

# LAKE SUPERIOR STATE UNIVERSITY

## ABEL ARENA ALUMNI LOFT

650 W EASTERDAY AVE.  
SAULT STE. MARIE, MICHIGAN 49783



**Sidock Group**

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Williamsport, PA • Tampa, FL

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Key Plan: No Scale

Client:  
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Project:  
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Seal:



Date: 01-30-2026  
Issued For: BIDS/PERMITS

Drawn: DAS  
Checked: GG  
Approved: GG

Sheet Title:  
**COVER SHEET**

Project Number: **525066.F**

Sheet Number: **CS-000**

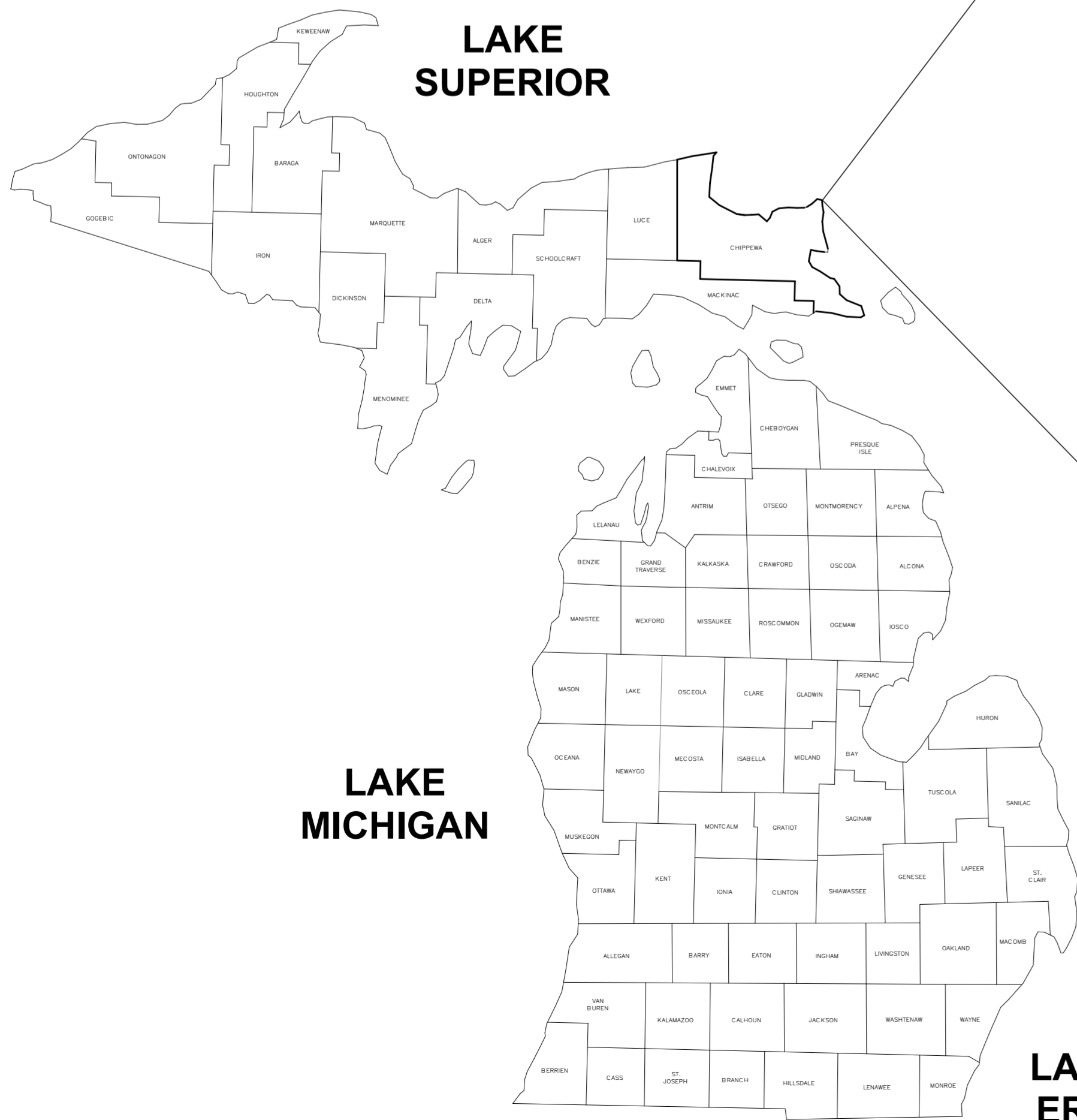
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PROJECT INFORMATION	
<b>SITE DATA</b>	
SITE AREA: EXISTING	
ZONING: EXISTING	
USE	
PRIMARY USE: ACCESSORY VIEWING SUITE (A-4)	
PARKING EXISTING	
BUILDING AREA EXISTING: 275,000	
PROJECT AREA: 327 SQFT	



**PROJECT SITE**  
W. EASTERDAY AVE / MERIDIAN ST., SAULT STE. MARIE MI.





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**CODE DATA**

Project Number: **525066.F**

Sheet Number: **CS-001**

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OCCUPANT LOAD CALCULATIONS					
FLR.	RM. NO.	RM. NAME	ACT FLOOR AREA	FLOOR AREA PER OCC	OCC. LOAD
LEVEL 1	100	ALUMNI LOFT	130	5 Net	26
LEVEL 1	101	UNENCLOSED SEATING			22
			TOTAL OCCUPANTS = 48		
EGRESS WIDTH PER OCCUPANT SERVED (PER MBC TABLE 1005.1)					
STAIRWAYS: N/A					
OTHER EGRESS COMPONENTS: 0.2 INCHES PER OCCUPANT (NOT SUPPRESSED)					

EGRESS WIDTH CALCULATIONS					
MARK	DOOR DESCRIPTION	DOOR DESCRIPTION	CLEAR OPENING / OCC. FACTOR =	OCC. CAPACITY	PROPOSED OCC.
①	3'-0" x 7'-0" SWING DR.	RESTRICTED ENTRY / PUBLIC EXIT	33" (CLEAR MIN.)	0.20	165
②	3'-0" x 7'-2" SLIDING DR.	PUBLIC ENTRY / EXIT	33" (CLEAR MIN.)	0.20	165
			TOTAL EGRESS WIDTH = 33" / 0.20 = 165 MAX. OCCUPANTS > 48 PROPOSED OCC. (OK)		
OTHER: 32" MIN. @ DOORS 44" MIN. CORRIDOR N/A STAIRS					

MRCEB BUILDING RENOVATION SUMMARY					
WORK AREA	BUILDING AREA (S.F.)	RECONFIGURED AREA (S.F.)	ADDITION AREA	WORK AREA EXCEEDS 50%	CLASSIFICATION OF WORK
A	275,000	327	-	NO	ALTERATION LEVEL 2 (CH. 5, SECTION 504 and CH'S 7 & 8)

**MBC CODE ANALYSIS LEGEND**

"X-X" DENOTES TRAVEL DISTANCE  
A-4 OCC. GROUP

**MBC/MRCEB CODE ANALYSIS LEGEND**

"X-X" DENOTES TRAVEL DISTANCE  
A-4 OCC. GROUP  
DENOTES WORK AREA

**CODE DATA**

JURISDICTION: SAULT STE. MARIE, MI  
CITY: CHIPPEWA  
COUNTY: SAULT STE. MARIE  
TOWNSHIP: MICHIGAN (MDLARA)  
STATE: MICHIGAN (MDLARA)

BUILDING CODE: MICHIGAN REHAB CODE FOR EXIST. BLDGS W/ MICHIGAN BUILDING CODE - 2021

MBC CONSTRUCTION TYPE: II-B

OCC. GROUP: ACCESSORY OCCUPANCY, NON-SEPARATED; A-4 (ASSEMBLY).

USE: ENCLOSED AND UNENCLOSED SPECTATOR SEATING

RISK CATEGORY: II (NOT ESSENTIAL)

PLUMBING CODE: MICHIGAN PLUMBING CODE - 2021

MECHANICAL CODE: MICHIGAN MECHANICAL CODE - 2021

ELECTRICAL CODE: MICHIGAN ELECTRICAL CODE - 2023, INCORPORATING THE 2023 NEC W/ MICHIGAN PART 8 RULES

FIRE CODE: INTERNATIONAL FIRE CODE- 2021

ENERGY CODE: CZ7 (CLIMATE ZONE 7)  
ASHRAE STANDARD 90.1-2019 W/  
2021 MICHIGAN COMMERCIAL ENERGY CODE W/ PART 10A AMENDMENTS

FIRE SUPPRESSION: PROVIDED PER NFPA 13-2019

FIRE ALARM: NFPA 72-2019

FIRE EXTINGUISHERS: NFPA 10-2019

ACCESSIBILITY: N/A PER MBC. SEC. 1103.2.15 - PROVIDED PER OWNER REQUEST, IN COMPLIANCE W/ 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN AND ICC A117.1-2009

SPACES WITH ONE EXIT/EXIT ACCESS: (MBC. TABLE 1006.2.1)  
MAX. OCC. LOAD MAX. COMM. PATH OF EGRESS/EXIT ACCESS TRAVEL DIST. (SINGLE EXIT) OF SPACE  
A,B (OCC.)  
<=49 MAX. 75 FT. (NOT SPRINKLERED, ALL OCCUPANT LOADS SERVED BY M.O.E.)

STORIES WITH ONE EXIT/EXIT ACCESS: (MBC. TABLE 1006.3.2(2))  
MAX. OCC. LOAD MAX. COMM. PATH OF EGRESS/EXIT ACCESS TRAVEL DIST. (SINGLE EXIT) OF STORY  
A,B (OCC.)  
<=49 MAX. 75 FT. (NOT SPRINKLERED)  
S (OCC.)  
<=29 MAX. 75 FT. (NOT SPRINKLERED)

MIN. NUMBER OF EXITS (STORY): (MBC TABLE 1006.3.1)  
2 PER STORY 1-500 OCC.

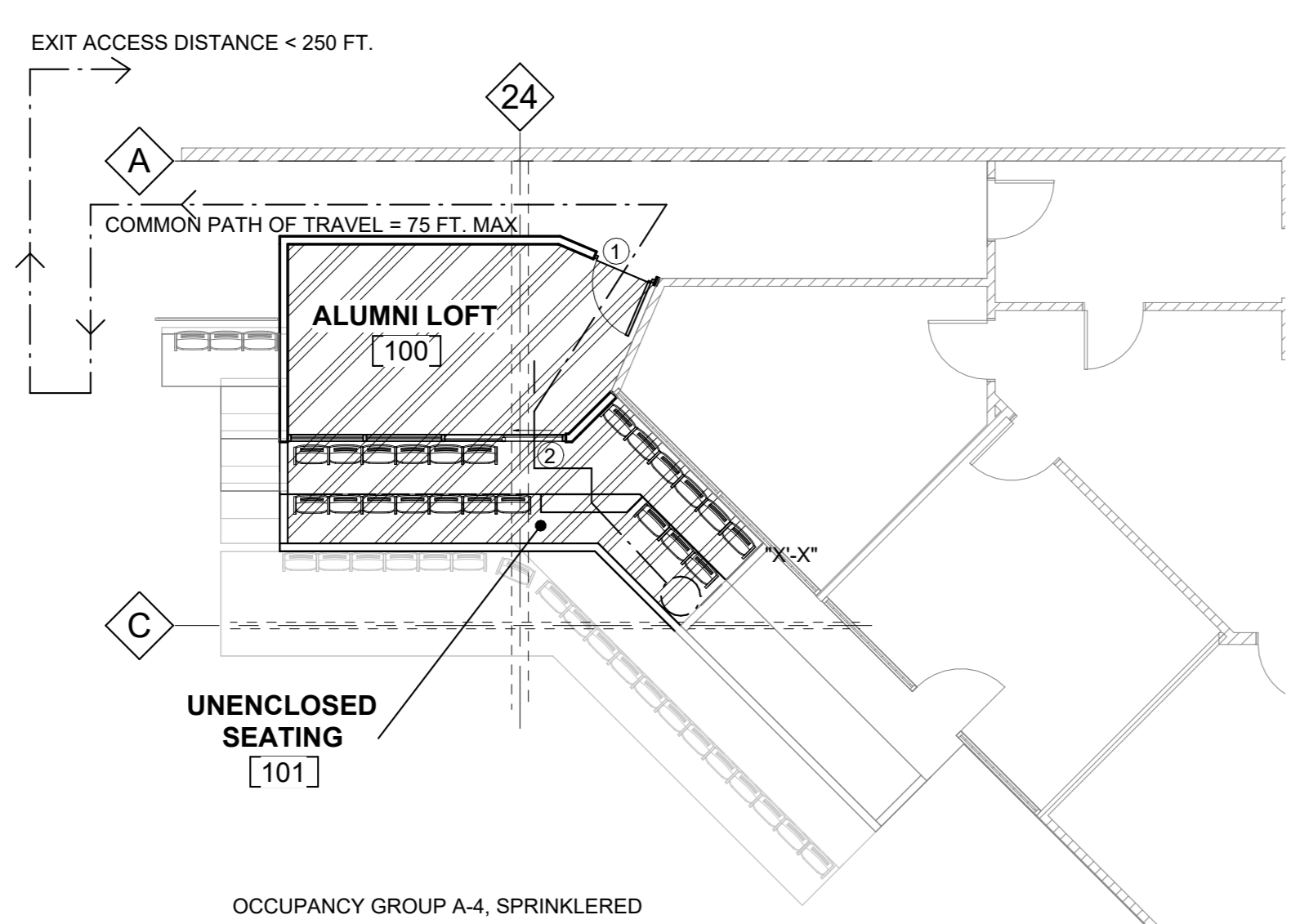
MAX. EXIT ACCESS TRAVEL DIST.: (MBC TABLE 1017.2)  
A,B, OCC. GROUPS = 250 FT.

DEAD END CORRIDOR: (MBC SECTION 1020.4)  
20 FT. (NOT SPRINKLERED)

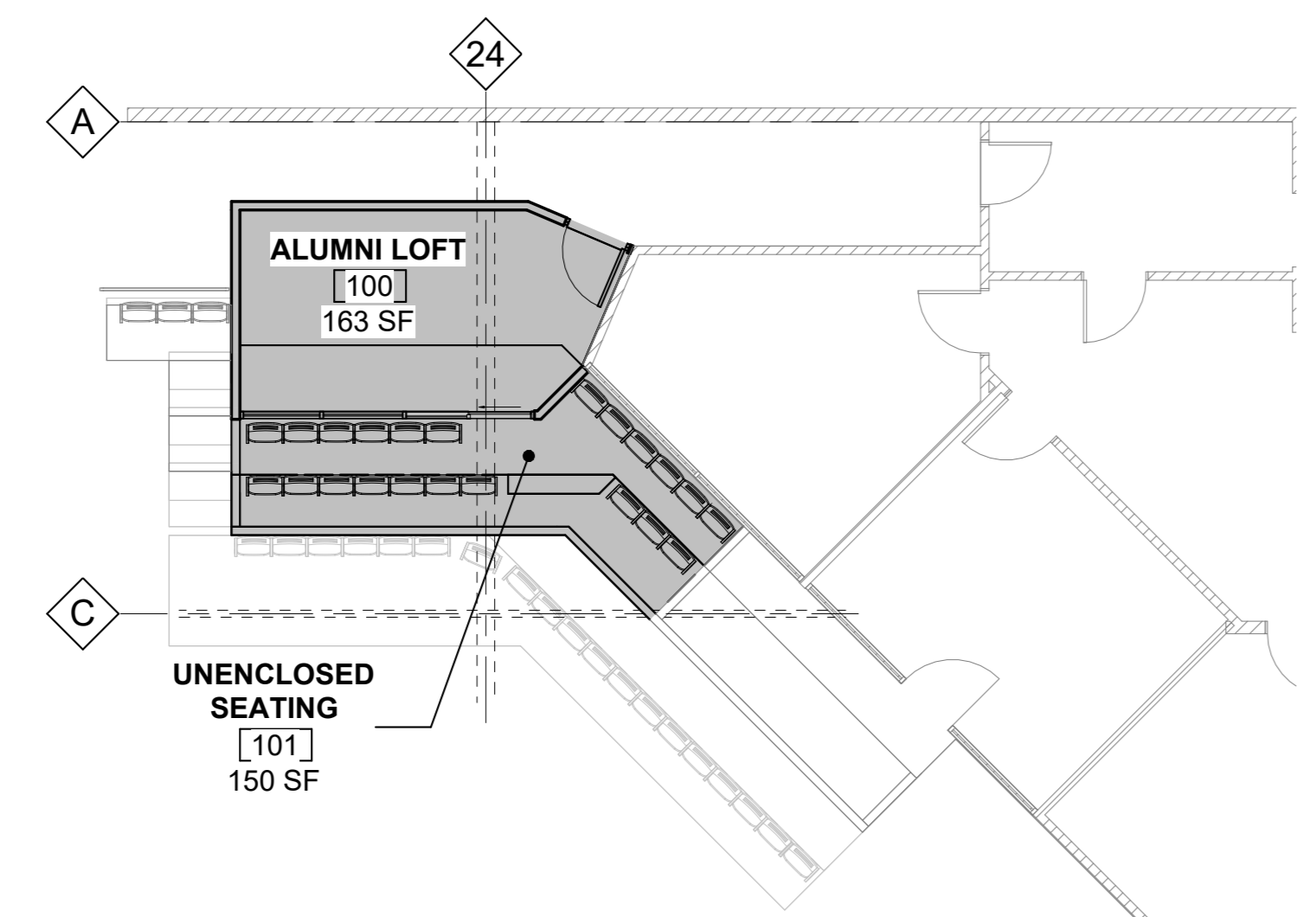
CORRIDOR WIDTH (MBC): OCC. LOAD < 50= 36 INCHES  
ALL OTHER = 44 INCHES

REQUIRED EXIT WIDTH (STAIRS / OTHER): (MBC SECTION 1011 OR PER MIN. PER 1005.3.1 AND 1009)  
STAIRS= N/A- NO STAIRS  
OTHER= PER OCC. LOAD CALCULATIONS

FIRE RESISTANCE RATING REQUIREMENTS	
MBC CONSTRUCTION TYPE - II-B	
BUILDING ELEMENT	FIRE RATINGS (MBC TABLE 601/602)
PRIMARY STRUCTURAL FRAME	0 HOUR
BEARING WALLS:	
EXTERIOR	0 HOUR
INTERIOR	0 HOUR
NON-BEARING WALLS AND PARTITIONS:	
EXTERIOR (A,B OCC. GROUPS)	X < 5 (1 HOUR), 5 < X < 10 (1 HOUR), 10 < X < 30 (0 HOUR), X > 30 (0 HOUR)
(S-1 OCC. GROUP)	X < 5 (2 HOUR), 5 < X < 10 (1 HOUR), 10 < X < 30 (0 HOUR), X > 30 (0 HOUR)
INTERIOR	0 HOUR
FLOOR CONSTRUCTION AND SECONDARY MEMBERS	0 HOUR
ROOF CONSTRUCTION AND SECONDARY MEMBERS	0 HOUR
INCIDENTAL USES	FIRE RATING REQUIREMENTS
FURNACE ROOM W/ ANY PIECE OF EQUIP. OVER 400,000 BTU/HR INPUT	ONE HOUR* (MBC TABLE 509)
ROOMS W/ BOILERS WHERE LARGEST PIECE OF EQUIP. IS OVER 15 PSI AND 10 HP	ONE HOUR* (MBC TABLE 509)
WALL REQUIREMENTS	FIRE RATING REQUIREMENTS
CORRIDOR WALLS (FIRE PARTITION)	> 30 OCC.= 1 HOUR* (PER MBC TABLE 1020.1)
OCCUPANCY SEPARATION (FIRE BARRIER)	ONE HOUR (PER MBC TABLE 508.4)
FIRE BARRIERS (OTHER)	(PER MBC SEC. 707.3)
HORIZONTAL ASSEMBLIES (ROOF-CEILING ASSEMBLY)	ONE HOUR (PER MBC SEC. 7112.4.6, 708.4)
HORIZONTAL ASSEMBLIES (PRECAST CEILING)	ONE HOUR (PER MBC SEC. 7112.4.6)
* ZERO HOUR WHEN AUTOMATIC SPRINKLER SYSTEM IS PROVIDED.	



**2 LIFE SAFTEY PLAN**  
CS-001 1/8" = 1'-0"



**1 MRCEB WORK AREA PLAN**  
CS-001 1/8" = 1'-0"

**DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE**

SIDOCK GROUP, INC.  
GINTAUTAS A. GASKA, AIA, NCARB  
LICENSE NUMBER #1301038501 EXP. 11/12/2026

THESE CONSTRUCTION DOCUMENTS WERE PREPARED FOR COMPLIANCE WITH THE MICHIGAN CONSTRUCTION CODES AND GUIDELINES IN EFFECT AT THE TIME OF PERMIT SUBMITTAL. ALL ENGINEERS, CONTRACTORS AND SUPPLIERS INVOLVED WITH THIS PROJECT SHALL COMPLY WITH THE SAME CODES. ISSUED AND APPROVED CODE MODIFICATIONS AND/OR LOCAL JURISDICTION CONSTRUCTION BOARDS OF APPEALS RULINGS AND, WHENEVER REQUIRED, SHALL PROVIDE SHOP DRAWINGS AND SUBMITTALS CLEARLY DESCRIBING COMPLIANCE TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE FOR REVIEW AND APPROVAL.

## ARCHITECTURAL DRAWING ABBREVIATIONS

ABV. ABOVE	DPR. DAMPER	H.C. HOLLOW CORE	P.C.F. POUNDS PER CUBIC FOOT	VIN. VINYL SHEET
A.F.F. ABOVE FINISHED FLOOR	DP. DAMP PROOFING	H.M. HOLLOW METAL	P.L.F. POUNDS PER LINEAR FOOT	VCT. RESILIENT TILE FLOORING
A.S.C. ABOVE SUSPENDED CEILING	D.L. DEAD LOAD	HK. HOOK	P.S.F. POUNDS PER SQUARE FOOT	(VINYL COMPOSITION TILE)
ACC. ACCESS	DEMO. DEMOLITION OR DEMOLISH	HMZ. HORIZONTAL	P.S.I. POUNDS PER SQUARE INCH	
ACFL. ACCESS FLOOR	DMT. DEMOUNTABLE	H.B. HOSE		W. WEST WIDTH OR WALLCOVERING
A.P. ACCESS PANEL	DEP. DEPRESSED	HY. HYDRANT		(VINYL COATED FABRIC)
ACPL. ACOUSTICAL PLASTER	DET. DETAIL			WB. WALL BORDER
A.C.T./AT. ACOUSTICAL CEILING TILE	DIAG. DIAGONAL	IN. INCH / INCHES	P.C.C. PRECAST CONCRETE	W/ WITH
AT (SP) ACOUSTICAL CEILING (W/ SPRAYED PLASTIC FINISH)	DIA. DIAMETER	INCL. INCLUDE	P.E.M.B. PRE-ENGINEERED METAL BUILDING	W/O WITHOUT
AT (TG) ACOUSTICAL CEILING (W/ TEGULAR EDGE)	DIM. DIMENSION (S)	INFO. INFORMATION	PRE-FIN. PRE-FINISHED	WC. WATER CLOSET
ACP. ACRYLIC PLASTIC	DSP. DISPENSER	INL. INLET	P.C. PRESTRESSED CONCRETE	WD. WOOD
ADDN. ADDITION	DIV. DIVISION	IN. INSIDE DIAMETER	PREV. PREVIOUSLY	WH. WATER HEATER
ADDNL. ADDITIONAL	D.H. DOOR HEADER	INSUL. INSULATED	P.L. PROPERTY LINE	WM. WATER MAIN
AF. ACCESS FLOORING	D.O. DOOR OPENING	IHM. INSULATED HOLLOW METAL	PROPOSED	WP. WALLCOVERING PROTECTIVE
ADH. ADHESIVE	D.J. DOOR JAMB	IOHD. INSULATED OVERHEAD DOOR		(RIGID PVC SHEET)
ADJ. ADJACENT	DBL. DOUBLE	IRD. INSULATED ROLLING DOOR	QT. QUARRY TILE	WP. WATER PROOF (ING)
ADJT. ADJUSTABLE	DBLA. DOUBLE ACTION	INT. INTERIOR	QTY. QUANTITY	WS. WATER SERVICE
AGG. AGGREGATE	DBLH. DOUBLE HUNG	ILK. INTERLOCK		WR. WEATHER RESISTANT
ADO. AUTOMATIC DOOR OPERATOR	DTA. DOVETAIL ANCHOR	INTM. INTERMEDIATE	R. RADIUS OR RISER	WSF. WELDED SEAM SHEET FLOORING
A/C. AIR CONDITIONING	DTS. DOVETAIL ANCHOR SET	INV. INVERT	RL. RAIL (ING)	WIN. WINDOW
A.C.U. AIR CONDITIONING UNIT	DWL. DOWEL (S)	I.E. INVERT ELEVATION	R.R. RAIL ROAD	W.W.F./W.W.R. WELDED WIRE FABRIC/
A.H.U. AIR HANDLING UNIT	DN. DOWN	IRS. IRON PIPE SIZE	REC. RECESS	W.W.M. WELDED WIRE REINFORCEMENT
ALT. ALTERNATE	DS. DOWNSPOUT	JAN. JANITOR	REF. REFLECT (ED), (IVE), (OR)	YRD. YARDED WIRE MESH
AL. ALUMINUM	D. DRAIN	J.C. JANITOR CLOSET	REFR. REFRIGERATOR	YRD. YARD (S)
A.B. ANCHOR BOLT	DRB. DRAIN BOARD	JT. JOINT	REG. REGISTER	XS. EXTRA STRONG
ANC. ANCHOR, ANCHORAGE	DWR. DRAWER	JF. JOINT FILLER	REINF. REINFORCE (D), (ING)	
ANOD. ANOZIDED	DWG. DRAWING	JST. JOIST	RCP. REINFORCED CONCRETE	
APT. APARTMENT	D.F. DRINKING FOUNTAIN	J.B. JOIST BEARING	REM. REMOVE (ABLE)	
APPROX APPROXIMATE	D.W. DUMB WATER		RESIL. RESILIENT ATHLETIC FLOORING	
- APPROXIMATELY	E. EAST	K.C.P. KEENE'S CEMENT PLASTER	RB. RESILIENT BASE (RUBBER, VINYL)	
ARCH. ARCHITECT (URAL)	EA. EACH	KP. KICKPLATE	RSF. RESILIENT SHEET FLOORING	
A.D. AREA DRAIN	E.F. EACH FACE	KIT. KITCHEN	RF. RAISED RUBBER FLOORING	
ASB. ASBESTOS	EFTR. EXISTING FINISH TO REMAIN	KS. KITCHEN SINK	RET. RETURN	
ASPH. ASPHALT	E.W. EACH WAY	KO. KNOCKOUT	RA. RETURN AIR	
A.T. ASPHALT TILE	ELEC. ELECTRIC (AL)		RVS. REVERSE (SIDE)	
@ AT	EMCH. ELECTRO-MECHANICAL CLOSER/HOLDER	L. LENGTH	REF. REFERENCE	
A.C.M. ASBESTOS CONTAINING MATERIAL	E.P. ELECTRICAL PANEL	LB. POUND	REQD. REQUIRED	
AUTO. AUTOMATIC	EW.C. ELECTRIC WATER COOLER	LBS. POUNDS	REV. REVISION (S), REVISED	
AWF. ACOUSTICAL WALL FABRIC (TACKABLE)	ELEV. ELEVATOR	LBL. LABEL	R.H. RIGHT HAND	
AWP. ACOUSTICAL WALL PANEL	EL. EMBEDMENT	LAV. LAVATORY	R.O.W. RIGHT OF WAY	
B/B. BACK TO BACK	EMBED. EMBEDMENT	LAD. LADDER	RVT. RIVET	
B/C. BACK OF CURB OR	ENC. ENCLOSE (URE)	L.B. LAG BOLTS	RC. ROOF CONDUCTOR	
BOTTOM CHORD	E.S. END SECTION	LAM. LAMINATE (D)	RD. ROOF DRAIN OR	
B.O.C. BACK OF CURB	EPY. EPOXY (COATINGS)	LM. LATEX MASTIC FLOORING	ROLLING DOOR	
B.P. BACK PLASTER (ED)	EQ. EQUAL	LDRY. LAUNDRY	RFH. ROOF HATCH	
BP. BRICK PAVERS (UNIT PAVERS)	EQUIP. EQUIPMENT	LAV. LAVATORY	RFG. ROOFING	
BALC. BALCONY	EP. EPOXY RESINOUS FLOORING	LH. LEFT HAND	RM. ROOM	
BSMT. BASEMENT	ESC. ESCALATOR	LT. LIGHT	R.O. ROUGH OPENING	
B. BATHROOM	EMER. EMERGENCY	L.C. LIGHT CONTROL	S. SOUTH	
B.F. BARRIER FREE	EST. ESTIMATE	L.W. LIGHTWEIGHT	SGL. SAFETY GLASS	
BRG. BEARING	EXCA. EXCAVATE	LWC. LIGHTWEIGHT CONCRETE	S.A. SELF-ADHERED	
BPL. BEARING PLATE	EXH. EXHAUST	LMS. LIMESTONE	S.F.M. SANITARY FORCE MAIN	
B.JT. BED JOIST	EXIST. EXISTING	LT. LIGHT	SND. SANITARY NAPKIN DISPENSER	
BR. BEDROOM	EXMP. EXPANDED METAL PLATE	LL. LIVE LOAD	SNR. SANITARY NAPKIN RECEPTACLE	
BR. BR BRICK (UNIT MASONRY)	EXP. EXPANSION	LR. LIVING ROOM	SCH. SCHEDULE (D)	
BM. BENCHMARK OR BEAM	E.B. EXPANSION BOLT	L.G. LONG	SCN. SCREEN	
BEL. BELOW	E.J. EXPANSION JOINT	L.L.H. LONG LEG HORIZONTAL	SNT. SEALANT	
BVL. BEVELED	EXP. EXPOSED	L.L.V. LONG LEG VERTICAL	STG. SEATING	
BIT. BITUMINOUS	E.C. EXTERIOR CONCRETE	LVR. LOUVER	SEC. SECTION	
BLK. BLOCK	EXT. EXTERIOR	L.H. LOUVER HEADER	SS. SERVICE SINK	
BLKG. BLOCKING	EXS. EXTRA STRONG	L.J. LOUVER JAMB	SHTH. SHEATHING	
BD. BOARD	EXTR. EXTRUDE (R)	L.S. LOUVER SILL	SHT. SHEET	
B.S. BOTH SIDES		L.P. LOW POINT OR LIGHT POLE	SG. SHEET GLASS	
B.W. BOTHWAYS	F.O.W. FACE OF WALL	M. MATCH	SH. SHELF OR SHELIVING	
BOT. BOTTOM	FB. FACE BRICK	MACH. MACHINE	S & P. SHELF AND POLE	
B/ BOTTOM OF	F.O.C. FACE OF CONCRETE	MHO. MAGNETIC HOLD-OPEN (WALL OR FLR. MTD.)	SHO. SHORE (D), (ING)	
B.O.D. BOTTOM OF DECK	F.O.F. FACE OF FINISH	M.H. MANHOLE	SHWR. SHOWER	
B.O.F. BOTTOM OF FOOTING	F.O.M. FACE OF MASONRY	MFG. MANUFACTURER	SIM. SIMILAR	
B.O.P. BOTTOM OF PIPE	F.O.S. FACE OF STUD	MT. MARBLE THRESHOLD	SKL. SKYLIGHT	
B.O.W. BOTTOM OF WALL	F.F. FINISHED FLOOR (OR FACE TO FACE)	MAS. MASONRY	SLV. SLEEVES	
B.O.V. BOULEVARD	F.F. FACTORY FINISH	M.O. MASONRY OPENING	SD. SOAP DISPENSER	
BRCG. BRACING	FF. FROST FREE	MATL./MAT. MATERIAL	SC. SOLID CORE	
BRKT. BRACKET	F/G. FINISHED GRADE	MAX. MAXIMUM	SP. SOUNDPROOF	
BC. BRICK	F.S. FAR SIDE	MECH. MECHANIC (AL)	S.A.B. SOUND ATTENUATION BATT	
BRZ. BRONZE	FAST. FASTEN (ER)	M.C. MEDICINE CABINET	SPC. SPACER	
BLDG. BUILDING	FA. FEET	MC. MULTI-COLOR COATING	SPK. SPEAKER	
B.L. BUILDING LINE	FN. FENCE	MEZZ. MEZZANINE	SPK. SPEAKER	
B.U.R. BUILT UP ROOFING	FBD. FIBERBOARD	MIN. MINIMUM	SPL. SPECIAL	
BLKHD. BULKHEAD	FRP. FIBERGLAS REINFORCED PANEL(S)	MIR. MIRROR	SC. HIGH BUILD GLAZED COATING (SPECIAL COATING)	
BBD. BULLETIN BOARD	FIN. FINISH	MISC. MISCELLANEOUS	SF. SPECIAL FACED	
CAB. CABINET	FFL. FINISHED FLOOR LINE	MOD. MODULAR	SPEC. SPECIFICATION (S)	
CAD. CADMIUM OR CAD	FA. FIRE ALARM	MLD. MOLDING OR MOULDING	SO. SPECIFICATION	
CLK. CALK (ING) OR CAULK (ING)	FBRK. FIRE BRICK	MOP. MOUNT OR	SO. FT. SQUARE FEET / FOOT	
CP. CARPET (WITHOUT CUSHION BROADLOOM)	F.E. FIRE EXTINGUISHER (BRACKET)	MT. MOUNT (ED), (ING)	STAG. STAGGERED	
CPT. CARPET TILE	F.E.C. FIRE EXTINGUISHER (CABINET)	MTL. METAL	ST. STAIN	
CSMT. CASEMENT	F.H. FIRE HYDRANT	MOV. MOVEABLE	ST. STAIN	
C.I. CAST IRON	FHC. FIRE HOSE CABINET	MULL. MULLION	S.S. STAINLESS STEEL	
C.I.P.C. CAST IN PLACE CONCRETE	FHS. FIRE HOSE STATION	N. NORTH	STD. STANDARD	
C.S. CAST STONE	F.M. FIRE MAIN	N.S. NEAR SIDE	ST. STATION	
C.B. CATCH BASIN	F.P. FIRE PROOF OR FIRE PLACE	NOM. NOMINAL	STL. STEEL	
CLG. CEILING	FR. FIRE RESISTANT COATING	NMT. NON-METALLIC	STO. STORAGE	
CHT. CEILING HEIGHT	FRT. FIRE RETARDANT	NF. NATURAL FINISH	SD. STORM DRAIN	
CEM. CEMENT	FIXT. FIXTURE	N.I.C. NOT IN CONTRACT	STW. STORM SEWER	
CPPL. CEMENT PLASTER (PORTLAND)	FLG. FLASHING OR FLANGE	N.T.S. NOT TO SCALE	STRU. STRUCTURAL	
C/C. CENTER / CENTER	FHMS. FLATHEAD MACHINE SCREW	NUM. NUMBER	ST. STRUCTURAL CLAY TILE	
C. CENTER LINE	FHWS. FLATHEAD WOOD SCREW	O/O. OUT TO OUT	ST. STONE (CAST)	
C.P. CENTER POINT	FLX. FLEXIBLE	O.C. ON CENTER	SA. SUPPLY AIR	
CM. CENTIMETER (S)	FLR. FLOOR (ING)	OPG. OPENING	SUS. SUSPEND (ED)	
CER. CERAMIC	FLCO. FLOOR CLEANOUT	OPS. OPPOSITE	SURF. SURFACE	
C.T. CT CERAMIC TILE (FLOOR, BASE, AND WALL)	F.D. FLOOR DRAIN	O.D. OUTSIDE DIAMETER	SYM. SYMMETRY (ICAL)	
C.M.T. CERAMIC MOSAIC TILE	FPL. FLOOR PLATE	OHMS. OHMS	SYN. SYNTHETIC	
CERT. CERTIFIED	FLUR. FLUORESCENT	OHWS. OVAL HEAD WOOD SCREW	SYS. SYSTEM	
CHBD. CHALK BOARD	FJT. FLUSH JOINT	OA. OVERALL	T. TREAD	
CHAM. CHAMFER	FTG. FOOTING	OH. OVERHEAD	T/ TOP OF	
CR. CHROMIUM	FRG. FORGED	OHD. OVERHEAD DOOR	T/C. TOP OF CURB OR TOP CHORD	
CIR. CIRCLE	FND. FOUNDATION	OFOI. OWNER FURNISHED/ OWNER INSTALLED	T/P. TOP OF PAVEMENT	
CIRC. CIRCUMFERENCE	FRMG. FRAME (ED), (ING)	OFCI. OWNER FURNISHED/ CONTRACTOR INSTALLED	T/S. TOP OF SLAB	
CL. CLASS	FRZR. FREEZE (ER)	OFCI. OWNER FURNISHED/ CONTRACTOR FURNISHED/ CONTRACTOR INSTALLED	T/STL. TOP OF STEEL	
CLR. CLEAR (ANCE)	FRA. FRESH AIR	CONTRACTOR INSTALLED	T/STL. TOP OF STEEL	
C.O. CLEAN OUT	FS. FULL SIZE	CONTRACTOR FURNISHED/ CONTRACTOR INSTALLED	TKBD. TACK BOARD	
CLR. CLEAR	F.T. FULLY TEMPERED	CONTRACTOR INSTALLED	TKS. TACK STRIP	
CLS. CLOSURE	F.B.O. FURNISHED BY OTHERS	P.T. PRESERVATIVE TREATED	TEL. TELEPHONE	
COL. COLUMN	F.B.O. (ING)	PT/P. PAINT (EXTERIOR, INTERIOR, TRANSPARENT FINISHES)	TEL. TELEPHONE	
COMB. COMBINATION	FUT. FUTURE	PANEL	TV. TELEVISION	
COMP. COMPACTED		PNL. PANEL	TEMPGL. TEMPERED GLASS	
COMPT. COMPARTMENT	G. GUTTER ELEVATION	PTR. PAPER TOWEL RECEPTOR	TEMP. TEMPORARY	
COMPO. COMPOSITION (COMPOSITE)	GA. GAGE	PAR. PARALLEL	TC. TERRA COTTA	
COMP. COMPRESS (ED), (ION), (IBLE)	GALV. GALVANIZE (D)	PK. PARKING	TZ. TERRAZZO	
CONC. CONCRETE	GST. GLAZED STRUCTURAL PANEL	PBD. PARTITION BOARD	TT. TERRAZZO TILE (PLASTIC MATRIX)	
CONN. CONNECTION	GL. GLASS (GLAZING)	PTN. PARTITION	THK. THICK (NESS)	
CONST. CONSTRUCTION	G.F.R.C. GLASS FIBER REINF. CONC.	PV. PAVE (D), (ING)	THD. THREAD (ED)	
C.J. CONTROL JOINT	G.B. GRAB BAR	PVMT. PAVEMENT	THRESH. THRESHOLD	
CONT. CONTINUOUS OR CONTINUATION	GD. GRADE OR GRADING	PED. PEDESTAL	T.O.C. TOP OF CONCRETE	
CONTR. CONTRACT (OR)	GRN. GRANITE	PC. PRECAST (ARCHITECTURAL, PRECAST CONCRETE PANELS)	T.O.F. TOP OF FOOTING	
C.L.L. CONTRACT LIMIT LINE	GRAT. GRATING	PT. PARTITION	T.O.P. TOP OF PIER OR PIPE	
CMU. CONCRETE MASONRY UNIT	GVL. GRAVEL	PEN. PENETRATION	T.O.S. TOP OF STEEL	
CNJ. CONSTRUCTION JOINT	G.F. GROUND FACE	PERF. PERFORATE (D)	T.O.W. TOP OF WALL	
COORD. COORDINATE (ION)	GRT. GROUT	PERIM. PERIMETER	TOL. TOLERANCE	
CPR. COPPER	GYP. BD / GB / GWB. GYPSUM WALLBOARD SYSTEMS	PC. PIECE	T&B. TOP AND BOTTOM	
C.S. CORNER GUARD	GPL. GYPSUM PLASTER LATH	PCP. PORTLAND CEMENT PLASTER	T&G. TONGUE AND GROOVE	
CORID. CORRIDOR	GPT. GYPSUM TILE	PPF. POLYPROPYLENE FABRIC WALLCOVERING	T&B. TONGUE AND GROOVE	
CORR. CORRUGATED	H. HIGH	PLAS / PL. PLASTER	TR. TRANSOM	
CMP. CORRUGATED METAL PIPE	H.R. HANDRAIL	PLAM. PLASTIC LAMINATE	TD. TRENCH DRAIN	
CP. CORRUGATED PERFORATED PLASTIC PIPE	HDW / HW. HARDWARE SET (FINISH OR BUILDERS HARDWARE)	PLATE. PLATE	TYP. TYPICAL	
CTR. COUNTER	H.W. HARDWARE	PG. PLATE GLASS	U.N.O. UNLESS NOTED OTHERWISE	
CFL. COUNTER FLASHING	HJT. HEAD JOINT	PLBG. PLUMBING	U.P. UTILITY POLE	
C.S. COUNTER SINK	HDR. HEADER	PWD. PLYWOOD	UIS. UNDERSIDE	
CTSK. COUNTERSUNK	HTG. HEATING	PWT. POINT OR POINT TANGENT		
CRS. COURSE (S)	HVAC. HEATING / VENTILATING / AIR CONDITIONING	P.C. POINT OF CURVATURE	VB. VAPOR BARRIER	
CRG. CROSS GRAIN	HT. HEIGHT	POL. POLISH (ED)	VP. VENEER PLASTER	
CTYD. COURTYARD	H.P. HIGH POINT	PUT. POLYURETHANE	VERT. VERTICAL	
CFT. CUBIC FOOT	H.S.B. HIGH STRENGTH BOLT	P.V. POST INDICATOR VALVE	V.I.F. VERIFY IN FIELD	
CYD. CUBIC YARD		PTC. POST TENSION CONCRETE		

## STATEMENT OF SPECIAL INSPECTIONS

(2021 MICHIGAN BUILDING CODE)	
UNLESS OTHERWISE NOTED, THE GENERAL CONTRACTOR MUST COORDINATE AND SCHEDULE ALL INSPECTIONS AND TESTING REQUIRED IN EACH SECTION OF THE SPECIFICATION AND THE SPECIAL INSPECTIONS MARKED BELOW. NOTIFY EACH INSPECTING OR TESTING AUTHORITY OR AGENCY 24 HOURS IN ADVANCE OF EACH INSPECTION OR TEST. SUBMIT ONE COPY OF EACH REPORT OR TEST AS IT IS MADE AVAILABLE TO THE ARCHITECT FOR THEIR REVIEW. THE GENERAL CONTRACTOR MUST HIRE AND PAY A THIRD PARTY COMPANY TO COMPLETE ALL REQUIRED INSPECTIONS, TESTING AND SPECIAL INSPECTIONS.	[ ] DRIVEN DEEP FOUNDATIONS (1705.7, TABLE 1705.7)
	[ ] CAST-IN-PLACE DEEP FOUNDATIONS (1705.8, TABLE 1705.8)
	[ ] HELICAL PILE FOUNDATIONS (1705.9)
	[ ] FABRICATED ITEMS (I.E. STRUCTURAL, LOAD BEARING OR LATERAL LOAD-RESISTING MEMBERS OF ASSEMBLIES- 1705.10)
	[ ] SPECIAL INSPECTION FOR WIND REQUIREMENTS (1705.11)
	[ ] WIND EXPOSURE CATEGORY (1609.4)
	[ ] B (>= 120MPH) [ ] C & [ ] D (>= 110 MPH)
	[ ] STRUCTURAL WOOD (1705.11.1)
	[ ] COLD-FORMED STEEL LIGHT-FRAME CONST. (1705.11.2)
	[ ] WIND RESISTING COMPONENTS (17011.3)
	[ ] ROOF CLADDING
	[ ] WALL CLADDING
THE AREAS MARKED BELOW MUST HAVE SPECIAL INSPECTIONS	[ ] SPECIAL INSPECTION FOR SEISMIC RESISTANCE (1705.12)
	[ ] SEISMIC DESIGN CATEGORY (1613.3.5)
	[ ] B [ ] C [ ] D [ ] E [ ] F
	[ ] STRUCTURAL STEEL (1705.12.1, 1705.12.1.1, 1705.12.1.2)
	[ ] STRUCTURAL WOOD (1705.12.2)
	[ ] WIND RESISTING COMPONENTS (17011.3)
	[ ] ARCHITECTURAL COMPONENTS (1705.12.5- CATEGORY D, E, F ONLY)
	[ ] EXTERIOR CLADDING
	[ ] INTERIOR EXTERIOR VENEER (>5 PSF)
	[ ] INTERIOR EXTERIOR NON-BEARING WALLS (> 15 PSF)
	[ ] SUSPENDED CEILING
	[ ] ACCESS FLOORS (CATEGORY D, E, F ONLY, 1705.12.5.1)
	[ ] *N/A FOR COMPONENTS <30 FT. ABOVE GRADE OR WALKING SURFACE
	[ ] MEP COMPONENTS (1705.12.6)
	[ ] EMERGENCY ELECTRICAL SYSTEMS
	[ ] OTHER ELECTRICAL EQUIPMENT (CATEGORY E, F ONLY)
	[ ] HAZARDOUS PIPING
	[ ] HAZARDOUS DUCTWORK
	[ ] VIBRATION ISOLATION SYSTEMS (W/ <= 1/4" CLEARANCE)
	[ ] STORAGE RACKS (>8 FT HIGH, CATEGORY D, E, F ONLY, 1705.12.7)
	[ ] SEISMIC ISOLATION SYSTEMS (1705.12.8)
	[ ] COLD-FORMED STEEL SPECIAL BOLTED MOMENT FRAMES (1705.12.9)
[X] INSPECTION OF FABRICATORS (1704.2.5)	[ ] TESTING FOR SEISMIC RESISTANCE (1705.13)
[X] STRUCTURAL STEEL	[ ] SEISMIC DESIGN CATEGORY (1609.4)
[X] STEEL JOISTS AND GIRDERS	[ ] B [ ] C [ ] D [ ] E [ ] F
[ ] PRECAST CONCRETE	[ ] IMPORTANCE FACTOR > 1
[ ] PRESTRESSED CONCRETE	[ ] STRUCTURAL STEEL (1705.13.1)
[ ] WOOD CONSTRUCTION (SECTION 1705.5)- PREFABRICATED STRUCTURAL ELEMENTS COVERING:	[ ] SEISMIC FORCE-RESISTING SYSTEMS (CATEGORY B, C, D, E, OR F, 1705.13.1.1)
[ ] MANUFACTURED WOOD TRUSSES	[ ] NOT REQUIRED IN BUILDINGS CLASSIFIED IN B OR C NOT SPECIFICALLY DETAILED FOR SEISMIC RESISTANCE W/ RESPONSE MOD. COEF. "R" OF <= 3 (1705.13.1.E.X)
[ ] WALLS	[ ] STRUCTURAL STEEL ELEMENTS (CATEGORY B, C, D, E, OR F (NOT INCLUDED IN 1705.13.1.1); STRUTS, COLLECTORS, CHORDS, AND FOUNDATION ELEMENTS, 1705.13.1.2)
[ ] FLOORS	[ ] NOT REQUIRED IN BUILDINGS CLASSIFIED IN B OR C NOT SPECIFICALLY DETAILED FOR SEISMIC RESISTANCE W/ RESPONSE MOD. COEF. "R" OF <= 3 (1705.13.1.2.E.X)
[ ] ROOF ASSEMBLIES	[ ] SEISMIC CERTIFICATION OF NONSTRUCTURAL COMPONENTS (CATEGORY B, C, D, E, OR F, 1705.13.2)
[ ] COLD-FORMED STEEL TRUSSES	[ ] ARCHITECTURAL
[X] SUBMIT FABRICATORS SHOP ACCREDITATION/ CERTIFICATION (FOR FABRICATORS REGISTERED AND APPROVED)	[ ] MECHANICAL
	[ ] ELECTRICAL
*FABRICATOR INSPECTION IS REQUIRED UNLESS APPROVED BY THE AUTHORITY HAVING JURISDICTION (AHJ). AT COMPLETION OF FABRICATION, THE TESTING AGENCY SHALL OBTAIN FROM EACH REGISTERED AND APPROVED FABRICATOR, A CERTIFICATE OF COMPLIANCE, STATING THAT THE WORKING WAS PERFORMED IN ACCORDANCE WITH THE APPROVED CONSTRUCTION DOCUMENTS AND SUBMIT ALL CERTIFICATES TO THE BUILDING DEPARTMENT PER MBC 1704.2.5.1.	[ ] DESIGNATED SEISMIC SYSTEMS (CATEGORY C, D, E, OR F, 1705.13.3)
	[ ] SEISMIC ISOLATION SYSTEMS (CATEGORY B, C, D, E, OR F, 1705.13.4)
[X] STRUCTURAL STEEL CONSTRUCTION (1705.2.1)	[ ] SPRAYED FIRE-RESISTANT MATERIALS (1705.14)
[X] STEEL CONSTRUCTION OTHER THAN STRUCTURAL (1705.2.3, 1705.2.2, & TABLE 1705.2.3)	[ ] MASTIC & INTUMESCENT FIRE-RESISTANT COATINGS (1705.15)
[X] MATERIAL VERIFICATION OF COLD-FORMED STEEL DECK (1705.2.2)	[ ] EXTERIOR INSULATION & FINISH (EIFS) (1705.16 AND 1408.6)
[X] WELDING (1705.2.2 & TABLE 1705.3 #1)	[ ] WATER-RESISTIVE BARRIER COATING (1705.16, EX. #2)
[X] COLD-FORMED STEEL DECK (1705.2.2)	[ ] MASONRY OR CONCRETE WALLS (1705.16, EX. #2)
[ ] REINFORCING STEEL (1705.3.1.2)	[ ] FIRE RESISTANT PENETRATIONS AND JOINTS- HIGH RISE BLDGS. OR RISK CAT. III & IV BLDGS./U.N.O. (1705.17)
[ ] OPEN-WEB STEEL JOISTS AND JOIST GIRDERS (1705.2.3)	[X] PENETRATION FIRESTOPS (1705.17.1)
[ ] COLD-FORMED STEEL TRUSSES (SPANNING 60'-0" OR GREATER (1705.2.4)	[X] FIRE-RESISTANT JOINT SYSTEMS (1705.17.2)
	[ ] SMOKE CONTROL (1705.18)
[X] CONCRETE CONSTRUCTION (1705.3 & TABLE 1705.3)	[ ] SPECIAL CASES AS DETERMINED BY AHJ (1705.1.1)
[X] REINFORCING STEEL (TABLE 1705.3 #1 & #2)	
[ ] PRESTRESSING TENDONS AND PLACEMENT (TABLE 1705.3 #1)	
[ ] WELDING (TABLE 1705.3 #2)	
[X] CAST-IN-PLACE ANCHORS (TABLE 1705.3 #3)	
[X] POST-INSTALLED ANCHORS (TABLE 1705.3 #4)	
[X] DESIGN MIX (TABLE 1705.3 #5)	
[X] SAMPLING & STRENGTH TESTS (TABLE 1705.3 #6)	
[X] CONCRETE PLACEMENT (TABLE 1705.3 #7)	
[ ] SHOTCRETE PLACEMENT (TABLE 1705.3 #7)	
[X] CURING (TABLE 1705.3 #8)	
[ ] PRESTRESSED (TABLE 1705.3 #9)	
[ ] APPLICATION OF PRESTRESSING FORCES	
[ ] GROUTING OF BONDED PRESTRESSING TENDONS/ SEISMIC	
[ ] PRECAST ERECTION (TABLE 1705.3 #10)	
[ ] VERIFICATION OF IN-SITU CONCRETE STRENGTH (TABLE 1705.3 #11)	
[ ] FORMWORK (TABLE 1705.3 #12)	
[ ] MASONRY CONSTRUCTION (MBC 1705.4 AND MASONRY STANDARD TMS 402-13/ACI 530-13/ASCE 5-13) AND TMS 602-13/ACI 530-1-13/ASCE 6-13. SEE ALSO EXCEPTIONS	
[ ] LEVEL 'A' QUALITY ASSURANCE, RISK CATEGORY I, II OR III DESIGNED IN ACCORDANCE W/ CHP. 5, 6, 6 OR 7, TABLE 1.19.1 (I.E. EMPIRICAL OR PRESCRIPTIVE)	
[ ] LEVEL 'B' QUALITY ASSURANCE	
[ ] RISK CATEGORY IV DESIGNED IN ACCORDANCE W/ CHP. 5, 6 OR 7, TABLE 1.19.2 (I.E. EMPIRICAL OR PRESCRIPTIVE)	
[ ] RISK CATEGORY I, II OR III DESIGNED IN ACCORDANCE OTHER THAN CHP. 5, 6 OR 7, TABLE 1.19.2 (I.E. ENGINEERED)	
[ ] LEVEL 'C' QUALITY ASSURANCE, RISK CATEGORY IV DESIGNED IN ACCORDANCE W/ CHP. 5, 6 OR 7, TABLE 1.19.3 (EMPIRICAL OR PRESCRIPTIVE)	
[ ] VERTICAL MASONRY FOUNDATION ELEMENTS. (1705.4.2)	
[ ] WOOD CONSTRUCTION (1705.5)	
[ ] HIGH-LOAD DIAPHRAGMS/ SHEAR WALLS (1705.5.1)	
[ ] METAL-PLATE-CONNECTED WOOD TRUSSES (SPANNING 60'-0" OR GREATER, 1705.5.2)	
[ ] SOILS (1705.6 & TABLE 1705.6)	
[ ] VERIFICATION OF BEARING MATERIAL CAPACITY (TABLE 1705.6 #1)	
[ ] VERIFICATION OF EXCAVATION DEPTH BEARING MATERIAL (TABLE 1705.6 #2)	
[ ] CLASSIFICATION AND TESTING OF FILL (TABLE 1705.6 #3)	
[ ] VERIFY ENGINEERED FILL DURING PLACEMENT AND COMPACTION (TABLE	

## GENERAL STRUCTURAL NOTES

- ALL CONSTRUCTION SHALL COMPLY FULLY WITH THE APPLICABLE PROVISIONS OF MIOSHA, THE MICHIGAN BUILDING CODE (2021) AND THE LOCAL GOVERNING CODE, LATEST EDITIONS, AND ALL REQUIREMENTS SPECIFIED IN THE CODES SHALL BE ADHERED TO AS IF THEY WERE CALLED FOR OR SHOWN ON THE DRAWINGS. THIS SHALL NOT BE CONSTRUED TO MEAN THAT ANY REQUIREMENTS SET FORTH ON THE DRAWING MAY BE MODIFIED BECAUSE THEY ARE MORE STRINGENT THAN THE CODE REQUIREMENTS OR BECAUSE THEY ARE NOT SPECIFICALLY REQUIRED BY CODE.

### DESIGN LOADS:

LIVE LOADS:	
FLOOR LIVE LOAD:	60 PSF
LOFT ROOF DEAD LOAD:	10 PSF
LOFT ROOF LIVE LOAD:	20 PSF

- PRIOR TO SUBMITTING PROPOSAL, VERIFY ALL CONDITIONS GOVERNING OR AFFECTING THE STRUCTURAL WORK; OBTAIN AND VERIFY ALL DIMENSIONS TO ENSURE THE PROPER FIT AND LOCATION OF THE STRUCTURAL WORK. TAKE ADDITIONAL DIMENSIONS AS REQUIRED; REPORT TO THE ENGINEER ANY AND ALL CONDITIONS WHICH MAY INTERFERE WITH OR OTHERWISE AFFECT OR PREVENT THE PROPER EXECUTION AND COMPLETION OF THE WORK; FAMILIARIZE YOURSELF WITH THE ACTUAL CONDITIONS OF THE STRUCTURAL WORK, ACCESS TO THE SITE, AVAILABLE STORAGE SPACE, FACILITIES AND OBSTRUCTIONS THAT MAY BE ENCOUNTERED DURING THE PROGRESS OF WORK.
- CONTRACTOR TO FURNISH ALL NECESSARY LABOR, MATERIAL, EQUIPMENT AND FACILITIES TO FURNISH, FABRICATE AND PERFORM THE REQUIRED STRUCTURAL WORK.
- ANY EXISTING CONSTRUCTION TO BE MODIFIED AS A PART OF THIS CONTRACT SHALL BE REBUILT AS REQUIRED TO THE SATISFACTION OF THE OWNER/ENGINEER.
- EXISTING CONSTRUCTION NOT UNDERGOING ALTERATION IS TO REMAIN UNDISTURBED, WHERE SUCH CONSTRUCTION IS DISTURBED AS A RESULT OF THE OPERATIONS OF THIS CONTRACT, THE EXISTING CONSTRUCTION SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AS REQUIRED AND TO THE SATISFACTION OF THE OWNER/ENGINEER.
- ALL WORK SHOWN ON THESE DRAWINGS MAY BE CHECKED BY AN INDEPENDENT TESTING AGENCY RETAINED BY OWNER TO ENSURE COMPLIANCE WITH THE REQUIREMENTS SHOWN ON THE DRAWINGS. THE CONTRACTOR SHALL PROVIDE ACCESS AS REQUIRED FOR TESTING PURPOSES.
- CONTRACTOR SHALL MAKE ALL NECESSARY FIELD VISITS FOR INSPECTION, MEASUREMENTS AND VERIFICATION OF EXISTING CONDITION OF RUNWAYS AND BUILDING.
- THE STRUCTURE IS DESIGNED TO BE SELF-SUPPORTING AND STABLE AFTER THE BUILDING IS FULLY COMPLETED. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE, AND TO ENSURE THE SAFETY OF THE BUILDING AND ITS COMPONENT PARTS DURING ERECTION. THIS INCLUDES THE ADDITION OF TEMPORARY BRACING, GUYS AND/OR TIE-DOWNS AS NECESSARY. SUCH MATERIAL SHALL REMAIN THE CONTRACTOR'S PROPERTY AFTER COMPLETION OF THE PROJECT.
- GOVERNING BUILDING CODE - MICHIGAN BUILDING CODE (2021).
- WORK THE STRUCTURAL DRAWINGS IN CONJUNCTION WITH THE ARCHITECTURAL, MECHANICAL, SITE AND ELECTRICAL DRAWINGS.
- USE OF ENGINEERING DRAWINGS AS ERECTION DRAWINGS BY THE CONTRACTOR IS STRICTLY PROHIBITED.

## STRUCTURAL STEEL

- STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING ASTM SPECIFICATION - A36:  
WIDE FLANGE - A992  
ALL OTHER SHAPES & PLATES - A36
- ALL CONNECTIONS NOT SPECIFICALLY DETAILED, SHALL BE DESIGNED AND DETAILED BY THE FABRICATOR. DETAILING SHALL BE PERFORMED USING RATIONAL ENGINEERING DESIGN AND STANDARD PRACTICE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE GENERAL DETAILS SHOWN ON THE DRAWINGS ARE APPROXIMATE ONLY AND DO NOT INDICATE THE REQUIRED NUMBER OF BOLTS OR WELD SIZES, UNLESS SPECIFICALLY NOTED.
- EXCEPT AS NOTED ON THE DRAWINGS, STRUCTURAL STEEL BOLTS SHALL BE ASTM A325, 3/4" DIAMETER ALL VERTICAL BOLTS ARE TO BE INSTALLED "HEAD UP" UNLESS SPECIFICALLY NOTED. IF A BOLT CANNOT BE INSTALLED "HEAD UP", THE THREAD IS TO BE "SPOILED" AFTER THE BOLT HAS BEEN PROPERLY TIGHTENED AND THEN INSPECTED BY THE TESTING AGENCY.
- HIGH STRENGTH BOLT INSTALLATION SHALL CONFORM TO THE REQUIREMENTS OF AISC AND THE "SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH STRENGTH BOLTS." PROVIDE FULLY PRETENSIONED JOINTS AT CONNECTIONS OF BRACING, WHERE BOLTS ARE IN TENSION, ARE SUBJECT TO LOAD REVERSALS OR FATIGUE, AND AT MOMENT CONNECTIONS. PROVIDE SLIP-CRITICAL JOINTS AT CONNECTIONS SUBJECT TO FATIGUE AND LOAD REVERSALS, OVERSIZED HOLES, SLOTTED HOLES AND WHERE SLIP AT THE FAYING SURFACES WOULD BE DETRIMENTAL TO THE PERFORMANCE OF THE STRUCTURE. ALL OTHER CONNECTIONS MAY HAVE SNUG-TIGHTENED CONNECTIONS UNLESS OTHERWISE NOTED.
- CONTRACTOR SHALL REFERENCE ARCHITECTURAL DRAWINGS FOR MISC. SHAPES AND PLATES WHICH SHALL BE SHOP WELDED TO THE STRUCTURAL FRAMING SECTIONS TO MINIMIZE FIELD WELDING. .
- ALL BEAMS SHALL BE FABRICATED WITH THE NATURAL CAMBER UP. PROVIDE CAMBERS AS INDICATED ON THE DRAWINGS.
- ALL STEEL TO RECEIVE ONE SHOP COAT OF PAINT. OMIT PAINT AT HOLES FOR SLIP CRITICAL TYPE CONNECTIONS, AT STRUCTURAL STEEL TO BE FIREPROOFED, ENCASED OR IN CONTACT WITH CONCRETE, AND ON TOP FLANGE OF BEAMS RECEIVING SHEAR CONNECTORS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTROL OF ALL ERECTION PROCEDURES AND SEQUENCES WITH RELATION TO TEMPERATURE DIFFERENTIALS, ESPECIALLY WITH RESPECT TO STRUCTURAL STEEL FRAMING INTO CONCRETE WALLS, BEAMS OR COLUMNS.
- PROVIDE TEMPORARY BRACING AS REQUIRED TO ENSURE STABILITY OF THE STRUCTURE UNDER FULL DESIGN LOADS UNTIL THE PERMANENT BRACING IS IN PLACE. CONTRACTOR SHALL PROVIDE NECESSARY SHORING WHERE REQUIRED DURING CONSTRUCTION.
- STRUCTURAL STEEL SHALL NOT BE ALTERED IN THE FIELD FROM THAT SHOWN ON THE DESIGN DRAWINGS. MISMATCHED HOLES SHALL BE REAMED TO LARGER DIAMETER AND PROPERLY SIZED BOLTS AND WASHERS USED FOR FINAL HOLE SIZE. CUTTING, BURNING OR WELDING NOT SHOWN ON DESIGN DRAWINGS SHALL NOT BE PERFORMED WITHOUT THE PRIOR WRITTEN APPROVAL OF THE ENGINEER.
- ALL STRUCTURAL STEEL SHALL BE DETAILED, SHOP PRIME PAINTED OR HOT-DIPPED GALVANIZED, PIECE MARKED, FURNISHED, FABRICATED AND ERECTED ACCORDING TO THE AISC "SPECIFICATIONS FOR STRUCTURAL STEEL BUILDINGS", LATEST EDITION AND TO THE AISC "CODE OF STANDARD PRACTICE".

## CAST-IN-PLACE CONCRETE

- ALL CONCRETE WORK SHALL CONFORM TO THE REQUIREMENTS OF ACI 301- LATEST REVISION, "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDING", EXCEPT AS MODIFIED BY STRUCTURAL REQUIREMENTS NOTED ON THE DRAWINGS.
- ALL CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4000 PSI.
- UNLESS NOTED OTHERWISE, MINIMUM CONCRETE COVER SHALL BE 3/4 INCHES.
- WELDED WIRE FABRIC SHALL BE FURNISHED IN FLAT SHEETS AND SHALL CONFORM TO ASTM A185 (FY = 75 KSI) AND HAVE A MINIMUM SIDE AND END LAP OF 8 INCHES.
- CONTRACTORS SHALL OBTAIN APPROVAL FROM THE ENGINEER, PRIOR TO PLACING OPENINGS OR SLEEVES, NOT SHOWN ON THE DRAWINGS, THROUGH ANY STRUCTURAL MEMBERS, ROOF, WALLS OR FOUNDATIONS. REVIEW ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS FOR BASES, OPENINGS, SLEEVES, ANCHORS, INSERTS, CONDUITS, RECESSES AND OTHER DEVICES IN CONCRETE WORK BEFORE CASTING CONCRETE.
- REFER TO ARCHITECTURAL DRAWINGS FOR SLAB RECESSES AND/OR FLOOR FINISH MATERIALS.
- CONCRETE CONTRACTOR SHALL INCLUDE IN HIS ESTIMATE ADDITIONAL CONCRETE QUANTITY AS REQUIRED TO COMPENSATE FOR DEFLECTIONS OF METAL DECK AND TO PROVIDE A LEVEL CONCRETE SURFACE. REFER TO STRUCTURAL STEEL AND METAL DECK NOTES FOR ADDITIONAL CONSIDERATIONS.
- THE CONCRETE SHALL BE THOROUGHLY COMPACTED BY VIBRATION SUPPLEMENTED BY SPADING, PUDDLING OR AGITATION, TO PREVENT HONEYCOMBING AND TO INSURE THE ELIMINATION OF VOIDS. VIBRATION MUST BE DIRECT ACTION IN THE CONCRETE AND NOT AGAINST FORMS OR REINFORCEMENT. HONEYCOMBING, VOIDS AND LARGE AIR POCKETS WILL NOT BE ACCEPTABLE.
- THE USE OF WATER-SOLUBLE CHLORIDE ION SHALL NOT BE USED UNLESS APPROVED BY THE ENGINEER, AS AN ALTERNATIVE TO THE ABOVE, THE CONTRACTOR MAY SUBMIT A CONCRETE MIX DESIGN FOR APPROVAL TWO WEEKS PRIOR TO PLACING ANY CONCRETE. THE ALTERNATE MIX DESIGN SHALL BE REVIEWED FOR CONFORMANCE TO '02 UBC.

## FABRICATION AND ERECTION

- ALL STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC 303-2016 "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES".
- ALL HOLES SHALL BE DRILLED OR PUNCHED. NO BURNING OF HOLES WILL BE PERMITTED. SLOTTED HOLES MUST HAVE STRAIGHT AND SMOOTH SIDES.
- THE SIZE OF A HOLE SHALL BE SUCH THAT A BOLT 1/16" LESS IN DIAMETER THAN THAT OF HOLE CAN BE INSERTED THEREIN. ALL BOLT HOLES SHALL BE PERFECTLY MATCHED.
- IN PLANNING THE METHOD OF ERECTION AND DISTRIBUTION OF MATERIAL BEFORE AND DURING ERECTION, THE CONTRACTOR SHALL MAKE FULL ALLOWANCE FOR ANY OBSTRUCTIONS ENCOUNTERED WHICH MAY RESULT FROM WORK PERFORMED BY OTHER TRADES, AS WELL AS THE OPERATIONS OF THE OWNER.
- IT SHALL BE UNDERSTOOD THAT THERE WILL BE NO EXTRA CHARGE BY THE CONTRACTOR ON ACCOUNT OF ANY OBSTRUCTIONS NOW ON THE SITE OF THE BUILDING.
- FURNISH AND INSTALL ANY AND ALL NECESSARY TEMPORARY BRACING TO SQUARE AND PLUMB UP ALL WORK, AS REQUIRED, BEFORE BOLTING OR WELDING.
- IN CASES WHERE MEMBERS DO NOT FIT OR HOLES DO NOT MATCH, THE HOLES SHALL BE REAMED OUT AND THE NEXT LARGER SIZE BOLT INSERTED. IF THE CONNECTION REQUIRES NEW HOLES, THEN NEW HOLES SHALL BE DRILLED, NO SUCH CORRECTIONS SHALL BE MADE WITHOUT PRIOR APPROVAL OF THE OWNER'S RESIDENT ENGINEER. BURNING OF HOLES IS STRICTLY PROHIBITED.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGE CAUSED BY THE ERECTION OF STRUCTURAL STEEL AS HEREIN SPECIFIED. THE CONTRACTOR SHALL REIMBURSE THE OWNER ACTUAL COST OF REPAIR AND OR REPLACEMENT.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO REMOVE/DEMOLISH AND PROPERLY DISPOSE OF EXISTING STEEL, AS REQUIRED FOR THE INSTALLATION OF NEW STEEL.
- TEMPORARILY SUPPORT ALL EXISTING UTILITIES IN WORK AREA AS REQUIRED TO COMPLETE SCOPE-OF-WORK ITEMS.

## STRUCTURAL STEEL PAINTING

- GENERAL- BEFORE ANY PAINT IS APPLIED, ALL SURFACES OF STEEL MEMBERS SHALL BE THOROUGHLY CLEANED IN THE FABRICATING SHOP TO REMOVE LOOSE AND TIGHT MILL SCALE, RUST, DIRT, OILS AND GREASE, AND OTHER FOREIGN MATTER. BURRS SHALL BE REMOVED BY GRINDING. ALL GREASE AND OIL SHALL BE REMOVED BY SOLVENTS. COMPLETELY REMOVE WELD-SPATTER METAL, SLAG AND OTHER WELD DEPOSIT PRODUCTS ADHERING TO THE STEEL. SURFACES SHALL BE THOROUGHLY DRY BEFORE PAINTING.
- AS A MINIMUM, SURFACES OF STEEL, PRIOR TO PAINTING, SHALL BE AUTOMATICALLY OR MANUALLY CLEANED BY POWER WIRE BRUSH.
- NO PAINT SHALL BE APPLIED WHEN THE TEMPERATURE IS BELOW 40° F.
- ALL AREAS AT JOINT FAYING SURFACES SHALL BE FREE OF OIL, LOOSE SCALE AND BURRS.
- SHOP PAINT COATS SHALL BE FREE OF SKIPS AND RUNS AND SHALL BE THOROUGHLY DRY BEFORE THE STEEL IS HANDLED OR SHIPPED.
- PRIOR TO COMPLETION OF WORK SCOPE, TOUCH-UP PRIME AND PAINT (TO MATCH) ANY FIELD WELDS AND MARRING/BREACHING OF SHOP-APPLIED COATING CAUSED BY SHIPMENT, HANDLING, ERECTION, ETC.

## METAL DECK

- ALL METAL DECKS SHALL BE AS NOTED ON DRAWINGS, FABRICATED AND ERECTED IN ACCORDANCE WITH THE LATEST "STEEL DECK INSTITUTE" (SDI) SPECIFICATIONS.
- THE CONTRACTOR SHALL FURNISH ALL ACCESSORIES INCLUDING CLOSURES, "Z" CLOSURES, COLUMN CLOSURES, SCREED ANGLES AND GIRDER FILLERS AS REQUIRED.
- ROOF DECK SHALL HAVE A GALVANIZED COATING CONFORMING TO ASTM A653 - COATING DESIGNATION G-60.
- DESIGN OF FLOOR DECK AS A FORM SHALL CONFORM TO THE REQUIREMENTS OF SDI SPECIFICATIONS AND COMMENTARIES FOR COMPOSITE STEEL FLOOR DECK, EXCEPT THAT CALCULATED THEORETICAL DEFLECTIONS AS DEFINED UNDER PARAGRAPH 3.3 SHALL NOT EXCEED L/240 OR 1 INCH, WHICHEVER IS SMALLER.
- THE METAL DECK SHALL BE DESIGNED TO BE CONTINUOUS OVER THREE (3) SPANS IN THE DIRECTION INDICATED. SINGLE AND DOUBLE SPANS, IF REQUIRED, SHALL SATISFY LOAD AND DEFLECTION REQUIREMENTS.
- ALL DECKING SHALL BE WELDED TO THE STRUCTURAL STEEL BY QUALIFIED WELDERS USING PRE-QUALIFIED PROCEDURES IN ACCORDANCE WITH AWS D1.1 CLAUSE 7, LATEST EDITION. THE ERECTOR SHALL ESTABLISH A WELDING PROCEDURE FOR THE STEEL DECKING TO THE STRUCTURAL STEEL FOR THE PARTICULAR GAGE USED. PRIOR TO THE START OF ERECTION OF THE STEEL DECK, EACH WELDER SHALL BE QUALIFIED USING THIS PROCEDURE AS WITNESSED BY THE OWNER'S TESTING AGENCY.

## HIGH STRENGTH BOLTS

- HIGH STRENGTH BOLTS, NUTS AND WASHERS SHALL CONFORM TO ASTM DESIGNATION A325 AND SHALL BE USED IN ACCORDANCE WITH "SPECIFICATIONS FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS" LATEST REVISION, BY THE RESEARCH COUNCIL ON STRUCTURAL CONNECTIONS OF THE ENGINEERING FOUNDATION.
- ALL BOLTED CONNECTIONS SHALL USE ONLY STANDARD HOLES; EXCEPT SHORT SLOTS, OVERSIZED HOLES AND LONG SLOTS SHALL BE USED WHERE SPECIFICALLY SHOWN OR CALLED OUT ON THE DESIGN DRAWINGS OR MENTIONED HEREIN. OVERSIZED HOLES, AND SHORT AND LONG SLOTS MUST BE TREATED AS SLIP-CRITICAL TYPE CONNECTIONS. HARDENED WASHERS SHALL BE INSTALLED OVER ALL OVERSIZED HOLES AND SHORT SLOTS IN AN OUTER PLY. A PLATE WASHER OR A CONTINUOUS BAR IS REQUIRED FOR ALL LONG SLOTTED HOLES USED IN AN OUTER PLY.
- THE TIGHTENING MECHANISM USED SHALL BE THE TURN-OF-THE-NUT METHOD. CONTACT SURFACE SHALL NOT BE PAINTED. IN EACH JOINT OR GROUP OF BOLTS 10% (BUT NOT LESS THAN TWO (2) BOLTS) SELECTED AT RANDOM AND NOT IN UNIFORM PATTERN SHALL BE CHECKED. THIS SHALL BE DONE IN THE PRESENCE OF THE OWNER'S DESIGNATED REPRESENTATIVE. IF BOLTING IS FOUND TO BE INADEQUATE UNDER TEST, ALL BOLTS IN THE DEFECTIVE GROUP SHALL BE CHECKED AT THE CONTRACTOR'S EXPENSE.

## WELDING

- ALL WELDING SHALL BE IN ACCORDANCE WITH THE AMERICAN WELDING SOCIETY AWS D1.1 - LATEST EDITION "STRUCTURAL WELDING CODE-STEEL".
- ALL WELDED JOINTS SHALL BE MADE USING PRE-QUALIFIED WELDS OR QUALIFIED PER CLAUSE 4 OF THE AWS D1.1 "STRUCTURAL WELDING CODE - STEEL". ALL QUALIFIED JOINTS ARE LIMITED TO THOSE MADE BY THE FOLLOWING WELDING PROCEDURES:
  - MANUAL SHIELDED METAL ARC.
  - SUBMERGED ARC.
  - GAS METAL ARC (EXCEPT SHORT CIRCUITING TRANSFER).
  - FLUX-CORED ARC.
- ALL FIELD WELDING SHALL BE PERFORMED USING THE MANUAL SHIELDED METAL ARC PROCESS.
- WELDS, INCLUDING TACK WELDS, SHALL BE MADE ONLY BY WELDERS AND WELDING OPERATORS WHO HAVE BEEN PREVIOUSLY QUALIFIED BY TESTS AS PRESCRIBED BY THE AWS D1.1 "STRUCTURAL WELDING CODE - STEEL" AND HAVE CURRENT PAPERS FOR THE TYPE OF JOINT, POSITION AND PROCESS TO BE WELDED.
- THE MINIMUM SIZE FILLET WELD SIZE SHALL BE 3/16"; THE SIZE AND LENGTH OF ALL FILLETS SHALL BE PROPORTIONED NOT TO LOCALLY OVERSTRESS THE CONNECTED MEMBERS.
- FILLET WELDS CONNECTING ANGLES OR OTHER UNSYMMETRICAL SECTIONS SHALL BE DESIGNED ACCORDING TO THE ACTUAL STRESSES CARRIED BY THE INDIVIDUAL LINES OF WELDING. SHOP DRAWINGS SHALL INDICATE WELDS REQUIRED.
- BEFORE WELDING MEMBERS TO EXISTING BEAMS OR COLUMNS, THOROUGHLY CLEAN ALL SURFACES TO REMOVE RUST, PAINT, OILS, DIRT OR OTHER FOREIGN MATTER IN THE AREA OF WELD.
- WHERE WELDING IS USED, THE OWNER MAY DECIDE TO MAKE NON-DESTRUCTIVE TESTS OF THE WELDS USING RADIOGRAPHY, ULTRASONIC, MAGNETIC AND/OR DYE PENETRANT WELD TEST METHODS IN COMBINATION OR SINGULARLY. THE NON-DESTRUCTIVE INVESTIGATION WILL BE PERFORMED BY AN INDEPENDENT TESTING LABORATORY QUALIFIED IN THIS TYPE OF WORK. THE COST OF THIS INVESTIGATION WILL BE ASSUMED BY THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE ACCESS AS REQUIRED FOR TESTING PERSONNEL.
- WELD ACCEPTABILITY SHALL BE BASED ON AWS D1.1-LATEST EDITION "STRUCTURAL WELDING - CODE STEEL" CLAUSE 6. IN THE EVENT THE WELDING IS NOT ACCEPTABLE, THE CONTRACTOR SHALL REMOVE ALL REJECTED WELDS AND REWELD ALL SUCH AREAS. THE CONTRACTOR WILL ASSUME ALL COSTS IN CONNECTION WITH THE REWELDING AND RE-EXAMINATION OF THE REWELDED CONNECTIONS UNTIL THE WELDING IS ACCEPTED BY OWNER.

## ALTERATIONS AND CONNECTIONS TO EXISTING STEEL

- THE CONTRACTOR WILL REMOVE EXISTING CONSTRUCTION TO THE EXTENT REQUIRED FOR THIS WORK. THE CONTRACTOR WILL PROTECT ALL OPENINGS MADE IN EXISTING BUILDINGS TO PERMIT CONNECTIONS OF NEW STEEL TO EXISTING STRUCTURAL STEEL. THE CONTRACTOR SHALL FURNISH AND INSTALL TEMPORARY SUPPORTS AND/OR SHORING AS REQUIRED.
- CONTRACTOR SHALL MAKE ALL NECESSARY FIELD MEASUREMENTS AS REQUIRED FOR CONNECTIONS TO EXISTING WORK. CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND ELEVATIONS SHOWN ON THE DRAWING BEFORE COMMENCING WORK. ANY DISCREPANCIES SHALL BE REPORTED TO THE OWNER'S RESIDENT ENGINEER.

## HANDLING OF STEEL

- WHEN THE STRUCTURAL STEEL IS DELIVERED, IT SHALL BE STACKED OFF THE GROUND. CARE SHALL BE TAKEN IN HANDLING AND STACKING THE MEMBERS TO PREVENT BUCKLING, KINKING OR DISTORTION. RAIL AND CARRIER SHIPMENTS SHALL HAVE SUFFICIENT AND SATISFACTORY DUNNAGE TO PREVENT DAMAGE IN TRANSIT.
- MEMBERS WHICH ARE BENT IN FABRICATION OR IN HANDLING SHALL BE STRAIGHTENED OR REPLACED BEFORE ERECTION.
- ALL DIRT, MUD AND DEBRIS SHALL BE CLEANED FROM STEEL BEFORE ERECTION.

## LIGHT GAUGE METAL FRAMING

- PROVIDE ALL STUDS AND/OR JOISTS AND ACCESSORIES OF THE TYPE, SIZE, GAGE AND SPACING SHOWN ON THE DRAWINGS.
- DESIGN ALL STRUCTURAL MEMBERS IN ACCORDANCE WITH AMERICAN IRON AND STEEL INSTITUTE (AISI) "SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS", LATEST EDITION.
- FORM ALL FRAMING MEMBERS FROM CORROSION RESISTANT STEEL, CORRESPONDING TO THE REQUIREMENTS OF ASTM A653 AND THE FOLLOWING STRENGTH REQUIREMENTS:

FRAMING MEMBER	GAGE	MINIMUM YIELD
STUDS, JOISTS	20, 18	33 KSI
RUNNERS, SOLID BLOCKING	20	33 KSI
- PLACE ALL COLD-FORMED STEEL STUD WALL BRIDGING HORIZONTALLY WITH A MAXIMUM VERTICAL SPACING OF FOUR FEET UNLESS NOTED OTHERWISE. AS AN OPTION, CONTINUOUS COLD-FORMED CHANNELS MAY BE POSITIONED THROUGH THE STUD PUNCH OUTS AS BRIDGING PROVIDED THE CHANNEL IS PROPERLY FASTENED TO EACH STUD.
- INSTALL AXIALLY LOADED STUDS IN A MANNER WHICH WILL ASSURE THAT THEIR ENDS ARE POSITIONED AGAINST THE INSIDE OF RUNNER WEB PRIOR TO FASTENING.
- FASTEN COMPONENTS WITH SELF-DRILLING SCREWS OR WELDING. PROVIDE SCREWS OF SUFFICIENT SIZE TO INSURE THE STRENGTH OF THE CONNECTION. WIRE TYING OF COMPONENTS IS NOT PERMITTED. TOUCH UP ALL WELDS WITH A ZINC-RICH PAINT.
- WELDING OF COLD-FORMED STUDS MAY BE PERFORMED USING A MINIMUM ONE-EIGHTH INCH AWS TYPE 6013 WELDING ROD.
- SECURELY ANCHOR RUNNERS TO THE SUPPORTING STRUCTURE. PROVIDE COMPLETE, UNIFORM, AND LEVEL BEARING SUPPORT FOR THE BOTTOM RUNNER.
- SECURELY ANCHOR ABUTTING LENGTHS OF RUNNER TO A COMMON STRUCTURAL ELEMENT, BUTT-WELDED OR SPLICED.
- PLUMB, ALIGN, AND SECURELY ATTACH STUDS TO THE FLANGES OF BOTH UPPER AND LOWER RUNNERS, SPLICES IN STUDS ARE NOT PERMITTED.
- PROVIDE HEADERS AND SUPPORTING STUDS FOR FRAMING OF WALL OPENINGS.
- STABILITY BRIDGING SHALL BE INSTALLED AT A MAXIMUM 4'-0" ON CENTER FOR SUSPENDED SOFFITS UNLESS NOTED OTHERWISE.
- DESIGN OF METAL STUD FRAMING SHOWN IS BASED ON CEE TYPE (1 5/8 INCH FLANGE) STUDS.
- SHOP DRAWINGS AND CALCULATIONS FOR COLD FORMED METAL FRAMING TO BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE WHERE THE PROJECT IS LOCATED.



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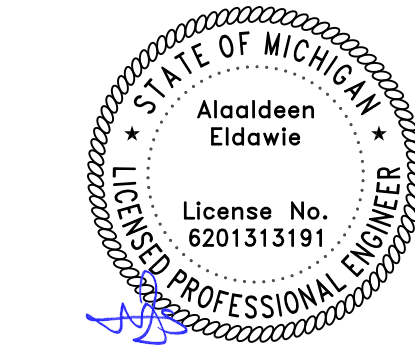
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ALUMNI LOFT

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MICHIGAN 49783

Seal:



Date	Issued For
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Approved: AE

Sheet Title:  
GENERAL NOTES

Project Number: 525066.F

Sheet Number: S-001

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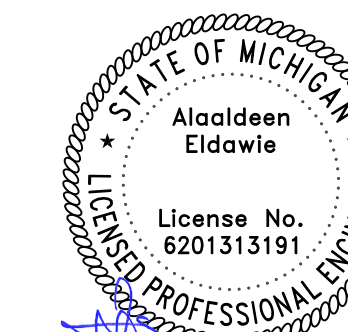
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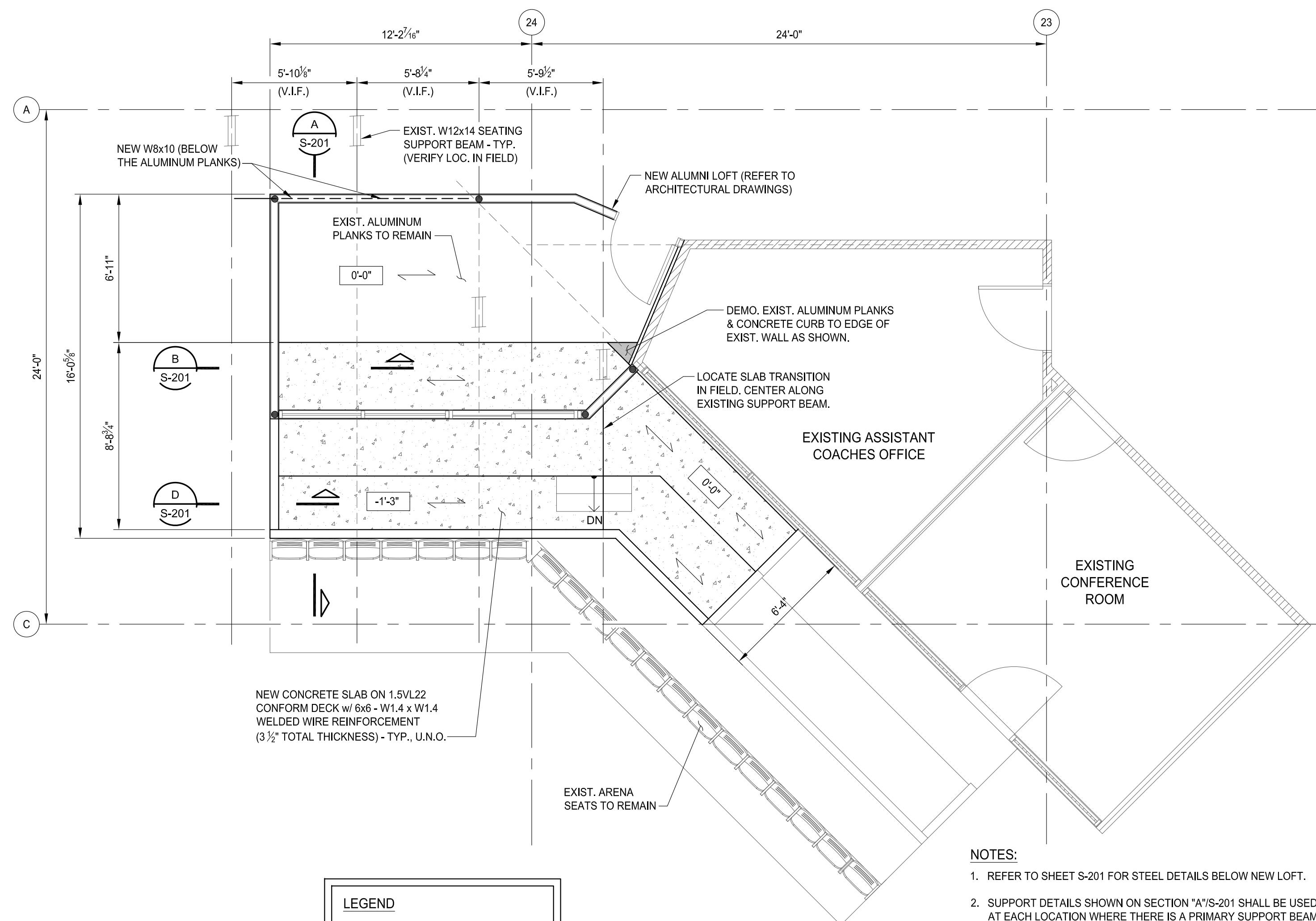
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Sheet Title:  
**FLOOR PLAN &  
ROOF FRAMING  
PLAN**

Project Number: 525066.F

Sheet Number: **S-101**

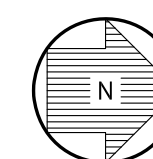
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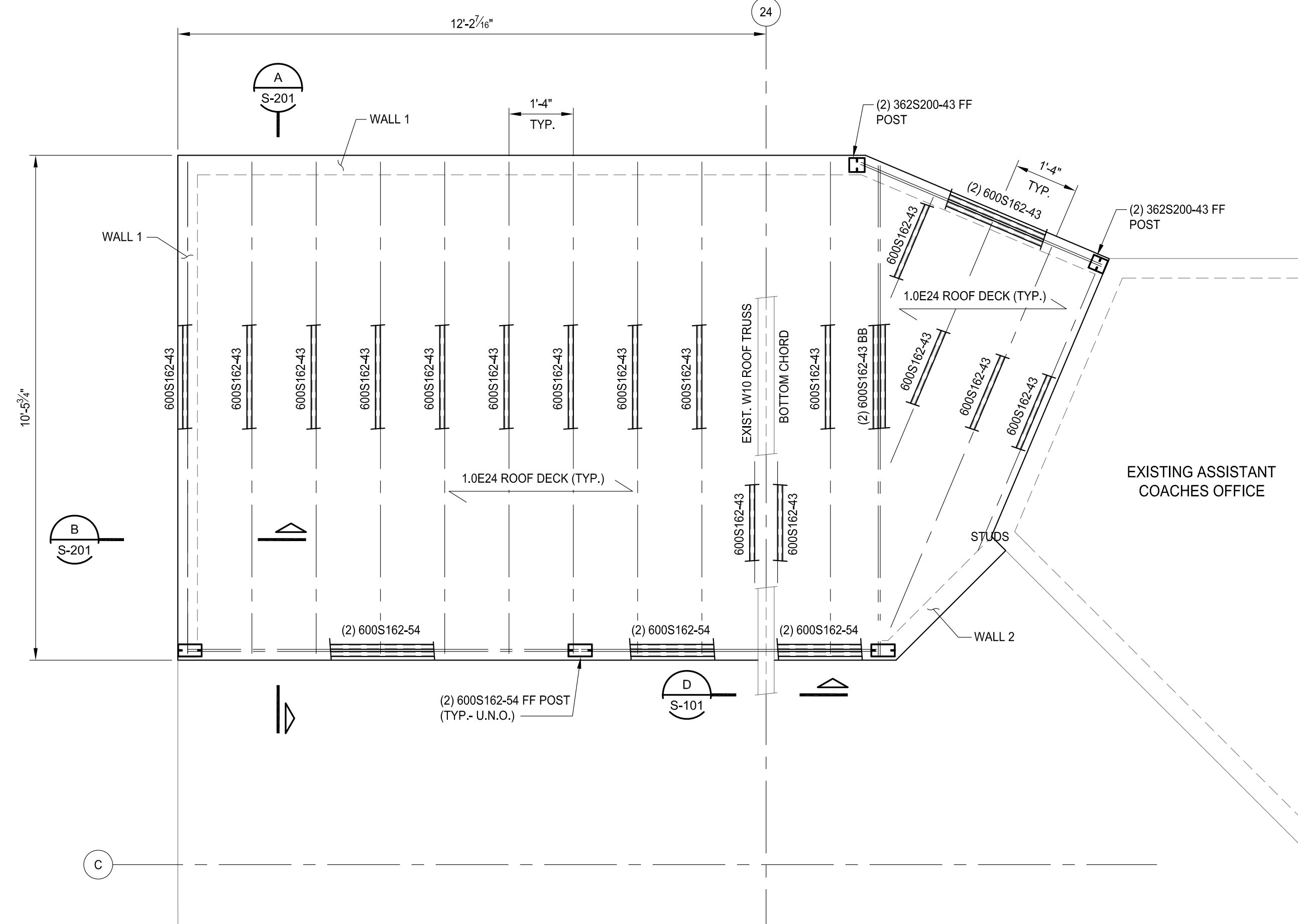
- NEW SILTTP2 HOLDOWN (OR EQUIVALENT) WITH 0.5" BOLTS

- NOTES:**
- REFER TO SHEET S-201 FOR STEEL DETAILS BELOW NEW LOFT.
  - SUPPORT DETAILS SHOWN ON SECTION "A"/S-201 SHALL BE USED AT EACH LOCATION WHERE THERE IS A PRIMARY SUPPORT BEAM FOR THE ALUMINIUM SEATING. THESE BEAMS WILL NEED TO BE LOCATED IN THE FIELD BY THE CONTRACTOR AFTER THE AREA BELOW THE SEATING HAS BEEN EXPOSED.
  - CONTRACTOR TO FIELD VERIFY SUPPORT/BEARING LOCATIONS FOR EXIST. W12x14 SEATING SUPPORT BEAMS & REPORT BACK TO E.O.R.



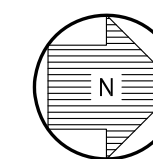
**FLOOR PLAN - NEW ALUMNI LOFT**

SCALE: 1/4"=1'-0" F.F. EL. 0'-0" = PRESS BOX LEVEL EL. 724'-0 3/4"



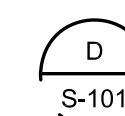
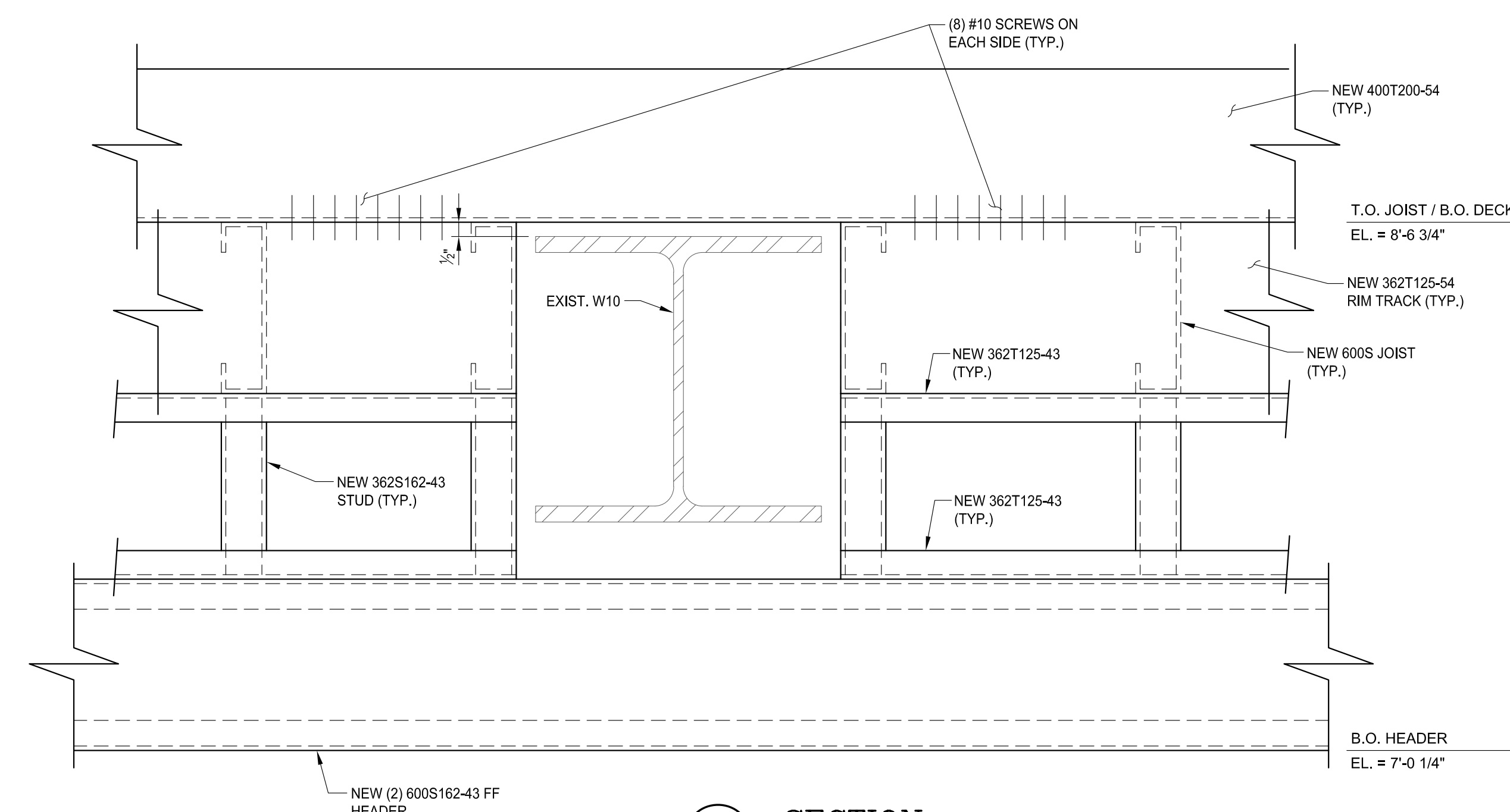
**WALL SCHEDULE**

	STUDS	SHEATHING
WALL 1	362S200-43 @ 16" PROVIDE BACK TO BACK STUDS AT THE LOCATIONS OF THE HOLDOWN	1/2" GYPSUM BOARD ON BOTH SIDES WITH #8 FASTENERS SPACED 8" ON EDGES AND 12" ON FIELD.
WALL 2	362S200-43 @ 16" PROVIDE BACK TO BACK STUDS AT THE LOCATIONS OF THE HOLDOWN	3/4" OSB SHEATHING ON ONE SIDE WITH #8 FASTENERS SPACED 4" ON EDGES AND 12" ON FIELD. GYPSUM BOARD ON THE OTHER SIDE.



**ROOF FRAMING PLAN - NEW ALUMNI LOFT**

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



**SECTION**

SCALE: 3"=1'-0"



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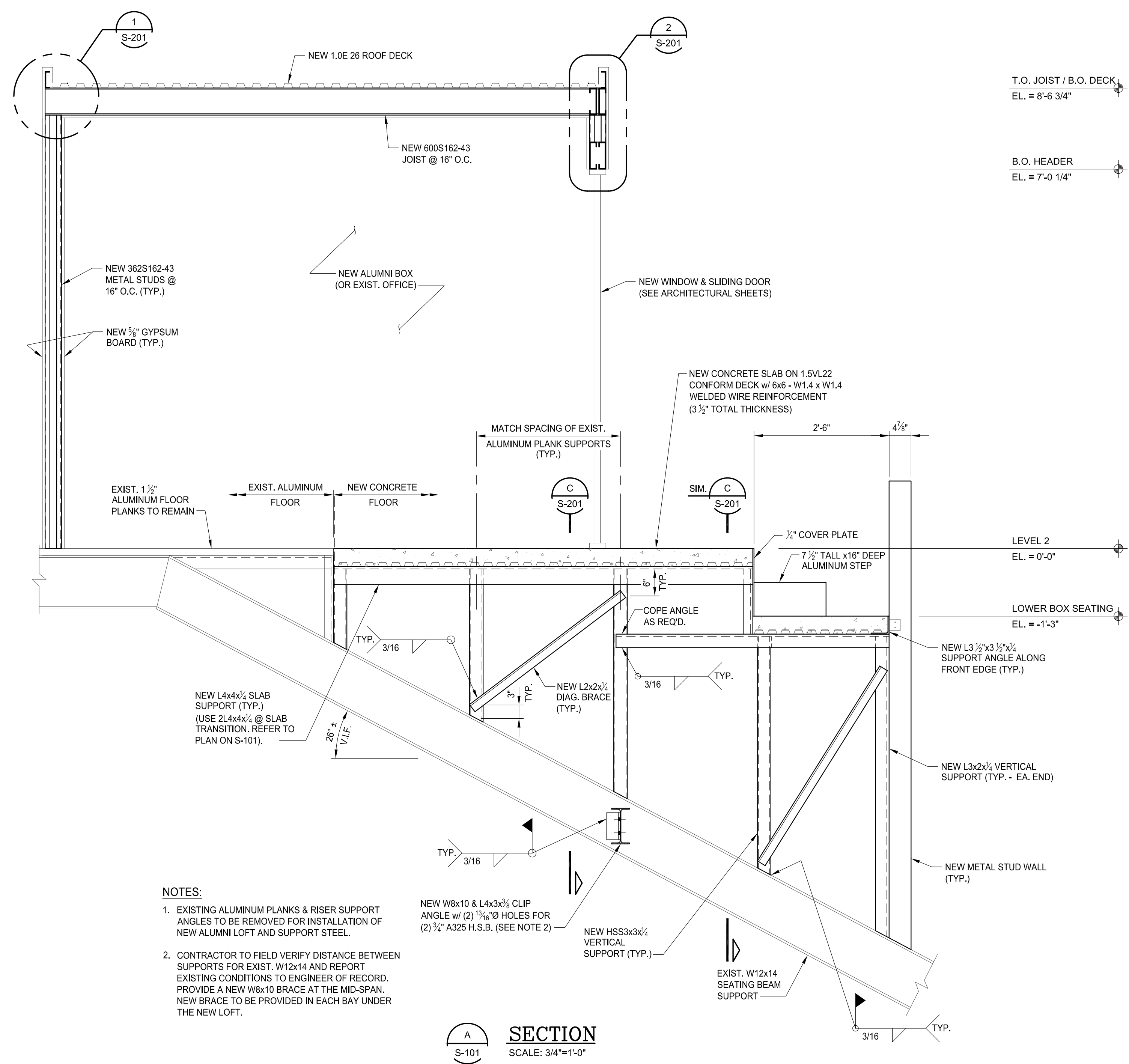
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**SECTIONS**

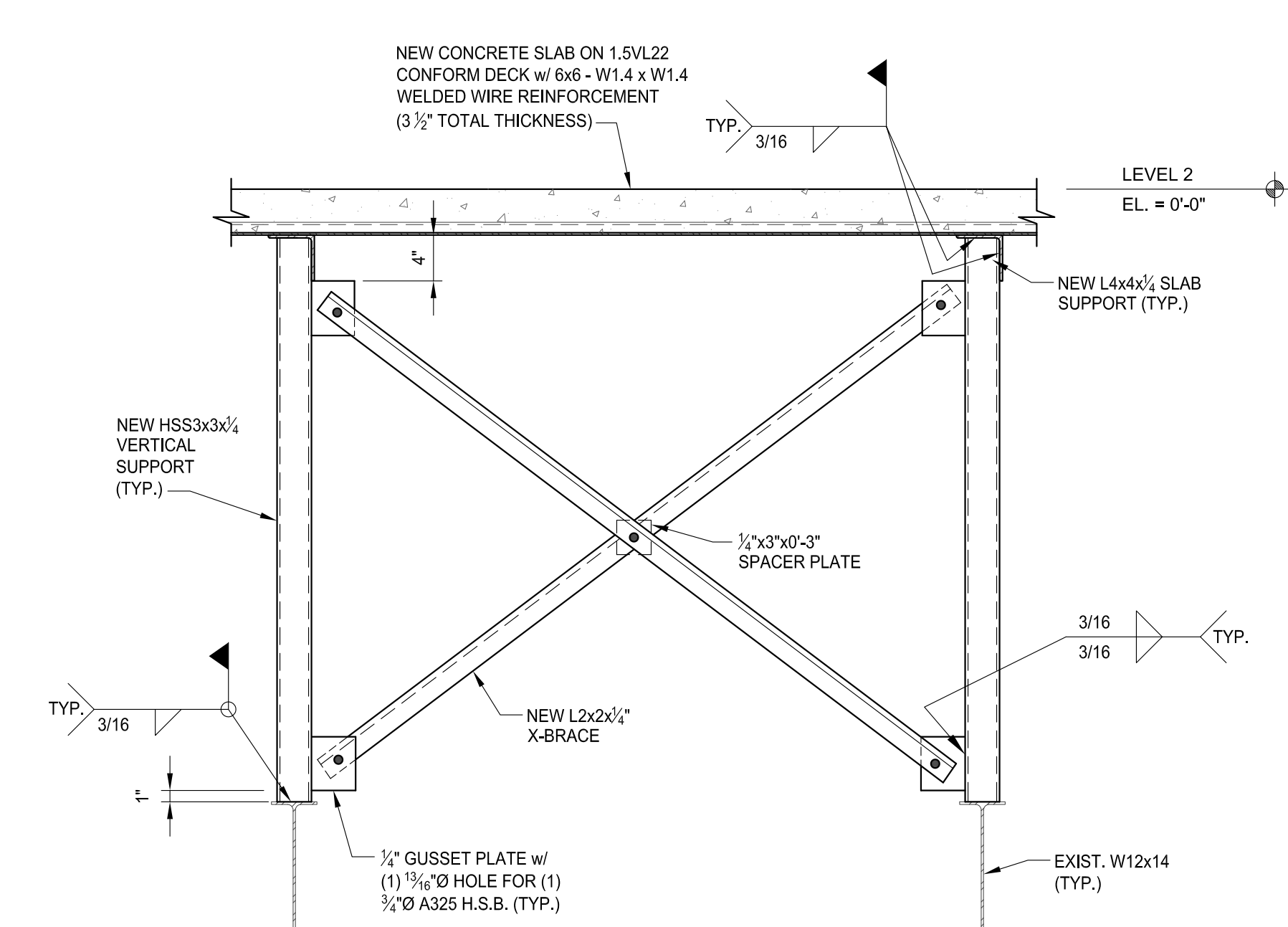
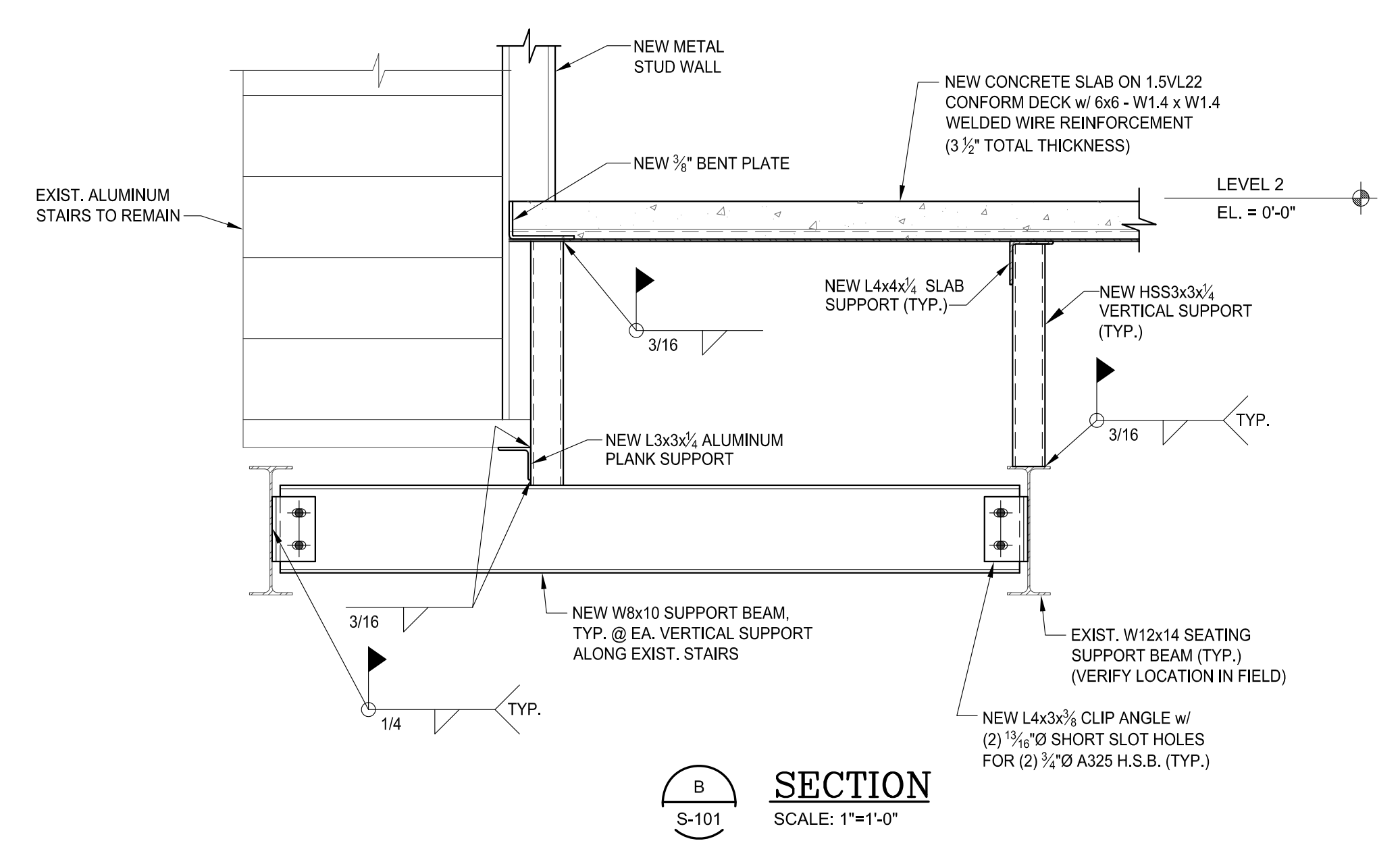
Project Number: **525066.F**

Sheet Number: **S-201**

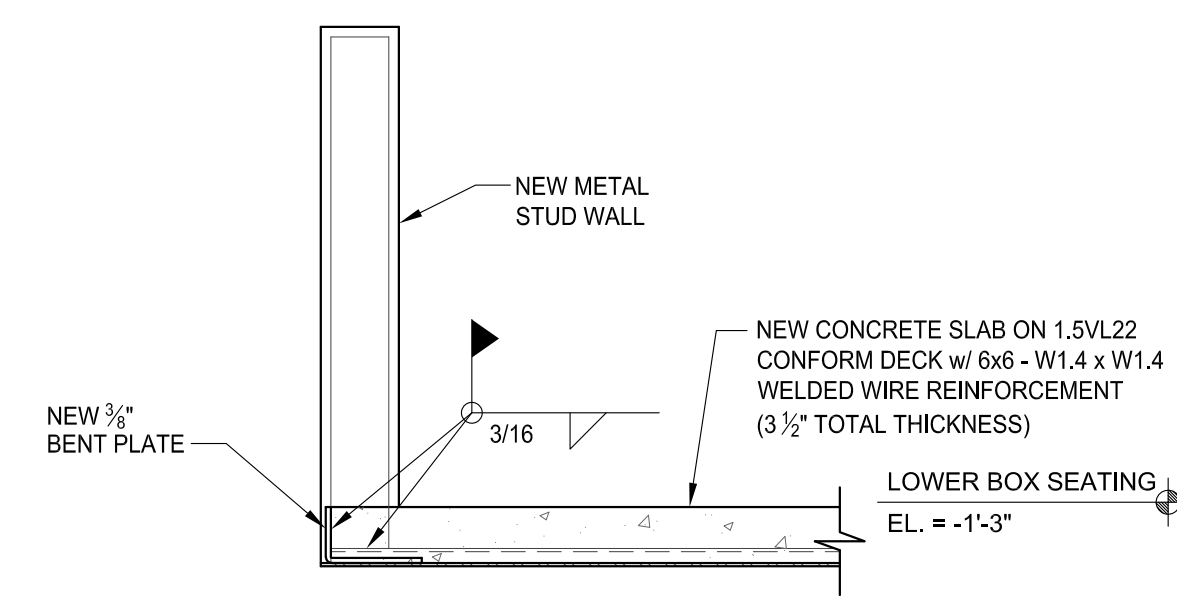
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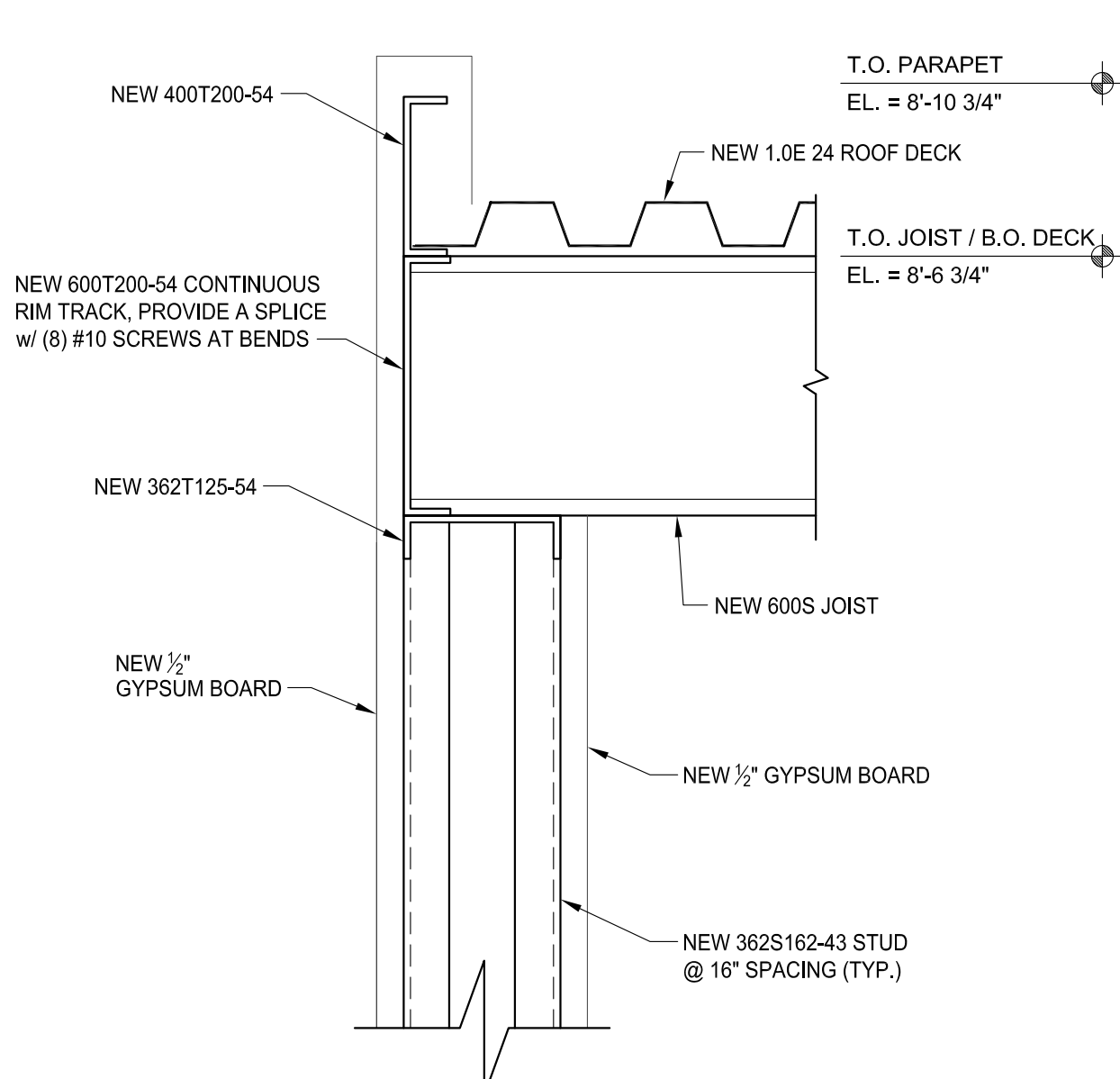
- NOTES:**
- EXISTING ALUMINUM PLANKS & RISER SUPPORT ANGLES TO BE REMOVED FOR INSTALLATION OF NEW ALUMNI LOFT AND SUPPORT STEEL.
  - CONTRACTOR TO FIELD VERIFY DISTANCE BETWEEN SUPPORTS FOR EXIST. W12x14 AND REPORT EXISTING CONDITIONS TO ENGINEER OF RECORD. PROVIDE A NEW W8x10 BRACE AT THE MID-SPAN. NEW BRACE TO BE PROVIDED IN EACH BAY UNDER THE NEW LOFT.



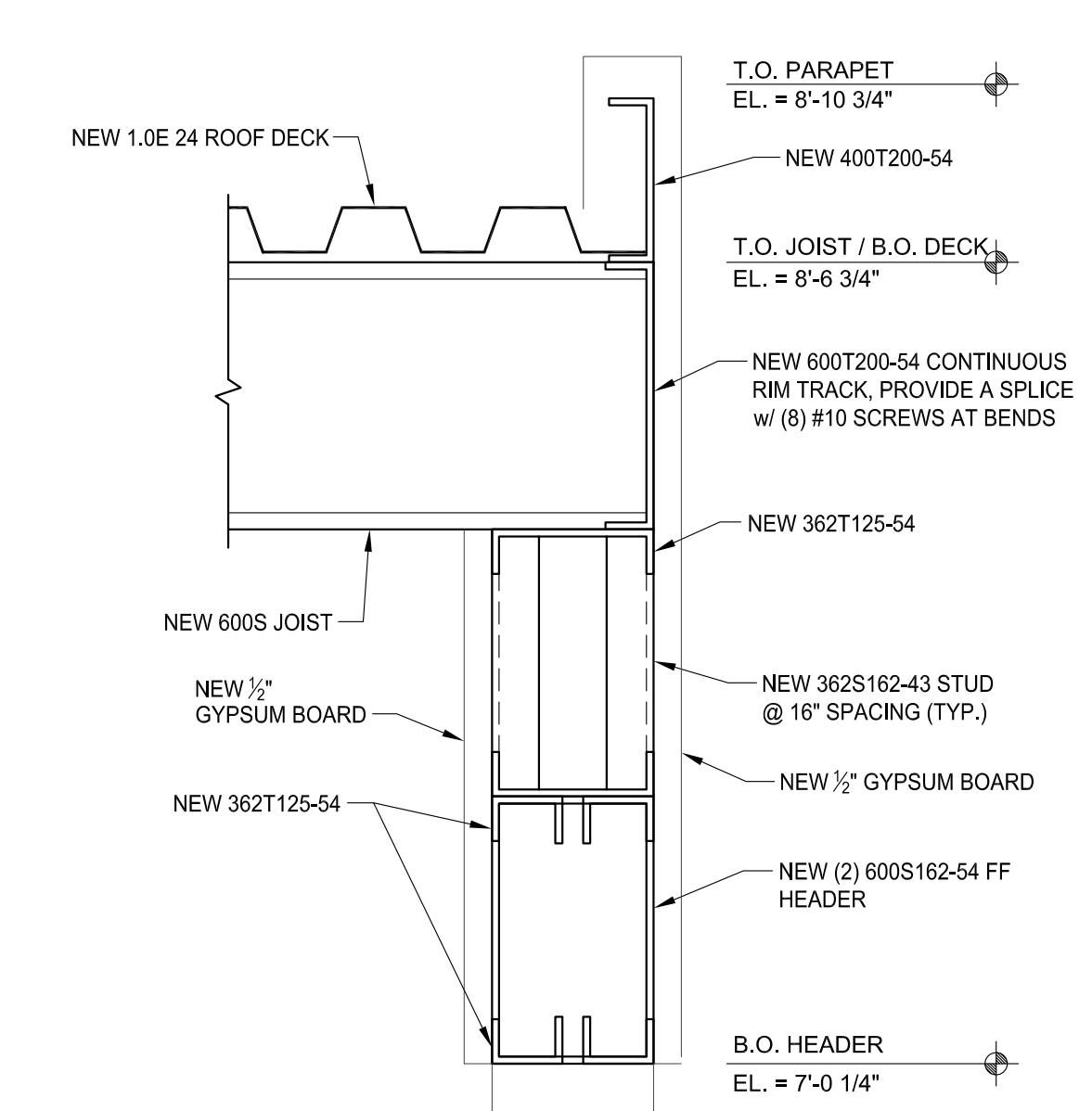
**SECTION C**  
SCALE: 1"=1'-0"



**SECTION D**  
SCALE: 1"=1'-0"



**DETAIL 1**  
SCALE: 3"=1'-0"



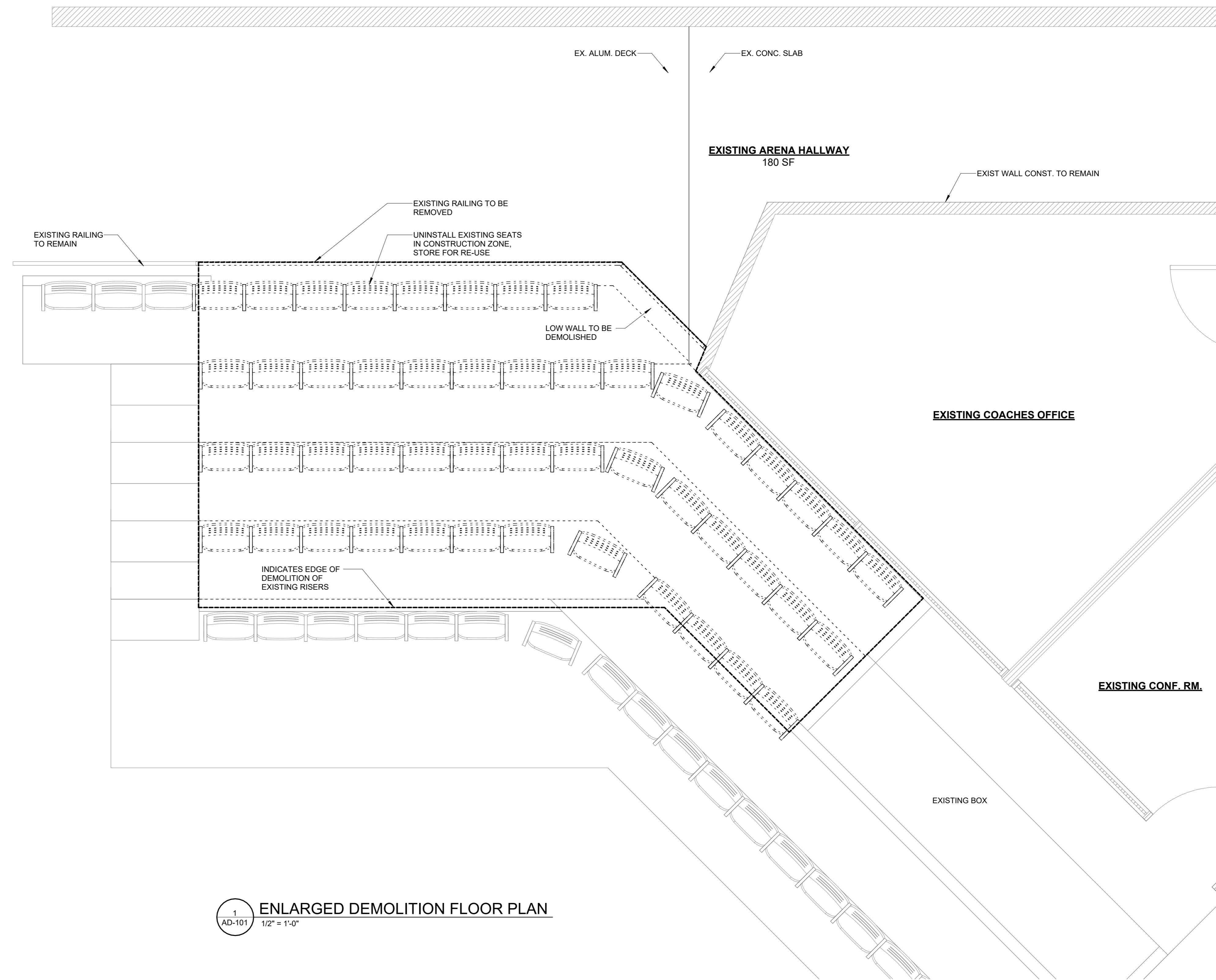
**DETAIL 2**  
SCALE: 3"=1'-0"

**EXISTING NOTES:**

- CONTRACTOR MUST VISIT THE SITE AND FAMILIARIZE HIMSELF WITH ALL EXISTING CONDITIONS. VERIFY MEASUREMENTS WITH CORRESPONDING CONSTRUCTION OR EXISTING CONDITIONS PRIOR TO PROCEEDING WITH THE WORK, AND NOTIFY THE ARCHITECT IMMEDIATELY OF SIGNIFICANT DISCREPANCIES.
  - VERIFY ALL CONDITIONS COVERING OR AFFECTING THE STRUCTURAL WORK; OBTAIN AND VERIFY ALL DIMENSIONS AND ELEVATIONS TO ENSURE THE PROPER STRENGTH, FIT AND LOCATION OF THE STRUCTURAL WORK; REPORT TO THE ARCHITECT ANY AND ALL CONDITIONS WHICH MAY INTERFERE WITH OR OTHERWISE AFFECT OR PREVENT THE PROPER EXECUTION AND COMPLETION OF THE NEW WORK. ALL DISCREPANCIES SHALL BE FULLY RESOLVED PRIOR TO COMMENCING WORK.
  - EXISTING CONSTRUCTION NOT UNDERGOING ALTERATION IS TO REMAIN UNDISTURBED, WHERE SUCH CONSTRUCTION IS DISTURBED AS A RESULT OF THE OPERATIONS OF THIS CONTRACT, IT MUST BE REPAIRED OR REPLACED BY THE CONTRACTOR AS REQUIRED AND TO THE SATISFACTION OF THE ARCHITECT.
  - WHERE THE EXISTING CONSTRUCTION IS TO BE ALTERED, OR OTHERWISE DISTURBED, PROVIDE TEMPORARY AND/OR PERMANENT BRACING AND SHORING AS MAY BE REQUIRED BEFORE AND DURING OPERATIONS AND UNTIL THE WORK IS SAFELY COMPLETED AND NO LONGER NEEDS SAME.
  - EACH CONTRACTOR SHALL PROVIDE ALL THE NECESSARY SUPPORT, BRACING, SHORING, ETC. (TEMPORARY AND/OR PERMANENT) OF BOTH NEW AND EXISTING CONSTRUCTION AS REQUIRED FOR THE SAFE INSTALLATION OF THE NEW CONSTRUCTION AND EQUIPMENT.
  - THE STRUCTURE IS DESIGNED TO BE SELF SUPPORTING AND STABLE AFTER THE BUILDING IS FULLY COMPLETED. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE, AND TO ENSURE THE SAFETY OF THE BUILDING AND ITS COMPONENT PARTS DURING ERECTION. THIS INCLUDES THE ADDITION OF TEMPORARY BRACING, GUYS OR TIE-DOWNS IF NECESSARY.
  - THE CONTRACTOR IS RESPONSIBLE FOR MEANS, METHODS, SEQUENCES, AND PROCEDURES OF CONSTRUCTION.
  - PROVIDE FIRE WATCH DURING FIELD CUTTING AND WELDING OPERATIONS, MEETING THE OWNER'S REQUIREMENTS.
  - ALL EXISTING STRUCTURAL MEMBERS TO REMAIN, U.N.O.
- CONTINUED USE OF FACILITIES:
- EACH CONTRACTOR SHALL AT ALL TIMES MAINTAIN A CLEAN AND SAFE PASSAGEWAY FOR THE OWNER'S OPERATION AND PERSONNEL IN EXISTING AREAS AND MAINTAIN CLEARANCES ADJACENT TO AND IN CONNECTION WITH THE WORK PERFORMED.
  - EACH CONTRACTOR SHALL EFFECTIVELY CONFINE DUST, DIRT AND NOISE TO THE ACTUAL CONSTRUCTION AREA AS APPROVED BY THE GENERAL CONTRACTOR IN ACCORDANCE WITH STATE OF MICHIGAN REGULATIONS.
  - WORK SHALL, IF REQUIRED, BE CONSTRUCTED IN PHASES TO ACCOMMODATE THE OWNER'S USE OF THE PREMISES DURING THE CONSTRUCTION PERIOD AND FOR INSTALLATION OF HIS EQUIPMENT. COORDINATE THE CONSTRUCTION SCHEDULE WITH THE GENERAL CONTRACTOR AND OWNER'S REPRESENTATIVE.
  - DURING THE CONTRACTOR'S PERFORMANCE OF THE WORK OF THIS CONTRACT, THE OWNER'S WILL CONTINUE TO OCCUPY THE EXISTING BUILDING. INTERRUPTION OF BUILDING ACCESS AND FACILITIES BY THE CONTRACTOR WILL NOT BE PERMITTED. TO WHATEVER EXTENT SUCH INTERRUPTIONS MIGHT INTERFERE WITH OWNER'S OCCUPANCY, LIMIT CONSTRUCTION OPERATIONS TO THOSE METHODS AND PROCEDURES WHICH WILL NOT ADVERSELY AND UNDULY EFFECT THE WORKING ENVIRONMENT OF OWNER'S OCCUPIED SPACES, INCLUDING NOISE, DUST, ODORS, AIR POLLUTION, AMBIENT DISCOMFORT, POOR LIGHTING, HAZARDS AND OTHER UNDESIRABLE EFFECTS AND CONDITIONS. COORDINATE AND SCHEDULE ALL WORK IN EXISTING BUILDING WITH OWNER AND GENERAL CONTRACTOR.

**DEMOLITION NOTES:**

- REMOVE ALL MATERIALS AND DEBRIS CREATED DURING THE DEMOLITION AND/OR CONSTRUCTION PROCESS AND DISPOSE OFF SITE IN A SAFE AND LEGAL MANNER.
- PROVIDE TEMPORARY PROTECTION AND WEATHER SEAL FOR INTERIOR DURING CONSTRUCTION PROCESS. TEMPORARY CONSTRUCTION MUST BE WATER TIGHT TO PREVENT ANY DAMAGE OR VANDALISM TO EXISTING INTERIOR SPACE.
- PROVIDE DUST MATS AT ALL CONSTRUCTION AREA ENTRANCE AND EXIT LOCATIONS.
- PERFORM ALL DEMOLITION WORK REQUIRED ON THE EXISTING BUILDING AS CALLED FOR ON THE DRAWINGS AND/OR AS REQUIRED TO ACCOMMODATE THE WORK.
- CAP, PATCH AND REPAIR ALL HOLES AND SURFACES IN WALLS, FLOORS AND CEILINGS WHERE ARCHITECTURAL, STRUCTURAL, MECHANICAL AND/OR ELECTRICAL ITEMS ARE REMOVED AS A RESULT OF THE DEMOLITION OPERATIONS.
- ALL EXISTING CONCRETE SLAB ON GRADE, CONCRETE TOPPING AND/OR CONCRETE PLANK CONSTRUCTION TO REMAIN IS TO BE PATCHED, REPAIRED, AND/OR FILLED TO MATCH EXISTING, PREPARE TO RECEIVE NEW FINISH.
- CARRY OUT ALL DEMOLITION WORK IN CLOSE COORDINATION AND COOPERATION WITH STRUCTURAL TRADES FOR PROPER SEQUENCING OF THE WORK TO ASSURE THE COMPLETE SAFETY AND STRUCTURAL INTEGRITY OF THE BUILDING AND ITS ELEMENTS AT ALL TIMES. PROVIDE TEMPORARY COLUMNS, JACKS, BEAMS, ETC., WHERE REQUIRED FOR SUPPORT OF EXISTING ELEMENTS OF CONSTRUCTION TO REMAIN IN SAFE, COMPETENT MANNER, IN CONFORMANCE WITH ALL LAWS, CODES ORDINANCES, RULES AND REGULATIONS BEARING ON THE WORK.
- DEMOLITION OF ALL PORTIONS OF THE STRUCTURE TO BE REMOVED SHALL BE DONE WITH UTMOST CARE, USING TOOLS AND METHODS SUBJECT TO OWNER'S APPROVAL. ALL POSSIBLE CARE SHALL BE TAKEN TO AVOID DAMAGING, SHOCK OR VIBRATION TO PORTIONS OF EXISTING STRUCTURE TO REMAIN.
- THE CONTRACTOR SHALL VERIFY THE EXISTENCE, LOCATION AND ELEVATION OF EXISTING SEWERS, DRAINS, ETC. IN DEMOLITION AREAS BEFORE PROCEEDING WITH THE WORK. ALL DISCREPANCIES SHALL BE DOCUMENTED AND REPORTED TO THE ARCHITECT.
- SAW CUT & REMOVE EXISTING CONCRETE SLAB FOR PLACEMENT OF PLUMBING WORK, FOUNDATIONS, STRUCTURAL STEEL, NECESSARY CAPPING OF EXISTING LINES AND FOUNDATION WORK, ETC. COORDINATE WITH STRUCTURAL ENGINEER AND ARCHITECT.
- SAWCUT AND REMOVE EXISTING MASONRY AS REQUIRED AT EXISTING WALL OPENINGS TO ACCOMMODATE NEW DOORS/ WINDOWS.
- REMOVE AND RELOCATE MECHANICAL AND ELECTRICAL ITEMS, INCLUDING PIPING, FIXTURES, EQUIPMENT, DUCTWORK, WIRING DEVICES, PANELS AND ACCESSORIES AS REQUIRED. REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR MECHANICAL AND ELECTRICAL DEMOLITION.
- REMOVE ALL EXISTING FLOOR DRAINS AND CLEANOUTS U.N.O., REMOVE ALL EXISTING EXPOSED PIPING AND ABANDON ALL HIDDEN PIPING THROUGHOUT WORK AREA.
- ALL EXISTING CONSTRUCTION TO REMAIN U.N.O.
- ALL EXISTING MATERIALS INDICATED TO REMAIN SHALL BE REPAIRED TO MATCH EXISTING. MATERIALS BEYOND REPAIR SHALL BE REPLACED TO MATCH EXISTING.
- PATCH AND PREPARE ALL DEMOLITION AREAS FOR NEW FINISHES, REFER TO ARCHITECTURAL DRAWINGS.
- REMOVE EXIST. GYPSUM BOARD AS REQUIRED TO ALLOW FOR INSTALLATION OF SOUND INSULATION WHERE INDICATED, COORDINATE W/ FLOOR PLAN FOR LOCATION AND WALL TYPE(S).
- REMOVE EXISTING GYPSUM BOARD AS REQUIRED FOR INSTALLATION OF SOUND CONTROL GYPSUM BOARD AND SOUND INSULATION, COORDINATE W/ FLOOR PLAN FOR LOCATION AND WALL TYPE(S).
- REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR SPECIFIC TRADE RELATED DEMOLITION WORK.
- REFER TO CIVIL DRAWINGS FOR SITE DEMOLITION INFORMATION.
- REFER TO STRUCTURAL DRAWINGS FOR STRUCTURAL DEMOLITION INFORMATION AND SHORING OF EXISTING STRUCTURE.
- REFER TO SECTION 24100 - DEMOLITION, IN THE SPECIFICATION FOR FURTHER INFORMATION PRIOR TO THE START OF DEMOLITION.



1  
AD-101 1/2" = 1'-0" ENLARGED DEMOLITION FLOOR PLAN



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Client:  
**LAKE SUPERIOR STATE UNIVERSITY**

Project:  
**ABEL ARENA ALUMNI LOFT**

650 W EASTERDAY AVE.  
SAULT STE. MARIE,  
MICHIGAN 49783



Date: 01-30-2026 Issued for: BIDS/PERMITS

Drawn: DAS  
Checked: GG  
Approved: GG

Sheet Title:  
**DEMOLITION FLOOR PLAN**

Project Number: **525066.F**

Sheet Number: **AD-101**

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Sheet Title:  
**FLOOR PLAN**

Project Number: **525066.F**

Sheet Number: **A-101**

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**GENERAL FLOOR PLAN NOTES:**

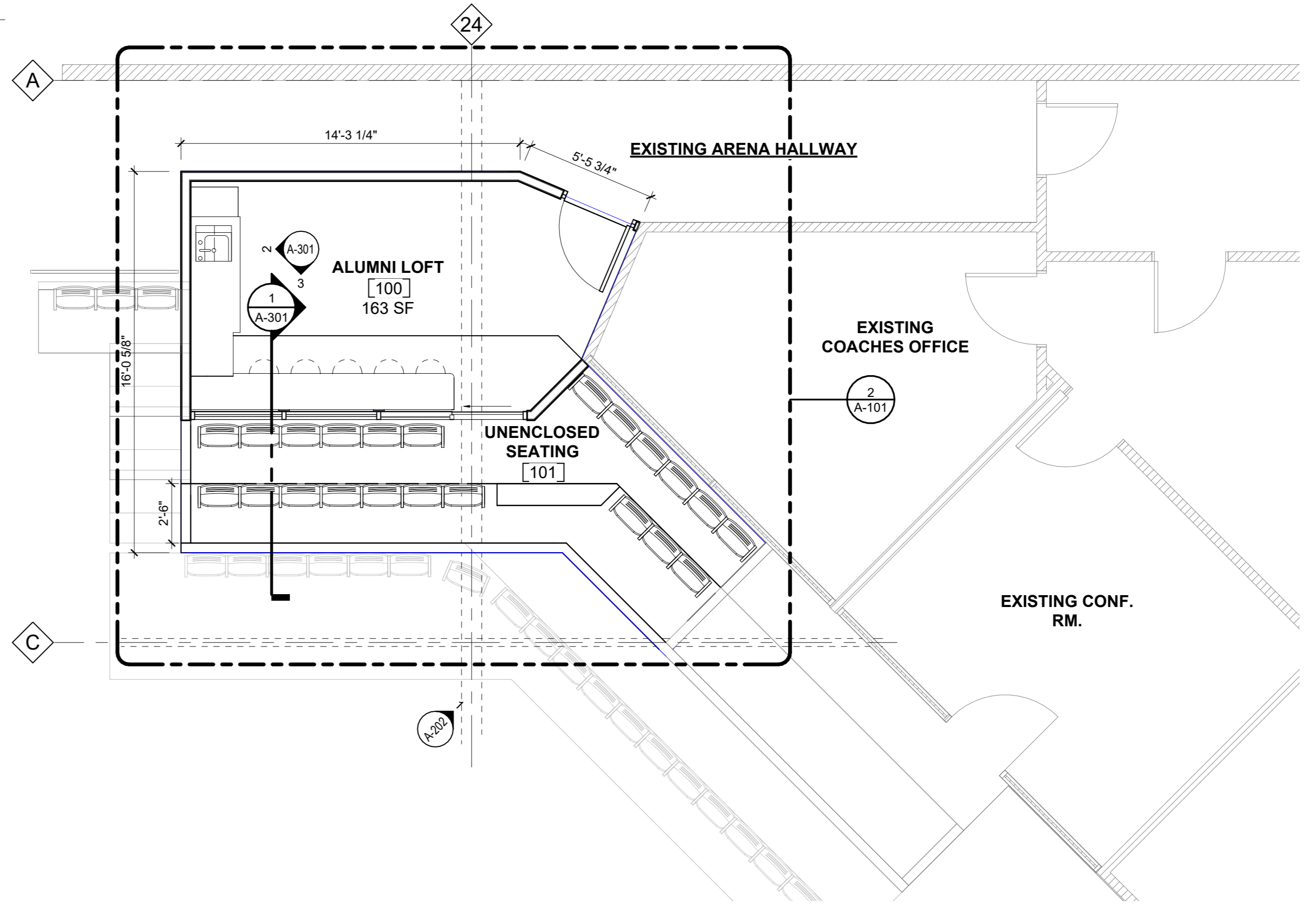
- UTILIZE 20GA. COLD FORMED STEEL STUDS AT 16" O.C. AT ALL INTERIOR PARTITIONS, U.N.O. (18GA. WHEN HEIGHT EXCEEDS MANUF. LIMITATIONS). MAINTAIN 6" COLD FORMED STEEL STUDS AT ALL PLUMBING AND CHASE WALLS, U.N.O. (VERIFY WITH PLANS AND WALL TYPE SHEET).
- ALL DIMENSIONS ARE TO FACE OF STUDS/ SHEATHING/ MASONRY/CONCRETE AND CENTERLINE OF OPENINGS FOR DOORS AND WINDOWS (FACE OF OPENING WHEN LOCATED IN MASONRY/CONCRETE). **DO NOT SCALE DRAWINGS.**
- PROVIDE AND INSTALL SEALANT AT INTERSECTION OF ALL GYPSUM BOARD PARTITIONS AND MASONRY/CONCRETE WALLS, (BOTH SIDES OF PARTITIONS).
- VERIFY SIZE AND LOCATION OF MECHANICAL AND ELECTRICAL EQUIPMENT, PADS, PENETRATIONS AND SUPPORTS WITH MECHANICAL AND ELECTRICAL DRAWINGS.
- SLOPE FLOORS TO DRAINS AT 1/8" PER FOOT MINIMUM WHILE KEEPING FLOOR LEVEL AT WALL BASE CONDITION. (DO NOT EXCEED 2% SLOPE IN ANY DIRECTION). REFER TO STRUCTURAL FOR ADDITIONAL INFORMATION.
- PROVIDE AND INSTALL A FULLY AUTOMATIC SPRINKLER SYSTEM IN ACCORDANCE WITH NFPA 13. STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS, WITH APPROVED COMPONENTS, DEVICES AND EQUIPMENT TO PROVIDE COMPLETE COVERAGE OF ALL PORTIONS OF THE BUILDING. THE FIRE SUPPRESSION HEADS MUST BE QUICK RESPONSE SPRINKLER HEADS THROUGHOUT THE LIGHT HAZARD PORTIONS, AND STANDARD RESPONSE AT ALL OTHER LOCATIONS. PROVIDE HIGH TEMPERATURE RATED HEADS PER NFPA 13. RECONFIGURE EXIST. SYSTEM TO EXTEND COVERAGE TO NEW WORK.
- PLANS INDICATE MINIMUM REQUIREMENTS FOR FIRE EXTINGUISHERS. PROVIDE ADDITIONAL EXTINGUISHERS IF REQUIRED BY AUTHORITY HAVING JURISDICTION. FIRE EXTINGUISHERS TO COMPLY WITH NFPA 10.
- COORDINATE ALL METER LOCATIONS WITH CIVIL, PLUMBING AND ELECTRICAL DRAWINGS.
- TO THE MAXIMUM EXTENT POSSIBLE, FLOOR CLEAN-OUTS ARE TO BE LOCATED IN INCONSPICUOUS LOCATIONS. ALL FLOOR CLEAN-OUTS LOCATED IN AREAS WITH FINISH FLOORING ARE TO BE FITTED WITH FINISH FLOORING INSERTS. ALL CLEAN-OUTS ARE TO BE FLUSH WITH FLOORS/WALLS.
- REFER TO SHEET A.700'S FOR ROOM FINISH, DOOR & WINDOW SCHEDULES.
- SEE SHEET A.720'S FOR WALL TYPES AND RATED ASSEMBLIES.
- SEE SHEET A.800'S FOR REFLECTED CEILING PLANS.
- REFER TO SHEET CS-003 FOR MOUNTING HEIGHTS.
- REFER TO PROJECT SPECIFICATIONS MANUAL FOR ADDITIONAL INFORMATION.

NOTE: ALL F.F.E. (FURNITURE, FIXTURES AND EQUIPMENT "BY OTHERS", TYP. U.N.O.

**WALL LEGEND:**

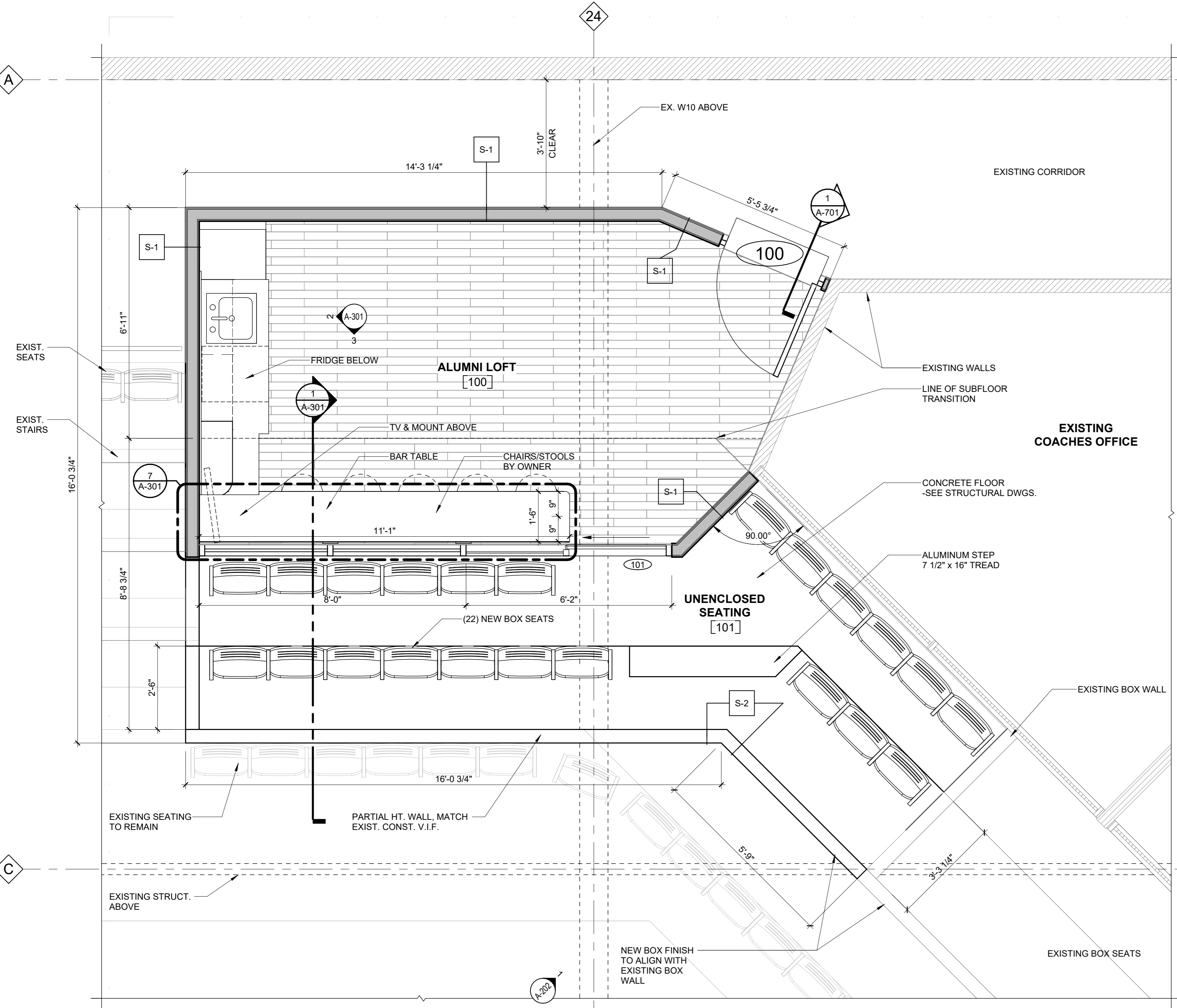
STUD INTERIOR WALL W/ GYP.BD (W/ S.A.B.)	
EXISTING WALL	
NEW DOOR FRAME AND ASSEMBLY	
NEW DOOR FRAME AND ASSEMBLY	

\*\*NOTE: WALL LEGEND SHOWN FOR GRAPHICAL REFERENCE ONLY. REFER TO WALL TYPES AND SECTIONS FOR ADDITIONAL DETAILS AND INFORMATION.



**LEVEL 2 PLAN**  
A-101 1/4" = 1'-0"

**ENLARGED ALUMNI LOFT PLAN**  
A-101 1/2" = 1'-0"





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Seal:



Date: 01-30-2026 Issued for: BIDS/PERMITS

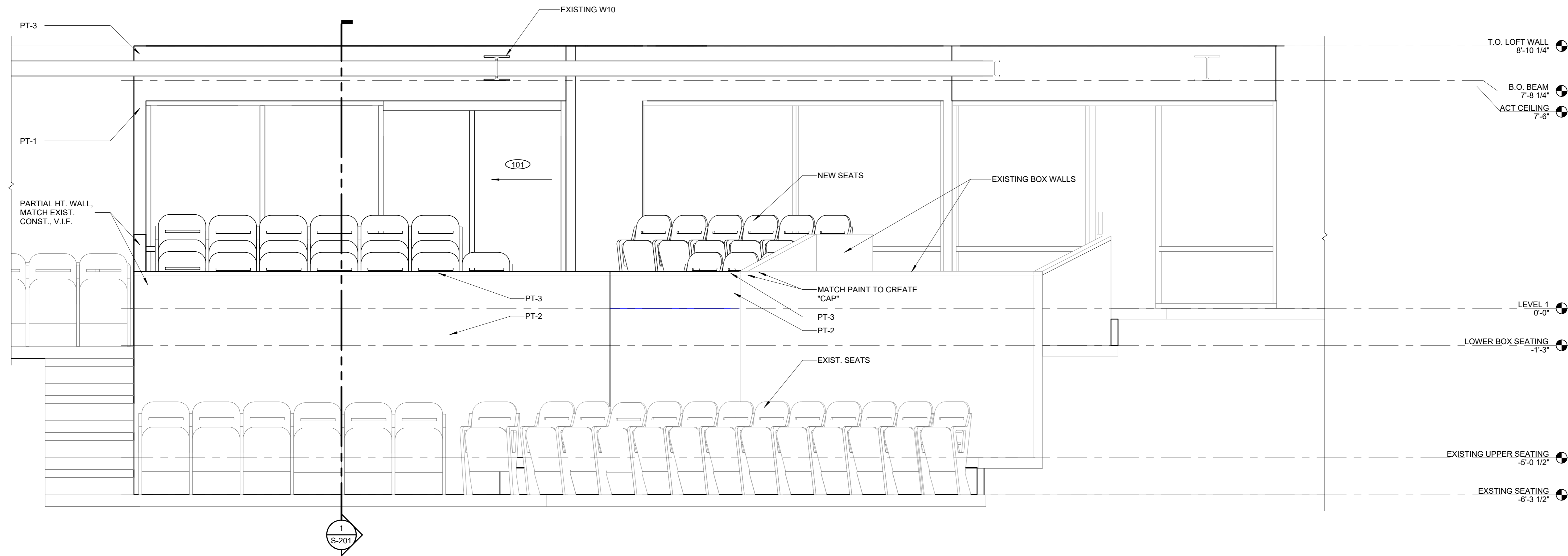
Drawn: DAS  
Checked: GG  
Approved: GG

Sheet Title:  
**ELEVATIONS**

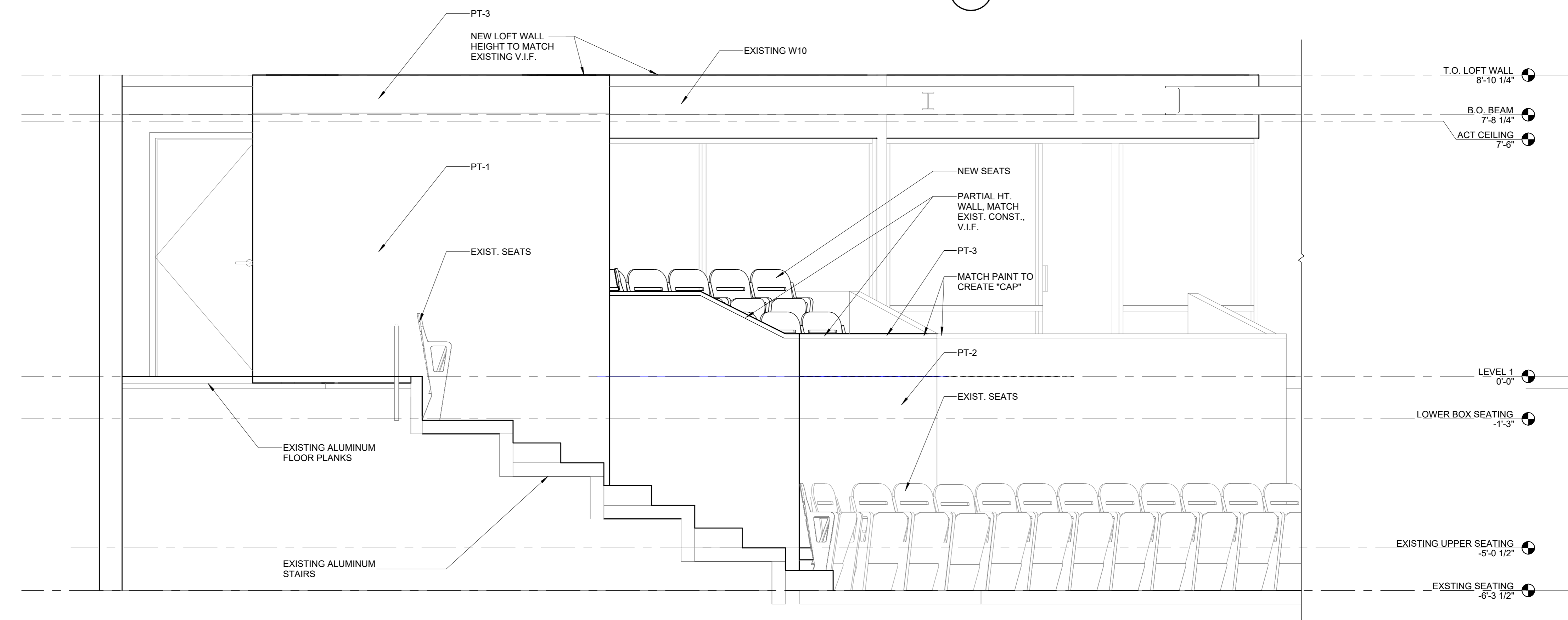
Project Number: **525066.F**

Sheet Number: **A-201**

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**2**  
A-201 1/2" = 1'-0"  
**LOFT FRONT ELEVATION**



**1**  
A-201 1/2" = 1'-0"  
**LOFT SIDE ELEVATION**



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Date: 01-30-2026 Issued for: BIDS/PERMITS

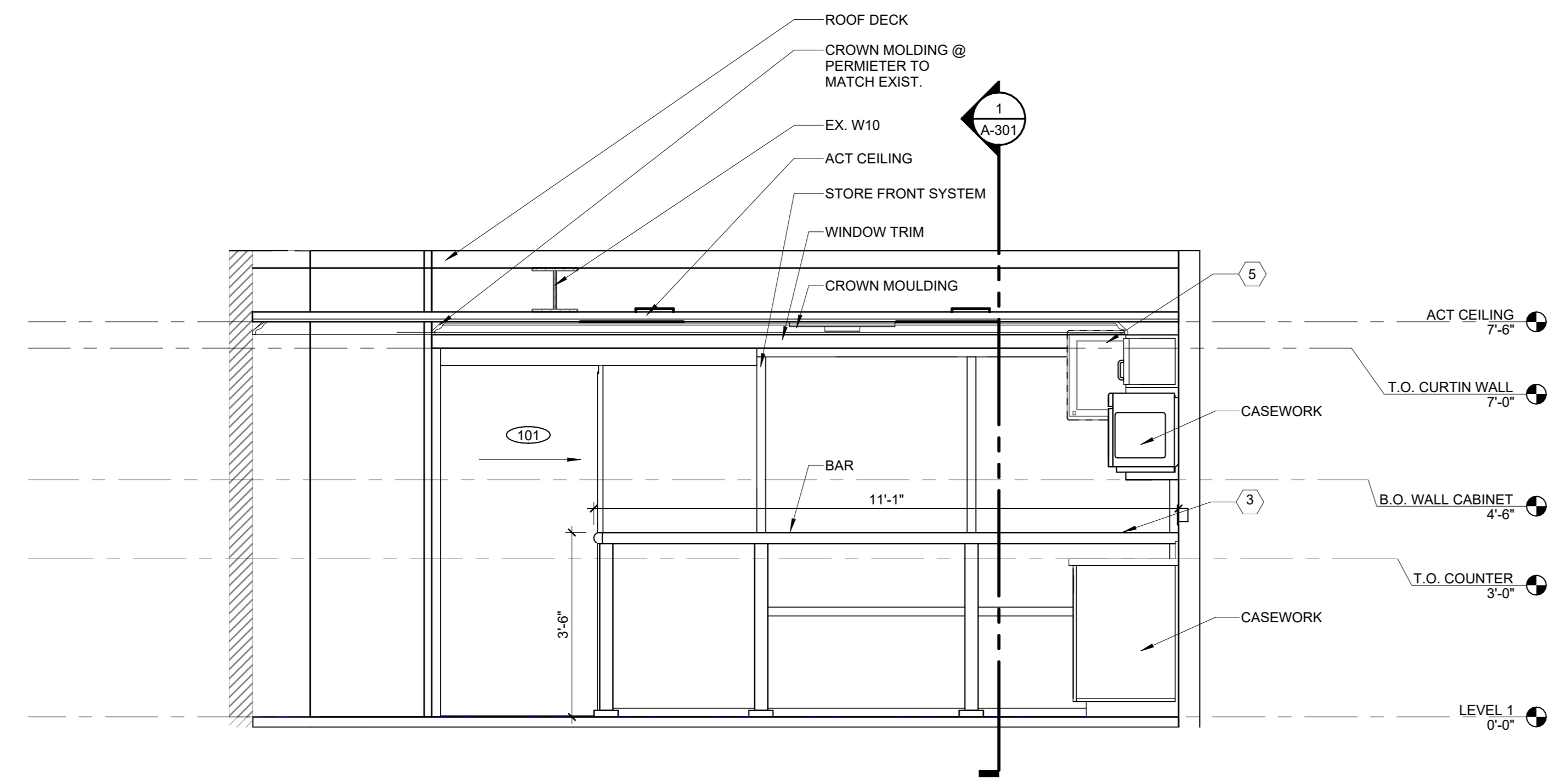
Drawn: DAS  
Checked: GG  
Approved: GG

Sheet Title:  
**SECTIONS,  
INTERIOR  
ELEVATIONS, AND  
DETAILS**

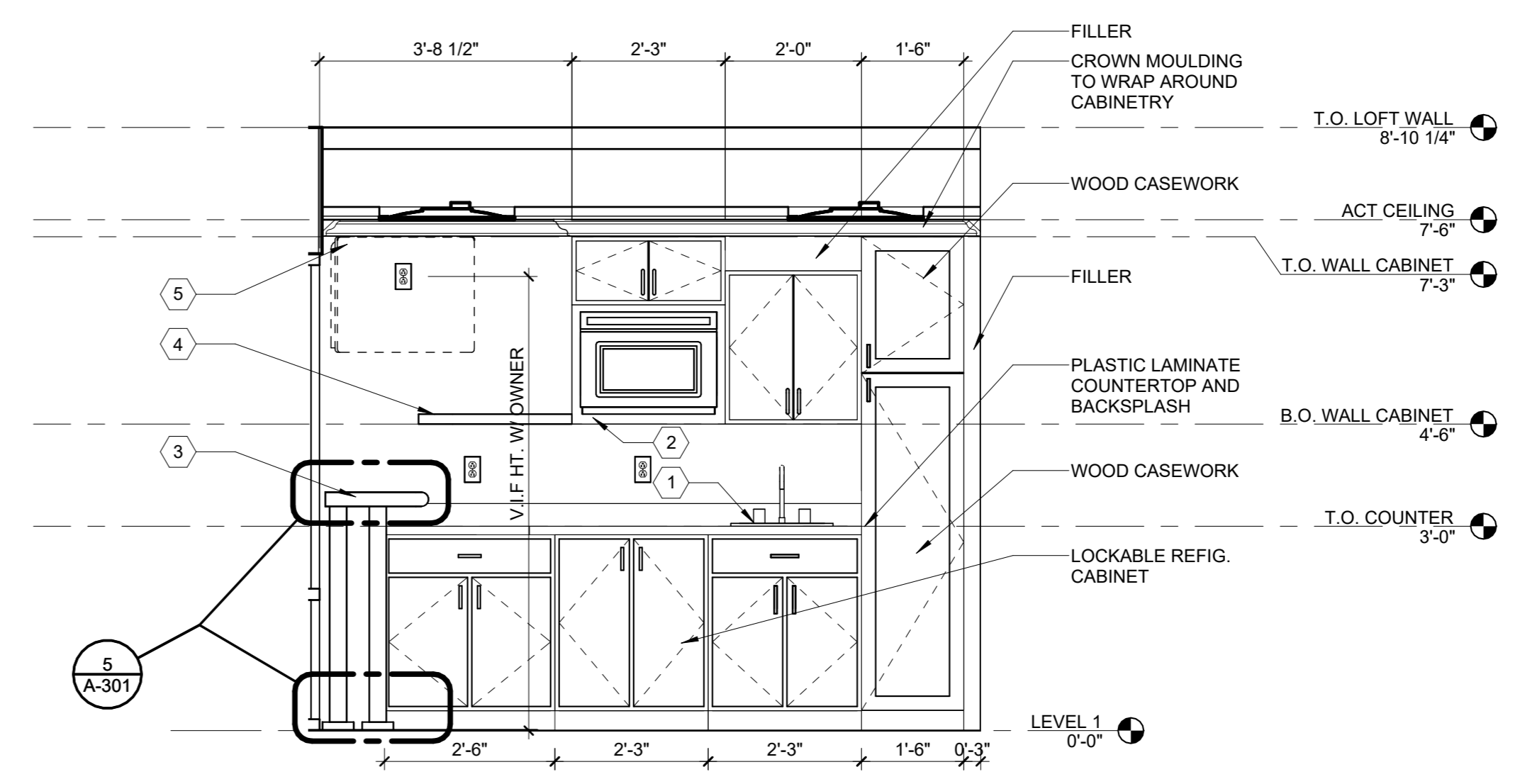
Project Number: **525066.F**

Sheet Number: **A-301**

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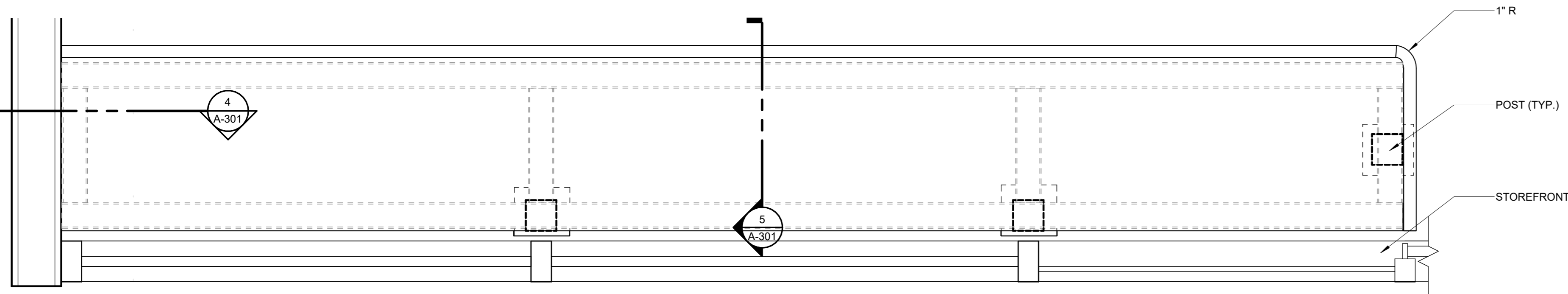


**3 INTERIOR ELEVATION -LOFT BAR**  
A-301 1/2" = 1'-0"

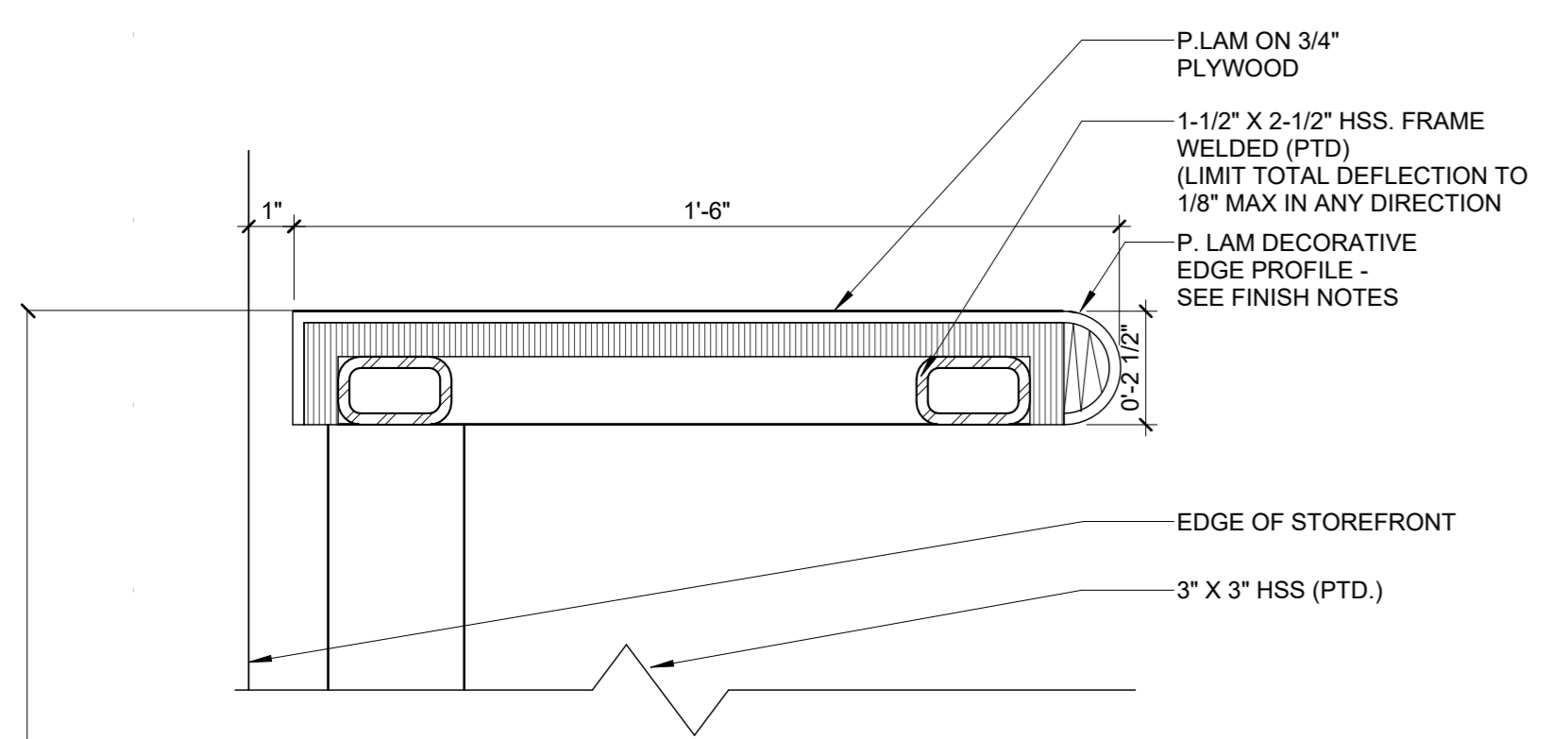


**2 INTERIOR ELEVATION-LOFT KITCHENETTE**  
A-301 1/2" = 1'-0"

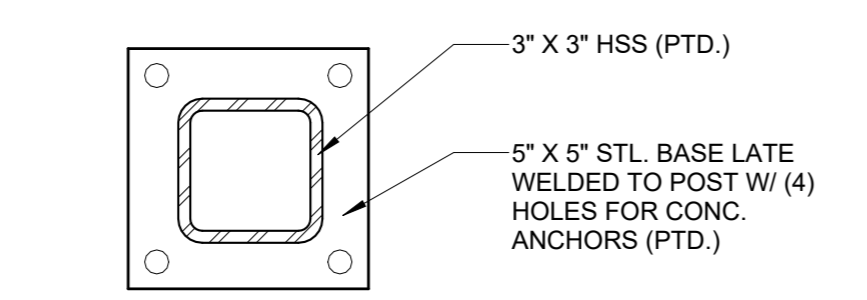
ACCESSORY LEGEND	
1	SINK
2	MICROWAVE CUBBY - MICROWAVE TO BE PROVIDED BY OWNER
3	BAR- W/ PLASITC LAMINATE COUNTERTOP
4	SHELF
5	FLAT SCREEN TV AND MOUNT - TV TO BE PROVIDED AND MOUNTED BY OWNER



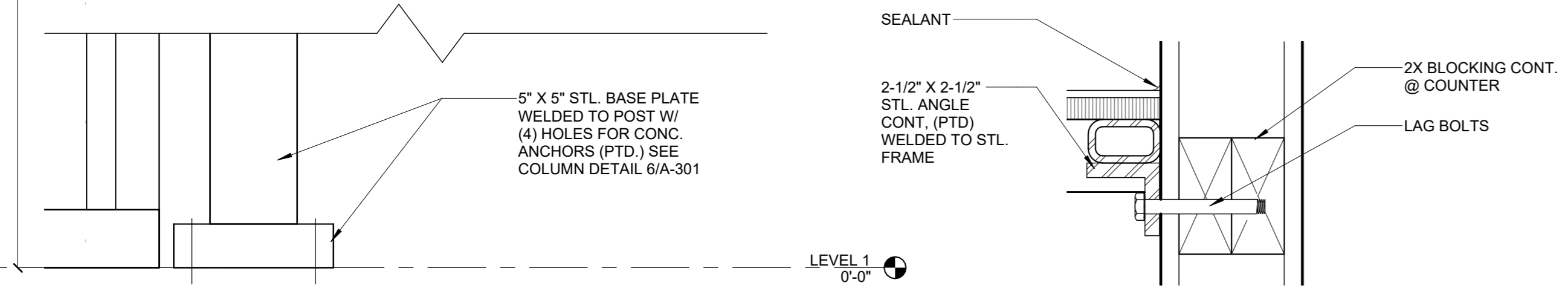
**7 ENLARGED COUNTER TOP PLAN**  
A-301 1 1/2" = 1'-0"



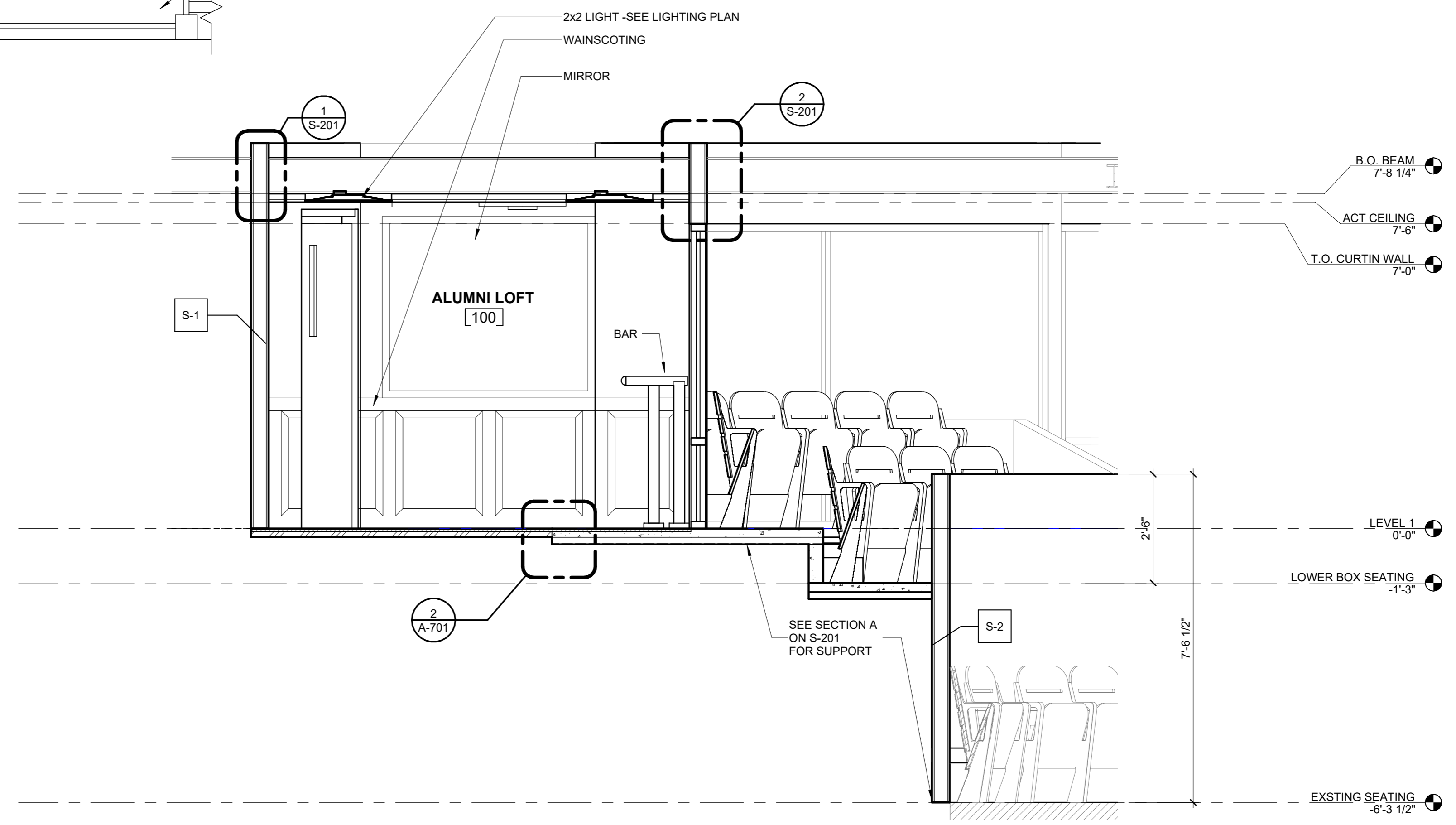
**5 BAR TABLE DETAIL**  
A-301 3" = 1'-0"



**6 COLUMN DETAIL**  
A-301 3" = 1'-0"



**4 COUNTER TO WALL DETAIL**  
A-301 3" = 1'-0"



**1 LOFT SECTION AND NEW BOX SEATING**  
A-301 1/2" = 1'-0"

DOOR SCHEDULE															
DOOR NO.	ROOM NAME	PAIR	DOOR				FRAME			HARDWARE SET	FIRE RATING (MIN.)	REMARKS			
			WIDTH	HEIGHT	THICKNESS	TYPE	HEAD	JAMB	SILL						
100	ALUMNI LOFT	No	3'-0"	7'-0"	0'-1 3/4"	N	H.M.	1	H.M.	4	3	-	1	-	4,5,6
101	ALUMNI LOFT	No	6'-0"	7'-0"	0'-1 3/4"	SGD	ALUM.	SF	ALUM.	6	6	5	2	-	1,2,3

ROOM FINISH SCHEDULE													
RM. NO.	RM. NM.	FLOOR	BASE	WALL				CEILING		PAINT/FINISH		REMARKS	
				N	S	E	W	MAT.	HT.	WALL	CEIL.		
100	ALUMNI LOFT	LVP	VB-1	EX. GWB / WS	GWB	EX. GWB/ SF	GWB/ WS	ACT	7'-6"	P-1	ACT-1		
101	UNENCLOSED SEATING	CONC.		EX. GWB	GWB	GWB	GWB	N/A	N/A	N/A	N/A		

### DOOR SCHEDULE NOTES

- ALUMINUM STOREFRONT SYSTEM
- HARDWARE BY GLASS WALL/ DOOR MANUFACTURER. EXTRUDED PULL
- SLIDING GLASS ASSEMBLY W/ HOOKBOLT LOCK
- LOCKABLE
- 10" KICK PLATE AND KICK-DOWN HOLDER
- CLOSER

### DOOR TYPE LEGEND

H.M. HOLLOW METAL  
 N NARROW LITE DOOR  
 SF STOREFRONT (ALUMINUM)  
 SGD SLIDING GLASS DOOR

### GENERAL DOOR NOTES

- ALL DOOR SIZES SPECIFIED ARE "NOMINAL".
- LOCKSET TO MATCH UNIVERSITY'S EXISTING MASTER KEY SYSTEM. COORDINATE WITH OWNER'S FACILITIES/ LOCKSHOP
- SUITE DOOR ON ARENA SIDE TO BE PAINTED TO MATCH EXISTING ARENA DOORS PAINT COLOR AND SUPPLIED W/ FACTORY - APPLIED WOOD GRAIN FINISH ON THE INSIDE.
- SPECIAL THRESHOLD @ DOOR 100 DUE TO LEVEL CHANGE- SEE DETAIL ON SHEET

### GENERAL GLAZING NOTES

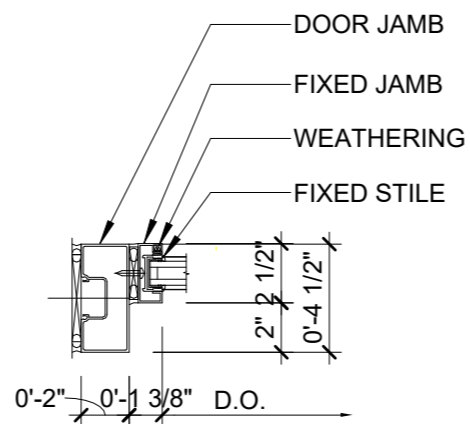
- INTERIOR GLAZING AT NON RATED FIRE DOORS, SIDELITES AND FIXED LITES MUST BE SAFETY GLAZING (FULLY TEMPERED, U.N.O.), DO NOT USE WIRED GLASS.
- REFER TO DOOR DETAILS FOR AIR SEALING AND FLASHING INFORMATION.

### ROOM FINISH LEGEND

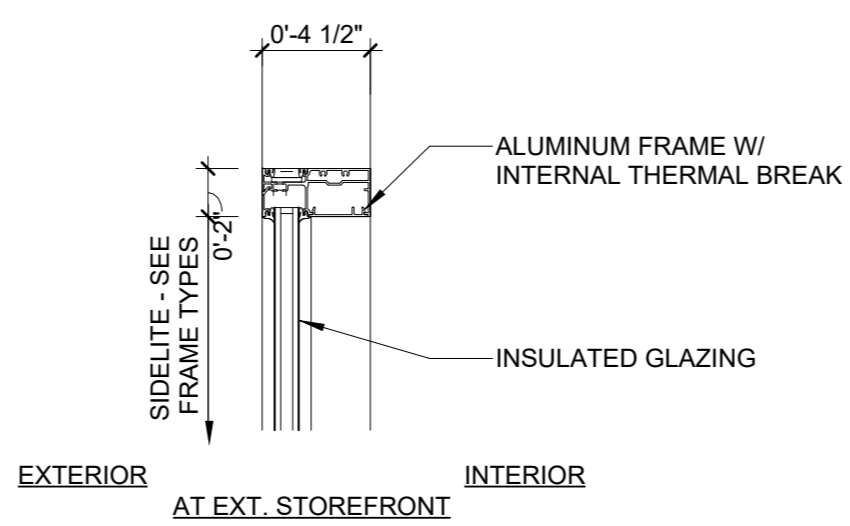
FLOORS  
 LVP LUXURY VINYL PLANK FLOORING  
 WALL BASE  
 VB-1 RESILIENT BASE (VINYL)  
 WALLS  
 GWB GYPSUM WALL BOARD  
 P-1 PAINT- SW-7541- GRECIAN IVORY.  
 P-2 PAINT- LAKER GOLD, MATCH EXISTING  
 P-3 PAINT- LAKER BLUE, MATCH EXISTING  
 WS WAINSCOTING  
 SF STOREFRONT  
 CEILING  
 ACT-1 ACOUSTICAL CEILING TILE

### ROOM FINISH NOTES

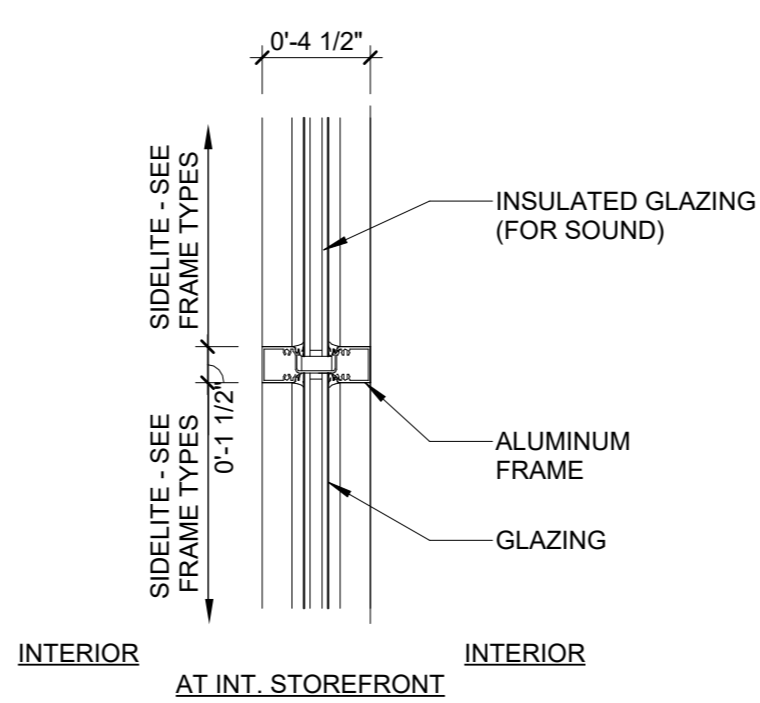
- SEE REFLECTED CEILING PLAN, FLOOR PLAN AND SECTIONS FOR ADDITIONAL INFORMATION
- EXPOSED CONCRETE FLOOR WITH SEALER.
- EGGSHELL PAINT ON GYPSUM BOARD SOFFITS, NO PAINT ON ACOUSTIC TILE
- WINDOW SHADES AT ALL EXTERIOR OPENINGS INCLUDING DOOR
- REFER TO REFLECTED CEILING PLAN AND INTERIOR ELEVATIONS FOR ACCENT LOCATIONS (PT-2). ALL OTHER LOCATIONS TO RECEIVE (PT-1) U.N.O.
- BAR AND COUNTERTOP EDGE PROFILE TO BE : FORMICA IDEAL EDGE E12 1-1/2" DOUBLE RADIUS



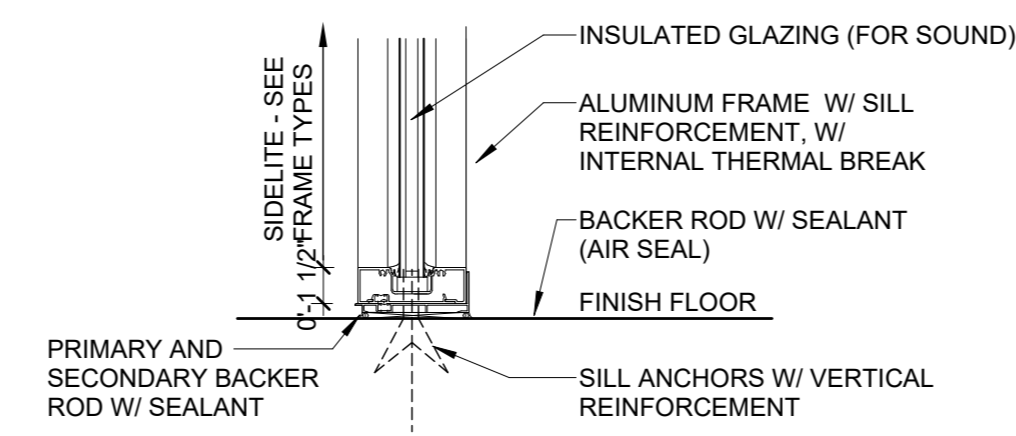
10 ALUM. JAMB  
 1 1/2" = 1'-0"



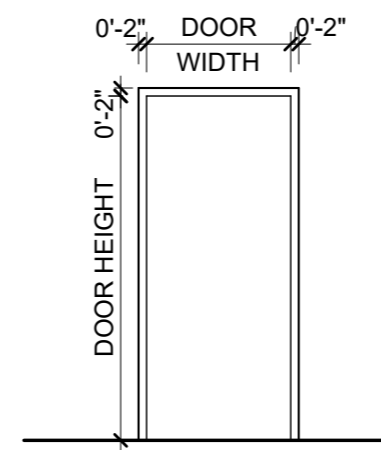
9 ALUM. MULLION/INTERMEDIATE  
 1 1/2" = 1'-0"



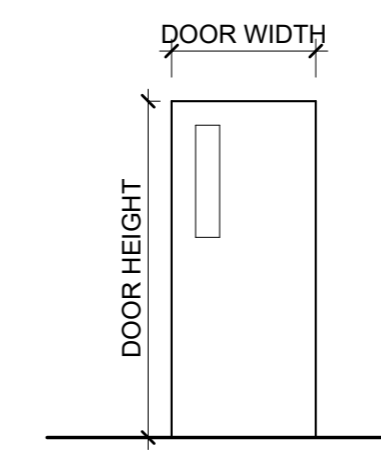
8 ALUM. MULLION/INTERMEDIATE  
 1 1/2" = 1'-0"



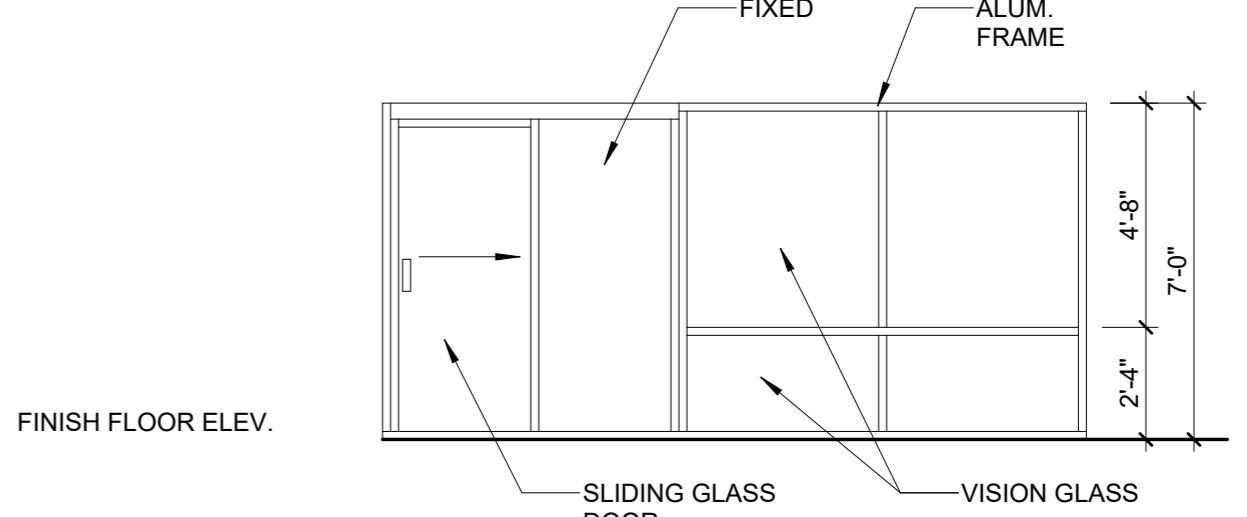
7 ALUM. STOREFRONT SILL  
 1 1/2" = 1'-0"



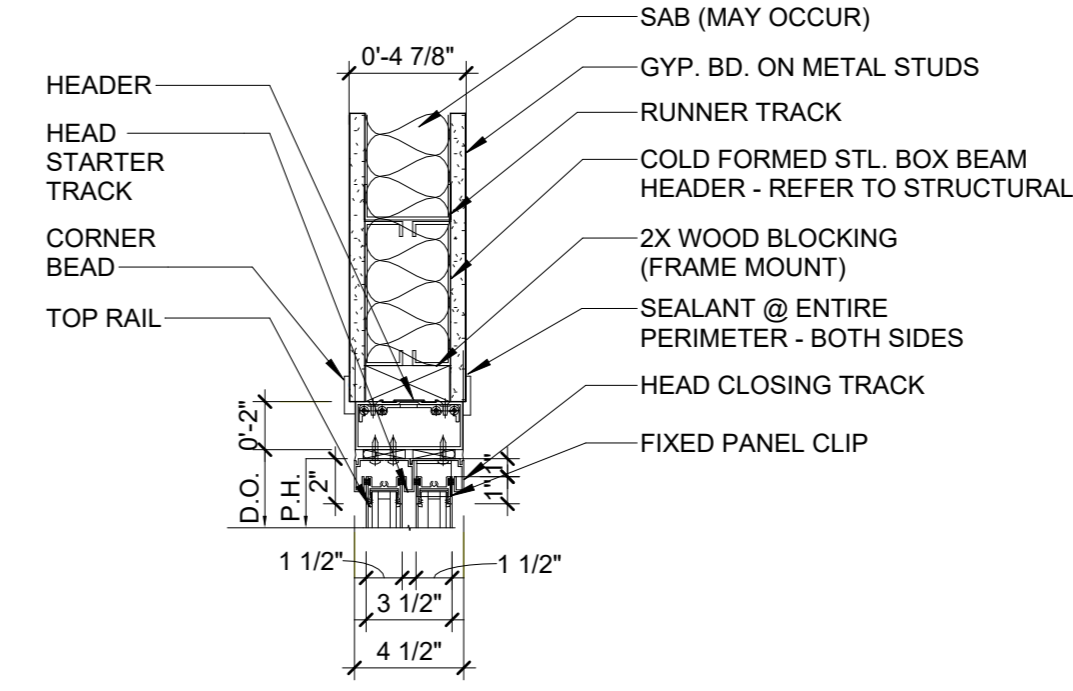
FRAME TYPES  
 1/4" = 1'-0"



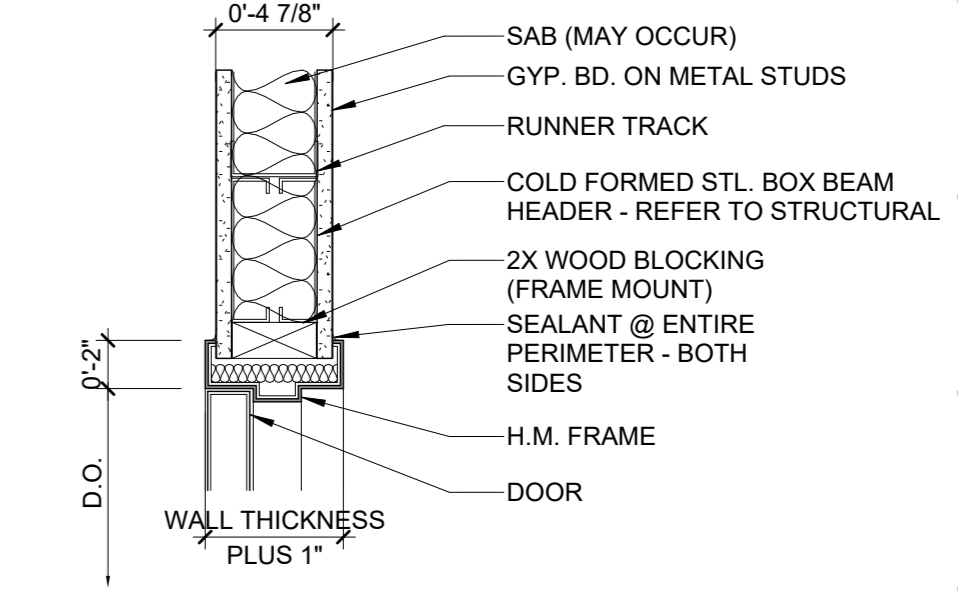
DOOR TYPES  
 1/4" = 1'-0"



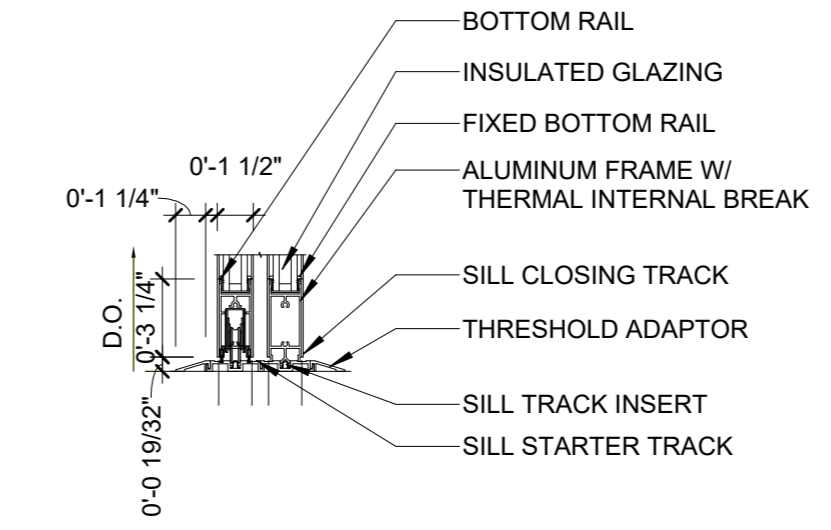
SLIDING GLASS DOOR  
 1/4" = 1'-0"



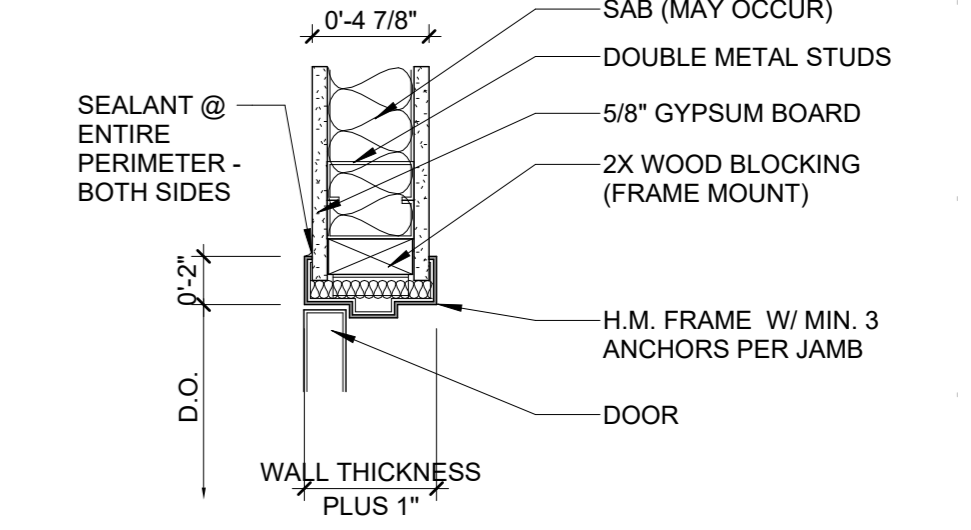
6 ALUM. JAMB/HEAD  
 1 1/2" = 1'-0"



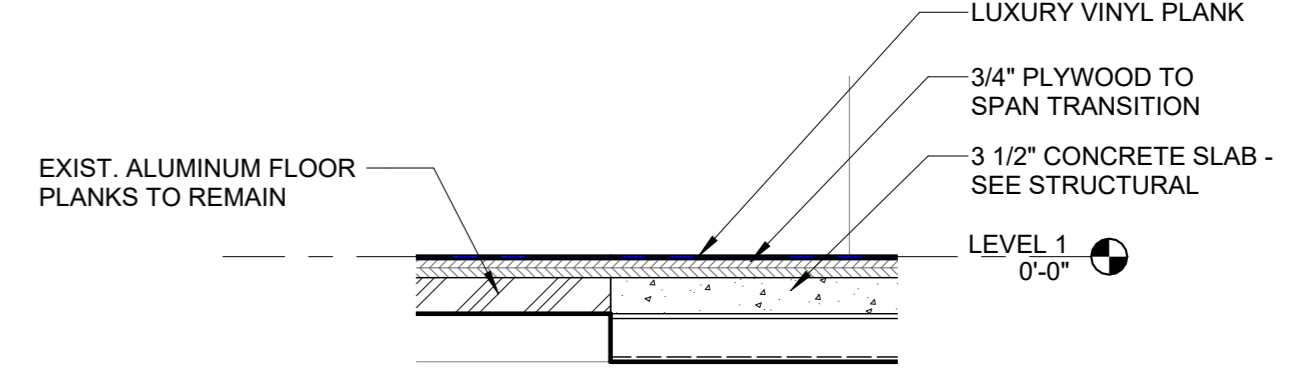
4 HEAD SECTION- H.M. FRAME  
 1 1/2" = 1'-0"



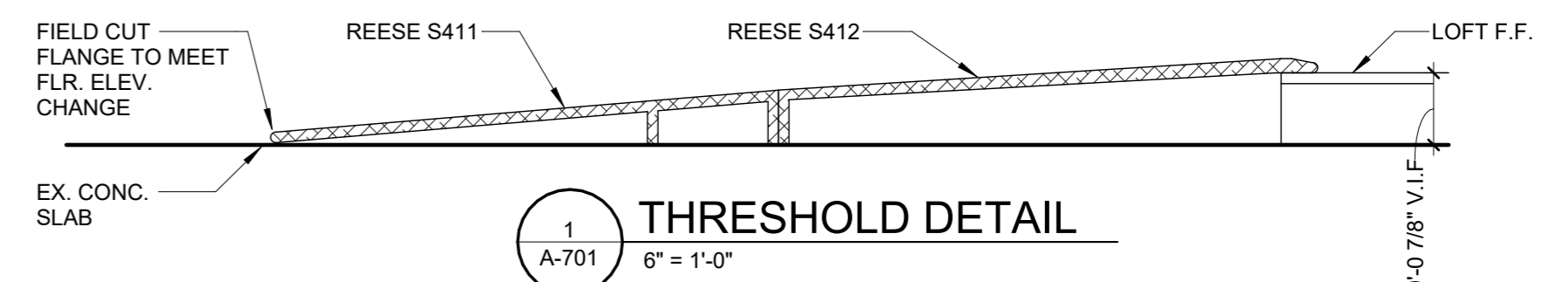
5 ALUM. SILL  
 1 1/2" = 1'-0"



3 JAMB SECTION-H.M. FRAME  
 1 1/2" = 1'-0"



2 SUB FLOOR TRANSITION DETAIL  
 1 1/2" = 1'-0"



1 THRESHOLD DETAIL  
 6" = 1'-0"



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Sheet Title:  
**SCHEDULES AND DETAILS**

Project Number: **525066.F**

Sheet Number: **A-701**

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Sheet Title:  
**WALL TYPES AND  
FIRE RATED  
ASSEMBLIES**


Project Number: **525066.F**

Sheet Number: **A-721**


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**PARTITION NOTES**

- WALLS ARE DISTINGUISHED ON FLOOR PLANS BY SYMBOL DESIGNATION, GRAPHIC DESIGNATION OR A COMBINATION OF BOTH DESIGNATIONS.
- THERE ARE TWO TYPES OF SYMBOL DESIGNATIONS, ONE FOR WALLS NOT REQUIRING SOUND ATTENUATION AND ANOTHER FOR WALLS WHICH REQUIRE SOUND ATTENUATIONS. REFER TO PARTITION MATRICES FOR SOUND ATTENUATION BLANKET (SAB) MINIMUM THICKNESS FOR STC INDICATED.
 



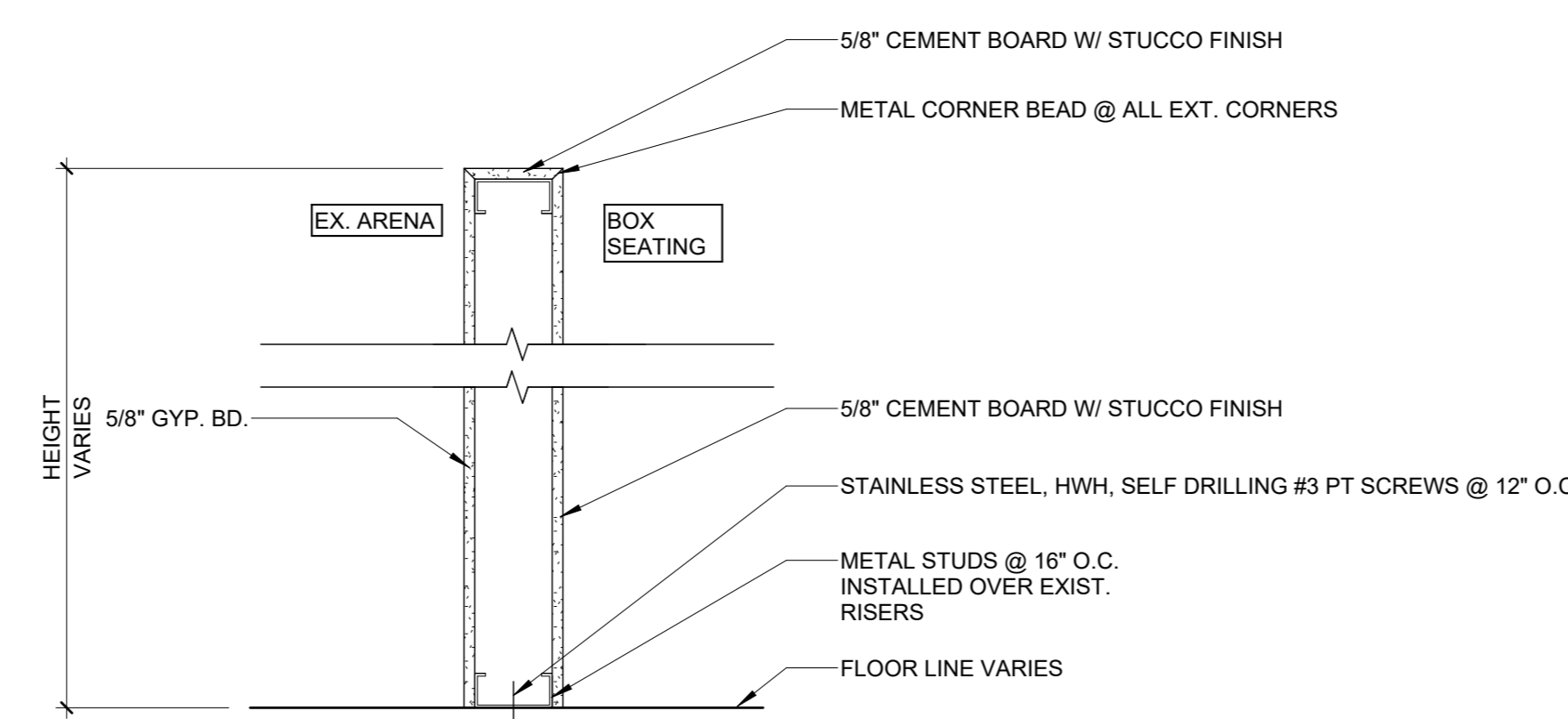
SYMBOL DESIGNATION  
(NO SOUND ATTENUATION  
BATTS)



SYMBOL DESIGNATION  
(WITH SOUND ATTENUATION  
BATTS)
- THE SYMBOL DESIGNATION HAS THREE CHARACTERS:
  - FIRST CHARACTER IS A LETTER INDICATING THE STRUCTURAL BACKUP SYSTEM.
  - SECOND CHARACTER IS A LETTER INDICATING THE PARTITION TYPE.
  - THIRD CHARACTER IS A NUMERIC INDICATING THE STRUCTURE WIDTH.

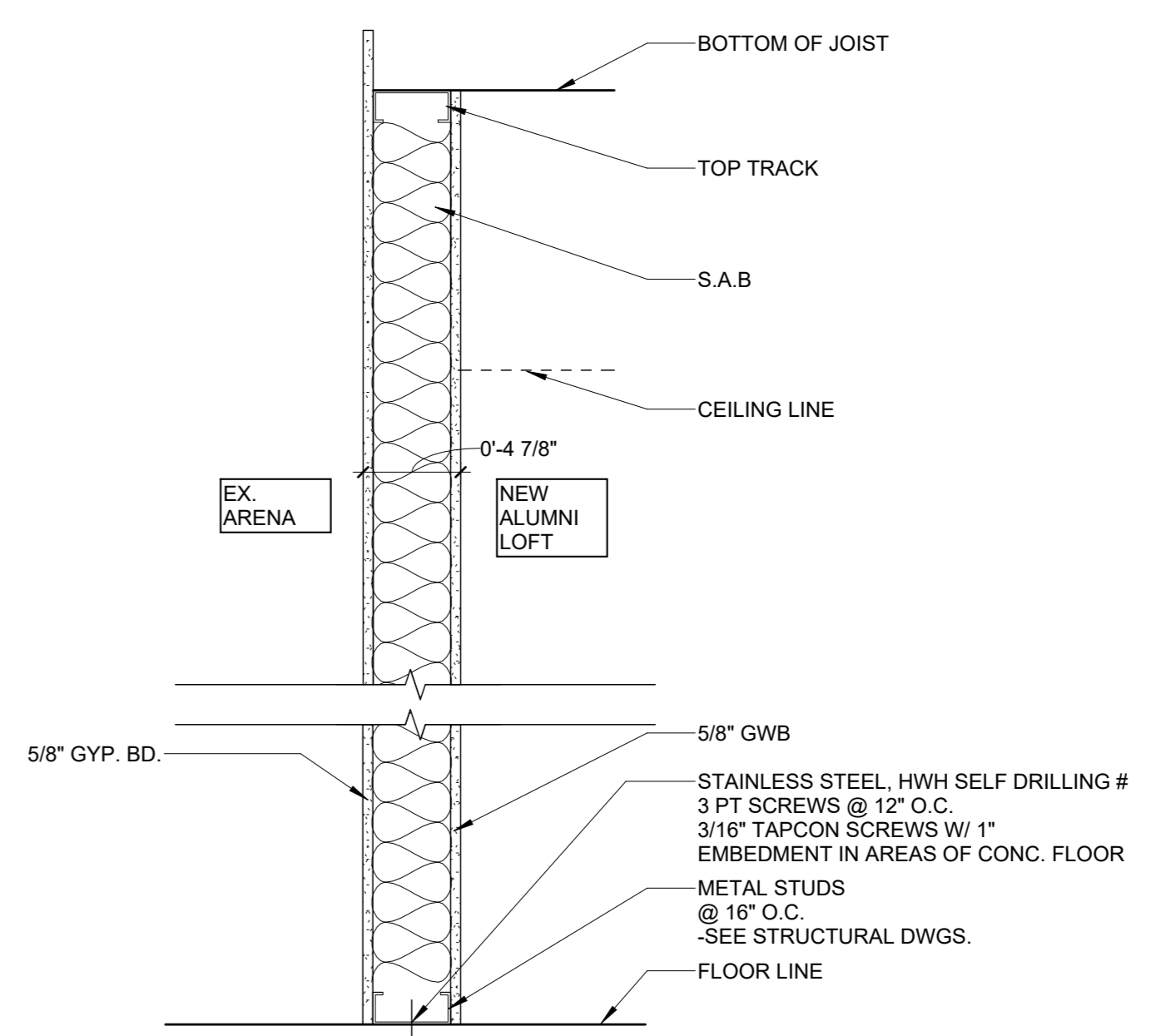
REFER TO LEGEND BELOW.

STRUCTURAL BACKUP	NUMERIC CHARACTER	METAL STUD WIDTH	WOOD STUD WIDTH	CMU WIDTH	CONCRETE WIDTH
W= WOOD STUD	1	1 5/8"	1 1/2"		
S= COLD FORMED STEEL STUD	2	2 1/2"	2 1/2"		
	3	3 5/8"	3 1/2"		
	4	4"		3 5/8"	
	6	6"	5 1/2"	5 5/8"	
M= C.M.U.	8	8"	7 1/4"	7 5/8"	8"
C= CONCRETE	10	10"	9 1/4"	9 5/8"	10"
	12			11 5/8"	12"
- WHERE PARTITION WALL TYPES ARE INDICATED, THE PARTITION SYSTEM IS CONTINUOUS UNTIL THE PARTITION CHANGES DIRECTION OR A DIFFERENT PARTITION SYSTEM IS INDICATED.
- ALL INTERIOR STUD FRAMING TO EXTEND TO UNDERSIDE OF JOIST.
- "LINE OF STRUCTURE/ ROOF DECK" INDICATED FOR EACH PARTITION IS DIAGRAMMATIC ONLY AND DOES NOT INDICATE EXACT CONSTRUCTION CONDITIONS OR GEOMETRY.
- APPROPRIATE FRAMING AND GYPSUM BOARD SHALL BE INSTALLED TO OFFSET AROUND STRUCTURAL MEMBERS OR OTHER OBSTRUCTIONS SUCH AS PIPING OR DUCTWORK TO MAINTAIN THE FIRE RESISTANCE RATING.
- GYPSUM BOARD TO TERMINATE 1/2" BELOW LINE OF STRUCTURE AND BE SEALED AS FOLLOWS.
  - FIRE RESISTANCE RATED WALLS SHALL BE INSTALLED WITH LISTED FIRE RATED SEALANT UNLESS NOTED OTHERWISE.
  - SMOKE RESISTANCE RATED WALLS SHALL BE INSTALLED WITH LISTED SEALANT TO "LIMIT THE PASSAGE OF SMOKE" UNLESS NOTED OTHERWISE.
  - NON-FIRE RESISTANCE RATED WALLS SHALL BE INSTALLED WITH ACOUSTICAL SEALANT U.N.O., AT THE TOP AND BOTTOM STUDS/ TRACKS.
- INSULATION AT HEAD CONDITIONS AT FLOOR/ROOF DECK
  - FIRE RESISTANCE RATED WALLS SHALL USE MINERAL WOOL INSULATION
  - NON-FIRE RESISTANCE RATED WALLS REQUIRING SOUND ATTENUATION SHALL USE SOUND ATTENUATION BLANKETS (SAB).
- FOR WALLS INDICATED TO RECEIVE SOUND ATTENUATION BATTS, EXTEND SOUND ATTENUATION BATTS TO FULL HEIGHT OF PARTITION UNLESS NOTED OTHERWISE. FLOOR STUD/ TRACKS TO BE SET IN A CONTINUOUS BED OF ACOUSTICAL SEALANT.
- WALLS ARE INDICATED WITH CONVENTIONAL GYPSUM WALLBOARD; UPGRADE TO PREMIUM TYPES OF WALLBOARD (I.E. MOISTURE-RESISTANT, TILE-BACKER, ETC) BASED ON THEIR LOCATION AND ACCORDING TO REQUIREMENTS OF SECTION 09 29 00/ GYPSUM BOARD.
- GYPSUM BOARD REQUIREMENTS
  - ALL FIRE RESISTANCE RATED WALLS TO USE TYPE 'X'
  - ALL FIRE RESISTANCE RATED CEILINGS TO USE TYPE 'C'
  - WHERE MOISTURE RESISTANT GYPSUM BOARD OCCURS ON FIRE RATED ASSEMBLIES, USE COMBINATION FIRE RESISTANCE RATED MOLD AND MOISTURE RESISTANCE RATED GYPSUM BOARD FOR THE APPROPRIATE APPLICATION (I.E. TYPE 'X' OR 'C')
  - AT OCCUPIED AREAS OR AT GYP. BD. SCHEDULED TO RECEIVE FINISHES, GYP. BD. SHALL RECEIVE LVL. 4 FINISH, ALL OTHER AREAS TO RECEIVE LVL. 2 FINISH.
  - ALL CURVED SURFACES EXPOSED TO VIEW TO RECEIVE LEVEL 5 FINISH.
- CONTINUE WALL FINISH MATERIAL TO MINIMUM 4" ABOVE SUSPENDED CEILINGS, U.N.O. WHERE NO CEILING IS INDICATED CONTINUE FINISH TO UNDERSIDE OF ROOF DECK, U.N.O.
  - ALL WALLS SCHEDULED TO RECEIVE SOUND ATTENUATION TO SHALL HAVE GYP. BD. AND INSULATION EXTENDED TO UNDERSIDE OF ROOF DECK.
  - ALL WALLS WHERE SOUND ATTENUATION IS NOT SCHEDULED ARE PERMITTED TO HAVE GYP. BD. TERMINATE 4" MIN. ABOVE THE FINISH CEILING, U.N.O.
- OFFSET ELECTRICAL BOXES AND OTHER PENETRATIONS MINIMUM 2'-0", TYP., ON OPPOSITE SIDES OF THE WALL.
- "METAL STUDS" INDICATED ON THIS SHEET FOR INTERIOR PARTITIONS REFER TO THOSE SPECIFIED IN SECTION 09 22 16 / NON-STRUCTURAL METAL FRAMING. REFER TO SPECIFICATIONS FOR ADDITIONAL CRITERIA SUCH AS STUD SPACING, MINIMUM GAUGE OF METAL AND PERMISSIBLE DEFLECTION LIMITS.
- WALL TYPES ARE TITLED TO GENERALLY DESCRIBE AN ASSEMBLY'S FIRE-RESISTIVE "CAPABILITY". IN SOME CASES, ARCHITECT MAY HAVE EMPLOYED A GIVEN WALL TYPE FOR ITS SOUND CONTROL OR OTHER PROPERTIES, THUS IT IS POSSIBLE THAT WALL TYPES CHOSEN MAY PROVIDE GREATER FIRE RESISTIVE CAPABILITY THAN ACTUALLY REQUIRED BY BUILDING CODE. UTILIZE WALL TYPES INDICATED BY FLOOR PLAN CALL-OUTS.
- CONTACT ARCHITECT WHERE WALLS/PARTITIONS LACK A WALL TYPE CALL-OUT.
- "STC" REFERS TO SOUND TRANSMISSION CLASS; A RATING SYSTEM THAT DESCRIBES THE ABILITY OF AN ASSEMBLY TO REDUCE THE TRANSMISSION OF SOUND. CONFIGURE SOUND-RATED WALL ASSEMBLIES ACCORDING TO THE MINIMUM REQUIREMENTS STIPULATED IN THE STC TESTS LISTED.
- "SAB" REFERS TO SOUND ATTENUATION BATTS SPECIFIED IN SECTION 07 21 00/ 09 29 00 WHERE SAB'S ARE INDICATED, THEY SHALL EXTEND CONTINUOUSLY FROM FLOOR TO STRUCTURE ABOVE, U.N.O. SAB'S SHALL BE OF MATERIAL AS SPECIFIED IN WALL TYPES AND SPECIFICATIONS. NO SUBSTITUTIONS WITHOUT ARCHITECT APPROVAL.



MARK	STUD SIZE	FIRE TEST	FIRE RATING	SOUND ATTENUATION			
				STC W/O SAB	SAB	STC W/ SAB	TEST
<b>S2</b>	3 5/8"	-	-	-	-	-	-

**S2** NON-FIRE RATED WALL  
1 1/2" = 1'-0"



MARK	STUD SIZE	FIRE TEST	FIRE RATING	SOUND ATTENUATION			
				STC W/O SAB	SAB	STC W/ SAB	TEST
<b>S1</b>	3 5/8"	-	-	-	-	-	-

**S1** NON-FIRE RATED WALL  
1 1/2" = 1'-0"

CEILING SCHEDULE		
MARK	DESCRIPTION	REMARKS
ACT-1	2' X 2' ACOUSTIC SUSPENDED CEILING - TYPE 1	STANDARD METAL GRID
EX. ACT-1	EX. 2' X 2' ACOUSTIC SUSPENDED CEILING- TYPE 1	STANDARD METAL GRID

REFLECTED CEILING PLAN SYMBOLS LEGEND	
SYMBOL	DESCRIPTION
	2'-0"x2'-0" LAY-IN CEILING SYSTEM
	2' X 2' LAY-IN DIMMABLE LIGHT FIXTURE (ACT)
	SUPPLY AIR DIFFUSER
	RETURN AIR/EXHAUST DIFFUSER
	FINISHED CEILING MATERIAL/ ELEVATION



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- REFLECTED CEILING PLAN NOTES:**
- THIS PLAN IS INTENDED TO SHOW GENERAL COORDINATION OF OVERHEAD WORK. REFER TO STRUCTURAL, PLUMBING, MECHANICAL, ELECTRICAL & LOW VOLTAGE DRAWINGS FOR FURTHER INFORMATION.
  - ALL CEILING HEIGHTS ARE FINISH DIMENSIONS.
  - ALL CEILING TILES MUST BE CENTERED IN ROOM.
  - ALL CEILING PENETRATIONS INCLUDING FIRE PROTECTION HEADS, FIRE ALARM DEVICES, LIGHT FIXTURES, SPEAKERS, ETC. MUST BE CENTERED IN THE CEILING TILE.
  - PROVIDE AND INSTALL A FIRE RATED ENCLOSURE ABOVE ALL RECESSED LIGHT FIXTURES WHICH PENETRATE A FIRE RATED CEILING MEMBRANE.
  - COORDINATE SIZE AND LOCATION OF ALL ACCESS PANELS WITH MECHANICAL AND ELECTRICAL DRAWINGS. ARCHITECT TO FIELD VERIFY LOCATIONS.
  - COORDINATE CEILING SUSPENSION SYSTEM WITH OTHER CEILING SPACE EQUIPMENT SUPPORTING DEVICES.
  - PROVIDE AND INSTALL MOISTURE RESISTANT GYPSUM BOARD AT ALL AREAS PRONE TO MOISTURE, I.E. PUBLIC TOILET ROOMS, LOCKER ROOMS/ SHOWER ROOMS, MECHANICAL ROOMS, JANITOR ROOMS/ HOUSEKEEPING ROOMS, ETC., U.N.O.
  - PROVIDE AND INSTALL FIRE DAMPERS AT DUCT PENETRATIONS OF ALL FIRE RATED ASSEMBLIES. CEILING RADIATION DAMPERS ARE REQUIRED AT ALL DUCT/FAN PENETRATIONS OF THE FIRE RATED CEILINGS, COORDINATE WITH MECHANICAL DRAWINGS.
  - REFER TO SPECIFICATIONS MANUAL FOR ADDITIONAL INFORMATION.

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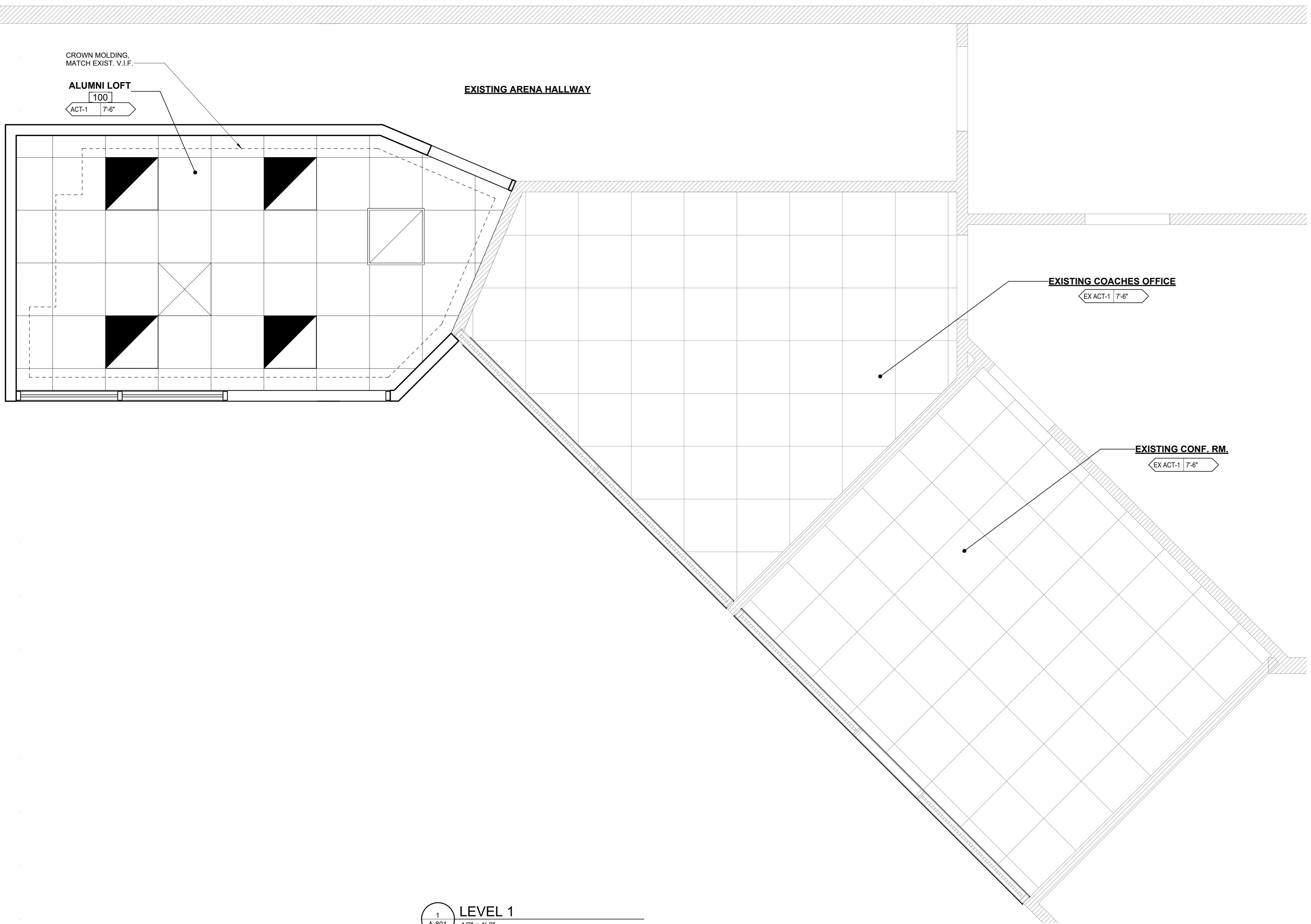
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Checked: GG  
Approved: GG

Sheet Title:  
**REFLECTED CEILING PLAN**

Project Number: **525066.F**

Sheet Number: **A-801**

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**LEVEL 1**  
1/2" = 1'-0"

ELECTRICAL SPECIFICATION

PART 1 - GENERAL

COOPERATION WITH OTHER TRADES

WHEN INTERFERENCES EXIST WITH THE WORK OF OTHER TRADES, NOTIFY THE OWNER BEFORE PROCEEDING WITH THE INSTALLATION OF THE WORK...

ORDINANCES AND CODES

THE ENTIRE INSTALLATION SHALL BE IN ACCORDANCE WITH THE GOVERNING RULES AND REGULATIONS OF THE NATIONAL ELECTRIC CODE...

THE ENTIRE INSTALLATION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF APPLICABLE FEDERAL, STATE AND LOCAL CODES, ORDINANCES AND REGULATIONS.

PROVIDE MATERIALS LISTED BY THE UNDERWRITERS' LABORATORIES, INC. AND BEARING THEIR LABEL WHERE SUCH SERVICE IS AVAILABLE FOR THE TYPE OF EQUIPMENT SPECIFIED.

WHERE PLANS AND SPECIFICATIONS CONFLICT WITH SUCH LAWS AND ORDINANCES, NOTIFY THE ARCHITECT BEFORE SUBMISSION OF THE BID...

PERMITS

OBTAIN AND PAY FOR ALL REQUIRED PERMITS.

INSPECTIONS

GIVE ALL REQUIRED NOTICES OF INSPECTIONS REQUIRED BY THE LAWS OR OTHER REGULATIONS AND PAY ALL FEES IN CONNECTION THEREWITH.

FINAL ELECTRICAL INSPECTION IS REQUIRED BY THE LOCAL INSPECTION AUTHORITY. FORWARD A COPY OF THE FINAL APPROVAL TO THE FIRE MARSHAL DIVISION, LOCAL FIELD OFFICE.

COORDINATION AND PROJECT RECORD DOCUMENTS

PROJECT RECORD DOCUMENTS ARE REQUIRED UPON COMPLETION OF THE WORK AND BEFORE FINAL PAYMENT IS MADE.

GUARANTEE

THE COMPLETE ELECTRICAL SYSTEM OR SYSTEMS FURNISHED AND INSTALLED SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE OF THE WORK AGAINST DEFECTIVE MATERIALS AND/OR WORKMANSHIP...

CHARACTER OF WORK

THE INSTALLATION SHALL BE SO MADE THAT ITS MANY COMPONENT PARTS WILL FUNCTION TOGETHER AS A WORKABLE SYSTEM. IT SHALL BE COMPLETE WITH ALL ACCESSORIES NECESSARY FOR ITS OPERATION...

EXECUTE THE WORK IN CONFORMITY WITH THE BEST PRACTICE, SO AS TO CONTRIBUTE TO EFFICIENCY OF OPERATION, MINIMUM MAINTENANCE, ACCESSIBILITY AND SIGHTLINESS.

MOUNTING HEIGHTS

MOUNT OUTLET BOXES AND EQUIPMENT AS SHOWN BELOW, UNLESS OTHERWISE INDICATED ON DRAWINGS. MOUNTING HEIGHTS SHOWN, IN GENERAL, ARE ABOVE FINISHED FLOOR TO CENTER LINE OF OUTLET BOXES OR EQUIPMENT.

BRACKET MOUNTED MIRROR LIGHTING FIXTURES: ABOVE MIRROR.

SWITCHES: 3'-10".

RECEPTACLES: FINISHED AREAS: 18".

VOICE/DATA OUTLETS - DESK MOUNTED: 18".

VOICE/DATA OUTLETS - WALL MOUNTED: 4'-8".

SAFETY SWITCHES: 4'-10".

MOTOR STARTERS: 4'-10".

BRACKET EXIT LIGHTING FIXTURES: 8'-8" TO BOTTOM OF FIXTURE FOR CEILINGS UP TO 9 FEET. MOUNT AT 8'-0" FOR CEILINGS HIGHER THAN 9 FEET.

REFER TO ARCHITECTURAL AND MECHANICAL DRAWINGS BEFORE INSTALLING ANY OF THE ABOVE OUTLETS OR EQUIPMENT FOR INTERFERENCE, AND ADJUST HEIGHTS TO AVOID INTERFERENCES THAT WOULD OCCUR.

EQUIPMENT IDENTIFICATION

IDENTIFY ALL PANELS, CONTROL POINTS, CONTROL CENTERS, EQUIPMENT BREAKERS, SWITCHES, ETC., AS APPROVED IN ACCORDANCE WITH THE IDENTIFICATION MARKINGS SHOWN ON THE DRAWINGS AND/OR AS DIRECTED.

DISCONNECT SWITCHES (INDIVIDUALLY OR PANEL MOUNTED), COMBINATION STARTERS AND TRANSFORMERS SHALL BE IDENTIFIED BY NAME, SOURCE OF POWER AND EQUIPMENT SERVED.

PANELBOARDS SHALL HAVE TYPED CIRCUIT DIRECTORIES IDENTIFYING EACH LOAD AND LOCATION. UPDATE ALL EXISTING PANEL SCHEDULES WITH NEW TYPED SCHEDULES FOR PANELS AFFECTED BY WORK IN THIS CONTRACT INCLUDING ADDITIONS OR DELETIONS TO EXISTING PANELS.

CONDUCTORS SHALL BE IDENTIFIED WITH WIRE MARKERS INDICATING THE CIRCUIT NUMBER, WIRE NUMBER AND WIRE LETTER AT EVERY TERMINAL POINT OR SPLICE. PROVIDE CIRCUIT IDENTIFICATION OF EVERY UNSPLICED CONDUCTOR WITHIN EACH JUNCTION OR PULL BOX.

INSTALL INSULATING BUSHINGS ON CONDUIT ENDS BEFORE THE INSTALLATION OF ANY CONDUCTORS.

PULL ROPE:

INSTALL 1/8 INCH DIAMETER NYLON PULLING ROPE WITH WOODEN BLOCKS AND IDENTIFICATION FASTENED TO BOTH ENDS IN ALL EMPTY ELECTRICAL AND TELEPHONE CONDUITS.

PARTS 2 AND 3 - PRODUCTS, INSTALLATION AND TESTING

ALL WIRING METHODS SHALL BE IN ACCORDANCE WITH NEC ARTICLE 300.

RACEWAYS AND FITTINGS

CONDUIT:

ELECTRICAL METALLIC TUBING: ZINC-COATED STEEL PER ANSI C80.3-1977 "SPECIFICATION FOR ELECTRICAL TUBING, ZINC-COATED".

RIGID STEEL CONDUIT, ELBOWS, AND COUPLINGS: ZINC-COATED THREADED STEEL PER ANSI C80.1 "SPECIFICATION FOR RIGID STEEL CONDUIT, ZINC-COATED".

LIQUID-TIGHT FLEXIBLE STEEL CONDUIT: PER UL-360 "LIQUIDTIGHT FLEXIBLE STEEL CONDUIT, ELECTRICAL", "SEALTITE ELECTRIFFLEX".

RIGID NON-METALLIC CONDUIT, ELBOWS, AND COUPLINGS: SMOOTH-WALL POLYVINYLCHLORIDE (PVC), 90°C, UL LISTED AND IN COMPLIANCE WITH THE TESTING REQUIREMENTS DEFINED IN NEMA WTC-2, NEMA TC-3, UL-651, AND UL-514 (FITTINGS). SCHEDULE 40: CARLON PLUS 40 (HEAVY WALL EPC) & SCHEDULE 80: CARLON PLUS 80 (EXTRA HEAVY EPC-80).

MANUFACTURERS: ALLIED, ANACONDA-SEALTITE, CERTAINTED, ELECTRI-FLEX CO., APPLETON, CROUSE-HINDS, PITTSBURGH, REPUBLIC, STEELDUCT, TRIANGLE/PVC AND WHEATLAND TUBE.

CONDUIT FITTINGS:

COUPLINGS AND CONNECTORS FOR EMT: ZINC-PLATED STEEL, COMPRESSION TYPE.

FITTINGS FOR FLEXIBLE STEEL CONDUIT: MALLEABLE IRON OR STEEL, ZINC OR CADMIUM PLATED, SECURING THE CONDUIT BY CLAMPING ACTION AROUND THE PERIPHERY OF THE CONDUIT.

MANUFACTURERS: SAME AS LISTED FOR CONDUIT PLUS APPLETON, CROUSE-HINDS, ERICKSON, HUBBELL INC., MIDLAND-ROSS, MIDWEST, RACO, O.Z./GEDNEY ELECTRIC CO., STEEL CITY, THOMAS & BETTS OR TOMIC.

CONDUIT SUPPORT:

PIPE STRAPS USED FOR EXPOSED WORK SHALL BE ONE HOLE MALLEABLE IRON GALVANIZED. USE OF FIBERED STRAP OR WIRE IS NOT ALLOWED. PROVIDE GALVANIZED TRAPEZE HANGERS FOR GROUPS OF CONDUITS.

INDIVIDUAL CONDUITS NOT SUPPORTED ON PIPE STRAPS SHALL BE PROVIDED WITH CLEVIS TYPE HANGERS. HANGER SUPPORTS SHALL BE ROD OR PIPE WITH THREADED CONNECTIONS.

BEAM CLAMPS FOR SUPPORT OF CONDUIT SHALL BE MALLEABLE IRON OR WROUGHT STEEL WITH HOOK RODS TO GRIP BEAM FLANGE. C-CLAMPS SHALL NOT BE USED.

MANUFACTURERS: SAME AS LISTED FOR CONDUITS, PLUS B-LINE HUBBELL INC., KINDORF, MIDLAND-ROSS, RACO, O.Z./GEDNEY ELECTRIC CO., STEEL CITY, THOMAS & BETTS AND UNISTRUT.

INSTALLATION - RACEWAYS AND FITTINGS

CONDUIT:

USE EMT (WITH COMPRESSION FITTINGS ONLY) IN CONCEALED DRY LOCATIONS UP TO 4-INCHES WHERE CONDUITS ARE NOT SUBJECT TO MECHANICAL DAMAGE.

INSTALL CONDUIT SIZES AS INDICATED. WHERE CONDUIT SIZES ARE NOT INDICATED, INSTALL SIZES PER NEC REQUIREMENTS. EXCEPT DO NOT USE CONDUIT SIZES SMALLER THAN 3/4-INCH UNLESS OTHERWISE SPECIFIED.

CONCEAL ALL CONDUIT IN FINISHED AREAS EITHER ABOVE CEILINGS, IN WALLS OR FLOORS, OTHER THAN SLABS ON GRADE UNLESS OTHERWISE SPECIFIED OR INDICATED.

FLEXIBLE STEEL CONDUIT SHALL BE USED FOR ALL FINAL CONNECTIONS TO CEILING MOUNTED EQUIPMENT SUCH AS LIGHTING FIXTURES AND SMOKE DETECTORS. USE IN DRY LOCATIONS.

LIQUID TIGHT FLEXIBLE STEEL CONDUIT SHALL BE USED FOR ALL FINAL CONNECTIONS TO TRANSFORMERS, VIBRATING EQUIPMENT SUCH AS MOTORS AND UNDER RAISED ACCESS FLOORING. USE IN WET LOCATIONS.

INSTALL CONDUIT A MINIMUM OF 12 INCHES FROM HOT WATER OR STEAM PIPES AND 3 INCHES FROM OTHER MECHANICAL PIPING.

SUPPORT CONDUIT EVERY 8 FEET IF SMALLER THAN 2 INCHES AND EVERY 10 FEET IF 2 INCHES OR LARGER.

DO NOT SUPPORT CONDUIT FROM PIPES, HANGERS, OR EXTENSION OF INSTALLATION OF OTHER TRADES.

SUPPORT 1-1/2-INCH AND LARGER CONDUIT RUNS ABOVE SUSPENDED CEILING FROM BUILDING STRUCTURAL MEMBERS (DO NOT USE CEILING MEMBERS). SUPPORT SUCH CONDUIT FROM STRUCTURAL SUPPORT SYSTEM. INSTALL PULL BOXES AT LEAST EVERY 100 FEET IN LONG CONDUIT RUNS.

DO NOT EXCEED LOADING LIMITS OF STRUCTURAL SYSTEMS WHERE GROUPS OF CONDUITS ARE SUPPORTED ON COMMON HANGERS. SEE STRUCTURAL DRAWINGS FOR LIMITS.

EXPANSION FITTINGS:

INSTALL A CONDUIT EXPANSION FITTING IN EACH CONDUIT RUN WHEREVER IT CROSSES AN EXPANSION JOINT IN THE STRUCTURE TO WHICH IT IS ATTACHED. IN ADDITION, INSTALL AN EXPANSION FITTING IN EACH CONDUIT RUN WHICH IS MECHANICALLY ATTACHED TO SEPARATE STRUCTURES.

SLEEVES:

INSTALL SLEEVES AS NOTED. WHERE CONDUITS ARE TO PASS THROUGH FLOOR SLABS, AND PIPE SLOTS ARE NOT PROVIDED, INSTALL PIPE SLEEVES OF SIZE AS INDICATED. INSTALL PIPE SLEEVES WITH BOTTOM OF SLEEVES FLUSH WITH SLAB AND TOP 3 INCHES ABOVE FINISHED FLOOR.

CLOSE AND MAKE WATERTIGHT ALL OPEN SPACES AROUND INSTALLED CONDUIT WITH OAKUM AND AN APPROVED MASTIC. SUPPORT CONDUIT AT EACH LEVEL. PROVIDE APPROVED MASTIC FOR FIRE STOP AND/OR FIRE RATED WALL/FLOOR PENETRATION SYSTEM AT ALL FLOOR/WALL PENETRATIONS.

BUSHINGS:

INSTALL INSULATING BUSHINGS ON CONDUIT ENDS BEFORE THE INSTALLATION OF ANY CONDUCTORS.

PULL ROPE:

INSTALL 1/8 INCH DIAMETER NYLON PULLING ROPE WITH WOODEN BLOCKS AND IDENTIFICATION FASTENED TO BOTH ENDS IN ALL EMPTY ELECTRICAL AND TELEPHONE CONDUITS.

ELECTRICAL SPECIFICATIONS

PULL AND JUNCTION BOXES:

BOXES LESS THAN 5-INCHES BY 5-INCHES: CONFORM TO PARAGRAPH ON "OUTLET BOXES".

SHEET METAL BOXES: CODE GAGE, FULL SEAM WELDED WITH BENT-IN

SAME GAGE AS BOX. FASTEN COVER WITH BRASS MACHINE SCREWS. GALVANIZE BOX AND COVER AFTER FABRICATION. PROVIDE SIZES CONFORMING TO NEC REQUIREMENTS FOR WIRING SPACE, EXCEPT

LOCATED IN AREAS REQUIRING GASKETS.

SPECIAL BOXES SHALL BE PROVIDED AS NOTED ON THE DRAWINGS.

PROVIDE SIZES PER NEC REQUIREMENTS FOR WIRING SPACE.

KILLARK:

INSTALLATION - PULL AND JUNCTION BOXES:

FOR JUNCTION OR PULL BOXES NOT OVER 100 CUBIC INCHES IN SIZE USE 4-11/16-INCHES X 4-11/16-INCHES OUTLET BOXES. FOR JUNCTION OR PULL BOXES OVER 100 CUBIC INCHES IN SIZE, CONSTRUCT SAME AS CABINETS WITH COVERS OF SAME GAGE METAL AS BOXES AND SECURE BY SCREWS OR BOLTS.

OUTLET BOXES:

IN GENERAL, USE OUTLET BOXES NOT LESS THAN 4-INCHES SQUARE, AT LEAST 2-INCHES DEEP AND OF SUFFICIENT SIZE TO ACCOMMODATE THE WHERE BOXES OF LARGER SIZE ARE INDICATED.

WHERE SHOWN ON THE DRAWINGS, AND NOTED IN THESE SPECIFICATIONS, USE THREADED HUB, CAST METAL OUTLET ON EXPOSED CONDUIT SYSTEMS OR FOR WEATHERPROOF DEVICES SUITABLE FOR THE WIRING DEVICES TO BE INSTALLED.

USE OUTLET BOXES WITH PLASTER COVERS FOR WIRING DEVICES IN FINISHED WALLS WHERE PRACTICABLE, TO BRING BOX OPENINGS FLUSH WITH FINISHED WALL OR NOT MORE THAN 1/4-INCH BACK OF SAME.

WHERE MOUNTING HEIGHT OR LOCATION OF OUTLETS IS NOT SHOWN OR SPECIFIED LOCATE THE OUTLET AS BEST SUITED FOR THE EQUIPMENT CONNECTED THERETO OR AS DIRECTED.

USE 4-INCH OCTAGON BOXES WITH 3/8-INCH FIXTURE STUD FOR LIGHTING FIXTURES.

WIREWAYS:

PAINTED STEEL ENCLOSURE NEMA 1 (OR OTHER AS NOTED ON DRAWINGS) WITH SCREWED FASTENED COVER, BENDS, ELBOWS, TEES, CROSSES, ADAPTERS AND ACCESSORIES AS REQUIRED, EASILY ASSEMBLED INTO A COMPLETE SYSTEM.

MANUFACTURERS: COPE, HOFFMAN, KEYSTONE, PARK METAL AND SQUARE D.

INSTALLATION - WIREWAYS:

INSTALL WIREWAYS COMPLETE WITH ALL REQUIRED COUPLINGS, END CLOSURES, ETC., AS REQUIRED. TAPS & SPLICES ARE PERMITTED WITHIN THE WIREWAY BUT SHALL BE LIMITED TO THE REQUIREMENTS OF NEC ARTICLE NO. 376.

WIRES AND CABLES:

PROVIDE WIRE AND CABLE FOR STANDARD SPECIFICATIONS ESTABLISHED FOR SUCH MATERIAL AND CONSTRUCTION BY ASTM, ANSI, IPCEA AND NEMA, WHERE APPLICABLE. PROVIDE COPPER CONDUCTORS OF 98% CONDUCTIVITY, NOT LESS THAN NO. 12 AWG.

WIRE FOR GENERAL INTERIOR AND EXTERIOR USE: SINGLE CONDUCTOR, ANNEALED COPPER, RATED 600 VOLTS AS FOLLOWS:

NEC TYPE THHN/THWN-2, RATED 90°C, DRY AND WET LOCATIONS.

NEC TYPE THHN/THWN, RATED 90°C, DRY LOCATIONS AND 75°C, WET LOCATIONS.

NEC TYPE XHHW, RATED 90°C, DRY AND DAMP LOCATION AND 75°C, WET LOCATION.

NEC TYPE MC SHALL BE PERMITTED FOR USE AS SPECIFIED IN NEC ARTICLE 330.

INSTALLATION - WIRES AND CABLES:

INSTALL WIRING IN ACCORDANCE WITH ARTICLE NO. 310 OF THE NATIONAL ELECTRICAL CODE OR PER ANY OTHER CODES THAT TAKE PRECEDENCE.

INSTALL CONDUCTORS IN SUCH A MANNER THAT THE BENDING RADIUS OF ANY WIRE OR CABLE IS NOT LESS THAN THE MINIMUM RECOMMENDED BY ICEA AND/OR THE MANUFACTURER. DO NOT EXCEED MANUFACTURER'S RECOMMENDED VALUES FOR MAXIMUM PULLING TENSION OR SIDEWALL FORCE APPLIED TO ANY WIRE OR CABLE.

PROVIDE A GREEN GROUND WIRE FOR EVERY CIRCUIT.

COLOR CODING AND CONDUCTOR IDENTIFICATION:

MATCH EXISTING COLOR SCHEME OR AS REQUIRED BY THE NEC.

BRANCH CIRCUITS:

PROVIDE A SEPARATE NEUTRAL WIRE FOR EVERY BRANCH CIRCUIT REQUIRING A NEUTRAL. SHARING OF NEUTRAL WIRES IS NOT ALLOWED.

GROUND WIRE:

GROUND WIRE FOR GENERAL INTERIOR USE SHALL BE GREEN INSULATED STRANDED COPPER AND SHALL MEET REQUIREMENTS OF WIRE FOR INTERIOR AND EXTERIOR USE.

MANUFACTURERS: AMERICAN INSULATED WIRE CORP., CABLEC, CAROL, GENERAL CABLE, OKONITE, ROME, SOUTH WIRE AND TRIANGLE.

INSULATING TAPE:

SCOTCH 33 PLUS OR OKONITE TYPE CLF SERIES 802-20 FOR GENERAL USE AND SCOTCH 27 FOR HIGH TEMPERATURE AREAS.

WIRING DEVICES:

LIGHTING SWITCHES:

TOGGLE OPERATED, SINGLE POLE SINGLE THROW, SINGLE POLE DOUBLE THROW, DOUBLE POLE DOUBLE THROW, SPECIFICATION GRADE, COMPOSITION BASED, HEAVY DUTY, FLUSH, QUIET TYPE, WITH PROVISION FOR BACK AND SIDE WIRING AND RATED 20 AMPERES, 120/277 VOLTS A.C.

BOXES, PROVIDE PERMANENTLY INSTALLED BARRIERS BETWEEN ADJACENT SWITCHES.

ILLUMINATED TOGGLE SWITCHES SHALL HAVE LONG LIFE NEON LAMPS AND LEXAN HANDLES, IN EITHER RED OR IVORY, AS INDICATED. HUBBELL #1223-IL-PL, OR #1223-IL-L.

DEVICE PLATES:

GANG TOGETHER ALL SWITCHES LOCATED IN ONE LOCATION AND COVER WITH ONE CUSTOM MADE WALL PLATE. SELECT THE CORRECT COMBINATION AND TYPE OF OPENING.

DEVICE PLATES IN FINISHED AREAS SHALL BE SMOOTH, BRUSHED STAINLESS STEEL NO. 302/304 FINISH. FOR RECEPTACLES WIRED TO THE EMERGENCY SYSTEM, THE PLATE SHALL BE ENGRAVED WITH "EMERGENCY" IN RED FILLED LETTERS.

INSTALLATION - WIRING DEVICES:

INSTALL WALL SWITCHES NEAR DOORS AT STRIKE SIDE OF DOORS AS FINALLY HUNG, 6 INCHES FROM DOOR FRAME. INSTALL SWITCHES IN 4-11/16 INCHES SQUARE BOXES WHERE POSSIBLE.

USE GANGED BOXES, 2-1/2 INCH DEEP, FOR 120 VOLT AND 277 VOLT SWITCHES AT THE SAME LOCATION WITH ISOLATING PARTITION BETWEEN 120 VOLT AND 277 VOLT SWITCHES. PROVIDE ISOLATING PARTITION BETWEEN 277 VOLT SWITCHES.

INSTALL PLUG-IN STRIPS AS INDICATED ON THE DRAWINGS. IF NOT INDICATED, INSTALL STRIPS ABOVE COUNTER 1 INCH ABOVE BACKSPASH AND STRIPS ABOVE BASEBOARD, FLUSH WITH TOP OF BASEBOARD.

GROUNDING:

GROUNDING CONDUCTORS:

BARE GROUNDING CONDUCTORS: STRANDED ANNEALED COPPER (SIZE AS INDICATED ON THE DRAWINGS).

INSULATED GROUNDING CONDUCTORS: REFER TO "WIRES AND CABLES" IN THIS SPECIFICATION.

GROUNDING CONNECTIONS:

EXOTHERMIC WELD. GROUNDING FITTINGS FOR BONDING A GROUND CONDUCTOR TO ITS OWN CONDUIT: BURNDY TYPE NE, OR PENN UNION TYPE BD.

INSTALLATION - GROUNDING:

THOROUGHLY CLEAN ALL BONDING SURFACES OF NON-CONDUCTING MATERIALS. TIN AND SWEAT CONTACT SURFACES WHILE BOLTING. DO NOT USE SOLDER TYPE CONNECTIONS.

PROVIDE SUPPLEMENTAL GROUNDING SYSTEM / MATS AS REQUIRED TO CONFORM TO NEC.

LIGHTING SYSTEMS:

FURNISH AND INSTALL LIGHTING SYSTEMS AS REQUIRED, AND ALL MATERIALS AND EQUIPMENT, INCLUDING LUMINAIRES, LAMPS, DRIVERS, POLES, ACCESSORIES AND ASSOCIATED SYSTEMS AND EQUIPMENT, AS INDICATED OR SPECIFIED.

FURNISH LUMINAIRES AND OTHER EQUIPMENT, INCLUDING ALL MODIFICATIONS THERETO AND COMPONENT ELECTRICAL PARTS, LISTED BY UNDERWRITERS' LABORATORIES AS MEETING NATIONAL ELECTRICAL CODE REQUIREMENTS AND BEARING THE UL LABEL WHERE SUCH SERVICE IS AVAILABLE FOR EQUIPMENT SPECIFIED.

FURNISH AND INSTALL EXIT LUMINAIRES AND EMERGENCY LIGHTING UNITS THAT ARE LISTED AND LABELED FOR THEIR INDICATED USE ON THE PROJECT.

FURNISH AND INSTALL LUMINAIRES FOR USE IN DAMP OR WET LOCATIONS, UNDERWATER, AND RECESSED IN COMBUSTIBLE CONSTRUCTION SPECIFICALLY LISTED AND LABELED FOR SUCH USE. PROVIDE LUMINAIRES FOR USE IN HAZARDOUS LOCATIONS THAT ARE LISTED AND LABELED FOR THE SPECIFIC HAZARD.

FURNISH AND INSTALL SUPPORTS AND MOUNTING HARDWARE FOR ALL LUMINAIRES AS DETAILED, AS SPECIFIED OR AS OTHERWISE REQUIRED BY THE FIXTURE SPECIFIED.

PERFORM OPERATING TESTS ON LIGHTING SYSTEMS TO PROVE THAT ALL DESIGN FUNCTIONS ARE SATISFACTORILY PERFORMED.

LIGHT EMITTING DIODE (LED):

LED: LAMP SHAPE AND BASE, BAR, MEETS FEDERAL MINIMUM FOR EFFICIENCY STANDARDS. EPA TOXICITY CHARACTERISTIC LEACHING PROCEDURE (TCLP) COMPLIANT. LUMEN MAINTENANCE PER LM-80, COLOR RENDERING INDEX (CRI) GREATER THAN 65, CORRELATED COLOR TEMPERATURE (CCT) OF 3500K UNLESS OTHERWISE NOTED. AVERAGE RATED LIFE, 50,000 HOURS. MINIMUM STARTING TEMPERATURE OF MINUS 40 DEGREES CELSIUS (40 DEGREES FAHRENHEIT). OPERATE LAMPS AT FREQUENCY OF 60 HERTZ OR HIGHER. DESIGNED FOR USE WITH OCCUPANCY SENSORS PROVIDING 50,000 STARTS MINIMUM.

DRIVERS:

SINGLE OR MULTI-VOLTAGE DRIVERS, INPUT FREQUENCY 50/60 HERTZ, INPUT VOLTAGE 120 VOLTS OR 277 VOLTS, SUSTAINED VARIATIONS OF ±10% VOLTAGE AND FREQUENCY WITH NO DAMAGE TO DRIVER, NON-PCB, CBM CERTIFIED AND CLASS "P" APPROVED UNLESS OTHERWISE SPECIFIED IN THE FIXTURE SPECIFICATIONS. POWER FACTOR GREATER THAN 90%, TOTAL HARMONIC DISTORTION (THD) LESS THAN 20% FOR PRIMARY LAMP APPLICATION, LAMP CURRENT CREST FACTOR (CCF) LESS THAN 1.5, MINIMUM DRIVER EFFICACY OF 80%.

LIGHTING CONTROL SYSTEM:

PROVIDE LIGHTING CONTROL SYSTEMS AND COMPONENTS AS SHOWN ON DRAWINGS. CONTROL FUNCTIONS MUST MEET CURRENT ENERGY CODE.

INSTALLATION - LIGHTING:

SUPPORTS:

PROVIDE SUPPORTS FOR ALL LIGHTING FIXTURES AS DETAILED, AS SPECIFIED OR AS OTHERWISE REQUIRED BY THE FIXTURE SPECIFIED. SUPPORT SINGLE UNITS FROM FIXTURE STUDS IN OUTLET BOXES. IN FINISHED AREAS, PROVIDE SUPPORTS INDEPENDENT OF THE ACOUSTIC TILE OR PLASTER. SUPPORT FIXTURES FROM THE CEILING SUPPORT SYSTEM, OR FROM THE CONCRETE FLOOR OR ROOF STEEL ABOVE THE CEILING.

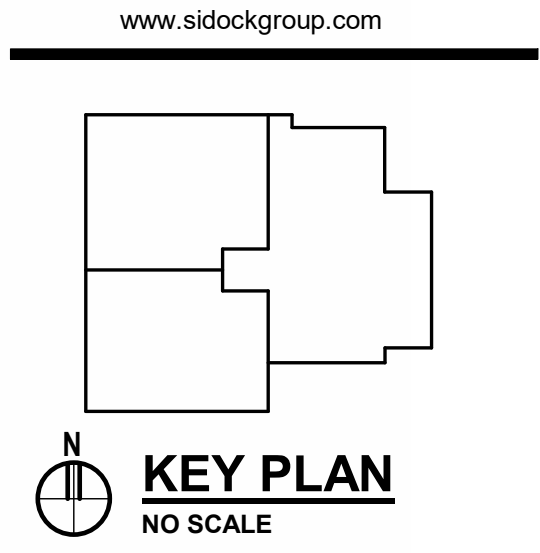
PROVIDE SUPPORTS FOR RECESSED FIXTURES AS RECOMMENDED BY THE FIXTURE MANUFACTURER OR AS SPECIFIED. VERIFY CEILING SUPPORT SYSTEMS AND COORDINATE FIXTURE INSTALLATION. FASTEN "LAY-IN" FIXTURES TO THE CEILING GRID.

END OF SECTION.

Electrical Symbol Schedule

Table with columns for POWER SYMBOLS, LIGHTING SYMBOLS, and NOTE SYMBOLS. Includes symbols for panelboards, starters, switches, receptacles, fire alarm devices, and demolition notes.

Sidock Group logo and contact information: ENGINEERS • ARCHITECTS • CONSULTANTS, Gaylord, Michigan 49735, 757 S. Wisconsin Ave., Ph: (989) 705-8400.



Client: LAKE SUPERIOR STATE UNIVERSITY, Project: ABEL ARENA ALUMNI LOFT, 650 W EASTERDAY AVE, SAULT STE. MARIE, MICHIGAN 49783.



Table with columns: No., Date, Issued for. Row 1: 1, 01/30/26, BIDS/PERMITS.

Sheet Title: ELECTRICAL SPECIFICATIONS AND SYMBOL SCHEDULE

Project Number: 525066.F

Sheet Number: E100

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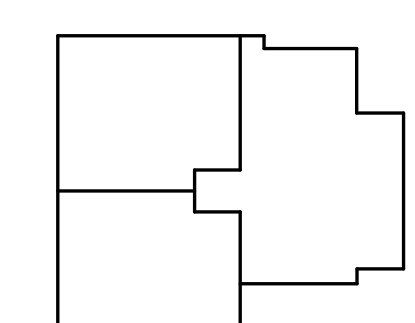
# Sidock Group

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Williamsport • Tampa

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**KEY PLAN**  
NO SCALE

Client:  
**LAKE SUPERIOR STATE UNIVERSITY**

Project:  
**ABEL ARENA ALUMNI LOFT**

650 W EASTERDAY AVE.  
SAULT STE. MARIE,  
MICHIGAN 49783

Seal:



*Michael R. Iott*

No.	Date	Issued for
1	01/30/26	BIDS/PERMITS

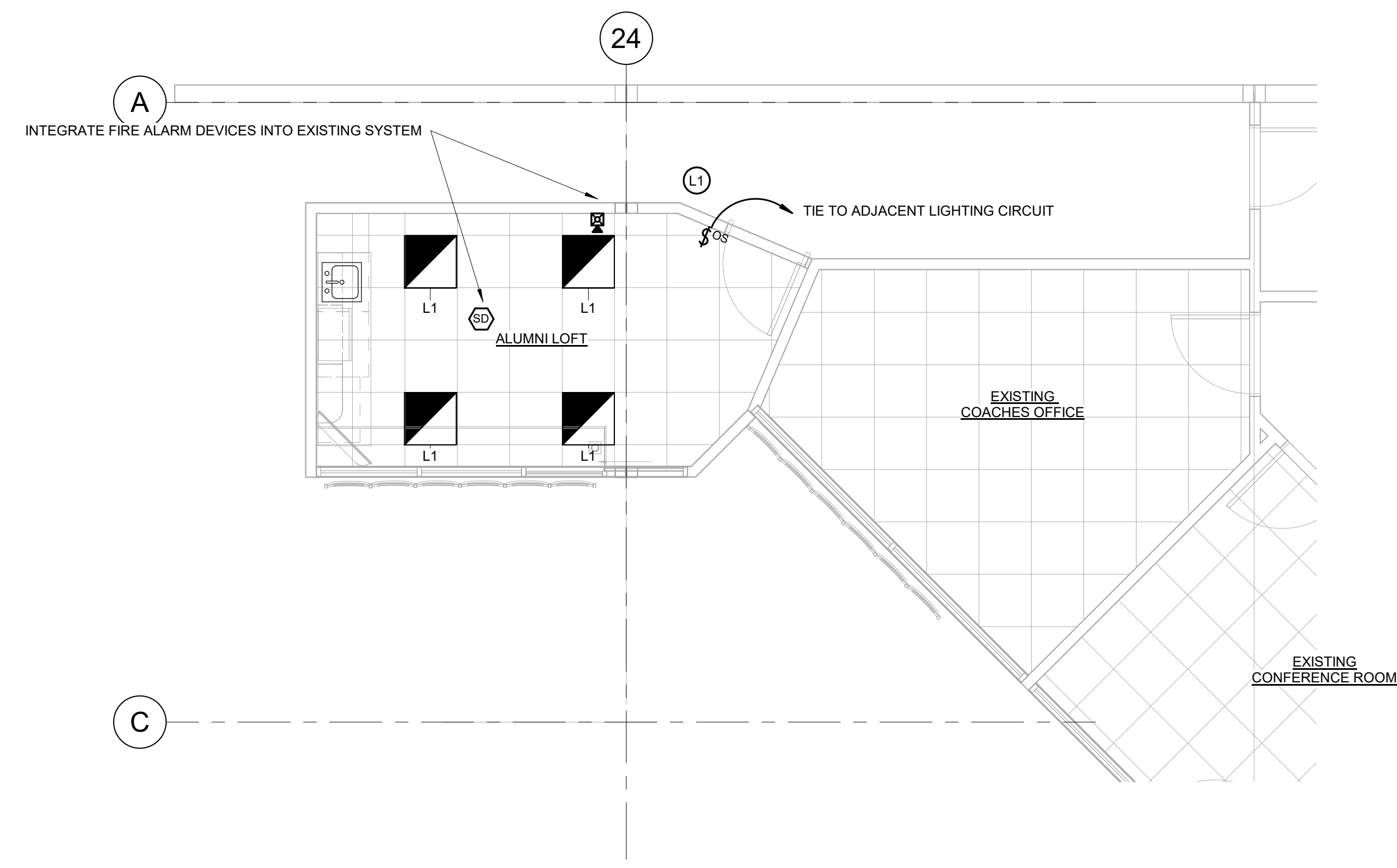
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 Checked: MRI  
 Approved: GG

Sheet Title:  
**ELECTRICAL  
 POWER AND  
 LIGHTING PLANS**

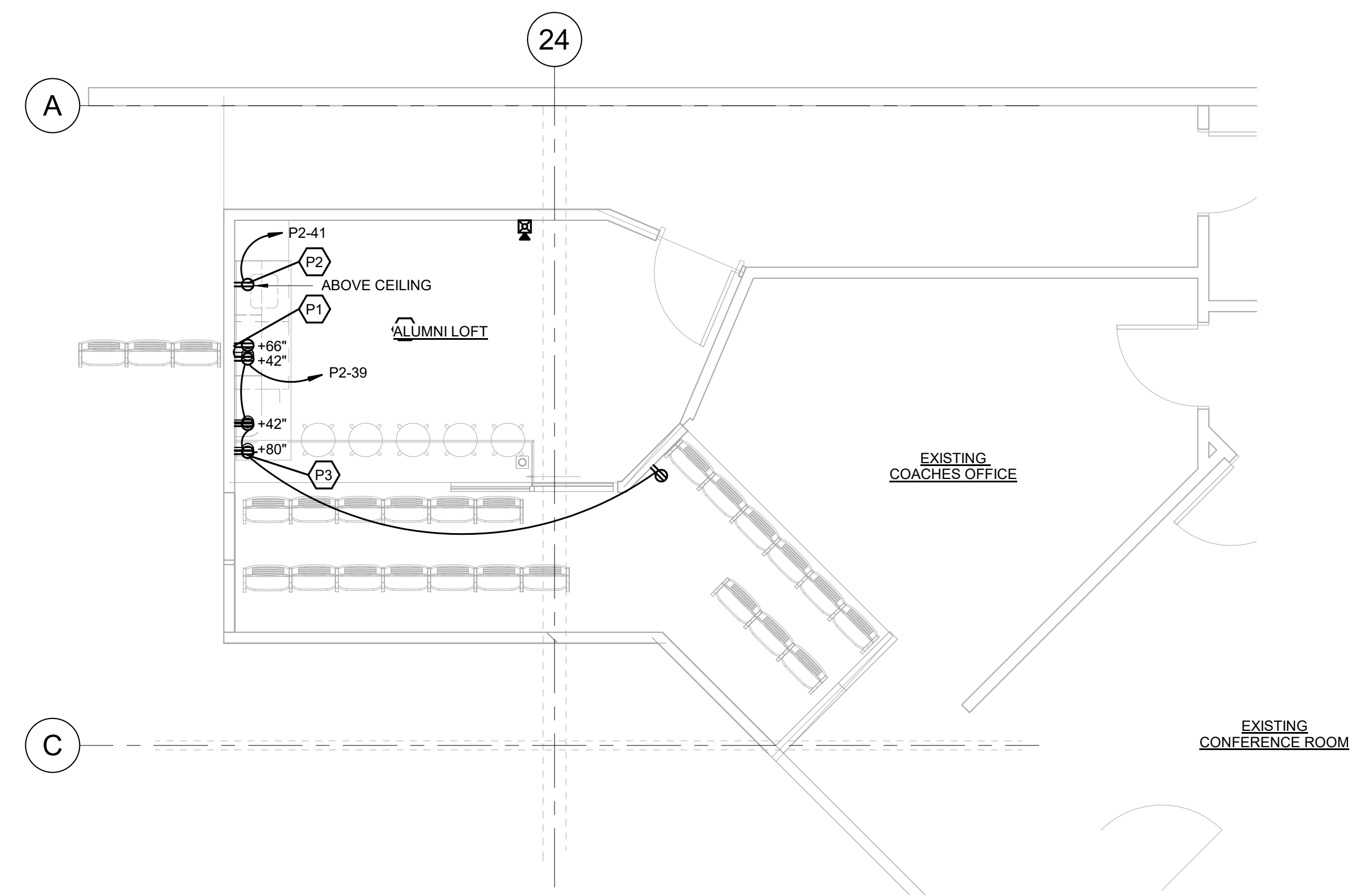
Project Number: **525066.F**

Sheet Number: **E101**

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**2 LIGHTING PLAN**  
 E101 1/4" = 1'-0"



**1 ELECTRICAL POWER PLAN**  
 E101 1/4" = 1'-0"

**LIGHTING PLAN NOTES**

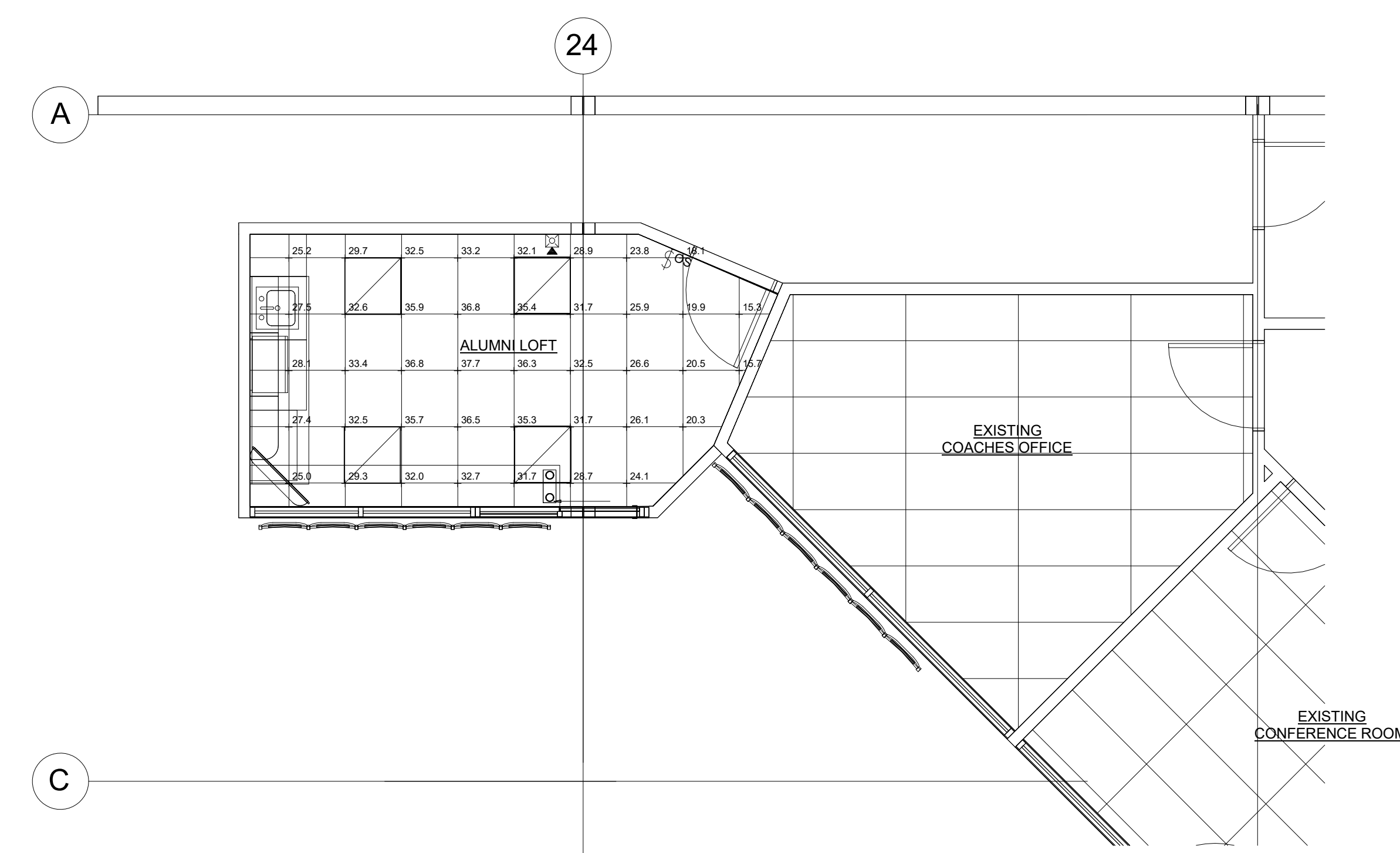
L1	PROVIDE AND INSTALL OCCUPANCY SENSOR SWITCH WITH DIMMING. PROGRAM FOR MANUAL "ON" AND AUTO "OFF".
----	---

**POWER PLAN NOTES**

P1	PROVIDE AND INSTALL DEDICATED RECEPTACLE FOR MICROWAVE. COORDINATE EXACT LOCATION WITH OWNER.
P2	PROVIDE AND INSTALL RECEPTACLE FOR WATER HEATER TO BE MOUNTED ABOVE CEILING. COORDINATE EXACT LOCATION AND REQUIREMENTS WITH M.C.
P3	PROVIDE AND INSTALL RECEPTACLE FOR MONITOR LOCATED IN THIS AREA. COORDINATE EXACT LOCATION AND REQUIREMENTS WITH OWNER.

**LUMINAIRE SCHEDULE**

Type Mark	Fixture Description	Lamp Description	Input Wattage	Basis of Design	Approved Manufacturer 1	Approved Manufacturer 2
L1	RECESSED RECESSED CENTER ELEMENT LED LAY IN 21X21" CURVED OPAL LENSE 120-277V	2000 NOMINAL LUMENS 80 CRI 3500KLED	17 VA	STAK 2X2 2000LM 80CRI 35K COL MIN10 MVOLT	METALUX	COLUMBIA



**3 LIGHTING PHOTOMETRIC DRAWING**  
 E101 1/4" = 1'-0"

NOTE: IT IS THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR BIDDER ON THIS PROJECT TO ATTEND THE PRE-BID WALK THROUGH TO DETERMINE THE LOCATION OF THE ELECTRICAL PANEL(S) UTILIZED IN THIS PROJECT AND DETERMINE THE HOME RUN DISTANCES REQUIRED. ANY REQUEST FOR ADDITIONAL FUNDS FOR MISJUDGED DISTANCES WILL NOT BE ACCEPTED.

**Statistics**

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Calc Zone #1	+	29.3 fc	37.7 fc	15.3 fc	2.5:1	1.9:1

**4 LIGHTING STATISTICS**  
 E101 12" = 1'-0"



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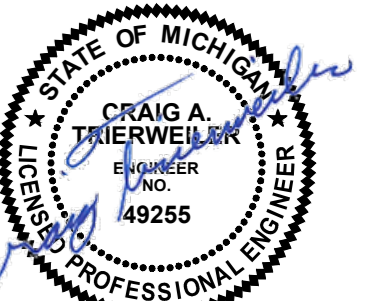
544 CHERBOURG DRIVE  
LANSING, MI 48917  
MATRIX PROJECT: 250202.02  
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FAX: 517.487.2544  
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Client:  
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Project:  
**ABEL ARENA ALUMNI LOFT**

650 W EASTERDAY AVE.  
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MICHIGAN 49783

Seal:



No.	Date	Issued for
1	1.9.2025	50% CDs
2	1.16.2026	Bids/Permit

Drawn: LDT  
Checked: NLS  
Approved: CAT

Sheet Title:  
**MECHANICAL SYMBOLS, NOTES, & ABBREVIATIONS**

Project Number: **525066.F**

Sheet Number: **M-100**

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## MECHANICAL ABBREVIATIONS

AFF	ABOVE FINISH FLOOR	ID	INSIDE DIAMETER
AC	AIR COMPRESSOR	IE	INVERT ELEVATION
AHU	AIR HANDLING UNIT	IAH	INTAKE HOOD
AS	AIR SEPARATOR		
A.T.C.	ARCHITECTURAL TRADES CONTRACTOR	LAT	LEAVING AIR TEMPERATURE
		LH	LATENT HEAT (MBH)
B	BOILER	LWT	LEAVING WATER TEMPERATURE
B.A.S.	BUILDING AUTOMATION SYSTEM		
CAF	COMBUSTION AIR FAN	MAX	MAXIMUM
CC	COOLING COIL	MBH	BTU PER HOUR (THOUSAND)
CFM	CUBIC FEET PER MINUTE	MIN	MINIMUM
CHLR	CHILLER	M.T.C.	MECHANICAL TRADES CONTRACTOR
CHP	CONSOLE HEAT PUMP		
CONV	CONVECTOR	N.C.	NOISE CRITERIA
CT	COOLING TOWER	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
CU	CONDENSING UNIT	NTS	NOT TO SCALE
CUH	CABINET UNIT HEATER		
CV	CONTROL VALVE	P	PUMP
CWP	CHILLED WATER PUMP	PCR	PUMPED CONDENSATE RETURN
		PD	PRESSURE DROP
DB	DRY BULB	RCP	RADIANT CEILING PANEL
DFU	DUCT FURNACE	REQD	REQUIRED
DIA	DIAMETER	RG	RETURN GRILLE
DN	DOWN	RH	RELATIVE HUMIDITY
DPR	DAMPER	RLH	RELIEF HOOD
DS	DUCT SILENCER	RTU	ROOF TOP UNIT
EAT	ENTERING AIR TEMPERATURE	SD	SUPPLY DIFFUSER
EF	EXHAUST FAN	SF	SUPPLY FAN
EG	EXHAUST GRILLE	SG	SUPPLY GRILLE
E.T.C.	ELECTRICAL TRADES CONTRACTOR	SH	SENSIBLE HEAT (MBH)
EVR	EVAPORATOR	SM	SHEET METAL
EWI	ENTERING WATER TEMPERATURE	SQ. FT.	SQUARE FEET
EXH	EXHAUST	SST	SATURATED SUCTION TEMPERATURE
EXIST	EXISTING	STR	STRAINER
FF	FINISH FLOOR	TC	TOTAL COOLING (MBH)
FFM	FEET PER MINUTE	TCL	TEMPERATURE CONTROL
FT	FEET	T&P	TEMPERATURE & PRESSURE RELIEF VALVE
FTR	FINNED TUBE RADIATION	TYP	TYPICAL
FU	FURNACE		
		UH	UNIT HEATER
GAL	GALLON	VAV	VARIABLE AIR VOLUME BOX
GFRH	GAS FIRED RADIANT HEATER	VRH	VARIABLE AIR VOLUME REHEAT BOX
GR	GRILLE	FPAVAV	FAN POWERED VARIABLE AIR VOLUME BOX
		V.F.D	VARIABLE FREQUENCY DRIVE
H	HUMIDIFIER		
HC	HEATING COIL		
HD	HEAD (FT)		
HP	HORSE POWER		
HHP	HORIZONTAL HEAT PUMP		
HTC	HEATING		
HVAC	HEATING, VENTILATION, & AIR CONDITIONING		
HWP	HEATING WATER PUMP		
HX	HEAT EXCHANGER		
		X-SA	EXISTING ITEM (EXISTING SUPPLY AIR DUCT)
			EXISTING ITEM
			EXISTING

## MECHANICAL SYMBOLS LEGEND

### HVAC DUCTWORK SYMBOLS

	SUPPLY AIR DUCT RISER
	RETURN AIR DUCT RISER
	OUTSIDE AIR DUCT RISER (AS NOTED)
	EXHAUST AIR DUCT
	INSULATED DUCTWORK (AS NOTED)
	SUPPLY AIR DIFFUSER (SQUARE)
	SUPPLY AIR DIFFUSER (INLINE)
	TURNING VANES
	SURFACE MTD. GRILLE
	SUPPLY AIR DIFFUSER (ROUND)
	90° TEE W/45° APPROACH
	CONICAL TAKE-OFF
	CONICAL TAKE-OFF W/ DAMPER
	BALANCE DAMPER
	RETURN AIR DUCT BOOT
	ECCENTRIC REDUCER
	CONCENTRIC REDUCER
	VERTICAL FIRE DAMPER
	EXISTING VERTICAL FIRE DAMPER
	HORIZONTAL FIRE DAMPER
	EXISTING HORIZONTAL FIRE DAMPER
	VERTICAL SMOKE DAMPER
	HORIZONTAL SMOKE DAMPER
	VERTICAL FIRE / SMOKE DAMPER
	HORIZONTAL FIRE / SMOKE DAMPER
	F/S
	F/S
	DUCT SMOKE DETECTOR, INSTALLED BY M.T.C., PROVIDED & WIRED BY E.T.C.
	UNIT HEATER
	CEILING EXHAUST FAN
	ROOF MOUNTED EXHAUST FAN
	DEMOLITION

### HVAC DUCTWORK & DIFFUSER TAGS

SD-1	250	TAG	CFM
8"ø	1	NECK	REMARKS
		SIZE	

### MISCELLANEOUS NOTES

	POINT OF CONNECTION BETWEEN NEW AND EXISTING
	POINT OF EXISTING TO REMAIN AND EXISTING TO BE REMOVED
	INDICATES PLAN NOTE
	INDICATES DEMOLITION NOTE
	DETAIL BUBBLE
	DETAIL NUMBER
	PAGE LOCATION INDICATES
	DIRECTION OF DETAIL SECTION

## GENERAL HVAC NOTES

- ALL WORK SHALL CONFORM TO MICHIGAN MECHANICAL CODE, LATEST APPLICABLE EDITION.
- INSTALL ALL EQUIPMENT, MATERIALS, AND ACCESSORIES PER MANUFACTURERS WRITTEN INSTRUCTIONS.
- ALL EXISTING SYSTEMS (INCLUDING AIR HANDLING UNITS) THAT SERVE AREAS BEING RENOVATED SHALL BE REBALANCED AS REQUIRED.
- NOTIFY OWNER OF ANY DUCTWORK DEMOLITION THAT MAY AFFECT NORMAL OPERATION OF OTHER AREAS.
- PROVIDE BALANCE DAMPERS FOR EACH DIFFUSER/GRILLE AND BRANCH DUCT.
- MAXIMUM LENGTH OF FLEXIBLE DUCT TO AIR TERMINAL DEVICES SHALL NOT EXCEED 6'-0" IN LENGTH WITH A MAXIMUM OF ONE 90° TURN AND SHALL BE INSULATED. ELBOWS SHALL BE MIN. 1.5 RADIUS. CONNECTIONS TO TERMINAL DEVICES SHALL BE BANDED AND TAPED.
- CONTRACTOR SHALL COORDINATE ALL WORK WITH OTHER DISCIPLINES PRIOR TO CONSTRUCTION TO AVOID CONFLICTS.
- THE CONTRACTOR SHALL FIELD VERIFY THE SIZES, LOCATION, ELEVATIONS, AND DETAILS OF ALL EXISTING CONDITIONS THAT MAY AFFECT THE WORK.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE INTEGRITY OF ALL EQUIPMENT AND MATERIALS IN A "NEW" CONDITION DURING CONSTRUCTION.
- ALL WORK SHALL BE PERFORMED BY LICENSED CONTRACTORS AND SUBCONTRACTORS AS REQUIRED BY LAW.
- CONTRACTOR SHALL USE LOW PRESSURE LOSS DUCT FITTINGS IN ACCORDANCE WITH SMACNA. (WYES, RADIUS OR VANED TEES, ETC.) DUCTWORK SHALL BE GALVANIZED SHEET METAL, MIN. 26 GA.
- ALL DUCT DIMENSIONS SHOWN ARE INSIDE CLEAR DIMENSION. INCREASE DUCT SIZE FOR LINING.
- CONSTRUCT ALL TRANSFER DUCTS W/ 1-INCH THICK LINING.
- ALL EXPOSED ROUND DUCTWORK SHALL BE SPIRAL.
- IF THERE IS CONFLICTING INFORMATION IN THE PLANS OR SPECIFICATIONS THE MORE STRINGENT AND GREATER COST ITEM SHALL BE USED.
- DRAWINGS INDICATE REQUIRED SIZES AND POINTS OF TERMINATION OF PIPES AND DUCTS AND SUGGESTED ROUTES. IT IS NOT INTENTION OF DRAWINGS TO INDICATE ALL NECESSARY OFFSETS. INSTALL WORK IN MANNER TO CONFORM TO STRUCTURE, AVOID OBSTRUCTIONS, PRESERVE HEADROOM AND KEEP OPENINGS AND PASSAGEWAYS CLEAR. DO NOT SCALE FROM DRAWINGS.

## GENERAL DEMOLITION NOTES

- SEE ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION.
- EXISTING EQUIPMENT LAYOUT IS SCHEMATIC. EXACT LOCATION OF EXISTING DUCT/PIPING AND EQUIPMENT SHALL BE COORDINATED WITH BUILDING STRUCTURE. EQUIPMENT FURNISHED, ARCHITECTURAL DRAWINGS AND ALL OTHER TRADES PRIOR TO DEMOLITION.
- PERFORM WORK IN ACCORDANCE WITH THE LATEST EDITIONS, REVISIONS, AMENDMENTS, OR SUPPLEMENTS OF APPLICABLE STATUTES, ORDINANCES, CODES OR REGULATIONS OF FEDERAL, STATE, AND LOCAL AUTHORITIES HAVING JURISDICTION IN EFFECT ON THE DATE BIDS ARE RECEIVED.
- WHERE APPROVED STANDARDS HAVE BEEN ESTABLISHED BY OSHA, UNDERWRITERS, LABORATORIES, AMERICAN CODES, ASA, ASHRAE, ARI, NEC, STATE FIRE INSURANCE REGULATION BODY, NFPA OR OTHERS, THESE STANDARDS SHALL BE FOLLOWED WHETHER OR NOT INDICATED ON THE DRAWING AND SPECIFICATIONS.
- DUCTWORK SHALL BE ACOUSTICALLY LINED WITHIN 10 FT OF THE INTAKE AND/OR DISCHARGE OF A FAN.
- DUCT/PIPING LAYOUT IS SCHEMATIC. EXACT LOCATION OF DUCT/PIPING AND EQUIPMENT SHALL BE COORDINATED WITH BUILDING STRUCTURE, EQUIPMENT FURNISHED, ARCHITECTURAL DRAWINGS, AND ALL OTHER TRADES PRIOR TO INSTALLATION. ANY CONTRACTOR INSTALLING WORK WITHOUT PRIOR COORDINATION SHALL RELOCATE HIS WORK AT HIS EXPENSE TO ALLOW PROPER INSTALLATION OF ANY AND ALL TRADES WORK.
- UNLESS OTHERWISE NOTED, ALL DUCT/PIPING SHALL BE CONCEALED WHEREVER POSSIBLE. PROVIDE CHROME ESCUTCHEON OR ALUMINUM DUCT COLLAR AT EACH PENETRATION OF A FINISHED SURFACE.
- DUCT/PIPING SHALL NOT BE RUN ABOVE ELECTRICAL GEAR IN THE SERVICE SPACE REQUIRED BY THE NATIONAL ELECTRICAL CODE.
- ANY ADDITIONAL LOW VOLTAGE CONTROL WIRING THAT IS REQUIRED SHALL BE PROVIDED BY THE HVAC CONTRACTOR. CONTROL WIRING SHALL BE RUN IN CONDUIT IF REQUIRED BY LOCAL CODES OR THE SPECIFICATIONS. POWER SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR.
- THE HVAC CONTRACTOR SHALL CLOSELY COORDINATE AIR DEVICE AND DUCTWORK LOCATIONS WITH REFLECTED CEILING AND STRUCTURAL PLANS.

## HVAC DUCTWORK

—SA—	SUPPLY AIR DUCT
—X-SA—	EXIST SUPPLY AIR DUCT
—RA—	RETURN AIR DUCT
—X-RA—	EXIST RETURN AIR DUCT
—OA—	OUTSIDE AIR DUCT
—X-OA—	EXIST OUTSIDE AIR DUCT
—EA—	EXHAUST AIR DUCT
—X-EA—	EXIST EXHAUST AIR DUCT

## TEMPERATURE CONTROL SYMBOLS

	THERMOSTAT
	PROGRAMMABLE THERMOSTAT
	THERMOSTAT (W/ NIGHT SETBACK)
	ROOM SENSOR
	HUMIDISTAT
	PRESSURE GAUGE
	DAMPER (ELECTRIC OPERATION)
	DAMPER (PNEUMATIC OPERATION)
	DAMPER BLADES

### HVAC PIPING SYMBOLS

	FLOW DIRECTION
	PIPING DROP
	PIPING RISE
	INLINE PIPING DROP
	INLINE PIPING RISE
	PIPING TEE
	PIPING ELBOW
	THERMOMETER
	PUMP
	UNION
	PIPE ANCHOR
	PIPE GUIDE
	BACK FLOW PREVENTER
	PIPE CAP
	PIPE BREAK
	THERMOMETER WELL
	EXPANSION LOOP
	EXPANSION COMPENSATOR
	FLOAT & THERMOSTATIC STEAM TRAP
	INVERTED BUCKET STEAM TRAP

### HVAC PIPING

—CWS—	CHILLED WATER SUPPLY
—CWR—	CHILLED WATER RETURN
—CD—	CONDENSATE DRAIN
—CS—	CONDENSER WATER SUPPLY
—CR—	CONDENSER WATER RETURN
—CTS—	COOLING TOWER WATER SUPPLY
—CTR—	COOLING TOWER WATER RETURN
—DX—	DIRECT EXPANSION
—HPS—	HEAT PUMP WATER SUPPLY
—HPR—	HEAT PUMP WATER RETURN
—HS—	HEATING WATER SUPPLY
—HR—	HEATING WATER RETURN
—S—	SUCTION (REFRIGERANT)
—L—	LIQUID (REFRIGERANT)
—DXS—	SUCTION (DIRECT EXPANSION)
—DXL—	LIQUID (DIRECT EXPANSION)
—LPS—	LOW PRESSURE STEAM (0-20 LBS.)
—MPS—	MEDIUM PRESSURE STEAM (21-75 LBS.)
—HPS—	HIGH PRESSURE STEAM (76 LBS. & ABV.)
—SC—	STEAM CONDENSATE (GRAVITY)
—SCP—	PUMPED STEAM CONDENSATE
—SC (BF)—	STEAM CONDENSATE BOILER FEED

### HVAC PIPING VALVES

	GATE VALVE
	GAS COCK
	CHECK VALVE
	BALANCE COCK
	CIRCUIT SETTER
	TWO-WAY CONTROL VALVE
	THREE-WAY CONTROL VALVE
	GLOBE VALVE
	BALL VALVE
	SOLENOID VALVE
	EXPANSION VALVE WITH THERMOSTATIC BULB
	PLUG VALVE
	BUTTERFLY VALVE
	RELIEF VALVE
	HOSE & DRAIN END VALVE
	PRESSURE RELIEF VALVE
	PRESSURE REDUCING VALVE
	TRIPLE DUTY VALVE
	GAS PRESSURE REGULATOR
	STRAINER (BLOW-OFF)

## MECHANICAL AND PLUMBING SPECIFICATIONS

- ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH ALL APPLICABLE CODES, SPECIFICATIONS, LOCAL ORDINANCES, INDUSTRY STANDARDS AND UTILITY COMPANY REGULATIONS.
- IN CASE OF DIFFERENCE BETWEEN BUILDING CODES, SPECIFICATIONS, STATE LAWS, LOCAL ORDINANCES, INDUSTRY STANDARDS, UTILITY COMPANY REGULATIONS, CONTRACT DOCUMENTS, AND AUTHORITY HAVING JURISDICTION, THE MOST STRINGENT SHALL GOVERN. CONTRACTOR SHALL PROMPTLY NOTIFY OWNER IN WRITING OF ANY SUCH DIFFERENCE.
- NON-COMPLIANCE: SHOULD CONTRACTOR PERFORM ANY WORK THAT DOES NOT COMPLY WITH REQUIREMENTS OF APPLICABLE BUILDING CODES, STATE LAWS, LOCAL ORDINANCES, INDUSTRY STANDARDS, UTILITY COMPANY REGULATIONS, CONTRACT DOCUMENTS, OR AUTHORITY HAVING JURISDICTION, HE SHALL BEAR ALL COSTS ARISING IN CORRECTING THE DEFICIENCIES.
- APPLICABLE CODES AND STANDARDS SHALL INCLUDE ALL STATE LAWS, LOCAL ORDINANCES, UTILITY COMPANY REGULATIONS AND APPLICABLE REQUIREMENTS OF MICHIGAN BUILDING CODE, MICHIGAN PLUMBING CODE, MICHIGAN DEPARTMENT OF FIRE AND BUILDING SERVICES.
- EXCEPT AS OTHERWISE SPECIFIED HEREIN, ALL PIPING WORK AND MATERIAL ARE TO CONFORM TO THE AMERICAN STANDARDS ASSOCIATION CODE FOR PRESSURE PIPING.
- PERMITS: CONTRACTOR SHALL PAY FOR ALL BUILDING PERMITS REQUIRED BY WORK AND PERMITS FOR OPENING STREETS AND FOR CONNECTION TO VARIOUS UTILITIES, INCLUDING FEES FOR WATER METER INSTALLATION AND ANY OTHER REQUIREMENTS NECESSARY TO CARRY OUT HIS WORK. WHERE STREETS OR SIDEWALKS ARE CUT, SAME MUST BE REPAIRED TO AT LEAST AS GOOD A CONDITION AS THEY WERE BEFORE, ALL AT EXPENSE OF THIS CONTRACTOR. PERMITS SHALL BE POSTED IN A PROMINENT PLACE AT THE BUILDING SITE AND BE PROPERLY PROTECTED FROM WEATHER AND PHYSICAL DAMAGE.

### GUARANTEE

- CONTRACTOR SHALL, BY ACCEPTING THESE DRAWINGS AND SPECIFICATIONS, GUARANTEE THE FOLLOWING:
  - HE WILL FURNISH ALL MATERIAL AND EQUIPMENT AS SPECIFIED EXCEPT WHERE SPECIFIC WRITTEN APPROVAL IS GIVEN BY ENGINEER FOR SUBSTITUTION.
  - ALL MATERIAL AND EQUIPMENT WILL BE INSTALLED SUBSTANTIALLY AS SHOWN ON DRAWINGS AND AS REQUIRED WITHIN INTENT OF THESE SPECIFICATIONS. ALL EQUIPMENT SHALL BE INSTALLED PER THE MANUFACTURER'S RECOMMENDED INSTALLATION INSTRUCTIONS.
  - ALL EQUIPMENT, PIPING, ETC., WILL BE DRIPTIGHT, AIRTIGHT, FREE OF VIBRATION, POUNDING AND OTHER OBJECTIONABLE NOISES.
  - ALL EQUIPMENT, ACCESSORIES AND MATERIAL FURNISHED BY THE CONTRACTOR, INCLUDING INSTALLATION, PIPE JOINTS, ETC., FURNISHED AND/OR DONE BY HIM FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE AGAINST ALL DEFECTS IN MATERIAL AND WORKMANSHIP.
  - IF ANY EQUIPMENT, MATERIAL AND/OR PIPE JOINTS, CONNECTIONS, ETC., FAILS OR DOES NOT OPERATE SATISFACTORILY OR SHOWS UNDUE WEAR, HE WILL, UPON BEING NOTIFIED, IMMEDIATELY REMEDY DEFECT AT HIS OWN EXPENSE.

### WORK AND WORKMANSHIP

- PROVIDE ALL REQUIRED LABOR, MATERIALS, EQUIPMENT AND CONTRACTOR'S SERVICES NECESSARY FOR COMPLETE INSTALLATION OF SYSTEMS REQUIRED IN FULL CONFORMITY WITH REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION, ALL AS INDICATED ON DRAWINGS AND HEREIN SPECIFIED.
- FINISHED JOB SHALL BE FUNCTIONAL AND COMPLETE IN EVERY DETAIL, INCLUDING ANY AND ALL SUCH ITEMS REQUIRED FOR A COMPLETE SYSTEM WHETHER OR NOT THESE ITEMS BE SPECIFIED OR SHOWN ON DRAWINGS.
- SPECIAL ATTENTION SHALL BE GIVEN TO ACCESSIBILITY OF WORKING PARTS AND CONTROLLING PARTS. ADJUSTABLE PARTS SHALL BE WITHIN EASY REACH. REMOVABLE PARTS SHALL HAVE SPACE FOR REMOVAL.
- EACH CONTRACTOR SHALL ACQUAINT HIMSELF WITH DETAILS OF ALL WORK TO BE PERFORMED BY OTHER TRADES AND TAKE NECESSARY STEPS TO INTEGRATE AND COORDINATE HIS WORK WITH OTHER TRADES.
- IT IS ASSUMED THE CONTRACTOR IS FAMILIAR WITH STANDARD 1ST CLASS INSTALLATION PROCEDURES. THEREFORE, THESE SPECIFICATIONS DO NOT ATTEMPT TO INCLUDE EVERY DETAIL OR OPERATION NECESSARY FOR THE COMPLETE INSTALLATION.
- IT SHOULD BE PARTICULARLY NOTED THAT THE TERMS "FURNISH" AND "PROVIDE" ARE INTERCHANGEABLE AND THAT EACH OF THESE MEANS TO PROVIDE, INSTALL AND CONNECT, UNLESS OTHERWISE STATED.
- WHENEVER TABLES OR SCHEDULES SHOW QUANTITY OF MATERIALS, THEY SHALL NOT BE USED AS A GUIDE TO CONTRACTOR. EACH CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING ALL MATERIALS NOTED ON DRAWINGS AS SPECIFIED.
- CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION, SAFE-KEEPING AND CLEANLINESS OF ALL EXISTING EQUIPMENT, MATERIAL, ETC., LOCATED IN SPACES TO BE REMODELED IN WHICH HE IS WORKING. AS PART OF HIS RESPONSIBILITY, HE SHALL PROVIDE NECESSARY COVERS, STRUCTURES, ETC., AS REQUIRED TO KEEP ALL DIRT, WATER, MOISTURE AND DUST FROM EQUIPMENT. METHOD THE CONTRACTOR PROPOSES TO USE IN PROTECTING EQUIPMENT SHALL BE COORDINATED WITH ENGINEER AND OWNER'S REPRESENTATIVE FOR APPROVAL BEFORE ANY WORK IS STARTED. ANY DAMAGE SUSTAINED DURING CONSTRUCTION SHALL BE CORRECTED OR REPLACED BY CONTRACTOR.
- MECHANICAL INSTALLATIONS: COORDINATE MECHANICAL EQUIPMENT AND MATERIALS INSTALLATION WITH OTHER BUILDING COMPONENTS. VERIFY ALL DIMENSIONS BY FIELD MEASUREMENTS. WHERE MOUNTING HEIGHTS ARE NOT DETAILED OR DIMENSIONED, INSTALL MECHANICAL SERVICES AND OVERHEAD EQUIPMENT TO PROVIDE THE MAXIMUM HEADROOM POSSIBLE. INSTALL MECHANICAL EQUIPMENT TO FACILITATE MAINTENANCE AND REPAIR OR REPLACEMENT OF EQUIPMENT COMPONENTS. AS MUCH AS PRACTICAL, CONNECT EQUIPMENT FOR EASE OF DISCONNECTING, WITH MINIMUM OF INTERFERENCE WITH OTHER INSTALLATIONS. COORDINATE THE INSTALLATION OF MECHANICAL MATERIALS AND EQUIPMENT ABOVE CEILINGS WITH SUSPENSION SYSTEM, LIGHT FIXTURES, AND OTHER INSTALLATIONS. INSTALL EQUIPMENT IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS.
- OPERATION AND MAINTENANCE DATA: MANUFACTURER'S PRINTED OPERATION PROCEDURES TO INCLUDE START-UP, BREAK-IN, ROUTINE, NORMAL, SUMMER AND WINTER OPERATION INSTRUCTIONS, REGULATION, CONTROL, STOPPING, SHUT-DOWN, AND EMERGENCY INSTRUCTIONS. PROCEDURES FOR ROUTINE PREVENTATIVE MAINTENANCE AND TROUBLESHOOTING DISASSEMBLY, REPAIR, AND REASSEMBLY, ALIGNING AND ADJUSTING INSTRUCTIONS, TRAIN OWNER'S PERSONNEL ON PROCEDURES FOR STARTING, STOPPING, TROUBLESHOOTING, SERVICING, AND MAINTAINING EQUIPMENT. TURN OVER TO THE OWNER.
- RECORD DRAWINGS: THE CONTRACTOR SHALL KEEP A RUNNING RECORD OF EACH CHANGE AND DEVIATION FROM THE DRAWINGS. UPON THE COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL SUBMIT ONE COMPLETE SET OF CLEAN DRAWINGS NEATLY SHOWING DEVIATIONS FROM THE CONTRACT DOCUMENTS WITH DIMENSIONS SHOWING THE EXACT LOCATION OF CONCEALED OR INACCESSIBLE PIPING, DUCTS, ETC.

### ASSIGNMENT OF MISCELLANEOUS WORK

- INTELS REQUIRED BY MECHANICAL CONTRACTOR SHALL BE FURNISHED BY MECHANICAL CONTRACTOR. CONTRACTOR SHALL NOTIFY GENERAL CONTRACTOR OF CORRECT SIZE AND LOCATIONS FOR ALL LINTELS PRIOR TO WALL CONSTRUCTION.
- PAINTING: MECHANICAL CONTRACTOR WILL PROVIDE PRIME PAINTING ON ALL FERROUS METALS SUCH AS SUPPORT STEEL OR HANGERS FOR MECHANICAL PIPING AND EQUIPMENT. PIPING IS NOT TO BE PRIMED. ANY FINISH PAINTING REQUIRED, INCLUDING PAINTING OF PIPING AND STEEL EXPOSED TO OUTSIDE ENVIRONMENT WILL BE PAINTED BY MECHANICAL CONTRACTOR.
- PLATFORMS AND SUPPORTING STANDS: FOR MECHANICAL EQUIPMENT SHALL BE FURNISHED BY MECHANICAL CONTRACTOR UNLESS NOTED OTHERWISE.
- HOLES THRU STRUCTURAL: HOLES REQUIRED FOR PIPING OR DUCTWORK OF SIZE 3" OR SMALLER SHALL BE CUT IN FIELD AT EXPENSE OF MECHANICAL CONTRACTOR WITH APPROVAL OF STRUCTURAL ENGINEER. OWNER SHALL BE GIVEN APPROVAL PRIOR TO ANY CUTTING. ALL LARGER HOLES SHALL BE PROVIDED BY OTHERS, WITH LOCATION APPROVAL FROM STRUCTURAL ENGINEER.
- CUTTING AND PATCHING: MECHANICAL CONTRACTOR SHALL CUT AND PATCH FINISHED AREAS AS REQUIRED BY MECHANICAL CONTRACTOR. IN ABSENCE OF GENERAL CONTRACTOR, EACH CONTRACTOR SHALL DO HIS OWN CUTTING AND PATCHING.
- SANITARY VENT PANS AND FLASHING BY MECHANICAL CONTRACTOR.

### SHOP DRAWING

- COMPLETE SCHEDULE OF EQUIPMENT, ETC., PROPOSED FOR INSTALLATION SHALL BE SUBMITTED FOR APPROVAL BEFORE ORDERS ARE PLACED.
- ELECTRONIC SHOP DRAWINGS SHALL BE PROVIDED WITHIN 30 DAYS OF AWARD ON CONTRACT AND SHALL INCLUDE CATALOG NUMBERS AND OTHER PERTINENT INFORMATION.
- THE CONTRACTOR SHALL SUBMIT EQUIPMENT SHOP DRAWINGS TO THE ARCHITECT FOR APPROVAL PRIOR TO ORDERING OF ANY OF THE FOLLOWING:
  - DUCTWORK & ACCESSORIES
  - DIFFUSERS AND GRILLES
  - PLUMBING FIXTURES
  - DOMESTIC WATER HEATER

### DRAWINGS

- MECHANICAL DRAWINGS SHOW GENERAL ARRANGEMENT OF ALL PIPING EQUIPMENT AND APPURTENANCES. THEY SHALL BE FOLLOWED AS CLOSELY AS ACTUAL BUILDING CONSTRUCTION AND WORK OF OTHER TRADES WILL PERMIT.
- MECHANICAL WORK SHALL CONFORM TO REQUIREMENTS SHOWN ON ALL DRAWINGS. GENERAL AND STRUCTURAL DRAWINGS SHALL TAKE PRECEDENCE OVER MECHANICAL DRAWINGS.
- BECAUSE OF SMALL SCALE OF MECHANICAL DRAWINGS IT IS NOT POSSIBLE TO INDICATE ALL OFFSETS, FITTINGS AND ACCESSORIES WHICH MAY BE REQUIRED. CONTRACTOR SHALL INVESTIGATE STRUCTURAL AND FINISH CONDITIONS AFFECTING WORK AND SHALL ARRANGE HIS WORK ACCORDINGLY, PROVIDING SUCH FITTINGS, VALVES AND ACCESSORIES AS MAY BE REQUIRED TO MEET SUCH CONDITIONS.

### COORDINATION BETWEEN CONTRACTORS

- EACH CONTRACTOR AND SUBCONTRACTOR SHALL STUDY ALL DRAWINGS APPLICABLE TO THIS WORK SO COMPLETE COORDINATION BETWEEN TRADES WILL BE EFFECTED. SPECIAL ATTENTION SHALL BE GIVEN TO POINTS WHERE DUCTS CROSS OTHER DUCTS OR PIPING, WHERE LIGHTS FIT INTO CEILINGS AND WHERE PIPE, DUCTS AND CONDUIT PASS THRU WALLS AND COLUMNS.
- IT IS RESPONSIBILITY OF EACH CONTRACTOR AND SUBCONTRACTOR TO LEAVE NECESSARY ROOM FOR OTHER TRADES. NO EXTRA COMPENSATION WILL BE ALLOWED TO COVER COST OF REMOVING PIPING, CONDUIT, DUCTS OR EQUIPMENT FOUND ENCRDACHING ON SPACE REQUIRED BY OTHERS.

### MINOR DEVIATIONS

- FOR PURPOSE OF CLARITY AND LEGIBILITY, DRAWINGS ARE ESSENTIALLY DIAGRAMMATIC ALTHOUGH SIZE AND LOCATION OF EQUIPMENT AND PIPING ARE DRAWN TO SCALE WHEREVER POSSIBLE. VERIFY CONTRACT DOCUMENT INFORMATION AT SITE.
- DRAWINGS INDICATE REQUIRED SIZES AND POINTS OF TERMINATION OF PIPES AND DUCTS AND SUGGESTED ROUTES. IT IS NOT INTENTION OF DRAWINGS TO INDICATE ALL NECESSARY OFFSETS. INSTALL WORK IN MANNER TO CONFORM TO STRUCTURE, AVOID OBSTRUCTIONS, PRESERVE HEADROOM AND KEEP OPENINGS AND PASSAGEWAYS CLEAR. DO NOT SCALE FROM DRAWINGS.

### ATTACHING TO BUILDING CONSTRUCTION

- EQUIPMENT AND PIPING SUPPORTS SHALL BE ATTACHED TO STRUCTURAL MEMBERS (BEAMS, JOISTS, ETC.) RATHER THAN TO FLOOR OR ROOF SLABS.
- WHERE PIPING IS SUSPENDED FROM NEW CONCRETE CONSTRUCTION, FURNISH, LOCATE AND INSTALL BLACK STEEL CHANNEL TYPE CONCRETE INSERTS WELDED TO COVER-PLATE. INSERTS SHALL PROVIDE FOR HORIZONTAL AND VERTICAL ADJUSTMENTS.
- WHERE PIPING IS SUSPENDED FROM EXISTING CONCRETE OR MASONRY CONSTRUCTION, USE EXPANSION SHIELDS TO ATTACH PIPE SUPPORTS TO CONSTRUCTION. EXPANSION SHIELD BOLT DIAMETER SHALL BE SAME SIZE AS SUPPORT ROD DIAMETER HEREINAFTER SPECIFIED.
- ERECTION OF METAL SUPPORTS & ANCHORAGES: CUT, FIT, AND PLACE MISCELLANEOUS METAL SUPPORTS ACCURATELY IN LOCATION, ALIGNMENT, AND ELEVATION TO SUPPORT AND ANCHOR MECHANICAL MATERIALS AND EQUIPMENT.

### BALANCING

- WORK BY MECHANICAL CONTRACTOR.
- GENERAL: BALANCE AND ADJUST SYSTEMS TO ACHIEVE COMFORT AND PROPER OPERATION OF SYSTEMS.
  - USE PROCEDURES AS OUTLINED IN NATIONAL STANDARDS FOR FIELD MEASUREMENTS AND INSTRUMENTATION, CURRENT VOLUME, AS PUBLISHED BY ASSOCIATED AIR BALANCE COUNCIL.
  - IF A PIECE OF EQUIPMENT IS NOT OPERATING IN SATISFACTORY MANNER, COORDINATE WITH MANUFACTURER TO REPAIR OR ADJUST.
  - SUBMIT REPORT TO ENGINEER IF SYSTEM OR PIECE OF EQUIPMENT CANNOT BE ADJUSTED TO OPERATE SATISFACTORILY.

### PIPING

- INSTALL CHROME-PLATED PIPE ESCUTCHEONS ON EXPOSED PIPE @ FLOORS, WALLS, AND CEILINGS.
- 125# WROUGHT COPPER UNIONS WITH SOLDER JOINT FITTINGS. CRANE 633.
- FURNISH AND INSTALL SUPPORTS, GUIDES AND ANCHORS REQUIRED FOR PROPER SUPPORT OF PIPES.
- SUPPORT VERTICAL RUNS WITH HANGER ADJACENT TO ELBOW.
- SUPPORT HORIZONTAL PIPE WITH GALVANIZED ALL-THREAD STEEL RODS (ASTM A107), SPACING: 1/2" - 2" PIPE, 8'-0" ON CENTERS WITH 3/8" DIA. ROD, 2 1/2" - 3" PIPE, 12'-0" ON CENTERS WITH 1/2" DIA. ROD.
- DOMESTIC HOT AND COLD WATER AND HOT WATER RETURN: HARD COPPER TUBE, ASTM B88, TYPE-L WATER TUBE, DRAWN TEMPER WITH COPPER SOLDER JOINT PRESSURE FITTINGS. JOINING MATERIAL: SOLDER, ASTM B32, ALLOY SN95, SN94, OR E, LEAD FREE. CLEANING & DISINFECTING: PURGE AND DISINFECT POTABLE WATER SYSTEMS AS PRESCRIBED BY AUTHORITIES HAVING JURISDICTION.

### PIPE HANGERS

- ADJUSTABLE STEEL CLEVIS HANGERS, NON-METALLIC COATING FOR ELECTROLYTIC PROTECTION WHERE ATTACHMENTS ARE IN DIRECT WITH COPPER. COPPER U-STRAP HANGERS FOR UN-INSULATED PIPE. COMPLY WITH MSS STANDARD PRACTICE SP-69.

### INSULATION

- PIPE INSULATION
  - SERVICE-DOMESTIC HOT WATER AND COLD WATER, MATERIAL: 1" MINERAL FIBER WITH ASJ JACKET. SEAL JOINTS TO PREVENT CONDENSATION.
  - APPLY INSULATION ONLY AFTER PIPES HAVE BEEN TESTED AND CLEANED.
  - INSTALL INSULATION IN A NEAT WORKMANLIKE MANNER.
  - ALL INSULATION: RATING NOT TO EXCEED 25 FLAME, 50 SMOKE, RATED FOR USE IN RETURN AIR PLENUM.
- DUCTWORK INSULATION
  - SERVICE: AIR CONDITIONING AND HEATING SUPPLY - INSULATE ENTIRELY. MATERIAL: 1-1/2" THK FIBERGLASS BLANKET W/ FSK JACKET.
  - OUTSIDE AIR: MIN. 2" THK FIBERGLASS BLANKET W/ FSK JACKET OR BOARD INSULATION.
  - LINING: PROVIDE 1-INCH THICK FIBERGLASS LINING, ASTM C 1071, WITH COATED SURFACE EXPOSED TO THE AIR STREAM TO PREVENT EROSION. LINE DUCTWORK WITHIN 10 FEET EITHER SIDE OF HVAC EQUIPMENT AS SHOWN.
  - ALL INSULATION: RATING NOT TO EXCEED 25 FLAME, 50 SMOKE, RATED FOR USE IN RETURN AIR PLENUM.
  - NO INSULATION WILL BE REQUIRED ON EXPOSED DUCTWORK IN CONDITIONED SPACES.

### "LOW PRESSURE" DUCTWORK AND ACCESSORIES

- DUCTWORK: GALVANIZED SHEET STEEL MIN. 26 GAUGE, CONSTRUCTED TO SMACNA STANDARDS. LOCK-FORMING QUALITY, ASTM A653, G90 COATING. FABRICATE ELBOWS WITH INSIDE RADIUS EQUAL TO ONE AND ONE-HALF TIMES THE DUCT WIDTH OR SQUARE WITH TURNING VANES. FABRICATE DIVIDED FLOW FITTINGS WITH A 45-DEGREE TAPERED ENTRY TO BRANCH DUCTS.
  - ALL EXPOSED DUCTWORK IN THE SPACES SHALL BE ROUND OR OVAL SPIRAL TYPE.
- FLEXIBLE DUCTS: FACTORY FABRICATED ROUND DUCT WITH A POLYETHYLENE OUTER JACKED ENCLOSING A 1-1/2 INCH THICK GLASS-FIBER INSULATION AROUND A STEEL-WIRE HELIX ENCAPSULATED IN A POLYETHYLENE FILM INNER LINER AND RATED FOR 6-INCH WG POSITIVE PRESSURE. PROVIDE 4 TO 6 FEET OF FLEX DUCT AT APPROPRIATE SUPPLY DIFFUSERS FOR SOUND ATTENUATION.
- MANUAL VOLUME DAMPERS: CONSTRUCT TO SMACNA STANDARDS. PROVIDE DAMPERS AT ALL BRANCH TAPS TO EACH DIFFUSER OR GRILLE OR ON REGISTERS WHERE SCHEDULED.
- FIRE DAMPERS: UL 555, 2 HOUR OR AS INDICATED. TYPE B
- FIRE/SMOKE DAMPERS: UL 555S, 2 HOUR OR AS INDICATED. WIRING BY EC.
- GRILLES AND DIFFUSERS: PROVIDE GRILLES AND DIFFUSERS AS SCHEDULED ON THE DRAWINGS AND AS MANUFACTURED BY TITUS, CARNES, NAILER, ANEMOSTAT, OR PRICE.

### PLUMBING

- FURNISHED AND INSTALL EQUIPMENT, SPECIALTIES AND ACCESSORIES TO PROVIDE SYSTEMS AS SHOWN ON DRAWINGS OR HEREUNDER SPECIFIED.
- FOR PLUMBING FIXTURES, REFER TO EQUIPMENT SCHEDULE ON DRAWINGS.
- EXPOSED FIXTURE METAL AND FITTINGS: COORDINATE W/ ARCH.
- FIXTURES SET PLUMB TO WALL LINES. FASTEN SECURELY IN PLACE.
- FIXTURES AND TRIM PROTECTED BY CONTRACTOR UNTIL FINAL ACCEPTANCE. CLEAN FIXTURES AND TRIM BEFORE FINAL INSPECTION. CRACKED FIXTURES OR SCRATCHED TRIM REPLACED BY CONTRACTOR BEFORE FINAL ACCEPTANCE.
- FIXTURES SET, CLEANED AND CONNECTED SO THEY MAY BE USED BY OWNERS' PERSONNEL AT EARLIEST POSSIBLE DATE.
- FIXTURES AND EQUIPMENT EQUIPPED WITH ANTI-SIPHON DEVICES OR CONSTRUCTED TO ELIMINATE POSSIBILITY OF SIPHONING WASTE MATERIAL INTO WATER SUPPLY.
- CHROMIUM PLATING TO BE IN ACCORDANCE WITH U.S. GOVERNMENT STANDARDS UNDER LICENSE FROM THE CHROME CORPORATION OF AMERICA. BRASS PLATE STEEL OR CAST IRON AND NICKEL PLATE BRASS OR BRASS PLATING BEFORE CHROMIUM PLATING. SATIN OR POLISHED FINISH AS SPECIFIED. COORDINATE FINAL FINISH WITH ARCHITECT BEFORE ORDERING.
- SANITARY'S VENT PIPING
  - ALL ABOVEGROUND PIPING W/ 3"- DIAMETER, ALL VERTICAL PIPING, AND ALL PIPING PENETRATING A RATED CEILING ASSEMBLY SHALL BE: CAST-IRON SOIL PIPE, CISPI 301 WITH HUB LESS CAST-IRON COUPLINGS.

1-1/2 & 2" PIPE	60-INCH MAX. SPACING	3/8-INCH ROD
3" PIPE	60-INCH MAX. SPACING	1/2-INCH ROD
4" & 5" PIPE	60-INCH MAX. SPACING	5/8-INCH ROD

- 10.2. RUN LOCAL HORIZONTAL DRAINAGE PIPING AT GRADE A MINIMUM OF 1/8"FT. MAKE CHANGES IN DIRECTION OF DRAINING PIPING WITH APPROPRIATE USE OF 45 DEGREE WYES, LONG SWEEP QUARTER, SIXTH, EIGHTH OR SIXTEENTH BENDS, EXCEPT THAT WHERE SPACE CONDITIONS REQUIRE, SHORT TURN SANITARY TEES MAY BE USED ON VERTICAL LINES. SLP JOINTS: PERMITTED ONLY ON FIXTURE TRAP INLETS OR ELBOWS CONNECTING TO FIXTURE TAILPIECES. UNIONS NOT PERMITTED ON SEWER SIDE OF TRAPS, USE TUCKER OR HUB END FITTINGS.
- 10.3. RUN VENT PIPING WITH LONG TURN ELBOWS AT CHANGES IN DIRECTION, GRADE TO DRAIN OUT CONDENSATION AND CONNECT AT BASE TO PREVENT ACCUMULATION OF RUST. WHERE POSSIBLE, MAKE VENT STACK AND DRY SOIL AND WASTE STACK EXTENSION OFFSETS AT ANGLE OF 45 DEGREES.
- 10.4. RUN PIPING FREE OF TRAPS WHEREVER POSSIBLE AND GRADE AND VALVE FOR COMPLETE CONTROL AND DRAINAGE OF SYSTEM WITH DRAIN COCKS AT LOW POINTS, AT BASE OF VALVED RISERS AND WHERE INDICATED.
11. UNLESS OTHERWISE NOTED, PROVIDE INDIVIDUAL WATER BRANCHES TO FIXTURES AND EQUIPMENT WITH HEAVY DUTY SHOCK ABSORBERS IN LIEU OF AIR CHAMBERS TO ELIMINATE PIPE HAMMER. EXACT SIZE AND LOCATION AS SHOWN ON DRAWINGS. JOSAM ABSORBOTRON OR APPROVED EQUAL.
12. INSTALL CHROME PLATED BRASS PIPE WITH CHROME PLATED THREADED CAST BRASS FITTINGS FOR EXPOSED PIPE AT PLUMBING FIXTURES.
13. MAKE CONNECTIONS TO EQUIPMENT WITH FLANGES OR UNIONS AND WITH THREADED ADAPTERS USED FOR SWING CONNECTIONS.
14. PROVIDE OVERRIM WATER SUPPLY TO FIXTURES AND EQUIPMENT PROVIDE APPROVED VACUUM BREAKERS TO ALL BELOW RIM CONNECTIONS (EXCEPT SILL COCKS).
15. TERMINATE PLUGGED TEES WHEN NOTED IN THREADED PLUG.
16. TEST WITH COLD WATER @ 100 PSIG OR 1-1/2 TIMES WORKING PRESSURE, WHICHEVER IS GREATER. MAINTAIN FOR ONE HOUR.

### DOMESTIC WATER HEATER

- DOMESTIC WATER HEATER SUBMITTAL CRITERIA:
  - INDICATE CAPACITY AND POWER REQUIREMENTS.
  - TEMPERATE ADJUSTING DIAL SHALL RANGE FROM 50°F-140°F.
  - REPLACEABLE HEATING ELEMENT.
  - MANUFACTURER PROVIDED TEMPERATURE AND PRESSURE (T&P) RELIEF VALVE (210°F AND 150 PSIG)
- DOMESTIC WATER HEATER SHALL BE UL LISTED AND LABELED TO UL 174.
- APPROVED MANUFACTURERS
  - A.O. SMITH WATER PRODUCTS CO.
  - LOCHINVAR, INC
  - BRADFORN WHITE CORPORATION
  - RHEEM
- CONNECTION TYPE SHALL BE PLUG-IN.

### FIRE PROTECTION

- GENERAL: MODIFY EXISTING WET PIPE SPRINKLER SYSTEM AND STANDPIPES CONFORMING TO NFPA 13 & NFPA 14.
- SPRINKLER HAZARDS: USE LIGHT HAZARD ASSEMBLY/OFFICE.
- ABOVE GROUND PIPING: STANDARD WEIGHT STEEL PIPE WITH THREADED, SQUARE CUT, OR ROLL GROOVED FITTINGS.
- SPRINKLERS: RECESSED IN FINISHED CEILINGS WITH CHROME PLATED ESCUTCHEON AND HEAD. UPRIGHT HEADS, ROUGH BRASS IN UNFINISHED SPACES.
- COORDINATE SPRINKLER PIPING WITH ARCHITECTURAL FINISHES AND OTHER TRADES.



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Seal:



No.	Date	Issued for
1	1.9.2025	50% CDs
2	1.16.2026	Bids/Permit

Drawn: LDT  
Checked: NLS  
Approved: CAT

Sheet Title:  
**MECHANICAL AND PLUMBING SPECIFICATIONS**

Project Number: **525066.F**

Sheet Number: **M-101**

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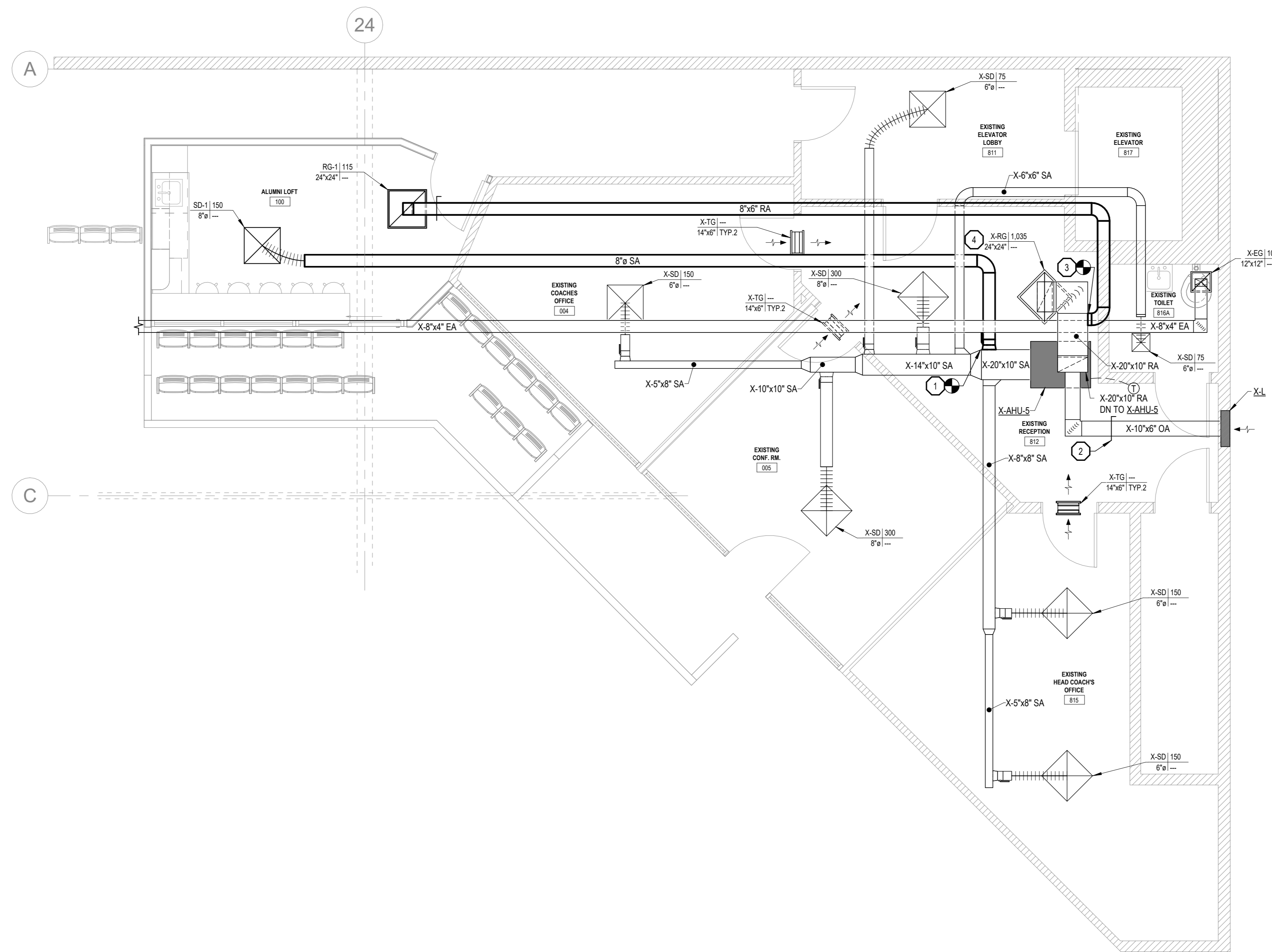
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Sheet Title:  
**LEVEL 2 FLOOR PLAN - HVAC NEW**

Project Number: **525066.F**

Sheet Number: **M-400**

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### HVAC KEY NOTES

- 1 MODIFY EXISTING SUPPLY AIR DUCT AS REQUIRED TO CONNECT TO NEW SUPPLY AIR DUCT.
- 2 BALANCE EXISTING OUTSIDE AIR DAMPER TO 200 CFM.
- 3 MODIFY EXISTING RETURN AIR DUCT AS REQUIRED TO CONNECT TO NEW RETURN AIR DUCT.
- 4 BALANCE EXISTING RETURN GRILLE TO CFM SPECIFIED ON TAG.

**LEVEL 2 FLOOR PLAN - HVAC NEW**  
SCALE: 1/4" = 1'-0"



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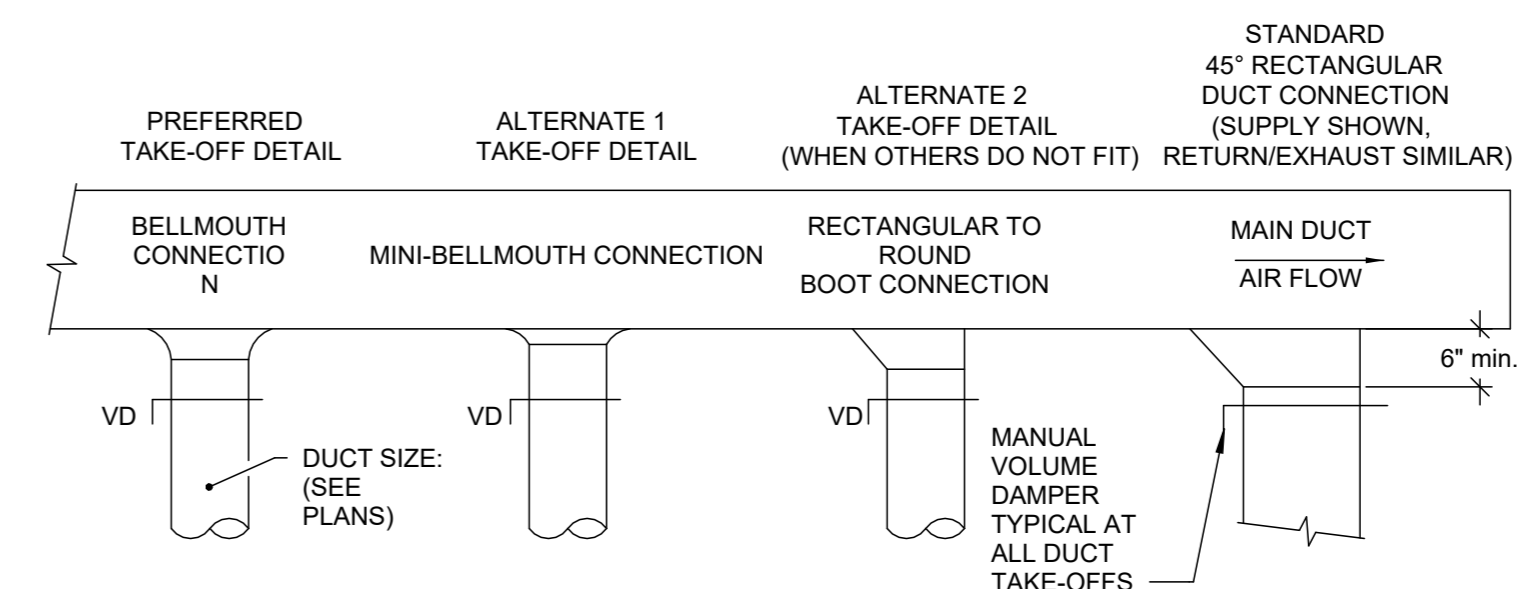
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Sheet Title:  
**HVAC SCHEDULES AND DETAILS**

Project Number: **525066.F**

Sheet Number: **M-900**

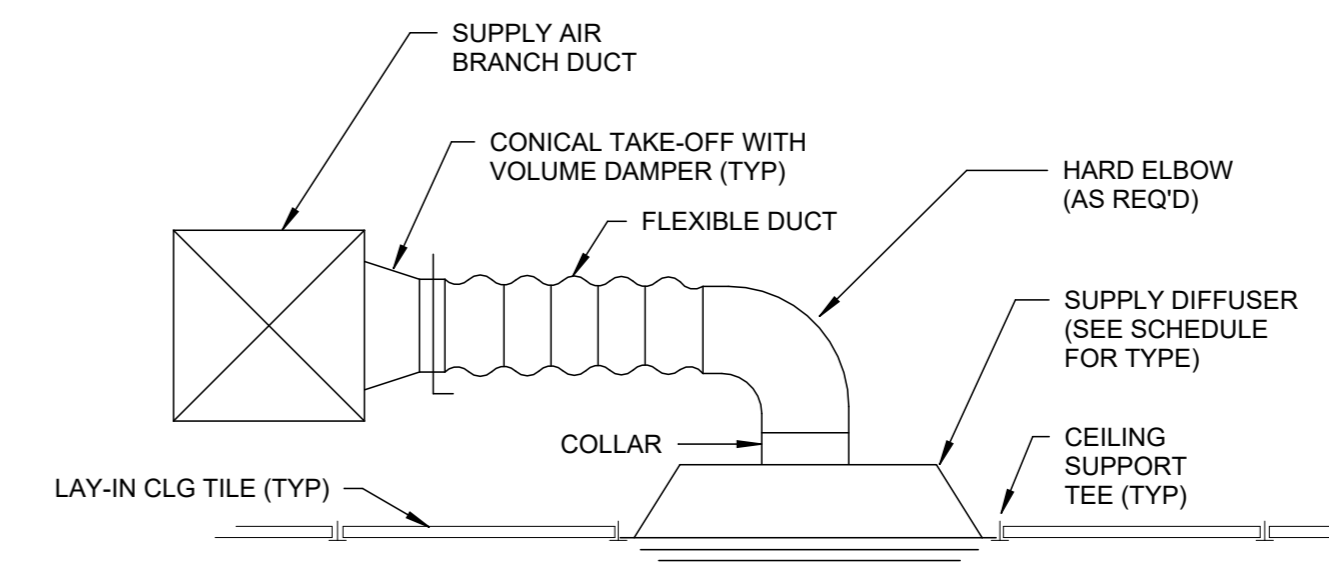
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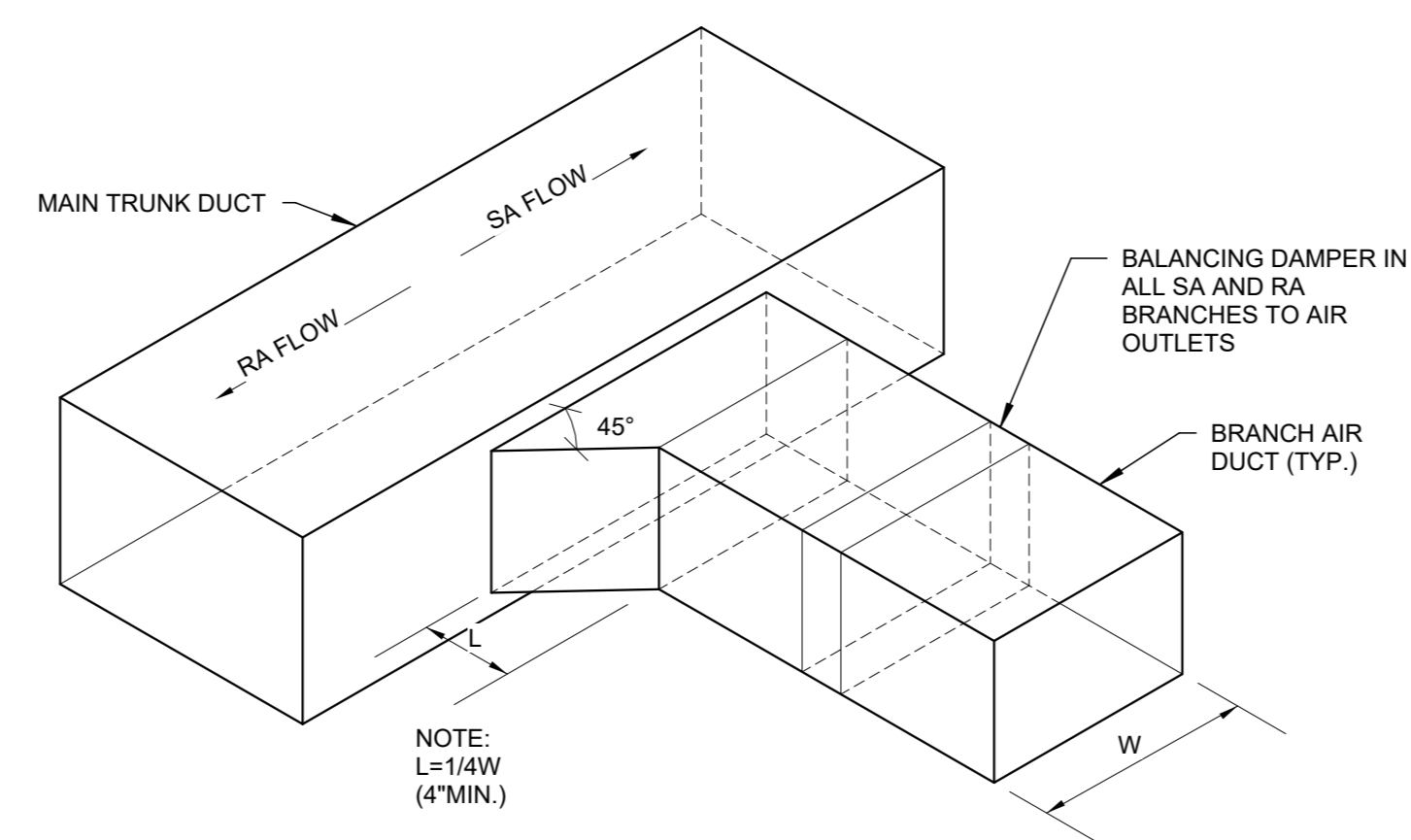
NOTES:

- "ALTERNATE" FITTINGS SHALL BE ACCEPTABLE ONLY WHEN DUCT HEIGHT DOES NOT PERMIT THE USE OF "PERMITTED" FULL SIZE BELLMOUTH CONNECTION
- THIS DETAIL APPLIES TO SINGLE TAKEOFFS TO DIFFUSER AS WELL AS BRANCH TAKEOFFS. IT ALSO APPLIES TO TAKEOFFS IN THE HORIZONTAL AS WELL AS THE VERTICAL DIRECTION.

**3 DUCT TAKE-OFFS DETAIL**  
M-900 NOT TO SCALE



**1 SUPPLY AIR DIFFUSER DETAIL**  
M-900 NOT TO SCALE



**2 SA/RA DUCT CONNECTION DETAIL**  
M-900 NOT TO SCALE

**DIFFUSER, REGISTER, & GRILLE SCHEDULE**

TAG	MODEL	NECK SIZE	FACE SIZE	CFM RANGE (MIN-MAX.)	PATTERN	MOUNT	MATERIAL	COLOR	100 FPM THROW	COMMENTS
SD-1	TMS	8"	24x24	140-245	3 CONE / 4 WAY	LAY-IN	STEEL	WHITE	5'	1,2,3,4
RG-1	50F	24x24	24x24	2,000	1/2x1/2x1/2 GRID	LAY-IN	STEEL	WHITE	-	1,2,3,4

NOTES:  
1. BASED ON: TITUS  
2. MAX. NC = 30  
3. MAX. APD = 0.10 INCHES  
4. SELECT BORDER TO MATCH ROOM FINISH SCHEDULE

**PLUMBING ABBREVIATIONS**

AD	AREA DRAIN	NTS	NOT TO SCALE
ASR	AUTOMATIC SPRINKLER RISER	ORD	OVERFLOW ROOF DRAIN
BFS	BELOW FLOOR SLAB	OXY	OXYGEN
BWV	BACK WATER VALVE	P	PUMP
CB	CATCH BASIN	PD	PRESSURE DROP
CI	CAST IRON	PVC	POLY-VINYL-CHLORIDE
CO	CLEAN OUT	RC	RAIN CONDUCTOR
CV	CONTROL VALVE	RD	ROOF DRAIN
DF	DRINKING FOUNTAIN	RI	ROUGH-IN
DIA	DIAMETER	REQD	REQUIRED
DN	DOWN	SAN	SANITARY
DWH	DOMESTIC WATER HEATER	SHWR	SHOWER
E.T.C.	ELECTRICAL TRADES CONTRACTOR	SK	SINK
EWC	ELECTRIC WATER COOLER	SP	STAND PIPE
EXIST	EXISTING	SQ. FT.	SQUARE FEET
FD	FLOOR DRAIN	SS	SERVICE SINK
FC	FINAL CONNECTIONS	ST	STORM
FDC	FIRE DEPT. CONNECTION	S&W	STOP & WASTE
FF	FINISH FLOOR	STR	STRAINER
FHV	FIRE HOSE VALVE	SV	STACKED VENT
FT	FEET	TYP.	TYPICAL
GAL	GALLON	UR	URINAL
GD	GARBAGE DISPOSAL	VB	VACUUM BREAKER
GI	GREASE INTERCEPTOR	VS	VENT STACK
GPH	GALLONS PER HOUR	V.F.D	VARIABLE FREQUENCY DRIVE
GPM	GALLONS PER MINUTE	VTR	VENT THRU ROOF
HB	HOSE BIB	W	WASTE
HD	HEAD (FT)	WB	WET BULB
HP	HORSE POWER	WC	WATER CLOSET
ID	INSIDE DIAMETER	WH	WALL HYDRANT
I.E.	INVERT ELEVATION	WS	WASTE STACK
LAV	LAVATORY	W&V	WASTE AND VENT
LT	LAUNDRY TRAY	X-CW	EXIST. CW PIPING
MA	MEDICAL AIR	ITEM	ITEM
MAX	MAXIMUM	EXISTING	EXISTING
MGC	MEDICAL GAS CONSOLE		
MH	MAN HOLE		
MIN	MINIMUM		
MS	MOP SINK		
M.T.C.	MECHANICAL TRADES CONTRACTOR		

**GENERAL PLUMBING NOTES**

- ALL PLUMBING WORK SHALL CONFORM TO MICHIGAN PLUMBING CODE, LATEST APPLICABLE EDITION, AND ALL APPLICABLE LOCAL CODES.
- INSTALL ALL EQUIPMENT, MATERIALS, AND ACCESSORIES PER MANUFACTURERS WRITTEN INSTRUCTIONS.
- INSTALL ISOLATION BALL VALVES @ ALL FIXTURE WATER SUPPLY LINES.
- ALL INVERT ELEVATIONS ARE BASED ON A FINISH FLOOR LEVEL OF 100'-0". ALL INVERTS, STATED OR NOT, NEW OR EXISTING, SHALL BE COORDINATED IN THE FIELD. VERIFY EXISTING INVERTS PRIOR TO STARING WORK.
- ALL ELEVATIONS SHOWN ARE INVERTS OF PIPING. THE SLEEVES SHALL BE COORDINATED WITH THESE ELEVATIONS.
- ALL PIPE SIZES SHOWN ARE SERVICE SIZE. SIZE SLEEVES FOR 1" CLEAR SPACE BETWEEN PIPE AND SLEEVE FOR INSTALLATION OF MECHANICAL SEAL.
- CONTRACTOR TO VERIFY LOCATIONS OF EXISTING UNDERGROUND UTILITIES BEFORE BEGINNING WORK.
- CONTRACTOR SHALL DEMOLISH & REMOVE EXISTING PIPING, FITTINGS, & EQUIPMENT AS REQUIRED FOR NEW INSTALLATIONS. VALVE & CAP PIPING TO REMAIN.
- FIELD VERIFY LOCATIONS OF EXISTING PIPING THAT MAY CONFLICT WITH NEW CONSTRUCTION AND RELOCATE AS NEEDED.
- NOTIFY OWNER OF ANY PIPING DEMOLITION THAT MAY AFFECT NORMAL OPERATION OF OTHER AREAS.
- 2% SLOPE FOR ALL SANITARY PIPING 2-1/2" OR LESS IN DIAMETER. 1% SLOPE FOR ALL SANITARY PIPING 3" OR MORE IN DIAMETER.
- PROVIDE SHOCK STOPS FOR EVERY PLUMBING GROUP. PROVIDE SHOCK ABSORBER IN THE DOMESTIC COLD AND HOT WATER PIPING. SHOCK ABSORBERS TO BE LOCATED IN AN ACCESSIBLE LOCATION.
- PROVIDE AIR ELIMINATION DEVICES FOR EACH PLUMBING SYSTEM.
- THE CONTRACTOR SHALL FIELD VERIFY THE SIZES, LOCATION, ELEVATIONS, AND DETAILS OF ALL EXISTING CONDITIONS THAT MAY AFFECT THE WORK.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE INTEGRITY OF ALL EQUIPMENT AND MATERIALS IN A "NEW" CONDITION DURING CONSTRUCTION.
- ALL WORK SHALL BE PERFORMED BY LICENSED CONTRACTORS AND SUBCONTRACTORS AS REQUIRED BY LAW.
- DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CODES AND REGULATIONS ENFORCED BY LOCAL BUILDING OFFICIALS.
- IF THERE IS CONFLICTING INFORMATION IN THE PLANS OR SPECIFICATIONS THE MORE STRINGENT AND GREATER COST ITEM SHALL BE USED.
- DRAWINGS INDICATE REQUIRED SIZES AND POINTS OF TERMINATION OF PIPES AND SUGGESTED ROUTES. IT IS NOT INTENTION OF DRAWINGS TO INDICATE ALL NECESSARY OFFSETS. INSTALL WORK IN MANNER TO CONFORM TO STRUCTURE. AVOID OBSTRUCTIONS, PRESERVE HEADROOM AND KEEP OPENINGS AND PASSAGEWAYS CLEAR. DO NOT SCALE FROM DRAWINGS.

**GENERAL DEMOLITION NOTES**

- SEE ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION.
- EXISTING EQUIPMENT LAYOUT IS SCHEMATIC. EXACT LOCATION OF EXISTING DUCT/PIPING AND EQUIPMENT SHALL BE COORDINATED WITH BUILDING STRUCTURE. EQUIPMENT FURNISHED, ARCHITECTURAL DRAWINGS AND ALL OTHER TRADES PRIOR TO INSTALLATION.
- PERFORM WORK IN ACCORDANCE WITH THE LATEST EDITIONS, REVISIONS, AMENDMENTS, OR SUPPLEMENTS OF APPLICABLE STATUTES, ORDINANCES, CODES OR REGULATIONS OF FEDERAL, STATE, AND LOCAL AUTHORITIES HAVING JURISDICTION IN EFFECT ON THE DATE BIDS ARE RECEIVED.
- WHERE APPROVED STANDARDS HAVE BEEN ESTABLISHED BY OSHA, UNDERWRITERS LABORATORIES, AMERICAN CODES, ASA, ASHRAE, ARI, NEC, STATE FIRE INSURANCE REGULATION BODY, NFPA OR OTHERS, THESE STANDARDS SHALL BE FOLLOWED WHETHER OR NOT INDICATED ON THE DRAWING AND SPECIFICATIONS.
- COORDINATE CUTTING AND PATCHING WITH GENERAL CONTRACTOR.
- ALL BOLD DASHED LINES INDICATE ITEMS TO BE REMOVED UNLESS NOTED BY KEYNOTE. ALL OTHER EXISTING SYSTEMS SHOWN FOR REFERENCE ONLY.
- PATCH AND REPAIR ALL FLOOR AND WALL SURFACES LEFT DAMAGED OR INCOMPLETE FROM REMOVAL OF EXISTING PARTITIONS, MILLWORK, CASEWORK, OR OTHER FIXED ACCESSORIES AND EQUIPMENT WITH MATERIALS TO MATCH EXISTING, AS ACCEPTABLE TO THE ARCHITECT.
- NOTATIONS ARE MADE IN VARIOUS PLACES ON THE DRAWINGS TO CALL ATTENTION TO DEMOLITION WHICH IS REQUIRED. HOWEVER, THESE DRAWINGS ARE NOT INTENDED TO SHOW EACH AND EVERY ITEM TO BE REMOVED. CONTRACTOR SHALL REMOVE ALL MATERIALS RELATED TO THEIR RESPECTIVE TRADES AS REQUIRED TO PERMIT THE CONSTRUCTION OF THE NEW WORK AS SHOWN.
- THE GENERAL CONTRACTOR SHALL COORDINATE THE EXTENT OF THE REQUIRED DEMOLITION OF THE EXISTING BUILDING AS REQUIRED TO FACILITATE THE CONSTRUCTION OF THE PROJECT AS SHOWN AS PART OF THIS WORK.
- ALL DEMOLITION SHALL BE APPROVED BY THE OWNER/TENANT PRIOR TO COMMENCEMENT AND SHALL BE PERFORMED UNDER REQUIREMENTS AND APPROVAL OF THE LOCAL CODE JURISDICTIONS.
- ASBESTOS ABATEMENT: CONTRACTOR SHALL NOTIFY BUILDING REPRESENTATIVE IMMEDIATELY WHEN AND IF ANY ITEMS ARE ENCOUNTERED THAT IN ANY WAY, SHAPE, OR FORM APPEAR TO BE HAZARDOUS OF NATURE. ASBESTOS ABATEMENT IS NOT PART OF THE SCOPE OF THE DESIGN PROFESSIONALS DOCUMENTATION OR RESPONSIBILITY TO SURVEY, IDENTIFY, OR FOR CONSULTATION OF PROPER DISPOSAL.
- PROTECT ALL EXISTING WORK WHICH IS TO REMAIN AND RESTORE IN AN APPROVED MANNER IF ANY SUCH WORK BECOMES DAMAGED.
- RUBBISH AND DEBRIS RESULTING FROM THE WORK SHALL BE REMOVED IMMEDIATELY FROM THE SITE IN A SAFE AND LEGAL MANNER BY THE CONTRACTOR.
- DEMOLITION CONTRACTOR SHALL BE RESPONSIBLE TO CONTACT BUILDING REPRESENTATIVE TO CLARIFY ANY ITEMS NOT SHOWN ON THESE DOCUMENTS OR SHOWN NOT MATCHING FIELD CONDITIONS.

**PLUMBING SYMBOLS LEGEND**

—CW—	COLD WATER	—G—	GAS (NATURAL)
--CW--	COLD WATER BELOW FINISH SLAB	—LP—	GAS (LIQUID PETROLEUM)
—HW—	HOT WATER	—ARV—	ACID RESISTANT
--HW--	HOT WATER BELOW FINISH SLAB	—ARW—	VENT ACID RESISTANT WASTE
—HWR—	HOT WATER RETURN	—RC—	RAIN CONDUCTOR
--HWR--	HOT WATER RETURN BELOW FINISH SLAB	—ST—	STORM BELOW FINISH SLAB
—SW—	SOFTENED WATER	—ORC—	OVERFLOW RAIN CONDUCTOR
--SW--	SOFTENED WATER BELOW FINISH SLAB	—ORC—	OVERFLOW RAIN CONDUCTOR BELOW FINISH SLAB
—SWR—	SOFTENED WATER RETURN	—SAN—	SANITARY WASTE
--SWR--	SOFTENED WATER RETURN BELOW FINISH SLAB	—SAN—	SANITARY WASTE BELOW FINISH SLAB
—TW—	TEMPERED WATER	—V—	VENT PIPING
--TW--	TEMPERED WATER BELOW FINISH SLAB	—V--	VENT PIPING BELOW FINISH SLAB
—TWR—	TEMPERED WATER RETURN	—CA—	COMPRESSED AIR
--TWR--	TEMPERED WATER RETURN BELOW FINISH SLAB	—O2—	OXYGEN
—DI—	DEIONIZED WATER	—NO—	NITROUS OXIDE
--DI--	DEIONIZED WATER BELOW FINISH SLAB	—N2—	NITROGEN
—RO—	REVERSE OSMOSIS WATER	—MA—	MEDICAL AIR
—RO—	REVERSE OSMOSIS WATER RETURN BELOW FINISH SLAB	—VAC—	VACUUM
—FP—	FIRE PROTECTION	-----	DEMOLITION

—GATE VALVE	—GAS COCK	—CHECK VALVE	—BALANCE COCK	—CIRCUIT SETTER	—TWO-WAY CONTROL VALVE	—THREE-WAY CONTROL VALVE	—GLOBE VALVE	—BALL VALVE	—OS&Y VALVE	—SOLENOID VALVE	—EXPANSION VALVE WITH THERMOSTATIC BULB	—PLUG VALVE	—BUTTERFLY VALVE	—RELIEF VALVE	—HOSE & DRAIN END VALVE	—PRESSURE RELIEF VALVE	—PRESSURE REDUCING VALVE	—TRIPLE DUTY VALVE	—GAS PRESSURE REGULATOR	—STRAINER (BLOW-OFF)
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—FLOW DIRECTION	—PIPING DROP	—PIPING RISE	—FLOOR CLEANOUT	—INLINE PIPING DROP	—INLINE PIPING RISE	—PIPING TEE	—PIPING ELBOW	—INLINE CLEANOUT	—PLUMBING TRAP	—THERMOMETER CONNECTION	—PUMP	—UNION	—PIPE ANCHOR	—PIPE GUIDE	—FLOOR DRAIN & FLOOR SINK	—BACK FLOW PREVENTER	—FLANGE END CONNECTION	—WALL HYDRANT & HOSE BIBB	—REGULAR & OVERFLOW ROOF DRAIN	—PIPE CAP	—PIPE BREAK	—WATER METER	—GAS METER	—PRESSURE GAUGE	—FIRE HYDRANT	—SPRINKLER HEAD (PENDANT)	—SPRINKLER HEAD (UPRIGHT)	—SPRINKLER HEAD (SIDEWALL)	—FIRE DEPARTMENT CONNECTION	—PIPING FLEXIBLE CONNECTOR	—SIGHT GLASS	—PIPE EXPANSION	—COMPENSATOR FLOW SENSOR DEVICE	—FLOW METER	—FLOW SWITCH	—PRESSURE SWITCH	—SUPERVISORY SWITCH INVERTED	—BUCKET TRAP	—FLOAT & THERMOSTATIC TRAP
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**MISCELLANEOUS NOTES**

- POINT OF CONNECTION BETWEEN NEW AND EXISTING
- POINT OF EXISTING TO REMAIN AND EXISTING TO BE REMOVED
- INDICATES PLAN NOTE
- INDICATES DEMOLITION NOTE
- DETAIL BUBBLE
- DETAIL NUMBER
- PAGE LOCATION INDICATES
- DIRECTION OF DETAIL SECTION



NOTE: DOMESTIC WATER HEATER SHALL BE SUSPENDED FROM STRUCTURE. COORDINATE INSTALLATION WITH ARCHITECTURAL DRAWINGS.

1 DOMESTIC WATER HEATER DETAIL  
P-100 NOT TO SCALE

TAGS	FIXTURE	MANUFACTURER	MODEL	ROUGH-IN CONNECTION SIZE				TRIM TYPE	TRIM MANUFACTURER	FIXTURE SIZE	ACCESSORIES & COMMENTS
				CW	HW	SAN	VENT				
SK-1	DROP IN SINK	AMERICAN STANDARD	22SB.615	1/2"	1/2"	1-1/2"	1-1/2"	MODEL: LKAV3031	ELKAY	15"x15"x6"	ADA, TWV - STD. ASSE 1070, DROP-IN BASIN SINK STAINLESS STEEL FINISH. 1 FAUCET HOLE. FAUCET STAINLESS STEEL FINISH.

TAG	MODEL	LOCATION	GALLONS	ELECTRICAL				HOT WATER TEMP. °F	COMMENTS
				VOLTAGE	PHASE	WATTS	DISC. BY		
DWH-1	PROE2	ALUMNI LOFT 100	2.5	120	1	1,440	EC	120	1,2,3

NOTES:  
1. BASED ON: RHEEM  
2. CONNECTION TYPE: PLUG-IN  
3. TEMPERATURE AND PRESSURE RELIEF VALVE PROVIDED BY MANU.

ABBREVIATIONS:  
EC - ELECTRICAL CONTRACTOR  
MC - MECHANICAL CONTRACTOR  
MANU - MANUFACTURER



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No.	Date	Issued for
1	1.9.2025	50% CDs
2	1.16.2026	Bids/Permit

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Checked: NLS  
Approved: CAT

Sheet Title:  
**PLUMBING SYMBOLS, NOTES & ABBREVIATIONS**

Project Number: **525066.F**

Sheet Number: **P-100**

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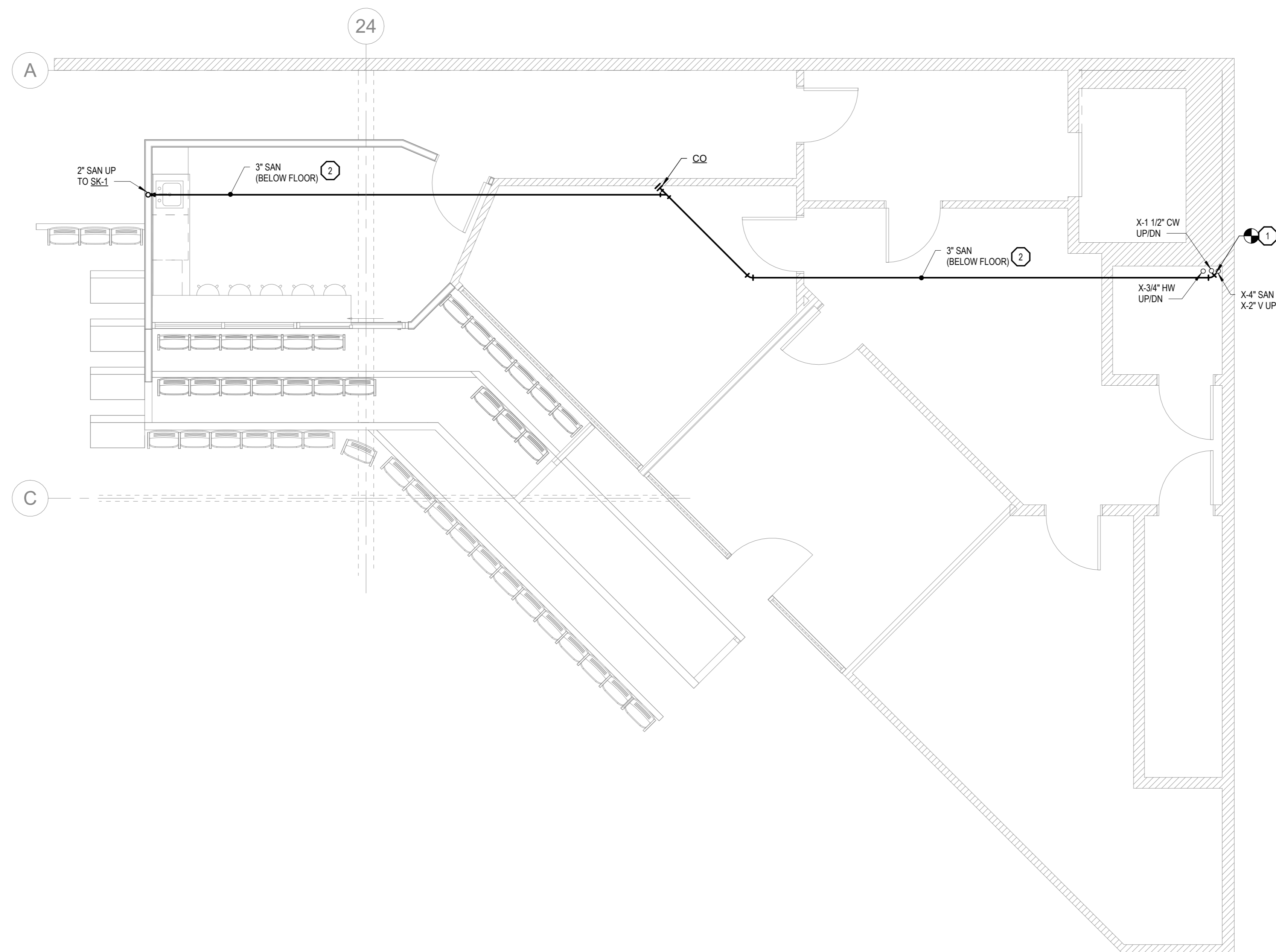
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Sheet Title:  
**BELOW LEVEL 2  
 FLOOR PLAN -  
 PLUMBING NEW**

Project Number: **525066.F**

Sheet Number: **P-400**

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### PLUMBING KEY NOTES

- 1 MODIFY EXISTING 4" SANITARY PIPE AS REQUIRED TO CONNECT NEW SANITARY PIPE.
- 2 CONTRACTOR SHALL PAINT 3" SANITARY PIPING BLUE AS REQUIRED TO MATCH CEILING/EXISTING PIPING.

**BELOW LEVEL 2 FLOOR PLAN - PLUMBING NEW**  
 SCALE: 1/4" = 1'-0"



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Sheet Title:  
**LEVEL 2 FLOOR  
PLAN - PLUMBING  
NEW**

Project Number: **525066.F**

Sheet Number: **P-401**

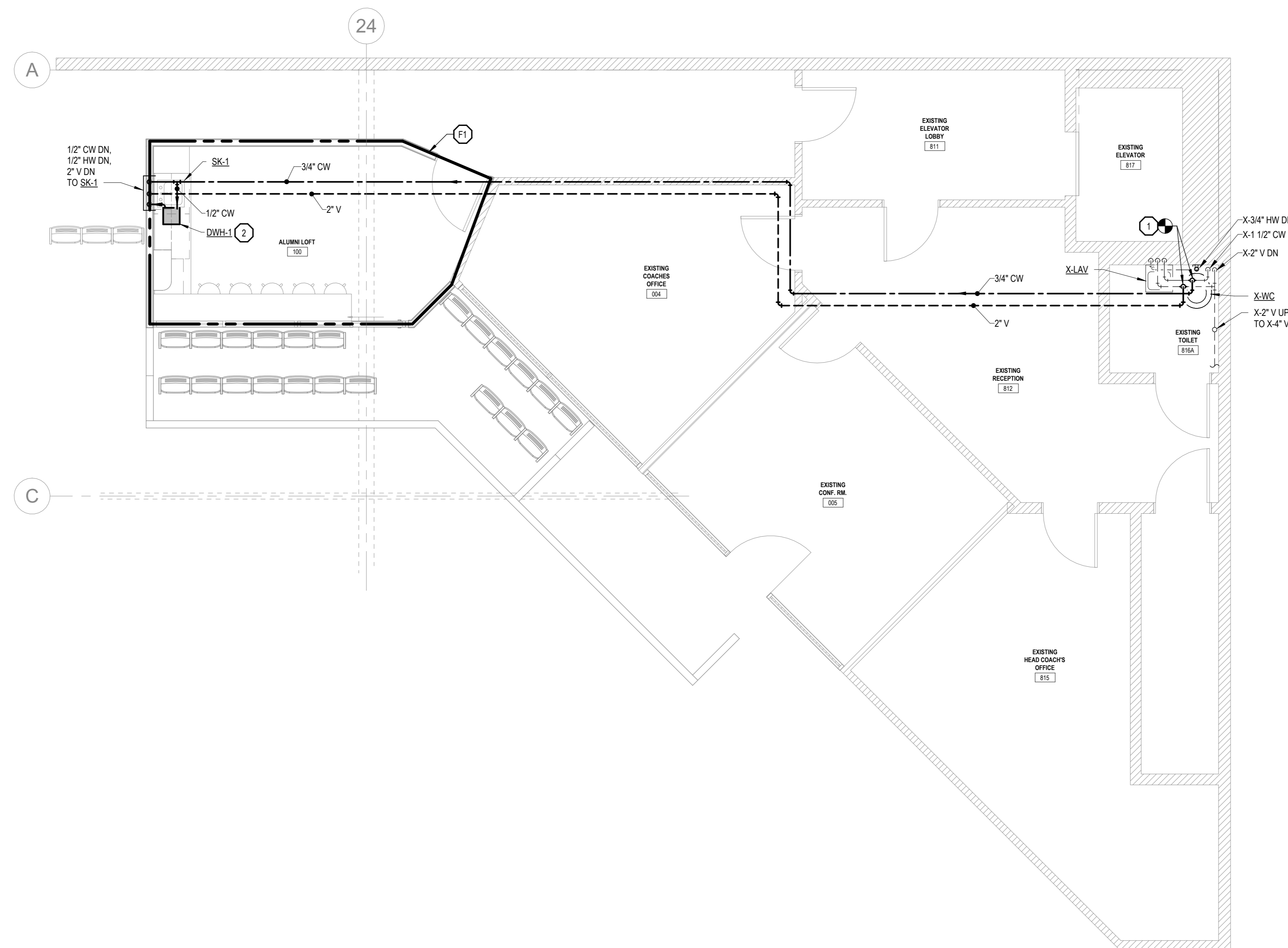
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## FIRE PROTECTION KEY NOTES

- F1 REPLACE AND MODIFY SPRINKLERS AND ASSOCIATED PIPING PER NFPA 13 FOR NEW ROOM AND CEILING LAYOUT IN AREA SHOWN. FIRE PROTECTION CONTRACTOR SHALL COORDINATE SPRINKLER LOCATIONS WITH ARCHITECT AND OTHER TRADES PRIOR TO INSTALLATION. FIRE PROTECTION CONTRACTOR SHALL PLAN ON TWO REVISIONS ON FIRE PROTECTION SHOP DRAWING SUBMITTAL TO COORDINATE SPRINKLER LOCATIONS.

## PLUMBING KEY NOTES

- 1 MODIFY EXISTING COLD WATER AND VENT PIPING AS REQUIRED TO CONNECT TO NEW COLD WATER AND VENT PIPING.
- 2 INSTALL ELECTRIC DOMESTIC WATER HEATER ABOVE LAY-IN CEILING AT LOCATION SHOWN.



**LEVEL 2 FLOOR PLAN - PLUMBING NEW**  
SCALE: 1/4" = 1'-0"