SHEET INDEX

NOTE: THE CONSTRUCTION DOCUMENTS FOR THIS PROJECT ARE COMPOSED OF SETS OF DRAWINGS AND SPECIFICATIONS, AND THEREFORE SHALL BE USED AND MAINTAINED IN THEIR ENTIRETY. ANY CONTRACTOR, SUBCONTRACTOR, VENDOR OR PARTY PARTICIPATING IN OR BIDDING ON THIS PROJECT SHALL BE EXPECTED TO PERFORM DUE DILIGENCE TO ENSURE THEIR BID, WORK PERFORMED, AND MATERIALS PROVIDED CONFORMS TO THE INFORMATION PROVIDED WITHIN ANY AND ALL SHEETS OF DRAWINGS AND SPECIFICATIONS, INCLUDING, BUT NOT LIMITED TO, ANY SUBSEQUENT ADDENDA OR CLARIFICATIONS THAT MAY BE ISSUED RELEVANT TO THEIR SCOPE OF WORK. PROJECT SCOPE MAY BE DEFINED WITHIN SPECIFICATIONS AND/OR DRAWINGS.

ADDITIONALLY, DRAWINGS MAY NOT BE RE-SCALED WHEN PRINTED, WRITTEN DIMENSIONS SHALL HAVE PRECEDENCE, AND LARGER SCALE DRAWINGS SHALL HAVE PRECEDENCE OVER SMALLER SCALE DRAWINGS.

ANY DEVIATION FROM OR CONFLICT WITHIN THE DRAWINGS AND/OR SPECIFICATIONS, MUST BE SUBMITTED VIA REQUEST FOR INFORMATION (RFI) AND RESPONDED TO BY THE ARCHITECT PRIOR TO BID OR BEFORE CONTINUING THAT PORTION OF WORK.

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E-411.1	FIRE ALARM & SECURITY PLAN - MAIN OFFICE
E-501.1	ELECTRICAL DETAILS
E-602.1	ELECTRICAL SCHEDULES



DESIGN TEAM

ARCHITECTURAL

DESIGN WEST ARCHITECTS
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michaelr@designwestarchitects.com
MICHAEL RIGBY

OWNER

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DON BELL

ELECTRICAL

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PHONE: 435-787-1445
shanes@sinesource.net
SHANE SWENSON

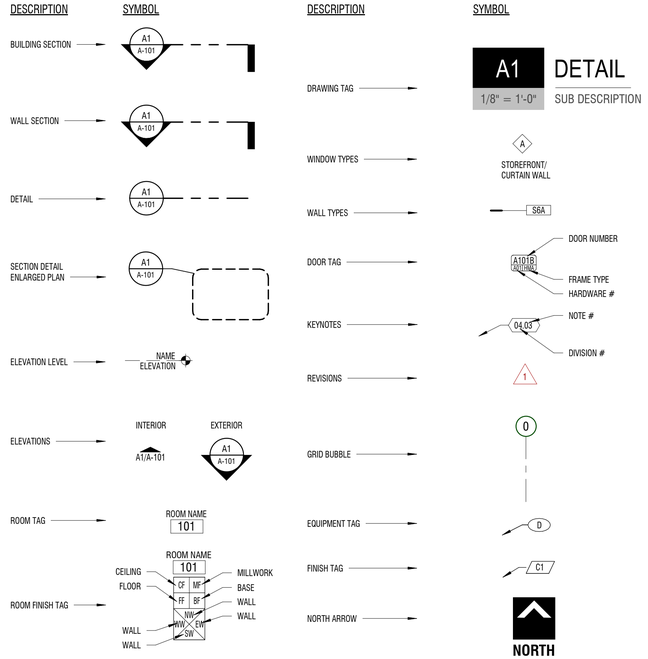
MECHANICAL & PLUMBING

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95 GOLF COURSE RD
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PHONE: 435-363-6411
mcarrillo@c-mech.net
MARTIN CARRILLO

ABBREVIATIONS

ABR.	DESCRIPTION	ABR.	DESCRIPTION	ABR.	DESCRIPTION
AB	ANCHOR BOLT	EXIST	EXISTING	PART BD	PARTICLE BOARD
ABS	ACRYLONITRILE-BUTADIENE -STYRENE	EXP	EXPANSION	PART'N	PARTITION
		EXT	EXTERIOR	P-LAM	PLASTIC LAMINATE PLATE
AC	ACOUSTIC, ACOUSTICAL	FD	FLOOR DRAIN	PLYWD	PLYWOOD
ACC STA	ACCESSIBLE STATION	FDN	FOUNDATION	PREFAB	PREFABRICATED
AD	ADDENDUM	FEC	FIRE EXTINGUISHER CABINET	PROJ	PROJECTION
ADJ	ADJUSTABLE	FIN	FINISH	PT	PRESERVATIVE TREATED
AFF	ABOVE FINISH FLOOR	FLR	FLOOR	PVC	POLYVINYL CHLORIDE
ALT	ALTERNATE	FTG	FOOTING	QT	QUARRY TILE
ALUM	ALUMINUM	GA	GAUGE	R/	ROUND
ASI	ARCHITECT SUPPLEMENTAL INSTRUCTION	GALV	GALVANIZED	RAD	RADIUS
		GI	GALVANIZED IRON	RD	ROOF DRAIN
ASPH	ASPHALT	GYP BD	GYPSUM BOARD	REF	REFRIGERATOR
		HDWD	HARDWOOD	REINF	REINFORCE
BB	BASKETBALL	HM	HOLLOW METAL	REV	REVISION
BD	BOARD	HORIZ	HORIZONTAL	RFI	REQUEST FOR INFORMATION
BLDG	BUILDING	HT	HEIGHT	RO	ROUGH OPENING
BLKG	BLOCKING	ID	INSIDE DIAMETER	SCHED	SCHEDULE
BM	BENCH MARK	INSUL	INSULATION	SHT	SHEET
B.O.	BOTTOM OF	INT	INTERIOR	SIM	SIMILAR
BRG	BEARING	JT	JOINT	SPEC	SPECIFICATION
BSMT	BASEMENT	KD	KNOCK DOWN	SQ	SQUARE
B.U.R.	BUILT UP ROOF	KO	KNOCK OUT	SS	STAINLESS STEEL
C	CHANNEL	L	ANGLE	STD	STANDARD
CB	CHALKBOARD	LLV	LONG LEG VERTICAL	STL	STEEL
C	CENTER LINE	MAX	MAXIMUM	STOR	STORAGE
CLG	CEILING	MB	MARKER BOARD	STRUCT	STRUCTURAL
CMU	CONCRETE MASONRY UNIT	MECH	MECHANICAL	SUSP	SUSPENDED, SUSPENSION
CO	CLEAN OUT	MFR	MANUFACTURER	SYS	SYSTEM
COL	COLUMN	MH	MANHOLE	T & B	TOP AND BOTTOM
CONC	CONCRETE	MIN	MINIMUM	TB	TACKBOARD
CONN	CONNECTION	MISC	MISCELLANEOUS	TEMP	TEMPORARY
CONT	CONTINUOUS	MO	MASONRY OPENING	TEL	TELEPHONE
CONTR	CONTRACTOR	MT	MOUNT	THRES	THRESHOLD
CT	CERAMIC TILE	MTL	METAL	TS	TUBE STEEL
d	PENNY	(N)	NEW	T.O.	TOP OF
DIM	DIMENSION	NIC	NOT IN CONTRACT	TOIL	TOILET
DS	DOWNSPOUT	NTS	NOT TO SCALE	TV	TELEVISION
DWG	DRAWING	O.C.	ON CENTER	TYP	TYPICAL
(E)	EXISTING	OD	OUTSIDE DIAMETER	VERT	VERTICAL
EA	EACH	OH	OVERHEAD	U.N.O.	UNLESS NOTED OTHERWISE
EIFS	EXTERIOR INSULATION FINISH SYSTEM	OF/CI	OWNER FURNISHED / CONTRACTOR INSTALLED	W	WIDE FLANGE
				W/	WITH
ELECT	ELECTRICAL	OF/OI	OWNER FURNISHED / OWNER INSTALLED	WC	WATER CLOSET
ELEV	ELEVATION			WD	WOOD
EQ	EQUAL	OPNG	OPENING	WM	WATER METER
EQUIP	EQUIPMENT	OPP	OPPOSITE	W/O	WITHOUT
EWC	ELECTRIC WATER COOLER	O.T.S.	OPEN TO STRUCTURE	WWF	WELDED WIRE FABRIC

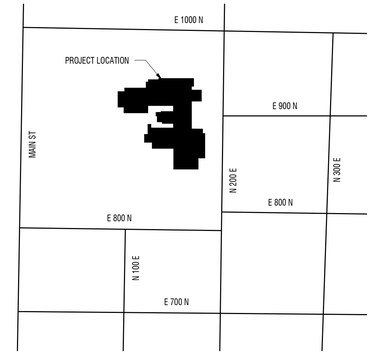
SYMBOLS LEGEND



MATERIALS LEGEND

MATERIAL	SYMBOL
EARTH	
ASPHALT PAVING	
COMPACTED GRANULAR FILL	
CONCRETE	
CONCRETE MASONRY UNITS	
BRICK	
STEEL	
CONTINUOUS WOOD	
WOOD BLOCKING	
PLYWOOD / OSB	
PARTICLE BOARD	
INSULATION	
RIGID INSULATION	
GYPSUM BOARD	
GLU-LAMINATE BEAM	
GLASS	
FINISH WOOD	
ALUMINUM	
WOOD STUD WALL	

VICINITY MAP



DESIGN WEST

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(435) 752-7031

SALT LAKE CITY, UTAH
(801) 539-8221

MT. LOGAN MIDDLE SCHOOL
MAIN OFFICE AND SECURE VESTIBULE REMODEL
875 N 200 E., LOGAN, UT 84321
LOGAN CITY SCHOOL DISTRICT

CONSTRUCTION DOCUMENTS

MARK: DESCRIPTION: DATE:

PROJECT #: 125070
DRAWN BY: CF
CHECKED BY: MR
ISSUED: 04.13.2026

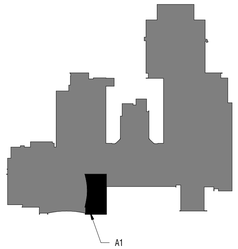
STATE OF UTAH
STEPHEN M WILLIAMS
12/8/2025
(8426858-0301)
LICENSED ARCHITECT

PROJECT INFORMATION

G-001

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KEY PLAN



LEGEND

EXIT TRAVEL DISTANCE

COMMON PATH

FEC

FIRE EXTINGUISHER CABINET

FIRE RATED WALL - 0.5 HR

FIRE RATED WALL - 1 HR

FIRE RATED WALL - 2 HR

FIRE RATED WALL - 3 HR

SOUND WALL - EXTEND TO DECK - SEE WALL TYPES ON A-601

CODE ANALYSIS

JURISDICTION
LOGAN CITY SCHOOL DISTRICT

CODE
2021 INTERNATIONAL EXISTING BUILDING CODE **(LEVEL 1)**
2021 INTERNATIONAL BUILDING CODE
2021 INTERNATIONAL MECHANICAL CODE
2021 INTERNATIONAL PLUMBING CODE
2021 COMMERCIAL ENERGY CONSERVATION CODE
2020 NATIONAL ELECTRICAL CODE
2017 ICC ANSI A117.1, 2017

OCCUPANCY CLASSIFICATION *(301)*

GROUP	DESCRIPTION
(E)	(EDUCATION)

TYPE OF CONSTRUCTION *(601)*
CONSTRUCTION TYPE
II-B (UNCHANGED)

AUTOMATIC SPRINKLER SYSTEM *(CH9)*
NO

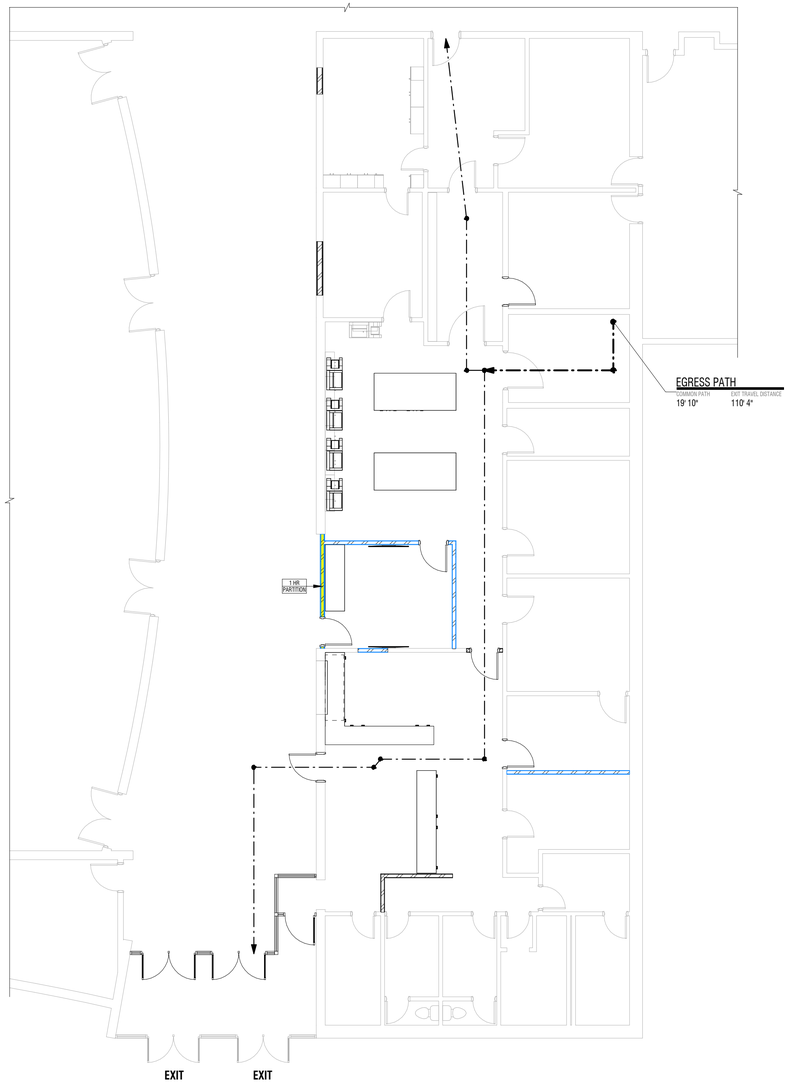
BUILDING HEIGHT *(504.3)*
UNCHANGED

NUMBER OF STORIES *(504.4)*
UNCHANGED

BUILDING AREA *(506)*
UNCHANGED

FIRE RESISTIVE REQUIREMENTS *(TABLE 601)*
CONSTRUCTION TYPE: 7

PRIMARY STRUCTURAL FRAME	0 HR RATING
BEARING WALLS	
EXTERIOR	0 HR RATING *(601, 602 EXTERIOR WALL 705)*
INTERIOR	0 HR RATING *(FIRE PARTIONS 708)*
NON BEARING WALLS	0 HR RATING *(2304.11.2)*
FLOOR CONSTRUCTION	0 HR RATING *(601, HORIZONTAL ASSEMBLY 711)*
ROOF CONSTRUCTION	0 HR RATING
SHAFT WALLS	1 HR RATING *(713.4, FIRE BARRIER 707)*
CORRIDORS	1 HR RATING *(1020.1, FIRE PARTIONS 708, 708.3, 713)*



A1 PLAN - LIFE & SAFETY

1/8" = 1'-0" LEVEL 01

CONSTRUCTION DOCUMENTS

DESIGN WEST
LOGAN, UTAH
(435) 752-7031
SALT LAKE CITY, UTAH
(801) 539-8221

MT. LOGAN MIDDLE SCHOOL
MAIN OFFICE AND SECURE VESTIBULE REMODEL
875 N 200 E, LOGAN, UT 84321
LOGAN CITY SCHOOL DISTRICT

MARK:	DATE:	DESCRIPTION:

PROJECT #: 125070
DRAWN BY: CF
CHECKED BY: MR
ISSUED: 04.13.2026

STATE OF UTAH
STEPHEN M WILLIAMS
12178220
LICENSED ARCHITECT

CODE ANALYSIS
G-002

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DIVISION 01 - GENERAL REQUIREMENTS

SECTION 012500
SUBSTITUTION PROCEDURES

PART 1 GENERAL

1.01 DEFINITIONS

A. Substitutions: Changes from Contract Documents requirements proposed by Contractor to materials, products, assemblies, and equipment.
   1. Substitutions for Cause: Proposed due to changed Project circumstances beyond Contractor's control.
      a. Unavailability.
      b. Regulatory changes.
   2. Substitutions for Convenience: Proposed due to possibility of offering substantial advantage to the Project.
      a. Substitution requests offering advantages solely to the Contractor will not be considered.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 GENERAL REQUIREMENTS

A. A Substitution Request for products, assemblies, materials, and equipment constitutes a representation that the submitter:
   1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product, equipment, assembly, or system.
   2. Agrees to provide the same warranty for the substitution as for the specified product.
   3. Agrees to provide same or equivalent maintenance service and source of replacement parts, as applicable.
   4. Agrees to coordinate installation and make changes to other work that may be required for the work to be complete, with no additional cost to Owner.
   5. Waives claims for additional costs or time extension that may subsequently become apparent.
   6. Agrees to reimburse Owner and Architect for review or redesign services associated with re-approval by authorities.

B. A Substitution Request for specified installer constitutes a representation that the submitter:
   1. Has acted in good faith to obtain services of specified installer, but was unable to come to commercial, or other terms.

C. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents. Burden of proof is on proposer.

D. Content: Include information necessary for tracking the status of each Substitution Request, and information necessary to provide an actionable response.
   1. No specific form is required. Contractor's Substitution Request documentation must include the following:
      a. Project Information:
         1) Official project name and number, and any additional required identifiers established in Contract Documents.
      b. Substitution Request Information:
         1) Discrete and consecutive Substitution Request number, and descriptive subject/title.
         2) Indication of whether the substitution is for cause or convenience.
         3) Issue date.
         4) Description of Substitution.
         5) Reason why the specified item cannot be provided.
         6) Differences between proposed substitution and specified item.
         7) Description of how proposed substitution affects other parts of work.
      c. Attached Comparative Data: Provide point-by-point, side-by-side comparison addressing essential attributes specified, as appropriate and relevant for the item:
         1) Physical characteristics.
         2) In-service performance.
         3) Expected durability.
         4) Visual effect.
         5) Warranties.
         6) Other salient features and requirements.
         7) Include, as appropriate or requested, the following types of documentation:
            (a) Product Data:
            (b) Samples.
            (c) Certificates, test, reports or similar qualification data.
      d. Impact of Substitution:
         1) Savings to Owner for accepting substitution.
         2) Change to Contract Time due to accepting substitution.

E. Limit each request to a single proposed substitution item.
   1. Submit an electronic document, combining the request form with supporting data into single document.

3.02 SUBSTITUTION PROCEDURES DURING PROCUREMENT

A. Submittal Time Restrictions:
   1. Submit request for Substitution for Convenience immediately upon discovery of its potential advantage to the project, but not later than [7] days prior to time required for review and approval by Architect, in order to stay on approved bidding schedule.

3.03 SUBSTITUTION PROCEDURES DURING CONSTRUCTION

A. Architect will consider requests for substitutions only within 15 days after date of Agreement.

B. Submit request for Substitution for Cause within 14 days of discovery of need for substitution, but not later than 7 days prior to time required for review and approval by Architect, in order to stay on approved project schedule.

C. Submit request for Substitution for Convenience are not permitted during construction.

D. Substitutions will not be considered under one or more of the following circumstances:
   1. When they are indicated or implied on shop drawing or product data submittals, without having received prior approval.
   2. Without a separate written request during the bidding period.

E. Failure to order product in a timely manner to meet project timeline requirements, does not constitute justification for a substitution. Any additional costs incurred related to obtaining the specified product in a expedited manner, as a result of this failure, will not be approved in Change Orders and are the responsibilty of the ordering party.

F. Architect may request additional information and documentation prior to rendering a decision. Provide this data in an expeditious manner.

G. Architect will notify Contractor in writing of decision to accept or reject request.
   1. Architect's decision following review of proposed substitution will be noted on the submitted form.

H. Accepted substitutions change the work of the Project. They will be documented and incorporated into work of the project by Change Order, Construction Change Directive, Architectural Supplementary Instructions, or similar instruments provided for in the Conditions of the Contract.

END OF SECTION

SECTION 014000
QUALITY REQUIREMENTS

PART 1 GENERAL

1.01 DEFINITIONS

A. Contractor's Quality Control Plan: Contractor's management plan for executing the Contract for Construction.

B. Contractor's Professional Design Services: Design of some aspect or portion of the project by party other than the design professional of record. Provide these services as part of the Contract for Construction.

1.02 CONTRACTOR'S CONSTRUCTION-RELATED PROFESSIONAL DESIGN SERVICES

A. Provide such engineering design services as may be necessary to plan and safely conduct certain construction operations, pertaining to, but not limited to the following:
   1. Temporary sheeting, shoring, or supports.
   2. Temporary scaffolding.
   3. Temporary bracing.
   4. Temporary falsework for support of spanning or arched structures.
   5. Temporary foundation underpinning.
   6. Temporary stairs or steps required for construction access only.
   7. Temporary hoist(s) and rigging.

1.03 CONTRACTOR'S DESIGN-RELATED PROFESSIONAL DESIGN SERVICES

A. Base design on performance and/or design criteria indicated in individual specification sections.

1.04 SUBMITTALS

A. Designer's Qualification Statement: Submit for Architect's knowledge as contract administrator, or for Owner's information.
   1. Include information for each individual professional responsible for producing, or supervising production of, design-related professional services provided by Contractor.
      a. Full name.
      b. Professional licensure information.
      c. Statement addressing extent and depth of experience specifically relevant to design of items assigned to Contractor.

B. Design Data: Submit for Architect's knowledge as contract administrator for the limited purpose of assessing compliance with information given and the design concept expressed in the Contract Documents, or for Owner's information.

C. Certificates: When specified in individual specification sections, submit certification by the manufacturer and Contractor or installation/application subcontractor to Architect, in quantities specified for Product Data.
   1. Indicate material or product complies with or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.

1.05 QUALITY ASSURANCE

A. Testing Agency Qualifications:
   1. Prior to start of work, submit agency name, address, and telephone number, and names of full time registered Engineer and responsible officer.
   2. Submit copy of report of laboratory facilities inspection made by NIST Construction Materials Reference Laboratory during most recent inspection, with memorandum of remedies of any deficiencies reported by the inspection.

B. Designer Qualifications: Where professional engineering design services and design data submittals are specifically required of Contractor by Contract Documents, provide services of a Professional Engineer experienced in design of this type of work and licensed in the State in which the Project is located.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 CONTROL OF INSTALLATION

A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of specified quality.

B. Comply with manufacturers' instructions, including each step in sequence.

C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect before proceeding.

D. Comply with specified standards as minimum quality for the work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

E. Have work performed by persons qualified to produce required and specified quality.

F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.

G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, and disfigurement.

3.02 DEFECT ASSESSMENT

A. Replace Work or portions of the Work not complying with specified requirements.

B. If, in the opinion of Owner, it is not practical to remove and replace the work, Owner will direct an appropriate remedy or adjust payment.

END OF SECTION

SECTION 016000
PRODUCT REQUIREMENTS

PART 1 GENERAL

1.01 SUBMITTALS

A. Product Data Submittals: Submit manufacturer's standard published data. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.

B. Shop Drawing Submittals: Prepared specifically for this Project; indicate utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.

C. Sample Submittals: Illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.

PART 2 PRODUCTS - NOT USED

2.01 EXISTING PRODUCTS

A. Do not use materials and equipment removed from existing premises unless specifically required or permitted by Contract Documents.

2.02 NEW PRODUCTS

A. Provide new products unless specifically required or permitted by Contract Documents.

2.03 PRODUCT OPTIONS

A. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.

B. Products Specified by Naming One or More Manufacturers: Use a product of one of the manufacturers named and meeting specifications, no options or substitutions allowed.

C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named.

PART 3 EXECUTION

3.01 SUBSTITUTION LIMITATIONS

A. See Section 012500 - Substitution Procedures.

END OF SECTION

SECTION 016116
VOLATILE ORGANIC COMPOUND (VOC) CONTENT RESTRICTIONS

PART 1 GENERAL

1.01 DEFINITIONS

A. Indoor-Emissions-Restricted Products: All products in the following product categories, whether specified or not:
   1. Interior paints and coatings applied on site.
   2. Interior adhesives and sealants applied on site, including flooring adhesives.
   3. Flooring.
   4. Composite wood.
   5. Products making up wall and ceiling assemblies.
   6. Thermal and acoustical insulation.
   7. Free-standing furniture.
   8. Exterior applied products (for LEED Healthcare and Schools projects only).

B. VOC-Content-Restricted Products: All products in the following product categories, whether specified or not:

C. Interior of Building: Anywhere inside the exterior weather barrier.

D. Adhesives: All gunnable, trowelable, liquid-applied, and aerosol adhesives, whether specified or not; including flooring adhesives, resilient base adhesives, and pipe jointing adhesives.

E. Sealants: All gunnable, trowelable, and liquid-applied joint sealants and sealant primers, whether specified or not; including firestopping sealants and duct joint sealers.

F. Inherently Non-Emitting Materials: Products composed wholly of minerals or metals, unless they include organic-based surface coatings, binders, or sealants; and specifically the following:
   1. Concrete.
   2. Metals that are plated, anodized, or powder-coated.
   3. Glass.
   4. Ceramics.
   5. Solid wood flooring that is unfinished and untreated.

1.02 SUBMITTALS

A. Product Data: For each VOC-restricted product used in the project, submit evidence of compliance.

1.03 QUALITY ASSURANCE

A. Indoor Emissions Standard and Test Method: CAL (CDPH SM), using Standard Private Office exposure scenario and the allowable concentrations specified in the method, and range of total VOC's after 14 days.
   1. Wet-Applied Products: State amount applied in mass per surface area.
   2. Paints and Coatings: Test tinted products, not just tinting bases.
   3. Evidence of Compliance: Acceptable types of evidence are the following;
      a. Current UL (GGG) certification.
      b. Current SCS (CPD) Floorscore certification.
      c. Current SCS (CPD) Indoor Advantage Gold certification.
      d. Current listing in CHPS (HPPD) as a low-emitting product.
      e. Current CRI (GLP) certification.
      f. Test report showing compliance and stating exposure scenario used.
   4. Product data submittal showing VOC content is NOT acceptable evidence.
   5. Manufacturer's certification without test report by independent agency is NOT acceptable evidence.

B. VOC Content Test Method: 40 CFR 59, Subpart D (EPA Method 24), or ASTM D3960, unless otherwise indicated.

C. Composite Wood Emissions Standard: CARB (ATCM) for ultra-low emitting formaldehyde (ULEF) resins.
   1. Evidence of Compliance: Acceptable types of evidence are:
      a. Current SCS "No Added Formaldehyde (NAF)" certification; www.scscertified.com.
      b. Report of laboratory testing performed in accordance with requirements.
      c. Published product data showing compliance with requirements.

D. Furnishings Emissions Standard and Test Method: BIFMA e3 Sections 7.6.1 and 7.6.2, tested in accordance with BIFMA M7.1.
   1. Evidence of Compliance:
      a. Test report showing compliance and stating exposure scenario used.

PART 2 PRODUCTS

2.01 MATERIALS

A. Indoor-Emissions-Restricted Products: Comply with Indoor Emissions Standard and Test Method, except for:
   1. Composite Wood, Wood Fiber, and Wood Chip Products: Comply with Composite Wood Emissions Standard or contain no added formaldehyde resins.
   2. Furnishings: Comply with Furnishings Emissions Standard and Test Method.
   3. Inherently Non-Emitting Materials.

B. VOC-Content-Restricted Products: VOC content not greater than required by the following:

PART 3 EXECUTION - NOT USED

END OF SECTION

DIVISION 02 - EXISTING CONDITIONS

SECTION 024100
DEMOLITION

<<<< UPDATE NOTES

PART 1 GENERAL - NOT USED

PART 2 PRODUCTS -- NOT USED

PART 3 EXECUTION

4.01 GENERAL PROCEDURES AND PROJECT CONDITIONS

A. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
   1. Obtain required permits.
   2. Take precautions to prevent catastrophic or uncontrolled collapse of structures to be removed; do not allow worker or public access within range of potential collapse of unstable structures.
   3. Provide, erect, and maintain temporary barriers and security devices.

4.02 DEBRIS AND WASTE REMOVAL

A. Remove debris, junk, and trash from site.

END OF SECTION

DIVISION 05 - METALS

SECTION 054000
COLD-FORMED METAL FRAMING

PART 1 GENERAL

PART 2 PRODUCTS

2.01 PERFORMANCE REQUIREMENTS

A. Design Requirements: Design cold-formed framing systems, components and connectors to withstand specified design loads in compliance with ICC (IBC), ASCE 7, AISI S100, and AISI S240.

2.02 MATERIALS

A. Steel Sheet: ASTM A1003/A1003M, subject to the ductility limitations indicated in AISI S240.

2.03 STRUCTURAL FRAMING COMPONENTS

A. Wall Studs and Track Sections: AISI S240; c-shaped studs and u-shaped track sections in stud-matching nominal width and compatible height.

2.04 MISCELLANEOUS CONNECTIONS

A. Self-Drilling, Self-Tapping Screws, Bolts, Nuts and Washers: Hot-dip galvanized per ASTM A153/A153M.

PART 3 EXECUTION

3.01 INSTALLATION - GENERAL

A. Install structural members and connections in compliance with ASTM C1007.

3.02 INSTALLATION OF STUDS

A. Install wall studs plumb and level.

END OF SECTION

DIVISION 06 - WOOD, PLASTICS, AND COMPOSITES

SECTION 064100
ARCHITECTURAL WOOD CASEWORK

PART 1 GENERAL

1.01 SUBMITTALS

A. Shop Drawings: Indicate materials, component profiles, fastening methods, jointing details, and accessories.

B. Samples: Submit actual sample items of all proposed hardware including pulls and hinges, demonstrating hardware design, quality, and finish. Submit samples of all millwork finishes.

1.02 QUALITY ASSURANCE

A. Fabricator Qualifications: Company specializing in fabricating the products specified in this section with minimum five years of documented experience.

PART 2 PRODUCTS

2.01 CABINETS

A. Quality Standard: Custom Grade, in accordance with AWI/AWMAC/WI (AWS), unless noted otherwise.

B. Plastic Laminate Faced Cabinets: Custom grade.

C. Cabinets:
   1. Finish - Exposed Exterior Surfaces: Decorative laminate.Where indicated on drawings.
   2. Finish - Exposed Interior Surfaces: Melamine where indicated on drawings.
   3. Finish - Semi-Exposed Surfaces: Melamine
   4. Finish - Concealed Surfaces: Manufacturer's option.
   5. Door and Drawer Front Edge Profiles: Square edge.
   6. Casework Construction Type: Type A - Frameless - Flush Overlay.
   7. Grained Face Layout for Cabinet and Door Fronts: Flush panel.
      a. Custom Grade: Doors, drawer fronts and false fronts wood grain to run and match vertically within each cabinet unit.
   8. Adjustable Shelf Loading: 40 psf.
   9. Cabinet Style: Flush overlay.
   10. Drawer Side Construction: Multiple-dovetailed.
   11. Drawer Construction Technique: Baltic Birch with Dovetail joints.
   12. Shelves to be 1" min thickness typical including upper cabinet bottoms.

2.02 LAMINATE MATERIALS

A. High Pressure Decorative Laminate (HPDL): NEMA LD 3, types as recommended for specific applications.

B. Provide specific types as indicated.
   1. Horizontal Surfaces for counter tops: HGS, 0.048 inch nominal thickness, through color, see plans fo
   2. Vertical Surfaces: VGS, 0.028 inch nominal thickness, through color, see plans for color and finish.
   3. Post-Formed Horizontal Surfaces: HGP, 0.039 inch nominal thickness.
   4. Cabinet Liner: CLS, 0.020 inch nominal thickness.
   5. Colors: Up to seven (7) colors of plastic laminate may be selected by Architect from Manufacturer's standard and premium colors.

2.03 COUNTERTOPS

A. Plastic Laminate Countertops: Medium density fiberboard substrate covered with HPDL, post-formed, with bullnose edge. color as selected by architect

2.04 ACCESSORIES

A. Adhesive: Type recommended by fabricator to suit application.

B. Bolts, Nuts, Washers, Lags, Pins, and Screws: Of size and type to suit application; galvanized or chrome-plated finish in concealed locations and stainless steel or chrome-plated finish in exposed locations.

C. Grommets: Standard plastic grommets for cut-outs, in color as selected by architect.
   1. Provide 5 per work station at reception desks and countertops with knee space below. Locate per owner requirements.

D. Knee braces: as provided by Section 05 5000

2.05 HARDWARE

A. Hardware: BHMA A156.9, types as indicated for quality grade specified.

B. Adjustable Shelf Supports: Standard side-mounted system using multiple holes for pin supports 32 mm @ 1 inch centers.

C. Drawer and Door Pulls: back mounted.

D. Cabinet Locks: Manufacturer's standard ANSI/BHMA, Grade 1, (5) pin-tumbler deadbolt type locks. All cabinet doors and drawers shall be locked unless noted otherwise on drawings.
   1. Small pin-tumbler or interchangeable core deadbolt style with heavy duty deadbolt.
      a. Disc-tumbler type locks will not be not accepted.
      b. Cam locks will not be not accepted.
   2. Base Products:
      a. Door locks ANSI number E07121.
         1) Product Standard: Olympus 100DR.
      b. Door locks ANSI number E07041.
         1) Product Standard: Olympus 200DW.
   3. Finish: Satin Chrome.
   4. Keying: Coordinated keying with the District.
      a. Direct any questions to: Travis Lindsley, phone: (385) 309-7843, email: trlindsey@wsd.net
      b. Key locks within each room alike - Refer to Key Schedule.
      c. Key rooms differently from each other.
      d. Master key all locks, furnish (6) mater keys to owner.
      e. Master key system must accommodate a minimum of 2,000 key changes.

E. Catches: Magnetic.

F. Drawer Slides:
   1. Type: Full extension.
   2. Static Load Capacity: Pencil drawers 45 lbf, Box drawers 100 lbf and, File drawers 200 lbf.
   3. Mounting: Side mounted.

G. Hinges: European style concealed self-closing type, 170 degree snap on type, steel with satin finish.

2.06 FABRICATION

A. Assembly: Shop assemble cabinets for delivery to site in units easily handled and to permit passage through building openings.

B. Edging: Fit shelves, doors, and exposed edges with specified edging. Do not use more than one piece for any single length.

C. Provide cutouts for plumbing fixtures. Verify locations of cutouts from on-site dimensions. Prime paint cut edges.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install work in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS) requirements for grade indicated.

B. Set and secure custom cabinets in place, assuring that they are rigid, plumb, and level.

3.02 ADJUSTING

A. Adjust moving or operating parts to function smoothly and correctly.

END OF SECTION

DIVISION 07 - THERMAL AND MOISTURE PROTECTION

SECTION 072100
THERMAL INSULATION

PART 1 GENERAL

1.01 SUBMITTALS

A. Product Data: Provide data on product characteristics, performance criteria, and product limitations.

PART 2 PRODUCTS

2.01 MINERAL FIBER BLANKET INSULATION MATERIALS

A. Flexible Glass Fiber Blanket Thermal Insulation: Preformed insulation, complying with ASTM C665; friction fit.
   1. Flame Spread Index: 75 or less, when tested in accordance with ASTM E84.
   2. Smoke Developed Index: 450 or less, when tested in accordance with ASTM E84.
   3. Combustibility: Non-combustible, when tested in accordance with ASTM E136, except for facing, if any.

PART 3 EXECUTION

3.01 BATT INSTALLATION

A. Install insulation in accordance with manufacturer's instructions.

B. Install in exterior wall and roof spaces without gaps or voids. Do not compress insulation.

END OF SECTION

SECTION 079200
JOINT SEALANTS

PART 1 GENERAL

1.01 SUBMITTALS

A. Product Data: Submit manufacturer's technical datasheets for each product to be used; include the following:
   1. Physical characteristics, including movement capability, VOC content, hardness, cure time, and color availability.
   2. List of backing materials approved for use with the specific product.
   3. Substrates that product is known to satisfactorily adhere to and with which it is compatible.
   4. Substrates the product should not be used on.

B. Color Cards for Selection: Where sealant color is not specified, submit manufacturer's color cards showing standard colors available for selection.
   1. Colors shall match adjacent materials.

PART 2 PRODUCTS

2.01 JOINT SEALANT APPLICATIONS

A. Scope:
   1. Exterior Joints: Seal open joints, whether or not the joint is indicated on drawings, unless specifically indicated not to be sealed. Exterior joints to be sealed include, but are not limited to, the following items.
      a. Wall expansion and control joints.
      b. Joints between door, window, and other frames and adjacent construction.
      c. Joints between different exposed materials.
      d. Openings below ledge angles in masonry.
      e. Other joints indicated below.
      f. Colors shall match the adjacent materials.
   2. Interior Joints: Do not seal interior joints unless specifically indicated to be sealed. Interior joints to be sealed include, but are not limited to, the following items.
      a. Joints between door, window, and other frames and adjacent construction.
      b. Other joints indicated below.
      c. Colors shall match the adjacent materials.
   3. Do Not Seal:
      a. Intentional weep holes in masonry.

2.02 JOINT SEALANTS - GENERAL

A. Colors: Match the adjacent materials.

2.03 ACCESSORIES

A. Backing Tape: Self-adhesive polyethylene tape with surface that sealant will not adhere to and recommended by tape and sealant manufacturers for specific application.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install this work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.

B. Provide joint sealant installations complying with ASTM C1193.

C. Install bond breaker backing tape where backer rod cannot be used.

D. Install sealant free of air pockets, foreign embedded matter, ridges, and sags, and without getting sealant on adjacent surfaces.

E. Nonsag Sealants: Tool surface concave, unless otherwise indicated; remove masking tape immediately after tooling sealant surface.

END OF SECTION

DIVISION 08 - OPENINGS

SECTION 081113
HOLLOW METAL DOORS AND FRAMES

PART 1 GENERAL

1.01 SUBMITTALS

A. Product Data: Materials and details of design and construction, hardware locations, reinforcement type and locations, anchorage and fastening methods, and finishes.

B. Shop Drawings: Details of each opening, showing elevations, glazing, frame profiles, and any indicated finish requirements.

1.02 DELIVERY, STORAGE, AND HANDLING

A. Comply with NAAMM HMMA 840 or ANSI/SDI A250.8 (SDI-100) in accordance with specified requirements.

PART 2 PRODUCTS

2.01 PERFORMANCE REQUIREMENTS

A. Requirements for Hollow Metal Doors and Frames:
   1. Steel Sheet: Comply with one or more of the following requirements; galvannealed steel complying with ASTM A653/A653M, cold-rolled steel complying with ASTM A1008/A1008M, or hot-rolled pickled and oiled (HRPO) steel complying with ASTM A1011/A1011M, commercial steel (CS) Type B, for each.
   2. Accessibility: Comply with ICC A117.1 and ADA Standards.
   3. Exterior Door Top Closures: Flush end closure channel, with top and door faces aligned.
   4. Door Edge Profile: Manufacturers standard for application indicated.
   5. Typical Door Face Sheets: Flush.
   6. Glazed Lights: Non-removable stops on non-secure side; sizes and configurations as indicated on drawings. Style: Manufacturer's standard.
   7. Hardware Preparations, Selections and Locations: Comply with NAAMM HMMA 830 and NAAMM HMMA 831 or BHMA A156.115 and ANSI/SDI A250.8 (SDI-100) in accordance with specified requirements.
   8. Zinc Coating for Typical Interior and/or Exterior Locations: Provide metal components zinc-coated (galvanized) and/or zinc-iron alloy-coated (galvannealed) by the hot-dip process in accordance with ASTM A653/A653M, with manufacturer's standard coating thickness, unless noted otherwise for specific hollow metal doors and frames.
      a. Based on SDI Standards: Provide at least A40/ZF120 (galvannealed) when necessary, coating not required for typical interior door applications, and at least A60/ZF180 (galvannealed) for corrosive locations.

B. Combined Requirements: If a particular door and frame unit is indicated to comply with more than one type of requirement, comply with the specified requirements for each type; for instance, an exterior door that is also indicated as being sound-rated must comply with the requirements specified for exterior doors and for sound-rated doors; where two requirements conflict, comply with the most stringent.

DESIGN WEST
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MT. LOGAN MIDDLE SCHOOL
MAIN OFFICE AND SECURE VESTIBULE REMODEL
875 N 200 E, LOGAN, UT 84321
LOGAN CITY SCHOOL DISTRICT

CONSTRUCTION DOCUMENTS

MARK:	DESCRIPTION:	DATE:

PROJECT #: 125070
DRAWN BY: KL
CHECKED BY: MR
ISSUED: 04.13.2026

STATE OF UTAH
STEPHEN A. WILLIAMS
12/19/2024
8842026-0301
LICENSED ARCHITECT

SPECIFICATIONS
G-003

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2.02 HOLLOW METAL DOORS

A. Exterior Doors: Thermally insulated.
1. Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).
   a. Level 2 - Heavy-duty.
   b. Physical Performance Level C, 250,000 cycles; in accordance with ANSI/SDI A250.4.
   c. Model 1 - Full Flush.
   d. Door Face Metal Thickness: 20 gauge, 0.032 inch, minimum.
   e. Zinc Coating: A60/ZF180 galvannealed coating; ASTM A653/A653M.
2. Door Core Material: Vertical steel stiffeners with fiberglass batts.
3. Door Thermal Resistance: R-value to meet or exceed requirements listed on drawings.
4. Door Thickness: 1-3/4 inches, nominal.
5. Weatherstripping: Refer to Section 087100.
6. Door Finish: Factory primed and field finished.

B. Interior Doors, Non-Fire Rated:
1. Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).
   a. Level 2 - Heavy-duty.
   b. Physical Performance Level C, 250,000 cycles; in accordance with ANSI/SDI A250.4.
   c. Model 1 - Full Flush.
   d. Door Face Metal Thickness: 20 gauge, 0.032 inch, minimum.
   e. Zinc Coating: A60/ZF180 galvannealed coating; ASTM A653/A653M.
2. Door Thickness: 1-3/4 inches, nominal.
3. Door Finish: Factory primed and field finished.

2.03 HOLLOW METAL FRAMES

A. Comply with standards and/or custom guidelines as indicated for corresponding door in accordance with applicable door frame requirements.

B. Frame Finish: Factory primed and field finished.

C. Exterior Door Frames: Full profile/continuously welded type.
1. Galvanizing: Components hot-dipped zinc-iron alloy-coated (galvannealed) in accordance with ASTM A653/A653M, with A40/ZF120 coating.
2. Frame Metal Thickness: 18 gauge, 0.042 inch, minimum.

D. Interior Door Frames, Non-Fire Rated: Full profile/continuously welded type.
1. Frame Metal Thickness: 18 gauge, 0.042 inch, minimum.

E. Provide mortar guard boxes for hardware cut-outs in frames to be installed in masonry or to be grouted.

F. Frames in Masonry Walls: Size to suit masonry coursing with head member 4 inches high to fill opening without cutting masonry units.

2.04 FINISHES

A. Primer: Rust-inhibiting, complying with ANSI/SDI A250.10, door manufacturer's standard.

B. Bituminous Coating: Cold-applied asphalt mastic, compounded for 15 mil, 0.015 inch dry film thickness (DFT) per coat; provide inert-type noncorrosive compound free of asbestos fibers, sulfur components, and other deleterious impurities.

2.05 ACCESSORIES

A. Grout for Frames: Mortar grout complying with ASTM C476 with maximum slump of 4 inches as measured in accordance with ASTM C143/C143M for hand troweling in place; plaster grout and thinner pumpable grout are prohibited.

B. Silencers: Resilient rubber, fitted into drilled hole; provide three on strike side of single door, three on center mullion of pairs, and two on head of pairs without center mullions.

C. Temporary Frame Spreaders: Provide for factory- or shop-assembled frames.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install doors and frames in accordance with manufacturer's instructions and related requirements of specified door and frame standards or custom guidelines indicated.

B. Coordinate frame anchor placement with wall construction.

END OF SECTION

SECTION 083313
COILING COUNTER DOORS

PART 1 GENERAL

1.01 SUBMITTALS

A. Product Data: Submit manufacturer's standard literature showing materials and details of construction and finish. Include data on electrical operation.

B. Shop Drawings: Indicate rough and actual opening dimensions, anchorage methods, hardware locations, and installation details.

1.02 WARRANTY

A. Manufacturer Warranty: Provide 2-year manufacturer warranty for counterbalance shaft assembly. Complete forms in Owner's name and register with manufacturer.

PART 2 PRODUCTS

2.01 COILING COUNTER DOORS

A. Coiling Counter Metal Doors, Fire-Rated: Stainless steel slat curtain.
1. Mounting: Between jambs, within prepared opening.
2. Fire Rating: 1-1/2 hours; comply with NFPA 80.
3. Nominal Slat Size: 1-1/4 inches wide.
4. Slat Profile: Flat.
5. Finish, Stainless Steel: No. 4 - Brushed.
6. Guides: Formed track; same material and finish unless otherwise indicated.

2.02 COMPONENTS

A. Metal Curtain Construction: Interlocking, single-thickness slats.

B. Guide Construction: Continuous, of profile to retain door in place, with mounting brackets of same metal.
1. Stainless Steel Guides: ASTM A666, Type 304, rollable temper.

C. Lock Hardware:
1. Latching Mechanism: Inside mounted, adjustable keeper, spring activated latch bar feature to keep in locked or retracted position.
2. Manual Chain Lift: Provide padlockable chain keeper on guide.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install units in accordance with manufacturer's instructions.

B. Install fire-rated doors in accordance with NFPA 80.

END OF SECTION

SECTION 084313
ALUMINUM-FRAMED STOREFRONTS

PART 1 GENERAL

1.01 SUBMITTALS

A. Product Data: Provide component dimensions, describe components within assembly, anchorage and fasteners, glass and infill, door hardware, and internal drainage details.

B. Shop Drawings: Indicate system dimensions, framed opening requirements and tolerances, affected related work, expansion and contraction joint location and details, and field welding required.

1.02 WARRANTY

A. Correct defective Work within a five year period after Date of Substantial Completion.

B. Provide five year manufacturer warranty against failure of glass seal on insulating glass units, including interpane dusting or misting. Include provision for replacement of failed units.

C. Provide five year manufacturer warranty against excessive degradation of exterior finish. Include provision for replacement of units with excessive fading, chalking, or flaking.

PART 2 PRODUCTS

2.01 ALUMINUM-FRAMED STOREFRONT (EXTERIOR)

A. Aluminum-Framed Storefront: Factory fabricated, factory finished aluminum framing members with infill, and related flashings, anchorage and attachment devices.
1. Finish: Class I color anodized,
2. Finish Color: As indicated on drawings.
3. Fabrication: Joints and corners flush, hairline, and weatherproof, accurately fitted and secured; prepared to receive anchors and hardware; fasteners and attachments concealed from view; reinforced as required for imposed loads.
4. Construction: Eliminate noises caused by wind and thermal movement, prevent vibration harmonics, and prevent "stack effect" in internal spaces.
5. System Internal Drainage: Drain to the exterior by means of a weep drainage network any water entering joints, condensation occurring in glazing channel, and migrating moisture occurring within system.

B. Performance Requirements
1. Wind Loads: Design and size components to withstand the specified load requirements without damage or permanent set, when tested in accordance with ASTM E330/E330M, using loads 1.5 times the design wind loads and 10 second duration of maximum load.
   a. Member Deflection: Limit member deflection to flexure limit of glass in any direction, with full recovery of glazing materials.
2. Water Penetration Resistance on Manufactured Assembly: No uncontrolled water on interior face, when tested in accordance with ASTM E331 at pressure differential of 8 psf.
3. Air Leakage: 0.06 cfm/sq ft maximum leakage of storefront wall area when tested in accordance with ASTM E283/E283M at 1.57 psf pressure difference.

2.02 COMPONENTS

A. Aluminum Framing Members: Tubular aluminum sections, thermally broken with interior section insulated from exterior, drainage holes and internal weep drainage system.
1. Glazing Stops: Flush.
2. Structurally Reinforced Members: Extruded aluminum with internal reinforcement of structural steel member.

B. Swing Doors: Glazed aluminum.
1. Thickness: 1-3/4 inches.
2. Top Rail: 4 inches wide.
3. Vertical Stiles: 4-1/2 inches wide.
4. Bottom Rail: 10 inches wide.
5. Glazing Stops: Square.
6. Finish: Same as storefront.

2.03 MATERIALS

A. Extruded Aluminum: ASTM B221 (ASTM B221M).

B. Fasteners: Stainless steel.

2.04 HARDWARE

A. For each door, include weatherstripping, sill sweep strip, and threshold.

B. Other Door Hardware: See Section 087100.

C. Weatherstripping: Wool pile, continuous and replaceable; provide on all doors.

D. Sill Sweep Strips: Resilient seal type, retracting, of neoprene; provide on all doors.

E. Threshold: Extruded aluminum, one piece per door opening, ribbed surface; provide on all doors.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install wall system in accordance with manufacturer's instructions.

B. Attach to structure to permit sufficient adjustment to accommodate construction tolerances and other irregularities.

C. Align assembly plumb and level, free of warp or twist. Maintain assembly dimensional tolerances, aligning with adjacent work.

END OF SECTION

SECTION 087100
DOOR HARDWARE

THIS SECTION IS PROVIDED AS AN INDEPENDENT FULL SECTION BY ARCHITECT

END OF SECTION

SECTION 088000
GLAZING

PART 1 GENERAL

1.01 SUBMITTALS

A. Product Data on Insulating Glass Unit, Glazing Unit, Plastic Film, and Spandrel Glazing Types: Provide structural, physical and environmental characteristics, size limitations, special handling and installation requirements.

B. Product Data on Glazing Compounds and Accessories: Provide chemical, functional, and environmental characteristics, limitations, special application requirements, and identify available colors.

1.02 QUALITY ASSURANCE

A. Perform work in accordance with GANA (GM), GANA (SM), IGMA TM-3000, NGA (LGRM), and _____ for glazing installation methods. Maintain one copy on site.

1.03 WARRANTY

A. Insulating Glass Units: Provide a five (5) year manufacturer warranty to include coverage for seal failure, interpane dusting or misting, including providing products to replace failed units.

PART 2 PRODUCTS

2.01 PERFORMANCE REQUIREMENTS - EXTERIOR GLAZING ASSEMBLIES

A. Provide type and thickness of exterior glazing assemblies to support assembly dead loads, and to withstand live loads caused by positive and negative wind pressure acting normal to plane of glass.
1. Design Pressure: Calculated in accordance with ASCE 7.
2. Comply with ASTM E1300 for design load resistance of glass type, thickness, dimensions, and maximum lateral deflection of supported glass.
3. Provide glass edge support system sufficiently stiff to limit the lateral deflection of supported glass edges to less than 1/175 of their lengths under specified design load.
4. Glass thicknesses listed are minimum.

B. Weather-Resistive Barrier Seals: Provide completed assemblies that maintain continuity of building enclosure water-resistive barrier, vapor retarder, and/or air barrier.
1. In conjunction with weather barrier related materials described in other sections, as follows:
2. To maintain a continuous vapor retarder and/or air barrier throughout glazed assembly from glass pane to heel bead of glazing sealant.

C. Thermal and Optical Performance: Provide exterior glazing products with performance properties as indicated. Performance properties are in accordance with manufacturer's published data as determined with the following procedures and/or test methods:
1. Center of Glass U-Value: Comply with NFRC 100 using Lawrence Berkeley National Laboratory (LBNL) WINDOW 7 computer program.
2. Center of Glass Solar Heat Gain Coefficient (SHGC): Comply with NFRC 200 using Lawrence Berkeley National Laboratory (LBNL) WINDOW 7 computer program.
3. Solar Optical Properties: Comply with NFRC 300 test method.

2.02 GLASS MATERIALS

A. Float Glass: Provide float glass based glazing unless otherwise indicated.
1. Annealed Type: ASTM C1036, Type I - Transparent Flat, Class 1 - Clear, Quality - Q3.
2. Kind HS - Heat-Strengthened Type: Complies with ASTM C1048.
3. Fully Tempered Safety Glass: Complies with ANSI Z97.1 or 16 CFR 1201 criteria for safety glazing used in hazardous locations.
4. Thicknesses: As indicated; provide greater thickness as required for exterior glazing wind load design.

2.03 INSULATING GLASS UNITS

A. 1/4 inch clear float; fully tempered where noted on Drawings or required by governing code.

B. Uncoated Clear Float Glass: Where glass as designated below is indicated, provide Type I (transparent glass, flat), Class 1 (clear) glass lites complying with the following:
1. Uncoated Clear Annealed Float Glass: Annealed or Kind HS (heat strengthened), Condition A (uncoated surfaces) where heat strengthening is required to resist thermal stresses induced by differential shading of individual glass lites and to comply with performance requirements.
2. Uncoated Clear Heat-Strengthened Float Glass: Kind HS (heatstrengthened).

C. Uncoated Clear Fully Tempered Float Glass: Kind FT (fully tempered). Provide as required and as indicated.

D. Insulating Glass
1. Type '1' - Solar-Control Low-E Insulating-Glass Units:
2. Where glass of this designation is indicated, provide insulating-glass units complying with the following:
   a. Available Manufacturers: Manufacturers with products that may be incorporated into the Work, include but are not limited to, the following:
      1) PPG Industries.
      2) Guardian.
      3) Viracon.
3. Overall Unit Thickness: 1 inch (25mm).
4. Thickness of Each Lite: 1/4 inch (6mm).
5. Interspace Content: Air.
6. Outdoor Lite: Basis of Design: PPG Solargray with Solarban 70XL
   a. Provide HS (heat strengthened) or FT(fully tempered) glass as indicated on the drawings. If FT (fully tempered) glass is not indicated on the drawings; but is required by the governing code, provide FT (fully tempered) glass.
7. Indoor Lite: Basis of Design: Class 1 (clear) float glass.
8. Low-E Coating: Sputtered on second surface.

2.04 BASIS OF DESIGN - INSULATING GLASS UNITS

A. Basis of Design - Insulating Glass Units: Vision glazing, with low-e coating.
1. Applications: Exterior insulating glass glazing unless otherwise indicated.
2. Coated Glass: Comply with requirements of ASTM C1376 for pyrolytic (hard-coat) or magnetic sputter vapor deposition (soft-coat) type coatings on flat glass; coated vision glass, Kind CV; coated overhead glass, Kind CO; or coated spandrel glass, Kind CS.
3. Spacer Color: Black.
4. Edge Seal:
5. Color: Black.
6. Purge interpane space with dry air, hermetically sealed.
7. Basis of Design - Vitro Architectural Glass (formerly PPG Glass): www.vitroglazings.com/#sle.
8. Outboard Lite: Annealed float glass, 1/4 inch thick, minimum.
   a. Low-E Coating: Vitro Architectural Glass (formerly PPG Glass) Solarban 70 glass on #2 surface.
   b. Glass: Clear.
9. Inboard Lite: Heat-strengthened float glass, 1/4 inch thick.
10. Other Manufacturers: Provide either the product identified as "Basis of Design" or an equivalent product of another acceptable manufacturer.

2.05 GLAZING UNITS

A. Insulated Exterior Vision Glazing:
1. Applications: As scheduled.
2. Glass Type: Annealed float glass.
3. Tint: Gray.
4. Thickness: 1 inch, nominal.

B. Monolithic Interior Vision Glazing:

2.06 GLAZING COMPOUNDS

A. Type GC-2 - Butyl Sealant: Single component; ASTM C920 Grade NS, Class 12-1/2, Uses M and A, Shore A hardness of 10 to 20; black color.

B. Type GC-5 - Silicone Sealant: Single component; neutral curing; capable of water immersion without loss of properties; nonbleeding, nonstaining; ASTM C920 Type S, Grade NS, Class 25, Uses M, A, and G; with cured Shore A hardness range of 15 to 25; color as selected.

2.07 ACCESSORIES

A. Setting Blocks: Silicone, with 80 to 90 Shore A durometer hardness; ASTM C864 Option II. Length of 0.1 inch for each square foot of glazing or minimum 4 inch by width of glazing rabbet space minus 1/16 inch by height to suit glazing method and pane weight and area.

B. Spacer Shims: Neoprene, 50 to 60 Shore A durometer hardness; ASTM C864 Option II. Continuous by one half the height of the glazing stop by thickness to suit application, self adhesive on one face.

C. Glazing Tape, Back Bedding Mastic Type: Preformed, butyl-based, 100 percent solids compound with integral resilient spacer rod applicable to application indicated; 5 to 30 cured Shore A durometer hardness; coiled on release paper; black color.

D. Glazing Splines: Resilient silicone extruded shape to suit glazing channel retaining slot; ASTM C864 Option II; color black.

E. Glazing Clips: Manufacturer's standard type.

PART 3 EXECUTION

3.01 INSTALLATION - DRY GLAZING METHOD (GASKET GLAZING)

A. Place setting blocks at 1/4 points with edge block no more than 6 inch from corners.

B. Rest glazing on setting blocks and push against fixed stop with sufficient pressure on gasket to attain full contact.

C. Install removable stops without displacing glazing gasket; exert pressure for full continuous contact.

3.02 INSTALLATION - WET GLAZING METHOD (SEALANT AND SEALANT)

A. Place setting blocks at 1/4 points and install glazing pane or unit.

B. Install removable stops with glazing centered in space by inserting spacer shims both sides at 24 inch intervals, 1/4 inch below sight line.

C. Fill gaps between glazing and stops with appropriate type sealant to depth of bite on glazing, but not more than 3/8 inch below sight line to ensure full contact with glazing and continue the air and vapor seal.

D. Apply sealant to uniform line, flush with sight line. Tool or wipe sealant surface smooth.

END OF SECTION

SECTION 088800
SPECIAL FUNCTION GLAZING

PART 1 GENERAL

1.01 WARRANTY

A. Laminated Glass: Provide 5-year manufacturer warranty to include coverage for delamination, including providing products to replace failed units.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Basis of Design: Ballisitic Glass & Armor Solutions - School Safe

B. Substitutions: See Section 016000-Product Requirements.

2.02 GLASS MATERIALS

2.03 LAMINATED SECURITY GLAZING UNITS

A. Type SG-1 - Security Glazing: Laminated glass.
1. Applications: Locations as indicated on drawings.
2. Performance Criteria:
   a. Bullet Resistance: Pass ASTM F1233 tests to comply with Class HG1 - Handgun-Low ballistic criteria.
   b. Forced Entry Resistance: Pass ASTM F3561 ASTM F1233 tests to comply with Forced Entry Sequence of Testing, Class 1.2: 1-1/2-inch (4 cm) diameter pipe/sledge, 25 impacts.
3. Glazing Method: As required to meet performance criteria.

PART 3 EXECUTION

3.01 INSTALLATION, GENERAL

A. Install glazing in accordance with written instructions of glass, gaskets, and other glazing material manufacturers, unless more stringent requirements are indicated, including those in glazing referenced standards.

B. Install glazing sealants in accordance with ASTM C1193, GANA (SM), and manufacturer's instructions.

3.02 INSTALLATION - DRY GLAZING METHOD, GASKET GLAZING

A. Place setting blocks at 1/4 points with edge block no more than 6 inches from corners.

B. Rest glazing on setting blocks and push against fixed stop with sufficient pressure on gasket to attain full contact.

C. Install removable stops without displacing glazing gasket; exert pressure for full continuous contact.

3.03 INSTALLATION - WET GLAZING METHOD, SEALANT AND SEALANT

A. Place setting blocks at 1/4 points and install glazing pane or unit.

B. Install removable stops with glazing centered in space by inserting spacer shims on both sides at 24-inch intervals, 1/4 inch below sight line.

C. Fill gaps between glazing and stops with sealant to depth of bite on glazing, but not more than 3/8 inch below sight line to ensure full contact with glazing and continue air and vapor seal.

D. Apply sealant to uniform line, flush with sight line. Tool or wipe sealant surface smooth.

3.04 INSTALLATION - WET/DRY GLAZING METHOD, TAPE AND SEALANT

A. Cut glazing tape to length and install against permanent stops, projecting 1/16 inch above sight line.

B. Place setting blocks at 1/4 points with edge block no more than 6 inches from corners.

C. Rest glazing on setting blocks and push against tape to ensure full contact at perimeter of pane or unit.

D. Install removable stops with spacer shims inserted between glazing and applied stops at 24-inch intervals, 1/4 inch below sight line.

E. Fill gaps between pane and applied stop with sealant to depth equal to bite on glazing, to uniform and level line.

F. Carefully trim protruding tape with knife.

3.05 INSTALLATION - BUTT JOINT GLAZING METHOD, SEALANT ONLY

A. Permit sealant to cure, remove foam backer rod, apply sealant to opposite side, and tool smooth to concave profile.

END OF SECTION

DIVISION 09 - FINISHES

SECTION 092116
GYPSUM BOARD ASSEMBLIES

PART 1 GENERAL

1.01 SUBMITTALS

A. Product Data: Provide data on gypsum board, glass mat faced gypsum board, accessories, and joint finishing system.

PART 2 PRODUCTS

2.01 GYPSUM BOARD ASSEMBLIES

A. Provide completed assemblies complying with ASTM C840 and GA-216.

2.02 BOARD MATERIALS

A. Gypsum Wallboard: Paper-faced gypsum panels as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
1. Application: Use for vertical surfaces and ceilings, unless otherwise indicated.
2. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
   a. Mold-resistant board is required whenever board is being installed before the building is enclosed and conditioned.
3. At Assemblies Indicated with Fire-Resistance Rating: Use type required by indicated tested assembly; if no tested assembly is indicated, use Type X board, UL or WH listed.
4. Thickness:
   a. Vertical Surfaces: 5/8 inch.
   b. Ceilings: 5/8 inch.
   c. Multi-Layer Assemblies: Thicknesses as indicated on drawings.

B. Backing Board For Wet Areas: One of the following products:
1. Application: Surfaces behind tile in wet areas, including manufactured housing, tub and shower surrounds, and shower ceilings.
2. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
3. ANSI Cement-Based Board: Non-gypsum-based; aggregated Portland cement panels with glass fiber mesh embedded in front and back surfaces complying with ANSI A118.9 or ASTM C1325.
4. Glass Mat Faced Board: Coated glass mat water-resistant gypsum backing panel as defined in ASTM C1178/C1178M.

C. Ceiling Board: Special sag resistant gypsum ceiling board as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
1. Application: Ceilings, unless otherwise indicated.
2. Thickness: 5/8 inch.
3. Edges: Tapered.

2.03 GYPSUM BOARD ACCESSORIES

A. Acoustic Putty Packs installed at back boxes in sound rated walls and at interior of exterior fured walls. Products by 3M, Hilti, or equivilent.

B. Beads, Joint Accessories, and Other Trim: ASTM C1047, galvanized steel or rolled zinc, unless noted otherwise.
1. Corner Beads: Low profile, for 90 degree outside corners.
2. L-Trim with Tear-Away Strip: Sized to fit 1/2-inch thick gypsum wallboard.
3. Expansion Joints:

C. Joint Materials: ASTM C475/C475M and as recommended by gypsum board manufacturer for project conditions.
1. Paper Tape: 2 inch wide, creased paper tape for joints and corners, except as otherwise indicated.
2. Joint Compound: Drying type, vinyl-based, ready-mixed.

D. Nails for Attachment to Wood Members: ASTM C514.

E. Anchorage to Substrate: Tie wire, nails, screws, and other metal supports, of type and size to suit application; to rigidly secure materials in place.

PART 3 EXECUTION

3.01 FRAMING INSTALLATION

3.02 ACOUSTIC ACCESSORIES INSTALLATION

A. Acoustic Insulation: Place tightly within spaces, around cut openings, behind and around electrical and mechanical items within partitions, and tight to items passing through partitions.

3.03 BOARD INSTALLATION

A. Comply with ASTM C840, GA-216, and manufacturer's instructions. Install to minimize butt end joints, especially in highly visible locations.

B. Single-Layer Nonrated: Install gypsum board in most economical direction, with ends and edges occurring over firm bearing.

C. Double-Layer, Nonrated: Use gypsum board for first layer, placed parallel to framing or furring members, with ends and edges occurring over firm bearing. Use glass mat faced gypsum board at exterior walls and at other locations as indicated. Place second layer perpendicular to framing or furring members. Offset joints of second layer from joints of first layer.

D. Cementitious Backing Board: Install over steel framing members and plywood substrate where indicated, in accordance with ANSI A108.11 and manufacturer's instructions.

E. Installation on Wood Framing: For rated assemblies, comply with requirements of listing authority. For nonrated assemblies, install as follows:

3.04 JOINT TREATMENT

A. Glass Mat Faced Gypsum Board and Exterior Glass Mat Faced Sheathing: Use fiberglass joint tape, embed and finish with setting type joint compound.

B. Finish gypsum board in accordance with levels defined in ASTM C840, as follows:
1. Level 4: Walls and ceilings to receive paint finish or wall coverings, unless otherwise indicated.
2. Level 2: In utility areas, behind cabinetry, and on backing board to receive tile finish.
3. Level 1: Fire-resistance-rated wall areas above finished ceilings, whether or not accessible in the completed construction.

3.05 TEXTURE FINISH

A. Apply finish texture coating by means of spraying apparatus in accordance with manufacturer's instructions.

END OF SECTION

SECTION 095100
ACOUSTICAL CEILINGS

PART 1 GENERAL

1.01 SUBMITTALS

A. Product Data: Provide data on suspension system components and acoustical units.

PART 2 PRODUCTS

2.01 ACOUSTICAL UNITS

A. Acoustical Units - General: ASTM E1264, Class A.
1. VOC Content: As specified in Section 016116.

B. Acoustical Panels:
1. Painted mineral fiber.
2. Size: As indicated on drawings.
3. Thickness: 5/8 inches.
4. Light Reflectance: 87 percent, determined in accordance with ASTM E1264.
5. Edge: Tegular.

C. Surface Color: White.

2.02 SUSPENSION SYSTEMS

A. Metal Suspension Systems - General: Complying with ASTM C635/C635M; die cut and interlocking components, with perimeter moldings, hold-down clips, stabilizer bars, clips, and splices as required.

B. Exposed Steel Suspension System: Formed steel, commercial quality cold rolled; heavy-duty.
1. Profile: Tee; 9/16 inch wide face.
2. Construction: Double web.
3. Finish: White painted.

2.03 ACCESSORIES

A. Support Channels and Hangers: Galvanized steel; size and type to suit application, seismic requirements, and ceiling system flatness requirement specified.

B. Hanger Wire: 12 gauge, 0.08 inch galvanized steel wire.

C. Perimeter Moldings: Same metal and finish as grid.

PART 3 EXECUTION

3.01 PREPARATION

A. Install after major above-ceiling work is complete.

B. Coordinate the location of hangers with other work.

3.02 INSTALLATION - SUSPENSION SYSTEM

A. Install suspension system in accordance with ASTM C636/C636M, ASTM E580/E580M, and manufacturer's instructions, as supplemented in this section.

3.03 INSTALLATION - ACOUSTICAL UNITS

A. Install acoustical units in accordance with manufacturer's instructions.

B. Fit acoustical units in place, free from damaged edges or other defects detrimental to appearance and function.

END OF SECTION

SECTION 095153
DIRECT-APPLIED ACOUSTICAL CEILINGS

PART 1 GENERAL

1.01 SUBMITTALS

A. Product Data: Provide data on acoustic units.

1.02 FIELD CONDITIONS

A. Maintain uniform temperature of minimum 60 degrees F, and maximum humidity of 40 percent prior to, during, and after installation.

PART 2 PRODUCTS

2.01 MATERIALS

A. Acoustic Tile: Mineral fiber, ASTM E1264 Type _____.
1. Joint: Kerfed.
2. Edge: Square.
3. Surface Color: White.
4. Surface Finish: Perforated .

B. Adhesive: Waterproof, gun grade; type recommended by tile manufacturer.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install system in accordance with manufacturer's instructions.

B. Center tile on room axis according to reflected plan.

END OF SECTION

SECTION 096813
TILE CARPETING

PART 1 GENERAL

1.01 SUBMITTALS

A. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
1. See Section 016000 - Product Requirements, for additional provisions.
2. Extra Carpet Tiles: Quantity equal to 5 percent of total installed of each color and pattern installed.

1.02 WARRANTY

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MT. LOGAN MIDDLE SCHOOL
MAIN OFFICE AND SECURE VESTIBULE REMODEL
875 N 200 E, LOGAN, UT 84321
LOGAN CITY SCHOOL DISTRICT

CONSTRUCTION DOCUMENTS

MARK:	DESCRIPTION:	DATE:

PROJECT #: 125070
DRAWN BY: KL
CHECKED BY: MR
ISSUED: 04.13.2026

STATE OF UTAH
STEPHEN M WILLIAMS
12/19/2025
(8636858-5501)
LICENSED ARCHITECT

SPECIFICATIONS
G-004

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A. Special Warranty for Carpet Tiles: Manufacturer agrees to repair or replace components of carpet tile installation that fail in materials or workmanship within specified warranty period.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Tile Carpeting:
1. See drawings and finish schedule for manufacturers and patterns.

2.02 PERFORMANCE REQUIREMENTS - ENTRY (WALK-OFF) CARPET TILE

A. Specifications listed are minimum requirements; products submitted must be of equal or greater quality, as judged by the Architect.
1. Minimum Quality Standard: Performance and construction of carpet shall be equal to or superior to the following:
a. See Finish Schedule on drawings for manufacturer and series.

B. Colors:
1. As indicated on drawings.

C. Pattern: As indicated on drawings.

2.03 MATERIALS

A. Tile Carpeting: Tufted, manufactured in one color dye lot.
1. Basis of Design Product: See drawings and finish schedule for patterns manufactured by see drawings.
2. Color: See Finish Schedule.
3. Pattern: See Finish Schedule.
4. Critical Radiant Flux: Minimum of 0.22 watts/sq cm, when tested in accordance with ASTM E648 or NFPA 253.
5. Surface Flammability Ignition: Pass ASTM D2859 (the "pill test").
6. Maximum Electrostatic Charge: 3 Kv. at 20 percent relative humidity.

2.04 ACCESSORIES

A. Adhesives:
1. Compatible with materials being adhered; maximum VOC content as specified in Section 016116.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that subfloor surfaces are smooth and flat within tolerances specified for that type of work and are ready to receive carpet tile.

B. Cementitious Subfloor Surfaces: Verify that substrates are ready for flooring installation by testing for moisture and alkalinity (pH).

C. Examine carpet tile for type, color, pattern, and potential defects.

D. Concrete Slabs: Verify finishes comply with requirements specified in Section 03 3000 "Cast-in-Place Concrete" and surfaces are free of cracks, ridges, depressions, scale, and foreign deposits.

3.02 PREPARATION

A. Prepare floor substrates as recommended by flooring and adhesive manufacturers.

B. Apply, trowel, and float filler to achieve smooth, flat, hard surface. Prohibit traffic until filler is cured.

C. Use trowelable leveling and patching compounds, according to manufacturer's written instructions, to fill cracks, holes, depressions, and protrusions in substrates. Fill or level cracks, holes and depressions 1/8 inch wide or wider, and protrusions more than 1/32 inch unless more stringent requirements are required by manufacturer's written instructions.

D. Concrete Substrates: Remove coatings, including curing compounds, and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, without using solvents. Use mechanical methods recommended in writing by adhesive and carpet tile manufacturers.

E. Broom and vacuum clean substrates to be covered immediately before installing carpet tile.

3.03 INSTALLATION

A. Starting installation constitutes acceptance of subfloor conditions.

B. Install carpet tile in accordance with manufacturer's instructions.

C. Blend carpet from different cartons to ensure minimal variation in color match.

D. Cut carpet tile clean. Fit carpet tight to intersection with vertical surfaces without gaps.

E. Installation Method: Glue down; install every tile with full-spread, releasable, pressure- sensitive adhesive.

F. Maintain dye-lot integrity. Do not mix dye lots in same area.

G. Cut and fit carpet tile to butt tightly to vertical surfaces, permanent fixtures, and built-in furniture including cabinets, pipes, outlets, edgings, thresholds, and nosings. Bind or seal cut edges as recommended by carpet tile manufacturer.

3.04 CLEANING

A. Perform the following operations immediately after installing carpet tile:
1. Remove excess adhesive and other surface blemishes using cleaner recommended by carpet tile manufacturer.
2. Remove yarns that protrude from carpet tile surface.
3. Vacuum carpet tile using commercial machine with face-beater element.

3.05 PROTECTION

A. Protect installed carpet tile in compliance with CRI 104 "Standard for Installation of Commercial Carpet - September 2015."

B. Protect carpet tile against damage from construction operations and placement of equipment and fixtures during the remainder of construction period. Use protection methods indicated or recommended in writing by carpet tile manufacturer.

END OF SECTION

SECTION 099123
INTERIOR PAINTING

PART 1 GENERAL

1.01 SECTION INCLUDES

1.02 SUBMITTALS

A. Product Data: Provide complete list of products to be used, with the following information for each:
1. Manufacturer's name, product name and/or catalog number, and general product category (e.g. "alkyd enamel").
2. Cross-reference to specified paint system(s) product is to be used in; include description of each system.
3. Manufacturer's installation instructions.

1.03 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified, with minimum three years documented experience.

B. Applicator Qualifications: Company specializing in performing the type of work specified with minimum three years' experience and approved by manufacturer.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.

B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.

C. Paint Materials: Store at minimum ambient temperature of 45 degrees Fahrenheit and a maximum of 90 degrees Fahrenheit, in ventilated area, and as required by manufacturer's instructions.

D. FIELD CONDITIONS
1. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.
2. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.
3. Provide lighting level of 80 ft candles (860 lx) measured mid-height at substrate surface.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Provide paints and finishes from the same manufacturer to the greatest extent possible.
1. In the event that a single manufacturer cannot provide specified products, minor exceptions will be permitted provided approval by Architect is obtained using the specified procedures for substitutions.
a. Basis-of-Design Product: Painting and coating products manufactured by
1) Sherwin-Williams Company: www.protective.sherwin-williams.com/industries/#sle.
b. Paints:
1) Benjamin Moore Paints; benjaminmoore.com.
2) PPG Paints: www.ppgpaints.com

2.02 PAINT SYSTEMS - INTERIOR

A. Paint I-OP - Interior Surfaces to be Painted, Unless Otherwise Indicated: Including gypsum board, concrete, concrete masonry units, brick, wood, plaster, uncoated steel, shop primed steel, galvanized steel and aluminum.
1. Two top coats and one coat primer.
2. Top Coat(s): High Performance Architectural Interior Latex.
3. Top Coat(s): Institutional Low Odor/VOC Interior Latex.
4. Top Coat Sheen:
a. Satin: MPI gloss level 4; use this sheen for items subject to frequent touching by occupants, including door frames and railings.
b. Semi-Gloss: MPI gloss level 5; use this sheen at all locations.

B. Paint I-OP-MD-DT - Medium Duty Door/Trim: For surfaces subject to frequent contact by occupants, including metals and wood:
1. Two top coats and one coat primer.
2. Top Coat(s): High Performance Architectural Interior Latex.
3. Top Coat Sheen:
a. Satin: MPI gloss level 4; use this sheen at all locations.
b. Semi-Gloss: MPI gloss level 5; use this sheen at all locations.

C. Paint I-OP-MD-WC - Medium Duty Vertical and Overhead: Including gypsum board, plaster, concrete, concrete masonry units, uncoated steel, shop primed steel, galvanized steel and aluminum.
1. Two top coats and one coat primer.
2. Top Coat(s): Interior Light Industrial Coating, Water Based.

D. Paint I-OP-DF - Dry Fall: Metals; exposed structure and overhead-mounted services in utilitarian spaces, including shop primed steel deck, structural steel, metal fabrications, galvanized ducts, galvanized conduit, galvanized piping.
1. Shop primer by others.
2. Top Coat: Water Based Dry Fall for Galvanized Steel.

E. Paint I-TR-C - Transparent Finish on Concrete Floors.
1. 2 coats sealer.
2. Sealer: Water Based for Concrete Floors; MPI #99.

2.03 PRIMERS

A. Primers: Provide the following unless other primer is required or recommended by manufacturer of top coats.

2.04 ACCESSORY MATERIALS

A. Accessory Materials: Provide primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of painted surfaces.

B. Patching Material: Latex filler.

C. Fastener Head Cover Material: Latex filler.

PART 3 EXECUTION

3.01 EXAMINATION

A. Do not begin application of paints and finishes until substrates have been properly prepared.

B. Verify that surfaces are ready to receive work as instructed by the product manufacturer.

C. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially effect proper application.

D. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

E. Test shop-applied primer for compatibility with subsequent cover materials.

F. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:
1. Gypsum Wallboard: 12 percent.
2. Plaster and Stucco: 12 percent.
3. Masonry, Concrete, and Concrete Masonry Units: 12 percent.
4. Concrete Floors and Traffic Surfaces: 8 percent.

3.02 PREPARATION

A. Clean surfaces thoroughly and correct defects prior to application.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Remove or repair existing paints or finishes that exhibit surface defects.

D. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces or finishing.

E. Seal surfaces that might cause bleed through or staining of topcoat.

F. Concrete:
1. Remove release agents, curing compounds, efflorescence, and chalk. Do not coat surfaces if moisture content or alkalinity of surfaces to be coated exceeds that permitted in manufacturer's written instructions.
2. Clean concrete according to ASTM D4258. Allow to dry.
3. Prepare surface as recommended by top coat manufacturer and according to SSPC-SP 13.

G. Masonry:
1. Remove efflorescence and chalk. Do not coat surfaces if moisture content or alkalinity of surfaces or if alkalinity of mortar joints exceed that permitted in manufacturer's written instructions. Allow to dry.
2. Prepare surface as recommended by top coat manufacturer.

H. Concrete Floors and Traffic Surfaces: Remove contamination, acid etch, and rinse floors with clear water. Verify required acid-alkali balance is achieved. Allow to dry.

I. Gypsum Board: Fill minor defects with filler compound. Spot prime defects after repair.

J. Galvanized Surfaces:
1. Remove surface contamination and oils and wash with solvent according to SSPC-SP 1.
2. Prepare surface according to SSPC-SP 2.

K. Ferrous Metal:
1. Solvent clean according to SSPC-SP 1.
2. Shop-Primed Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces. Re-prime entire shop-primed item.
3. Remove rust, loose mill scale, and other foreign substances using methods recommended in writing by paint manufacturer and blast cleaning according to SSPC-SP 6 "Commercial Blast Cleaning". Protect from corrosion until coated.

3.03 APPLICATION

A. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.

B. Apply products in accordance with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual".

C. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.

D. Apply each coat to uniform appearance in thicknesses specified by manufacturer.

E. Dark Colors and Deep Clear Colors: Regardless of number of coats specified, apply as many coats as necessary for complete hide.

F. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.

G. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.04 CLEANING

A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

3.05 PROTECTION

A. Protect finishes until completion of project.

B. Touch-up damaged finishes after Substantial Completion.

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MT. LOGAN MIDDLE SCHOOL
MAIN OFFICE AND SECURE VESTIBULE REMODEL
875 N 200 E, LOGAN, UT 84321
LOGAN CITY SCHOOL DISTRICT

MARK:	DESCRIPTION:	DATE:

PROJECT #: 125070
DRAWN BY: KL
CHECKED BY: MR
ISSUED: 04.13.2026

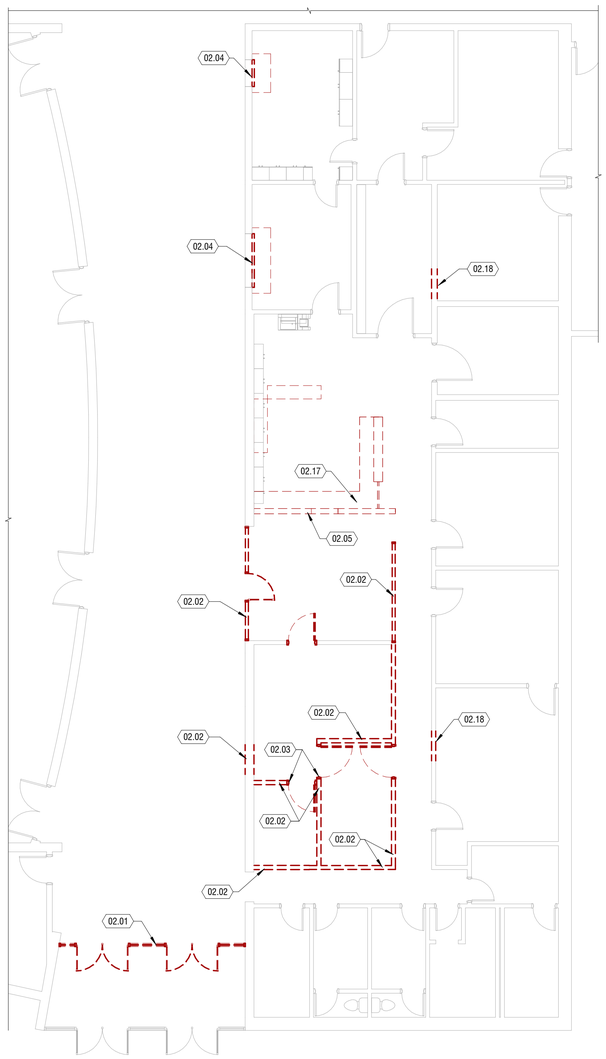
STATE OF UTAH
STEPHEN M WILLIAMS
12/19/2024
LICENSED ARCHITECT

CONSTRUCTION DOCUMENTS

SPECIFICATIONS

G-005

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GENERAL NOTES:

1. THE DEMOLITION DRAWINGS ARE INTENDED TO SHOW THE GENERAL NATURE & SCOPE OF THE WORK REQUIRED. ON-SITE OBSERVATIONS SHOULD BE MADE AND REPORT ANY ABNORMAL CONDITIONS TO ARCHITECT. SOME INCIDENTAL ITEMS REQUIRING REMOVAL MAY NOT BE SPECIFICALLY CALLED OUT. REMOVAL OF ALL ITEMS NECESSARY FOR THE COMPLETION OF WORK IS THE RESPONSIBILITY OF THE CONTRACTOR.

   FIELD VERIFY EXISTING CONDITIONS AND THEIR COMPATIBILITY WITH NEW CONSTRUCTION PRIOR TO THE COMMENCEMENT OF WORK. SEE ARCHITECTURAL, STRUCTURAL, MECHANICAL, ELECTRICAL, PLUMBING DRAWINGS FOR ADDITIONAL DEMOLITION PLANS AND SCOPE. REFER TO SHEET INDEX FOR DEMOLITION DRAWINGS. COORDINATE DISCREPANCIES WITH ARCHITECT PRIOR TO PROCEEDING WITH WORK.

2. KEYNOTES: (#) THE FIRST TWO NUMBERS REPRESENT THE RELATED CSI MASTER FORMAT DIVISION. THE SECOND SET OF NUMBERS REPRESENTS AN IDENTIFYING MARK VALUE. NOT ALL VALUES MAY BE USED OR OCCUR IN THE DOCUMENT SET.

   ADDITIONALLY, KEYNOTES RETAIN THEIR ASSIGNED VALUE UNIVERSALLY THROUGHOUT THE ARCHITECTURAL SET. THE KEYNOTES LISTED BELOW, REPRESENT THE KEYNOTES FOUND AND UTILIZED ON THIS SHEET AND EACH LIST WILL DIFFER RESPECTIVE TO ITS' SHEET. THEREFORE, BASED ON ACTUAL KEYNOTES UTILIZED ON A GIVEN SHEET OF DRAWINGS, GAPS IN THE SEQUENCING WILL OCCUR.

3. ALL INTERIOR DIMENSIONS ARE TO/FROM FACE OF FINISH. ALL EXTERIOR DIMENSIONS ARE TO/FROM FACE OF FINISH MATERIAL OR GRID WHERE SHOWN. CONTRACTOR SHALL COORDINATE EXISTING DIMENSIONS WITH PROPOSED SCOPE AND REPORT DISCREPANCIES WHERE FOUND.

4. PROTECT ALL SURFACES THAT ARE TO REMAIN OR THAT ARE EXPOSED, AND PROVIDE DUST BARRIERS TO PROTECT ADJACENT AREAS FROM DUST AND DEBRIS DURING SELECTIVE DEMOLITION OPERATIONS.

5. PATCH AND REPAIR DAMAGE IN WALLS, CEILINGS, AND FLOORS RESULTING FROM DEMOLITION OF EXISTING ITEMS OR CONSTRUCTION OF NEW ITEMS AND/OR REPLACE WITH NEW TO MATCH EXISTING. CLEAN AND PREPARE TO RECEIVE NEW FINISH. PROVIDE PAINT/FINISH TOUCHUP AT ALL DEMO LOCATIONS. CLEAN WORK AREA OF DUST, DIRT, AND DEBRIS CAUSED BY SELECTIVE DEMOLITION OPERATIONS. RETURN ADJACENT AREAS TO CONDITION EXISTING BEFORE SELECTIVE DEMOLITION OPERATIONS BEGAN.

6. TRANSPORT DEMOLISHED MATERIALS OFF OWNER'S PROPERTY AND LEGALLY DISPOSE OF DEBRIS.

7. IN LOCATIONS WHERE NEW FLOOR FINISHS ARE BEING INSTALLED, EXISTING FLOORING WILL BE DEMOED AND SUB-FLOORING PREPPED TO RECEIVE NEW FINISHES AS INDICATED ON FINISH SCHEDULE.

8. ASBESTOS TESTING AND REMOVAL BY OWNER. ANY ASBESTOS CONTAINING MATERIAL (ACM) OR LEAD-BASED PAINT (LBP) REMOVAL SHALL BE COORDINATED WITH AUTHORITY HAVING JURISDICTION. REMOVAL SHALL BE DONE THROUGH A QUALIFIED ACM AND LBP CONTRACTORS. DIVISION OF AIR QUALITY RULE R307-801-9: THE ASBESTOS PROJECT OPERATOR SHALL ENSURE THAT THE STRUCTURE OR FACILITY TO BE DEMOLISHED OR RENOVATED IS INSPECTED FOR ACM BY AN INSPECTOR CERTIFIED UNDER THE PROVISIONS OF R307-801-6. AN ASBESTOS SURVEY REPORT SHALL BE GENERATED ACCORDING TO THE PROVISIONS OF R307-801-10. THE ASBESTOS PROJECT OPERATOR SHALL MAKE THE ASBESTOS SURVEY REPORT AVAILABLE ON SITE TO ALL PERSONS WHO HAVE ACCESS TO THE SITE FOR THE DURATION OF THE RENOVATION OR DEMOLITION ACTIVITIES.

9. ALL SUSPECT ASBESTOS CONTAINING MATERIALS OR LEAD BASED PAINT NOT IDENTIFIED MUST BE SAMPLED TO DETERMINE CONTENT. IF MATERIALS ARE ENCOUNTERED WHICH HAVE NOT BEEN PREVIOUSLY IDENTIFIED/SAMPLED, STOP WORK AND CONTACT THE AUTHORITY HAVING JURISDICTION.

10. DEMOLISH EXISTING FLOORING WHERE SHOWN, INCLUDING: SETTING BEDS, ADHESIVES AND OTHER VARIANCES IN THE EXISTING FLOOR. PREPARE FLOOR TO RECEIVE NEW FLOORING AS REQUIRED BY CONTRACT DOCUMENTS.

11. ALL OWNER FURNISHINGS AND EQUIPMENT SHALL BE REMOVED BY OWNER. ITEMS IDENTIFIED AS "REMOVED AND STORED" / "TO BE SALVAGED" SHALL BE REMOVED AND STORED IN A SAFE LOCATION PRIOR TO DEMOLITION.

12. WALLS, DOORS, CABINETS, WINDOWS, CEILINGS, ETC. WHERE SHOWN DASHED ARE TO BE REMOVED.

13. REMOVE ALL ABANDONED POWER AND SIGNAL CABLING BACK TO SOURCE AND SAFE OFF.

14. REMOVE GENERAL FINISHES, SIGNAGE, FIXTURES, HARDWARE, ETC. THROUGHOUT AREA OF WORK, U.N.O. EXIT SIGNS ARE TO BE REMOVED AND STORED FOR REINSTALLATION.

15. CONTRACTOR TO PATCH AND REPAIR DAMAGED FIRE PROOFING ON STRUCTURAL AND FIRE RATED ASSEMBLIES. MATCH EXISTING FIRE RATING.

16. REMOVE OR COVER ALL EXISTING PERIMETER WINDOW COVERINGS PRIOR TO COMMENCEMENT OF DEMOLITION. CLEAN AND UNCOVER OR REINSTALL AT COMPLETION OF CONSTRUCTION.

17. ALL EXISTING SPRINKLER / FIRE ALARM WORK SHALL BE SEPARATE SUBMITTAL. CONTRACTOR SHALL PROVIDE FINAL DESIGN AND PERMITTING.

18. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER'S REPRESENTATIVE TO DETERMINE IF ANY PARTS OR EQUIPMENT ARE DESIRED TO BE KEPT BY THE OWNER. THE OWNER SHALL HAVE THE RIGHT OF FIRST REFUSAL. ANY ITEM NOT WISHED TO BE RETAINED, SHALL BE DISPOSED OF AT THE RESPONSIBILITY OF THE CONTRACTOR.

KEYNOTES

(#)

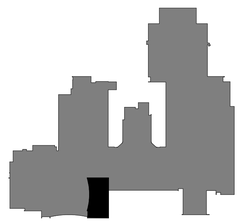
MARK	DESCRIPTION
02.01	EXISTING STOREFRONT TO BE REMOVED
02.02	EXISTING WALL TO BE REMOVED
02.03	EXISTING DOOR TO BE REMOVED
02.04	EXISTING ROLLUP WINDOW TO BE REMOVED
02.05	EXISTING DESK TO BE REMOVED
02.17	EXISTING CASEWORK TO BE REMOVED
02.18	DEMOLISH PORTION OF WALL IN PREPERATION FOR NEW DOOR. SEE FLOOR PLANS AND DOOR SCHEDULES FOR LOCATION AND EXTENT OF DEMOLITION

LEGEND

EXISTING TO REMAIN

TO BE DEMOLISHED

KEY PLAN



A1 PLAN - DEMOLITION

1/8" = 1'-0" @MAIN OFFICE

NORTH

CONSTRUCTION DOCUMENTS

DESIGN WEST

LOGAN, UTAH
(435) 752-7031

SALT LAKE CITY, UTAH
(801) 539-8221

MT. LOGAN MIDDLE SCHOOL
MAIN OFFICE AND SECURE VESTIBULE REMODEL
875 N 200 E, LOGAN, UT 84321

LOGAN CITY SCHOOL DISTRICT

MARK: DESCRIPTION: DATE:

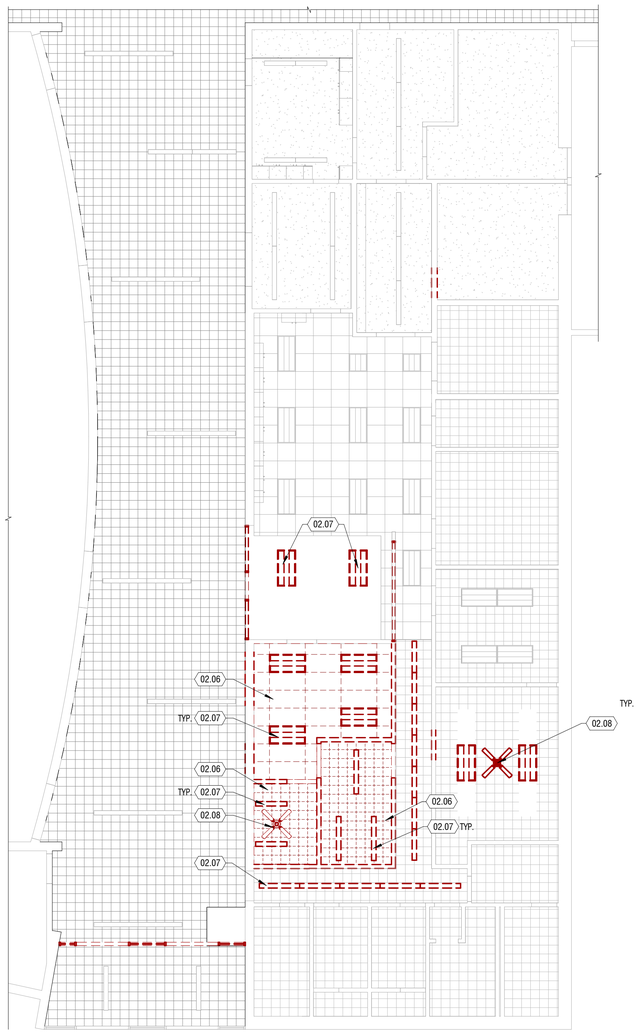
PROJECT #: 125070
DRAWN BY: CF
CHECKED BY: MR
ISSUED: 04.13.2026

STATE OF UTAH
STEPHEN M WILLIAMS
(8642808-0301)
2/13/2026
LICENSED ARCHITECT

PLAN - DEMOLITION - MAIN OFFICE

AD-101

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GENERAL NOTES:

1. THE DEMOLITION DRAWINGS ARE INTENDED TO SHOW THE GENERAL NATURE & SCOPE OF THE WORK REQUIRED. ON-SITE OBSERVATIONS SHOULD BE MADE AND REPORT ANY ABNORMAL CONDITIONS TO ARCHITECT. SOME INCIDENTAL ITEMS REQUIRING REMOVAL MAY NOT BE SPECIFICALLY CALLED OUT. REMOVAL OF ALL ITEMS NECESSARY FOR THE COMPLETION OF WORK IS THE RESPONSIBILITY OF THE CONTRACTOR.

   FIELD VERIFY EXISTING CONDITIONS AND THEIR COMPATIBILITY WITH NEW CONSTRUCTION PRIOR TO THE COMMENCEMENT OF WORK. SEE ARCHITECTURAL, STRUCTURAL, MECHANICAL, ELECTRICAL, PLUMBING DRAWINGS FOR ADDITIONAL DEMOLITION PLANS AND SCOPE. REFER TO SHEET INDEX FOR DEMOLITION DRAWINGS. COORDINATE DISCREPANCIES WITH ARCHITECT PRIOR TO PROCEEDING WITH WORK.

2. KEYNOTES: (#) THE FIRST TWO NUMBERS REPRESENT THE RELATED CSI MASTER FORMAT DIVISION. THE SECOND SET OF NUMBERS REPRESENTS AN IDENTIFYING MARK VALUE. NOT ALL VALUES MAY BE USED OR OCCUR IN THE DOCUMENT SET.

   ADDITIONALLY, KEYNOTES RETAIN THEIR ASSIGNED VALUE UNIVERSALLY THROUGHOUT THE ARCHITECTURAL SET. THE KEYNOTES LISTED BELOW, REPRESENT THE KEYNOTES FOUND AND UTILIZED ON THIS SHEET AND EACH LIST WILL DIFFER RESPECTIVE TO ITS' SHEET. THEREFORE, BASED ON ACTUAL KEYNOTES UTILIZED ON A GIVEN SHEET OF DRAWINGS, GAPS IN THE SEQUENCING WILL OCCUR.

3. ALL INTERIOR DIMENSIONS ARE TO/FROM FACE OF FINISH. ALL EXTERIOR DIMENSIONS ARE TO/FROM FACE OF FINISH MATERIAL OR GRID WHERE SHOWN. CONTRACTOR SHALL COORDINATE EXISTING DIMENSIONS WITH PROPOSED SCOPE AND REPORT DISCREPANCIES WHERE FOUND.

4. PROTECT ALL SURFACES THAT ARE TO REMAIN OR THAT ARE EXPOSED, AND PROVIDE DUST BARRIERS TO PROTECT ADJACENT AREAS FROM DUST AND DEBRIS DURING SELECTIVE DEMOLITION OPERATIONS.

5. PATCH AND REPAIR DAMAGE IN WALLS, CEILINGS, AND FLOORS RESULTING FROM DEMOLITION OF EXISTING ITEMS OR CONSTRUCTION OF NEW ITEMS AND/OR REPLACE WITH NEW TO MATCH EXISTING. CLEAN AND PREPARE TO RECEIVE NEW FINISH. PROVIDE PAINT/FINISH TOUCHUP AT ALL DEMO LOCATIONS. CLEAN WORK AREA OF DUST, DIRT, AND DEBRIS CAUSED BY SELECTIVE DEMOLITION OPERATIONS. RETURN ADJACENT AREAS TO CONDITION EXISTING BEFORE SELECTIVE DEMOLITION OPERATIONS BEGAN.

6. TRANSPORT DEMOLISHED MATERIALS OFF OWNER'S PROPERTY AND LEGALLY DISPOSE OF DEBRIS.

7. IN LOCATIONS WHERE NEW FLOOR FINISHS ARE BEING INSTALLED, EXISTING FLOORING WILL BE DEMOED AND SUB-FLOORING PREPPED TO RECEIVE NEW FINISHES AS INDICATED ON FINISH SCHEDULE.

8. ASBESTOS TESTING AND REMOVAL BY OWNER. ANY ASBESTOS CONTAINING MATERIAL (ACM) OR LEAD-BASED PAINT (LBP) REMOVAL SHALL BE COORDINATED WITH AUTHORITY HAVING JURISDICTION. REMOVAL SHALL BE DONE THROUGH A QUALIFIED ACM AND LBP CONTRACTORS. DIVISION OF AIR QUALITY RULE R307-801-9: THE ASBESTOS PROJECT OPERATOR SHALL ENSURE THAT THE STRUCTURE OR FACILITY TO BE DEMOLISHED OR RENOVATED IS INSPECTED FOR ACM BY AN INSPECTOR CERTIFIED UNDER THE PROVISIONS OF R307-801-6. AN ASBESTOS SURVEY REPORT SHALL BE GENERATED ACCORDING TO THE PROVISIONS OF R307-801-10. THE ASBESTOS PROJECT OPERATOR SHALL MAKE THE ASBESTOS SURVEY REPORT AVAILABLE ON SITE TO ALL PERSONS WHO HAVE ACCESS TO THE SITE FOR THE DURATION OF THE RENOVATION OR DEMOLITION ACTIVITIES.

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KEYNOTES

(#)

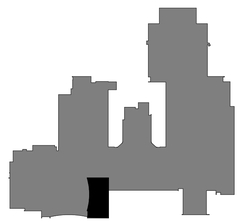
MARK	DESCRIPTION
02.06	EXISTING CEILING SYSTEM TO BE REMOVED
02.07	EXISTING LIGHT FIXTURE TO BE REMOVED
02.08	EXISTING CEILING FAN TO BE REMOVED AND DISCARDED

LEGEND

EXISTING TO REMAIN

TO BE DEMOLISHED

KEY PLAN



A1 PLAN - REFLECTED CEILING - DEMOLITION

1/8" = 1'-0" @CLASSROOMS

NORTH

CONSTRUCTION DOCUMENTS

DESIGN WEST

LOGAN, UTAH
(435) 752-7031

SALT LAKE CITY, UTAH
(801) 539-8221

MT. LOGAN MIDDLE SCHOOL
MAIN OFFICE AND SECURE VESTIBULE REMODEL
875 N 200 E, LOGAN, UT 84321

LOGAN CITY SCHOOL DISTRICT

MARK:	DESCRIPTION:	DATE:

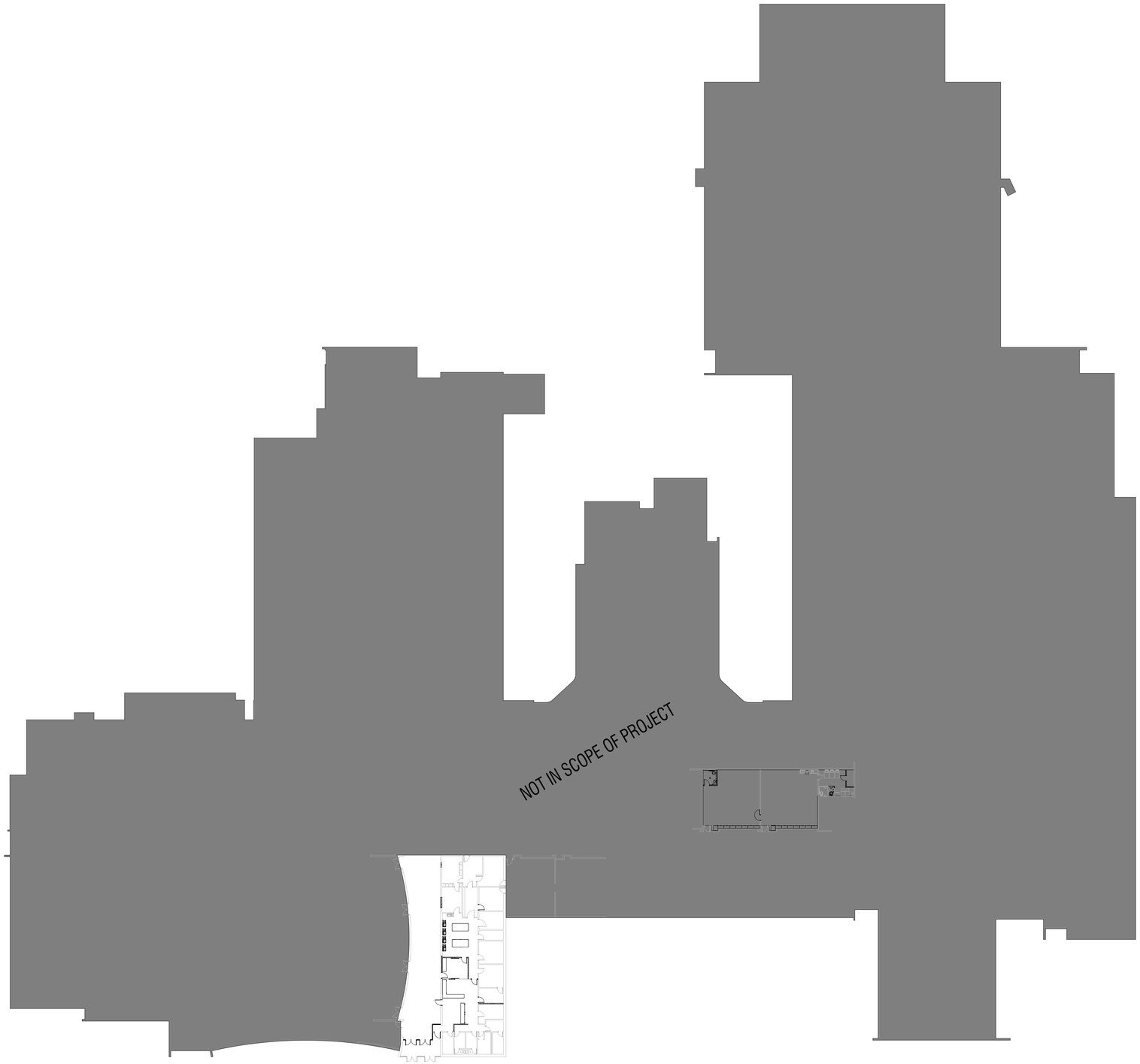
PROJECT #: 125070
DRAWN BY: CF
CHECKED BY: MR
ISSUED: 04.13.2026

STATE OF UTAH
STEPHEN M WILLIAMS
12/8/2026
8842808-0301
LICENSED ARCHITECT

PLAN - DEMOLITION - REFLECTED CEILINGS - MAIN OFFICE

AD-103

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A1 PLAN - OVERALL

1" = 30'-0" LEVEL 01

NORTH

CONSTRUCTION DOCUMENTS

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(801) 539-8221

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875 N 200 E, LOGAN, UT 84321

LOGAN CITY SCHOOL DISTRICT

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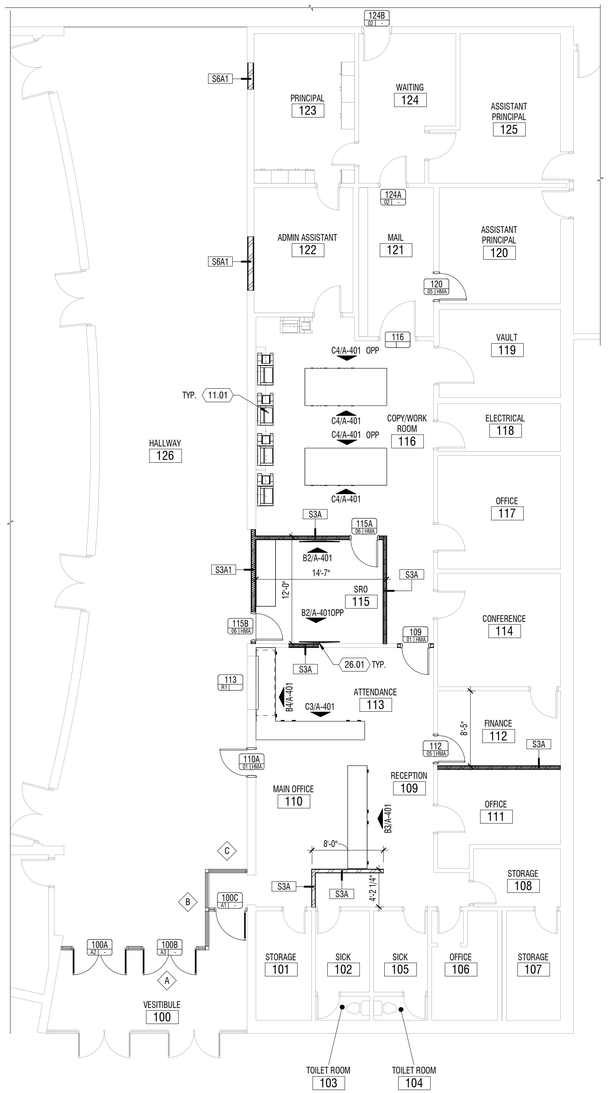
PROJECT #: 125070
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ISSUED: 04.13.2026

STATE OF UTAH
STEPHEN N WILLIAMS
2/18/2026
9842808-0301
LICENSED ARCHITECT

PLAN - OVERALL

A-100

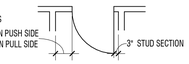
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GENERAL NOTES

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2. CONTRACTOR SHALL BE FAMILIARIZED WITH THE LAY-OUT OF STRUCTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS. ANY QUESTIONS SHALL BE SUBMITTED VIA REQUEST FOR INFORMATION (RFI).
3. MIN CLEARANCE REQUIRED ON LATCH SIDE OF DOORS SHALL CONFORM TO ADA REQUIREMENTS

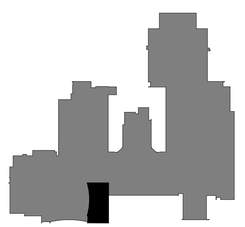


4. HINGE SIDE OF DOORS AT PERPENDICULAR WALLS TO HAVE 3" STUD SECTION U.N.O.
5. ALIGN FURRED WALLS AND STUD WALL FINISH FACE TYPICAL U.N.O.
6. ADA RESTROOMS MUST COMPLY WITH ADA WATER CLOSET MEASUREMENTS ON SHEET A-501
7. DOOR AND WINDOWS OPENINGS ARE INDICATED WITH ANNOTATION SYSMBOLS AND ARE FURTHER IDENTIFIED ON DOOR AND WINDOW SCHEDULES. SEE BOTH FLOOR PLANS AND EXTERIOR ELEVATIONS FOR ALL REFERENCES.
8. PROVIDE CONTINUOUS WOOD BLOCKING OR METAL STRAPPING FOR ANY WALL MOUNTED OR SUPPORTED ITEMS. PROVIDE FIRE RATED BLOCKING FOR ANY FIRE RATED PARTITIONS PER A-503
9. WALL TYPES SHOWN AS ═══ WWW ARE SHOWN ON SHEET A-601. FOR EXTERIOR WALLS SEE BUILDING & WALL SECTIONS. FOR STANDARD STEEL STUD DETAILS SEE A-503.
10. EXTEND ALL WALLS SURROUNDING AN OPEN CEILING AREA TO DECK.
11. BLOCKING TO BE PROVIDED AT SHELVING, CASEWORK, RAILINGS, LIGHT FIXTURE, COUNTERTOP, ACCESSORIES AND MORE PER A-503, TYP

KEYNOTES

MARK	DESCRIPTION
11.01	COPY EQUIPMENT - OWNER FURNISHED, OWNER INSTALLED
26.01	WALL MOUNTED DISPLAY - OWNER FURNISHED, CONTRACTOR INSTALLED.

KEY PLAN



A1 PLAN - MAIN OFFICE

1/8" = 1'-0"

NORTH

CONSTRUCTION DOCUMENTS

DESIGN WEST
LOGAN, UTAH
(435) 752-7031
SALT LAKE CITY, UTAH
(801) 539-8221

MT. LOGAN MIDDLE SCHOOL
MAIN OFFICE AND SECURE VESTIBULE REMODEL
875 N 200 E, LOGAN, UT 84321
LOGAN CITY SCHOOL DISTRICT

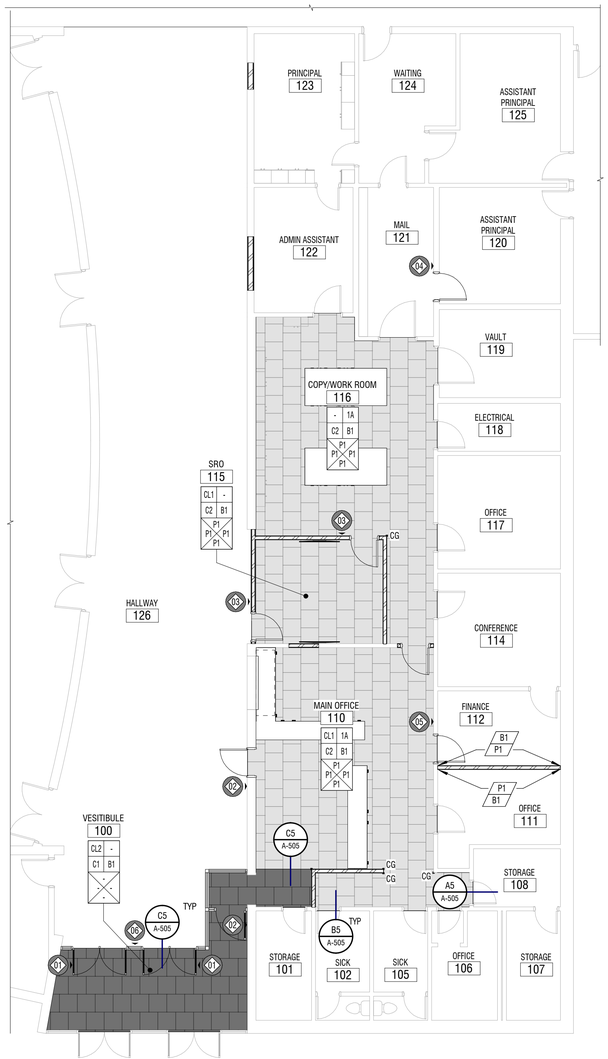
MARK: DATE: DESCRIPTION:

PROJECT #: 125070
DRAWN BY: CF
CHECKED BY: MR
ISSUED: 04.13.2026

STATE OF UTAH
STEPHEN N WILLIAMS
2/18/2026
9842808-0301
LICENSED ARCHITECT

PLAN - MAIN OFFICE
A-101

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GENERAL NOTES

1. ROOM FINISH TAGS FOR EACH ROOM REPRESENT TYPICAL FINISHES. SPECIFIC WALLS IN SELECTED AREAS MAY HAVE MULTIPLE FINISHES WHICH WILL BE INDICATED IN INTERIOR ELEVATIONS.
2. FIELD VERIFY ALL DIMENSIONS PRIOR TO FABRICATION OF CASEWORK AND FINISH ASSEMBLIES
3. SEE INTERIOR ELEVATIONS FOR ADDITIONAL FINISH INFORMATION
4. SEE REFLECTED CEILING PLANS FOR ADDITIONAL FINISH INFORMATION
5. FOR FINISH SCHEDULE SEE SHEET A-691
6. FLOOR MATERIAL TRANSITIONS WILL OCCUR BELOW DOORS. U.N.O.
7. FOR TYPICAL TRANSITION/FINISH DETAILS SEE SHEET A-505
8. TILED WALLS TO BE FULL HEIGHT OF WALL, U.N.O.
10. POLISHED OR SEALED CONCRETE DOES EXTEND UNDER CASEWORK OR MILLWORK
11. FLOOR COVERING DOES NOT EXTEND UNDER MILLWORK OR CASEWORK, U.N.O.

KEYNOTES

MARK	DESCRIPTION

LEGEND

CEILING / MILLWORK
FLOOR / BASE
WALL / WALL
WALL / WALL

ROOM FINISH TAG
* = SEE ELEVATIONS FOR FINISH SELECTIONS
- = NO FINISH APPLIED

C1 — FINISH TAG - INDICATES SPECIFIC APPLIED FINISH

C1 — INDICATES FINISH IS APPLIED TO AREA BETWEEN ARROWS

C1 — INDICATES FINISH IS APPLIED TO FACE OF SURFACE(S)

01 — INDICATES SIGNAGE LOCATION

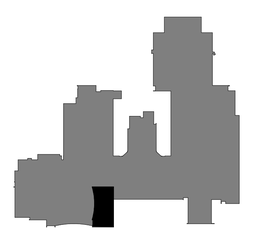
CG — INDICATES CORNER GUARD, SEE MISC. SECTION ON FINISH SCHEDULE FOR SELECTION INFORMATION

FLOORING LEGEND

CARPET - C1

CARPET - C2

KEY PLAN



CONSTRUCTION DOCUMENTS

NORTH

A1 PLAN - MAIN OFFICE - FINISH
1/8" = 1'-0"

DESIGN WEST
LOGAN, UTAH
(435) 752-7031
SALT LAKE CITY, UTAH
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MT. LOGAN MIDDLE SCHOOL
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LOGAN CITY SCHOOL DISTRICT

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STATE OF UTAH
STEPHEN M WILLIAMS
12/19/2025
6842808-0301
LICENSED ARCHITECT

PLAN - FINISH - MAIN OFFICE
A-102

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GENERAL NOTES

1. KEYNOTES: (#) THE FIRST TWO NUMBERS REPRESENT THE RELATED CSI MASTER FORMAT DIVISION. THE SECOND SET OF NUMBERS REPRESENTS AN IDENTIFYING MARK VALUE. NOT ALL VALUES MAY BE USED OR OCCUR IN THE DOCUMENT SET.

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2. CONTRACTOR SHALL COORDINATE LAY-OUT OF STRUCTURAL, MECHANICAL, SPRINKLER AND ELECTRICAL. NOTIFY ARCHITECT OF ANY CONFLICTS.
3. ALL INTERIOR DIMENSIONS ARE TO/FROM FACE OF STUD / MASONRY. ALL EXTERIOR DIMENSIONS ARE TO/FROM FACE OF GRID/FOUNDATION. DIMENSIONS MARKED 'CLEAR' OR 'CLR' ARE FROM FACE OF FINISH TO FACE OF FINISH AND SHALL BE MAINTAINED AND CANNOT BE FIELD ADJUSTED WITHOUT PRIOR APPROVAL OF THE ARCHITECT.
4. SEE A-601 LEGEND FOR FINISH LEGEND
5. CEILING HEIGHT IS B.O. FINISHED CEILING HEIGHT ABOVE FINISHED FLOOR
6. MEASUREMENTS SPECIFYING "EQ" = EQUAL LENGTH OR WIDTH TO FILL REMAINDER OF LENGTH REQUIRED
7. LIGHT FIXTURES WITH NO DIMENSIONS ARE TO BE CENTERED ON ROOM UNLESS OTHERWISE NOTED
8. ROLLER SHADES PER FINISH PLANS, COORDINATE MANUAL AND POWER LOCATIONS WITH THE ELECTRICAL AND FINISH PLANS.
9. CEILINGS WITH NO DIRECT MEASUREMENTS, ASSUME CEILING TO BE EQUALLY DISTANCED ON ALL SIDES OF ROOM
10. FIXTURES IN OPEN TO STRUCTURE AREAS ARE DIMENSIONED FROM WALL OR CENTERLINE OF ROOM
11. LIGHT FIXTURES WITH NO DIMENSIONS ARE TO BE CENTERED ON ROOM UNLESS OTHERWISE NOTED
12. FIXTURES ON GRID SHALL BE IN LINE WITH GRID CENTER ON CENTER UNLESS OTHERWISE NOTED

MATERIALS

2'-0" x 2'-0" SUSPENDED ACOUSTICAL LAY-IN CEILING SYSTEM

SYMBOLS

LIGHTING FIXTURES:
2'x2' / 2'x4' TROFFERS

SURFACE MOUNTED FIXTURES

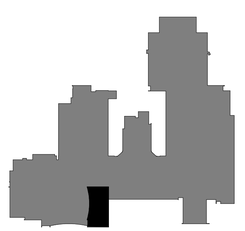
AIR GRILLES/ACCESS PANELS:
EXHAUST

SUPPLY / FRESH

RETURN / RELIEF

ACCESS PANEL

KEY PLAN



A1 — REFLECTED CEILING PLAN - MAIN OFFICE - DEMOLITION

1/8" = 1'-0"

NORTH

CONSTRUCTION DOCUMENTS

DESIGN WEST
LOGAN, UTAH
(435) 752-7031
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MT. LOGAN MIDDLE SCHOOL
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LOGAN CITY SCHOOL DISTRICT

MARK:	DATE:	DESCRIPTION:

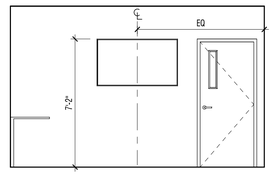
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ISSUED: 04.13.2026

STATE OF UTAH
STEPHEN M WILLIAMS
12/18/2026
8842808-0301
LICENSED ARCHITECT

PLAN - REFLECTED CEILINGS - MAIN OFFICE

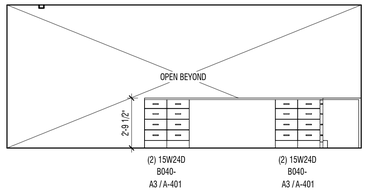
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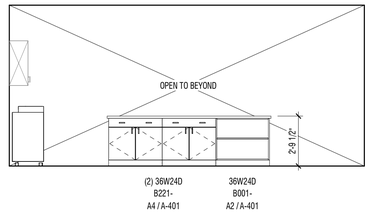
B2 ELEVATION

1/4" = 1'-0" TELEVISION



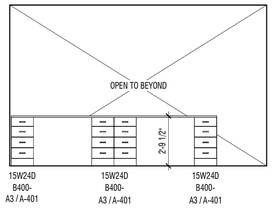
C3 ELEVATION

1/4" = 1'-0" CASEWORK



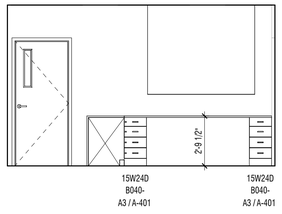
C4 ELEVATION

1/4" = 1'-0" CASEWORK



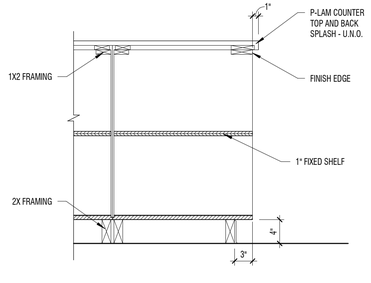
B3 ELEVATION

1/4" = 1'-0" CASEWORK



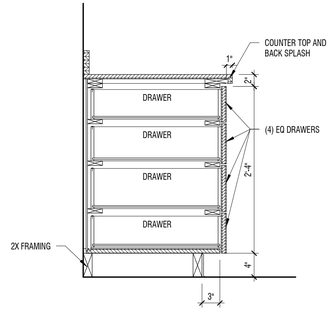
B4 ELEVATION

1/4" = 1'-0" CASEWORK



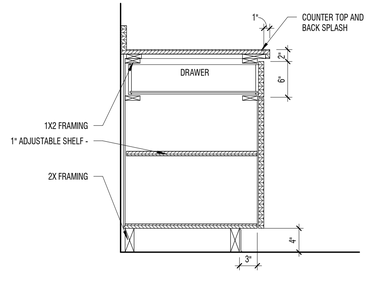
A2 BASE CABINET

1" = 1'-0" CASEWORK



A3 BASE CABINET

1" = 1'-0" CASEWORK



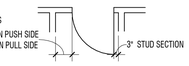
A4 BASE CABINET

1" = 1'-0" CASEWORK

GENERAL NOTES

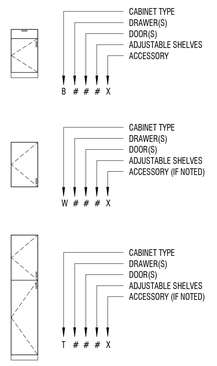
1. KEYNOTES: (#) THE FIRST TWO NUMBERS REPRESENT THE RELATED CSI MASTER FORMAT DIVISION. THE SECOND SET OF NUMBERS REPRESENTS AN IDENTIFYING MARK VALUE. NOT ALL VALUES MAY BE USED OR OCCUR IN THE DOCUMENT SET.

   ADDITIONALLY, KEYNOTES RETAIN THEIR ASSIGNED VALUE UNIVERSALLY THROUGHOUT THE SET. THE KEYNOTES LISTED BELOW, REPRESENT THE KEYNOTES FOUND AND UTILIZED ON THIS SHEET AND EACH LIST WILL DIFFER RESPECTIVE TO ITS' SHEET. THEREFORE, BASED ON ACTUAL KEYNOTES UTILIZED ON A GIVEN SHEET OF DRAWINGS, GAPS IN THE SEQUENCING WILL OCCUR.
2. CONTRACTOR SHALL BE FAMILIARIZED WITH THE LAY-OUT OF STRUCTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS. ANY QUESTIONS SHALL BE SUBMITTED VIA REQUEST FOR INFORMATION (RFI).
3. MIN CLEARANCE REQUIRED ON LATCH SIDE OF DOORS SHALL CONFORM TO ADA REQUIREMENTS



4. HINGE SIDE OF DOORS AT PERPENDICULAR WALLS TO HAVE 3" STUD SECTION U.N.O.
5. ALIGN FURRED WALLS AND STUD WALL FINISH FACE TYPICAL U.N.O.
6. ADA RESTROOMS MUST COMPLY WITH ADA WATER CLOSET MEASUREMENTS ON SHEET A-501
7. DOOR AND WINDOWS OPENINGS ARE INDICATED WITH ANNOTATION SYSMBOLS AND ARE FURTHER IDENTIFIED ON DOOR AND WINDOW SCHEDULES. SEE BOTH FLOOR PLANS AND EXTERIOR ELEVATIONS FOR ALL REFERENCES.
8. PROVIDE CONTINUOUS WOOD BLOCKING OR METAL STRAPPING FOR ANY WALL MOUNTED OR SUPPORTED ITEMS. PROVIDE FIRE RATED BLOCKING FOR ANY FIRE RATED PARTITIONS PER A-503
9. WALL TYPES SHOWN AS — WWW — ARE SHOWN ON SHEET A-601. FOR EXTERIOR WALLS SEE BUILDING & WALL SECTIONS. FOR STANDARD STEEL STUD DETAILS SEE A-503.
10. EXTEND ALL WALLS SURROUNDING AN OPEN CEILING AREA TO DECK.
11. BLOCKING TO BE PROVIDED AT SHELVING, CASEWORK, RAILINGS, LIGHT FIXTURE, COUNTERTOP, ACCESSORIES AND MORE PER A-503, TYP

CASEWORK KEY



NOTES:

CABINET TYPE
- B BASE CABINET
- W WALL CABINET
- T TALL CABINET
- SB SINK BASE CABINET
- MB MICROWAVE BASE CABINET

DRAWER
- # DENOTES NUMBER OF TOTAL DRAWERS

DOOR
- # DENOTES NUMBER OF TOTAL DOORS

ADJUSTABLE SHELVES
- # DENOTES NUMBER OF TOTAL SHELVES

ACCESSORY
- L LOCKS AT DOOR(S)/DRAWER(S)
- F FILE DRAWER(S)
- V VENTED DOOR
- R REV-A-SHELF OR EQUAL GARBAGE PULLOUT DRAWER
- - DENOTES NO ACCESSORY

CASEWORK TAG



HARDWARE
CABINET PULLS - SEE MH1 ON FINISH SCHEDULE

TOE KICK DIMENSIONS
STANDARD 4" U.N.O.

CASEWORK GENERAL NOTES

1. SEE FINISH SCHEDULE FOR MATERIAL.

DESIGN WEST

LOGAN, UTAH
(435) 752-7031

SALT LAKE CITY, UTAH
(801) 539-8221

MT. LOGAN MIDDLE SCHOOL
MAIN OFFICE AND SECURE VESTIBULE REMODEL

875 N 200 E, LOGAN, UT 84321

LOGAN CITY SCHOOL DISTRICT

MARK:	DATE:	DESCRIPTION:

PROJECT #: 125070
DRAWN BY: CF
CHECKED BY: MR
ISSUED: 04.13.2026

STATE OF UTAH
STEPHEN A. WILLIAMS
12/19/2025
LICENSED ARCHITECT

CONSTRUCTION DOCUMENTS

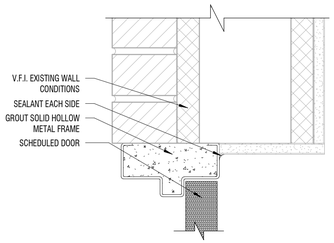
ELEVATIONS AND DETAILS

A-401

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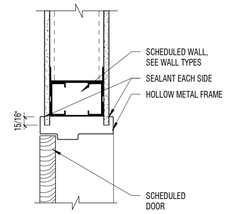
DOOR SCHEDULE

MARK	LEAF SIZING (1) W	H	D	DOOR TYPE (2)	CONSTRUCTION (3)	FINISH (4)	GLAZING (5)	RATING (6)	FRAME TYPE (7)	DETAILS (8) HEAD	JAMB	SILL	HARDWARE (9)	NOTES (10)
100A	6'-0"	7'-0"	1 3/4"	AL02	AL	BLACK	SG	-	-	PER MANUFACTURE	PER MANUFACTURE	-	A2	
100B	6'-0"	7'-0"	1 3/4"	AL02	AL	BLACK	SG	-	-	PER MANUFACTURE	PER MANUFACTURE	-	A3	
100C	3'-4"	7'-0"	1 3/4"	AL01	AL	BLACK	SG	-	-	PER MANUFACTURE	PER MANUFACTURE	-	A1	
109	3'-0"	7'-0"	1 3/4"	WD02	SC	2A	SG	-	HMA	C4/A-501	B4/A-501	-	01	CARD READER
110A	3'-0"	7'-0"	1 3/4"	WD01	SC	2A	CG	20 MIN	HMA	C3/A-501	B3/A-501	-	01	BUZZ IN
112	3'-0"	7'-0"	1 3/4"	WD02	SC	2A	CG	-	HMA	C4/A-501	B4/A-501	-	05	
113	6'-0"	5'-2"	2"	OH01	AL	-	-	20 MIN		B2/A-501	B2/A-501	B2/A-501	R1	
115A	3'-0"	7'-0"	1 3/4"	WD02	SC	2A	CG	-	HMA	C4/A-501	B4/A-501	-	06	
115B	3'-0"	7'-0"	1 3/4"	WD01	SC	2A	CG	20 MIN	HMA	C4/A-501	B4/A-501	-	06	
117	3'-0"	7'-0"	1 3/4"	WD02		2A		-						
120	3'-0"	7'-0"	1 3/4"	WD02	SC	2A	CG	-	HMA	C4/A-501	B4/A-501	-	05	
124A	3'-0"	7'-0"	1 3/4"	EXISTING	-	-	-	-	-	-	-	-	02	CARD READER
124B	3'-0"	7'-0"	1 3/4"	EXISTING	-	-	-	-	-	-	-	-	02	CARD READER



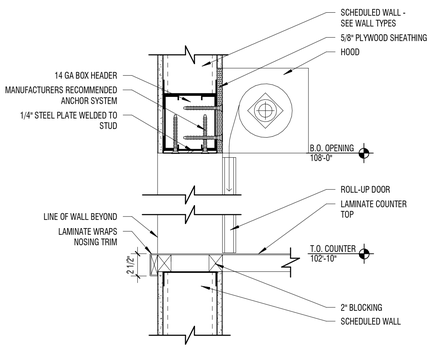
C3 DETAIL - HEAD

3" = 1'-0"



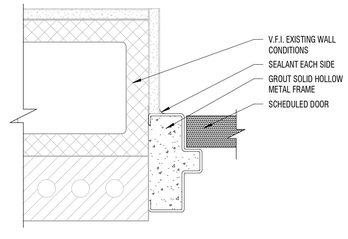
C4 DETAIL - HEAD

1 1/2" = 1'-0"



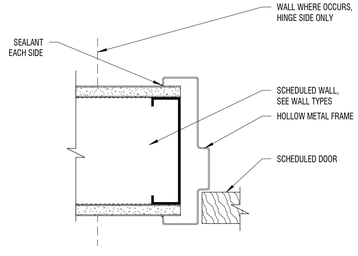
B2 ROLL-UP HEAD AND SILL

1 1/2" = 1'-0"



B3 DETAIL - JAMB

3" = 1'-0"



B4 DETAIL - JAMB

3" = 1'-0"

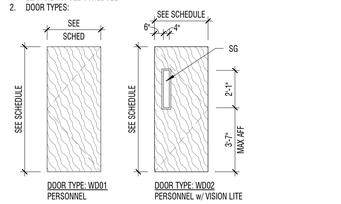
GENERAL NOTES

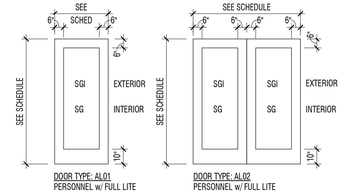
1. PROVIDE SEALANT AT JOINTS AT DISSIMILAR MATERIAL CONNECTIONS, ISOLATE DISSIMILAR METALS.
2. ALL DIMENSIONS FOR DOOR AND WINDOW OPENINGS TO BE FIELD VERIFIED PRIOR TO MANUFACTURING AND INSTALLATION.
3. UNLESS NOTED OTHERWISE, WHERE OCCURS ALL WINDOWS AND TRANSOMS THAT OCCUR IN RATED CORRIDOR WALL TO BE RATED 45 MIN.
4. PRE-PAINT ALL FRAMES PRIOR TO INSTALLATION.
5. BRAILLE SIGNAGE REQUIRED ON STRIKE SIDE OF FRAME.

SCHEDULE NOTES

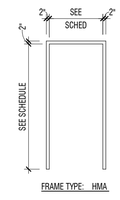
- IF SCHEDULE FIELD SHOWS A HYPHEN (-) OR IS BLANK, THERE ARE NO ITEMS APPLICABLE OR IS DETERMINED BY MANUFACTURER.
- SWING LINES SHOWN BELOW ARE REPRESENTATIONAL AND DO NOT INDICATE ACTUAL SWING. SEE PLANS FOR INDIVIDUAL SWINGS.

1. LEAF SIZING: SEE SCHEDULE
2. DOOR TYPES:





3. CONSTRUCTION:
   AL ALUMINUM
   SC SOLID CORE
4. FINISH: SEE DOOR FINISHES ON SHEET A-691
5. GLAZING: (DOOR AND WINDOW)
   SG SAFETY GLASS (TEMPERED OR LAMINATED)
   CG CLEAR FLOAT GLASS
6. RATING: 20, 45, 60 AND ETC. INDICATES FIRE RATING
   NOTE: ALL FIRE RATED DOORS SHALL BE AUTOMATIC CLOSING OR SELF-CLOSING AS PROVIDED IN THE IBC, IN ADDITION SEE THE IBC FOR SPECIAL PROVISIONS RELATING TO DOORS.
7. FRAME TYPE: (NUMBER(S) INDICATE(S) FRAME TYPE(S) SHOWN



8. DETAILS: (REFER TO SHEETS INDICATED FOR DOOR AND WINDOW DETAILS)
9. HARDWARE: (GROUP #, SEE SPECIFICATIONS FOR HARDWARE GROUPS)
10. NOTES:
    A:

CONSTRUCTION DOCUMENTS

DESIGN WEST

LOGAN, UTAH
(435) 752-7031

SALT LAKE CITY, UTAH
(801) 539-8221

MT. LOGAN MIDDLE SCHOOL
MAIN OFFICE AND SECURE VESTIBULE REMODEL
875 N 200 E, LOGAN, UT 84321
LOGAN CITY SCHOOL DISTRICT

MARK:	DATE:	DESCRIPTION:

PROJECT #: 125070
DRAWN BY: CF
CHECKED BY: MR
ISSUED: 04.13.2026

STATE OF UTAH
STEPHEN M WILLIAMS
12/19/2025
6842026-0301
LICENSED ARCHITECT

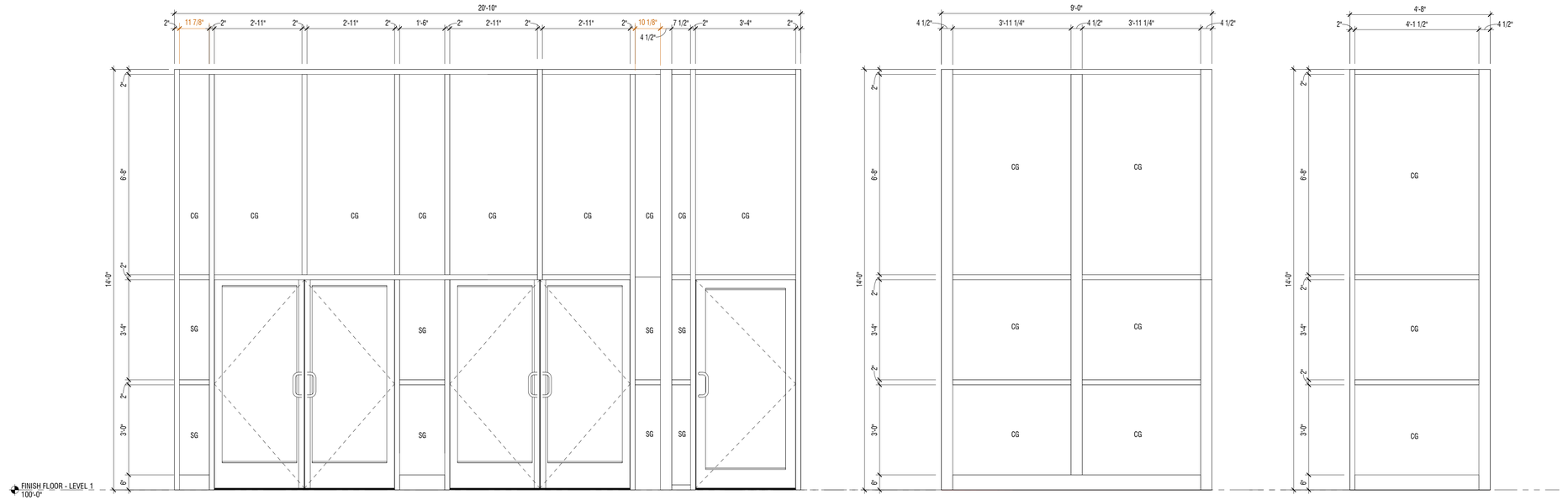
SCHEDULE - DOOR & DETAILS

A-501

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WINDOW GENERAL NOTES

1. PROVIDE SEALANT AT JOINTS AT DISSIMILAR MATERIAL CONNECTIONS, ISOLATE DISSIMILAR METALS.
2. ALL DIMENSIONS FOR WINDOW OPENINGS TO BE FIELD VERIFIED PRIOR TO MANUFACTURING AND INSTALLATION.
3. ALL WINDOWS AND TRANSOMS THAT OCCUR IN RATED CORRIDOR WALL TO BE RATED 45 MIN.
4. PRE-PAINT ALL FRAMES PRIOR TO INSTALLATION.
5. BRAILLE SIGNAGE REQUIRED ON STRIKE SIDE OF FRAME.



A NOTE: CONNECT TO EXISTING CONDITIONS V.F.I

B NOTE: CONNECT TO EXISTING CONDITIONS V.F.I

C NOTE: CONNECT TO EXISTING CONDITIONS V.F.I

CONSTRUCTION DOCUMENTS

DESIGN WEST

LOGAN, UTAH
(435) 752-7031

SALT LAKE CITY, UTAH
(801) 539-8221

MT. LOGAN MIDDLE SCHOOL
MAIN OFFICE AND SECURE VESTIBULE REMODEL

875 N 200 E, LOGAN, UT 84321

LOGAN CITY SCHOOL DISTRICT

MARK:	DATE:	DESCRIPTION:

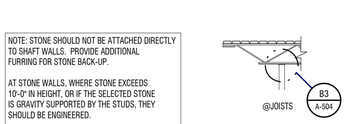
PROJECT #: 125070
DRAWN BY: CF
CHECKED BY: MR
ISSUED: 04.13.2026

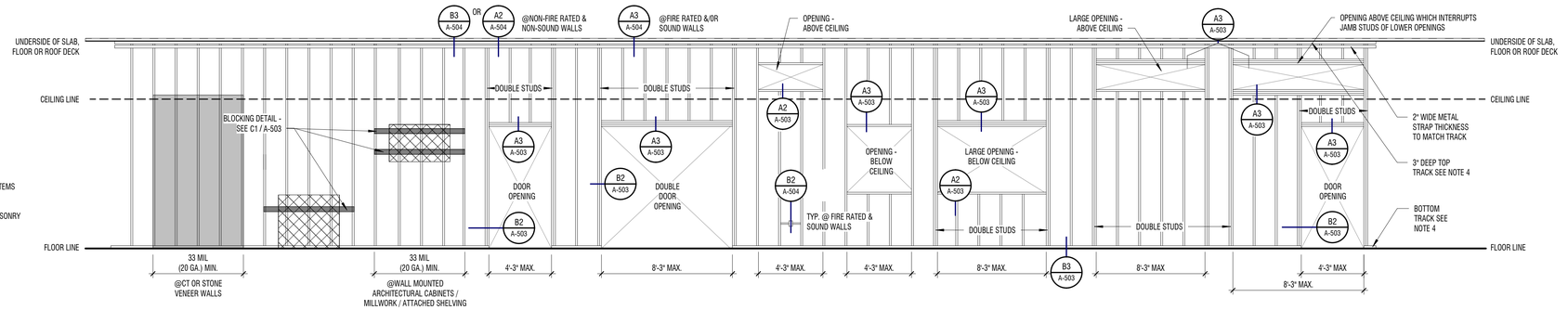
STATE OF UTAH
STEPHEN M WILLIAMS
2/18/2025
9842808-0301
LICENSED ARCHITECT

SCHEDULE - STOREFRONTS & DETAILS

A-502

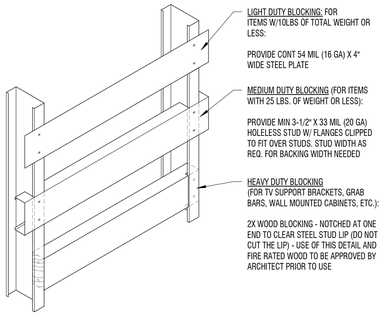
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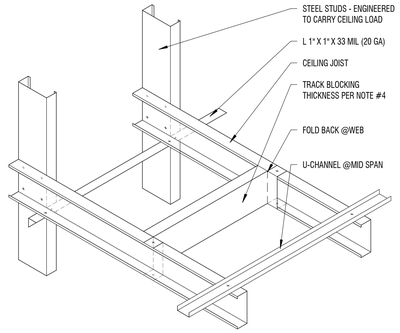
D1 STEEL STUDS TO B.O. STRUCTURE

1/4" = 1'-0" TYPICAL



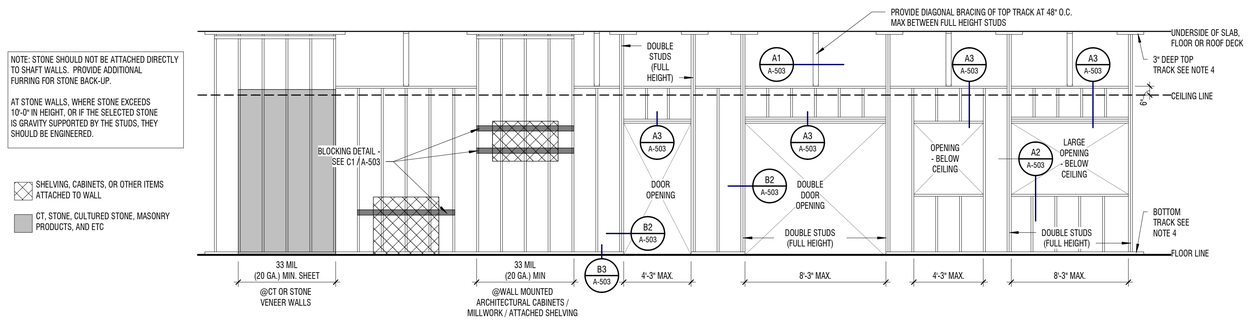
C1 WALL BLOCKING

1 1/2" = 1'-0" TYPICAL UNO



C2 CEILING FRAMING DETAILS

1 1/2" = 1'-0" TYPICAL



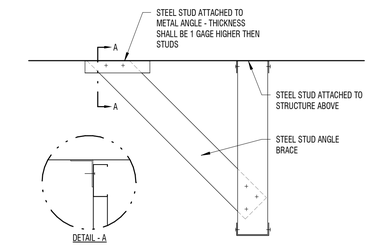
C3 STEEL STUDS EXT TO CLG HEIGHT

1/4" = 1'-0" TYPICAL

FRAMING NOTES

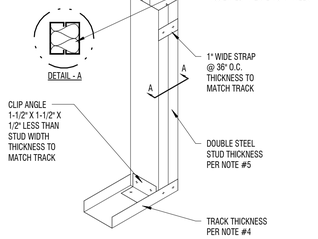
1. STUD SPACING SHALL BE 16" O.C. UNLESS NOTED OTHERWISE.
2. ALL STUDS SHALL BE "C" TYPE STUDS WITH A 1 1/4" FLANGE MINIMUM.
3. DOUBLE STUDS AT SIDE OF OPENINGS ARE NOT ALLOWED TO BE CUT. MINIMUM GAGE OF STUDS AT SIDE OF OPENINGS TO BE 20 GA. AS LONG AS THE HEIGHT FALLS WITHIN THE LIMITS AS SET FORTH IN THE ALLOWABLE STEEL STUD HEIGHTS.
4. ALL TOP AND BOTTOM TRACKS WILL BE A MINIMUM OF ONE LEVEL OF THICKNESS HIGHER THAN THE STUDS SECURED TO IT. THE MINIMUM THICKNESS SHALL BE 33 MIL (20 GA) NO. U.N.O. IN STRUCTURAL DRAWINGS.
   18 MIL (25 GA) STUDS = 33 MIL (20 GA) TRACKS
   33 MIL (20 GA) STUDS = 43 MIL (18 GA) TRACKS
   43 MIL (18 GA) STUDS = 54 MIL (16 GA) TRACKS
   EXAMPLE - IF YOU HAVE A 18 MIL (25 GA) STUD WALL WITH AN OPENING USING 33 MIL (20 GA) STUDS AROUND THE OPENING - A 33 MIL (20 GA) TRACK WILL BE REQUIRED.
5. ALL DOUBLE STUDS AT OPENINGS, HEADERS, AND SILLS WILL BE A MINIMUM OF ONE LEVEL OF THICKNESS HIGHER THAN THE STUDS ADJACENT TO IT. THE MINIMUM THICKNESS SHALL BE 33 MIL (20 GA) UNO.
   18 MIL (25 GA) STUDS = 33 MIL (20 GA) TRACKS
   33 MIL (20 GA) STUDS = 43 MIL (18 GA) TRACKS
   43 MIL (18 GA) STUDS = 54 MIL (16 GA) TRACKS
6. STUD IDENTIFICATION
   CHARACTERS 1-3 = MEMBER DEPTH (362 = 3 5/8")
   CHARACTER 4 = STYLE (S = C-STUD/JOIST)
   CHARACTERS 5-7 = FLANGE WIDTH (125 = 1 1/4")
   CHARACTERS 8-9 = MATERIAL THICKNESS IN MILS
   FOR REFERENCE ONLY: 18 MILS = 25 GA = 33 MILS = 20 GA 43 MILS = 18 GA
7. GYPSUM BOARD USED FOR THIS TABLE TO BE 5/8" ON 1 SIDE OF THE STEEL STUDS.
8. GYPSUM BOARD USED FOR THIS TABLE TO BE 5/8" ON 1 SIDE OR TWO SIDES OF THE STEEL STUDS.
9. MINIMUM THICKNESS OF STUDS FOR SUPPORT OF CERAMIC TILE SHALL BE 33 MILS (20 GAGE) - ACTUAL THICKNESS WILL BE DETERMINED BY THE HEIGHT OF THE STUD.
10. NOT ALL POSSIBLE OPTIONS OF STEEL STUDS ARE SHOWN IN THIS TABLE. ALL OTHER VARIATIONS ARE TO REVIEWED AND APPROVED BY THE ARCHITECT OR STRUCTURAL ENGINEER.
11. 25 GA STUDS ARE NOT PERMITTED FOR CEILING STUD

NOTE:
INFORMATION IN THESE CHARTS COMES FROM STEEL STUD MANUFACTURERS ASSOCIATION "www.ssma.com". NOT ALL AVAILABLE PRODUCTS HAVE BEEN SHOWN HERE OR LISTED. THESE CHARTS ARE FOR INTERIOR NON LOAD BEARING PARTITIONS ONLY. ALL LOAD BEARING PARTITIONS NEED TO BE ENGINEERED BY THE STRUCTURAL ENGINEER.



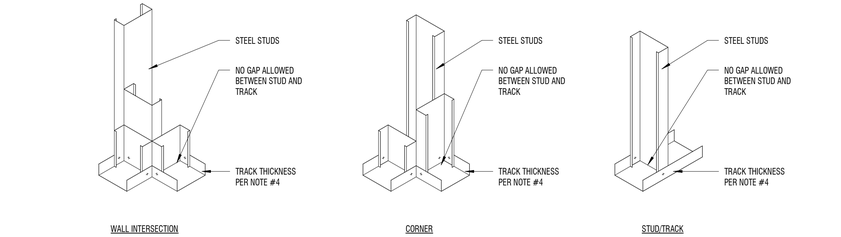
B1 DIAGONAL BRACING

1 1/2" = 1'-0" TYPICAL



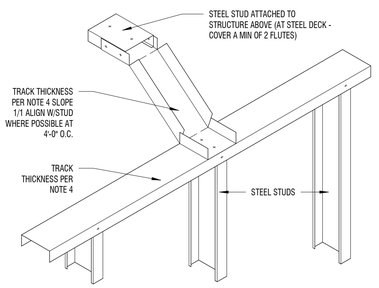
B2 END OF WALL / DOOR JAMB

1 1/2" = 1'-0" TYPICAL



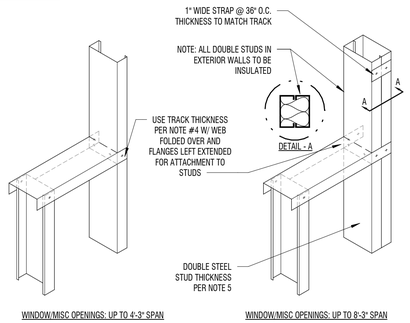
B3 MISC STUD / TRACK DETAILS

1 1/2" = 1'-0" TYPICAL



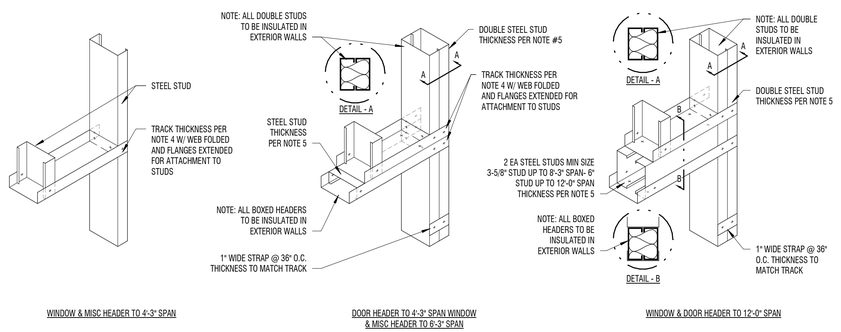
A1 DIAGONAL BRACE

1 1/2" = 1'-0" TYPICAL



A2 OPENING SILLS

1 1/2" = 1'-0" TYPICAL



A3 OPENING HEADERS

1 1/2" = 1'-0" TYPICAL

CONSTRUCTION DOCUMENTS

DESIGN WEST
LOGAN, UTAH
(435) 752-7031
SALT LAKE CITY, UTAH
(801) 539-8221

MT. LOGAN MIDDLE SCHOOL
MAIN OFFICE AND SECURE VESTIBULE REMODEL
875 N 200 E, LOGAN, UT 84321
LOGAN CITY SCHOOL DISTRICT

MARK:	DESCRIPTION:	DATE:

PROJECT #: 125070
DRAWN BY:
CHECKED BY:
ISSUED: 04.13.2026

STATE OF UTAH
STEPHEN M WILLIAMS
12/19/2025
8842608-0301
LICENSED ARCHITECT

DETAILS - METAL STUDS TYPICAL

A-503

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ALLOWABLE HEIGHTS: STEEL STUD

STUD MEMBER See Note 6	SPACING	GYP BD 1 SIDE see note 8 typ	GYP BD 2 SIDES see note 8 typ	CT ON CEM BD 1 SIDE	CT ON CEM BD 2 SIDES	GYP BD 1 SIDE CT ON CEM BD 1 SIDE	2 LAYER GYP BD 2 SIDES
162S125-18	24" O.C.	6'-0"	7'-11"	NP	NP	NP	NP
	16" O.C.	6-11"	8'-4	NP	NP	NP	NP
	12" O.C.	7'-7"	8'-10"	NP	NP	NP	NP
162S125-33	24" O.C.	7'-6"	8'-9"	5'-9"	NP	NP	NP
	16" O.C.	8'-7"	9'-8"	6'-7"	NP	NP	NP
	12" O.C.	9'-6"	10'-4"	7'-3"	NP	NP	NP
250S125-18	24" O.C.	8'-4"	10'-7"	NP	NP	NP	8'-5"
	16" O.C.	9'-6"	11'-3"	NP	NP	NP	8-11"
	12" O.C.	10'-6"	11'-11"	NP	NP	NP	9'-6"
250S125-33	24" O.C.	10'-5"	11'-7"	7'-11"	7'-8"	8'-7"	8-11"
	16" O.C.	11'-11"	12'-10"	9'-1"	8'-8"	9'-8"	10'-0"
	12" O.C.	13'-2"	13-11"	10'-0"	9'-5"	10'-6"	10'-11"
250S125-43	24" O.C.	11'-4"	13'-6"	8'-8"	8'-2"	9'-6"	9'-7"
	16" O.C.	13'-0"	14'-9"	9'-11"	9'-3"	10'-7"	10'-10"
	12" O.C.	14'-4"	15'-9"	10'-11"	10'-1"	11'-5"	11'-9"
350S125-18 OR 362S125-18	24" O.C.	10'-10"	13'-5"	NP	NP	NP	9'-5'
	16" O.C.	12'-5"	14'-4"	NP	NP	NP	10'-9"
	12" O.C.	13'-8"	15'-4"	NP	NP	NP	12'-0"
350S125-33 OR 362S125-33	24" O.C.	13'-6"	14'-9"	10'-4"	10'-1"	11'-2"	11'-7"
	16" O.C.	15'-6"	16'-5"	11'-10"	11'-4"	12'-6"	12'-11"
	12" O.C.	17'-1"	17'-10"	13'-0"	12'-4"	13'-7"	14'-1"
350S125-43 OR 362S125-43	24" O.C.	14'-9"	16'-3"	11'-3"	10'-6"	11'-8"	12'-3"
	16" O.C.	16'-11"	18'-0"	12'-11"	11'-11"	13'-3"	13'-10"
	12" O.C.	18'-7"	19'-7"	14'-2"	13'-1"	14'-6"	15'-2"
400S125-18	24" O.C.	12'-0"	14'-2	NP	NP	NP	10'-5"
	16" O.C.	13'-9"	15'-4"	NP	NP	NP	11'-11"
	12" O.C.	15'-1"	16'-5"	NP	NP	NP	13'-0"
400S125-33	24" O.C.	15'-0"	16'-5"	11'-6"	11'-2"	12'-4"	12'-10"
	16" O.C.	17'-3"	18'-4"	13'-2"	12'-6"	13'-9"	14'-5"
	12" O.C.	18'-11"	19'-11"	14'-5"	13'-7"	15'-0"	15'-8"
400S125-43	24" O.C.	16'-5"	17'-2"	12'-6"	11'-6"	12'-8"	13'-4"
	16" O.C.	18'-9"	19'-5"	14'-4"	13'-2"	14'-6"	15'-2"
	12" O.C.	20'-8"	21'-2"	15'-9"	14'-5"	15'-11"	16'-8"
600S125-18	24" O.C.	NP	18'-9"	NP	NP	NP	11'-5"
	16" O.C.	NP	19'-9"	NP	NP	NP	14'-0"
	12" O.C.	NP	22'-1"	NP	NP	NP	16'-2"
600S125-33	24" O.C.	20-10"	21'-7"	15'-11"	15'-0"	16'-7"	17'-2"
	16" O.C.	23-11"	24'-6"	18'-3"	17'-0"	18'-9"	19'-5"
	12" O.C.	26'-3"	26'-9"	20'-1"	18'-7"	20'-6"	21'-3"
600S125-43	24" O.C.	22'-9"	25'-7"	17'-4"	17'-1"	19'-1"	19'-10"
	16" O.C.	26'-0"	28'-3"	19'-10"	19'-1"	21'-3"	22'-1"
	12" O.C.	28'-8"	30'-7"	21'-10"	20'-9"	23'-0"	23'-11"
800S125-43	24" O.C.	28-11"	30'-8"	22'-0"	21'-0"	23'-5"	24'-2"
	16" O.C.	33'-1"	34'-4"	25'-3"	23'-9"	26'-3"	27'-2"
	12" O.C.	36'-5"	37'-6"	27'-9"	25'-11"	28'-8"	29'-8"

* NP = NOT PERMITTED

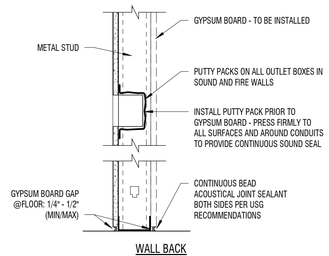
ALLOWABLE CEILING SPANS L/360: STL STUD

STUD MEMBER see note 6	SPACING	1 LAYER OF GYP BD: LATERAL SUPPORT OF COMPRESSION FLANGE UNSUPPORTED see note 7	1 LAYER OF GYP BD: LATERAL SUPPORT OF COMPRESSION FLANGE MID SPAN see note 7	2 LAYERS OF GYP BD: LATERAL SUPPORT OF COMPRESSION FLANGE UNSUPPORTED see note 7	2 LAYERS OF GYP BD: LATERAL SUPPORT OF COMPRESSION FLANGE MID SPAN see note 7
162S137-33	24" O.C.	7'-5"	7'-5"	6'-6"	6'-6"
	16" O.C.	8'-6"	8'-6"	7'-5"	7'-5"
	12" O.C.	9'-4"	9'-4"	8'-2"	8'-2"
250S162-33	24" O.C.	10'-10"	10'-10"	9'-5"	9'-5"
	16" O.C.	12'-5"	12'-5"	10'-10"	10'-10"
	12" O.C.	13'-5"	13'-8"	11'-11"	11'-11"
250S162-43	24" O.C.	11'-9"	11'-9"	10'-3"	10'-3"
	16" O.C.	13'-6"	13'-6"	11'-9"	11'-9"
	12" O.C.	14-10"	14'-10"	13'-0"	13'-0"
362S162-33	24" O.C.	12'-2"	18'-2"	10'-11"	12'-7"
	16" O.C.	13'-7"	16'-6"	12'-2"	14'-5"
	12" O.C.	14'-8"	14'-5"	13'-2"	15-10"
362S162-43	24" O.C.	13'-4"	15'-8"	11'-11"	13'-8"
	16" O.C.	14-11"	17'-11	13'-4"	15'-8"
	12" O.C.	16'-2"	19'-9"	14'-5"	17'-3"
400S162-33	24" O.C.	12'-6"	15'-6"	11'-3"	13'-7"
	16" O.C.	13-11"	17'-10"	12'-6"	15'-6"
	12" O.C.	15'-1"	19'-7"	13'-6"	17'-1"
400S162-43	24" O.C.	13'-8"	16-11"	12'-2"	14'-9"
	16" O.C.	15'-3"	19'-4"	13'-8"	16-11"
	12" O.C.	16'-7"	21'-4"	14'-9"	18'-7"
600S162-33	24" O.C.	14'-0"	20'-4"	12'-8"	18'-4"
	16" O.C.	15'-7"	22'-7"	14'-0"	20'-4"
	12" O.C.	16-10"	24'-4"	15'-2"	21-11"
600S162-43	24" O.C.	15'-2"	21'-10"	13'-8"	19'-8"
	16" O.C.	16-11"	24'-4"	15'-2"	21'-10"
	12" O.C.	18'-4"	26'-3"	16'-5"	23'-7"

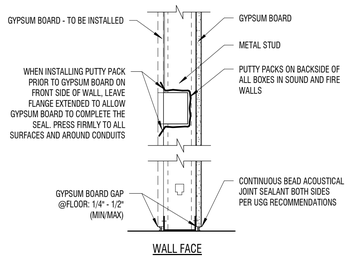
FRAMING NOTES

1. STUD SPACING SHALL BE 16" O.C. UNLESS NOTED OTHERWISE.
2. ALL STUDS SHALL BE "C" TYPE STUDS WITH A 1 1/4" FLANGE MINIMUM.
3. DOUBLE STUDS AT SIDE OF OPENINGS ARE NOT ALLOWED TO BE CUT. MINIMUM GAGE OF STUDS AT SIDE OF OPENINGS TO BE 20 GA. AS LONG AS THE HEIGHT FALLS WITHIN THE LIMITS AS SET FORTH IN THE ALLOWABLE STEEL STUD HEIGHTS.
4. ALL TOP AND BOTTOM TRACKS WILL BE A MINIMUM OF ONE LEVEL OF THICKNESS HIGHER THAN THE STUDS SECURED TO IT. THE MINIMUM THICKNESS SHALL BE 33 MIL (20 GA) NO. U.N.O. IN STRUCTURAL DRAWINGS.
   18 MIL (25 GA) STUDS = 33 MIL (20 GA) TRACKS
   33 MIL (20 GA) STUDS = 43 MIL (18 GA) TRACKS
   43 MIL (18 GA) STUDS = 54 MIL (16 GA) TRACKS
   EXAMPLE - IF YOU HAVE A 18 MIL (25 GA) STUD WALL WITH AN OPENING USING 33 MIL (20 GA) STUDS AROUND THE OPENING - A 33 MIL (20 GA) TRACK WILL BE REQUIRED.
5. ALL DOUBLE STUDS AT OPENINGS, HEADERS, AND SILLS WILL BE A MINIMUM OF ONE LEVEL OF THICKNESS HIGHER THAN THE STUDS ADJACENT TO IT. THE MINIMUM THICKNESS SHALL BE 33 MIL (20 GA) UNO.
   18 MIL (25 GA) STUDS = 33 MIL (20 GA) TRACKS
   33 MIL (20 GA) STUDS = 43 MIL (18 GA) TRACKS
   43 MIL (18 GA) STUDS = 54 MIL (16 GA) TRACKS
6. STUD IDENTIFICATION
   CHARACTERS 1-3 = MEMBER DEPTH (362 = 3 5/8")
   CHARACTER 4 = STYLE (S = C-STUD/JOIST)
   CHARACTERS 5-7 = FLANGE WIDTH (125 = 1 1/4")
   CHARACTERS 8-9 = MATERIAL THICKNESS IN MILS
   FOR REFERENCE ONLY: 18 MILS = 25 GA = 33 MILS = 20 GA 43 MILS = 18 GA
7. GYPSUM BOARD USED FOR THIS TABLE TO BE 5/8" ON 1 SIDE OF THE STEEL STUDS.
8. GYPSUM BOARD USED FOR THIS TABLE TO BE 5/8" ON 1 SIDE OR TWO SIDES OF THE STEEL STUDS.
9. MINIMUM THICKNESS OF STUDS FOR SUPPORT OF CERAMIC TILE SHALL BE 33 MILS (20 GAGE) - ACTUAL THICKNESS WILL BE DETERMINED BY THE HEIGHT OF THE STUD.
10. NOT ALL POSSIBLE OPTIONS OF STEEL STUDS ARE SHOWN IN THIS TABLE. ALL OTHER VARIATIONS ARE TO REVIEWED AND APPROVED BY THE ARCHITECT OR STRUCTURAL ENGINEER.
11. 25 GA STUDS ARE NOT PERMITTED FOR CEILING STUD

NOTE:
INFORMATION IN THESE CHARTS COMES FROM STEEL STUD MANUFACTURERS ASSOCIATION "www.ssma.com". NOT ALL AVAILABLE PRODUCTS HAVE BEEN SHOWN HERE OR LISTED. THESE CHARTS ARE FOR INTERIOR NON LOAD BEARING PARTITIONS ONLY. ALL LOAD BEARING PARTITIONS NEED TO BE ENGINEERED BY THE STRUCTURAL ENGINEER.



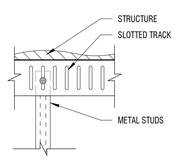
WALL BACK



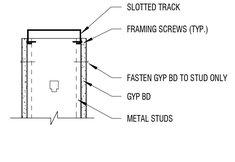
WALL FACE

B2 SOUND / FIRE WALL SEALANTS

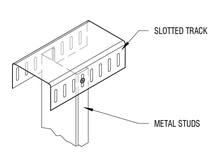
1 1/2" = 1'-0" TYPICAL



SIDE VIEW



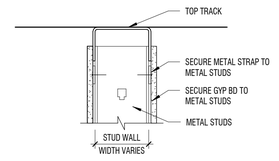
SECTION



ISOMETRIC

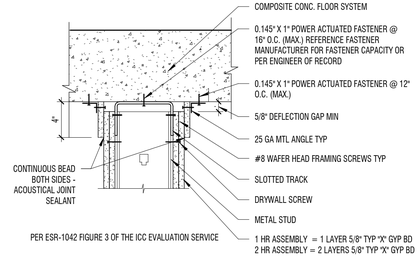
A2 SLOTTED TOP TRACK

1 1/2" = 1'-0" TYPICAL



B3 TOP TRACK

1 1/2" = 1'-0" TYPICAL



PER ESR-1042 FIGURE 3 OF THE ICC EVALUATION SERVICE

A3 FIRE / SOUND TOP TRACK

1 1/2" = 1'-0" @DECK/FLOOR

DESIGN WEST

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(435) 752-7031

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(801) 539-8221

MT. LOGAN MIDDLE SCHOOL
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875 N 200 E, LOGAN, UT 84321
LOGAN CITY SCHOOL DISTRICT

CONSTRUCTION DOCUMENTS

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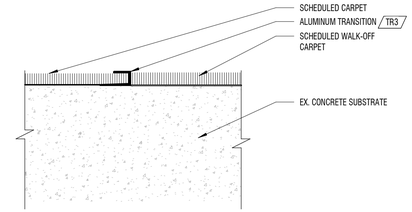
PROJECT #: 125070
DRAWN BY:
CHECKED BY:
ISSUED: 04.13.2026

STATE OF UTAH
STEPHEN N WILLIAMS
12/18/2025
LICENSED ARCHITECT

DETAILS - METAL STUDS TYPICAL

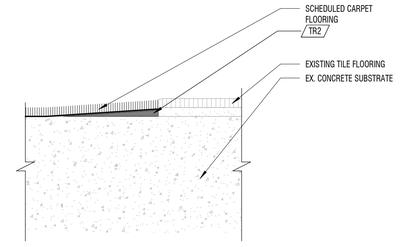
A-504

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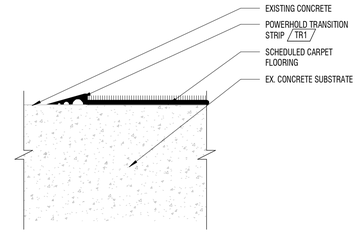
C5 FLOOR FINISH TRANSITION

6" = 1'-0" WALK-OFF TO CARPET



B5 FLOOR FINISH TRANSITION

6" = 1'-0" CARPET W/ RAMP TO EXISTING TILE



A5 FLOOR FINISH TRANSITION

6" = 1'-0" CARPET TO EX. CONCRETE

CONSTRUCTION DOCUMENTS

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STATE OF UTAH
STEPHEN M WILLIAMS
2/18/2025
9842808-0301
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DETAILS - INTERIOR FINISH

A-505

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INTERIOR WALL TYPES

S2C

DESCRIPTION	ASSEMBLY	FIRE RATING
PARTITION	ULTRA-COMPACT SURFACE TILE OVER LATEX-PORTLAND CEMENT MORTAR OR ORGANIC ADHESIVE BOND COAT WHERE OCCURS 5/8" TILE BACKER BOARD, 5/8" GYPSUM BOARD ABOVE WHERE OCCURS 3-5/8" METAL STUD FRAMING @ 16" O.C.	N/A TESTING SOURCE N/A STC RATING N/A TESTING SOURCE N/A



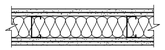
S3A

DESCRIPTION	ASSEMBLY	FIRE RATING
PARTITION	5/8" GYPSUM BOARD 3-5/8" METAL STUD FRAMING @ 16" O.C. 5/8" GYPSUM BOARD	N/A TESTING SOURCE N/A STC RATING N/A TESTING SOURCE N/A



S3A1

DESCRIPTION	ASSEMBLY	FIRE RATING
PARTITION	(2) 5/8" GYPSUM BOARD 3-5/8" METAL STUD FRAMING @ 16" O.C. (2) 5/8" GYPSUM BOARD	1 HOUR TESTING SOURCE N/A STC RATING N/A TESTING SOURCE N/A



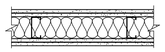
S3D

DESCRIPTION	ASSEMBLY	FIRE RATING
PARTITION	ULTRA-COMPACT SURFACE TILE OVER LATEX-PORTLAND CEMENT MORTAR OR ORGANIC ADHESIVE BOND COAT WHERE OCCURS 5/8" TILE BACKER BOARD, 5/8" GYPSUM BOARD ABOVE WHERE OCCURS 3-5/8" METAL STUD FRAMING @ 16" O.C. 5/8" GYPSUM BOARD	N/A TESTING SOURCE N/A STC RATING N/A TESTING SOURCE N/A



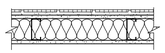
S6A1

DESCRIPTION	ASSEMBLY	FIRE RATING
PARTITION	(2) 5/8" GYPSUM BOARD 3-5/8" METAL STUD FRAMING @ 16" O.C. (2) 5/8" GYPSUM BOARD	1 HOUR TESTING SOURCE N/A STC RATING N/A TESTING SOURCE N/A



S6E

DESCRIPTION	ASSEMBLY	FIRE RATING
PARTITION	ULTRA-COMPACT SURFACE TILE OVER LATEX-PORTLAND CEMENT MORTAR OR ORGANIC ADHESIVE BOND COAT WHERE OCCURS 5/8" TILE BACKER BOARD, 5/8" GYPSUM BOARD ABOVE WHERE OCCURS 3-5/8" METAL STUD FRAMING @ 16" O.C. 5/8" GYPSUM BOARD	N/A TESTING SOURCE N/A STC RATING N/A TESTING SOURCE N/A



GENERAL NOTES

1. ROOM FINISH TAGS FOR EACH ROOM REPRESENT TYPICAL FINISHES. SPECIFIC WALLS IN SELECTED AREAS MAY HAVE MULTIPLE FINISHES WHICH WILL BE INDICATED IN INTERIOR ELEVATIONS.
2. FIELD VERIFY ALL DIMENSIONS PRIOR TO FABRICATION OF CASEWORK AND FINISH ASSEMBLIES
3. SEE INTERIOR ELEVATIONS FOR ADDITIONAL FINISH INFORMATION
4. SEE REFLECTED CEILING PLANS FOR ADDITIONAL FINISH INFORMATION
5. FOR FINISH SCHEDULE SEE SHEET A-691
6. FLOOR MATERIAL TRANSITIONS WILL OCCUR BELOW DOORS. U.N.O.
7. FOR TYPICAL TRANSITION/FINISH DETAILS SEE SHEET A-505
8. TILED WALLS TO BE FULL HEIGHT OF WALL, U.N.O.
10. POLISHED OR SEALED CONCRETE DOES EXTEND UNDER CASEWORK OR MILLWORK
11. FLOOR COVERING DOES NOT EXTEND UNDER MILLWORK OR CASEWORK, U.N.O.

DESIGN WEST

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CHECKED BY: MR
ISSUED: 04.13.2026

STATE OF UTAH
STEPHEN M WILLIAMS
2/18/2026
9842808-0301
LICENSED ARCHITECT

SCHEDULE - INTERIOR WALL TYPES

A-601

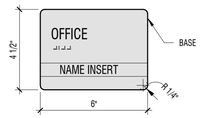
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SIGNAGE GRAPHICS

TYPE A

MATERIAL

ACRYLIC WITH RAISED TEXT & CHANGEABLE INSERT



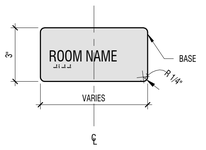
NOTES

TEXT HEIGHT: 5/8"
TEXT FONT: FUTURA
TEXT COLOR: BY ARCHITECT
BASE COLOR: BY ARCHITECT

TYPE B

MATERIAL

ACRYLIC WITH RAISED TEXT



NOTES

TEXT HEIGHT: 5/8"
TEXT FONT: FUTURA
TEXT COLOR: BY ARCHITECT
BASE COLOR: BY ARCHITECT

TYPE C

MATERIAL

ACRYLIC WITH RAISED TEXT & PICTURE



NOTES

TEXT HEIGHT: 5/8"
TEXT FONT: FUTURA
TEXT COLOR: BY ARCHITECT
BASE COLOR: BY ARCHITECT

TO READ "FACULTY" AT ALL FACULTY RESTROOMS

TYPE D

MATERIAL

VINYL LETTERS - SEE SCHEDULE FOR TEXT



NOTES

TEXT HEIGHT: 1"
TEXT FONT: HELVETICA
TEXT COLOR: BY ARCHITECT
BASE COLOR: BY ARCHITECT

GENERAL NOTES

1. SEE FINISH PLANS FOR SIGNAGE LOCATIONS. SIGNAGE INDICATED WITH SYMBOL ON PLAN

   NUMBER REFERS TO SIGNAGE SCHEDULE, LETTER IN SCHEDULE REFERS TO SIGNAGE GRAPHICS
2. MAINTAIN MIN 1/2" EDGE DISTANCE FROM ALL COPY/IMAGES
3. FINAL SIGN TEXT TO BE APPROVED BY OWNER AND ARCHITECT
4. PROVIDE ALL SIGNAGE REQUIRED BY CODE AND COMPLY WITH ANSI SECTION 703
5. FINAL COPY AND LAY OUT OF SIGNAGE TO BE COORDINATED W/ ARCHITECT. SIZES AND MATERIALS, ESTABLISHED COPY TO BE DETERMINED BY OWNER AND SUPPLIED FOR SHOP DRAWINGS
6. WHEN SIGN IS MOUNTED ON GLASS, PROVIDE BLANK BACKER PLATE THAT MATCHES SIZE AND STYLE ON OTHER SIDE OF GLASS

SIGNAGE SCHEDULE

MARK	SIGNAGE TYPE	REQUIRED TEXT
01	TYPE D	ALL VISITORS REQUIRED TO CHECK IN AT THE MAIN ENTRANCE OFFICE
02	TYPE B	MAIN OFFICE
03	TYPE B	STUDENT RESOURCE OFFICER
04	TYPE A	ASSISTANT PRINCIPAL
05	TYPE B	FINANCE
06	TYPE B	EXIT
07	TYPE C	RESTROOM
08	TYPE B	STORAGE

CONSTRUCTION DOCUMENTS

DESIGN WEST

LOGAN, UTAH
(435) 752-7031

SALT LAKE CITY, UTAH
(801) 539-8221

MT. LOGAN MIDDLE SCHOOL
MAIN OFFICE AND SECURE VESTIBULE REMODEL
875 N 200 E, LOGAN, UT 84321

LOGAN CITY SCHOOL DISTRICT

MARK:	DATE:	DESCRIPTION:

PROJECT #: 125070
DRAWN BY: CF
CHECKED BY: MR
ISSUED: 04.13.2026

STATE OF UTAH
STEPHEN N WILLIAMS
2/18/2026
LICENSED ARCHITECT

SCHEDULE - SIGNAGE

A-681

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FINISH SCHEDULE

CARPET

MARK:	C1	C2
TYPE:	WALK-OFF CARPET	CARPET TILE
MANUFACTURER:	SHAW	SHAW
COLLECTION:	STEPPIN OUT	NO RULES
SERIES:	BON JOUR II TILE, 5T032	INFINITE TILE, 5T010
COLOR:	EBONY, 31500	BOUNDLESS, 09485
PRODUCT SIZE:	24" X 24"	24" X 24"
INSTALL PATTERN:	QUARTER TURN	QUARTER TURN
NOTES:		

BASE

MARK:	B1
TYPE:	RUBBER W/ TOE
MANUFACTURER:	ROPPE
COLOR:	CHARCOAL 123
SIZE:	4"
STYLE:	700 SERIES W/ STANDARD TOE
NOTES:	

CEILING

MARK:	CL1	CL2
TYPE:	ACT LAY-IN	DIRECT-APPLIED TILE
MANUFACTURER:	USG	-
MODEL:	MARS - HIGH NRC	-
SIZE:	2' X 2'	1' X 1'
COLOR:	WHITE	MATCH EXISTING
NOTES:	SEE RCP FOR SPECIFIC LOCATIONS WITHIN ROOMS AND SPACES	SEE RCP FOR SPECIFIC LOCATIONS WITHIN ROOMS AND SPACES

TRANSITIONS

MARK:	TR1	TR2	TR3
TYPE:	ALUMINUM FLOORING TRANSITION	SUBFLOOR LEVELER	ALUMINUM FLOORING TRANSITION
MANUFACTURER:	POWERHOLD	ROPPE	POWERHOLD
COLOR:	EA	-	EA
MODEL:	LVT 115 - 5MM LVT REDUCER	SUBFLOOR LEVELER	LVT 905 - 5MM SQUARE CAP
LOCATION:	CARPET TO CONCRETE	VARIOUS	CARPET TO WALK-OFF CARPET
NOTES:	SEE DETAIL A5 / A-505	SEE DETAIL B5 / A-505	SEE DETAIL C5 / A-505

COUNTERTOPS

MARK:	CT1
TYPE:	HIGH PRESSURE LAMINATE
MANUFACTURER:	WILSONART
COLOR:	PEARL SOAPSTONE 4886-38
FINISH:	FINE VELVET FINISH
NOTES:	

MISCELLANEOUS

MARK:	MI1
TYPE:	ALUMINUM CORNER GUARD
MANUFACTURER:	INPRO
MODEL:	DW-AL03412-CLR
COLOR:	CLEAR
PRODUCT SIZE:	3/4" WINGS
INSTALL PATTERN:	UP TO 9' AFF MIN., 6' AFF MAX
NOTES:	

PAINT

MARK:	P1	P2
MANUFACTURER:	SHERWIN WILLIAMS	SHERWIN WILLIAMS
COLOR:	SW 9544 DASHING	MATCH EXISTING DOOR FRAMES
SHEEN:	SATIN	SATIN
NOTES:		BLUE DOOR FRAMES

EPOXY PAINT

MARK:	EP1
MANUFACTURER:	SHERWIN WILLIAMS
COLOR:	SW 9544 DASHING
SHEEN:	WALLS: SATIN, CEILING: MATTE
NOTES:	

MILLWORK FINISHES

MARK:	MF1
TYPE:	HIGH PRESSURE LAMINATE
MANUFACTURER:	WILSONART
COLOR:	NEW AGE OAK 7938-38
FINISH:	FINE VELVET FINISH
NOTES:	

MILLWORK HARDWARE

MARK:	MH1
MANUFACTURER:	-
COLOR:	BRUSHED CHROME
STYLE:	WIRE PULL
SIZE:	4" CENTER TO CENTER
NOTES:	

FINISH COMBINATIONS

MILLWORK GROUPING

MARK:	1A
UPPER CABINETS:	MF1
BACKSPLASH:	CT1 - 4"
COUNTERTOP:	CT1
FRONT EDGE STYLE:	EASED
BASE CABINETS:	MF1
HARDWARE:	MH1
FRAME CONSTRUCTION:	FRAMELESS
DOOR INTERFACE STYLE:	FLUSH OVERLAY
NOTES:	

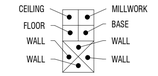
DOOR FINISHES

MARK:	2A
DOOR FINISH:	MATCH EXISTING
FRAME FINISH:	P2
HARDWARE COLOR:	MATCH EXISTING
NOTES:	OFFICE AND VESTIBULE AREA

GENERAL NOTES

1. ROOM FINISH TAGS FOR EACH ROOM REPRESENT TYPICAL FINISHES. SPECIFIC WALLS IN SELECTED AREAS MAY HAVE MULTIPLE FINISHES WHICH WILL BE INDICATED IN INTERIOR ELEVATIONS.
2. FIELD VERIFY ALL DIMENSIONS PRIOR TO FABRICATION OF CASEWORK AND FINISH ASSEMBLIES
3. SEE INTERIOR ELEVATIONS FOR ADDITIONAL FINISH INFORMATION
4. SEE REFLECTED CEILING PLANS FOR ADDITIONAL FINISH INFORMATION
5. FOR FINISH SCHEDULE SEE SHEET A-691
6. FLOOR MATERIAL TRANSITIONS WILL OCCUR BELOW DOORS, U.N.O.
7. FOR TYPICAL TRANSITION/FINISH DETAILS SEE SHEET A-505
8. TILED WALLS TO BE FULL HEIGHT OF WALL, U.N.O.
10. POLISHED OR SEALED CONCRETE DOES EXTEND UNDER CASEWORK OR MILLWORK
11. FLOOR COVERING DOES NOT EXTEND UNDER MILLWORK OR CASEWORK, U.N.O.

LEGEND

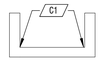


ROOM FINISH TAG

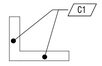
* = SEE ELEVATIONS FOR FINISH SELECTIONS
- = NO FINISH APPLIED



FINISH TAG - INDICATES SPECIFIC APPLIED FINISH



INDICATES FINISH IS APPLIED TO AREA BETWEEN ARROWS



INDICATES FINISH IS APPLIED TO FACE OF SURFACE(S)



INDICATES SIGNAGE LOCATION

CG L

INDICATES CORNER GUARD, SEE MISC. SECTION ON FINISH SCHEDULE FOR SELECTION INFORMATION

FLOORING LEGEND



CARPET - C1



CARPET - C2

DESIGN WEST

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LOGAN CITY SCHOOL DISTRICT

MARK:	DATE:	DESCRIPTION:

PROJECT #: 125070
DRAWN BY: CF
CHECKED BY: MR
ISSUED: 04.13.2026

STATE OF UTAH
STEPHEN M WILLIAMS
2/18/2026
LICENSED ARCHITECT

CONSTRUCTION DOCUMENTS

SCHEDULE - FINISHES

A-691

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ABBREVIATIONS

NOTE: ALL ABBREVIATIONS MAY NOT BE USED

AD	ACCESS DOOR
AIR	CONDITION(-ING, -ED) COND
APD	AIR PRESSURE DROP
BD	BALANCING DAMPER
BHP	BRAKE HORSE POWER
BTU	BRITISH THERMAL UNIT
BTU/H	BTU/HOUR
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CLG	COOLING
COMP	COMPONENT
COND	CONDENS(-ER, -ING, -ATION)
CV	CONTROL VALVE
CW	COLD WATER
DIA	DIAMETER
DISCH	DISCHARGE
DP	DEPTH OR DEEP
DB	DRY BULB TEMPERATURE
(E)	EXISTING
EER	ENERGY EFFICIENCY RATIO
EFF	EFFICIENCY
EG	ETHYLENE GLYCOL
ELEC	ELECTRIC
ELEV	ELEVATION
ENT	ENTERING
EVAP	EVAPORAT(-E, -ING, -ED, -OR)
EWT	ENTERING WATER TEMP
EXT	EXTERNAL
(F)	FUTURE
F	FAHRENHEIT
FC	FLEXIBLE CONNECT(-OR, -ION)
FD	FIRE DAMPER
FLA	FULL LOAD AMPS
FPI	FINS PER INCH
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FSD	FIRE SMOKE DAMPER
FT	FEET
GAL	GALLON(-S)
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
HD	HEAD
HG	MERCURY
HR	HOUR
HT	HEIGHT
HTG	HEATING
HP	HORSE POWER
HW	HOT WATER
HX	HERTZ (FREQUENCY)
ID	INSIDE DIAMETER
IN	INCH
KW	KILOWATT
LAT	LEAVING AIR TEMPERATURE
LBS	POUNDS
LG	LENGTH
LH	LATENT HEAT
LRA	LOCKED ROTOR AMPS
LVG	LEAVING
LWT	LEAVING WATER
MAX	TEMPERATURE MAXIMUM
MBH	THOUSAND BTU PER HOUR
MCA	MINIMUM CIRCUIT AMPS
MFR	MANUFACTURER
MIN	MINIMUM
N/A	NOT APPLICABLE
NC	NORMALLY CLOSED
NC	NOISE CRITERIA
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NPSH	NET POSITIVE SUCTION HEAD
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OD	OUTSIDE DIAMETER
OZ	OUNCE
PD	PRESSURE DROP
PD	PRESSURE DIFFERENCE
PG	PROPYLENE GLYCOL
PH	PHASE
PPM	PARTS PER MILLION
PRESS	PRESSURE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSIA	PSI ABSOLUTE
PSIG	PSI GAUGE
R	THERMAL RESISTANCE
RA	RETURN AIR
RECIRC	RECIRCULATEE
REFR	REFRIGERATION
REQD	REQUIRED
RLA	RATED --- AMPS
RPM	REVOLUTIONS PER MINUTE
RW	RAIN WATER
SA	SUPPLY AIR
SC	SHADING COEFFICIENT
SCFM	STANDARD CUBIC FT / MINUTE
SCW	SOFT COLD WATER
SF	SAFETY FACTOR
SH	SENSIBLE HEAT
SL	SEA LEVEL
SP	STATIC PRESSURE
SPECS	SPECIFICATIONS(-S)
SQ	SQUARE
STD	STANDARD
STM	STEAM
TEMP	TEMPERATURE
TD	TEMP DROP
TD	TEMP DIFFERENCE
THERM	THERMAL
TOT	TOTAL
TSTAT	THERMOSTAT
V	VOLT
VAC	VACUUM
VAV	VARIABLE AIR VOLUME
VEL	VELOCITY
VENT, VENTILATION	
VERT	VERTICAL
VFD	VARIABLE FREQUENCY DRIVE
VOL	VOLUME
WC	WATER COLUMN
WG	WATER GAUGE
WPD	WATER PRESSURE DROP
WTR	WATER
WT	WEIGHT
WB	WET BULB TEMPERATURE
YR	YEAR

ANNOTATIONS

SYMBOL	DESCRIPTION
EQU-1	PLUMBING FIXTURES
	POINT OF CONNECTION
1 / A101	SECTION TAG - TOP FIGURE IS SECTION NUMBER BOTTOM FIGURE IS SHEET NUMBER
A / ME501	DETAIL TAG - TOP FIGURE IS DETAIL NUMBER BOTTOM FIGURE IS SHEET NUMBER
(1) EQUI-1 2500 CFM 12"/12"	DIFFUSER/GRILLE TAG - TOP NOTE IS SIZE/TYPE BOTTOM FIGURE IS CFM
EQU-1	EQUIPMENT IDENTIFICATION
1	KEYED NOTE IDENTIFICATION
1	REVISION DELTA NUMBER
S	SWITCH
S	SENSOR
T	THERMOSTAT
T N	NIGHT THERMOSTAT
	BREAK, ROUND
	BREAK, STRAIGHT

DUCT WORK/GRILLES SYMBOLS

SYMBOL	DESCRIPTION
20/12	RECTANGULAR DUCT WITH NET INSIDE DIMENSIONS IN INCHES
20Ø	ROUND DUCT WITH NET INSIDE DIMENSIONS IN INCHES
20/12 FO	FLAT OVAL DUCT WITH NET INSIDE DIMENSIONS IN INCHES
	RECTANGULAR 90° WITH TURNING VANES
W R	R=1.5W ROUND DUCT SIMILAR TO RECTANGULAR
	UNDER FLOOR DUCT
	POSITIVE PRESSURE DUCT (SUPPLY) - UP
	POSITIVE PRESSURE DUCT (SUPPLY) - DOWN
	NEGATIVE PRESSURE DUCT (RETURN) - UP
	NEGATIVE PRESSURE DUCT (RETURN) - DOWN
	ROUND DUCT - UP
	ROUND DUCT - DOWN
	DUCT TRANSFORMATION MAX 15°
	HIGH EFFICIENCY FITTING
D 45° D	TAP ENTRY AREA EQUALS 150% OF BRANCH AREA
	FLEXIBLE DUCT
	CEILING DIFFUSER WITH FLEXIBLE DUCT
	CEILING SUPPLY DIFFUSER
	CEILING EXHAUST REGISTER
	CEILING RETURN REGISTER
	CEILING RETURN AIR GRILLE WITH SOUND BOOT
	SIDEWALL SUPPLY REGISTER
	SIDEWALL EXHAUST, LOUVER, OR RETURN REGISTER
	MANUAL VOLUME DAMPER
FD	FIRE DAMPER IN DUCT, WITH ACCESS PANEL REQUIRED
FSD	COMBINATION FIRE/SMOKE DAMPER WITH ACCESS PANEL
SD	SMOKE DAMPER WITH ACCESS PANEL
BDD	BACK DRAFT DAMPER
	ATC DAMPER
SD	DUCT SMOKE DETECTOR
	HEATING OR COOLING COIL IN DUCT

EQUIPMENT SYMBOLS

SYMBOL	DESCRIPTION
	UNIT HEATER
OR	INLINE PUMP
	FAN
	GAS PRESSURE REGULATOR
	GAS PRESSURE REGULATOR
OR	ACCESS PANEL IN DUCT OR PLENUM
	SINGLE DUCT AIR TERMINAL BOX VARIABLE OR CONSTANT VOLUME MIN 1-1/2 TERMINAL INLET SIZE STRAIGHT DUCT AT TERMINAL INLET

PLUMBING SYMBOLS

SYMBOL	DESCRIPTION
	THERMOSTATIC MIXING VALVE
	HOSE BIBB
	FLOOR CLEAN-OUT OR CLEAN-OUT TO GRADE
W.H.	WALL HYDRANT
	WALL CLEAN-OUT
	FIRE RISER
	FLOOR SINK
	FLOOR DRAIN
	ROOF DRAIN
	DOWNSPOUT NOZZLE
	WATER HAMMER ARRESTOR
	FILL PORT
	DRAIN PAN AND P-TRAP
(NAME)	FIXTURE FROM LEVEL ABOVE

PIPING SYMBOLS

SYMBOL	DESCRIPTION
E(NAME)	EXISTING PIPING
	DEMOLITION
OR	90° ELBOW
	45° ELBOW
	PIPE CAP
	RISER - UP ELBOW
	RISER - DOWN ELBOW
	RISE OR DROP
	BRANCH - SIDE CONNECTION
	BRANCH - TOP CONNECTION
	BRANCH - BOTTOM CONNECTION
VTR	VENT THROUGH ROOF
	ARROW INDICATED DIRECTION OF FLOW IN PIPE
	REDUCER
	ECCENTRIC REDUCER
SLOPE	LEADER INDICATES DOWNWARD SLOPE
RPBP	REDUCED PRESSURE BACKFLOW PREVENTER DRAIN PAN
F&T	F&T-FLOAT & THERMOSTATIC
	VALVE IN RISE
OR	SHUT OFF VALVE
OR	BALL VALVE
OR	BUTTERFLY VALVE
	MOTOR OPERATED BUTTERFLY VALVE
OR	GATE VALVE
	GATE VALVE - NON RISING STEM
OR	ANGLE VALVE
OR	GLOBE VALVE
OR	PLUG VALVE
	SHUT OFF PLUG VALVE FOR USE WITH PRESSURE GAUGE
OR	CHECK VALVE
OR	LATERAL STRAINER WITH BLOW-OFF VALVE - PROVIDE HOSE END WITH CAP WHERE DISCHARGE IS NOT PIPED TO DRAIN
OR	PRESSURE REDUCING VALVE EXTERNAL PRESSURE
OR	PRESSURE REDUCING VALVE SELF CONTAINED
OR	ATC - 2 WAY VALVE
OR	ATC - 3 WAY VALVE
S	SOLENOID VALVE
0.0 GPM OR	CALIBRATED BALANCING VALVE WITH GPM INDICATED
	VENTURI FLOW METER
GPM LB/HR.	FLOW METER ORIFICE
OR	RELIEF VALVE
	AIR VENT - MANUAL
	AIR VENT - AUTO
	FLOW SWITCH
P S	PRESSURE SWITCH
OR	TEMPERATURE AND PRESSURE TEST PORT
	THERMOMETER WELL
	THERMOMETER - TEMP RANGE INDICATED
	PRESSURE GAUGE WITH SHUT OFF PLUG VALVE
	PRESSURE GAUGE WITH PIGTAIL
OR	UNION
OR	FLANGE
OR	FLEXIBLE EXPANSION JOINT
	ALIGNMENT GUIDE
	ANCHOR
	STEAM TRAP

SHEET INDEX

SHEET NUMBER	SHEET NAME
ME001	MECHANICAL SYMBOLS & LEGEND
ME002	MECHANICAL GENERAL NOTES
ME003	MECHANICAL SPECIFICATION
ME501	MECHANICAL DETAILS
MD111	LEVEL 1 MAIN OFFICE MECHANICAL DEMO PLAN
MH111	LEVEL 1 MAIN OFFICE MECHANICAL PLAN

DESIGN WEST
LOGAN, UTAH
(435) 752-7031
SALT LAKE CITY, UTAH
(801) 539-8221

MT. LOGAN MIDDLE SCHOOL
MAIN OFFICE AND SECURE VESTIBULE REMODEL
875 N 200 E, LOGAN, UT 84321
LOGAN CITY SCHOOL DISTRICT

MARK:	DESCRIPTION:	DATE:

PROJECT #: 26003
DRAWN BY: S.ROCHA
CHECKED BY: M.CARRILLO
ISSUED: 04.02.2026

PROFESSIONAL ENGINEER
6136918-2202
MARTIN THOMAS CARRILLO
04/27/2026
STATE OF UTAH

CONSTRUCTION DOCUMENTS

C-MECH ENGINEERING

MECHANICAL SYMBOLS & LEGEND

ME001

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MECHANICAL GENERAL NOTES

1. ALL SUPPLY GRILLES ARE CD-1, CFM AS NOTED, UNLESS OTHERWISE NOTED. REFER TO DETAIL FOR GRILLE & DIFFUSER CONNECTION.
2. ALL RETURN GRILLES SHOWN AS SUCH ARE RG-1 UNLESS OTHERWISE NOTED. RETURN GRILLES LOCATED IN ACOUSTICAL CEILING TILE SHALL BE INSTALLED WITH RETURN AIR SOUND BOOT UNLESS OTHERWISE INDICATED.
3. BRANCH DUCTWORK SHALL BE SIZED TO MATCH NECK INLET SIZE OF DIFFUSER, GRILLE, OR REGISTER SERVED UNLESS NOTED OTHERWISE.
4. COORDINATE EXACT LOCATION OF THERMOSTAT WITH OWNER.
5. DO NOT ROUTE DUCTS AND PIPES ABOVE ELECTRICAL PANELS. ALL ELECTRICAL PANELS MUST HAVE CLEAR ACCESS SPACE IN FRONT OF PANEL 4'-0" DEEP AND 6'-6" HIGH. DO NOT ROUTE DUCTS AND PIPES IN ELECTRICAL ROOMS, EXCEPT DUCTS AND PIPES SERVING THE ROOM.
6. COORDINATE EXACT LOCATIONS OF GRILLES WITH ARCHITECTURAL PLANS.
7. ALL DUCT DIMENSIONS ARE INSIDE FREE AREA DIMENSIONS. ADJUST SHEET METAL DIMENSION FOR LINED DUCT.
8. PROVIDE CEILING ACCESS PANELS AS REQUIRED WHERE MECHANICAL EQUIPMENT, VALVES, FIRE DAMPERS, ETC. ARE LOCATED ABOVE INACCESSIBLE CEILINGS.
9. ROOF DECK SHALL NOT BE USED TO SUPPORT LOADS FROM PIPING, DUCTWORK OR EQUIPMENT, UNLESS NOTED OTHERWISE. HANGER LOADS LESS THAN 50 LBS. MAY BE HUNG FROM THE STEEL ROOF DECK IN CASES WHEN HANGING FROM THE STEEL ROOF DECK CANNOT BE AVOIDED; THE ATTACHMENT METHOD MUST DISTRIBUTE THE LOAD ACROSS THE DECK AS APPROVED BY THE STRUCTURAL ENGINEER.
10. COORDINATE INSTALLATION OF NEW MECHANICAL EQUIPMENT WITH EXISTING CONDITIONS.
11. ALL SURFACES DAMAGED AS A RESULT OF NEW CONSTRUCTION SHALL BE PATCHED AND REPAIRED AS REQUIRED TO MATCH EXISTING SURFACES.
12. PROVIDE MANUFACTURER'S RECOMMENDED SERVICE CLEARANCE AROUND ALL SIDES OF MECHANICAL EQUIPMENT.
13. THERMOSTATS SHALL NOT BE LOCATED ON EXTERIOR WALLS. COORDINATE EXACT MOUNTING LOCATION OF ALL THERMOSTATS WITH LATEST REVISION OF ARCHITECTURAL ELEVATION AND FURNISHINGS PLANS, TYPICAL.
14. LOCATE ALL EXHAUST VENTS AND PLUMBING VENTS MINIMUM 10 FT. FROM ALL BUILDING INTAKES.
15. INSTALL WATER, GAS, AND VENT PIPING SHOWN ABOVE THE CEILING UNLESS NOTED OTHERWISE.
16. INSTALL WASTE PIPING SHOWN BELOW THE FLOOR UNLESS NOTED OTHERWISE.
17. PROVIDE 2" MINIMUM WASTE PIPING BELOW GRADE.
18. COORDINATE EXACT LOCATION OF FIXTURES AND DRAINS WITH ARCHITECTURAL DRAWINGS.
19. PROVIDE 3" MINIMUM VENT THROUGH ROOF. INCREASE VENT LINE 12" BELOW BUILDING INSULATION.
20. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR CAULKING AND SEALING ALL PENETRATIONS IN FIRE AND SMOKE RATED PARTITIONS TO MAINTAIN RATINGS. SEE SPECIFICATION, TYPICAL.
21. THE MECHANICAL CONTRACTOR SHALL PROVIDE FIRE, SMOKE OR COMBINATION FIRE/SMOKE DAMPERS AT ALL LOCATIONS SHOWN ON THE CONTRACT DOCUMENTS AND AS REQUIRED TO MEET THE INTEGRITY OF ALL SMOKE AND FIRE PARTITIONS. THE CONTRACTOR SHALL REFER TO THE LATEST ARCHITECTURAL LIFE SAFETY PLANS FOR ALL FIRE AND SMOKE PARTITION LOCATIONS. DAMPERS ARE TO BE PROVIDED WITH SHUTOFF/TEST SWITCH AT EACH LOCATION.
22. PROVIDE AND INSTALL TURNING VANES IN ALL SQUARE LOW PRESSURE DUCTWORK AT ELBOWS OR TEES, TYPICAL.
23. INSTALL ALL TERMINAL BOXES IN EASILY ACCESSIBLE AND SERVICEABLE LOCATIONS, MEETING ALL MANUFACTURERS REQUIRED CLEARANCES ON EACH SIDE, SEE DETAILS, TYPICAL.
24. CONTRACTOR SHALL OFF-SET, TRANSITION AND PROVIDE CHANGES AS REQUIRED FOR COORDINATION WITH OTHER TRADES, TYPICAL.
25. DUCTWORK SIZES SHOWN ARE INSIDE CLEAR DIMENSIONS. REFER TO MECHANICAL SPECIFICATIONS FOR EXTENT OF DUCT INSULATION AND LINER.
26. PROVIDE AND INSTALL REMOTE DAMPER OPERATORS FOR ALL DAMPERS INSTALLED ABOVE INACCESSIBLE CEILINGS, SEE MECHANICAL SPECIFICATIONS FOR EQUIPMENT REQUIREMENTS, TYPICAL.
27. PROVIDE AND INSTALL HIGH EFFICIENCY TAKE-OFF FITTINGS AND BALANCING DAMPER AT ALL BRANCH CONNECTIONS TO LOW PRESSURE DUCTWORK.
28. PROVIDE AND INSTALL HIGH EFFICIENCY OR CONICAL TAKE-OFFS AT ALL BRANCH CONNECTIONS TO MEDIUM PRESSURE DUCTWORK.
29. WHERE DUCTWORK CROSSES, SUPPLY DUCTWORK IS USUALLY BELOW RETURN AND EXHAUST DUCT. RETURN DUCTWORK IS USUALLY BELOW EXHAUST DUCTS.
30. EXCEPT WHERE DIRECTED TO PLACE ITEMS OF WORK AT THE APPROXIMATE LOCATION SHOWN; DO NOT SCALE DRAWINGS FOR DIMENSIONAL INFORMATION. ALL ELEMENTS OF THE DRAWINGS MAY NOT BE DRAWN TO EXACT SCALE. ALL DIMENSIONS REQUIRED ARE SHOWN OR MAY BE DERIVED FROM THOSE SHOWN ON THE FLOOR PLANS, DETAIL PLANS, ELEVATIONS, SECTION, DETAILS, SCHEDULES, AND SPECIFICATIONS. IF CONCERNS ARISE, THE CONTRACTOR SHALL NOTIFY THE DESIGNER SO THAT A CLARIFICATION CAN BE ISSUED.
31. THESE DOCUMENTS SHOW THE DESIGN INTENT. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE EVERYTHING INDICATED ON THE DRAWINGS OR SPECIFIED REGARDLESS OF WHERE IT IS SHOWN ON THE DRAWINGS OR IN THE SPECIFICATIONS.
32. THE CONTRACTOR SHALL INFORM THE DESIGNER OF ANY PROPOSED DEVIATIONS FROM THE CONTRACT DOCUMENTS.

MECHANICAL PIPING GENERAL NOTES

1. CONTRACTOR SHALL PROVIDE ALL EQUIPMENT AND MATERIALS AND PERFORM ALL REQUIRED LABOR TO INSTALL COMPLETE AND OPERABLE PIPING SYSTEMS AS INDICATED ON THE DRAWINGS, AS SPECIFIED AND AS REQUIRED BY CODE.
2. UNLESS OTHERWISE NOTED: ALL MECHANICAL PIPING IS OVERHEAD TO RUN ABOVE DUCTWORK AND TIGHT TO UNDERSIDE OF STRUCTURE.
3. WHERE VALVING OR EQUIPMENT IS LOCATED ABOVE HARD CEILINGS PROVIDE AN ACCESS DOOR IN CEILING. ACCESS DOORS SHALL HAVE A MINIMUM SIZE OF 24"X24".
4. NO PIPING TO RUN OVER ELECTRICAL PANELS, VFD'S OR MCC'S. PROTECT EQUIPMENT WITH A 42" DEEP ZONE IN FRONT OF PANELS, VFD'S, AND MCC'S.
5. SLEEVE PIPING THRU WALLS/FOUNDATIONS WHERE REQUIRED. COORDINATE PIPING SLEEVES WITH OTHER TRADES AND STRUCTURAL APPURTENANCES.
6. INSTALL PIPING SO THAT ALL VALVES, STRAINERS, UNIONS, TRAPS, FLANGES, AND OTHER APPURTENANCES REQUIRING ACCESS ARE ACCESSIBLE.
7. ALL VALVES SHALL BE INSTALLED SO THAT VALVE REMAINS IN SERVICE WHEN EQUIPMENT OR PIPING ON EQUIPMENT SIDE OF VALVE IS REMOVED.
8. PROVIDE AN AIR VENT AT THE HIGH POINT OF EACH DROP IN THE HEATING AND CHILLED WATER PIPING SYSTEM.
9. INSTALL ALL PIPING WITHOUT FORCING OR SPRINGING.
10. ALL VALVES SHALL BE ADJUSTED FOR SMOOTH AND EASY OPERATION.
11. PROVIDE ISOLATION VALVES AT EACH EXIT/ENTRANCE INTO SHAFT WHETHER OR NOT SHOWN.
12. ALL PIPE AND DUCT SIZES SHALL REMAIN THE SAME SIZE SHOWN, IN THE DIRECTION OF FLOW, UNLESS SHOWN OTHERWISE.
13. COORDINATE LOCATION OF THERMOSTAT WITH ARCHITECTURAL FURNISHING PLANS. MOUNT THERMOSTAT AT HEIGHT AS SPECIFIED ON ARCHITECTURAL.
14. CONTRACTOR TO PROVIDE VALVE IDENTIFICATION AND LOCATION ON ALL CEILING TILES WHERE VALVES ARE LOCATED ABOVE CEILING.

PLUMBING GENERAL NOTES

1. SLOPE PIPE AS FOLLOWS: WASTE BRANCHES: 1/4" PER FOOT; WASTE MAINS: 1/4" PER FOOT; ROOF DRAIN/ROOF DRAIN OVERFLOW: 1/8" PER FOOT, UNLESS OTHERWISE NOTED.
2. CONTRACTOR SHALL PERFORM ALL WORK DONE WITH WATER CONTROL IN MIND TO PREVENT WATER FROM DAMAGING AREAS ON FLOORS BELOW.
3. PLUMBING DRAWINGS ARE SCHEMATIC IN NATURE. CONTRACTOR SHALL FIELD VERIFY EXACT PIPE ROUTING AND COORDINATE WITH ALL OTHER TRADES FOR COMPLETE INSTALLATION OF CODE COMPLIANT PLUMBING SYSTEM.
4. ALL PIPING IN PLUMBING CHASES SHALL BE ARRANGED TO ALLOW MAINTENANCE ACCESS. PROVIDE MANUFACTURER REQUIRED CLEARANCES AROUND ALL EQUIPMENT.
5. NO PIPING SHALL RUN OVER ELECTRICAL PANELS, VFD'S OR MCC'S. PROTECT EQUIPMENT WITH A 42" DEEP ZONE IN FRONT OF PANELS, VFD'S, AND MCC'S.
6. COORDINATE FAN ROOM FLOOR DRAIN AND FLOOR SINK LOCATIONS WITH COOLING COIL, EVAPORATIVE SECTION, AND HEATING COIL LOCATIONS.
7. CONTRACTOR TO PROVIDE VALVE IDENTIFICATION AND LOCATION ON ALL CEILING TILES WHERE VALVES ARE LOCATED.
8. PIPING AND ROUTING SHOWN, INCLUDING ALL BELOW FLOOR DECK PIPING, IS APPROXIMATE. EXACT LOCATION AND SIZE OF ALL PIPING SHALL BE DETERMINED BY THE CONTRACTOR AND FIELD VERIFIED.
9. REFER TO ARCHITECTURAL DRAWINGS FOR FIXTURE MOUNTING HEIGHTS, DIMENSIONS, AND OTHER REQUIREMENTS.
10. CONTRACTOR TO VERIFY CONNECTION SIDE OF ADA FIXTURES AND ADJUST ACCORDINGLY. INSTALL FLUSH VALVES HANDLES ON WIDE SIDE OF ALL FIXTURES.
11. LOCATE ALL VENTS MINIMUM 25' AWAY FROM AIR INTAKES.
12. INSTALL ALL DOMESTIC WATER LINES BELOW DUCTWORK.
13. WHERE ISOLATION VALVES, BALANCING VALVES AND WATER HAMMER ARRESTORS ARE MOUNTED ABOVE HARD CEILINGS,CONTRACTOR SHALL INSTALL 24" X 24" ACCESS DOOR IN CEILING.
14. MOUNT ALL ISOLATION VALVES, CONTROL VALVES, BALANCING VALVES, ETC. NEAR CEILING HEIGHT FOR EASE OF ACCESS & MAINTENANCE.
15. INSTALL ALL EQUIPMENT WITH SUFFICIENT CLEARANCE FOR MAINTENANCE PER MANUFACTURERS RECOMMENDATION.
16. COORDINATE ALL FLOOR PENETRATIONS WITH STRUCTURAL AND OTHER TRADES. PROVIDE SLEEVES AS NECESSARY.
17. COORDINATE EXACT LOCATION OF PLUMBING WITH STRUCTURAL MEMBERS, LIGHTS, REFLECTED CEILING, CABLE TRAY, DUCTWORK, MECHANICAL PIPING, MEDICAL GASES, FIRE PROTECTION AND OTHER TRADES, TYPICAL.
18. COORDINATE THE LOCATION OF THE FLOOR DRAIN, SHOWER DRAIN, OR FLOOR SINK WITH ARCHITECTURAL AND STRUCTURAL, TYPICAL AT ALL LOCATIONS.
19. SEE PLUMBING FIXTURE SCHEDULE FOR PIPE SIZES OF WASTE, VENT AND DOMESTIC WATER TO/FROM SINGLE FIXTURE.
20. HOSE BIBBS SHOWN AT LAVATORIES ARE TO BE MOUNTED AT AN ACCESSIBLE LOCATION UNDER THE LAVATORY.
21. COORDINATE EXACT LOCATION OF PLUMBING PIPING WITH STRUCTURAL MEMBERS, LIGHTS, REFLECTED CEILING PLANS, CABLE TRAY, ELECTRICAL CONDUITS, DUCTWORK, MECHANICAL AND FIRE PROTECTION PIPING, AND ALL OTHER TRADES AND ALL EXISTING CONDITIONS.
22. LOCATE CIRCUIT SETTERS, VALVES, WATER HAMMER ARRESTORS, ETC. IN ACCESSIBLE LOCATIONS. PROVIDE 24"X24" ACCESS PANEL WHERE ITEM IS LOCATED ABOVE A HARD CEILING.
23. INSTALL CLEANOUTS IN DRAIN PIPING AS INDICATED, AND WHERE NOT INDICATED, ACCORDING TO THE FOLLOWING.
    a) SHALL BE SIZE SAME AS DRAINAGE PIPING UP TO 4" NPS. USE 4" NPS FOR LARGER. DRAINAGE PIPING UNLESS LARGER CLEANOUT IS INDICATED.
    b) SHALL BE LOCATED AT MINIMUM INTERVALS OF 50 FT FOR PIPING 4" NPS AND SMALLER AND 100 FT FOR LARGER PIPING PER CODE REQUIREMENTS.
    c) SHALL BE LOCATED AT THE BASE OF EACH VERTICAL STACK.
24. ALL PIPE AND DUCT SIZES SHALL REMAIN THE SAME SIZE SHOWN, IN THE DIRECTION OF FLOW, UNTIL INDICATED OTHERWISE.

230050 HVAC DESIGN CRITERIA

A. WORK INCLUDED: FURNISH ALL LABOR, MATERIALS, EQUIPMENT, APPLIANCES AND NECESSARY INCIDENTALS FOR THE COMPLETE INSTALLATION OF ALL HEATING, VENTILATION AND AIR CONDITIONING AS SHOWN ON THE DRAWINGS AND AS SPECIFIED HEREIN.
B. RELATED WORK INCLUDED IN THIS SECTION:
    1. FURNISHING ELECTRICAL DEVICES NECESSARY FOR MECHANICAL WORK, EXCEPT DISCONNECTS UNLESS INDICATED OTHERWISE.
    2. LINE AND LOW VOLTAGE WIRING FOR MECHANICAL CONTROLS INCLUDING FINAL CONNECTIONS AS INDICATED ON WIRING DIAGRAMS.
    3. CONDUIT FOR LINE AND LOW VOLTAGE WIRING FOR MECHANICAL CONTROLS AS INDICATED ON WIRING DIAGRAMS.
    4. RESPONSIBILITY FOR OBTAINING CLARIFICATION OF DISCREPANCIES BETWEEN MECHANICAL AND ELECTRICAL WORK FROM ARCHITECT PRIOR TO PROCEEDING WITH THE WORK.
    5. RESPONSIBILITY FOR PROPER OPERATION OF AUTOMATIC ELECTRICAL CONTROLS AND EQUIPMENT, AND OF ELECTRIC POWER DRIVEN EQUIPMENT FURNISHED UNDER THIS SECTION.
C. RELATED WORK IN OTHER SECTIONS:
    1. ELECTRICAL WORK AS FOLLOWS WILL BE PROVIDED UNDER ELECTRICAL DIVISION:
D. CONDUIT FOR LINE VOLTAGE WIRING FOR EQUIPMENT AND DEVICES AS INDICATED OR SPECIFIED EXCEPT CONDUIT FOR LINE AND LOW VOLTAGE WIRING FOR MECHANICAL CONTROLS AS SPECIFIED UNDER DIVISION 23.
E. LINE VOLTAGE WIRING FOR EQUIPMENT AND DEVICES AS INDICATED OR SPECIFIED HEREIN EXCEPT LINE AND LOW VOLTAGE WIRING FOR MECHANICAL CONTROLS AS SPECIFIED UNDER DIVISION 23.
F. PROVIDING DISCONNECT SWITCHES.
G. INSTALLING ELECTRICAL DEVICES SUCH AS STARTERS AND DISCONNECTS, AND WHEN INDICATED, FURNISHING ALL SUCH DEVICES.
H. CODES AND STANDARDS:
    1. IN ADDITION TO THE REQUIREMENTS OF ALL GOVERNING CODES, ORDINANCES AND AGENCIES, CONFORM TO THE REQUIREMENTS OF THE FOLLOWING CODES AND STANDARDS:
    2. 2021 INTERNATIONAL MECHANICAL CODE.
    3. 2021 INTERNATIONAL BUILDING CODE.
    4. 2021 INTERNATIONAL PLUMBING CODE.
    5. 2021 INTERNATIONAL ENERGY CONSERVATION CODE.
    6. 2021 INTERNATIONAL FUEL AND GAS CODE.
    7. ASHRAE 90.1-2016.
    8. 2020 NATIONAL ELECTRIC CODE.
I. DESIGN CONDITIONS
    1. OUTSIDE DESIGN CONDITIONS: USE THE FOLLOWING CLIMATE DATE FROM ASHRAE 2021 FUNDAMENTAL HANDBOOK 24.14 FOR LOGAN, UTAH
        a. ELEVATION, 4785 FT
        b. SUMMER DESIGN DRY BULB TEMP. (ASHRAE 1%), 93°F
        c. SUMMER MEAN COINCIDENT WEB BULB, (ASHRAE 1%), 63°F
        d. COOLING TOWER WEB BULB TEMP, (ASHRAE 1%), 53°F
        e. WINTER DESIGN DRY BULB TEMP, (ASHRAE 99%), -3°F
J. ALL GAS FIRED EQUIPMENT SHALL INCLUDE A LABEL INDICATING THAT THE APPLIANCE HAS BEEN ADJUSTED, MODIFIED OR RE-CALIBRATED FOR THE ALTITUDE WHEREIN THE PROJECT IS TO BE LOCATED. THE APPLIANCE SHALL ALSO INCLUDE A COMPLIANCE STATEMENT INDICATING THAT THE APPLIANCE HAS BEEN ADJUSTED, MODIFIED OR RE-CALIBRATED FOR THE PROPER OPERATION AT THE ALTITUDE OF THE PROJECT AND SHALL BE LISTED CAPABLE FOR USE WITH NATURAL GAS OR PROPANE GAS IF PROPANE IS LISTED ON THE DRAWINGS.

END OF SECTION 230050

230051 PRODUCT HANDLING

A. PROTECTION: TAKE ALL PRECAUTIONS NECESSARY TO PROTECT THE MATERIALS OF THIS SECTION BEFORE, DURING AND AFTER INSTALLATION.
B. REPLACEMENTS: IN THE EVENT OF DAMAGE, IMMEDIATELY REPAIR ALL DAMAGED AND DEFECTIVE WORK TO THE APPROVAL OF THE ENGINEER, AT NO ADDITIONAL COST TO THE OWNER.

END OF SECTION 230051

230053 INSTALLATION REQUIREMENTS

A. EXAMINATION OF SITE: EXAMINE THE SITE AND INCLUDE IN BID PROPOSAL ALL CONDITIONS UNDER WHICH WORK IS TO BE PERFORMED.
B. PROVIDE A MINIMUM CLEARANCE OF 30" OR MORE AT ALL EQUIPMENT AND CONNECTED PIPING. CODE REQUIRED CLEARANCE SHALL TAKE PRECEDENCE.
C. INSTALL ALL VALVES, PIPING, AND EQUIPMENT WITH CLEARANCES TO PERMIT DISASSEMBLY FOR MAINTENANCE PURPOSES.
D. PROVIDE AMPLE SPACE IN EQUIPMENT ROOMS FOR REMOVAL OF COILS, COOLER TUBE, IMPELLERS AND MOTOR ROTORS, HEAT EXCHANGER TUBES, ETC. OFFSET PIPING DROPS TO ALLOW REMOVAL AND PROVIDE UNIONS IN PIPING WHERE PIPING IS TO BE DISCONNECTED. SHOW AND LABEL ACCESS SPACE ON CONSTRUCTION DRAWINGS.
E. PROVIDE ACCESS DOORS FOR ALL EQUIPMENT LOCATED ABOVE INACCESSIBLE CEILINGS.
F. INSTALL ALL SYSTEMS SUCH THAT NO EQUIPMENT, DUCTWORK, PIPING, CONDUIT, ETC. IS REQUIRED TO BE REMOVED TO SERVICE, REPAIR OR REPLACE EQUIPMENT.
G. LOCATE LARGER DUCTWORK, PIPING, AND VAV BOXES IN THE CEILING SPACE ABOVE CORRIDORS. LOCATE SMALLER PIPING AND CONDUCT IN ADJACENT SPACES WHERE CEILING SPACE IN CORRIDORS IS LIMITED. AVOID USING PIPING TRAPEZES WHERE ACCESS TO PIPING AND CONDUIT IS LIMITED.
H. SCHEDULE ALL UTILITY SHUTDOWNS 7 DAYS IN ADVANCE.
I. REPLACE OR REPAIR DAMAGE TO ANY EXISTING BUILDING WHERE REPAIR OR REPLACEMENT WORK IS PERFORMED BY A CONTRACTOR. PROVIDE PHOTO DOCUMENTS OF THE REMODEL AREA PRIOR TO START OF CONSTRUCTION.
J. SCHEDULE A REPRESENTATIVE OF THE OWNER TO BE PRESENT WHEN TEST ON HVAC SYSTEMS ARE CONDUCTED.
K. FLUSH, CHEMICALLY CLEAN AND CIRCULATE, AND PRESSURE TEST ALL HYDRONIC AND STEAM PIPING SYSTEMS.
L. PROVIDE AN APPROPRIATE METHOD OF FILLING AND DRAINING DOWN EACH HYDRONIC SYSTEM. PROVIDE ALL AUTOMATIC AIR VENT VALVES SHALL BE ACCESSIBLE.
M. EXTEND ALL DRAINS TO FLOOR DRAINS AND FLOOR SINKS. PROVIDE DRAIN LINES THAT ARE NOT ROUTED ACROSS WALKWAYS.

END OF SECTION 230053

230053 MISCELLANEOUS

A. PERMIT AND FEES: ARRANGE, APPLY AND PAY FOR ALL NECESSARY PERMITS, INSPECTIONS, EXAMINATIONS AND FEES OR CHARGES REQUIRED BY PUBLIC AUTHORITIES HAVING JURISDICTION.
B. LOCATIONS AND ACCESSIBILITY: CONTRACTOR SHALL FULLY INFORM HIMSELF REGARDING PECULIARITIES AND LIMITATIONS OF SPACE AVAILABLE FOR INSTALLATION OF WORK UNDER THIS SECTION. VALVES, MOTORS, CONTROLS AND OTHER DEVICES REQUIRING SERVICE, MAINTENANCE AND ADJUSTMENT SHALL BE PLACED IN FULLY ACCESSIBLE POSITIONS AND LOCATIONS. PROVIDE ACCESS DOORS WHERE REQUIRED IN DUCTWORK AND/OR CONSTRUCTION WHETHER SPECIALLY DETAILED OR NOT, AND RENDER ALL SUCH DEVICES ACCESSIBLE.
C. SCAFFOLDING: FURNISH ALL SCAFFOLDING, RIGGING AND HOISTING AS REQUIRED FOR THE PROPER EXECUTION OF THE WORK.
D. DRAWINGS: DRAWINGS INDICATE DESIRED LOCATION AND ARRANGEMENT OF DUCTWORK, EQUIPMENT, AND OTHER ITEMS, AND ARE TO BE FOLLOWED AS CLOSELY AS POSSIBLE. ALL OFFSETS AND INTERFERENCES MAY NOT BE SHOWN BECAUSE OF THE SCALE OF DRAWINGS. ASSUME THE RESPONSIBILITY FOR COORDINATING THE WORK WITH ALL OTHER TRADES. WORK SPECIFIED AND NOT CLEARLY DEFINED BY THE DRAWINGS SHALL BE INSTALLED AND ARRANGED IN A MANNER SATISFACTORY TO THE ENGINEER. IN THE EVENT CHANGES IN INDICATED LOCATIONS AND ARRANGEMENTS ARE DEEMED NECESSARY BY ENGINEER, THEY SHALL BE MADE BY THIS CONTRACTOR WITHOUT ADDITIONAL CHARGES.
E. ALL HVAC EQUIPMENT SHALL BE LABELED. INFORMATION ON LABELS SHALL INCLUDE: IDENTIFICATION NUMBER AND NAME SAME AS THE DRAWINGS, FLOW AND STATIC PRESSURE AND THE AREA TO WHICH THE UNIT SERVES. LABELS SHALL BE BLACK FACED FORMICA WITH WHITE ENGRAVED LETTERING AT LEAST 3/16 INCH HIGH.

END OF SECTION 230053

230054 DISCREPANCIES

A. IN THE EVENT OF DISCREPANCY, IMMEDIATELY NOTIFY THE OWNER.
B. DO NOT PROCEED WITH INSTALLATION IN AREAS OF DISCREPANCY UNTIL ALL SUCH DISCREPANCIES HAVE BEEN FULLY RESOLVED. SEE SECTION 2.

END OF SECTION 230054

230055 EQUIPMENT IDENTIFICATION

A. ALL MAJOR EQUIPMENT SHALL BEAR FIRMLY ATTACHED METAL NAMEPLATES WHICH STATE NAME OF MANUFACTURER, MODEL NUMBER AND ELECTRICAL DATA.

END OF SECTION 230055

230056 INITIAL LUBRICATION, ADJUSTING, AND FILLING SYSTEMS

A. BEFORE OPERATING ANY MECHANICAL SYSTEMS, EQUIPMENT BEARINGS SHALL BE LUBRICATED AND BOLTS, PULLEYS, AND OTHER MOVING PARTS CHECKED FOR ALIGNMENT AND TOLERANCES IN ACCORDANCE WITH MANUFACTURER'S OPERATING INSTRUCTIONS. VIBRATIONS AND NOISE SHALL BE SUPPRESSED.

END OF SECTION 230056

230057 CLEANING OF EQUIPMENT, MATERIALS AND PREMISES

A. BEFORE OPERATING ANY MECHANICAL SYSTEMS, EQUIPMENT BEARINGS SHALL BE LUBRICATED AND BOLTS, PULLEYS, AND OTHER MOVING PARTS CHECKED FOR ALIGNMENT AND TOLERANCES IN ACCORDANCE WITH MANUFACTURER'S OPERATING INSTRUCTIONS. VIBRATIONS AND NOISE SHALL BE SUPPRESSED.

END OF SECTION 230057

230058 EQUIPMENT AND MATERIAL

A. INSTALL PER MANUFACTURER'S RECOMMENDATIONS AND LITERATURE.

END OF SECTION 230058

230059 ACCESSIBILITY

A. INSTALL WORK READILY ACCESSIBLE FOR NORMAL OPERATION, READING OF INSTRUMENTS, ADJUSTMENT, SERVICE, INSPECTION AND REPAIR, PROVIDE ACCESS PANELS WHERE INDICATED AND REQUIRED. ACCESS PANELS SHALL BE THE RESPONSIBILITY OF RESPECTIVE SUBCONTRACTORS.

END OF SECTION 230059

230500 BASIC MECHANICAL MATERIALS AND METHODS

PART 1 - GENERAL
1.1 SECTION REQUIREMENTS
A. SUMMARY: GENERAL REQUIREMENTS FOR MOTORS, HANGERS AND SUPPORTS, VIBRATION ISOLATION AND SEISMIC RESTRAINTS, VALVES, AND METERS AND GAGES.
B. SUBMITTALS: PRODUCT DATA FOR MATERIALS AND EQUIPMENT SPECIFIED IN THIS SECTION.
PART 2 - PRODUCTS
2.1 MOTORS
A. MOTOR CHARACTERISTICS:
    1. MOTORS 3/4 HP AND LARGER: THREE PHASE.
    2. MOTORS SMALLER THAN 3/4 HP: SINGLE PHASE.
    3. FREQUENCY RATING: 60 HZ.
    4. VOLTAGE RATING: NEMA STANDARD VOLTAGE SELECTED TO OPERATE ON NOMINAL CIRCUIT VOLTAGE TO WHICH MOTOR IS CONNECTED.
    5. SERVICE FACTOR: 1.15 FOR OPEN DRIPPROOF MOTORS; 1.0 FOR TOTALLY ENCLOSED MOTORS.
    6. DUTY: CONTINUOUS DUTY AT AMBIENT TEMPERATURE OF 105°F AND AT ALTITUDE OF 4500 FEET ABOVE SEA LEVEL.
    7. CAPACITY AND TORQUE CHARACTERISTICS: SUFFICIENT TO START, ACCELERATE, AND OPERATE CONNECTED LOADS AT DESIGNATED SPEEDS, AT INSTALLED ALTITUDE AND ENVIRONMENT, WITH INDICATED OPERATING SEQUENCE, AND WITHOUT EXCEEDING NAMEPLATE RATINGS OR CONSIDERING SERVICE FACTOR.
    8. ENCLOSURE: UNLESS OTHERWISE INDICATED, OPEN DRIPPROOF.
    9. MOTORS USED WITH VARIABLE FREQUENCY CONTROLLERS: RATINGS, CHARACTERISTICS, AND FEATURES COORDINATED WITH AND APPROVED BY CONTROLLER MANUFACTURER.
2.2 HANGERS AND SUPPORTS
A. HANGER AND PIPE ATTACHMENTS: FACTORY FABRICATED WITH GALVANIZED COATINGS; NONMETALLIC COATED FOR HANGERS IN DIRECT CONTACT WITH COPPER TUBING.
B. BUILDING ATTACHMENTS: POWDER-ACTUATED-TYPE, DRIVE-PIN ATTACHMENTS WITH PULLOUT AND SHEAR CAPACITIES APPROPRIATE FOR SUPPORTED LOADS AND BUILDING MATERIALS.
C. MECHANICAL-EXPANSION ANCHORS: INSERT WEDGE-TYPE ATTACHMENTS WITH PULLOUT AND SHEAR CAPACITIES APPROPRIATE FOR SUPPORTED LOADS AND BUILDING MATERIALS.
2.3 VIBRATION ISOLATION AND SEISMIC CONTROL DEVICES
A. VIBRATION SUPPORTS:
    1. RESTRAINED ELASTOMERIC MOUNTS: DOUBLE-DEFLECTION TYPE, WITH MOLDED, OIL-RESISTANT RUBBER OR NEOPRENE ISOLATOR ELEMENTS WITH FACTORY-DRILLED, ENCAPSULATED TOP PLATE FOR BOLTING TO EQUIPMENT AND BASEPLATE FOR BOLTING TO STRUCTURE. PROVIDE ISOLATOR WITH MINIMUM 0.5-INCH STATIC DEFLECTION.
    2. SPRING ISOLATORS: FREESTANDING, LATERALLY STABLE, OPEN-SPRING ISOLATORS. PROVIDE ISOLATOR WITH MINIMUM 1-INCH STATIC DEFLECTION.
B. VIBRATION HANGERS:
    1. ELASTOMERIC HANGERS: DOUBLE-DEFLECTION TYPE, WITH MOLDED, OIL-RESISTANT RUBBER OR NEOPRENE ISOLATOR ELEMENTS BONDED TO STEEL HOUSINGS WITH THREADED CONNECTIONS FOR HANGER RODS. PROVIDE ISOLATOR WITH MINIMUM 0.5-INCHSTATIC DEFLECTION.
    2. SPRING HANGERS: COMBINATION COIL-SPRING AND ELASTOMERIC-INSERT HANGER WITH SPRING AND INSERT IN COMPRESSION. PROVIDE ISOLATOR WITH MINIMUM 1-INCH STATIC DEFLECTION.
C. SEISMIC RESTRAINTS:
    1. RESILIENT ISOLATION WASHERS AND BUSHINGS: 1-PIECE, MOLDED, BRIDGE-BEARING NEOPRENE COMPLYING WITH AASHTO M 251 AND HAVING A DUROMETER HARDNESS OF 50, PLUS OR MINUS 5, WITH A FLAT WASHER FACE.
    2. RESTRAINING CABLES: GALVANIZED STEEL CABLES WITH END CONNECTIONS MADE OF STEEL ASSEMBLIES THAT SWIVEL TO FINAL INSTALLATION ANGLE AND UTILIZE TWO CLAMPING BOLTS FOR CABLE ENGAGEMENT.
    3. ANCHOR BOLTS: SEISMIC-RATED, DRILL-IN, AND STUD-WEDGE OR FEMALE-WEDGE TYPE. SELECT ANCHOR BOLTS WITH STRENGTH REQUIRED FOR ANCHOR AND AS TESTED ACCORDING TO ASTM E 488/E 488M.
2.4 PRESSURE GAGES AND TEST PLUGS
A. PRESSURE GAGES: DIRECT-MOUNTING, INDICATING-DIAL TYPE COMPLYING WITH ASME B40.100. DRY METAL CASE, MINIMUM 2-1/2 INCH DIAMETER WITH RED POINTER ON WHITE FACE, AND PLASTIC WINDOW. MINIMUM ACCURACY 3 PERCENT OF MIDDLE HALF OF RANGE. RANGE TWO TIMES OPERATING PRESSURE.
B. TEST PLUG: CORROSION-RESISTANT BRASS OR STAINLESS-STEEL BODY WITH TWO SELF-SEALINGRUBBER CORE INSERTS AND GASKETED AND THREADED CAP, WITH EXTENDED STEM FOR UNITS TO BE INSTALLED IN INSULATED PIPING. MINIMUM PRESSURE AND TEMPERATURE RATING 500 PSIG AT 200°F.
PART 3 - EXECUTION
3.1 MOTOR INSTALLATION
A. ANCHOR MOTOR ASSEMBLY TO BASE, ADJUSTABLE RAILS, OR OTHER SUPPORT, ARRANGED AND SIZED ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.
3.2 GENERAL PIPING INSTALLATIONS
A. INSTALL PIPING FREE OF SAGS AND BENDS.
B. INSTALL FITTINGS FOR CHANGES IN DIRECTION AND BRANCH CONNECTIONS.
C. INSTALL SLEEVES FOR PIPES PASSING THROUGH CONCRETE AND MASONRY WALLS, GYPSOM-BOARD PARTITIONS AND CONCRETE FLOOR AND ROOF SLABS.
D. EXTERIOR WALL, PIPE PENETRATIONS: MECHANICAL SLEEVE SEALS INSTALLED IN STEEL OR CAST-IRON PIPES FOR WALL SLEEVES.
E. FIRE-BARRIER PENETRATIONS: SEAL PIPE PENETRATIONS WITH THROUGH-PENETRATION FIRESTOP SYSTEMS SPECIFIED IN DIVISION 7.
F. INSTALL UNIONS AT FINAL CONNECTION TO EACH PIECE OF EQUIPMENT.
G. INSTALL DIELECTRIC UNIONS AND FLANGES TO CONNECT PIPING MATERIALS OF DISSIMILAR METALS IN GAS PIPING.
H. INSTALL DIELECTRIC COUPLING AND NIPPLE FITTINGS TO CONNECT PIPING MATERIALS OF DISSIMILAR METALS IN WATER PIPING.
3.3 GENERAL EQUIPMENT INSTALLATIONS
A. INSTALL EQUIPMENT TO ALLOW MAXIMUM POSSIBLE HEADROOM UNLESS SPECIFIC MOUNTING HEIGHTS ARE NOT INDICATED.
B. INSTALL EQUIPMENT LEVEL AND PLUMB, PARALLEL AND PERPENDICULAR TO OTHER BUILDING SYSTEMS AND COMPONENTS, UNLESS OTHERWISE INDICATED.
C. INSTALL MECHANICAL EQUIPMENT TO FACILITATE SERVICE

230513 AIR OUTLETS AND INLETS

A. PROVIDE HIGH EFFICIENCY NON-OVERLOADING VFD RATED MOTORS WITH CERAMIC BEARINGS AND GROUND BRUSHES TO PROTECT FROM TRANSIENT VOLTAGE.

END OF SECTION 230513

230529 HANGERS AND SUPPORTS FOR HVAC PIPING AND EQUIPMENT

A. PROVIDE A RUST RESISTANT STEEL HANGERS, SUPPORTS, RODS AND ACCESSORIES.
B. PROVIDE HANGERS TO ACCOMMODATE FULL SIZE INSULATION SYSTEM PER CODE SPACING AND SIZING REQUIREMENTS.
C. SEE SECTION 230548 FOR SEISMIC REQUIREMENTS

END OF SECTION 230529

230548 VIBRATION & SEISMIC CONTROLS FOR HVAC PIPING & EQUIPMENT

ALL ISOLATION MATERIALS, FLEXIBLE CONNECTORS AND SEISMIC RESTRAINTS SHALL BE OF THE SAME VENDOR AND SHALL BE SELECTED AND CERTIFIED USING PUBLISHED OR FACTORY CERTIFIED DATA. ANY VARIANCE OR NON-COMPLIANCE WITH THESE SPECIFICATION REQUIREMENTS SHALL BE CORRECTED BY THE CONTRACTOR IN AN APPROVED MANNER.

A. DESCRIPTION
   1. THE WORK IN THIS SECTION CONSISTS OF FURNISHING ENGINEERING AND MATERIALS NECESSARY FOR THE REQUIRED SEISMIC DESIGN OF SUPPORTS AND ATTACHMENTS FOR SYSTEMS AND EQUIPMENT CONTAINED HEREIN FOR THE PROJECT.
   2. UNLESS OTHERWISE SPECIFIED, ALL MECHANICAL, ELECTRICAL, FIRE PROTECTION AND PLUMBING EQUIPMENT, PIPE, AND DUCT SHALL BE RESTRAINED TO RESIST SEISMIC FORCES. RESTRAINTS SHALL MAINTAIN EQUIPMENT, PIPING, AND DUCT WORK IN A CAPTIVE POSITION.
   3. THE 2018 IBC/ASCE 7-05 REQUIRES THAT MECHANICAL & ELECTRICAL COMPONENTS BE ASSIGNED A COMPONENT IMPORTANCE FACTOR. THIS IMPORTANCE FACTOR IS USED TO DETERMINE WHICH EQUIPMENT MAY OR MAY NOT BE EXEMPT FROM SEISMIC DESIGN FORCE REQUIREMENTS. THE COMPONENT IMPORTANCE FACTOR IS DETERMINED AS FOLLOWS:
      a. I/p= 1.5 LIFE-SAFETY COMPONENT IS REQUIRED TO FUNCTION AFTER AN EARTHQUAKE.
      b. I/p = 1.5 COMPONENT CONTAINS HAZARDOUS OR FLAMMABLE MATERIAL.
      c. I/p = 1.5 STORAGE RACKS IN OCCUPANCIES OPEN TO THE GENERAL PUBLIC (E.G., WAREHOUSE RETAIL STORES).
      d. I/p = 1.0 ALL OTHER COMPONENTS.

B. GENERAL SEISMIC DESIGN REQUIREMENTS:
   1. PER IBC 1613.1, THE SEISMIC RESTRAINT OF NONSTRUCTURAL COMPONENTS SHALL MEET THE REQUIREMENTS OF ASCE 7. IF THE COMPONENT IN QUESTION IS EXEMPTED BY SECTION 13.1.4 OF ASCE 7, A SUBMITTAL NOTING THAT SEISMIC RESTRAINT OF THAT PARTICULAR COMPONENT IS NOT REQUIRED.
   2. THE SEISMIC RESTRAINT DESIGN MUST MEET THE REQUIREMENTS LISTED IN TABLE 13.2-1 OF ASCE 7. THESE REQUIREMENTS MAY BE MET BY PROVIDING A PROJECT-SPECIFIC DESIGN PREPARED BY A REGISTERED DESIGN PROFESSIONAL IN THE STATE WERE THE PROJECT IS BEING CONSTRUCTED, AND A MANUFACTURER 'S CERTIFICATION THAT THE COMPONENT IS SEISMICALLY QUALIFIED.
   3. THE 2018 IBC/ASCE 7-05 REQUIRES THAT MECHANICAL & ELECTRICAL COMPONENTS BE ASSIGNED A COMPONENT IMPORTANCE FACTOR. THIS IMPORTANCE FACTOR IS USED TO DETERMINE WHICH EQUIPMENT MAY OR MAY NOT BE EXEMPT FROM SEISMIC DESIGN FORCE REQUIREMENTS. THE COMPONENT IMPORTANCE FACTOR IS DETERMINED AS FOLLOWS:
      a. I/p= 1.5 LIFE-SAFETY COMPONENT IS REQUIRED TO FUNCTION AFTER AN EARTHQUAKE.
      b. I/p = 1.5 COMPONENT CONTAINS HAZARDOUS OR FLAMMABLE MATERIAL.
      c. I/p = 1.5 STORAGE RACKS IN OCCUPANCIES OPEN TO THE GENERAL PUBLIC (E.G., WAREHOUSE RETAIL STORES).
      d. I/p = 1.0 ALL OTHER COMPONENTS.

C. GENERAL SEISMIC DESIGN REQUIREMENTS:
   1. PER IBC 1613.1, THE SEISMIC RESTRAINT OF NONSTRUCTURAL COMPONENTS SHALL MEET THE REQUIREMENTS OF ASCE 7. IF THE COMPONENT IN QUESTION IS EXEMPTED BY SECTION 13.1.4 OF ASCE 7, A SUBMITTAL NOTING THAT SEISMIC RESTRAINT OF THAT PARTICULAR COMPONENT IS NOT REQUIRED.
   2. THE SEISMIC RESTRAINT DESIGN MUST MEET THE REQUIREMENTS LISTED IN TABLE 13.2-1 OF ASCE 7. THESE REQUIREMENTS MAY BE MET BY PROVIDING A PROJECT-SPECIFIC DESIGN PREPARED BY A REGISTERED DESIGN PROFESSIONAL IN THE STATE WERE THE PROJECT IS BEING CONSTRUCTED, AND A MANUFACTURER 'S CERTIFICATION THAT THE COMPONENT IS SEISMICALLY QUALIFIED.
   3. ON PROJECTS WITH SEISMIC DESIGN CATEGORY C:
      a. COMPONENTS WITH IP = 1.0 DO NOT REQUIRE SEISMIC DESIGN OR RESTRAINT.
      b. DUCT: WHERE DUCT IP>1.0, BRACE ALL DUCT > 5 LB/LF
      c. PIPE: WHERE PIPE IP>1.0, BRACE ALL PIPE > 2" DIAMETER.
      d. EQUIPMENT: WHERE EQUIPMENT IP>1.0, PROVIDE ANCHORAGE OR RESTRAINT DESIGN FOR ALL FLOOR, WALL MOUNTED OR SUSPENDED EQUIPMENT.
   4. ON PROJECTS WITH SEISMIC DESIGN CATEGORY D:
      a. SEISMIC ANCHORAGE DESIGN IS NOT REQUIRED FOR FLOOR MOUNTED MECHANICAL, ELECTRICAL, AND PLUMBING COMPONENTS WHERE I P = 1.0 AND FLEXIBLE CONNECTIONS BETWEEN THE COMPONENTS AND ASSOCIATED DUCT WORK, PIPING AND CONDUIT ARE PROVIDED. THE COMPONENTS ARE MOUNTED AT 4 FEET (1219 MM) OR LESS ABOVE A FLOOR LEVEL AND THEY WEIGH 400 POUNDS (1780 N) OR LESS.
   5. SEISMIC ANCHORAGE OR BRACING IS NOT REQUIRED FOR HANGING, WALL MOUNTED, AND FLEXIBLY SUPPORTED MECHANICAL, PLUMBING AND ELECTRICAL COMPONENTS THAT WEIGH 20 POUNDS (89 N) OR LESS, WHERE I P = 1.0 AND FLEXIBLE CONNECTIONS ARE PROVIDED BETWEEN THE COMPONENTS AND ASSOCIATED DUCT WORK, PIPING AND CONDUIT.
   6. WHERE EQUIPMENT IP>1.0, PROVIDE ANCHORAGE OR RESTRAINT DESIGN FOR ALL FLOOR, WALL MOUNTED OR SUSPENDED EQUIPMENT.
   7. DUCT:
      a. WHERE DUCT I/p=1.0, BRACE ALL RECTANGULAR DUCT > AND EQUAL 6 SQFT, ALL ROUND DUCT > 33" DIAMETER.
      b. WHERE DUCT I/p>1.0, BRACE ALL DUCT > 5 LB/LF
   8. PIPE:
      a. WHERE PIPE I/p=1.0, BRACE ALL PIPE > 3" DIAMETER..
      b. WHERE PIPE I/p>1.0, BRACE ALL PIPE > 1" DIAMETER.
   9. EQUIPMENT ITEMS INSTALLED IN-LINE AND RIGIDLY MOUNTED AT THE INLET AND OUTLET TO THE DUCT SYSTEM (E.G, FANS, HEAT EXCHANGERS AND HUMIDIFIERS) WITH AN OPERATING WEIGHT LESS THAN 75 POUNDS (334 N) NEED NOT BE BRACED IF THE DUCT RUN IT IS ATTACHED TO IS BRACED. EQUIPMENT WITH AN OPERATING WEIGHT GREATER THAN 75 LBS MUST BE BRACED AND SUPPORTED INDEPENDENT OF THE DUCT.
   10. REGARDLESS OF SEISMIC DESIGN CATEGORY:
      a. SEISMIC RESTRAINTS ARE NOT REQUIRED ON PIPING SUPPORTED BY INDIVIDUAL CLEVIS HANGERS WHERE THE DISTANCE, AS MEASURED FROM THE TOP OF THE PIPE TO THE SUPPORTING STRUCTURE, IS LESS THAN 12 INCHES (305MM) FOR THE ENTIRE PIPE RUN AND THE PIPE CAN ACCOMMODATE THE EXPECTED DEFLECTIONS. TRAPEZE OR DOUBLE ROD HANGERS, WHERE THE DISTANCE FROM THE TOP OF THE TRAPEZE OR SUPPORT TO THE STRUCTURE IS LESS THAN 12 INCHES FOR THE ENTIRE RUN. HVAC DUCTS SUSPENDED FROM HANGERS THAT ARE 12 INCHES (305 MM) OR LESS IN LENGTH FROM THE TOP OF THE DUCT TO THE SUPPORTING STRUCTURE AND THE HANGERS ARE DETAILED TO AVOID SIGNIFICANT BENDING OF THE HANGERS AND THEIR CONNECTIONS. DUCT MUST BE POSITIVELY ATTACHED TO HANGER WITH MINIMUM #10 SCREWS WITHIN 2 " FROM THE TOP OF THE DUCT. HANGER RODS SHALL NOT BE CONSTRUCTED IN A MANNER THAT WOULD SUBJECT THE ROD TO BENDING MOMENTS (SWIVEL, EYE BOLT, OR VIBRATION ISOLATION HANGER CONNECTION TO STRUCTURE ARE REQUIRED TO PREVENT BENDING MOMENTS WHEN UTILIZING THIS EXCLUSION). DISPLACEMENT OF THE COMPONENT SHALL NOT CAUSE DAMAGING IMPACT WITH OTHER UTILITIES OR THE STRUCTURE. FLEXIBLE CONNECTIONS ARE REQUIRED BETWEEN UNBRACED SYSTEMS AND EQUIPMENT TO ACCOMMODATE DIFFERENTIAL DISPLACEMENTS. WHERE HVAC SYSTEMS IP>1.0, THIS EXCLUSION SHALL NOT APPLY (PER ASCE 7, 13.6.7).
   11. L. BRACE SPACING FOR LOW DEFORMABILITY PIPING AND DUCT (E.G., CAST IRON, PVC, FIBERGLASS, GLASS, ETC.) SHALL NOT EXCEED ONE HALF OF THE BRACE SPACING OF HIGH DEFORMABILITY PIPING OR DUCT.
   12. WHEREVER SYSTEMS OR COMPONENTS ARE VIBRATION ISOLATED, SEISMIC RESTRAINTS MUST BE DESIGNED TO PREVENT SHORT CIRCUITING OF THE ISOLATION SYSTEMS.

D. MANUFACTURER'S RESPONSIBILITIES:
   1. THE FOLLOWING SEISMIC RESTRAINT MANUFACTURERS ARE ACCEPTED: INTERNATIONAL SEISMIC APPLICATION TECHNOLOGY (ISAT), AMBER / BOOTH, MASON INDUSTRIES INC. (M.I.), KINETICS NOISE CONTROL INC. (K.N.C.), VIBRATION MOUNTING & CONTROLS, INC. (V.M.C.) AND VIBRO ACOUSTICS.

E. QUALITY CONTROL
   1. ALL SEISMIC RESTRAINT COMPONENTS EXPOSED TO THE WEATHER SHALL BE ZINC OR CADMIUM-PLATED, EPOXY COAT OR PVC COATED, AND/OR GALVANIZED STEEL. NUTS, BOLTS AND WASHERS MAY BE ZINCELECTROPLATED. RESTRAINTS FOR OUTDOOR MOUNTED COMPONENTS SHALL PROVIDE ADEQUATE RESTRAINT FOR THE GREATER OF EITHER WIND OR SEISMIC LOADS REQUIRED BY LOCAL CODES OR WITHSTAND A MINIMUM OF 30 LB. / SQ. FT. APPLIED TO ANY EXPOSED SURFACE OF THE EQUIPMENT.
   2. SUBMITTALS MUST INCLUDE SEISMIC BRACING LAYOUT DRAWINGS INDICATING THE LOCATION OF ALL SEISMIC RESTRAINTS. THE SUBMITTAL PACKAGE MUST INCLUDE SEISMIC RESTRAINT DETAILS PROVIDING SPECIFIC INFORMATION RELATING TO THE MATERIALS, TYPE, SIZE, AND LOCATIONS OF ANCHORAGES; MATERIALS USED FOR BRACING; ATTACHMENT REQUIREMENTS OF BRACING TO STRUCTURE AND COMPONENT; AND LOCATIONS OF TRANSVERSE AND LONGITUDINAL SWAY BRACING AND ROD STIFFENERS.

END OF SECTION 230548

230553 HVAC PIPING AND EQUIPMENT IDENTIFICATION

A. PIPE IDENTIFICATION:
   1. LABEL AND COLOR CODE ALL PIPES WITH CONTENTS CLEARLY IDENTIFIED AND ARROW INDICATING DIRECTION OF FLOW. THIS APPLIES TO PIPING RUN ABOVE THE CEILINGS AND IN PIPE TUNNELS AS WELL AS PIPE EXPOSED IN EQUIPMENT ROOMS AND FINISHED AREAS. IDENTIFY PIPES AS THE FOLLOWING LOCATIONS.
      a. ADJACENT TO EACH VALVE.
      b. AT EVERY POINTS OF ENTRY AND EXIT WHERE PIPING PASSES THROUGH ALL WALL OR FLOOR.
      c. ON EACH RISER AND JUNCTION
      d. A MAXIMUM OF EVERY FIFTY FEET (50') ON LONG CONTINUOUS LINES FULLY EXPOSED TO VIEW.
      e. ADJACENT TO ALL SPECIAL FITTINGS OR DEVICES (REGULATING VALVES, ETC.).
      f. CONNECTION TO EQUIPMENT.
      g. APPLY MARKERS SO THEY CAN BE READ FROM THE FLOOR.
   2. PROVIDE ALL TEMPERATURE SELF-STICKING PERMANENT LABELS AND MARKERS AS MANUFACTURED BY W.H. BRADY CO 727 WEST GLENDALE AVE, MILWAUKEE, WISCONSIN: OR SETON NAME PLATE CORP, 592 BOULEVARD, NEW HAVEN, CONNECTICUT.
   3. PROVIDE UNIFORM PIPE COLOR-CODING THOUGHT THE CAMPUS AND MATCH NEW SYSTEMS WITH EXISTING SYSTEMS. PROVIDE BACKGROUND COLORS SHALL BE AS FOLLOWS:
      a. BLACK: DANGEROUS MATERIALS (HIGH PRESSURE STEAM, NATURAL GAS, CONDENSATE, HIGH PRESSURE REFRIGERANT, HIGH VOLTAGE, ETC.)
      b. WHITE: FIRE PROTECTION EQUIPMENT (FIRE SPRINKLER WATER, FIRE PROTECTION WATER)
      c. WHITE: PROTECTIVE MATERIALS (FILTERED WATER)
      d. WHITE: SAFE MATERIALS (CHILLED WATER, COLD WATER, INSTRUMENT AIR, SANITARY SEWER, ETC.)
   4. PROVIDE IDENTIFICATION LETTERS TWO INCH (2") HIGH FOR PIPES THREE INCH (3") AND LARGER, AND ONE INCH (1") HIGH FOR PIPES TWO AND ONE-HALF INCHES (2 - 1/2") AND UNDER.

B. DUCT IDENTIFICATION: IDENTIFICATION AND LABELING.
   1. IDENTIFY ALL DUCTS EXPOSED IN MECHANICAL EQUIPMENT ROOM. A SAMPLE DUCT IDENTIFICATION IS AS FOLLOWS: "SUPPLY HOT DUCT-HEATING AUDITORIUM WING."

C. EQUIPMENT IDENTIFICATION
   1. IDENTIFY ALL MECHANICAL EQUIPMENT AND ALL OTHER DEVICES WITH SIGNS MADE OF LAMINATED PLASTIC WITH ONE-EIGHT INCH (1/8") OR LARGER ENGRAVED LETTERS. ATTACH SIGNS SECURELY WITH RUST PROOF SCREW OR SOME OTHER PERMANENT MEANS (NO ADHESIVES).
   2. INCLUDE THE FOLLOWING INFORMATION ON THE EQUIPMENT IDENTIFICATION SIGN: NAME OF EQUIPMENT, IDENTIFICATION ON PLANS AND SCHEDULES, DESIGN CAPACITY AND ANY OTHER IMPORTANT DATA NO INCLUDED ON FACTORY ATTACHED NAME PLATE.
   3. ATTACH SIGNS TO EQUIPMENT SO THEY CAN BE EASILY READ. ATTACH USING SCREW OR RIVETS.
   4. A SAMPLE IDENTIFICATION SIGN FOR EQUIPMENT IS AS FOLLOWS:
      a. "SUPPLY FAN -AUDITORIUM F-2
      b. CAPACITY: 49,850 CFM @ 3.5" S.P. (AT 4775 FT. ELEV.)"
      c. "HEATING HOT WATER PUMP
      d. CLASSROOM AREA
      e. 156 GPM @ 57 FT.HEAD"

D. REMOVABLE CEILING TILE:
   1. PROVIDE IDENTIFICATION ON THE LAY-IN TILE TEE BAR CEILING WHERE VALVES, MIXING BOXES, FIRE DAMPERS, ADJUSTMENT CONTROLS, ETC. ARE LOCATED ABOVE CEILING TILE. INDICATE THE TILE TO BE REMOVED FOR ACCESS TO A PARTICULAR ITEM..

END OF SECTION 230553

230700 HVAC INSULATION

A. THERMAL DUCT INSULATION: INSULATE ALL SUPPLY AND RETURN AIR DUCTS, UNLESS OTHERWISE SPECIFIED WITH KNAUF OR EQUAL, MICROLITE FIBERGLASS DUCT INSULATION, FOIL FACED, 3/4 LB. DENSITY, 1-1/2" THICK INSULATION WRAPPED ENTIRELY AROUND DUCT WITH JOINTS LAPPED AT LEAST 2" AND SECURED WITH 16 GAUGE GALVANIZED WIRE ON 12" CENTERS. INSULATION SHALL COVER ALL SURFACES INCLUDING STANDING SEAMS. THERMAL RESISTIVE VALUE OF DUCT WRAP SHALL BE A MINIMUM OF R-5.

B. RECTANGULAR SUPPLY DUCTS AND RETURN AIR DUCTS LOCATED IN UNCONDITIONED SPACES SHALL BE LINED WITH KNAUF LINACOUSTIC OR EQUAL, 1 INCH, 1-1/2 LB, THERMAL RESISTIVE VALUE OF DUCT LINER SHALL BE A MINIMUM OF R-5. RECTANGULAR SUPPLY DUCTS AND RETURN AIR DUCTS LOCATED OUTSIDE THE BUILDING ENVELOPE SHALL BE LINED WITH KNAUF LINACOUSTIC OR EQUAL, 2 INCH, 1-1/2 LB, THERMAL RESISTIVE VALUE OF DUCT LINER SHALL BE A MINIMUM OF R-8. DENSITY COATED FIBERGLASS DUCT LINER COMPLYING WITH FRICTION CORRECTION FACTOR NOT GREATER THAN 1.1 AT A VELOCITY OF 3000 FPM. APPLY INSULATION TO INSIDE OF DUCTS WITH AN APPROVED FIRE RETARDANT ADHESIVE TO PROVIDE 100% COVERAGE AND A SMOOTH SURFACE. IN DUCTS WITH ONE SIDE MORE THAN 12", SECURE INSULATION WITH MECHANICAL FASTENERS IN ADDITION TO ADHESIVE, SPACED AT 14" CENTERS IN BOTH DIRECTIONS. MECHANICAL FASTENERS SHALL BE FLUSH WITH THE LINER SURFACE AND SHALL START WITHIN 2" OF THE LEADING EDGE OF EACH SECTION, AND WITHIN 3" OF THE LEADING EDGE OF ALL CROSS JOINTS OF THE LINER SHALL BE HEAVILY COATED WITH AN APPROVED FIRE RESISTANT ADHESIVE. THE DUCT LINER SHALL BE CUT TO ASSURE SNUG CLOSING CORNER JOINTS, THE BLACK SURFACE OF THE LINER SHALL FACE THE AIR STREAM, TRANSVERSE JOINTS SHALL BE NEATLY BUTTED AND ALL DAMAGED AREAS SHALL BE HEAVILY COATED WITH AN APPROVED ADHESIVE.

C. ALL DUCT INSULATION SHALL HAVE AN NRC RATING OF NOT LESS THAN 0.60 AND A K FACTOR OF NOT MORE THAN 0.27. DUCT DIMENSIONS SHALL BE INCREASED 2 INCHES ON EACH SIDE FROM THOSE SHOWN ON DRAWINGS TO ACCOMMODATE INSULATION.

D. PROVIDE PROJECTIVE PVC OR ALUMINUM JACKET IN EXPOSED AREAS AND AREAS SUBJECT TO DAMAGE INCLUDING MECHANICAL ROOMS.

E. INSULATE ALL MAIN STEAM VALVES, EXPANSION JOINTS, PRESSURE REDUCING VALVES, PUMP TRAPS, HEAT PRODUCING PIPE, FITTINGS, AND DEVICES.

F. PAINT CHILLED WATER PUMPS AND COMPONENTS THAT ARE NOT INSULATED WITH CONDENSATE RESISTANT PAINT PRIOR TO FILLING CHILLED WATER SYSTEM.

G. PROVIDE ALUMINUM INSULATION JACKET FOR ALL STEAM AND CONDENSATE PIPING SYSTEMS.

H. PROVIDE EQUIPMENT INSULATION BLANKETS TEMPERATURE RATED FOR EQUIPMENT APPLICATION.

I. PROVIDE COLOR CODED INSULATION PVC JACKET FOR ALL PIPING SYSTEMS REFER TO IDENTIFICATION SECTION FOR RUDIMENTS.

J. ALL ROUND DUCT INSULATION AND FLEX DUCT CONNECTIONS SHALL USE STAINLESS STEEL DRAWBAND CLAMPS. ZIP-TIE/PLASTIC/NYLON BAND CLAMPS ARE NOT ALLOWED.

END OF SECTION 230700

230800 HVAC START-UP AND PERFORMANCE VERIFICATION

A. THE CONTRACTOR SHALL START-UP AND COMPLETELY VERIFY PERFORMANCE AND OPERATION PRIOR TO NOTIFYING THE ENGINEER OF SUBSTANTIAL COMPLETION.

B. THE CONTRACTOR SHALL DEMONSTRATE AT A BARE MINIMUM IN THE PRESENCE OF THE ENGINEER:
   1. INSTALLATION VERIFICATION
   2. STARTUP AND CHECKOUT (FACTORY AUTHORIZED TECHNICIAN)
   3. PERFORMANCE TESTING AND DEMONSTRATION
   4. TRAINING
   5. CLOSEOUT

C. THE GENERAL CONTRACTOR WILL PROVIDE THE SPECIFIC SUPPORT AND DOCUMENTATION REQUIRED OF THE MECHANICAL, ELECTRICAL, PLUMBING, AND CONTROLS CONTRACTORS, DESIGNER, OWNER AND OTHER AS APPLICABLE TO ENSURE ACCEPTABLE COMMISSIONING.

END OF SECTION 230800

233113 METAL DUCTS

A. PROVIDE DUCTS, PLENUMS, ACCESS DOORS, FRESH AIR INTAKES, AND EXHAUSTS AS INDICATED AND REQUIRED. ALL DUCTWORK SHALL BE CONSTRUCTED, ERECTED AND TESTED IN ACCORDANCE WITH THE MOST RESTRICTIVE OF LOCAL REGULATIONS, PROCEDURES DETAILED IN THE ASHRAE HANDBOOK OF FUNDAMENTALS OR THE APPLICABLE STANDARDS ADOPTED BY THE SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION. PROVIDE REFABRICATED SPIRAL LOCKSEAM DUCTS AND FITTINGS AND RECTANGULAR DUCTS OF GALVANIZED STEEL. ALUMINUM FLEXIBLE DUCTWORK OR GYPSUM BOARD DUCTWORK IS NOT ACCEPTABLE.

B. ALL CONNECTIONS TO MAIN DUCTS SHALL BE MADE WITH LOW LOSS FITTINGS.

C. FLAT DUCT SURFACES SHALL BE CRIMPED DIAGONALLY REGARDLESS OF SIZE. LONGITUDINAL JOINTS IN ALL DUCT SIZES MAY BE FLAT LOCK JOINTS. TRANSVERSE JOINTS AND INTERMEDIATE BRACING SHALL BE CONSTRUCTED OF GALVANIZED SHEET METAL OR GALVANIZED STRUCTURAL ANGLES IN ACCORDANCE WITH REQUIREMENTS OF ASHRAE GUIDE AND PUBLIC AUTHORITIES HAVING JURISDICTION.

D. TRANSVERSE JOINTS ON ALL DUCTS SHALL BE SEALED WITH MASTIC OR TAPE.

E. LONGITUDINAL JOINTS ON DUCTS WITH INTERNAL STATIC PRESSURES IN EXCESS OF 0.75 INCHES OF WATER PRESSURE SHALL BE SEALED WITH MASTIC OR TAPE.

F. LOCK JOINTS SHALL BE HAMMERED TO MAKE THEM AIRTIGHT. INSIDE OF DUCT SHALL PRESENT A SMOOTH SURFACE TO FLOW AIR.

G. CHANGES IN SIZE OF DUCTS SHALL INCREASE GRADUALLY WITH A SLOPE OF NOT MORE THAN 12 INCHES IN 5 FEET WHERE POSSIBLE, BUT NOT MORE THAN 12 INCHES IN 3 FEET IN ANY EVENT.

H. TURNS SHALL BE MADE WITH A THROAT RADIUS OF NOT LESS THAN THE DUCT WIDTH.

I. PLENUMS SHALL BE MADE OF 18 GAUGE GALVANIZED SHEET STEEL REINFORCED HORIZONTALLY ON A MAXIMUM OF 48" CENTERS BY 1-1/2" X 1-1/4" X 1/8" GALVANIZED ANGLES AND REINFORCED VERTICALLY BY 1-1/2" STANDING SEAMS.

J. PRESSURE TEST AND SEAL ALL NEW AND EXISTING DUCTS IN RETROFIT AND REMODEL PROJECTS.

END OF SECTION 233113

233113 DUCT AND ACCESSORIES

PART 1 - GENERAL
1.1 SECTION REQUIREMENTS
A. SUMMARY: METAL AND NONMETAL DUCTS AND ACCESSORIES IN PRESSURE CLASSES 2-INCH WG OR LESS AND A MAXIMUM VELOCITY OF 2400 FPM.
B. COMPLY WITH NFPA 90A FOR SYSTEMS SERVING SPACES MORE THAN 25,000 CU. FT. IN VOLUME OR BUILDING TYPES II, IV, AND V CONSTRUCTION MORE THAN 3 STORIES IN HEIGHT.
C. COMPLY WITH NFPA 90B FOR SYSTEMS SERVING SPACES IN 1- OR 2-FAMILY DWELLINGS OR SERVING SPACES LESS THAN 25,000 CU. FT.
D. COMPLY WITH UL 181 AND UL 181A FOR DUCTS AND CLOSURES.
PART 2 - PRODUCTS
2.1 DUCTS
A. GALVANIZED STEEL SHEET: FORMING STEEL WITH MINIMUM G60 HOT-DIP GALVANIZED COATING.
B. DUCT LINER: ASTM C 1071, TYPE II, 1 INCH THICK; WITH AN AIRSTREAM SURFACE COATED WITH A HIGH-TEMPERATURE-RESISTANT COATING.
   1. ADHESIVE: ASTM C 916, TYPE I.
   2. MECHANICAL FASTENERS: GALVANIZED STEEL PIN, LENGTH REQUIRED TO PENETRATE LINER PLUS A MAXIMUM 1/8-INCH PROJECTION INTO THE AIRSTREAM.
C. JOINT AND SEAM TAPE, AND SEALANT: COMPLY WITH UL 181A.
D. RECTANGULAR METAL DUCT FABRICATION: COMPLY WITH SMACNA'S "HVAC DUCT CONSTRUCTION STANDARD" FOR METAL THICKNESS, REINFORCING TYPES AND INTERVALS, TIE-ROD APPLICATIONS, AND JOINT TYPES AND INTERVALS.
E. FIBROUS-GLASS LINER: COMPLY WITH NFPA 90A OR NFPA 90B AND WITH NAIMA AH124.
   1. THICKNESS: 1 INCH.
   2. LINER ADHESIVE: COMPLY WITH NFPA 90A OR NFPA 90B AND WITH ASTM C 916.
   3. MECHANICAL FASTENERS: GALVANIZED STEEL SUITABLE FOR ADHESIVE ATTACHMENT, MECHANICAL ATTACHMENT, OR WELDING ATTACHMENT.
2.2 ACCESSORIES
A. VOLUME-CONTROL DAMPERS: FACTORY-FABRICATED VOLUME-CONTROL DAMPERS, COMPLETE WITH REQUIRED HARDWARE AND ACCESSORIES. SINGLE BLADE AND MULTIPLE OPPOSED BLADE, STANDARD LEAKAGE RATING, AND SUITABLE FOR HORIZONTAL OR VERTICAL APPLICATIONS.
B. FLEXIBLE CONNECTORS: FLAME-RETARDED OR NONCOMBUSTIBLE FABRICS, COATINGS, AND ADHESIVES COMPLYING WITH UL 181, CLASS 1.
C. FLEXIBLE DUCTS: FACTORY-FABRICATED, INSULATED, ROUND DUCT, WITH AN OUTER JACKET ENCLOSING 1-INCH THICK, GLASS-FIBER INSULATION AROUND A CONTINUOUS INNER LINER.
PART 3 - EXECUTION
3.1 INSTALLATION
A. DUCT SYSTEM PRESSURE CLASS: CONSTRUCT AND INSTALL EACH DUCT SYSTEM FOR THE SPECIFIC DUCT PRESSURE CLASSIFICATION INDICATED.
B. CONCEAL DUCTS FROM VIEW IN FINISHED AND OCCUPIED SPACES.
C. AVOID PASSING THROUGH ELECTRICAL EQUIPMENT SPACES AND ENCLOSURES.
D. SUPPORT AND CONNECT METAL DUCTS ACCORDING TO SMACNA'S "HVAC DUCT CONSTRUCTION STANDARD."
E. INSTALL DUCT ACCESSORIES ACCORDING TO DETAILS OF CONSTRUCTION AS SHOWN IN SMACNA STANDARDS.
F. INSTALL VOLUME-CONTROL DAMPERS IN LINED DUCT WITH METHODS TO AVOID DAMAGE TO LINER AND TO AVOID EROSION OF DUCT LINER.
3.2 TESTING, ADJUSTING, AND BALANCING
A. BALANCE AIRFLOW WITHIN DISTRIBUTION SYSTEMS, INCLUDING SUBMAINS, BRANCHES, AND TERMINALS TO INDICATED QUANTITIES.
END OF SECTION 233113

233300 AIR DUCT ACCESSORIES

A. TURNING VANES SHALL BE FURNISHED AND INSTALLED IN ALL 90-DEGREE TURNS IN SUPPLY, RETURN, MIXED AIR AND FRESH AIR DUCTS, AND ELSEWHERE AS SHOWN ON THE DRAWINGS. MATERIAL OF TURNING VANES SHALL MATCH DUCTWORK. VANES ARE TO BE SINGLE BLADE, OF SIZE, SPACING, GAUGE, AND FABRICATION IN ACCORDANCE WITH SMACNA RECOMMENDATIONS.

B. DAMPERS USED IN LOW VELOCITY BRANCH DUCTS TO CONTROL THE VOLUME OR AIR FLOW SHALL BE YOUNG NO. 817 VOLUME DAMPER OR EQUAL. AN OPERATING HEAD SHALL BE PLACE ON THE SIDE OF THE DUCT AND SHALL BE LOCKED IN POSITION BY A SET KEY WHERE THE DAMPER IS ACCESSIBLE WHERE THE DAMPER IS NOT ACCESSIBLE, YOUNG NO. 817A OR 817B VOLUME CONTROL DAMPER OR EQUAL, CONSISTING OF AN END BEARING OR MITER GEAR, COUPLING, 3/8-INCHSQUARE SHAFT, AND REGULATOR FOR OPERATING THE UNIT FROM THE CEILING SHALL BE PROVIDED.

C. USE LOCKABLE TYPE BALANCING DAMPERS.

D. USE TURNING VANES ON ALL ELBOWS 45 DEGREE AND LARGER.

E. PROVIDE ACCESS FOR ALL BALANCING DAMPERS, FIRE DAMPERS, ETC.

F. CONNECT SMOKE DAMPERS TO THEE BUILDING AUTOMATION SYSTEM (BAS).

END OF SECTION 233300

233423 POWER VENTILATORS

PART 1 - GENERAL
1.1 SECTION REQUIREMENTS
A. SUBMITTALS: PRODUCT DATA.
B. BEAR THE AMCA SEAL.
C. COMPLY WITH UL 705.
PART 2 - PRODUCTS
2.1 CENTRIFUGAL VENTILATORS
A. HOUSING: REMOVABLE, SPUN-ALUMINUM, ; SQUARE, ONE-PIECE, ALUMINUM BASE WITH VENTURI INLET CONE.
   1. UPBLAST UNITS: ALUMINUM DISCHARGE BAFFLE TO DIRECT DISCHARGE AIR UPWARD, WITH RAIN AND SNOW DRAINS.
   2. WALL-MOUNTING UNITS: ALUMINUM RECTANGULAR BASE WITH VENTURI INLET CONE, MOTOR MOUNT, AND VIBRATION ISOLATORS DESIGNED FOR WALL MOUNTING.
B. FAN WHEELS: ALUMINUM HUB AND WHEEL WITH BACKWARD-INCLINED BLADES.
C. BELT-DRIVEN DRIVE ASSEMBLY: RESILIENTLY MOUNTED TO HOUSING:
   1. FAN SHAFT: TURNED, GROUND, AND POLISHED STEEL; KEYED TO WHEEL HUB.
   2. SHAFT BEARINGS: PERMANENTLY LUBRICATED, PERMANENTLY SEALED, SELF-ALIGNING BALL BEARINGS.
   3. PULLEYS: CAST-IRON, ADJUSTABLE-PITCH MOTOR PULLEY.
   4. FAN AND MOTOR ISOLATED FROM EXHAUST AIRSTREAM.
D. ACCESSORIES:
   1. DISCONNECT SWITCH: NONFUSIBLE TYPE, WITH THERMAL-OVERLOAD PROTECTION MOUNTED INSIDE FAN HOUSING, FACTORY WIRED THROUGH AN INTERNAL ALUMINUM CONDUIT.
   2. BIRD SCREENS: REMOVABLE, 1/2-INCH MESH, ALUMINUM WIRE.
   3. MOTORIZED DAMPERS: PARALLEL-BLADE DAMPERS MOUNTED IN CURB BASE WITH ELECTRIC ACTUATOR; WIRED TO CLOSE WHEN FAN STOPS.
E. ROOF CURBS: GALVANIZED STEEL; MITERED AND WELDED CORNERS; 1-1/2-INCH THICK, RIGID, FIBERGLASS INSULATION ADHERED TO INSIDE WALLS; AND 1-1/2-INCH WOOD NAILER. SIZE AS REQUIRED TO SUIT ROOF OPENING AND FAN BASE.
   1. CONFIGURATION: BUILT-IN CANT AND MOUNTING FLANGE.
   2. OVERALL HEIGHT: 12 INCHES.
   3. PITCH MOUNTING: MANUFACTURE CURB FOR ROOF SLOPE.
   4. HINGED SUBBASE: GALVANIZED STEEL HINGED ARRANGEMENT PERMITTING SERVICE AND MAINTENANCE.
F. MOUNTING PEDESTAL: GALVANIZED STEEL WITH REMOVABLE ACCESS PANEL.
2.2 CEILING-MOUNTING OR IN-LINE CENTRIFUGAL VENTILATORS
A. HOUSING: STEEL, LINED WITH ACOUSTICAL INSULATION.
B. FAN WHEEL: CENTRIFUGAL WHEELS DIRECTLY MOUNTED ON MOTOR SHAFT. FAN SHROUDS, MOTOR, AND FAN WHEEL SHALL BE REMOVABLE FOR SERVICE.
C. GRILLE: ALUMINUM, LOUVERED OR ECG-CRATE GRILLE WITH FLANGE ON INTAKE AND THUMBSCREW ATTACHMENT TO FAN HOUSING.
D. ELECTRICAL REQUIREMENTS: JUNCTION BOX FOR ELECTRICAL CONNECTION ON HOUSING AND RECEPTACLE FOR MOTOR PLUG-IN.
E. ACCESSORIES:
   1. VARIABLE-SPEED CONTROLLER: SOLID-STATE CONTROL TO RE

GRILLE, REGISTER & DIFFUSER SCHEDULE

MARK	MANUFACTURER	MODEL	SIZE	MAX CFM	MAX NC	DESCRIPTION
CD-1	EH PRICE	SPD	6"ø 8"ø 10"ø 12"ø 14"ø 15"ø	110 235 420 600 800 890	25	SQUARE PLAQUE CEILING DIFFUSERS. REMOVABLE FACE & CORE ALUMINUM CONSTRUCTION WITH OBD. FRAME SHALL BE FOR SURFACE OR LAY-IN MOUNTING AS REQUIRED BY CEILING TYPE. LAY-IN FRAMES SHALL BE 24" x 24", 24" x 12" OR 12" x 12" AS REQUIRED TO FIT CEILING TILE SPACE AVAILABLE. PROVIDE ROUND NECK ADAPTER. COLOR BY ARCHITECT.
L-1	GREENHECK	ESD-603	SEE PLANS	-	-	WALL LOUVER. STATIONARY 6" THICK, 12 GA. EXT. ALUMINUM BLADES. 8 GA. FRAME WITH BIRD SCREEN. FACTORY POWDER COAT, COLOR TO BE SELECTED BY ARCHITECT. SEE MECHANICAL PLANS FOR SIZE AND LOCATION.

FAN SCHEDULE

MARK	MANUFACTURER	MODEL	DESCRIPTION	AREA SERVED	CFM	STATIC PRESSURE (IN WC)	RPM	ELECTRICAL		STATIC EFF. (%)	WEIGHT (LBS)	NOTES
								HP	VOLTS/PHASE			
EF-1	GREENHECK	SP-B150-QG	LOW PROFILE EXHAUST FAN	COPY CENTER	160	0.5	1050	19.2 W	115/10	15	-	(1)(2)(5)

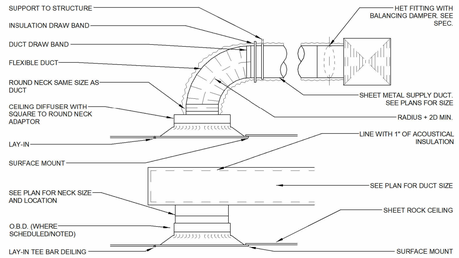
(1) ALL CAPACITIES AT 4500 FT ELEVATION.

(2) DIRECT DRIVE CEILING MOUNTED EXHAUST FAN. PROVIDE WITH GRAVITY BACKDRAFT DAMPER INTEGRAL OVERLOAD PROTECTION, DISCONNECT, AND CEILING GRILLE.

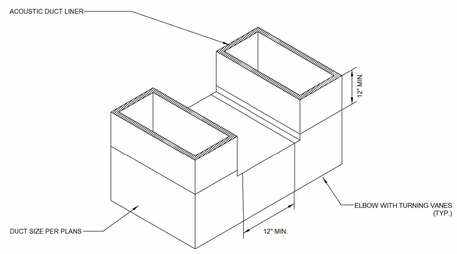
(3) CONTROL: OCCUPANCY. INTERLOCK WITH LIGHTING.

(4) DIRECT DRIVE CEILING VENTILATION FAN. PROVIDE INTEGRAL THERMOAL OVERLOAD PROTECTION, GRILLE, SERVICE DISCONNECT AND ALL MOUNTING HARDWARE FOR GYP. CEILING INSTALLATION. PROVIDE WITH SIDEWALL VENT CAP TERMINATION.

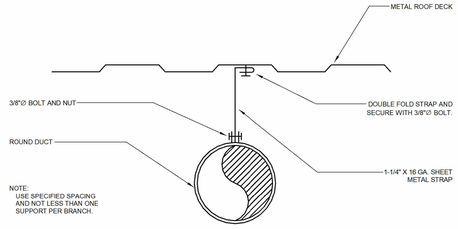
(5) CONTROL: RUNS CONTINUOUSLY



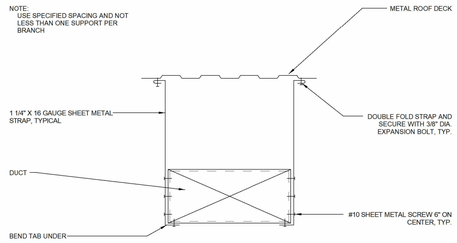
1 CEILING DIFFUSER DETAIL
SCALE: NTS



2 RETURN AIR TRANSFER DUCT DETAIL
SCALE: NTS



3 ROUND DUCT SUPPORT DETAIL
SCALE: NTS



4 RECTANGULAR DUCT SUPPORT
SCALE: NTS

CONSTRUCTION DOCUMENTS

C-MECH ENGINEERING

DESIGN WEST
LOGAN, UTAH
(435) 752-7031
SALT LAKE CITY, UTAH
(801) 539-8221

MT. LOGAN MIDDLE SCHOOL
MAIN OFFICE AND SECURE VESTIBULE REMODEL
875 N 200 E, LOGAN, UT 84321
LOGAN CITY SCHOOL DISTRICT

MARK:	DATE:	DESCRIPTION:

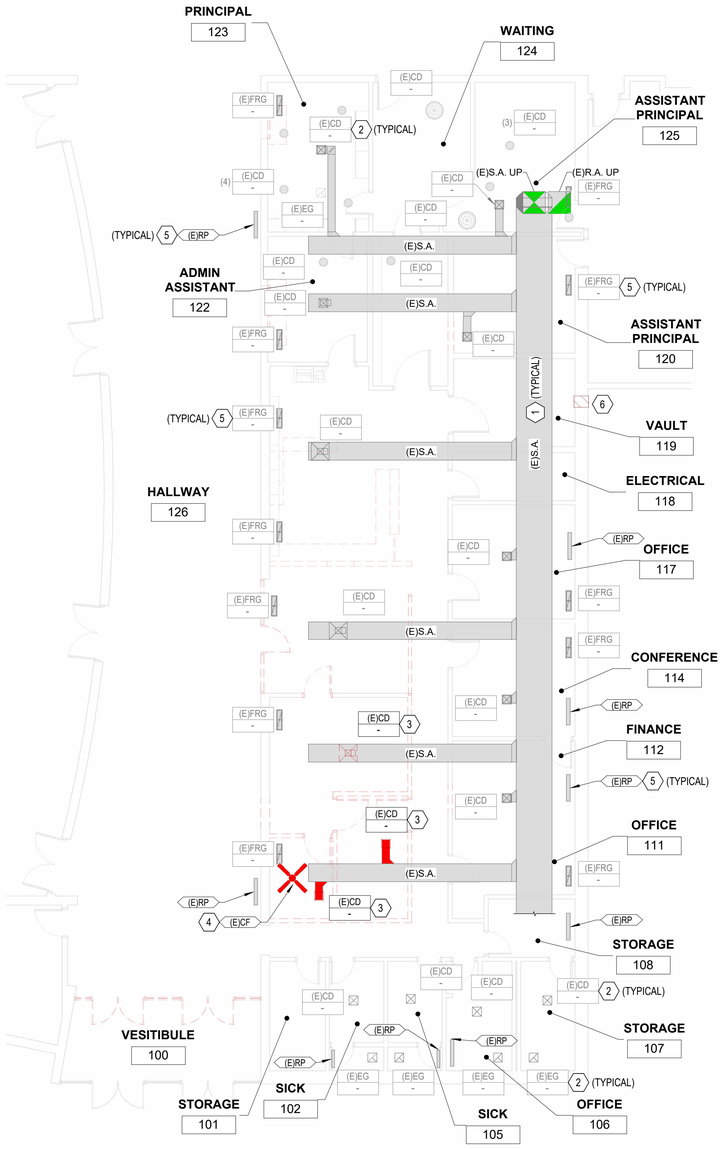
PROJECT #: 26003
DRAWN BY: S.ROCHA
CHECKED BY: M.CARRILLO
ISSUED: 04.02.2026

PROFESSIONAL ENGINEER
6136918-2202
MARTIN THOMAS CARRILLO
04/22/2026
STATE OF UTAH

MECHANICAL DETAILS

ME501

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1 LEVEL 1 MAIN OFFICE MECHANICAL DEMOLITION PLAN
1/8" = 1'-0"

GENERAL NOTES

1. EXISTING EQUIPMENT AND DISTRIBUTION TO BE FIELD VERIFIED BY CONTRACTOR PRIOR TO BEGINNING DEMOLITION WORK.

KEYED NOTES

1. DUCT ABOVE CEILING LOCATIONS IS APPROXIMATE AND TO BE VERIFIED BY CONTRACTOR. (TYPICAL).
2. EXISTING CEILING DIFFUSER TO REMAIN UNLESS OTHERWISE NOTED. SHOWN FOR REFERENCE ONLY. (TYPICAL).
3. CONTRACTOR TO TAKE AIRFLOW MEASUREMENT PRIOR TO CONSTRUCTION FOR USE IN BALANCING AFTER NEW DIFFUSER INSTALLATION. DEMOLISH AND REMOVE EXISTING DIFFUSER. PREPARE FOR INSTALLATION OF NEW DIFFUSER AT SAME LOCATION IN NEW CEILING.
4. DEMOLISH AND REMOVE EXISTING CEILING FAN.
5. EXISTING EQUIPMENT SHOWN FOR REFERENCE PURPOSES ONLY SHALL REMAIN UNDISTURBED. (TYPICAL)
6. SAW-CUT OR CORE DRILL FOR NEW EXHAUST LOUVER. COORDINATE EXACT LOCATION WITH NEW DUCT ROUTING

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LOGAN CITY SCHOOL DISTRICT

MARK: DESCRIPTION: DATE:

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ISSUED: 04.02.2026

PROFESSIONAL ENGINEER
6136918-2202
MARTIN THOMAS CARRILLO
04/27/2026
STATE OF UTAH

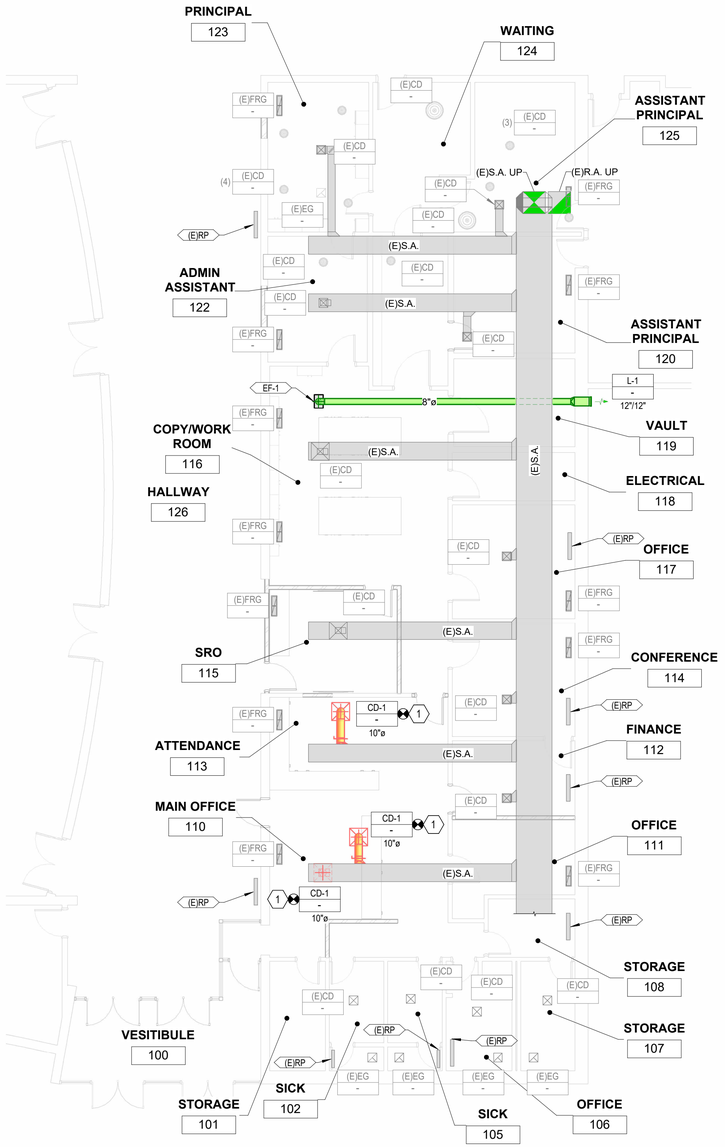
CONSTRUCTION DOCUMENTS

C-MECH ENGINEERING

LEVEL 1 MAIN OFFICE MECHANICAL DEMO PLAN

MD111

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1 LEVEL 1 MAIN OFFICE MECHANICAL PLAN
1/8" = 1'-0"

GENERAL NOTES

1. EXISTING EQUIPMENT AND DISTRIBUTION TO BE FIELD VERIFIED BY CONTRACTOR PRIOR TO BEGINNING DEMOLITION WORK.

KEYED NOTES

1. CONNECT NEW DIFFUSER INTO EXISTING CONNECTION. TRANSITION AND OFFSET TO MATCH NEW CEILING AND DIFFUSER NECK REQUIREMENTS. BALANCE TO PREVIOUSLY MEASURED CFM.

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MT. LOGAN MIDDLE SCHOOL
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875 N 200 E, LOGAN, UT 84321
LOGAN CITY SCHOOL DISTRICT

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PROFESSIONAL ENGINEER
6136918-2202
MARTIN THOMAS CARRILLO
STATE OF UTAH

C-MECH ENGINEERING

CONSTRUCTION DOCUMENTS

LEVEL 1 MAIN OFFICE MECHANICAL PLAN

MH111

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GENERAL PROJECT NOTES

1. ALL ELECTRICAL INSTALLATIONS TO CONFORM TO THE LATEST NEC AND LOCAL CODES.
2. THE ELECTRICAL CONTRACTOR SHALL HAVE A COORDINATION MEETING WITH THE MECHANICAL CONTRACTOR, CONSTRUCTION SUPERINTENDANT AND ANY OTHER TRADES AS REQUIRED WITHIN SEVEN DAYS OF THE START OF THE JOB TO REVIEW CODE CLEARANCE REQUIREMENTS FOR PANELS, SWITCHES, AND OTHER ELECTRICAL GEAR SPECIFICALLY FOR THIS JOB. RECORD THE MEETING IN THE SUPERINDENT 'S LOG. REPORT UNRESOLVED CONFLICTS TO THE ARCHITECT IMMEDIATELY.
3. ELECTRICAL CONTRACTOR 'S PROJECT MANAGER AND ON-SITE PROJECT FOREMAN SHALL REVIEW VENDOR SUBMITTALS FOR ACCURACY PRIOR TO SUBMITTING TO ENGINEER. INACCURACIES SHALL BE CORRECTED PRIOR TO ENGINEER SUBMITTAL.
4. SUBMITTALS FOR EACH SYSTEM WILL BE REVIEWED BY ENGINEER UP TO TWO TIMES —ONE FULL SUBMITTAL FOR OVERALL COMPLIANCE AND ONE RESUBMITTAL. ADDITIONAL REVIEWS WILL BE CHARGED TO CONTRACTOR AT ENGINEER 'S STANDARD BILLING RATE.
5. THE CLARITY OF RECORD DRAWING CHANGES MADE BY THE CONTRACTOR SHALL BE EQUAL TO THE ORIGINAL DRAWINGS AS JUDGED BY THE ARCHITECT OR THE RECORD SET WILL BE RETURNED TO THE CONTRACTOR FOR CLARIFICATION.
6. WHEN THE GENERAL CONTRACT CALLS FOR "RECORD" OR "AS-BUILT" DRAWINGS TO BE FURNISHED BY THE CONTRACTOR AT JOB COMPLETION, THE ELECTRICAL CONTRACTOR SHALL BE REQUIRED TO FURNISH A COMPLETE SET OF "BLUE-PRINT READY" AUTOCAD ELECTRICAL DRAWINGS FOR ALL CONTRACTOR GENERATED CHANGES FROM THE DRAWINGS OF A CLARITY EQUAL TO THE ORIGINAL DRAWINGS AS JUDGED BY THE ENGINEER. CONTACT ARCHITECT FOR DISKS OR REPRODUCIBLE ORIGINAL MEDIA. PROVIDE DRAWINGS ON CD IN AUTOCAD FORMAT.
7. DO NOT SCALE ELECTRICAL FLOOR PLANS. SEE ARCHITECTURAL DRAWINGS FOR ACCURATE DIMENSIONS AND FLOOR PLANS.
8. ELECTRICAL DEVICES CANNOT BE SHOWN TO SCALE AND SOMETIMES OVERLAP BUILDING ELEMENTS. REFER TO ARCHITECTURAL ELEVATIONS FOR ACCURATE MOUNTING LOCATIONS
9. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE TO FIELD VERIFY ALL PANEL CLEARANCES PER NEC 110.26 AND NOTIFY ALL OTHER TRADES ON THE JOB OF THESE CODE REQUIREMENTS.
10. THE ELECTRICAL CONTRACTOR SHALL FIELD VERIFY WITH THE GENERAL CONTRACTOR ADEQUATE WALL DEPTH FOR MOUNTING FLUSH CIRCUIT BREAKER PANELS.
11. PANEL INDEXES SHALL INCLUDE ALL PERTINENT INFORMATION ON THE PANEL SCHEDULES INCLUDING DISTINCT NAMES FOR EACH CIRCUIT AND INFORMATION ON LIGHTS, OUTLETS, EQUIPMENT, ETC. DO NOT SIMPLY COPY THE CIRCUIT DESCRIPTION COLUMN. INDEXES TO BE TYPEWRITTEN.
12. UPDATE PANEL SCHEDULES AND EQUIPMENT LABELS TO REFLECT CHANGES MADE AS PART OF THIS PROJECT.
13. COORDINATE MOUNTING HEIGHT AND LOCATION OF ALL OUTLETS, SWITCHES, AUXILIARY EQUIPMENT, AND OTHER DEVICES WITH THE ARCHITECTURAL DRAWINGS. PRIOR TO INSTALLATION, REVIEW WITH THE GENERAL CONTRACTOR THE LOCATION OF MILLWORK AS A FINAL CHECK TO PREVENT COVERING OF ELECTRICAL ITEMS.
14. MOUNTING HEIGHT OF GENERAL PURPOSE OUTLETS AND SWITCHES SHALL BE 16 " TO BOTTOM AND 48 " TO TOP RESPECTIVELY UNLESS OTHERWISE NOTED.
15. ALL ELECTRICAL EQUIPMENT SHALL BE LOCATED SO AS NOT TO INTERFERE WITH WOOD TRIM AND MOLDINGS. THE ELECTRICAL CONTRACTOR SHALL REVIEW FINISH SCHEDULES AND ARCHITECTURAL DETAILS BEFORE ROUGH-IN OF OUTLET OR SWITCH BOXES TO PREVENT BOXES AND PLATES FROM BEING PLACED BEHIND OR IN TRIMS AND MOLDINGS. REFER SPECIAL CONDITIONS TO ARCHITECT PRIOR TO ROUGH-IN.
16. EMT IS NOT ALLOWED OUT OF DOORS.
17. DO NOT INSTALL FEEDERS OR CIRCUITING EXPOSED ON ROOFTOPS OR RUNNING HORIZONTALLY WITHIN 36 " OF ROOFTOPS.
18. CIRCUIT WIRE SIZES MUST, AT MINIMUM, MATCH NEC REQUIRED CONDUCTOR SIZES FOR CORRESPONDING OVERCURRENT PROCTECTIVE DEVICES. VERIFY WITH PANEL SCHEDULES BEFORE PULLING WIRE.
19. HOME RUNS MUST BE RUN EXACTLY AS SHOWN ON PLANS UNLESS OTHERWISE NOTED. DO NOT COMBINE HOME RUNS INTO ONE CONDUIT THAT ARE NOT SHOWN COMBINED ON THE DRAWINGS.
20. THE ELECTRICAL CONTRACTOR SHALL RUN BRANCH CIRCUIT CONDUITS IN ATTIC SPACES IN A NEAT AND WORKMANLIKE MANNER SO AS TO CONSERVE OPEN SPACES AS MUCH AS POSSIBLE. HVAC DUCTWORK AND PLUMBING SHALL HAVE LOCATION PRIORITY OVER BRANCH CIRCUIT CONDUIT RUNS.
21. CIRCUIT WIRING SHALL BE INSTALLED AS SHOWN ON THE DRAWINGS. ANY DEVIATIONS SHALL BE INITIATED BY A CHANGE ORDER FROM THE ARCHITECT. OTHERWISE THE RECORD SET SHALL MATCH THE CONSTRUCTION SET.
22. PROVIDE AN EQUIPMENT GROUNDING CONDUCTOR, PULLED INTO THE CONDUIT WITH THE PHASE CONDUCTOR, IN ALL SERVICE, FEEDER, AND BRANCH CIRCUITS.
23. PROVIDE A NEUTRAL CONDUCTOR FOR EACH BREAKER TRIP HANDLE. NEUTRALS SHALL NOT BE SHARED BETWEEN BRANCH CIRCUITS.
24. ALL CIRCUITS TO BE MINIMUM #12 CU IN MINIMUM 3/4 " CONDUIT UNLESS OTHERWISE NOTED.
25. WHERE ALLOWED BY CODE, MC CABLE IS AN APPROVED ALTERNATE TO CONDUCTORS IN CONDUIT FOR CONCEALED BRANCH CIRCUIT WIRING BETWEEN DEVICES, BUT NOT FOR HOME-RUNS. HOME RUNS TO BE RAN IN CONDUIT COMPLETE FROM PANEL TO FIRST DEVICE OR FIXTURE ON CIRCUIT.
26. DO NOT INSTALL MORE THAN THREE PHASE CONDUCTORS IN ANY HOME-RUN CONDUITS UNLESS SPECIFICALLY INDICATED ON DRAWINGS.
27. IDENTIFY ALL OUTLET COVER PLATES WITH THE PANEL AND CIRCUIT NUMBER.
28. A GFI OUTLET SHALL BE INSTALLED AT EACH LOCATION DESIGNATED BY "GFI" ON THE DRAWINGS. DOWNSTREAM PROTECTION BY A GFI OUTLET UPSTREAM IS NOT ALLOWED.
29. OUTLETS, SWITCHES, AND COVER PLATES TO BE COLOR CODED (BROWN, WHITE, IVORY, OR GRAY) TO THE WALL THEY ARE MOUNTED ON AS DIRECTED BY THE ARCHITECT.
30. ALL CONVENIENCE OUTLETS MUST BE MOUNTED FLUSH WITH THE COVER PLATE AND SECURED FIRMLY TO THE OUTLET BOX.
31. THE CONTRACTOR SHALL TAKE SPECIAL CARE TO MAKE SURE OUTLET BOXES ARE SET FLUSH WITH FINISH WALL SURFACES WHERE WALL PANELING OR ACOUSTICAL WALLS ARE INSTALLED OR WHERE OUTLETS ARE INSTALLED ON CARPETED RISERS.
32. GFI OUTLETS SHALL BE INSTALLED AND/OR CIRCUITED SO THAT THE TRIPPING OF A GFI OUTLET IN A STUDENT ACCESSED AREA WILL NOT SHUT OF ANY DOWN-STREAM OUTLETS.
33. REMOVE ALL OLD AND/OR UNUSED EXISTING CONDUIT AND ELECTRICAL APPARATUS FROM EXTERIOR OR INTERIOR EXPOSED SURFACES.
34. WHERE EXISTING ELECTRICAL EQUIPMENT IS TO REMAIN BUT THE SURFACE THAT IT IS MOUNTED ON IS TO BE REWORKED UNDER OTHER CONTRACTS, THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE TO REMOVE AND INSTALL OR MODIFY THE EXISTING EQUIPMENT AS REQUIRED TO MEET THE DESIGN INTENT. SEE ARCHITECTURAL DRAWINGS FOR ROOF, CEILINGS, WALLS, SOFFITS, FLOORS, ETC.
35. REMOVE ALL UNUSED CONDUITS AND CIRCUITS IN THE DEMOLTIONED AREA AS THEY ARE IDENTIFIED AS UNUSED OR ABANDONED.
36. REMOVE ALL EXISTING ELECTRICAL DEVICES, EQUIPMENT, AND APPARATUS AS THEY ARE IDENTIFIED AS UNUSED OR ABANDONED.
37. RELOCATE EXISTING CONDUITS AND CIRCUITS AS REQUIRED THAT ARE PRESENTLY SERVING EQUIPMENT THAT IS INTENDED TO REMAIN IN SERVICE BUT SAID CONDUITS ARE CURRENTLY RUNNING THROUGH AREAS TO BE DEMOLITIONED.
38. WHERE EXISTING CONDUIT RUNS ARE RE-USED BY SPECIAL PERMISSION FROM THE ARCHITECT, A SEPARATE GREEN, INSULATED GROUND WIRE SHALL BE PULLED IN THE CONDUIT AND BONDED AT EACH END AS REQUIRED.
39. RE-ROUTE EXISTING CIRCUIT CONDUITS AS REQUIRED AT ALL AREAS WHERE EXISTING WALLS ARE TO BE DEMOLITIONED OR HAVE DOORWAYS CUT IN THEM. PLAN ON AN AVERAGE OF ONE, 3/4 " CONDUIT RELOCATION FOR EACH PENETRATION OR WALL REMOVAL.
40. ALL DEVICES SHOWN ON EXISTING WALLS ARE TO FINISH FLUSH WITH EXISTING WALL UNLESS OTHERWISE INDICATED.
41. FIELD VERIFY CONDITIONS FOR NEW WIRING. SURFACE RACEWAYS AND/OR BOXES MUST RECEIVE PRIOR APPROVAL FROM THE ARCHITECT AND OWNER AND WILL BE EVALUATED ON A CASE BY CASE BASIS DURING CONSTRUCTION. APPROVED RACEWAYS MUST BE PAINTED TO MATCH THE SURFACE ON WHICH THEY ARE MOUNTED.
42. ALL PATCH, REPAIR, REPAINT AND COVER UP REQUIRED AS A RESULT OF ELECTRICAL REMODEL IS TO BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR, BUT ACTUAL WORK IS TO BE PERFORMED BY QUALIFIED PERSONNEL.
43. ALL RECESSED LIGHT FIXTURES MUST CONFORM TO NEC 410
44. ALL RECESSED LIGHT FIXTURES THAT PENETRATE THE BUILDING THERMAL ENVELOPE SHALL BE SEALED WITH A GASKET OR CAULK BETWEEN THE HOUSING AND INTERIOR WALL OR CEILING COVERING
45. COORDINATE LOCATION OF CEILING LIGHT FIXTURES WITH THE REFLECTED CEILING PLAN.
46. FIXTURE COUNTS SHOWN ON DRAWINGS ARE FOR REFERENCE ONLY. CONTRACTOR IS RESPONSIBLE TO VERIFY FIXTURE COUNTS AS PART OF BIDDING PROCESS.
47. ELECTRICAL CONTRACTOR SHALL VERIFY CEILING THICKNESSES AND USE CEILING TRIM EXTENDERS ON DOWNLIGHTS AS REQUIRED.
48. SUPPORT RECESSED T-BAR MOUNT FIXTURES WITH FOUR EXTRA GALVANIZED WIRE SUPPORTS ON OPPOSITE CORNERS PER IBC. CONNECT WIRES TO BUILDING STRUCTURE.
49. CONNECT EMERGENCY CIRCUIT OF EMERGENCY LIGHT BATTERY PACK TO UNSWITCHED LIGHTING CIRCUIT SERVING FIXTURES IN AREA. INSTALL EXTRA CONDUCTORS AS REQUIRED. WIRE SO LAMPS IN NORMAL MODE ARE CONTROLLED AS NOTED ON LIGHTING PLANS. PROVIDE ADDITIONAL BALLASTS AS REQUIRED.
50. WHERE LIGHT FIXTURES AS SPECIFIED AS COLOR PER ARCHITECT, THIS SHALL BE INTERPRETED AS A NON-STANDARD COLOR
51. THE CONTRACTOR SHALL PROVIDE A WIRE MESH COVER OVER ALL RECESSED LIGHTS TO KEEP BLOWN IN INSULATION AT LEAST THREE INCHES AWAY FROM THE FIXTURE HOUSING.
52. EMERGENCY LIGHT BATTERY PACKS SHALL BE CONNECTED SO AS TO BE ABLE TO OPERATE IN THE TEST MODE WHEN THE NORMAL SWITCH LEG IS TURNED ON, AND SHALL ILLUMINATE ONE FIXTURE LAMP UNLESS OTHERWISE NOTED.
53. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE TO REVIEW ALL SWITCH LOCATIONS WITH THE GENERAL CONTRACTOR PRIOR TO ROUGH-IN TO PREVENT ANY SWITCHES FROM BEING LOCATED ON THE WRONG SIDE OF THE DOOR.
54. COORDINATE LOCATION OF EXIT LIGHTS WITH ARCHITECT.
55. VERIFY FIXTURE COUNT WITH REFLECTED CEILING PLAN.
56. EXHAUST FANS FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR, WIRED BY ELECTRICAL CONTRACTOR.
57. REFER TO MECHANICAL PLANS FOR EXACT LOCATION OF MECHANICAL EQUIPMENT.
58. ELECTRICAL CONTRACTOR SHALL FURNISH ALL MOTOR DISCONNECTS, STARTERS, AND CONTROL STATIONS FOR MECHANICAL EQUIPMENT UNLESS THE SAME IS FURNISHED AS AN INTEGRAL PART OF THE EQUIPMENT. VERIFY WITH MECHANICAL CONTRACTOR PRIOR TO BID.
59. THERMOSTAT AND CONTROL WIRING FOR MECHANICAL EQUIPMENT BY MECHANICAL CONTRACTOR.
60. PROVIDE SAFETY DISCONNECTS AS REQUIRED AT ALL CONNECTIONS TO MECHANICAL EQUIPMENT. PROVIDE FUSING AND RATINGS PER NAMEPLATE INFORMATION OF EQUIPMENT SERVED.
61. BEFORE RUNNING CONDUITS, PLACING OUTLETS OR ORDERING EQUIPMENT, THE CONTRACTOR SHALL REVIEW THE SPECIFICATIONS AND DESIGN AND SHOP DRAWINGS OF THE OTHER TRADES SERVED BY THE CONDUIT, OUTLETS, AND/OR EQUIPMENT AND NOTIFY ENGINEER OF CONFLICTS. WHERE NO NOTIFICATION IS GIVEN, THE CONTRACTOR WILL BE RESPONSIBLE TO REVISE INSTALLATIONS WITHOUT COST TO THE OWNER.
62. PROVIDE NEUTRAL CONNECTION TO 208/240/480V, SINGLE-PHASE EQUIPMENT. RUN SEPARATE GROUND WIRE TO ALL OUTDOOR UNITS AND BOND TO THE EQUIPMENT GROUND LUG.
63. ELECTRICAL CONTRACTOR SHALL INSTALL A PULL STRING IN ALL COMMUNICATIONS, SECURITY, AND OTHER LOW VOLTAGE CONDUITS FOR USE BY LOW VOLTAGE SYSTEM CONTRACTOR.
64. ELECTRICAL CONTRACTOR SHALL INSTALL A PULL STRING IN ALL UNUSED POWER AND LIGHTING CONDUITS.
65. REVIEW THE STATE DESIGN REQUIREMENTS MANUAL PRIOR TO BID
66. WHERE THERE ARE CONFLICTS IN THE DRAWINGS AND/OR SPECIFICATIONS THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER PRIOR TO BID. WHERE NO NOTIFICATION IS GIVEN THE MORE STRINGENT INTERPRETATION (GENERALLY INTERPRETED TO BE THE MORE COSTLY) WILL BE ENFORCED.

ELECTRICAL LEGEND

ANNOTATIONS

X / XXX	DETAIL CALL-OUT; TOP "X" REFERS TO DETAIL NUMBER & BOTTOM "XXX" REFERS TO SHEET NUMBER
#	KEYED NOTE CALLOUT
#-#	EQUIPMENT CALLOUT
— — xCDy — —	COMMUNICATIONS RACEWAY: "x" CONDUITS OF "y" DIAMETER

LIGHTING FIXTURES

	EXIT LIGHT: CEILING - FACE(S) AS SHOWN
	EXIT LIGHT: WALL - FACE(S) AS SHOWN
	EXIT LIGHT: FACE SIDE
	EXIT LIGHT: DIRECTIONAL ARROWS, DOUBLE FACE
	RECESSED FIXTURE
	STRIP LIGHT
	FLUORESCENT FIXTURE
	EMERGENCY FIXTURE
	WALL MOUNT FIXTURE

LIGHTING CONTROL

$X	SINGLE POLE SWITCH; "x" INDICATES SWITCH GROUP
$LV	LOW VOLTAGE SWITCH; ACUITY N-LIGHT SYSTEM OR EQUIVALENT
$4	FOUR WAY SWITCH
$ LCX/Y	LIGHTING CONTROL OVERRIDE SWITCH; X=CONTROL ZONE #1, Y=CONTROL ZONE #2
DLV	DIMMER SWITCH: LED; 600 W MINIMUM; ACUITY N-LIGHT SYSTEM OR EQUIVALENT
XS / LV	WALL MOUNT OCCUPANCY SENSOR; ADAPTIVE TECHNOLOGY; LOW-VOLTAGE; ACUITY N-LIGHT SYSTEM OR EQUIVALENT VS = VACANCY SENSOR SETTING OS = OCCUPANCY SENSOR SETTING
S XS	OCCUPANCY/VACANCY SENSOR: DUAL TECHNOLOGY VS = VACANCY SENSOR SETTING OS = OCCUPANCY SENSOR SETTING
S DT	OCCUPANCY/VACANCY SENSOR: DUAL TECHNOLOGY
S PR	OCCUPANCY/VACANCY SENSOR: PASSIVE INFRARED
S US	OCCUPANCY/VACANCY SENSOR: ULTRASONIC
S #	OCCUPANCY/VACANCY SENSOR: # INDICATES WATTSTOPPER CAT# FOR COVERAGE PATTERN OR EQUIVALENT AS SPECIFIED

BRANCH CIRCUITING

	SIMPLEX OUTLET
	SIMPLEX OUTLET: GROUND FAULT INTERRUPTER
	DUPLEX OUTLET
	DUPLEX OUTLET: ISOLATED GROUND - ORANGE DEVICE AND PLATE
	FACELESS GFCI PROTECTION DEVICE
	DUPLEX OUTLET: GROUND FAULT INTERRUPTER
EWC	ELECTRIC WATER COOLER OUTLET
USB	DUPLEX RECEPTACLE WITH (2)USB; LEVITON T5832 SERIES OR EQUIVALENT
WP	DUPLEX OUTLET: WEATHERPROOF
	DOUBLE DUPLEX OUTLET
	DOUBLE DUPLEX OUTLET: GROUND FAULT INTERRUPTER
	DOUBLE DUPLEX OUTLET: ISOLATED GROUND - ORANGE DEVICE AND PLATE
FB#	FLOOR OUTLET: WIREMOLD RFB4-S38BBTCBK, 2 DUPLEX, 1 DATA, 1 TELEPHONE UNLESS OTHERWISE NOTED IN FLOOR BOX SCHEDULE
J	JUNCTION BOX
	SPECIAL OUTLET: SEE PANEL SCHEDULE
	DISCONNECT; NO OVER-CURRENT PROTECTION
	DISCONNECT WITH OVER-CURRENT PROTECTION (CIRCUIT BREAKER STYLE OR AS SPECIFIED)
$m	MOTOR PROTECTIVE THERMAL SWITCH
$SSU	MOTOR PROTECTIVE FUSED THERMAL SWITCH
	QUANTITY OF CONDUCTORS: SHORT LINES = NEUTRAL/GROUND LONG LINES = PHASE /SWITCH
	HOME-RUN
	CIRCUITING: NORMAL SOURCE

POWER AND DISTRIBUTION

	DISTRIBUTION PANEL
	PANELBOARD
	METER/METER SOCKET

COMMUNICATIONS

	COMMUNICATIONS RACK
CMJ	COMMUNICATIONS RACEWAY: OPEN D-RINGS OR J-HOOKS. SEE DETAILS AND SPECIFICATIONS
LR#	COMMUNICATIONS LADDER RACK. SEE SPECIFICATIONS AND/OR SCHEDULES
	PHONE BACKBOARD
	TELEVISION OUTLET (4-11/16"sq x 2-3/4"D J-BOX; 5/8",1-GANG MUD RING; 1" CONDUIT, (2)RG-6 COAX)
	COMMUNICATIONS OUTLET, 1-PORT DEVICE, COMM BOX (SEE COMMUNICATIONS RACEWAY SCHEDULE); 1.25" CONDUIT; 4-PORT KEYSTONE FACEPLATE; (1)CAT 6A CABLE/JACK
	COMMUNICATIONS OUTLET, 2-PORT DEVICE, COMM BOX (SEE COMMUNICATIONS RACEWAY SCHEDULE); 1.25" CONDUIT; 4-PORT KEYSTONE FACEPLATE; (2)CAT 6A CABLES/JACKS
	COMMUNICATIONS OUTLET, 3-PORT DEVICE, COMM BOX (SEE COMMUNICATIONS RACEWAY SCHEDULE); 1.25" CONDUIT; 4-PORT KEYSTONE FACEPLATE; (3)CAT 6A CABLES/JACKS
x	COMMUNICATIONS OUTLET, 6-PORT DEVICE, COMM BOX (SEE COMMUNICATIONS RACEWAY SCHEDULE); 1.25" CONDUIT; 4-PORT KEYSTONE FACEPLATE; (X)CAT 6A CABLES/JACKS
W	COMMUNICATIONS OUTLET, WALL PHONE, 2-PORT DEVICE, COMM BOX (SEE COMMUNICATIONS RACEWAY SCHEDULE); 1.25" CONDUIT; 4-PORT KEYSTONE FACEPLATE; (2) CAT 6A CABLES/JACKS
WAP	COMMUNICATIONS OUTLET, WIRELESS ACCESS POINT,2-PORT DEVICE, COMM BOX (SEE COMMUNICATIONS RACEWAY SCHEDULE); 1.25" CONDUIT; 4-PORT KEYSTONE FACEPLATE; (2) CAT 6A CABLES/JACKS

FIRE ALARM

FACP	FIRE ALARM CONTROL PANEL
ANN	FIRE ALARM REMOTE ANNUNCIATOR PANEL
	SMOKE DETECTOR
DD	DUCT DETECTOR
CM	CONTROL/RELAY MODULE
x	STROBE;"X" = MINIMUM CANDELA RATING
x	CEILING MOUNTED STROBE;"X" = MINIMUM CANDELA RATING
x	HORN AND STROBE;"X" = MINIMUM CANDELA RATING
x	CEILING MOUNTED HORN AND STROBE;"X" = MINIMUM CANDELA RATING
RTS	DETECTOR REMOTE TEST SWITCH WITH INDICATING LIGHT

SECURITY

SEC	SECURITY SYSTEM HEAD END EQUIPMENT
	CCTV CAMERA : WALL MOUNT
	CCTV CAMERA : DOME TYPE CEILING MOUNT
ES	ELECTRIC STRIKE, (4SD J-BOX ABOVE CEILING; 1/2" CONDUIT STUB INTO DOOR FRAME)
CR	CARD READER (4SD J-BOX WALL; 4SD J-BOX ABOVE CEILING; 1/2" CONDUIT BETWEEN BOXES)
MS	MOTION SENSOR: INFRARED
EPT	EMERGENCY POWER TRANSFER, (4SD J-BOX ABOVE CEILING; 1/2" CONDUITS STUB DOWN DOOR FRAME TO ELECTRIFIED HINGE)

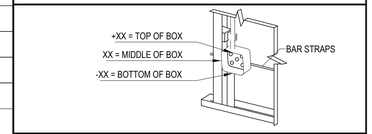
AUDIO/VISUAL

S A/V	SPEAKER : LOCAL AUDIO VISUAL SYSTEM SPEAKER

ONE-LINE

XA / YP	BREAKER : "x" = BREAKER AMPERAGE "y" = QUANTITY OF POLES
	BRANCH PANEL
	BRANCH PANEL WITH MAIN BREAKER
	BRANCH PANEL WITH SUB FEED BREAKER
x	FEEDER SIZE (REFER TO CONDUIT AND CONDUCTOR SCHEDULE UNLESS OTHERWISE NOTED)
	GROUND
M	CT AND METER
M	DIRECT METER
	METER : NET METERING
	TRANSFORMER
hp	MOTOR : hp = MOTOR HORSEPOWER

GENERAL WALL MOUNTED BOX HEIGHT DETAIL



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ELECTRICAL ABBREVIATIONS

A	AMPERE	MAX	MAXIMUM
AF	AMP FUSE	MCB	MAIN CIRCUIT BREAKER
AFF	ABOVE FINISHED FLOOR	MECH	MECHANICAL
AFG	ABOVE FINISHED GRADE	MFR	MANUFACTURER
AFI	ARC-FAULT CIRCUIT-INTERRUPTER	MIN	MINIMUM
AIC	AMPERE INTERRUPTING CAPACITY	MLO	MAIN LUGS ONLY
AL	ALUMINUM	MTD	MOUNTED
ARCH	ARCHITECT(URAL)	NEC	NATIONAL ELECTRICAL CODE
AS	AMP SWITCH	NECA	NATIONAL ELECTRICAL CONTRACTOR'S ASSOCIATION
AWG	AMERICAN WIRE GAUGE	NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
BLDG	BUILDING	N, NEUT	NEUTRAL
BKBD	BACKBOARD	NFC	NATIONAL FIRE CODE
C	CONDUIT	NC	NORMALLY CLOSED
CAB	CABINET	NIC	NOT IN CONTRACT
CAT	CATALOG/CATEGORY	NL	NIGHT LITE
C/B	CIRCUIT BREAKER	NO	NORMALLY OPEN
CKT	CIRCUIT	NTS	NOT TO SCALE
CLG	CEILING	OCP	OVERCURRENT PROTECTION
CO	CONDUIT ONLY	P	POLE
COMM	COMMUNICATION	PH	PHASE
CONN	CONNECTION	PNL	PANEL
CU	COPPER	PWR	POWER
DEMO	DEMOLITION/DEMOLISH	QTY	QUANTITY
DISC	DISCONNECT	RECEP	RECEPTACLE
DN	DOWN	REQ'D	REQUIRED
DWG	DRAWING	RGSC	RIGID GALVANIZED STEEL CONDUIT
EA	EACH	RM	ROOM
ELEC	ELECTRICAL	SCHED	SCHEDULE
ELEV	ELEVATOR	SECT	SECTION
EMER, EM	EMERGENCY	SP	SINGLE POLE
EMT	ELECTRICAL METALLIC TUBING	SN	SOLID NEUTRAL
EOLR	END OF LINE RESISTOR	SPEC	SPECIFICATION
EQUIP	EQUIPMENT	SW	SWITCH
EX, EXIST	EXISTING	SWBD	SWITCHBOARD
FBO	FURNISHED BY OTHERS	SWGR	SWITCH GEAR
FCU	FAN COIL UNIT	SYS	SYSTEM
FF	FINISHED FLOOR	TEMP	TEMPORARY
FIXT	FIXTURE	TELE	TELEPHONE
FLEX	FLEXIBLE METALLIC CONDUIT (STEEL)	TWP	TWISTED PAIR
FLUOR	FLUORESCENT	TWSP	TWISTED SHEILDED PAIR
FT	FEET OR FOOT	XFMR	TRANSFORMER
GFI	GROUND FAULT INTERRUPTER	T-STAT	THERMOSTAT
G, GND	GROUND	TYP	TYPICAL
HP	HORSEPOWER	UBC	UNIFORM BUILDING CODE
HVAC	HEATING, VENTILATING & AIR CONDITIONING	UL	UNDERWRITERS LABORATORY
IG	ISOLATED GROUND	UMC	UNIFORM MECHANICAL CODE
IMC	INTERMEDIATE METAL CONDUIT	UNO	UNLESS NOTED OTHERWISE
IN	INCH(ES)	V	VOLT OR VOLTAGE
ISC	SHORT CIRCUIT AMPERES, KA	VA	VOLT AMPERE
JB, J-BOX	JUNCTION BOX	W	WATT
KCMIL	THOUSAND CIRCULAR MILS	W/	WITH
KVA	KILOVOLT AMPERE	WG	WIRE GUARD
KW	KILOWATT	WP	UL LISTED WEATHERPROOF, NEMA 3R or 4
LTG	LIGHTING		

DESIGN WEST
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MT. LOGAN MIDDLE SCHOOL
MAIN OFFICE AND SECURE VESTIBULE REMODEL

875 N 200 E, LOGAN, UT 84321

LOGAN CITY SCHOOL DISTRICT

CONSTRUCTION DOCUMENTS

MARK: | DATE: | DESCRIPTION:

PROJECT #: 125070
DRAWN BY: D.PATTON
CHECKED BY: S.SWENSON
ISSUED: 04.02.2026

REGISTERED PROFESSIONAL ENGINEER
No. 294174
SHANE B. SWENSON
4/8/2026
STATE OF UTAH

ABBREVIATIONS, G.P.N., LEGEND & SHEET INDEX

E-001.1

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ELECTRICAL SPECIFICATIONS

SECTION 260500 - COMMON WORK RESULTS FOR ELECTRICAL
1.1 APPLICABILITY
A. Division 26 section Common work results for Electrical applies to Division 26, Division 27 (Communications), and Division 28 (Electronic Safety and Security)
1.2 COORDINATION
A. Coordinate arrangement, mounting, and support of electrical equipment:
1. To allow maximum possible headroom unless specific mounting heights that reduce headroom are indicated.
2. To provide for ease of disconnecting the equipment with minimum interference to other installations.
3. To allow right of way for piping and conduit installed at required slope.
4. So connecting raceways, cables, wireways, cable trays, and busways will be clear of obstructions and of the working and access space of equipment.
B. Coordinate installation of required supporting devices and set sleeves in cast-in-place concrete, masonry walls, and other structural components as they are constructed.
C. Coordinate location of access panels and doors for electrical items that are behind finished surfaces or otherwise concealed. Access doors and panels are specified in Division 08 Section "Access Doors and Frames."
D. Coordinate sleeve selection and application with selection and application of firestopping specified
1.3 PERFORMANCE REQUIREMENTS
A. Seismic Performance: Electrical equipment shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.
1. The term "withstand" means "the unit will remain in place without separation of any parts from the device when subjected to the seismic forces specified."
1.4 COMMON REQUIREMENTS FOR ELECTRICAL INSTALLATION
A. Comply with NECA 1.
B. Measure indicated mounting heights to bottom of unit for suspended items and to center of unit for wall-mounting items.
C. Headroom Maintenance: If mounting heights or other location criteria are not indicated, arrange and install components and equipment to provide maximum possible headroom consistent with these requirements.
D. Equipment: Install to facilitate service, maintenance, and repair or replacement of components of both electrical equipment and other nearby installations. Connect in such a way as to facilitate future disconnecting with minimum interference with other items in the vicinity.
E. Right of Way: Give to piping systems installed at a required slope.
1.5 SLEEVE INSTALLATION FOR ELECTRICAL PENETRATIONS
A. Electrical penetrations occur when raceways, cables, wireways, cable trays, or busways penetrate concrete slabs, concrete or masonry walls, or fire-rated floor and wall assemblies.
B. Concrete Slabs and Walls: Install sleeves for penetrations unless core-drilled holes or formed openings are used. Install sleeves during erection of slabs and walls.
C. Use pipe sleeves unless penetration arrangement requires rectangular sleeved opening.
D. Fire-Rated Assemblies: Install sleeves for penetrations of fire-rated floor and wall assemblies unless openings compatible with firestop system used are fabricated during construction of floor or wall.
E. Cut sleeves to length for mounting flush with both surfaces of walls.
F. Extend sleeves installed in floors 2 inches (50 mm) above finished floor level.
G. Size pipe sleeves to provide 1/4-inch (6.4-mm) annular clear space between sleeve and raceway or cable, unless indicated otherwise.
H. Seal space outside of sleeves with grout for penetrations of concrete and masonry
1. Promptly pack grout solidly between sleeve and wall so no voids remain. Tool exposed surfaces smooth; protect grout while curing.
I. Interior Penetrations of Non-Fire-Rated Walls and Floors: Seal annular space between sleeve and raceway or cable, using joint sealant appropriate for size, depth, and location of joint. Comply with requirements in Division 07 Section "Joint Sealants."
J. Fire-Rated-Assembly Penetrations: Maintain indicated fire rating of walls, partitions, ceilings, and floors at raceway and cable penetrations. Install sleeves and seal raceway and cable penetration sleeves with firestop materials. Comply with requirements in Division 07 Section "Penetration Firestopping."
K. Roof-Penetration Sleeves: Seal penetration of individual raceways and cables with flexible boot-type flashing units applied in coordination with roofing work.
L. Aboveground, Exterior-Wall Penetrations: Seal penetrations using steel pipe sleeves and mechanical sleeve seals. Select sleeve size to allow for 1-inch (25-mm) annular clear space between pipe and sleeve for installing mechanical sleeve seals.
M. Underground, Exterior-Wall Penetrations: Install cast-iron pipe sleeves. Size sleeves to allow for 1-inch (25-mm) annular clear space between raceway or cable and sleeve for installing mechanical sleeve seals.
1.6 SLEEVE-SEAL INSTALLATION
A. Install to seal exterior wall penetrations.
B. Use type and number of sealing elements recommended by manufacturer for raceway or cable material and size. Position raceway or cable in center of sleeve. Assemble mechanical sleeve seals and install in annular space between raceway or cable and sleeve. Tighten bolts against pressure plates that cause sealing elements to expand and make watertight seal.
1.7 FIRESTOPPING
A. Apply firestopping to penetrations of fire-rated floor and wall assemblies for electrical installations to restore original fire-resistance rating of assembly. Firestopping materials and installation requirements are specified in Division 07 Section "Penetration Firestopping."

SECTION 260519 - LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES
1.1 CONDUCTORS AND CABLES
A. Copper Conductors: Comply with NEMA WC 70.
B. Conductor Insulation: Comply with NEMA WC 70 for Types THHN-THWN.
C. Multiconductor Cable: Comply with NEMA WC 70 for metal-clad cable, Type MC and Type SOW with ground wire.
1.2 CONNECTORS AND SPLICES
A. Description: Factory-fabricated connectors and splices of size, ampacity rating, material, type, and class for application and service indicated.
1.3 CONDUCTOR MATERIAL APPLICATIONS
A. Feeders: Copper. Solid or stranded for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.
B. Branch Circuits: Copper. Solid or stranded for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.
1.4 CONDUCTOR INSULATION AND MULTICONDUCTOR CABLE APPLICATIONS AND WIRING METHODS
A. Feeders: Type THHN-THWN, single conductors in raceway.
B. Exposed Branch Circuits, Including in Crawlspaces: Type THHN-THWN, single conductors in raceway.
C. Branch Circuits Concealed in Ceilings, Walls, and Partitions: Type THHN-THWN, single conductors in raceway or Metal-clad cable, Type MC (HCF-MC in patient care areas).
D. Branch Circuits Concealed in Concrete, below Slabs-on-Grade, and Underground: Type THHN-THWN, single conductors in raceway.
E. Cord Drops and Portable Appliance Connections: Type SOW, hard service cord with stainless-steel, wire-mesh, strain relief device at terminations to suit application.
F. Class 1 Control Circuits: Type THHN-THWN, in raceway.
G. Class 2 Control Circuits: Type THHN-THWN, in raceway.
1.5 INSTALLATION OF CONDUCTORS AND CABLES
A. Conceal cables in finished walls, ceilings, and floors, unless otherwise indicated.
B. Use manufacturer-approved pulling compound or lubricant where necessary; compound used must not deteriorate conductor or insulation. Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.
C. Use pulling means, including fish tape, cable, rope, and basket-weave wire/cable grips, that will not damage cables or raceway.
D. Install exposed cables parallel and perpendicular to surfaces of exposed structural members, and follow surface contours where possible.
E. Support cables according to Division 26 Section "Hangers and Supports for Electrical Systems."
F. Identify and color-code conductors and cables according to Division 26 Section "Identification for Electrical Systems."
1.6 CONNECTIONS
A. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.
B. Wiring at Outlets: Install conductor at each outlet, with at least 12 inches (300 mm) of slack.

SECTION 260526 - GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS
1.1 CONDUCTORS
A. Insulated Conductors: Copper wire or cable insulated for 600 V unless otherwise required by applicable Code or authorities having jurisdiction.
B. Bare Copper Conductors:
1. Solid Conductors: ASTM B 3.
2. Stranded Conductors: ASTM B 8.
3. Bonding Conductor: No. 4 or No. 6 AWG, stranded conductor.
1.2 APPLICATIONS
A. Conductors: Install solid or stranded conductor for No. 8 AWG and smaller, and stranded conductors for No. 6 AWG and larger, unless otherwise indicated.
B. Conductor Terminations and Connections:
1. Pipe and Equipment Grounding Conductor Terminations: Bolted connectors.
2. Underground Connections: Welded connectors, except at ground rods and as otherwise indicated.
3. Connections to Ground Rods: Bolted connectors.
4. Connections to Structural Steel: Welded connectors.
1.3 EQUIPMENT GROUNDING
A. Install insulated equipment grounding conductors with all feeders and branch circuits.
B. Isolated Grounding Receptacle Circuits: Install an insulated equipment grounding conductor connected to the receptacle grounding terminal. Isolate conductor from raceway and from panelboard grounding terminals. Terminate at equipment grounding conductor terminal of the applicable derived system or service, unless otherwise indicated.
1.4 INSTALLATION
A. Grounding Conductors: Route along shortest and straightest paths possible, unless otherwise indicated or required by Code. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage.
B. Bonding Straps and Jumpers: Install in locations accessible for inspection and maintenance, except where routed through short lengths of conduit.
C. Bonding Interior Metal Ducts: Bond metal air ducts to equipment grounding conductors of associated fans, blowers, electric heaters, and air cleaners. Install bonding jumper to bond across flexible duct connections to achieve continuity.

SECTION 260529 - HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS
1.1 APPLICATION
A. Comply with NECA 1 and NECA 101 for application of hangers and supports for electrical equipment and systems except if requirements in this Section are stricter.
B. Maximum Support Spacing and Minimum Hanger Rod Size for Raceway: Space supports for EMT, IMC, and RMC as required by NFPA 70. Minimum rod size shall be 1/4 inch (6 mm) in diameter.
C. Multiple Raceways or Cables: Install trapeze-type supports fabricated with steel shotfirst or other support system, sized so capacity can be increased by at least 50 percent in future without exceeding specified design load limits.
1. Secure raceways and cables to these supports with conduit clamps.
D. Spring-steel clamps designed for supporting single conduits without bolts may be used for 1-1/2-inch (38-mm) and smaller raceways serving branch circuits and communication systems above suspended ceilings and for fastening raceways to trapeze supports.
1.2 SUPPORT INSTALLATION
A. Comply with NECA 1 and NECA 101 for installation requirements except as specified in this Article.
B. Raceway Support Methods: In addition to methods described in NECA 1, EMT and RMC may be supported by openings through structure members, as permitted in NFPA 70.
C. Strength of Support Assemblies: Where not indicated, select sizes of components so strength will be adequate to carry present and future static loads within specified loading limits. Minimum static design load used for strength determination shall be weight of supported components plus 200 lb (90 kg).
D. Mounting and Anchorage of Surface-Mounted Equipment and Components: Anchor and fasten electrical items and their supports to building structural elements by the following methods unless otherwise indicated by code:
1. To Wood: Fasten with lag screws or through bolts.
2. To New Concrete: Bolt to concrete inserts.
3. To Masonry: Approved toggle-type bolts on hollow masonry units and expansion anchor fasteners on solid masonry units.
4. To Existing Concrete: Expansion anchor fasteners.
5. Instead of expansion anchors, powder-actuated driven threaded studs provided with lock washers and nuts may be used in existing standard-weight concrete 4 inches (100 mm) thick or greater. Do not use for anchorage to lightweight-aggregate concrete or for slabs less than 4 inches (100 mm) thick.
6. To Steel: Welded threaded studs complying with AWS D1.1/D1.1M, with lock washers and nuts or Beam clamps (MSS Type 19, 21, 23, 25, or 27) complying with MSS SP-69.
7. To Light Steel: Sheet metal screws.
8. Items Mounted on Hollow Walls and Nonstructural Building Surfaces: Mount cabinets, panelboards, disconnect switches, control enclosures, pull and junction boxes, transformers, and other devices on slotted-channel racks attached to substrate by means that meet seismic-restraint strength and anchorage requirements.
E. Drill holes for expansion anchors in concrete at locations and to depths that avoid reinforcing bars.
1.3 INSTALLATION OF FABRICATED METAL SUPPORTS
A. Cut, fit, and place miscellaneous metal supports accurately in location, alignment, and elevation to support and anchor electrical materials and equipment.
B. Field Welding: Comply with AWS D1.1/D1.1M.

SECTION 260533 - RACEWAY AND BOXES FOR ELECTRICAL SYSTEMS
1.1 METAL CONDUIT AND TUBING
A. Rigid Steel Conduit: ANSI C80.1.
B. PVC-Coated Steel Conduit: PVC-coated rigid steel conduit.
1. Comply with NEMA RN 1.
2. Coating Thickness: 0.040 inch (1 mm), minimum.
C. EMT: ANSI C80.3.
D. FMC: Zinc-coated steel or aluminum.
E. LFMC: Flexible steel conduit with PVC jacket.
F. Fittings for Conduit (Including all Types and Flexible and Liquidtight), EMT, and Cable: NEMA FB 1; listed for type and size raceway with which used, and for application and environment in which installed.
1. Fittings for EMT: Steel or die-cast, set-screw or compression type.
2. Coating for Fittings for PVC-Coated Conduit: Minimum thickness, 0.040 inch (1 mm), with overlapping sleeves protecting threaded joints.
G. Joint Compound for Rigid Steel Conduit or IMC: Listed for use in cable connector assemblies, and compounded for use to lubricate and protect threaded raceway joints from corrosion and enhance their conductivity.
1.2 SURFACE RACEWAYS
A. Listing and Labeling: Surface raceways and tele-power poles shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
B. Surface Metal Raceways: Galvanized steel with snap-on covers complying with UL 5. Manufacturer's standard enamel finish in color selected by Architect.
1.3 BOXES, ENCLOSURES, AND CABINETS
A. Sheet Metal Outlet and Device Boxes: NEMA OS 1.
B. Small Sheet Metal Pull and Junction Boxes: NEMA OS 1.
C. Cast-Metal Access, Pull, and Junction Boxes: NEMA FB 1, cast aluminum or galvanized, cast iron with gasketed cover.
D. Hinged-Cover Enclosures: NEMA 250, Type 1, with continuous-hinge cover with flush latch, unless otherwise indicated.
1. Metal Enclosures: Steel, finished inside and out with manufacturer's standard enamel.
E. Cabinets:
1. NEMA 250, Type 1, galvanized-steel box with removable interior panel and removable front, finished inside and out with manufacturer's standard enamel.
2. Hinged door in front cover with flush latch and concealed hinge.
3. Key latch to match panelboards.
4. Metal barriers to separate wiring of different systems and voltage.
5. Accessory feet where required for freestanding equipment.
1.4 RACEWAY APPLICATION
A. Outdoors: Apply raceway products as specified below, unless otherwise indicated:
1. Exposed Conduit: Rigid steel conduit.
2. Concealed Conduit, Aboveground: Rigid steel conduit.
3. Underground Conduit: RNC, Type EPC-40-PVC, direct buried.
4. Boxes and Enclosures, Aboveground: NEMA 250, Type 3R.
B. Comply with the following indoor applications, unless otherwise indicated:
1. Exposed, Not Subject to Physical Damage: EMT.
2. Exposed and Subject to Physical Damage: Rigid steel conduit. Includes raceways in the following locations:
a. Utility tunnels
3. Concealed in Ceilings and Interior Walls and Partitions: EMT.
4. Damp or Wet Locations: Rigid steel conduit.
5. Raceways for Optical Fiber or Communications Cable in Spaces Used for Environmental Air: Plenum-type, optical fiber/communications cable raceway or EMT.
6. Boxes and Enclosures: NEMA 250, Type 1, except use NEMA 250, Type 4, stainless steel in damp or wet locations.
C. Minimum Raceway Size: 3/4-inch (21-mm) trade size.
D. Raceway Fittings: Compatible with raceways and suitable for use and location.
1. Rigid Steel Conduit: Use threaded rigid steel conduit fittings, unless otherwise indicated.
E. Install nonferrous conduit or tubing for circuits operating above 60 Hz. Where aluminum raceways are installed for such circuits and pass through concrete, install in nonmetallic sleeve.
F. Do not install aluminum conduits in contact with concrete.
1.5 INSTALLATION
A. Comply with NECA 1 for installation requirements applicable to products specified in Part 2 except where requirements on Drawings or in this Article are stricter.
B. Keep raceways at least 6 inches (150 mm) away from parallel runs of flues and steam or hot-water pipes. Install horizontal raceway runs above water and steam piping.
C. Install no more than the equivalent of three 90-degree bends in any conduit run except for communications conduits, for which fewer bends are allowed.
D. Conceal conduit and EMT within finished walls, ceilings, and floors, unless otherwise indicated.
E. Raceway Terminations at Locations Subject to Moisture or Vibration: Use insulating bushings to protect conductors, including conductors smaller than No. 4 AWG.
F. Install pull wires in empty raceways. Use polypropylene or monofilament plastic line with not less than 200-lb (90-kg) tensile strength. Leave at least 12 inches (300 mm) of slack at each end of pull wire.
G. Flexible Conduit Connections: Use maximum of 72 inches (1830 mm) of flexible conduit for recessed and semirecessed lighting fixtures, equipment subject to vibration, noise transmission, or movement; and for transformers and motors.
1. Use LFMC in damp or wet locations.
H. Recessed Boxes in Masonry Walls: Saw-cut opening for box in center of cell of masonry block, and install box flush with surface of wall.

SECTION 260548 - VIBRATION AND SEISMIC CONTROLS FOR ELECTRICAL SYSTEMS
1.1 PERFORMANCE REQUIREMENTS
A. Seismic-Restraint Loading:
1. Site Class as Defined in the IBC: Per structural documents.
2. Site Class as Defined in the IBC: Per structural documents.
3. Assigned Seismic Use Group or Building Category as Defined in the IBC: Per structural documents.
a. Component Importance Factor:
1) General: 1.0.
2) Life Safety (EM): 1.5
b. Component Response Modification Factor:
1) Fixtures: 1.5
2) Equipment: 2.5
3) Conduit and Cables: 5.0.
c. Component Amplification Factor: 2.5.
4. Design Spectral Response Acceleration at Short Periods (0.2 Second): Per structural documents.
5. Design Spectral Response Acceleration at 1.0-Second Period: Per structural documents.
1.2 QUALITY ASSURANCE
A. Comply with seismic-restraint requirements in the IBC unless requirements in this Section are more stringent.
B. Comply with NFPA 70.
1.3 SEISMIC-RESTRAINT DEVICES
A. General Requirements for Restraint Components: Rated strengths, features, and application requirements shall be as defined in reports by an agency acceptable to authorities having jurisdiction.
1. Structural Safety Factor: Allowable strength in tension, shear, and pullout force of components shall be at least four times the maximum seismic forces to which they will be subjected.
B. Channel Support System: MFMA-3, shop- or field-fabricated support assembly made of slotted steel channels with accessories for attachment to braced component at one end and to building structure at the other end and other matching components and with corrosion-resistant coating; and rated in tension, compression, and torsion forces.
C. Restraint Cables: ASTM A 603 galvanized or ASTM A 492 stainless-steel cables with end connections made of steel assemblies with thimbles, brackets, swivels, and bolts designed for restraining cable service; and with a minimum of two clamping bolts for cable engagement.
D. Bushing Assemblies for Wall-Mounted Equipment Anchorage: Assemblies of neoprene elements and steel sleeves designed for rigid equipment mountings, and matched to type and size of attachment devices.
E. Resilient Isolation Washers and Bushings: One-piece, molded, oil- and water-resistant neoprene, with a flat washer face.
F. Mechanical Anchor: Drilled-in and stud-wedge or female-wedge type in zinc-coated steel for interior applications and stainless steel for exterior applications. Select anchors with strength required for anchor and as tested according to ASTM E 488. Minimum length of eight times diameter.
G. Adhesive Anchor: Drilled-in and capsule anchor system containing polyvinyl or urethane methacrylate-based resin and accelerator, or injected polymer or hybrid mortar adhesive. Provide anchor bolts and hardware with zinc-coated steel for interior applications and stainless steel for exterior applications. Select anchor bolts with strength required for anchor and as tested according to ASTM E 488.
1.4 EXAMINATION
A. Examine areas and equipment to receive vibration isolation and seismic-control devices for compliance with requirements for installation tolerances and other conditions affecting performance.
B. Examine roughing-in of reinforcement and cast-in-place anchors to verify actual locations before installation.
C. Proceed with installation only after unsatisfactory conditions have been corrected.
1.5 APPLICATIONS
A. Multiple Raceways or Cables: Secure raceways and cables to trapeze member with clamps approved for application by an agency acceptable to authorities having jurisdiction.
B. Strength of Support and Seismic-Restraint Assemblies: Where not indicated, select sizes of components so strength will be adequate to carry present and future static and seismic loads within specified loading limits.
1.6 SEISMIC-RESTRAINT DEVICE INSTALLATION
A. Equipment and Hanger Restraints:
1. Install restrained isolators on electrical equipment.
2. Install resilient, bolt-isolation washers on equipment anchor bolts where clearance between anchor and adjacent surface exceeds 0.125 inch (3.2 mm).
3. Install seismic-restraint devices using methods approved by an agency acceptable to authorities having jurisdiction providing required submittals for component.
B. Install bushing assemblies for mounting bolts for wall-mounted equipment, arranged to provide resilient media where equipment or equipment-mounting channels are attached to wall.
C. Attachment to Structure: If specific attachment is not indicated, anchor bracing to structure at flanges of beams, at upper truss chords of bar joists, or at concrete members.
D. Drilled-in Anchors:
1. Identify position of reinforcing steel and other embedded items prior to drilling holes for anchors. Do not damage existing reinforcing or embedded items during coring or drilling. Notify the structural engineer if reinforcing steel or other embedded items are encountered during drilling. Locate and avoid prestressed tendons, electrical and telecommunications conduit, and gas lines.
2. Do not drill holes in concrete or masonry until concrete, mortar, or grout has achieved full design strength.
3. Wedge Anchors: Protect threads from damage during anchor installation. Heavy-duty sleeve anchors shall be installed with sleeve fully engaged in the structural element to which anchor is to be fastened.
4. Adhesive Anchors: Clean holes to remove loose material and drilling dust prior to installation of adhesive. Place adhesive in holes proceeding from the bottom of the hole and progressing toward the surface in such a manner as to avoid introduction of air pockets in the adhesive.
5. Set anchors to manufacturer's recommended torque, using a torque wrench.
6. Install zinc-coated steel anchors for interior and stainless-steel anchors for exterior applications.

1.7 ACCOMMODATION OF DIFFERENTIAL SEISMIC MOTION
A. Install flexible connections in runs of raceways, cables, wireways, cable trays, and busways where they cross seismic joints, where adjacent sections or branches are supported by different structural elements, and where they terminate with connection to equipment that is anchored to a different structural element from the one supporting them as they approach equipment.
1.8 ADJUSTING
A. Adjust isolators after isolated equipment is at operating weight.
B. Adjust active height of spring isolators.
C. Adjust restraints to permit free movement of equipment within normal mode of operation.

SECTION 260553 - IDENTIFICATION FOR ELECTRICAL SYSTEMS
1.1 CONDUCTOR IDENTIFICATION MATERIALS
A. Color-Coding Conductor Tape: Colored, self-adhesive vinyl tape not less than 3 mils (0.08 mm) thick by 1 to 2 inches (25 to 50 mm) wide.
1.2 EQUIPMENT IDENTIFICATION LABELS
A. Self-Adhesive, Engraved, Laminated Acrylic or Melamine Label: Adhesive backed, with white letters on a dark-gray background. Minimum letter height shall be 3/8 inch (10 mm).
1.3 INSTALLATION
A. Verify identity of each item before installing identification products.
B. Location: Install identification materials and devices at locations for most convenient viewing without interference with operation and maintenance of equipment.
C. Apply identification devices to surfaces that require finish after completing finish work.
D. Self-Adhesive Identification Products: Clean surfaces before application, using materials and methods recommended by manufacturer of identification device.
E. Attach signs and plastic labels that are not self-adhesive type with mechanical fasteners appropriate to the location and substrate.
F. Attach plastic raceway and cable labels that are not self-adhesive type with clear vinyl tape with adhesive appropriate to the location and substrate.
1.4 IDENTIFICATION SCHEDULE
A. Accessible Raceways and Cables within Buildings: Identify the covers of each junction and pull box of the following systems with self-adhesive vinyl labels with the wiring system legend and system voltage.
B. Power-Circuit Conductor Identification, 600 V or Less: For conductors in vaults, pull and junction boxes, manholes, and handholes, use color-coding conductor tape to identify the phase.
1. Color-Coding for Phase and Voltage Level Identification, 600 V or Less: Use colors listed below for ungrounded service feeder and branch-circuit conductors.
a. Color shall be factory applied or field applied for sizes larger than No. 8 AWG, if authorities having jurisdiction permit.
b. Colors for 208/120-V Circuits:
1) Phase A: Black.
2) Phase B: Red.
3) Phase C: Blue.
4) Neutral: White with colored stripe matching associated phase for single phase circuit
5) Ground: Green
6) Isolated Ground: Green with continuous yellow stripe
c. Colors for 480/277-V Circuits:
1) Phase A: Brown.
2) Phase B: Orange.
3) Phase C: Yellow.
4) Ground: Gray with colored stripe matching associated phase for single phase circuits
5) Ground: Green with continuous gray stripe
d. Field-Applied, Color-Coding Conductor Tape: Apply in half-lapped turns for a minimum distance of 6 inches (150 mm) from terminal points and in boxes where splices or taps are made. Apply last two turns of tape with no tension to prevent possible unwinding. Locate bands to avoid obscuring factory cable markings.
C. Warning Labels for Indoor Cabinets, Boxes, and Enclosures for Power and Lighting: Self-adhesive warning labels
D. Equipment Identification Labels: On each unit of equipment, install unique designation label that is consistent with wiring diagrams, schedules, and the Operation and Maintenance Manual. Apply labels to disconnect switches and protection equipment, central or master units, control panels, control stations, terminal cabinets, and racks of each system. Systems include power, lighting, control, communication, signal, monitoring, and alarm systems unless equipment is provided with its own identification.
1. Labeling Instructions:
a. Indoor Equipment: Self-adhesive, engraved, laminated acrylic or melamine label. Unless otherwise indicated, provide a single line of text with 1/2-inch- (13-mm-) high letters on 1-1/2-inch- (38-mm-) high label; where two lines of text are required, use labels 2 inches (50 mm) high.
b. Elevated Components: Increase sizes of labels and letters to those appropriate for viewing from the floor.
c. Unless provided with self-adhesive means of attachment, fasten labels with appropriate mechanical fasteners that do not change the NEMA or NRTL rating of the enclosure.
2. Equipment to Be Labeled:
a. Enclosures and electrical cabinets.
b. Access doors and panels for concealed electrical items.
c. Emergency system boxes and enclosures.
d. Enclosed switches.
e. Enclosed circuit breakers.
f. Enclosed controllers.
g. Transformers.
h. Remote-controlled switches, dimmer modules, and control devices.

SECTION 260923 - LIGHTING CONTROL DEVICES
1.1 SUBMITTALS
A. Product Data: For each type of product.
B. Shop Drawings: Show installation details for occupancy and light-level sensors.
C. Field quality-control reports.
D. Operation and Maintenance Data: For each type of lighting control device to include in emergency, operation, and maintenance manuals.
1.2 INDOOR OCCUPANCY SENSORS
A. General Requirements for Sensors: Wall- or ceiling-mounted, solid-state indoor occupancy sensors with a separate power pack.
1. Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
2. Operation: Unless otherwise indicated, turn lights on when coverage area is occupied, and turn them off when unoccupied; with a time delay for turning lights off, adjustable over a minimum range of 1 to 15 minutes.
3. Sensor Output: Contacts rated to operate the connected relay, complying with UL 773A. Sensor is powered from the power pack.
4. Power Pack: Dry contacts rated for 20-A ballast load at 120- and 277-V ac, for 13-A tungsten at 120-V ac, and for 1 hp at 120-V ac. Sensor has 24-V dc, 150-mA, Class 2 power source, as defined by NFPA 70.
5. Mounting:
a. Sensor: Suitable for mounting in any position on a standard outlet box.
b. Relay: Externally mounted through a 1/2-inch (13-mm) knockout in a standard electrical enclosure.
c. Time-Delay and Sensitivity Adjustments: Recessed and concealed behind hinged door.
6. Indicator: Digital display, to show when motion is detected during testing and normal operation of sensor.
7. Bypass Switch: Override the "on" function in case of sensor failure.
8. Automatic Light-Level Sensor: Adjustable from 2 to 200 fc (21.5 to 2152 lux); turn lights off when selected lighting level is present.
B. PIR Type: Ceiling mounted; detect occupants in coverage area by their heat and movement.
1. Detector Sensitivity: Detect occurrences of 6-inch- (150-mm-) minimum movement of any portion of a human body that presents a target of not less than 36 sq. in. (232 sq. cm).
2. Detection Coverage (Room): Detect occupancy anywhere in a circular area of 1000 sq. ft. (93 sq. m) when mounted on a 96-inch- (2440-mm-) high ceiling.
3. Detection Coverage (Corridor): Detect occupancy within 90 feet (27.4 m) when mounted on a 10-foot- (3-m-) high ceiling.C. Dual-Technology Type: Ceiling mounted; detect occupants in coverage area using PIR and ultrasonic detection methods. The particular technology or combination of technologies that control on-off functions is selectable in the field by operating controls on unit.
4. Sensitivity Adjustment: Separate for each sensing technology.
5. Detector Sensitivity: Detect occurrences of 6-inch- (150-mm-) minimum movement of any portion of a human body that presents a target of not less than 36 sq. in. (232 sq. cm), and detect a person of average size and weight moving not less than 12 inches (305 mm) in either a horizontal or a vertical manner at an approximate speed of 12 inches/s (305 mm/s).
6. Detection Coverage (Standard Room): Detect occupancy anywhere within a circular area of 1000 sq. ft. (93 sq. m) when mounted on a 96-inch- (2440-mm-) high ceiling.
1.3 SWITCHBOX-MOUNTED OCCUPANCY SENSORS
A. General Requirements for Sensors: Automatic-wall-switch occupancy sensor, suitable for mounting in a single gang switchbox.
1. Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
2. Operating Ambient Conditions: Dry interior conditions, 32 to 120 deg F (0 to 49 deg C).
3. Switch Rating: Not less than 800-VA fluorescent at 120 V, 1200-VA fluorescent at 277 V, and 800-W incandescent.
1.4 SENSOR INSTALLATION
A. Coordinate layout and installation of ceiling-mounted devices with other construction that penetrates ceilings or is supported by them, including light fixtures, HVAC equipment, smoke detectors, fire-suppression systems, and partition assemblies.
B. Install and aim sensors in locations to achieve not less than 90 percent coverage of areas indicated. Do not exceed coverage limits specified in manufacturer's written instructions.
1.5 WIRING INSTALLATION
A. Wiring Method: Comply with Section 260519 "Low-Voltage Electrical Power Conductors and Cables." Minimum conduit size is 1/2 inch (13 mm).
B. Wiring within Enclosures: Comply with NECA 1. Separate power-limited and nonpower-limited conductors according to conductor manufacturer's written instructions.
C. Size conductors according to lighting control device manufacturer's written instructions unless otherwise indicated.
D. Splices, Taps, and Terminations: Make connections only on numbered terminal strips in junction, pull, and outlet boxes; terminal cabinets; and equipment enclosures.
1.6 IDENTIFICATION
A. Identify components and power and control wiring according to Section 260553 "Identification for Electrical Systems."
1. Identify controlled circuits in lighting contactors.
2. Identify circuits or luminaires controlled by photoelectric and occupancy sensors at each sensor.
B. Label time switches and contactors with a unique designation.
1.7 FIELD QUALITY CONTROL
A. Perform the following tests and inspections:
1. Operational Test: After installing time switches and sensors, and after electrical circuitry has been energized, start units to confirm proper unit operation.
2. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
B. Lighting control devices will be considered defective if they do not pass tests and inspections.
C. Prepare test and inspection reports.
1.8 ADJUSTING
A. Occupancy Adjustments: When requested within 12 months from date of Substantial Completion, provide on-site assistance in adjusting sensors to suit actual occupied conditions. Provide up to two visits to Project during other-than-normal occupancy hours for this purpose.
1. For occupancy and motion sensors, verify operation at outer limits of detector range. Set time delay to suit Owner's operations.

SECTION 262416 - PANELBOARDS
1.1 SUBMITTALS
A. Product Data: For each type of panelboard.
B. Shop Drawings: For each panelboard and related equipment.
C. Panelboard Schedules: For installation in panelboards.
D. Operation and Maintenance Data: For panelboards and components to include in emergency, operation, and maintenance manuals. In addition to items specified in Section 017823 "Operation and Maintenance Data," include the following:
1.2 PANELBOARDS AND LOAD CENTERS COMMON REQUIREMENTS
A. HYPERLINK "http://www.specagent.com/Lookup?uid=11316" Manufacturers: Subject to compliance with requirements, provide products by the following:
1. Square D
B. Fabricate and test panelboards according to IEEE 344 to withstand seismic forces defined in Section 260548.16 "Seismic Controls for Electrical Systems."
C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
D. Enclosures: Flush and Surface-mounted, dead-front cabinets.
1. Rated for environmental conditions at installed location.
2. Front: Secured to box with concealed trim clamps. For surface-mounted fronts, match box dimensions; for flush-mounted fronts, overlap box. Trims shall cover all live parts and shall have no exposed hardware.
3. Finishes:
a. Panels and Trim: Steel, factory finished immediately after cleaning and pretreating with manufacturer's standard two-coat, baked-on finish consisting of prime coat and thermosetting topcoat.
1) Custom color where noted on drawings
b. Back Boxes: Galvanized steel.
E. Phase, Neutral, and Ground Buses:
1. Material: Tin-plated aluminum or Hard-drawn copper, 98 percent conductivity.
a. Plating shall run entire length of bus.
b. Bus shall be fully rated the entire length.
2. Interiors shall be factory assembled into a unit. Replacing switching and protective devices shall not disturb adjacent units or require removing the main bus connectors.
3. Equipment Ground Bus: Adequate for feeder and branch-circuit equipment grounding conductors; bonded to box.
4. Isolated Ground Bus: Adequate for branch-circuit isolated ground conductors; insulated from box.
5. Full-Sized Neutral: Equipped with full-capacity bonding strap for service entrance applications. Mount electrically isolated from enclosure. Do not bond to gutter.
F. Conductor Connectors: Suitable for use with conductor material and sizes.
1. Material: Tin-plated aluminum or Hard-drawn copper, 98 percent conductivity.
2. Terminations shall allow use of 75 deg C rated conductors without derating.
3. Size: Lugs suitable for indicated conductor sizes, with additional gutter space, if required, for larger conductors.
4. Main and Neutral Lugs: Mechanical type, with a lug on the neutral bar for each pole in the panelboard.
5. Ground Lugs and Bus-Configured Terminators: Mechanical type, with a lug on the bar for each pole in the panelboard.
G. Panelboard Short-Circuit Current Rating: Fully rated to interrupt symmetrical short-circuit current available at terminals. Assembly listed by an NRTL for 100 percent interrupting capacity.
1. Panelboards and overcurrent protective devices rated 240 V or less shall have short-circuit ratings as shown on Drawings, but not less than 10,000 A rms symmetrical.
2. Panelboards and overcurrent protective devices rated above 240 V and less than 600 V shall have short-circuit ratings as shown on Drawings, but not less than 14,000 A rms symmetrical.
1.3 LIGHTING AND APPLIANCE BRANCH-CIRCUIT PANELBOARDS
A. Panelboards: NEMA PB 1, lighting and appliance branch-circuit type.
B. Mains: As indicated on drawings
C. Branch Overcurrent Protective Devices: Bolt-on circuit breakers, replaceable without disturbing adjacent units.
D. Doors: Concealed hinges; secured with flush latch with tumbler lock; keyed alike.
1.4 DISCONNECTING AND OVERCURRENT PROTECTIVE DEVICES
A. MCCB: Comply with UL 489, with interrupting capacity to meet available fault currents.
1. Thermal-Magnetic Circuit Breakers:
a. Inverse time-current element for low-level overloads.
b. Instantaneous magnetic trip element for short circuits.
c. Adjustable magnetic trip setting for circuit-breaker frame sizes 250 A and larger.
2. GFCI Circuit Breakers: Single- and double-pole configurations with Class A ground-fault protection (6-mA trip).
3. GFEP Circuit Breakers: Class B ground-fault protection (30-mA trip).
4. Arc-Fault Circuit Interrupter Circuit Breakers: Comply with UL 1699; 120/240-V, single-pole configuration.
5. Subfeed Circuit Breakers: Vertically mounted.
6. MCCB Features and Accessories:
a. Standard frame sizes, trip ratings, and number of poles.
b. Breaker handle indicates tripped status.
c. UL listed for reverse connection without restrictive line or load ratings.
d. Lugs: Mechanical style, suitable for number, size, trip ratings, and conductor materials.
e. Application Listing: Appropriate for application; Type SWD for switching fluorescent lighting loads; type HID for feeding fluorescent and HID lighting circuits.
f. Shunt Trip: 120-V or 24-V trip coil energized from separate circuit, set to trip at 75 percent of rated voltage.
g. Rating Plugs: Three-pole breakers with ampere ratings greater than 150 amperes shall have interchangeable rating plugs or electronic adjustable trip units.
h. Multipole units enclosed in a single housing with a single handle or factory assembled to operate as a single unit.
i. Handle Padlocking Device: Fixed attachment, for locking circuit-breaker handle in on or off position.
j. Handle Clamp: Loose attachment, for holding circuit-breaker handle in on position.
1.5 IDENTIFICATION
A. Panelboard Label: Manufacturer's name and trademark, voltage, amperage, number of phases, and number of poles shall be located on the interior of the panelboard door.
B. Breaker Labels: Faceplate shall list current rating, UL and I

E. Receptacle Orientation:
1. Install ground pin of vertically mounted receptacles up, and on horizontally mounted receptacles to the right.

F. Device Plates: Do not use oversized or extra-deep plates. Repair wall finishes and remount outlet boxes when standard device plates do not fit flush or do not cover rough wall opening.

G. Dimmers:
1. Install dimmers within terms of their listing.
2. Verify that dimmers used for fan speed control are listed for that application.
3. Install unshared neutral conductors on line and load side of dimmers according to manufacturers' device listing conditions in the written instructions.

1.10 FIELD QUALITY CONTROL

A. Perform the following tests and inspections:
1. Test Instruments: Use instruments that comply with UL 1436.
2. Test Instrument for Convenience Receptacles: Digital wiring analyzer with digital readout or illuminated digital-display indicators of measurement.

B. Tests for Convenience Receptacles:
1. Line Voltage: Acceptable range is 105 to 132 V.
2. Percent Voltage Drop under 15-A Load: A value of 6 percent or higher is unacceptable.
3. Ground Impedance: Values of up to 2 ohms are acceptable.
4. GFCI Trip: Test for tripping values specified in UL 1436 and UL 943.
5. Using the test plug, verify that the device and its outlet box are securely mounted.
6. Tests shall be diagnostic, indicating damaged conductors, high resistance at the circuit breaker, poor connections, inadequate fault current path, defective devices, or similar problems. Correct circuit conditions, remove malfunctioning units and replace with new ones, and retest as specified above.

C. Wiring device will be considered defective if it does not pass tests and inspections.

D. Prepare test and inspection reports.

SECTION 265100 - INTERIOR LIGHTING

1.1 SUBMITTALS

A. Product Data: For each type of lighting fixture, arranged in order of fixture designation. Include data on features, accessories, finishes, and the following:

B. Field quality-control test reports.

C. Operation and Maintenance Data: For lighting equipment and fixtures to include in emergency, operation, and maintenance manuals.

D. Warranties: Special warranties specified in this Section.

1.2 LIGHTING FIXTURES AND COMPONENTS, GENERAL REQUIREMENTS

A. Recessed Fixtures: Comply with NEMA LE 4 for ceiling compatibility for recessed fixtures.

B. LED Fixtures: Comply with UL 1598. Where LER is specified, test according to NEMA LE5 and NEMA LE5A as applicable

C. Metal Parts: Free of burrs and sharp corners and edges.

D. Sheet Metal Components: Steel, unless otherwise indicated. Form and support to prevent warping and sagging.

E. Doors, Frames, and Other Internal Access: Smooth operating, free of light leakage under operating conditions, and designed to permit relamping without use of tools. Designed to prevent doors, frames, lenses, diffusers, and other components from falling accidentally during relamping and when secured in operating position.

F. Reflecting surfaces shall have minimum reflectance as follows, unless otherwise indicated:
1. White Surfaces: 85 percent.
2. Specular Surfaces: 83 percent.
3. Diffusing Specular Surfaces: 75 percent.
4. Laminated Silver Metalized Film: 90 percent.

G. Plastic Diffusers, Covers, and Globes:
1. Acrylic Lighting Diffusers: 100 percent virgin acrylic plastic. High resistance to yellowing and other changes due to aging, exposure to heat, and UV radiation.
a. Lens Thickness: At least 0.125 inch (3.175 mm) minimum unless different thickness is indicated.
b. UV stabilized.
2. Glass: Annealed crystal glass, unless otherwise indicated.

1.3 LED LUMINAIRES

A. A. Solid State Drivers and LED: Comply with DOE LM 79
1. Total Harmonic Distortion Rating: Less than 10 percent
2. Transient Voltage protection
3. Power factor: 0.90 or higher
4. Temperatures: Minus 40 deg F (minus 40 deg C) and higher
5. Heat sink to remove heat from circuits
6. L70 compliant to 70,000 hours minimum
7. Dimmable
a. Dimming Range: 100 to 1 percent of rated lamp lumens
b. Input watts: Can be reduced to 20 percent of normal
c. Compatibility: Certified by manufacturer for use with specific dimming control system and lamp type indicated.

1.4 EMERGENCY POWER UNIT

A. Internal Type: Self-contained, modular, battery-inverter unit, factory mounted within lighting fixture body and compatible with ballast. Comply with UL 924.
1. Emergency Connection: Operate LED fixture(s) continuously at an output of 1400 lumens each. Connect unswitched circuit to battery-inverter unit and switched circuit to fixture driver.
2. Test Push Button and Indicator Light: Visible and accessible without opening fixture or entering ceiling space.
a. Push Button: Push-to-test type, in unit housing, simulates loss of normal power and demonstrates unit operability.
b. Indicator Light: LED indicates normal power on. Normal glow indicates trickle charge; bright glow indicates charging at end of discharge cycle.
3. Battery: Sealed, maintenance-free, nickel-cadmium type.
4. Charger: Fully automatic, solid-state, constant-current type with sealed power transfer relay.
5. Integral Self-Test: Factory-installed electronic device automatically initiates code-required test of unit emergency operation at required intervals. Test failure is annunciated by an integral audible alarm and flashing red LED.

1.5 EXIT SIGNS

A. Description: Comply with UL 924; for sign colors, visibility, luminance, and lettering size, comply with authorities having jurisdiction.

B. Internally Lighted Signs:
1. Lamps for AC Operation: LEDs, 70,000 hours minimum rated lamp life.
2. Self-Powered Exit Signs (Battery Type): Integral automatic charger in a self-contained power pack.
a. Battery: Sealed, maintenance-free, nickel-cadmium type.
b. Charger: Fully automatic, solid-state type with sealed transfer relay.
c. Operation: Relay automatically energizes lamp from battery when circuit voltage drops to 80 percent of nominal voltage or below. When normal voltage is restored, relay disconnects lamps from battery, and battery is automatically recharged and floated on charger.
d. Test Push Button: Push-to-test type, in unit housing, simulates loss of normal power and demonstrates unit operability.
e. LED Indicator Light: Indicates normal power on. Normal glow indicates trickle charge; bright glow indicates charging at end of discharge cycle.
f. Integral Self-Test: Factory-installed electronic device automatically initiates code-required test of unit emergency operation at required intervals. Test failure is annunciated by an integral audible alarm and flashing red LED.

1.6 LIGHTING FIXTURE SUPPORT COMPONENTS

A. Comply with Division 26 Section "Hangers and Supports for Electrical Systems" for channel- and angle-iron supports and nonmetallic channel and angle supports.

B. Wires: ASTM A 641/A 641M, Class 3, soft temper, zinc-coated steel, 12 gage (2.68 mm).

1.7 INSTALLATION

A. Lighting fixtures: Set level, plumb, and square with ceilings and walls. Install lamps in each fixture.

B. Support for Lighting Fixtures in or on Grid-Type Suspended Ceilings: Use grid as a support element.
1. Install a minimum of four ceiling support system rods or wires for each fixture. Locate not more than 6 inches (150 mm) from lighting fixture corners.
2. Support Clips: Fasten to lighting fixtures and to ceiling grid members at or near each fixture corner with clips that are UL listed for the application.
3. Fixtures of Sizes Less Than Ceiling Grid: Install as indicated on reflected ceiling plans or center in acoustical panel, and support fixtures independently with at least two 3/4-inch (20-mm) metal channels spanning and secured to ceiling tees.
4. Install at least one independent support rod or wire from structure to a tab on lighting fixture. Wire or rod shall have breaking strength of the weight of fixture at a safety factor of 3.

C. Suspended Lighting Fixture Support:
1. Pendants and Rods: Where longer than 48 inches (1200 mm), brace to limit swinging.
2. Stem-Mounted, Single-Unit Fixtures: Suspend with twin-stem hangers.
3. Continuous Rows: Use tubing or stem for wiring at one point and tubing or rod for suspension for each unit length of fixture chassis, including one at each end.

D. Adjust aimable lighting fixtures to provide required light intensities.

E. Connect wiring according to Division 26 Section "Low-Voltage Electrical Power Conductors and Cables."

1.8 FIELD QUALITY CONTROL

A. Test for Emergency Lighting: Interrupt power supply to demonstrate proper operation. Verify transfer from normal power to battery and retransfer to normal.

B. Prepare a written report of tests, inspections, observations, and verifications indicating and interpreting results. If adjustments are made to lighting system, retest to demonstrate compliance with standards.

SECTION 270528 - PATHWAYS FOR COMMUNICATIONS SYSTEMS

1.1 CONDUITS AND FITTINGS

A. Comply with Division 26 section "Raceways and Boxes for Electrical Systems" unless otherwise indicated

1.2 BOXES, ENCLOSURES, AND CABINETS

A. Comply with Division 26 section "Raceways and Boxes for Electrical Systems" unless otherwise indicated

B. General Requirements for Boxes, Enclosures, and Cabinets:
1. Comply with TIA-569-D.
2. Boxes, enclosures, and cabinets installed in wet locations shall be listed and labeled as defined in NFPA 70, by an NRTL, and marked for use in wet locations.
3. Box extensions used to accommodate new building finishes shall be of same material as recessed box.
4. Device Box Dimensions: As indicated on drawings.
5. Gangable boxes are prohibited.

1.3 HOOKS

A. Description: Prefabricated sheet metal cable supports for telecommunications cable.

B. Listed and labeled as defined in NFPA 70, by an NRTL, and marked for intended location and application.

C. Comply with TIA-569-D.

D. Galvanized steel.

E. J shape.

1.4 WIRE-MESH CABLE TRAY

A. Description:
1. Configuration: Galvanized- steel wire mesh, complying with NEMA VE 1.
2. Width: As indicated on drawings
3. Minimum Usable Load Depth: As indicated on drawings.
4. Straight Section Lengths: 12 feet (3.7 m), except where shorter lengths are required to facilitate tray assembly.
5. Structural Performance: Capable of supporting a maximum cable load, with a safety factor of 1.5, plus a 200-lb (90-kg) concentrated load, when tested according to NEMA VE 1.
6. Class Designation: Comply with NEMA VE 1, Class 12A.
7. Splicing Assemblies: Bolted type using serrated flange locknuts.
8. Splice-Plate Capacity: Splices located within support span shall not diminish rated loading capacity of cable tray.

B. Materials and Finishes:
1. Steel:
a. Straight Sections and Fittings: Steel complies with the minimum mechanical properties of ASTM A 1011/A 1011M, SS, Grade 33.
b. Steel Tray Splice Plates: ASTM A 1011/A 1011M, HSLAS, Grade 50, Class 1.
c. Fasteners: Steel complies with the minimum mechanical properties of ASTM A 510/A 510M, Grade 1008.
d. Finish: Hot-dip galvanized after fabrication, complying with ASTM A123/A123 M, Class B2.
1) Hardware: Stainless steel, Type 316.
e. Finish: Electrogalvanized after fabrication, complying with ASTM B 633.
1) Hardware: Galvanized, ASTM B 633

C. Cable Trays and Accessories: Identified as defined in NFPA 70 and marked for intended location, application, and grounding

D. Source Limitations: Obtain cable trays and components from single manufacturer.

D. Structural Performance::
1. Uniform Load Distribution: Capable of supporting a uniformly distributed load on the indicated support span when supported as a simple span and tested according to NEMA VE 1.
2. Concentrated Load: A load applied at midpoint of span and centerline of tray.
3. Load and Safety Factors: Applicable to both side rails and rung capacities.

1.5 PATHWAY APPLICATION

A. Comply with Division 26 section "Raceways and Boxes for Electrical Systems" unless otherwise indicated below.

B. Minimum Pathway Size: 1.25 inch (25 mm) for communications cables.

1.6 INSTALLATION

A. Comply with Division 26 section "Raceways and Boxes for Electrical Systems" unless otherwise indicated below.

B. Comply with the following standards for installation requirements except where requirements on Drawings or in this Section are stricter:
1. NECA/BICSI 568.
2. TIA-569-D.

C. Keep pathways at least 6 inches (150 mm) away from parallel runs of flues and steam or hot-water pipes. Install horizontal pathway runs above water and steam piping.

D. Install no more than the equivalent of two 90-degree bends in any pathway run. Support within 12 inches (300 mm) of changes in direction. Utilize long radius ells for all optical-fiber cables.

E. Pathways for Optical-Fiber and Communications Cable: Install pathways, metal and nonmetallic, rigid and flexible, as follows:
1. 1-Inch (25-mm) Trade Size and Larger: Install pathways in maximum lengths of 75 feet (23 m).
2. Install with a maximum of two 90-degree bends or equivalent for each length of pathway unless Drawings show stricter requirements. Separate lengths with pull or junction boxes or terminations at distribution frames or cabinets where necessary to comply with these requirements.

F. Hooks:
1. Size to allow a minimum of 50 percent future capacity without exceeding design capacity limits.
2. Shall be supported by dedicated support wires. Do not use ceiling grid support wire or support rods.
3. Hook spacing shall allow no more than 6 inches (150 mm) of sag. The lowest point of the cables shall be no less than 6 inches (150 mm) adjacent to ceilings, mechanical ductwork and fittings, luminaires, power conduits, power and telecommunications outlets, and other electrical and communications equipment.
4. Space hooks no more than 4 feet (1.2 m) o.c.
5. Provide a hook at each change in direction.

1.7 CABLE TRAY INSTALLATION

A. Install cable trays according to NEMA VE 2.

B. Install cable trays as a complete system, including fasteners, hold-down clips, support systems, barrier strips, adjustable horizontal and vertical splice plates, elbows, reducers, tees, crosses, cable dropouts, adapters, covers, and bonding.

C. Install cable trays so that the tray is accessible for cable installation and all splices are accessible for inspection and adjustment.

D. Remove burrs and sharp edges from cable trays.

E. Join aluminum cable tray with splice plates; use four square neck-carriage bolts and locknuts.

F. Fasten cable tray supports to building structure and install seismic restraints.

G. Design fasteners and supports to carry cable tray, the cables, and a concentrated load of 200 lb (90 kg). Comply with requirements in Section 270529 "Hangers and Supports for Communications Systems."

H. Place supports so that spans do not exceed maximum spans on schedules and provide clearances shown on Drawings. Install intermediate supports when cable weight exceeds the load-carrying capacity of the tray rungs.

I. Construct supports from channel members, threaded rods, and other appurtenances furnished by cable tray manufacturer. Arrange supports in trapeze or wall-bracket form as required by application.

J. Support bus assembly to prevent twisting from eccentric loading.

K. Install center-hung supports for single-rail trays designed for 60 versus 40 percent eccentric loading condition, with a safety factor of 3.

L. Locate and install supports according to NEMA VE 2. Do not install more than one cable tray splice between supports.

M. Install expansion connectors where cable trays cross building expansion joints and in cable tray runs that exceed dimensions recommended in NEMA VE 2. Space connectors and set gaps according to applicable standard.

N. Make changes in direction and elevation using manufacturer's recommended fittings.

O. Make cable tray connections using manufacturer's recommended fittings.

P. Seal penetrations through fire and smoke barriers. Comply with requirements in Section 078413 "Penetration Firestopping."

Q. Install cable trays with enough workspace to permit access for installing cables.

R. Install barriers to separate cables of different systems, such as power, communications, and data processing; or of different insulation levels, such as 600, 5000, and 15 000 V.

S. Install permanent covers, if used, after installing cable. Install cover clamps according to NEMA VE 2.

T. Clamp covers on cable trays installed outdoors with heavy-duty clamps.

U. Install warning signs in visible locations on or near cable trays after cable tray installation.

1.8 CABLE TRAY GROUNDING

A. Ground cable trays according to NFPA 70 unless additional grounding is specified. Comply with requirements in Section 270526 "Grounding and Bonding for Communications Systems."

B. Cable trays shall be bonded together with splice plates listed for grounding purposes or with listed bonding jumpers.

SECTION 271513 - COMMUNICATIONS COPPER HORIZONTAL CABLING

1.1 SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings: Reviewed and stamped by RCDD.

C. Field quality-control reports.

D. Maintenance Data: For splices and connectors to include in maintenance manuals.

1.2 QUALITY ASSURANCE

A. Installer Qualifications: Cabling Installer must have personnel certified by BICSI or staff.

1.3 PERFORMANCE REQUIREMENTS

A. General Performance: Horizontal cabling system shall comply with transmission standards in TIA-568-C.1, when tested according to test procedures of this standard.

B. Telecommunications Pathways and Spaces: Comply with TIA-569-D.

C. Grounding: Comply with TIA-607-B.

1.4 GENERAL CABLE CHARACTERISTICS

A. Listed and labeled by an NRTL acceptable to authorities having jurisdiction as complying with the applicable standard and NFPA 70 for the following types:
1. Communications, Plenum Rated: Type CMP complying with UL 1685 or Type CMP in listed plenum communications raceway or Type CMP in listed cable routing assembly.

B. Surface-Burning Characteristics: Comply with ASTM E 84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
1. Flame-Spread Index: 25 or less.
2. Smoke-Developed Index: 50 or less.

C. RoHS compliant.

1.5 CATEGORY 6A TWISTED PAIR CABLE

A. Description: Four-pair, balanced twisted pair cable, with internal spline, certified to meet transmission characteristics of Category 6a cable at frequencies up to 500MHz.

B. Standard: Comply with TIA-568-C.2 for Category 6a cables.

C. Conductors: 100-ohm, 23 AWG solid copper.

D. Shielding/Screening: Screened twisted pairs (F/UTP).

E. Cable Rating: Plenum.

F. Jacket: Thermoplastic.
1. Color per owner's cabling standards for system served.

1.6 TWISTED PAIR CABLE HARDWARE

A. Description: Hardware designed to connect, splice, and terminate twisted pair copper communications cable.

B. General Requirements for Twisted Pair Cable Hardware:
1. Comply with the performance requirements of Category 6a.
2. Comply with TIA-568-C.2, IDC type, with modules designed for punch-down caps or tools.
3. Cables shall be terminated with connecting hardware of same category or higher.

C. Cross-Connect: Modular array of connecting blocks arranged to terminate building cables and permit interconnection between cables.
1. Number of Terminals per Field: One for each conductor in assigned cables.

D. Patch Panel: Modular panels housing numbered jack units with IDC-type connectors at each jack location for permanent termination of pair groups of installed cables.
1. Features:
a. Universal T568A and T568B wiring labels.
b. Labeling areas adjacent to conductors.
c. Replaceable connectors.
d. 48 ports.
2. Construction: 16-gauge steel and mountable on 19-inch (483 mm) equipment racks.
3. Number of Jacks per Field: One for each four-pair cable indicated.

E. Patch Cords: Factory-made, four-pair cables; terminated with an eight-position modular plug at each end.
1. Patch cords shall have bend-relief-compliant boots and color-coded icons to ensure performance. Patch cords shall have latch guards to protect against snagging.
2. Patch cords shall have color-coded boots for circuit identification.

F. Plugs and Plug Assemblies:
1. Male; eight position; color-coded modular telecommunications connector designed for termination of a single four-pair, 100-ohm, unshielded or shielded twisted pair cable.
2. Standard: Comply with TIA-568-C.2.
3. Marked to indicate transmission performance.

G. Jacks and Jack Assemblies:
1. Female; eight position; modular; fixed telecommunications connector designed for termination of a single four-pair, 100-ohm, unshielded or shielded twisted pair cable.
2. Designed to snap-in to a patch panel or faceplate.
3. Standard: Comply with TIA-568-C.2.
4. Marked to indicate transmission performance.

H. Faceplate:
1. Four port, vertical single gang faceplates designed to mount to single gang wall boxes.
2. Eight port, vertical double gang faceplates designed to mount to double gang wall boxes.
3. Plastic Faceplate: High-impact plastic. Coordinate color with Section 262726 "Wiring Devices."
4. Metal Faceplate: Stainless steel, complying with requirements in Section 262726 "Wiring Devices."
5. For use with snap-in jacks accommodating any combination of twisted pair, optical fiber, and coaxial work area cords.
a. Flush mounting jacks, positioning the cord at a 45-degree angle.

I. Legend:
1. Machine printed, in the field, using adhesive-tape label.
2. Snap-in, clear-label covers and machine-printed paper inserts.

1.7 SOURCE QUALITY CONTROL

A. Factory test cables on reels according to TIA-568-C.1.

B. Factory test twisted pair cables according to TIA-568-C.2.

C. Cable will be considered defective if it does not pass tests and inspections.

D. Prepare test and inspection reports.

1.8 WIRING METHODS

A. Wiring Method: Install cables in raceways and cable trays, except within consoles, cabinets, desks, and counters and except in accessible ceiling spaces, attics, and gypsum board partitions where unenclosed wiring method may be used. Conceal raceways and cables, except in unfinished spaces.
1. Install plenum-rated cable only.
2. Comply with requirements for raceways and boxes specified in Section 270528 "Pathways for Communications Systems."

B. Wiring Method: Conceal conductors and cables in accessible ceilings, walls, and floors where possible.

C. Wiring within Enclosures: Bundle, lace, and train cables within enclosures. Connect to terminal points with no excess and without exceeding manufacturer's limitations on bending radii. Provide and use lacing bars and distribution spools. Install conductors parallel with or at right angles to sides and back of enclosure.

1.9 INSTALLATION OF TWISTED-PAIR HORIZONTAL CABLES

A. Comply with NECA 1 and NECA/BICSI 568.

B. General Requirements for Cabling:
1. Comply with TIA-568-C.0, TIA-568-C.1, and TIA-568-C.2.
2. Comply with BICSI's "Information Transport Systems Installation Methods Manual (ITSIMM), Ch. 5, "Copper Structured Cabling Systems," "Cable Termination Practices" Section.
3. Consolidation points may be used only for making a direct connection to equipment outlets:
4. Cables may not be spliced. Secure and support cables at intervals not exceeding 30 inches (760 mm) and not more than 6 inches (150 mm) from cabinets, boxes, fittings, outlets, racks, frames, and terminals.
5. Install lacing bars to restrain cables, prevent straining connections, and prevent bending cables to smaller radii than minimums recommended by manufacturer.
6. Bundle, lace, and train conductors to terminal points without exceeding manufacturer's limitations on bending radii, but not less than radii specified in BICSI Information Transport Systems Installation Methods Manual , Ch. 5, "Copper Structured Cabling Systems," "Cable Termination Practices" Section. Use lacing bars and distribution spools.
7. Do not install bruised, kinked, scored, deformed, or abraded cable. Do not splice cable between termination, tap, or junction points. Remove and discard cable if damaged during installation, and replace it with new cable.
8. Cold-Weather Installation: Bring cable to room temperature before dereeling. Heat lamps shall not be used for heating.
9. In the communications equipment room, install a 10-foot- (3-m-) long service loop on each end of cable.
10. Pulling Cable: Comply with BICSI Information Transport Systems Installation Methods Manual, Ch. 5, "Copper Structured Cabling Systems," "Pulling and Installing Cable" Section. Monitor cable pull tensions.

C. Open-Cable Installation:
1. Install cabling with horizontal and vertical cable guides in telecommunications spaces with terminating hardware and interconnection equipment.
2. Suspend twisted pair cabling, not in a wireway or pathway, a minimum of 8 inches (200 mm) above ceilings by cable supports not more than 48 inches (1225 mm) apart.
3. Cable shall not be run through structural members or in contact with pipes, ducts, or other potentially damaging items.

D. Ground connecting hardware for cables into separate logical fields.

E. Separation from EMI Sources:
1. Comply with recommendations from BICSI's "Telecommunications Distribution Methods Manual" and TIA-569-D for separating unshielded copper communication cable from potential EMI sources, including electrical power lines and equipment.

1.10 FIRESTOPPING

A. Comply with TIA-569-D, Annex A, "Firestopping."

1.11 GROUNDING

A. Install grounding according to the "Grounding, Bonding, and Electrical Protection" chapter in BICSI's "Telecommunications Distribution Methods Manual."

1.12 IDENTIFICATION

A. Identify system components, wiring, and cabling complying with TIA-606-B. Comply with requirements for identification specified in Section 270553 "Identification for Communications Systems."

1.13 FIELD QUALITY CONTROL

A. Perform tests and inspections with the assistance of a factory-authorized service representative.

B. Data for each measurement shall be documented. Data for submittals shall be printed in a summary report that is formatted similarly to Table 10.1 in BICSI's "Telecommunications Distribution Methods Manual," or shall be transferred from the instrument to the computer, saved as text files, printed, and submitted.

C. Remove and replace cabling where test results indicate that they do not comply with specified requirements.

D. End-to-end cabling will be considered defective if it does not pass tests and inspections.

E. Prepare test and inspection reports.

SECTION 280513 - CONDUCTORS AND CABLES FOR ELECTRONIC SAFETY AND SECURITY

1.1 PERFORMANCE REQUIREMENTS

A. Surface-Burning Characteristics: Comply with ASTM E 84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
1. Flame-Spread Index: 25 or less.
2. Smoke-Developed Index: 50 or less.

B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

1.2 GENERAL CABLE REQUIREMENTS

A. Plenum-Rated Cable: NFPA 70, Type CMP

B. Flame-Spread Resistance: NFPA 262, Flame Test

1.3 UTP CABLE

A. Comply with Division 27 "Communications Horizontal Cabling"

1.4 COAXIAL CABLE

A. Comply with Division 27 "Communications Coaxial Horizontal Cabling"

1.5 COAXIAL-CABLE HARDWARE

A. Comply with Division 27 "Communications Coaxial Horizontal Cabling"

1.6 RS-232 CABLE

A. PE insulation.

B. Aluminum foil-polyester tape shield with 100 percent shield coverage.

C. Fluorinated ethylene propylene jacket.

1.7 RS-485 CABLE

A. Fluorinated ethylene propylene insulation.

B. Unshielded.

C. Fluorinated ethylene propylene jacket.

1.8 CONTROL-VOLTAGE CABLE

A. PVC insulation.

B. Unshielded.

C. PVC jacket.

1.9 CONTROL-CIRCUIT CONDUCTORS

A. Class 1 Control Circuits: Stranded copper, Type THHN-THWN, complying with UL 83, in pathway XLP/PVC tray cable, complying with UL 83, in cable tray.

B. Class 2 Control Circuits: Stranded copper, Type THHN-THWN, complying with UL 83, in pathway.

C. Class 3 Remote-Control and Signal Circuits: Stranded copper, Type TW or TF in pathway, complying with UL 83.

1.10 INSTALLATION OF HANGERS AND SUPPORTS

A. Comply with requirements in Section 260529 "Hangers and Supports for Electrical Systems" for installation of supports for cables.

1.11 WIRING METHOD

A. Install wiring in metal pathways and wireways.
1. Minimum conduit size shall be 3/4 inch (21 mm). Control and data-transmission wiring shall not share conduits with other building wiring systems.
2. Comply with requirements in Section 280528 "Pathways for Electronic Safety and Security."
3. Comply with requirements in Section 270536 "Cable Trays for Communications Systems."

B. Install cable, concealed in accessible ceilings, walls, and floors when possible.

C. Wiring on Racks and within Enclosures:
1. Bundle, lace, and train conductors to terminal points with no excess and without exceeding manufacturer's limitations on bending radii, but not less than radii specified in BICSI ITSIM's "Cabling Termination Practices" chapter. Cable ties shall not be excessively tightened such that the transmission characteristics of the cable are altered.
2. Install lacing bars and distribution spools.
3. Separate power-limited and non-power-limited conductors as recommended in writing by manufacturer.
4. Install conductors parallel with or at right angles to sides and back of enclosure.
5. Connect conductors associated with intrusion system that are terminated, spliced, or interrupted in any enclosure onto terminal blocks.
6. Mark each terminal according to system's wiring diagrams.
7. Make all connections with approved crimp-on terminal spade lugs, pressure-type terminal blocks, or plug connectors.

1.12 INSTALLATION OF CONDUCTORS AND CABLES

A. Comply with NECA 1 and NFPA 70.

B. Conductors: Size according to system manufacturer's written instructions unless otherwise indicated.

C. General Requirements for Cabling:
1. Comply with TIA-568-C.1.
2. Comply with BICSI ITSIM, Ch. 6, "Cable Termination Practices."
3. Cables may not be spliced. Secure and support cables at intervals not exceeding 30 inches (760 mm) and not more than 6 inches (150 mm) from cabinets, boxes, fittings, outlets, racks, frames, and terminals.
4. Maintain minimum cable bending radius during installation and termination of cables.
5. Do not install bruised, kinked, scored, deformed, or abraded cable. Do not splice cable between termination, tap, or junction points. Remove and discard cable if damaged during installation and replace it with new cable.
6. Cold-Weather Installation: Bring cable to room temperature before dereeling. Heat lamps shall not be used for heating.
7. Pulling Cable: Comply with BICSI ITSIM, Ch. 4, "Pulling Cable." Monitor cable pull tensions. Do not exceed manufacturer's rated cable-pulling tension.

D. Open-Cable Installation:
1. Install cabling with horizontal and vertical cable guides in telecommunication spaces with terminating hardware and interconnection equipment.
2. Suspend copper cable not in a wireway or pathway a minimum of 8 inches (200 mm) above ceilings by cable supports not more than 60 inches (1525 mm) apart. Cable supports shall be fastened to structural members or floor slabs in accordance with Section 260529 "Hangers and Supports for Electrical Systems."
3. Cable shall not be run in contact with pipes, ducts, or other potentially damaging items. Cables shall not be run through structural members or use structural members, pipes, ducts, or equipment as a support.

E. Separation from EMI Sources:
1. Comply with BICSI TDMM and TIA-569-C recommendations for separating unshielded copper voice and data communication cable from potential EMI sources, including electrical power lines and equipment.

1.13 POWER AND CONTROL-CIRCUIT CONDUCTORS

A. 120-V Power Wiring: Install according to Section 260519 "Low-Voltage Electrical Power Conductors and Cables" unless otherwise indicated.

B. Minimum Conductor Sizes:
1. Class 1 remote-control and signal circuits, No. 14 AWG.
2. Class 2 low-energy, remote-control and signal circuits, No. 16 AWG.
3. Class 3 low-energy, remote-control, alarm and signal circuits, No. 12 AWG.

1.14 CONNECTIONS

A. Comply with requirements in Section 281300 "Access Control" for connecting, terminating, and identifying wires and cables.

1.15 FIRESTOPPING

A. Comply with requirements in Section 078413 "Penetration Firestopping."

B. Comply with TIA-569-C, "Firestopping" Annex A.

C. Comply with BICSI TDMM, "Firestopping Systems" Article.

1.16 GROUNDING

A. For communication wiring, comply with J-STD-607-A and with BICSI TDMM's "Grounding, Bonding, and Electrical Protection" chapter.

B. For low-voltage wiring and cabling, comply with requirements in Section 280526 "Grounding and Bonding for Electronic Safety and Security."

1.17 IDENTIFICATION

A. Identify system components, wiring, and cabling complying with TIA-606-B. Comply with requirements for identification specified in Section 260553 "Identification for Electrical Systems."

1.18 FIELD QUALITY CONTROL

A. Perform the following tests and inspections:
1. Visually inspect cable placement, cable termination, grounding and bonding, equipment and patch cords, and labeling of all components.

B. Document data for each measurement. Print data for submittals in a summary report that is formatted using Table 10.1 in BICSI TDMM as a guide, or transfer the data from the instrument to the computer, save as text files, print, and submit.

C. End-to-end cabling will be considered defective if it does not pass tests and inspections.

D. Prepare test and inspection reports.

SECTION 280528 - PATHWAYS FOR ELECTRONIC SAFETY AND SECURITY

1.1 PATHWAY APPLICATION

A. Comply with Division 26 section "Raceways and Boxes for Electrical Systems" unless otherwise indicated

B. Minimum Pathway Size: 3/4-inch (24-mm) trade size. Minimum size for optical-fiber cables is 1 inch (27 mm).

C. Do not install nonmetallic conduit.

1.2 INSTALLATION

A. Comply with Division 26 section "Raceways and Boxes for Electrical Systems" unless otherwise indicated

B. Comply with NECA 1, NECA 101, and TIA-569-B for installation requirements except where requirements on Drawings or in this article are stricter. Comply with NECA 102 for aluminum pathways. Comply with NFPA 70 limitations for types of pathways allowed in specific occupancies and number of floors.

C. Keep pathways at least 6 inches (150 mm) away from parallel runs of flues and steam or hot-water pipes. Install horizontal pathway runs above water and steam piping.

D. Stub-ups to Above Recessed Ceilings:
1. Use EMT for pathways.
2. Use a conduit bushing or insulated fitting to terminate stub-ups not terminated in hubs or in an enclosure.

E. Flexible Conduit Connections: Comply with NEMA RV 3. Use maximum of 72 inches (1830 mm) of flexible conduit for equipment subject to vibration, noise transmission, or movement; and for transformers and motors.
1. Use LFMC in damp or wet locations.
2. Flexible conduit allowed only where specifically noted on drawings.

SECTION 283111 - DIGITAL, ADDRESSABLE FIRE-ALARM SYSTEM

1.1 SUBMITTALS

A. General Submittal Requirements:
1. Submittals shall be approved by authorities having jurisdiction prior to submitting them to Architect.
2. Shop Drawings shall be prepared by persons with the following qualifications:
a. Trained and certified by manufacturer in fire-alarm system design.
b. NICET-certified fire-alarm technician, Level III minimum.
c. Licensed or certified by authorities having jurisdiction.

B. Product Data: For each type of product indicated.

C. Shop Drawings: For fire-alarm system. Include plans, elevations, sections, details, and attachments to other work.
1. Comply with recommendations in the "Documentation" Section of the "Fundamentals of Fire Alarm Systems" Chapter in NFPA 72.
2. Include voltage drop calculations for notification appliance circuits.
3. Include battery-size calculations.
4. Include floor plans to indicate final outlet locations showing address of each addressable device. Show size and route of cable and conduits.

D. Delegated-Design Submittal: For smoke and heat detectors indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

E. Field quality-control reports.

F. Software and Firmware Operational Documentation:

1.2 QUALITY ASSURANCE

A. Installer Qualifications: Personnel shall be trained and certified by manufacturer for installation of units required for this Project.

B. Source Limitations for Fire-Alarm System and Components: Obtain fire-alarm system from single source from single manufacturer. Components shall be compatible with, and operate as, an extension of existing system.

C. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

D. NFPA Certification: Obtain certification according to NFPA 72 in the form of a placard by an FMG-approved alarm company.

1.3 PROJECT CONDITIONS

A. Interruption of Existing Fire-Alarm Service: Do not interrupt fire-alarm service to facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary guard service according to requirements indicated:
1. Notify Owner no fewer than two days in advance of proposed interruption of fire-alarm service.
2. Do not proceed with interruption of fire-alarm service without Owner's written permission.

1.4 SEQUENCING AND SCHEDULING

A. Existing Fire-Alarm Equipment: Maintain existing equipment fully operational until new equipment has been tested and accepted. As new equipment is installed, label it "NOT IN SERVICE" until it is accepted. Remove labels from new equipment when put into service and label existing fire-alarm equipment "NOT IN SERVICE" until removed from the building.

B. Equipment Removal: After acceptance of new fire-alarm system, remove existing disconnected fire-alarm equipment and wiring.

1.5 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Simplex

1.6 FIRE-ALARM CONTROL UNIT

A. Circuits:
1. Initiating Device, Notification Appliance, and Signaling Line Circuits: NFPA 72, Class A.
a. Initiating Device Circuits: Style E.
b. Notification Appliance Circuits: Style Z.
c. Signaling Line Circuits: Style 7.
d. Install no more than 50 addressable devices on each signaling line circuit.

B. Notification Appliance Circuit: Operation shall sound in a repeating pattern.

C. Primary Power: 24-V dc obtained from 120-V ac service and a power-supply module. Initiating devices, notification appliances, signaling lines, trouble signals, supervisory and digital alarm communicator transmitters shall be powered by 24-V dc source.
1. Alarm current draw of entire fire-alarm system shall not exceed 80 percent of the power-supply module rating.

D. Secondary Power: 24-V dc supply system with batteries, automatic battery charger, and automatic transfer switch.
1. Batteries: Sealed lead calcium.

1.7 MANUAL FIRE-ALARM BOXES

A. General Requirements for Manual Fire-Alarm Boxes: Comply with UL 38. Boxes shall be finished in red with molded, raised-letter operating instructions in contrasting color; shall show visible indication of operation; and shall be mounted on recessed outlet box. If indicated as surface mounted, provide manufacturer's surface back box.
1. Double-action mechanism requiring two actions to initiate an alarm, pull-lever type; with integral addressable module arranged to communicate manual-station status (normal, alarm, or trouble) to fire-alarm control unit.
2. Station Reset: Key- or wrench-operated switch.
3. Indoor Protective Shield: Factory-fabricated clear plastic enclosure hinged at the top to permit lifting for access to initiate an alarm. Lifting the cover actuates an integral battery-powered audible horn intended to discourage false-alarm operation.

1.8 SYSTEM SMOKE DETECTORS

A. General Requirements for System Smoke Detectors:
1. Comply with UL 268; operating at 24-V dc, nominal.
2. Integral Addressable Module: Arranged to communicate detector status (normal, alarm, or trouble) to fire-alarm control unit.
3. Base Mounting: Detector and associated electronic components shall be mounted in a twist-lock module that connects to a fixed base. Provide terminals in the fixed base for connection to building wiring.
4. Self-Restoring: Detectors do not require resetting or readjustment after actuation to restore them to normal operation.
5. Integral Visual-Indicating Light: LED type indicating detector has operated and power-on status.

B. Photoelectric Smoke Detectors:
1. Detector address shall be accessible from fire-alarm control unit and shall be able to identify the detector's location within the system and its sensitivity setting.
2. An operator at fire-alarm control unit, having the designated access level, shall be able to manually access the following for each detector:
a. Primary status.
b. Device type.
c. Present average value.
d. Present sensitivity selected.
e. Sensor range (normal, dirty, etc.).

1.9 NOTIFICATION APPLIANCES

A. General Requirements for Notification Appliances: Connected to



GENERAL NOTES

1. DEMOLITION PLAN IS ENGINEER'S ATTEMPT TO ASSIST BIDDERS IN ESTIMATING REMOVAL COSTS OF EXISTING EQUIPMENT. PLAN IS NOT INTENDED TO BE ALL-INCLUSIVE, AND IT IS THE BIDDERS RESPONSIBILITY TO VERIFY ALL EXISTING EQUIPMENT AND DEVICES TO BE REMOVED PRIOR TO BIDDING.
2. EXISTING ITEMS TO BE REMOVED ARE INDICATED AS BOLD/DASHED. ITEMS TO REMAIN ARE SHOWN AS LIGHT/SOLID.
3. MAINTAIN CIRCUIT CONTINUITY FOR DEVICES DOWNSTREAM OF ITEMS TO BE REMOVED.
4. WHERE DEVICES ARE SHOWN TO BE REMOVED, COMPLETELY REMOVE ALL RACEWAYS, BOXES AND CONDUCTORS TO PANEL OR TO FIRST J-BOX THAT IS REQUIRED TO REMAIN ACTIVE IN CIRCUIT PATH.

KEYED NOTES

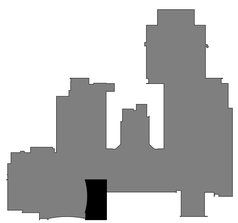
1. EXISTING DISTRIBUTION TO REMAIN.
2. REMOVE EXISTING FIXTURES AND/OR LIGHTING CONTROL AS INDICATED.
3. REMOVE EXISTING OUTLETS AS INDICATED.
4. REMOVE EXISTING COMMUNICATIONS DEVICES AS INDICATED.
5. REMOVE EXISTING FIRE ALARM DEVICES AS INDICATED.
6. REMOVE EXISTING ELECTRONIC SYSTEMS DEVICES AS INDICATED.
7. DISCONNECT EXISTING EQUIPMENT FOR REMOVAL BY OTHERS.
8. RELOCATE ACCESS CONTROL 8-DOOR CONTROLLER. SEE NEW ELECTRONIC SYSTEMS PLAN FOR LOCATION. EXTEND ALL EXISTING CONNECTIONS TO NEW CONTROLLER LOCATION.
9. REMOVE AND REINSTALL POWER DOOR. EXTEND AND RECONNECT EXISTING CIRCUIT AND ALL POWER AND CONTROL CIRCUITING TO OPENER AT NEW LOCATION.
10. RELOCATE ADA DOOR OPENER BUTTON AS INDICATED ON NEW POWER PLAN. PROVIDE 1/2" CONDUIT WITH CONTROL WIRING TO DOOR MOTOR.
11. RELOCATE INTERCOM INTERFACE AT DESK TO NEW LOCATION AS SHOWN. SEE E401.1 FOR ADDITIONAL INFORMATION.

1 ELECTRICAL DEMOLITION PLAN - OFFICES

1/8" = 1'-0"

NORTH

KEY PLAN



CONSTRUCTION DOCUMENTS

DESIGN WEST

LOGAN, UTAH
(435) 752-7031

SALT LAKE CITY, UTAH
(801) 539-8221

MT. LOGAN MIDDLE SCHOOL
MAIN OFFICE AND SECURE VESTIBULE REMODEL

875 N 200 E, LOGAN, UT 84321

LOGAN CITY SCHOOL DISTRICT

MARK:	DESCRIPTION:	DATE:

PROJECT #:	125070
DRAWN BY:	D.PATTON
CHECKED BY:	S.SWENSON
ISSUED:	04.02.2026

REGISTERED PROFESSIONAL ENGINEER
No. 294171
SHANE D. SWENSON
4/8/2026
STATE OF UTAH

ELECTRICAL DEMOLITION PLAN - MAIN OFFICE

ED-101.1

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GENERAL NOTES

1. COORDINATE ALL SWITCH, OUTLET, LIGHT AND OTHER DEVICE LOCATIONS WITH ARCHITECTURAL ELEMENTS (CABINETS, WINDOWS ETC.) PRIOR TO ROUGH-IN. REVIEW ARCHITECTURAL INTERIOR ELEVATIONS PRIOR TO ROUGH-IN OF EACH AREA FOR ADDITIONAL INFORMATION.
2. ALL EMERGENCY LIGHTING BATTERIES SHALL PROVIDE A MINIMUM OF 90 MINUTES ILLUMINATION PER NEC 700.12(A) AND IBC 1006. SEE SPEC SECTION 265100 FOR ADDITIONAL REQUIREMENTS.
3. ALL BALLASTS, INCLUDING BATTERY BACKUP AND ASSOCIATED SELF-DIAGNOSTICS, SHALL BE FACTORY MOUNTED.
4. ALL OCCUPANCY SENSORS SHALL HAVE INTEGRAL PHOTOCELL CONTROL AS SPECIFIED.
5. CONTRACTOR TO FURNISH OCCUPANCY SENSORS WITH COVERAGE PATTERNS APPROPRIATE FOR THEIR INSTALLED LOCATIONS. COORDINATE WITH EQUIPMENT SUPPLIER PRIOR TO BID.
6. CONNECT OCCUPANCY SENSORS TO ENABLE ALL SWITCHES IN CONTROLLED SPACE.
7. CONNECT OCCUPANCY SENSORS, BATTERY BALLASTS, EXIT SIGNS, ETC. TO UNSWITCHED SOURCE CONDUCTOR.
8. SEE POWER PLAN FOR ELECTRICAL DISTRIBUTION, EQUIPMENT AND LIGHTING RELAY PANEL LOCATIONS.
9. NO INTERIOR OR EXTERIOR RACEWAYS SHALL BE SURFACE MOUNTED WITHOUT PRIOR WRITTEN APPROVAL FROM OWNER AND ARCHITECT.
10. ALL LOCAL LIGHTING CONTROL SHALL BE LOW VOLTAGE (LITHONIA N-LIGHT, WATTSTOPPER, ETC).
11. EXISTING LIGHTING, ELECTRICAL AND ELECTRONIC DEVICES SHOWN LIGHT. NEW DEVICES SHOWN DARK, UNLESS OTHERWISE INDICATED.
12. NEW DEVICES SHOWN ON EXISTING WALLS SHALL FINISH FLUSH WITH WALL UNLESS OTHERWISE NOTED. CUT, PATCH AND REPAIR SURFACES AS REQUIRED.

KEYED NOTES

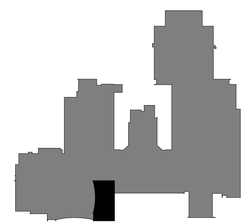
1. PROVIDE EM BATTERY IN FIXTURES NOTED. CONNECT BATTERY TO UNSWITCHED CIRCUIT CONDUCTOR OF CIRCUIT SERVING FIXTURE. CONNECT LAMPS TO OPERATE WITH SWITCH(S) IN NORMAL MODE.
2. CONNECT TO EXISTING LIGHTING CIRCUIT PREVIOUSLY SERVING SPACE.
3. CONNECT TO EXISTING CIRCUIT INDICATED.
4. CONNECT TO EXISTING LIGHTING CONTROL INDICATED.
5. INTEGRATE NEW LIGHTING CONTROL INTO EXISTING CONTROL AS REQUIRED.
6. PROVIDE NEW CONNECTIONS TO UNSWITCHED SOURCE CONDUCTOR FOR CONSTANT POWER TO BATTERY AS REQUIRED.
7. RETROFIT EXISTING FIXTURES WITH EM BATTERY BALLAST.
8. PROVIDE NEW LIGHTING CONTROL FOR EXISTING SPACE.
9. PROVIDE DIMMER CONTROL FROM NEW DIMMER TO EXISTING FIXTURES. EXTEND CONTROL WIRES THROUGHOUT SWITCH GROUP AS REQUIRED.



1 LIGHTING PLAN - OFFICES
1/8" = 1'-0"

NORTH

KEY PLAN



CONSTRUCTION DOCUMENTS

DESIGN WEST

LOGAN, UTAH
(435) 752-7031

SALT LAKE CITY, UTAH
(801) 539-8221

MT. LOGAN MIDDLE SCHOOL
MAIN OFFICE AND SECURE VESTIBULE REMODEL

875 N 200 E, LOGAN, UT 84321

LOGAN CITY SCHOOL DISTRICT

MARK:	DATE:	DESCRIPTION:

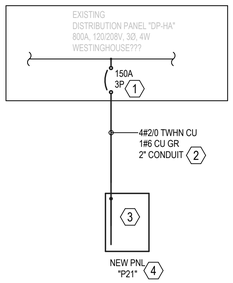
PROJECT #: 125070
DRAWN BY: D.PATTON
CHECKED BY: S.SWENSON
ISSUED: 04.02.2026

REGISTERED PROFESSIONAL ENGINEER
No. 294174
SHANE B. SWENSON
4/8/2026
STATE OF UTAH

LIGHTING PLAN - MAIN OFFICE

E-201.1

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KEYED NOTES

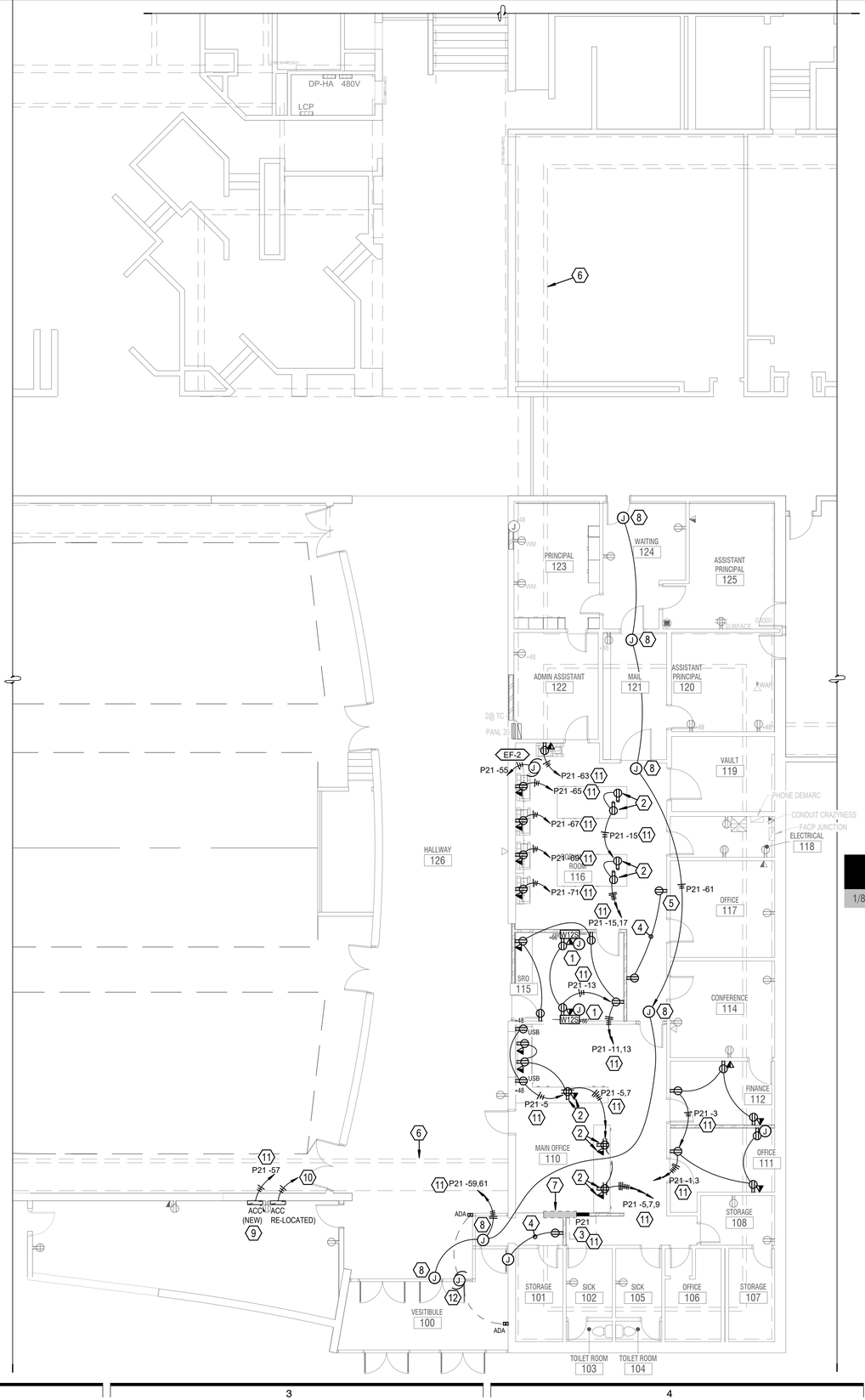
1. PROVIDE NEW BREAKER IN EXISTING PANEL.
2. PROVIDE NEW FEEDER.
3. PROVIDE NEW BRANCH PANEL.
4. VERIFY PANEL NAME WITH EXISTING BUILDING STANDARD AND OWNER.

GENERAL NOTES

1. ALL NEW EQUIPMENT TO BE SQUARE D, TO MATCH BUILDING STANDARD.

2 PARTIAL ELECTRICAL ONE-LINE DIAGRAM

1/8" = 1'-0"



KEYED NOTES

1. PROVIDE RECESS CONNECTIONS TO FLAT PANEL TV. VERIFY OUTLET LOCATION WITH ARCHITECTURAL ELEVATIONS PRIOR TO ROUGH-IN. FIELD PAINT BOX/COVER/CONDUIT TO MATCH ADJACENT BUILDING SURFACE.
2. OUTLETS MOUNTED IN CABINET. COORDINATE WORK WITH MILLWORK PROVIDER.
3. PROVIDE NEW PANEL. SEE ONE-LINE DIAGRAM FOR ADDITIONAL INFORMATION.
4. CONNECT TO EXISTING CIRCUIT INDICATED.
5. REPLACE EXISTING WIRING DEVICES IN SPACE WITH NEW COMPLYING WITH THIS PROJECT'S REQUIREMENTS.
6. FOOTPRINT OF UTILITY TUNNEL BELOW FOR NEW FEEDER ROUTING.
7. CUT, PATCH AND REPAIR FLOOR FOR NEW FEEDER INSTALLATION.
8. PROVIDE POWER FOR ACCESS DOOR EQUIPMENT. VERIFY LOCATION WITH SECURITY SYSTEM VENDOR PRIOR TO ROUGH-IN.
9. PROVIDE POWER TO NEW ACCESS CONTROL DOOR CONTROLLER. VERIFY EXACT LOCATION WITH SECONDARY SYSTEM VENDOR PRIOR TO ROUGH-IN.
10. EXTEND EXISTING CIRCUIT SERVING RELOCATED ACCESS CONTROL CARD CONTROLLER TO NEW EQUIPMENT LOCATION. VERIFY LOCATION WITH SECURITY SYSTEM VENDOR PRIOR TO ROUGH-IN.
11. VERIFY PANEL NAME TO EXTEND EXISTING FACILITY SYSTEM PRIOR TO PRINTING NAMEPLATE. UPDATE FIELD REDLINE SET WITH CIRCUIT NAME AND NOTIFY ENGINEER OF CHANGES.
12. PROVIDE CONNECTIONS TO REINSTALL ADA DOOR OPENER. EXTEND EXISTING CIRCUIT TO NEW EQUIPMENT LOCATION. RE-CIRCUIT TO EXISTING/RELOCATED PUSH BUTTONS PER MANUFACTURER REQUIREMENTS.

GENERAL NOTES

1. COORDINATE ALL SWITCH, OUTLET, LIGHT AND OTHER DEVICE LOCATIONS WITH ARCHITECTURAL ELEMENTS (CABINETS, WINDOWS ETC.) PRIOR TO ROUGH IN. REVIEW ARCHITECTURAL INTERIOR ELEVATIONS PRIOR TO ROUGH-IN OF EACH AREA FOR ADDITIONAL INFORMATION.
2. NO INTERIOR OR EXTERIOR RACEWAYS SHALL BE SURFACE MOUNTED WITHOUT PRIOR WRITTEN APPROVAL FROM OWNER AND ARCHITECT.
3. EXISTING LIGHTING, ELECTRICAL AND ELECTRONIC DEVICES SHOWN LIGHT. NEW DEVICES SHOWN DARK.
4. NEW DEVICES SHOWN ON EXISTING WALLS SHALL FINISH FLUSH WITH WALL UNLESS OTHERWISE NOTED. CUT, PATCH AND REPAIR SURFACES AS REQUIRED.
5. ALL NEW 20A, 120V RECEPTACLES SHALL BE RATED TAMPER RESISTANT.

1 POWER PLAN - OFFICES

1/8" = 1'-0"

NORTH

KEY PLAN



CONSTRUCTION DOCUMENTS

POWER PLAN - MAIN OFFICE

E-301.1

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DESIGN WEST
LOGAN, UTAH
(435) 752-7031
SALT LAKE CITY, UTAH
(801) 539-8221

MT. LOGAN MIDDLE SCHOOL
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COMMUNICATIONS RACEWAY SCHEDULE				
SYMBOL	DESCRIPTION	MANUFACTURER	MODEL	ACCESSORIES
xCDy	CONDUIT; QUANTITY "X", DIAMETER "Y" AS INDICATED ON SYMBOL SCHEDULE	AS SPECIFIED		INSULATED THROAT CONNECTORS ON ALL ENDS; PULL STRING
CMJ	CABLE HOOKS; 4"; RETAINING CLIP QUANTITY AS REQUIRED FOR CURRENT CABLING PLUS 50% SPARE CAPACITY	COOPER B-LINE	BCH64 SERIES (OR EQUIVALENT)	RETAINER (BCHR64) OTHER ACCESSORIES AS REQUIRED
xBTy	X"W X Y"D STEEL, WIRE MESH TRAY MAXIMUM 6' SUPPORT SPACING (MIN 83 LBS/FT LOAD CAPACITY)	COOPER	FT(X)X(Y)-EG SERIES (OR EQUIVALENT)	ACCESSORIES AS REQUIRED
COMM OUTLET BOX	5" SQUARE X 3" DEEP 5/8" MUD RING (1 OR 2-GANG AS NOTED)	STEEL CITY STEEL CITY	82181T-1 SERIES 82C-*G-5/8 (OR EQUIVALENT)	

KEYED NOTES

1. PROVIDE ROUGH-IN FOR FUTURE DATA OUTLET AS SPECIFIED.
2. REINSTALL WIRELESS ACCESS POINT REMOVED DURING DEMOLITION.
3. PROPOSED ROUTE FOR NEW STRUCTURED CABLING PATHWAYS. VERIFY WITH FIELD CONDITIONS.
4. PROVIDE CONDUIT, SIZED AS INDICATED, BETWEEN BOXES INDICATED OR BETWEEN BOX AND CABLE TRAY INDICATED FOR OWNER A/V CABLING. CONDUIT IS IN ADDITION TO SPECIFIED CONDUIT FOR COMMUNICATIONS.
5. REINSTALL CLOCK REMOVED DURING DEMOLITION. RECONNECT TO EXISTING MASTER CLOCK CIRCUIT SERVING REMOVED CLOCK.
6. PROVIDE NEW CLOCK TO MATCH EXISTING FACILITY. INTEGRATE INTO EXISTING SYSTEM AS REQUIRED.
7. PROVIDE NEW INTERCOM EQUIPMENT. INTEGRATE INTO EXISTING SYSTEM.
8. RELOCATE EXISTING INTERCOM INTERFACE AT RECEPTION DESK. RECONNECT TO EXISTING SYSTEM PER MANUFACTURER REQUIREMENTS.

GENERAL NOTES

1. ARCHITECTURAL CEILINGS SHOWN FOR CONTRACTOR CONVENIENCE IN BIDDING INSTALLATION REQUIREMENTS. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION.
2. NEW DEVICES SHOWN ON EXISTING WALLS SHALL FINISH FLUSH WITH WALL UNLESS OTHERWISE NOTED. CUT, PATCH AND REPAIR SURFACES AS REQUIRED.
3. COORDINATE ALL SWITCH, OUTLET, LIGHT AND OTHER DEVICE LOCATIONS WITH ARCHITECTURAL ELEMENTS (CABINETS, WINDOWS ETC.) PRIOR TO ROUGH IN. REVIEW ARCHITECTURAL INTERIOR ELEVATIONS PRIOR TO ROUGH-IN OF EACH AREA FOR ADDITIONAL INFORMATION.
4. NO INTERIOR OR EXTERIOR RACEWAYS SHALL BE SURFACE MOUNTED WITHOUT PRIOR WRITTEN APPROVAL FROM OWNER AND ARCHITECT.
5. SEE SYMBOL SCHEDULE FOR COMMUNICATIONS CABLING AND ROUGH-IN REQUIREMENTS.
6. PROVIDE PULL STRINGS IN ALL COMMUNICATIONS AND SECURITY RACEWAYS AS SPECIFIED.
7. SOLIDLY SUPPORT COMMUNICATIONS J-HOOKS (—CMJ— LINES) TO STRUCTURAL ELEMENTS. USE SUSPENSION HANGERS, WHERE NEEDED, TO MAINTAIN SPECIFIED SPACING.
8. CONTRACTOR PROVIDE ALL COMMUNICATIONS BOXES AND RACEWAY UNLESS OTHERWISE NOTED. SEE COMMUNICATIONS RACEWAY SCHEDULE FOR ADDITIONAL INFORMATION.
9. INTEGRATE ALL NEW INTERCOM DEVICES INTO EXISTING SYSTEM. PROVIDE ALL UPGRADES AS NECESSARY FOR SYSTEM EXPANSION.
10. INTEGRATE NEW ACCESS CONTROL DEVICES INTO EXISTING PDK SYSTEM. PROVIDE ALL UPGRADES AS NECESSARY FOR SYSTEM EXPANSION.
11. PROVIDE FACTORY COLOR CODING FOR LOW VOLTAGE SYSTEMS RACEWAYS AS FOLLOWS:
    - FIRE ALARM: RED
    - IT/COMMUNICATIONS: BLUE
    - SECURITY: YELLOW
    - LIGHTING CONTROL: ORANGE
    - OTHER: PURPLE
12. ELECTRICAL CONTRACTOR TO HIRE OWNER'S PDK SECURITY SYSTEM AND INTERCOMM/CLOCK CONTRACTORS AS A SUB AND INCLUDE ALL ASSOCIATED COSTS IN BID.

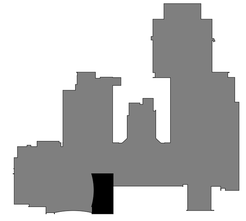


1 ELECTRONIC SYSTEMS PLAN - OFFICES

1/8" = 1'-0"

NORTH

KEY PLAN



CONSTRUCTION DOCUMENTS

DESIGN WEST

LOGAN, UTAH
(435) 752-7031

SALT LAKE CITY, UTAH
(801) 539-8221

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LOGAN CITY SCHOOL DISTRICT

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DRAWN BY: D.PATTON
CHECKED BY: S.SWENSON
ISSUED: 04.02.2026

REGISTERED PROFESSIONAL ENGINEER No. 294174 SHANE B. SWENSON 4/8/2026 STATE OF UTAH

ELECTRONICS SYSTEMS PLAN - MAIN OFFICE

E-401.1

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KEYED NOTES

1. PROVIDE NEW FIRE ALARM DEVICE. INTEGRATE INTO EXISTING SIMPLEX SYSTEM.
2. DEVICE INDICATED TO BE INSTALLED WITHIN 15'-0" OF END OF CORRIDOR PER NFPA 72.
3. PROVIDE ACCESS CONTROL AT DOOR INDICATED. PROVIDE ROUGH-IN PER DETAIL 3/E501.1 COORDINATE ALL INSTALLATIONS WITH OWNER SECURITY SYSTEM VENDOR PRIOR TO ROUGH-IN. INTEGRATE NEW DEVICES INTO EXISTING PDK SYSTEM.
4. PROVIDE ACCESS CONTROL AT DOOR INDICATED. PROVIDE ROUGH-IN PER DETAIL 1/E501.1 COORDINATE ALL INSTALLATIONS WITH OWNER SECURITY SYSTEM VENDOR PRIOR TO ROUGH-IN. INTEGRATE NEW DEVICES INTO EXISTING PDK SYSTEM.
5. RELOCATE EXISTING ACCESS DOOR CONTROLLER TO NEW LOCATION INDICATED OR OTHER LOCATION AS DIRECTED BY OWNER.
6. ANTICIPATED LOCATION FOR NEW ACCESS DOOR CONTROLLER(LOCATE ADJACENT TO RELOCATED CONTROLLER). VERIFY LOCATION WITH SECURITY SYSTEM VENDOR PRIOR TO ROUGH-IN.
7. PROVIDE (2)3" CONDUITS FROM CONTROLLER INTO TUNNEL BELOW. SEE POWER PLAN FOR TUNNEL FOOTPRINT.
8. PROVIDE UNDERCOUNTER RELEASE BUTTON AT DESK AT LOCATION DIRECTED BY OWNER FOR EACH DOOR INDICATED TO OVERRIDE ACCESS CONTROL.

GENERAL NOTES

1. ARCHITECTURAL CEILINGS SHOWN FOR CONTRACTOR CONVENIENCE IN BIDDING INSTALLATION REQUIREMENTS. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION.
2. NEW DEVICES SHOWN ON EXISTING WALLS SHALL FINISH FLUSH WITH WALL UNLESS OTHERWISE NOTED. CUT, PATCH AND REPAIR SURFACES AS REQUIRED.
3. COORDINATE ALL SWITCH, OUTLET, LIGHT AND OTHER DEVICE LOCATIONS WITH ARCHITECTURAL ELEMENTS (CABINETS, WINDOWS ETC.) PRIOR TO ROUGH IN. REVIEW ARCHITECTURAL INTERIOR ELEVATIONS PRIOR TO ROUGH-IN OF EACH AREA FOR ADDITIONAL INFORMATION.
4. NO INTERIOR OR EXTERIOR RACEWAYS SHALL BE SURFACE MOUNTED WITHOUT PRIOR WRITTEN APPROVAL FROM OWNER AND ARCHITECT.
5. INTEGRATE ALL NEW FIRE ALARM DEVICES INTO EXISTING SIMPLEX SYSTEM. PROVIDE ALL UPGRADES NECESSARY FOR SYSTEM EXPANSION.
6. CANDELA RATINGS FOR STROBE DEVICES ARE MINIMUM REQUIRED VALUES. FIRE ALARM CONTRACTOR SHALL ADJUST MANUFACTURER'S STANDARD CANDELA RATINGS AS NECESSARY TO MEET OR EXCEED MINIMUM REQUIREMENTS.
7. FIRE ALARM ANNUNCIATION DEVICE LOCATIONS ARE BASED ON CODE REQUIRED LAYOUTS. COORDINATE WITH ENGINEER PRIOR TO RELOCATING ANY DEVICES. ALTERNATE LOCATIONS AFFECT DEVICE CANDELA RATINGS.
8. ALL FIRE ALARM CONDUITS AND BOXES TO BE IDENTIFIED AS FOLLOWS:
   a) CONCEALED: FACTORY APPLIED RED.
   b) EXPOSED: FIELD PAINTED TO MATCH ADJACENT SURFACE.
9. SMOKE DETECTORS SHALL NOT BE INSTALLED UNTIL AFTER CONSTRUCTION CLEAN-UP IS COMPLETED AND FINAL.
10. PROVIDE SYNCHRONIZATION OF ALL VISUAL NOTIFICATION APPLIANCE CIRCUITS. PROVIDE ALL REQUIRED SYNC MODULES. PROVIDE A MULTI-SYNC MODE SLAVE CONNECTION BETWEEN ALL SYNC MODULES.
11. DESIGN AND FIELD VERIFY AUDIBILITY SETTINGS OF NOTIFICATION APPLIANCES. FIELD MEASURE SOUND PRESSURE LEVELS AND REPLACE HORN-STROBES WITH STROBE ONLY DEVICES WERE REQUIRED.
12. PROVIDE FACTORY COLOR CODING FOR LOW VOLTAGE SYSTEMS RACEWAYS AS FOLLOWS:
    - FIRE ALARM: RED
    - IT/COMMUNICATIONS: BLUE
    - SECURITY: YELLOW
    - LIGHTING CONTROL: ORANGE
    - OTHER: PURPLE

KEY PLAN



1 FIRE ALARM & SECURITY PLAN - OFFICES

1/8" = 1'-0"

NORTH

CONSTRUCTION DOCUMENTS

DESIGN WEST
LOGAN, UTAH
(435) 752-7031
SALT LAKE CITY, UTAH
(801) 539-8221

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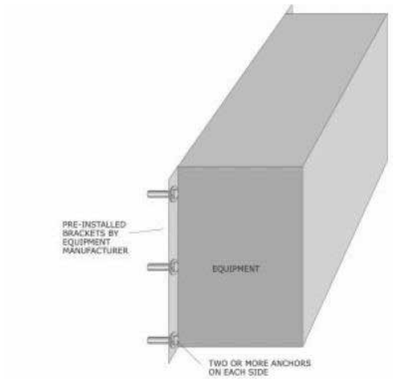
PROJECT #: 125070
DRAWN BY: D.PATTON
CHECKED BY: S.SWENSON
ISSUED: 04.02.2026

REGISTERED PROFESSIONAL ENGINEER No. 394174 SHANE B. SWENSON 4/8/2026 STATE OF UTAH

FIRE ALARM & SECURITY PLAN - MAIN OFFICE

E-411.1

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Direct attachment to a wall.

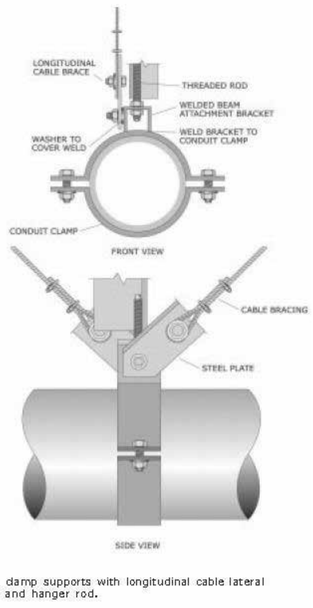
10 SEISMIC SUPPORT: EQUIPMENT TO WALL

12" = 1'-0"

Direct attachment

9 SEISMIC SUPPORT: RACEWAY TO WALL

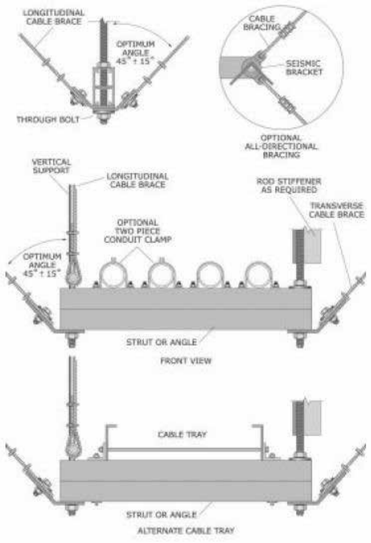
12" = 1'-0"



Conduit clamp supports with longitudinal cable lateral support and hanger rod.

8 SEISMIC SUPPORT_SUSPENDED RACEWAY

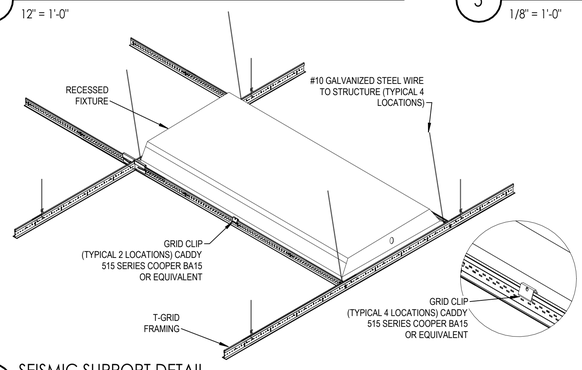
12" = 1'-0"



Trapeze support with cable lateral supports.

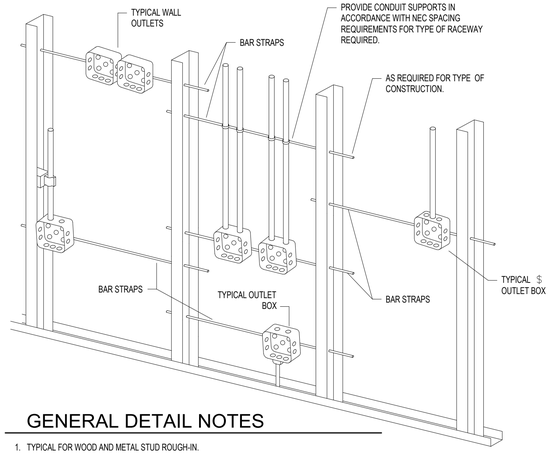
7 SEISMIC SUPPORT: RACEWAY TRAPEZE

12" = 1'-0"



6 SEISMIC SUPPORT DETAIL

1/8" = 1'-0"

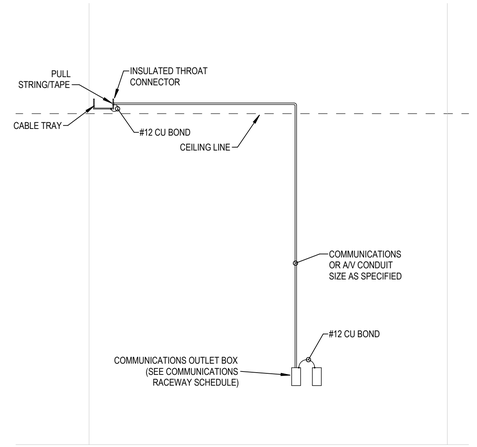


GENERAL DETAIL NOTES

1. TYPICAL FOR WOOD AND METAL STUD ROUGH-IN.
2. PLASTER RINGS NOT SHOWN.
3. LOCATE ALL OUTLET BOXES IN ACCORDANCE WITH ARCHITECTURAL AND MECHANICAL DRAWINGS AND WITH ALL APPLICABLE SHOP DRAWINGS.
4. OUTLETS ON OPPOSITE SIDES OF WALLS OR PARTITIONS IN THE SAME STUD SPACE IN A RATED FIRE SEPARATION WALL MUST BE SEPARATED BY A MINIMUM OF 24" HORIZONTAL DISTANCE.
5. IN NON-RATED WALLS, OUTLETS ON OPPOSITE SIDES OF WALLS OR PARTITIONS MUST BE SEPARATED BY 16" FOR SOUND ATTENUATION.

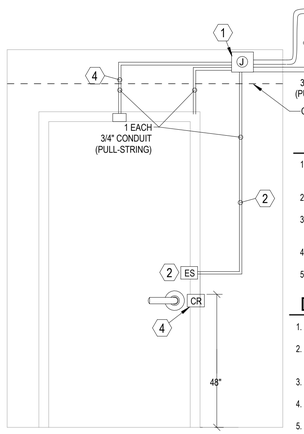
5 TYPICAL ROUGH-IN REQUIREMENTS DETAIL

1/8" = 1'-0"



2 LOW-VOLTAGE OUTLET ROUGH-IN DETAIL

3/16" = 1'-0"



DETAIL KEYED NOTES

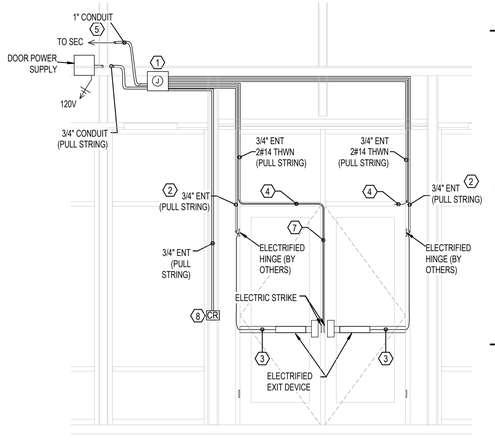
1. PROVIDE J-BOX ABOVE ACCESSIBLE CEILING ON CONTROLLED SIDE OF DOOR. ROUTE ALL DOOR SECURITY CONDUITS FOR DOOR TO J-BOX.
2. SHARED CONDUIT FOR CARD READER AND ELECTRIC STRIKE.
3. PROVIDE CONDUIT STUB INTO DOOR FRAME FOR DOOR POSITION SENSOR. VERIFY LOCATION WITH SECURITY SYSTEM VENDOR PRIOR TO ROUGH-IN.
4. PROVIDE CONDUIT STUB INTO DOOR FRAME FOR REX SENSOR.
5. PROVIDE HOME-RUN TO SECURITY SYSTEM HEAD-END LOCATION.

DETAIL GENERAL NOTES

1. CABLING BY OTHERS EXCEPT AS NOTED.
2. COORDINATE ALL CONDUIT, BOX TYPES AND LOCATIONS WITH OWNER'S SECURITY SYSTEM VENDOR PRIOR TO ROUGH-IN.
3. PROVIDE INSULATED THROAT CONNECTORS ON BOTH ENDS OF ALL CONDUITS.
4. REFER TO ARCHITECTURAL DRAWINGS FOR DOOR HARDWARE TYPES.
5. PROVIDE PULL-STRINGS IN ALL CONDUITS.

3 TYPICAL ACCESS CONTROL DOOR ROUGH-IN DETAIL: MISC ELECTRIC STRIKE

1/8" = 1'-0"



DETAIL KEYED NOTES

1. PROVIDE J-BOX ABOVE ACCESSIBLE OFFICE CEILING ON CONTROLLED SIDE OF DOOR. ROUTE ALL DOOR SECURITY CONDUITS FOR DOOR TO J-BOX.
2. PROVIDE CONDUIT AND PULL STRING AS INDICATED ROUTED THROUGH STOREFRONT/WINDOW MULLIONS TO DOOR FRAME SIDE. TERMINATE CONDUITS LEVEL WITH TOP OF ELECTRICAL HINGES.
3. WIRING THROUGH HINGE TO ELECTRIFIED HARDWARE WITH INTEGRAL REX AND DOOR STATUS BY OWNER.
4. PROVIDE CONDUIT WITH CONDUCTORS AND PULL STRING AS INDICATED ROUTED THROUGH STOREFRONT/WINDOW MULLIONS TO DOOR FRAME TOP FOR DOOR OPENER AND/OR CONTACT SENSORS CONNECTIONS.
5. PROVIDE HOME-RUN TO SECURITY SYSTEM HEAD-END LOCATION.
6. VERIFY HEIGHT WITH DOOR HARDWARE SUPPLIER.
7. PROVIDE ADDITIONAL PULL-STRING FOR CONNECTION TO ELECTRIC STRIKES IN CENTER MULLION.
8. PROVIDE 1-GANG BOX WITH CONDUIT CONNECTING TO BOX AND EXTENDING TO ABOVE CEILING J-BOX FOR EXTERIOR DOOR CARD READER. VERIFY MOUNTING HEIGHT AND LOCATION WITH OWNER'S SECURITY SYSTEM REP PRIOR TO ROUGH-IN. COORDINATE BUILDING FINISHES WITH GENERAL CONTRACTOR TO PROVIDE FLAT MOUNTING SURFACE FOR BOX AND 2" SURROUNDING BOX.
9. WHERE OWNER OPTS FOR MULLION ,OUNT DEVICE AS SHOWN ON SECURITY VENDOR DRAWINGS, ELIMINATE BOX AND CONDUIT. CABLING WILL SHARE CONDUIT WITH PANIC HARDWARE CONDUIT.

DETAIL GENERAL NOTES

1. CABLING BY OTHERS EXCEPT UNLESS OTHERWISE NOTED.
2. COORDINATE ALL CONDUIT, BOX TYPES AND LOCATIONS WITH OWNER'S SECURITY SYSTEM VENDOR PRIOR TO ROUGH-IN.
3. PROVIDE INSULATED THROAT CONNECTORS ON BOTH ENDS OF ALL CONDUITS.
4. REFER TO ARCHITECTURAL DRAWINGS FOR DOOR HARDWARE TYPES.
5. PROVIDE PULL-STRINGS IN ALL CONDUITS.

1 ENTRY DOOR ACCESS DETAIL - EXTERIOR PUBLIC DOUBLE DOOR

3/8" = 1'-0"

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No. 294174
SHANE B. SWENSON
4/8/2026
STATE OF UTAH

ELECTRICAL DETAILS

E-501.1

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LIGHT FIXTURE SCHEDULE

	TYPE	MANUFACTURER/CATALOG NO.	DESCRIPTION	MOUNTING	POWER	LAMPS
	EX- 1EB	DUAL LITE LE-*-S-G-*-W-E-I SURE-LITES ELX7-1-70-WH-G-CHEV-MOUNT-SD LIGHTOLIER LITHONIA MCPHILBEN EELP	EXIT SIGN; SINGLE FACE; EDGE-LIT; WHITE FRAME; MIRRORED HOUSING BATTERY PACK; SELF DIAGNOSTICS; PENDANT WHERE NOTED ON DRAWINGS	WALL, CEILING, OR PENDANT 1-FACE	3W	LED
	LS- L15 LS- L15(B)	HALO SMX8-S-LS-F-S-010(-REMOTE EM) EQUIVALENT ONLY WITH PRIOR APPROVAL	SURFACE MOUNT, FLAT PANEL; 9" SQUARE MULTI-VOLT, ELECTRONIC, DIMMING, DRIVER; SMOOTH WHITE LENS; REMOTE EM BATTTERY PACK WHERE NOTED ON DRAWINGS;	SURFACE	15.4 W	1500 LUMEN NOMINAL LED 4000K
	LS1- L2K LS1- L2K(B)	LITHONIA CPX-1X4-2000LM-80CRI-40K-SWL-MIN10-ZT-MVOLT(-E10W)-1X4SMKSH EQUIVALENT ONLY WITH PRIOR APPROVAL	SURFACE MOUNT, FLAT PANEL; MULTI-VOLT, ELECTRONIC, DIMMING, DRIVER; SMOOTH WHITE LENS; EM BATTTERY PACK WHERE NOTED ON DRAWINGS;	SURFACE	17.2 W	2000 LUMEN NOMINAL LED 4000K
	LS1- L3K LS1- L3K(B)	LITHONIA CPX-1X4-3000LM-80CRI-40K-SWL-MIN10-ZT-MVOLT(-E10W)-1X4SMKSH EQUIVALENT ONLY WITH PRIOR APPROVAL	SURFACE MOUNT, FLAT PANEL; MULTI-VOLT, ELECTRONIC, DIMMING, DRIVER; SMOOTH WHITE LENS; EM BATTTERY PACK WHERE NOTED ON DRAWINGS;	SURFACE	29.3 W	3000 LUMEN NOMINAL LED 4000K
	LS4- L6K	LITHONIA CPX-1X4-6000LM-80CRI-40K-SWL-MIN10-ZT-MVOLT(-E10W)-1X4SMKSH EQUIVALENT ONLY WITH PRIOR APPROVAL	SURFACE MOUNT, FLAT PANEL; MULTI-VOLT, ELECTRONIC, DIMMING, DRIVER; SMOOTH WHITE LENS; EM BATTTERY PACK WHERE NOTED ON DRAWINGS;	SURFACE	55.4 W	6000 LUMEN NOMINAL LED 4000K
	LG2- L4K LG2- L4K(B)	LITHONIA CPX-2X2-4000LM-80CRI-40K-SWL-MIN10-ZT-MVOLT(-E10W) EQUIVALENT ONLY WITH PRIOR APPROVAL	RECESS, FLAT PANEL; MULTI-VOLT, ELECTRONIC, DIMMING, DRIVER; SMOOTH WHITE LENS; EM BATTTERY PACK WHERE NOTED ON DRAWINGS;	RECESS	36.3 W	4000 LUMEN NOMINAL LED 4000K

LIGHT FIXTURE ACCESSORY SCHEDULE

	B	AS SPECIFIED	APPENDED TO FIXTURE TYPE; 1100 LUMEN EM BATTERY SUPPLY	AS SPECIFIED		PER FIXTURE TYPE

NOTES

-FIXTURE APPENDS ARE ADDED TO STANDARD FIXTURE TYPES. APPENDS ARE INTENDED TO MODIFY FIXTURE CATALOG NUMBERS GIVEN ABOVE AS NOTED IN APPEND DESCRIPTION

MECHANICAL EQUIPMENT SCHEDULE

SYM	DESCRIPTION	LOAD	VOLTS	PHASE	FIRE ALARM SHUTDOWN	CONTROL CIRCUITS BY	* STARTER BY	SAFETY DISCONNECT BY	REMARKS
EF- 1	EXHAUST FAN	13 W	120	1	NO	ELEC	MECH	MECH	INTERLOOCK TO BE CONTROLLED WITH LIGHTING IN SPACE SERVED BY FAN

* ELECTRICAL CONTRACTOR VERIFY SINGLE SPEED OR TWO SPEED STARTERS WITH MECHANICAL DRAWINGS.

FLOOR, TABLE, AND WALL BOX SCHEDULE

SYMBOL	DESCRIPTION	MANUFACTURER	MODEL	COLOR	DEVICES
W12S	MULTI-SERVICE, WALL BOX; STEEL; FLUSH-IN-USE; RECESS MOUNT IN WALL; COVER FIELD PAINTED CUSTOM COLOR AS SELECTED BY OWNER/ARCHITECT	WIREMOLD OR EQUIVALENT WITH PRIOR APPROVAL	EFSB2	PER ARCHITECT	-ONE DUPLEX -1 @ 1.25" COMM CONDUIT WITH (2) COMM AND (1) TV PORTS -A/V CONNECTORS PER OWNER -A/V CONDUIT AS NOTED ON PLAN
A/V	X-LARGE CAPACITY WALL BOX; STEEL 6" SQUARE X 3 1/2" DEEP 3/4" MUD RING (3-GANG AS SPECIFIED)	GARVIN GARVIN OR EQUIVALENT	6350-1-1/2 6AMR-3	PER ARCHITECT	-A/V CONNECTORS PER OWNER -A/V CONDUIT AS NOTED ON PLAN

PANEL DP HA — TYPE WESTINGHOUSE? — 3 Ø 4 WIRE 120/208 VOLTS

	NEW
X	EXISTING
1	NEMA RATING
EX	BOLT ON BREAKERS
	ISOLATED GROUND BUS
	SURGE PROTECT (SPD)

REMARKS

-ALL CIRCUITS CONSIDERED EXISTING UNLESS OTHERWISE INDICATED IN THESE DRAWINGS
-+=PROVIDE NEW BREAKER IN EXISTING PANEL
-*=VERIFY PANEL NAME WITH OWNER AND IDENTIFICATION PER FINAL NAME

LOCATION: ELEC RM

MOUNTING: ( ) FLUSH (X) SURFACE

800? AMP MAIN — (X) LUGS — ( ) BREAKER

No.	BRKR A	BRKR P	CIRCUIT DESCRIPTION	L	O	M	WIRE/GND PH	WIRE/GND N	WIRE/GND G	WIRE/GND C	CIRC. LOAD	A	B	C	CIRC. LOAD	WIRE/GND PH	WIRE/GND N	WIRE/GND G	WIRE/GND C	L	O	M	CIRCUIT DESCRIPTION	BRKR A	BRKR P	No.
1	100	3	SPACE									0											SPACE	100	3	2
3	-	-	-										0										-	-	-	4
5	-	-	-											0									-	-	-	6
7	225	3	SPACE									3919			3919	1LIN	1LIN	1LIN	1LIN			1	PANEL P21* (ADMIN)	+1LIN	3	8
9	-	-	-										5220		5220	1LIN						1	-	-	-	10
11	-	-	-											4560	4560	1LIN						1	-	-	-	12
13	200	3	PANEL ??			1	EX	EX	EX	EX		0				EX	EX	EX	EX			1	PANEL AA (ADMIN)	150	3	14
15	-	-	-			1	EX						0			EX						1	-	-	-	16
17	-	-	-			1	EX							0		EX						1	-	-	-	18
19	225	3	PANELS SA/SD (KITCHEN)			1	EX	EX	EX	EX		0				EX	EX	EX	EX			1	PANEL KA (AUDITORIUM)	225	3	20
21	-	-	-			1	EX						0			EX						1	-	-	-	22
23	-	-	-			1	EX							0		EX						1	-	-	-	24
											TOTALS	3919	5220	4560												

AIC EXISTING
SCCR EXISTING
PARALLEL RUNS SEE ONE-LINE

FEEDER EXISTING — AMPS/PHASE 33 44 38

BREAKER CODES
A=ARC-FAULT; G=GROUND FAULT; H=HACR; L=LOCKING HANDLE; S=SHUNT TRIP; R=RED PAINTED HANDLE; T=HANDLE TIE
WIRE CODES
I=ADD'L ISO GROUND TO MATCH SAFETY GROUND; S=UNLESS OTHERWISE SPECIFIED
GENERAL CODES
1LIN=SEE ONE-LINE DIAGRAM; AS=AS SPECIFIED

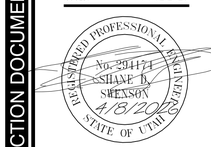
DESIGN WEST
LOGAN, UTAH
(435) 752-7031
SALT LAKE CITY, UTAH
(801) 539-8221

MT. LOGAN MIDDLE SCHOOL
MAIN OFFICE AND SECURE VESTIBULE REMODEL
875 N 200 E, LOGAN, UT 84321
LOGAN CITY SCHOOL DISTRICT

MARK: DATE: DESCRIPTION:

CONSTRUCTION DOCUMENTS

PROJECT #: 125070
DRAWN BY: D.PATTON
CHECKED BY: S.SWENSON
ISSUED: 04.02.2026



ELECTRICAL SCHEDULES

E-602.1

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