



MONTANA STATE UNIVERSITY **POST FARM SEED STORAGE EXPANSION**

8431 HUFFINE LANE, BOZEMAN, MT 59718

CLIENT PROJECT NO.: 25-1282

100% MSU REVIEW SET

ISSUE DATE: 10/13/2025

ARCHITECTURAL ABBREVIATIONS					
& ∠ @ CL o #	AND ANGLE AT CENTERLINE DEGREE NUMBER	F.O.S. F.O. F.R.P. FRFP FRT FT FTG FURR FUT	FACE OF STUD FACE OF (Conc. etc.) FIBER REINFORCED PANEL FIREPROOFING FIRE-RETARDENT TREATED FOOT OR FEET FOOTING FURRING FUTURE	PLYWD PR PREFAB PRMA PROJ PT P.T. PTD PVC	PLYWOOD PAIR PREFABRICATED PROTECTED MEMBRANE ROOF ASSEMBLY PROJECT POINT AND PAINT PRESERVATIVE TREATED PAPER TOWEL DISPENSER POLYVINYL CHLORIDE
ABV AC ACP ACT ACOUS ADD AFF AHU ALT ALUM APPROX ARCH ASPH AVG	ABOVE ASPHALTIC CONCRETE ACOUSTICAL CEILING PANEL ACOUSTICAL CEILING TILE ACOUSTICAL ADDITION ABOVE FINISH FLOOR AIR HANDLING UNIT ALTERNATE ALUMINUM APPROXIMATE ARCHITECTURAL ASPHALT AVERAGE	G GAU GAL GALV G.B. G.I. GL GT GWB GYM GYP	GAUGE GALLON GALVANIZED GRAB BAR GALVANIZED IRON GLASS GLASS TYPE GYPSUM WALL BOARD GYMNASIUM GYPSUM	R RISER OR RADIUS R.D. REF REFR REINF REQ R.H. R.L. RM R.O. R.O.W. RTU	ROUGH OPENING RIGHT OF WAY ROOF TOP UNIT
BD BLDG BLKG BLW BM B.O. B.S. BTU BUR	BOARD BUILDING BLOCKING BELOW BENCH MARK BOTTOM OF BOTH SIDES BRITISH THERMAL UNIT BUILT-UP ROOF	H.B. H.C. HDWD HDWR H.M. H.M.F. HORIZ H.P. HR HT HW HWY	HOSE BIB HOLLOW CORE HARDWOOD HARDWARE HOLLOW METAL HOLLOW METAL FRAME HORIZONTAL HIGH POINT HOUR HEIGHT HOT WATER HIGHWAY	S SAN S.C. SCHED SE SECT SHEATH SHT SIM SND SPEC SQ S.S. S.S.T. STD STL STOR STRUCT ST.S SUSP SV SW SYM	SOUTH SANITARY SOLID CORE SCHEDULE SOUTHEAST SECTION SHEATHING SHEET SIMILAR SANITARY NAPKIN DISPENSER SPECIFICATIONS SQUARE SANITARY SEWER STAINLESS STEEL STANDARD STEEL STORAGE STRUCTURAL STORM SEWER SUSPENDED SHEET VINYL SOUTHWEST SYMMETRICAL
CAB C.B. CEM C.I. CIRC CLG CLR C.M.P. CMU COL COMP CONC CONSTR CONT COOR CORR C.R. C.R.C. C.T. CTR	CABINET CATCH BASIN CEMENT CAST IRON CIRCULAR CEILING CLEAR CORRUGATED METAL PIPE CONCRETE MASONRY UNIT COLUMN COMPOSITION CONCRETE CONSTRUCTION CONTINUOUS COORDINATE CORRIDOR COLD ROLLED COLD ROLLED CHANNEL CERAMIC TILE CENTER	I.D. (*) OR IN IHM INSUL INT JAN JT KIT LAB LAM LAV LB LH LL L.O.W. L.P.	INSIDE DIAMETER INCHES INSULATED HOLLOW METAL INSULATION INTERIOR JANITOR JOINT KITCHEN LABORATORY LAMINATE OR LAMINATED LAVATORY POUND LEFT HAND LIVE LOAD LIMITS OF WORK LOW POINT	TB TBHM TEL TEMP TERR T&G THRU T.O. T.O.S. TV TYP UAA UL UNFIN UNO	TACKBOARD THERMALLY- BROKEN HOLLOW METAL TELEPHONE TEMPORARY TERRAZZO TONGUE AND GROOVE THROUGH TOP OF (eg CONCRETE) TOP OF STEEL TELEVISION TYPICAL UNIVERSITY OF ALASKA ANCHORAGE UNDERWRITERS LABORATORY UNFINISHED UNLESS NOTED OTHERWISE
DBL DEPT D.F. DET DIA DIAG DIM DISP DL DN DS DWG	DOUBLE DEPARTMENT DRINKING FOUNTAIN DETAIL DIAMETER DIAGONAL DIMENSION DISPENSER DEAD LOAD DOWN DOWNSPOUT DRAWINGS	MAT'L MAX MECH MET OR MTL MFR MH MIN MISC M.O. MULL	MATERIAL MAXIMUM MECHANICAL METAL MANUFACTURER MANHOLE MINIMUM OR MINUTE MISCELLANEOUS MASONRY OPENING MULLION	VCT VERT VEST VR VTR	VINYL COMPOSITION TILE VERTICAL VESTIBULE VAPOR RETARDER VENT THROUGH ROOF
E (E) EA E.I.F.S. ELEV ELEV ELEC EMB EQ EQUIP E.G. EXIST EXP EXP.AGG. EXP.JT.	EAST EXISTING EACH EXTERIOR INSULATION & FINISH SYSTEM ELEVATION ELEVATOR ELECTRICAL EMBOSSING EQUAL EQUIPMENT EACH SIDE EXISTING EXPOSED EXPANSION EXPOSED AGGREGATE EXPANSION JOINT EXTERIOR	N NE NIC NO NOM NTS NW O O.C. O.D. OFD OFF OFCI OFOI OH OPNG OPP	NORTH NORTHEAST NOT IN CONTRACT NUMBER NOMINAL NOT TO SCALE NORTHWEST OVER ON CENTER OUTSIDE DIAMETER OVERFLOW DRAIN OFFICE OWNER FURNISHED, CONTRACTOR INSTALLED OWNER FURNISHED, OWNER INSTALLED OVERHEAD OPENING OPPOSITE	W W/ WC WD W/O WP WT	WEST WITH WATER CLOSET WOOD WITHOUT WATERPROOF WEIGHT
F.B. F.D. FDN F.E. F.E.C. FIN FF FF FLUOR F.O.B. F.O.F.	FLAT BAR FLOOR DRAIN FOUNDATION FIRE EXTINGUISHER FIRE EXTINGUISHER CABINET FINISH FACTORY FINISH(ED) FINISH FLOOR FLUORESCENT FACE OF BLOCK FACE OF FINISH	PARA PART PERF PERM PERP P.I.C. PL P.LAM PLAST	PARALLEL PARTITION PERFORATED PERMANENT PERPENDICULAR PRECAST INSULATED CONCRETE PLATE PLASTIC LAMINATE PLASTER		

PROJECT DESCRIPTION

MONTANA STATE UNIVERSITY – POST FARM SEED STORAGE BARN EXPANSION

THE SEED STORAGE BARN EXPANSION AT MONTANA STATE UNIVERSITY'S POST FARM INVOLVES EXTENDING THE EXISTING STRUCTURE BY 30 FEET TO THE EAST, MAINTAINING THE CURRENT WIDTH AND ARCHITECTURAL CONSISTENCY OF THE MAIN BUILDING. THE DESIGN CONTINUES THE EXISTING POST-AND-TRUSS STRUCTURAL LAYOUT TO ENSURE SEAMLESS INTEGRATION WITH THE ORIGINAL CONSTRUCTION. AS PART OF THE EXPANSION, THE EXISTING EAST WALL WILL BE REMOVED TO CREATE A CONTINUOUS STORAGE VOLUME. ADDITIONALLY, THE EXISTING MAIN DOOR AND OVERHEAD DOOR WILL BE CAREFULLY SALVAGED AND REINSTALLED IN THE NEW EAST WALL OF THE EXPANDED STRUCTURE. ELECTRICAL AND LIGHTING LAYOUTS WILL CONTINUE WITH EXISTING LAYOUTS THROUGHOUT THE EXPANSION.

STATE MAP

VICINITY MAP

DRAWING INDEX

GENERAL

C COVER

G100 GENERAL NOTES, ABBREVIATIONS, LOCATION MAP AND SHEET INDEX

ARCHITECTURAL

D1.01 DEMOLITION PLAN

A1.00 SITE PLAN / LIFE SAFTEY

A1.01 FLOOR PLAN

A1.02 ROOF PLAN

A2.01 EXTERIOR ELEVATIONS

A3.01 SECTIONS & DETAILS

A4.01 SPECIFICATIONS

A4.02 SPECIFICATIONS

STRUCTURAL

S0.0 GENERAL STRUCTURAL NOTES

S0.1 GENERAL STRUCTURAL NOTES

S1.0 FOUNDATION PLAN

S2.0 ROOF FRAMING PLAN

S3.0 DETAILS

ELECTRICAL

E001 ELECTRICAL COVER

E100 ELECTRICAL DEMO PLAN

E200 ELECTRICAL REMODEL PLAN

ARCHITECTURAL DRAWING CONVENTIONS								
A								
	NORTH ARROW	GRID LINES	SHEET NOTE TAG	BLDG./WALL SECTION	DISCIPLINE	DETAIL	EXTERIOR ELEVATION	PARTITION TYPE
	REVISIONS	DOOR NUMBER	DEMOLITION	VERT. CONTROL POINT	WINDOW TYPE	ROOM TAG	INTERIOR ELEVATION	MATCHLINE

GENERAL PROJECT NOTES

1. ALL WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE PROVISIONS OF THE BUILDING CODES OUTLINED ON THE LIFE SAFETY PLAN, AND ALL OTHER STATE AND LOCAL CODES, INCLUDING ALL AMENDMENTS.

2. ALL WORK SHALL CONFORM TO THE AMERICAN DISABILITIES ACT (A.D.A.) ACCESSIBILITY GUIDELINES FOR BUILDING AND FACILITIES (A.D.D.A.G.) AND A.N.S.I. 117.1 UNLESS NOTED OTHERWISE.

3. ALL DIMENSIONS ARE TO FACE OF STUD, FACE OF CONCRETE, FACE OF C.M.U., TO CENTERLINE OF STRUCTURAL COLUMN, OR TO STRUCTURAL GRID-LINE UNLESS NOTED OTHERWISE.

4. DIMENSIONS NOTED AS 'CLEAR' (OR CLR.) SHALL BE TO FINISHED FACE.

5. DO NOT SCALE THE DRAWINGS TO OBTAIN CONSTRUCTION DIMENSIONS.

Revisions

No.	Description	Date

Drawn by Author Date 10/13/2025

Checked Checker Job No. MSU# 25-1282 AA# 25031.01

Sheet Contents

GENERAL NOTES, ABBREVIATIONS, LOCATION MAP AND SHEET INDEX

Sheet No.

G100

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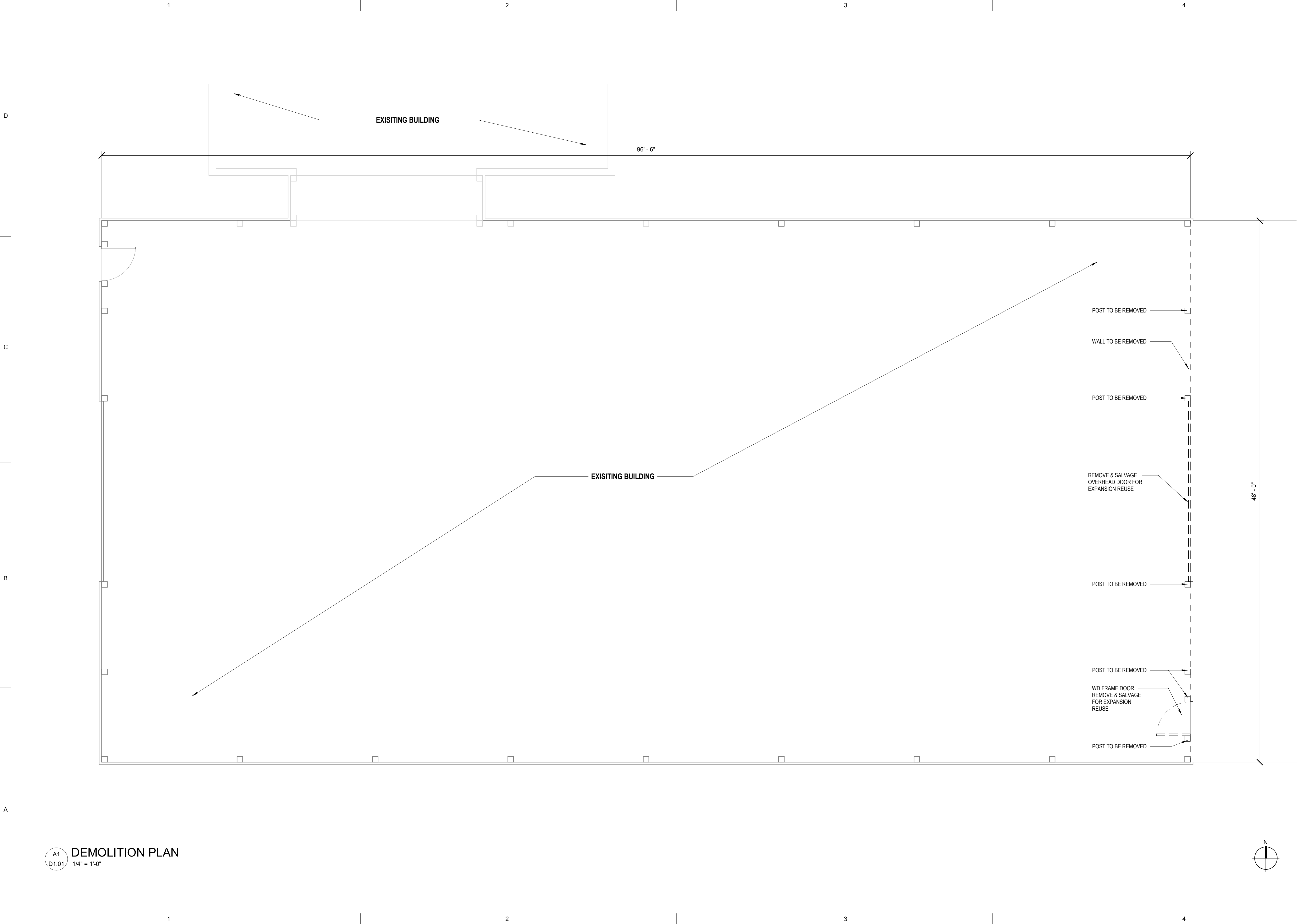
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A1
D1.01
DEMOLITION PLAN
1/4" = 1'-0"



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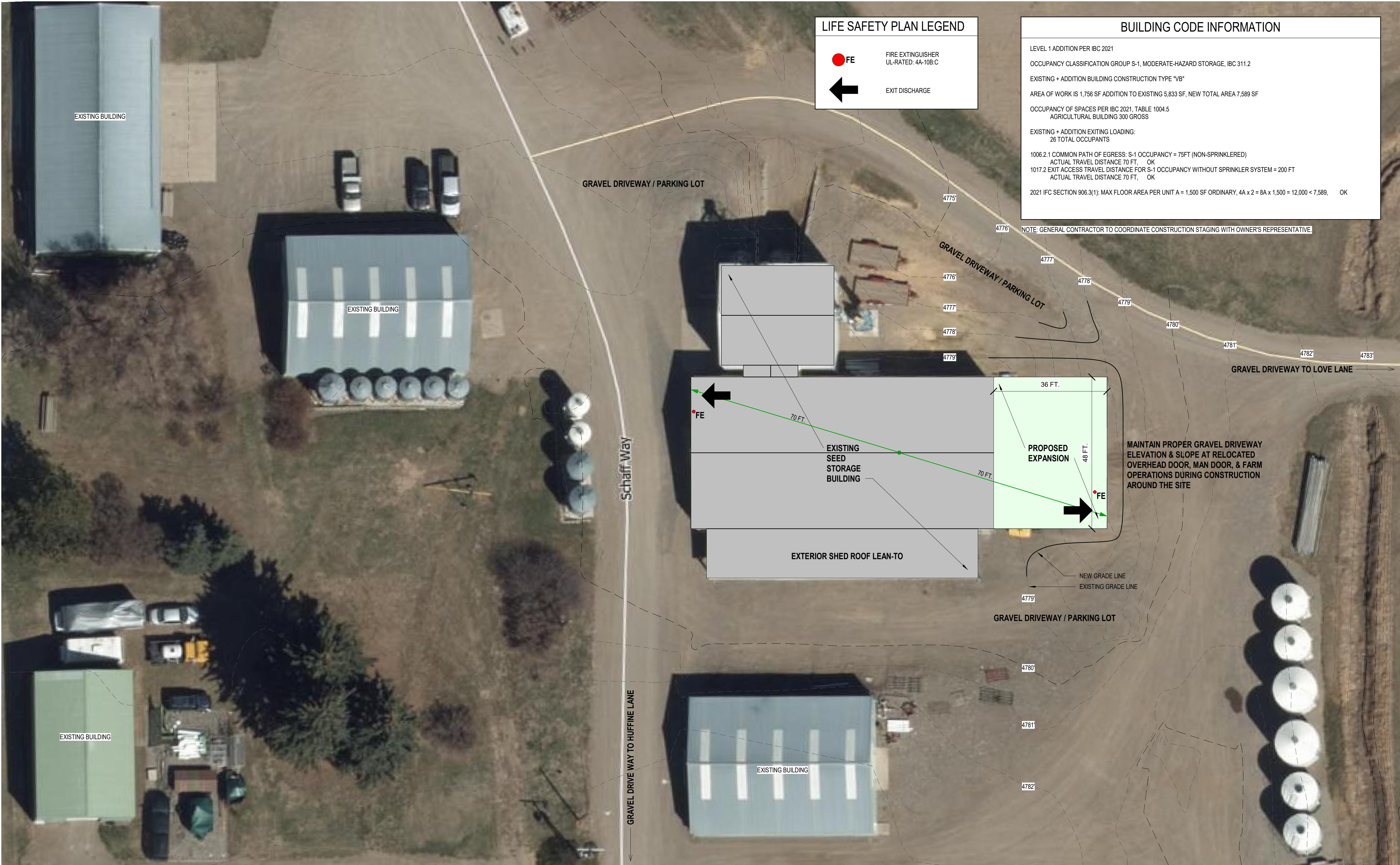
Revisions		
No.	Description	Date

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Sheet Contents
DEMOLITION PLAN

Sheet No.
D1.01

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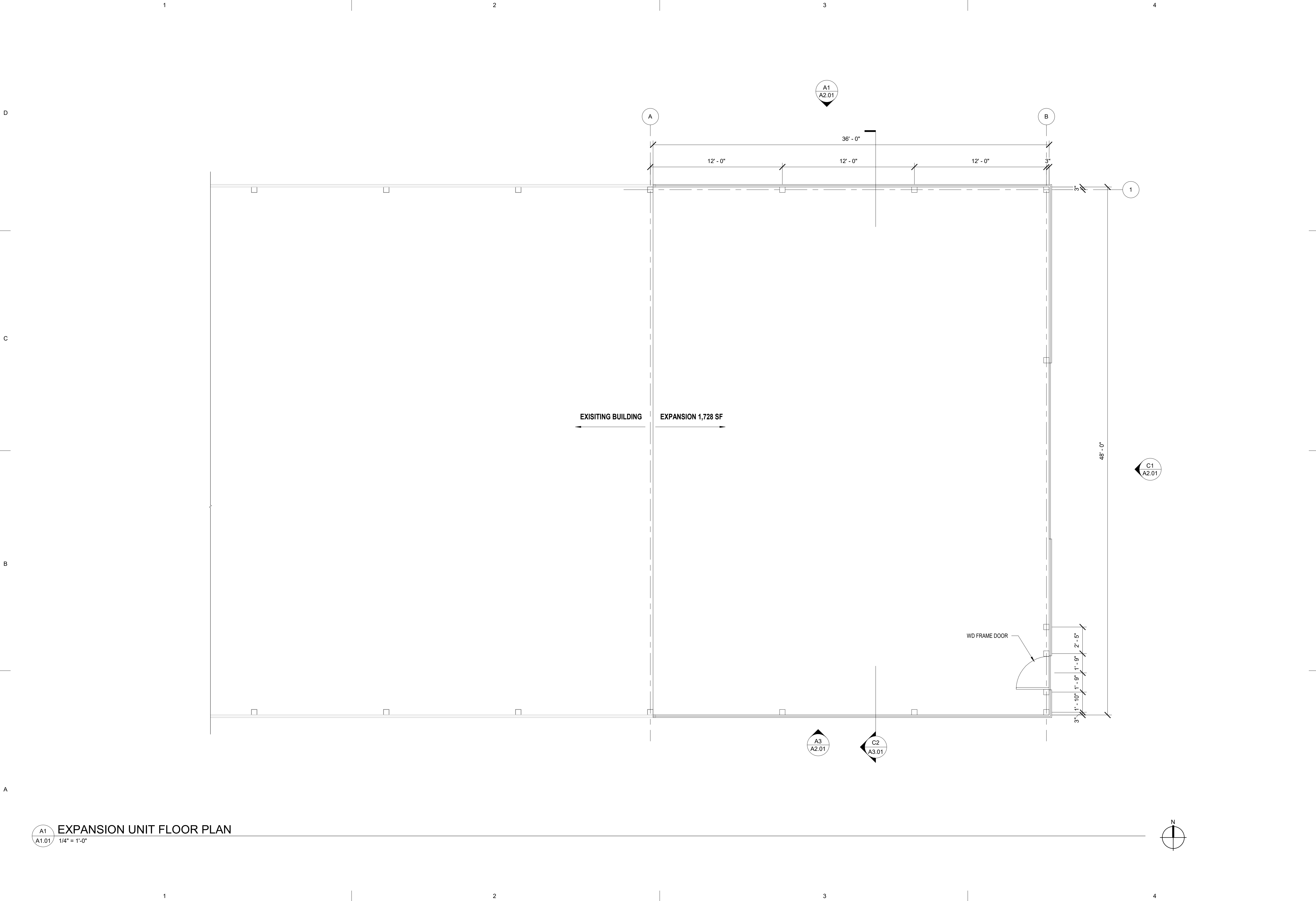


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Sheet Contents SITE PLAN / LIFE SAFETY

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A1
A1.01

EXPANSION UNIT FLOOR PLAN

1/4" = 1'-0"



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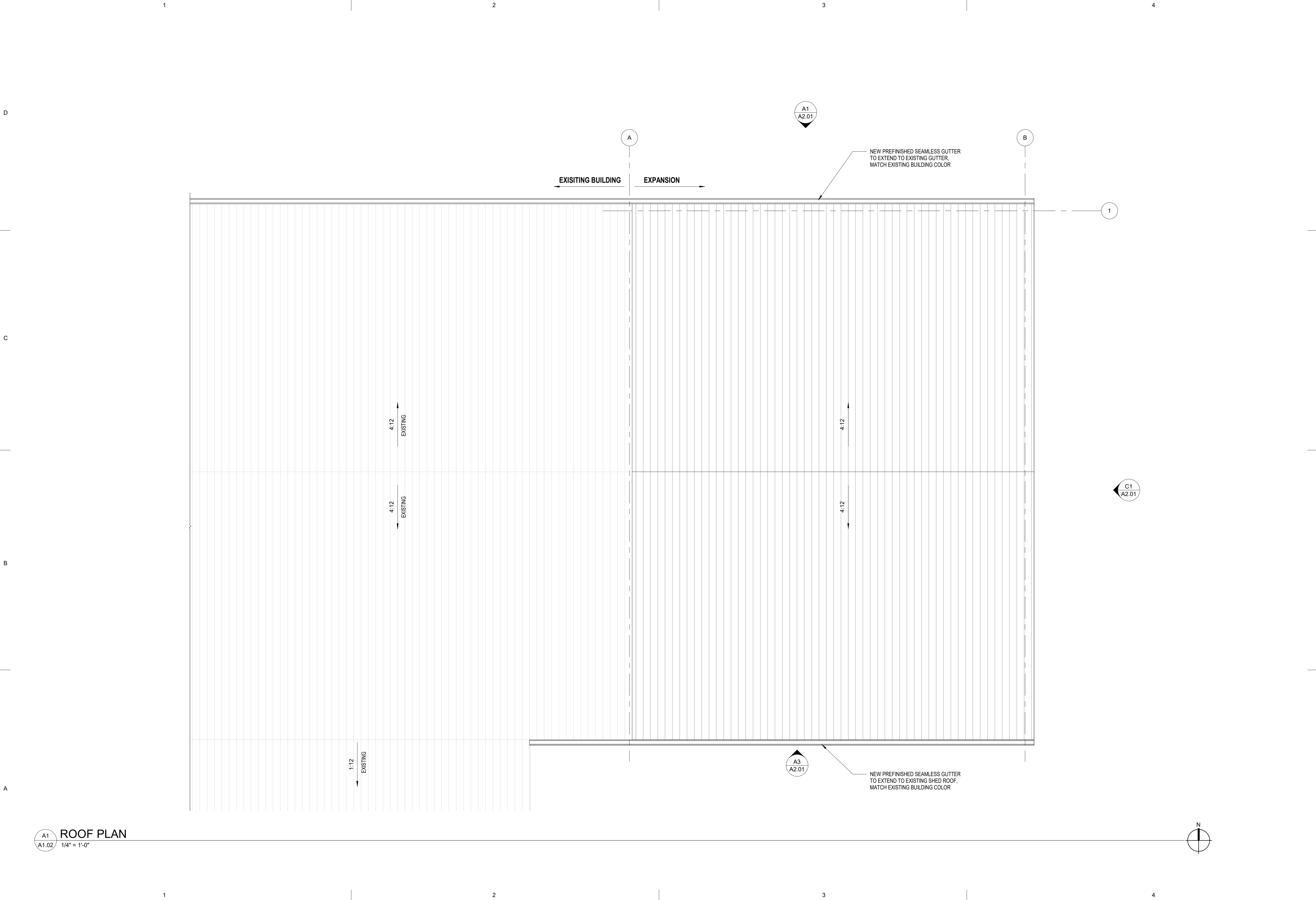
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Sheet Contents FLOOR PLAN

Sheet No.

A1.01

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A1
A1.02
ROOF PLAN
1/4" = 1'-0"



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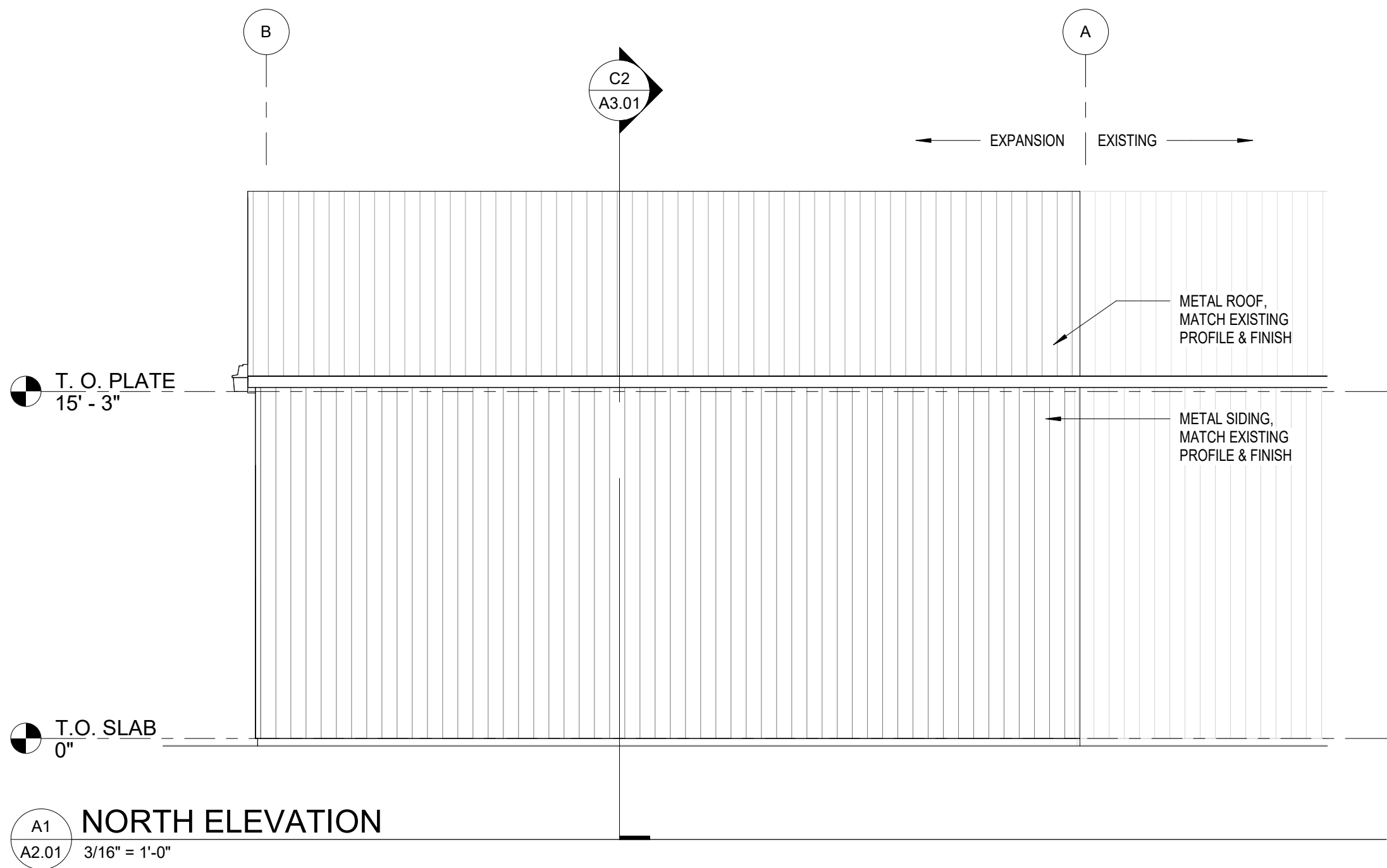
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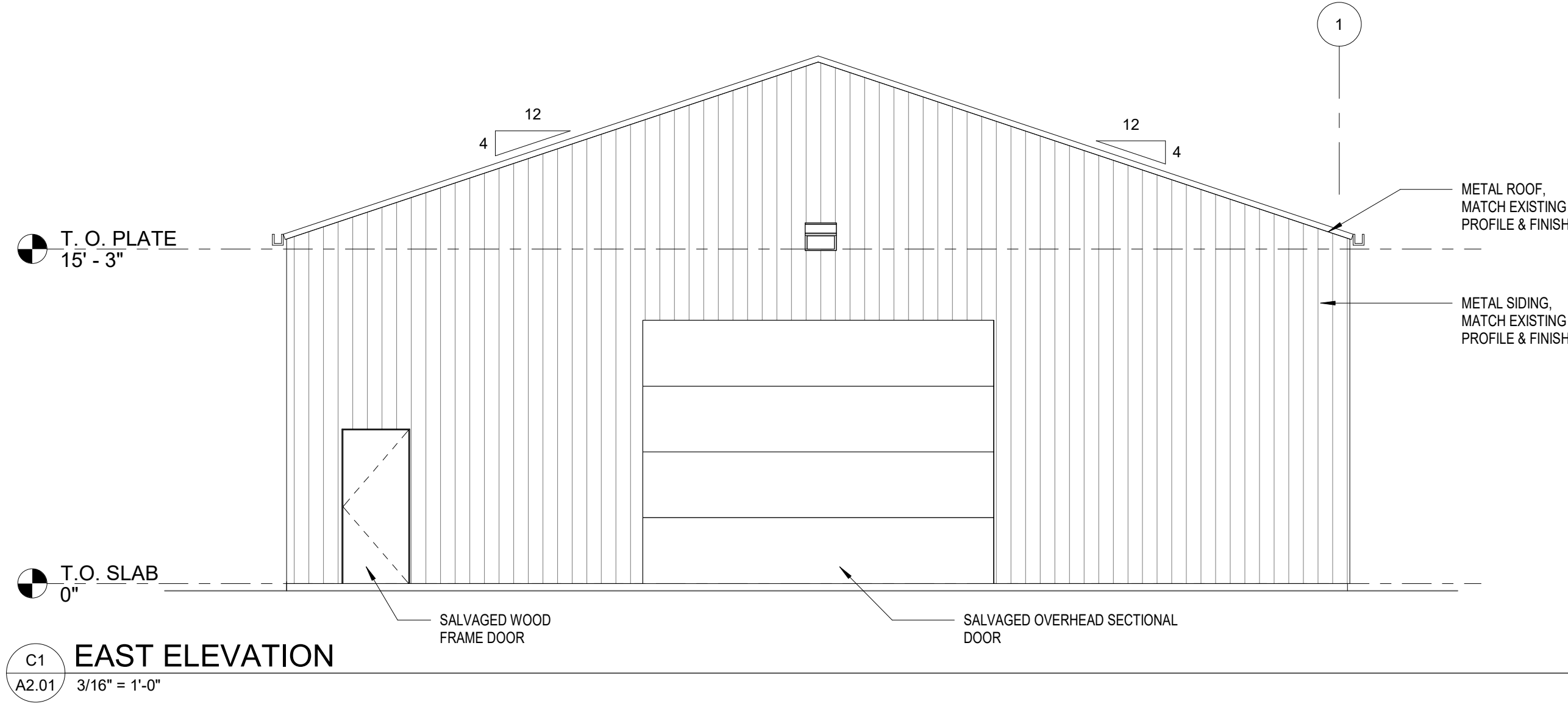
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ROOF PLAN

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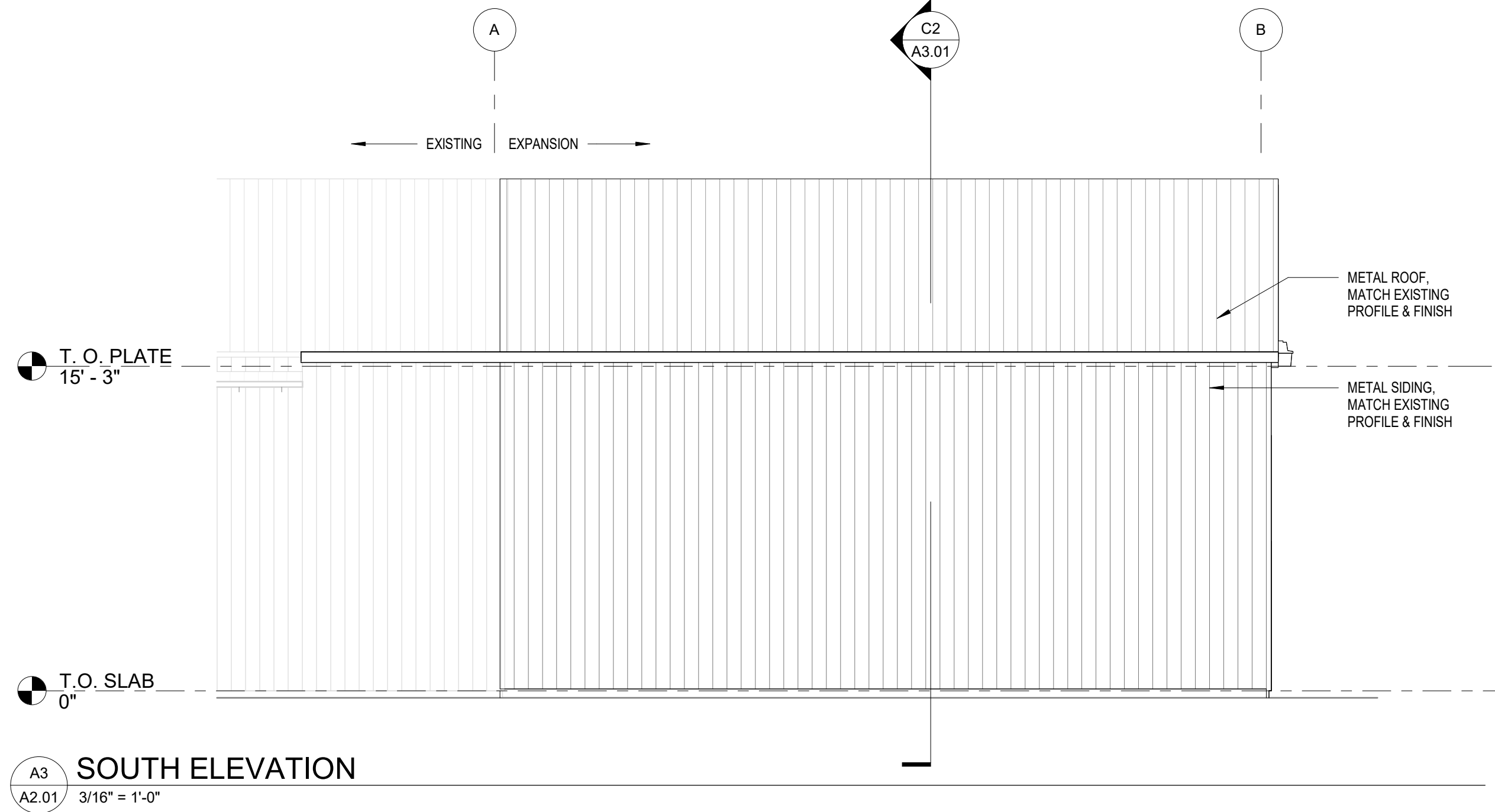
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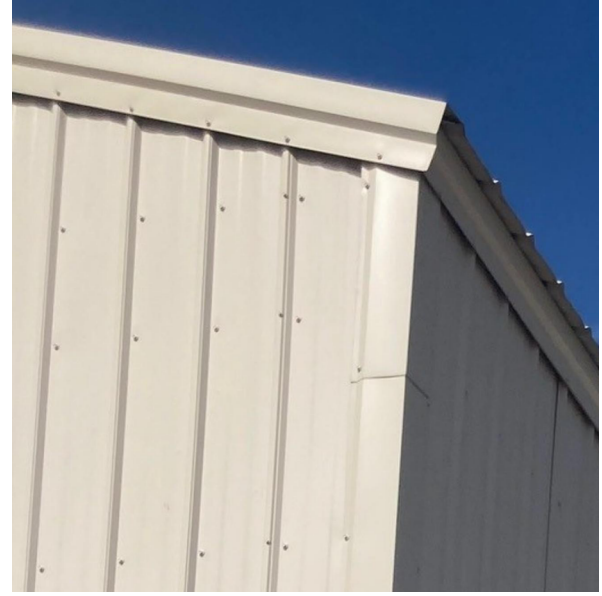
A1
A2.01
NORTH ELEVATION
3/16" = 1'-0"



C1
A2.01
EAST ELEVATION
3/16" = 1'-0"



A3
A2.01
SOUTH ELEVATION
3/16" = 1'-0"



EXISTING BUILDING PHOTO: EXTERIOR CORNER AT ROOF



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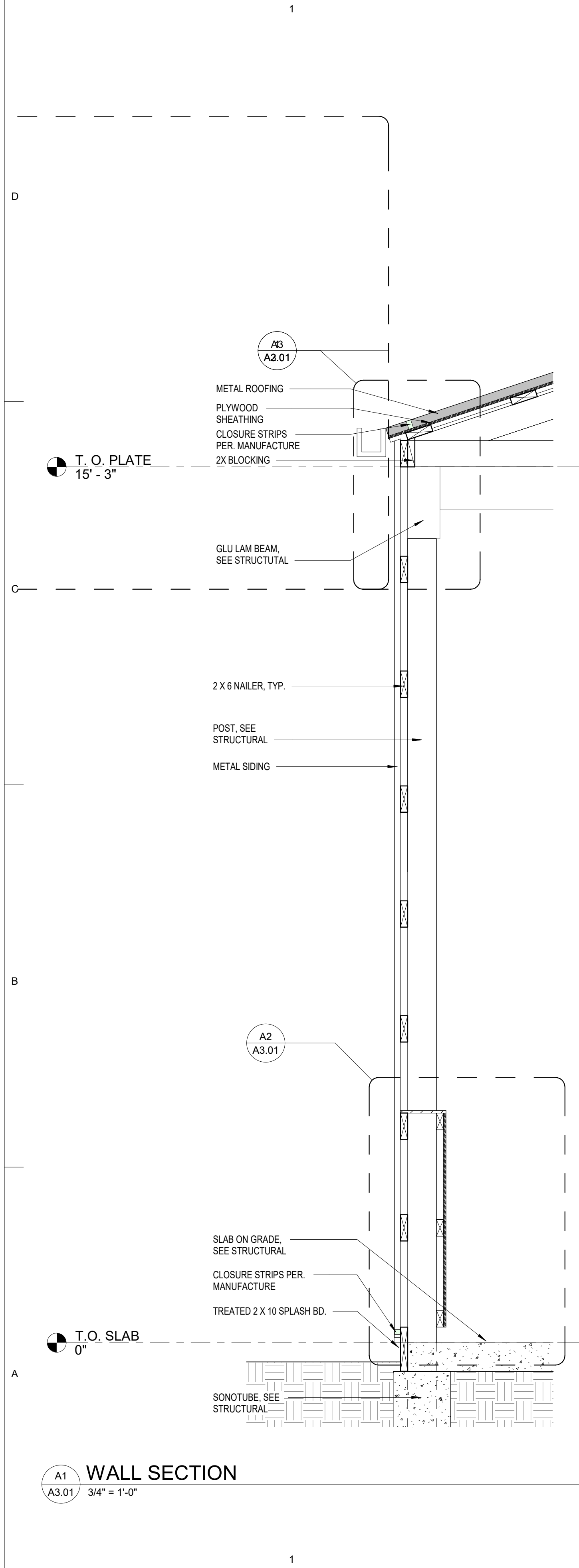
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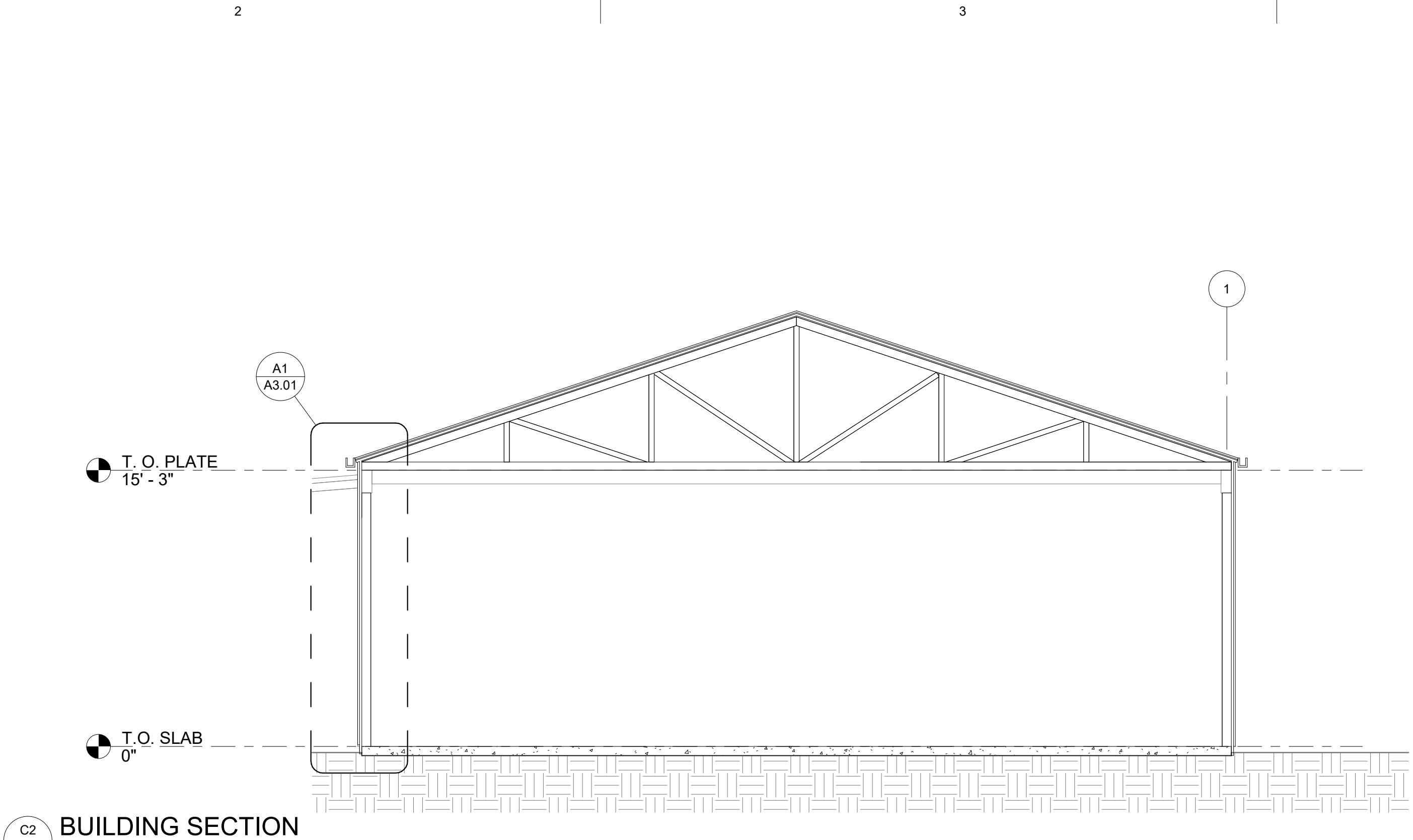
Sheet Contents
EXTERIOR ELEVATIONS

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A2.01

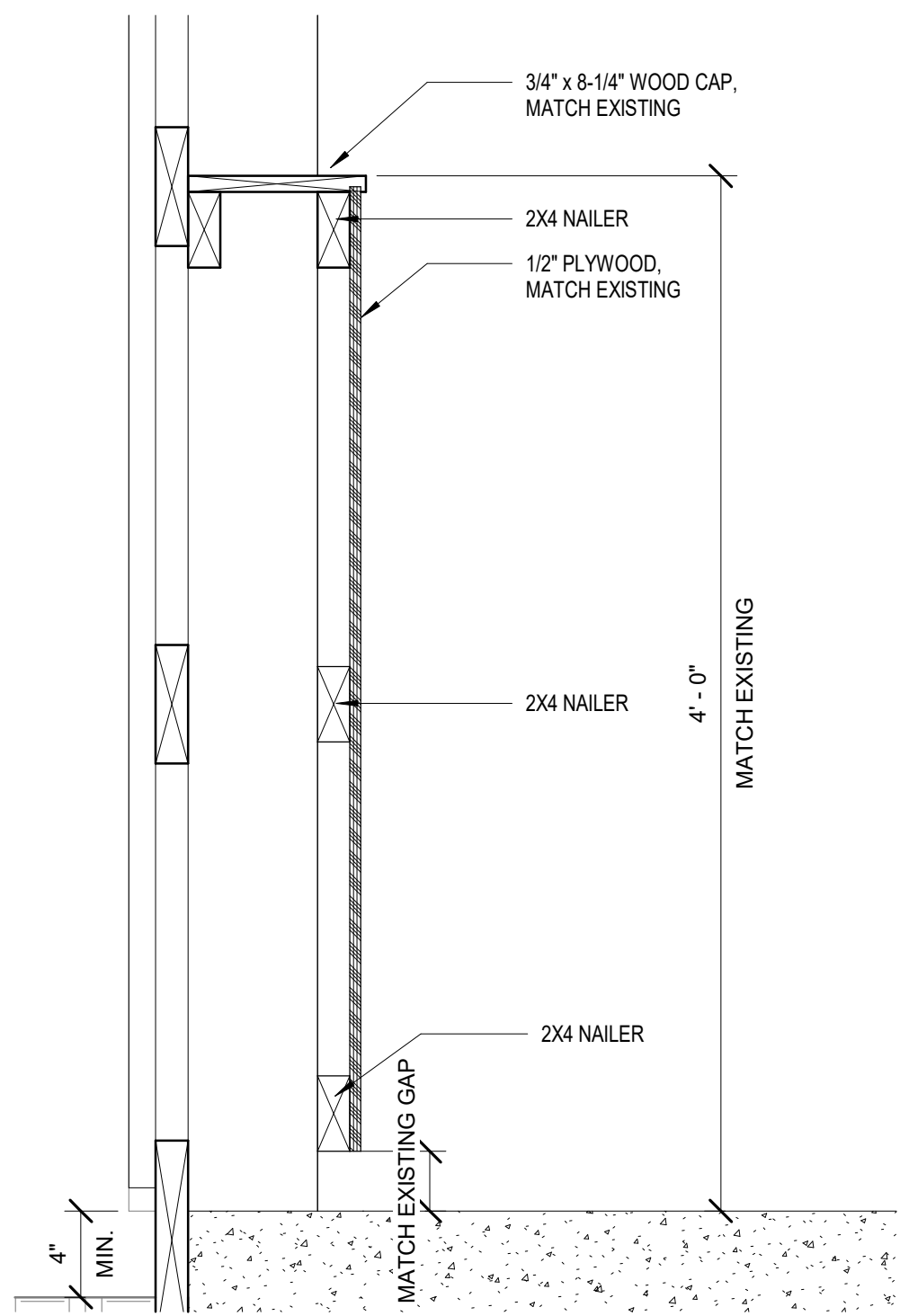
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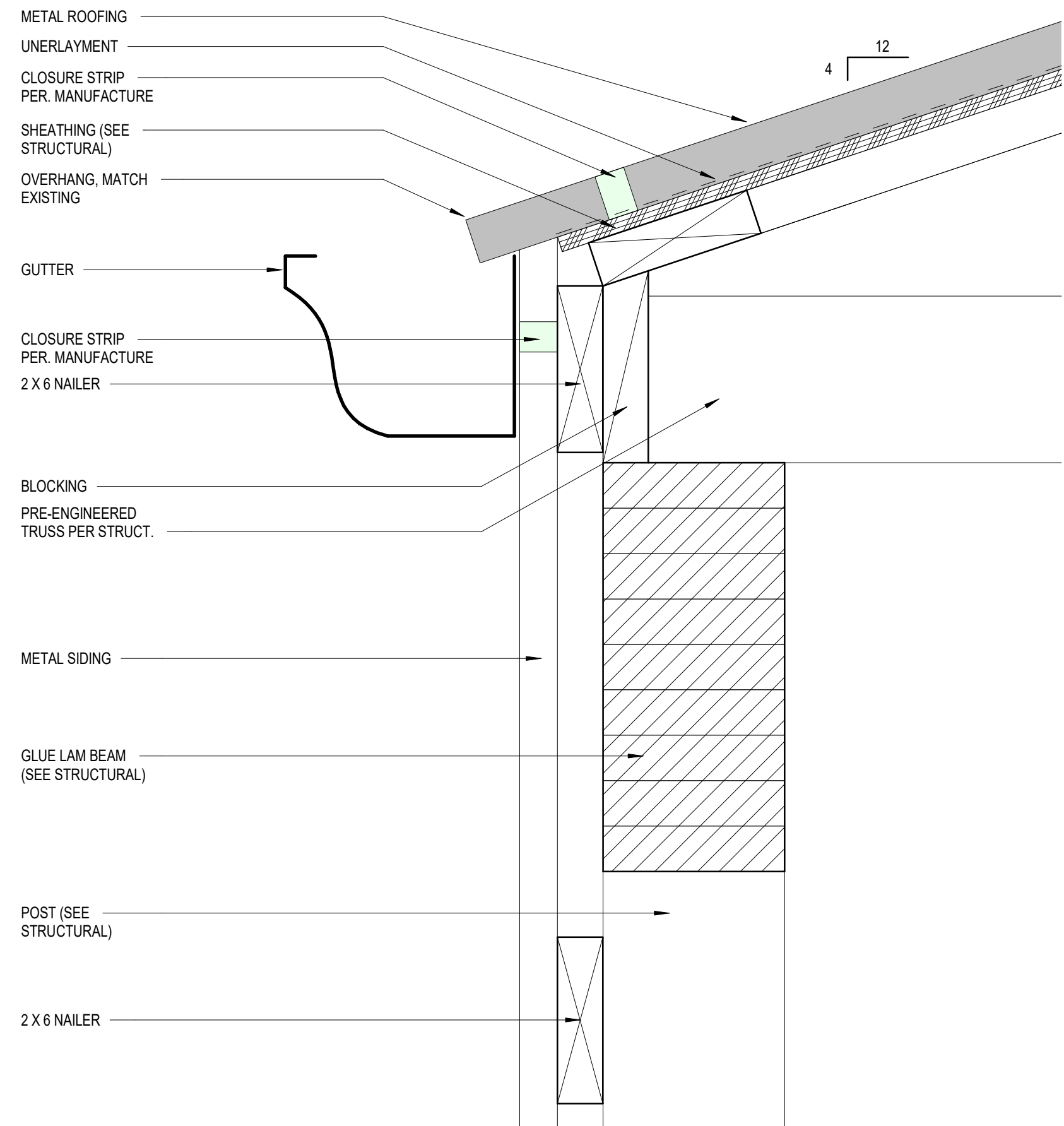
WALL SECTION
3/4" = 1'-0"



BUILDING SECTION
3/16" = 1'-0"



WAINSCOT DETAIL
1 1/2" = 1'-0"



EAVE DETAIL
3" = 1'-0"



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Sheet Contents
SECTIONS & DETAILS

Sheet No.
A3.01

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1		2		3		4	
DIVISION 02 - EXISTING CONDITIONS						SECTION 07 6100 - SHEET METAL ROOFING	
SECTION 02 4100 - DEMOLITION						PART 1 GENERAL	
D	PART 1 GENERAL					1.01 SECTION INCLUDES	
	A. Selective demolition of building elements for alteration purposes.					A. Sheet metal roofing, associated flashings, and underlayment.	
	1.02 RELATED REQUIREMENTS					B. Sealants for joints within sheet metal fabrications.	
	A. Section 01 1000 - Summary: Limitations on Contractor's use of site and premises.					1.02 REFERENCE STANDARDS	
	B. Section 01 1000 - Summary: Description of items to be salvaged or removed for re-use by Contractor.					A. AAMA 611 - Specification for Anodized Architectural Aluminum; 2024.	
	C. Section 01 5000 - Temporary Facilities and Controls: Site fences, security, protective barriers, and waste removal.					B. ASTM A792/A792M - Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process; 2023.	
	D. Section 01 6000 - Product Requirements: Handling and storage of items removed for salvage and relocation.					C. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2018 (Reapproved 2024).	
	E. Section 01 7000 - Execution and Closeout Requirements: Project conditions; protection of bench marks, survey control points, and existing construction to remain; reinstallation of removed products; temporary bracing and shoring.					D. ASTM D1970/D1970M - Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection; 2021.	
	F. Section 31 2200 - Grading: Rough and fine grading.					E. ICC-ES AC188 - Acceptance Criteria for Roof Underlayments; 2023.	
	G. Section 31 2323 - Fill: Fill material for filling holes, pits, and excavations generated as a result of removal operations.					F. SMACNA (ASMM) - Architectural Sheet Metal Manual; 2012.	
	1.03 DEFINITIONS					1.03 SUBMITTALS	
	A. Remove: Detach or dismantle items from existing construction and dispose of them off site, unless items are indicated to be salvaged or reinstalled.					A. Product Data: Provide data on metal types, finishes, characteristics.	
	B. Remove and Salvage: Detach or dismantle items from existing construction in a manner to prevent damage. Clean, package, label and deliver salvaged items to Owner in ready-for-reuse condition.					1.04 QUALITY ASSURANCE	
	C. Remove and Reinstall: Detach or dismantle items from existing construction in a manner to prevent damage. Clean and prepare for reuse and reinstall where indicated.					A. Perform work in accordance with SMACNA (ASMM) requirements and standard details, except as otherwise noted.	
C	D. Existing to Remain: Designation for existing items that are not to be removed and that are not otherwise indicated to be salvaged or reinstalled.					1.05 DELIVERY, STORAGE, AND HANDLING	
	1.04 REFERENCE STANDARDS					A. Stack material to prevent twisting, bending, or abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.	
	A. 29 CFR 1926 - Safety and Health Regulations for Construction; Current Edition.					B. Prevent contact with materials that could cause discoloration or staining.	
	B. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations; 2022, with Errata (2021).					1.06 WARRANTY	
	PART 3 EXECUTION					A. Provide 5-year manufacturer warranty for _____. Warranty shall include degradation of metal finish.	
	2.01 DEMOLITION					PART 2 PRODUCTS	
	A. Remove other items indicated, for salvage, relocation, and recycling.					2.01 MANUFACTURERS	
	B. Fill excavations, open pits, and holes in ground areas generated as result of removals, using specified fill; compact fill as specified in Section 31 2200.					A. Sheet Metal Roofing Manufacturers:	
	2.02 GENERAL PROCEDURES AND PROJECT CONDITIONS					1. Construction Metal Products, Inc: www.cmpmetalsystems.com/#sle.	
	A. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.					2. Or approved Equal.	
	1. Obtain required permits.					2.02 SHEET MATERIALS	
	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.					A. Aluminum-Zinc Alloy Coated Steel Sheet (Galvalume): ASTM A792/A792M, with AZ55/AZM165 coating designation; 24 gauge, 0.0239 inch thick.	
	3. Provide, erect, and maintain temporary barriers and security devices.					2.03 FABRICATION	
	4. Conduct operations to minimize effects on and interference with adjacent structures and occupants.					A. Form sections true to shape, accurate in size, square, and free from distortion or defects.	
	5. Do not close or obstruct roadways or sidewalks without permits from authority having jurisdiction.					B. Fabricate cleats of same material as sheet, thickness to match roofing sheet, interlockable with sheet.	
	6. Conduct operations to minimize obstruction of public and private entrances and exits. Do not obstruct required exits at any time. Protect persons using entrances and exits from removal operations.					C. Fabricate starter strips, interlockable with sheet.	
	7. Obtain written permission from owners of adjacent properties when demolition equipment will traverse, infringe upon, or limit access to their property.					D. Form pieces in longest practical lengths.	
	B. Do not begin removal until receipt of notification to proceed from Owner.					E. Hem exposed edges on underside 1/2 inch; miter and seam corners.	
	C. Protect existing structures and other elements to remain in place and not removed.					F. Fabricate corners from single piece with minimum 18-inch long legs; seam for rigidity, seal with sealant.	
	1. Provide bracing and shoring.					2.04 FINISHES	
	2. Prevent movement or settlement of adjacent structures.					A. Clear Anodized Finish: AAMA 611 AA-M12C22A41 Class I clear anodic coating not less than 0.7 mil, 0.0007 inch thick.	
	3. Stop work immediately if adjacent structures appear to be in danger.					B. Color: As selected by Architect from manufacturer's standard colors. To match as closely as possible to existing building.	
	D. Hazardous Materials:					2.05 ACCESSORIES	
	1. If hazardous materials are discovered during removal operations, stop work and notify Architect and Owner; hazardous materials include regulated asbestos containing materials, lead, PCBs, and mercury.					A. Fasteners: Galvanized steel, with soft neoprene washers.	
	E. Perform demolition in a manner that maximizes salvage and recycling of materials.					B. Underlayment: Synthetic non-asphaltic sheet, intended by manufacturer for self adhered fastened roofing underlayment.	
	1. Dismantle existing construction and separate materials.					1. Minimum Requirements: Comply with requirements of ICC-ES AC188 for non-self-adhesive sheet.	
	2. Set aside reusable, recyclable, and salvageable materials; store and deliver to collection point or point of reuse.					2. Ultraviolet Resistance and Weatherability: Approved in writing by manufacturer for exposure to weather for minimum of 12 months.	
	2.03 EXISTING UTILITIES					3. Low Temperature Flexibility: Passing test specified in ASTM D1970/D1970M.	
	A. Coordinate work with utility companies. Notify utilities before starting work, comply with their requirements, and obtain required permits.					4. Fasteners: As specified by manufacturer and building code qualification report or approval, if any.	
	B. Protect existing utilities to remain from damage.					C. Concealed Sealants: Non-curing butyl sealant or butyl tape.	
	C. Do not disrupt public utilities without permit from authority having jurisdiction.					D. Exposed Sealants: ASTM C920 elastomeric sealant, with minimum movement capability as recommended by manufacturer for sealed substrates; color to match adjacent material.	
	D. Do not close, shut off, or disrupt existing life safety systems that are in use without at least 7 days prior written notification to Owner.					PART 3 EXECUTION	
	E. Do not close, shut off, or disrupt existing utility branches or take-offs that are in use without at least 3 days prior written notification to Owner.					3.01 EXAMINATION	
	F. Locate and mark utilities to remain; mark using highly visible tags or flags, with identification of utility type; protect from damage due to subsequent construction, using substantial barricades if necessary.					A. Inspect roof deck to verify deck is clean and smooth, free of depressions, waves, or projections, properly sloped to drains.	
A	G. Remove exposed piping, valves, meters, equipment, supports, and foundations of disconnected and abandoned utilities.					B. Verify deck is dry and free of snow or ice. Verify joints in wood deck are solidly supported and fastened.	
	2.04 SELECTIVE DEMOLITION FOR ALTERATIONS					C. Verify correct placement of wood nailers and insulation positioning between nailers.	
	A. Existing construction and utilities indicated on drawings are based on casual field observation and existing record documents only.					D. Verify roofing termination and base flashings are in place, sealed, and secure.	
	1. Verify construction and utility arrangements are as indicated.					3.02 PREPARATION	
	2. Report discrepancies to Architect before disturbing existing installation.					A. Install starter and edge strips, and cleats before starting installation.	
	3. Beginning of demolition work constitutes acceptance of existing conditions that would be apparent upon examination prior to starting demolition.					B. Back paint concealed metal surfaces and surfaces in contact with dissimilar metals with protective backing paint to a minimum dry film thickness of 15 mil, 0.015 inch.	
	B. Remove existing work as indicated and required to accomplish new work.					3.03 INSTALLATION	
	1. Remove items indicated on drawings.						
1		2		3		4	



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PRELIMINARY
NOT FOR
CONSTRUCTION

MONTANA STATE UNIVERSITY
POST FARM SEED STORAGE
EXPANSION
8431 HUFFINE LANE, BOZEMAN, MT 59718

Revisions		
No.	Description	Date

Drawn by Author	Date 10/13/2025
Checked Checker	Job No. MSU# 25-1282 AAI# 25031.01

Sheet Contents SPECIFICATIONS

Sheet No.
A4.01

Autodesk Docs/25031.01 MSU POST FARM SEED STORAGE EXPANSION/MSU POST FARM SEED STORAGE EXPANSION.rvt

Plot Date Time: 10/13/2025 4:31:17 PM

	1	2	3	4
D	A. Roofing: 1. Apply underlayment over entire roof area, as follows: a. Apply in single layer, laid perpendicular to slope; weather lap edges 2 inches and nail in place. b. Use butyl tape to seal concealed joints between metal roofing surfaces.			
	END OF SECTION			
C	SECTION 07 7123 - MANUFACTURED GUTTERS AND DOWNSPOUTS			
	PART 1 GENERAL			
B	1.01 SECTION INCLUDES A. Pre-finished aluminum gutters and downspouts. B. Precast concrete splash pads.			
	1.02 RELATED REQUIREMENTS A. Section 07 6100 - Sheet Metal Roofing.			
A	1.03 REFERENCE STANDARDS A. AAMA 611 - Specification for Anodized Architectural Aluminum; 2024. B. AAMA 2603 - Voluntary Specification, Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix); 2022. C. ASTM B209/B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate; 2021a. D. SMACNA (ASMM) - Architectural Sheet Metal Manual; 2012.			
	1.04 ADMINISTRATIVE REQUIREMENTS A. Comply with SMACNA (ASMM) for sizing components for rainfall intensity determined by a storm occurrence of 1 in 5 years. B. Comply with applicable code for size and method of rain water discharge.			
	1.05 SUBMITTALS A. See Section 01 3000 - Administrative Requirements for submittal procedures. B. Product Data: Provide data on prefabricated components.			
	1.06 DELIVERY, STORAGE, AND HANDLING A. Stack material to prevent twisting, bending, or abrasion, and to provide ventilation. Slope to drain. B. Prevent contact with materials that could cause discoloration, staining, or damage.			
	PART 2 PRODUCTS			
	2.01 MANUFACTURERS A. Gutters and Downspouts: 1. Alside, Inc: www.alside.com/#sle. 2. Or Approved Manufacturer..			
	2.02 MATERIALS A. Pre-Finished Aluminum Sheet: ASTM B209/B209M; 0.032 inch thick. 1. Finish: Plain, shop pre-coated with acrylic coating. 2. Color: As selected from manufacturer's standard colors. Closest to Existing Building Color.			
	2.03 COMPONENTS A. Gutters: Match Existing rectangular style profile. B. Downspouts: CDA square profile. Match Existing			
	2.04 FABRICATION A. Form gutters and downspouts of profiles indicated. B. Fabricate with required connection pieces. C. Form sections square, true, and accurate in size, in maximum possible lengths, free of distortion or defects detrimental to appearance or performance. Allow for expansion at joints. D. Hem exposed edges of metal. E. Fabricate gutter and downspout accessories; seal watertight.			
	2.05 FINISHES A. Class I Clear Anodized Finish: AAMA 611 AA-M12C22A41, clear anodic coating not less than 0.7 mil, 0.0007 inch thick. B. Modified silicone polyester coating: Baked enamel system, comply with AAMA 2603.			
	2.06 ACCESSORIES A. Splash Pads: Precast concrete type, profiles size(s) as indicated; minimum 3,000 psi compressive strength at 28 days, with minimum 5 percent air entrainment.			
	PART 3 EXECUTION			
	3.01 EXAMINATION A. Verify existing conditions before starting work. B. Verify that surfaces are ready to receive work.			
	3.02 INSTALLATION A. Install gutters, downspouts, and accessories in accordance with manufacturer's instructions. B. Sheet Metal: Join lengths with formed seams sealed watertight. Flash and seal gutters to downspouts and accessories. C. Slope gutters 1/4" inch per 10 feet , ____ percent minimum.			
	END OF SECTION			
	1	2	3	4

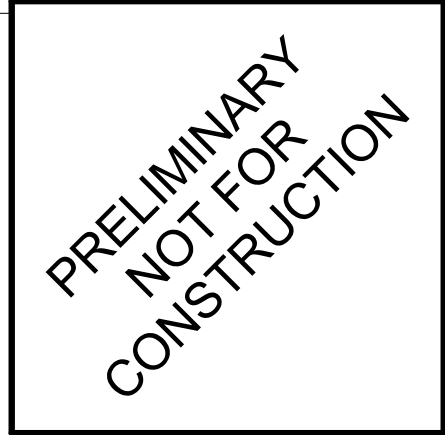


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Sheet Contents
SPECIFICATIONS

Sheet No.

A4.02

C:\Users\sam.wilkes\OneDrive - Tamarack Grove Engineering\Documents\25-27025_MSU Seed Barn Expansion_Bozeman, MT_RV725_sam.wilkes\TKMM.rvt

Plot Date Time: 9/29/2025 3:54:40 PM

1	2	3	4
1 1. THE DESIGN AND CONSTRUCTION OF THIS PROJECT IS GOVERNED BY THE INTERNATIONAL BUILDING CODE 2021 EDITION, AS MODIFIED BY THE STATE AND LOCAL JURISDICTION REQUIREMENTS, AND IS HEREAFTER REFERRED TO AS THE "GOVERNING CODE". WHERE A STATE SPECIFIC CODE IS THE GOVERNING CODE, ALL REFERENCES TO THE IBC ARE SUPERCEDED BY THE APPLICABLE STATE CODE CHAPTERS/SECTIONS.. a. ALL DESIGN AND CONSTRUCTION CODES AND REFERENCED STANDARDS REFER TO THE EDITIONS REFERENCED BY THE GOVERNING BUILDING CODE AT THE TIME OF APPROVAL. REFER TO CHAPTER 35 OF THE GOVERNING CODE FOR THE REFERENCED STANDARDS. b. RISK CATEGORY: II a. ROOF DEAD LOAD: 15 PSF b. ROOF LIVE LOAD: 12 PSF c. GROUND SNOW LOAD, (Pg): 46 PSF d. FLAT ROOF SNOW LOAD, (Pf): 41 PSF e. SNOW IMPORTANCE FACTOR, (Is): 0.80 f. SNOW EXPOSURE FACTOR, (Ce): 1.0 g. THERMAL FACTOR, (Ci): 1.2 h. SLOPE FACTOR(S), (Cs): 0.297 i. SEE FRAMING PLANS FOR DRIFT LOCATION, WIDTHS AND LOADS IF APPLICABLE. B. FLOOR DESIGN DATA a. FLOOR DEAD LOAD: 78 PSF b. FLOOR LIVE LOAD: 125 PSF C. EARTHQUAKE DESIGN DATA a. MAPPED SPECTRAL RESPONSE ACC. FOR SHORT PERIOD, (Ss): 0.73 G b. MAPPED SPECTRAL RESPONSE ACC. FOR 1-SEC PERIOD, (S1): 0.23 G c. DESIGN SPECTRAL RESPONSE ACC. FOR SHORT PERIOD, (Sds): 0.593 G d. DESIGN SPECTRAL RESPONSE ACC. FOR 1-SEC PERIOD, (Sd1): 0.325 G e. SITE CLASS: D f. SEISMIC DESIGN CATEGORY: D g. SEISMIC IMPORTANCE FACTOR, (Ie): 1.0 h. SEISMIC RESPONSE COEFFICIENT(S), (Cs): 0.198 i. RESPONSE MODIFICATION COEFFICIENT(S), (R): 3.0 j. BASIC SEISMIC-FORCE-RESISTING-SYSTEM(S): LIGHT FRAME WALLS WITH GIRTS k. DESIGN BASE SHEAR(S): N/A l. ANALYSIS PROCEDURE USED: EQUIVALENT LATERAL FORCE PROCEDURE D. WIND DESIGN DATA a. ULTIMATE DESIGN WIND SPEED (V): 115 MPH b. NOMINAL DESIGN WIND SPEED (VASD): 89.1 MPH c. WIND EXPOSURE: C d. INTERNAL PRESSURE COEFFICIENT(S): ± 0.18 E. SOILS DESIGN DATA a. ALLOWABLE SOIL BEARING PRESSURE: 1500 PSF b. MINIMUM FROST/BEARING DEPTH: 36 IN c. GEOTECHNICAL REPORT PREPARED BY, (REPORT #): N/A F. SPECIAL DESIGN DATA a. SEE PLANS FOR ALL EQUIPMENT DESIGN WEIGHTS.	2 A. GENERAL REQUIREMENTS 1. THE TERM CONTRACTOR (G.C.) AS USED IN THESE DOCUMENTS REFERS TO THE CONTRACTOR / CONSTRUCTION MANAGER IN RESPONSIBLE CHARGE OF THE PROJECT IN TERMS OF COORDINATION, SCHEDULING, SUBCONTRACTOR COORDINATION, ETC. THE TERM IS REFERENCEING THE ENTITY THAT COORDINATES THE WORK OF OTHER TRADES. 2. ALL REFERENCED STANDARDS, SUCH AS CODES, SPECIFICATIONS, AND OTHER PUBLICATIONS NOTED HEREIN, ARE INTENDED TO REFER TO THE EDITION OF SAID STANDARD AS REFERENCED BY THE GOVERNING CODE OR THE LATEST EDITION PUBLISHED AS OF THE DATE ON THE CONSTRUCTION DOCUMENTS. 3. THE CONSTRUCTION DOCUMENTS ARE INTENDED TO SHOW THE GENERAL CHARACTER AND EXTENT OF THE PROJECT ARE NOT INTENDED TO SHOW ALL DETAILS OF WORK. DETAILS, SECTIONS AND NOTES SHOWN ON DRAWINGS ARE INTENDED TO BE TYPICAL AND SHALL APPLY TO SIMILAR CONDITIONS ELSEWHERE, U.N.O. IF LOCATIONS ARE FOUND WHERE NO TYPICAL DETAIL, TYPICAL SCHEDULE OR SPECIFIC DETAIL APPLIES, NOTIFY E.O.R. 4. DIMENSIONS ARE NOT TO BE DERIVED BY SCALING THE CONSTRUCTION DOCUMENTS FOR LOCATIONS, QUANTITY TAKEOFFS, MATERIAL SIZES, ETC. IF THERE IS A QUESTION ABOUT DIMENSIONS, CONTACT THE ARCHITECT OR E.O.R. FOR CLARIFICATION. 5. WHERE CONFLICTS EXIST BETWEEN CONSTRUCTION DOCUMENTS, THE STRICTEST REQUIREMENTS AS INDICATED BY THE E.O.R. SHALL GOVERN. 6. THE CONTRACTOR SHALL COORDINATE ARCHITECTURAL, MECHANICAL, ELECTRICAL, CIVIL, PLUMBING AND DEFERRED SUBMITTAL DRAWINGS TO HAVE A COMPLETE SCOPE OF WORK INVOLVED IN THIS PROJECT. REFER TO PROJECT SPECIFICATIONS ISSUED AS PART OF THE CONSTRUCTION DOCUMENTS FOR INFORMATION SUPPLEMENTAL TO THESE DRAWINGS. 7. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS AT THE SITE. CONFLICTS BETWEEN THE CONSTRUCTION DOCUMENTS AND ACTUAL SITE CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND E.O.R. PRIOR TO PROCEEDING WITH CONSTRUCTION. 8. THE CONTRACTOR IS RESPONSIBLE FOR ANY DEVIATIONS FROM THE CONSTRUCTION DOCUMENTS, UNLESS SUCH CHANGES ARE AUTHORIZED IN WRITING BY THE E.O.R. 9. THE CONTRACTOR SHALL PERFORM ALL CONSTRUCTION FOR THE PROJECT IN A MANNER AND SEQUENCE THAT ARE BASED ON ACCEPTED INDUSTRY STANDARDS THAT RECOGNIZE THE INTERACTION OF THE COMPONENTS THAT COMPRISE THE STRUCTURE WITHOUT CAUSING DISTRESS, UNANTICIPATED MOVEMENTS OR IRREGULAR LOAD PATHS AS A RESULT OF THE CONSTRUCTION MEANS AND METHODS EMPLOYED. 10. THE CONTRACTOR IS RESPONSIBLE FOR THE MEANS OF CONSTRUCTION AND THE STRENGTH AND STABILITY OF THE STRUCTURE DURING CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE SAFE AND ADEQUATE SHORING, BRACING AND TEMPORARY STRUCTURAL STABILITY THROUGHOUT CONSTRUCTION. E.O.R. IS RESPONSIBLE ONLY FOR THE PRIMARY STRUCTURE IN ITS COMPLETED FORM. 11. FALL PROTECTION SUPPORT FROM PERIMETER OF THE STRUCTURE SHALL BE PROVIDED IN ACCORDANCE WITH OSHA REQUIREMENTS AS REQUIRED. 12. THE CONTRACTOR IS RESPONSIBLE TO ENFORCE ALL APPLICABLE SAFETY CODES AND REGULATIONS DURING ALL PHASES OF CONSTRUCTION. 13. NO STRUCTURAL MEMBER SHALL BE CUT OR NOTCHED OR OTHERWISE REDUCED IN STRENGTH UNLESS APPROVED BY THE E.O.R. 14. CONSTRUCTION LOADS AND MATERIALS SHALL BE SPREAD OUT WHEN PLACED ON FRAMED FLOORS OR ROOFS. LOADS ON THE STRUCTURE DURING CONSTRUCTION SHALL NOT EXCEED THE DESIGN LOADS AS NOTED IN THE DESIGN CRITERIA. 15. ALTERNATE PRODUCTS OF SIMILAR STRENGTH, NATURE AND FORM FOR SPECIFIED ITEMS MAY BE SUBMITTED WITH ADEQUATE TECHNICAL DOCUMENTATION TO THE E.O.R. FOR REVIEW. ALTERNATE MATERIALS THAT ARE SUBMITTED WITHOUT ADEQUATE TECHNICAL DOCUMENTATION OR THAT SIGNIFICANTLY DEViate FROM THE DESIGN INTENT OF MATERIALS SPECIFIED MAY BE RETURNED WITHOUT REVIEW. ALTERNATES THAT REQUIRE SUBSTANTIAL EFFORT TO REVIEW WILL NOT BE REVIEWED UNLESS AUTHORIZED BY THE OWNER. 16. ANCHORAGE AND SUPPORT OF MECHANICAL AND ELECTRICAL EQUIPMENT, DUCTWORK AND PIPING IS TO BE DESIGN BY OTHERS. ALL SUSPENDED EQUIPMENT IS TO BE SECURED WITH LATERAL BRACING BY OTHERS. 17. SITE VISITS BY REPRESENTATIVES OF THE E.O.R. DO NOT INCLUDE INSPECTION OF CONSTRUCTION MEANS AND METHODS. SITE VISIT DURING CONSTRUCTION ARE NOT CONTINUOUS AND DETAILED INSPECTION SERVICES, (WHICH ARE TO BE PERFORMED BY OTHERS). OBSERVATIONS DO NOT GUARANTEE CONTRACTORS PERFORMANCE AND ARE NOT TO BE CONSTRUED AS SUPERVISION OR VERIFICATION OF CONSTRUCTION. B. SHOP DRAWING AND DEFERRED SUBMITTAL REQUIREMENTS A. ALL SHOP DRAWINGS AND DEFERRED SUBMITTAL DOCUMENTS SHALL BE SUBMITTED TO THE E.O.R. FOR REVIEW AND APPROVAL. SUBMITTED DOCUMENTS SHALL BEAR THE CONTRACTORS REVIEW STAMP WITH THE CHECKERS INITIALS BEFORE BEING SUBMITTED TO E.O.R. FOR APPROVAL. B. ALL DIFFERED SUBMITTALS SHALL BE STAMPED AND SIGNED BY AN ENGINEER REGISTERED IN THE APPROPRIATE JURISDICTION OF THE PROJECT AND IT SHALL BE THE SOLE RESPONSIBILITY OF THE SPECIALTY ENGINEER INCLUDING, BUT NOT LIMITED TO, DESIGN, COORDINATION, DIMENSIONS AND INTENDED PURPOSE. C. REVIEW OF SUBMITTED DOCUMENTS BY THE E.O.R. SHALL BE FOR GENERAL CONFORMANCE TO THE DESIGN SET FORTH ON THE CONSTRUCTION DOCUMENTS AND SPECIFICATIONS. D. DEFERRED SUBMITTAL ITEMS SHALL NOT BE FABRICATED OR INSTALLED UNTIL THE DESIGN AND SUBMITTAL DOCUMENTS HAVE BEEN REVIEWED AND APPROVED BY THE E.O.R. AND BUILDING OFFICIAL. E. WHERE DIMENSIONS AND ELEVATIONS OF EXISTING CONSTRUCTION COULD AFFECT THE NEW CONSTRUCTION, IT IS THE CONTRACTORS RESPONSIBLY TO MAKE FIELD MEASUREMENTS IN TIME FOR THEIR INCORPORATION INTO THE SHOP DRAWINGS. F. ALL DEFERRED SUBMITTAL DOCUMENTS SHALL INCLUDE A QUALITY ASSURANCE PROGRAM FOR SPECIAL INSPECTIONS WHERE REQUIRED BY THE GOVERNING CODE. C. STRUCTURAL OBSERVATION REQUIREMENTS A. WHERE REQUIRED BY THE PROVISIONS OF THE GOVERNING CODE, THE OWNER OR OWNER'S AUTHORIZED AGENT SHALL EMPLOY A REGISTERED DESIGN PROFESSIONAL TO PERFORM STRUCTURAL OBSERVATIONS. THE STRUCTURAL OBSERVER SHALL VISUALLY OBSERVE REPRESENTATIVE LOCATIONS OF STRUCTURAL SYSTEMS, DETAILS AND LOAD PATHS FOR GENERAL CONFORMANCE TO THE APPROVED CONSTRUCTION DOCUMENTS. STRUCTURAL OBSERVATION DOES NOT INCLUDE OR WAIVE THE RESPONSIBILITY OF THE INSPECTIONS OR SPECIAL INSPECTIONS LISTED IN THE GOVERNING CODE. B. FREQUENCY AND EXTENT OF THE STRUCTURAL OBSERVATIONS SHALL BE SET AND SUBMITTED TO THE BUILDING OFFICIAL. C. STRUCTURAL OBSERVATIONS SHALL BE PROVIDED FOR THOSE STRUCTURES WHERE ONE OR MORE OF THE FOLLOWING CONDITIONS EXIST: a. THE STRUCTURE IS CLASSIFIED AS RICK CATEGORY (III) OR (IV). b. THE STRUCTURE IS A HIGH-RISE BUILDING. c. THE STRUCTURE IS ASSIGNED TO SEISMIC DESIGN CATEGORY (E) AND IS GREATER THAN TWO STORIES ABOVE THE GRADE PLANE. d. SUCH OBSERVATION IS REQUIRED BY THE E.O.R. RESPONSIBLE FOR THE STRUCTURAL DESIGN. e. SUCH OBSERVATION IS SPECIFICALLY REQUIRED BY THE BUILDING OFFICIAL. D. EXISTING CONDITIONS a. CONTRACTOR SHALL VERIFY ANY AND ALL APPLICABLE EXISTING CONDITIONS, CONSTRUCTION, DIMENSIONS AND ELEVATIONS AND IMMEDIATELY NOTIFY ARCH. AND EOR OF ANY DISCREPANCIES BEFORE PROCEEDING WITH ANY CONSTRUCTION.	3 A. SOIL PREPARATION: 1. IT IS RECOMMENDED THAT ALL GRADING, EXCAVATION, PLACEMENT AND INSTALLATION OF STRUCTURAL FILL AND FOUNDATIONS BE PERFORMED UNDER THE INSPECTION AND TESTING OF A QUALIFIED GEOTECHNICAL CONSULTANT DURING THE CRITICAL STAGES OF CONSTRUCTION. 2. IF A GEOTECHNICAL REPORT HAS BEEN CONDUCTED FOR THE SITE, THE CONTRACTOR SHALL FULLY REVIEW THE REPORT FOR ADDITIONAL REQUIREMENTS AND INFORMATION PRIOR TO CONSTRUCTION. 3. THE CONTRACTOR SHALL INVESTIGATE THE SITE DURING CLEARING AND EARTHWORK OPERATION FOR FILLED EXCAVATIONS OR BURIED STRUCTURES AND NOTIFY THE E.O.R. IF ANY STRUCTURES ARE FOUND PRIOR TO CONSTRUCTION. 4. DURING EXCAVATION, LOCATE AND PROTECT UNDERGROUND OR CONCEALED UTILITIES WHERE WORK IS BEING PERFORMED. WHEN OVERSIZE MATERIALS, CONCRETE, OR ASPHALT ARE ENCOUNTERED, THESE MATERIALS SHOULD BE HAULED OFF SITE AND DISPOSED OF IN ACCORDANCE WITH APPLICABLE CODES AND REGULATIONS. 5. ALL SHALLOW SPREAD FOUNDATIONS SYSTEMS SHALL BEAR ON COMPETENT NATIVE SOILS OR STRUCTURAL FILL PLACED PER THE GEOTECHNICAL REPORT RECOMMENDATIONS. IF THE SITE HAS A LOWER BEARING CAPACITY THAN LISTED, THEN THE FOUNDATION PLAN WILL NEED TO BE REDESIGNED. 6. MINIMUM FROST DEPTH LISTED IS FROM LOWEST ADJACENT FINISH GRADE TO BOTTOM OF THE FOOTING. THE MINIMUM FROST DEPTH SHALL BE MAINTAINED FOR ALL EXTERIOR FOOTINGS. THE CONTRACTOR SHALL COORDINATE AND VERIFY WITH ENGINEER OF RECORD PRIOR TO THE PLACEMENT OF FOUNDATIONS. 7. ALL STRUCTURAL FILL BELOW FOOTINGS SHALL EXTEND OUT PAST THE EDGE OF THE FOOTING AND SLOPE AT 2 TO 1 (2 VERTICAL TO 1 HORIZONTAL) UNTIL REACHING COMPETENT SOILS. 8. ALL WATER SHALL BE REMOVED FROM FOUNDATION EXCAVATIONS PRIOR TO THE PLACEMENT OF CONCRETE. THE CONTRACTOR IS RESPONSIBLE FOR THE GOUND WATER CONTROL SYSTEM DESIGN. 9. ALL STRUCTURAL FILL MATERIAL SHOULD BE PLACED IN UNIFORM 12" THICK LOOSE LIFTS AND COMPACTED TO 95% OF ITS MAXIMUM DRY DENSITY AS DETERMINED BY A STANDARD PROCTOR AT OPTIMUM MOISTURE CONTENT, IN ACCORDANCE WITH ASTM D1557. IN RESTRICTED AREAS WHERE ONLY HAND-OPERATED EQUIPMENT IS PERMITTED, THE MAXIMUM LOOSE LIFT SHALL BE 8". B. SLAB REQUIREMENTS: 1. ALL CONCRETE SLABS SHALL HAVE A MINIMUM 4" THICKNESS AND CONTROL JOINTS AT 10'-0" O.C. MAX SPACING. 2. WHERE RECOMMENDED INTERIOR CONCRETE SLABS SHALL HAVE A PLASTIC VAPOR RETARDER PER ASTM E1745 UNDER A MINIMUM OF 6" OF COMPACTED CLEAN GRANULAR STRUCTURAL FILL. 3. SEAL ALL VAPOR RETARDER COMPLETELY AROUND ALL PIPES AND CONDUITS. INSPECT VAPOR RETARDER THOROUGHLY AND REPAIR ALL PUNCTURES AND TEARS PRIOR TO PLACING CONCRETE. ALL ALPS SHALL BE 18" MINIMUM AND SEALED CONTINUOUSLY WITH PRESSURE SENSITIVE TAPE. 4. ALL SLAB SAWN CONTROL AND CONSTRUCTION JOINTS SHALL BE MADE AS SOON AS POSSIBLE WITHOUT DAMAGE TO THE SURACE. FILLING OF SAWN JOINTS WHERE REQUIRED SHALL BE DELAYED AS LONG AS POSSIBLE TO ALLOW MAXIMUM SHRINKAGE TO OCCUR IN SLABS. 5. SEE ARCHITECTURAL PLANS FOR LOCATIONS OF SLAB SLOPES, DEPRESSIONS, CURBS, DRAINS, NON-STRUCTURAL PARTITIONS AND OTHER EMBEDDED ITEMS NOT SHOWN ON THE FOUNDATION PLAN. C. RETAINING WALL REQUIREMENTS: 1. ALL FILL MATERIALS BEHIND RETAINING WALLS SHALL BE FULLY DRAINED BY MEANS OF SUB-DRAIN, WEEP HOLES, OR FREE DRAINING AGGREGATE. BACKFILL FINISHED GRADE SHALL BE SLOPED AWAY FROM THE BACKFACE OF RETAINING WALL. THE DESIGN OF RETAINING WALLS AND SUBTERRANEAN BUILDING WALLS ARE BASED ON DRAINED SOILS. 2. DO NOT PLACE BACKFILL BEHIND WALLS BEFORE THEY HAVE ATTAINED THEIR DESIGN STRENGTH. 3. ANY SUPERIMPOSED LOADS, OTHER THAN RETAINED EARTH, SHALL BE CONSIDERED AS SURCHARGES AND ACCOUNTED FOR IN DESIGN. LOADS APPLIED WITHIN A HORIZONTAL DISTANCE EQUAL TO WALL STEM HEIGHT AS MEASURED FROM BACK FACE OF THE WALL SHALL BE CONSIDERED AS SURCHARGE. TEMPORARY CONSTRUCTION LOADS SHALL NOT BE APPLIED WITHIN A HORIZONTAL DISTANCE EQUAL TO STEM WALL HEIGHT FROM THE BACK FACE OF THE WALL. NOTIFY EOR IF TEMPORARY CONSTRUCTION LOADS WILL BE APPLIED WITHIN THE SPECIFIED HORIZONTAL ZONE PRIOR TO CONSTRUCTION. 4. THE CONTRACTOR IS RESPONSIBLE TO ADEQUATELY PROTECT ALL EXCAVATION SLOPES. WHERE NECESSARY, SHEET PILES AND SHORING OF EXCAVATION SHALL BE PROVIDED WITH ALL REQUIRED TIEBACKS AND BRACING. 5. APPROPRIATE FOUNDATION WATERPROOFING METHODS SHALL BE PROVIDED ON BACKSIDE OF SUB-SURFACE RETAINING WALLS FROM BASE OF WALL TO FINISHED GRADE.	4 ABBREVIATIONS (E) EXISTING (F) FUTURE (N) NEW (R) RENOVATE CL CENTERLINE Ø DIAMETER OR ROUND ⊥ PERPENDICULAR □ SQUARE # NUMBER OR POUND @ AT A.B. ANCHOR BOLT A.F.F. ABOVE FINISH FLOOR ABV. ABOVE ADJ. ADJUSTABLE AGG. AGGREGATE ALT. ALTERNATIVE ALUM. ALUMINUM APPROX. APPROXIMATE ARCH. ARCHITECTURAL B.O. BOTTOM OF B.O.C. BOTTOM OF CONCRETE B/T BETWEEN B.N. BOUNDARY NAIL(ING) B.U. BUILT-UP BD. BOARD BLDG. BUILDING BLK. BLOCK BM. BEAM BOT. BOTTOM C.C. CENTER TO CENTER C.I. CAST IRON C.I.P. CAST IN PLACE CMU CONCRETE MASONRY UNIT C.O. CONCRETE OPENING CLG. CEILING CLR. CLEAR CNTRSK. COUNTERSUNK COL. COLUMN CONC. CONCRETE CONT. CONTINUOUS CORR. CORRIDOR CW/ COORDINATE WITH DEEP DEEP D.B.A. DEFORMED BAR ANCHOR D.F. DOUGLAS FIR DET. DETAIL DIA. DIAMETER DIAG. DIAGONAL DIM. DIMENSION DN. DOWN DWG. DRAWING E.B. EXPANSION BOLT E.B.E. ECCENTRICALLY BRACED FRAME E.J. EXPANSION JOINT E.N. EDGE NAIL(ING) EA. EACH EL. ELEVATION ELEC. ELECTRICAL ELEV. ELEVATOR EOR ENGINEER OF RECORD EQ. EQUAL EQUIP. EQUIPMENT E.S. EDGE SCREW(ING) EXP. EXPANSION EXT. EXTERIOR F.B. FLAT BAR F.D. FLOOR DRAIN F.O. FACE OF F.O.C. FACE OF CURB/CONCRETE F.O.F. FACE OF FINISH F.O.M. FACE OF MASONRY F.O.S. FACE OF STUDS F.O.T. FACE OF TREAD FDN. FOUNDATION FIN. FINISH FL. FLOOR(ING) FLASH. FLASHING F.S. FAR SIDE FT. FOOT OR FEET FTG. FOOTING FTW. FIRE TREATED WOOD FURR. FURRING GA. GAUGE OR GAGE GALV. GALVANIZED GSN GENERAL STRUCTURAL NOTES GYP. GYPSUM H. HIGH H.C.A. HEADED CONCRETE ANCHOR H.S.S. HOLLOW STRUCTURAL STEEL H.P. HIGH POINT HORIZ. HORIZONTAL HR. HOUR HT. HEIGHT HVAC HEATING VENTILATING AND AIR CONDITIONING I.D. INSIDE DIAMETER IN. INCH INSUL. INSULATION INT. INTERIOR JT. JOINT K.O. KICKOUT L.F. LINEAL FEET OR FOOT L.L.V. LONG LEG VERTICAL L.L.H. LONG LEG HORIZONTAL L.P. LOW POINT LSI. LAMINATED STRAND LUMBER LAM. LAMINATE LVL. LAMINATED VENEER LUMBER LBS. POUNDS M.B. MACHINE BOLT M.H. MINIMUM M.O. MASONRY OPENING MAX. MAXIMUM MECH. MECHANICAL MET. METAL MFR. MANUFACTURER MIN. MINIMUM MISC. MISCELLANEOUS MT'D MOUNTED MTRL. MATERIAL N. NORTH N.I.C. NOT IN CONTRACT N.S. NEAR SIDE N.T.S. NOT TO SCALE NO. NUMBER NOM. NOMINAL N.S. NEAR SIDE O/H OVERHEAD O/ OVER O.A. OVER ALL O.C. ON CENTER O.D. OUTSIDE DIAMETER O.H. OPPOSITE HAND OPNG. OPENING OPP. OPPOSITE OZ. OUNCE P.A.F. POWDER IN ACTUATED FASTENER PART. PARTICLE P/L PROPERTY LINE PL. PLATE PLYWD. PLYWOOD PRE-ENG. PRE-ENGINEERED METAL BUILDING PT. POINT P.S.L. PARALLEL STRAND LUMBER R. RADIUS OR RISER R.D. ROOF DRAIN R.O. ROUGH OPENING RE. REFERENCE (CW/) REINF. REINFORCE(D) REQ'D. REQUIRED RM. ROOM R.T.U. ROOF TOP UNIT S.C. SOLID CORE S.F. SQUARE FEET OR FOOT S.S. STAINLESS STEEL SCHED. SCHEDULE SECT. SECTION SHT. SHEET SIM. SIMILAR OR SIMILAR TO SPECs. SPECIFICATIONS STD. STANDARD STRUC. STRUCTURAL SUSP. SUSPENDED SYM. SYMMETRICAL T&G TONGUE & GROOVE T.O.B. TOP OF BEAM T.O.C. TOP OF CURB/CONCRETE T.O.D. TOP OF DECK T.O.M. TOP OF MASONRY T.O.S. TOP OF SLAB T.O.W. TOP OF WALL THK. THICKNESS TJI TRUSS JOIST I-JOIST TYP. TYPICAL U.B.C. UNIFORM BUILDING CODE U.O.N. UNLESS OTHERWISE NOTED U.N.O. UNLESS NOTED OTHERWISE V.I.F. VERIFY IN FIELD VERT. VERTICAL WITH WITH W/O WITHOUT WD. WOOD W. WIDE W.P. WORK POINT W.W.F. WELDED WIRE FABRIC



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MONTANA STATE UNIVERSITY

POST FARM SEED STORAGE

EXPANSION

Revisions		
No.	Description	Date

Drawn by CID	Date 09/29/2025
Checked BJS	Job No. 25-27029

Sheet Contents
GENERAL STRUCTURAL NOTES

Sheet No.

S0.0

SHEET LIST	
SHEET NUMBER	SHEET NAME
S0.0	GENERAL STRUCTURAL NOTES
S0.1	GENERAL STRUCTURAL NOTES
S1.0	FOUNDATION PLAN
S2.0	ROOF FRAMING PLAN
S3.0	DETAILS

1

1

CONCRETE

A.

GENERAL REQUIREMENTS

1.

ALL CONCRETE CONSTRUCTION SHALL CONFORM TO REQUIREMENTS SET FORTH IN ACI 318, "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE", AND ACI 301, "SPECIFICATIONS FOR STRUCTURAL CONCRETE".

2.

CAST-IN-PLACE AND PRECAST CONSTRUCTION TOLERANCES FOR MEMBER SIZE AND LOCATION SHALL BE IN CONFORMANCE WITH ACI 117 AND ACI ITG-7, RESPECTIVELY.

3.

NORMAL WEIGHT CONCRETE SHALL BE IN CONFORMANCE WITH ASTM C33 WITH A NOMINAL MAXIMUM AGGREGATE SIZE OF 3/4".

4.

LIGHTWEIGHT CONCRETE SHALL BE IN CONFORMANCE WITH ASTM C330 AND THE RESULTS OF ASTM C330 SHALL BE SUBMITTED TO E.O.R. FOR REVIEW AND APPROVAL PRIOR TO PLACEMENT. THE VOLUMETRIC FRACTIONS OF THE AGGREGATE SHALL ALSO BE SUBMITTED TO E.O.R. FOR REVIEW AND APPROVAL PRIOR TO PLACEMENT.

5.

PORTLAND CEMENT SHALL BE TYPE I/II IN CONFORMANCE WITH ASTM C150.

6.

OTHER CEMENTITIOUS MATERIALS SHALL CONFORM TO THE FOLLOWING:

a.

BLENDED HYDRAULIC CEMENTS:

= ASTM C595

b.

EXPANSIVE HYDRAULIC CEMENT:

= ASTM C845

c.

HYDRAULIC CEMENT:

= ASTM C1157

d.

FLY ASH AND NATURAL POZZOLAN:

= ASTM C618

e.

SLAG CEMENT:

= ASTM C989

f.

SILICA FUME:

= ASTM C1240

7.

MIXING WATER SHALL CONFORM TO ASTM C1602.

8.

ADMIXTURES MAY BE USED TO INCREASE THE WORKABILITY OF THE CONCRETE UPON WRITTEN APPROVAL OF THE CONCRETE MANUFACTURER OR THE PROJECT TESTING LABORATORY. TESTING ON CONCRETE SHALL BE DONE PRIOR TO THE ADDITION OF ADMIXTURES.

9.

ADMIXTURES SHALL CONFORM TO THE FOLLOWING:

a.

WATER REDUCTION AND SETTING TIME MODIFICATION:

= ASTM C494

b.

PRODUCING FLOWING CONCRETE:

= ASTM C1017

c.

AIR ENTRAINMENT:

= ASTM C260

d.

INHIBITING CHLORIDE-INDUCED CORROSION:

= ASTM C1528

10.

CONCRETE MIXTURE PROPORTIONS SHALL CONFORM WITH ACI 301 AND ESTABLISHED SO CONCRETE CAN BE PLACED READILY WITHOUT SEGREGATION INTO FORMS AND AROUND REINFORCEMENT.

11.

ALL CONCRETE MIXING AND TRANSPORTATION OF CONCRETE SHALL CONFORM TO THE REQUIREMENTS OF ATM C94 AND ASTM C685.

12.

STAIN AND TEXTURE OF EXPOSED CONCRETE SURFACES PER OWNER'S DIRECTION, IF APPLICABLE.

13.

THE SLUMP OF THE CONCRETE SHALL BE BETWEEN:

a.

BEAMS/COLUMNS: 3" ± 1"

b.

WALLS/FOUNDATIONS: 5" ± 1"

c.

SLABS-ON-GRADE: 4" ± 1"

14.

THE CONCRETE SHALL MEET THE MOST STRINGENT REQUIREMENTS FROM THE FOLLOWING EXPOSURE CLASSES:

15.

ALL FOOTINGS, FOUNDATIONS, AND STEM WALLS:

= F1, S0, W0, C0

16.

INTERIOR SLABS-ON-GRADE:

= F0, S0, W0, C0

17.

EXTERIOR SLABS-ON-GRADE:

= F2, S0, W0, C0

18.

CONCRETE EXPOSURE CLASSES AND REQUIREMENTS:

EXPOSURE CATEGORY: F								
EXPOSURE CLASS	MAXIMUM w/cm	MINIMUM f'c (psi)	AIR CONTENT (%)	LIMITS ON MAXIMUM PERCENT OF TOTAL CEMENTITIOUS MATERIALS BY MASS				
F0	N/A	2500	N/A	N/A				
F1	0.55	3500	5	N/A				
F2	0.45	4500	6	N/A				
F3	0.40	5000	6	ASTM C618	ASTM C989	ASTM C1240	TOTAL OF ASTM C618 & ASTM C1240	TOTAL OF ASTM C618 & ASTM C989 & ASTM C1240
				25%	50%	10%	35%	50%

EXPOSURE CATEGORY: S						
EXPOSURE CLASS	MAXIMUM w/cm	MINIMUM f'c (psi)	CEMENTITIOUS MATERIALS			
			ASTM C150	ASTM C595	ASTM C1157	CALCIUM CHLORIDE ADMIXTURE
S0	N/A	2500	N/A	N/A	N/A	N/A
S1	0.50*	4000	II	IP(MS), IS(MS), OR IT(MS)	MS	N/A
S2	0.45	4500	V	IP(HS), IS(HS), OR IT(HS)	HS	NOT PERMITTED
S3	0.45	4500	V + POZZOLAN OR SLAG CEMENT	IP(HS), IS(HS), OR IT(HS) + POZZOLAN OR SLAG CEMENT	HS + POZZOLAN OR SLAG CEMENT	NOT PERMITTED

EXPOSURE CATEGORY: W		
EXPOSURE CLASS	MAXIMUM w/cm	MINIMUM f'c (psi)
W0	N/A	2500
W1	0.50	4000

EXPOSURE CATEGORY: C			
EXPOSURE CLASS	MAXIMUM w/cm	MINIMUM f'c (psi)	MAXIMUM WATER-SOLUBLE CHLORIDE ION (Cl ⁻¹) CONTENT IN NONPRESTRESSED CONCRETE, PERCENT BY WEIGHT OF CEMENT
C0	N/A	2500	1.00
C1	N/A	2500	0.30
C2	0.40	5000	0.15

*FOR SEAWATER EXPOSURE THE MAXIMUM w/cm RATIO SHALL BE 0.40.

19.

TEMPERATURE REQUIREMENTS OF THE CONCRETE SHALL CONFORM TO THE FOLLOWING:

a.

CONCRETE SHALL BE MAINTAINED AT A TEMPERATURE MINIMUM OF 50°F AND IN A MOIST CONDITION FOR AT LEAST THE FIRST 7 DAYS AFTER PLACEMENT.

b.

ADEQUATE EQUIPMENT SHALL BE PROVIDED FOR HEATING CONCRETE MATERIALS AND PROTECTING CONCRETE DURING FREEZING OR NEAR-FREEZING WEATHER.

c.

FROZEN MATERIALS OR MATERIALS CONTAINING ICE SHALL NOT BE USED.

d.

FORMS, FILLERS, AND GROUND WITH WHICH CONCRETE IS TO COME IN CONTACT SHALL BE FREE FROM FROST AND ICE.

e.

CONCRETE SHALL NOT EXCEED A TEMPERATURE MAXIMUM OF 95°F AT THE TIME OF PLACEMENT.

f.

HANDLING, PLACING, PROTECTION, AND CURING PROCEDURES SHALL LIMIT CONCRETE TEMPERATURES OR WATER EVAPORATION THAT COULD REDUCE STRENGTH SERVICEABILITY, AND DURABILITY OF THE MEMBER OR STRUCTURE.

g.

HOT WEATHER AND COLD WEATHER CONCRETE CONSTRUCTION SHALL BE DONE IN COMPLIANCE WITH ACI 305.1 AND ACI 306.1, RESPECTIVELY.

h.

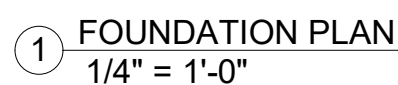
CONCRETE MATERIALS AND PRODUCTION METHODS SHALL BE SELECTED SO THAT THE CONCRETE TEMPERATURE AT DELIVERY COMPLIES WITHIN THE SPECIFIED TEMPERATURE LIMITS.

i.

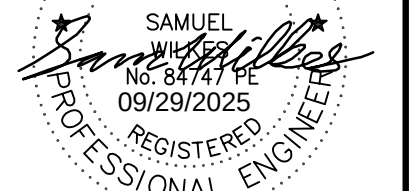
PROVISIONS LISTED DO NOT PROTECT CONCRETE AGAINST CHEMICALLY AGGRESSIVE SOLUTIONS, CONTACT E.O.R. IF SUCH CONDITIONS APPLY.

A

1



1. FOR ALL FOUNDATION DETAILS NOT CUT ON PLAN, RE: FOUNDATION DETAIL SHEETS.
2. FOR ALL FRAMING DETAILS NOT CUT ON PLAN, RE: FRAMING DETAIL SHEETS.
3. ALL COLUMNS TO BE CENTERED IN/ON STUD WALL FRAMING, U.N.O.
4. ALL STRUCTURAL COLUMN CALL/OUTS DENOTE THE LEVEL THAT THEY BEAR OR START, COORDINATE WITH DETAILING.
5. CONCRETE FOUNDATION CONTRACTOR IS REQUIRED TO PROPERLY LOCATE ALL HOLDDOWNS, STRAPS AND ANCHOR BOLT LOCATIONS w/ STRUCTURAL & ARCHITECTURAL PLANS & DIMENSIONS PRIOR TO CONCRETE POUR.



MONTANA STATE UNIVERSITY POST FARM SEED STOCK EXPANSION

No.	Description	Date

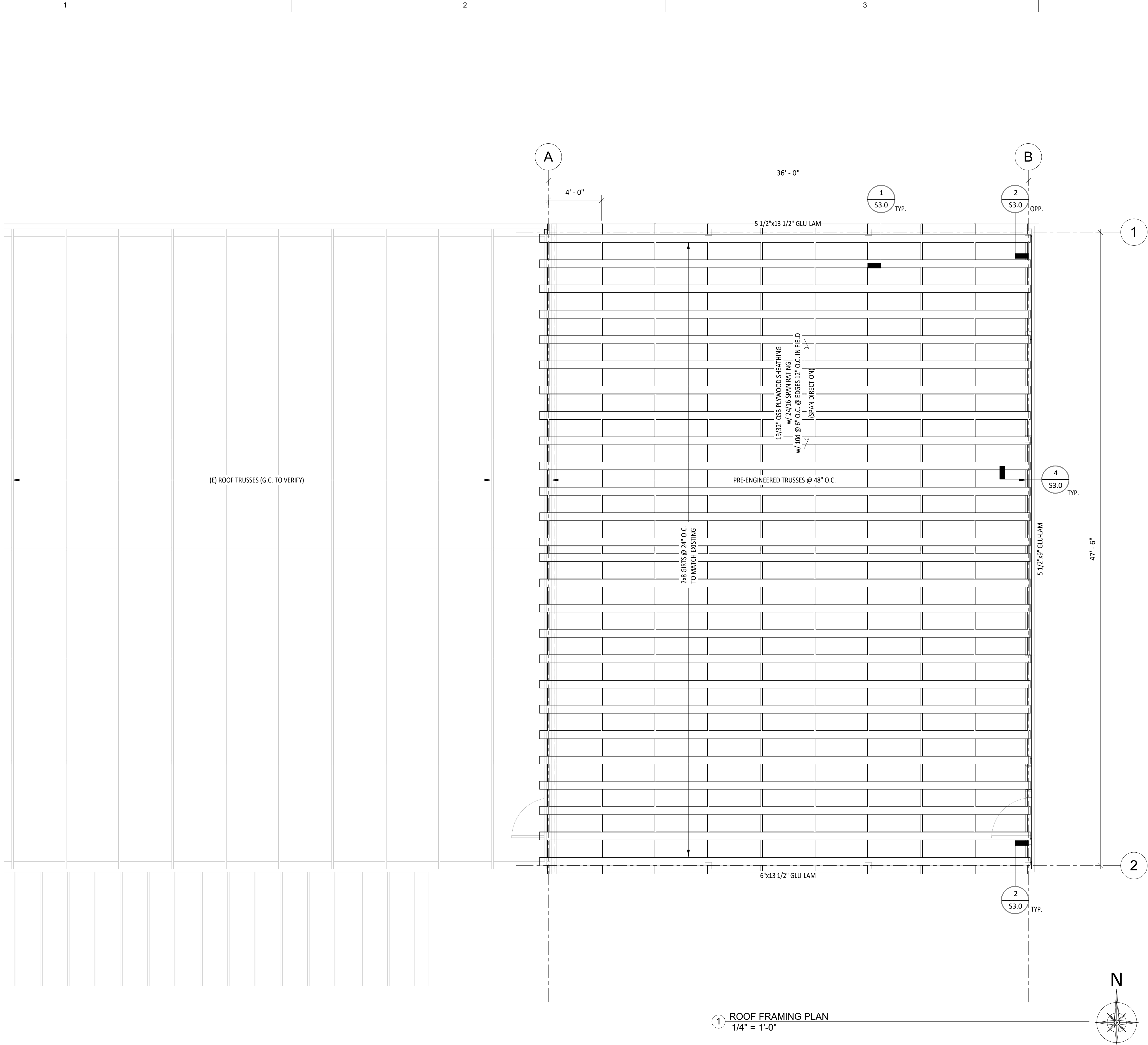
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Checked DH	Job No. 25-27029

Sheet Contents

NO.	DESCRIPTION	DATE
1	FOUNDATION PLAN	

S1.0

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ROOF FRAMING NOTES:

- FOR TYPICAL FRAMING DETAILS NOT CUT ON PLAN RE: FRAMING DETAILS.
- ALL HUNG CEILINGS, EQUIPMENT, AND ARCH. ELEMENTS CONNECTIONS, RE: ARCH.



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MONTANA
SAMUEL
WILKES
REGISTERED
PROFESSIONAL ENGINEER

MONTANA STATE UNIVERSITY
**POST FARM SEED STORAGE
EXPANSION**

Revisions		
No.	Description	Date

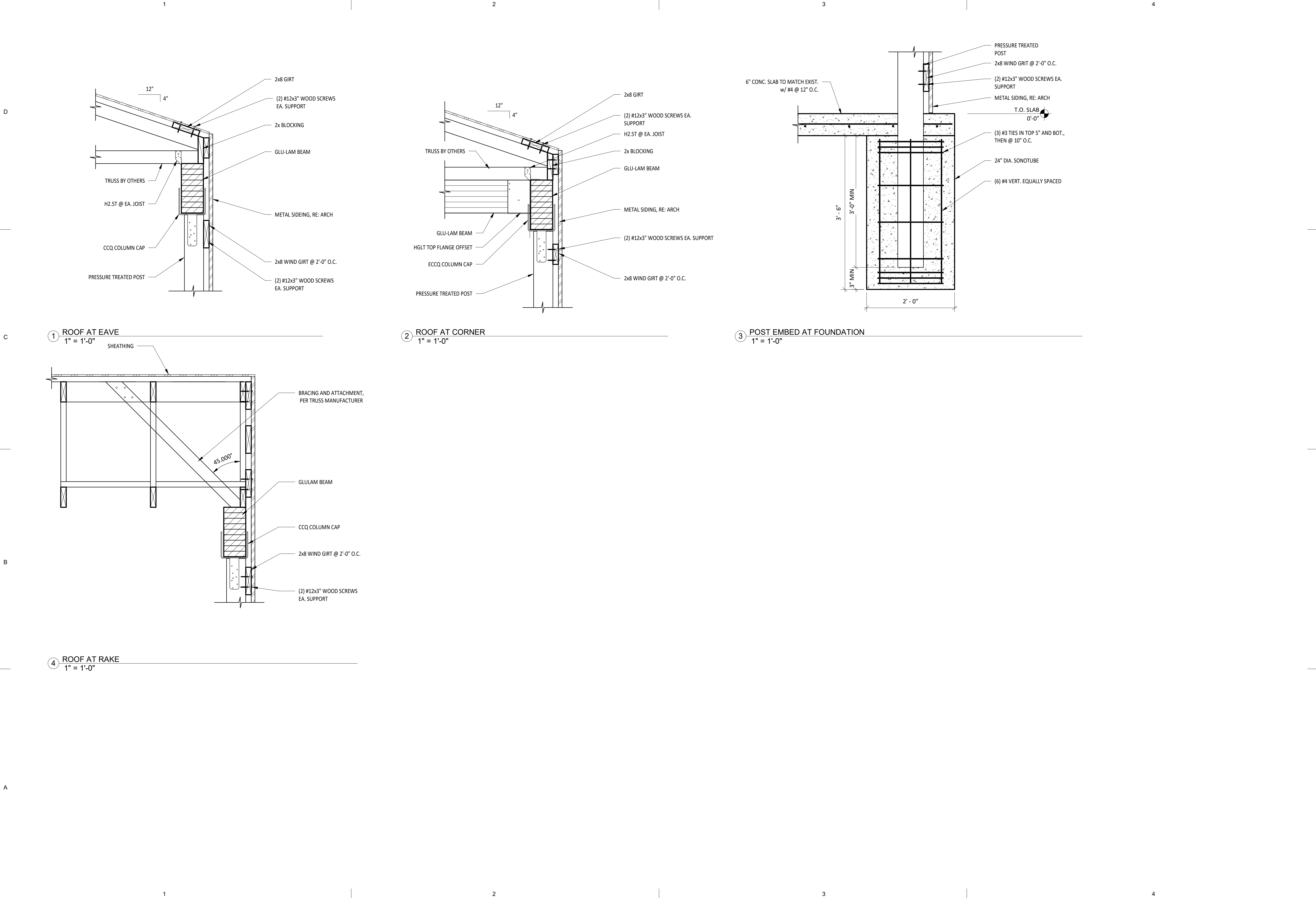
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Checked DDH	Job No. 25-27029

Sheet Contents ROOF FRAMING PLAN

Sheet No.

S2.0

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MONTANA STATE UNIVERSITY
**POST FARM SEED STORAGE
EXPANSION**

Revisions		
No.	Description	Date

Drawn by CID	Date 09/29/2025
Checked DDH	Job No. 25-27029

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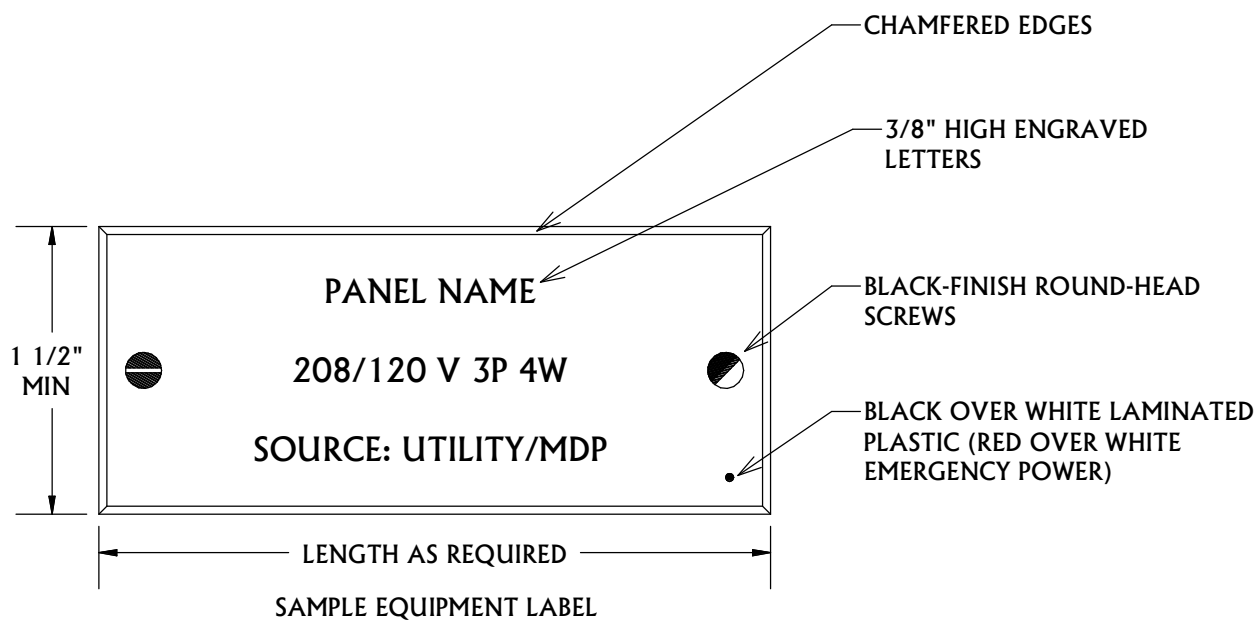
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S3.0

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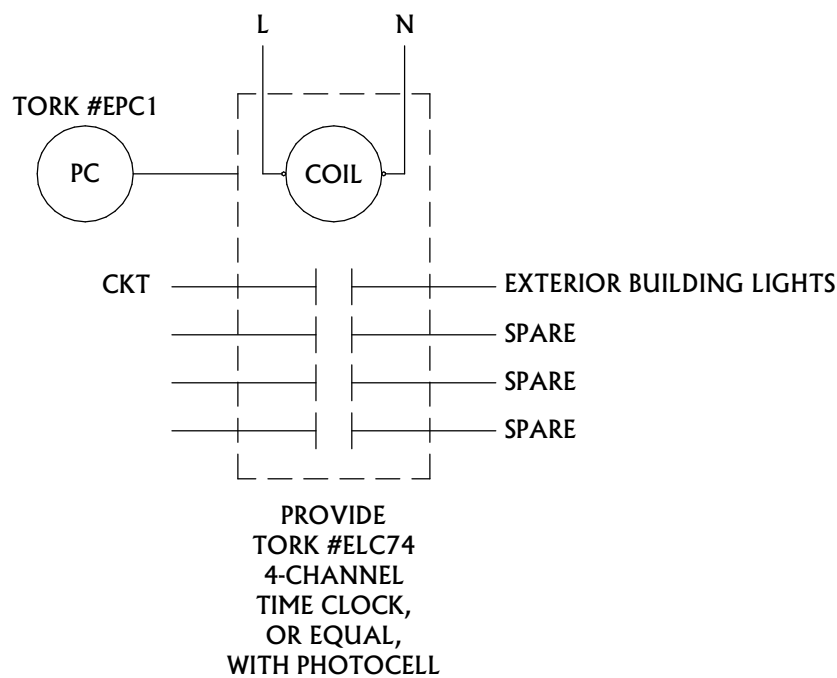
PROJECT NOTES

- THE ELECTRICAL WORK SHALL INCLUDE ALL ITEMS, ARTICLES, MATERIALS, OPERATIONS, AND METHODS LISTED, MENTIONED OR SCHEDULED IN THESE DRAWINGS. ALL MATERIAL, EQUIPMENT AND LABOR SHALL BE FURNISHED TOGETHER WITH ALL INCIDENTAL ITEMS REQUIRED BY GOOD PRACTICE TO PROVIDE THE COMPLETE ELECTRICAL SYSTEM DESCRIBED.
- EXAMINE AND REFER TO ALL ARCHITECTURAL, MECHANICAL AND STRUCTURAL DRAWINGS FOR CONSTRUCTION CONDITIONS WHICH MAY AFFECT THE ELECTRICAL WORK. INSPECT THE BUILDING SITE AND EXISTING FACILITIES FOR VERIFICATION OF PRESENT CONDITIONS. MAKE PROPER PROVISIONS FOR THESE CONDITIONS IN PERFORMANCE OF THE WORK AND COST THEREOF.
- THE ELECTRICAL WORK SHALL MEET THE REQUIREMENTS OF THE PLANS AND SHALL NOT BE LESS THAN THE MINIMUM REQUIREMENTS OF ALL APPLICABLE SECTIONS OF THE LATEST CODES AND STANDARDS THAT ARE ADOPTED BY THE AUTHORITY HAVING JURISDICTION.
- THE ELECTRICAL CONTRACTOR SHALL PAY ALL FEES AND ARRANGE FOR ALL PERMITS REQUIRED FOR WORK DONE UNDER HIS CONTRACT AND UNDER HIS SUPERVISION BY SUBCONTRACT.
- THE ELECTRICAL CONTRACTOR SHALL AND HEREBY DOES WARRANT AND GUARANTEE THAT ALL WORK EXECUTED UNDER HIS CONTRACT WILL BE FREE FROM DEFECTS OF MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE OF THIS WORK AND THAT HE WILL, AT HIS OWN EXPENSE, REPAIR AND/OR REPLACE ALL SUCH DEFECTIVE MATERIALS AND WORK DURING THE TERM OF THE WARRANTY.
- MANUFACTURER'S TRADE NAMES AND CATALOG NUMBERS LISTED ARE INTENDED TO INDICATE THE QUALITY OF EQUIPMENT OR MATERIAL DESIRED. MANUFACTURERS NOT LISTED MUST HAVE PRIOR APPROVAL. WRITTEN PRIOR APPROVAL MUST BE OBTAINED FROM THE ARCHITECT SEVEN (7) BUSINESS DAYS PRIOR TO BID OPENING.
- THE DRAWINGS ARE PARTLY DIAGRAMMATIC AND DO NOT NECESSARILY SHOW EXACT LOCATIONS OF CONDUIT UNLESS SPECIFICALLY DIMENSIONED. THEY SHALL NOT BE USED FOR OBTAINING QUANTITIES OR LINEAR RUNS OF CONDUIT.
- ALL WIRING DEVICES, INCLUDING SWITCHES AND RECEPTACLES SHALL BE SPECIFICATION GRADE. SWITCHES AND RECEPTACLES SHALL BE 20-AMPERE UNLESS OTHERWISE NOTED. DEVICES SHALL HAVE METALLIC COVER PLATES MOUNTED ON SURFACE BACK BOXES. ALL GFCI DEVICES AS SHOWN IN PLAN SHALL EQUAL ONE DEVICE. THE USE OF FEED THROUGH PROTECTION IS NOT ACCEPTABLE.
- ALL CONDUCTORS SHALL BE COPPER. ALUMINUM CONDUCTORS WILL NOT BE PERMITTED. MINIMUM CONDUCTOR SIZE SHALL BE NO. 12 AWG. ALL CONDUCTORS SHALL BE INSTALLED IN CONDUIT. ALL CONDUIT SHALL BE EMT UNLESS OTHERWISE NOTED. UTILIZE NO. 10 AWG MINIMUM WIRE SIZE FROM PANEL BOARD TO FIRST LIGHTING FIXTURES AND FIRST RECEPTACLE FOR CIRCUIT RUNS OF 50 FEET OR MORE. PROVIDE DEDICATED NEUTRAL CONDUCTORS FOR ALL 120V CIRCUITS UTILIZED ON PROJECT AS COMBINING OF CIRCUITS TO UTILIZE A COMMON NEUTRAL IS NOT ACCEPTABLE.
- PROVIDE DISCONNECT SWITCHES WHERE REQUIRED BY NEC. DISCONNECT SWITCHES SHALL BE HEAVY DUTY NEMA RATED, UL LISTED AND SERVICE ENTRANCE RATED WHERE REQUIRED.
- REFER TO DEVICE MOUNTING HEIGHT DETAIL FOR INSTALLATION HEIGHT OF DEVICES IN PROJECT.
- PROVIDE UPDATED TYPE WRITTEN PANEL DIRECTORIES FOR ALL PANELS AT PROJECT CLOSE AFFECTED BY REMODEL REGARDLESS IF EXISTING OR NEW PANEL. DIRECTORIES SHALL IDENTIFY/ DESCRIBE LOAD LOCATION. HAND WRITTEN DIRECTORIES ARE NOT ACCEPTABLE.
- FIRE SEAL ALL CONDUIT PENETRATIONS WITH UL-LISTED FIRE RATED CAULKING MATERIALS / ASSEMBLY. WHERE REQUIRED BY APPLICABLE CODES FIRE SEAL ALL FIRE-RATED MEMBRANE PENETRATIONS.
- LABEL ALL MOTOR STARTERS, DISCONNECTS AND PANEL BOARDS WITH SELF ADHESIVE BACKED ENGRAVED ACRYLIC LABELS WITH 1/2 INCH HIGH WHITE LETTERS ON A 1-1/2 INCH HIGH BLACK BACKGROUND LABEL.
- UPON COMPLETION OF WORK, PREPARE A "BROCHURE OF EQUIPMENT" CONTAINING DATA PERTINENT TO EQUIPMENT AND SYSTEMS ON JOB. BINDERS CONTAINING MATERIALS SHALL BE (3) THREE RING BINDERS OF SUFFICIENT NUMBER TO HOLD ALL LITERATURE. CONTAINED IN BINDERS SHALL BE: INSTALLATION, MAINTENANCE, AND OPERATING INSTRUCTIONS FOR EACH PIECE OF EQUIPMENT; PARTS LISTS; WIRING DIAGRAMS; ONE CLEAN COPY OF EACH SHOP DRAWING THAT REFLECTS ANY REQUIRED SHOP DRAWING REVIEW COMMENTS AND LITERATURE SUBMITTAL; RECORD DRAWINGS, ETC.
- EC SHALL MAINTAIN A CLEAN COPY OF AS-BUILDS ON SITE, NOTING ANY DEVIATIONS FROM PLAN. AT PROJECT CLOSE THE AS-BUILDS SHALL BE GIVEN TO THE ARCHITECT FOR USE IN PRODUCING ELECTRONIC AS-BUILD PLANS OF THE PROJECT.
- VERIFY ALL EXISTING CONDITIONS THAT AFFECT ELECTRICAL WORK PRIOR TO SUBMITTING ANY PRICING. MAKE ALLOWANCE TO ACCOMMODATE ALL EXISTING CONDITIONS.



1 EQUIPMENT IDENTIFICATION LABEL

NOT TO SCALE



2 EXTERIOR LIGHTS PHOTOCONTROL

NOT TO SCALE

LUMINAIRE SCHEDULE

CALLOUT	MANUFACTURER	MODEL	MOUNTING	LAMP	ELECTRICAL DATA	DESCRIPTION
A1	LITHONIA LIGHTING	IBE L24 15000LM ND NVOLT 40K DWH	SUSPENDED	LED	120 V/1-105 VA	2' LED HIGH BAY 4000K 15000 LUMENS. (WHITE FINISH)
E1	LITHONIA LIGHTING	INDL SP640L UVOLT LTP SDRT CW	WALL	LED	120 V/1-5 VA	EMERGENCY LIGHT 2 HEADS. 640 LM. COLD LOCATION RATED.
W1	LITHONIA LIGHTING	WPX2 LED 40K MVOLT E1 4WC	WALL	LED	120 V/1-47 VA	WALL MOUNTED EXTERIOR SITE LIGHTING 4000K 6000 LUMENS. 14 WATT EMERGENCY BATTERY BACKUP. (FINISH BY ARCHITECT)
X1	LITHONIA LIGHTING	LV S W 1 R 120/277 EL N CW	WALL	LED	120 V/1-5 VA	EMERGENCY EXIT SIGN. NICKEL CADMIUM BATTERY BACKUP.

ELECTRICAL LEGEND

MISCELLANEOUS LEGEND

W/	WITH ABOVE COUNTER	AFF	ABOVE FINISHED FLOOR
AC	ELECTRICAL CONTRACTOR	AFG	ABOVE FINISHED GRADE
EC	EXISTING	WM	WIRE MOLD
(R)	RELOCATED	GC	GENERAL CONTRACTOR
(N)	NEW DEVICE	GND	GROUND
C	CONDUIT	LIG	UNDER GROUND
BFG	BELOW FINISHED GRADE	BOD	BOTTOM OF DEVICE
UC	UNDER COUNTER	TOD	TOP OF DEVICE
WP	WEATHER PROOF	COD	CENTER OF DEVICE
MC	MECHANICAL CONTRACTOR	BOF	BOTTOM OF FIXTURE
		PC	PLUMBING CONTRACTOR

1	REFER TO ELECTRICAL NOTES
⤴	HOMERUN TO ELECTRICAL PANEL
⚡	NUMBER OF HASH MARKS INDICATES NUMBER OF CURRENT CARRYING CONDUCTORS. NO MARKS INDICATES TWO. GROUNDING CONDUCTOR NOT SHOWN BUT SHALL BE INCLUDED IN ALL CONDUITS.
—	NORMAL CIRCUIT CONCEALED IN WALL OR EXPOSED
—	UNDERGROUND OR BURIED CIRCUIT

POWER DEVICES

\$	SINGLE POLE SWITCH, SUBSCRIPT INDICATES TYPE: 2 2-POLE 3 3-WAY 4 4-WAY D DIMMER K KEYED LV LOW VOLTAGE MC MOMENTARY CONTAC OS OCCUPANCY SENSOR P PILOT LIGHT T TIMER - 1 HOUR TIMER, MOTOR RATED FOR EXHAUST FANS
Ⓢ Ⓢ	DUPLEX RECEPTACLE SUBSCRIPT INDICATES TYPE: AC ABOVE COUNTER GFCI GROUND FAULT CIRCUIT INTERRUPTER IG ISOLATED GROUND TR TAMPER RESISTANT U USB WP WEATHERPROOF WR WEATHER-RESISTANT FILLED CENTER INDICATES GFCI DEVICE
Ⓢ Ⓢ	DOUBLE DUPLEX RECEPTACLE, SUBSCRIPT ABOVE INDICATE TYPE
Ⓢ Ⓢ	DUPLEX RECEPTACLE IN FLOOR BOX
Ⓢ Ⓢ	DOUBLE DUPLEX RECEPTACLE IN FLOOR BOX
Ⓢ	SIMPLEX RECEPTACLE
Ⓢ	DUPLEX RECEPTACLE, CEILING MOUNTED. DEVICE AND COVER SHALL MATCH CEILING FINISH
Ⓢ Ⓢ	SWITCHED DUPLEX RECEPTACLE, BOX INDICATES DEVICE LOCATED IN FLOOR BOX
Ⓢ	208V SINGLE PHASE RECEPTACLE, CONFIGURATION NOTED ON PLANS
Ⓢ	208V THREE PHASE RECEPTACLE, CONFIGURATION NOTED ON PLANS
Ⓢ	SIMPLEX RECEPTACLE IN FLOOR BOX
Ⓢ	MUSHROOM HEAD PUSH BUTTON
Ⓢ	PHOTO CELL
Ⓢ	WALL MOUNTED CLOCK HANGER/ POWER RECEPTACLE
Ⓢ	CORNER WALL MOUNTED OCCUPANCY SENSOR
Ⓢ	CEILING MOUNTED OCCUPANCY SENSOR, STYLE 1
Ⓢ	CEILING MOUNTED OCCUPANCY SENSOR, STYLE 2
Ⓢ	CEILING MOUNTED OCCUPANCY SENSOR, STYLE 3
Ⓢ	OCCUPANCY SENSOR POWER PACK, BOX INDICATES WALL MOUNTING
Ⓢ Ⓢ Ⓢ	SPECIAL PURPOSE CONNECTION, BRACKET INDICATES WALL MOUNTING, BOX INDICATES FLOOR MOUNTING
Ⓢ Ⓢ Ⓢ	JUNCTION BOX, BRACKET INDICATES WALL MOUNTING, BOX INDICATES FLOOR MOUNTING
Ⓢ	MOTOR CONNECTION
Ⓢ	RELAY
Ⓢ	NON-FUSED DISCONNECT SWITCH
Ⓢ	FUSED DISCONNECT SWITCH
Ⓢ	COMBINATION STARTER/DISCONNECT SWITCH
Ⓢ	CONTACTOR
Ⓢ	MANUAL MOTOR STARTER
Ⓢ	AQUASTAT BY PLUMBING CONTRACTOR, WIRED BY EC.
Ⓢ	VARIABLE FREQUENCY DRIVE
Ⓢ	CO2 DETECTOR BY MC, ROUGH-IN BY EC
Ⓢ	THERMOSTAT BY MC, ROUGH-IN BY EC
Ⓢ	PAD MOUNTED UTILITY TRANSFORMER
Ⓢ	ELECTRICAL PANEL - SEE PANEL SCHEDULES FOR MOUNTING CONFIGURATION

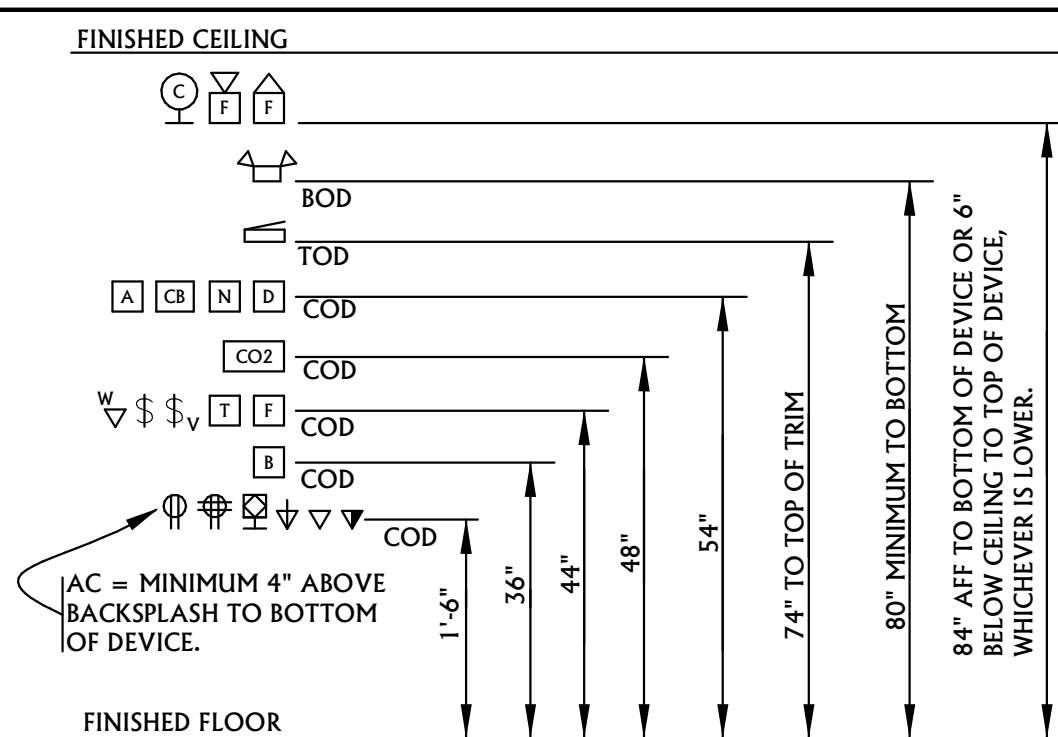
LIGHTING DEVICES

Ⓢ	LAY-IN OR RECESSED LIGHTING FIXTURE
Ⓢ	SURFACE MOUNTED LIGHTING FIXTURE
Ⓢ	DIRECT/ INDIRECT LIGHTING PENDANT MOUNTED FIXTURE.
Ⓢ	SURFACE MOUNTED OR CHAIN HUNG STRIP FIXTURE
Ⓢ	WALL BRACKET LIGHTING FIXTURE
Ⓢ	RECESSED DOWN LIGHT, HALF MOON INDICATES WALL WASH TRIM AND DIRECTION.
Ⓢ	SURFACE MOUNTED CYLINDER FIXTURE
Ⓢ	WALL MOUNTED FIXTURE
Ⓢ	WALL SCONCE FIXTURE
Ⓢ	FILLED CENTER OR SLASH INDICATES FIXTURE IS AN EMERGENCY DEVICE WITH EMERGENCY BATTERY PACK OR CONNECTED TO EMERGENCY POWER.
Ⓢ	EXIT SIGN, BRACKET INDICATES WALL MOUNTING. NUMBER OF FACES AND DIRECTION INDICATED BY FILLED AREAS.
Ⓢ	REMOTE DOUBLE HEAD EGRESS FIXTURE
Ⓢ	SITE GROUND MOUNTED FLOOD FIXTURE
Ⓢ	DOUBLE HEAD WALL MOUNTED BATTERY PACK POWERED EGRESS FIXTURE.
Ⓢ	SQUARE HEAD POLE MOUNTED SITE LIGHT FIXTURE.
Ⓢ	ROUND HEAD POLE MOUNTED SITE LIGHT FIXTURE.

ELECTRICAL ABBREVIATIONS

A	AMP(S)	LTS	LIGHTS
ACCU	AIR CONDITIONING CONDENSING UNIT	LW	LIGHT WHITE
ACU	AIR CONDITIONING UNIT	MC	MECHANICAL CONTRACTOR
ADJ	ADJUSTABLE	MCA	MINIMUM CIRCUIT AMPS
ADMIN	ADMINISTRATION	MCB	MAIN CIRCUIT BREAKER
AFF	ABOVE FINISH FLOOR	MDP	MAIN DISTRIBUTION PANEL
AHU	AIR HANDLING UNIT	MECH	MECHANICAL
AL	ALUMINUM	MFA	MINIMUM FEEDER AMPACITY
AMP	AMPERE(S)	MFG	MANUFACTURER
APPL	APPLIANCE	MIN	MINIMUM
APPROX	APPROXIMATE	MLO	MAIN LUGS ONLY
ATS	AUTOMATIC TRANSFER SWITCH	MOC	MOMENTARY CONTACT
BLDG	BUILDING	MOC	MOMENTARY CONTACT
BRK	BREAKER	MOC	MOMENTARY CONTACT
BTU/HR	BRITISH THERMAL UNIT/HOUR	MP	MAXIMUM OVERCURRENT PROTECTION
		MTD	MAIN PANEL MOUNTED
C	CONDUIT	NIC	NOT IN CONTRACT
CB	CIRCUIT BREAKER	NO	NUMBER
CCT	CIRCUIT	OC	OVERCURRENT PROTECTION
CCTV	CLOSED CIRCUIT TELEVISION	OFF	OFFICE
CUH	CABINET UNIT HEATER	OH	OVERHEAD
CFM	CUBIC FEET PER MINUTE	P	PHASE
COM	COMMUNICATION	PNL	PANEL
COMM	COMMISSARY	PREP	PREPARATION
COMP	COMPRESSOR	PROD	PRODUCE
COND	CONDENSER	P/I	PROVIDE & INSTALL
CONTR	CONTRACTOR	RA	REMOTE ANNUNCIATOR
CU	COPPER	RAF	RETURN AIR FAN
CTV	CABLE TELEVISION	RECP	RECEPTACLE
CW	COOL WHITE	REF	REFRIGERATOR
		REFR	REFRIGERANT
DIA	DIAMETER	REQD	REQUIRED
DISC	DISCONNECT	RM	ROOM
DPS	DOOR POWER SUPPLY	RMS	ROOM(S)
DWG	DRAWING	RR	RESTROOMS
		RS	RAPID START
EC	ELECTRICAL CONTRACTOR	SDP	SUB DISTRIBUTION PANEL
EF	EXHAUST FAN	SER	SERVICE
ELEC	ELECTRIC	SF	SUPPLY FAN
EMD	ESTIMATED MAXIMUM DEMAND	SHT	SHEET
EMER	EMERGENCY	SN	SOLID NEUTRAL
ENGR	ENGINEER	SP	SPECIFICATIONS
ETC	ETCETERA	SPTS	SPECS
EW	ELECTRIC WATER COOLER	SPST	SINGLE THROW
EXT	EXTERIOR	STD	STANDARD
FA	FIRE ALARM	STL	STEEL
FAC	FACILITY	STOR	STORAGE
FACP	FIRE ALARM CONTROL PANEL	SW	SWITCH
FIX	FIXTURE		
FLA	FULL LOAD AMPS	TBD	TELEPHONE BACK BOARD
FT	FOOT	TV	TELEVISION
		TYP	TYPICAL
GC	GENERAL CONTRACTOR	UG	UNDERGROUND
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	UGE	UNDERGROUND ELECTRICAL
		UGT	UNDERGROUND TELEPHONE
HP	HORSEPOWER	UH	UNIT HEATER
HPS	HIGH PRESSURE SODIUM	V	VOLT(S)
HID	HIGH INTENSITY DISCHARGE	VA	VOLT AMPERES
HT	HEIGHT	VEST	VESTIBULE
HTRS	HEATERS	W	WIRE
HW	HOT WATER	W	WATT(S)
HHW	HOT WATER HEATER	W/	WITH
HWP	HOT WATER PUMP	WM	WATT MISER
HZ	HERTZ	XFMR	TRANSFORMER
INC	INCORPORATED		
J-BOX	JUNCTION BOX		
KHZ	KILOHERTZ		
KIT	KITCHEN		
KVA	KILOVOLT AMPERE(S)		
KW	KILOWATT(S)		

INTERIOR MOUNTING HEIGHTS



ELECTRICAL SHEET LIST

E001	ELECTRICAL COVER
E100	ELECTRICAL DEMOLITION PLANS
E200	ELECTRICAL REMODEL PLANS



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Drawn by
JB

Date
09.29.2025

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Sheet Contents

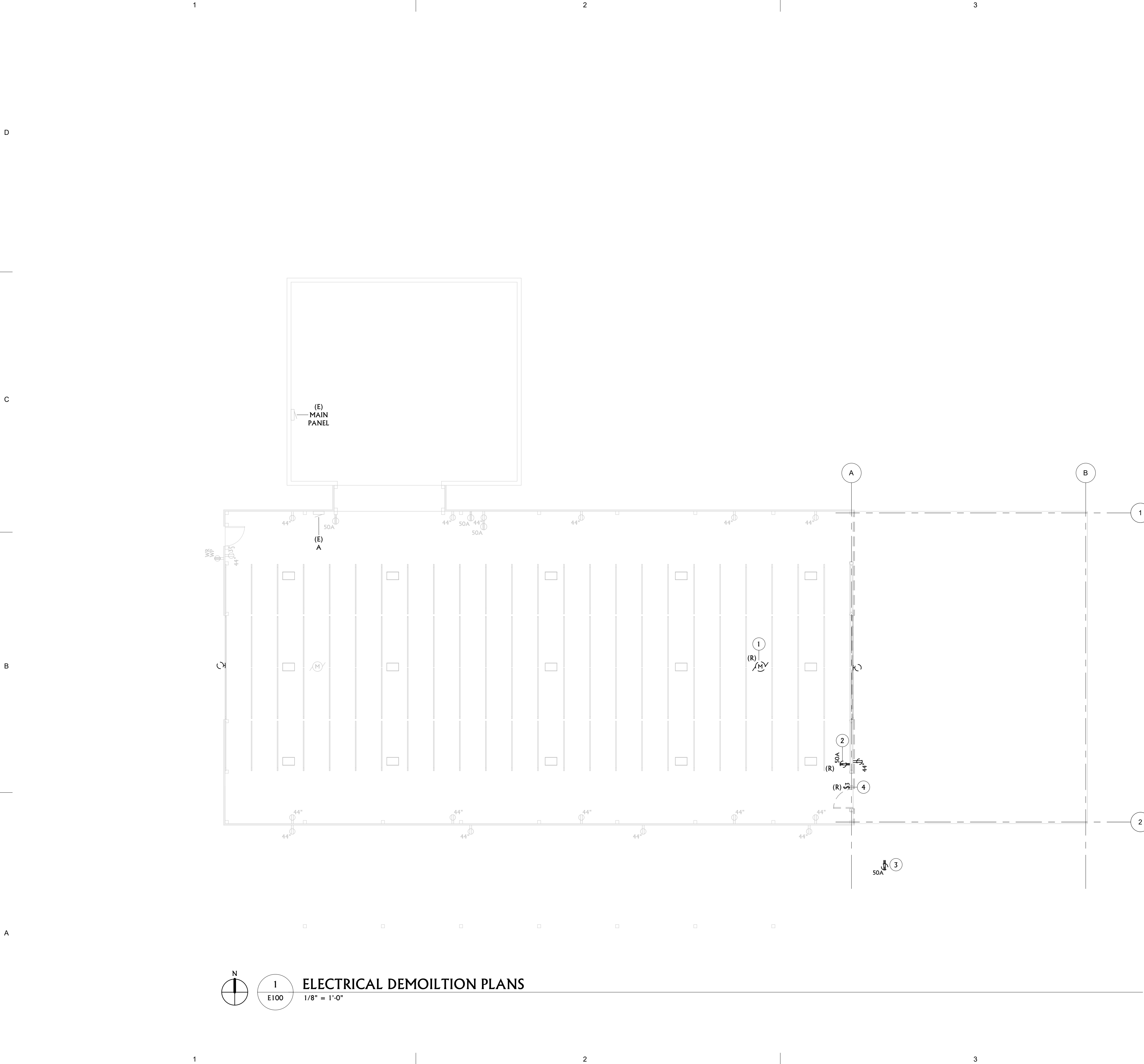
ELECTRICAL COVER

Sheet No.

E001

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ELECTRICAL GENERAL DEMOLITION NOTES	
A	ALL DASHED ITEMS ON DEMOLITION PLANS ARE TO BE REMOVED UNLESS NOTED OTHERWISE. DEVICES SHOWN ARE BASED ON EXISTING PLANS AND LIMITED VISUAL FIELD OBSERVATIONS AND ARE ONLY INTENDED TO CONVEY SCOPE. DEMO OR MODIFY ALL EXISTING ELECTRICAL INSTALLATIONS ARE REQUIRED TO SUPPORT PROJECT. FIELD VERIFY ALL CONDITIONS PRIOR TO BIDDING.
B	ALL ITEMS DENOTED WITH AN (R) ARE TO BE RELOCATED OR REMOVED AND REINSTALLED. ALL SHADED ITEMS ARE EXISTING TO REMAIN. ALL ITEMS DENOTED WITH AN (E) ARE EXISTING TO REMAIN.
C	EXISTING CONDUITS STUBBED THROUGH THE FLOOR THAT ARE NOT REUSED OR ARE ABANDONED SHALL BE CUT AT THE FLOOR SURFACE, GROUND FLUSH AND FILLED WITH GROUT. FLOOR FINISH SHALL MATCH THAT OF EXISTING.
D	REMOVE ALL CONDUCTORS, CABLING AND RACEWAYS BACK TO SOURCE OR TO NEAREST JUNCTION UNNAFFECTED BY DEMOLITION AND REMODEL WORK, UNLESS OTHERWISE NOTED. NO EXISTING WIRING MAY BE REUSED IN THE NEW ELECTRICAL WORK. PROVIDE NEW CONDUCTORS IN EXISTING RACEWAYS THAT ARE FEASIBLE TO RE-USE. USE EXISTING BACK BOXES WITH NEW DEVICES IN APPROPRIATE AREAS.
E	SOME DEVICES AND SYSTEMS THAT ARE NOT REMOVED MAY BE AFFECTED BY DEMOLITION AND CONSTRUCTION. PROVIDE ALL LABOR AND MATERIALS REQUIRED TO MAINTAIN OR RESTORE CONTINUITY AND FUNCTION OF ALL EXISTING DEVICES AND SYSTEMS THAT ARE NOT REMOVED BUT ARE AFFECTED BY DEMOLITION OR CONSTRUCTION WORK.
F	ALL WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH NEC, STATE AND LOCAL BUILDING CODE.
G	ANY WORK THAT REQUIRES POWER DISRUPTIONS SHALL BY SCHEDULED AND APPROVED BY THE OWNER. ALL WORK SHALL BE PERFORMED WITH NO DISRUPTION OF THE OWNER'S BUSINESS.
H	OWNER HAS FIRST RIGHT OF REFUSAL FOR ALL REMOVED EQUIPMENT AND MATERIALS. PRESENT ALL REMOVED EQUIPMENT AND MATERIALS TO OWNER, REMOVE ALL UNCLAIMED MATERIALS FROM PROJECT SITE AND DISPOSE OF IT IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS.
I	PROVIDE UPDATED, TYPEWRITTEN DIRECTORIES FOR ALL EXISTING PANELS AFFECTED BY DEMOLITION WORK. LABEL ALL CIRCUIT BREAKERS THAT HAVE THEIR ENTIRE LOAD REMOVED AS 'SPARE'.

ELECTRICAL KEYNOTES	
1	RELOCATE OVERHEAD DOOR MOTOR. RETAIN WIRING FOR REUSE. SEE REMODEL PLAN.
2	RELOCATE RECEPTACLE. RETAIN WIRING FOR REUSE. SEE REMODEL PLAN.
3	DISCONNECT EXISTING ELECTRICAL SERVING PLUG BACK TO NEAREST JUNCTION BOX. SEE REMODEL PLAN.
4	RELOCATE LIGHT SWITCH. RETAIN WIRING FOR REUSE. SEE REMODEL PLAN.



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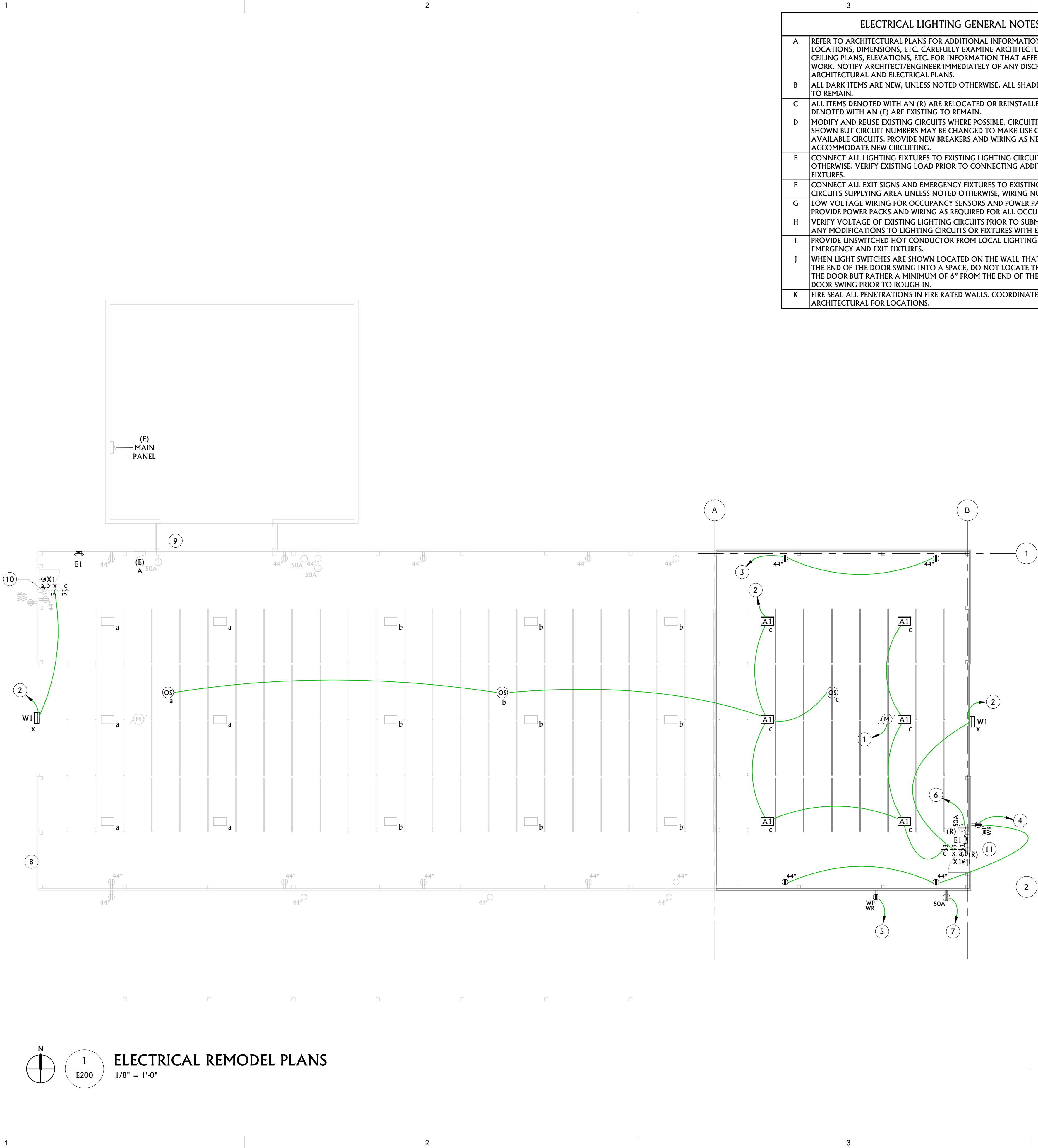
Sheet Contents ELECTRICAL DEMOLITION PLANS

Sheet No.

E100

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ELECTRICAL LIGHTING GENERAL NOTES	
A	REFER TO ARCHITECTURAL PLANS FOR ADDITIONAL INFORMATION ON DEVICE LOCATIONS, DIMENSIONS, ETC. CAREFULLY EXAMINE ARCHITECTURAL FLOOR PLANS, CEILING PLANS, ELEVATIONS, ETC. FOR INFORMATION THAT AFFECTS ELECTRICAL WORK. NOTIFY ARCHITECT/ENGINEER IMMEDIATELY OF ANY DISCREPANCIES BETWEEN ARCHITECTURAL AND ELECTRICAL PLANS.
B	ALL DARK ITEMS ARE NEW, UNLESS NOTED OTHERWISE. ALL SHADED ITEMS ARE EXISTING TO REMAIN.
C	ALL ITEMS DENOTED WITH AN (R) ARE RELOCATED OR REINSTALLED. ALL ITEMS DENOTED WITH AN (E) ARE EXISTING TO REMAIN.
D	MODIFY AND REUSE EXISTING CIRCUITS WHERE POSSIBLE. CIRCUITING SHALL BE AS SHOWN BUT CIRCUIT NUMBERS MAY BE CHANGED TO MAKE USE OF EXISTING AVAILABLE CIRCUITS. PROVIDE NEW BREAKERS AND WIRING AS NEED TO ACCOMMODATE NEW CIRCUITING.
E	CONNECT ALL LIGHTING FIXTURES TO EXISTING LIGHTING CIRCUITS UNLESS NOTED OTHERWISE. VERIFY EXISTING LOAD PRIOR TO CONNECTING ADDITIONAL LIGHTING FIXTURES.
F	CONNECT ALL EXIT SIGNS AND EMERGENCY FIXTURES TO EXISTING EMERGENCY CIRCUITS SUPPLYING AREA UNLESS NOTED OTHERWISE, WIRING NOT SHOWN.
G	LOW VOLTAGE WIRING FOR OCCUPANCY SENSORS AND POWER PACKS NOT SHOWN. PROVIDE POWER PACKS AND WIRING AS REQUIRED FOR ALL OCCUPANCY SENSORS.
H	VERIFY VOLTAGE OF EXISTING LIGHTING CIRCUITS PRIOR TO SUBMITTALS. COORDINATE ANY MODIFICATIONS TO LIGHTING CIRCUITS OR FIXTURES WITH ENGINEER.
I	PROVIDE UNSWITCHED HOT CONDUCTOR FROM LOCAL LIGHTING CIRCUIT TO ALL EMERGENCY AND EXIT FIXTURES.
J	WHEN LIGHT SWITCHES ARE SHOWN LOCATED ON THE WALL THAT IS COMMON WITH THE END OF THE DOOR SWING INTO A SPACE, DO NOT LOCATE THE SWITCHES BEHIND THE DOOR BUT RATHER A MINIMUM OF 6" FROM THE END OF THE SWING. VERIFY EXACT DOOR SWING PRIOR TO ROUGH-IN.
K	FIRE SEAL ALL PENETRATIONS IN FIRE RATED WALLS. COORDINATE WITH ARCHITECTURAL FOR LOCATIONS.

ELECTRICAL POWER GENERAL NOTES	
A	REFER TO ARCHITECTURAL PLANS FOR ADDITIONAL INFORMATION ON DEVICE LOCATIONS, DIMENSIONS, ETC. CAREFULLY EXAMINE ARCHITECTURAL FLOOR PLANS, CEILING PLANS, ELEVATIONS, ETC. FOR INFORMATION THAT AFFECTS ELECTRICAL WORK. NOTIFY ARCHITECT/ENGINEER IMMEDIATELY OF ANY DISCREPANCIES BETWEEN ARCHITECTURAL AND ELECTRICAL PLANS.
B	ALL DARK ITEMS ARE NEW, UNLESS NOTED OTHERWISE. ALL SHADED ITEMS ARE EXISTING TO REMAIN.
C	CONNECT ALL DEVICES TO EXISTING CIRCUITS SERVING THE AREA UNLESS NOTED OTHERWISE. VERIFY EXISTING LOAD PRIOR TO CONNECTING ADDITIONAL DEVICES.
D	FIRE SEAL ALL PENETRATIONS IN FIRE RATED WALLS. COORDINATE WITH ARCHITECTURAL FOR LOCATIONS.

ELECTRICAL KEYNOTES	
1	REINSTALL OVERHEAD DOOR MOTOR SAVED DURING DEMO PHASE IN NEW LOCATION. EXTEND/ MODIFY CONDUIT AND CONDUCTORS AS NECESSARY. COORDINATE WITH FRAMING. REUSE EXISTING CIRCUIT PANEL A-2.
2	REUSE EXISTING LIGHTING CIRCUITS. VERIFY CIRCUIT LOADING PRIOR TO ADDING ANY LOAD.
3	CIRCUIT TO EXISTING RECEPTACLE CIRCUIT FOR NORTH WALL PANEL A-8. VERIFY CIRCUIT LOADING PRIOR TO ADDING ANY LOAD.
4	CIRCUIT TO EXISTING RECEPTACLE CIRCUIT FOR SOUTH WALL PANEL A-6. VERIFY CIRCUIT LOADING PRIOR TO ADDING ANY LOAD.
5	CIRCUIT TO EXISTING RECEPTACLE CIRCUIT FOR OUTSIDE WALL PANEL A-1. VERIFY CIRCUIT LOADING PRIOR TO ADDING ANY LOAD.
6	REINSTALL RECEPTACLE SAVED DURING DEMO PHASE IN NEW LOCATION. EXTEND/ MODIFY CONDUCTORS AS NECESSARY. COORDINATE WITH FRAMING. REUSE EXISTING CIRCUIT PANEL A-9, 11.
7	PROVIDE NEW WEATHER RATED NEMA 10-50 RECEPTACLE IN WEATHERPROOF ENCLOSURE. REUSE EXISTING CIRCUIT FOR OUTDOOR PLUG. EXTEND/ MODIFY CONDUIT AND CONDUCTORS AS NECESSARY.
8	PROVIDE PHOTOCELL FOR CONTROL OF EXTERIOR BUILDING LIGHTS. SEE SHEET E001 DETAIL 2 FOR MORE INFORMATION.
9	PROVIDE TORK #ELC74 TIME CLOCK. COORDINATE INSTALL LOCATION WITH OWNER.
10	USE EXISTING LIGHT SWITCH TO CONTROL EXISTING LIGHTS (ZONES A&B). PROVIDE NEW THREE WAY SWITCH TO CONTROL NEW LIGHTS (ZONE C).
11	RELOCATE EXISTING LIGHT SWITCH TO CONTROL EXISTING LIGHTS (ZONES A&B) EXTEND/MODIFY CONDUIT AS NECESSARY. PROVIDE NEW THREE WAY SWITCH TO CONTROL NEW LIGHTS (ZONE C).



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E200