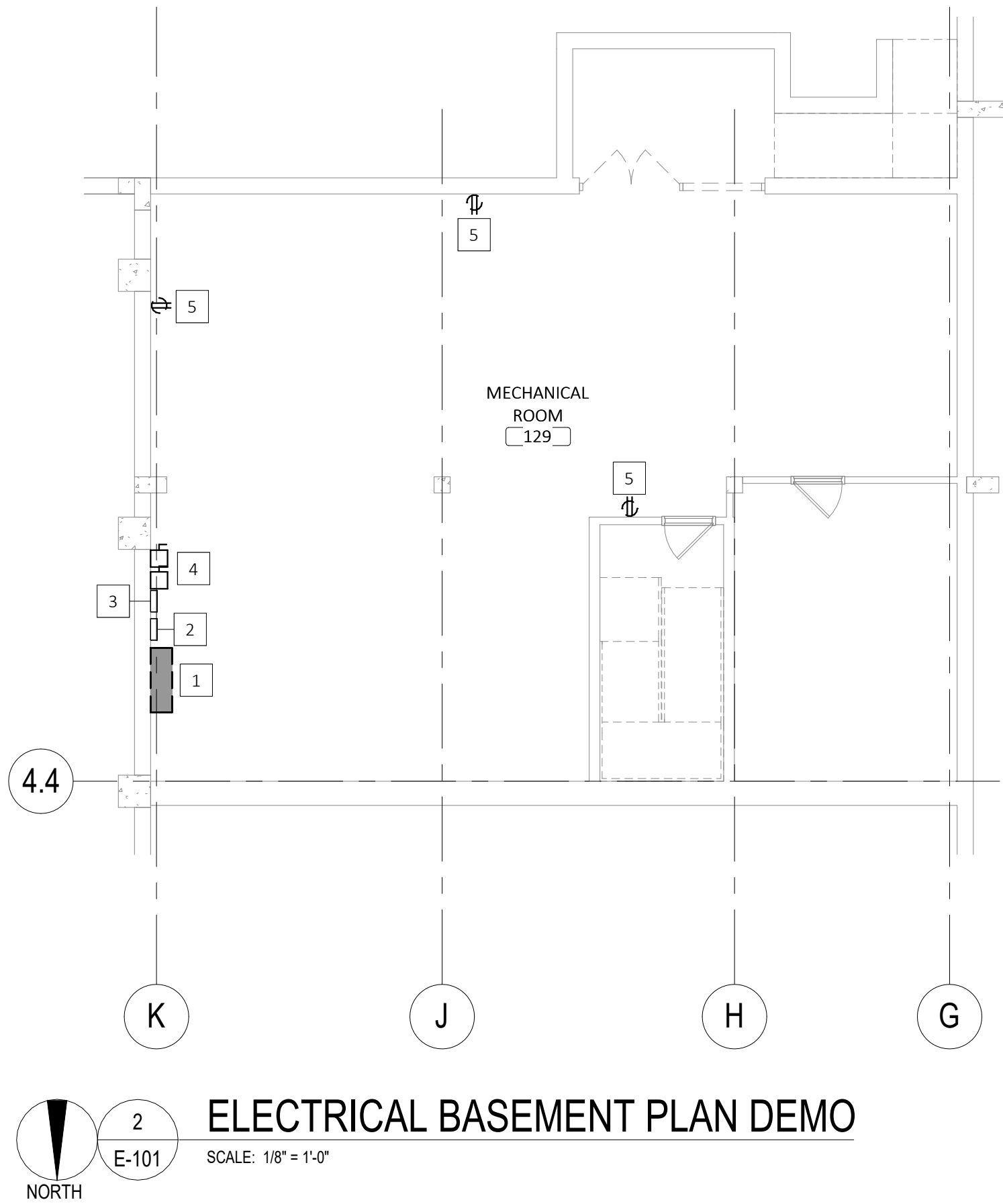
SHEET NUMBER:

E-001

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08/04/2026

- GENERAL DEMOLITION NOTES:
- A. VERIFY EXISTING CONDITIONS - CONTRACTOR SHALL FIELD VERIFY ALL EXISTING ELECTRICAL EQUIPMENT, WIRING, AND DEVICE LOCATIONS PRIOR TO THE START OF DEMOLITION. WHERE DISCREPANCIES EXIST BETWEEN DRAWINGS AND FIELD CONDITIONS, NOTIFY THE ENGINEER BEFORE PROCEEDING.
 - B. SHUTDOWN COORDINATION - COORDINATE ALL ELECTRICAL SHUTDOWNS WITH THE OWNER A MINIMUM OF 72 HOURS IN ADVANCE. SHUTDOWNS AFFECTING OCCUPIED SPACES SHALL OCCUR OUTSIDE OF OCCUPIED HOURS UNLESS OTHERWISE APPROVED.
 - C. PROTECTION OF ACTIVE SYSTEMS - MAINTAIN OPERATION OF EXISTING CIRCUITS SERVING OCCUPIED OR UNAFFECTED AREAS OF THE BUILDING. PROVIDE TEMPORARY SUPPORTS FOR CONDUITS, CABLE TRAYS, AND EQUIPMENT THAT REMAIN IN SERVICE DURING DEMOLITION. PROTECT EXISTING FIRE ALARM, SECURITY, IT, AND EMERGENCY/EGRESS LIGHTING CIRCUITS UNLESS SPECIFICALLY NOTED FOR REMOVAL.
 - D. SELECTIVE DEMOLITION - REMOVE ONLY WIRING, DEVICES, RACEWAYS, AND EQUIPMENT INDICATED ON PLANS TO BE REMOVED. WIRING THAT IS DE-ENERGIZED AND ABANDONED SHALL BE FULLY REMOVED BACK TO THE NEAREST ACCESSIBLE JUNCTION BOX OR PANEL. DO NOT LEAVE ABANDONED WIRING IN CEILINGS OR WALLS. WHERE DEMOLITION RESULTS IN EXPOSED JUNCTION BOXES THAT REMAIN, INSTALL BLANK, CODE-APPROVED COVERS.
 - E. DE-ENERGIZATION & SAFETY - LOCKOUT/TAGOUT PROCEDURES ARE MANDATORY FOR ALL CIRCUIT REMOVAL WORK. VERIFY CIRCUITS ARE FULLY DE-ENERGIZED BEFORE REMOVAL. CONFIRM PRESENCE OF SHARED NEUTRALS, MULTI-WIRE BRANCH CIRCUITS, AND EMERGENCY CIRCUITS BEFORE DISCONNECTING.
 - F. REUSE / SALVAGE - SALVAGE AND TURN OVER TO OWNER ANY FIXTURES, DEVICES, PANELS, AND EQUIPMENT IDENTIFIED AS "TO BE SALVAGED" ON DRAWINGS. EQUIPMENT NOT DESIGNATED FOR SALVAGE SHALL BE PROPERLY DISPOSED OF IN ACCORDANCE WITH LOCAL CODES AND RECYCLING REQUIREMENTS.
 - G. LIGHTING AND EMERGENCY SYSTEMS - MAINTAIN EMERGENCY LIGHTING AND EGRESS LIGHTING AT ALL TIMES DURING DEMOLITION. ANY TEMPORARY LIGHTING REQUIRED FOR SAFE WORKING CONDITIONS SHALL BE PROVIDED AND MAINTAINED BY THE CONTRACTOR.
 - H. FIRE ALARM / SECURITY / LOW VOLTAGE - COORDINATE DEMOLITION OF FIRE ALARM, ACCESS CONTROL, CCTV, DATA/TELECOM, AND OTHER LOW-VOLTAGE SYSTEMS WITH THE RESPECTIVE SYSTEM VENDORS AND SECURITY. DO NOT DISTURB FIRE ALARM SYSTEM WIRING WITHOUT APPROVAL. ACCIDENTAL DISCONNECTION WILL REQUIRE FULL TESTING AND RECERTIFICATION AT CONTRACTOR EXPENSE.
 - I. PENETRATIONS AND FIRESTOPPING - ANY DEMOLISHED CONDUIT, SLEEVING, OR CABLE PENETRATIONS THROUGH FIRE-RATED ASSEMBLIES SHALL BE REPAIRED AND FIRESTOPPED TO MATCH THE ORIGINAL RATING.
 - J. DEMOLITION DOCUMENTATION - IDENTIFY AND MARK ALL CIRCUITS AND PANELBOARD DIRECTORIES AFFECTED BY DEMOLITION. UPDATE PANEL SCHEDULES TO REMOVE REFERENCES TO CIRCUITS AND EQUIPMENT NO LONGER IN USE.

- ☒ ELECTRICAL DEMO KEYNOTES
- EXISTING 800A, 208V, 3PH/4W, FRANK ADAMS MAIN DISTRIBUTION PANELBOARD TO BE REMOVED AND REPLACED WITH NEW DISTRIBUTION PANELBOARD. REFER TO RISER DIAGRAM ON DRAWING E-501 FOR FULL SCOPE OF WORK.
 - EXISTING PANELBOARD E1 TO BE REMOVED. REFER TO RISER DIAGRAM ON DRAWING E-501 FOR FULL SCOPE OF WORK.
 - EXISTING PANELBOARD L1 TO BE REMOVED AND REPLACED WITH NEW PANELBOARD. REFER TO RISER DIAGRAM ON DRAWING E-501 FOR FULL SCOPE OF WORK.
 - REMOVE THE (2) FUSED DISCONNECT SWITCHES SERVING THE (2) EXISTING ROOFTOP UNITS WHICH CONDITION THE GYMNASIUM. MAKE EXISTING RTU WIRING READY FOR CONNECTION TO NEW MAIN DISTRIBUTION PANELBOARD.
 - REPLACE EXISTING RECEPTACLES IN PLACE WITH NEW GFCI TYPE RECEPTACLES AND RECONNECT TO EXISTING CIRCUIT. REFER TO DRAWING E-106.



ELECTRICAL BASEMENT PLAN DEMO
SCALE: 1/8" = 1'-0"

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CASCO
12 SUMNER DRIVE, SUITE 100, ST. LOUIS, MO 63143
T 314-621-1100

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SITE # 6303
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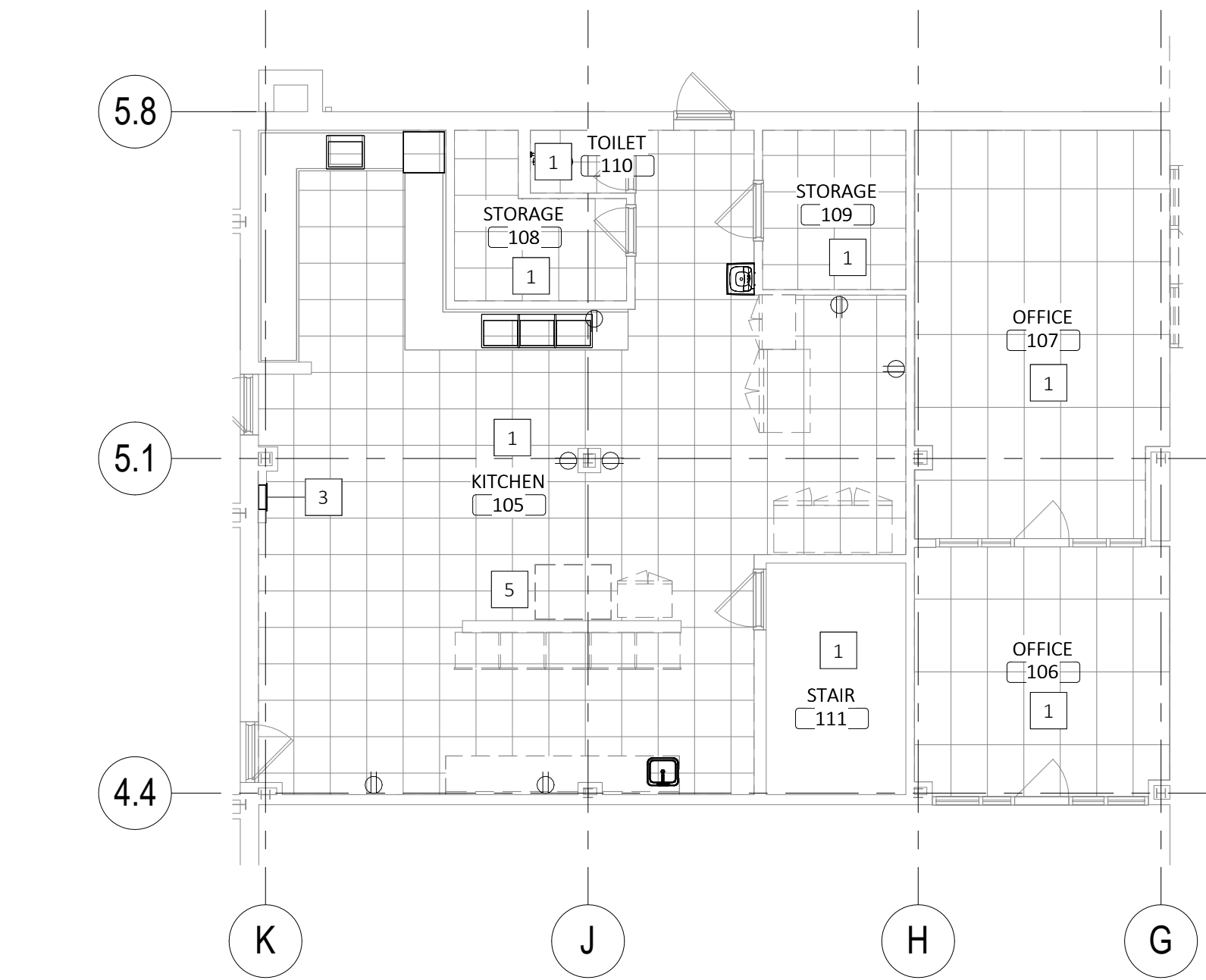
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SHEET TITLE:
ELECTRICAL BASEMENT
DEMO PLAN

SHEET NUMBER:

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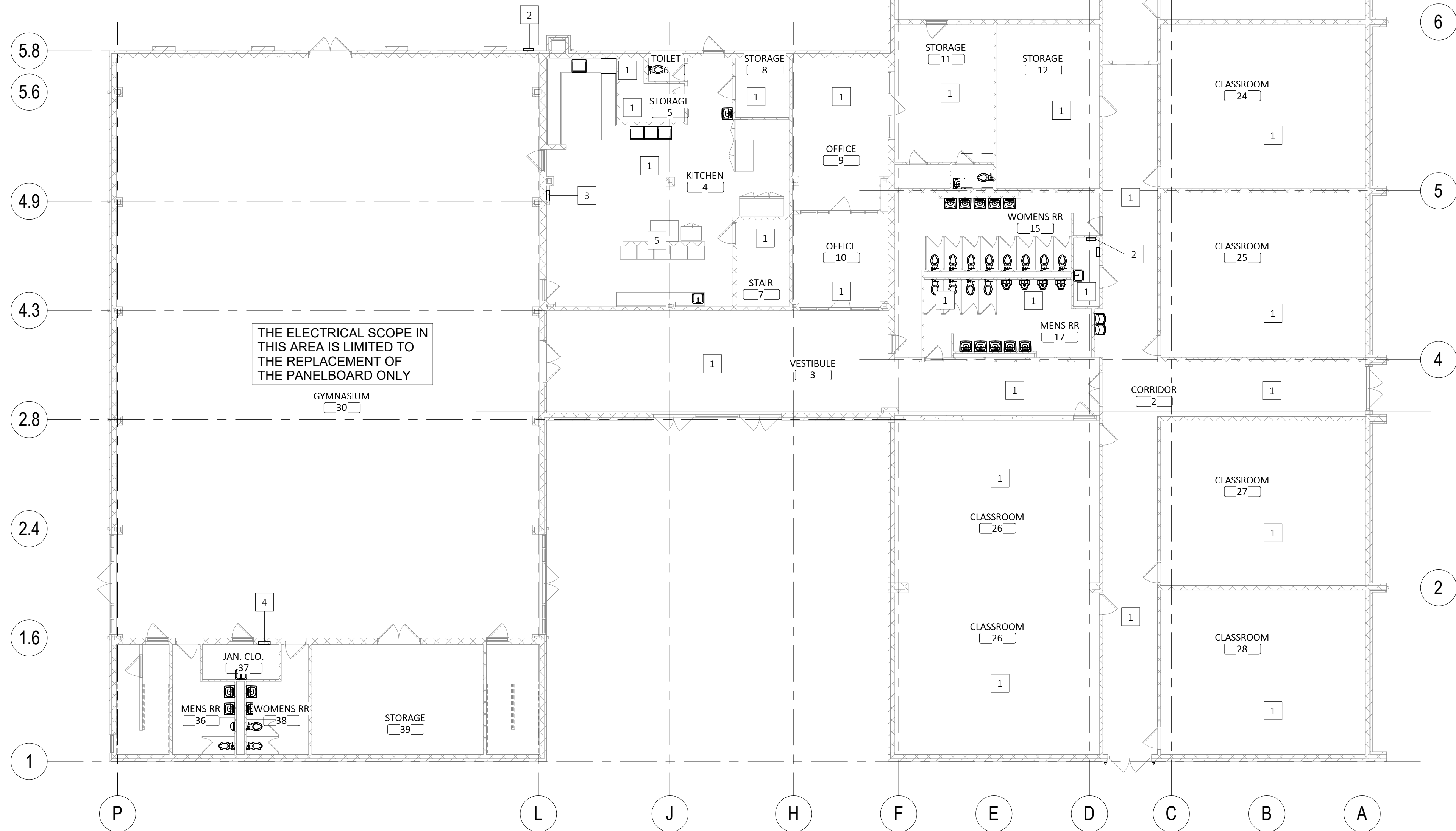
SHEET 42 OF 51
08/04/2026



E-102

ENLARGED ELECTRICAL KITCHEN PLAN DEMO

SCALE: 1/8" = 1'-0"



E-102

ELECTRICAL FIRST FLOOR PLAN DEMO

SCALE: 3/32" = 1'-0"

GENERAL DEMOLITION NOTES:

- VERIFY EXISTING CONDITIONS - CONTRACTOR SHALL FIELD VERIFY ALL EXISTING ELECTRICAL EQUIPMENT, WIRING, AND DEVICE LOCATIONS PRIOR TO THE START OF DEMOLITION. WHERE DISCREPANCIES EXIST BETWEEN DRAWINGS AND FIELD CONDITIONS, NOTIFY THE ENGINEER BEFORE PROCEEDING.
- SHUTDOWN COORDINATION - COORDINATE ALL ELECTRICAL SHUTDOWNS WITH THE OWNER A MINIMUM OF 72 HOURS IN ADVANCE. SHUTDOWNS AFFECTING OCCUPIED SPACES SHALL OCCUR OUTSIDE OF OCCUPIED HOURS UNLESS OTHERWISE APPROVED.
- PROTECTION OF ACTIVE SYSTEMS - MAINTAIN OPERATION OF EXISTING CIRCUITS SERVING OCCUPIED OR UNAFFECTED AREAS OF THE BUILDING. PROVIDE TEMPORARY SUPPORTS FOR CONDUITS, CABLE TRAYS, AND EQUIPMENT THAT REMAIN IN SERVICE DURING DEMOLITION. PROTECT EXISTING FIRE ALARM, SECURITY, IT, AND EMERGENCY/EGRESS LIGHTING CIRCUITS UNLESS SPECIFICALLY NOTED FOR REMOVAL.
- SELECTIVE DEMOLITION - REMOVE ONLY WIRING, DEVICES, RACEWAYS, AND EQUIPMENT INDICATED ON PLANS TO BE REMOVED. WIRING THAT IS DE-ENERGIZED AND ABANDONED SHALL BE FULLY REMOVED BACK TO THE NEAREST ACCESSIBLE JUNCTION BOX OR PANEL. DO NOT LEAVE ABANDONED WIRING IN CEILINGS OR WALLS. WHERE DEMOLITION RESULTS IN EXPOSED JUNCTION BOXES THAT REMAIN, INSTALL BLANK, CODE-APPROVED COVERS.
- DE-ENERGIZATION & SAFETY - LOCKOUT/TAGOUT PROCEDURES ARE MANDATORY FOR ALL CIRCUIT REMOVAL WORK. VERIFY CIRCUITS ARE FULLY DE-ENERGIZED BEFORE REMOVAL. CONFIRM PRESENCE OF SHARED NEUTRALS, MULTI-WIRE BRANCH CIRCUITS, AND EMERGENCY CIRCUITS BEFORE DISCONNECTING.
- REUSE / SALVAGE - SALVAGE AND TURN OVER TO OWNER ANY FIXTURES, DEVICES, PANELS, AND EQUIPMENT IDENTIFIED AS 'TO BE SALVAGED' ON DRAWINGS. EQUIPMENT NOT DESIGNATED FOR SALVAGE SHALL BE PROPERLY DISPOSED OF IN ACCORDANCE WITH LOCAL CODES AND RECYCLING REQUIREMENTS.
- LIGHTING AND EMERGENCY SYSTEMS - MAINTAIN EMERGENCY LIGHTING AND EGRESS LIGHTING AT ALL TIMES DURING DEMOLITION. ANY TEMPORARY LIGHTING REQUIRED FOR SAFE WORKING CONDITIONS SHALL BE PROVIDED AND MAINTAINED BY THE CONTRACTOR.
- FIRE ALARM / SECURITY / LOW VOLTAGE - COORDINATE DEMOLITION OF FIRE ALARM, ACCESS CONTROL, CCTV, DATA/TELECOM, AND OTHER LOW-VOLTAGE SYSTEMS WITH THE RESPECTIVE SYSTEM VENDORS AND SECURITY. DO NOT DISTURB FIRE ALARM SYSTEM WIRING WITHOUT APPROVAL. ACCIDENTAL DISCONNECTION WILL REQUIRE FULL TESTING AND RECERTIFICATION AT CONTRACTOR EXPENSE.
- PENETRATIONS AND FIRESTOPPING - ANY DEMOLISHED CONDUIT, SLEEVING, OR CABLE PENETRATIONS THROUGH FIRE-RATED ASSEMBLIES SHALL BE REPAIRED AND FIRESTOPPED TO MATCH THE ORIGINAL RATING.
- DEMOLITION DOCUMENTATION - IDENTIFY AND MARK ALL CIRCUITS AND PANELBOARD DIRECTORIES AFFECTED BY DEMOLITION. UPDATE PANEL SCHEDULES TO REMOVE REFERENCES TO CIRCUITS AND EQUIPMENT NO LONGER IN USE.

ELECTRICAL DEMO KEYNOTES

- EC SHALL DEMOLISH EXISTING LIGHTING FIXTURES THROUGHOUT THE PROJECT EXTENTS.
- EC SHALL DEMOLISH EXISTING PANELBOARD AND ASSOCIATED BRANCH CIRCUITS.
- EC SHALL DEMOLISH EXISTING KITCHEN PANELBOARD AND MAKE READY FOR NEW PANELBOARD IN THE SAME LOCATION. EXISTING BRANCH CIRCUITS SHALL BE RECONNECTED TO THE NEW PANELBOARD. REFER TO RISER DIAGRAM AND ENLARGED POWER PLAN FOR FURTHER DETAILS.
- EC SHALL DEMOLISH THE EXISTING GYMNASIUM PANELBOARD AND MAKE READY FOR A NEW PANELBOARD IN THE SAME LOCATION. EXISTING BRANCH CIRCUITS SHALL BE RECONNECTED TO THE NEW PANELBOARD.
- THE EXISTING EXHAUST HOOD IS TO BE REMOVED AND REPLACED WITH NEW IN A DIFFERENT LOCATION IN THE KITCHEN. REMOVE ALL ASSOCIATED EXHAUST HOOD ELECTRICAL AND FIRE ALARM CONNECTIONS IN THEIR ENTIRETY.

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12 SUMNER DRIVE, SUITE 100, ST. LOUIS, MO 63143
T 314-621-1100

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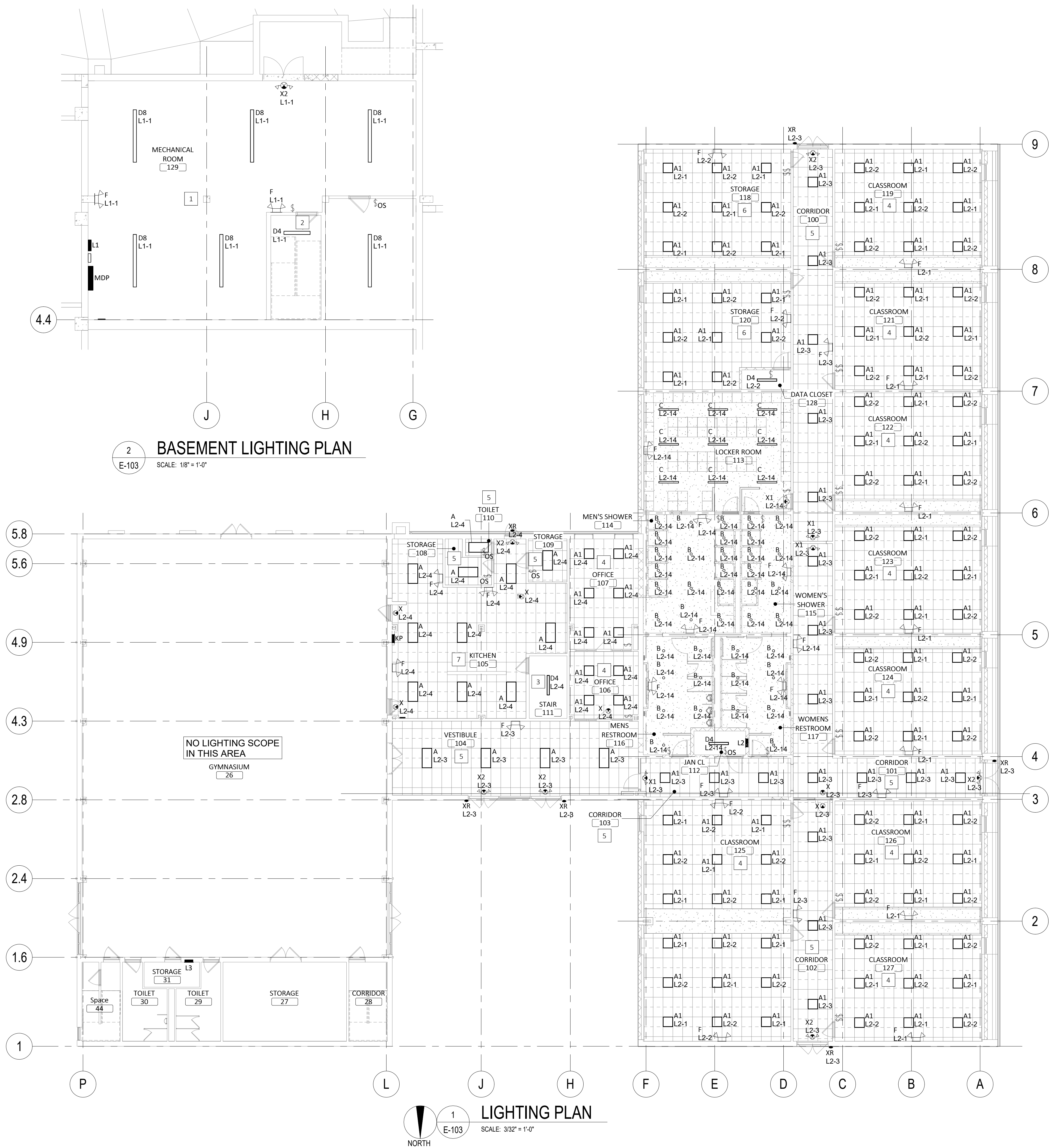
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SHEET TITLE:
ELECTRICAL FIRST FLOOR
DEMO PLAN

SHEET NUMBER:

E-102

SHEET 43 OF 51
08/04/2026



2 BASEMENT LIGHTING PLAN
E-103 SCALE: 1/8" = 1'-0"

1 LIGHTING PLAN
E-103 SCALE: 3/32" = 1'-0"

- GENERAL ELECTRICAL NOTES:
- A. ALL ELECTRICAL WORK SHALL COMPLY WITH THE LATEST ADOPTED EDITIONS OF THE 2023 NEC, 2024 IBC, NFPA 101, NFPA 110 AND NFPA 72. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL OTHER APPLICABLE STATE AND LOCAL CODES AS WELL AS ALL MISSOURI NATIONAL GUARD GUIDELINES.
 - B. PROVIDE NEW LIGHTING FIXTURES, CONTROLS, WIRING, CONDUIT, AND SUPPORTS AS SHOWN AND AS REQUIRED FOR A COMPLETE AND OPERATIONAL LIGHTING SYSTEM.
 - C. THE CONTRACTOR SHALL CONFIRM MOUNTING HEIGHTS, FIXTURE ORIENTATION, TRIM STYLES, AND CEILING CONDITIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO INSTALLATION.
 - D. PROVIDE UNSWITCHED 120V POWER TO EMERGENCY LIGHTING AND EXIT SIGNS.
 - E. MAINTAIN REQUIRED EGRESS AND TEMPORARY LIGHTING THROUGHOUT CONSTRUCTION. PROVIDE TEMPORARY LIGHTING WHERE EXISTING LIGHTING IS REMOVED PRIOR TO INSTALLATION OF NEW FIXTURES.
 - F. CONTRACTOR SHALL COORDINATE ALL FIXTURE SUPPORTS WITH THE CEILING MANUFACTURER AND STRUCTURAL CONDITIONS. PROVIDE ADDITIONAL SUPPORTS WHERE REQUIRED. DO NOT SUSPEND FIXTURES FROM CEILING TILES OR GRID.
 - G. VERIFY ALL LIGHT FIXTURE VOLTAGES AND DRIVER TYPES AGAINST PANEL SCHEDULES AND EQUIPMENT SUBMITTALS PRIOR TO INSTALLATION.

- X ELECTRICAL KEYNOTES
1. MOUNT TYPE D8 FIXTURES AT APPROXIMATELY 9' AFF. COORDINATE WITH EXISTING MECHANICAL AND PLUMBING PIPING AND DUCTWORK.
 2. MOUNT TYPE D4 TO UNDERSIDE OF STAIR LANDING.
 3. CENTER TYPE D4 IN STAIRWELL. SUSPENDED FROM STRUCTURE ABOVE TO 9' ABOVE UPPER STAIRWELL LANDING.
 4. SELECT HIGH LUMEN OUTPUT FOR TYPE A1 LIGHT FIXTURES IN THIS SPACE.
 5. SELECT MEDIUM LUMEN OUTPUT FOR TYPE A1 LIGHT FIXTURES IN THIS SPACE.
 6. SELECT LOW LUMEN OUTPUT FOR TYPE A1 LIGHT FIXTURES IN THIS SPACE.
 7. SELECT HIGH LUMEN OUTPUT FOR KITCHEN TYPE A LIGHT FIXTURES.

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FACILITY #8136303050

REVISIONS		
No.	Description	Date

ISSUE DATE:08/04/2026

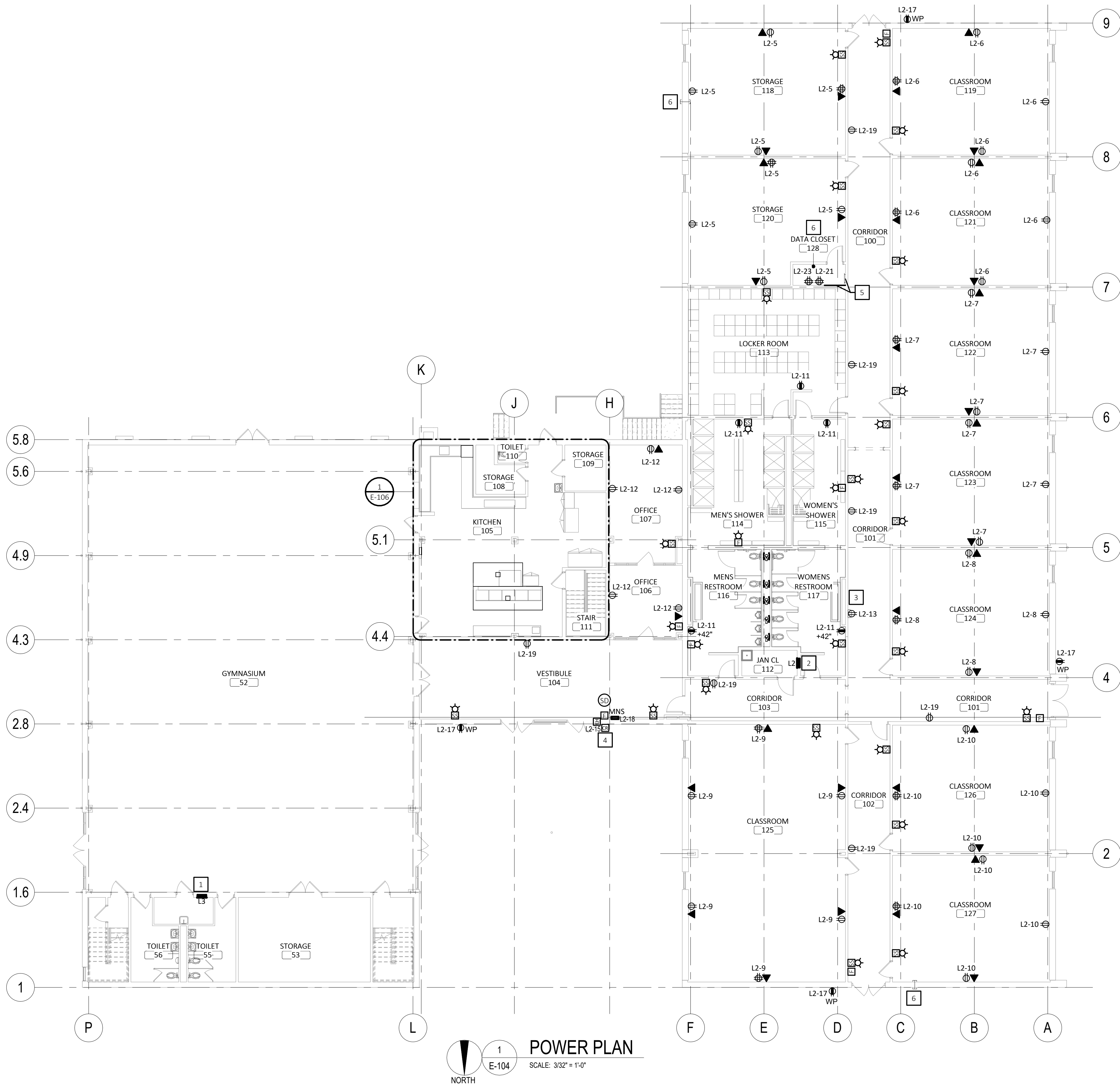
DWG FILE #: 2605562
DRAWN BY: MHK
CHECKED BY: WJK
DESIGNED BY: MHK

SHEET TITLE:
LIGHTING PLAN

SHEET NUMBER:

E-103

SHEET 44 OF 51
08/04/2026



GENERAL ELECTRICAL NOTES:

- ALL ELECTRICAL WORK SHALL COMPLY WITH THE LATEST ADOPTED EDITIONS OF THE 2023 NEC, 2024 IBC, NFPA 101, NFPA 110 AND NFPA 72. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL OTHER APPLICABLE STATE AND LOCAL CODES AS WELL AS ALL MISSOURI NATIONAL GUARD GUIDELINES.
- THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING ELECTRICAL CONDITIONS PRIOR TO INSTALLATION.
- WHERE EXISTING CONDITIONS DIFFER FROM DRAWINGS OR CREATE CONFLICTS, NOTIFY THE ENGINEER BEFORE PROCEEDING.
- THE CONTRACTOR SHALL MAINTAIN OPERATION OF CIRCUITS SERVING OCCUPIED OR ADJACENT SPACES UNLESS OTHERWISE NOTED.
- COORDINATE WITH ARCHITECTURAL, MECHANICAL, PLUMBING, STRUCTURAL, AND OTHER TRADES TO AVOID CONFLICTS.
- COORDINATE POWER REQUIREMENTS, CONNECTION POINTS, AND DEVICE MOUNTING HEIGHTS WITH EQUIPMENT MANUFACTURERS.
- VERIFY ALL DEVICE MOUNTING LOCATIONS WITH ARCHITECTURAL INTERIOR ELEVATIONS AND ROOM LAYOUTS.
- COORDINATE ELECTRICAL SHUTDOWNS WITH OWNER MINIMUM OF 72 HOURS IN ADVANCE. SHUTDOWNS IMPACTING OCCUPIED DORM SPACES SHALL OCCUR DURING APPROVED TIME WINDOWS.
- PROVIDE NEW CIRCUITS, BREAKERS, SPACES, AND PANELBOARDS AS REQUIRED TO SUPPORT NEW WORK. UPDATE ALL PANEL SCHEDULES, DIRECTORIES, AND LABELING TO REFLECT FINAL CONDITIONS.
- ALL WIRING SHALL BE IN RIGID CONDUIT UNLESS SPECIFICALLY NOTED OTHERWISE. ALL ABANDONED WIRING SHALL BE REMOVED BACK TO THE NEAREST ACCESSIBLE JUNCTION BOX, PANELBOARD, OR SOURCE.
- MAINTAIN CONTINUITY OF THE GROUNDING AND BONDING SYSTEM THROUGHOUT CONSTRUCTION. GROUND ALL NEW EQUIPMENT PER NEC ARTICLE 250.
- MAINTAIN FIRE ALARM, EMERGENCY LIGHTING, EGRESS LIGHTING, AND LIFE SAFETY SYSTEMS ACTIVE AT ALL TIMES DURING CONSTRUCTION. ANY INTERRUPTIONS TO FIRE ALARM SYSTEMS SHALL BE COORDINATED WITH THE OWNER AND MONITORING SERVICE.
- COORDINATE FIRE ALARM, ACCESS CONTROL, CCTV, DATA/TELECOM, AND WI-FI CABLING WITH OWNER. PROVIDE CONDUITS, BOXES, AND SUPPORTS FOR ALL LOW VOLTAGE SYSTEMS UNLESS NOTED OTHERWISE. FINAL DEVICE INSTALLATION, PROGRAMMING, AND TESTING SHALL BE PERFORMED BY THE OWNER'S DESIGNATED VENDORS UNLESS NOTED.
- LABEL ALL NEW CIRCUITS, DEVICES, AND EQUIPMENT IN ACCORDANCE WITH NEC.
- PROVIDE RED-LINE/AS-BUILT MARKUPS DAILY AND FINAL UPDATED AS-BUILT DRAWINGS AT PROJECT COMPLETION. SUBMIT ALL O&M MANUALS, TEST REPORTS, AND EQUIPMENT DATA AT REQUEST FOR SUBSTANTIAL COMPLETION.

ELECTRICAL KEYNOTES

- PROVIDE AND CONNECT NEW PANELBOARD "L3". SEE DRAWINGS E-501 AND E-602 FOR DETAILS. RECONNECT ALL EXISTING BRANCH CIRCUITS. FIELD VERIFY THE CONTENTS OF THE EXISTING BRANCH CIRCUITS AND PROVIDE AN UPDATED CIRCUIT DIRECTORY. THE EXISTING PANELBOARD INCLUDES CONTACTORS AND A CONTROL SWITCH. FIELD VERIFY IF THE CONTACTORS AND CONTROL SWITCH ARE ACTIVE. IF ACTIVE, REPLACE AS REQUIRED TO KEEP THE EXISTING SYSTEM(S) COMPLETE AND OPERATIONAL.
- PROVIDE AND CONNECT NEW PANELBOARD "L2". SEE DRAWING E-501 FOR DETAILS.
- PROVIDE GFI CIRCUIT BREAKER FOR BRANCH CIRCUIT SERVING RECEPTACLE.
- PROVIDE BACKBOX ROUGH-IN WITH LOW VOLTAGE CABLING PATHWAY TO SECURITY HEAD END SYSTEM FOR ELECTRONIC CARD READER BY OWNER. PROVIDE 120V POWER TO ELECTRIFIED DOOR HARDWARE. SEE ARCHITECTURAL DOOR HARDWARE SCHEDULE FOR FURTHER DETAILS.
- PROVIDE 4' x 8' x 3/4" FIRE RETARDANT PLYWOOD BACKBOARD FOR LOW VOLTAGE SYSTEMS EQUIPMENT MOUNTING. COORDINATE WITH NATIONAL GUARD FOR LOCATION(S) AND QUANTITY. ADDITIONALLY, PROVIDE 12' x 2' x 1/4" COPPER TELECOMMUNICATIONS GROUNDING BUSBAR AND CONNECT TO THE BUILDING'S EXISTING GROUNDING ELECTRODE SYSTEM WITH #6 CU WIRE.
- COORDINATE EXACT LOCATIONS (TWO LOCATIONS) OF BUILDING ENTRY TELECOMMUNICATIONS CABLING WITH THE NATIONAL GUARD. PROVIDE WEATHERPROOF, FIRE RATED EXTERIOR WALL PENETRATING SLEEVE AND LOW VOLTAGE CABLING PATHWAY ABOVE ACCESSIBLE CEILING FROM BUILDING ENTRY LOCATIONS TO DATA CLOSET 128.

STATE OF MISSOURI
MIKE KEHOE
GOVERNOR

CASCO DIVERSIFIED CORPORATION
ENGINEERING
LICENSE # 000613
EXP. DATE: 12/31/2027



Professional of Record:
ELEC POR NAME: MARK KUHLMAN
LICENSE #: 2017000321
EXP. DATE: 12/31/2027

CASCO
12 SUMNER DRIVE, SUITE 100, ST. LOUIS, MO 63143
T 314-621-1100

OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES
MANAGEMENT,
DESIGN AND CONSTRUCTION

DEPARTMENT OF
MISSOURI NATIONAL
GUARD

INTERIOR AND EXTERIOR
RENOVATION

JEFFERSON BARRACKS
READINESS CENTER
74 KEARNEY ST.
ST. LOUIS, MO 63125

PROJECT # T2504-03
SITE # 6303
FACILITY #8136303050

REVISIONS

No.	Description	Date
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ISSUE DATE:08/04/2026

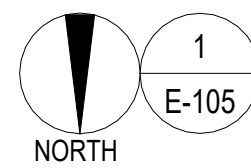
DWG FILE #: 2605562
DRAWN BY: MHK
CHECKED BY: WJK
DESIGNED BY: MHK

SHEET TITLE:
POWER AND SYSTEMS PLAN

SHEET NUMBER:

E-104

SHEET 45 OF 51
08/04/2026

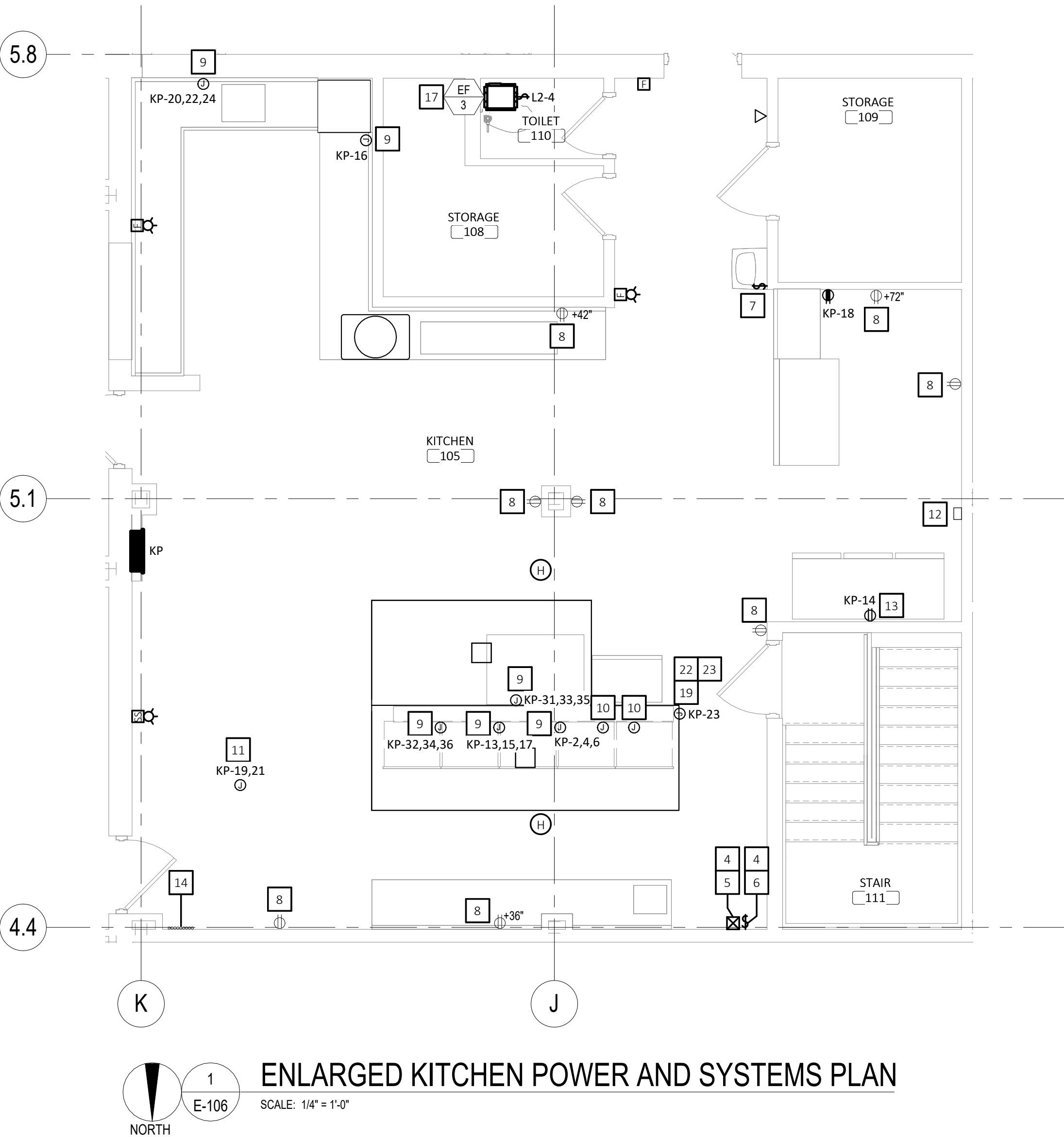
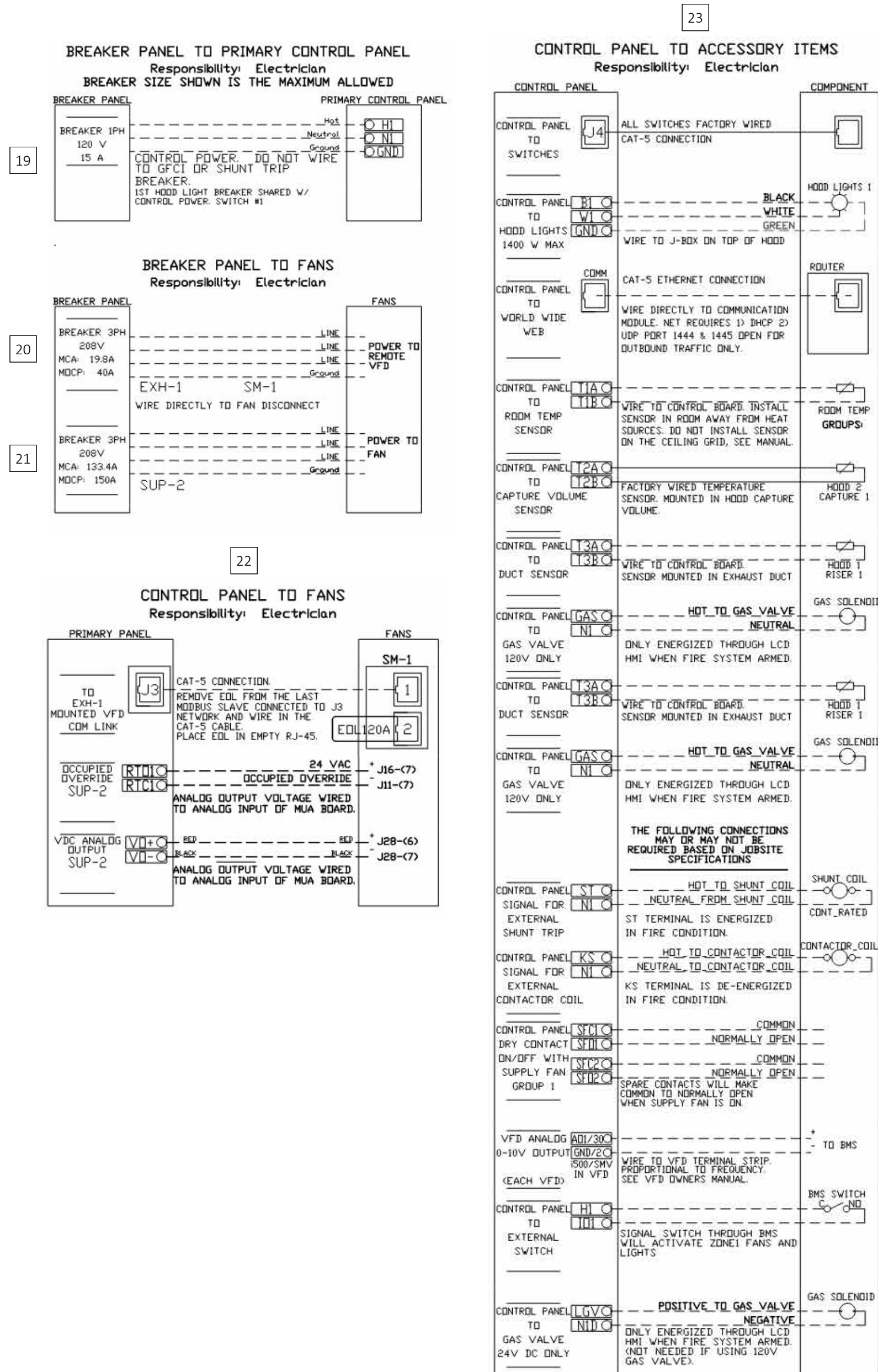


SCALE: 3/32" = 1'-0"

1. EXISTING ROOFTOP UNIT SHALL BE DISCONNECTED FROM THE EXISTING MAIN DISTRIBUTION PANELBOARD AND CONNECTED TO NEW MAIN DISTRIBUTION PANELBOARD. REMOVE THE EXISTING FUSED DISCONNECT SWITCH TAPPED FROM THE EXISTING MAIN DISTRIBUTION PANELBOARD IN THE BASEMENT. RE-USE EXISTING CONDUIT AND EXISTING WIRING. SHORTEN/EXTEND EXISTING WIRING AS REQUIRED FOR CONNECTION TO NEW MAIN DISTRIBUTION PANELBOARD.
2. NEW ROOFTOP UNIT. CONNECT TO DISCONNECT SWITCH PROVIDED WITH UNIT. COORDINATE WITH M.C. COORDINATE RETURN AIR SMOKE DETECT OR DETECTOR REQUIREMENTS WITH THE DELEGATED FIRE PROTECTION ENGINEER.
3. NEW DEDICATED OUTDOOR AIR SYSTEM. CONNECT TO DISCONNECT SWITCH PROVIDED WITH UNIT. COORDINATE WITH M.C. COORDINATE RETURN AIR SMOKE DETECT OR DETECTOR REQUIREMENTS WITH THE DELEGATED FIRE PROTECTION ENGINEER.
4. PROVIDE 30A/3P, NON-FUSED DISCONNECT SWITCH IN NEMA 3R ENCLOSURE FOR EXHAUST FAN. COORDINATE WITH M.C.
5. PROVIDE WEATHERPROOF GFCI HVAC SERVICE RECEPTACLE.

SHEET 46 OF 51
08/04/2026

CAPTIVEAIRE ELECTRICIAN RESPONSIBILITY DETAILS



GENERAL ELECTRICAL NOTES:

- A. ALL ELECTRICAL WORK SHALL COMPLY WITH THE LATEST ADOPTED EDITIONS OF THE 2023 NEC, 2024 IBC, NFPA 101, NFPA 110 AND NFPA 72. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL OTHER APPLICABLE STATE AND LOCAL CODES AS WELL AS ALL MISSOURI NATIONAL GUARD GUIDELINES.
- B. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING ELECTRICAL CONDITIONS PRIOR TO INSTALLATION.
- C. WHERE EXISTING CONDITIONS DIFFER FROM DRAWINGS OR CREATE CONFLICTS, NOTIFY THE ENGINEER BEFORE PROCEEDING.
- D. THE CONTRACTOR SHALL MAINTAIN OPERATION OF CIRCUITS SERVING OCCUPIED OR ADJACENT SPACES UNLESS OTHERWISE NOTED.
- E. COORDINATE WITH ARCHITECTURAL, MECHANICAL, PLUMBING, STRUCTURAL, AND OTHER TRADES TO AVOID CONFLICTS.
- F. COORDINATE POWER REQUIREMENTS, CONNECTION POINTS, AND DEVICE MOUNTING HEIGHTS WITH EQUIPMENT MANUFACTURERS.
- G. VERIFY ALL DEVICE MOUNTING LOCATIONS WITH ARCHITECTURAL INTERIOR ELEVATIONS AND ROOM LAYOUTS.
- H. COORDINATE ELECTRICAL SHUTDOWNS WITH OWNER MINIMUM OF 72 HOURS IN ADVANCE. SHUTDOWNS IMPACTING OCCUPIED DORM SPACES SHALL OCCUR DURING APPROVED TIME WINDOWS.
- I. PROVIDE NEW CIRCUITS, BREAKERS, SPACES, AND PANELBOARDS AS REQUIRED TO SUPPORT NEW WORK. UPDATE ALL PANEL SCHEDULES, DIRECTORIES, AND LABELING TO REFLECT FINAL CONDITIONS.
- J. ALL WIRING SHALL BE IN RIGID CONDUIT UNLESS SPECIFICALLY NOTED OTHERWISE. ALL ABANDONED WIRING SHALL BE REMOVED BACK TO THE NEAREST ACCESSIBLE JUNCTION BOX, PANELBOARD, OR SOURCE.
- K. MAINTAIN CONTINUITY OF THE GROUNDING AND BONDING SYSTEM THROUGHOUT CONSTRUCTION. GROUND ALL NEW EQUIPMENT PER NEC ARTICLE 250.
- L. MAINTAIN FIRE ALARM, EMERGENCY LIGHTING, EGRESS LIGHTING, AND LIFE SAFETY SYSTEMS ACTIVE AT ALL TIMES DURING CONSTRUCTION. ANY INTERRUPTIONS TO FIRE ALARM SYSTEMS SHALL BE COORDINATED WITH THE OWNER AND MONITORING SERVICE.
- M. COORDINATE FIRE ALARM, ACCESS CONTROL, CCTV, DATA/TELECOM, AND WI-FI CABLING WITH OWNER. PROVIDE CONDUITS, BOXES, AND SUPPORTS FOR ALL LOW VOLTAGE SYSTEMS UNLESS NOTED OTHERWISE. FINAL DEVICE INSTALLATION, PROGRAMMING, AND TESTING SHALL BE PERFORMED BY THE OWNER'S DESIGNATED VENDORS UNLESS NOTED.
- N. LABEL ALL NEW CIRCUITS, DEVICES, AND EQUIPMENT IN ACCORDANCE WITH NEC.
- O. PROVIDE RED-LINE/AS-BUILT MARKUPS DAILY AND FINAL UPDATED AS-BUILT DRAWINGS AT PROJECT COMPLETION. SUBMIT ALL O&M MANUALS, TEST REPORTS, AND EQUIPMENT DATA AT REQUEST FOR SUBSTANTIAL COMPLETION.
- P. GFCI PROTECTION SHALL BE PROVIDED IN THE KITCHEN FOR THE BRANCH CIRCUIT OR OUTLET SUPPLYING THE FOLLOWING APPLIANCES RATED 150V OR LESS TO GROUND AND 60A OR LESS, SINGLE OR THREE PHASE: DISHWASHERS, ELECTRIC RANGES, WALL MOUNTED OVENS, COUNTER-MOUNTED COOKING UNITS AND MICROWAVE OVENS.

STATE OF MISSOURI
MIKE KEHOE
GOVERNOR

CASCO DIVERSIFIED CORPORATION
ENGINEERING
LICENSE #: 000613
EXP. DATE: 12/31/2027



Professional of Record:
ELEC FOR NAME: MARK KUHLMAN
LICENSE #: 2017000321
EXP. DATE: 12/31/2027

CASCO

1344521-1100

OFFICE OF ADMINISTRATION
DIVISION OF FACILITIES
MANAGEMENT,
DESIGN AND CONSTRUCTION

DEPARTMENT OF
MISSOURI NATIONAL
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INTERIOR AND EXTERIOR
RENOVATION

JEFFERSON BARRACKS
READINESS CENTER
74 KEARNEY ST.
ST. LOUIS, MO 63125

PROJECT # T2504-03
SITE # 6303
FACILITY #8136303050

REVISIONS

No. Description Date

ISSUE DATE:08/04/2026

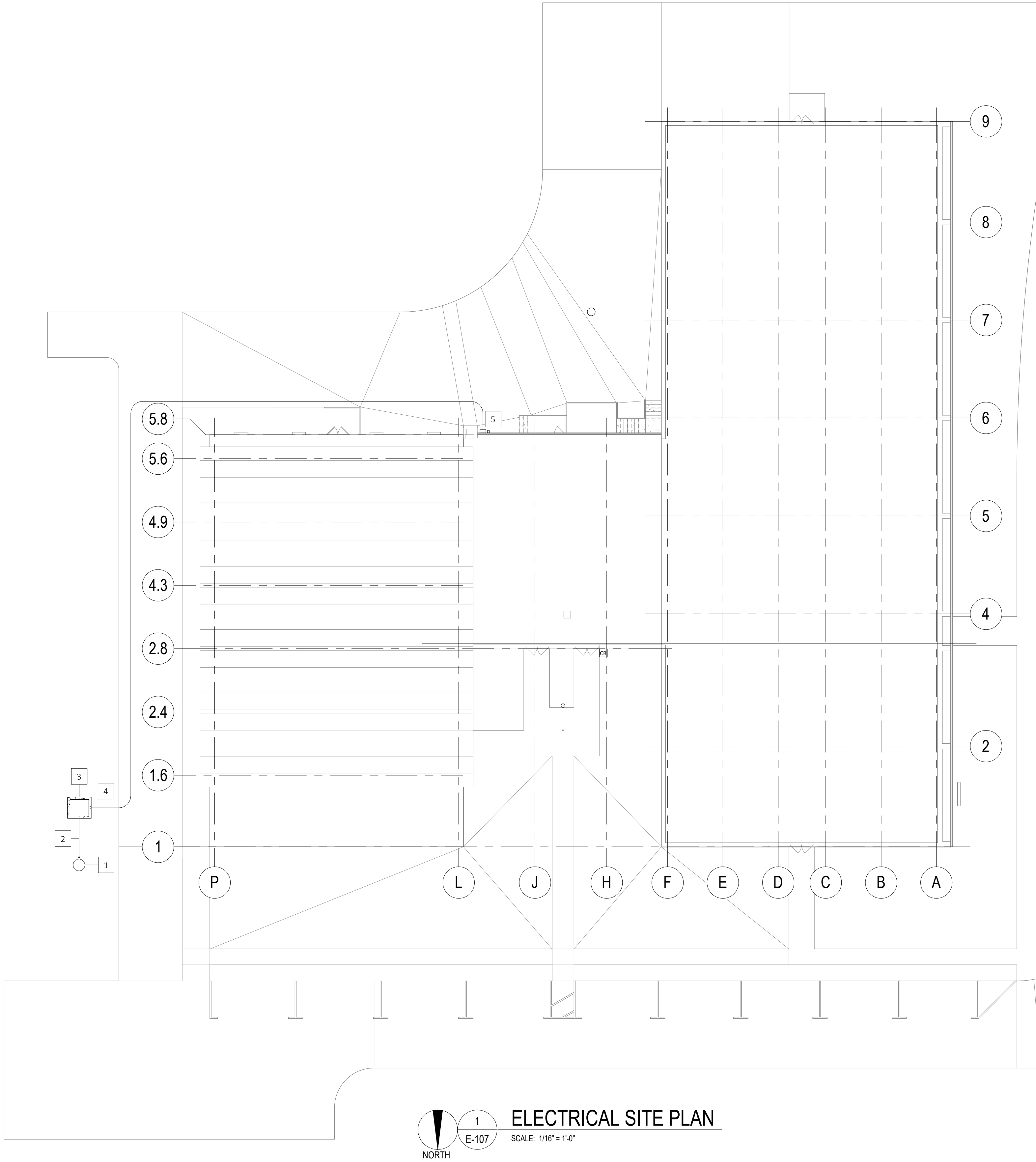
DWG FILE #: 2605562
DRAWN BY: MHK
CHECKED BY: WJK
DESIGNED BY: MHK

SHEET TITLE:
ENLARGED POWER AND
SYSTEMS PLANS

SHEET NUMBER:

E-106

SHEET 47 OF 51
08/04/2026



- GENERAL ELECTRICAL NOTES:
- A. ALL ELECTRICAL WORK SHALL COMPLY WITH THE LATEST ADOPTED EDITIONS OF THE 2023 NEC, 2024 IBC, NFPA 101, NFPA 110 AND NFPA 72. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL OTHER APPLICABLE STATE AND LOCAL CODES AS WELL AS ALL MISSOURI NATIONAL GUARD GUIDELINES.
 - B. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING ELECTRICAL CONDITIONS PRIOR TO INSTALLATION.
 - C. WHERE EXISTING CONDITIONS DIFFER FROM DRAWINGS OR CREATE CONFLICTS, NOTIFY THE ENGINEER BEFORE PROCEEDING.
 - D. THE CONTRACTOR SHALL MAINTAIN OPERATION OF CIRCUITS SERVING OCCUPIED OR ADJACENT SPACES UNLESS OTHERWISE NOTED.
 - E. COORDINATE WITH ARCHITECTURAL, MECHANICAL, PLUMBING, STRUCTURAL, AND OTHER TRADES TO AVOID CONFLICTS.
 - F. COORDINATE POWER REQUIREMENTS, CONNECTION POINTS, AND DEVICE MOUNTING HEIGHTS WITH EQUIPMENT MANUFACTURERS.
 - G. VERIFY ALL DEVICE MOUNTING LOCATIONS WITH ARCHITECTURAL INTERIOR ELEVATIONS AND ROOM LAYOUTS.
 - H. COORDINATE ELECTRICAL SHUTDOWNS WITH OWNER MINIMUM OF 72 HOURS IN ADVANCE. SHUTDOWNS IMPACTING OCCUPIED DORM SPACES SHALL OCCUR DURING APPROVED TIME WINDOWS.
 - I. PROVIDE NEW CIRCUITS, BREAKERS, SPACES, AND PANELBOARDS AS REQUIRED TO SUPPORT NEW WORK. UPDATE ALL PANEL SCHEDULES, DIRECTORIES, AND LABELING TO REFLECT FINAL CONDITIONS.
 - J. ALL WIRING SHALL BE IN RIGID CONDUIT UNLESS SPECIFICALLY NOTED OTHERWISE. ALL ABANDONED WIRING SHALL BE REMOVED BACK TO THE NEAREST ACCESSIBLE JUNCTION BOX, PANELBOARD, OR SOURCE.
 - K. MAINTAIN CONTINUITY OF THE GROUNDING AND BONDING SYSTEM THROUGHOUT CONSTRUCTION. GROUND ALL NEW EQUIPMENT PER NEC ARTICLE 250.
 - L. MAINTAIN FIRE ALARM, EMERGENCY LIGHTING, EGRESS LIGHTING, AND LIFE SAFETY SYSTEMS ACTIVE AT ALL TIMES DURING CONSTRUCTION. ANY INTERRUPTIONS TO FIRE ALARM SYSTEMS SHALL BE COORDINATED WITH THE OWNER AND MONITORING SERVICE.
 - M. COORDINATE FIRE ALARM, ACCESS CONTROL, CCTV, DATA/TELECOM, AND WI-FI CABLING WITH OWNER. PROVIDE CONDUITS, BOXES, AND SUPPORTS FOR ALL LOW VOLTAGE SYSTEMS UNLESS NOTED OTHERWISE. FINAL DEVICE INSTALLATION, PROGRAMMING, AND TESTING SHALL BE PERFORMED BY THE OWNER'S DESIGNATED VENDORS UNLESS NOTED.
 - N. LABEL ALL NEW CIRCUITS, DEVICES, AND EQUIPMENT IN ACCORDANCE WITH NEC.
 - O. PROVIDE RED-LINE/AS-BUILT MARKUPS DAILY AND FINAL UPDATED AS-BUILT DRAWINGS AT PROJECT COMPLETION. SUBMIT ALL O&M MANUALS, TEST REPORTS, AND EQUIPMENT DATA AT REQUEST FOR SUBSTANTIAL COMPLETION.

AMEREN ELECTRIC CONTACT FOR THIS PROJECT IS COLTON WENDLE. COLTON CAN BE REACHED AT COLTONWENDLE@UTILITRA.COM. CONTRACTOR SHALL COORDINATE ELECTRIC UTILITY WORK LEAD TIMES WITH AMEREN AND THE NATIONAL GUARD AND MAKE ALL POSSIBLE EFFORTS TO MINIMIZE DELAYS.

- | X | ELECTRICAL KEYNOTES |
|----|--|
| 1. | EXISTING ELECTRIC UTILITY POLE WITH EXISTING TRANSFORMER SERVING THIS FACILITY. EXISTING TRANSFORMER SHALL BE REMOVED BY AMEREN. REMOVE THE EXISTING TRANSFORMER SECONDARY CONDUIT AND WIRING TO THE DEMOLISHED MAIN DISTRIBUTION PANEL IN ITS ENTIRETY. |
| 2. | PROVIDE 4" EMPTY CONDUIT FROM NEW UTILITY TRANSFORMER TO UTILITY POLE AND STUB UP FOR PRIMARY WIRING BY AMEREN. COORDINATE FULLY WITH AMEREN. |
| 3. | NEW CONCRETE PAD FOR NEW UTILITY TRANSFORMER. CONCRETE PAD PROVIDED BY E.C. TO BE COORDINATED WITH AMEREN SPECIFICATIONS. COORDINATE EXACT LOCATION OF TRANSFORMER PAD WITH NATIONAL GUARD AND AMEREN PRIOR TO INSTALLATION. |
| 4. | NEW SECONDARY CONDUITS AND CONDUCTORS BY E.C. REFER TO RISER DIAGRAM ON SHEET E-501 FOR DETAILS. |
| 5. | PROVIDE NEW CT CABINET AND METER SOCKET ENCLOSURE ON BUILDING EXTERIOR PER AMEREN SPECIFICATIONS. COORDINATE FULLY WITH AMEREN. |

STATE OF MISSOURI
MIKE KEHOE
GOVERNOR

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Professional of Record:
ELEC POR NAME: MARK KUHLMAN
LICENSE #: 2017000321
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CASCO
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12 SUMNER DRIVE, SUITE 100, ST. LOUIS, MO 63143

OFFICE OF ADMINISTRATION
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JEFFERSON BARRACKS
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74 KEARNEY ST,
ST. LOUIS, MO 63125

PROJECT # T2504-03
SITE # 6303
FACILITY #8136303050

REVISIONS		
No.	Description	Date

ISSUE DATE:08/04/2026

DWG FILE #: 2605562
DRAWN BY: MHK
CHECKED BY: WJK
DESIGNED BY: MHK

SHEET TITLE:
ELECTRICAL SITE PLAN

SHEET NUMBER:

E-107

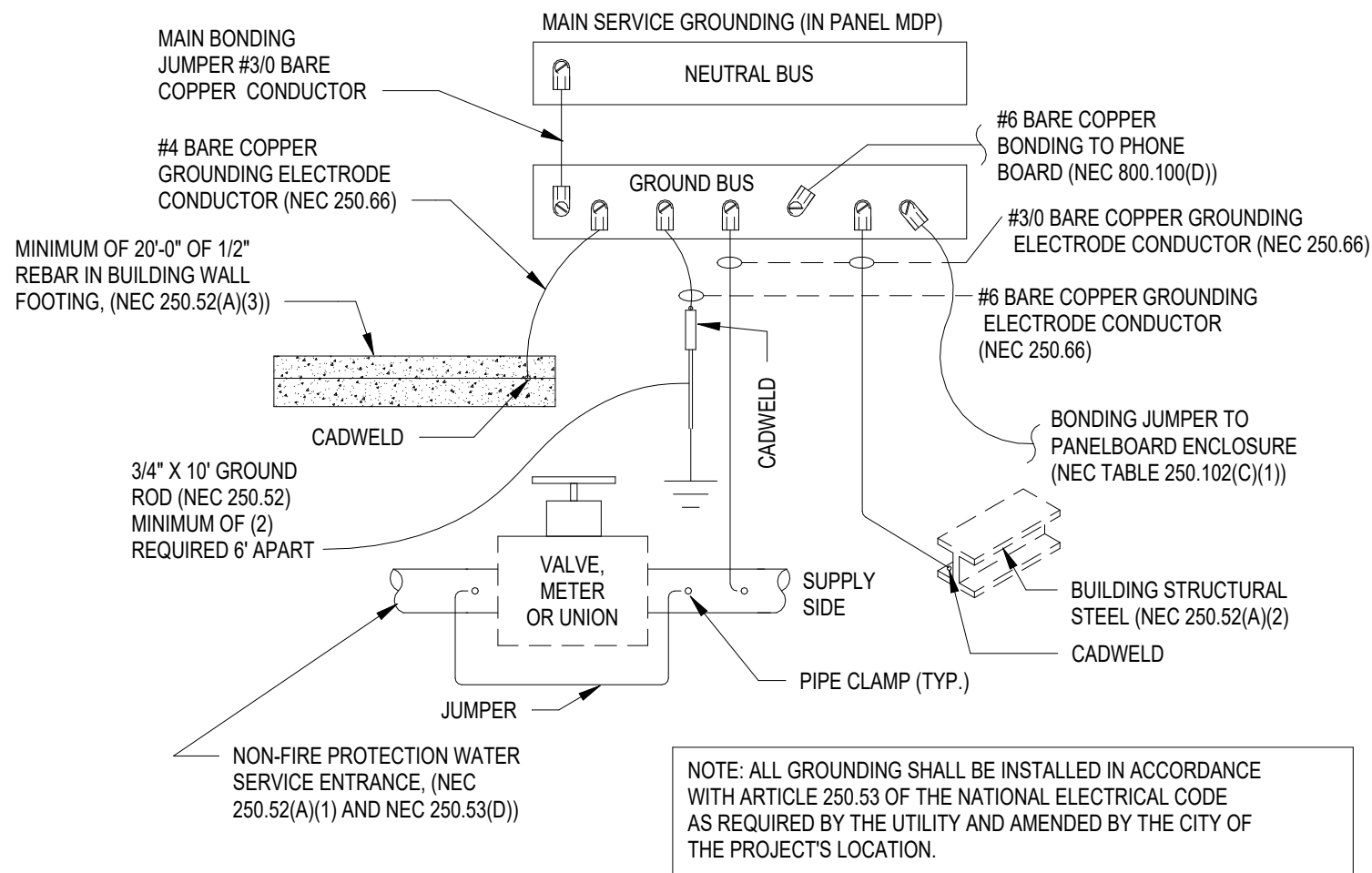
SHEET 48 OF 51
08/04/2026

UT. XFRM FAULT CALC		TEST LOAD.xlsm
SERVICE ENTRANCE		CALCULATION
VOLTAGE (L-L):	208V	I-FLA=[RATED KVA * 1000]/[V-L*SQRT(PHASE)]
PHASE (PH):	3	
AMPS:	1000A	I-FLA= 1,388A
FULL LOAD KVA:	360KVA	
TRANSFORMER:	500KVA	M=100%/Z= 80.6
IMPEDANCE (%Z):	1.2%Z	I-SC=I-FLA*M= 112 KA
CALCULATION IS BASED ON ESTIMATED TRANSFORMER SIZE WITH %Z FROM BUSSMANN SPD. CONTRACTOR SHALL CONTACT UTILITY AND VERIFY I-SC AVAILABLE AT SECONDARY OF TRANSFORMER. CONTACT ENGINEER FOR RE-CALCULATION IF LARGER THAN CALCULATED.		

FEEDER FAULT CALC		TEST LOAD.xlsm
STARTING I-SC:		IMPEDANCE BASED ON 3 SINGLE CONDUCTORS IN NON-MAGNETIC CONDUIT (WORSE CASE) CALCULATION
VOLTAGE (L-L):	208V	
PHASE (PH):	3	
FEEDER SIZE:	350	
FEEDER MATERIAL:	CU	f=[SQRT(PHASE)*L*IS-C]/[Q*C*V-L-L]
PARALLEL SETS (Q):	3 SETS	
FEEDER LENGTH (L):	240FT	f= 3.365
FEET PER OHMS (C):	22,737 FT/OHMS	M=1/(1+f)= 0.229
		I-SC=I-SC*M= 26 KA
NOTE: CALCULATION BASED ON BUSSMANN SPD		

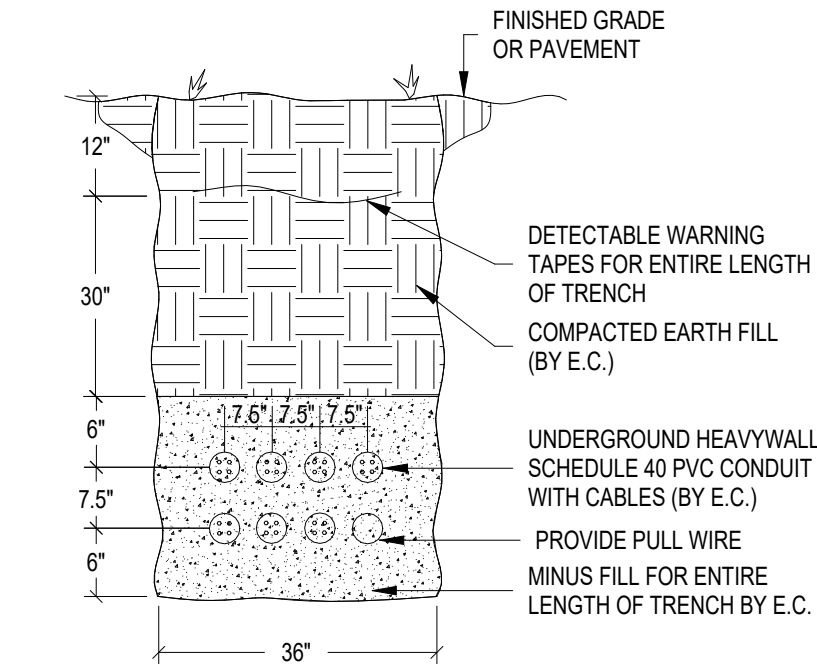
MOTOR LOAD FAULT CALC		TEST LOAD.xlsm
STARTING I-SC:		CALCULATION
MOTOR LOAD (KVA):	176KVA	I-SC(ML)=I-ML*6= 2,923A
MOTOR LOAD (A):	487A	I-SC=I-SC+I-SC(ML)= 115 KA
NOTE: CALCULATION FOR MDP WITH MOTOR CONTRIBUTION.		

PANEL KP FEEDER FAULT CALC		TEST LOAD.xlsm
STARTING I-SC:		IMPEDANCE BASED ON 3 SINGLE CONDUCTORS IN NON-MAGNETIC CONDUIT (WORSE CASE) CALCULATION
VOLTAGE (L-L):	208V	
PHASE (PH):	3	
FEEDER SIZE:	600	
FEEDER MATERIAL:	CU	f=[SQRT(PHASE)*L*IS-C]/[Q*C*V-L-L]
PARALLEL SETS (Q):	1 SETS	
FEEDER LENGTH (L):	30FT	f= 0.234
FEET PER OHMS (C):	28,033 FT/OHMS	M=1/(1+f)= 0.810
		I-SC=I-SC*M= 21 KA
NOTE: CALCULATION BASED ON BUSSMANN SPD		



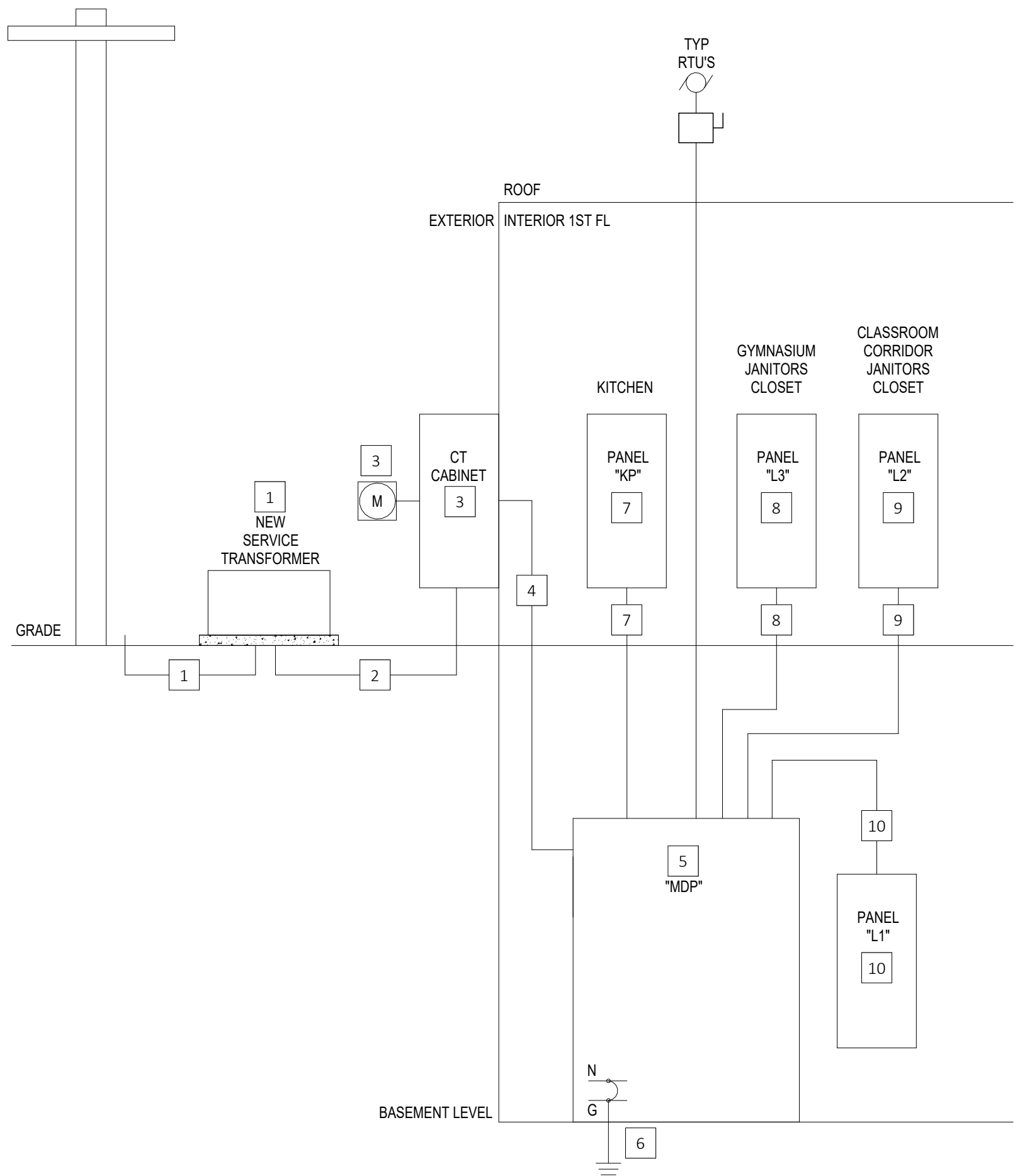
- GENERAL GROUNDING NOTES
- FULL SIZE GROUND MEANS THAT GROUND CONNECTOR SIZE SHALL BE AS SHOWN ON SERVICE EQUIPMENT ON THE POWER RISER DIAGRAM.
 - AFTER GROUNDING SYSTEM IS INSTALLED, GROUND RESISTANCE SHALL BE MEASURED, TO ASSURE THAT GROUND VALUE OF 15 OHM MAXIMUM RESISTANCE IS ACHIEVED. IF NOT, ADDITIONAL GROUNDING SHALL BE PROVIDED TO MEET THE SPECIFIC VALUE.
 - ALL CONNECTIONS TO GROUND RODS SHALL BE EXOTHERMIC WELD CONNECTIONS.
 - WHERE LOCATED OUTSIDE OF BUILDING, TOP OF GROUND ROD SHALL BE 12" (MINIMUM) BELOW GRADE. PROVIDE NON-METALIC INSPECTION WELL WITH REMOVABLE COVER.
 - GROUND CONNECTOR SHALL BE LOCATED WITHIN OR NEAR BOTTOM OF CONCRETE FOUNDATION OR FOOTING THAT IS IN DIRECT CONTACT WITH THE EARTH, AND SHALL CONSIST OF AT LEAST 20 FEET OF ONE OR MORE STEEL REINFORCING BARS OR RODS OF NOT LESS THAN 1/2 INCH DIAMETER OR OF AT LEAST 20 FEET OF BARE COPPER CONDUCTOR.
 - ALL CONDUCTIONS SHALL BE COPPER.
 - BONDING OF HOT WATER PIPE, COLD WATER PIPE, AND UTILITY SYSTEM.

1
E-501
GROUNDING DETAIL
SCALE: NOT TO SCALE

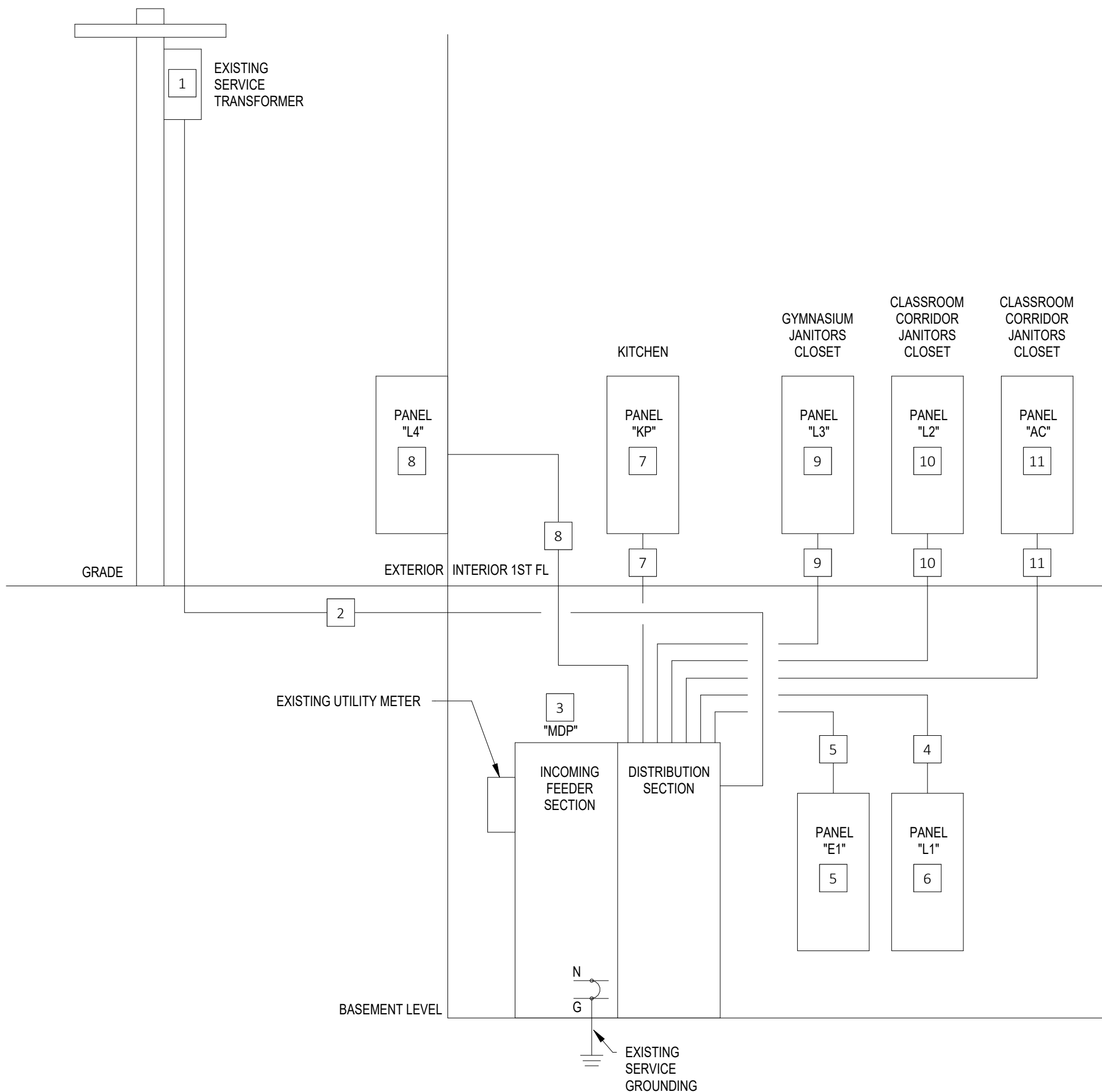


- NOTES:
- ALL EXCAVATION IN ELECTRICAL ONLY TRENCHES BY E.C.
 - COORDINATE ALL WORK WITH UTIL. COMPANIES & APPLICABLE TRADES.
 - EXCAVATED MATERIAL SHALL BE PLACED A MINIMUM OF 2' FROM BOTH EDGES OF THE TRENCH.
 - EDGES OF TRENCH SHALL BE A MIN OF 36" FROM EDGE OF WATER, GAS OR SEWER PIPES.

4
E-501
TRENCH DETAIL FOR CONDUIT SECONDARY POWER CABLES
SCALE: 1/8" = 1'-0"



3
E-501
ELECTRICAL RISER DIAGRAM NEW
SCALE: NOT TO SCALE



2
E-501
ELECTRICAL RISER DIAGRAM EXISTING
SCALE: NOT TO SCALE

GENERAL ONE-LINE NOTES	
A.	ALL SERVICE EQUIPMENT SHALL BE PROVIDED IN ACCORDANCE WITH THE LOCAL UTILITY COMPANY REQUIREMENTS. VERIFY VOLTAGE, PHASE, OVERHEAD, UNDERGROUND, POINT OF CONNECTION, ETC.
B.	ALL WORK SHALL BE IN ACCORDANCE WITH NFPA 70 (NEC) AND LOCAL ORDINANCES AND PER MISSOURI NATIONAL GUARD STANDARDS.
C.	SPACE RESTRICTIONS APPLY. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR AND SHALL VERIFY SPACE WITH ACTUAL DIMENSION OF ALL SUBSTITUTION FROM DESIGN SPECIFICATIONS.
D.	CONFIRM BREAKER SIZES WITH MECHANICAL CONTRACTOR PRIOR TO INSTALLATION.
E.	IDENTIFICATION (PERMANENT LABELING) FOR ALL DISCONNECTING MEANS INCLUDING BREAKERS, SAFETY SWITCHED, ETC.

EXISTING RISER DIAGRAM KEYNOTES	
1.	EXISTING UTILITY TRANSFORMER. AMEREN MAY OR MAY NOT RE-USE THIS. BEING A SINGLE BUCKET ON THE UTILITY POLE, IT LOOKS LIKE ITS CURRENTLY TOO SMALL FOR A 600A 208V/3PH SERVICE. YET IT HAS BEEN WORKING FOR THE LAST 50 YEARS AND WE ARE LIKELY REDUCING TOTAL ELECTRICAL LOAD..
2.	EXISTING TRANSFORMER SECONDARY WIRING. EXISTING WIRING SIZE CANNOT BE DETERMINED WITHOUT ASSISTANCE FROM AN ELECTRICIAN, BUT IT APPEARS TO BE AT BEST 400A WIRING AS IT IS A SINGLE SET OF FEEDERS. THIS WIRING IS 50+ YEARS OLD AND SHOULD BE REPLACED DUE TO ITS AGE.
3.	EXISTING 600A, 208V, 3PH/4W, FRANK ADAMS MAIN DISTRIBUTION PANELBOARD TO BE REMOVED. TO BE DETERMINED IF THIS IS TO BE REPLACED IN THE SAME LOCATION OR TO BE INSTALLED ON THE BUILDING EXTERIOR.
4.	EXISTING PANELBOARD FEEDERS TO BE REPLACED. NEW PANELBOARDS SHALL BE INSTALLED IN THE SAME LOCATION. REFER TO NEW WORK RISER DIAGRAM.
5.	EXISTING 50A, 120/208V, 3PH/4W, 12 CKT PANELBOARD "E1" WITH 50A MAIN CIRCUIT BREAKER TO BE REMOVED. CONTRACTOR SHALL FIELD VERIFY EXISTING BRANCH CIRCUITS WHICH REMAIN IN OPERATION AND RECONNECT THEM TO THE NEW PANELBOARD "L1". REMOVE FEEDER TO PANELBOARD IN ITS ENTIRETY.
6.	EXISTING 100A, 120/208V, 3PH/4W, 20 CKT MAIN LUG ONLY FRANK ADAMS PANELBOARD "L1" TO BE REMOVED. CONTRACTOR SHALL FIELD VERIFY EXISTING BRANCH CIRCUITS WHICH REMAIN IN OPERATION AND RECONNECT THEM TO THE NEW PANELBOARD WHICH REPLACES L1. REFER TO NEW WORK RISER DIAGRAM FOR FURTHER DETAILS.
7.	EXISTING 400A, 120/208V, 3PH/4W, FUSIBLE SWITCH FRANK ADAMS PANELBOARD "KP" TO BE REMOVED. CONTRACTOR SHALL FIELD VERIFY EXISTING BRANCH CIRCUITS WHICH REMAIN IN OPERATION AND RECONNECT THEM TO THE NEW PANELBOARD WHICH REPLACES KP. REFER TO NEW WORK RISER DIAGRAM FOR NEW KITCHEN PANELBOARD.
8.	EXISTING 100A, 120/208V, 3PH/4W, 20 CKT, MAIN LUG ONLY, FRANK ADAMS PANELBOARD "L4" AND THE EXISTING FEEDER SERVING PANELBOARD L4 SHALL BE REMOVED. PANELBOARD L4 WILL NOT BE RE-ESTABLISHED AS PART OF THE NEW DESIGN.
9.	EXISTING 100A, 120/208V, 3PH/4W, 32 CKT, MAIN LUG ONLY, FRANK ADAMS PANELBOARD "L3" TO BE REMOVED. CONTRACTOR SHALL FIELD VERIFY EXISTING BRANCH CIRCUITS WHICH REMAIN IN OPERATION AND RECONNECT THEM TO THE NEW PANELBOARD WHICH REPLACES L3. UTILIZE EXISTING FEEDER ON NEW PANELBOARD. REFER TO NEW WORK RISER DIAGRAM.
10.	EXISTING 100A, 120/208V, 3PH/4W, 30 CKT MAIN LUG ONLY, FRANK ADAMS PANELBOARD "L2" TO BE REPLACED AND INSTALLED IN A NEW LOCATION. REFER TO NEW WORK RISER DIAGRAM FOR NEW PANELBOARD. REMOVE EXISTING PANELBOARD FEEDER BACK TO SOURCE. REFER TO FLOOR PLAN E-104 FOR NEW LOCATION.
11.	EXISTING 100A, 120/240V, 1PH/3W, 24 CKT, MAIN LUG ONLY, GE POWER PLUS LOAD CENTER "AC" AND ASSOCIATED PANELBOARD FEEDER TO BE REMOVED. REMOVE ALL ASSOCIATED BRANCH CIRCUITS IN THEIR ENTIRETY. THIS SINGLE PHASE PANEL WILL NOT BE UTILIZED FOR THE NEW DESIGN.

NEW RISER DIAGRAM KEYNOTES	
1.	NEW UTILITY TRANSFORMER BY AMEREN. PROVIDE CONCRETE PAD PER AMEREN SPECIFICATIONS. PROVIDE EMPTY 4" CONDUIT WITH WARNING TAPE AT LEAST 12" ABOVE THE CONDUITS ALONG THE ENTIRE ROUTE TO UTILITY POLE AS DESIGNATED BY AMEREN.
2.	PROVIDE 3 SETS OF (4) #350 CU, 3"C. PROVIDE WARNING TAPE AT LEAST 12" ABOVE THE CONDUITS ALONG THE ENTIRE ROUTE. COORDINATE FULL REQUIREMENTS WITH AMEREN.
3.	PROVIDE NEW CT CABINET AND METER SOCKET ENCLOSURE ON BUILDING EXTERIOR PER AMEREN SPECIFICATIONS.
4.	PROVIDE 3 SETS OF (4) #350 CU, 3"C.
5.	PROVIDE NEW SURFACE MOUNTED 1000A, 120/208V, 3PH/4W, SERVICE ENTRANCE RATED MAIN DISTRIBUTION PANELBOARD "MDP" WITH 1000A MAIN CIRCUIT BREAKER.
6.	SERVICE ENTRANCE GROUNDING ELECTRODE SYSTEM. RE-USE OF EXISTING SERVICE ENTRANCE GROUNDING MAY BE POSSIBLE. CONTRACTOR SHALL FIELD VERIFY THE EXISTING GROUNDING ELECTRODE SYSTEM AND RECONNECT AND ADD ALL REASONABLY ACHIEVABLE CONNECTIONS AS SHOWN IN THE GROUNDING DETAIL ON THIS DRAWING. CONNECTIONS TO MDP FROM EXISTING GROUNDING ELECTRODE SYSTEM SHALL BE SIZED #30 CU.
7.	PROVIDE NEW SURFACE MOUNTED 400A, 120/208V, 3PH/4W, 42 CIRCUIT, MAIN LUG ONLY PANELBOARD. PROVIDE (4) #600 CU, (1) #3 CU GND, 4"C.
8.	PROVIDE NEW RECESSED 100A, 120/208V, 3PH/4W, 42 CKT, MAIN LUG ONLY PANELBOARD "L3" IN PLACE OF THE OLD FRANK ADAMS PANELBOARD AND RECONNECT THE PANELBOARD FEEDER AND ALL EXISTING BRANCH CIRCUITS. FIELD VERIFY THE FULL EXTENTS OF BRANCH CIRCUIT RECONNECTION. SHORTEN/EXTEND EXISTING FEEDER AS REQUIRED FOR NEW PANELBOARD INSTALLATION. PROVIDE NEW CIRCUIT DIRECTORY COORDINATED WITH EXISTING CONDITIONS.
9.	PROVIDE NEW RECESSED 100A, 120/208V, 3PH/4W, 42 CKT, MAIN LUG ONLY PANELBOARD "L2". PROVIDE NEW FEEDER (4) #3 CU, (1) #6 CU GND, 1-1/4"C.
10.	PROVIDE NEW SURFACE MOUNTED 100A, 120/208V, 3PH/4W, 24 CKT, MAIN LUG ONLY PANELBOARD "L1" IN PLACE OF THE OLD FRANK ADAMS PANELBOARD. PROVIDE NEW 100A FEEDER (4) #3 CU, (1) #6 CU GND, 1-1/4"C. CONTRACTOR SHALL FIELD VERIFY THE EXISTING BRANCH CIRCUITS WHICH REMAIN IN OPERATION, RECONNECT THEM AND PROVIDE AN UPDATED CIRCUIT DIRECTORY COORDINATED WITH EXISTING CONDITIONS. REFER TO PANEL SCHEDULE ON DRAWING E-602 FOR ASSUMED RECONNECTED CIRCUITS.



REVISIONS		
No.	Description	Date

ISSUE DATE:08/04/2026

DWG FILE #: 2605562
DRAWN BY: MHK
CHECKED BY: WJK
DESIGNED BY: MHK

SHEET TITLE:
ELECTRICAL DETAILS & RISER

SHEET NUMBER:

E-501

SHEET 49 OF 51
08/04/2026

Branch Panel: MDP

Location: Space 11
Supply From:
Mounting:
Enclosure: Type 1

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 42KAIC
Mains Type: MCB
Mains Rating: 1000 A
MCB Rating: 1000 A

Notes:

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	KP	400 A	3	40.1	0.0					3	60 A	SPARE	2
3	--	--	--	--	--	43.7	0.0			--	--	--	4
5	--	--	--	--	--			38.1	0.0	--	--	--	6
7	L1	100 A	3	2.9	8.5					3	100 A	L2	8
9	--	--	--	--	--	5.8	6.3			--	--	--	10
11	--	--	--	--	--			2.6	6.7	--	--	--	12
13	L3	100 A	3	8.0	7.6					3	100 A	EXISTING GYMNASIUM RTU	14
15	--	--	--	--	--	8.0	7.6			--	--	--	16
17	--	--	--	--	--			7.0	7.6	--	--	--	18
19	RTU-1	50 A	3	4.2	7.6					3	100 A	EXISTING GYMNASIUM RTU	20
21	--	--	--	--	--	4.2	7.6			--	--	--	22
23	--	--	--	--	--			4.2	7.6	--	--	--	24
25	RTU-2	60 A	3	5.0	4.2					3	50 A	RTU-3	26
27	--	--	--	--	--	5.0	4.2			--	--	--	28
29	--	--	--	--	--			5.0	4.2	--	--	--	30
31	RTU-4	70 A	3	5.8	6.6					3	60 A	RTU-5	32
33	--	--	--	--	--	5.8	6.6			--	--	--	34
35	--	--	--	--	--			5.8	6.6	--	--	--	36
37	RTU-6	60 A	3	5.0	2.8					3	30 A	RTU-7	38
39	--	--	--	--	--	5.0	2.8			--	--	--	40
41	--	--	--	--	--			5.0	2.8	--	--	--	42
43	EF-1	15 A	3	0.4	16.0					3	150 A	DOAS-1	44
45	--	--	--	--	--	0.4	16.0			--	--	--	46
47	--	--	--	--	--			0.4	16.0	--	--	--	48
49	GEF-1	20 A	3	2.0	0.0					3	50 A	FUTURE CONNECTION TO VAULT BY OTHERS	50
51	--	--	--	--	--	2.0	0.0			--	--	--	52
53	--	--	--	--	--			2.0	0.0	--	--	--	54
55	SPARE	100 A	3	0.0	--					1	--	PROVISIONS	56
57	--	--	--	--	--	0.0	--			1	--	PROVISIONS	58
59	--	--	--	--	--			0.0	--	1	--	PROVISIONS	60
Total Load:				126.7 kVA		131.0 kVA		121.6 kVA					
Total Amps:				1063 A		1098 A		1014 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
HVAC	204177 VA	80.00%	163342 VA		
Lighting	14199 VA	125.00%	17749 VA	Total Conn. Load:	379159 VA
Motor	3516 VA	108.36%	3810 VA	Total Est. Demand:	287575 VA
Receptacle	34325 VA	64.57%	22163 VA	Total Conn. Current:	1052 A
Lighting - Exterior	1000 VA	125.00%	1250 VA	Total Est. Demand Current:	798 A
Kitchen Equipment - Non-Dwelling Unit	121942 VA	65.00%	79262 VA		

Notes:

Branch Panel: KP

Location: KITCHEN 43

Supply From: MDP

Mounting:

Enclosure: Type 1

Volts: 120/208 Wye

Phases: 3

Wires: 4

A.I.C. Rating: 22KAIC

Mains Type: MLO

Mains Rating: 400 A

Notes:

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	(E) BOILER	30 A	3	2.9	5.0					3	100 A	(E) RANGE #1	2
3	--	--	--			2.9	5.0			--	--	--	4
5	--	--	--					2.9	5.0	--	--	--	6
7	(E) FREEZER	20 A	3	1.9	2.9					1	30 A	(E) REFRIGERATOR	8
9	--	--	--			1.9	2.9			1	30 A	(E) RECEPT COLUMN	10
11	--	--	--					1.9	2.9	1	30 A	(E) RECEPT OVER SINK	12
13	(E) RANGE #2	100 A	3	5.0	1.2					1	20 A	REFRIGERATOR	14
15	--	--	--			5.0	1.9			1	20 A	(E) DISHWASHER	16
17	--	--	--					5.0	1.2	1	20 A	REFRIGERATOR	18
19	(E) WARMING TABLE	30 A	2	2.5	2.9					3	30 A	(E) DISPOSAL	20
21	--	--	--			2.5	2.9			--	--	--	22
23	HOOD CONTROL PANEL	15 A	1					0.5	2.9	--	--	--	24
25	SPARE	20 A	1	0.0	2.9					3	30 A	(E) COFFEE UNIT	26
27	(E) RANGE & FRYER CONTACTOR CONTROL CKT	30 A	1			2.9	2.9			--	--	--	28
29	SPARE	20 A	1					0.0	2.9	--	--	--	30
31	(E) PIZZA OVEN	60 A	3	5.8	7.2					3	100 A	(E) RANGE #3	32
33	--	--	--			5.8	7.2			--	--	--	34
35	--	--	--					5.8	7.2	--	--	--	36
37	SPARE	20 A	3	0.0	0.0					1	20 A	SPARE	38
39	--	--	--			0.0	0.0			1	20 A	SPARE	40
41	--	--	--					0.0	0.0	1	20 A	SPARE	42
Total Load:				40.1 KVA		43.7 KVA		38.1 KVA					
Total Amps:				337 A		367 A		318 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
Kitchen Equipment - Non-Dwelling Unit	121942 VA	65.00%	79262 VA	
				Total Conn. Load: 121942 VA
				Total Est. Demand: 79262 VA
				Total Conn. Current: 338 A
				Total Est. Demand Current: 220 A

Notes:

Branch Panel: L2

Location: JANITOR CLO 42

Supply From: MDP

Mounting:
Enclosure: Type 1

Volts: 120/208 Wye

Phases: 3

Wires: 4

A.I.C. Rating: 10KAIC

Mains Type: MLO

Mains Rating: 100 A

Notes:

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	Lighting CLASSROOM 9	20 A	1	1.6	1.7					1	20 A	Lighting CLASSROOM 9	2
3	Lighting CORRIDOR	20 A	1			0.8	0.9			1	20 A	Lighting OFFICE 17	4
5	Receptacles CLASSROOM 9	20 A	1					1.8	1.8	1	20 A	Receptacles CLASSROOM 8	6
7	Receptacles CLASSROOM 6	20 A	1	1.8	0.9					1	20 A	Receptacles CLASSROOM 4	8
9	Receptacles CLASSROOM 16	20 A	1			1.4	1.8			1	20 A	Receptacles CLASSROOM 3	10
11	Receptacle WOMEN RESTROOM 41	20 A	1					0.9	0.9	1	20 A	Receptacles OFFICE 18	12
13	Water Bottle Filler	20 A	1	0.4	0.9					1	20 A	Lighting Restroom/Locker Rm	14
15	Entrance Card Reader 120V	20 A	1			0.3	0.7			1	20 A	Receptacles Rooftop	16
17	Receptacles EXTERIOR	20 A	1					0.7	0.2	1	20 A	Mass Notification System - MNS	18
19	Receptacles CORRIDORS	20 A	1	1.3	0.0					1	20 A	120V Circuit Resrved for MNS	20
21	Receptacle DATA CLOSET	20 A	1			0.4	0.0			1	20 A	120V Circuit Resrved for MNS	22
23	Receptacle DATA CLOSET	20 A	1					0.4	0.0	1	20 A	Spare	24
25	Spare	20 A	1	0.0	0.0					1	20 A	Spare	26
27	Spare	20 A	1			0.0	0.0			1	20 A	Spare	28
29	Spare	20 A	1					0.0	0.0	1	20 A	Spare	30
31	Spare	20 A	1	0.0	0.0					1	20 A	Spare	32
33	Space	--	1			--	--			1	--	Space	34
35	Space	--	1					--	--	1	--	Space	36
37	Space	--	1	--	--					1	--	Space	38
39	Space	--	1			--	--			1	--	Space	40
41	Space	--	1					--	--	1	--	Space	42
Total Load:				8.5 kVA		6.3 kVA		6.7 kVA					
Total Amps:				71 A		52 A		56 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
HVAC	18 VA	80.00%	14 VA	
Lighting	5776 VA	125.00%	7220 VA	Total Conn. Load: 21274 VA
Motor	300 VA	125.00%	375 VA	Total Est. Demand: 20200 VA
Receptacle	15180 VA	82.94%	12590 VA	Total Conn. Current: 59 A
				Total Est. Demand Current: 56 A

Notes:

Branch Panel: L1

Location: Space 11
Supply From: MDP
Mounting:
Enclosure: Type 1

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating: 22KAIC
Mains Type: MLO
Mains Rating: 100 A

Notes:

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	Basement Ltg	20 A	1	0.4	0.6					1	20 A	Basement Rec and Water Softener	2
3	Gas Water Heaters 1 & 2 Controls	20 A	1			0.2	1.2			1	20 A	Water Heater Booster Pump	4
5	Reconnected Kitchen Rec	20 A	1					0.7	0.7	1	20 A	Reconnected Kitchen Rec	6
7	Reconnected Kitchen Rec	20 A	1	0.7	1.2					1	20 A	Water Heater Booster Pump	8
9	Reconnected Gym Ext fans	20 A	1			1.2	1.2			1	20 A	Reconnected Gym Ext fans	10
11	Basement Recirc Pump HWRP	20 A	1					0.2	0.5	1	20 A	Reconnected Unknown Ckt	12
13	Spare	20 A	1	0.0	0.0					1	20 A	Spare	14
15	Reconnected Exterior Ltg	20 A	1			0.5	0.5			1	20 A	Reconnected Unknown Ckt	16
17	Reconnected Courtyard Ltg	20 A	1					0.5	0.0	1	20 A	Spare	18
19	Spare	20 A	1	0.0	0.0					1	20 A	Spare	20
21	Basement Sump Pump	20 A	1			0.9	0.2			1	20 A	Basement GUH-1	22
23	Spare	20 A	1					0.0	0.0	1	20 A	Spare	24
Total Load:				2.9 kVA		5.8 kVA		2.6 kVA					
Total Amps:				25 A		48 A		22 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
HVAC	2532 VA	80.00%	2026 VA		
Lighting	423 VA	125.00%	529 VA	Total Conn. Load:	11316 VA
Motor	3216 VA	109.14%	3510 VA	Total Est. Demand:	11459 VA
Receptacle	4145 VA	100.00%	4145 VA	Total Conn. Current:	31 A
Lighting - Exterior	1000 VA	125.00%	1250 VA	Total Est. Demand Current:	32 A

Notes:

Branch Panel: L3

Location: STORAGE 31

Supply From: MDP

Mounting:

Enclosure: Type 1

Volts: 120/208 Wye

Phases: 3

Wires: 4

A.I.C. Rating: 10KAIC

Mains Type: MLO

Mains Rating: 100 A

Notes:

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	Reconnected 30A ckt	30 A	1	2.0	2.0					1	30 A	Reconnected 30A ckt	2
3	Reconnected 30A ckt	30 A	1			2.0	2.0			1	30 A	Reconnected 30A ckt	4
5	Reconnected 30A ckt	30 A	1					2.0	2.0	1	30 A	Reconnected 30A ckt	6
7	Reconnected 30A ckt	20 A	1	0.5	0.5					1	20 A	Reconnected 30A ckt	8
9	Reconnected 30A ckt	20 A	1			0.5	0.5			1	20 A	Reconnected 30A ckt	10
11	Reconnected 30A ckt	20 A	1					0.5	0.5	1	20 A	Reconnected 30A ckt	12
13	Reconnected 30A ckt	20 A	1	0.5	0.5					1	20 A	Reconnected 30A ckt	14
15	Reconnected 30A ckt	20 A	1			0.5	0.5			1	20 A	Reconnected 30A ckt	16
17	Reconnected 30A ckt	20 A	1					0.5	0.5	1	20 A	Reconnected 30A ckt	18
19	Reconnected 30A ckt	20 A	1	0.5	0.5					1	20 A	Reconnected 30A ckt	20
21	Reconnected 30A ckt	20 A	1			0.5	0.5			1	20 A	Reconnected 30A ckt	22
23	Reconnected 30A ckt	20 A	1					0.5	0.5	1	20 A	Reconnected 30A ckt	24
25	Reconnected 30A ckt	20 A	1	0.5	0.5					1	20 A	Reconnected 30A ckt	26
27	Reconnected 30A ckt	20 A	1			0.5	0.5			1	20 A	Reconnected 30A ckt	28
29	Spare	20 A	1					0.0	0.0	1	20 A	Spare	30
31	Spare	20 A	1	0.0	0.0					1	20 A	Spare	32
33	Spare	20 A	1			0.0	0.0			1	20 A	Spare	34
35	Space	--	1					--	--	1	--	Space	36
37	Space	--	1	--	--					1	--	Space	38
39	Space	--	1			--	--			1	--	Space	40
41	Space	--	1					--	--	1	--	Space	42
		Total Load:		8.0 kVA		8.0 kVA		7.0 kVA					
		Total Amps:		68 A		68 A		58 A					

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Lighting	8000 VA	125.00%	10000 VA		
Receptacle	15000 VA	83.33%	12500 VA	Total Conn. Load:	23000 VA
				Total Est. Demand:	22500 VA
				Total Conn. Current:	64 A
				Total Est. Demand Current:	62 A

Notes:

