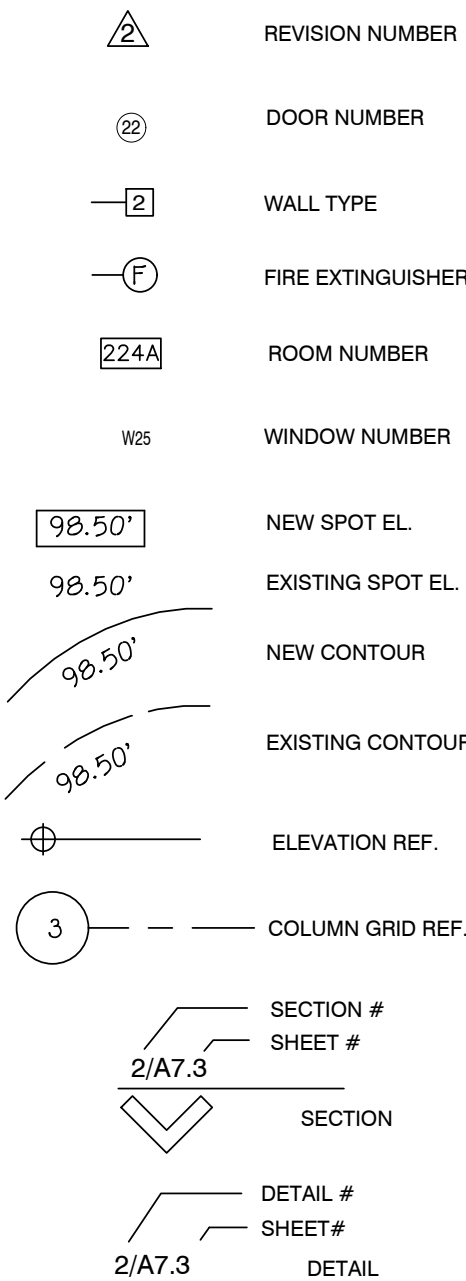


STRUCTURAL PRESERVATION of
LA VERKIN HYDROELECTRIC
POWER PLANT
La Verkin, UT

GENERAL SYMBOLS



ABBREVIATIONS

& L @ C Ø # (E)	And Angle At Centerline Diameter or Round Pound or Number Existing	DBL. DEPT. D.F. DET. DIA. DIM. DISP. DN. D.O. DR. DWR. DS. D.S.P. DWG.	Double Department Drinking Fountain Detail Diameter Dimension Dispenser Down Door Opening Door Drawer Downspout Dry Standpipe Drawing	F.O.S. FPRF. F.S. FT. FTG. FURR. FUT.	Face of Studs Fireproof Full Size Foot or Feet Footing Furring Future	MH. MIN. MIR. MISC. M.O. MASONRY MUL.	Manhole Minimum Mirror Miscellaneous Masonry Opening Mounted Mullion	S. S.C. SCHED. S.D. SECT. SH. SHR. SHT. SIM. SPEC. SQ. S.S.T. S.SK. STA. STD. STL. STOR. STR.L. SUSP. SYM.	South Solid Core Schedule Soap Dispenser Section Shelf Shower Sheet Similar Specification Square Stainless Steel Service Sink Station Standard Steel Storage Structural Suspended Symmetrical
BD. BITUM. BLDG. BLK. BLKG. BM. BOT. or B.	Board Bituminous Building Block Blocking Beam Bottom	ELEC. ELEV. EMER. ENCL. E.P. EQ. EQPT. E.W.C. EXST. EXPO. EXP. EXT.	Electrical Elevator Emergency Enclosure Electrical Panelboard Equal Equipment Electric Water Cooler Existing Exposed Expansion Exterior	I.D. INSUL. INT.	Inside Diameter (Dim.) Insulation Interior	PRCST. PL. P.LAM. PLAS. PLYWD. PR. PT. PTN. Q.T.	Pre-cast Plate Plastic Laminate Plaster Plywood Pair Point Partition Quarry Tile	T. TRD. T.C. TEL. TER. T.&G. THK. T.P. T.V. T.W. TYP.	Top Tread Top of Curb Telephone Terrazzo Tongue & Groove Thick Top of Pavement Television Top of Wall Typical
CAB. C.B. CEM. CER. C.I. C.G. CLG. CLKG. CLO. CLR. C.O. COL. CONC. CONN. CONSTR. CONT. CORR. CTSK. CNTR. CTR.	Cabinet Catch Basin Cement Ceramic Cast Iron Corner Guard Ceiling Calking Closet Clear Cased Opening Column Concrete Connection Construction Continuous Corridor Countersunk Counter Center	F.A. F.B. F.D. FDN. F.E. F.E.C. F.H.C. FINL. FL. FLASH. FLUOR. F.O.C. F.O.F.	Fire Alarm Flat Bar Floor Drain Foundation Fire Extinguisher Fire Extinguisher Cab. Fire Hose Cabinet Finish Floor Flashing Fluorescent Face of Concrete Face of Finish	JAN. JT. KIT. LAB. LAM. LAV. LKR. LT. MAX. M.C. MECH. MEMB. MET. MFR.	Janitor Joint Kitchen Laboratory Laminate Lavatory Locker Light Maximum Medicine Cabinet Mechanical Membrane Metal Manufacturer	R. RAD. R.D. REF. REFR. RGTR. REINF. REQ. RESIL. RM. R.O. RWD. R.W.L.	Riser Radius Roof Drain Reference Refrigerator Register Reinforced Required Resilient Room Rough Opening Redwood Rain Water Leader	UNF. U.N.O. UR. VERT. VEST. W. W/ W.C. WD. W/O WP. WT.	Unfinished Unless Noted Otherwise Urine Vertical Vestibule West With Water Closet Wood Without Waterproof Weight

DRAWINGS INDEX

ARCHITECTURAL	STRUCTURAL
A0.1 COVER SHEET	S1.1 GENERAL STRUCTURAL NOTES
A2.1 FLOOR PLANS	S3.1 STRUCTURAL PLANS
A4.1 BUILDING ELEVATIONS	S8.1 STRUCTURAL DETAILS

GENERAL NOTES/CODE ANALYSIS

- THIS BUILDING IS A HISTORICAL STRUCTURE AND CANNOT BE OCCUPIED. THE WORK REFLECTED IN THESE DESIGN DOCUMENTS IS IN AN EFFORT TO PRESERVE THE HISTORICAL STRUCTURE, NOT TO MAKE THE BUILDING SAFE FOR OCCUPANCY.
- Site Address: La Verkin, Utah
- Legal Description: Washington County Parcel LV-166-B.
- All construction shall be in compliance with the 2021 editions of the IBC, IPC, IMC, IECC, 2021 NEC and ANSI A117.1 2009 (including all applicable amendments), and shall comply with all codes, ordinances, and requirements set forth by Washington County, UT
- Zoning District: Residential Agricultural
- Occupancy Type: S-2
- Construction Type: V-B
- Building limitations:
S-2 OCCUPANCY
S-2 (NS) Allowable Area: 13,500 sq. ft. Per Floor
Actual Building Areas:
1st floor Area: 1,200 sq. ft.
2nd floor Area: 1,200 sq. ft.
Total Building Area: 2,400 sq. ft.
S-2 (NS) Allowable Stories: Base: 2 Stories
Actual Stories: 2 Stories
Allowable Height: Base: 40 feet
Actual Height: 35'-0" +/-
- Building occupancy & exits:
This building is not intended for Occupancy until additional work is completed to ensure the safety of the structure.
- Building does NOT have a fire sprinkler installed.
- It is the responsibility of the general contractor to become aware of the location of all underground utilities on the site before any drilling or excavation begins.
- Contractor shall coordinate construction with landscape contractor and provide rough grading in planting areas. Landscape contractor shall be responsible for proper drainage of landscaped areas away from buildings.
- All dimensions are to be field verified for correctness. If any variances occur, the Architect shall be contacted for verification. Written dimensions on these drawings shall have precedence over scaled dimensions. All interior dimensions are to be to face of stud unless otherwise noted. All exterior dimensions are to be to face of stud / structural girt or clear opening, unless otherwise noted.
- Fire Department Access must always be maintained during the course of construction and access provided to the combustible construction and stock piles of combustible materials, coordinate any concerns and access requirements with the local Fire Department

PROPERTY INFO

PROPERTY ADDRESS = WASHINGTON COUNTY
PARCEL NO.: LV-166-B
LA VERKIN, UTAH

OWNER :
WASHINGTON COUNTY
111 E TABERNACLE ST.
ST. GEORGE UT, 84770
PHONE: (435) 301-7000

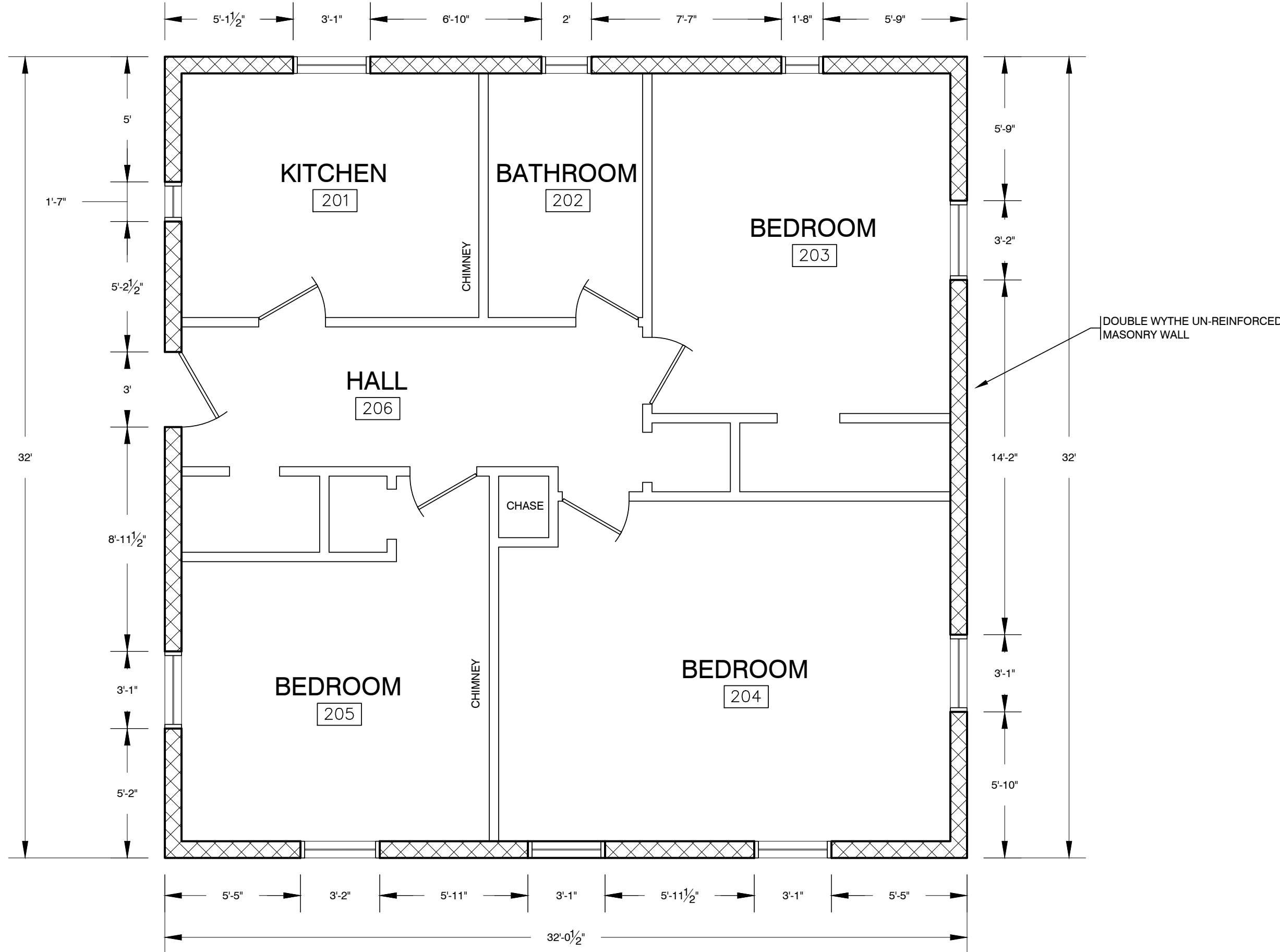
7/16/2023
DATE:
23027
JOB NUMBER:
N/A
SCALE:
J.J.M.
DRAWN:
CHECKED:



DESIGN
ASSOCIATES INC.
ARCHITECTURE &
CONSULTING ENGINEERS

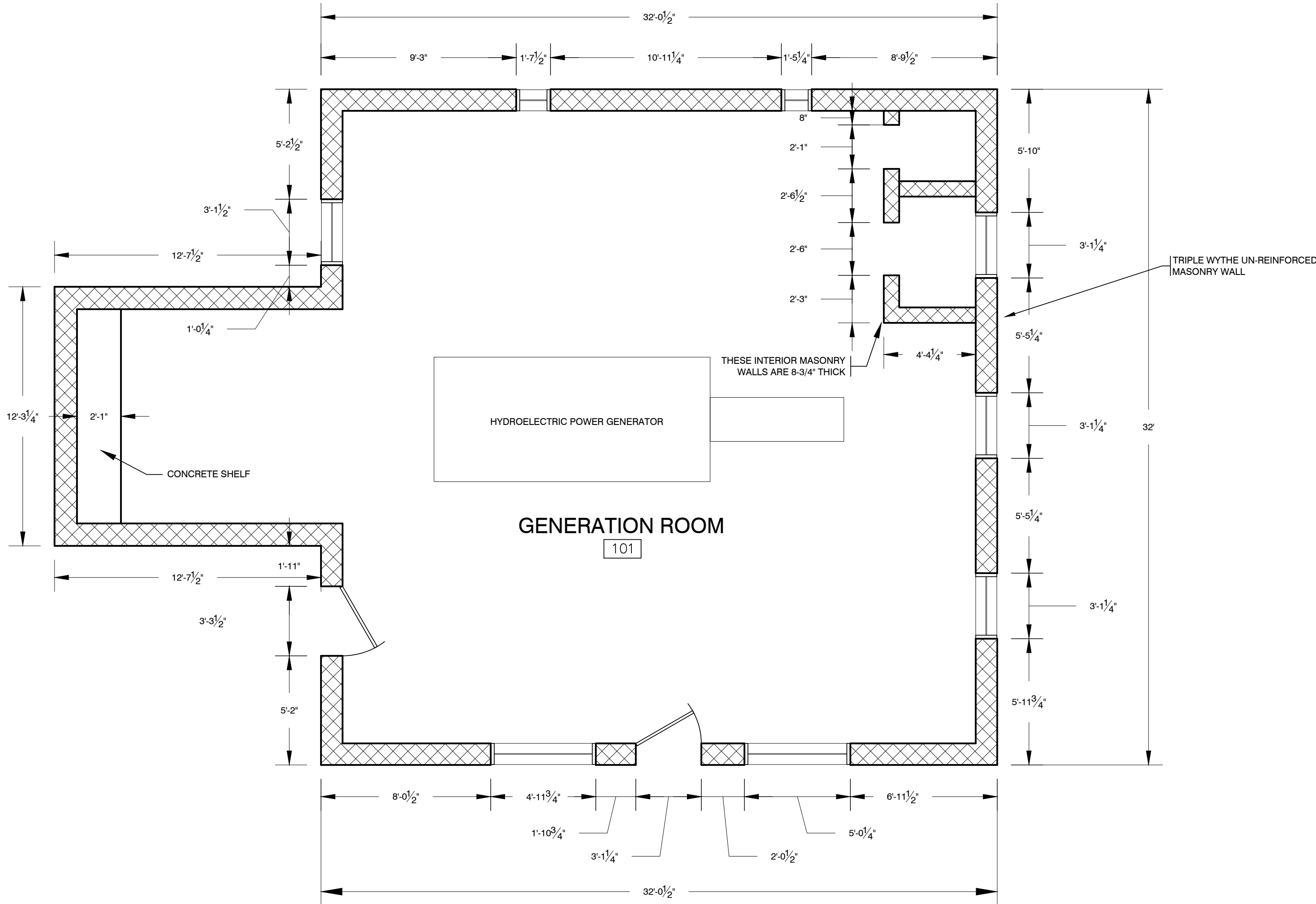
73 EAST 100 SOUTH
ST. GEORGE UTAH 84770
(435) 628-2377 (435) 673-3580 fax
www.mrwdesign.com

COVER SHEET
WASHINGTON COUNTY HISTORICAL HYDROELECTRIC PLANT
37° 11' 18" NORTH 113° 16' 46.24" WEST
LA VERKIN, UTAH 54745



UPPER FLOOR PLAN

SCALE: 1/4" = 1'



LOWER FLOOR PLAN

SCALE: 1/4" = 1'

NOTES:

- THIS BUILDING IS A HISTORICAL STRUCTURE AND CANNOT BE OCCUPIED. THE WORK REFLECTED IN THESE DESIGN DOCUMENTS IS IN AN EFFORT TO PRESERVE THE HISTORICAL STRUCTURE, NOT TO MAKE THE BUILDING SAFE FOR OCCUPANCY.
- ROOMS ARE LABELED BASED ON THEIR HISTORICAL USE AND ARE NOT BE CONSTRUED AS ANY FUTURE USE.
- EXISTING CONSTRUCTION INFORMATION:
CEILING HEIGHT = 8'-0"
UPPER FLOOR WALLS ARE DOUBLE WYTHE BRICK ~ 8"
ALL INTERIOR DOOR HEIGHTS = 80"
TYPICAL INTERIOR STUD = 1-1/2" x 3-1/4"
WALLS & CEILINGS HAVE LATH & PLASTER FOR A FINISH IN VERY POOR STATE
LOWER FLOOR WALLS ARE TRIPLE WYTHE BRICK ~ 12" TO 12-1/2" THICK

7/06/2023
DATE:

23027
JOB NUMBER:

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

DS
DRAWN:

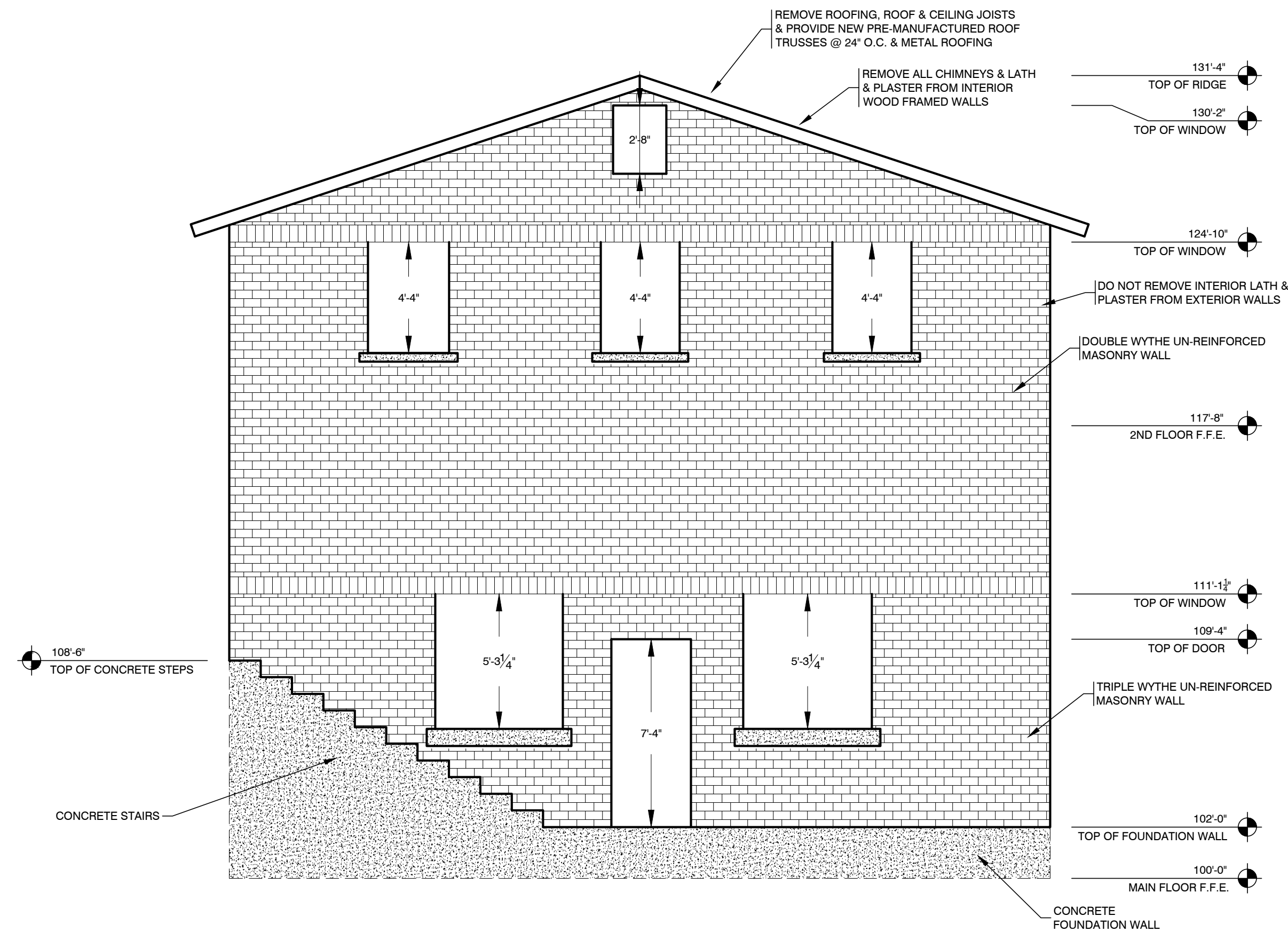
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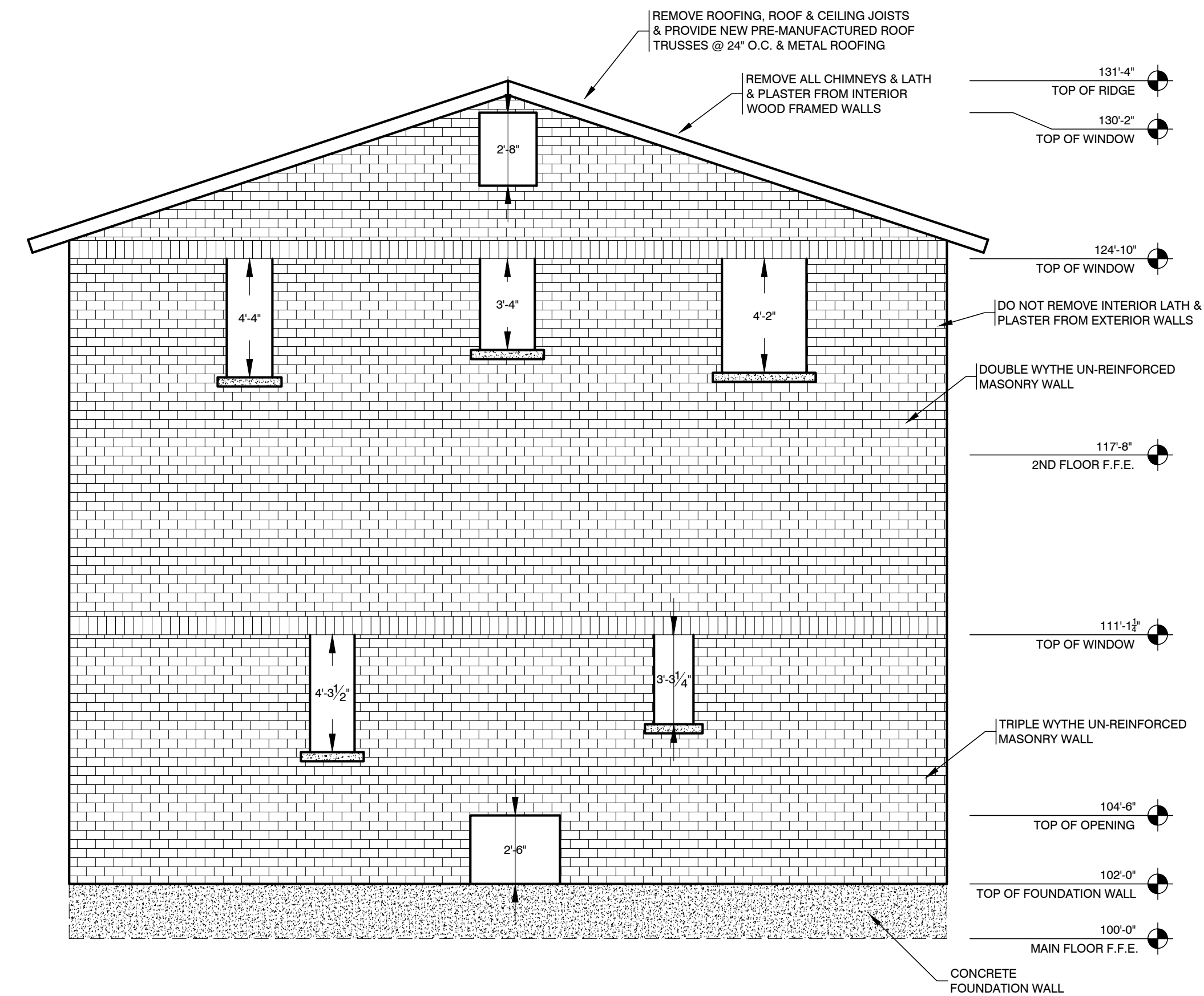
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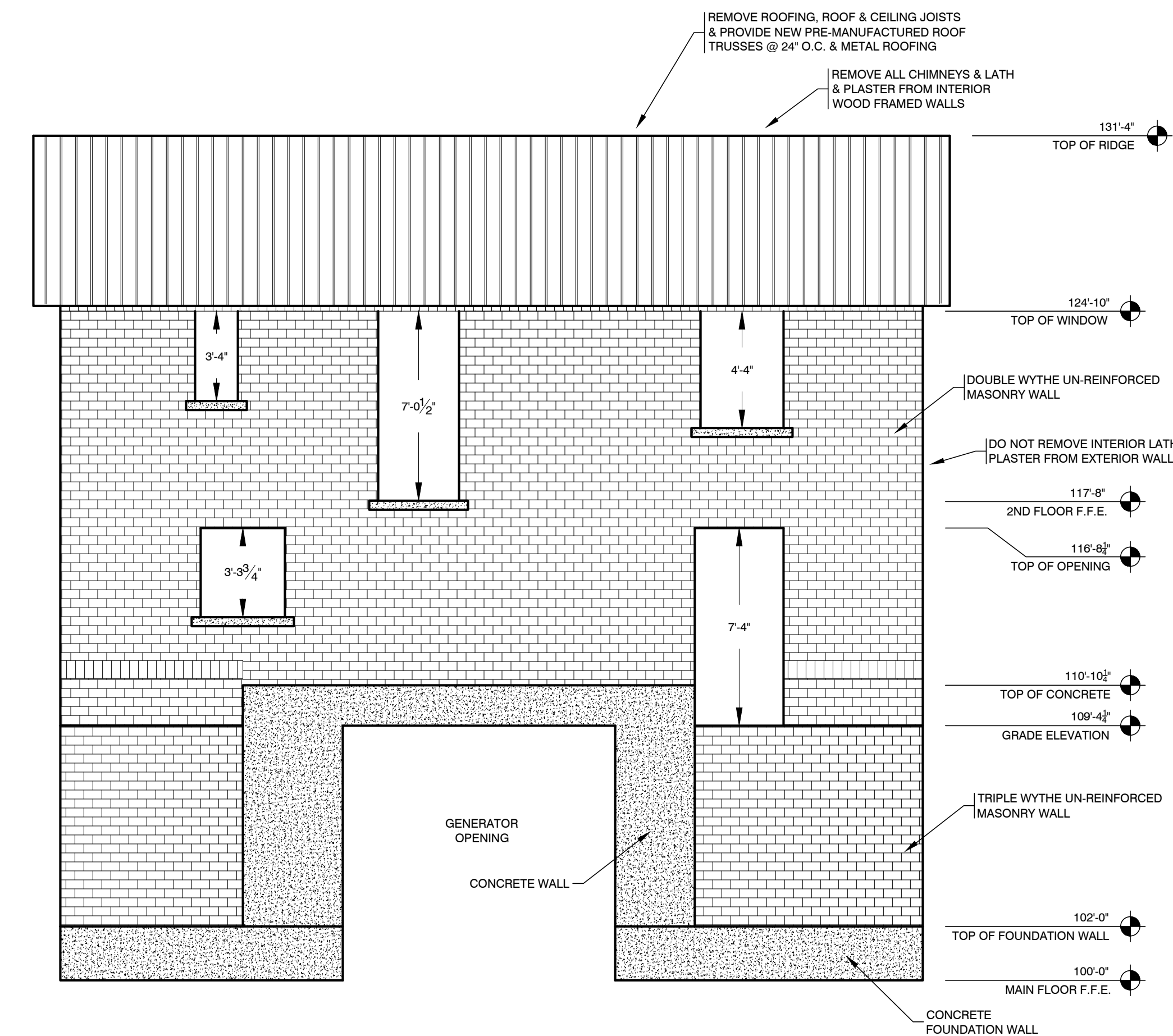
FLOOR PLANS
WASHINGTON COUNTY HISTORICAL HYDROELECTRIC PLANT
37° 11' 45.18" NORTH 113° 16' 46.24" WEST
LA VERKIN, UTAH 84745



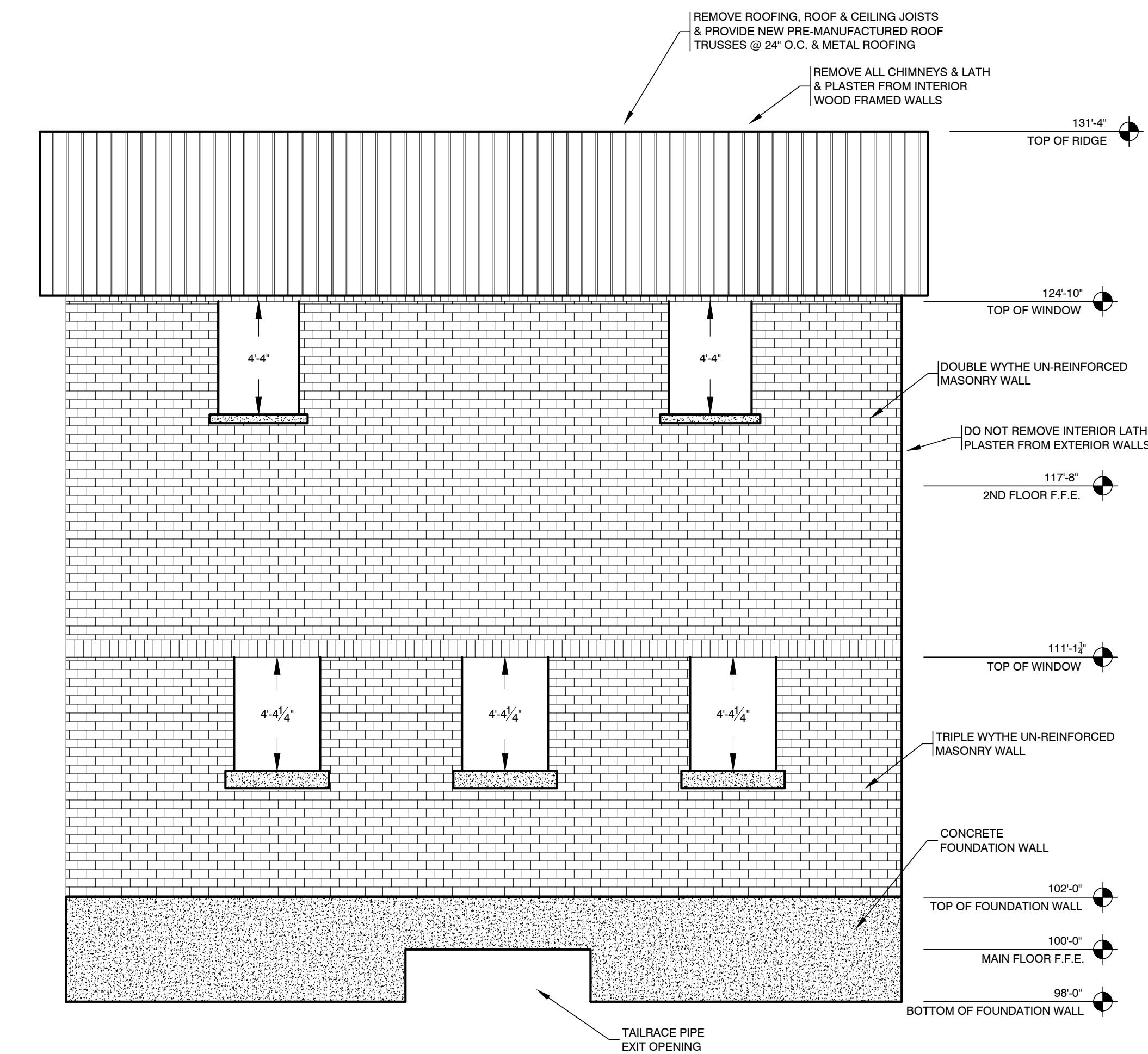
WEST ELEVATION
SCALE: 1/4" = 1'-0"



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



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



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

SPECIAL INSPECTION & NONDESTRUCTIVE TESTING REQUIREMENTS.

1. SPECIAL INSPECTION AND NONDESTRUCTIVE TESTING SHALL BE PERFORMED BY AN INDEPENDENT TESTING AGENCY AND SHALL BE PAID FOR BY THE OWNER.
2. WHERE RESULTS OF INSPECTIONS OR TESTS DO NOT INDICATE COMPLIANCE WITH CONTRACT DOCUMENTS, RE-TESTS MAY BE REQUIRED PER ENGINEER'S DISCRETION.

AISC 360-16 QUALITY ASSURANCE TABLE N5.4-1, N5.4-2, AND N5.4-3 WELDING

INSPECTION TASKS PRIOR TO WELDING		
WELDER QUALIFICATION RECORDS & CONTINUITY RECORDS PER AWS	<input type="checkbox"/> CONTINUOUS	<input checked="" type="checkbox"/> PERIODIC
WELDING PROCEDURE SPECIFICATIONS (WPS) AVAILABLE	<input checked="" type="checkbox"/> CONTINUOUS	<input type="checkbox"/> PERIODIC
MANUFACTURER CERTIFICATIONS FOR WELDING CONSUMABLES AVAILABLE	<input type="checkbox"/> CONTINUOUS	<input checked="" type="checkbox"/> PERIODIC
MATERIAL IDENTIFICATION (TYPE/GRADE)	<input type="checkbox"/> CONTINUOUS	<input checked="" type="checkbox"/> PERIODIC
WELDER IDENTIFICATION SYSTEM	<input type="checkbox"/> CONTINUOUS	<input checked="" type="checkbox"/> PERIODIC
FIT-UP OF GROOVE WELDS (INCLUDING JOINT GEOMETRY)	<input type="checkbox"/> CONTINUOUS	<input type="checkbox"/> PERIODIC
◦ JOINT PREPARATIONS		
◦ DIMENSIONS (ALIGNMENT, ROOT OPENING, ROOT FACE, BEVEL)		
◦ CLEANLINESS (CONDITION OF STEEL SURFACES)		
◦ TACKING (TACK WELD QUALITY AND LOCATION)		
◦ BACKING TYPE AND FIT (IF APPLICABLE)		
FIT-UP OF CJP GROOVE WELDS OF HSS T-, Y- & K-JOINTS WITH OUT BACKING (INCLUDING JOINT GEOMETRY)	<input type="checkbox"/> CONTINUOUS	<input checked="" type="checkbox"/> PERIODIC
◦ JOINT PREPARATIONS		
◦ DIMENSIONS (ALIGNMENT, ROOT OPENING, ROOT FACE, BEVEL)		
◦ CLEANLINESS (CONDITION OF STEEL SURFACES)		
◦ TACKING (TACK WELD QUALITY & LOCATION)		
CONFIGURATION AND FINISH OF ACCESS HOLES	<input type="checkbox"/> CONTINUOUS	<input checked="" type="checkbox"/> PERIODIC
FIT-UP OF FILLET WELDS	<input type="checkbox"/> CONTINUOUS	<input checked="" type="checkbox"/> PERIODIC
◦ DIMENSIONS (ALIGNMENT, GAPS AT ROOT)		
◦ CLEANLINESS (CONDITION OF STEEL SURFACES)		
◦ TACKING (TACK WELD QUALITY AND LOCATION)		
CHECKING WELDING EQUIPMENT	<input type="checkbox"/> CONTINUOUS	<input checked="" type="checkbox"/> PERIODIC
INSPECTION TASKS DURING WELDING		
CONTROL AND HANDLING OF WELDING CONSUMABLES	<input type="checkbox"/> CONTINUOUS	<input checked="" type="checkbox"/> PERIODIC
◦ PACKAGING		◦ EXPOSURE CONTROL
NO WELDING OVER CRACKED TACK WELDS	<input type="checkbox"/> CONTINUOUS	<input checked="" type="checkbox"/> PERIODIC
ENVIRONMENTAL CONDITIONS	<input type="checkbox"/> CONTINUOUS	<input checked="" type="checkbox"/> PERIODIC
◦ WIND SPEED WITHIN LIMITS		◦ PRECIPITATION AND TEMPERATURE
WPS FOLLOWED	<input type="checkbox"/> CONTINUOUS	<input checked="" type="checkbox"/> PERIODIC
◦ SETTINGS ON WELDING EQUIPMENT		◦ TRAVEL SPEED
◦ SELECTING WELDING MATERIALS		◦ SHIELDING GAS TYPE/FLOW RATE
◦ PREHEAT APPLIED		◦ PROPER POSITION (F, V, H, OH)
◦ INTERPASS TEMPERATURE MAINTAINED (MIN./MAX.)		
WELDING TECHNIQUES	<input type="checkbox"/> CONTINUOUS	<input checked="" type="checkbox"/> PERIODIC
◦ INTERPASS AND FINAL CLEANING		◦ EACH PASS WITH IN PROFILE LIMITATIONS
◦ EACH PASS MEETS QUALITY REQUIREMENTS		
PLACEMENT & INSTALLATION OF STEEL HEADED STUD ANCHORS	<input type="checkbox"/> CONTINUOUS	<input checked="" type="checkbox"/> PERIODIC
INSPECTION TASKS AFTER WELDING		
WELDS CLEANED	<input type="checkbox"/> CONTINUOUS	<input checked="" type="checkbox"/> PERIODIC
SIZE, LENGTH AND LOCATION OF WELDS	<input checked="" type="checkbox"/> CONTINUOUS	<input type="checkbox"/> PERIODIC
WELDS MEET VISUAL ACCEPTANCE CRITERIA	<input checked="" type="checkbox"/> CONTINUOUS	<input type="checkbox"/> PERIODIC
◦ CRACK PROHIBITION		◦ WELD/BASE-METAL FUSION
◦ WELD PROFILES		◦ WELD SIZE
◦ POROSITY		◦ UNDERCUT
ARC STRIKES	<input checked="" type="checkbox"/> CONTINUOUS	<input type="checkbox"/> PERIODIC
K-AREA	<input checked="" type="checkbox"/> CONTINUOUS	<input type="checkbox"/> PERIODIC
WELD ACCESS HOLES IN ROLLED HEAVY SHAPES AND BUILT-UP HEAVY SHAPES	<input checked="" type="checkbox"/> CONTINUOUS	<input type="checkbox"/> PERIODIC
BACKING REMOVED AND WELD TABS REMOVED (IF REQUIRED)	<input checked="" type="checkbox"/> CONTINUOUS	<input type="checkbox"/> PERIODIC
REPAIR ACTIVITIES	<input checked="" type="checkbox"/> CONTINUOUS	<input type="checkbox"/> PERIODIC
DOCUMENT ACCEPTANCE OR REJECTION OF WELDED JOINT OR MEMBER	<input checked="" type="checkbox"/> CONTINUOUS	<input type="checkbox"/> PERIODIC
NO PROHIBITED WELDS HAVE BEEN ADDED WITHOUT THE APPROVAL OF THE EOR	<input checked="" type="checkbox"/> CONTINUOUS	<input type="checkbox"/> PERIODIC

SPECIAL INSPECTORS SHALL:

- BE APPROVED BY THE BUILDING OFFICIAL PRIOR TO PERFORMING ANY DUTIES
- PROVIDE PROOF OF LICENSURE BY THE STATE OF UTAH FOR EACH TYPE OF SPECIAL INSPECTION PROVIDED
- INSPECTION REPORTS ARE TO MEET THE REQUIREMENTS OF IBC 1704.2.4
- INSPECTION REPORTS ARE TO BE SUBMITTED TO THE CODE CONSULTANT, ARCHITECT, AND BUILDING OFFICIAL WITHIN 48 HOURS OF PERFORMING INSPECTIONS
- A FINAL INSPECTION REPORT SHALL BE SUBMITTED FOLLOWING COMPLETION OF THE PROJECT DOCUMENTING THE TYPES OF SPECIAL INSPECTIONS PERFORMED AND A STATEMENT INDICATING THAT THE STRUCTURE IS IN COMPLIANCE WITH THE APPROVED CONSTRUCTION DOCUMENTS AND APPLICABLE CODES (SEE IBC 1704.2.4)

DESIGN CRITERIA

1. GOVERNING BUILDING CODE: 2021 INTERNATIONAL BUILDING CODE (IBC)
2. GRAVITY LIVE LOADS USED IN DESIGN:
ROOF LIVE.....20 PSF
SNOW.....15 PSF $l_b = 1.0$
OFFICE LIVE.....50 PSF
OFFICE PARTITION...20 PSF
3. SEISMIC LOADING IBC 1603.1.5;
1. RISK CATEGORY=II 2. $l_w=1.0$ 3. $S_s=0.621$ & $S_1=0.205$ 4. SITE CLASS=C
5. $S_{DS}=0.51\theta$ 6. SEISMIC DESIGN CATEGORY=D
4. WIND LOADING:
RISK CATEGORY: II
VELOCITY $V_{ult} = 100$ MPH
EXPOSURE CATEGORY.....C
5. SEISMIC SITE CLASS
THE SOIL SITE CLASS WAS OBTAINED FROM A SHEAR WAVE VELOCITY SURVEY AT THE SITE OF THIS BUILDING BY LANDMARK TESTING & ENGINEERING. THIS WAS REPORTED TO WASHINGTON COUNTY THROUGH A LETTER DATED AUGUST 14, 2023

VOLUNTEER SEISMIC STRENGTHENING:

THIS PROJECT CONSISTS OF AN EXISTING HISTORIC UN-REINFORCED MASONRY (URM) BUILDING. THE OWNER (WASHINGTON COUNTY) DESIRES TO FIX THE ROOF AS THIS BUILDING HAS FALLEN INTO DISREPAIR. THE ROOF IS FRAMED AS A WOOD ROOF RAFTER AND WOOD CEILING JOIST TIE. THE FLOOR IS FRAMED WITH WOOD FLOOR JOISTS. THE OWNER HAS CONSENTED TO TIE THE EXTERIOR URM WALLS TO THE ROOF AND FLOOR AS PART OF THIS REPAIR EFFORT. NO IN-PLANE CHECKS ARE MADE IN THIS ANALYSIS. THEREFORE IN-PLANE INFORMATION IS NOT REPORTED IN THE DESIGN CRITERIA. THE OWNER UNDERSTANDS THAT AFTER THIS EFFORT IS COMPLETED THE BUILDING REMAINS UN-OCCUPIABLE.

GENERAL

1. THE PROJECT SPECIFICATIONS ARE NOT SUPERSEDED BY THESE GENERAL STRUCTURAL NOTES BUT ARE INTENDED TO BE COMPLIMENTARY TO THEM. CONSULT THE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS IN EACH SECTION. NOTES AND DETAILS ON THE DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES, TYPICAL DETAILS AND SPECIFICATIONS.
2. CONTRACTOR SHALL COMPARE ALL DIMENSIONS AND CONDITIONS ON DRAWINGS AND AT SITE. ALL OMISSIONS OR CONFLICTS BETWEEN THE VARIOUS ELEMENTS OF THE WORKING DRAWINGS AND/OR SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND OR STRUCTURAL ENGINEER BEFORE PROCEEDING WITH ANY WORK INVOLVED. IN CASE OF CONFLICT, FOLLOW THE MOST STRINGENT REQUIREMENT AS DIRECTED BY THE ARCHITECT WITHOUT ADDITIONAL COST TO THE OWNER.
3. ALL DETAILS, SECTIONS, AND NOTES SHOWN ON THE DRAWINGS ARE INTENDED TO BE TYPICAL AND SHALL APPLY TO SIMILAR SITUATIONS ELSEWHERE UNLESS NOTED OR SHOWN OTHERWISE.
4. SHORING AND BRACING REQUIREMENTS:
A. FLOOR AND ROOF STRUCTURES – THE GENERAL CONTRACTOR IS RESPONSIBLE FOR THE METHOD AND SEQUENCE OF ALL STRUCTURAL ERECTION. HE SHALL PROVIDE TEMPORARY SHORING AND BRACING AS HIS METHOD OF ERECTION REQUIRES TO PROVIDE ADEQUATE VERTICAL AND LATERAL SUPPORT. SHORING AND BRACING SHALL REMAIN IN PLACE AS THE CHOSEN METHOD REQUIRES UNTIL ALL PERMANENT MEMBERS ARE IN PLACE AND ALL FINAL CONNECTIONS ARE COMPLETED, INCLUDING ALL ROOF AND FLOOR ATTACHMENTS. THE BUILDING SHALL NOT BE CONSIDERED STABLE UNTIL ALL CONNECTIONS ARE COMPLETE.
B. WALLS ABOVE GRADE SHALL BE BRACED UNTIL THE STRUCTURAL SYSTEM IS COMPLETE. WALLS ARE NOT SELF SUPPORTING.
5. IT SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO COORDINATE WITH ALL TRADES ANY AND ALL ITEMS THAT ARE TO BE INTEGRATED INTO THE STRUCTURAL SYSTEM. OPENINGS OR PENETRATIONS THROUGH, OR ATTACHMENTS TO THE STRUCTURAL SYSTEM THAT ARE NOT INDICATED ON THESE DRAWINGS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR AND SHALL BE COORDINATED WITH THE ARCHITECT/ENGINEER. THE ORDER OF CONSTRUCTION IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. IT IS THE CONTRACTOR'S OBLIGATION TO PROVIDE ITEMS NECESSARY FOR HIS CHOSEN PROCEDURE.
6. OBSERVATION VISITS TO THE SITE BY THE STRUCTURAL ENGINEER SHALL NOT BE CONSTRUED AS INSPECTION NOR APPROVAL ON CONSTRUCTION.
7. ALL CONSTRUCTION AND INSPECTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE INTERNATIONAL BUILDING CODE. THE CONTRACTOR SHALL COORDINATE ALL REQUIRED INSPECTIONS AND SHALL NOT PROCEED WITH THE WORK INVOLVED UNTIL THE INSPECTIONS HAVE BEEN DONE.
8. ALL WORKMANSHIP AND MATERIALS SHALL CONFORM TO THE REQUIREMENTS OF THE LATEST EDITION OF THE INTERNATIONAL BUILDING CODE.
9. THE CONTRACTOR MUST SUBMIT A WRITTEN REQUEST FOR, AND OBTAIN THE ARCHITECT'S AND /OR THE STRUCTURAL ENGINEER'S WRITTEN PRIOR APPROVAL FOR ALL CHANGES, MODIFICATIONS, AND/OR SUBSTITUTIONS.
10. THE CONTRACTOR SHALL COORDINATE AND VERIFY ALL DIMENSIONS AND ELEVATIONS SHOWN ON STRUCTURAL DRAWINGS WITH THE ARCHITECTURAL DRAWINGS.
11. SEE THE ARCHITECTURAL DRAWINGS FOR DIMENSIONS, DOORS, WINDOWS, NONBEARING INTERIOR AND EXTERIOR WALLS, AND ELEVATIONS.
12. SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE ENGINEER IS NOT A GUARANTOR OF THE CONTRACTOR'S WORK. RESPONSIBLE FOR SAFETY IN, ON, OR ABOUT THE JOB SITE, IN CONTROL OF THE SAFETY OR ADEQUACY OF ANY CONSTRUCTION EQUIPMENT, BUILDING COMPONENT, SCAFFOLDING, FORMS, OR OTHER WORK AIDS OR FOR SUPERINTENDING THE WORK.
13. CONTRACTOR MUST FIELD VERIFY ALL EXISTING CONDITIONS TO MATCH DETAILS SHOWN ON DRAWINGS. IF ANY CONFLICTING CONDITIONS ARISE DURING CONSTRUCTION, CONTRACTOR MUST NOTIFY STRUCTURAL ENGINEER BEFORE PROCEEDING WITH FABRICATION OR CONSTRUCTION.
14. THERMAL OR MOISTURE PROTECTION, FURNISHINGS, DOORS, WINDOWS, EQUIPMENT, MECHANICAL, ELECTRICAL, FINISHES, SIDING, PANELING, VENEERS ARE NOT PART OF THE RESPONSIBILITY OF THE STRUCTURAL ENGINEER.
15. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE ALL EXISTING UTILITIES WHETHER SHOWN HERON OR NOT, AND TO PROTECT THEM FROM DAMAGE. THE CONTRACTOR SHALL BEAR ALL EXPENSE OF REPAIR OR REPLACEMENT IN CONJUNCTION WITH THE REQUIRED WORK.
16. ONLY AN AUTHORIZED REPRESENTATIVE OF MRW DESIGN ASSOCIATES INC. MAY MAKE CHANGES TO THESE CONTRACT DRAWINGS. MRW DESIGN ASSOCIATES INC. SHALL NOT BE RESPONSIBLE OR LIABLE FOR ANY CLAIMS ARISING DIRECTLY OR INDIRECTLY FROM CHANGES MADE WITHOUT WRITTEN AUTHORIZATION BY AN AUTHORIZED REPRESENTATIVE OF MRW DESIGN ASSOCIATES INC.

WOOD

1. ALL ROOF & FLOOR DIAPHRAGMS SHALL BE APA RATED STRUCTURAL SHEATHING WITH A SPAN INDEX RATING AND THICKNESS AS NOTED ON DRAWINGS. EDGE SUPPORT, IF REQUIRED BY SPAN RATING OR THE SHEATHING AND JOIST SPACING, SHALL CONSIST OF LUMBER BLOCKING, PANEL EDGE CLIPS, OR TONGUE AND GROOVE SHEATHING EDGES.
2. ALL MEMBERS FRAMING INTO THE SIDE OF HEADERS OR STUD WALLS SHALL BE ATTACHED USING METAL JOIST HANGERS.
3. ALL BOLTS FOR CONNECTIONS SHALL HAVE WASHERS PLACED UNDER NUTS AND HEADS. BOLT HOLES TO BE DRILLED 1/16" LARGER THAN BOLT DIAMETER.
4. MATERIALS:
A. LVL MATERIAL REQUIRED STRENGTH: $E = 2,000,000$ psi, $F_b = 2,600$ psi, & $F_v = 285$ psi.
B. SHEATHING SHALL BE INTERIOR GRADE WITH EXTERIOR GLUE, SPAN INDEX RATIO:
24/16 (7/16") ROOF
48/24 (3/4") FLOORS
5. NAILS:
STANDARD COMMON. MINIMUM NAILING REQUIREMENTS (SEE DRAWINGS FOR AREAS WITH GREATER REQUIREMENTS):
A. SHEATHING NAILS OR OTHER APPROVED SHEATHING CONNECTORS SHALL BE DRIVEN SO THAT THEIR HEAD OR CROWN IS FLUSH WITH THE SURFACE OF THE SHEATHING. PER IBC SECTION 2304.10.3.
B. ROOF: NAIL ALL SHEATHING PANEL EDGES WITH 8d COMMON NAILS AT 6" O.C. AT ALL PANEL EDGES AND AT 12" O.C. AT ALL INTERMEDIATE SUPPORTS. UNLESS BLOCKING IS SPECIFICALLY REQUIRED ON THE DRAWINGS, USE TWO PLYCLIPS BETWEEN EACH SUPPORT FOR SPANS OF 48" O.C. AND ONE PLYCLIP BETWEEN EACH SUPPORT FOR LESSER SPANS AT ALL UNSUPPORTED SHEATHING PANEL EDGES.
C. FLOOR: NAIL ALL SHEATHING PANEL EDGES WITH 10d COMMON NAILS AT 6" O.C. AT ALL PANEL EDGES AND AT 12" O.C. AT ALL INTERMEDIATE SUPPORTS.
D. GENERAL FRAMING AND CARPENTRY: CONNECT ALL ITEMS AS PER I.B.C. CHAPTER 23, AND TABLE 2304.10.1 UNLESS NOTED OTHERWISE.
6. LAMINATED BUILT-UP BEAMS OF 2X MEMBER 10 IN. OR LESS IN DEPTH SHALL BE SPIKED TOGETHER WITH NOT LESS THAN 16d COMMON NAILS AT TWELVE-INCH (12 IN.) CENTERS, STAGGERED UNLESS SO SPIKED, OR IF THE DEPTH OF BEAM IS MORE THAN TEN INCHES (10 IN.) THE LAMINATIONS SHALL BE CONNECTED TOGETHER WITH 1/2 IN. BOLTS AT 18 IN. O.C. STAGGERED. BOLTS SHALL BE PLACED 1/4 THE DEPTH OF THE MEMBER FROM THE TOP AND BOTTOM OF THE MEMBER.
7. ALL WOOD FRAMING IN CONTACT WITH CONCRETE OR CONCRETE TYPE MATERIALS SHALL CONSIST OF PRESERVATIVE TREATED WOOD PER IBC 2304.12.1.2, & 2304.12.1.2. FOR PRESERVATIVE-TREATED AND FIRE-RETARDANT-TREATED WOOD SHALL MEET THE REQUIREMENTS OF IBC 2304.10.6 AND SHALL BE OF HOT DIPPED ZINC-COATED GALVANIZED STEEL, STAINLESS STEEL, SILICON BRONZE OR COPPER. THE COATING WEIGHTS FOR ZINC-COATED FASTENERS SHALL BE IN ACCORDANCE WITH ASTM A153.
8. PRE-FAB WOOD TRUSSES SHALL BE DESIGNED BY A UTAH REGISTERED ENGINEER. ALL DIMENSIONS SHALL BE VERIFIED IN THE FIELD PRIOR TO FABRICATIONS OF TRUSSES. PROVIDE CROSS BRACING, CONNECTIONS, AND INSTALLATION AS REQUIRED BY TRUSS MANUFACTURER. TRUSS MANUFACTURER SHALL PROVIDE DESIGN, CONNECTIONS, LOCATIONS & AMOUNTS OF CONTINUOUS STRINGERS AND NAILING SCHEDULES OF GIRDER & COMPONENTS.

STRUCTURAL STEEL

1. MINIMUM YIELD STRENGTH 36 KSI FOR STRUCTURAL ANGLES.
2. FABRICATION AND CONSTRUCTION SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING CODES AND STANDARDS:
A. AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC). "SPECIFICATIONS FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS" WITH "COMMENTARY".
B. AISC "CODE OF STANDARD PRACTICE" EXCLUDING THE FOLLOWING: SECTION 1.5.1, SECTION 3.3 (FIRST SENTENCE), SECTION 4.2, SECTION 4.2.1, SECTION 4.2.2, SECTION 7.5.4, SECTION 7.11.5.
C. AISC "SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS"
D. AMERICAN WELDING SOCIETY (AWS), STRUCTURAL WELDING CODE (SPECIFIC ITEMS DO NOT APPLY WHEN THEY CONFLICT WITH THE AISC REQUIREMENTS).
3. WELDING:
A. CERTIFICATION OF WELDERS: ALL SHOP AND FIELD WELDING SHALL BE EXECUTED BY AWS CERTIFIED WELDERS. CERTIFICATION SHALL BE CONSIDERED CURRENT IF DATED WITHIN THE PAST 12 MONTHS. WELDERS WILL BE CONSIDERED CERTIFIED IF THEY HAVE BEEN CERTIFIED BY AWS AND THEIR WORK RECORDS ARE CURRENT WITHIN EVERY SIX MONTH PERIOD THEREAFTER AS REQUIRED BY AWS. CERTIFICATION AND RECORDS MUST COMPLY WITH AWS STANDARDS. CERTIFICATIONS AND APPROPRIATE RECORDS MUST BE PROVIDED TO THE ARCHITECT PRIOR TO BEGINNING WORK.
B. ELECTRODES: E-70 XX OR AS NOTED OTHERWISE.
C. MINIMUM WELDS: ALL INTERSECTING STEEL SHAPES WHICH ARE NOT BOLTED SHALL BE CONNECTED BY FILLET WELD ALL AROUND, UNLESS NOTED OTHERWISE. FILLET WELD SIZES THAT ARE NOT SHOWN SHALL BE 1/16" LESS THAN THE THINNEST OF THE CONNECTED PARTS FOR THICKNESS 1/4" SHALL BE OF THE SAME SIZE AS THE THINNEST OF THE CONNECTED PART.
D. STUD WELDING AND DEFORMED BAR ANCHOR WELDING SHALL CONFORM TO MANUFACTURER'S SPECIFICATIONS. WELDING SHALL BE TESTED TO COMPLY WITH AWS D1.1 SECTION 7.6 THROUGH 7.8 AND APPENDIX "K".
4. BOLTED CONNECTIONS:
A. USE ASTM A325N BOLTS FOR ALL STEEL TO STEEL CONNECTION, UNLESS NOTED OTHERWISE. TIGHTEN BOLTS BY THE TURN OF THE NUT, CALIBRATED WRENCH, OR DIRECT TENSION INDICATOR METHOD. ALTERNATE FASTENER DESIGNS AS DEFINED BY AISC SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO INSTALLATION. PROVIDE HARDENED WASHERS BENEATH TURNED ELEMENT. BOLTS WILL BE TESTED AS REQUIRED BY IBC SECTION 1705.2.1.
B. WHERE A STEEL TO STEEL BEAM CONNECTION IS NOT DETAILED ON DRAWINGS PROVIDE STANDARD FRAMED BEAM CONNECTIONS MEETING REQUIREMENTS OF "MANUAL OF STEEL CONSTRUCTION", AISC 360-16, WITH 3/4" MINIMUM DIAMETER BOLTS (OR WELDED EQUIVALENT) UNLESS OTHERWISE NOTED. FOR BEAMS WITHOUT DESIGNATED LOADS ON DRAWINGS, SELECT CONNECTIONS TO SUPPORT 60% OF TOTAL UNIFORM LOAD CAPACITY IN BENDING FOR EACH GIVEN BEAM AND SPAN, PLUS THE REACTION DUE TO ANY CONCENTRATED LOADS. MINIMUM OF TWO (2) BOLTS PER CONNECTION.
C. BOLTS, NUTS AND WASHERS SHALL NOT BE REUSED.

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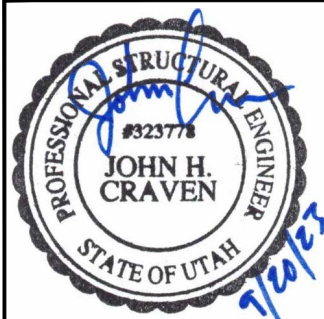
7/06/2023
DATE:

23027
JOB NUMBER:

N.T.S.
SCALE:

J.H.C.
DRAWN:

J.H.C.
CHECKED:

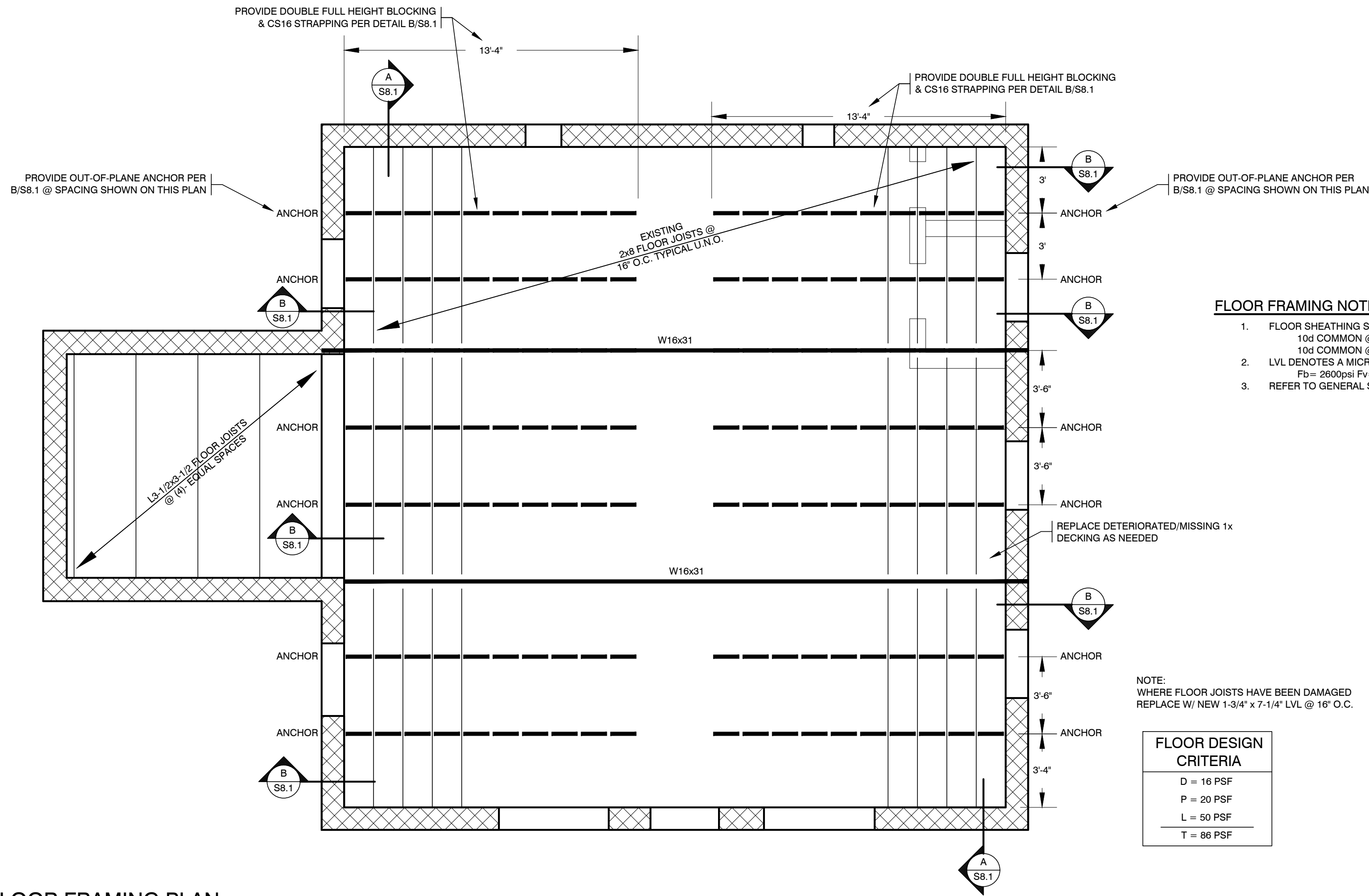


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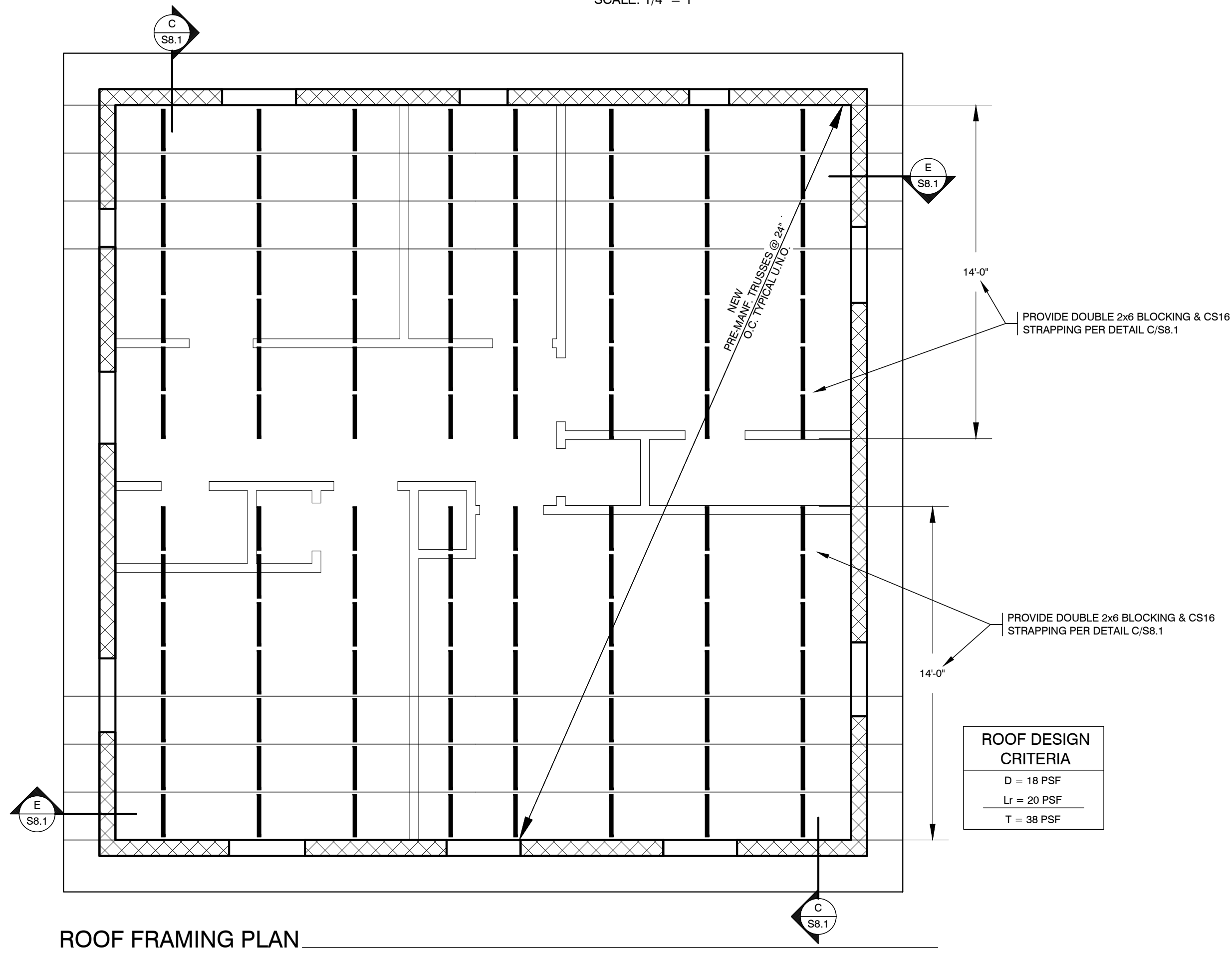
GENERAL STRUCTURAL NOTES
WASHINGTON COUNTY HISTORICAL HYDROELECTRIC PLANT
37° 11' 45.18" NORTH 113° 16' 46.24" WEST
LA VERKIN, UTAH 84745

S1.1
OF SHEETS



UPPER FLOOR FRAMING PLAN

SCALE: 1/4" = 1'

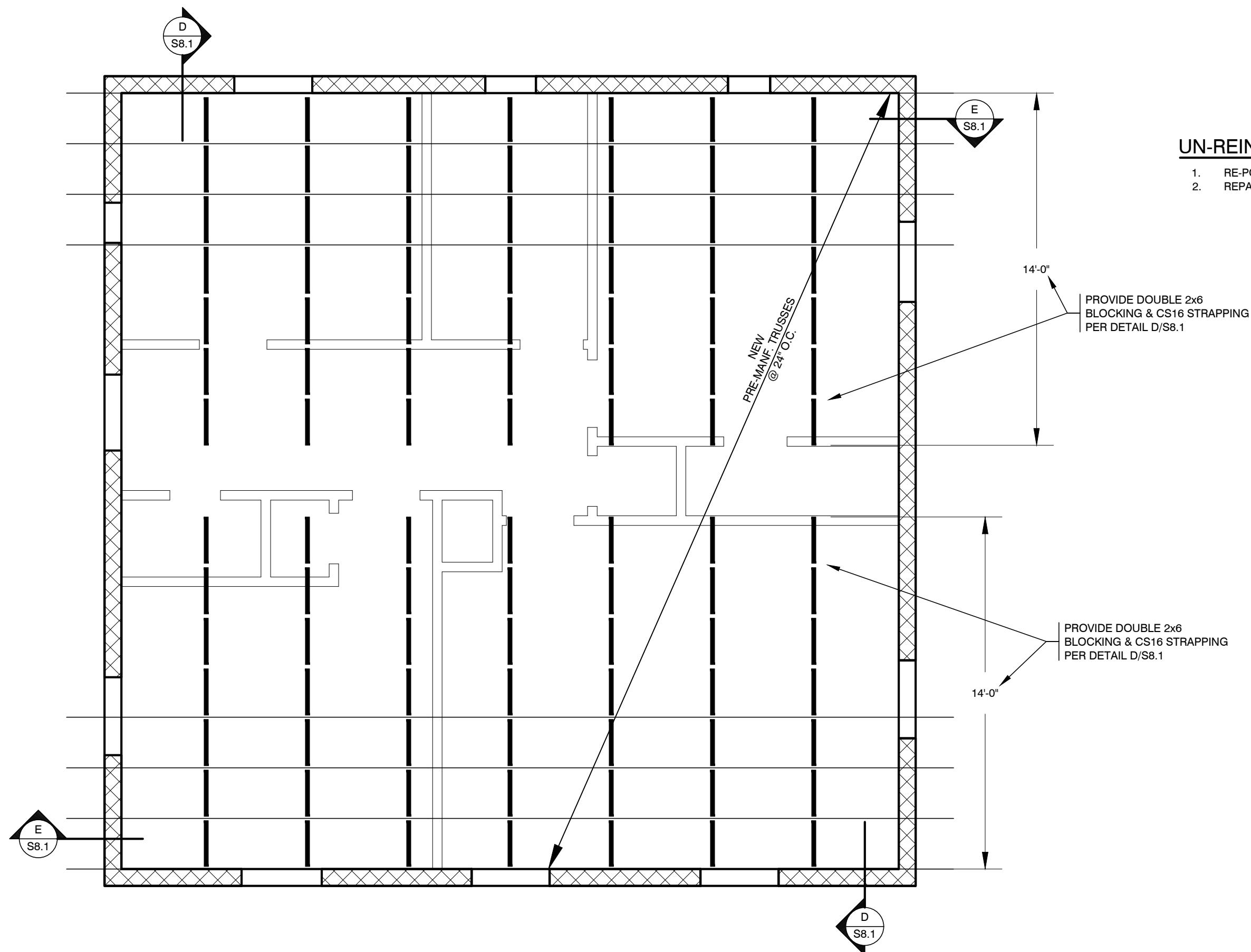


ROOF FRAMING PLAN

SCALE: 1/4" = 1'

ROOF FRAMING NOTES

- REMOVE CEILING JOISTS AND ROOF RAFTERS. PROVIDE NEW PRE-MANUFACTURED ROOF TRUSSES @ 24" O.C.
- ROOF SHEATHING SHALL BE APA RATED 24/16 (7/16"). NAIL ALL PANEL EDGES WITH 8d NAILS @ 6" O.C. AND @ 12" O.C. AT ALL INTERMEDIATE SUPPORTS.
- REFER TO GENERAL STRUCTURAL NOTES ON SHEET S1.1 FOR ADDITIONAL INFORMATION.



CEILING ANCHORAGE PLAN

SCALE: 1/4" = 1'

UN-REINFORCED MASONRY WALLS

- RE-POINT & REPAIR DETERIORATED MORTAR JOINTS ALL WALLS EXTERIOR & INTERIOR.
- REPAIR BROKEN, DETERIORATED, OR MISSING BRICKS ALL WALLS EXTERIOR & INTERIOR.

UPPER FLOOR NOTES:

- REMOVE ALL UN-REINFORCED MASONRY CHIMNEYS. THUS REMOVING THE DANGER OF THEM COLLAPSING AND CAUSING HARM TO OCCUPANTS TO THE BUILDING. REMOVING WEIGHT FROM THE BUILDING ALSO REDUCES SEISMIC WEIGHT / SEISMIC FORCES.
- REMOVE ALL LATH & PLASTER FROM ALL CEILINGS AND PROVIDE 5/8" THICK GYPSUM BOARD FINISH. ATTACH TO EACH EXISTING FLOOR JOISTS & NEW ROOF TRUSSES PER MANUFACTURER'S RECOMMENDATIONS: (12" O.C. IN-FIELD/7" O.C. EDGES MAX).
- REMOVE ALL LATH & PLASTER FROM ALL WOOD FRAMED WALLS AND PROVIDE 1/2" THICK GYPSUM BOARD FINISH. ATTACH TO EACH STUD PER MANUFACTURER'S RECOMMENDATIONS: (12" O.C. IN-FIELD/8" O.C. EDGES MAX).
- MAINTAIN EXISTING LATH & PLASTER ON THE URM (UN-REINFORCED MASONRY) WALLS.
- MAINTAIN EXISTING 1x DECKING ON UPPER FLOOR AND ADD NEW STRUCTURAL SHEATHING.
- FLOOR SHEATHING SHALL BE 3/4" A.P.A. RATED, STRUCT.II, EXTERIOR PANEL INDEX #48/24 NAIL WITH 10d COMMON @ 6" O.C. - PANEL EDGES
10d COMMON @ 12" O.C. - ALL ELSE
- TO MAINTAIN EXISTING ELEMENTS TILE FLOORS ARE NOT AN OPTION. FOR FUTURE POSSIBILITIES PROVIDE LIGHT WEIGHT FLOORING.

7/06/2023
DATE:

23027
JOB NUMBER:

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

DS
DRAWN:

JHC
CHECKED:

PROFESSIONAL STRUCTURAL ENGINEER
JOHN H. CRAVEN
233774
STATE OF UTAH
11/15/23

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STRUCTURAL PLANS

WASHINGTON COUNTY HISTORICAL HYDROELECTRIC PLANT
37° 11' 45.18" NORTH 113° 16' 46.24" WEST
LA VERKIN, UTAH 84745

S3.1

OF SHEETS

2	2	2	A UPPER FLOOR ANCHORAGE TO URM WALL	B UPPER FLOOR ANCHORAGE TO URM WALL
2	2	2		
2	2	2	C CABLE URM TOP ANCHORAGE	
2	2	2		
2	2	2	D CABLE URM ANCHORAGE @ CEILING	
2	2	2		
2	2	2	E URM ANCHORAGE @ BEARING	

7/06/2023

DATE:

23027

JOB NUMBER:

N.T.S.

SCALE:

J.H.C.

DRAWN:

J.H.C.

CHECKED:

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M

RW

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STRUCTURAL DETAILS

WASHINGTON COUNTY HISTORICAL HYDROELECTRICAL PLANT

37° 11' 45.18" NORTH 113° 16' 46.24" WEST

LA VERKIN, UTAH 84745

S8.1

OF SHEETS