DWR LOGAN FISH HATCHERY RESIDENCE

State of Utah—Department of Administrative Services

DIVISION OF FACILITIES CONSTRUCTION AND MANAGEMENT

4110 State Office Building/Salt Lake City, Utah 84114/538-3018

1465 WEST 200 NORTH LOGAN, UT

2/13/2025

DFCM PROJECT # 24437520

PROJECT DATA

OWNER
DWR LOGAN FISH HATCHERY COMPANY
1465 W 200 N
Logan, UT 84321
PHONE:

ARCHITECT
JUSTIN M CAMPBELL
CARTWRIGHT AEC
635 SOUTH 100 EAST, SUITE 110
LOGAN, UT
PHONE: (435) 753-2850

STRUCTURAL ENGINEER
STEVEN W THEURER
CARTWRIGHT AEC
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MECHANICAL & ELECTRICAL ENGINEER
DON OLSON
EPIC ENGINEERING
50 EAST 100 SOUTH
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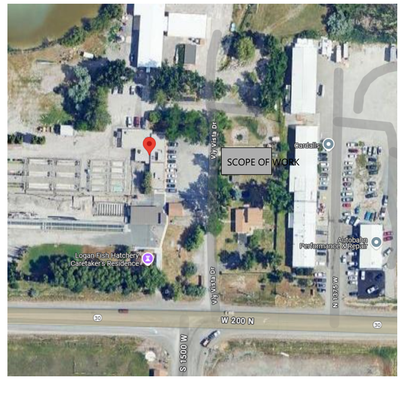
PHONE: (435) 654-6600

DEFERRED SUBMITTAL

ROOF TRUSSES - ROOF TRUSS DESIGN BY ROOF TRUSS MANUFACTURER

VICINITY MAP



SHEET LIST

GENERAL:
G001 COVER SHEET
G002 CODE REVIEW
ARCHITECTURAL:
AE001 WALL SECTIONS
AE100 INSULATION BOARD
AE101 FLOOR PLAN - MAIN LEVEL
AE101.1 MAIN LEVEL ANNOTATION PLAN
AE101.2 MAIN LEVEL FINISH PLAN
AE102 BONUS ROOM
AE102.1 BONUS ROOM ANNOTATION PLAN
AE102.2 BONUS ROOM FINISH FLOOR PLAN Copy 1
AE111 ROOF PLAN
AE121 REFLECTED CEILING PLAN
AE122 REFLECTED CEILING PLAN - BONUS ROOM
AE201 ARCHITECTURAL ELEVATIONS
AE202 ARCHITECTURAL ELEVATIONS
AE203 PERSPECTIVE VIEWS
AE301 BUILDING SECTIONS
AE310 EXTERIOR WALL SECTIONS
AE401 ENLARGED PLANS - STAIRS
AE411 INTERIOR ELEVATIONS
AE501 ARCHITECTURAL DETAILS
AE502 ARCHITECTURAL DETAILS
AE503 ARCHITECTURAL DETAILS
AE601 ARCHITECTURAL SCHEDULES
BA102.2 BID ALTERNATE FINISH FLOOR PLAN
BA201 BID ALTERNATE ARCHITECTURAL ELEVATIONS
BA202 BID ALTERNATE ARCHITECTURAL ELEVATIONS
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S002 SPECIAL INSPECTIONS
S101 FOUNDATION PLAN
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S111 ROOF FRAMING PLAN
S500 TYPICAL STRUCTURAL DETAILS
S501 STRUCTURAL DETAILS
S502 STRUCTURAL DETAILS
S061 STRUCTURAL SCHEDULES
ELECTRICAL:
E0.1 ELECTRICAL SYMBOLS & NOTES
E0.2 ELECTRICAL GENERAL NOTES
E1.1 FIRST LEVEL ELECTRICAL PLAN
E1.2 SECOND LEVEL ELECTRICAL PLAN
E5.1 ELECTRICAL DETAILS & SCHEDULES
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M1.1 FIRST LEVEL MECHANICAL PLAN
M1.2 SECOND LEVEL MECHANICAL PLAN
M5.1 MECHANICAL DETAILS & SCHEDULES
PLUMBING:
P0.1 PLUMBING GENERAL NOTES
P1.1 FIRST LEVEL PLUMBING PLAN
P1.2 SECOND LEVEL PLUMBING PLAN
P1.3 FIRST LEVEL SANITARY PLAN
P1.4 SECOND LEVEL SANITARY PLAN
P5.1 PLUMBING DETAILS AND SCHEDULES

NOTE:
BID ALTERNATE PAGES ARE MARKED WITH THE DESIGNATION BA.

CODE ANALYSIS

APPLICABLE CODES

	YEAR		YEAR
INTERNATIONAL BUILDING CODE	IRC 2021	NATIONAL ELECTRICAL CODE	IRC 2021
INTERNATIONAL MECHANICAL CODE	IRC 2021	UNIFORM BASE CODE FOR BUILDING CONSERVATION	N/A
INTERNATIONAL PLUMBING CODE	IRC 2021		
INTERNATIONAL FIRE CODE	IRC 2021	ADA ACCESSIBILITY GUIDELINES	N/A
INTERNATIONAL ENERGY CONSERVATION CODE	IRC 2021		

A. OCCUPANCY AND GROUP: R
CHANGE IN USE: YES ____ NO X MIXED OCCUPANCY: YES ____ NO X
SPECIAL USE AND OCCUPANCY(e.g. HIGH RISE, COVERED MALL): NO

B. SEISMIC DESIGN CATEGORY: D DESIGN WIND SPEED: 103 MPH

C. TYPE OF CONSTRUCTION: (CIRCLE ONE)

I A | I B | II A | II B | III A | III B | IV HT | V A | (V B)

D. FIRE RESISTANCE RATING. REQUIREMENTS FOR THE EXTERIOR WALLS BASED ON THE FIRE SEPARATION DISTANCE (IN HOURS):
NORTH: 0 SOUTH: 0 EAST: 0 WEST: 0

E. MIXED OCCUPANCIES: NO NONSEPARATED USES: NO

F. SPRINKLERS:
REQUIRED: NO PROVIDED: NO TYPE OF SPRINKLER SYSTEM: N/A

G. NUMBER OF STORIES: 1 BUILDING HEIGHT: 22'-9"

H. ACTUAL AREA PER FLOOR (SQUARE FEET): 3178

I. TABULAR AREA: N/A

J. AREA MODIFICATIONS: N/A

K. FIRE RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (HOURS):

ELEMENT	HRS	ASSEMBLY LISTING	ELEMENT	HRS	ASSEMBLY LISTING
EXTERIOR BEARING WALLS	0		FLOORS - CEILING FLOORS	0	
INTERIOR BEARING WALLS	0		ROOFS - CEILING ROOFS	0	
EXTERIOR NON-BEARING WALLS	0		EXTERIOR DOORS & WINDOWS	0	
STRUCTURAL FRAME	0		SHAFT ENCLOSURES	0	
PARTITIONS - PERMANENT FIRE BARRIERS	0		FIRE WALLS	0	
			FIRE PARTITIONS	0	
			SMOKE PARTITIONS	0	

L. DESIGN OCCUPANT LOAD: IRC
EXIT WIDTH REQUIRED: 36 EXIT WIDTH PROVIDED: 36

M. MINIMUM NUMBER OF REQUIRED PLUMBING FACILITIES:
A. WATER CLOSETS: REQUIRED (M) N/A (F) N/A PROVIDED (M)____ (F)____
B. LAVATORIES: REQUIRED (M) N/A (F) N/A PROVIDED (M)____ (F)____
C. BATH TUBS OR SHOWERS: ____
D. DRINKING FOUNTAINS: N/A SERVICE SINKS: N/A

FOOTNOTES:
1. IN CASE OF CONFLICT WITH THE U.S. DEPARTMENT OF FEDERAL REGISTERS PARTS I THROUGH V - ADA GUIDELINES AND SPECIFIC REFERENCE TO THE INTERNATIONAL BUILDING CODE ACCESSIBILITY CHAPTERS, THE MORE RESTRICTIVE REQUIREMENT SHALL GOVERN.
2. ADDITIONAL CODE INFORMATION SHALL BE PROVIDED AT THE DISCRETION OF THE BUILDING OFFICIAL FOR COMPLEX BUILDINGS. INCLUDING, BUT NOT LIMITED TO:
   A. HIGH RISE REQUIREMENTS
   B. ATRIUMS
   C. PERFORMANCE BASED CRITERIA
   D. MEANS EGRESS ANALYSIS
   E. FIRE ASSEMBLY LOCATOR SHEET
   F. EXTERIOR AND INTERIOR ACCESSIBILITY ROUTE
   G. FIRE STOPPING, INCLUDING TESTED DESIGN NUMBER

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DFCM APPROVAL

REVIEWED FOR CODE COMPLIANCE
THOMAS PETERSON
05/19/2025
DIVISION OF FACILITIES CONSTRUCTION AND MANAGEMENT

STATE OF UTAH
JUSTIN MICHAEL CAMPBELL
2/13/2025
No.8539712-0301
LICENSED ARCHITECT

DWR LOGAN FISH HATCHERY RESIDENCE
1465 WEST 200 NORTH
LOGAN, UT

DFCM PROJECT #	24437520
CARTWRIGHT PROJECT #	124141
DATE:	2/13/2025
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	

REVISIONS
DATE DESCRIPTION

COVER SHEET
G001

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BUILDING CODE ANALYSIS

PROJECT NAME: DWR LOGAN FISH HATCHERY RESIDENCE
CARTWRIGHT PROJECT NUMBER: 124141

NO.	ITEM	CODE DATA	REFERENCE
1.	**DESCRIPTION:**	NEW RESIDENCE BUILDING	
2.	**PROJECT ADDRESS:**	1465 WEST 200 NORTH, LOGAN, UTAH 84321	
3.	**JURISDICTION:**	STATE OF UTAH DIVISION OF FACILITIES CONSTRUCTION AND MANAGEMENT	
4.	**APPLICABLE CODE:**	2021 UTAH STATE RESIDENTIAL CODE BASED ON THE 2021 INTERNATIONAL RESIDENTIAL CODE (USRC) 2021 INTERNATION BUILDING CODE (IBC) [REFERENCE]	
5.	**TYPE OF CONSTRUCTION:**	TYPE V-B	IBC SECTION 606.5
6.	**FIRE SPRINKLERS:**	NOT REQUIRED (UTAH AMENDMENTS TO THE INTERNATIONAL RESIDENTIAL CODE)	USRC SECTION R313
7.	**LOCATION ON PROPERTY:**	ALL EXTERIOR WALLS OF THE DWELLING ARE GREATER THAN 10 FEET FROM THE PROPERTY LINE. ALL FSD ≥ 10 FEET.	
8.	**ALLOWABLE FLOOR AREA:**	UNLIMITED (R-3 OCCUPANCY, TYPE V-B CONSTRUCTION)	IBC TABLE 506.2
9.	**STORY HEIGHT:**		
	ALLOWED (WOOD WALL FRAMING):	11.58 FEET	USRC SECTION R301.3
	ACTUAL STORY HEIGHTS:	10.09 FEET MAIN LEVEL 9.08 FEET BONUS ROOM	
10.	**FIRE-RESISTANT CONSTRUCTION:**		USRC TABLE R302.1(1)
	EXTERIOR WALLS:	ALL FSD ≥ 5 FEET — 0 HOUR	
	PROJECTIONS:	ALL FSD ≥ 5 FEET — 0 HOUR	
	OPENINGS IN EXTERIOR WALLS:	ALL FSD ≥ 5 FEET — 0 HOUR	
	PENETRATIONS OF EXTERIOR WALLS:	ALL FSD > 3 FEET — 0 HOUR	
11.	**MEANS OF EGRESS:**	EGRESS DOOR: REQUIREMENTS:	USRC SECTION R311.2
		SIDE HINGED; CLEAR WIDTH NOT LESS THAN 32 INCHES MEASURED FROM FACE OF DOOR TO STOP WHEN DOOR IS OPENED 90 DEGREES; CLEAR HEIGHT NOT LESS THAN 78 INCHES MEASURED FROM TOP OF THRESHOLD TO BOTTOM OF THE STOP.	
		PROVIDE EGRESS DOORS: MAIN ENTRANCE: PAIR OF DOORS, 6'-0" WIDE (EACH LEAF 3'-0" WIDE) X 6'-8" HIGH. REAR DOOR (OPENS ONTO PATIO): SINGLE DOOR 3'-0" WIDE X 6'-8" HIGH.	
		STAIR (EGRESS FROM BONUS ROOM TO MAIN LEVEL): REQUIREMENTS:	
		WIDTH: 36 INCHES MINIMUM CLEAR WIDTH AT ALL POINTS ABOVE PERMITTED HANDRAIL HEIGHT AND BELOW REQUIRED HEADROOM HEIGHT. 31 1/2" MINIMUM CLEAR WIDTH AT OR BELOW HANDRAIL HEIGHT WHERE HANDRAIL IS INSTALLED ON ONE SIDE.	USRC SECTION R311.7.1
		HEADROOM: 6'-8" MINIMUM MEASURED VERTICALLY FROM ADJOINING TREAD NOSING OR FROM FLOOR SURFACE OF LANDING.	USRC SECTION R311.7.2
		VERTICAL RISE: 12'-7" MAXIMUM.	USRC SECTION R311.7.3
		RISER HEIGHT: 8 INCHES MAXIMUM.	USRC SECTION R311.7.5.1
		TREAD DEPTH: 9 INCHES MINIMUM.	USRC SECTION R311.7.5.2
		NOSING: NOT REQUIRED WHERE TREAD DEPTH IS 10 INCHES MINIMUM.	USRC SECTION R311.7.5.3, EXCEPTION 1.

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		HANDRAIL HEIGHT: 34 INCHES MINIMUM AND 38 INCHES MAXIMUM MEASURED VERTICALLY FROM ADJOINING TREAD NOSING. HANDRAIL PROJECTION: 4 1/2 INCHES MAXIMUM ON EITHER SIDE OF THE STAIRWAY. HANDRAIL CLEARANCE: 1 1/2 INCHES MINIMUM BETWEEN WALL AND HANDRAIL.	
		PROVIDE STAIR FROM MAIN LEVEL TO BONUS ROOM: VERTICAL RISE: 9'-0 1/2" RISERS: 16 RISERS @ 6 25/32" = 9'-0 1/2" TREADS: 10 TREADS @ 11" = 8'-3" MAIN LEVEL TO LANDING; LANDING 3'-8" X 3'-8" 5 TREADS @ 11" = 4'-7" LANDING TO BONUS ROOM. STAIR WIDTH: 3'-8" BETWEEN WALLS HANDRAIL: HANDRAIL ON ONE SIDE OF STAIR, 36 INCHES HIGH FROM ADJOINING TREAD NOSING TO TOP OF HANDRAIL.	
		UNDER-STAIR PROTECTION: AT WATER HEATER CLOSET UNDER THE STAIR PROVIDE 1/2 MINIMUM GYPSUM BOARD AT WALLS, UNDER STAIR SURFACE, AND SOFFITS.	USRC SECTION R302.7
12.	**DWELLING-GARAGE SEPARATION:**	SEPARATION — MATERIAL	USRC TABLE R302.6
		FROM RESIDENCE AND ATTICS: MINIMUM 1/2 INCH GYPSUM BOARD OR EQUIVALENT APPLIED TO GARAGE SIDE.	
		FROM HABITABLE ROOMS ABOVE THE GARAGE: MINIMUM 5/8 INCH TYPE X GYPSUM BOARD OR EQUIVALENT.	
		STRUCTURE(S) SUPPORTING FLOOR/CEILING ASSEMBLIES USED FOR SEPARATION REQUIRED BY THIS SECTION: MINIMUM 1/2 INCH GYPSUM BOARD OR EQUIVALENT APPLIED TO THE INTERIOR SIDE OF EXTERIOR WALLS THAT ARE WITHIN THIS AREA.	
		OPENINGS IN GARAGE WALLS: SOLID WOOD DOORS 1 3/8" MINIMUM THICKNESS, SOLID OR HONEYCOMB-CORE STEEL DOORS 1 3/8" MINIMUM THICKNESS, OR 20-MINUTE FIRE-RATED DOORS	USRC SECTION R302.5.1
13.	**SMOKE AND CARBON MONOXIDE ALARMS**	SMOKE ALARMS:	USRC SECTION R314 USRC SECTION R314.3
		REQUIRED LOCATIONS: IN EACH SLEEPING ROOM. OUTSIDE EACH SEPARATE SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE BEDROOMS. ON EACH ADDITIONAL STORY OF THE DWELLING. NOT LESS THAN 3 FEET HORIZONTALLY FROM THE DOOR OR OPENING OF A BATHROOM THAT CONTAINS A BATHTUB OR SHOWER.	
		INSTALLATION NEAR COOKING APPLICANCES: IONIZATION SMOKE ALARMS SHALL NOT BE INSTALLED LESS THAN 20 FEET HORIZONTALLY FROM A PERMANENTLY INSTALLED COOKING APPLICANCE IONIZATION SMOKE ALARMS WITH AN ALARM SILENCING SWITCH SHALL NOT BE INSTALLED LESS THAN 10 FEET HORIZONTALLY FROM A PERMANENTLY INSTALLED COOKING APPLICANCE PHOTOELECTRIC SMOKE ALARMS SHALL NOT BE INSTALLED LESS THAN 6 FEET HORIZONTALLY FROM A PERMANENTLY INSTALLED COOKING APPLICANCE SMOKE ALARMS LISTED AND MARKED "HELPS REDUCE COOKING NUISANCE ALARMS" SHALL NOT BE INSTALLED LESS THAN 6 FEET HORIZONTALLY FROM A PERMANENTLY INSTALLED COOKING APPLICANCE.	USRC SECTION R314.3.1

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		INTERCONNECTION: SMOKE ALARM DEVICES SHALL BE INTERCONNECTED IN SUCH A MANNER THAT THE ACTIVATION OF ONE ALARM WILL ACTIVATE ALL ALARMS IN THE DWELLING UNIT. PHYSICAL INTERCONNECTION OF SMOKE ALARMS SHALL NOT BE REQUIRED WHERE LISTED WIRELESS ALARMS ARE INSTALLED AND ALL ALARMS SOUND UPON ACTIVATION OF ONE ALARM.	USRC SECTION R314.4
		POWER SOURCE: SMOKE ALARMS SHALL RECEIVE THEIR PRIMARY POWER FROM THE BUILDING WIRING SYSTEM WHERE SUCH WIRING IS SERVED FROM A COMMERCIAL SOURCE AND, WHERE PRIMARY POWER IS INTERRUPTED, SHALL RECEIVE POWER FROM A BATTERY. WIRING SHALL BE PERMANENT AND WITHOUT A DISCONNECTING SWITCH OTHER THAN THOSE REQUIRED FOR OVERCURRENT PROTECTION.	USRC SECTION R314.6
		CARBON MONOXIDE ALARMS: CARBON MONOXIDE ALARMS SHALL BE PROVIDED IN DWELLING UNITS WHERE EITHER OR BOTH OF THE FOLLOWING CONDITIONS EXIST: THE DWELLING UNIT CONTAINS A FUEL-FIRED APPLIANCE. THE DWELLING UNIT HAS AN ATTACHED GARAGE WITH AN OPENING THAT COMMUNICATES WITH THE DWELLING UNIT.	USRC SECTION R315.2.1
		REQUIRED LOCATIONS: CARBON MONOXIDE ALARMS IN DWELLING UNITS SHALL BE INSTALLED ON EACH LEVEL OF THE DWELLING UNIT AND OUSIDE OF EACH SEPARATE SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE BEDROOMS.	USRC SECTION R315.3
		INTERCONNECTIVITY: CARBON MONOXIDE ALARM DEVICES SHALL BE INTERCONNECTED IN SUCH A MANNER THAT THE ACTIVATION OF ONE ALARM WILL ACTIVATE ALL ALARMS IN THE DWELLING UNIT. PHYSICAL INTERCONNECTION OF CARBON MONOXIDE ALARMS SHALL NOT BE REQUIRED WHERE LISTED WIRELESS ALARMS ARE INSTALLED AND ALL ALARMS SOUND UPON ACTIVATION OF ONE ALARM.	USRC SECTION R315.5
		POWER SOURCE: CARBON MONOXIDE ALARMS SHALL RECEIVE THEIR PRIMARY POWER FROM THE BUILDING WIRING SYSTEM WHERE SUCH WIRING IS SERVED FROM A COMMERCIAL SOURCE AND, WHERE PRIMARY POWER IS INTERRUPTED, SHALL RECEIVE POWER FROM A BATTERY. WIRING SHALL BE PERMANENT AND WITHOUT A DISCONNECTING SWITCH OTHER THAN THOSE REQUIRED FOR OVERCURRENT PROTECTION.	USRC SECTION R315.6
		COMBINATION ALARMS: COMBINATION SMOKE AND CARBON MONOXIDE ALARMS SHALL BE PERMITTED TO BE USED IN LIEU OF SMOKE ALARMS AND IN LIEU OF CARBON MONOXIDE ALARMS.	USRC SECTIONS R314.5 AND R315.4

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CHECKED BY:	
APPROVED BY:	

REVISIONS
DATE DESCRIPTION

CODE REVIEW

G002

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NONSTRUCTURAL COMPONENT CHECKLIST

ITEM DESCRIPTION	*NOT REQUIRED*	*ON CONST. DOCUMENTS*	*DEFERRED SUBMITTAL*	*COMMENTS*
Architectural Components:				
Interior Nonstructural Walls & Partitions	X			
Cantilever Elements *(i.e. parapets, etc.)*	X			
Exterior Nonstructural Wall Elements	X			
Veneer	X			
Penthouses	X			
Ceilings *(i.e. suspended grid or hard-lid)*	X			
Cabinets *(i.e. storage cabinets, equip, etc.)*	X			
Access Floors	X			
Storage Racks	X			
Appendages & Ornamentations	X			
Signs & Billboards	X			
Other:				
Other:				
MEP Components:				
Fire Sprinklers	X			
Mechanical Equipment *(i.e. HVAC, fans, air handlers, boilers, furnaces, tanks, chillers, water heaters, heat exchangers, evaporators, engines, turbines, pumps, compressors, MFR equipment, etc.)*	X			No suspended elements.
Electrical Equipment *(i.e. generators, batteries, inverters, transformers, MCC, panel boards, switch gear, cabinets, etc.)*	X			No suspended elements.
Elevator & Escalator Components	X			
Communication Equipment, Computers, Instrumentation, and Controls	X			
Roof-mounted Chimneys, Stacks, Cooling & Electrical Towers	X			
Lighting Fixtures	X			
Vibration Isolated Components	X			
Piping & Conduit Systems	X			
Ductwork *(including in-line components)*	X			No suspended elements.
Conveyors	X			
Cable Trays	X			
Other:				
Other:				

NOTES:

1. Deferred submittals for seismic restraint of nonstructural components must be submitted to the DFCM Building Official a minimum of two weeks prior to the planned installation in order to allow for plan review and forwarding to inspectors. In the event that the submittal is deficient additional time may become necessary.
2. When seismic restraint of non-structural components is installed prior to receiving DFCM approval it shall not be covered or concealed until receiving both plan review and inspection approval. Further, installers are proceeding at their own risk until plan review and inspection approval occurs.
3. The requirements for seismic restraint of nonstructural components cannot be satisfied by a general reference to Design Manuals. The design professional may utilize these manuals as a basis of their design, but must provide all supporting documentation to ensure that the design conforms to the requirements of ASCE 7-05, Chapter 13.
4. Submittals must include details of the proposed seismic restraint of nonstructural components. These details must show specific information relating to the materials, type, size, and locations of anchorages; materials used for bracing; attachment requirements of bracing to structure and component; and locations of transverse and longitudinal sway bracing and rod stiffeners. Submittals may also require structural calculations, engineering reports, test data, and/or specifications to ensure code compliance.

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REVISIONS

	DATE	DESCRIPTION
1	4/11/2025	REVIEW COMMNETS

NONSTRUCTURAL COMPONENT CHECKLIST

G003

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COMPLIANCE WITH GOVERNMENTAL REGULATIONS:

THE CONTRACTOR'S PERSONNEL, EQUIPMENT, AND OPERATIONS SHALL COMPLY FULLY WITH ALL APPLICABLE STANDARDS, REGULATIONS, AND REQUIREMENTS OF EXISTING FEDERAL, UTAH STATE, AND LOCAL GOVERNMENTAL AGENCIES. THIS SHALL INCLUDE, BUT NOT NECESSARILY BE LIMITED TO, THE FOLLOWING:

1. UNITED STATES OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION REGULATIONS: TITLE 29 OF THE CODE OF FEDERAL REGULATIONS, PART 1926 (29 CFR PART 1926), SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION.
2. UTAH STATE INDUSTRIAL COMMISSION REGULATIONS: THE UTAH OCCUPATIONAL SAFETY AND HEALTH ACT AND EMPLOYER-EMPLOYEE SAFE PRACTICES FOR EXCAVATIONS AND TRENCHING OPERATIONS (JAN. 1, 1974), AS PUBLISHED BY THE UTAH STATE INDUSTRIAL COMMISSION, INCLUDING ANY AND ALL AMENDMENTS OR REVISIONS EFFECTIVE PRIOR TO PERFORMANCE OF THE WORK.
3. PRINCIPAL STANDARDS AND SPECIFICATIONS: THE CONTRACTOR SHALL BE REQUIRED TO COMPLY WITH THE 2017 "MANUAL OF STANDARD SPECIFICATIONS" BY THE UTAH CHAPTER OF AMERICAN PUBLIC WORKS ASSOCIATION (APWA) IN CONCERT WITH THE CONTRACT DOCUMENTS.
4. PERMITS: THE CONTRACTOR IS RESPONSIBLE TO OBTAIN ALL REQUIRED LICENSES AND PERMITS APPLICABLE TO THIS PROJECT. CONTRACTOR SHALL BE SUBJECT TO THE CONDITIONS OF ALL PERMITS AND AGREEMENTS BETWEEN THE AGENCY AND THE PERMITTING AGENCIES.
5. ARCHEOLOGICAL FINDINGS: IF A SUSPECTED OR UNSUSPECTED HISTORIC, ARCHEOLOGICAL, OR PALEONTOLOGICAL ITEM, FEATURE, REMAINS, OR SITE IS ENCOUNTERED, CONSTRUCTION OPERATIONS SHALL BE IMMEDIATELY STOPPED IN THE VICINITY OF THE DISCOVERY AND THE OWNER AND ENGINEER SHALL BE IMMEDIATELY NOTIFIED OF THE NATURE AND EXACT LOCATION OF THE FINDINGS. THE CONTRACTOR SHALL NOT DISTURB, REMOVE, DAMAGE, OR OTHERWISE IMPACT THE DISCOVERED OBJECTS AND SHALL PROVIDE WRITTEN CONFIRMATION OF THE DISCOVERY TO THE OWNER ENGINEER WITHIN TWO (2) CALENDAR DAYS.

FEDERAL, STATE, AND LOCAL INSPECTING AGENCIES:

THE SITE OF CONSTRUCTION IS TO BE OPEN AT ALL REASONABLE TIMES AND PLACES FOR PERIODIC OBSERVATION BY ACCREDITED REPRESENTATIVES OF THE FEDERAL, STATE, AND LOCAL AGENCIES WHO HAVE REGULATORY OR SUPERVISORY AUTHORITY OVER ANY PART OF THE WORK PROPOSED OR REGULATED THERETO.

WORKMANSHIP:

1. THE CONTRACTOR SHALL BE SKILLED AND REGULARLY ENGAGED IN THE GENERAL CLASS AND TYPE OF WORK CALLED FOR IN THE PROJECT PLANS AND SPECIFICATIONS. THEREFORE, THE OWNER IS RELYING UPON THE EXPERIENCE AND EXPERTISE OF THE CONTRACTOR TO EXECUTE THE WORK IN A GOOD AND WORKMANLIKE MANNER AND THAT THE WORK BE COMPLETED IN ACCORDANCE WITH THE TRUE INTENT AND PURPOSE OF THE SAME.
2. ALL WORK SHALL BE DONE IN ACCORDANCE WITH, ALL LAWS, ORDINANCES, BUILDING CODES, RULES AND REGULATIONS APPLYING TO THE WORK, INCLUDING, BUT NOT LIMITED TO, THE AMERICANS WITH DISABILITIES ACT, ENVIRONMENTAL REGULATIONS AND THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970, AS AMENDED. CONTRACTOR SHALL HAVE CONTROL OVER, AND BE SOLELY RESPONSIBLE FOR, ALL MEANS, METHODS AND SEQUENCES FOR PERFORMING THE WORK.
3. THE CONTRACTOR SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOBSITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNER AND ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR THE ENGINEER.
4. THE CONTRACTOR SHALL MAINTAIN A NEATLY MARKED SET OF FULL-SIZE AS-BUILT RECORD DRAWINGS SHOWING THE FINAL LOCATION AND LAYOUT OF ALL IMPROVEMENTS INSTALLED, ERECTED, AND/OR CONSTRUCTED UNDER THE AGREEMENT.

UNDERGROUND UTILITIES:

THE EXISTING UTILITIES AND/OR IMPROVEMENT INFORMATION SHOWN ON THE PLANS WAS DERIVED FROM TOPOGRAPHIC SURVEYS, FIELD INVESTIGATIONS AND/OR FROM AVAILABLE DRAWING INFORMATION. NEITHER THE OWNER NOR ENGINEER GUARANTEES THESE LOCATIONS TO BE EITHER TRUE OR EXACT. IT SHALL BE THE CONTRACTOR'S SOLE RESPONSIBILITY TO VERIFY ALL EXISTING IMPROVEMENTS AND TO EXPOSE ALL EXISTING UNDERGROUND UTILITIES TO THE EXTENT NECESSARY IN ORDER TO DULY EXECUTE THE WORK.

CONTRACTOR'S SITE INSPECTION:

1. THE CONTRACTOR SHALL INSPECT THE SITE OF THE WORK PRIOR TO BIDDING TO SATISFY ITSELF, BY PERSONAL EXAMINATION OR BY SUCH OTHER MEANS AS THEY MAY PREFER, OF THE LOCATION OF THE PROPOSED WORK, AND OF THE ACTUAL CONDITIONS OF AND AT THE SITE OF WORK. THE INFORMATION PROVIDED BY THE OWNER OR THE ENGINEER IS NOT INTENDED TO BE A SUBSTITUTE FOR, OR A SUPPLEMENT TO, THE INDEPENDENT VERIFICATION BY THE CONTRACTOR.
2. THE CONTRACTOR SHALL BE HELD RESPONSIBLE AND SHALL BEAR ALL COSTS AND/OR EXPENSES FOR ANY FIELD CHANGES MADE WITHOUT PRIOR WRITTEN AUTHORIZATION FROM THE OWNER.

PUBLIC SAFETY AND CONVENIENCE:

THE CONVENIENCE OF THE GENERAL PUBLIC AND THE PROTECTION OF PERSONS AND PROPERTY IS OF PRIME IMPORTANCE AND SHALL BE PROVIDED FOR BY THE CONTRACTOR DURING THIS PROJECT. CONTRACTOR SHALL USE EVERY REASONABLE PRECAUTION TO SAFEGUARD PERSONS AND PROPERTY. FAILURE OF THE OWNER, AGENCY, OR ENGINEER TO NOTIFY THE CONTRACTOR OF ANY DEFICIENCIES IN PROVIDING FOR PUBLIC SAFETY AND CONVENIENCE SHALL NOT RELIEVE THE CONTRACTOR FROM ITS RESPONSIBILITY. THE CONTRACTOR SHALL BE REQUIRED TO COMPLY WITH THE REQUIREMENTS OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).

PROJECT COORDINATION AND MEETINGS

1. THE CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE ITS WORK WITH DFCM AND FES PERSONNEL DURING THE COURSE OF THIS PROJECT.
2. THE CONTRACTOR SHALL BE REQUIRED TO ATTEND MEETINGS PRIOR TO AND DURING EXECUTION OF THE WORK, OR AS NECESSARY TO FACILITATE THE SMOOTH AND ORDERLY EXECUTION OF THE WORK. ALL MEETINGS SHALL BE HELD AT A LOCATION DESIGNATED BY THE OWNER.
3. THE CONTRACTOR SHALL CONDUCT DAILY SITE SAFETY BRIEFINGS AS NECESSARY FOR CONTRACTOR AND SUBCONTRACTOR EMPLOYEES WORKING THE SITE, IN COMPLIANCE WITH OSHA RULES.
4. ALL MEETINGS WITH THE OWNER (OR ITS REPRESENTATIVE) SHALL BE ATTENDED BY THE CONTRACTOR'S SUPERINTENDENT AND OTHER PERSONNEL HAVING AUTHORITY TO LEGALLY BIND CONTRACTOR TO ISSUES DISCUSSED AND RESOLVED DURING THE MEETINGS. THE CONTRACTOR'S SUBCONTRACTOR(S) MAY ALSO BE REQUIRED TO ATTEND SUCH MEETINGS. SUBCONTRACTOR ATTENDANCE SHALL BE AT THE DISCRETION OF THE RESIDENT ENGINEER AND/OR THE OWNER.
5. THE CONTRACTOR SHALL BE REQUIRED TO ATTEND ALL MEETINGS ORDERED OR REQUESTED BY REPRESENTATIVES OF REGULATORY AGENCIES WITH JURISDICTION OVER THE SITE OR ANY ASPECT OF THE WORK BEING PERFORMED AT THE SITE, EITHER BY THE CONTRACTOR OR OTHERS. SOME MEETINGS MAY BE AFTER HOURS.

PLANS AND SPECIFICATIONS:

1. ANY AMBIGUITIES OR CONFLICTS IDENTIFIED BY THE CONTRACTOR, CONTRACTOR'S REPRESENTATIVE, OWNER, OR DEPARTMENT OF FACILITIES AND CONSTRUCTION MANAGEMENT (DFCM) SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ENGINEER.
2. IT IS INTENDED THAT THESE PLANS AND SPECIFICATIONS REQUIRE ALL LABOR AND MATERIALS NECESSARY AND ORDINARY FOR PROPER COMPLETION OF THE WORK PROPOSED HEREIN AND THAT THE WORK BE COMPLETED IN ACCORDANCE WITH THEIR TRUE INTENT AND PURPOSE.
3. WHERE THE PLANS OR SPECIFICATIONS DESCRIBE PORTIONS OF THE WORK IN GENERAL TERMS BUT NOT COMPLETE DETAIL, IT IS UNDERSTOOD THAT ONLY THE BEST GENERAL PRACTICE IS TO PREVAIL AND THAT ONLY MATERIALS AND WORKMANSHIP OF THE FIRST QUALITY ARE TO BE USED.
4. THE WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH SAID CONTRACT DRAWINGS, THE TECHNICAL SPECIFICATIONS, AND SUCH FURTHER WORKING AND DETAILED PLANS AS MAY BE FURNISHED FROM TIME TO TIME BY THE ENGINEER. DETAILS SHOWN ON THE PLANS ARE INDICATIVE OF THE TYPE OF WORK REQUIRED AND ARE SUBJECT TO REVISION, ALTERATION, MODIFICATION AND VARIATION. SAID REVISION, ALTERATION, MODIFICATION AND/OR VARIATION, THOUGH DESIRABLE WITH RESPECT TO IMPROVING UPON THE ORIGINAL INTENT OF THE WORK SCOPE, SHALL NEVERTHELESS BE CONSIDERED INCIDENTAL TO THE OVERALL COST OF THE WORK. SUCH INCIDENTAL REVISIONS, ALTERATIONS, MODIFICATIONS AND/OR VARIATIONS THAT ARE DESIRABLE IN OPINION OF THE PROJECT OWNER OR ENGINEER, ON ACCOUNT OF CONDITIONS ENCOUNTERED OR FOR OTHER REASONS, SHALL NOT BE CONSIDERED A VARIATION OF THE TERMS OF THE CONTRACT.
5. FIGURED PLAN DIMENSIONS ARE TO PREVAIL OVER SCALED DIMENSIONS. ALL THINGS WHICH IN THE OPINION OF THE ENGINEER MAY BE FAIRLY INFERRED FROM THE PLANS ARE TO BE EXECUTED BY THE CONTRACTOR AS PART OF THE CONTRACT, AND THE PROJECT OWNER AND/OR ENGINEER SHALL BE THE SOLE JUDGE AS TO WHETHER THE DETAIL PLANS CONFORM TO THE GENERAL PLANS.
6. PLANS, CALCULATIONS, ESTIMATES OF QUANTITIES, AND ANY STATEMENT MADE IN THE INFORMATION FOR CONTRACTOR OR OTHERWISE AS TO THE CONDITION UNDER WHICH THE WORK IS TO BE PERFORMED, ARE NOT GUARANTEED BY THE PROJECT OWNER OR THE ENGINEER TO BE CORRECT, OR TO BE A COMPLETE REPRESENTATION OF ALL EXISTING DATA ON THE CONDITIONS AFFECTING THE WORK, AND THE CONTRACTOR AGREES THAT HE/SHE HAS MADE HIS OWN EXAMINATIONS AND WILL MAKE NO CLAIM FOR DAMAGES ON ACCOUNT OF ANY ERROR OR OMISSION IN ANY PLANS, CALCULATIONS, ESTIMATES OF QUANTITIES, OR ANY STATEMENTS MADE IN THE INFORMATION FOR BIDDERS OR OTHERWISE AS TO THE CONDITIONS UNDER WHICH THE WORK IS TO BE PERFORMED. ADDITIONALLY, CONTRACTOR SHALL REPORT SUCH DISCREPANCY, ERROR, OR OMISSION TO THE PROJECT OWNER AND ENGINEER IN WRITING AS SOON AS IT COMES TO HIS KNOWLEDGE, AND BEFORE PROCEEDING WITH WORK RELATING TO SUCH DISCREPANCY, ERROR OR OMISSION.

   ANY CORRECTION OR MODIFICATION OF THE PLANS OR SPECIFICATIONS MAY BE MADE BY DFCM OR THE ENGINEER WHEN NECESSARY, IN HIS/HER OPINION, FOR THE PROPER FULFILLMENT OF THEIR PURPOSE OR FOR THEIR PROPER INTERPRETATION. ANY CORRECTION OR MODIFICATION OF THE PLANS MAY BE MADE BY THE CONTRACTOR WHEN NECESSARY WHEN APPROVED BY THE DESIGN ENGINEER AND DFCM.

DFCM CONSTRUCTION REQUIREMENTS:

CONSTRUCTION OF NEW STATE BUILDINGS AND REMODELING OF EXISTING BUILDINGS SHALL COMPLY WITH ALL THE REQUIREMENTS OF THE DFCM STANDARDS, INCLUDING ENHANCED ACCESSIBILITY. THE DFCM STANDARDS CAN BE FOUND AT THE FOLLOWING WEB SITE: WWW.DFCM.UTAH.GOV. CONTRACTOR SHALL BE FAMILIAR WITH AND COMPLIANT WITH DFCM STANDARDS AND REQUIREMENTS FOR THIS PROJECT.

CHANGES IN THE WORK:

THE OWNER SHALL HAVE THE RIGHT, WITHIN THE GENERAL SCOPE OF THE WORK, TO MAKE CHANGES IN THE WORK, INCLUDING BUT NOT LIMITED TO CHANGES IN THE PLANS AND SPECIFICATIONS OR TO THE METHOD OR MANNER OF PERFORMANCE OF THE WORK. THE CONTRACTOR SHALL PROMPTLY COMPLY WITH ANY AND ALL WRITTEN CHANGE ORDERS ISSUED BY THE ENGINEER AND/OR OWNER.

STORMWATER AND EROSION CONTROL:

1. THE DISTURBANCE AREA AT THE SITE WILL BE LESS THAN ONE ACRE IN TOTAL AND THEREFORE NOT UNDER THE JURISDICTION OF THE NPDES GENERAL CONSTRUCTION PERMIT PROCESS. REGARDLESS OF THE NEED FOR A SWPPP UNDER THE NPDES PERMIT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEVELOPING A SITE-SPECIFIC SEDIMENT AND EROSION CONTROL PLAN WHICH SHALL BE SUBMITTED TO DFCM AND THE OWNER. THE CONTRACTOR'S PLAN SHALL BE DESIGNED TO ACCOUNT FOR THE ANTICIPATED WORK PLAN, CONSTRUCTION SEQUENCE, AND ANTICIPATED LEVEL OF DISTURBANCE.
2. CONTRACTOR'S SEDIMENT AND EROSION CONTROL PLAN SHALL BE IMPLEMENTED AND UPDATED FROM THE COMMENCEMENT OF ANY SOIL DISTURBING ACTIVITIES AT THE SITE, UNTIL FINAL STABILIZATION OF THE PROJECT.

SURVEY CONTROL AND BENCHMARKS:

1. THE CONTRACTOR SHALL ESTABLISH LINES AND GRADES AND LAYOUT ALL WORK FOR THE PROJECT, SHALL BE RESPONSIBLE FOR ESTABLISHING ELEVATIONS, TEMPORARY BENCHMARKS, BASELINES, LEVELS, REFERENCE MARKS, BATTER BOARDS, ETC., AND SHALL LOCATE AND PROTECT SURVEY CONTROL AND REFERENCE POINTS PROVIDED BY THE OWNER. ADDITIONAL CONTROL ESTABLISHED BY THE CONTRACTOR WITHIN THE PROJECT AREA SHALL BE PROTECTED FROM DISTURBANCE.
2. THE CONTRACTOR SHALL PROVIDE BENCHMARKS IN THE FIELD TO ESTABLISH REFERENCE POINTS (HORIZONTAL AND VERTICAL CONTROL) WHICH IN HIS JUDGMENT ARE NECESSARY TO ENABLE THE CONTRACTOR TO PROCEED WITH THE WORK. THE ENGINEER RESERVES THE RIGHT TO VERIFY CORRECTNESS OF THE LAYOUT OF THE WORK AND SLOPE GRADES DURING THE PROGRESS OF THE WORK. WHERE BENCHMARKS AND REFERENCES WILL UNAVOIDABLY BE DESTROYED BY THE CONSTRUCTION, CONTRACTOR SHALL ESTABLISH TEMPORARY OR SECONDARY REFERENCE POINTS OUTSIDE OF THE CONSTRUCTION AREA BEFORE THE BENCHMARKS ARE DEMOLISHED, AND SHALL PROTECT AND MAINTAIN SUCH TEMPORARY POINTS DURING CONSTRUCTION.
3. THE CONTRACTOR IS RESPONSIBLE FOR ALL CONSTRUCTION SURVEYING AND STAKING FOR COMPLETION OF THE WORK.
3. NO CHANGE IN DESIGN LOCATION OR GRADE SHALL BE MADE BY THE CONTRACTOR WITHOUT WRITTEN APPROVAL FROM THE ENGINEER.
4. HORIZONTAL DATUM: NORTH AMERICAN DATUM OF 1983 (N.A.D. 83) (2011) EPOCH 2010; VERTICAL DATUM: NORTH AMERICAN VERTICAL DATUM OF 1988 (N.A.V.D. 88).

GENERAL CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE TO MAINTAIN THE SITE IN A NEAT, SAFE AND ORDERLY MANNER AT ALL TIMES.
2. EXCESS SOILS AND MATERIALS SHALL BE STOCKPILED ON SITE AT A LOCATION DESIGNATED BY THE OWNER.
3. IN THE EVENT EXISTING SIGNAGE, LANDSCAPE FEATURES, OR ANY SUCH/OTHER IMPROVEMENTS NEED TO BE DISTURBED AND/OR REMOVED AND REPLACED FOR THE PROPER PLACEMENT OF IMPROVEMENTS TO BE CONSTRUCTED, THE COST OF REPLACING OR REPAIRING SUCH EXISTING IMPROVEMENTS SHALL BE INCLUDED IN THE RESPECTIVE UNIT PRICE BID ITEM.
4. POLYVINYL CHLORIDE WATER PIPE (PVC) SHALL BE RIGID, THERMOPLASTIC PRESSURE CLASS 150 AND MEET THE REQUIREMENTS OF ANSI/AWWA STANDARD C900 FOR WATER DISTRIBUTION PIPE.
5. FITTINGS FOR POLYVINYL CHLORIDE WATER PIPE (PVC) SHALL BE DUCTILE IRON (DI) AND SHALL MEET THE REQUIREMENTS OF NSF 61 AND ANSI/AWWA C110/A21.10-82 OR C-153/A21.53-58.
6. PVC/PE/HDPE PIPE, INCLUDING WATER AND SEWER SERVICE CONNECTIONS SHALL INCLUDE A #12 TRACER WIRE ATTACHED TO THE TOP OF THE PIPE.
7. HIGH DENSITY POLYETHYLENE PIPE (HDPE) PIPE SHALL BE PE3608 MADE OF HIGH DENSITY, HIGH MOLECULAR WEIGHT RESIN MANUFACTURED ACCORDING TO ASTM D3350, F714, OR API 15LE ANDAWWA C906. SEE PLANS FOR PIPE DR REQUIREMENTS.
8. POLYVINYL CHLORIDE (PVC) SEWER PIPE SHALL BE RIGID, SDR-35 PIPE MEETING THE REQUIREMENTS OF ASTM D2241. JOINTS TO BE BELL AND SPIGOT WITH A FLEXIBLE ELASTOMERIC SEAL.
9. POLYETHYLENE (PE) PRESSURE PIPE TUBING FOR WATER SERVICE LINES TO COMPLY WITH AWWA C901 REQUIREMENTS WITH SIZE AS NOTED ON PLANS WITH COMPRESSION FITTINGS.
10. CONTRACTOR SHALL PROVIDE TEMPORARY SAFETY FENCING AND BARRIER AROUND EXCAVATIONS AND PROJECT SITE DURING CONSTRUCTION.
11. CONTRACTOR TO COORDINATE WITH OWNER TO MAINTAIN OWNER AND VISITOR ACCESS TO THE SITE THROUGHOUT CONSTRUCTION.

FOR REFERENCE

EARTHWORK AND GRADING:

1. A GEOTECHNICAL REPORT ENTITLED, "GEOTECHNICAL STUDY, PROPOSED LOGAN FISH HATCHERY" DATED MARCH 1, 2023 AND EXECUTED BY GSH GEOTECHNICAL, INC. HAS BEEN PREPARED FOR THE WORK HEREIN IDENTIFIED. THE NATURE AND EXTENT OF SUCH SITE OR SUBSURFACE VARIATIONS MAY NOT BECOME EVIDENT UNTIL CONSTRUCTION COMMENCES OR IS IN PROGRESS. IF SITE AND SUBSURFACE ANOMALIES OR VARIATIONS EXIST OR DEVELOP, THE ENGINEER SHOULD BE CONTACTED IMMEDIATELY SO THAT SUCH SITUATIONS/CONDITIONS CAN BE EVALUATED AND ADDRESSED WITH APPLICABLE RECOMMENDATIONS. THE CONTRACTOR AND APPLICABLE SUBCONTRACTORS SHALL FAMILIARIZE THEMSELVES WITH THE REQUIREMENTS AND RECOMMENDATIONS CONTAINED IN THE REPORT.
2. CONTRACTOR SHALL PERFORM EARTHWORK AND GRADING ACTIVITIES IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, APWA STANDARD SPECIFICATIONS, AND THE RECOMMENDED EARTHWORK SPECIFICATIONS FOUND IN THE REPORT OF THE GEOTECHNICAL INVESTIGATION STUDY COMPLETED BY GSH GEOTECHNICAL, INC. AS IT PERTAINS TO THE CONDITIONS OF THE EARTHWORK.
3. ALL EARTHWORK SHALL BE PLACED AND COMPACTED AS OUTLINED IN THE CONTRACT DOCUMENTS AND GEOTECHNICAL REPORT.
4. SOIL INVESTIGATIONS WERE CONDUCTED FOR DESIGN PURPOSES ONLY, AND THE DATA SHOWN IN THE REPORTS ARE FOR SUBSURFACE CONDITIONS FOUND AT THE TIME OF THE INVESTIGATION. THE OWNER AND ENGINEER DISCLAIM RESPONSIBILITY FOR THE INTERPRETATION BY THE CONTRACTOR OF DATA, SUCH AS PROJECTION OR EXTRAPOLATION, FROM THE TEST HOLES TO OTHER LOCATIONS ON THE SITE OF THE WORK, SOIL BEARING VALUES AND PROFILES, SOIL STABILITY AND THE PRESENCE, LEVEL AND EXTENT OF UNDERGROUND WATER FOR SUBSURFACE CONDITIONS DURING CONSTRUCTION OPERATIONS.

UNTREATED BASE COURSE:

UNTREATED BASE COURSE MATERIAL SHALL BE DEPOSITED AND SPREAD IN A UNIFORM LAYER, WITHOUT SEGREGATION OF SIZE, WITH SUCH DEPTH THAT WHEN COMPACTED THE LAYER WILL HAVE THE THICKNESS REQUIRED FOR ITS INTENDED PURPOSE IN ACCORDANCE WITH APWA SPECIFICATIONS AND MEET REQUIREMENTS OF THE GSH GEOTECHNICAL REPORT. THE BASE SHALL BE COMPACTED TO NOT LESS THAN 96% MAXIMUM DRY DENSITY AS DETERMINED BY AASHTO T-180. SURFACES SHALL BE TRUE TO THE ESTABLISHED GRADE.

BITUMINOUS ASPHALT CEMENT PAVEMENT:

CONTRACTOR SHALL PLACE AND COMPACT A 3" THICK HOT-MIX ASPHALT SURFACE COURSE OVER THE FINISHED BASE COURSE MATERIAL WHERE SHOWN. CONTRACTOR SHALL PROVIDE THE ENGINEER WITH SPECIFIED AND SELECTED ASPHALT MIX DESIGNS, AND SELECTED PRIME COAT AND TACK COAT AT THE PRE-CONSTRUCTION MEETING. ALL HOT-MIX ASPHALT SHALL BE PG 58-28, DM-1/2, MARSHALL MIX PER APWA 32 12 05. APPLY TACK COAT, COMPLIANT WITH APWA SECTION 32 12 14, BETWEEN LAYERS OR LIFTS IF THE PREVIOUS PAVEMENT LAYER IS DIRTY OR OLDER THAN 24 HOURS PER APWA SECTION 32 12 16.

DUST CONTROL:

THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE DUST CONTROL, PAVEMENT CLEANING, AND SWEEPING OPERATIONS FOR THE DURATION OF THE PROJECT. DUST CONTROL AND PAVEMENT SWEEPING SHALL BE PROVIDED DAILY AT THE END OF EACH WORK DAY, UNLESS OTHERWISE APPROVED BY THE AGENCY. DUST CONTROL AND SWEEPING SHALL BE CONSIDERED INCIDENTAL TO THE WORK AND WILL NOT BE PAID UNDER A SEPARATE BID ITEM.

SITE RESTORATION AND FINALIZATION:

1. WHERE NEW EARTHWORK MEETS EXISTING EARTHWORK, CONTRACTOR SHALL BLEND NEW EARTHWORK SMOOTHLY INTO EXISTING, PROVIDING VERTICAL CURVES OR ROUNDS AT ALL TOP AND BOTTOM OF SLOPES.
2. WHERE A SPECIFIC LIMIT OF WORK LINE IS NOT OBVIOUS OR IMPLIED, CONTRACTOR SHALL BLEND GRADES TO MATCH AND MEET EXISTING CONDITIONS.
3. CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS AND SHALL RAKE AND WORK SUCH DISTURBED AREAS IN ORDER TO FORM A SMOOTH AND AESTHETICALLY PLEASING FINISHED GRADE FREE FROM ROUGHNESS, BUMPS, RIDGES OR IRREGULARITIES.

DEWATERING:

IF REQUIRED FOR THE PERFORMANCE OF THE PROJECT WORK, THE CONTRACTOR SHALL MAINTAIN ALL NECESSARY SLOPES, DITCHES, SUBDRAINS, AND SHALL FURNISH AND OPERATE ALL PUMPS NEEDED SUCH THAT DEWATERING OF THE WORK AREAS CAN BE ACCOMPLISHED IN A MANNER THAT WILL PREVENT LOSS OF FINES FROM THE STRUCTURAL EARTHWORK, MAINTAIN STABILITY OF EXCAVATED SLOPES, AND ALLOW THE WORK TO BE PERFORMED. THE CONTRACTOR SHALL EMPLOY A PROPER METHOD OF DEWATERING.

"AS-BUILT" MARK UPS OF CONTRACT DRAWINGS

THE CONTRACTOR SHALL CONTINUOUSLY MARK UP A SET OF THE CONTRACT DRAWINGS BASED ON THE FIELD CHANGES AND AS-BUILT CONDITIONS. THE MARKED UP SET OF CONTRACT DRAWINGS SHALL BE AVAILABLE ON SITE AT ALL TIMES. THE CONTRACTOR SHALL BRING THE UPDATED SET TO EACH CONSTRUCTION MEETING. A COMPLETE SET OF MARKED UP CONTRACT DRAWINGS SHALL BE PROVIDED TO THE OWNER AND ENGINEER AT THE COMPLETION OF THE PROJECT.

AIR, SOIL, AND WATER POLLUTION AND NOISE CONTROL

1. THE CONTRACTOR SHALL COMPLY WITH THE APPLICABLE LOCAL, STATE, AND FEDERAL REGULATIONS PERTAINING TO OPEN BURNING, AND DUST, ODOR, CONSTRUCTION AND DEMOLITION; AND HIS/HER ATTENTION IS CALLED TO APPLICABLE ENFORCEMENT PROVISIONS IN REGARD TO THESE AND OTHER PERTINENT AND APPLICABLE REGULATIONS. THE CONTRACTOR SHALL COMPLY WITH THE PROVISIONS OF THE CLEAN AIR ACT OF 1970, 42USC, SECTIONS 1857- 1857F.
2. THE WORK OF THIS CONTRACT IS BEING CONDUCTED ADJACENT TO THE BIERDENOU SLOUGH AND ITS SURROUNDING WETLANDS AND IS A SENSITIVE WATER RESOURCE WHICH PROVIDES HABITAT FOR FISH AND OTHER WILDLIFE. THE CONTRACTOR SHALL TAKE EVERY PRECAUTION TO PREVENT THE CHEMICAL CONTAMINATION OF SOIL, GROUNDWATER, AND RIVER WATER CAUSED BY SPILLING OR LEAKING OF OIL, HAZARDOUS MATERIAL, OR OTHER CHEMICALS AND MATERIALS USED IN THE CONSTRUCTION OPERATION. THE CONTRACTOR SHALL BE ESPECIALLY CAREFUL NOT TO DISCHARGE OR SPILL ANY OIL, GROUT, CONCRETE, OR OTHER CONTAMINANTS IN OR ONTO THE WATERS ADJACENT TO AND/OR WITHIN WORK AREAS.
3. CLEAN-UP OF SUCH SPILLS, LEAKS OR OTHER CONTAMINATION SHALL BE UNDERTAKEN IMMEDIATELY BY THE CONTRACTOR. THE CLEAN-UP WORK SHALL BE DONE TO THE SATISFACTION OF THE ENGINEER AND OWNER. ALL SPILLS, LEAKS, OR OTHER CONTAMINATION SHALL BE IMMEDIATELY REPORTED TO BOTH THE ENGINEER AND OWNER. IN THE EVENT THAT SUCH A SPILL OR LEAK IS NOT CLEANED UP BY THE CONTRACTOR, THE OWNER RESERVES THE RIGHT TO HAVE THE SPILL OR LEAK CLEANED UP BY ITS OWN FORCES OR BY OTHERS AND THE EXPENSE OF SUCH REMOVAL AND DISPOSAL WILL BE CHARGED TO THE CONTRACTOR.

SITE CONCRETE

1. ALL CONCRETE SHALL MEET THE REQUIREMENTS OF ACI-301, "SPECIFICATION FOR STRUCTURAL CONCRETE FOR BUILDINGS." PROPORTIONING OF INGREDIENTS FOR EACH CONCRETE MIX SHALL BE BY METHOD 2 OR THE ALTERNATE PROCEDURE GIVEN IN ACI-301. PLACE CONCRETE PER ACI-304 AND CONFORM TO ACI-604 (306) FOR COLD WEATHER PLACEMENT AND ACI-605 (305) FOR HOT WEATHER PLACEMENT, USE INTERIOR MECHANICAL VIBRATORS WITH 7,000 RPM MINIMUM FREQUENCY. DO NOT OVER-VIBRATE. CONCRETE SHALL BE PLACED MONOLITHICALLY BETWEEN CONSTRUCTION AND CONTROL JOINTS. PROTECT ALL CONCRETE FROM PREMATURE DRYING, EXCESSIVE HOT OR COLD TEMPERATURE FOR SEVEN DAYS AFTER PLACING.
2. MATERIALS
   a. CEMENT: EXPOSURE CLASS SO: ASTM 150, TYPE I/II, OR ASTM C595, TYPE IL. FOR TYPE IL CEMENT, LIMIT LIMESTONE CONTENT TO 7% MAX. AND BLAINE FINENESS TO BE AT LEAST 500 M^2/KG.
   b. COARSE AND FINE AGGREGATE: ASTM C33.
   c. WATER SHALL BE CLEAN AND POTABLE.
   d. FLY ASH: ASTM C618, CLASS F, MAXIMUM FLY ASH CONTENT AS A PERCENTAGE OF TOTAL WEIGHT OF CEMENITIOUS MATERIALS SHALL BE 25 PERCENT.
3. STRENGTH
   a. f'c = 4500 PSI AT 28 DAYS
   b. MAX. W/C RATION = 0.45
4. EXPOSURE CLASSIFICATION
   a. F3 - EXPOSED TO FREEZING AND THAWING CYCLES WITH FREQUENT EXPOSURE TO WATER AND DEICING CHEMICALS
   b. S0 - LOW EXPOSURE TO WATER SOLUBLE SULPHATE
   c. W0 - MAY BE IN CONTACT WITH WATER, LOW PERMEABILITY IS NOT REQUIRED.
   d. C2 - EXPOSED TO MOISTURE AND AN EXTERNAL SOURCE OF CHLORIDES OR DEICING CHEMICALS.
5. ADMIXTURES
   a. AIR ENTRAINMENT: ASTM C260 AND ASTM C494, ENTRAIN 6% PLUS/MINUS 1.5% BY VOLUME IN ALL EXPOSED CONCRETE.
   b. WATER REDUCING ADMIXTURE: ASTM C494, ADMIXTURES SHALL BE USED IN EXACT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
   c. SYNERGIZED PERFORMANCE SYSTEMS: CONCRETE USING ADMIXTURES TO PRODUCE FLOWABLE CONCRETE MAY BE USED SUBJECT TO ENGINEER'S APPROVAL.
   d. NO OTHER ADMIXTURE PERMITTED UNLESS APPROVED BY THE ENGINEER OF RECORD.
6. A STATEMENT OF MIX DESIGN FOR ALL CONCRETE SHALL BE SUBMITTED TO AND REVIEWED BY THE ENGINEER PRIOR TO COMMENCING WORK.
7. ALL CONCRETE WORK SHALL BE PLACED, CURED, STRIPPED, AND PROTECTED AS DIRECTED BY THE SPECIFICATIONS AND ACI STANDARDS AND PRACTICES.
8. BEFORE CONCRETE IS POURED CHECK WITH ALL TRADES` TO ENSURE PROPER PLACEMENT OF ALL OPENINGS, SLEEVES, CURBS, CONDUITS, BOLTS, INSERTS, ETC. RELATIVE TO WORK.
9. REFER TO DRAWINGS FOR TYPICAL CONSTRUCTION JOINT DETAILS. UNLESS NOTED IN DRAWINGS, ALL REINFORCEMENT SHALL BE CONTINUOUS THROUGH JOINTS.
10. WHERE EXTERIOR SLABS ON GRADE ABUT FOUNDATIONS OR COLUMNS PROVIDE 3/8" PREFORMED EXPANSION JOINT WITH SEALANT.
11. SEE PLANS OR ADDITIONAL SITE NOTES FOR CONTROL JOINT, EXPANSION JOINT, AND SUBGRADE PREPARATION FOR CONCRETE WORK.

REVIEWED FOR CODE COMPLIANCE
THOMAS PETERSON
05/19/2025
DIVISION OF FACILITIES CONSTRUCTION AND MANAGEMENT

DFCM CODE COMPLIANCE OFFICER

NO.	REVISIONS	BY	DATE
	PUBLISHED		

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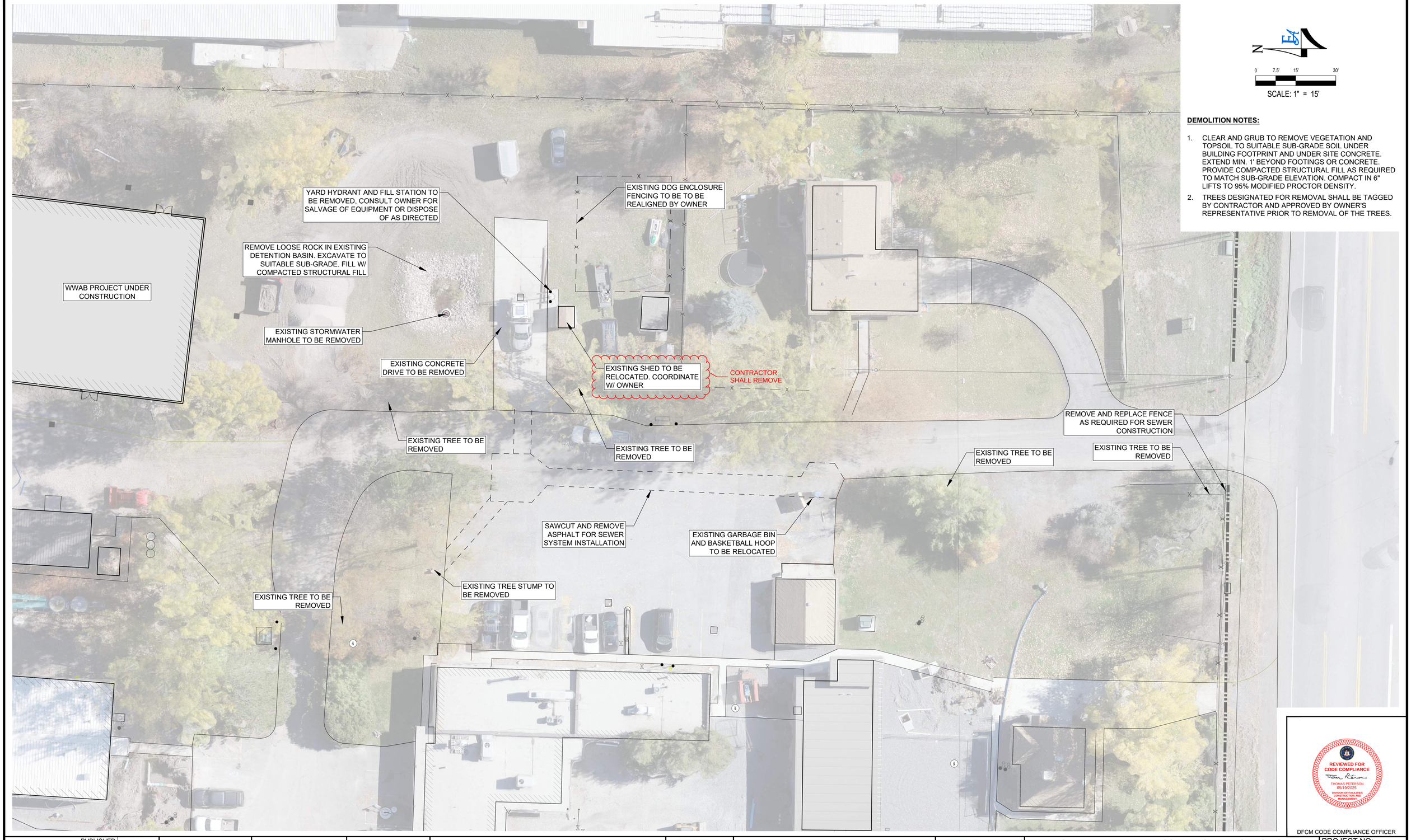
DRAWN
DESIGNED
APPROVED
QA

ATTENTION
LINE IS 2-INCHES
AT 24"x36" S



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0 7.5' 15' 30'

SCALE: 1" = 15'

DEMOLITION NOTES:

1. CLEAR AND GRUB TO REMOVE VEGETATION AND TOPSOIL TO SUITABLE SUB-GRADE SOIL UNDER BUILDING FOOTPRINT AND UNDER SITE CONCRETE. EXTEND MIN. 1' BEYOND FOOTINGS OR CONCRETE. PROVIDE COMPACTED STRUCTURAL FILL AS REQUIRED TO MATCH SUB-GRADE ELEVATION. COMPACT IN 6" LIFTS TO 95% MODIFIED PROCTOR DENSITY.
2. TREES DESIGNATED FOR REMOVAL SHALL BE TAGGED BY CONTRACTOR AND APPROVED BY OWNER'S REPRESENTATIVE PRIOR TO REMOVAL OF THE TREES.

REVIEWED FOR CODE COMPLIANCE
THOMAS PETERSON
05/19/2025
DIVISION OF FACILITIES CONSTRUCTION AND MANAGEMENT

DFCM CODE COMPLIANCE OFFICER

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DRAWN
DESIGNED
APPROVED
QA

ATTENTION
LINE IS 2-INCHES
AT 24"x36" SIZE
IF NOT 2-INCHES, SCALE DRAWING ACCORDINGLY

PROFESSIONAL STRUCTURAL ENGINEER
2/25/25
No. 295553
CRAIG L. RASMUSSEN
STATE OF UTAH

LOGAN FISH HATCHERY
UTAH DIVISION OF WILDLIFE RESOURCES
1465 WEST 200 NORTH
LOGAN, UTAH 84321

UTAH DNR WILDLIFE RESOURCES

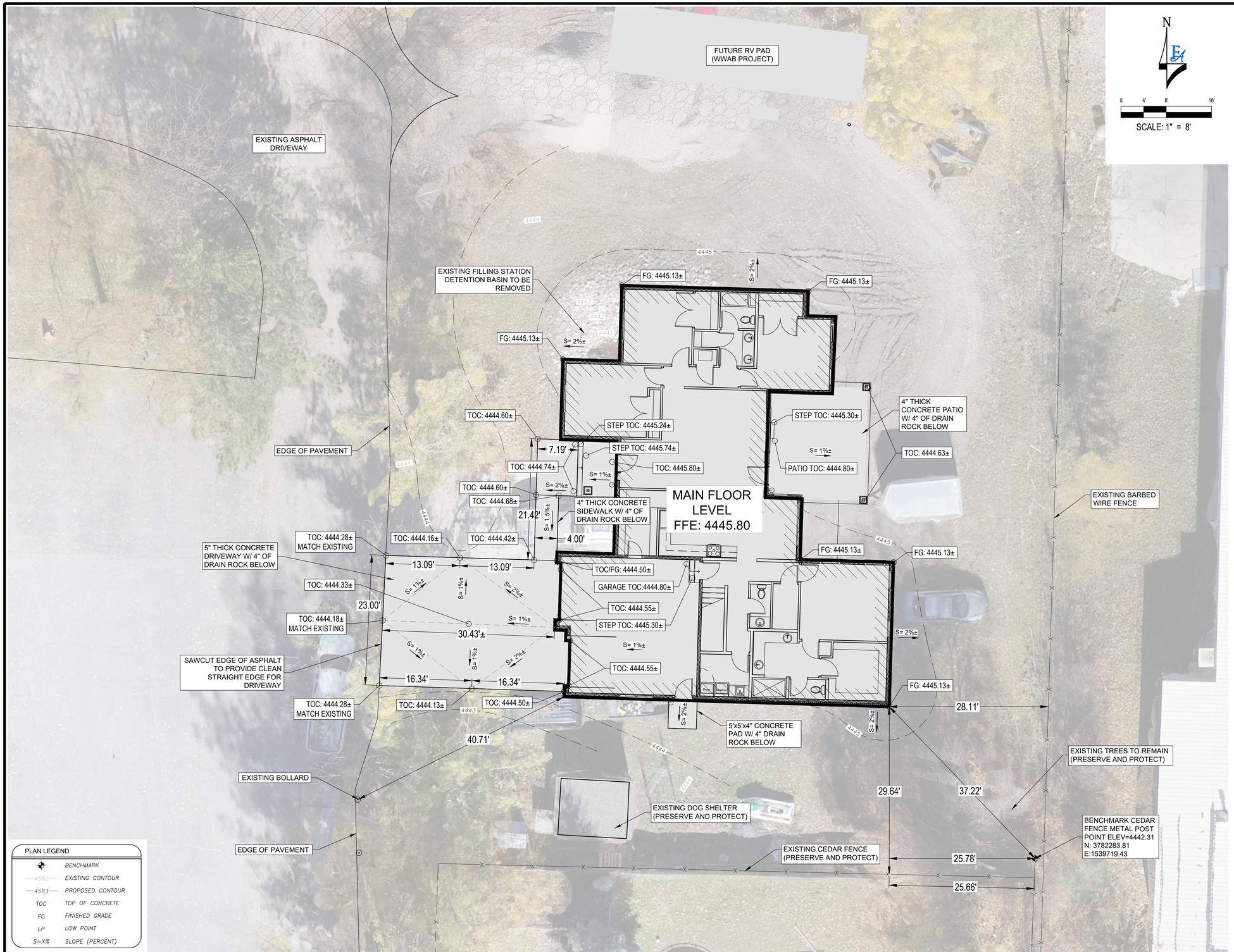
FORSGREN Associates Inc.
95 WEST 100 SOUTH, STE. 115, LOGAN, UT 84321
PH: 435.227.0333 FAX: 435.227.0334

Blue Stakes of UTAH 811 Bluestakes.org

CARETAKER RESIDENCE BUILDING
LOGAN HATCHERY IMPROVEMENT PROJECT

DEMOLITION PLAN

PROJECT NO: 14-24-0189
SHEET NO: C-101
DATE: 02-25-2025
PAGE NO: 2



SITE PREPARATION AND CONSTRUCTION NOTES:

1. THIS PROJECT INVOLVES RENOVATION OF AND/OR INTERFACING WITH EXISTING FACILITIES. ALL REPRESENTATIONS OF EXISTING CONDITIONS SHOWN HEREIN WERE DERIVED FROM TOPOGRAPHIC SURVEYS, FIELD INVESTIGATIONS AND/OR FROM AVAILABLE RECORD DRAWING INFORMATION. NEITHER THE OWNER NOR ENGINEER GUARANTEES THESE LOCATIONS TO BE EITHER TRUE OR EXACT. IT SHALL BE THE CONTRACTOR'S SOLE RESPONSIBILITY TO VERIFY ALL EXISTING IMPROVEMENTS AND TO EXPOSE ALL EXISTING UNDERGROUND UTILITIES TO THE EXTENT NECESSARY IN ORDER TO DULY EXECUTE THE WORK.
2. TREES DESIGNATED FOR REMOVAL SHALL BE TAGGED BY CONTRACTOR AND APPROVED BY OWNER'S REPRESENTATIVE PRIOR TO REMOVAL OF THE TREES.
3. REMOVE ALL EXISTING SURFACE VEGETATION AND SOFT SOILS. STABILIZE AND FILL WITH SUITABLE STRUCTURAL FILL IN ACCORDANCE WITH GEOTECHNICAL REPORT.
4. THE FOOTINGS SHALL NOT BE INSTALLED UPON NON-ENGINEERED FILLS, LOOSE OR DISTURBED SOILS, TOPSOIL, SURFACE VEGETATION, ROOT SYSTEMS, RUBBISH, CONSTRUCTION DEBRIS, OR OTHER DELETERIOUS MATERIALS. IF UNSUITABLE SOILS ARE ENCOUNTERED, THEY MUST BE REMOVED AND REPLACED WITH COMPACTED GRANULAR FILL. IF GRANULAR SOILS BECOME LOOSE OR DISTURBED, THEY MUST BE RECOMPACTED PRIOR TO POURING THE CONCRETE.
5. ALL PROPOSED SITE FEATURES SHALL BE LAID OUT AND STAKED FOR REVIEW AND APPROVAL BY THE OWNER'S REPRESENTATIVE PRIOR TO COMMENCEMENT OF INSTALLATION. ANY REQUIRED ADJUSTMENTS TO THE LAYOUT SHALL BE UNDERTAKEN AS DIRECTED, AT NO ADDITIONAL COST TO THE OWNER.
6. CONTRACTOR SHALL PLACE SURVEY HUBS NEAR PROPOSED BUILDING TO MARK FINISHED FLOOR ELEVATION FOR USE IN DETERMINING REQUIRED BURY DEPTH FOR UTILITY PIPING, AND TO ESTABLISH BUILDING CORNERS TO ENSURE PROPER UTILITY PIPING INSTALLATION.
7. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND GRADES ON THE GROUND AND REPORT ANY DISCREPANCIES IMMEDIATELY TO THE ENGINEER.
8. NO CONSTRUCTION WILL BE PERFORMED WITHOUT THE PROPOSED CONSTRUCTION BASELINES AND LAYOUTS BEING STAKED IN THE FIELD AND THE SAME BEING APPROVED BY OWNER AND ENGINEER.
9. IF EXCESSIVELY SOFT OR OTHERWISE UNSUITABLE SOILS ARE ENCOUNTERED BENEATH THE PROPOSED FOOTINGS, THEY SHALL BE COMPLETELY REMOVED. IF THE REMOVAL DEPTH REQUIRED IS GREATER THAN 2 FEET BELOW PROPOSED FOOTINGS, GSH GEOTECHNICAL MUST BE NOTIFIED TO PROVIDE FURTHER RECOMMENDATIONS. IN PAVEMENT, FLOOR SLAB, AND OUTSIDE FLATWORK AREAS, UNSUITABLE NATURAL SOILS SHOULD BE REMOVED TO A MAXIMUM DEPTH OF 2 FEET AND REPLACED WITH COMPACTED GRANULAR STRUCTURAL FILL (SEE GSH GEOTECHNICAL REPORT).
10. ALL BACKFILL MATERIALS SHALL BE PLACED AND COMPACTED AS SPECIFIED TO THE SUBGRADE REQUIRED FOR THE INSTALLATION OF THE REMAINDER OF THE CONTRACT WORK.
11. ALL PROPOSED PAVEMENTS SHALL MEET THE LINE AND GRADE OF EXISTING ADJACENT PAVEMENT SURFACES.
12. ALL CONCRETE WALKWAYS ADJACENT TO STRUCTURES SHALL BE SLOPED AWAY FROM THE STRUCTURE AT A TWO-PERCENT (2%) SLOPE UNLESS OTHERWISE SHOWN.

SITE RESTORATION AND FINALIZATION

1. WHERE A SPECIFIC LIMIT OF WORK LINE IS NOT OBVIOUS OR IMPLIED, CONTRACTOR SHALL BLEND GRADES TO MATCH AND MEET EXISTING CONDITIONS.
2. CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS AND SHALL RAKE AND WORK SUCH DISTURBED AREAS IN ORDER TO FORM A SMOOTH AND AESTHETICALLY PLEASING FINISHED GRADE FREE FROM ROUGHNESS, BUMPS, RIDGES OR IRREGULARITIES.

PLAN LEGEND

	BENCHMARK
4582	EXISTING CONTOUR
4583	PROPOSED CONTOUR
TOC	TOP OF CONCRETE
FG	FINISHED GRADE
LP	LOW POINT
S=X%	SLOPE (PERCENT)

REVIEWED FOR CODE COMPLIANCE
THOMAS PETERSON
05/19/2025
DIVISION OF FACILITIES CONSTRUCTION AND MANAGEMENT
DFCM CODE COMPLIANCE OFFICER

NO.	REVISIONS	BY	DATE
	PUBLISHED		

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IF NOT 2-INCHES, SCALE DRAWING ACCORDINGLY

PROFESSIONAL STRUCTURAL ENGINEER
2/25/25
No. 295553
CRAIG L. RASMUSSEN
STATE OF UTAH

LOGAN FISH HATCHERY
UTAH DIVISION OF WILDLIFE RESOURCES
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LOGAN, UTAH 84321

UTAH DNR WILDLIFE RESOURCES

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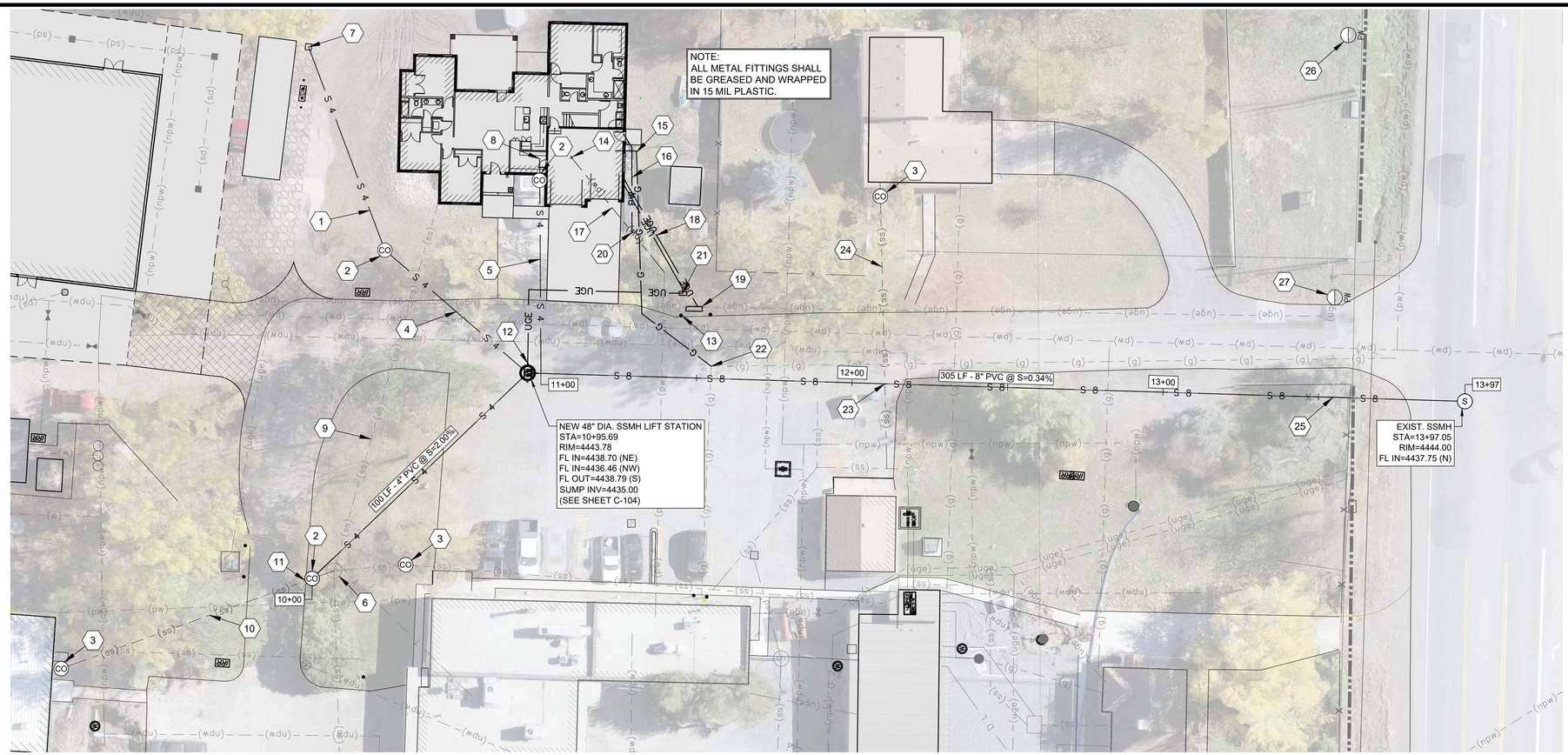
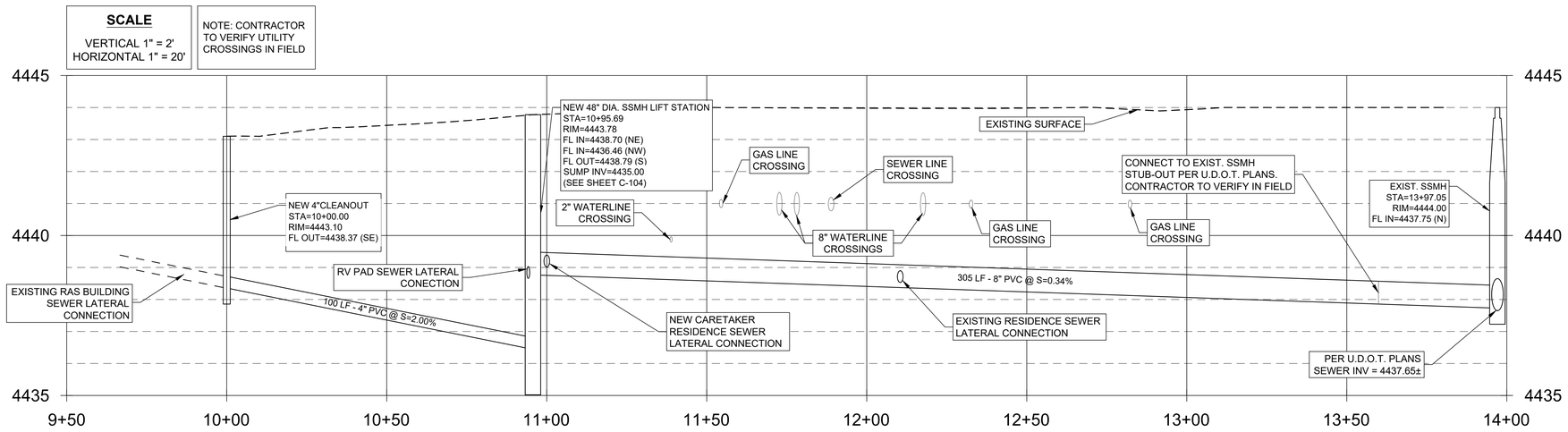
Blue Stakes of UTAH 811 Bluestakes.org

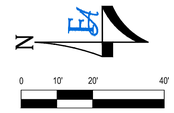
CARETAKER RESIDENCE BUILDING
LOGAN HATCHERY IMPROVEMENT PROJECT

GENERAL PROJECT CONSTRUCTION SITE AND GRADING PLAN

PROJECT NO: 14-24-0189
SHEET NO: C-102
DATE: 02-25-2025
PAGE NO: 3







SCALE: 1" = 20'

SHEET KEY NOTES:

1. RV PAD SEWER LATERAL 70 LF - 4" PVC @ S=2.0% MIN.
2. NEW 4" CLEANOUT
3. EXISTING 4" CLEANOUT
4. RV PAD SEWER LATERAL 62 LF - 4" PVC @ S=2.0% MIN.
5. SEWER LATERAL 70 LF - 4" PVC @ S=2.0% MIN.
6. EXISTING SANITARY SEWER MANHOLE TO REMAIN
7. RV PAD SEWER INV=4441.27
8. SANITARY LOCATION
9. EXISTING UTILITY LINE TO BE ABANDONED IN PLACE
10. EXISTING RAS BUILDING SEWER LATERAL
11. CONTRACTOR TO VERIFY DEPTH AND LOCATION OF EXISTING LATERAL AND CONNECT TO NEW SEWER CLEANOUT. PLUG EXISTING SERVICE DOWNSTREAM OF CONNECTION
12. PROVIDE CONDUIT FROM LIFT STATION TO CONTROL PANEL AND CONNECT POWER, ALARMS, TO PROVIDE FULL FUNCTIONALITY FOR THE LIFT STATION
13. EXISTING BOLLARD
14. EXISTING POTABLE WATER SPIGOT
15. COORDINATE W/ UTILITY PURVEYOR AND INSTALL GAS SERVICE
16. 2" POLYETHYLENE SERVICE TUBING CONNECT TO BUILDING PLUMBING
17. APPROXIMATE WATER LINE TO EXISTING SPIGOT. REMOVE OR ABANDON IN PLACE (PUMP FULL W/ GROUT)
18. APPROXIMATE ELECTRICAL SERVICE (SEE ELECTRICAL PLAN)
19. EXISTING ELECTRICAL CABINET
20. WATER SERVICE CONNECTION FROM EXISTING LINE CONTRACTOR TO VERIFY DEPTH, SIZE AND LOCATION OF EXISTING LINE PRIOR TO CONNECTION
21. LIFT STATION CONTROL PANEL - PROVIDE CONDUIT AND POWER FROM HOUSE PANEL AND TO LIFT STATION
22. CONNECTION TO EXISTING GAS LINE COORDINATE W/ UTILITY PURVEYOR
23. CONTRACTOR TO VERIFY DEPTH AND LOCATION OF EXISTING LATERAL AND CONNECT TO NEW SEWER LINE. PATCH AND REPAIR PAVEMENT AND PLUG EXISTING SERVICE DOWNSTREAM OF CONNECTION
24. EXISTING RESIDENCE SEWER LATERAL
25. CONNECT TO EXIST. SSMH STUB-OUT PER U.D.O.T. PLANS. CONTRACTOR TO VERIFY IN FIELD
26. EXISTING WATER METER. SERVICE LINE ALIGNMENT UNKNOWN. SERVICE TO EXISTING CARETAKER RESIDENCE
27. EXISTING WATER METER. SERVICE LINE ALIGNMENT UNKNOWN. SERVICE TO EXISTING BUNK HOUSE, ADMIN. BUILDING, AND RAS BUILDING TO REMAIN. TRUCK DISINFECTION/FILL STATION SERVICE TO BE DEMOLISHED W/ EXISTING WATER SERVICE TO BE CONNECTED TO NEW CARETAKER RESIDENCE.

REVIEWED FOR CODE COMPLIANCE
THOMAS PETERSON
05/19/2025
DIVISION OF FACILITIES CONSTRUCTION AND MANAGEMENT
DFCM CODE COMPLIANCE OFFICER

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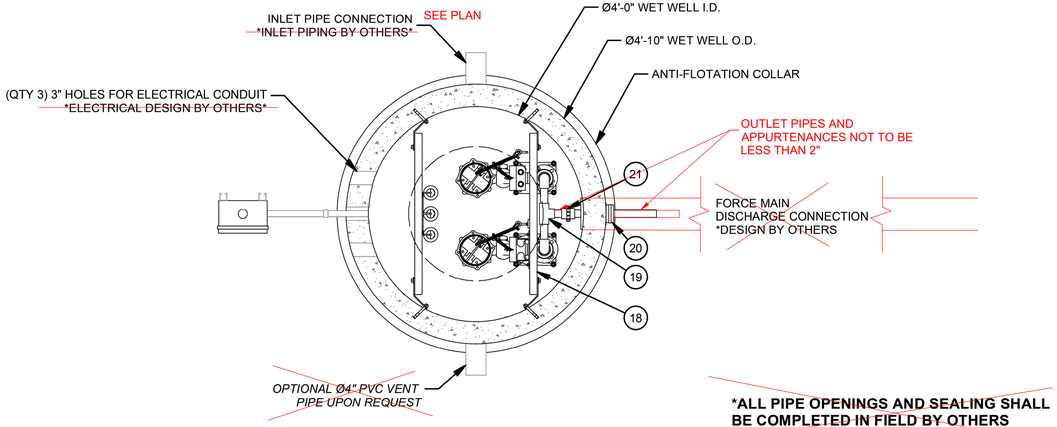
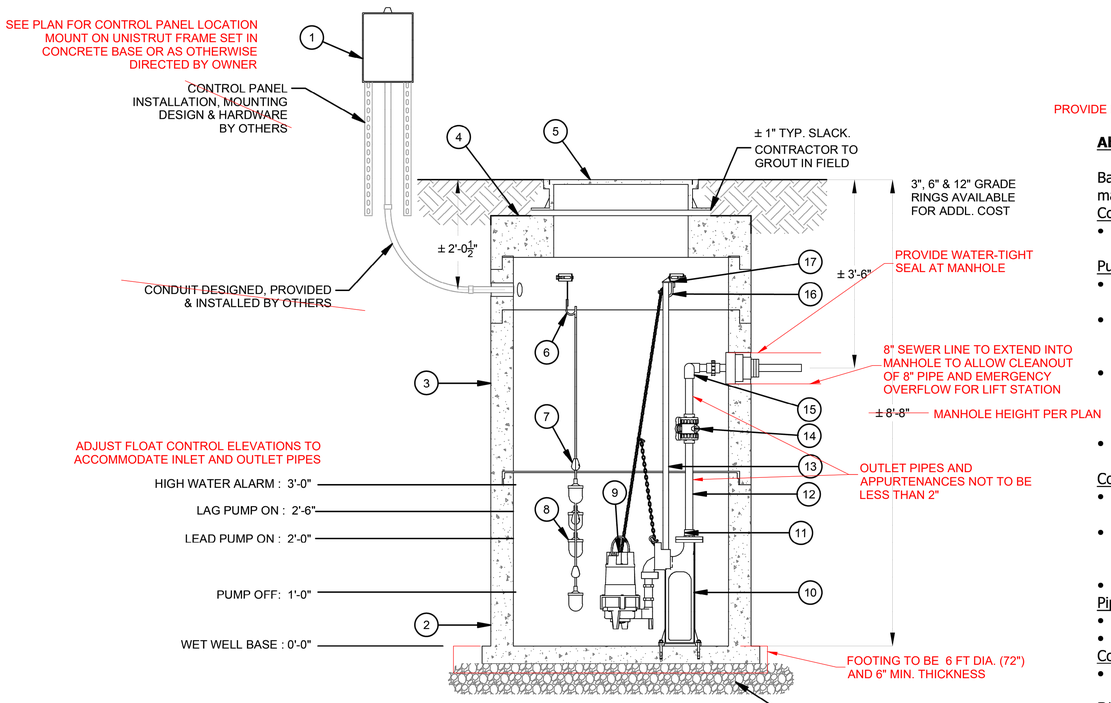
CARETAKER RESIDENCE BUILDING
LOGAN HATCHERY IMPROVEMENT PROJECT
GENERAL PROJECT CONSTRUCTION
SANITARY SEWER P&P & UTILITY PLAN

PROJECT NO: 14-24-0189
SHEET NO: C-103
DATE: 02-25-2025
PAGE NO: 4



PLAN VIEW
NOT TO SCALE

***ALL PIPE OPENINGS AND SEALING SHALL BE COMPLETED IN FIELD BY OTHERS**



PROFILE VIEW
NOT TO SCALE

BILL OF MATERIALS

ITEM	QTY	DESCRIPTION
1	1	DUPLEX ALTERNATING CONTROL PANEL FOR 0.5HP MOTORS PROVIDE 100 FT LEADS
2	1	48IN DIA. JENSEN PRECAST CONCRETE MANHOLE BASE
3	1	48IN MANHOLE BARREL *HEIGHT VARIES*
4	1	48IN DIA. JENSEN PRECAST CONCRETE MANHOLE FLAT TOP
5	1	30IN DIA. CAST IRON RING AND COVER WITH GASKET
6	1	3 HOOK BRACKET TYPE 316SS
7	4	CORD WEIGHT
8	4	UNIMAX CONTROL SWITCH 100 FT
9	2	SUBMERSIBLE GRINDER PUMP WITH 2 " NPT DISCHARGE AND 30' POWER CABLE
10	2	STANDARD 2 " AUTOCOUPLING WITH INTEGRAL CHECK VALVE & SS ANCHORS
11	2	ADAPTER PVC SCH 80 2.0 IN MA THD X SLIP
12	20	L.F. PIPE PVC SCH 80 2.0 IN DIA *CUT TO LENGTH AS NEEDED
13	20	LF 304SS 1IN. DIA SCH40 PIPE *CUT TO LENGTH AS NEEDED
14	2	BALL VALVE 2.0 IN SCH80 PVC SLIP TRUE UNION
15	2	90 DEG ELBOW 2.0 IN SCH 80 PVC SLIP
16	2	1 HOOK BRACKET TYPE 316SS
17	2	UPPER GUIDE RAIL BRACKET FOR 2.0 IN NPT DISCHARGE
18	10	LF 316SS STRUT C-CHANNEL W/ SS INSTALL HARDWARE *CUT AS NEEDED*
19	1	FITTING PVC TEE 2.0 IN SCH 80 SLIP
20	3	FLEXIBLE BOOT TYPE PIPE CONNECTOR MEETS ASTMC-923. 8" PVC PIPE W/ 2" PUMP DISCHARGE LINE
21	1	UNION 2.0 IN SCH 80 PVC

MM-148-DG-3.idw

PUMP CHARACTERISTICS

20 GPM OR 15.0' TDH

DESCRIPTION	VALUE
DUTY POINT RANGE	UP TO 30 GPM OR 25.0' TDH
MANUFACTURER	BARNES
MODEL NUMBER	SERIES SGVF
PUMP TYPE	SUBMERSIBLE GRINDER PUMP
MOTOR SIZE	.5 HP MIN
POWER SUPPLY	115 V 200 V+ THREE PHASE

PROVIDE DUPLEX PUMP STATION AS SPECIFIED OR APPROVED EQUAL.

Abbreviated Specifications:

Basis of Design: Provide site assembled precast drainage pump station, including specified controls, pumps, valves, internal piping, and precast concrete well to be manufactured and furnished by **Jensen Pump Stations**, (855) 468-5600, PumpStations@jensenprecast.com, www.JensenEngineeredSystems.com.

Concrete

- Precast concrete manufacturer must be NPCA-certified. Design shall be according to ACI 318/318R. Mix design shall be: 4,000 psi minimum, with 0.45 maximum water/cementitious materials ratio. Wet well designed per ASTM C 478, precast, reinforced concrete.

Pumps

- Furnish and install 2 (qty) Barnes recessed vortex submersible grinder pump with a self-engaging lift out assembly, designed to handle pumping of unscreened drainage water.
- The volute, seal plates and motor housing shall be constructed of high quality ASTM A-48 class 30 cast iron. The pump impeller shall be of the non-clog/vortex design with pump out vanes on the back side. The unit shall utilize a tandem mechanical shaft seal arrangement and shall operate in an oil atmosphere. Single phase motors shall be of the capacitor start, capacitor run design.
- The motor shaft shall be of 416 stainless steel. Protection against excessive temperature shall be provided by heat sensor thermostat attached to the stator windings and connected in series with the contactor coil in the control panel. The single phase models shall provide protection against excessive temperature through the use of an in-line heat/current sensor. The lower bearing shall be of the single ball type to accept radial and thrust loads, and the upper bearing of the single ball design, for radial loads. Bearings shall operate in an oil bath atmosphere.
- The pump shall utilize the Barnes break-away fitting which includes an integral check valve. The pump shall be equipped with 30 ft. of CSA/UL Approved 12/4 Type SOW power cord and connected to the motor via quick disconnect pin terminals.

Control Panel

- Provide Alderon *Check It* pump control panel. *Check It* panel is float switch operated and includes: NEMA 4X enclosure, lockable hasp, beacon and alarm buzzer, test & silence switches, HOA switches, pump run indicators and float switch indicators.
- Control Sequence of Operation: Cycle each pump on and off automatically to maintain well wastewater level. Automatic control operates both pumps in parallel if well level rises above starting point of low-level pump, until shutoff level is reached. Automatic alternator, with manual disconnect switch, changes sequence of lead-lag sewage pumps at completion of each pumping cycle.
- Minimum 4 qty mechanical float control switches shall be provided with control panel.

Piping & Hardware

- All piping, fittings, and valves shall be Schedule 80 and conforming to ASTM Standard D 1784.
- All hardware provided and used within wet well shall be 316SS quality.

Commissioning

- The pumps and station integration shall be tested and confirmed at start-up by a qualified Jensen Pump Stations representative. On-site and remote commissioning options are available.

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DISCLAIMERS, INCLUDING BUT NOT LIMITED TO:
1.) All elevations have been provided by others, and have not been verified by Jensen Precast. Contractor to verify all dimensions and elevations in field prior to installation.
2.) These layout drawings are intended to show overall system design only. All concrete component thicknesses, dimensions, and joint orientations may vary across Jensen Precast's manufacturing facilities. Contractor to confirm all thicknesses, dimensions, and joint orientations prior to installation.
3.) System design criteria has been provided to Jensen Precast. Others are responsible for verification that system meets intended application.
4.) Foundation, subgrade, and backfill to be designed by others.

JENSEN PUMP STATIONS
521 DUNN CIRCLE, SPARKS, NV 89431
www.jensenwaterresources.com
(855) 468-5600

MINIMUNI
MUNICIPAL GRADE RESIDENTIAL & COMMERCIAL LIFT STATIONS

DESCRIPTION: MINI-MUNI 1.25IN DUPLEX WASTEWATER PUMP STATION
MECHANICAL DETAIL

PART NUMBER:	MM-148-DG-3	DRAWN BY:	J. Salo
CREATED:	2/18/2020	MODIFIED:	5/11/2020

REV: 1
SHEET: 2 OF 2

REVIEWED FOR CODE COMPLIANCE
THOMAS PETERSON 05/19/2025
DIVISION OF FACILITIES CONSTRUCTION AND MANAGEMENT
DFCM CODE COMPLIANCE OFFICER

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PROFESSIONAL STRUCTURAL ENGINEER — STATE OF UTAH — No. 295553 — CRAIG L. RASMUSSEN — 2/25/25

LOGAN FISH HATCHERY
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CARETAKER RESIDENCE BUILDING
LOGAN HATCHERY IMPROVEMENT PROJECT

GENERAL DETAILS

PROJECT NO: 14-24-0189
SHEET NO: C-104
DATE: 02-25-2025
PAGE NO: 5

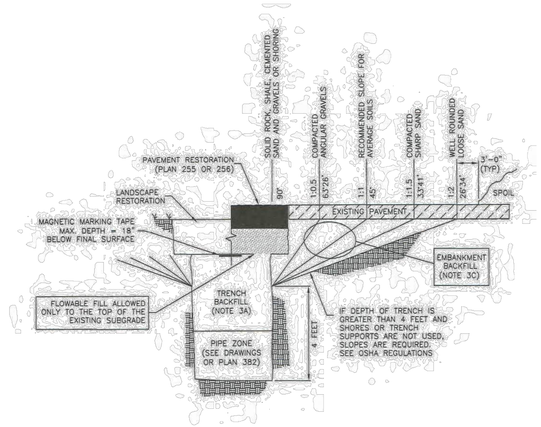
Trench backfill

1. **GENERAL**
   A. The drawing applies to backfilling a trench (and embankment) above the pipe zone.

2. **PRODUCTS**
   A. Backfill: Common fill, APWA Section 31 05 13. Maximum particle size 3-inches.
   B. Flowable Fill: APWA Section 31 05 15. Target is 60 psi in 28 days with 90 psi maximum in 28 days, It must flow easily requiring no vibration for consolidation.

3. **EXECUTION**
   A. Trench Backfill Above the Pipe Zone: Follow requirement indicated in APWA Section 33 05 20 and the following provisions. See Standard Plan 382 for backfilling the pipe zone.
      1) DO NOT USE sewer rock, pea gravel, or recycled RAP aggregate as trench backfill.
      2) Maximum lift thickness is 8-inches before compaction. Compaction is 95 percent or greater relative to a standard proctor density, APWA Section 31 23 26.
      3) Water jetting is NOT allowed.
   B. Flowable Fill: If controlled low strength material is placed in the trench. Cure the material before placing surface restorations.
   C. Embankment Backfill: When trench sides are sloped proceed as follows.
      1) Maximum lift thickness is 8-inches before compaction.
      2) Compact per APWA Section 31 23 26 to 95 percent or greater relative to a standard proctor density.
      3) Submission of quality control compaction test result data may be requested by ENGINEER at any time. Provide results of tests immediately upon request.
   D. Surface Restoration:
      1) Landscaped Surface: Follow APWA Section 32 92 00 (turf or grass) or APWA Section 32 93 13 (ground cover) requirements. Rake to match existing grade. Replace vegetation to match pre-construction conditions.
      2) Paved Surface: Follow APWA Section 33 05 25 (bituminous pavement surfacing), or APWA Section 33 05 25 (concrete pavement surfacing). Do not install surfacing until compaction density is acceptable to ENGINEER. .

NARRATIVE: THIS PLAN SHOWS VARIOUS SLOPES RECOMMENDED FOR VARIOUS TYPES OF SLOPE STABILITY PROBLEMS. THE VERTICAL TEXT INDICATES VARIOUS MATERIALS THAT MAY BE ENCOUNTERED. THE SERVICES OF A PROFESSIONAL SOILS ENGINEER SHOULD BE USED TO VERIFY SLOPE STABILITY.



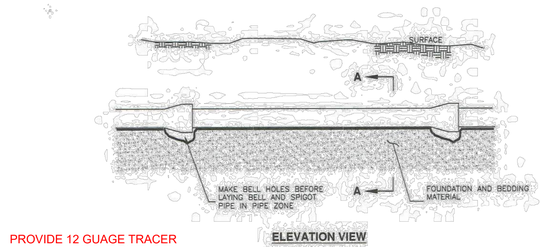
APWA Utah Chapter — *Trench backfill* — Plan 381 July 2016

Pipe zone backfill

1. **GENERAL**
   A. Install the pipe in the center of the trench or no closer than 6-inches from the wall of the pipe to the wall of the trench.

2. **PRODUCTS**
   A. Base Course: Untreated base course, APWA Section 32 11 23. Do not use gravel as a base course without ENGINEER's permission.
   B. Backfill: Common fill, APWA Section 31 05 13. Maximum particle size 2-inches.
   C. Concrete: APWA Section 03 30 04.
   D. Flowable Fill: Target is 60 psi in 28 days with 90 psi maximum in 28 days, APWA Section 31 05 15. It must flow easily requiring no vibration for consolidation.
   E. Stabilization-Separation Geotextile: Moderate or high at CONTRACTOR's choice, APWA Section 31 05 19.

3. **EXECUTION**
   A. Excavate the Pipe Zone: Width is measured at the pipe spring line and includes any necessary sheathing. Provide width recommended by pipe manufacturer. Follow manufacturer's recommendations when using trench boxes.
   B. Foundation Stabilization: Get ENGINEER's permission before installing common fill. Vibrate to stabilize. Installation of stabilization-separation geotextile will be required to separate backfill material and native subgrade materials if common fill cannot provide a working surface or prevent soils migration.
   C. Bedding: Follow APWA Section 33 05 20 requirements and the following provisions.
      1) Furnish untreated base course material unless specified otherwise by pipe manufacturer.
      2) Maximum lift thickness is 8-inches.
      3) Bedding immediately under the pipe should not be compacted, but loosely placed.
      4) Compaction is 95 percent or greater relative to a modified proctor density, APWA Section 31 23 26.
      5) When using concrete, provide at least Class 2,000, APWA Section 03 30 04.
   D. Pipe Zone: DO NOT USE sewer rock, pea gravel, or recycled RAP aggregate in the pipe zone. Water jetting is NOT allowed.
      1) Maximum lift thickness is 8-inches before compaction. Compaction is 95 percent or greater relative to a modified proctor density, APWA Section 31 23 26 unless pipe manufacturer requires more stringent installation.
      2) Submission of quality control compaction test result data developed for the haunch zone may be requested by ENGINEER at any time. CONTRACTOR is to provide results of tests immediately upon request.
   E. Flowable Fill (when required and if allowed by pipe manufacturer):
      1) Place the controlled low strength material, APWA Section 31 05 15.
      2) Prevent pipe flotation by installing in lifts and providing pipe restraints as required by pipe manufacturer.
      3) Reset pipe to line and grade if pipe "floats" out of position.



INSTALLATION

CONCRETE PIPE: FOLLOW ASTM C 1479
"STANDARD PRACTICE FOR INSTALLATION OF PRECAST CONCRETE SEWER, STORM DRAIN, AND CULVERT PIPE USING STANDARD INSTALLATIONS."

PLASTIC PIPE: FOLLOW ASTM D 2321
"STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY-FLOW APPLICATIONS"

CORRUGATED METAL PIPE: FOLLOW ASTM A 798
"STANDARD PRACTICE FOR INSTALLING FACTORY-MADE CORRUGATED STEEL PIPE FOR SEWERS AND OTHER APPLICATIONS."

VITRIFIED CLAY PIPE: FOLLOW ASTM C 12.
"STANDARD RECOMMENDED PRACTICE FOR INSTALLING VITRIFIED CLAY PIPE LINES."

APWA Utah Chapter — *Pipe zone backfill* — Plan 382 January 2011

Sewer Lateral Connection

1. GENERAL
   A. Before installation, secure acceptance by ENGINEER for all pipe, fittings, and couplings to be used.
   B. Before backfilling, secure inspection of installation by ENGINEER. Give at least 24 hours notice.

2. PRODUCTS
   A. BASE COURSE: Untreated base course, APWA Section 32 11 23. Do not use gravel as a base course without ENGINEER's written permission.
   B. BACKFILL: Common fill, APWA Section 31 05 13. Maximum particle size 3-inches.
   C. LATERAL CONNECTION: New sewer mains shall use preformed wye of same material located 45° above centerline. New sewer laterals to existing mains shall use round hole sewer tapping saddle with two stainless steel straps.

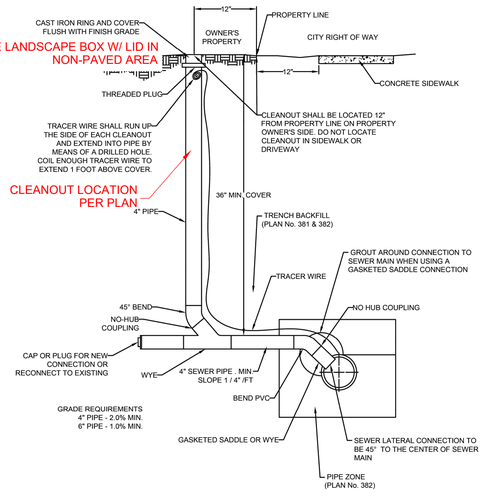
3. EXECUTION
   A. Tape wrap pipe as required by soil conditions.
   B. Remove core plug from sewer main. Do not break into sewer main to make connection.
   C. BASE COURSE AND BACKFILL PLACEMENT: Maximum lift thickness is 8-inches before compaction. Compaction is 95 percent or greater relative to a standard proctor density, APWA Section 31 23 26.
   D. Tracer wire shall connect to the wire on the sewer main if existing. If the main does not have wire, run dual wire down to the main and wrap around.

LOGAN CITY UNITED IN SERVICE — PUBLIC WORKS DEPARTMENT	STANDARD NOTE	SEWER LATERAL CONNECTION REVISION DATE: 2/22/2024	DETAIL NO. 431

Sewer Lateral Connection

OR HDPE LANDSCAPE BOX W/ LID IN NON-PAVED AREA

CLEANOUT LOCATION PER PLAN



* See the City Approved Materials List

LOGAN CITY UNITED IN SERVICE — PUBLIC WORKS DEPARTMENT	STANDARD DETAIL	SEWER LATERAL CONNECTION REVISION DATE: 2/22/2024	DETAIL NO. 431

Concrete pavement joints

1. REINFORCEMENT: ASTM A 615, grade 60, galvanized or epoxy coated deformed steel rebar or smooth steel dowels with diameter and length as indicated.
   A. Space rebar and dowels at 12 to 15 inches on center.
   B. Grease dowels to provide movement in expansion joints.
   C. Keep tie bars in the vertical center of the concrete slab and perpendicular to the joint during concrete placement.

2. SAWING: Keep at least 3 working power saws on-site when concrete is being placed. Saw crack control joints (contraction joints) before shrinkage cracking takes place. Do not tear or ravel concrete during sawing. In cool weather, the joint sawing may be delayed only for the time required to prevent tearing and raveling the concrete. Cut joint to dimensions recommended by sealant manufacturer and approved by ENGINEER.

3. JOINTS: Lay out joints to aid construction and control random cracking.
   A. Longitudinal joint spacing is 12 feet for concrete pavement less than 9 inches thick and 15 feet for concrete pavement 9 inches thick and thicker.
   B. Transverse joints spacing is 30 x T (slab thickness in feet) where the maximum slab length to slab width ratio is 1.5 to 1.
   C. Extend transverse contraction joints continuously across the full width of the concrete. Make the joints coincide with curb and gutter joints.
   D. Make adjustments in joint locations to meet inlet or manhole locations.

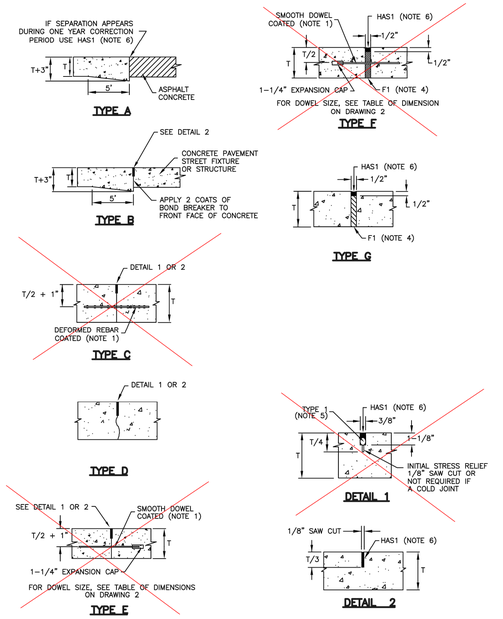
4. JOINT FILLER: Type F1 per APWA Section 32 13 73, extending to the bottom of the concrete slab.

5. BACKER ROD: Type 1 (round rod) APWA Section 32 13 73. It must be oversized approximately 25 percent to fit tightly into each joint and compatible with hot poured sealant.

6. JOINT SEALANT: Hot applied, APWA Section 32 13 73. Remove dirt, oil and curing compounds from joint reservoir. Seal joints immediately after cleaning.

Concrete pavement joints

1. BASKET ASSEMBLY:
   A. Attach basket assembly firmly to existing or new base. Secure dowels and tie bars firmly in the basket assembly. All wire sizes shown are minimum.
   B. During concrete placement, keep the dowels in vertical center of the concrete, perpendicular to the joint, and parallel to the direction of concrete slab expansion.



Concrete pavement joints

June 2005

Plan No. 261 Drawing 1 of 2

REVIEWED FOR CODE COMPLIANCE
THOMAS PETERSON
05/19/2025
DIVISION OF FACILITIES CONSTRUCTION AND MANAGEMENT
DFCM CODE COMPLIANCE OFFICER

PUBLISHED			
NO.	REVISIONS	BY	DATE

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DESIGNED _____
APPROVED _____
QA _____

ATTENTION
LINE IS 2-INCHES
AT 24"x36" SIZE
IF NOT 2-INCHES, SCALE DRAWING ACCORDINGLY

PROFESSIONAL STRUCTURAL ENGINEER — STATE OF UTAH — No. 295553 — CRAIG L. RASMUSSEN — 2/25/25

LOGAN FISH HATCHERY
UTAH DIVISION OF WILDLIFE RESOURCES
1465 WEST 200 NORTH
LOGAN, UTAH 84321

UTAH DNR WILDLIFE RESOURCES

FORSGREN Associates Inc.
95 WEST 100 SOUTH, STE. 115, LOGAN, UT 84321
PH: 435.227.0333 FAX: 435.227.0334

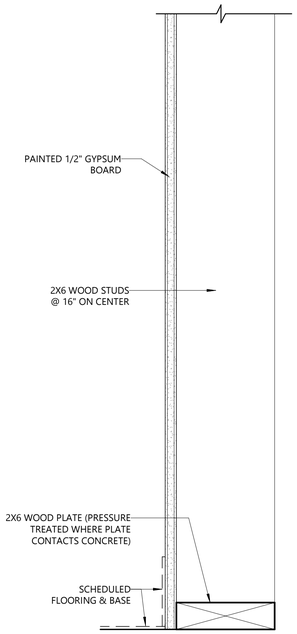
Blue Stakes of UTAH 811 Bluestakes.org

CARETAKER RESIDENCE BUILDING
LOGAN HATCHERY IMPROVEMENT PROJECT

GENERAL DETAILS

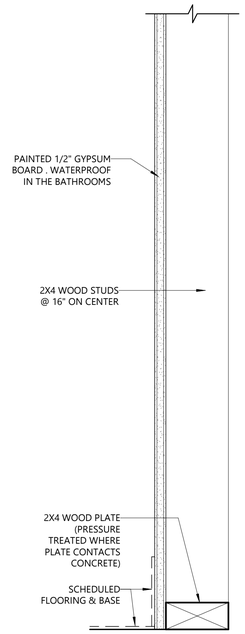
PROJECT NO: 14-24-0189
SHEET NO: C-105
DATE: 02-25-2025
PAGE NO: 6

WALL CORE
2x6 WOOD STUDS
@ 16" O.C.



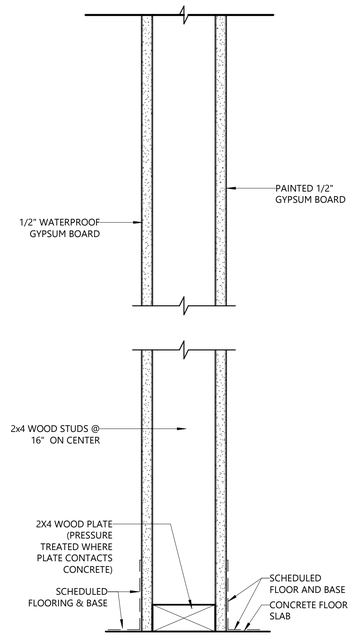
WALL TYPE #9

WALL CORE
2x4 WOOD STUDS
@ 16" O.C.



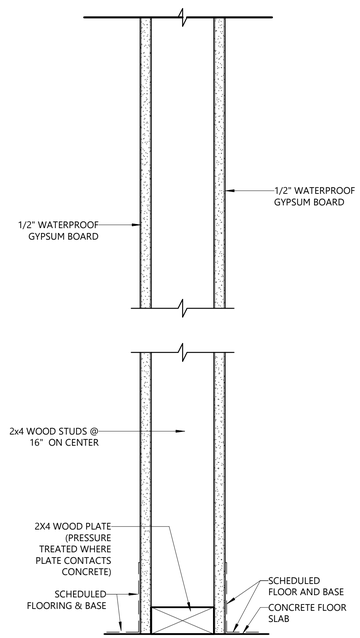
WALL TYPE #8

WALL CORE
2x4 WOOD STUDS
@ 16" O.C.



WALL TYPE #7

WALL CORE
2x4 WOOD STUDS
@ 16" O.C.



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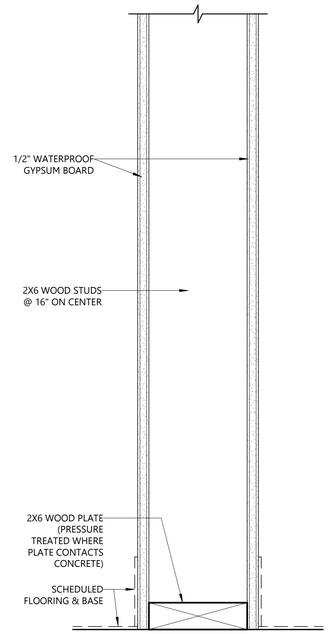
WALL CORE
2x6 WOOD STUDS
@ 16" O.C.



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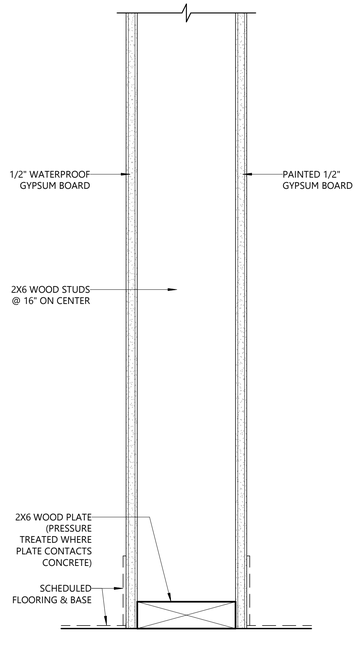
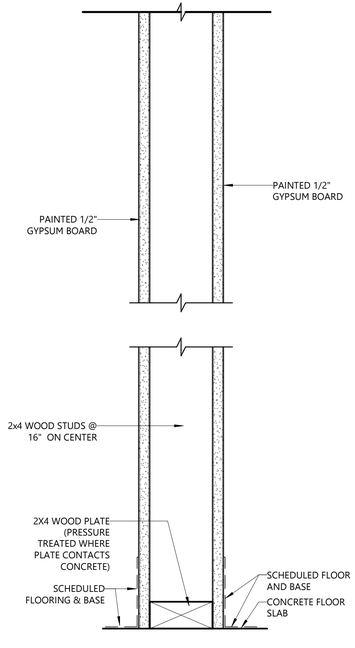
@ 16" O.C.



WALL TYPE #4

WALL CORE
2x4 WOOD STUDS
@ 16" O.C.



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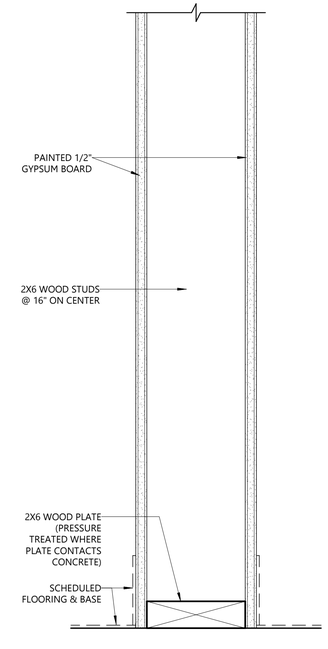

WALL TYPE #2

WALL CORE
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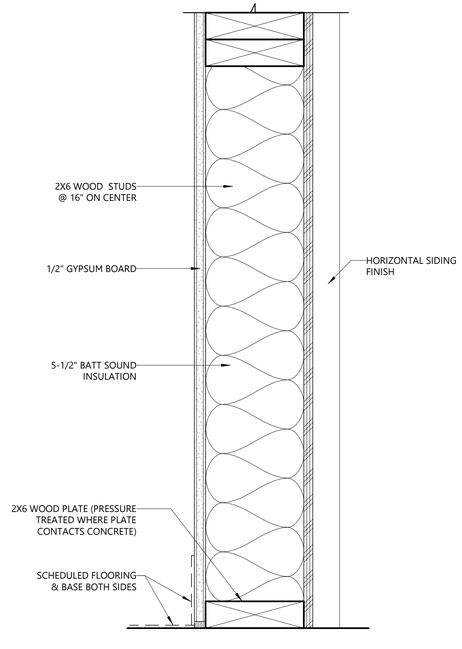
@ 16" O.C.



WALL TYPE #1

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REVIEWED FOR CODE COMPLIANCE
THOMAS PETERSON
05/19/2025
DIVISION OF FACILITIES CONSTRUCTION AND MANAGEMENT

STATE OF UTAH
JUSTIN MICHAEL CAMPBELL
2/13/2025
No.8539712-0301
LICENSED ARCHITECT

DWR LOGAN FISH HATCHERY RESIDENCE

1465 WEST 200 NORTH
LOGAN, UT

DFCM PROJECT #	24437520
CARTWRIGHT PROJECT #	124141
DATE:	2/13/2025
DRAWN BY:	
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APPROVED BY:	

REVISIONS
DATE DESCRIPTION

WALL SECTIONS

AE001

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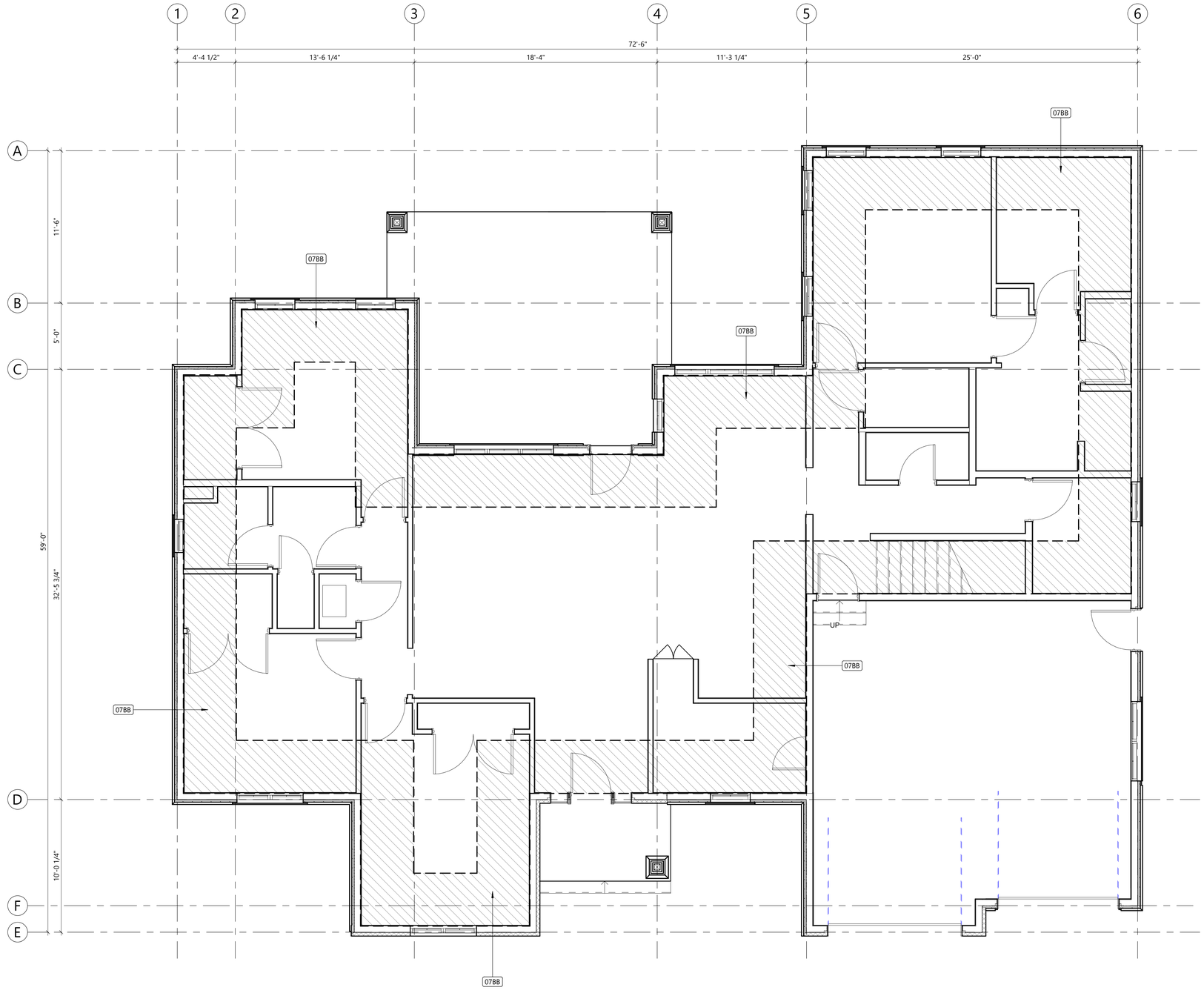

A3 INSULATION PLAN
SCALE: 1/4" = 1'-0"

KEYNOTES

#	DESCRIPTION
07BB	48-INCH HORIZONTAL R-10 INSULATION BOARD UNDER SLAB

IRC 2021 ENERGY

PRESCRIPTIVE ENERGY COMPLIANCE

BUILDING TYPE: RESIDENTAL

CLIMATE ZONE: 5B (CACHE COUNTY, UTAH)

	REQUIRED	PROVIDE
BUILDING ENVELOPE		
ROOF		
ATTIC	R-49 MINIMUM	R-49 MINIMUM
WALLS ABOVE GRADE		
WOOD FRAMED	R-20+R5 MINIMUM	R-20+R5 MINIMUM
SLAB ON GRADE FLOORS		
UNHEATED SLABS	R-10 CI MINIMUM FOR 4'-0" BELOW SLAB	R-10 CI MINIMUM FOR 4'-0" BELOW SLAB
BUILDING ENVELOPE VERTICAL FENESTRATION (COMPLETE ASSEMBLY, INCLUDING FRAME AND GLAZING)		
MAXIMUM U-FACTOR		
FIXED FENESTRATION	U-0.30 MAXIMUM	U-0.30 MAXIMUM
ENTRANCE DOORS	U-0.40 MAXIMUM	U-0.40 MAXIMUM

SOLAR HEAT GAIN COEFFICIENT				
ORIENTATION	SEW	N	SEW	N
PF < 0.2	0.40 MAX.	0.53 MAX.	0.40 MAX.	0.53 MAX.
CEILING				
CEILNG	R-30 MAXIMUM		R-30 MAXIMUM	

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LOGAN, UT

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CARTWRIGHT PROJECT #	124141
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DATE	DESCRIPTION

INSULATION BOARD

AE100

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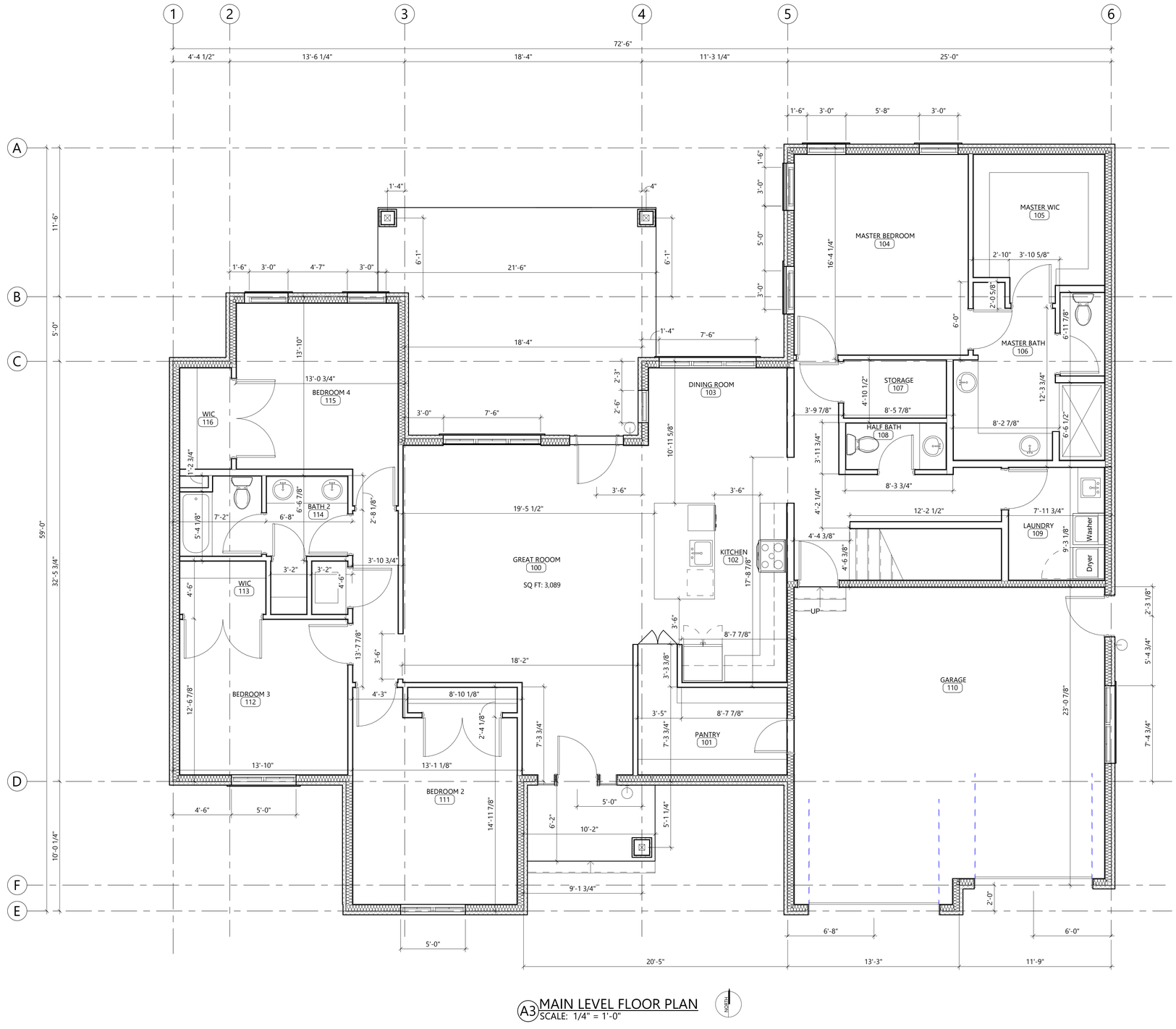

A3 MAIN LEVEL FLOOR PLAN
SCALE: 1/4" = 1'-0"

IRC 2021 ENERGY

PRESCRIPTIVE ENERGY COMPLIANCE

BUILDING TYPE: RESIDENTAL

CLIMATE ZONE: 5B (CACHE COUNTY, UTAH)

	REQUIRED	PROVIDE
BUILDING ENVELOPE		
ROOF		
ATTIC	R-49 MINIMUM	R-49 MINIMUM
WALLS ABOVE GRADE		
WOOD FRAMED	R-20+R5 MINIMUM	R-20+R5 MINIMUM
SLAB ON GRADE FLOORS		
UNHEATED SLABS	R-10 CI MINIMUM FOR 4'-0" BELOW SLAB	R-10 CI MINIMUM FOR 4'-0" BELOW SLAB
BUILDING ENVELOPE VERTICAL FENESTRATION (COMPLETE ASSEMBLY, INCLUDING FRAME AND GLAZING)		
MAXIMUM U-FACTOR		
FIXED FENESTRATION	U-0.30 MAXIMUM	U-0.30 MAXIMUM
ENTRANCE DOORS	U-0.40 MAXIMUM	U-0.40 MAXIMUM

SOLAR HEAT GAIN COEFFICIENT				
ORIENTATION	SEW	N	SEW	N
PF < 0.2	0.40 MAX.	0.53 MAX.	0.40 MAX.	0.53 MAX.
CEILING				
CEILNG	R-30 MAXIMUM		R-30 MAXIMUM	

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1465 WEST 200 NORTH
LOGAN, UT

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CARTWRIGHT PROJECT #	124141
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DATE	DESCRIPTION

FLOOR PLAN - MAIN LEVEL

AE101

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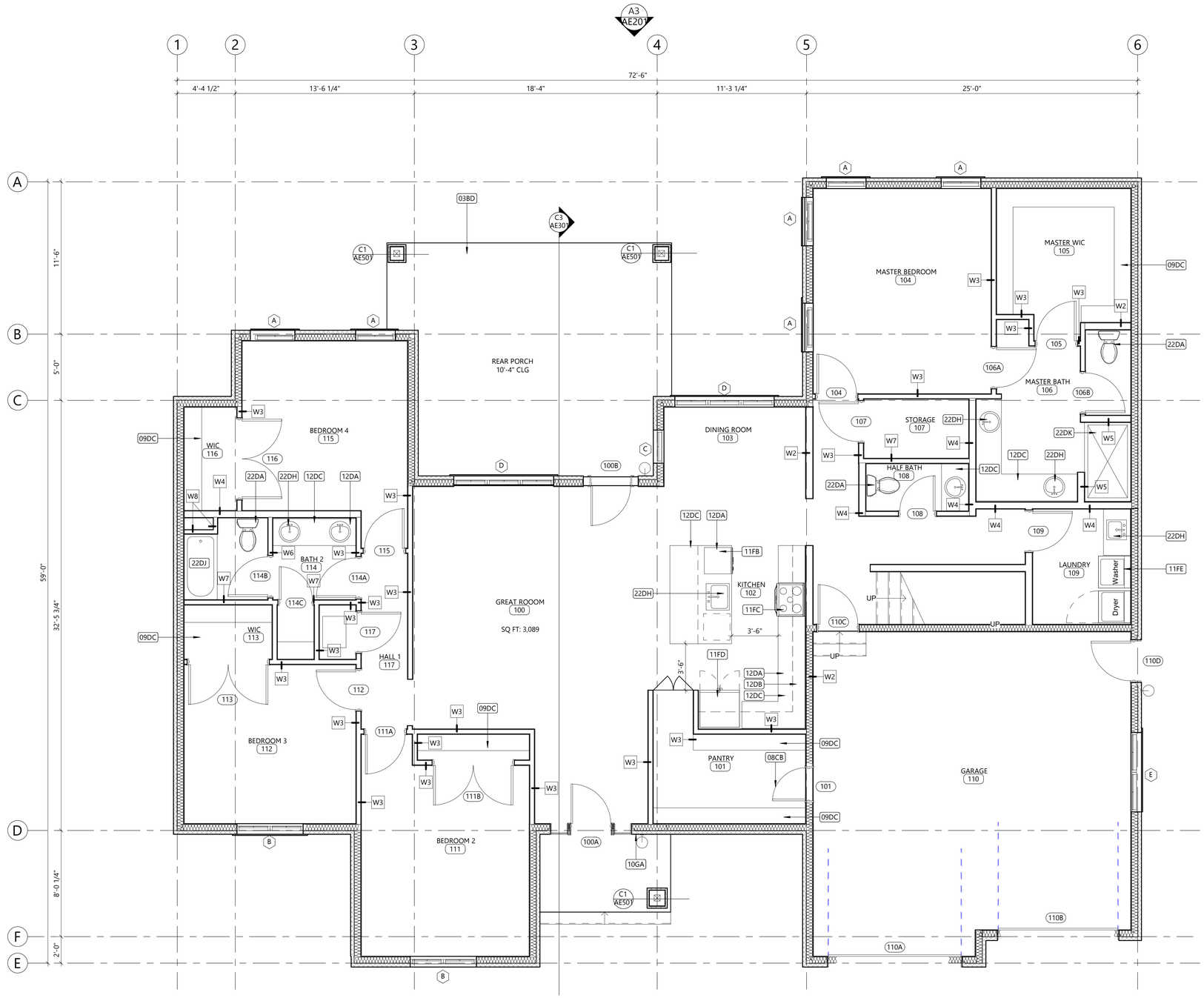

A3 MAIN LEVEL FLOOR PLAN
SCALE: 1/4" = 1'-0"

C3 AE201

KEYNOTES

#	DESCRIPTION
03BD	CONCRETE PATIO
08CB	2'-6"x2'-6" PANTRY DOOR
09DC	BUILT IN SHELVING, PRIME AND PAINTED
10GA	DOORBELL
11FB	DISHWASHER (ADA ACCESSIBLE) SUPPLIED BY OWNER, INSTALLED BY CONTRACTOR
11FC	STOVE & RANGETOP (ADA ACCESSIBLE). SUPPLIED BY OWNER, INSTALLED BY CONTRACTOR
11FD	REFRIDGERATOR/FREEZER (ADA ACCESSIBLE) SUPPLIED BY OWNER, INSTALLED BY CONTRACTOR
11FE	WASHER & DRYER
12DA	BASE CABINETS
12DB	UPPER CABINETS
12DC	COUNTERTOPS
22DA	TOILET. SEE GENERAL DETAILS & PLUMBING DRAWINGS
22DH	SINK. SEE PLUMBING DRAWINGS
22DJ	BATHTUB
22DK	SHOWER

IRC 2021 ENERGY

PRESCRIPTIVE ENERGY COMPLIANCE

BUILDING TYPE: RESIDENTAL

CLIMATE ZONE: 5B (CACHE COUNTY, UTAH)

	REQUIRED	PROVIDE
BUILDING ENVELOPE		
ROOF		
ATTIC	R-49 MINIMUM	R-49 MINIMUM
WALLS ABOVE GRADE		
WOOD FRAMED	R-20+R5 MINIMUM	R-20+R5 MINIMUM
SLAB ON GRADE FLOORS		
UNHEATED SLABS	R-10 CI MINIMUM FOR 4'-0" BELOW SLAB	R-10 CI MINIMUM FOR 4'-0" BELOW SLAB
BUILDING ENVELOPE VERTICAL FENESTRATION (COMPLETE ASSEMBLY, INCLUDING FRAME AND GLAZING)		
MAXIMUM U-FACTOR		
FIXED FENESTRATION	U-0.30 MAXIMUM	U-0.30 MAXIMUM
ENTRANCE DOORS	U-0.40 MAXIMUM	U-0.40 MAXIMUM

SOLAR HEAT GAIN COEFFICIENT				
ORIENTATION	SEW	N	SEW	N
PF < 0.2	0.40 MAX.	0.53 MAX.	0.40 MAX.	0.53 MAX.
CEILING				
CEILNG	R-30 MAXIMUM		R-30 MAXIMUM	

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DIVISION OF FACILITIES CONSTRUCTION AND MANAGEMENT

STATE OF UTAH
JUSTIN MICHAEL CAMPBELL
2/13/2025
No.8539712-0301
LICENSED ARCHITECT

DWR LOGAN FISH HATCHERY RESIDENCE

1465 WEST 200 NORTH
LOGAN, UT

DFCM PROJECT #	24437520
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#	DATE	DESCRIPTION

MAIN LEVEL
ANNOTATION PLAN

AE101.1

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FINISH SCHEDULE

NUMBER	ROOM NAME	FLOOR FINISH	WALL FINISH	BASE	CEILING TYPE	NOTES
100	GREAT ROOOM	LVP	PAINTED GYP. BOARD	WOOD BASE AND TRIM	SEE CEILING PLAN	
101	PANTRY	LVP	PAINTED GYP. BOARD	WOOD BASE AND TRIM	SEE CEILING PLAN	
102	KITCHEN	LVP	PAINTED GYP. BOARD	WOOD BASE AND TRIM	SEE CEILING PLAN	
103	DINING ROOM	LVP	PAINTED GYP. BOARD	WOOD BASE AND TRIM	SEE CEILING PLAN	
104	MASTER BEDROOM	CARPET	PAINTED GYP. BOARD	WOOD BASE AND TRIM	SEE CEILING PLAN	
105	MASTER WIC	CARPET	PAINTED GYP. BOARD	WOOD BASE AND TRIM	SEE CEILING PLAN	
106	MASTER BATH	LVP	PAINTED GYP. BOARD	WOOD BASE AND TRIM	SEE CEILING PLAN	
107	STORAGE	LVP	PAINTED GYP. BOARD	WOOD BASE AND TRIM	SEE CEILING PLAN	
108	HALF BATH	LVP	PAINTED GYP. BOARD W/	WOOD BASE AND TRIM	SEE CEILING PLAN	
109	LAUNDRY	LVP	PAINTED GYP. BOARD	WOOD BASE AND TRIM	SEE CEILING PLAN	
110	GARAGE	SEALED CONCRETE	PAINTED GYP. BOARD	WOOD BASE AND TRIM	SEE CEILING PLAN	
111	BEDROOM 2	CARPET	PAINTED GYP. BOARD	WOOD BASE AND TRIM	SEE CEILING PLAN	

FINISH SCHEDULE

NUMBER	ROOM NAME	FLOOR FINISH	WALL FINISH	BASE	CEILING TYPE	NOTES
112	BEDROOM 3	CARPET	PAINTED GYP. BOARD	WOOD BASE AND TRIM	SEE CEILING PLAN	
113	WIC	CARPET	PAINTED GYP. BOARD	WOOD BASE AND TRIM	SEE CEILING PLAN	
114	BATH 2	LVP	PAINTED GYP. BOARD	WOOD BASE AND TRIM	SEE CEILING PLAN	
115	BEDROOM 4	CARPET	PAINTED GYP. BOARD	WOOD BASE AND TRIM	SEE CEILING PLAN	
116	WIC	CARPET	PAINTED GYP. BOARD	WOOD BASE AND TRIM	SEE CEILING PLAN	
117	HALL 1	LVP	PAINTED GYP. BOARD	WOOD BASE AND TRIM	SEE CEILING PLAN	
118	HALL 2	LVP	PAINTED GYP. BOARD	WOOD BASE AND TRIM	SEE CEILING PLAN	
200	BONUS ROOM	B.A. CARPET	GYPSUM BOARD, B.A. PRIME AND PAINT	B.A. WOOD BASE AND TRIM	SEE CEILING PLAN	BID ALTERNATE
201	BATHROOM	B.A. LVP	GYPSUM BOARD, B.A. PRIME AND PAINT	B.A. WOOD BASE AND TRIM	SEE CEILING PLAN	BID ALTERNATE
202	MECHANICAL	PLYWOOD	GYPSUM BOARD, B.A. PRIME AND PAINT	B.A. WOOD BASE AND TRIM	SEE CEILING PLAN	BID ALTERNATE

A3 MAIN LEVEL FLOOR PLAN
SCALE: 1/4" = 1'-0"

FINISH FLOOR LEGEND

- LVP - LAMINET VINYL PLANKS
- CARPET
- PLYWOOD SHEATHING

IRC 2021 ENERGY

PRESCRIPTIVE ENERGY COMPLIANCE		
BUILDING TYPE: RESIDENTAL		
CLIMATE ZONE: 5B (CACHE COUNTY, UTAH)		
	REQUIRED	PROVIDE
BUILDING ENVELOPE		
ROOF		
ATTIC	R-49 MINIMUM	R-49 MINIMUM
WALLS ABOVE GRADE		
WOOD FRAMED	R-20+R5 MINIMUM	R-20+R5 MINIMUM
SLAB ON GRADE FLOORS		
UNHEATED SLABS	R-10 CI MINIMUM FOR 4'-0" BELOW SLAB	R-10 CI MINIMUM FOR 4'-0" BELOW SLAB
BUILDING ENVELOPE VERTICAL FENESTRATION (COMPLETE ASSEMBLY, INCLUDING FRAME AND GLAZING)		
MAXIMUM U-FACTOR		
FIXED FENESTRATION	U-0.30 MAXIMUM	U-0.30 MAXIMUM
ENTRANCE DOORS	U-0.40 MAXIMUM	U-0.40 MAXIMUM

SOLAR HEAT GAIN COEFFICIENT				
ORIENTATION	SEW	N	SEW	N
PF < 0.2	0.40 MAX.	0.53 MAX.	0.40 MAX.	0.53 MAX.
CEILING				
CEILNG	R-30 MAXIMUM		R-30 MAXIMUM	

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05/19/2025
DIVISION OF FACILITIES CONSTRUCTION AND MANAGEMENT

STATE OF UTAH
JUSTIN MICHAEL CAMPBELL
2/13/2025
No.8539712-0301
LICENSED ARCHITECT

DWR LOGAN FISH HATCHERY RESIDENCE

1465 WEST 200 NORTH
LOGAN, UT

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MAIN LEVEL FINISH PLAN

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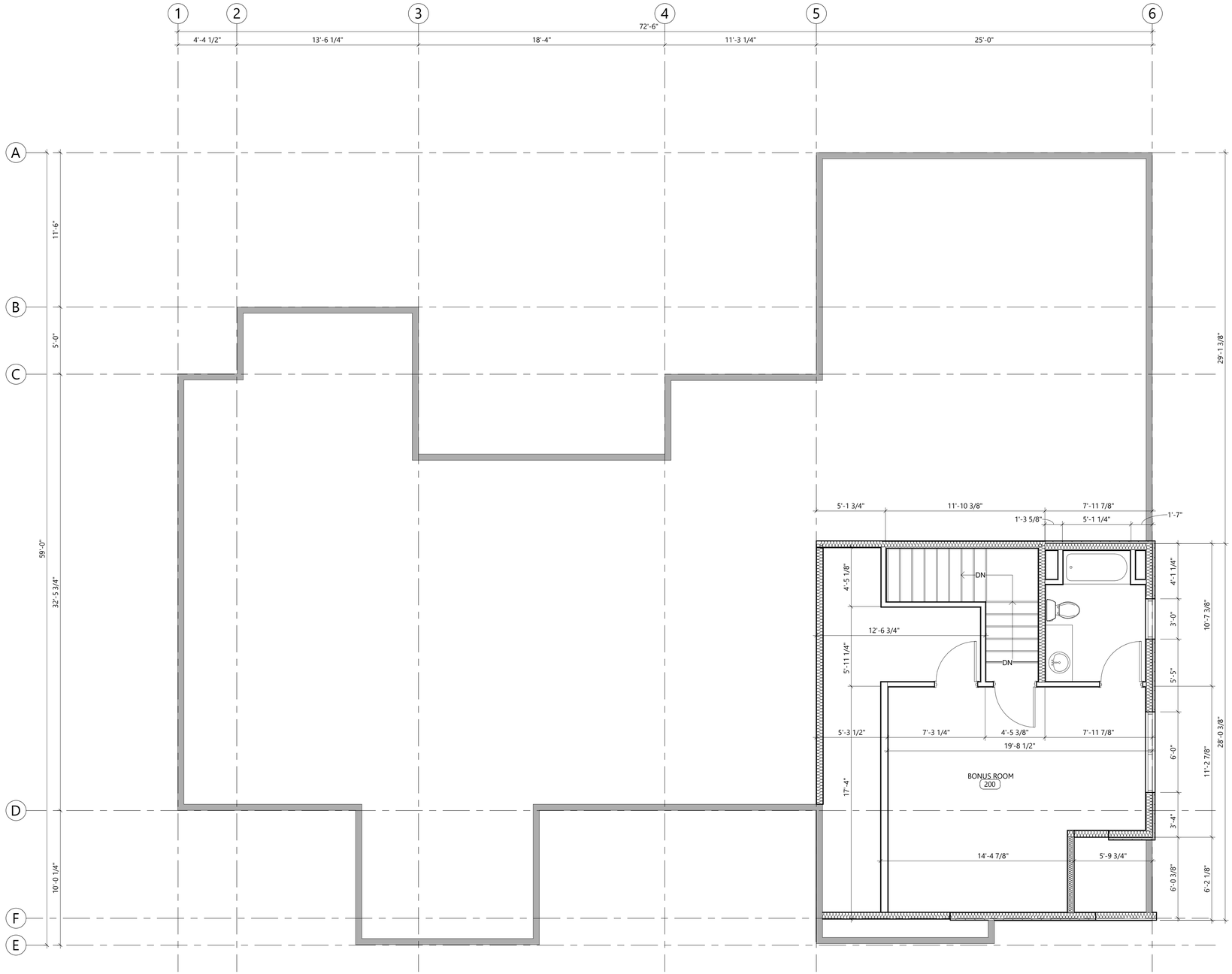

A3 BONUS ROOM
SCALE: 1/4" = 1'-0"

NORTH

IRC 2021 ENERGY

PRESCRIPTIVE ENERGY COMPLIANCE

BUILDING TYPE: RESIDENTAL

CLIMATE ZONE: 5B (CACHE COUNTY, UTAH)

	REQUIRED	PROVIDE
BUILDING ENVELOPE		
ROOF		
ATTIC	R-49 MINIMUM	R-49 MINIMUM
WALLS ABOVE GRADE		
WOOD FRAMED	R-20+R5 MINIMUM	R-20+R5 MINIMUM
SLAB ON GRADE FLOORS		
UNHEATED SLABS	R-10 CI MINIMUM FOR 4'-0" BELOW SLAB	R-10 CI MINIMUM FOR 4'-0" BELOW SLAB
BUILDING ENVELOPE VERTICAL FENESTRATION (COMPLETE ASSEMBLY, INCLUDING FRAME AND GLAZING)		
MAXIMUM U-FACTOR		
FIXED FENESTRATION	U-0.30 MAXIMUM	U-0.30 MAXIMUM
ENTRANCE DOORS	U-0.40 MAXIMUM	U-0.40 MAXIMUM

SOLAR HEAT GAIN COEFFICIENT				
ORIENTATION	SEW	N	SEW	N
PF < 0.2	0.40 MAX.	0.53 MAX.	0.40 MAX.	0.53 MAX.
CEILING				
CEILNG	R-30 MAXIMUM		R-30 MAXIMUM	

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DWR LOGAN FISH HATCHERY RESIDENCE

1465 WEST 200 NORTH
LOGAN, UT

DFCM PROJECT #	24437520
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DATE:	2/13/2025
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#	DATE	DESCRIPTION

BONUS ROOM

AE102

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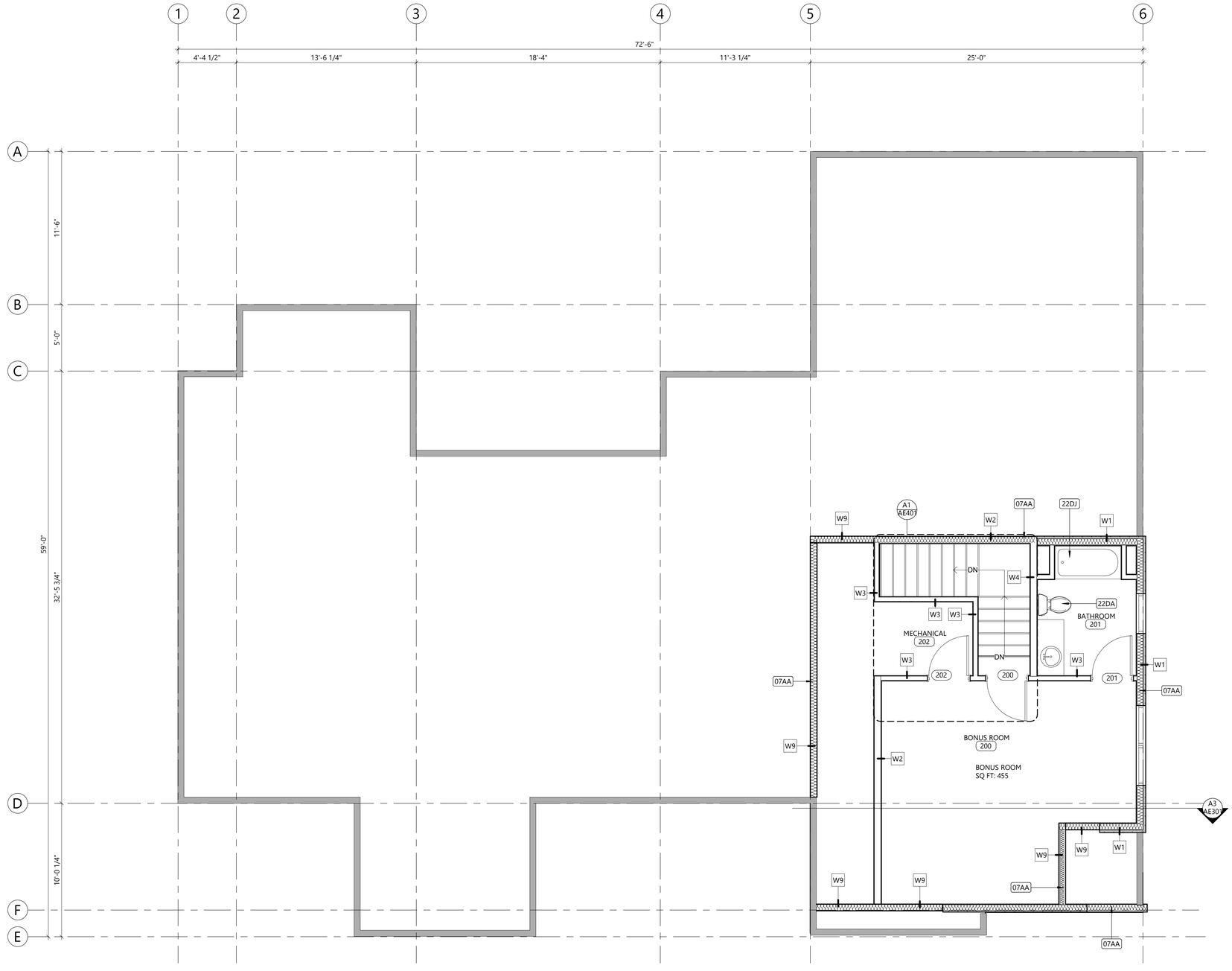

A3 BONUS ROOM ANNOTAION PLAN
SCALE: 1/4" = 1'-0"

KEYNOTES

#	DESCRIPTION
07AA	INSULATION
22DA	TOILET. SEE GENERAL DETAILS & PLUMBING DRAWINGS
22DJ	BATHTUB

IRC 2021 ENERGY

PRESCRIPTIVE ENERGY COMPLIANCE

BUILDING TYPE: RESIDENTAL

CLIMATE ZONE: 5B (CACHE COUNTY, UTAH)

	REQUIRED	PROVIDE
BUILDING ENVELOPE		
ROOF		
ATTIC	R-49 MINIMUM	R-49 MINIMUM
WALLS ABOVE GRADE		
WOOD FRAMED	R-20+R5 MINIMUM	R-20+R5 MINIMUM
SLAB ON GRADE FLOORS		
UNHEATED SLABS	R-10 CI MINIMUM FOR 4'-0" BELOW SLAB	R-10 CI MINIMUM FOR 4'-0" BELOW SLAB
BUILDING ENVELOPE VERTICAL FENESTRATION (COMPLETE ASSEMBLY, INCLUDING FRAME AND GLAZING)		
MAXIMUM U-FACTOR		
FIXED FENESTRATION	U-0.30 MAXIMUM	U-0.30 MAXIMUM
ENTRANCE DOORS	U-0.40 MAXIMUM	U-0.40 MAXIMUM
SOLAR HEAT GAIN COEFFICIENT		

ORIENTATION	SEW	N	SEW	N
PF < 0.2	0.40 MAX.	0.53 MAX.	0.40 MAX.	0.53 MAX.
CEILING				
CEILNG	R-30 MAXIMUM		R-30 MAXIMUM	

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05/19/2025
DIVISION OF FACILITIES CONSTRUCTION AND MANAGEMENT

STATE OF UTAH
JUSTIN MICHAEL CAMPBELL
2/13/2025
No.8539712-0301
LICENSED ARCHITECT

DWR LOGAN FISH HATCHERY RESIDENCE

1465 WEST 200 NORTH
LOGAN, UT

DFCM PROJECT #	24437520
CARTWRIGHT PROJECT #	124141
DATE:	2/13/2025
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APPROVED BY:	

REVISIONS

#	DATE	DESCRIPTION

BONUS ROOM ANNOTATION PLAN

AE102.1

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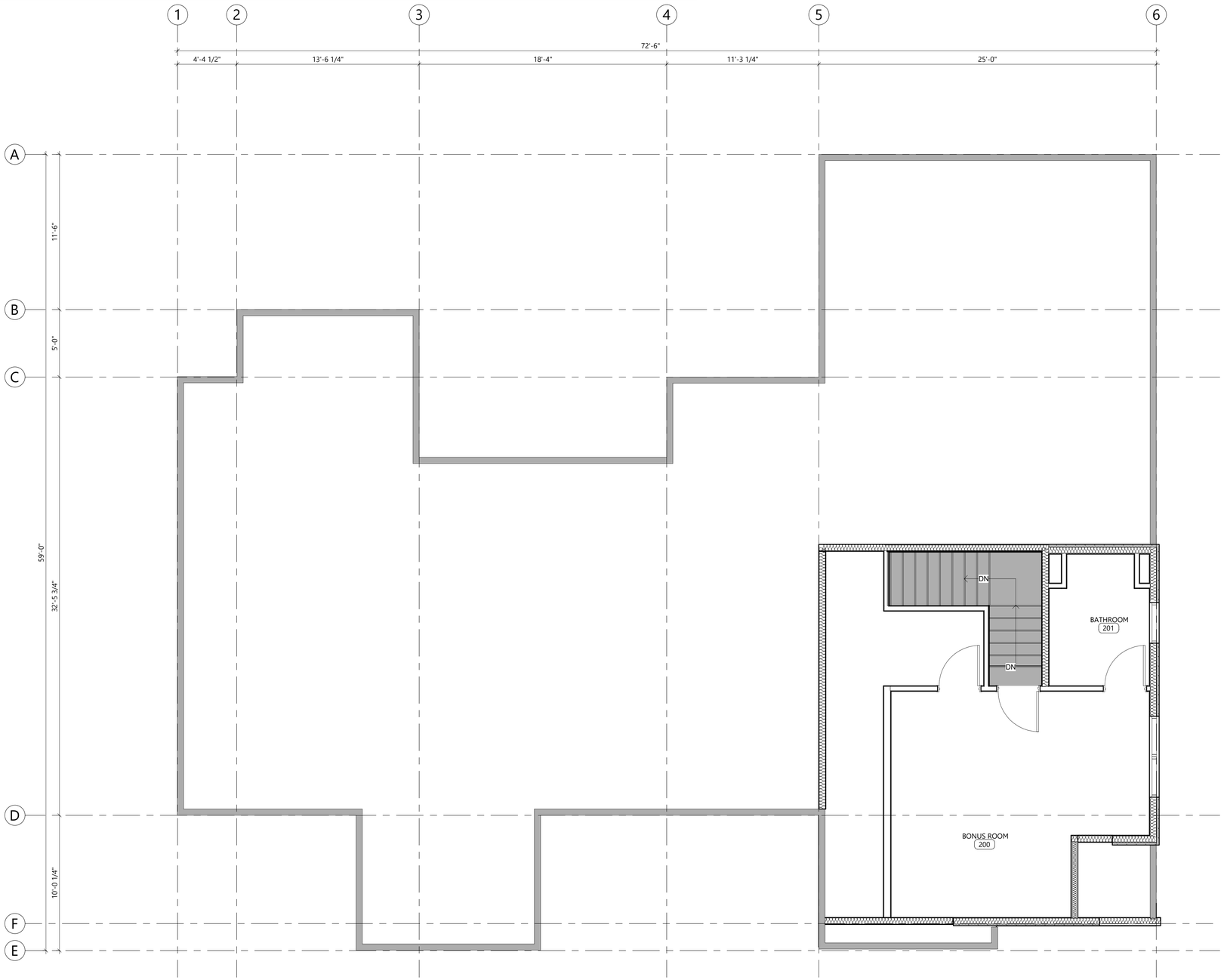
FINISH SCHEDULE

NUMBER	ROOM NAME	FLOOR FINISH	WALL FINISH	BASE	CEILING TYPE	NOTES
100	GREAT ROOOM	LVP	PAINTED GYP. BOARD	WOOD BASE AND TRIM	SEE CEILING PLAN	
101	PANTRY	LVP	PAINTED GYP. BOARD	WOOD BASE AND TRIM	SEE CEILING PLAN	
102	KITCHEN	LVP	PAINTED GYP. BOARD	WOOD BASE AND TRIM	SEE CEILING PLAN	
103	DINING ROOM	LVP	PAINTED GYP. BOARD	WOOD BASE AND TRIM	SEE CEILING PLAN	
104	MASTER BEDROOM	CARPET	PAINTED GYP. BOARD	WOOD BASE AND TRIM	SEE CEILING PLAN	
105	MASTER WIC	CARPET	PAINTED GYP. BOARD	WOOD BASE AND TRIM	SEE CEILING PLAN	
106	MASTER BATH	LVP	PAINTED GYP. BOARD	WOOD BASE AND TRIM	SEE CEILING PLAN	
107	STORAGE	LVP	PAINTED GYP. BOARD	WOOD BASE AND TRIM	SEE CEILING PLAN	
108	HALF BATH	LVP	PAINTED GYP. BOARD W/	WOOD BASE AND TRIM	SEE CEILING PLAN	
109	LAUNDRY	LVP	PAINTED GYP. BOARD	WOOD BASE AND TRIM	SEE CEILING PLAN	
110	GARAGE	SEALED CONCRETE	PAINTED GYP. BOARD	WOOD BASE AND TRIM	SEE CEILING PLAN	
111	BEDROOM 2	CARPET	PAINTED GYP. BOARD	WOOD BASE AND TRIM	SEE CEILING PLAN	

FINISH SCHEDULE

NUMBER	ROOM NAME	FLOOR FINISH	WALL FINISH	BASE	CEILING TYPE	NOTES
112	BEDROOM 3	CARPET	PAINTED GYP. BOARD	WOOD BASE AND TRIM	SEE CEILING PLAN	
113	WIC	CARPET	PAINTED GYP. BOARD	WOOD BASE AND TRIM	SEE CEILING PLAN	
114	BATH 2	LVP	PAINTED GYP. BOARD	WOOD BASE AND TRIM	SEE CEILING PLAN	
115	BEDROOM 4	CARPET	PAINTED GYP. BOARD	WOOD BASE AND TRIM	SEE CEILING PLAN	
116	WIC	CARPET	PAINTED GYP. BOARD	WOOD BASE AND TRIM	SEE CEILING PLAN	
117	HALL 1	LVP	PAINTED GYP. BOARD	WOOD BASE AND TRIM	SEE CEILING PLAN	
118	HALL 2	LVP	PAINTED GYP. BOARD	WOOD BASE AND TRIM	SEE CEILING PLAN	
200	BONUS ROOM	B.A. CARPET	GYPSUM BOARD, B.A. PRIME AND PAINT	B.A. WOOD BASE AND TRIM	SEE CEILING PLAN	BID ALTERNATE
201	BATHROOM	B.A. LVP	GYPSUM BOARD, B.A. PRIME AND PAINT	B.A. WOOD BASE AND TRIM	SEE CEILING PLAN	BID ALTERNATE
202	MECHANICAL	PLYWOOD	GYPSUM BOARD, B.A. PRIME AND PAINT	B.A. WOOD BASE AND TRIM	SEE CEILING PLAN	BID ALTERNATE



A1 BONUS ROOM FINISH FLOOR PLAN
SCALE: 1/4" = 1'-0"

FINISH FLOOR LEGEND

- LVP - LAMINET VINYL PLANKS
- CARPET
- PLYWOOD SHEATHING

IRC 2021 ENERGY

PRESCRIPTIVE ENERGY COMPLIANCE		
BUILDING TYPE: RESIDENTAL		
CLIMATE ZONE: 5B (CACHE COUNTY, UTAH)		
	REQUIRED	PROVIDE
BUILDING ENVELOPE		
ROOF		
ATTIC	R-49 MINIMUM	R-49 MINIMUM
WALLS ABOVE GRADE		
WOOD FRAMED	R-20+R5 MINIMUM	R-20+R5 MINIMUM
SLAB ON GRADE FLOORS		
UNHEATED SLABS	R-10 CI MINIMUM FOR 4'-0" BELOW SLAB	R-10 CI MINIMUM FOR 4'-0" BELOW SLAB
BUILDING ENVELOPE VERTICAL FENESTRATION (COMPLETE ASSEMBLY, INCLUDING FRAME AND GLAZING)		
MAXIMUM U-FACTOR		
FIXED FENESTRATION	U-0.30 MAXIMUM	U-0.30 MAXIMUM
ENTRANCE DOORS	U-0.40 MAXIMUM	U-0.40 MAXIMUM
SOLAR HEAT GAIN COEFFICIENT		

ORIENTATION	SEW	N	SEW	N
PF < 0.2	0.40 MAX.	0.53 MAX.	0.40 MAX.	0.53 MAX.
CEILING				
CEILNG	R-30 MAXIMUM		R-30 MAXIMUM	

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JUSTIN MICHAEL CAMPBELL
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DWR LOGAN FISH HATCHERY RESIDENCE

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BONUS ROOM FINISH FLOOR PLAN Copy 1

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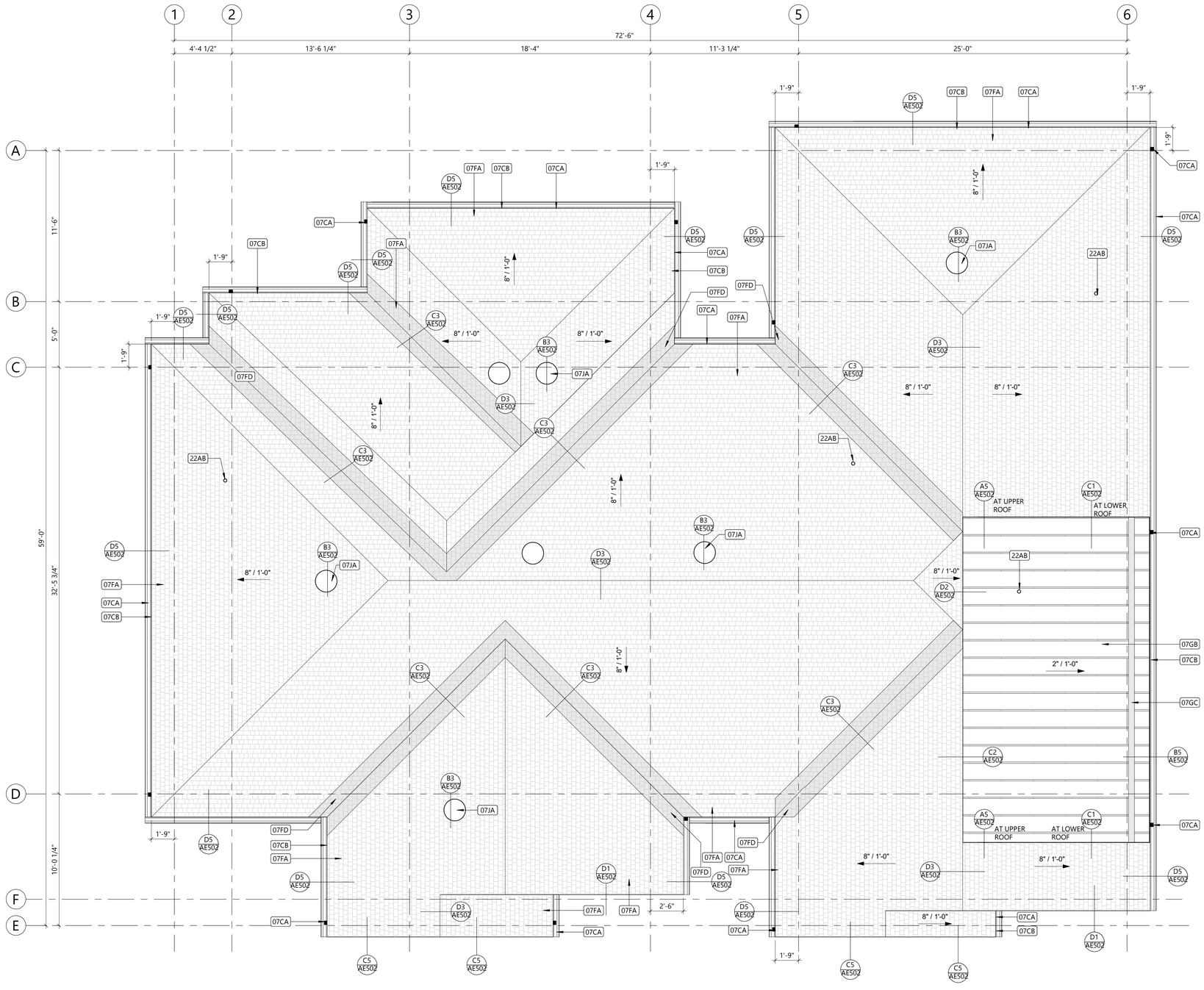

A3 OVERALL ROOF PLAN
SCALE: 1/4" = 1'-0"

KEYNOTES

#	DESCRIPTION
07CA	RAIN GUTTER AND DOWNSPOUTS
07CB	WRAP WOOD FASCIA BOARD WITH PREFINISHED BREAK METAL, COLOR TO MATCH RAIN GUTTER
07FA	ASPHALT SHINGLE ROOF SYSTEM;PRIMARY UNDERLAYMENT FULL DRY IN WITH SELF-ADHERING, POLYMER-MODIFIED BITUMEN SHEET (ICE AND WATER SHIELD) AND ORGANIC FELT SLIP SHEET BETWEEN PRIMARY UNDERLAYMENT AND ASPHALT SHINGLES
07FD	24" WIDE VALLEY PREFINISHED METAL FLASHING WITH 1" HIGH V-CRIMP, CENTERED ON VALLEY
07GB	STANDING SEAM METAL ROOF SYSTEM: PRIMARY UNDERLAYMENT FULL DRY IN WITH SELF-ADHERING, HIGH-TEMPERATURE UNDERLAYMENT AND SLIP SHEET BETWEEN PRIMARY UNDERLAYMENT AND METAL ROOF
07GC	STANDING SEAM SNOW GUARD
07JA	STATIC ROOF VENT, 144 SQUARE INCHES NET FREE AREA
22AB	PLUMBING VENT - SEE PLUMBING DRAWINGS

NOTE: ALL ROOF PENETRATIONS SHALL BE 3'-0" MINIMUM FROM CENTERS OF ALL VALLEYS

ROOF/ATTIC VENTILATION

TOTAL ATTIC AREA:	3,957 SF
1/300 OF ATTIC AREA:	13.19 SF = 1,900 SQUARE INCHES
UPPER VENTILATION:	6 STATIC ROOF VENTS @ 144 SQUARE INCHES NFA = 864 SQUARE INCHES NET FREE AREA
SOFFIT VENTILATION:	PROVIDE PERFORATED METAL SOFFIT PANELS WITH A MINIMUM 1,036 SQUARE INCHES NET FREE AREA, EQUALLY DISTRIBUTED THROUGHOUT THE SOFFIT AREA.

IRC 2021 ENERGY

PRESCRIPTIVE ENERGY COMPLIANCE

BUILDING TYPE: RESIDENTAL

CLIMATE ZONE: 5B (CACHE COUNTY, UTAH)

	REQUIRED	PROVIDE
BUILDING ENVELOPE		
ROOF		
ATTIC	R-49 MINIMUM	R-49 MINIMUM
WALLS ABOVE GRADE		
WOOD FRAMED	R-20+R5 MINIMUM	R-20+R5 MINIMUM
SLAB ON GRADE FLOORS		
UNHEATED SLABS	R-10 CI MINIMUM FOR 4'-0" BELOW SLAB	R-10 CI MINIMUM FOR 4'-0" BELOW SLAB
BUILDING ENVELOPE VERTICAL FENESTRATION (COMPLETE ASSEMBLY, INCLUDING FRAME AND GLAZING)		
MAXIMUM U-FACTOR		
FIXED FENESTRATION	U-0.30 MAXIMUM	U-0.30 MAXIMUM
ENTRANCE DOORS	U-0.40 MAXIMUM	U-0.40 MAXIMUM
SOLAR HEAT GAIN COEFFICIENT		

ORIENTATION	SEW	N	SEW	N
PF < 0.2	0.40 MAX.	0.53 MAX.	0.40 MAX.	0.53 MAX.
CEILING				
CEILNG	R-30 MAXIMUM		R-30 MAXIMUM	

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ROOF PLAN

AE111

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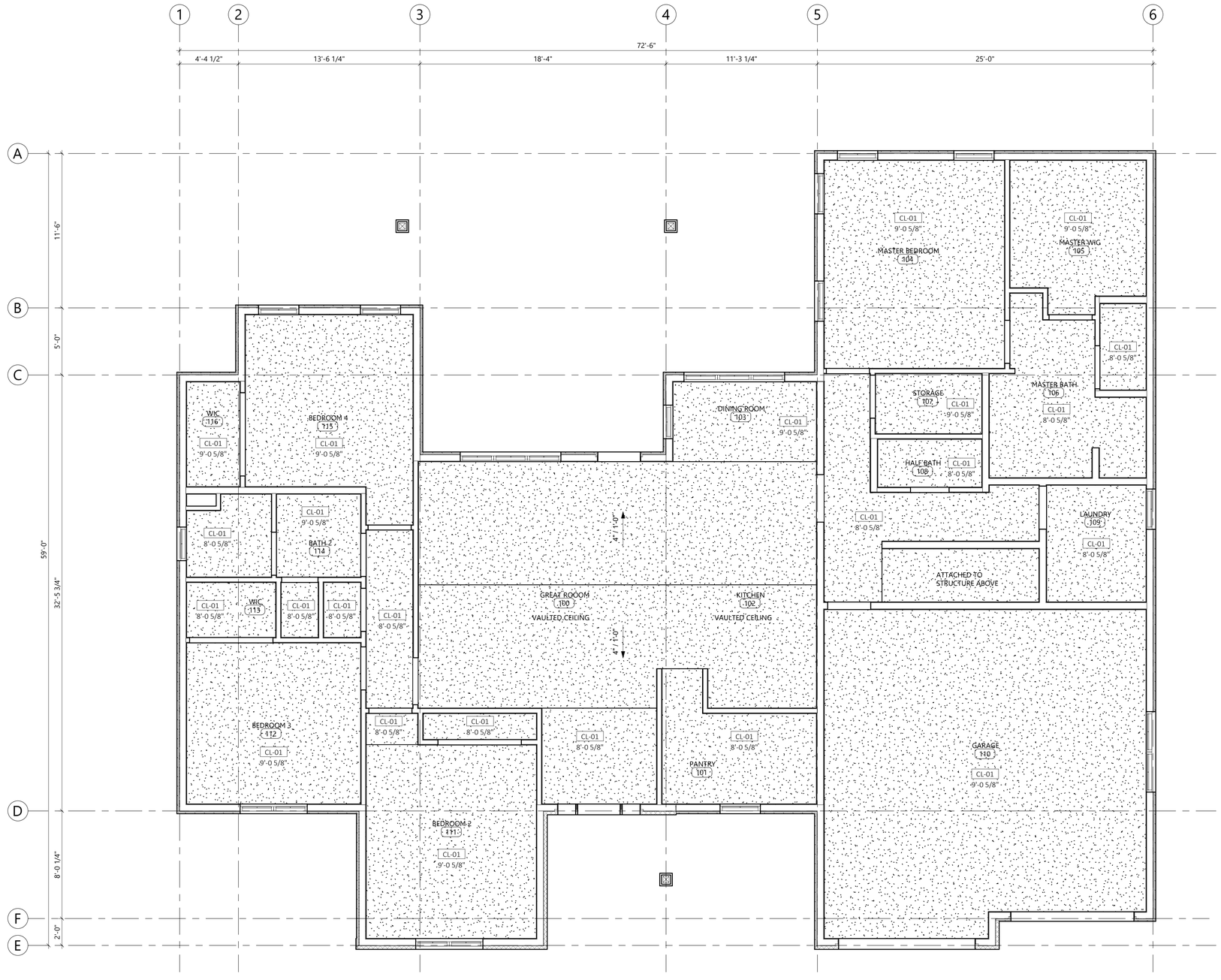

A3 REFLECTED CEILING PLAN - MAIN LEVEL
SCALE: 1/4" = 1'-0"

CEILING LEGEND

CL-01 PAINTED GYPSUM BOARD ATTACHED TO STRUCTURE

IRC 2021 ENERGY

PRESCRIPTIVE ENERGY COMPLIANCE		
BUILDING TYPE: RESIDENTAL		
CLIMATE ZONE: 5B (CACHE COUNTY, UTAH)		
	REQUIRED	PROVIDE
BUILDING ENVELOPE		
ROOF		
ATTIC	R-49 MINIMUM	R-49 MINIMUM
WALLS ABOVE GRADE		
WOOD FRAMED	R-20+R5 MINIMUM	R-20+R5 MINIMUM
SLAB ON GRADE FLOORS		
UNHEATED SLABS	R-10 CI MINIMUM FOR 4'-0" BELOW SLAB	R-10 CI MINIMUM FOR 4'-0" BELOW SLAB
BUILDING ENVELOPE VERTICAL FENESTRATION (COMPLETE ASSEMBLY, INCLUDING FRAME AND GLAZING)		
MAXIMUM U-FACTOR		
FIXED FENESTRATION	U-0.30 MAXIMUM	U-0.30 MAXIMUM
ENTRANCE DOORS	U-0.40 MAXIMUM	U-0.40 MAXIMUM
SOLAR HEAT GAIN COEFFICIENT		
ORIENTATION	SEW / N	SEW / N
PF < 0.2	0.40 MAX. / 0.53 MAX.	0.40 MAX. / 0.53 MAX.
CEILING		
CEILNG	R-30 MAXIMUM	R-30 MAXIMUM

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REFLECTED CEILING PLAN

AE121

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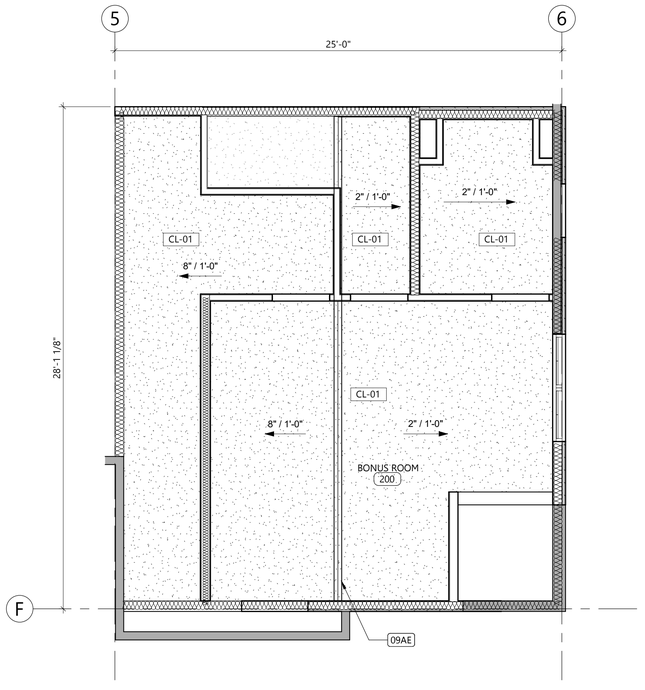

A4 REFLECTED CEILING PLAN - BONUS ROOM
SCALE: 1/4" = 1'-0"

CEILING LEGEND

CL-01	PAINTED GYPSUM BOARD ATTACHED TO STRUCTURE

KEYNOTES

#	DESCRIPTION
09AE	WRAP BEAM WITH GYPSUM BOARD. PRIME AND PAINT

IRC 2021 ENERGY

PRESCRIPTIVE ENERGY COMPLIANCE

BUILDING TYPE: RESIDENTAL

CLIMATE ZONE: 5B (CACHE COUNTY, UTAH)

	REQUIRED	PROVIDE
BUILDING ENVELOPE		
ROOF		
ATTIC	R-49 MINIMUM	R-49 MINIMUM
WALLS ABOVE GRADE		
WOOD FRAMED	R-20+R5 MINIMUM	R-20+R5 MINIMUM
SLAB ON GRADE FLOORS		
UNHEATED SLABS	R-10 CI MINIMUM FOR 4'-0" BELOW SLAB	R-10 CI MINIMUM FOR 4'-0" BELOW SLAB
BUILDING ENVELOPE VERTICAL FENESTRATION (COMPLETE ASSEMBLY, INCLUDING FRAME AND GLAZING)		
MAXIMUM U-FACTOR		
FIXED FENESTRATION	U-0.30 MAXIMUM	U-0.30 MAXIMUM
ENTRANCE DOORS	U-0.40 MAXIMUM	U-0.40 MAXIMUM
SOLAR HEAT GAIN COEFFICIENT		
ORIENTATION	SEW / N	SEW / N
PF < 0.2	0.40 MAX. / 0.53 MAX.	0.40 MAX. / 0.53 MAX.
CEILING		
CEILNG	R-30 MAXIMUM	R-30 MAXIMUM

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REFLECTED CEILING PLAN - BONUS ROOM

AE122

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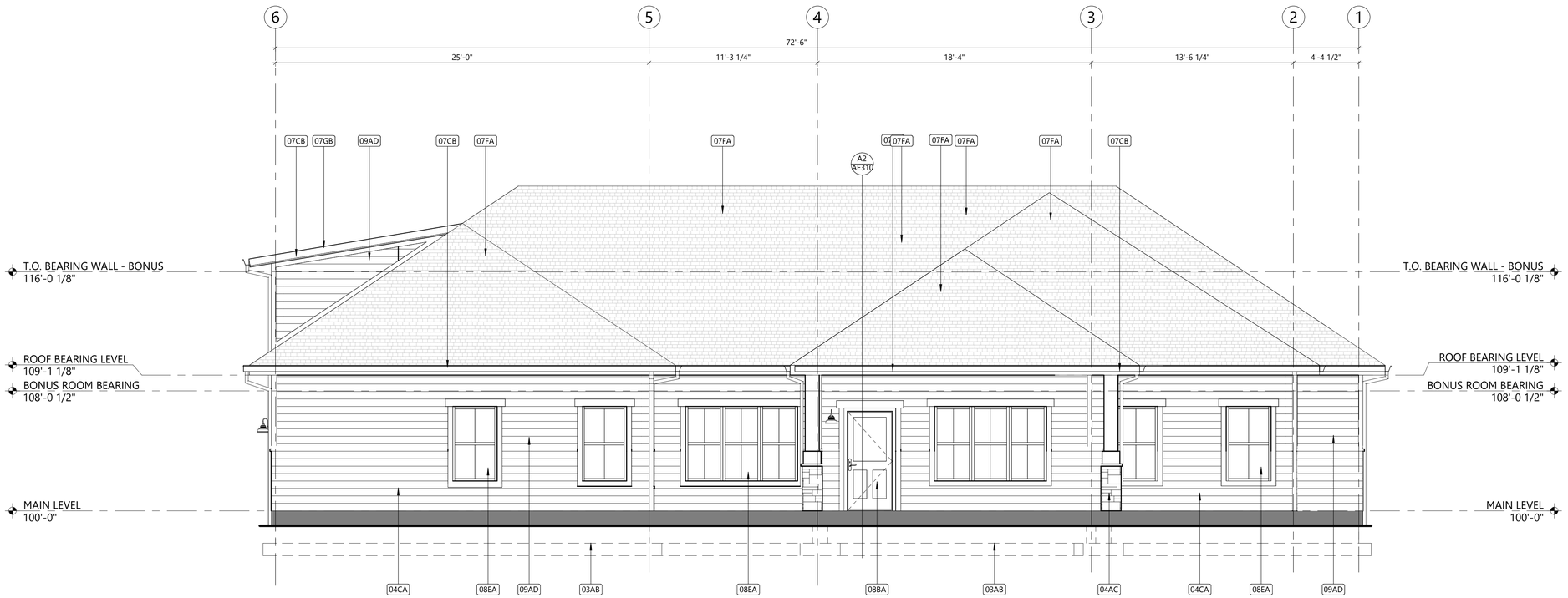
C3 WEST ELEVATION
SCALE: 1/4" = 1'-0"



A3 EAST ELEVATION
SCALE: 1/4" = 1'-0"

KEYNOTES

#	DESCRIPTION
03AB	LINE OF CONCRETE FOUNDATION WALL
04AC	WRAP COLUMNS WITH STONE
04CA	CAST STONE VENEER
07CB	WRAP WOOD FASCIA BOARD WITH PREFINISHED BREAK METAL, COLOR TO MATCH RAIN GUTTER
07FA	ASPHALT SHINGLE ROOF SYSTEM:PRIMARY UNDERLAYMENT FULL DRY IN WITH SELF-ADHERING, POLYMER-MODIFIED BITUMEN SHEET (ICE AND WATER SHIELD) AND ORGANIC FELT SLIP SHEET BETWEEN PRIMARY UNDERLAYMENT AND ASPHALT SHINGLES
07GB	STANDING SEAM METAL ROOF SYSTEM: PRIMARY UNDERLAYMENT FULL DRY IN WITH SELF-ADHERING, HIGH-TEMPERATURE UNDERLAYMENT AND SLIP SHEET BETWEEN PRIMARY UNDERLAYMENT AND METAL ROOF
08BA	DOOR - FOR SIZES AND TYPES SEE DOOR SCHEDULE
08BB	GARAGE DOOR - FOR DOOR SIZES AND TYPES SEE DOOR SCHEDULE
08EA	WINDOW - FOR SIZES & TYPES SEE WINDOW SCHEDULE
09AC	FIBER CEMENT BOARD PANEL SIDING WITH BATTENS
09AD	FIBER CEMENT BOARD LAP SIDING
10GA	DOORBELL

IRC 2021 ENERGY

PRESCRIPTIVE ENERGY COMPLIANCE

BUILDING TYPE: RESIDENTAL

CLIMATE ZONE: 5B (CACHE COUNTY, UTAH)

	REQUIRED	PROVIDE
BUILDING ENVELOPE		
ROOF		
ATTIC	R-49 MINIMUM	R-49 MINIMUM
WALLS ABOVE GRADE		
WOOD FRAMED	R-20+R5 MINIMUM	R-20+R5 MINIMUM
SLAB ON GRADE FLOORS		
UNHEATED SLABS	R-10 CI MINIMUM FOR 4'-0" BELOW SLAB	R-10 CI MINIMUM FOR 4'-0" BELOW SLAB

BUILDING ENVELOPE VERTICAL FENESTRATION (COMPLETE ASSEMBLY, INCLUDING FRAME AND GLAZING)

MAXIMUM U-FACTOR				
FIXED FENESTRATION	U-0.30 MAXIMUM		U-0.30 MAXIMUM	
ENTRANCE DOORS	U-0.40 MAXIMUM		U-0.40 MAXIMUM	
SOLAR HEAT GAIN COEFFICIENT				
ORIENTATION	SEW	N	SEW	N
PF < 0.2	0.40 MAX.	0.53 MAX.	0.40 MAX.	0.53 MAX.
CEILING				
CEILNG	R-30 MAXIMUM		R-30 MAXIMUM	

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JUSTIN MICHAEL CAMPBELL
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DWR LOGAN FISH HATCHERY RESIDENCE

1465 WEST 200 NORTH
LOGAN, UT

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ARCHITECTURAL ELEVATIONS

AE201

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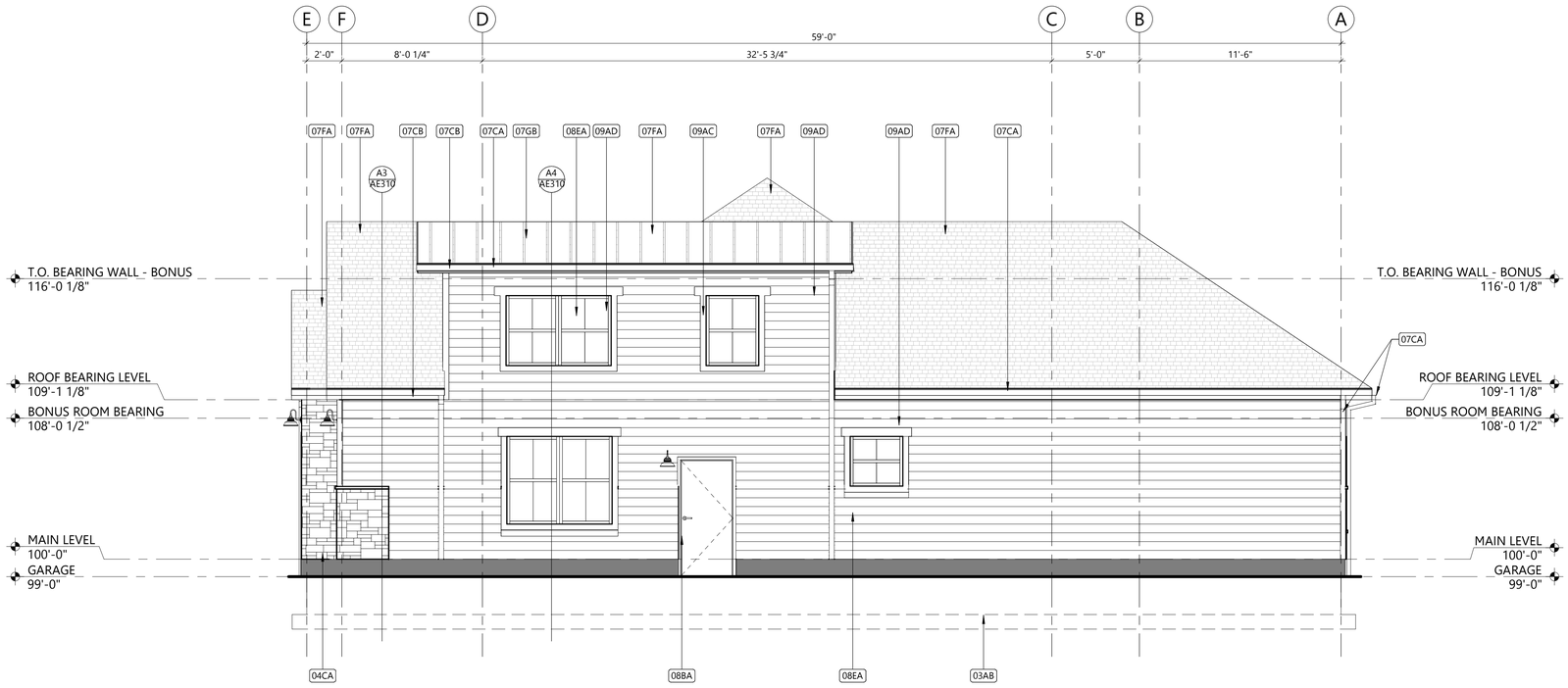
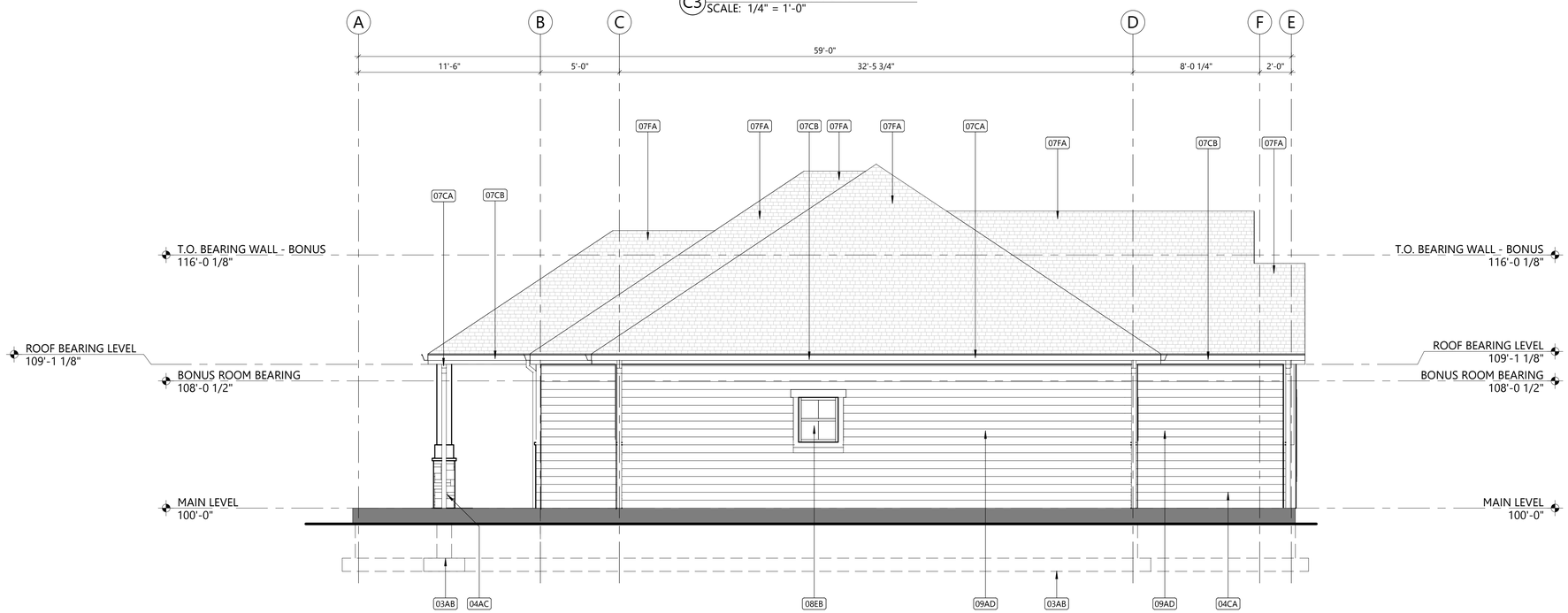


C3 SOUTH ELEVATION
SCALE: 1/4" = 1'-0"



A3 NORTH ELEVATION
SCALE: 1/4" = 1'-0"

KEYNOTES

#	DESCRIPTION
03AB	LINE OF CONCRETE FOUNDATION WALL
04AC	WRAP COLUMNS WITH STONE
04CA	CAST STONE VENEER
07CA	RAIN GUTTER AND DOWNSPOUTS
07CB	WRAP WOOD FASCIA BOARD WITH PREFINISHED BREAK METAL, COLOR TO MATCH RAIN GUTTER
07FA	ASPHALT SHINGLE ROOF SYSTEM:PRIMARY UNDERLAYMENT FULL DRY IN WITH SELF-ADHERING, POLYMER-MODIFIED BITUMEN SHEET (ICE AND WATER SHIELD) AND ORGANIC FELT SLIP SHEET BETWEEN PRIMARY UNDERLAYMENT AND ASPHALT SHINGLES
07GB	STANDING SEAM METAL ROOF SYSTEM: PRIMARY UNDERLAYMENT FULL DRY IN WITH SELF-ADHERING, HIGH-TEMPERATURE UNDERLAYMENT AND SLIP SHEET BETWEEN PRIMARY UNDERLAYMENT AND METAL ROOF
08BA	DOOR - FOR SIZES AND TYPES SEE DOOR SCHEDULE
08EA	WINDOW - FOR SIZES & TYPES SEE WINDOW SCHEDULE
08EB	OPAQUE WINDOW - FOR SIZES & TYPES SEE WINDOW SCHEDULE
09AC	FIBER CEMENT BOARD PANEL SIDING WITH BATTENS
09AD	FIBER CEMENT BOARD LAP SIDING

IRC 2021 ENERGY

PRESCRIPTIVE ENERGY COMPLIANCE

BUILDING TYPE: RESIDENTAL

CLIMATE ZONE: 5B (CACHE COUNTY, UTAH)

	REQUIRED	PROVIDE
BUILDING ENVELOPE		
ROOF		
ATTIC	R-49 MINIMUM	R-49 MINIMUM
WALLS ABOVE GRADE		
WOOD FRAMED	R-20+R5 MINIMUM	R-20+R5 MINIMUM
SLAB ON GRADE FLOORS		
UNHEATED SLABS	R-10 CI MINIMUM FOR 4'-0" BELOW SLAB	R-10 CI MINIMUM FOR 4'-0" BELOW SLAB
BUILDING ENVELOPE VERTICAL FENESTRATION (COMPLETE ASSEMBLY, INCLUDING FRAME AND GLAZING)		
MAXIMUM U-FACTOR		
FIXED FENESTRATION	U-0.30 MAXIMUM	U-0.30 MAXIMUM
ENTRANCE DOORS	U-0.40 MAXIMUM	U-0.40 MAXIMUM

SOLAR HEAT GAIN COEFFICIENT				
ORIENTATION	SEW	N	SEW	N
PF < 0.2	0.40 MAX.	0.53 MAX.	0.40 MAX.	0.53 MAX.
CEILING				
CEILNG	R-30 MAXIMUM		R-30 MAXIMUM	

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ARCHITECTURAL ELEVATIONS

AE202

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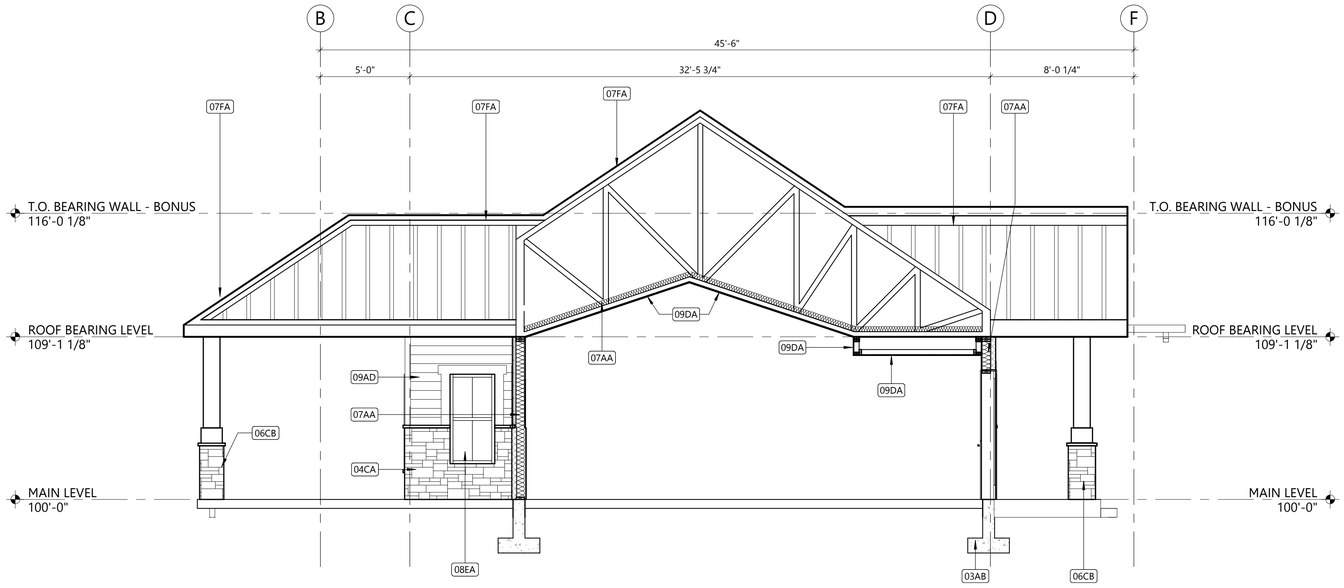
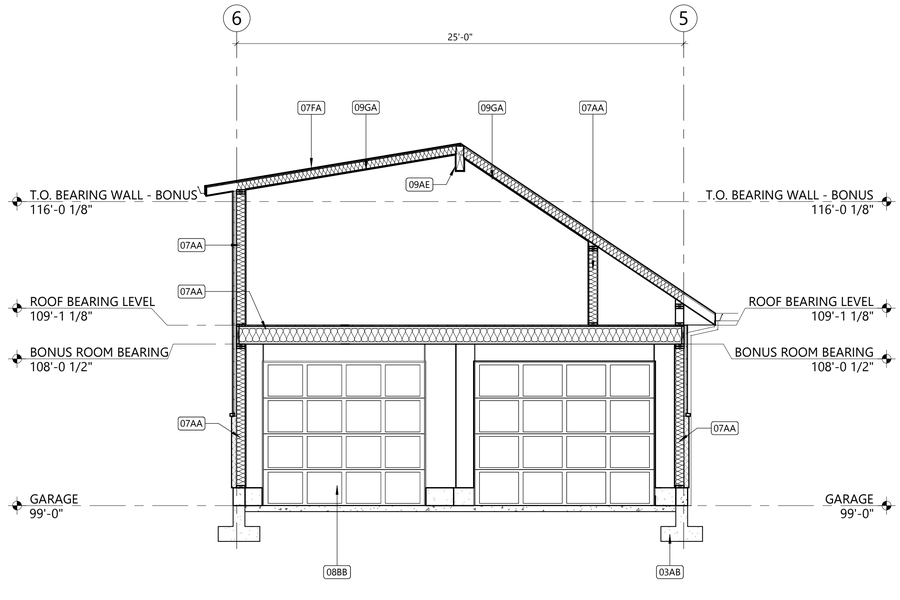


C3 ENLARGED BUILDING SECTION
SCALE: 1/4" = 1'-0"



A3 BONUS ROOM SOUTH ELEVATION
SCALE: 1/4" = 1'-0"

KEYNOTES

#	DESCRIPTION
03AB	LINE OF CONCRETE FOUNDATION WALL
04CA	CAST STONE VENEER
06CB	WRAP COLUMN
07AA	INSULATION
07FA	ASPHALT SHINGLE ROOF SYSTEM;PRIMARY UNDERLAYMENT FULL DRY IN WITH SELF-ADHERING, POLYMER-MODIFIED BITUMEN SHEET (ICE AND WATER SHIELD) AND ORGANIC FELT SLIP SHEET BETWEEN PRIMARY UNDERLAYMENT AND ASPHALT SHINGLES
08BB	GARAGE DOOR - FOR DOOR SIZES AND TYPES SEE DOOR SCHEDULE
08EA	WINDOW - FOR SIZES & TYPES SEE WINDOW SCHEDULE
09AD	FIBER CEMENT BOARD LAP SIDING
09AE	WRAP BEAM WITH GYPSUM BOARD. PRIME AND PAINT
09DA	PAINTED GYP. BOARD
09GA	CEILING ATTACHED TO BOTTOM OF STRUCTURE

IRC 2021 ENERGY

PRESCRIPTIVE ENERGY COMPLIANCE

BUILDING TYPE: RESIDENTAL

CLIMATE ZONE: 5B (CACHE COUNTY, UTAH)

	REQUIRED	PROVIDE
BUILDING ENVELOPE		
ROOF		
ATTIC	R-49 MINIMUM	R-49 MINIMUM
WALLS ABOVE GRADE		
WOOD FRAMED	R-20+R5 MINIMUM	R-20+R5 MINIMUM
SLAB ON GRADE FLOORS		
UNHEATED SLABS	R-10 CI MINIMUM FOR 4'-0" BELOW SLAB	R-10 CI MINIMUM FOR 4'-0" BELOW SLAB
BUILDING ENVELOPE VERTICAL FENESTRATION (COMPLETE ASSEMBLY, INCLUDING FRAME AND GLAZING)		
MAXIMUM U-FACTOR		
FIXED FENESTRATION	U-0.30 MAXIMUM	U-0.30 MAXIMUM
ENTRANCE DOORS	U-0.40 MAXIMUM	U-0.40 MAXIMUM

SOLAR HEAT GAIN COEFFICIENT				
ORIENTATION	SEW	N	SEW	N
PF < 0.2	0.40 MAX.	0.53 MAX.	0.40 MAX.	0.53 MAX.
CEILING				
CEILNG	R-30 MAXIMUM		R-30 MAXIMUM	

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REVIEWED FOR CODE COMPLIANCE
THOMAS PETERSON
05/19/2025
DIVISION OF FACILITIES CONSTRUCTION AND MANAGEMENT

STATE OF UTAH
JUSTIN MICHAEL CAMPBELL
2/13/2025
No.8539712-0301
LICENSED ARCHITECT

DWR LOGAN FISH HATCHERY RESIDENCE

1465 WEST 200 NORTH
LOGAN, UT

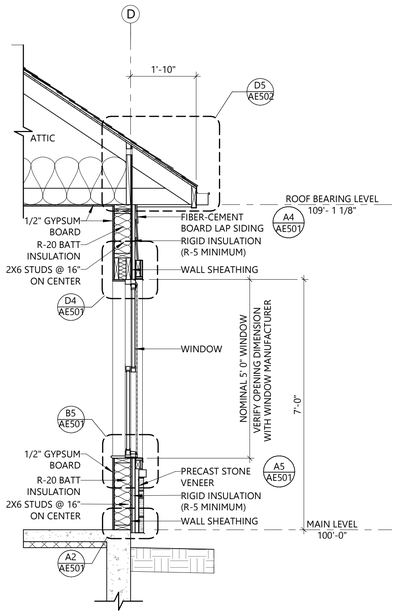
DFCM PROJECT #	24437520
CARTWRIGHT PROJECT #	124141
DATE:	2/13/2025
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	

REVISIONS
DATE DESCRIPTION

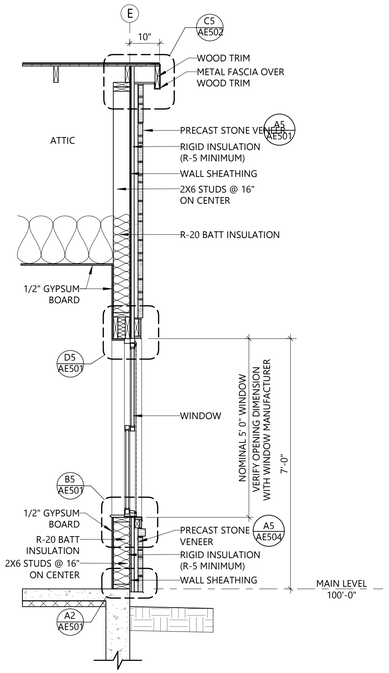
BUILDING SECTIONS

AE301

3/17/2025 5:38:23 PM



C1 EXTERIOR WALL SECTION
SCALE: 1/2" = 1'-0"



C2 EXTERIOR WALL SECTION
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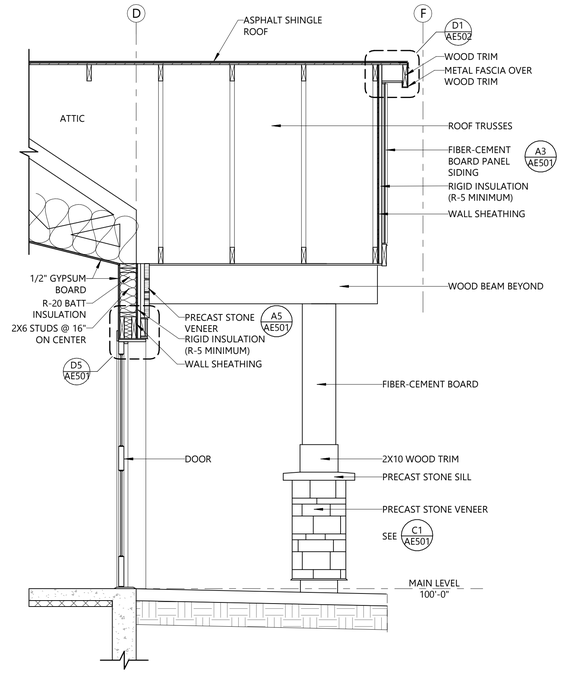
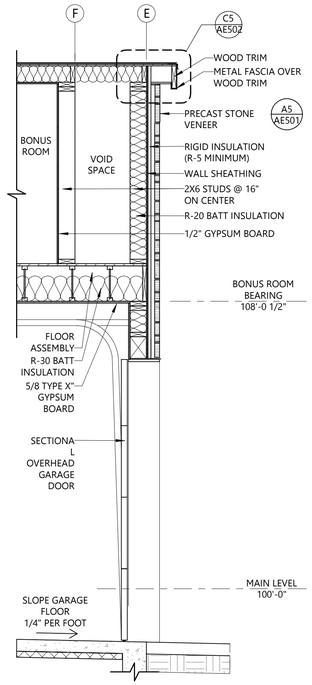


C3 EXTERIOR WALL SECTION
SCALE: 1/2" = 1'-0"



C5 EXTERIOR WALL SECTION
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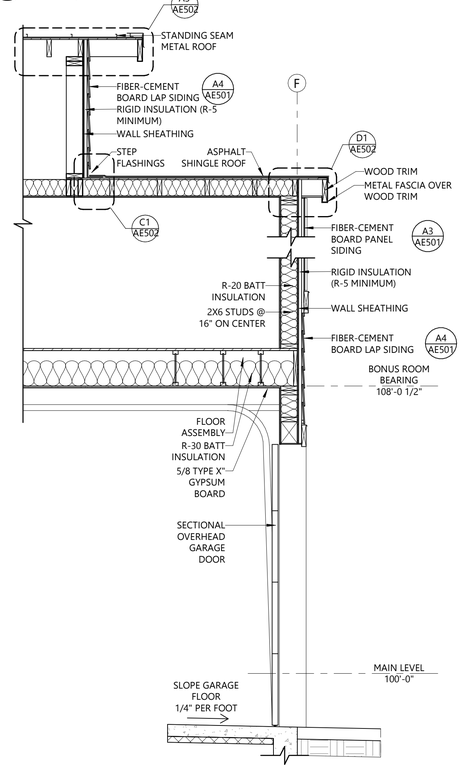
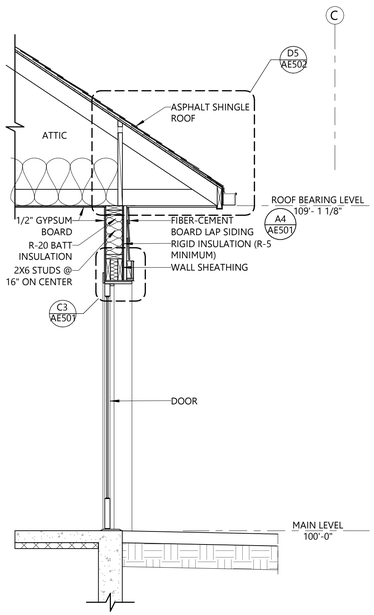
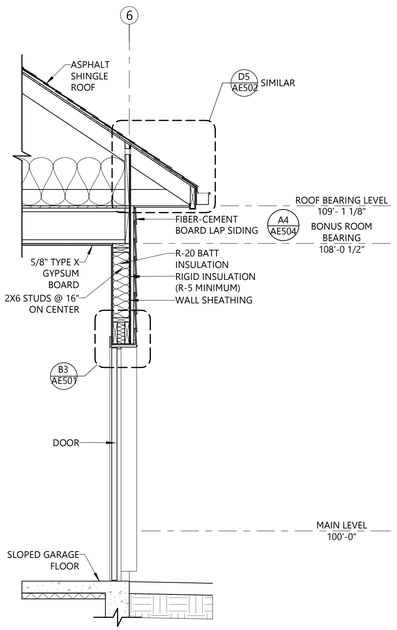


A1 EXTERIOR WALL SECTION
SCALE: 1/2" = 1'-0"



A2 EXTERIOR WALL SECTION
SCALE: 1/2" = 1'-0"



A3 EXTERIOR WALL SECTION
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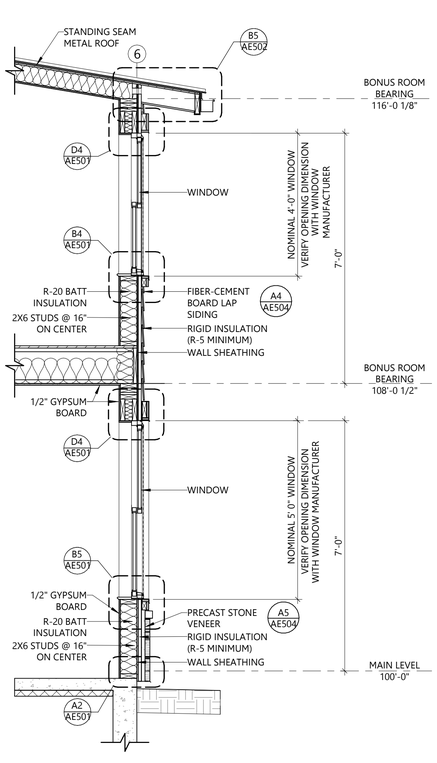

A4 EXTERIOR WALL SECTION
SCALE: 1/2" = 1'-0"

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2/13/2025
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LICENSED ARCHITECT
STATE OF UTAH

DWR LOGAN FISH HATCHERY RESIDENCE

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LOGAN, UT

DFCM PROJECT #	24437520
CARTWRIGHT PROJECT #	124141
DATE:	2/13/2025
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CHECKED BY:	
APPROVED BY:	

REVISIONS

#	DATE	DESCRIPTION

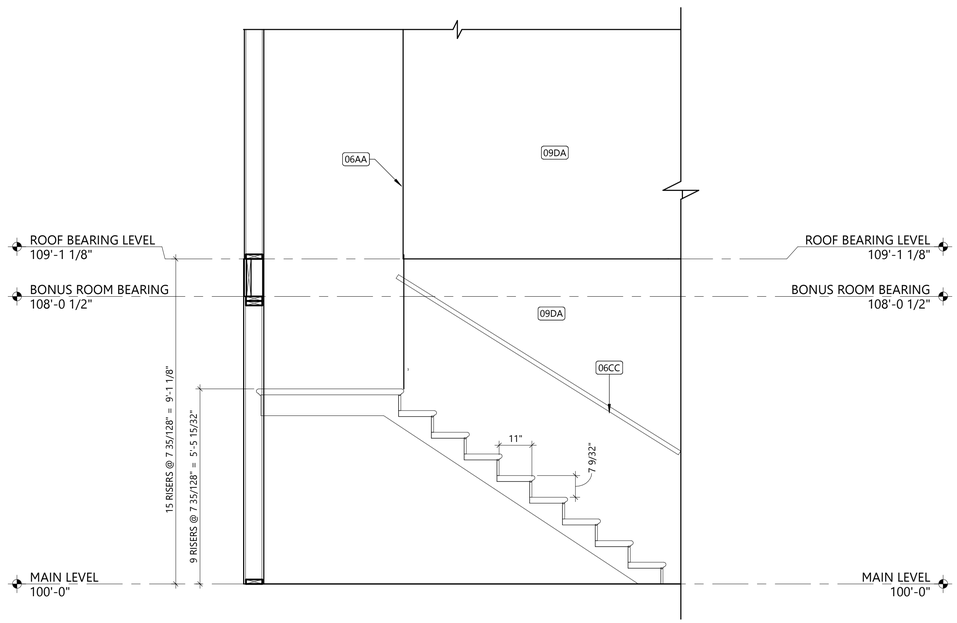
EXTERIOR WALL SECTIONS

AE310

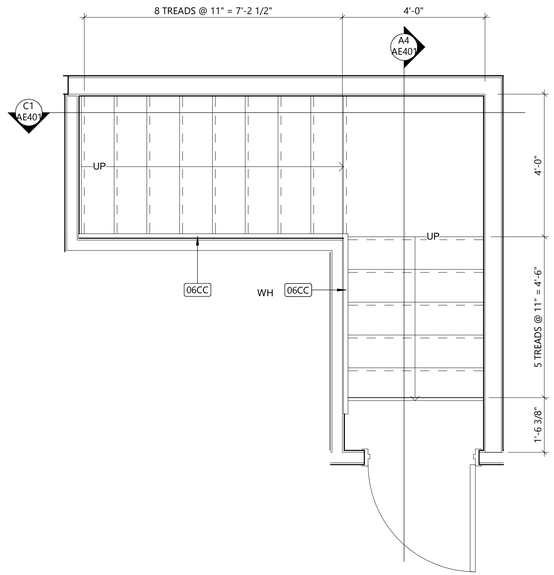
3/17/2025 5:38:24 PM

KEYNOTES

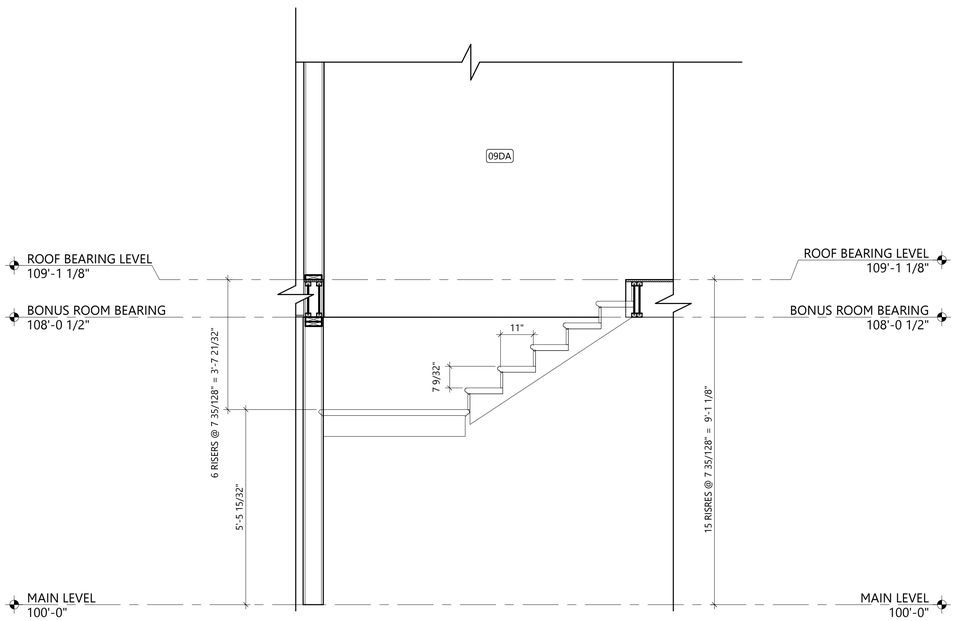
#	DESCRIPTION
06AA	LINE OF INTERIOR WALL
06CC	RAILING
09DA	PAINTED GYP. BOARD



C1 ENLARGED STAIRS
SCALE: 1/2" = 1'-0"



A1 T.O. BEARING WALL ANNOTATION PLAN - STAIRS
SCALE: 1/2" = 1'-0"



A4 ENLARGED STAIRS
SCALE: 1/2" = 1'-0"

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#	DATE	DESCRIPTION

ENLARGED PLANS - STAIRS

AE401

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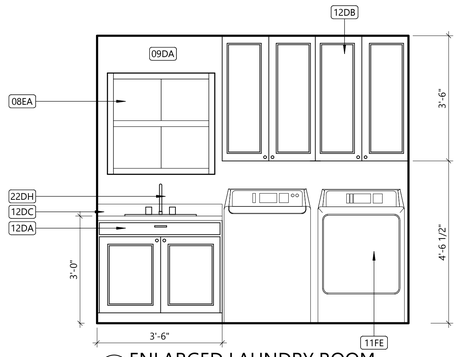
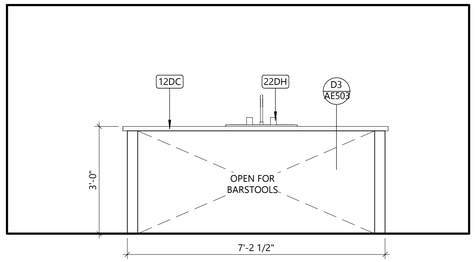


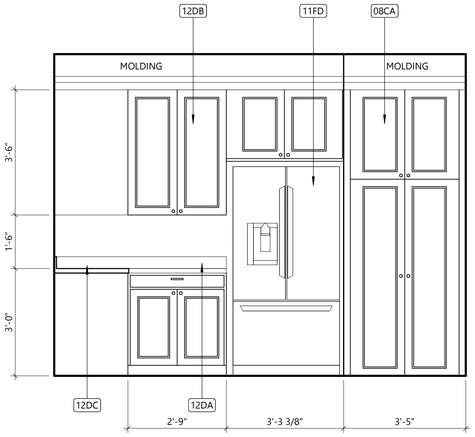
D3 ENLARGED LAUNDRY ROOM
SCALE: 1/2" = 1'-0"



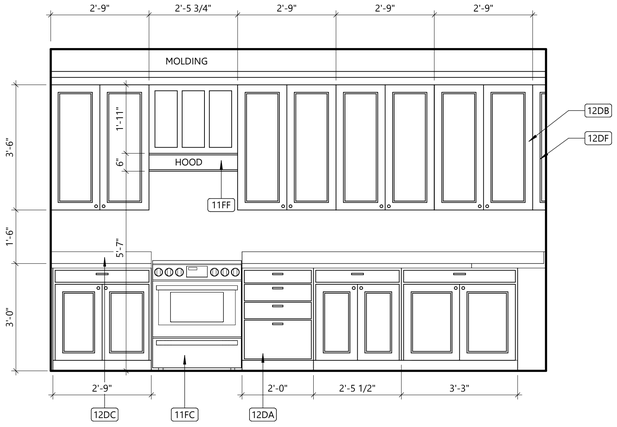
D4 ENLARGED KITCHEN ISLAND
SCALE: 1/2" = 1'-0"

KEYNOTES

#	DESCRIPTION
08CA	HIDDEN PANTRY DOOR
08EA	WINDOW - FOR SIZES & TYPES SEE WINDOW SCHEDULE
09DA	PAINTED GYP. BOARD
09DB	PRIME AND PAINTED WOOD TRIM
10AA	MIRROR
10CG	MIRROR, 24"W x 36"H, PROVIDE SHIM AS NECESSARY TO MOUNT THE MIRROR PLUMB
11FB	DISHWASHER (ADA ACCESSIBLE) SUPPLIED BY OWNER, INSTALLED BY CONTRACTOR
11FC	STOVE & RANGETOP (ADA ACCESSIBLE). SUPPLIED BY OWNER, INSTALLED BY CONTRACTOR
11FD	REFRIDGERATOR/FREEZER (ADA ACCESSIBLE) SUPPLIED BY OWNER, INSTALLED BY CONTRACTOR
11FE	WASHER & DRYER
11FF	RANGE HOOD
12DA	BASE CABINETS
12DB	UPPER CABINETS
12DC	COUNTERTOPS
12DE	CUSTOM PANEL
12DF	CORNER CABINET
22DA	TOILET, SEE GENERAL DETAILS & PLUMBING DRAWINGS
22DH	SINK, SEE PLUMBING DRAWINGS
22DJ	BATHTUB



B1 KITCHEN ELEVATION
SCALE: 1/2" = 1'-0"



B3 KITCHEN ELEVATION
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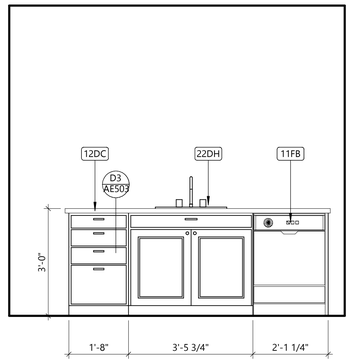
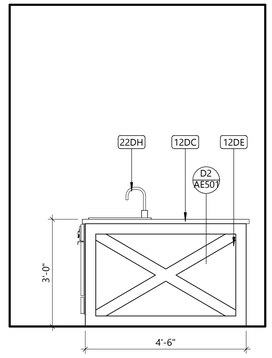
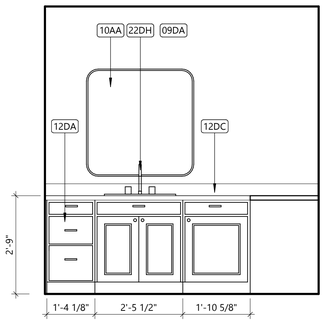


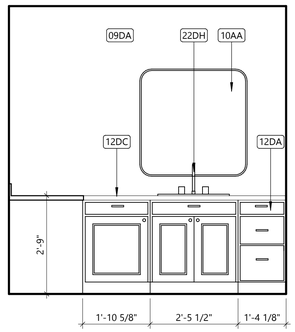
B4 ENLARGED KITCHEN ISLAND
SCALE: 1/2" = 1'-0"



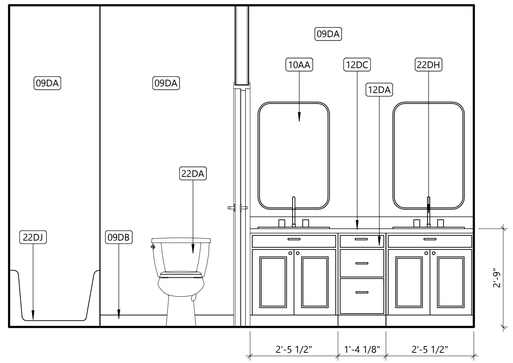
B5 ENLARGED KITCHEN ISLAND
SCALE: 1/2" = 1'-0"



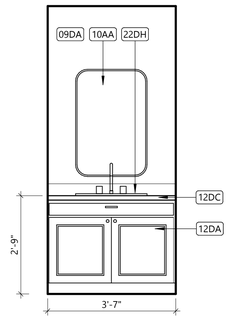
A1 ENLARGED BATHROOM
SCALE: 1/2" = 1'-0"



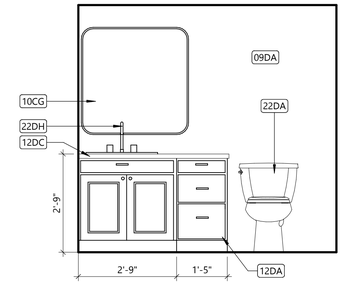
A2 ENLARGED BATHROOM
SCALE: 1/2" = 1'-0"



A3 ENLARGED BATHROOM
SCALE: 1/2" = 1'-0"



A4 ENLARGED BATHROOM
SCALE: 1/2" = 1'-0"



A5 ENLARGED BATHROOM
SCALE: 1/2" = 1'-0"

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REVISIONS

#	DATE	DESCRIPTION

INTERIOR ELEVATIONS

AE411

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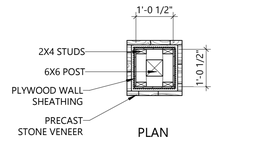
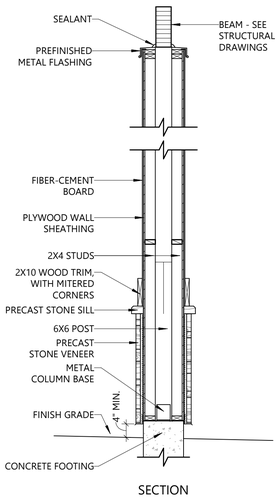
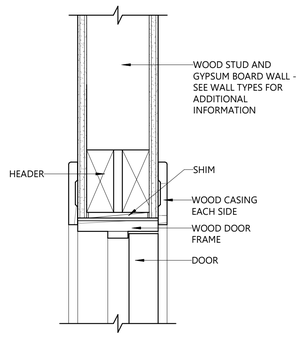


PLAN

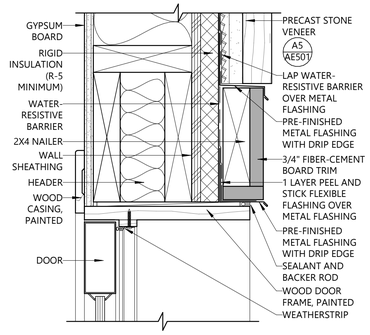


SECTION

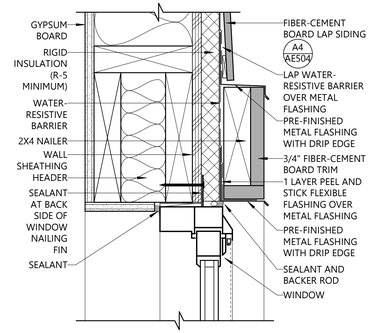
C1 COLUMN PLAN AND SECTION
SCALE: 1/2" = 1'-0"



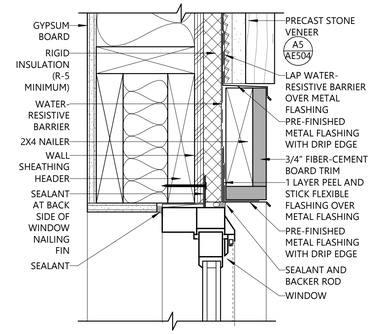
D2 INTERIOR DOOR HEAD (JAMB SIMILAR)
SCALE: 3" = 1'-0"



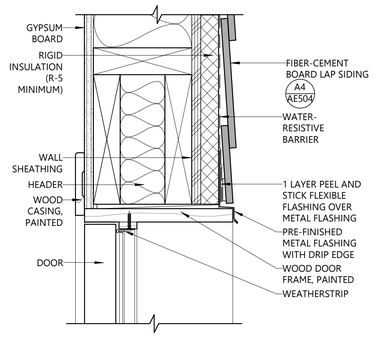
D3 EXTERIOR DOOR HEAD
SCALE: 3" = 1'-0"



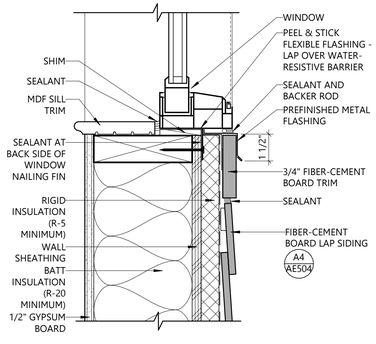
D4 WINDOW HEAD
SCALE: 3" = 1'-0"



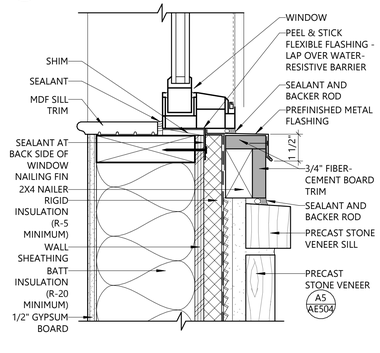
D5 WINDOW HEAD
SCALE: 3" = 1'-0"



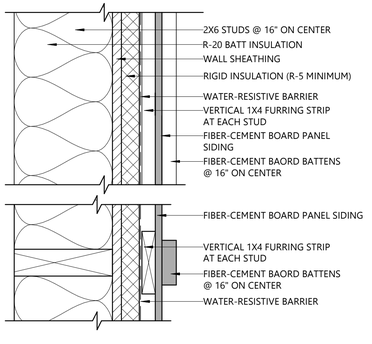
C3 EXTERIOR DOOR HEAD
SCALE: 3" = 1'-0"



C4 WINDOW JAMB
SCALE: 3" = 1'-0"

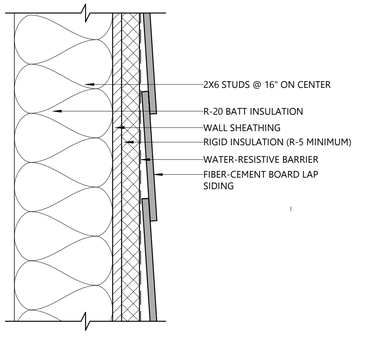


C5 WINDOW JAMB
SCALE: 3" = 1'-0"



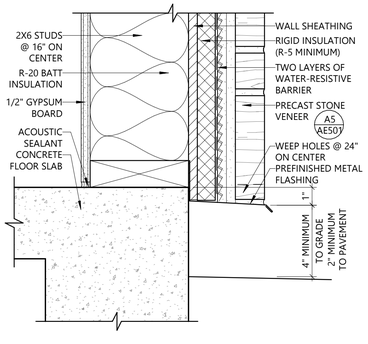
C3 EXTERIOR DOOR HEAD
SCALE: 3" = 1'-0"

B3 EXTERIOR DOOR HEAD
SCALE: 3" = 1'-0"



B4 WINDOW SILL
SCALE: 3" = 1'-0"

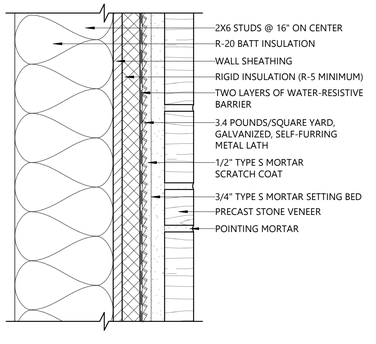
B5 WINDOW SILL
SCALE: 3" = 1'-0"



A2 EXTERIOR WALL BASE
SCALE: 3" = 1'-0"

A3 FIBER-CEMENT BOARD PANEL SIDING
SCALE: 3" = 1'-0"

A4 FIBER-CEMENT BOARD LAP SIDING
SCALE: 3" = 1'-0"



A5 PRECAST STONE VENEER
SCALE: 3" = 1'-0"

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DFCM APPROVAL

REVIEWED FOR CODE COMPLIANCE
THOMAS PETERSON
05/19/2025
DIVISION OF FACILITIES CONSTRUCTION AND MANAGEMENT

STATE OF UTAH
JUSTIN MICHAEL CAMPBELL
2/13/2025
No.8539712-0301
LICENSED ARCHITECT

DWR LOGAN FISH HATCHERY RESIDENCE

1465 WEST 200 NORTH
LOGAN, UT

DFCM PROJECT #	24437520
CARTWRIGHT PROJECT #	124141
DATE:	2/13/2025
DRAWN BY:	
CHECKED BY:	
APPROVED BY:	

REVISIONS

	DATE	DESCRIPTION

ARCHITECTURAL DETAILS

AE501

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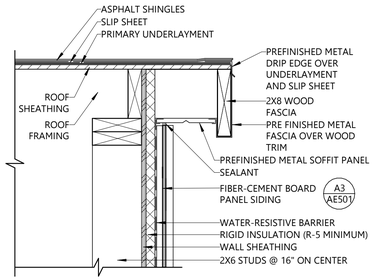
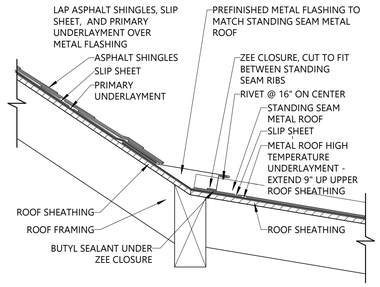
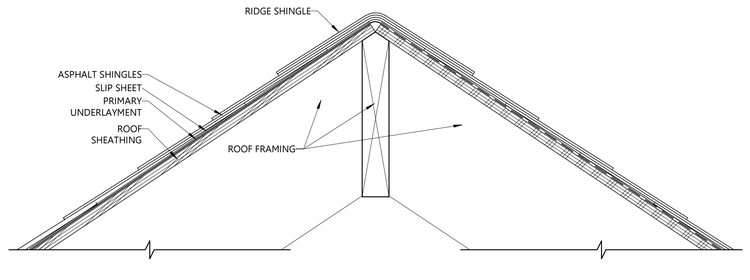


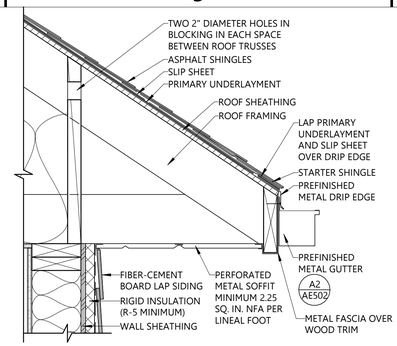
D1 SHINGLES RAKE DETAIL
SCALE: 1 1/2" = 1'-0"



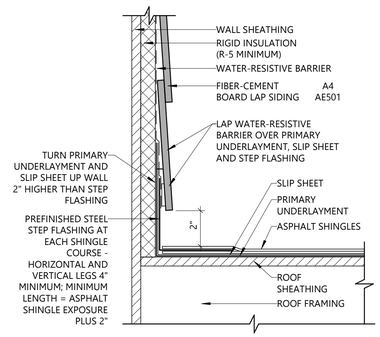
D2 ROOF TRANSITION DETAIL
SCALE: 1 1/2" = 1'-0"



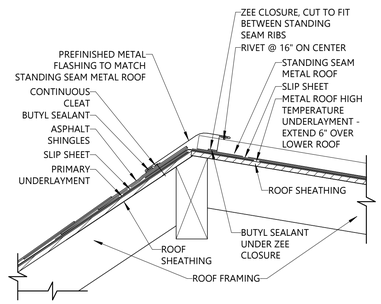
D3 ASPHALT SHINGLES RIDGE DETAIL
SCALE: 3" = 1'-0"



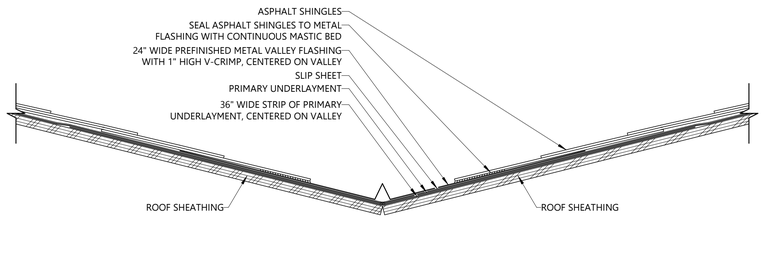
D5 SHINGLES EAVE DETAIL
SCALE: 1 1/2" = 1'-0"



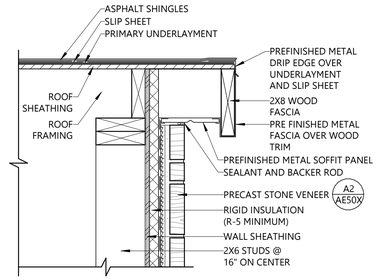
C1 ROOF TO WALL DETAIL
SCALE: 3" = 1'-0"



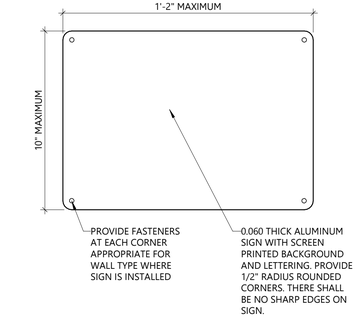
C2 ROOF TRANSITION DETAIL
SCALE: 1 1/2" = 1'-0"



C3 ASPHALT SHINGLES VALLEY DETAIL
SCALE: 3" = 1'-0"



C5 SHINGLES RAKE DETAIL
SCALE: 1 1/2" = 1'-0"



LOCATE SIGN ON INTERIOR SIDE OF GARAGE WALL.

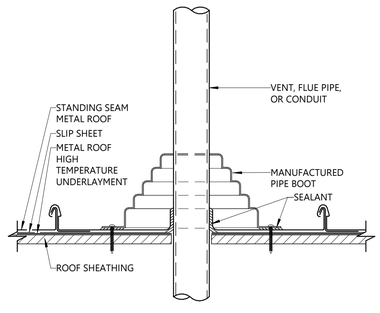
SIGN TEXT:

CAUTION

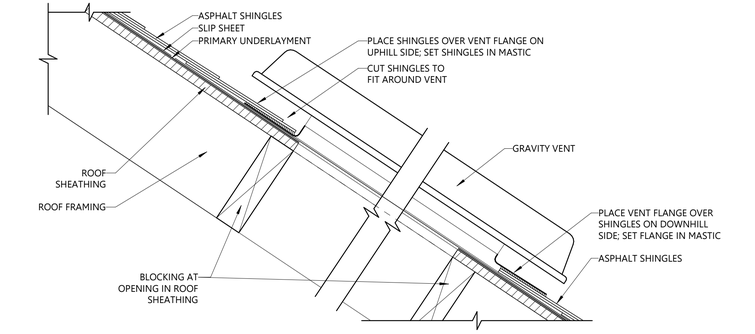
THIS ROOF IS UNDER WARRANTY UNTIL [INSERT YEAR] WITH [INSERT MANUFACTURER]. ALL ACCESS IS TO BE RESTRICTED WITHOUT FACILITIES MANAGER'S PERMISSION AND LOG ENTRY. REPAIR WORK, IF NECESSARY, SHOULD BE PERFORMED ONLY BY AN AUTHORIZED APPLICATOR. FOR LEAK REPAIRS, CONTACT [INSERT MANUFACTURER] AT [INSERT MANUFACTURER WARRANTY CLAIM DEPARTMENT PHONE NUMBER] AND PROVIDE THEM WITH WARRANTY NUMBER. QUESTIONS REGARDING THIS ROOF OR ANY POTENTIAL WORK PERTAINING TO THIS ROOF, PLEASE CONTACT DFCM AT DFCMROOF@UTAH.GOV

[WARRANTY #]	[[ROOFING CONTRACTOR]
[WARRANTY TYPE]	[CONTRACTOR TELEPHONE NUMBER]
INSTALLATION DATE]	[CONTRACTOR ADDRESS]
[MANUFACTURER'S ADDRESS]	[ROOF TYPE]

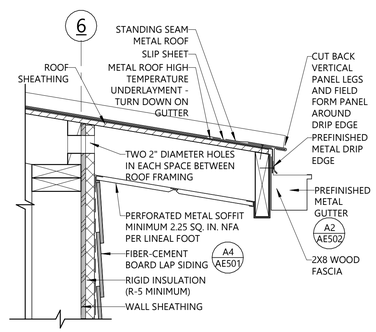
A1 ROOF WARRANTY SIGN
SCALE: 3" = 1'-0"



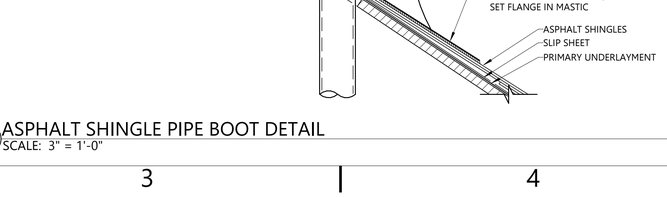
STANDING SEAM METAL ROOF
B2 PIPE BOOT DETAIL
SCALE: 3" = 1'-0"



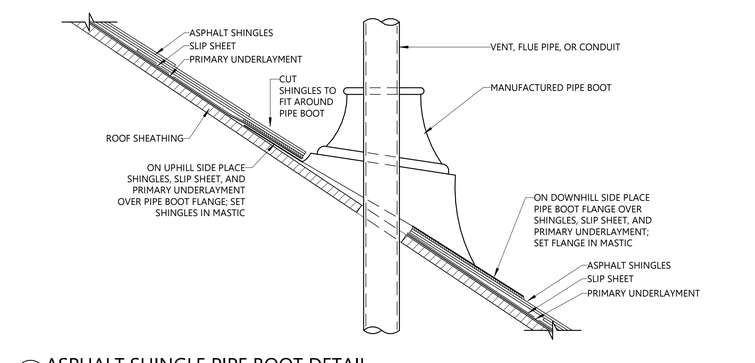
B3 ASPHALT SHINGLE VENT DETAIL
SCALE: 3" = 1'-0"



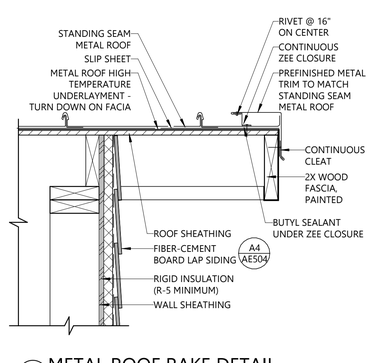
B5 METAL ROOF EAVE DETAIL
SCALE: 1 1/2" = 1'-0"



A2 ROOF GUTTER DETAIL
SCALE: 3" = 1'-0"



A3 ASPHALT SHINGLE PIPE BOOT DETAIL
SCALE: 3" = 1'-0"



A5 METAL ROOF RAKE DETAIL
SCALE: 1 1/2" = 1'-0"

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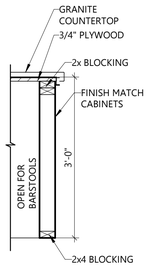
REVISIONS

	DATE	DESCRIPTION

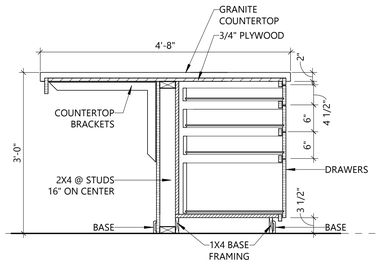
ARCHITECTURAL DETAILS

AE502

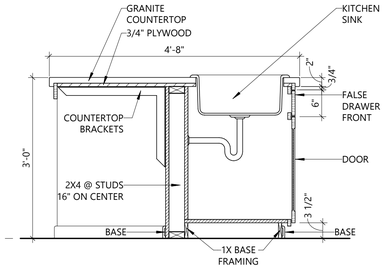
3/17/2025 5:38:27 PM



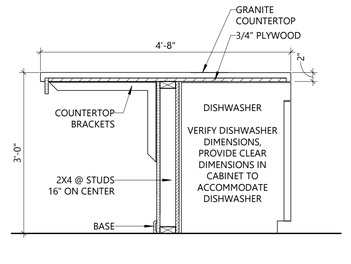
D2 ISLAND SECTION END
SCALE: 3/4" = 1'-0"



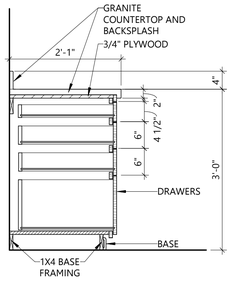
D3 KITCHEN ISLAND SECTION
SCALE: 3/4" = 1'-0"



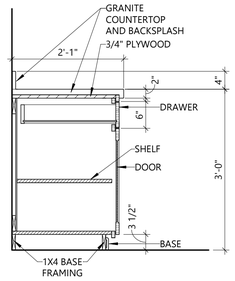
D4 KITCHEN ISLAND SECTION
SCALE: 3/4" = 1'-0"



D5 KITCHEN ISLAND SECTION
SCALE: 3/4" = 1'-0"



C2 KITCHEN BASE CABINET SECTION
SCALE: 3/4" = 1'-0"



C3 KITCHEN BASE CABINET SECTION
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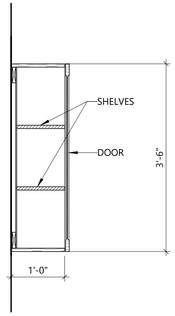
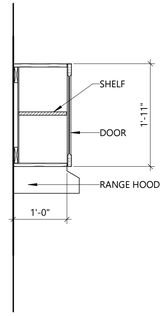
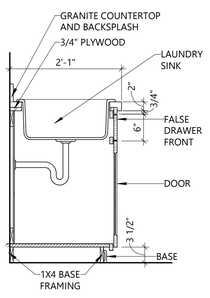


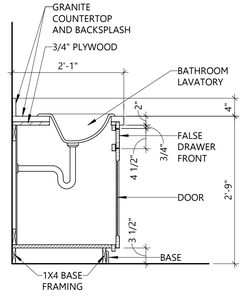
C4 KITCHEN UPPER CABINET
SCALE: 3/4" = 1'-0"



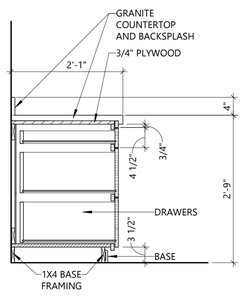
C5 KITCHEN UPPER CABINET
SCALE: 3/4" = 1'-0"



B2 LAUNDRY BASE CABINET SECTION
SCALE: 3/4" = 1'-0"



B3 BATHROOM BASE CABINET SECTION
SCALE: 3/4" = 1'-0"



B4 BATHROOM BASE CABINET SECTION
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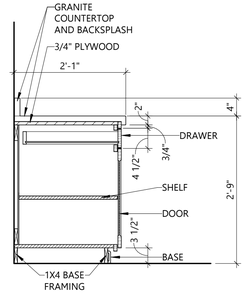

B5 BATHROOM BASE CABINET SECTION
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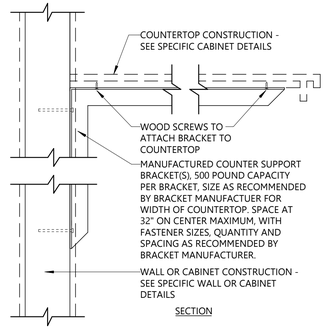

A4 COUNTERTOP BRACKET DETAIL
SCALE: 1 1/2" = 1'-0"

PLUMBING FIXTURES

KITCHEN SINK

AMERICAN STANDARD QUINCE 33 X 22 DOUBLE BOWL CAST IRON KITCHEN SINK, NO. 77DB33223.308 WITHAMERICAN STANDARD DELANCY SINGLE CONTROL KITCHEN FAUCET WITH PULL-DOWN SPRAY, NO. 4279300, WITH NO. 1660152 DECK PLATE

GARBAGE DISPOSAL: INSINKERATOR BADGER 5, 1/2 HORSEPOWER

BATHROOM LAVATORY

AMERICAN STANDARD AQUALYN COUNTERTOP SINK, VITREOUS CHINA, NO. 0476.028 WITH AMERICAN STANDARD CHATFIELD 2-HANDLE BATH FAUCET, LEVER HANDLES, NO. 7413201.002

BATHROOM WATER CLOSET

AMERICAN STANDARD CHAMPION PRO ELONGATED TOILET, VITREOUS CHINA, 1.6 GPF, NO. 211CA.004 (FLUSH HANDLE ON LEFT HAND SIDE) AND NO. 211CA.005 (FLUSH HANDLE ON RIGHT HAND SIDE)

BATHROOM BATHTUB/SHOWER

KOHLER STERLING PERFORMA 2, 60" X 29" BATH/SHOWER WITH AMERICAN STANDARD CHATFIELD 1 HANDLE TUB/SHOWER WITH 3-FUNCTION SHOWERHEAD, NO. 7413508.002 .

BATHROOM SHOWER

KOHLER STERLING 63-1/4" X 39-3/8" VIKRELL SHOWER OC S-63 WITH AMERICAN STANDARD SPECTRA FILTER SHOWER RAIL NO. 9238759

LAUNDRY ROOM SINK

AMERICAN STANDARD QUINCE
33 X 22 SINGLE BOWL CAST IRON
KITCHEN SINK, NO. 77SB33223.308
FAUCET: AMERICAN STANDARD DELANCY SINGLE CONTROL KITCHEN FAUCET WITH PULL-DOWN SPRAY, NO. 4279300, WITH NO. 1660152 DECK PLATE

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ARCHITECTS & ENGINEERS
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PROFESSIONAL STAMP

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THOMAS PETERSON
05/19/2025
DIVISION OF FACILITIES CONSTRUCTION AND MANAGEMENT

AGENCY APPROVAL

STATE OF UTAH
JUSTIN MICHAEL CAMPBELL
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DWR LOGAN FISH HATCHERY RESIDENCE

1465 WEST 200 NORTH
LOGAN, UT

CARTWRIGHT PROJECT #	124141
DATE:	2/13/2025
DRAWN BY:	RSB
CHECKED BY:	Checker
APPROVED BY:	Approver

REVISIONS
DATE DESCRIPTION

ARCHITECTURAL DETAILS

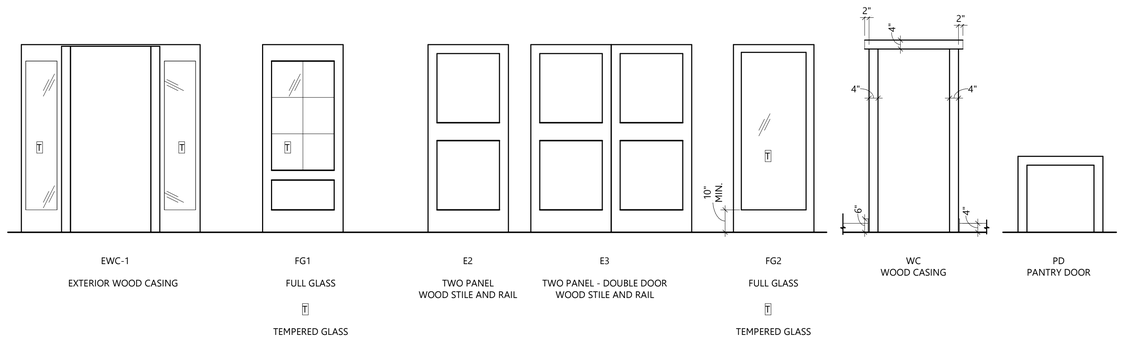
AE503

3/17/2025 5:38:28 PM

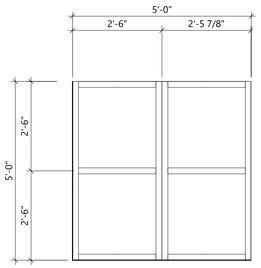
PRELIMINARY

DOOR SCHEDULE

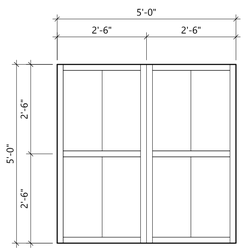
	DOOR							FRAME					
MARK	WIDTH	HEIGHT	THICKNESS	TYPE	MATERIAL	FINISH	GLAZING	TYPE	MATERIAL	FINISH	FIRE RATING	HARDWARE GROUP	NOTES
100A	3'-0"	7'-0"	1 3/4"	FG1	INSULATED METAL DOOR	PAINTED	TEMPERED	EWC-1	PREHUNG WOOD FRAME W/WOOD CASING	PAINTED	N/A	HW-01	
100B	3'-0"	6'-8"	1 3/4"	FG2	INSULATED METAL DOOR W/ GLASS	PAINTED	TEMPERED	WC	PREHUNG WOOD FRAME W/WOOD CASING	PAINTED	N/A	HW-01	
101	2'-6"	2'-6"	1 3/4"	PD	PREHUNG SOLID CORE DOOR W/CASING	PAINTED	N/A	WC	PREHUNG WOOD FRAME W/WOOD CASING	PAINTED	20 MIN	HW-07	
104	3'-0"	6'-8"	1 3/4"	E2	PREHUNG SOLID CORE DOOR W/CASING	PAINTED	N/A	WC	PREHUNG WOOD FRAME W/WOOD CASING	PAINTED	N/A	HW-02	
105	3'-0"	6'-8"	1 3/4"	E2	PREHUNG SOLID CORE DOOR W/CASING	PAINTED	N/A	WC	PREHUNG WOOD FRAME W/WOOD CASING	PAINTED	N/A	HW-03	
106A	3'-0"	6'-8"	1 3/4"	E2	PREHUNG SOLID CORE DOOR W/CASING	PAINTED	N/A	WC	PREHUNG WOOD FRAME W/WOOD CASING	PAINTED	N/A	HW-03	
106B	3'-0"	6'-8"	1 3/4"	E2	PREHUNG SOLID CORE DOOR W/CASING	PAINTED	N/A	WC	PREHUNG WOOD FRAME W/WOOD CASING	PAINTED	N/A	HW-03	
107	3'-0"	6'-8"	1 3/4"	E2	PREHUNG SOLID CORE DOOR W/CASING	PAINTED	N/A	WC	PREHUNG WOOD FRAME W/WOOD CASING	PAINTED	N/A	HW-03	
108	2'-8"	6'-8"	1 3/4"	E2	PREHUNG SOLID CORE DOOR W/CASING	PAINTED	N/A	WC	PREHUNG WOOD FRAME W/WOOD CASING	PAINTED	N/A	HW-04	
109	3'-0"	6'-8"	1 3/4"	E2	PREHUNG SOLID CORE DOOR W/CASING	PAINTED	N/A	WC	PREHUNG WOOD FRAME W/WOOD CASING	PAINTED	N/A	HW-03	
110A	10'-0"	8'-0"	N/A	N/A	BY MANUFACTURER	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
110B	9'-0"	8'-0"	N/A	N/A	BY MANUFACTURER	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
110C	3'-0"	6'-8"	1 3/4"	E2	PREHUNG SOLID CORE DOOR W/CASING	PAINTED	N/A	WC	PREHUNG WOOD FRAME W/WOOD CASING	PAINTED	20 MIN	HW-06	
110D	3'-0"	6'-8"	1 3/4"	E2	INSULATED METAL DOOR	PAINTED	N/A	WC	PREHUNG WOOD FRAME W/WOOD CASING	PAINTED	N/A	HW-01	
111A	3'-0"	6'-8"	1 3/4"	E2	PREHUNG SOLID CORE DOOR W/CASING	PAINTED	N/A	WC	PREHUNG WOOD FRAME W/WOOD CASING	PAINTED	N/A	HW-03	
111B	6'-0"	6'-8"	1 3/4"	E3	PREHUNG SOLID CORE DOOR W/CASING	PAINTED	N/A	WC	PREHUNG WOOD FRAME W/WOOD CASING	PAINTED	N/A	HW-05	
112	3'-0"	6'-8"	1 3/4"	E2	PREHUNG SOLID CORE DOOR W/CASING	PAINTED	N/A	WC	PREHUNG WOOD FRAME W/WOOD CASING	PAINTED	N/A	HW-03	
113	6'-0"	6'-8"	1 3/4"	E3	PREHUNG SOLID CORE DOOR W/CASING	PAINTED	N/A	WC	PREHUNG WOOD FRAME W/WOOD CASING	PAINTED	N/A	HW-05	
114A	3'-0"	6'-8"	1 3/4"	E2	PREHUNG SOLID CORE DOOR W/CASING	PAINTED	N/A	WC	PREHUNG WOOD FRAME W/WOOD CASING	PAINTED	N/A	HW-04	
114B	3'-0"	6'-8"	1 3/4"	E2	PREHUNG SOLID CORE DOOR W/CASING	PAINTED	N/A	WC	PREHUNG WOOD FRAME W/WOOD CASING	PAINTED	N/A	HW-03	
114C	2'-6"	6'-8"	1 3/4"	E2	PREHUNG SOLID CORE DOOR W/CASING	PAINTED	N/A	WC	PREHUNG WOOD FRAME W/WOOD CASING	PAINTED	N/A	HW-03	
115	3'-0"	6'-8"	1 3/4"	E2	PREHUNG SOLID CORE DOOR W/CASING	PAINTED	N/A	WC	PREHUNG WOOD FRAME W/WOOD CASING	PAINTED	N/A	HW-03	
116	6'-0"	6'-8"	1 3/4"	E3	PREHUNG SOLID CORE DOOR W/CASING	PAINTED	N/A	WC	PREHUNG WOOD FRAME W/WOOD CASING	PAINTED	N/A	HW-05	
117	3'-0"	6'-8"	1 3/4"	E2	PREHUNG SOLID CORE DOOR W/CASING	PAINTED	N/A	WC	PREHUNG WOOD FRAME W/WOOD CASING	PAINTED	N/A	HW-03	
200	3'-0"	6'-8"	1 3/4"	E2	PREHUNG SOLID CORE DOOR W/CASING	PAINTED	N/A	WC	PREHUNG WOOD FRAME W/WOOD CASING	PAINTED	N/A	HW-03	
201	3'-0"	6'-8"	1 3/4"	E2	PREHUNG SOLID CORE DOOR W/CASING	PAINTED	N/A	WC	PREHUNG WOOD FRAME W/WOOD CASING	PAINTED	N/A	HW-04	
202	3'-0"	6'-8"	1 3/4"	E2	PREHUNG SOLID CORE DOOR W/CASING	PAINTED	N/A	WC	PREHUNG WOOD FRAME W/WOOD CASING	PAINTED	N/A	HW-03	



DOOR AND FRAME TYPES



WINDOW A



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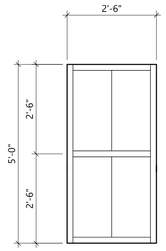

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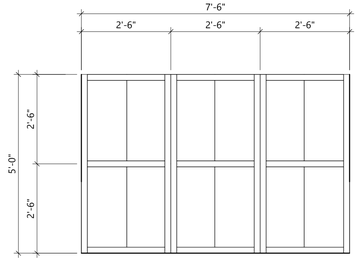
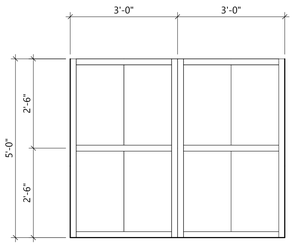
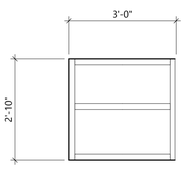


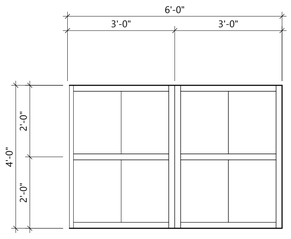
WINDOW D



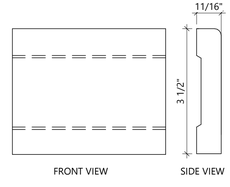
WINDOW E



WINDOW F

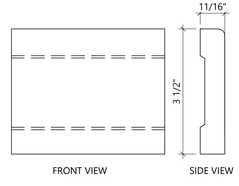


WINDOW G



WM 327

A4 DOOR AND WINDOW CASING
SCALE: 6" = 1'-0"



WM 623

A5 BASEBOARD
SCALE: 6" = 1'-0"

IRC 2021 ENERGY

PRESCRIPTIVE ENERGY COMPLIANCE

BUILDING TYPE: RESIDENTAL

CLIMATE ZONE: 5B (CACHE COUNTY, UTAH)

	REQUIRED	PROVIDE
BUILDING ENVELOPE		
ROOF		
ATTIC	R-49 MINIMUM	R-49 MINIMUM
WALLS ABOVE GRADE		
WOOD FRAMED	R-20+R5 MINIMUM	R-20+R5 MINIMUM
SLAB ON GRADE FLOORS		
UNHEATED SLABS	R-10 CI MINIMUM FOR 4'-0" BELOW SLAB	R-10 CI MINIMUM FOR 4'-0" BELOW SLAB
BUILDING ENVELOPE VERTICAL FENESTRATION (COMPLETE ASSEMBLY, INCLUDING FRAME AND GLAZING)		
MAXIMUM U-FACTOR		
FIXED FENESTRATION	U-0.30 MAXIMUM	U-0.30 MAXIMUM
ENTRANCE DOORS	U-0.40 MAXIMUM	U-0.40 MAXIMUM

SOLAR HEAT GAIN COEFFICIENT				
ORIENTATION	SEW	N	SEW	N
PF < 0.2	0.40 MAX.	0.53 MAX.	0.40 MAX.	0.53 MAX.

CEILING		
CEILNG	R-30 MAXIMUM	R-30 MAXIMUM

SHEET NOTE

ALL WINDOWS ARE DOUBLE HUNG VINYL WINDOWS

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05/19/2025
DIVISION OF FACILITIES CONSTRUCTION AND MANAGEMENT

STATE OF UTAH
JUSTIN MICHAEL CAMPBELL
2/13/2025
No.8539712-0301
LICENSED ARCHITECT

DWR LOGAN FISH HATCHERY RESIDENCE

1465 WEST 200 NORTH
LOGAN, UT

DFCM PROJECT #	24437520
CARTWRIGHT PROJECT #	124141
DATE:	2/13/2025
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REVISIONS

	DATE	DESCRIPTION

ARCHITECTURAL SCHEDULES

AE601

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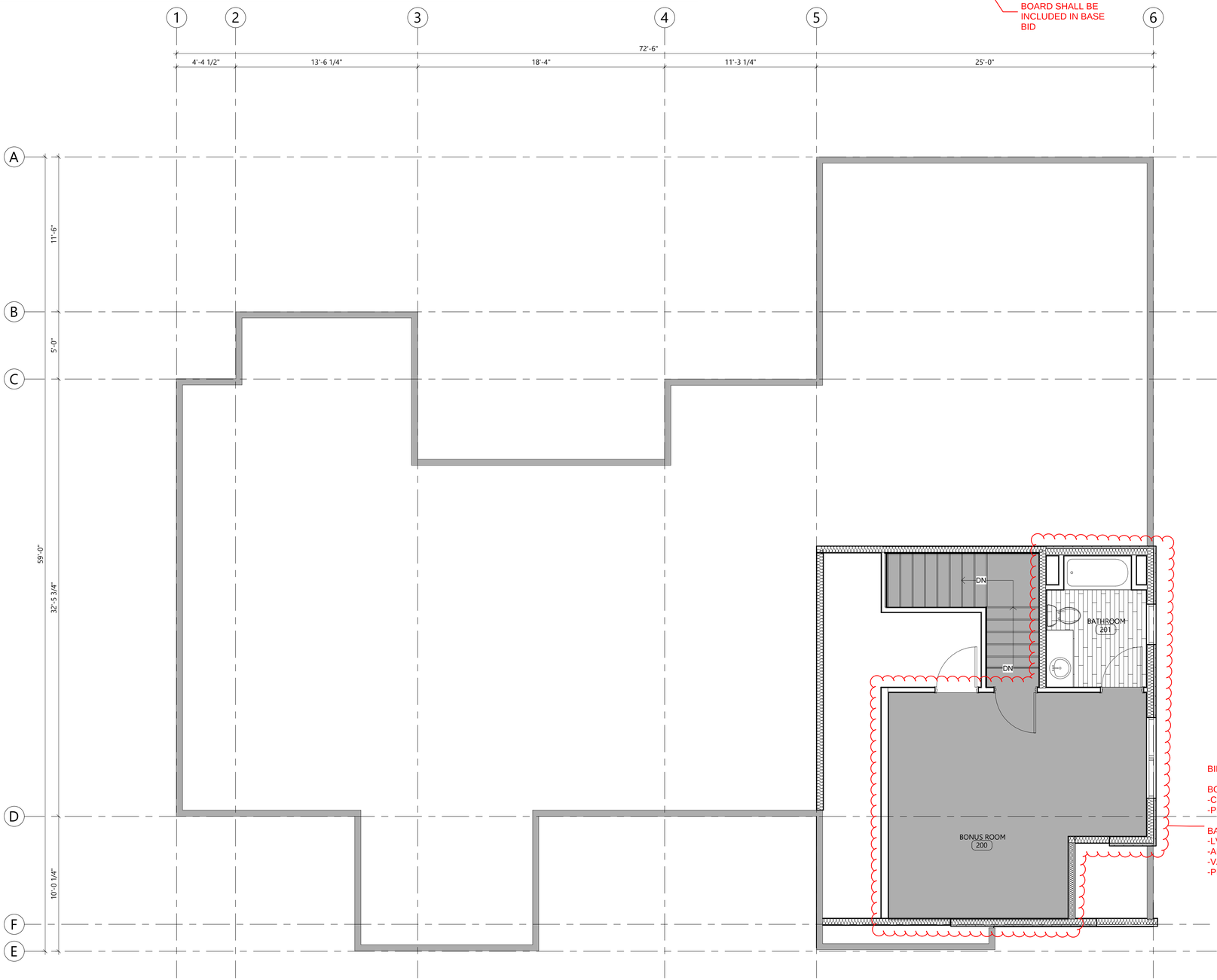
FINISH SCHEDULE

NUMBER	ROOM NAME	FLOOR FINISH	WALL FINISH	BASE	CEILING TYPE	NOTES
100	GREAT ROOOM	LVP	PAINTED GYP. BOARD	WOOD BASE AND TRIM	SEE CEILING PLAN	
101	PANTRY	LVP	PAINTED GYP. BOARD	WOOD BASE AND TRIM	SEE CEILING PLAN	
102	KITCHEN	LVP	PAINTED GYP. BOARD	WOOD BASE AND TRIM	SEE CEILING PLAN	
103	DINING ROOM	LVP	PAINTED GYP. BOARD	WOOD BASE AND TRIM	SEE CEILING PLAN	
104	MASTER BEDROOM	CARPET	PAINTED GYP. BOARD	WOOD BASE AND TRIM	SEE CEILING PLAN	
105	MASTER WIC	CARPET	PAINTED GYP. BOARD	WOOD BASE AND TRIM	SEE CEILING PLAN	
106	MASTER BATH	LVP	PAINTED GYP. BOARD	WOOD BASE AND TRIM	SEE CEILING PLAN	
107	STORAGE	LVP	PAINTED GYP. BOARD	WOOD BASE AND TRIM	SEE CEILING PLAN	
108	HALF BATH	LVP	PAINTED GYP. BOARD W/	WOOD BASE AND TRIM	SEE CEILING PLAN	
109	LAUNDRY	LVP	PAINTED GYP. BOARD	WOOD BASE AND TRIM	SEE CEILING PLAN	
110	GARAGE	SEALED CONCRETE	PAINTED GYP. BOARD	WOOD BASE AND TRIM	SEE CEILING PLAN	
111	BEDROOM 2	CARPET	PAINTED GYP. BOARD	WOOD BASE AND TRIM	SEE CEILING PLAN	

FINISH SCHEDULE

NUMBER	ROOM NAME	FLOOR FINISH	WALL FINISH	BASE	CEILING TYPE	NOTES
112	BEDROOM 3	CARPET	PAINTED GYP. BOARD	WOOD BASE AND TRIM	SEE CEILING PLAN	
113	WIC	CARPET	PAINTED GYP. BOARD	WOOD BASE AND TRIM	SEE CEILING PLAN	
114	BATH 2	LVP	PAINTED GYP. BOARD	WOOD BASE AND TRIM	SEE CEILING PLAN	
115	BEDROOM 4	CARPET	PAINTED GYP. BOARD	WOOD BASE AND TRIM	SEE CEILING PLAN	
116	WIC	CARPET	PAINTED GYP. BOARD	WOOD BASE AND TRIM	SEE CEILING PLAN	
117	HALL 1	LVP	PAINTED GYP. BOARD	WOOD BASE AND TRIM	SEE CEILING PLAN	
118	HALL 2	LVP	PAINTED GYP. BOARD	WOOD BASE AND TRIM	SEE CEILING PLAN	
200	BONUS ROOM	B.A. CARPET	GYPSUM BOARD, B.A. PRIME AND PAINT	B.A. WOOD BASE AND TRIM	SEE CEILING PLAN	BID ALTERNATE
201	BATHROOM	B.A. LVP	GYPSUM BOARD, B.A. PRIME AND PAINT	B.A. WOOD BASE AND TRIM	SEE CEILING PLAN	BID ALTERNATE
202	MECHANICAL	PLYWOOD	GYPSUM BOARD, B.A. PRIME AND PAINT	B.A. WOOD BASE AND TRIM	SEE CEILING PLAN	BID ALTERNATE

NOTE: GYPSUM BOARD SHALL BE INCLUDED IN BASE BID



A3 BONUS ROOM FINISH FLOOR PLAN
SCALE: 1/4" = 1'-0"

FINISH FLOOR LEGEND

- LVP - LAMINET VINYL PLANKS
- CARPET
- PLYWOOD SHEATHING

BID ALTERNATE SCOPE OF WORK

BONUS ROOM
-CARPET
-PRIME AND PAINT THE WALLS

BATH
-LVP FLOORING
-ALL PLUMBING FIXTURES
-VANITY AND MIRROR
-PRIME AND PAINT WALLS

IRC 2021 ENERGY

PRESCRIPTIVE ENERGY COMPLIANCE		
BUILDING TYPE: RESIDENTAL		
CLIMATE ZONE: 5B (CACHE COUNTY, UTAH)		
	REQUIRED	PROVIDE
BUILDING ENVELOPE		
ROOF		
ATTIC	R-49 MINIMUM	R-49 MINIMUM
WALLS ABOVE GRADE		
WOOD FRAMED	R-20+R5 MINIMUM	R-20+R5 MINIMUM
SLAB ON GRADE FLOORS		
UNHEATED SLABS	R-10 CI MINIMUM FOR 4'-0" BELOW SLAB	R-10 CI MINIMUM FOR 4'-0" BELOW SLAB
BUILDING ENVELOPE VERTICAL FENESTRATION (COMPLETE ASSEMBLY, INCLUDING FRAME AND GLAZING)		
MAXIMUM U-FACTOR		
FIXED FENESTRATION	U-0.30 MAXIMUM	U-0.30 MAXIMUM
ENTRANCE DOORS	U-0.40 MAXIMUM	U-0.40 MAXIMUM
SOLAR HEAT GAIN COEFFICIENT		
ORIENTATION	SEW	N
PF < 0.2	0.40 MAX.	0.53 MAX.
CEILING		
CEILNG	R-30 MAXIMUM	R-30 MAXIMUM

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BID ALTERNATE FINISH FLOOR PLAN

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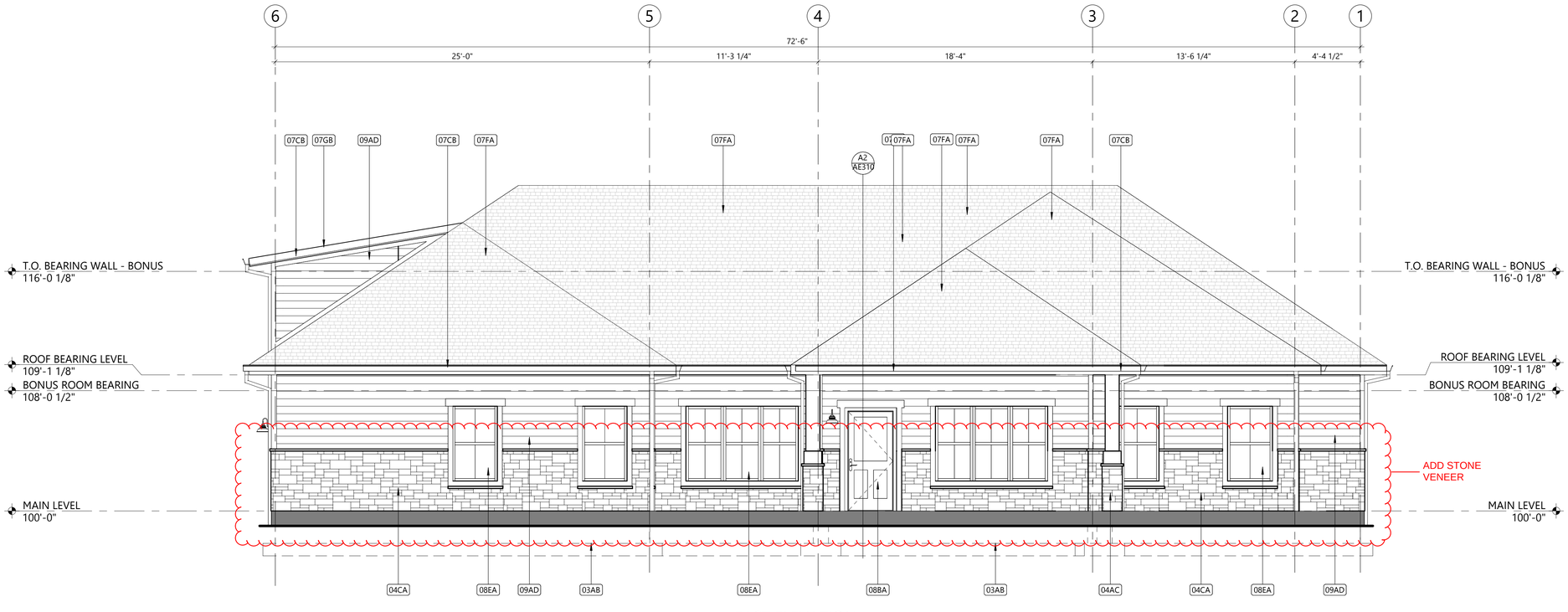
C2 WEST ELEVATION
SCALE: 1/4" = 1'-0"



A3 EAST ELEVATION
SCALE: 1/4" = 1'-0"

KEYNOTES

#	DESCRIPTION
03AB	LINE OF CONCRETE FOUNDATION WALL
04AC	WRAP COLUMNS WITH STONE
04CA	CAST STONE VENEER
07CB	WRAP WOOD FASCIA BOARD WITH PREFINISHED BREAK METAL, COLOR TO MATCH RAIN GUTTER
07FA	ASPHALT SHINGLE ROOF SYSTEM:PRIMARY UNDERLAYMENT FULL DRY IN WITH SELF-ADHERING, POLYMER-MODIFIED BITUMEN SHEET (ICE AND WATER SHIELD) AND ORGANIC FELT SLIP SHEET BETWEEN PRIMARY UNDERLAYMENT AND ASPHALT SHINGLES
07GB	STANDING SEAM METAL ROOF SYSTEM: PRIMARY UNDERLAYMENT FULL DRY IN WITH SELF-ADHERING, HIGH-TEMPERATURE UNDERLAYMENT AND SLIP SHEET BETWEEN PRIMARY UNDERLAYMENT AND METAL ROOF
08BA	DOOR - FOR SIZES AND TYPES SEE DOOR SCHEDULE
08BB	GARAGE DOOR - FOR DOOR SIZES AND TYPES SEE DOOR SCHEDULE
08EA	WINDOW - FOR SIZES & TYPES SEE WINDOW SCHEDULE
09AC	FIBER CEMENT BOARD PANEL SIDING WITH BATTENS
09AD	FIBER CEMENT BOARD LAP SIDING
10GA	DOORBELL

IRC 2021 ENERGY

PRESCRIPTIVE ENERGY COMPLIANCE

BUILDING TYPE: RESIDENTAL

CLIMATE ZONE: 5B (CACHE COUNTY, UTAH)

	REQUIRED	PROVIDE
BUILDING ENVELOPE		
ROOF		
ATTIC	R-49 MINIMUM	R-49 MINIMUM
WALLS ABOVE GRADE		
WOOD FRAMED	R-20+R5 MINIMUM	R-20+R5 MINIMUM
SLAB ON GRADE FLOORS		
UNHEATED SLABS	R-10 CI MINIMUM FOR 4'-0" BELOW SLAB	R-10 CI MINIMUM FOR 4'-0" BELOW SLAB
BUILDING ENVELOPE VERTICAL FENESTRATION (COMPLETE ASSEMBLY, INCLUDING FRAME AND GLAZING)		
MAXIMUM U-FACTOR		
FIXED FENESTRATION	U-0.30 MAXIMUM	U-0.30 MAXIMUM
ENTRANCE DOORS	U-0.40 MAXIMUM	U-0.40 MAXIMUM

SOLAR HEAT GAIN COEFFICIENT				
ORIENTATION	SEW	N	SEW	N
PF < 0.2	0.40 MAX.	0.53 MAX.	0.40 MAX.	0.53 MAX.
CEILING				
CEILNG	R-30 MAXIMUM		R-30 MAXIMUM	

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1465 WEST 200 NORTH
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BID ALTERNATE
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ELEVATIONS

BA201

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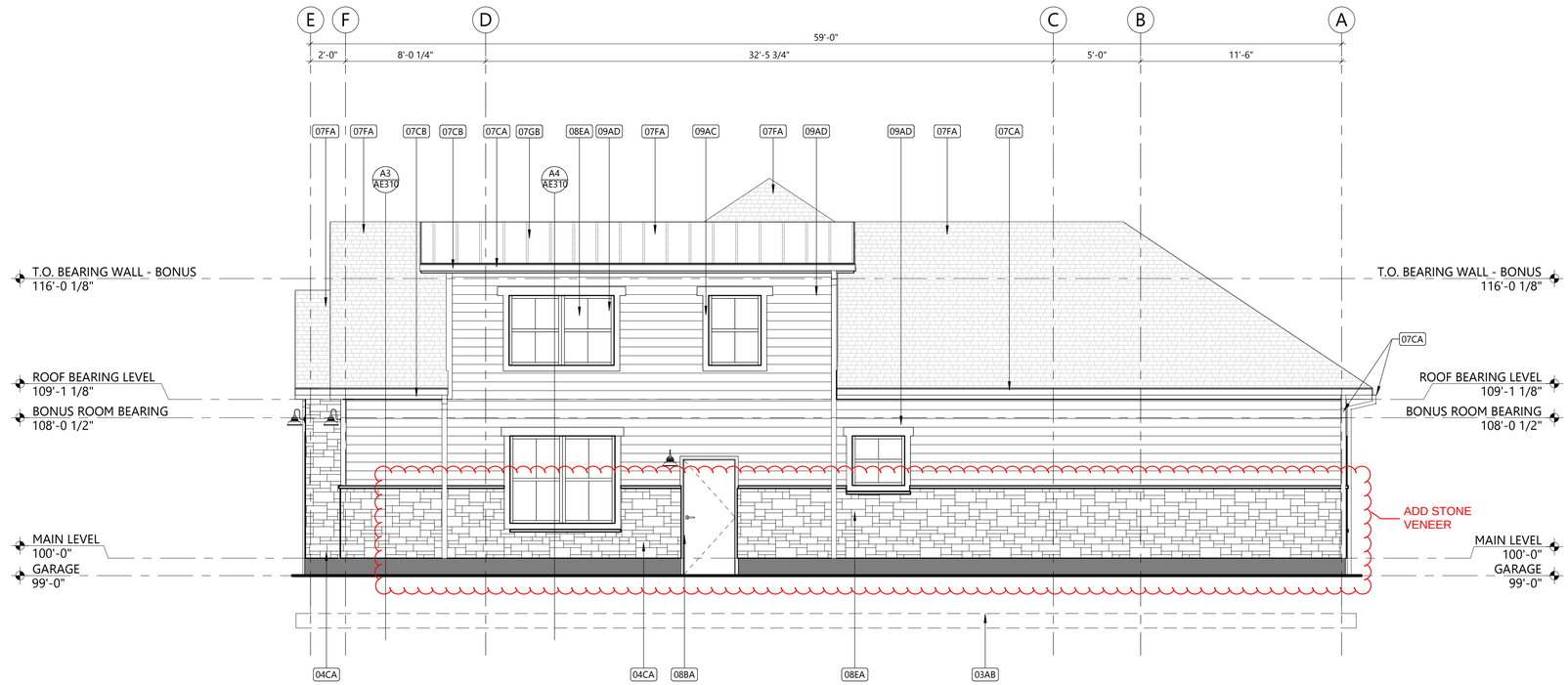
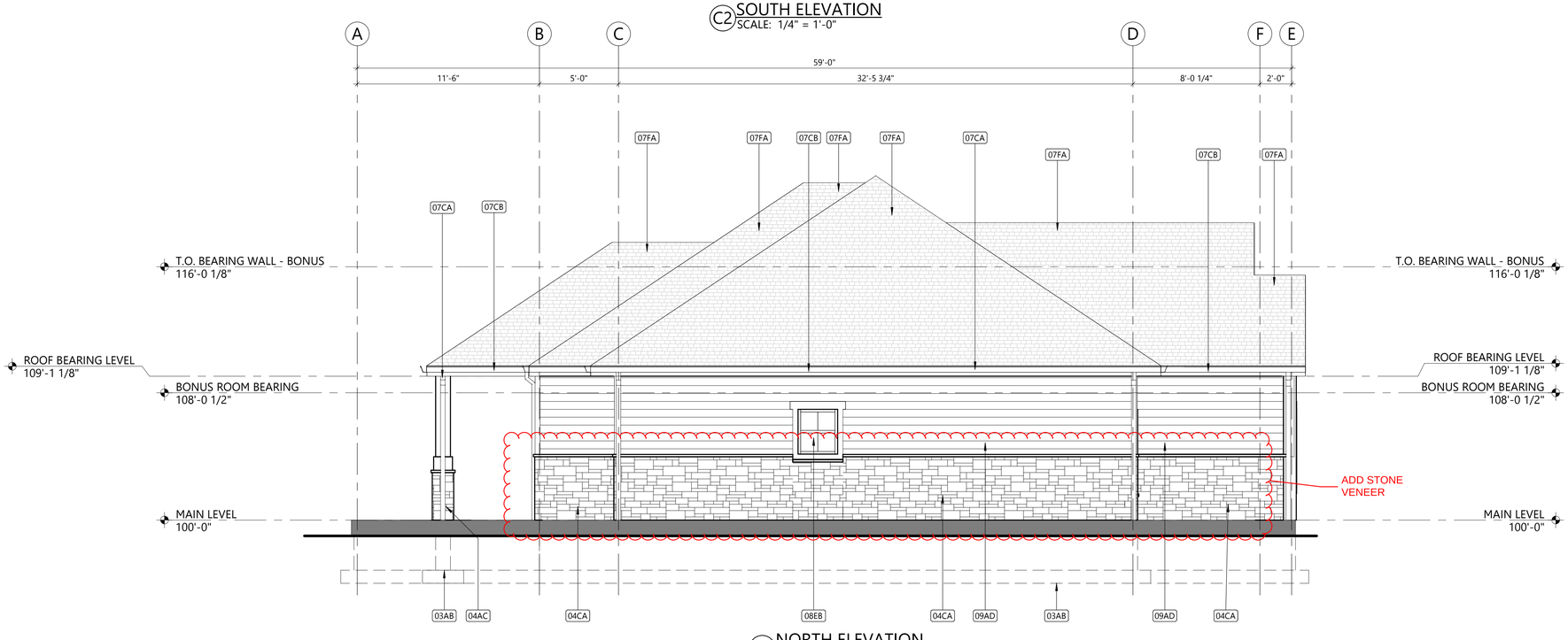


C2 SOUTH ELEVATION
SCALE: 1/4" = 1'-0"



A3 NORTH ELEVATION
SCALE: 1/4" = 1'-0"

KEYNOTES

#	DESCRIPTION
03AB	LINE OF CONCRETE FOUNDATION WALL
04AC	WRAP COLUMNS WITH STONE
04CA	CAST STONE VENEER
07CA	RAIN GUTTER AND DOWNSPOUTS
07CB	WRAP WOOD FASCIA BOARD WITH PREFINISHED BREAK METAL, COLOR TO MATCH RAIN GUTTER
07FA	ASPHALT SHINGLE ROOF SYSTEM:PRIMARY UNDERLAYMENT FULL DRY IN WITH SELF-ADHERING, POLYMER-MODIFIED BITUMEN SHEET (ICE AND WATER SHIELD) AND ORGANIC FELT SLIP SHEET BETWEEN PRIMARY UNDERLAYMENT AND ASPHALT SHINGLES
07GB	STANDING SEAM METAL ROOF SYSTEM: PRIMARY UNDERLAYMENT FULL DRY IN WITH SELF-ADHERING, HIGH-TEMPERATURE UNDERLAYMENT AND SLIP SHEET BETWEEN PRIMARY UNDERLAYMENT AND METAL ROOF
08BA	DOOR - FOR SIZES AND TYPES SEE DOOR SCHEDULE
08EA	WINDOW - FOR SIZES & TYPES SEE WINDOW SCHEDULE
08EB	OPAQUE WINDOW - FOR SIZES & TYPES SEE WINDOW SCHEDULE
09AC	FIBER CEMENT BOARD PANEL SIDING WITH BATTENS
09AD	FIBER CEMENT BOARD LAP SIDING

IRC 2021 ENERGY

PRESCRIPTIVE ENERGY COMPLIANCE

BUILDING TYPE: RESIDENTAL

CLIMATE ZONE: 5B (CACHE COUNTY, UTAH)

	REQUIRED	PROVIDE
BUILDING ENVELOPE		
ROOF		
ATTIC	R-49 MINIMUM	R-49 MINIMUM
WALLS ABOVE GRADE		
WOOD FRAMED	R-20+R5 MINIMUM	R-20+R5 MINIMUM
SLAB ON GRADE FLOORS		
UNHEATED SLABS	R-10 CI MINIMUM FOR 4'-0" BELOW SLAB	R-10 CI MINIMUM FOR 4'-0" BELOW SLAB
BUILDING ENVELOPE VERTICAL FENESTRATION (COMPLETE ASSEMBLY, INCLUDING FRAME AND GLAZING)		
MAXIMUM U-FACTOR		
FIXED FENESTRATION	U-0.30 MAXIMUM	U-0.30 MAXIMUM
ENTRANCE DOORS	U-0.40 MAXIMUM	U-0.40 MAXIMUM

SOLAR HEAT GAIN COEFFICIENT				
ORIENTATION	SEW	N	SEW	N
PF < 0.2	0.40 MAX.	0.53 MAX.	0.40 MAX.	0.53 MAX.
CEILING				
CEILNG	R-30 MAXIMUM		R-30 MAXIMUM	

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BID ALTERNATE
ARCHITECTURAL
ELEVATIONS

BA202

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DESIGN CRITERIA

GOVERNING CODE: 2021 INTERNATIONAL BUILDING CODE

DEAD LOADS
- ROOF – 18 PSF
- FLOOR - 16 PSF

LIVE LOADS
- ROOF – 20 PSF
- GROUND SNOW LOAD - 41 PSF
- ADJUSTMENT FACTORS - Ce=Ct=Is=1.0, Cs=0.91
- FLAT ROOF SNOW LOAD - 26 PSF
- FLOOR - 40 PSF

WIND DESIGN DATA
- DESIGN WIND SPEED, V (3-SEC. GUST) – 103 MPH
- RISK CATEGORY - II
- EXPOSURE – C
- INTERNAL PRESSURE COEFFICIENT – 0.18 (+/-)
- COMPONENTS AND CLADDING –SEE ASCE 7-16

EARTHQUAKE DESIGN DATA
- RISK CATEGORY - II
- IMPORTANCE FACTOR, IE – 1.0
- SHORT PERIOD SPECTRAL ACCELERATION, SS – 1.113 g
- 1 SEC. PERIOD SPECTRAL ACCELERATION, S1 – 0.370 g
- SITE CLASS - E
- SHORT PERIOD DESIGN SPECTRAL ACCELERATION, SDS – 0.890 g
- 1 SEC. PERIOD DESIGN SPECTRAL ACCELERATION, SD1 – 0.370 g
- SEISMIC DESIGN CATEGORY - D
- BASIC SEISMIC FORCE–RESISTING SYSTEM – WOOD SHEAR WALLS
- SEISMIC RESPONSE COEFFICIENT, CS – 0.137
- RESPONSE MODIFICATION COEFFICIENT, R – 6.5
- ANALYSIS PROCEDURE – EQUIVALENT LATERAL FORCE

GEOTECHNICAL INFORMATION

GEOTECHNICAL INVESTIGATION REPORT:
- CIVIL SOLUTIONS GROUP, INC.
- PROJECT NO.: 24-126
- DATE: MAY 15, 2024
- ALLOWABLE SOIL BEARING PRESSURE - 1,500 PSF
- FROST PROTECTION DEPTH - 30 IN

ABBREVIATIONS

@	AT	IN.	INCH
A.B.	ANCHOR BOLT		
ABC	AGGREGATE BASE COURSE	JT.	JOINT
ABV.	ABOVE		
ALT.	ALTERNATE	K/KIP	1,000 POUNDS
APPROX.	APPROXIMATE	KLF	KIPS PER LINEAL FOOT
ARCH.	ARCHITECT	L	ANGLE
		LBS	POUNDS
BLDG.	BUILDING	L.F.	LINEAL FOOT
B.N.	BOUNDARY NAILING	LLV	LONG LEG VERTICAL
BTM.	BOTTOM	LVL	LAMINATED VENEER LUMBER
BRG.	BEARING		
BTWN.	BETWEEN	MAX.	MAXIMUM
		MECH.	MECHANICAL
C.J.	CONTROL/CONSTRUCTION JOINT	MIN.	MINIMUN
		MISC.	MISCELLANEOUS
C.L.	CENTER LINE	MTL.	METAL
CLR.	CLEAR		
CMU	CONCRETE MASONRY UNIT	N.I.C.	NOT IN CONTRACT
COL.	COLUMN	N.S.	NEAR SIDE
CONC.	CONCRETE	N.T.S.	NOT TO SCALE
CONST.	CONSTRUCTION		
CONT.	CONTINUOUS	O.A.E.	OR APPROVED EQUAL
		O.C.	ON CENTER
DBA	DEFORMED BAR ANCHOR	O.F.	OUTSIDE FACE
DBL.	DOUBLE	OPP.	OPPOSITE HAND
DTL	DETAIL		
DIA.	DIAMETER	PL.	PLATE
DIM.	DIMENSION	PSF	POUNDS PER SQUARE FOOT
DWGS.	DRAWINGS	PSI	POUNDS PER SQUARE INCH
EA.	EACH		
E.F.	EACH FACE	R.D.	ROOF DRAIN
E.J.	EXPANSION JOINT	REINF.	REINFORCING
ELEV.	ELEVATION	REQ'D	REQUIRED
E.N.	EDGE NAILING		
EOR	ENGINEER OF RECORD	S.A.D.	SEE ARCHITECTURAL DRAWINGS
EQ.	EQUAL	SDS	SELF DRILLING SCREWS
EXIST.	EXISTING	SIM.	SIMILAR
		SLV	SHORT LEG VERTICAL
F.D.	FLOOR DRAIN	SQ.	SQUARE
F.F.E.	FINISHED FLOOR ELEVATION	STD.	STANDARD
		STL.	STEEL
F.G.	FINISHED GRADE	STRUCT.	STRUCTURAL
FND.	FOUNDATION		
F.N.	FIELD NAILING	T&B	TOP AND BOTTOM
F.P.	FULL PENETRATION	T.O.	TOP OF (ELEVATION)
FRP	FIBER REINFORCED POLYMER	T.O.C.	TOP OF CONCRETE
		T.O.D.	TOP OF DECK
F.S.	FAR SIDE	T.O.F.	TOP OF FOOTING
FTG.	FOOTING	T.O.S.	TOP OF STEEL
		T.O.P.	TOP OF PARAPET
GA.	GAUGE	T.O.W.	TOP OF WALL
GALV.	GALVANIZED	TYP.	TYPICAL
GSN	GENERAL STRUCTURAL NOTES	U.N.O.	UNLESS NOTED OTHERWISE
H.B.	HORIZONTAL BRIDGING	VERT.	VERTICAL
HORIZ.	HORIZONTAL		
HAS	HEADED STUD ANCHOR	W/	WITH
HT.	HEIGHT	W.W.F.	WELDED WIRE FABRIC
I.F.	INSIDE FACE	X.B.	CROSS BRACING

[L] LATERAL ELEMENT SEE SPECIAL INSPECTION

GENERAL

DRAWINGS:
1. THE STRUCTURAL NOTES AND DRAWINGS ARE INTENDED TO COMPLEMENT THE PROJECT SPECIFICATIONS (IF APPLICABLE) WHICH ARE PART OF THE CONSTRUCTION DOCUMENTS.
2. THE ARCHITECTURAL DOCUMENTS (IF APPLICABLE) ARE THE PRIME CONSTRUCTION DOCUMENTS. THE STRUCTURAL DOCUMENTS ARE SUPPLEMENTARY TO, AND USED IN CONJUNCTION WITH, THE ARCHITECTURAL DOCUMENTS AND OTHER CONSULTANTS DOCUMENTS.
3. THESE CONSTRUCTION DOCUMENTS HAVE BEEN PREPARED UNDER THE SUPERVISION OF A LICENSED ENGINEER TO MEET OR EXCEED INDUSTRY STANDARDS; HOWEVER, THESE CONSTRUCTION DOCUMENTS ARE BASED ON LIMITED INFORMATION, VARIABLE SITE CONDITIONS, ETC. ALL SITUATIONS, ELEMENTS AND CONDITIONS MAY NOT BE EXPLICITLY DEPICTED IN THESE DRAWINGS.
4. GIVEN THE LIMITED INFORMATION PROVIDED, VARIED CIRCUMSTANCES AND SITE CONDITIONS, IT IS NECESSARY THAT THE WORK DEPICTED BE PERFORMED BY A QUALIFIED AND EXPERIENCED CONTRACTOR, INCLUDING CONTRACTOR'S EMPLOYEES OR SUB-CONTRACTORS, WHO HAVE A WORKING KNOWLEDGE OF THE APPLICABLE BUILDING CODE REQUIREMENTS, INDUSTRY-STANDARD PRACTICES, AND HIGH QUALITY OF WORKMANSHIP.
5. ALL OMISSIONS OR CONFLICTS BETWEEN THE CONTRACT DOCUMENTS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER PRIOR TO PROCEEDING WITH ANY WORK INVOLVED. IN CASE OF CONFLICT, THE MOST STRINGENT REQUIREMENT SHOULD BE FOLLOWED AS SPECIFICALLY DIRECTED BY THE ARCHITECT/ENGINEER AT NO ADDITIONAL COST TO THE OWNER.
6. SPECIFIC NOTES AND DETAILS ON THE CONSTRUCTION DOCUMENTS SHALL GOVERN OVER THE STRUCTURAL NOTES AND TYPICAL DETAILS. TYPICAL DETAILS AND SECTIONS SHALL APPLY WHERE SPECIFIC DETAILS ARE NOT SHOWN. TYPICAL OR SIMILAR DETAILS REFER TO GENERAL CONDITIONS BEING ADDRESSED AND ARE NOT NECESSARILY DETAILS LABELED "TYPICAL" OR "SIMILAR" IN THE PLANS AND DOCUMENTS.
7. DRAWINGS AND DETAILS HAVE BEEN PREPARED WITH THE INTENT TO VISUALLY REPRESENT INFORMATION PROVIDED IN SCALED FORM; HOWEVER CONTRACTOR/SUPPLIERS SHOULD NOT SCALE PLANS OR DETAILS FOR DIMENSIONAL INFORMATION.
8. DETAILS MAY SHOW ONLY ONE VIEW OF AN ELEMENT(S) AND/OR MAY OMIT INFORMATION/ITEMS FOR CLARITY.
9. WHERE REFERENCE IS MADE TO VARIOUS MATERIAL STANDARDS, SUCH STANDARDS SHALL BE THE EDITION REFERENCED IN THE GOVERNING BUILDING CODE.
10. NOTICE OF COPYRIGHT: THESE STRUCTURAL DOCUMENTS, INCLUDING ANY DRAWING OR DETAIL, ARE HEREBY COPYRIGHTED BY CARTWRIGHT ENGINEERS, ALL RIGHTS RESERVED. THESE DOCUMENTS ARE INSTRUMENTS OF SERVICE FOR ONE USE ONLY. REPRODUCTION AND DISTRIBUTION OF THESE DRAWINGS IS ONLY ALLOWED AS REQUIRED FOR REGULATORY AGENCIES AND FOR CONVEYANCE OF INFORMATION TO CONTRACTED PARTIES IN THE CONSTRUCTION OF THIS PROJECT. THESE DOCUMENTS SHALL NOT BE REPRODUCED OR COPIED, IN PART OR WHOLE BY ANY PARTY FOR USE IN PREPARATION OF SHOP DRAWINGS OR OTHER SUBMITTALS.

CONTRACTOR RESPONSIBILITIES:
1. THE CONTRACTOR SHALL VERIFY ALL SITE CONDITIONS AND DIMENSIONS. IF ACTUAL CONDITIONS DIFFER FROM THOSE SHOWN IN THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER / ARCHITECT PRIOR TO PROCEEDING WITH THE FABRICATION OR CONSTRUCTION OF ANY AFFECTED ELEMENTS.
2. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL COORDINATE WITH ALL TRADES TO ESTABLISH AND VERIFY ANY ITEMS THAT ARE TO BE INTEGRATED INTO THE STRUCTURAL SYSTEM SUCH AS OPENINGS, PENETRATIONS, INSERTS, MECHANICAL AND ELECTRICAL EQUIPMENT, ETC. SIZES AND LOCATIONS OF MECHANICAL AND OTHER EQUIPMENT OR ANY OF THE ITEMS PREVIOUSLY LISTED, THAT DIFFER FROM THOSE SHOWN ON THE CONTRACT DOCUMENTS SHALL BE IMMEDIATELY REPORTED TO THE ARCHITECT/ENGINEER. ANY INTERFERENCES OR CONFLICTS OF ANY ITEM WITH A STRUCTURAL ELEMENT SHALL ALSO BE REPORTED IMMEDIATELY TO THE ENGINEER / ARCHITECT.
3. THE CONTRACTOR SHALL SUBMIT A WRITTEN REQUEST TO MODIFY THE CONTRACT DOCUMENTS. CHANGES, MODIFICATIONS OR SUBSTITUTIONS MAY BE MADE ONLY BY AN AUTHORIZED REPRESENTATIVE OF CARTWRIGHT ENGINEERS. CARTWRIGHT ENGINEERS SHALL NOT BE LIABLE FOR ANY CLAIMS ARISING DIRECTLY OR INDIRECTLY FROM CHANGES MADE WITHOUT WRITTEN AUTHORIZATION BY AN AUTHORIZED REPRESENTATIVE OF CARTWRIGHT ENGINEERS. ANY SUCH WORK DONE BY THE CONTRACTOR BEFORE RECEIVING WRITTEN APPROVAL WILL BE AT THE CONTRACTOR'S RISK.
4. THE ENGINEER SHALL NOT BE RESPONSIBLE FOR ACTIVITIES UNDER CONTROL OF THE CONTRACTOR. THE ENGINEER SHALL NOT BE RESPONSIBLE FOR FABRICATION, ERECTION AND CONSTRUCTION REQUIREMENTS AS PRESCRIBED BY OSHA OR OTHER REGULATORY AGENCIES REGARDLESS OF INDICATIONS IN THESE DOCUMENTS.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, AND CONSTRUCTION SITE SAFETY IN ORDER TO COMPLY WITH THE CONTRACT DOCUMENTS AND SPECIFICATIONS. THE CONTRACTOR SHALL PROVIDE ADEQUATE SHORING AND BRACING AS REQUIRED FOR THE CHOSEN METHOD OF ERECTION AND FOR THE SAFETY OF LIFE AND PROPERTY. SHORING AND BRACING SHALL REMAIN IN PLACE UNTIL THE ENTIRE STRUCTURAL SYSTEM HAS BEEN COMPLETED. DESIGN OF ALL SHORING AND BRACING IS BY OTHERS AT NO ADDITIONAL COST TO THE OWNER.
6. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING APPROPRIATE PROTECTION FOR ALL STRUCTURAL ITEMS FROM CORROSION DUE TO MOLD, CONDENSATION, RUST, CHEMICAL REACTIONS, ETC. THE CONTRACTOR SHALL ENSURE THAT CONSTRUCTION MATERIALS OR EQUIPMENT PLACED ON THE STRUCTURE IN QUANTITIES OR MASSES DO NOT EXCEED THE DESIGN LOADS STATED HEREIN OR THE DESIGN LOAD BEARING CAPACITY OF SHORING PROVIDED BY THE CONTRACT.

FOUNDATION

1. GEOTECHNICAL INFORMATION: SEE DESIGN CRITERIA NOTES.
2. CLEAR EXCAVATIONS OF DEBRIS AND LOOSE SOILS PRIOR TO PLACING FOOTINGS. ALL FOOTINGS SHALL BEAR ON ENGINEERED COMPACTED FILL AS DIRECTED BY A QUALIFIED GEOTECHNICAL ENGINEER.
3. TOP OF FOOTING ELEVATIONS ARE BASED ON PRELIMINARY GRADING INFORMATION. VERIFY PRIOR TO CONSTRUCTION. FOOTING STEPS SHOWN ON PLAN ARE APPROXIMATE LOCATIONS.
4. UNLESS NOTED OTHERWISE, ALL FOOTINGS ARE CENTERED UNDER WALLS AND COLUMNS.
5. VERTICAL FOUNDATION REINFORCEMENT TO BE CENTERED IN FOUNDATION WALL U.N.O.
6. PLACE ALL FOOTING REINFORCING IN BOTTOM OF FOOTING WITH 3" CLEAR CONCRETE COVER, UNLESS NOTED OTHERWISE.

CONCRETE

1. MATERIALS, UNLESS NOTED OTHERWISE:
   - A. NORMAL WEIGHT AGGREGATES ASTM C 33
   - B. LIGHT WEIGHT AGGREGATES ASTM C 330
   - C. LIGHT WEIGHT CONCRETE SHALL NOT EXCEED 100 (± 3) POUNDS PER CUBIC FOOT.
   - D. FLY ASH, CLASS F POZZOLAN ASTM C618
   - E. REINFORCING STEEL ASTM 615
   - F. GRADE 60 (FY = 60 KSI)
   - G. DEFORMED BAR ANCHORS (DBA) ASTM A496
   - H. HEADED STUD ANCHORS (HSA) ASTM A108
   - I. ANCHOR BOLTS ASTM F1554 GR. 36
   - J. ADMIXTURES: AIR-ENTRAINING ADMIXTURES SHALL COMPLY WITH ASTM C 260 (WHEN USED). CALCIUM CHLORIDE SHALL NOT BE ADDED TO THE CONCRETE MIX. UNREINFORCED CONCRETE SLABS ON GRADE MAY HAVE CALCIUM CHLORIDE NOT EXCEEDING ONE PERCENT.
   - K. TYPE I/II CEMENT COMPLYING WITH ASTM C-150 SHALL BE USED FOR ALL CONCRETE.
   - L. THE WATER/CEMENT RATIO FOR CONCRETE 4000 PSI AND GREATER SHALL NOT EXCEED 0.45 (GROUT MIXES ARE EXCLUDED).
   - M. THE SLUMP OF ALL CONCRETE SHALL BE LIMITED TO 4" UNLESS PLASTICIZERS ARE USED.
   - N. PROVIDE AIR ENTRAINING AS PROVIDED IN THE SPECIFICATIONS.
   - O. AIR ENTRAINMENT SHALL BE ADJUSTED FOR THE USE OF ADMIXTURES AND FLY ASH.
   - P. FLY ASH SHALL BE A MAXIMUM OF 20% OF THE CEMENTITIOUS MATERIAL.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN, DETAILING, CARE, PLACEMENT AND REMOVAL OF ALL FORM WORK AND SHORES.
3. REINFORCEMENT SHALL HAVE THE FOLLOWING CONCRETE COVER.
   - A. CAST-IN-PLACE CONCRETE: CLEAR COVER
     - a. CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH.....3"
   - B. FORMED CONCRETE EXPOSED TO EARTH OR WEATHER:
     - a. #6 THRU #18 BARS.....2"
     - b. #5 AND SMALLER BARS.....1-1/2"
   - C. CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND:
     - a. SLABS, WALLS, JOISTS; #11 BARS AND SMALLER.....3/4"
4. CONSTRUCTION JOINTS AND CONTROL JOINTS:
   - A. PROVIDE A BEVELED 2x4 INTERMEDIATE KEYWAY THAT SHALL BE INSTALLED IN ALL HORIZONTAL AND VERTICAL CONSTRUCTION JOINTS INCLUDING BETWEEN TOP OF FOOTING AND FOUNDATION WALLS. IN ADDITION, ALL JOINTS SHALL BE INTENTIONALLY ROUGHENED TO FULL AMPLITUDE OF APPROXIMATELY ¼ INCH.
   - B. CONTROL JOINTS SHALL BE INSTALLED IN SLABS ON GRADE SO THE LENGTH TO WIDTH RATIO OF THE SLAB IS NO MORE THAN 1.25:1. CONTROL JOINTS SHALL BE COMPLETED WITHIN 12 HOURS OF CONCRETE PLACEMENT.
   - C. CONTROL JOINTS MAY BE INSTALLED BY:
     - D. SAW CUT A DEPTH OF ¼ THE THICKNESS OF THE SLAB.
     - E. TOOLED JOINTS A DEPTH OF ¼ THE THICKNESS OF THE SLAB.
     - F. INSTALL CONSTRUCTION OR CONTROL JOINTS IN SLABS ON GRADE AT A SPACING NOT TO EXCEED 30 TIMES THE SLAB THICKNESS IN ANY DIRECTION, UNLESS NOTED OTHERWISE.
5. CONSTRUCTION
   - A. USE CHAIRS OR OTHER SUPPORT DEVICES RECOMMENDED BY THE CRSI TO SUPPORT BAR AND TIE REINFORCEMENT BARS AND W.W.F PRIOR TO PLACING CONCRETE. W.W.F SHALL BE CONTINUOUSLY SUPPORTED AT 36" o.c. MAXIMUM. REINFORCING STEEL FOR SLABS ON GRADE SHALL BE ADEQUATELY SUPPORTED ON PRECAST CONCRETE UNITS. LIFTING THE REINFORCING OFF THE GRADE DURING PLACEMENT OF CONCRETE IS NOT PERMITTED.
   - B. CONTRACTOR SHALL COORDINATE PLACEMENT OF ALL OPENINGS, CURBS, DOWELS, SLEEVES, CONDUITS, BOLTS, INSERTS AND OTHER EMBEDDED ITEMS PRIOR TO CONCRETE PLACEMENT.
   - C. ALL EMBEDS AND DOWELS SHALL BE SECURELY TIED TO FORM WORK OR TO ADJACENT REINFORCING PRIOR TO THE PLACEMENT OF CONCRETE.
   - D. NO PIPES, DUCTS, SLEEVES, ETC. SHALL BE PLACED IN STRUCTURAL CONCRETE UNLESS SPECIFICALLY DETAILED OR APPROVED BY THE STRUCTURAL ENGINEER. PENETRATIONS THROUGH WALLS WHEN APPROVED SHALL BE BUILT INTO THE WALL PRIOR TO CONCRETE PLACEMENT. PENETRATIONS WILL NOT BE ALLOWED IN FOOTINGS OR GRADE BEAMS UNLESS DETAILED. PIPING SHALL BE ROUTED AROUND THESE ELEMENTS AND FOOTINGS STEPPED TO AVOID PIPING.
   - E. REINFORCING BARS SHALL NOT BE WELDED. DO NOT SUBSTITUTE REINFORCING BARS FOR DBA'S OR HSA'S, U.N.O.
6. DETAILING:
   - A. LAP LENGTHS SEE SCHEDULE ON S601
   - B. DO NOT SPLICE STIRRUPS AND TIES.
   - C. AT JOINTS PROVIDE REINFORCING DOWELS TO MATCH THE MEMBER REINFORCING, UNLESS NOTED OTHERWISE.
   - D. AT ALL DISCONTINUOUS CONTROL OR CONSTRUCTIONS SLAB ON GRADE JOINTS, PROVIDE (2) #4 X CONT.
   - E. PROVIDE CORNER BARS AT INTERSECTING WALL CORNERS USING THE SAME BAR SIZE AND SPACING AS THE HORIZONTAL WALL REINFORCING.
   - F. ALL VERTICAL REINFORCING SHALL BE DOWELED TO FOOTINGS, OR TO THE STRUCTURE BELOW WITH THE SAME SIZE AND SPACING AS THE VERTICAL REINFORCING FOR THE ELEMENT ABOVE. DOWELS EXTENDING INTO FOOTINGS SHALL TERMINATE WITH A 90 DEGREE STANDARD HOOK AND SHALL EXTEND TO WITHIN 4" OF THE BOTTOM OF THE FOOTING U.N.O. FOOTING DOWELS (#8 BARS AND SMALLER) WITH HOOKS NEED NOT EXTEND MORE THAN 20" INTO FOOTINGS U.N.O.

CONCRETE COMPRESSIVE STRENGTHS AND EXPOSURE

ELEMENT	COMPRESSIVE STRENGTH AT 28 DAYS (f'c)	WEATHERING POTENTIAL (2021 IRC TABLE R402.2)
FOOTINGS	3,000 PSI	SEVERE
FOUNDATION WALLS	3,000 PSI	SEVERE
INTERIOR SLAB ON GRADE	3,000 PSI	MODERATE
GARAGE SLAB ON GRADE	4,000 PSI	SEVERE

GENERAL WOOD NOTES

GENERAL TIMBER NOTES
1. THESE NOTES APPLY TO TYPICAL SITUATIONS AND MATERIALS. EACH NOTE SHOULD BE TAKEN AS PROJECT MINIMUM STANDARDS, BUT MAY BE AMENDED AND/OR SUPERSEDED BY OTHER NOTES, DETAILS, SCHEDULES AND SPECIFICATIONS (IF APPLICABLE). "U.N.O." APPLIES TO EACH NOTE IN THE 'GENERAL WOOD NOTES' SECTION.
2. ALL HORIZONTAL FRAMING MEMBERS SHALL BE INSTALLED WITH THE NATURAL CROWN UP, AS MARKED ON THE MEMBER (U.N.O.).

DIMENSIONAL LUMBER
1. ALL FRAMING LUMBER SHALL BE DOUGLAS FIR/LARCH CLEARLY MARKED WITH A STAMP BY WWPA APPROVED AGENCY AND SHALL BE GRADED AS FOLLOWS:
   - A. TRUSSES & TRUSS BLOCKING (IF APPLICABLE):
     - a. CHORDS: NO. 1
     - b. WEBS: NO. 2
   - B. ROOF/FLOOR FRAMING:
     - a. BEAMS / STRINGERS / I-JOISTS: NO. 1.
2. WALLS SHALL HAVE DOUBLE 2x TOP PLATES SPLICED WITH A MINIMUM OF 3'-0" OF OVERLAP AT SPLICES AND SHALL BE CONNECTED WITH A MINIMUM OF (12) 16d NAILS WITH (2) 16d NAILS @ 3" o.c., MAX, STAGGERED
3. WHERE A BEAM OR COLUMN IS BEARING ON A TOP PLATE, AS A MINIMUM, PROVIDE (2) ADDITIONAL 2x STUDS IN WALL BELOW.

SHEATHING
1. SHEATHING SHALL BE APA RATED SHEATHING, EXPOSURE I, EXTERIOR GLUE AND PANEL INDEX RATING AS NOTED BELOW (U.N.O.):

LOCATION	THICKNESS	PANEL INDEX
WALLS:	7/16"	24/0
FLOORS:	23/32"	48/24
ROOFS:	15/32"	32/16

2. PROVIDE 2x SHAPED BLOCKING AT RIDGES UNLESS A CONTINUOUS MEMBER EXISTS. PANEL EDGES ARE UNBLOCKED (U.N.O.).
3. ALL ROOF SHEATHING SHALL HAVE 8d COMMON NAILS @ 6" o.c. AT BOUNDARY (BN) AND EDGES (EN) AND @ 12" o.c. FIELD NAILING (FN). INSTALL FLAT BLOCKING AT ALL PANEL EDGES, (U.N.O.).
4. ALL FLOOR SHEATHING SHALL HAVE 10d COMMON NAILS @ 6" o.c. AT BOUNDARY (BN) AND EDGES (EN) AND @ 12" o.c. FIELD NAILING (FN). INSTALL FLAT BLOCKING AT ALL PANEL EDGES (U.N.O.).
5. ALL EXTERIOR WALL SHEATHING SHALL HAVE 8d COMMON NAILS @ 6" o.c. AT BOUNDARY (BN) AND EDGES (EN) AND @ 12" o.c. FIELD NAILING (FN). INSTALL FLAT BLOCKING AT ALL PANEL EDGES (U.N.O.).
6. INDIVIDUAL PIECES OF SHEATHING AT ROOF, FLOOR, AND SHEAR WALLS SHALL NOT BE SMALLER THAN 24" IN EITHER DIRECTION AND SHALL SPAN A MINIMUM OF THREE MEMBERS, (U.N.O.)
7. ALL 23/32" FLOOR SHEATHING SHALL BE TONGUE AND GROOVE (U.N.O.).
8. ALL ROOF SHEATHING AND WALL SHEATHING AT SHEAR WALLS SHALL HAVE SOLID BLOCKING AT ALL PANEL EDGES (U.N.O.).
9. AT ALL OVERBUILD LOCATIONS, ROOF SHEATHING SHALL BE COMPLETE BELOW OVERBUILDS PRIOR TO OVERBUILD CONSTRUCTION.
10. AT SHEAR WALLS, PANEL EDGE NAILING IS TO INCLUDE TOP & BOTTOM PLATES, END POSTS, ALL VERTICAL ELEMENTS, HOLD-DOWN ANCHORS AND HORIZONTAL BLOCKING.
11. AT ROOF & FLOOR DIAPHRAGMS, PANEL EDGE NAILING IS TO INCLUDE DRAG STRUTS, TENSION CHORDS, BLOCKING OVER BEARING WALLS AND SHEAR WALLS, AND ANY OTHER SPECIAL DIAPHRAGM MEMBERS NOTED ON PLANS.

CONNECTIONS & FASTENERS
1. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE ADEQUATE STRUCTURAL CONNECTIONS. CONNECTIONS MUST CARRY THE BEARING CAPACITY OF THE MEMBER AND ANY UPLIFT OR SEISMIC FORCES GENERATED IN THE MEMBER. SPECIAL CONSIDERATION SHALL BE GIVEN TO CRUSHING OF WOOD AT BEARING, SPLITTING AND OR CRACKING, ETC.
2. ALL BOLTS THRU WOOD SHALL BE ASTM A307 AND SHALL HAVE HARDENED WASHERS UNDER ASTM A563 HEAVY HEX NUT AND BOLT HEADS.
3. AT EXPOSED LOCATIONS OR IN TREATED WOOD, NAILS SHALL BE GALVANIZED OR STAINLESS STEEL (SEE NOTE BELOW FOR FASTENERS CONNECTED TO OR IN CONTACT WITH TREATED WOOD). THE HEAD OF ALL NAILS SHALL BE FLUSH WITH SURFACE OF THE SHEATHING. ALL NAILS SHALL HAVE THE FOLLOWING MINIMUM PROPERTIES:

NAIL SIZE	SHANK DIAMETER	MIN. PENETRATION PENETRATION INTO MEMBER
6d	0.113"	1.25"
8d	0.131"	1.50"
10d	0.148"	1.63"
12d	0.148"	1.63"
16d	0.162"	1.75"

4. A CONTINUOUS BEAD OF PERMANENT BOND TIMBER/WOOD ADHESIVE COMPOUND SHALL BE USED TO FASTEN ALL PLYWOOD FLOOR SHEATHING TO FLOOR JOISTS IN ACCORDANCE WITH MANUFACTURERS' SPECIFICATIONS.
5. ALL FRAMING ANCHORS, POST CAPS, HOLD DOWNS, COLUMN BASES ETC., TO BE SIMPSON OR APPROVED EQUAL.
6. ALL WALL BOTTOM PLATES SHALL CONFORM TO THE FOLLOWING REQUIREMENTS (U.N.O.).
   - A. ANCHORAGE TO FOUNDATIONS OR FOOTINGS WITH 5/8" DIAMETER ANCHOR BOLTS @ 48"o.c. WITH 8" MINIMUM EMBEDMENT.
   - B. THERE SHALL BE A MINIMUM OF (2) ANCHOR BOLTS PER PLATE WITH END BOLT LOCATED NOT MORE THAN 12" NOR LESS THAN 4" FROM EACH END OF EACH PIECE.
   - C. WALL BOTTOM PLATES AT SHEAR WALLS SHALL INCLUDE 1/4" x 3" x 3" STEEL PLATE WASHERS BETWEEN THE SILL PLATE AND NUT OF THE ANCHOR BOLT. THE HOLE IN THE PLATE WASHER IS PERMITTED TO BE SLOTTED DIAGONALLY WITH A WIDTH UP TO 3/16" LARGER THAN THE BOLT DIAMETER AND SLOT LENGTH NOT TO EXCEED 1-3/4", PROVIDED A STANDARD CUT WASHER IS PLACED BETWEEN THE PLATE WASHER AND THE NUT.
7. FASTENERS CONNECTED TO OR IN CONTACT WITH PRESERVATIVE-TREATED AND/OR FIRE-RETARDANT-TREATED WOOD (EXCEPT FOR TIMBERSTRAND LSL TREATED LUMBER AND BORATE BASED TREATMENTS) SHALL BE OF G-185 HOT-DIP GALVANIZED STEEL OR 304 OR 316 STAINLESS STEEL. STAINLESS STEEL AND GALVANIZED STEEL SHALL NEVER BE USED IN CONTACT WITH EACH OTHER.
8. ALL NAILS SPECIFIED IN THE DETAILS AND SCHEDULES SHALL BE COMMON NAILS (U.N.O.).
9. EXCEPT WHERE NOTED OTHERWISE, THE NUMBER AND SIZE OF NAILS CONNECTING WOOD MEMBERS SHALL NOT BE LESS THAN THE REQUIREMENTS SET FORTH IN IBC TABLE 2304.9.1. CONNECTIONS FOR MULTIPLE PIECES OF ENGINEERED LUMBER SHALL BE IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS.
10. ALL STRUCTURAL MEMBERS SHALL HAVE 1 ¼" BEARING (MINIMUM).

BLOCKING, BRIDGING, & MISC.
1. ALL JOISTS & RAFTERS SHALL HAVE FULL-HEIGHT BLOCKING AT THEIR BEARING POINTS. CONNECT EACH BLOCK TO THE TOP OF EXTERIOR WALLS WITH SIMPSON A34 CLIP, OR EQUAL, (U.N.O.). EACH RAFTER/JOIST SHALL BE ANCHORED WITH SIMPSON H1, OR EQUAL (U.N.O.).
2. INSTALL BRIDGING AT THE MID-SPAN OF ALL FLOOR JOISTS AND/OR 8'-0"o.c. (WHICHEVER IS SMALLER).
3. STANDARD PENETRATIONS THROUGH STRUCTURAL MEMBERS FOR MECH. & PLUM. SYSTEMS, ETC. SHALL BE PROVIDED ON THE CENTERLINE OF THE MEMBERS' DEPTH AND WITHIN THE MIDDLE ONE-THIRD OF THE SPAN. LARGER PENETRATIONS ARE NOT PERMITTED WITHOUT PRIOR APPROVAL.
4. 'BIRD'S MOUTHS' AND OTHER NOTCHING OF STRUCTURAL MEMBERS NOT SPECIFICALLY DETAILED ARE NOT PERMITTED WITHOUT PRIOR WRITTEN APPROVAL.

WOOD

LUMBER TABLE

DIMENSION LUMBER	BEAMS/ COLUMNS/ POSTS	DOUG FIR #2
	SILL PLATES	SO. PINE, DOUG FIR, HEM FIR #2 OR BETTER
TRUSSES &TRUSS BLOCKING	CHORDS	DOUG FIR #2
	WEBS	DOUG FIR #2
BEARING WALLS	ALL SIZES	DOUG FIR #2
INTERIOR NON-BEARING PARTITIONS	ALL SIZES	SO. PINE, DOUG FIR, HEM FIR STUD OR BETTER

NAILING SCHEDULE

CONN.	FASTENING	LOCATION
1x	(3) 16d ((2) 8d if 6" or less nominal)	FACE NAIL
2x	(2) 16d	FACE NAIL
Sole/ Sill PL	16d @ 16" o.c. OR 3", 14ga. STAPLE @ 12" o.c.	FACE NAIL
DblLStuds	16d @ 24" o.c. OR 3", 14ga. STAPLE @ 8" o.c.	FACE NAIL
Dbl. Top PL's	16d @ 16" o.c. OR 3", 14ga. STAPLE @ 12" o.c.	FACE NAIL
2 Piece Header	16d @ 16" o.c. OR 3", 14ga. STAPLE @ 12" o.c.	ALONG EA. EDGE
Corner Studs	16d @ 24" o.c. OR 3", 14ga. STAPLE @ 16" o.c.	FACE NAIL
Girder Beam	20d @ 32" o.c. OR 3", 14ga. STAPLE @ 12" o.c.	FACE NAIL

* FOR NAILING NOT SHOWN IN THIS SCHEDULE, SEE IBC TABLE 2304.9.1

ANCHOR BOLTS / EMBEDDED BOLTS
1. ALL ANCHOR BOLTS SHALL HAVE ASTM A-563 HEAVY HEX NUT AND ASTM F-436 WASHERS AT STANDARD OR OVERSIZED HOLES PER AISC SPECIFICATION TABLE J3.3. WHERE HOLE SIZES DO NOT COMPLY WITH THE LIMITATIONS FOR OVERSIZED HOLES THE STRUCTURAL ENGINEER SHALL BE NOTIFIED TO DETERMINE STEEL PLATE WASHER REQUIREMENTS. ANCHOR BOLTS SHALL COMPLY WITH THE FOLLOWING:
   - A. ALL ANCHOR BOLTS (UNLESS NOTED OTHERWISE) - ASTM F1554 GRADE 36 HEADED BOLTS OR J-BOLTS. (ASTM A36 THREADED ROD MAY BE USED WITH DOUBLE NUT AND WASHER.)
2. SEE TYPICAL ANCHOR BOLT DETAIL FOR DEFINITIONS OF EMBEDMENT LENGTH, ETC.
3. FURNISH TEMPLATES AND OTHER DEVICES AS NECESSARY FOR PRESETTING ALL BOLTS PRIOR TO PLACING CONCRETE AND/OR GROUT.
4. IF THREADED RODS ARE USED AS PERMITTED ABOVE, THEY SHALL BE CLEAR OF SOIL AND DIRT.
5. WHERE REQUIRED FOR ERECTION, HOLES LARGER THAN OVERSIZED MAY BE PERMITTED WITH THE USE OF STEEL PLATE WASHERS AT THE DISCRETION OF THE STRUCTURAL ENGINEER.

DEFERRED SUBMITTALS
1. A DEFERRED SUBMITTAL IS A PART OR PORTION OF THE PROJECT THAT WAS NOT DESIGNED OR ENGINEERED BY THE PROJECT ENGINEER OF RECORD. IT HAS BEEN DELEGATED TO THE CONTRACTOR TO COORDINATE THE DESIGN ELEMENTS WITH THE SPECIFIC MANUFACTURERS AND SUPPLIERS USED. ON ALL

DIVISION OF FACILITIES CONSTRUCTION & MANAGEMENT

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Special Inspection, Material Testing & Structural Observation Items Required by Chapter 17 of the 2021 IBC

Indicate items requiring special inspection, structural testing, or structural observations by checking the appropriate box. All items not requiring inspection/testing should be removed from the form. For items requiring continuous inspection, a special inspector must be present onsite during the performance of that task. In most cases "periodic" inspections/tests shall be performed prior to commencing the task, intermittently during the task, and at the completion of the task. The "Detailed Instructions & Frequency" provides a description of the presumed requirements for tasks requiring "periodic" inspections. The design professional in responsible charge should revise the requirements as needed on a project-specific basis.

CONCRETE CONSTRUCTION (IBC 1705.3 & 1705.12.1)

Item			*Detailed Instructions and Frequencies*
Reinforcing steel, including prestressing tendons	☐ Continuous	☒ Periodic	Verify prior to placing concrete that reinforcing is of specified type, grade and size; that it is free of oil, dirt and rust; that it is located and spaced properly; that hooks, bends, ties, stirrups and supplemental reinforcement are placed correctly; that lap lengths, stagger and offsets are provided; and that all mechanical connections are installed per the manufacturer's instructions and/or evaluation report.
Welding of reinforcing steel	☐ Continuous	☒ Periodic	Visually inspect all welds and also verify weldability of reinforcing steel based upon carbon equivalent and in accordance with AWS D1.4. Continuously inspect any welds over 5/16" thick.
Cast-in bolts & embeds	☐ Continuous	☒ Periodic	Inspection of anchors or embeds cast in concrete is required when allowable loads have been increased or where strength design is used.
Post-installed anchors or dowels	☐ Continuous	☒ Periodic	All post-installed anchors/dowels shall be specially inspected as required by the approved ICC-ES report. Horizontally or upwardly inclined anchors that resist sustained tension loads require continuous inspection and approved installers.
Use of required mix design	☐ Continuous	☒ Periodic	Verify that all mixes used comply with the approved construction documents; ACI 318: Ch. 19, 26.4.3, 26.4.4; and IBC 1904.1, 1904.2.
Concrete sampling for strength tests, slump, air content, and temp	☒ Continuous	☐ Periodic	
Concrete & shotcrete placement	☒ Continuous	☐ Periodic	
Curing temperature and techniques	☐ Continuous	☒ Periodic	Verify that the ambient temperature for concrete is kept at > 50°F for at least 7 days after placement. High-early-strength concrete shall be kept at > 50°F for at least 3 days. Accelerated curing methods may be used (see ACI 318: 26.5.3-26.5.5). The ambient temperature for shotcrete shall be > 40°F for the same period of time as noted for concrete. Shotcrete shall be kept continuously moist for at least 24 hours after shotcreting. All concrete materials, reinforcement, forms, fillers, and ground shall be free from frost. In hot weather conditions ensure that appropriate measures are taken to avoid plastic shrinkage cracking and that the specified water/cement ratio is not exceeded.
Formwork	☐ Continuous	☒ Periodic	Verify that the forms are placed plumb and conform to the shapes, lines, and dimensions of the members as required by the approved construction documents.

DIVISION OF FACILITIES CONSTRUCTION & MANAGEMENT

Office of the State Building Official
4315 S 2700 W Taylorsville, UT 84129
Phone: (801) 538-3018
Website: http://dfcm.utah.gov/

SOILS CONSTRUCTION (IBC 1705.6)

Item			*Detailed Instructions and Frequencies*
Verify subgrade is adequate to achieve design bearing capacity	☐ Continuous	☒ Periodic	Prior to placement of concrete.
Verify excavations extend to proper depth and material	☐ Continuous	☒ Periodic	Prior to placement of compacted fill or concrete.
Verify that subgrade has been appropriately prepared prior to placing compacted fill	☐ Continuous	☒ Periodic	Prior to placement of compacted fill.
Perform classification and testing of compacted fill materials	☐ Continuous	☒ Periodic	All materials shall be checked at each lift for proper classifications and gradations not less than once for each 10,000ft² of surface area.
Verify proper materials, densities and lift thicknesses during placement and compaction.	☒ Continuous	☐ Periodic	Verify use of proper materials and procedures in accordance with the geotechnical report. Verify densities and lift thicknesses during placement and compaction of compacted fill.

Special Inspectors Shall:

- Be approved by the Building Official prior to performing any duties;
- Provide proof of licensure as a special inspector by the State of Utah for each type of inspection;
- Inspection reports are to meet the requirements of IBC 1704.2.4 and DFCM standards;
- Inspection reports are to be submitted to the code consultant, architect, DFCM project manager, and the State of Utah 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).

CONTRACTOR'S STATEMENT OF RESPONSIBILITY (IBC 1704.4)

The following statement must be provided on the plans along with a signature from the contractor prior to permit issuance.

Each contractor involved with the construction of wind or seismic force-resisting systems shall comply with the requirements of IBC 1704.4. The contractor is responsible for providing the special inspector access to approved plans and contract documents at the job site. All special inspection records shall be retained at the job site by the contractor and shall be made available to the Building Department upon request.

Declaration by General Contractor

I, the General Contractor of the project, agree to comply with the "Contractor Responsibility" items noted above.

Signature _____ Date _____

Last Revised: 8/2023

GENERAL STATEMENT OF SPECIAL INSPECTIONS (2021 IBC)

1. WHERE APPLICATION IS MADE FOR CONSTRUCTION, THE OWNER SHALL EMPLOY ONE OR MORE APPROVED AGENCIES TO PERFORM INSPECTIONS DURING CONSTRUCTION ON THE TYPES OF WORK LISTED UNDER IBC 2021 SECTION 1704. THESE INSPECTIONS ARE IN ADDITION TO THOSE IDENTIFIED IN SECTION 110.
2. THE SPECIAL INSPECTOR SHALL BE A QUALIFIED PERSON WHO SHALL DEMONSTRATE COMPETENCE, TO THE SATISFACTION OF THE BUILDING OFFICIAL, FOR THE INSPECTION OF THE PARTICULAR TYPE OF CONSTRUCTION OR OPERATION REQUIRING SPECIAL INSPECTION. THE SPECIAL INSPECTOR SHALL PROVIDE WRITTEN DOCUMENTATION TO THE BUILDING OFFICIAL DEMONSTRATING HIS OR HER COMPETENCE AND RELEVANT EXPERIENCE OR TRAINING. EXPERIENCE OR TRAINING SHALL BE CONSIDERED RELEVANT WHEN THE DOCUMENTED EXPERIENCE OR TRAINING IS RELATED IN COMPLEXITY TO THE SAME TYPE OF SPECIAL INSPECTION ACTIVITIES FOR PROJECTS OF SIMILAR COMPLEXITY AND MATERIAL QUALITIES. THE SPECIAL INSPECTION AGENCY SHALL ALSO COMPLY WITH IBC 1703.1.
3. ALL MATERIALS INSPECTIONS & TESTS IDENTIFIED IN THE SPECIAL INSPECTION TABLES AND GENERAL STRUCTURAL NOTES ARE TO COMPLY WITH THE REFERENCES AND STANDARDS LISTED IN THE TABLES IN IBC 2021, CHAPTERS 17, 35 & ELSEWHERE IN THIS CODE.
4. THE TYPE AND EXTENT OF SPECIAL INSPECTIONS ARE AS SPECIFIED IN THE INDIVIDUAL SPECIAL INSPECTION TABLES AND PROJECT SPECIFICATIONS.
5. SPECIAL INSPECTIONS FOR SEISMIC RESISTANCE ARE REQUIRED FOR THE FOLLOWING (SEE PLAN FOR SEISMIC DESIGN CATEGORY):
   A. THE SEISMIC-FORCE-RESISTING SYSTEMS IN STRUCTURES ASSIGNED TO SEISMIC DESIGN CATEGORY C, D, E OR F.
   B. DESIGNATED SEISMIC SYSTEMS IN STRUCTURES ASSIGNED TO SEISMIC DESIGN CATEGORY D, E OR F.
   C. ARCHITECTURAL, STRUCTURAL, MECHANICAL AND ELECTRICAL COMPONENTS IN STRUCTURES ASSIGNED TO SEISMIC DESIGN CATEGORY C, D, E OR F AS STATED IN IBC SECTIONS 1705.12
6. REPORTS OF FINDINGS OR DISCREPANCIES SHALL BE NOTED AND FORWARDED TO THE CONTRACTOR, ARCHITECT, ENGINEERS, AND BUILDING OFFICIAL IN A TIMELY MANNER.
7. STRUCTURAL OBSERVATION VISITS SHALL BE PERFORMED BY A REPRESENTATIVE OF CARTWRIGHT ENGINEERS IN ACCORDANCE WITH THE CONTRACT AS NEEDED TO OBSERVE THE CONSTRUCTION OF CRITICAL BUILDING ELEMENTS (I.E. FOOTINGS, BRACED FRAMES, MOMENT FRAMES, DRAG STRUTS AND THEIR CONNECTIONS, COLLECTORS, AND ROOF AND FLOOR DIAPHRAGMS, ETC.). STRUCTURAL OBSERVATION REPORTS FOR EACH VISIT SHALL BE SENT DIRECTLY TO THE ARCHITECT OR DISTRIBUTED TO THE CONTRACTOR AND BUILDING OFFICIAL. STRUCTURAL OBSERVATION VISITS ARE TO VERIFY THAT WORK IS IN GENERAL CONFORMANCE WITH CONTRACT DOCUMENTS AND SHALL NEITHER BE CONSTRUED AS SPECIAL INSPECTION, INSPECTION BY A BUILDING OFFICIAL, NOR APPROVAL OF COMPLETED CONSTRUCTION.
8. ITEMS THAT ARE LISTED AS DEFERRED STRUCTURAL SUBMITTALS MAY REQUIRE SPECIAL INSPECTIONS IN ADDITION TO THOSE FOUND IN THESE CONSTRUCTION DOCUMENT. SEE GENERAL STRUCTURAL NOTES (SHOP DRAWINGS / DEFERRED SUBMITTALS) FOR ADDITIONAL INFORMATION. PERIODIC INSPECTION U.N.O. IS DEFINED AS COMPLETE INSPECTION OF EACH ELEMENT DURING THE CONSTRUCTION PHASE. CONTRACTOR TO COORDINATE AND COOPERATE WITH SPECIAL INSPECTION REQUIREMENTS.
9. EACH CONTRACTOR RESPONSIBLE FOR THE CONSTRUCTION OF A MAIN WIND- OR SEISMIC-FORCE-RESISTING SYSTEM, DESIGNATED SEISMIC SYSTEM OR A WIND- OR SEISMIC-RESISTING COMPONENT LISTED IN THE STATEMENT OF SPECIAL INSPECTIONS SHALL SUBMIT A WRITTEN STATEMENT OF RESPONSIBILITY TO THE BUILDING OFFICIAL AND THE OWNER PRIOR TO THE COMMENCEMENT OF WORK ON THE SYSTEM OR COMPONENT. THE CONTRACTOR'S STATEMENT OF RESPONSIBILITY SHALL CONTAIN ACKNOWLEDGEMENT OF AWARENESS OF THE SPECIAL REQUIREMENTS CONTAINED IN THE STATEMENT OF *SPECIAL INSPECTIONS*.
10. INSPECTION OF LABELED MATERIALS SHALL BE PER IBC 2021 SECTION 1703.
11. INSPECTION OF ARCHITECTURAL, ELECTRICAL, MECHANICAL EQUIPMENT, SHALL BE PER IBC 2021 SECTION 1705.12.
12. TESTING OF NON-STRUCTURAL ITEMS SHALL BE PER IBC 2021 SECTION 1705.13.2.
13. SPECIAL INSPECTION REQUIREMENTS FOR *THE SEISMIC/WIND-FORCE-RESISTING SYSTEMS* IN ACCORDANCE WITH IBC 2021 SECTION 1705 ARE IN ADDITION TO THE REQUIREMENTS OUTLINED IN THE SPECIAL INSPECTION TABLES IN THESE DOCUMENTS AND IN IBC 2021. ALL OTHER ITEMS REQUIRING SPECIAL INSPECTION ARE IDENTIFIED IN THE SPECIAL INSPECTION SCHEDULE(S). IN CASE OF CONFLICT, THE MOST STRINGENT SPECIAL INSPECTION REQUIREMENTS SHOULD BE PERFORMED. SEISMIC/WIND-FORCE-RESISTING SYSTEMS AND ALL OTHER SYSTEMS, COMPONENTS THAT ARE SUBJECT TO SPECIAL INSPECTIONS ARE IDENTIFIED ON THESE DOCUMENTS WITH A BOXED **L**. SEE REQUIRED VERIFICATION AND INSPECTION OF WOOD ELEMENTS FOR EXCEPTIONS.

QUALIFICATION OF SPECIAL INSPECTOR

1. THE INSPECTION AGENCY SHALL SUBMIT QUALIFICATIONS AND / OR CERTIFICATIONS TO THE BUILDING OFFICIAL, OWNER, AND/OR OWNERS REPRESENTATIVE TO DETERMINE THAT THE AGENCY MEETS THE APPLICABLE REQUIREMENTS AND IS QUALIFIED TO PERFORM THE TESTS AND INSPECTIONS.
   A. THE AGENCY SHALL BE OBJECTIVE AND COMPETENT.
   B. THE AGENCY SHALL ALSO DISCLOSE POSSIBLE CONFLICTS OF INTEREST SO THAT OBJECTIVITY CAN BE CONFIRMED AND SHALL BE INDEPENDENT OF THE CONTRACTOR.
   C. THE AGENCY SHALL HAVE ADEQUATE EQUIPMENT TO PERFORM REQUIRED TESTS.
   D. THE EQUIPMENT SHALL BE PERIODICALLY CALIBRATED.
   E. THE AGENCY SHALL EMPLOY EXPERIENCED PERSONNEL EDUCATED IN CONDUCTING, SUPERVISING AND EVALUATING TESTS AND INSPECTIONS.
   F. THE SPECIAL INSPECTOR SHALL KEEP RECORDS OF INSPECTIONS.
   G. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE ARCHITECT, ENGINEER, CONTRACTOR AND BUILDING OFFICIAL. ANY DISCREPANCIES THAT OCCUR SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ARCHITECT, ENGINEER, CONTRACTOR AND BUILDING OFFICIAL PRIOR TO THE COMPLETION OF THAT PHASE OF WORK.
   H. WELDING INSPECTOR QUALIFICATION SHALL BE PER IBC 2021 SECTION 1704.2.1

REQUIRED VERIFICATION AND INSPECTION OF POST-INSTALLED ANCHORS

1. SPECIAL INSPECTIONS SHALL BE PERFORMED FOR ALL POST-INSTALLED ANCHORS IN ACCORDANCE W/ THE CURRENT ICC-ESR. AS APPLICABLE, THE INSPECTION PROGRAM SHALL VERIFY THE FOLLOWING ALONG WITH ALL OTHER MANUFACTURER REQUIREMENTS: ANCHOR TYPE AND LOCATION, EMBEDMENT, TIGHTENING TORQUE, DIMENSIONS, HOLE DEPTH AND DIAMETER, HOLE CLEANOUT, ADHESIVE MIXING AND PLACEMENT PROCEDURES.
2. THE DURATION OF INSPECTION (CONTINUOUS OR PERIODIC) SHALL BE IN ACCORDANCE WITH THE CURRENT ICC-ESR, U.N.O. IN THESE SPECIAL INSPECTION NOTES.
3. CONTINUOUS INSPECTION SHALL BE PROVIDED FOR SIMPSON SET 3G EPOXY, AS APPLICABLE.

REQUIRED VERIFICATION & INSPECTION OF SOILS

VERIFICATION & INSPECTION	CONT.	PERIODIC	COMMENTS
1. VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY.	——	●	
2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL.	——	●	
3. PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS.	——	●	
4. VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESS DURING PLACEMENT AND COMPACTION OF COMPACTED FILL.	●	——	
5. PRIOR TO PLACEMENT OF COMPACTED FILL, INSPECT SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY.	——	●	

NOTES:
1. SPECIAL INSPECTIONS FOR EXISTING SITE SOIL CONDITIONS, FILL PLACEMENT AND LOAD-BEARING REQUIREMENTS SHALL BE AS REQUIRED BY IBC 1705.6 AND TABLE 1705.6. THE APPROVED GEOTECHNICAL REPORT (IF APPLICABLE), AND THE CONSTRUCTION DOCUMENTS SHALL BE USED TO DETERMINE COMPLIANCE. DURING FILL PLACEMENT, THE SPECIAL INSPECTOR SHALL DETERMINE THAT PROPER MATERIALS AND PROCEDURES ARE USED IN ACCORDANCE WITH THE PROVISIONS OF THE APPROVED GEOTECHNICAL REPORT.
2. WHERE IBC SECTION 1803 DOES NOT REQUIRE REPORTING OF MATERIALS AND PROCEDURES FOR FILL PLACEMENT, OR WHERE A GEOTECHNICAL REPOT IS NOT AVAILABLE, THE SPECIAL INSPECTOR SHALL VERIFY THAT THE IN-PLACE DRY DENSITY OF THE COMPACTED FILL IS NOT LESS THAN 90 PERCENT OF THE MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE CONTENT DETERMINED IN ACCORDANCE WITH ASTM D 1557.

REQUIRED VERIFICATION & INSPECTION OF CONCRETE CONSTRUCTION

VERIFICATION & INSPECTION	CONT.	PERIODIC	COMMENTS
1. INSPECT REINFORCEMENT, INCLUDING PRESTRESSING TENDONS, AND VERIFY PLACEMENT.	——	●	
2. REINFORCING BAR WELDING:			
A. VERIFY WELDABILITY OF REINFORCING BARS OTHER THAN ASTM A706	——	●	
B. INSPECT SINGLE-PASS FILLET WELDS, MAIMUM 5/16", AND	——	●	
C. INSPECT ALL OTHER WELDS	●	——	
3. INSPECT ANCHORS CAST IN CONCRETE	——	●	
4. INSPECT ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS. b			
A. ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATION TO RESIST SUSTAINED TENSION LOADS.	●	——	
B. MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED IN 4.A.	——	●	
5. VERIFYING USE OF REQUIRED DESIGN MIX.	——	●	
6. PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE.	●	——	
7. INSPECT CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES.	●	——	
8. VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.	——	●	
9. INSPECT PRESTRESSED CONCRETE FOR:			
A. APPLICATION OF PRESTRESSING FORCES.	●	——	
B. GROUTING OF BONDED PRESTRESSING TENDONS.	●	——	
10. INSPECT ERECTION OF PRECAST CONCRETE MEMBERS.	——	●	
11. FOR PRECAST CONCRETE DIAPHRAGM CONNECTION OR REINFORCEMENT AT JOINTS CLASSIFIED AS MODERATE OR HIGH DEFORMABILITY ELEMENTS IN STRUCTURES ASSIGNED TO SEISMIC DESIGN CATEGORY C, D, E OR F, INSPECT SUCH CONNECTIONS AND REINFORCEMENTS IN THE FIRLD FOR:			
A. INSTALLATION OF THE EMBEDDED PARTS	●		
B. COMPLETION OF THE CONTINUITY OF REINFORCEMENT ACROSS JOINTS	●		
C. COMPLETION OF CONNECTIONS IN THE FIELD	●		
12. INSPECT INSTALLATION TOLERANCES OF PRECAST CONCRETE DIAPHRAM CONNECTIONS FOR COMPLIANCE WITH ACI 550.5		●	
13. VERIFY IN-SITU CONCRETE STRENGTH, PRIOR TO STRESSING OF TENDONS IN POST-TENSIONED CONCRETEND PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS.	——	●	
14. INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED.	——	●	

NOTES:
1. THE SPECIAL INSPECTIONS AND VERIFICATIONS FOR CONCRETE CONSTRUCTION SHALL BE AS REQUIRED BY SECTION 1705.3 AND TABLE 1705.3.
2. WHERE APPLICABLE, SEE ALSO SECTION 1705.13, SPECIAL INSPECTION FOR SEISMIC RESISTANCE.

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REVIEWED FOR CODE COMPLIANCE
THOMAS PETERSON
05/19/2025
DIVISION OF FACILITIES CONSTRUCTION AND MANAGEMENT

5/7/2025
No.7717774-2203
STEVEN W. THEURER
STATE OF UTAH
LICENSED STRUCTURAL ENGINEER

DWR LOGAN FISH HATCHERY RESIDENCE

1465 WEST 200 NORTH
LOGAN, UT 84321

DFCM PROJECT #	24437520
CARTWRIGHT PROJECT #	124141
DATE:	5/7/2025
DRAWN BY:	FWP
CHECKED BY:	JPF
APPROVED BY:	SWT

REVISIONS

	DATE	DESCRIPTION

SPECIAL INSPECTIONS

SE002

5/7/2025 4:47:51 PM

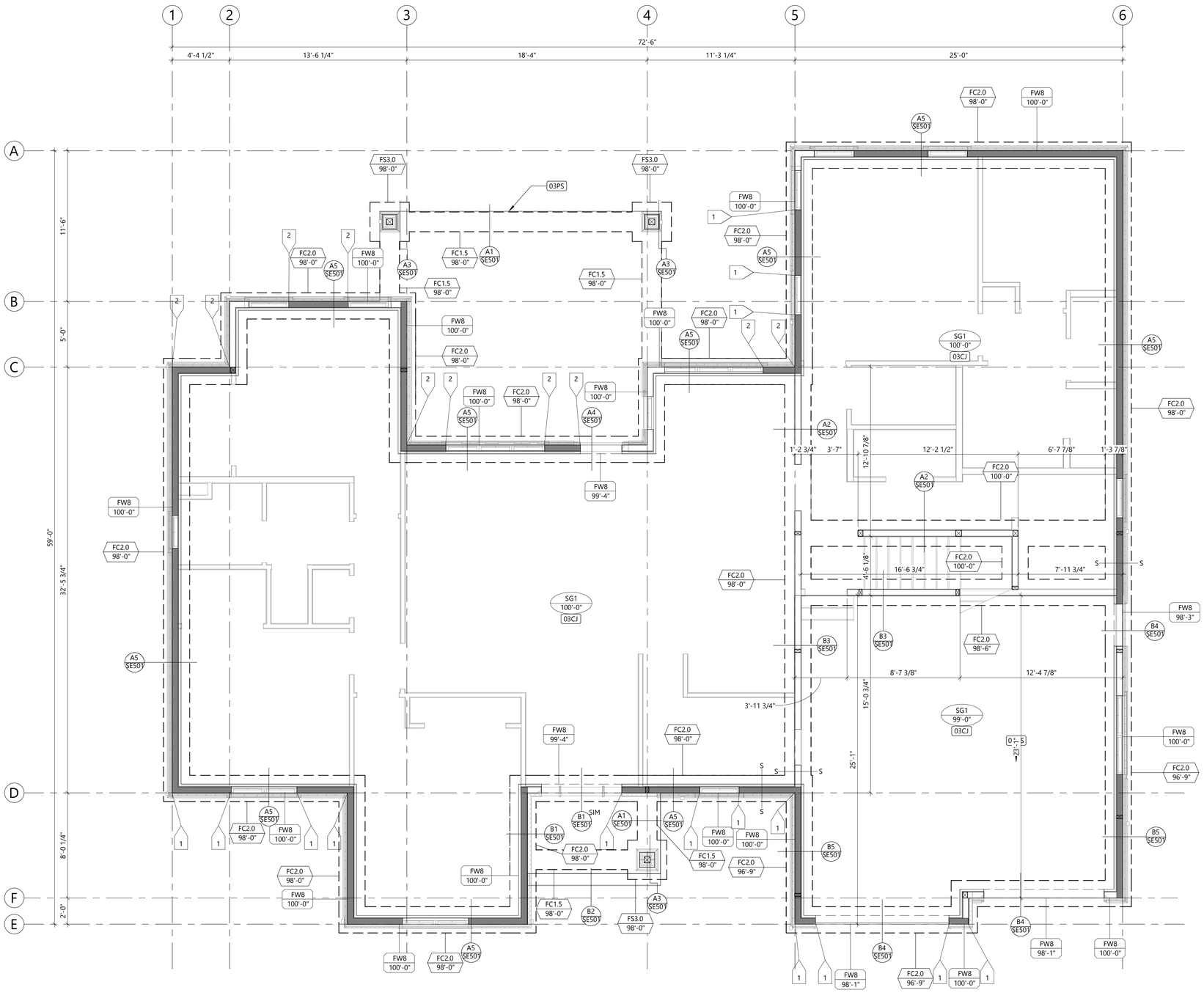
CONFORMANCE SET

SHEET NOTES

1. COORDINATE AND VERIFY THIS DRAWING WITH ALL OTHER DRAWINGS INCLUDING ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS.
2. FOR ALL DIMENSIONS NOT SHOWN, REFER TO THE ARCHITECTURAL DRAWINGS.
3. REFER TO THE GENERAL STRUCTURAL NOTES, DRAWING S001 FOR OTHER REQUIREMENTS.

KEYNOTES

#	DESCRIPTION
03CJ	PROVIDE CONTROL JOINTS IN SLAB ON GRADE PER GENERAL STRUCTURAL NOTES ON S001
03GS	ELEVATION GIVEN FOR GARAGE IS THE HIGH POINT. SLOPE GARAGE SLAB DOWN PER CIVIL DWGS TOWARD OVERHEAD DOOR FROM THIS ELEVATION
03PS	PATIO SLAB ON GRADE



A3 FOUNDATION PLAN
SCALE: 1/4" = 1'-0"

GRAPHIC SCALE: 1/4"= 1'-0"
0 2' 4' 8'

CONFORMANCE SET

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STATE OF UTAH — PROFESSIONAL STRUCTURAL ENGINEER
5/7/2025
No.7717774-2203
STEVEN W. THEURER
SIGN | DATE

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DATE:	5/7/2025
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#	DATE	DESCRIPTION

FOUNDATION PLAN

SE101

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SHEET NOTES

1. COORDINATE AND VERIFY THIS DRAWING WITH ALL OTHER DRAWINGS INCLUDING ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS.
2. FOR ALL DIMENSIONS NOT SHOWN, REFER TO THE ARCHITECTURAL DRAWINGS.
3. "#T#K" EQUALS NUMBER OF TRIMMER STUDS AND KING STUDS REQUIRED ADJACENT TO OPENINGS IN BEARING WALLS. PROVIDE 1T1K MINIMUM AT ALL OPENINGS IN EXTERIOR WALLS AND INTERIOR BEARING WALLS, U.N.O.
4. REFER TO THE GENERAL STRUCTURAL NOTES, DRAWING S001 FOR OTHER REQUIREMENTS.

KEYNOTES

#	DESCRIPTION
06BH	SIMPSON HUC412 BEAM HANGER
06FJ	11 7/8" TJI 560 FLOOR JOIST @ 16" o.c.
06FS	23/32" T&G PLYWOOD FLOOR SHEATHING GLUED AND ATTACHED PER GSN
06WE	BEARING WALL FRAMING = 2x6 STUDS @ 16" o.c.

A3 2ND LEVEL FRAMING PLAN
SCALE: 1/4" = 1'-0"

GRAPHIC SCALE: 1/4"= 1'-0"
0 2' 4' 8'

CONFORMANCE SET

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05/19/2025
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5/7/2025
No.7717774-2203
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#	DATE	DESCRIPTION

2ND LEVEL FRAMING PLAN

SE102

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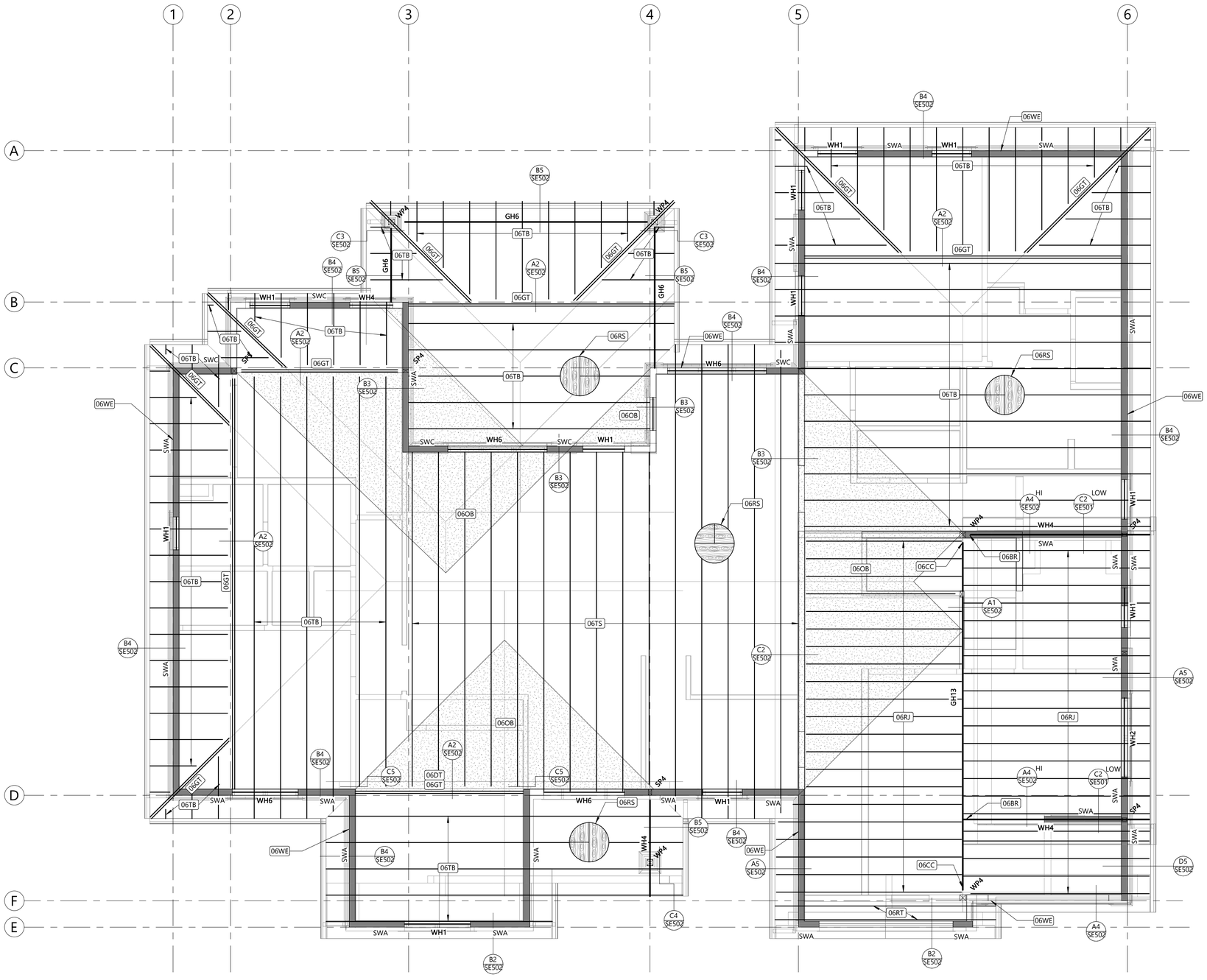

A3 ROOF FRAMING PLAN
SCALE: 1/4" = 1'-0"

GRAPHIC SCALE: 1/4"= 1'-0"
0 2' 4' 8'

SHEET NOTES

1. COORDINATE AND VERIFY THIS DRAWING WITH ALL OTHER DRAWINGS INCLUDING ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS.
2. FOR ALL DIMENSIONS NOT SHOWN, REFER TO THE ARCHITECTURAL DRAWINGS
3. "#TrK" EQUALS NUMBER OF TRIMMER STUDS AND KING STUDS REQUIRED ADJACENT TO OPENINGS IN BEARING WALLS. PROVIDE 1T1K MINIMUM AT ALL OPENINGS IN EXTERIOR WALLS AND INTERIOR BEARING WALLS, U.N.O.
4. REFER TO THE GENERAL STRUCTURAL NOTES, DRAWING S001 FOR OTHER REQUIREMENTS.

KEYNOTES

#	DESCRIPTION
06BR	SIMPSON HUC26-3 BEAM HANGER (SLOPE SEAT AS REQUIRED)
06CC	PROVIDE SIMPSON ECCQ5-6SDS2.5 COLUMN CAP AT RIDGE BEAM BEARING
06DT	DRAG TRUSS - MANUFACTURER TO DESIGN FOR DRAG FORCE = 1,000 LBS IN EITHER DIRECTION DUE TO WIND OR SEISMIC
06GT	PREFABRICATED WOOD GIRDER TRUSS
06OB	OVERBUILD FRAMING IN SHADED AREAS TO BE 2x6 @ 24" o.c. WITH A MAXIMUM SPAN OF 8'-0". PROVIDE 2x4 @ 24" o.c. STUD FRAMED WALLS TO EXISTING TRUSSES BELOW AS NEEDED. AT CONTRACTOR'S OPTION, OVERBUILD FRAMING MAY BE FRAMED USING PRE-FABRICATED TRUSSES
06RJ	2x10 @ 24" o.c. ROOF JOIST
06RS	15/32" PLYWOOD ROOF SHEATHING ATTACHED PER GSN
06RT	PREFAB WOOD TRUSSES @ 24" o.c.
06TB	PRE-FABRICATED FLAT BOTTOM CHORD WOOD TRUSSES @ 24" o.c. SLOPE TOP CHORDS OF TRUSSES TO ACHIEVE SLOPE SHOWN ON ARCHITECTURAL ROOF PLAN
06TS	PREFABRICATED WOOD SCISSOR TRUSSES @ 24" o.c. SLOPE TOP & BOTTOM CHORDS OF TRUSSES TO ACHIEVE SLOPE SHOWN ON ARCHITECTURAL ROOF PLAN. TRUSS DESIGNER TO COORDINATE CHASES FOR MECHANICAL DUCTS WITH MECHANICAL DRAWINGS
06WE	BEARING WALL FRAMING = 2x6 STUDS @ 16" o.c.

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05/19/2025
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STATE OF UTAH
STRUCTURAL ENGINEER
5/7/2025
No.7717774-2203
STEVEN W. THEURER
LICENSED | UTAH

DWR LOGAN FISH HATCHERY RESIDENCE

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DATE DESCRIPTION

ROOF FRAMING PLAN

SE111

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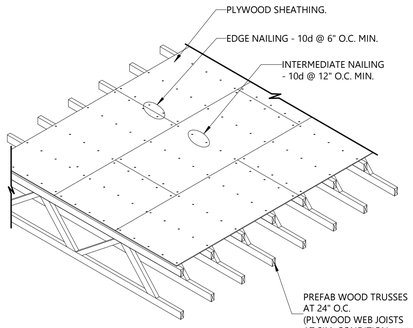
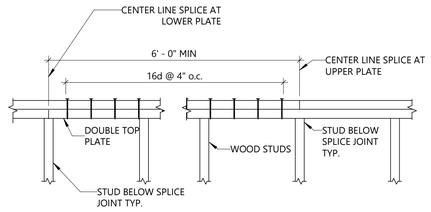
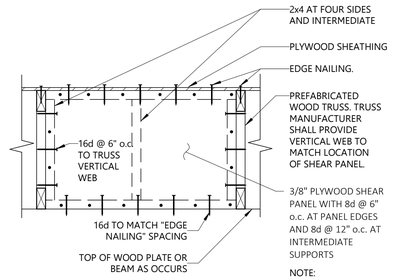


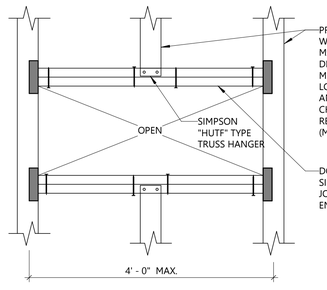
D3 TYP.WOOD SHEATHING AT TRUSS
SCALE: 3/4" = 1'-0"



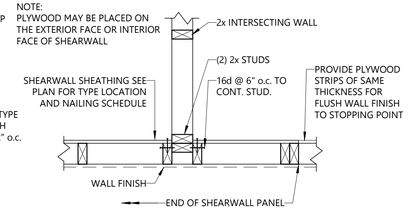
D4 TYP. SPLICE OF TOP PLATES
SCALE: 1" = 1'-0"



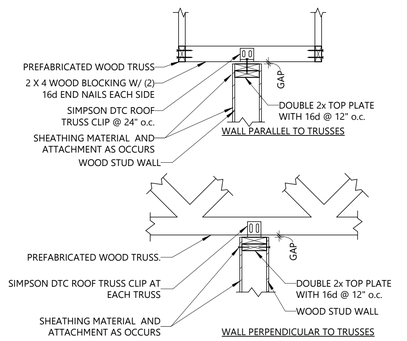
D5 TYP. PLYWOOD SHEAR PANEL
SCALE: 1" = 1'-0"



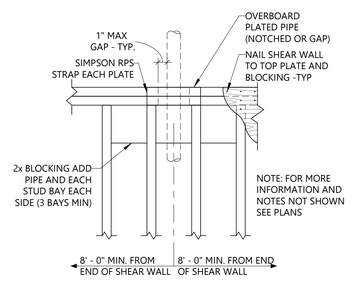
C2 TYP. ROOF OPENING
SCALE: 1" = 1'-0"



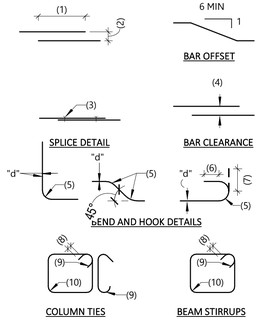
C3 SHEARWALL AT PARTITION
SCALE: 1" = 1'-0"



C4 TYP. WD. TRUSS AT WOOD STUD WALL
SCALE: 3/4" = 1'-0"

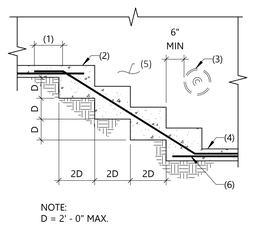


C5 TYP PIPE IN SHEARWALL
SCALE: 1 1/2" = 1'-0"



NOTES:
1. LAP. SEE G.S.N.
2. MAXIMUM 1/5 LAP BUT NOT MORE THAN 6"
3. WIRE TIES
4. 1d (1" MINIMUM)
5. RADIUS = 3d FOR BARS NOT OVER #8; 4d FOR #9, #10, AND #11 BARS; 5d FOR #14 AND #18 BARS. 5d FOR ALL GRADE 40 BARS BARS WITH 180 DEGREE HOOK
6. 4d (4" MINIMUM)
7. 12d (90 DEGREE HOOK)
8. 6d (4" MINIMUM)
9. 135 DEGREE BEND
10. BEND AROUND 1 1/2" PIN FOR #3 BARS. BEND AROUND 2" PIN FOR #4 BARS. BEND AROUND 2 1/2" PIN FOR #5 BARS

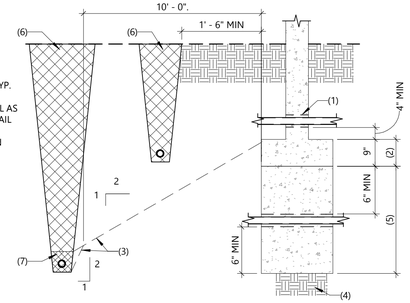
B1 TYP. CONCRETE REINF. BAR DETAILS
SCALE: 1/2" = 1'-0"



NOTE: D = 2' - 0" MAX.

NOTES:
1. LAP PER G.S.N. (24" MIN) TYP.
2. TOP OF WALL FOOTING
3. PIPE THROUGH STEM WALL AS OCCURS. SEE TYPICAL DETAIL
4. RETURN TO FOOTING THICKNESS AS SHOWN ON PLAN
5. STEM WALL. SEE OTHER DETAILS
6. CONTINUOUS FOOTING REINFORCING

B2 TYP. STEP IN CONCRETE FOOTING
SCALE: 1/2" = 1'-0"

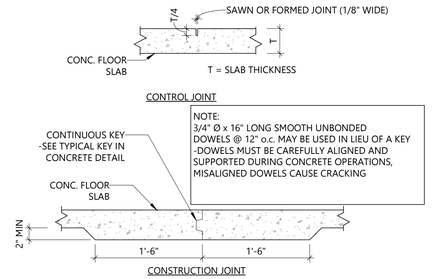


NOTES:
1. C.I. SLEEVE 2" LARGER THAN PIPE
2. NO SLEEVES PERMITTED
3. EXCAVATION BELOW THESE LINES ARE NOT PERMITTED
4. CONCRETE FILL PIPE TRENCH. EXTEND 2' - 0" EACH SIDE OF SLEEVE.
5. 3' - 0" MAXIMUM. STEP FOOTING IF NECESSARY IN ORDER TO MAINTAIN 3' - 0" MAX. HEIGHT
6. BACK FILL PER SPECS.
7. 90% DENSITY - (ASTM D-698)

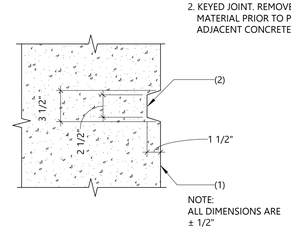
NOTE: PIPES LOCATED GREATER THAN 3' - 0" BELOW FOOTING BASE MAY BE BACKFILLED WITH COMPACTED FILL PER SPECIFICATIONS

B3 TYP. PIPE THROUGH FOOTING AND TRENCH
SCALE: 1/2" = 1'-0"

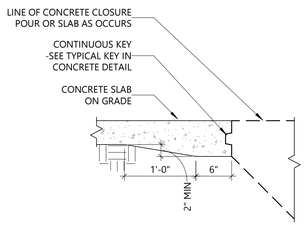
CONCRETE SAWCUT SHALL BE MADE SOON ENOUGH TO PREVENT SHRINKAGE CRACKING, BUT NOT SO SOON AS TO CAUSE SPALLING OF THE CONCRETE WHILE SAWING. WORK MUST BE ACCOMPLISHED WITHIN 24 HOURS OF CONCRETE PLACEMENT



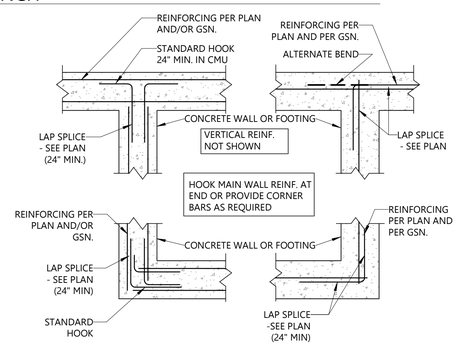
B5 TYP. CONTROL JOINTS ON SLAB
SCALE: 1" = 1'-0"



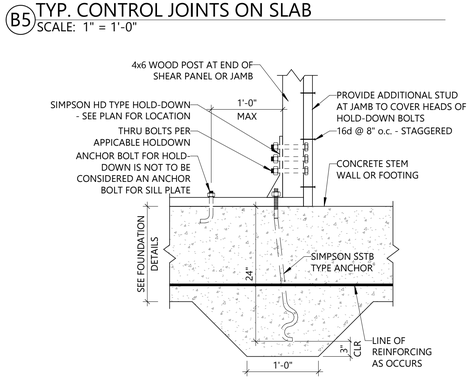
A2 TYP. KEY IN CONCRETE
SCALE: 1 1/2" = 1'-0"



A3 TYP THICKENED SLAB AT CONC. POUR
SCALE: 1" = 1'-0"



A4 TYP. CORNER REINF. IN CONCRETE FOOTING
SCALE: 1" = 1'-0"



A5 TYPICAL SIMPSON HD TYPE HOLD-DOWN
SCALE: 1" = 1'-0"

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REVIEWED FOR CODE COMPLIANCE
THOMAS PETERSON
05/19/2025
DIVISION OF FACILITIES CONSTRUCTION AND MANAGEMENT

5/7/2025
No.7717774-2203
STEVEN W. THEURER
STATE OF UTAH

DWR LOGAN FISH HATCHERY RESIDENCE

1465 WEST 200 NORTH
LOGAN, UT 84321

DFCM PROJECT #	24437520
CARTWRIGHT PROJECT #	124141
DATE:	5/7/2025
DRAWN BY:	FWP
CHECKED BY:	JPF
APPROVED BY:	SWT

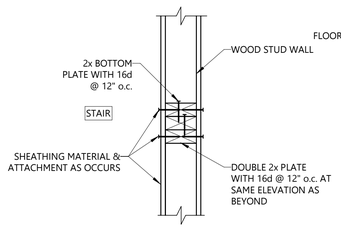
REVISIONS
DATE DESCRIPTION

TYPICAL STRUCTURAL DETAILS

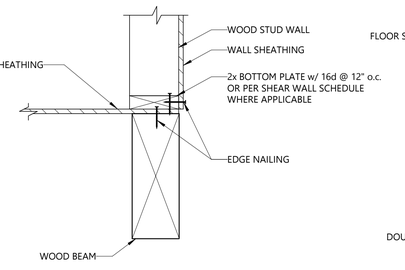
SE500

5/7/2025 4:47:56 PM

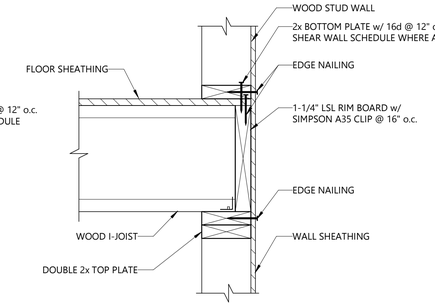
CONFORMANCE SET



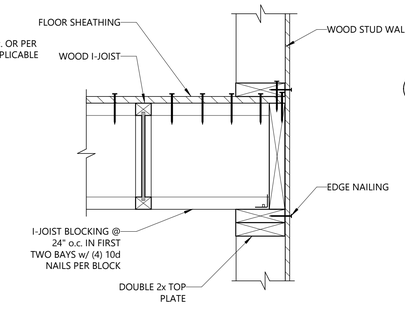
C1 WOOD STUD WALL AT STAIRS
SCALE: 1 1/2" = 1'-0"



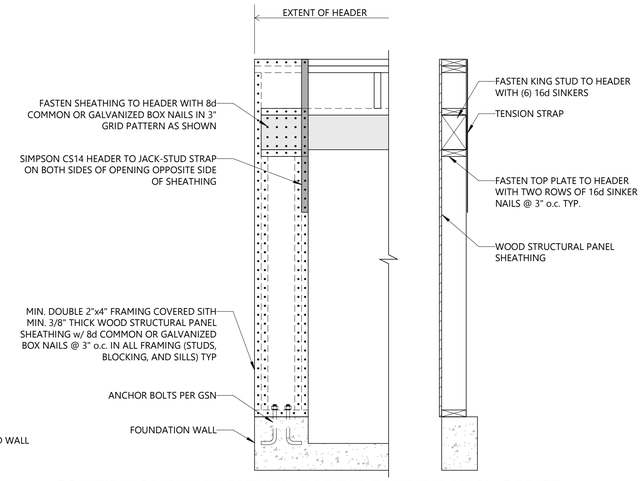
C2 WOOD STUD WALL AT WOOD BEAM
SCALE: 1 1/2" = 1'-0"



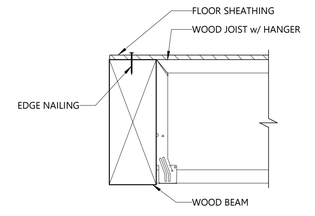
C3 WOOD JOIST AT WOOD WALL
SCALE: 1 1/2" = 1'-0"



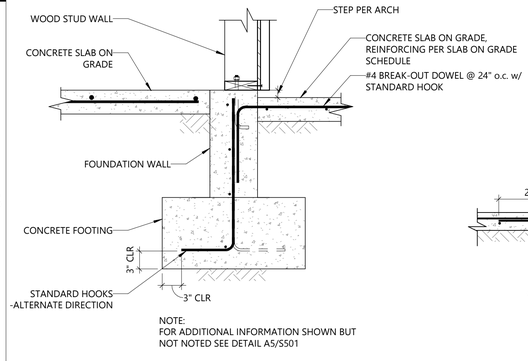
C4 WOOD JOIST AT WOOD WALL
SCALE: 1 1/2" = 1'-0"



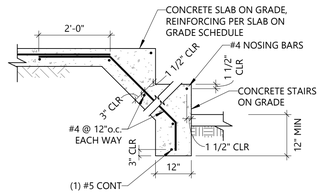
D5 CONTINUOUSLY SHEATHED PORTAL FRAME PANEL CONST.
SCALE: 3/4" = 1'-0"



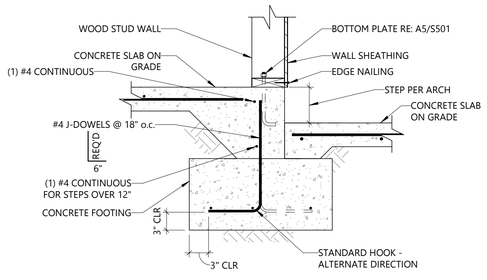
C5 WOOD JOIST AT WOOD BEAM
SCALE: 1 1/2" = 1'-0"



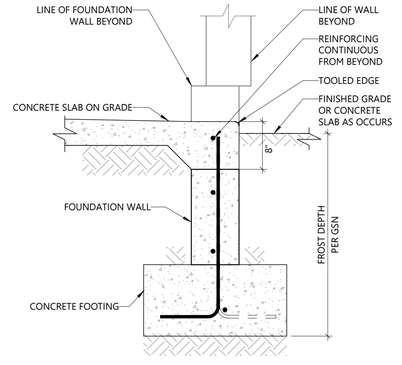
B1 WOOD STUD WALL AT CONCRETE FOOTING
SCALE: 1" = 1'-0"



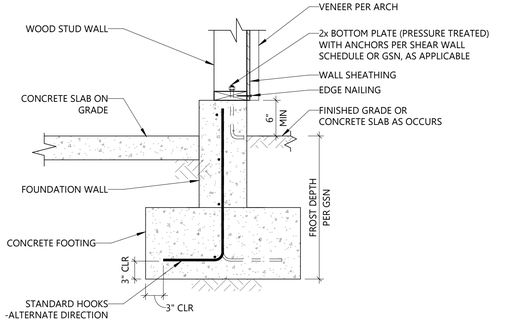
B2 CONCRETE STAIRS ON GRADE
SCALE: 1/2" = 1'-0"



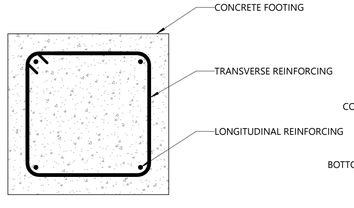
B3 WOOD STUD WALL AT CONC. FOOTING
SCALE: 1" = 1'-0"



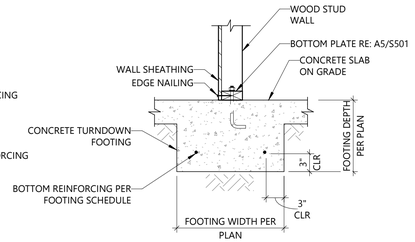
B4 DOOR OPENING AT CONCRETE FOOTING
SCALE: 1" = 1'-0"



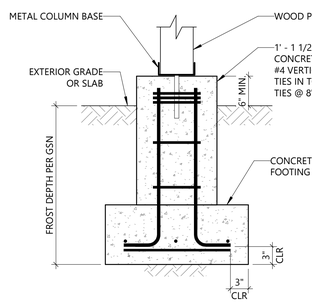
B5 WOOD STUD WALL AT CONCRETE FOOTING
SCALE: 1" = 1'-0"



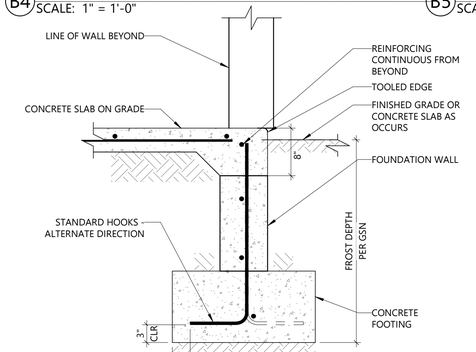
A1 SEISMIC TIE BEAM
SCALE: 1 1/2" = 1'-0"



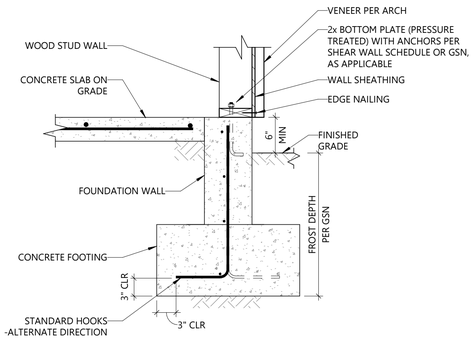
A2 WOOD STUD WALL AT CONC. FOOTING
SCALE: 1" = 1'-0"



A3 WOOD POST AT CONCRETE PIER
SCALE: 1" = 1'-0"



A4 DOOR OPENING AT CONCRETE FOOTING
SCALE: 1" = 1'-0"



A5 WOOD STUD WALL AT CONCRETE FOOTING
SCALE: 1" = 1'-0"

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REVISIONS

#	DATE	DESCRIPTION

STRUCTURAL DETAILS

SE501

CONFORMANCE SET

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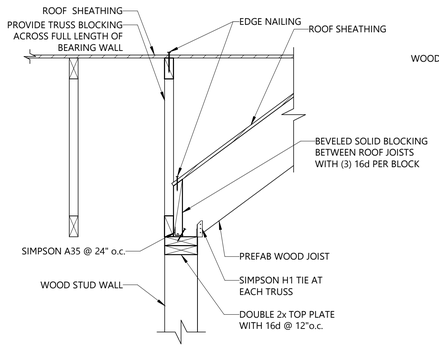
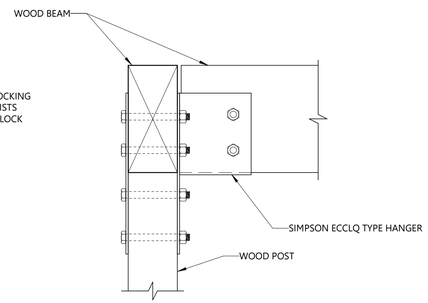
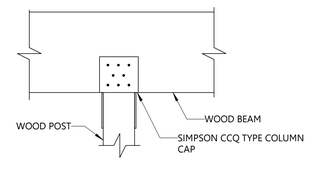


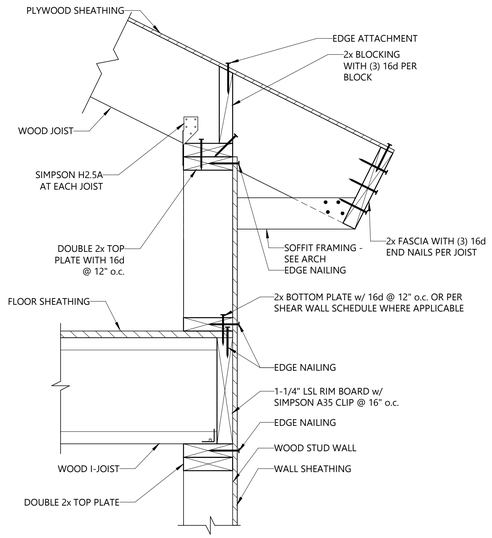
C2 PREFAB TRUSS AT WOOD STUD WALL
SCALE: 1" = 1'-0"



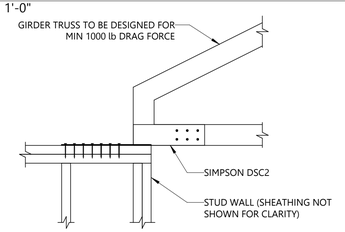
C3 WOOD BEAM AT WOOD POST
SCALE: 1 1/2" = 1'-0"



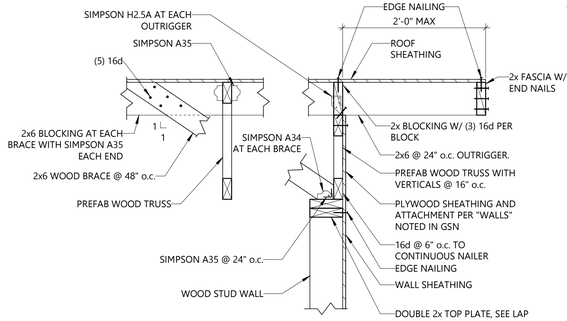
C4 WOOD BEAM AT WOOD POST
SCALE: 1" = 1'-0"



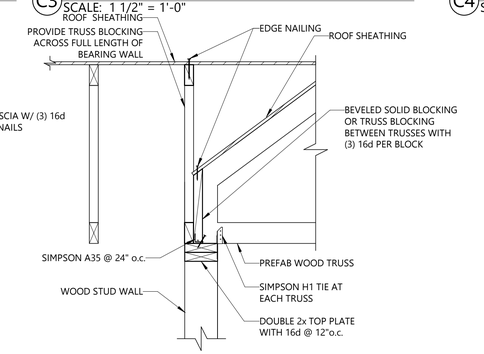
D5 WOOD JOIST AT WOOD STUD WALL
SCALE: 1 1/2" = 1'-0"



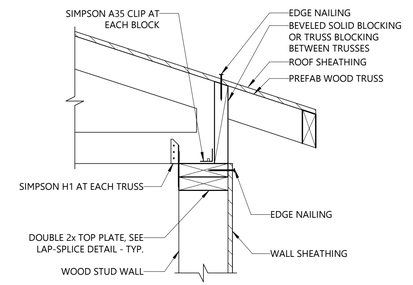
C5 DRAG AT GIRDER TRUSS
SCALE: 1" = 1'-0"



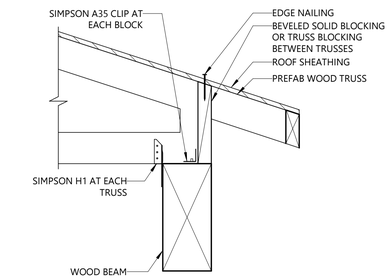
B2 WOOD OUTRIGGER AT WOOD TRUSS
SCALE: 1" = 1'-0"



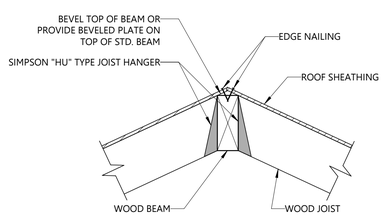
B3 PREFAB TRUSS AT WOOD STUD WALL
SCALE: 1" = 1'-0"



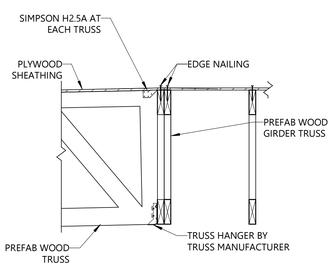
B4 WOOD TRUSS AT WOOD STUD WALL
SCALE: 1 1/2" = 1'-0"



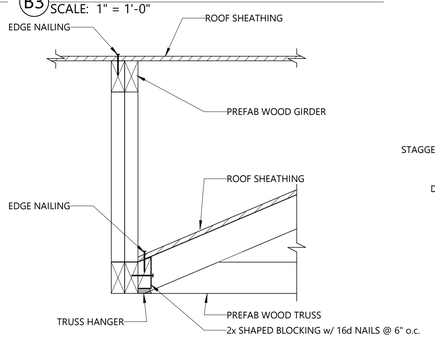
B5 WOOD TRUSS AT WOOD BEAM
SCALE: 1 1/2" = 1'-0"



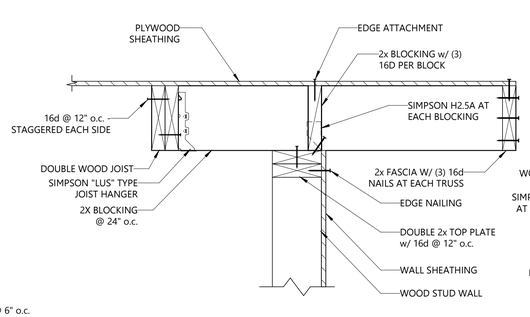
A1 WOOD JOIST AT WOOD BEAM
SCALE: 1" = 1'-0"



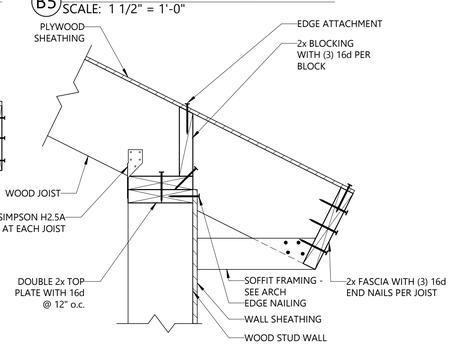
A2 PREFAB TRUSS AT GIRDER TRUSS
SCALE: 3/4" = 1'-0"



A3 TRUSS AT GIRDER TRUSS
SCALE: 1 1/2" = 1'-0"



A4 PLYWOOD SHEATHING AT WOOD STUD WALL
SCALE: 1 1/2" = 1'-0"



A5 WOOD JOIST AT WOOD STUD WALL
SCALE: 1 1/2" = 1'-0"

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DFCM APPROVAL

REVIEWED FOR CODE COMPLIANCE
THOMAS PETERSON
05/19/2025
DIVISION OF FACILITIES CONSTRUCTION AND MANAGEMENT

5/7/2025
No.7717774-2203
STEVEN W. THEURER
LICENSED STRUCTURAL ENGINEER
STATE OF UTAH

DWR LOGAN FISH HATCHERY RESIDENCE

1465 WEST 200 NORTH
LOGAN, UT 84321

DFCM PROJECT #	24437520
CARTWRIGHT PROJECT #	124141
DATE:	5/7/2025
DRAWN BY:	FWP
CHECKED BY:	JPF
APPROVED BY:	SWT

REVISIONS

#	DATE	DESCRIPTION

STRUCTURAL DETAILS

SE502

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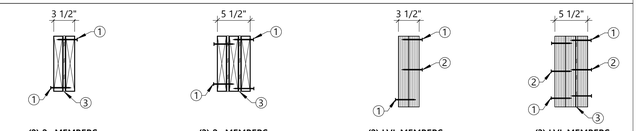
CONFORMANCE SET

WOOD POST SCHEDULE

MARK	SIZE		MARK	SIZE		MARK	SIZE
SP1	(2) 2x4		WP1	4x4		EP1	3-1/2x3-1/2 PSL
SP2	(3) 2x4		WP2	4x6		EP2	3-1/2x5-1/4 PSL
SP3	(4) 2x4		WP3	4x8		EP3	3-1/2x7 PSL
SP4	(2) 2x6		WP4	6x6		EP4	5-1/4x5-1/4 PSL
SP5	(3) 2x6		WP5	6x8		EP5	5-1/4x7 PSL
SP6	(4) 2x6		WP6	8x8		EP6	7x7 PSL

WOOD BEAM AND HEADER SCHEDULE



(2) 2x MEMBERS | (3) 2x MEMBERS | (2) LVL MEMBERS | (3) LVL MEMBERS

KEYNOTES:
1. 16d NAILS STAGGERED AT 8" o.c. AS SHOWN
2. (3) ROWS OF 16d NAILS AT 8" o.c. AT 14" MEMBERS OR DEEPER AS SHOWN
3. PLYWOOD SPACER - 3" WIDE BY BEAM DEPTH (MIN.)

MARK	SIZE		MARK	SIZE		MARK	SIZE
WH1	(2) 2x6		LH1	(2) 1-3/4x5-1/2 LVL		GH1	3-1/8x9 GL
WH2	(3) 2x6		LH2	(3) 1-3/4x5-1/2 LVL		GH2	5-1/8x9 GL
WH3	(2) 2x8		LH3	(2) 1-3/4x7-1/4 LVL		GH3	3-1/8x10-1/2 GL
WH4	(3) 2x8		LH4	(3) 1-3/4x7-1/4 LVL		GH4	5-1/8x10-1/2 GL
WH5	(2) 2x10		LH5	(2) 1-3/4x9-1/4 LVL		GH5	3-1/8x12 GL
WH6	(3) 2x10		LH6	(3) 1-3/4x9-1/4 LVL		GH6	5-1/8x12 GL
WH7	(2) 2x12		LH7	(2) 1-3/4x9-1/2 LVL		GH7	3-1/8x13-1/2 GL
WH8	(3) 2x12		LH8	(3) 1-3/4x9-1/2 LVL		GH8	5-1/8x13-1/2 GL
WH9	4x8		LH9	(2) 1-3/4x11-1/4 LVL		GH9	5-1/8x15 GL
WH10	6x8		LH10	(3) 1-3/4x11-1/4 LVL		GH10	5-1/8x16-1/2 GL
			LH11	(2) 1-3/4x11-7/8 LVL		GH11	5-1/8x18 GL
			LH12	(3) 1-3/4x11-7/8 LVL		GH12	5-1/8x19-1/2 GL
			LH13	(2) 1-3/4x14 LVL		GH13	5-1/8x21 GL
			LH14	(3) 1-3/4x14 LVL		GH14	5-1/8x22-1/2 GL
			LH15	(2) 1-3/4x16 LVL			
			LH16	(3) 1-3/4x16 LVL			
			LH17	(3) 1-3/4x18 LVL			
			LH18	(3) 1-3/4x22 LVL			
			LH19	(3) 1-3/4x24 LVL			

HOLDOWN SCHEDULE

MARK	DESCRIPTION	COMMENTS
1	SIMPSON LSTHD8 OR HDU2-SDS2.5	SEE NOTE 5 FOR ANCHOR
2	SIMPSON STHD10 OR HDU4-SDS2.5	SEE NOTE 5 FOR ANCHOR

NOTES
1. ALL HOLDOWNS BY SIMPSON STRONG-TIE, U.N.O.
2. INSTALL ALL HARDWARE AS PER MANUFACTURERS RECOMMENDATIONS.
3. HOLDOWNS AT CORNERS TO BE ATTACHED TO COMMON STUDS TO CORNER WALLS
4. ATTACH HOLDOWNS TO (2) 2X STUDS UNO
5. PROVIDE 5/8" Ø THREADED ROD. EPOXY INTO CLEAN DRY HOLE WITH SIMPSON SET-3G EPOXY (ICC REPORT # 4057) OR EQUAL. PROVIDE 12" MINIMUM EMBEDMENT.

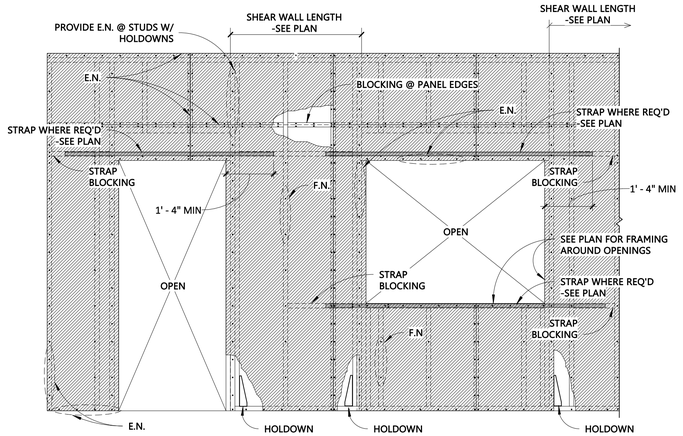
ROOF JOIST HANGER SCHEDULE

JOIST SIZE	FLAT HANGER	SLOPED AND/OR SKEWED HANGER	COMMENT
2x10	LUS28	HU210 OR HUC210	---

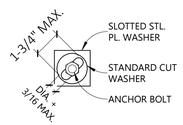
WOOD SHEAR WALL SCHEDULE

MARK	SHEATHING ATTACHMENT: SHEATHING THICKNESS	WALL SIDES SHEATHED	FRAMING THICKNESS AT PANEL EDGES	EDGE NAILING (E.N.)	FIELD NAILING (F.N.)	BOTTOM PLATE ATTACHMENT: NOMINAL SILL PLATE THICKNESS	ANCHOR BOLTS TO CONCRETE	NAILS/SCREWS TO WOOD	COMMENTS
SWA	7/16" PLYWOOD	1	2x	8d @ 6" o.c.	8d @ 12" o.c.	2x	5/8" Ø @ 48" o.c.	16d STAGGERED AT 5" o.c.	BLOCKED
SWB	7/16" PLYWOOD	1	2x	8d @ 4" o.c.	8d @ 12" o.c.	2x	5/8" Ø @ 32" o.c.	16d STAGGERED AT 4" o.c.	BLOCKED
SWC	7/16" PLYWOOD	1	2x	8d @ 3" o.c.	8d @ 12" o.c.	2x	5/8" Ø @ 24" o.c.	16d STAGGERED AT 3" o.c.	BLOCKED
SWD	7/16" PLYWOOD	1	3x OR (2)2x	8d @ 2" o.c.	8d @ 12" o.c.	2x	5/8" Ø @ 18" o.c.	16d STAGGERED AT 2" o.c.	BLOCKED
SWCC	7/16" PLYWOOD	2	3x OR (2)2x	8d @ 3" o.c.	8d @ 12" o.c.	3x	5/8" Ø @ 16" o.c.	1/4"x4 1/2" SDS SCREW STAGGERED AT 4" o.c.	BLOCKED
SWDD	7/16" PLYWOOD	2	3x OR (2)2x	8d @ 2" o.c.	8d @ 12" o.c.	3x	5/8" Ø @ 12" o.c.	1/4"x4 1/2" SDS SCREW STAGGERED AT 3" o.c.	BLOCKED

NOTES
1. WALL STUDS SUPPORTING SHEATHING SHALL BE SPACED AT 16" O.C. MAX.
2. PROVIDE BLOCKING AT ALL PANEL EDGES AT PLYWOOD SHEATHING.
3. ANCHOR BOLTS SHALL BE EMBEDDED 7 INCHES MIN. INTO CONCRETE.
4. PROVIDE 2 ANCHOR BOLTS MINIMUM PER SILL PLATE PIECE, EACH WITHIN 12 INCHES AND NO CLOSER THAN 4 INCHES OF EACH END.
5. PROVIDE 2 FULL HEIGHT STUDS MIN. AT EACH END OF EACH SHEAR WALL U.N.O.
6. ALL ANCHOR BOLTS SHALL HAVE A NUT AND MIN. 3"X3"X.229" STEEL PLATE WASHER.
7. WHEN (2) 2X STUDS ARE USED, FACE NAIL STUDS TOGETHER W/ 16D NAILS AT 2" O.C., STAGGERED.



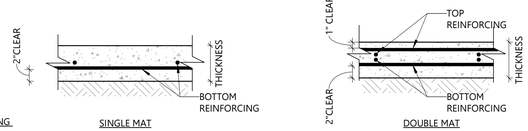
SHEAR WALL ELEVATION VIEW



ALTERNATE SLOTTED PL. WASHER

SLAB ON GRADE SCHEDULE

MARK	THICKNESS	BOTTOM REINFORCING	TOP REINFORCING	COMMENTS
SG1	4"	#3 @ 18" o.c., EACH WAY	N/A	

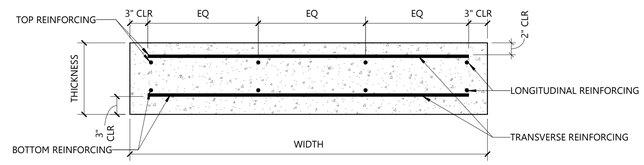


REINFORCING MATS: SINGLE MAT | DOUBLE MAT

NOTES:
1. PLACE SLAB ON GRADE OVER PREPARED AND COMPACTED SUBGRADE PER THE GEOTECHNICAL REPORT

FOOTING SCHEDULE

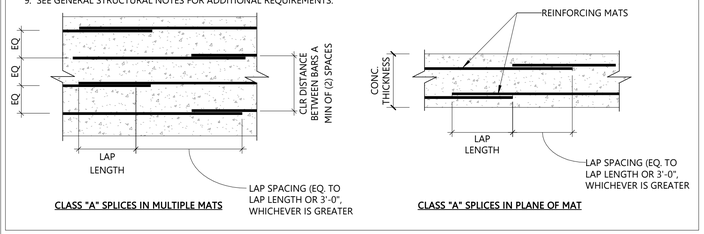
MARK	WIDTH	LENGTH	THICKNESS	LONGITUDINAL REINFORCING	TRANSVERSE REINFORCING
FC1.5	1'-6"	CONT.	1'-6"	(2) #5, TOP & BOTTOM	#3 STIRRUPS @ 18" o.c.
FC2.0	2'-0"	CONT.	1'-0"	(2) #5, BOTTOM	---
FS3.0	3'-0"	3'-0"	1'-0"	(3) #5, BOTTOM	(3) #5, BOTTOM



CONCRETE REINFORCING BAR LAP SPLICE SCHEDULE

BAR SIZE	f ' c = 3,000psi				f ' c = 4,000psi				f ' c = 5,000psi				f ' c = 6,000psi			
	REGULAR CLASS		TOP CLASS		REGULAR CLASS		TOP CLASS		REGULAR CLASS		TOP CLASS		REGULAR CLASS		TOP CLASS	
	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B
#3	13"	17"	17"	21"	12"	16"	16"	21"	12"	16"	16"	21"	12"	16"	16"	21"
#4	17"	22"	22"	28"	15"	19"	19"	25"	13"	17"	17"	22"	12"	16"	16"	21"
#5	21"	27"	27"	35"	18"	24"	24"	31"	16"	21"	21"	27"	15"	19"	19"	25"
#6	27"	36"	36"	46"	24"	31"	31"	40"	21"	28"	28"	36"	20"	25"	25"	33"
#7	37"	48"	48"	63"	32"	42"	42"	54"	29"	38"	38"	49"	27"	34"	34"	44"
#8	49"	64"	64"	82"	42"	55"	55"	71"	38"	49"	49"	64"	35"	45"	45"	58"
#9	62"	80"	80"	104"	54"	70"	70"	90"	48"	62"	62"	81"	44"	57"	57"	74"
#10	78"	102"	102"	132"	68"	88"	88"	115"	61"	79"	79"	102"	56"	72"	72"	94"
#11	96"	125"	125"	162"	83"	108"	108"	141"	76"	97"	97"	126"	68"	88"	88"	115"

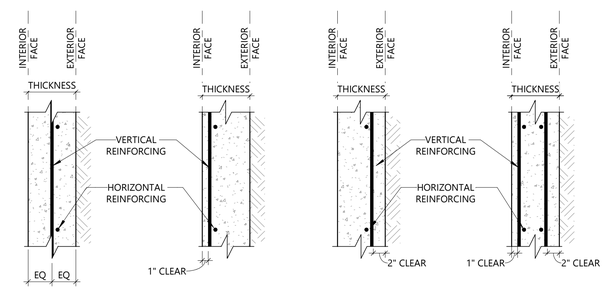
NOTES:
1. THIS SCHEDULE SHALL BE USED FOR ALL BAR SPLICES IN CONCRETE WALLS AND SLABS, U.N.O.
2. CLASS "A" SPLICES MAY BE USED ONLY IN CASES WHERE 50% OR LESS OF THE BARS ARE SPLICED WITHIN THE LAP SPLICE LENGTH, SEE DETAILS BELOW.
3. CLASS "B" SPLICES SHALL BE USED FOR ALL SPLICES UNLESS THE REQUIREMENTS CLASS "A" SPLICES ARE MET.
4. TIES AND STIRRUPS SHALL NOT BE SPLICED.
5. SPLICES FOR BUNDLED BARS:
   A. FOR BUNDLED BARS OF THREE OR LESS, LAP SPLICE LENGTHS SHALL BE MULTIPLIED BY 1.2.
   B. FOR BUNDLED BARS OF FOUR OR MORE, LAP SPLICE LENGTHS SHALL BE MULTIPLIED BY 1.33.
   C. INDIVIDUAL BAR SPLICES WITHIN A BUNDLE SHALL NOT OVERLAP.
   D. ENTIRE BUNDLES SHALL NOT BE LAP SPLICED.
6. FOR ALL LIGHTWEIGHT CONCRETE, LAP LENGTHS SHALL BE MULTIPLIED BY 1.3.
7. FOR ALL EPOXY COATED BARS, LAP LENGTHS SHALL BE MULTIPLIED BY 1.5.
8. TOP BARS ARE DEFINED AS HORIZONTAL BARS WHERE 12", OR MORE, OF FRESH CONCRETE IS CAST BELOW THE REINFORCING BAR.
9. SEE GENERAL STRUCTURAL NOTES FOR ADDITIONAL REQUIREMENTS.



CLASS "A" SPLICES IN MULTIPLE MATS | CLASS "A" SPLICES IN PLANE OF MAT

FOUNDATION WALL SCHEDULE

MARK	THICKNESS	VERTICAL REINFORCING	HORIZONTAL REINFORCING	REINFORCING LOCATION
FW8	8"	#4 @ 18" o.c.	#4 @ 12" o.c.	CENTERED



REINFORCING LOCATION: CENTERED | INTERIOR FACE | EXTERIOR FACE | EACH FACE

NOTES:
1. FOR WALLS THAT ARE CAST DIRECTLY AGAINST EARTH, REINFORCING PLACED ON EXTERIOR FACE SHALL HAVE 3" CLEAR COVER.
2. PROVIDE MINIMUM OF (1) #4 HORIZONTAL BAR WITHIN 12" OF TOP AND BOTTOM OF EACH WALL.

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SE601

5/7/2025 4:47:59 PM

CONFORMANCE SET

SECTION 01 00 00 – GENERAL REQUIREMENTS

1. DRAWINGS ARE DIAGRAMMATIC AND SHOULD NOT BE SCALED FOR EXACT DIMENSIONS; EXACT DIMENSIONS AND LOCATIONS SHALL BE DETERMINED BY MEASUREMENTS IN THE FIELD AND SHALL BE SUBJECT TO APPROVAL BY THE ARCHITECT/ENGINEER. THE CONTRACTOR SHALL VERIFY DIMENSION PRIOR TO ORDERING EQUIPMENT AND MATERIAL.
2. BEFORE SUBMITTING A BID, IT WILL BE NECESSARY FOR EACH CONTRACTOR TO VISIT THE SITE AND ASCERTAIN FOR HIMSELF/HERSELF THE CONDITIONS TO BE MET IN INSTALLING THE WORK AND MAKE PROVISIONS FOR THE CONDITIONS IN THE FINAL PRICE. FAILURE TO COMPLY WITH THIS REQUIREMENT SHALL NOT BE CONSIDERED JUSTIFICATION FOR THE OMISSION OR FAULTY INSTALLATION OF ANY WORK. BY SUBMITTING A BID, THE CONTRACTOR IS STATING THAT THE BID COVERS ALL WORK NECESSARY TO PROPERLY INSTALL THE SYSTEM INDICATED.
3. IN CASE OF DISAGREEMENT BETWEEN THE DRAWINGS AND SPECIFICATIONS, OR WITHIN THE DRAWINGS OR SPECIFICATIONS, THE BID SHALL INCLUDE THE GREATER AMOUNT OF WORK AND THE MATTER SHALL BE REFERRED TO THE ARCHITECT/ENGINEER.
4. THE CONTRACTOR SHALL SECURE AND PAY ALL FEES ASSOCIATED WITH ANY AND ALL NECESSARY PERMITS, LICENSES, AND INSPECTIONS REQUIRED FOR THE WORK.
5. ALL WORK SHALL COMPLY WITH ALL PERTINENT NATIONAL, STATE AND LOCAL ORDINANCES AND CODES, AND ALL AMERICAN DISABILITIES ACT (ADA) REQUIREMENTS, AND ANY AMENDMENTS. NOTHING WITHIN THE DRAWINGS OR SPECIFICATIONS SHALL BE CONSTRUED AS WAIVING ANY OF THE RULES, REGULATIONS, OR REQUIREMENTS OF THE AUTHORITIES HAVING JURISDICTION. IN THE EVENT OF A CONFLICT, THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION SHALL GOVERN. THE CONFLICT SHALL BE REPORTED TO THE ARCHITECT/ENGINEER IMMEDIATELY, AND NECESSARY MODIFICATION SHALL BE MADE AT NO ADDITIONAL COST TO THE OWNER OR ARCHITECT/ENGINEER.
6. IF THE REQUIREMENTS OF THE CONSTRUCTION DOCUMENTS ARE IN EXCESS OF THOSE REQUIRED BY CODE, THE PROVISIONS OF THE CONSTRUCTION DOCUMENTS SHALL TAKE PRECEDENCE.
7. ALL EQUIPMENT AND MATERIALS FOR WHICH APPROVAL STANDARDS HAVE BEEN ESTABLISHED BY UNDERWRITERS' LABORATORIES, INC (UL), FACTORY MUTUAL (FM), AND AMERICAN STANDARD CODES SHALL BE SO APPROVED AND SHALL BEAR APPROVAL LABELS.
8. ALL WORK SHALL BE IN COMPLIANCE WITH ALL APPLICABLE SAFETY REGULATIONS.
9. SHOULD ANY DOUBT ARISE AS TO THE TRUE MEANING OF THE DRAWINGS OR SPECIFICATIONS, REFERENCE SHALL BE MADE TO THE ARCHITECT/ ENGINEER, WHOSE DECISION SHALL BE FINAL. THE ARCHITECT/ ENGINEER WILL RESPOND WITHIN 10 BUSINESS DAYS AFTER RECEIPT OF REQUEST FOR INFORMATION. THE CONTRACTOR SHALL CONFORM TO THESE RESPONSES AS PART OF THE CONTRACT WITH NO ADDITIONAL COST TO THE OWNER OR ARCHITECT/ ENGINEER. NO ALLEGED STATEMENT BY THE ARCHITECT/ ENGINEER IS ACCEPTABLE EXCUSE FOR INFERIOR WORK.
10. THE LISTING OF PRODUCT MANUFACTURERS, MATERIALS AND METHODS IS INTENDED TO ESTABLISH A STANDARD OF QUALITY. PRODUCTS BY OTHER MANUFACTURERS MAY BE ACCEPTED PROVIDED THEY HAVE THE EQUIVALENT CAPACITY, CONSTRUCTION, AND PERFORMANCE. THE ARCHITECT/ ENGINEER SHALL BE THE SOLE JUDGE OF QUALITY AND EQUIVALENCE OF EQUIPMENT, MATERIALS, AND METHODS. HOWEVER, UNDER NO CIRCUMSTANCES SHALL ANY SUBSTITUTION BE MADE WITHOUT WRITTEN APPROVAL OF THE ARCHITECT/ ENGINEER PRIOR TO BIDDING.
11. EQUIPMENT HAS BEEN CHOSEN TO FIT WITHIN THE AVAILABLE SPACE. WHERE SUBSTITUTED OR ALTERNATIVE EQUIPMENT IS PROPOSED, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THAT THE EQUIPMENT WILL FIT WITHIN THE SPACE AVAILABLE, INCLUDING ALL REQUIRED CODE AND MAINTENANCE CLEARANCES, AND TO COORDINATE ALL EQUIPMENT REQUIREMENTS WITH OTHER CONTRACTORS.
12. OBTAIN ALL EQUIPMENT OR MATERIAL OF EACH TYPE THROUGH ONE SOURCE, LOCALLY WHEN POSSIBLE, FROM A SINGLE MANUFACTURER.
13. SUBSTITUTIONS: PRODUCTS OF EQUAL PERFORMANCE CHARACTERISTICS MAY BE CONSIDERED. CONTRACTORS WISHING TO SUBSTITUTE A PRODUCT OR MATERIAL SHALL SUBMIT EACH REQUEST TO THE ARCHITECT/ ENGINEER IN WRITING AT LEAST 7 DAYS PRIOR TO BIDS BEING DUE. REQUESTS SHALL NOT BE CONSIDERED AFTER THAT TIME. THE ARCHITECT/ ENGINEER SHALL REVIEW THE REQUEST AND IF ACCEPTABLE WILL ISSUE A LETTER ALLOWING THE SUBSTITUTION. ANY ANTICIPATED USE OF A NON-SPECIFIED PRODUCT WITHOUT WRITTEN APPROVAL IS STRICTLY THE RISK OF THE CONTRACTOR. IF A REQUEST IS REJECTED, THE CONTRACTOR SHALL FURNISH THE SPECIFIED PRODUCT OR MATERIAL. EACH CONTRACTOR IS RESPONSIBLE FOR COSTS INCURRED BY OTHER TRADES AS A RESULT OF ANY SUBSTITUTION MADE BY THE CONTRACTOR.
14. SUBMITTALS: SUBMIT THE FOLLOWING IN ACCORDANCE WITH DIVISION 1 SPECIFICATIONS AND THE REQUIREMENTS OF THIS SECTION FOR EACH PIECE OF EQUIPMENT AND EACH TYPE OF COMPONENT AND MATERIAL.
    1. SUBMIT PRODUCT DATA FOR EACH TYPE OF PRODUCT SPECIFIED.
    2. SUBMIT SHOP/COORDINATION DRAWINGS AT A MINIMUM SCALE OF 1/4"= 1'-0" DETAILING ALL MAJOR EQUIPMENT, COMPONENT, AND SYSTEMS IN RELATION TO WORK OF OTHER TRADES, INDICATING INSTALLATION, CODE, AND WORKING CLEARANCES AND ACCESS FOR ALL EQUIPMENT AND COMPONENTS.
    3. SUBMIT SAMPLES OF COLOR, LETTERING, AND GRAPHICS FOR EACH IDENTIFICATION PRODUCT.
    4. CONTRACTOR SHALL SEPARATE SUBMITTALS TO CONTAIN NO MORE THAN ONE SPECIFICATION SECTION.
    5. WITHIN 30 DAYS AFTER AWARD OF CONTRACT, THE CONTRACTOR SHALL SUBMIT A MINIMUM OF FOUR (4) COPIES OF EACH SUBMITTAL WITH COVERSHEET TO THE ARCHITECT/ ENGINEER. IF ACCEPTABLE TO THE ARCHITECT/ OWNER, AN ELECTRONIC VERSION CONTAINING THE COVERSHEET AND ALL SUBMITTAL DATA WITHIN ONE FILE MAY BE SUBMITTED IN LIEU OF THE 4 COPIES.
    6. EACH SUBMITTAL SHALL INCLUDE THE FOLLOWING INFORMATION. SUBMITTALS THAT DO NOT COMPLY WITH THE FOLLOWING REQUIREMENTS WILL BE MARKED "REJECTED" AND RETURNED.
        1. COVERSHEET: INDICATING THE NAMES AND ADDRESS OF THE PROJECT, ARCHITECT, ENGINEER, AND CONTRACTOR, AND THE SUBMITTAL NAME AND NUMBER. NUMBER SHALL BE BASED ON THE SPECIFICATION SECTION, SUBMITTAL SEQUENCE NUMBER, AND A REVISION SEQUENCE NUMBER IS APPLICABLE. EX: 262726-02-R1 IS THE 1ST VERSION TO THE 2ND SUBMITTAL FOR SECTION 26 27 26.
        2. LIST OF VARIATIONS: THIS PAGE SHALL LIST ALL VARIATIONS INCLUDING FURNISHED/UNFURNISHED OPTIONS AND FEATURES BETWEEN THE SUBMITTED ITEM AND THE SCHEDULED/SPECIFIED ITEM. IF THERE ARE NOT VARIATIONS, THE PAGE SHALL STATE "NO VARIATIONS."
        3. PRODUCT INFORMATION: CLEARLY INDICATE MANUFACTURER'S NAME, DESIGNATION, SIZE, PERFORMANCE AND CAPACITY DATA, DIMENSIONAL DATA, SUFFICIENT PICTORIAL AND DIAGRAMMATIC DATA TO SHOW CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS. APPLICABLE INFORMATION SHALL BE CLEARLY INDICATED AND NON-APPLICABLE INFORMATION SHALL BE STRUCK-OUT.
        4. WARRANTY INFORMATION: MANUFACTURER'S WARRANTY CERTIFICATE THAT MEETS OR EXCEED THE REQUIREMENTS OF THE CONSTRUCTION DOCUMENTS.
        5. CERTIFICATION BY THE GENERAL AND SUB-CONTRACTOR THAT MATERIAL SUBMITTED IS IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS, SIGNED AND DATED.
    7. SUBMITTAL REVIEW TIME IN THE ARCHITECTS/ ENGINEER'S OFFICE WILL BE A MINIMUM OF 10 WORKING DAYS PER REVIEW. THE CONTRACTOR SHALL CONSIDER THIS REVIEW TIME WHEN SCHEDULING WORK.
    8. EACH SUBMITTAL WILL BE MARKED WITH ONE OF THE FOLLOWING:
        1. NO EXCEPTIONS TAKEN – SUBMITTAL WAS REVIEWED AND NO DEVIATIONS WERE FOUND.
        2. EXCEPTIONS NOTED, SUBMIT RESPONSE – SUBMITTAL WAS REVIEWED AND FOUND TO HAVE MINOR DEVIATIONS OR MISSING INFORMATION. A RE-SUBMITTAL IS NOT REQUIRED; HOWEVER, A WRITTEN RESPONSE TO ALL REVIEW COMMENTS SHALL BE SUBMITTED.
        3. EXCEPTIONS NOTED, RESUBMIT – SUBMITTAL WAS REVIEWED AND MAJOR DEVIATIONS WERE NOTED. THE SUBMITTAL SHALL BE REVISED TO ADDRESS THE NOTED DEVIATIONS AND RESUBMITTED.
        4. REJECTED – SUBMITTAL WAS REVIEWED AND IS NOT IN CONFORMANCE OR IS NOT IN THE CORRECT FORMAT. A REVISED SUBMITTAL THAT IS IN CONFORMANCE SHALL BE RESUBMITTED.
    9. INADEQUATE OR INCOMPLETE SUBMITTALS WILL NOT BE REVIEWED AND WILL BE RETURNED MARKED "REJECTED."
    10. THE ARCHITECT'S/ ENGINEER'S REVIEW OF A SUBMITTAL SHALL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF ERRORS, OMISSIONS, OVERSIGHTS, OR DEVIATIONS THAT MAY BE CONTAINED WITHIN THE SUBMITTAL. IF THE CONTRACTOR PROCEEDS BASED ON UNDETECTED ERRORS, OMISSIONS, OVERSIGHTS, OR DEVIATIONS, IT IS AT HIS/HER SOLE RESPONSIBILITY. REGARDLESS OF ANY INFORMATION CONTAINED IN THE SUBMITTAL OR THE ARCHITECT'S/ ENGINEER'S REVIEW THEREOF, THE CONTRACT DOCUMENTS SHALL GOVERN THE WORK AND NEITHER WAIVED NOR SUSPENDED BY THE SUBMITTAL REVIEW.
    11. EQUIPMENT AND MATERIAL PURCHASED WITHOUT A "NO EXCEPTIONS TAKEN" SUBMITTAL REVIEW IS AT THE RISK OF THE CONTRACTOR. THE COST OF REMOVAL AND REPLACEMENT OF SUCH ITEMS WHICH IS JUDGED UNSATISFACTORY BY THE ARCHITECT/ ENGINEER FOR ANY REASON SHALL BE AT THE CONTRACTOR'S EXPENSE.
15. OPERATIONS AND MAINTENANCE REQUIREMENTS (PER ENERGY CODE): CONSTRUCTION DOCUMENTS SHALL REQUIRE THAT WITHIN 90 DAYS AFTER THE DATE OF SYSTEM ACCEPTANCE RECORD DRAWINGS OF THE ACTUAL INSTALLATION BE PROVIDED TO THE BUILDING OWNER OR THE DESIGNATED REPRESENTATIVE OF THE BUILDING OWNER. RECORD DRAWING SHALL INCLUDE AS A MINIMUM THE LOCATION AND PERFORMANCE DATA ON EACH PIECE OF EQUIPMENT, GENERAL CONFIGURATION OF DUCT AND PIPE DISTRIBUTION SYSTEM INCLUDING SIZES, AND THE TERMINAL AIR OR WATER DESIGN FLOW RATES.
16. MANUALS. CONSTRUCTION DOCUMENTS SHALL REQUIRE THAT AN OPERATING MANUAL AND A MAINTENANCE MANUAL BE PROVIDED TO THE BUILDING OWNER OR THE DESIGNATED REPRESENTATIVE OF THE BUILDING OWNER WITHIN 90 DAYS AFTER THE DATE OF SYSTEM ACCEPTANCE. THESE MANUALS SHALL BE IN ACCORDANCE WITH INDUSTRY-ACCEPTED STANDARDS AND SHALL INCLUDE, AT A MINIMUM, THE FOLLOWING:
    1. SUBMITTAL DATA STATING EQUIPMENT SIZE AND SELECTED OPTIONS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE.
    2. OPERATIONS MANUALS AND MAINTENANCE MANUALS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE, EXCEPT EQUIPMENT NOT FURNISHED AS PART OF THE PROJECT. REQUIRED ROUTINE MAINTENANCE ACTIONS SHALL BE CLEARLY IDENTIFIED.
    3. NAMES AND ADDRESSES OF AT LEAST ONE SERVICE AGENCY.
    4. HVAC CONTROLS SYSTEM MAINTENANCE AND CALIBRATION INFORMATION, INCLUDING WIRING DIAGRAMS, SCHEMATICS, AND CONTROL SEQUENCE DESCRIPTIONS. DESIRED OR FIELD-DETERMINED SET-POINTS SHALL BE PERMANENTLY RECORDED ON CONTROL DRAWINGS AT CONTROL DEVICES OR, FOR DIGITAL CONTROL SYSTEMS, IN PROGRAMMING COMMENTS.
    5. A COMPLETE NARRATIVE OF HOW EACH SYSTEM IS INTENDED TO OPERATE, INCLUDING SUGGESTED SET-POINTS.
17. RECORD DRAWINGS: THE CONTRACTOR SHALL MAINTAIN A SET OF CLEARLY MARKED RECORD DRAWING PRINTS AT THE SITE, WHICH INDICATE ALL ALTERATIONS AND CHANGES. WITHIN 30 DAYS AFTER COMPLETION OF WORK, THE CONTRACTOR SHALL PROVIDE A REPRODUCIBLE SET IN OWNER'S REQUESTED FORMAT (PLOTS, CAD, PDF, ETC.) WITH THE ARCHITECT'S/ ENGINEER'S SEAL STRUCK-OUT AND EACH DRAWING MARKED WITH THE GENERAL AND ASSOCIATED SUB-CONTRACTORS' NAMES AND DATE.
18. ALL EQUIPMENT AND MATERIAL SHALL BE INSTALLED, CONNECTED, AND ADJUSTED PER THE MANUFACTURER'S WRITTEN INSTRUCTIONS AND RECOMMENDATIONS.
19. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR COORDINATING WITH ALL OTHER TRADES PRIOR TO SYSTEM INSTALLATION. THE CONTRACTOR SHALL REFER TO OTHER TRADE PLANS FOR OTHER WORK THAT MAY IMPACT HIS/HER WORK.
20. WHERE SPACE REQUIREMENTS CONFLICT, THE FOLLOWING ORDER OF PRECEDENCE SHALL BE USED.
    1. BUILDING LINES AND STRUCTURAL MEMBERS.
    2. SOIL, DRAIN, AND CONDENSATE PIPING.
    3. GREASE – RATED DUCTWORK.
    4. REFRIGERANT AND VENT PIPING.
    5. HVAC DUCTWORK.
    6. HVAC AND DOMESTIC WATER PIPING.
    7. FIRE PROTECTION (SPRINKLER & STANDPIPE) PIPING.
    8. ELECTRICAL CONDUIT.
21. THE CONTRACTOR SHALL TAKE CARE DURING WORK TO AVOID DAMAGE TO WORK BY OTHER TRADES.
22. THE CONTRACTOR SHALL KEEP THE PREMISES FREE OF DEBRIS AND RUBBISH CAUSED BY HIS/HER WORK ON A DAILY BASIS. THIS DEBRIS AND RUBBISH SHALL BE REMOVED FROM THE BUILDING AND SITE.
23. GUARANTEE. THE CONTRACTOR SHALL GUARANTEE THE ENTIRE INSTALLATION TO BE IN PROPER WORKING ORDER FOR A PERIOD OF ONE (1) YEAR, UNLESS NOTED OTHERWISE, AFTER FINAL ACCEPTANCE AND SHALL FURNISH FREE OF CHARGE ALL MATERIALS AND LABOR NECESSARY TO COMPLY WITH THIS GUARANTEE.
24. DEMOLITION: WHERE ACCESSIBLE WORK IS TO BE DEMOLISHED, IT SHALL BE REMOVED IN ITS ENTIRETY TO A POINT OF PERMANENT CONCEALMENT. WHERE WORK TO BE DEMOLISHED IS NOT ACCESSIBLE, REMOVE SYSTEM TO 2" BELOW THE SURFACE, CAP, AND PATCH SURFACE TO MATCH EXISTING. WHERE WORK TO REMAIN IS DAMAGED, REMOVE THE DAMAGED PORTIONS AND INSTALL NEW OF EQUAL CAPACITY, QUALITY, AND FUNCTION
25. WORK WITHIN EXISTING BUILDING: CONSTRUCTION SHALL BE ARRANGED TO MINIMIZE THE HAZARD AND INTERRUPTION TO THE OCCUPANTS. DO NOT INTERRUPT SERVICES TO THE OCCUPANTS WITHOUT WRITTEN PERMISSION FROM THE ARCHITECT/ OWNER/ TENANT, A MINIMUM OF 5 WORKING DAYS PRIOR TO THE INTERRUPTION. WHERE DISRUPTION OF A SERVICE BECOMES NECESSARY, PROVISIONS SHALL BE MADE TO PROVIDE TEMPORARY SERVICE THROUGHOUT THE INTERRUPTION OF THE PRIMARY SERVICE.

SECTION 26 00 00 - GENERAL REQUIREMENTS FOR ELECTRICAL SYSTEMS

1. ALL ELECTRICAL COMPONENTS, DEVICES, AND ACCESSORIES SHALL BE LISTED AND LABELED AS DEFINED IN NFPA 70, BY A QUALIFIED TESTING AGENCY, AND MARKED FOR INTENDED LOCATION AND APPLICATION.
2. PRODUCT SELECTION FOR RESTRICTED SPACE: DRAWINGS INDICATE DIMENSIONS OF SELECTED EQUIPMENT AND ACCESSORIES INCLUDING CLEARANCES BETWEEN EQUIPMENT, ADJACENT SURFACES AND OTHER ITEMS. THE CONTRACTOR IS RESPONSIBLE TO VERIFY FIELD DIMENSIONS AND NOTIFY THE ARCHITECT/ENGINEER IF REQUIRED CLEARANCES CANNOT BE MAINTAINED.
3. DO NOT DELIVER OR INSTALL EQUIPMENT AND DEVICES UNTIL SPACES ARE ENCLOSED AND WEATHERTIGHT, WORK IN SPACES IS COMPLETE AND DRY, AND WORK ABOVE EQUIPMENT IS COMPLETE.
4. INTERRUPTION OF EXISTING ELECTRIC SERVICE: DO NOT INTERRUPT ELECTRIC SERVICE TO FACILITIES OCCUPIED BY OWNER OR OTHERS UNLESS PERMITTED UNDER THE FOLLOWING CONDITIONS AND THEN ONLY AFTER ARRANGING TO PROVIDE TEMPORARY ELECTRIC SERVICE ACCORDING TO REQUIREMENTS INDICATED:
    1. NOTIFY ARCHITECT AND OWNER NO FEWER THAN FIVE BUSINESS DAYS IN ADVANCE OF PROPOSED INTERRUPTION OF ELECTRIC SERVICE.
    2. DO NOT PROCEED WITH INTERRUPTION OF ELECTRIC SERVICE WITHOUT ARCHITECT'S OR OWNER'S WRITTEN PERMISSION.
    3. COMPLY WITH NFPA 70E.
5. STORE EQUIPMENT, COMPONENTS, AND MATERIALS IN A CLEAN, DRY LOCATION WHICH PROVIDES PROTECTION AGAINST THE WEATHER. ITEMS WHICH BECOME DAMAGED DUE TO WEATHER OR EXPOSURE SHALL BE REPLACED PRIOR TO INSTALLATION.
6. PROVIDE ALL TEMPORARY FACILITIES REQUIRED TO SUPPLY CONSTRUCTION POWER AND LIGHTING. INSTALL AND MAINTAIN FACILITIES IN A MANNER THAT WILL PROTECT THE PUBLIC AND WORKMEN THAT COMPLIES WITH ALL APPLICABLE LAWS AND REGULATIONS. IN GENERAL, PROVIDE ONE (1) 150W INCANDESCENT LIGHT FIXTURE AND ONE (1) DUPLEX RECEPTACLE FOR EVERY 600-SQUARE FEET OF AREA (MINIMUM OF ONE EACH PER ROOM.) UPON COMPLETION OF THE WORK, REMOVE ALL TEMPORARY FACILITIES FROM THE SITE.
7. TEST ALL WIRING AND CONNECTIONS FOR PROPER CONFIGURATION PRIOR TO ENERGIZING ANY CIRCUIT.
8. VACUUM DIRT AND DEBRIS FROM WITHIN ENCLOSURES; DO NOT USE COMPRESSED AIR TO ASSIST IN CLEANING.
9. AT COMPLETION OF INSTALLATION, INSPECT EXPOSED FINISHES. REMOVE BURRS, DIRT AND CONSTRUCTION DEBRIS AND REPAIR DAMAGED FINISH, INCLUDING CHIPS, SCRATCHES, AND ABRASIONS BACK TO THE ORIGINAL FINISH.

SECTION 26 05 19 - LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

1. CONDUCTORS AND CABLES: COPPER SHALL BE SOFT-DRAWN, ANNEALED WITH 98% CONDUCTIVITY OR ALUMINUM WITH THHN/THWN INSULATION.
2. MULTI-CONDUCTOR CABLE: METAL-CLAD CABLE, TYPE MC ONLY. ALL MULTI-CONDUCTOR CABLES SHALL BE PROVIDED WITH AN INTERNAL EQUIPMENT GROUNDING CONDUCTOR. THE CABLE SHEATHING SHALL NOT BE USED FOR AS AN EQUIPMENT GROUND.
3. CONNECTORS AND SPLICES: UL-LISTED, FACTORY-FABRICATED CONNECTORS AND SPLICES OF SIZE, AMPACITY RATING, MATERIAL, TYPE, AND CLASS FOR APPLICATION AND SERVICE INDICATED.
4. CONDUCTOR MATERIAL APPLICATIONS:
    1. FEEDERS: COPPER FOR FEEDERS SMALLER THAN #4 AWG; COPPER OR ALUMINUM FOR FEEDER'S #4 AWG AND LARGER. SOLID FOR #10 AWG AND SMALLER; STRANDED FOR #6 AWG AND LARGER. CONDUCTOR SIZES INDICATED ON DRAWINGS ARE COPPER UNLESS NOTED OTHERWISE.
    2. BRANCH CIRCUITS: COPPER. SOLID FOR #10 AWG AND SMALLER; STRANDED FOR # 8 AWG AND LARGER.
5. CONDUCTOR INSULATION AND MULTICONDUCTOR CABLE APPLICATIONS AND WIRING METHODS:
    1. FEEDERS (EXPOSED AND CONCEALED) & BRANCH CIRCUIT (EXPOSED): TYPE THHN/THWN, SINGLE CONDUCTORS IN RACEWAY.
    2. BRANCH CIRCUITS - INTERIOR, CONCEALED IN CEILINGS, WALLS, AND PARTITIONS: TYPE THHN/THWN, SINGLE CONDUCTORS IN RACEWAY OR METAL-CLAD CABLE, TYPE MC.
        1. TYPE MC CABLE MAY BE INSTALLED ONLY IN THE FOLLOWING INSTALLATIONS.
            1. SINGLE-PHASE CIRCUITS ONLY.
            2. CONNECTION TO RECESSED LIGHTING FIXTURES WITH A MAXIMUM LENGTH OF 6'.
            3. CONNECTION TO NEMA 5-15R AND 5-20R RECEPTACLES WITH A MAXIMUM LENGTH OF THE DISTANCE BETWEEN THE RECEPTACLE AND THE FINISH CEILING PLUS 8'.
    3. CLASS 1 CONTROL CIRCUITS: TYPE THHN/THWN, IN RACEWAY.
    4. CLASS 2 CONTROL CIRCUITS: TYPE THHN/THWN, IN RACEWAY OR POWER-LIMITED CABLE, CONCEALED IN BUILDING FINISHES OR POWER-LIMITED TRAY CABLE, IN CABLE TRAY.
6. CONCEAL CABLES IN FINISHED WALLS, CEILINGS, AND FLOORS, UNLESS OTHERWISE INDICATED.
7. CONDUCTORS MAY BE RUN IN PARALLEL ON SIZE #1/0 THROUGH 750 KCMIL INCLUSIVE, PROVIDED ALL PARALLEL CONDUCTORS ARE THE SAME SIZE, LENGTH, AND TYPE OF INSULATION, AND THEY SHALL BE SO ARRANGED AND TERMINATED AS TO ENSURE EQUAL DIVISION OF THE TOTAL CURRENT BETWEEN ALL PARALLEL CONDUCTORS INVOLVED.
8. CONDUCTOR SIZES INDICATED IN THE CONSTRUCTION DRAWINGS ARE MINIMUM SIZES. CONTRACTOR SHALL INCREASE CONDUCTOR SIZES ABOVE THOSE INDICATED TO LIMIT THE DROP IN VOLTAGE FROM THE POTENTIAL FROM THE FARTHEST POINT ON THE CIRCUIT FROM EXCEEDING 3% AT MAXIMUM LOAD FOR ALL LIGHTING AND POWER BRANCH CIRCUITS.
9. INSTALL A SEPARATE GROUNDED (NEUTRAL) CONDUCTOR FOR ALL BRANCH CIRCUITS AS REQUIRED BY THE NEC.
10. KEEP CONNECTIONS AND SPLICES TO A MINIMUM. SPLICES ARE NOT PERMITTED IN FEEDER CONDUCTORS UNLESS SPECIFICALLY INDICATED ON PLAN.
11. ALL CONNECTIONS AND SPLICES SHALL OCCUR WITHIN OUTLET BOXES, JUNCTION BOXES, SPLICE BOXES, OR OTHER DEVICES APPROVED FOR THIS PURPOSE.
12. MAKE SPLICES AND TAPS THAT ARE COMPATIBLE WITH CONDUCTOR MATERIAL AND THAT POSSESS EQUIVALENT OR BETTER MECHANICAL STRENGTH, CURRENT-CARRYING, AND INSULATION RATINGS THAN UNSPLICED CONDUCTORS. USE OXIDE INHIBITOR IN EACH SPLICE AND TAP CONDUCTOR FOR ALUMINUM CONDUCTORS.

SECTION 26 05 26 - GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

1. INSULATED CONDUCTORS: COPPER OR TINNED-COPPER WIRE OR CABLE INSULATED FOR 600V UNLESS OTHERWISE REQUIRED BY APPLICABLE CODE. INSTALL SOLID CONDUCTOR FOR #8 AWG AND SMALLER, AND STRANDED CONDUCTORS FOR #6 AWG AND LARGER, UNLESS OTHERWISE INDICATED.
2. BARE COPPER BONDING CABLE: 28 KCMIL, 14 STRANDS OF #17 AWG CONDUCTORS, 1/4" IN DIAMETER.
3. BARE COPPER BONDING CONDUCTOR: #4 OR #6 AWG, STRANDED CONDUCTOR.
4. BOLTED CONNECTORS FOR CONDUCTORS AND PIPES: COPPER OR COPPER ALLOY, BOLTED PRESSURE-TYPE, WITH AT LEAST TWO BOLTS, SIZE FOR CONDUCTOR AND MATERIAL/PIPE THICKNESS.
5. INSTALL INSULATED EQUIPMENT GROUNDING CONDUCTORS WITH OIL FEEDERS AND BRANCH CIRCUITS.
6. HVAC AND PLUMBING EQUIPMENT: INSTALL A SEPARATE INSULATED EQUIPMENT GROUNDING CONDUCTOR TO EACH PIECE OF EQUIPMENT OPERATING AT 120 *V* AND MORE, INCLUDING AIR CLEANERS, HEATERS, DAMPERS, HUMIDIFIERS, WATER HEATERS, PUMPS, ETC. BOND CONDUCTOR TO EACH UNIT AND TO DUCT AND/OR CONNECTED METALLIC PIPING. INSTALL BONDING JUMPER TO BOND ACROSS FLEXIBLE CONNECTIONS TO ACHIEVE CONTINUITY.
7. ROUTE GROUNDING CONDUCTORS ALONG SHORTEST AND STRAIGHTEST PATHS POSSIBLE, UNLESS OTHERWISE INDICATED OR REQUIRED BY CODE. AVOID OBSTRUCTING ACCESS OR PLACING CONDUCTORS WHERE THEY MAY BE SUBJECTED TO STRAIN, IMPACT, OR DAMAGE.
8. BONDING STRAPS AND JUMPERS: COPPER OR TINNED-COPPER TAPE, BRAIDED CONDUCTORS, TERMINATED WITH COPPER FERRULES; 1-5/8" WIDE AND 1/16" THICK, INSTALLED IN LOCATIONS ACCESSIBLE FOR INSPECTION AND MAINTENANCE, EXCEPT WHERE ROUTED THROUGH SHORT LENGTHS OF CONDUIT.
    1. BONDING TO STRUCTURE: BOND STRAPS DIRECTLY TO BASIC STRUCTURE, TAKING CARE NOT TO PENETRATE ANY ADJACENT PARTS.
    2. BONDING TO EQUIPMENT MOUNTED ON VIBRATION ISOLATION HANGERS AND SUPPORTS: INSTALL SO VIBRATION IS NOT TRANSMITTED TO RIGIDLY MOUNTED EQUIPMENT

SECTION 26 05 29 - HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

1. DESIGN SUPPORTS FOR MULTIPLE RACEWAYS AND EQUIPMENT CAPABLE OF SUPPORTING COMBINED WEIGHT OF SUPPORTED SYSTEMS, ITS CONTENTS, AND COMPONENTS; ADEQUATE TO RESIST MAXIMUM LOADS IMPOSED FOR THIS PROJECT, WITH A MINIMUM STRUCTURAL SAFETY FACTOR OF FIVE TIMES THE APPLIED FORCE.
2. STEEL SLOTTED SUPPORT SYSTEMS: HOT-DIP GALVANIZED, FACTORY-FABRICATED COMPONENTS FOR FIELD ASSEMBLY WITH CHANNEL DIMENSIONS SELECTED FOR APPLICABLE LOAD CRITERIA.
3. CONDUIT AND CABLE SUPPORT DEVICES: STEEL AND MALLEABLE-IRON HANGERS, CLAMPS, AND ASSOCIATED FITTINGS, DESIGNED FOR TYPES AND SIZES OF RACEWAY OR CABLE TO BE SUPPORTED.
4. SUPPORT FOR CONDUCTORS IN VERTICAL CONDUIT: FACTORY-FABRICATED ASSEMBLY CONSISTING OF MALLEABLE IRON, THREADED BODY AND INSULATING WEDGING PLUG OR PLUGS FOR NON-ARMORED ELECTRICAL CONDUCTORS OR CABLES IN RISER CONDUITS. PLUGS SHALL HAVE NUMBER, SIZE, AND SHAPE OF CONDUCTOR GRIPPING PIECES AS REQUIRED TO SUIT INDIVIDUAL CONDUCTORS OR CABLES SUPPORTED.
5. POWDER-ACTUATED FASTENERS: THREADED-STEEL STUD, FOR USE IN HARDENED PORTLAND CEMENT CONCRETE, STEEL, OR WOOD, WITH TENSION, SHEAR, AND PULLOUT CAPACITIES APPROPRIATE FOR SUPPORTED LOADS AND BUILDING MATERIALS WHERE USED.
6. MECHANICAL-EXPANSION ANCHORS: INSERT-WEDGE-TYPE, ZINC-COATED STEEL, FOR USE IN HARDENED PORTLAND CEMENT CONCRETE WITH TENSION, SHEAR, AND PULLOUT CAPACITIES APPROPRIATE FOR SUPPORTED LOADS AND BUILDING MATERIALS IN WHICH USED.
7. MAXIMUM SUPPORT SPACING AND MINIMUM HANGER ROD SIZE FOR RACEWAY: SPACE SUPPORTS FOR EMT, IMC, AND RMC AS NFPA 70. MINIMUM ROD SIZE SHALL BE 1/4" IN DIAMETER.
8. MULTIPLE RACEWAYS OR CABLES: INSTALL TRAPEZE-TYPE SUPPORTS FABRICATED WITH STEEL SLOTTED SUPPORT SYSTEM, SIZED SO CAPACITY CON BE INCREASED BY AT LEAST 25% IN FUTURE WITHOUT EXCEEDING SPECIFIED DESIGN LOAD LIMITS. SECURE RACEWAYS AND CABLES TO THESE SUPPORTS WITH TWO-BOLT CONDUIT CLAMPS OR SINGLE-BOLT CONDUIT CLAMPS USING SPRING FRICTION ACTION FOR RETENTION IN SUPPORT CHANNEL.
9. SPRING-STEEL CLAMPS DESIGNED FOR SUPPORTING SINGLE CONDUITS WITHOUT BOLTS MAY BE USED FOR 1-1 /2" AND SMALLER RACEWAYS SERVING BRANCH CIRCUITS AND COMMUNICATION SYSTEMS ABOVE SUSPENDED CEILINGS AND FOR FASTENING RACEWAYS TO TRAPEZE SUPPORTS.
10. STRENGTH OF SUPPORT ASSEMBLIES: SELECT SIZES OF COMPONENTS SO STRENGTH WILL BE ADEQUATE TO CARRY WEIGHT OF SUPPORTED COMPONENTS PLUS 200 LB, MINIMUM.
11. MOUNTING AND ANCHORAGE OF SURFACE-MOUNTED EQUIPMENT AND COMPONENTS: ANCHOR AND FASTEN ELECTRICAL ITEMS AND THEIR SUPPORTS TO BUILDING STRUCTURAL ELEMENTS BY THE FOLLOWING METHODS UNLESS OTHERWISE INDICATED BY CODE:
    1. TO WOOD: FASTEN WITH LAG SCREWS OR THROUGH BOLTS.
    2. TO EXISTING CONCRETE: EXPANSION ANCHOR FASTENERS OR POWDER-ACTUATED DRIVEN THREADED STUDS PROVIDED WITH LOCK WASHERS AND NUTS MAY BE USED IN EXISTING STANDARD-WEIGHT CONCRETE 4" THICK OR GREATER. DRILL HOLES FOR EXPANSION ANCHORS IN CONCRETE AT LOCATIONS AND TO DEPTHS THAT AVOID REINFORCING BARS.
    3. TO STRUCTURAL STEEL: BEAM CLAMPS COMPLYING WITH MSS SP-69.
    4. TO LIGHT STEEL: SHEET METAL SCREWS.
    5. ITEMS MOUNTED ON HOLLOW WALLS AND NONSTRUCTURAL BUILDING SURFACES: MOUNT EQUIPMENT AND ENCLOSURES ON SLOTTED-CHANNEL RACKS ATTACHED TO SUBSTRATE.
12. CONSTRUCT CONCRETE BAS

SECTION 26 22 00 - LOW-VOLTAGE TRANSFORMERS

1. SUBJECT TO COMPLIANCE WITH REQUIREMENTS, MANUFACTURERS INCLUDE, BUT ARE NOT LIMITED TO; ACME ELECTRIC, EATON CUTLER-HAMMER, GE, SIEMENS, AND SQUARE D.
2. GENERAL TRANSFORMER REQUIREMENTS: FACTORY-ASSEMBLED AND -TESTED, AIR-COOLED UNITS FOR 60-HZ SERVICE, WITH ONE RAIN-ORIENTED, NON-AGING SILICON STEEL CORE PER LEG AND CONTINUOUS WINDINGS WITHOUT SPLICES EXCEPT FOR TAPS. CORES AND COILS SHALL BE ENCAPSULATED WITHIN RESIN COMPOUND, SEALING OUT MOISTURE AND AIR. ENCLOSURE SHALL BE VENTILATED, NEMA TYPE 2, EXCEPT FOR EXTERIOR INSTALLATION SHALL BE TYPE 3R.
3. GENERAL PURPOSE DISTRIBUTION TRANSFORMERS
   1. WINDINGS: ONE COIL PER PHASE IN PRIMARY AND SECONDARY.
   2. TAPS FOR TRANSFORMERS 7.5 TO 24 KVA: ONE 5 PERCENT TAP ABOVE AND ONE 5 PERCENT TAP BELOW NORMAL FULL CAPACITY.
   3. TAPS FOR TRANSFORMERS 25 KVA AND LARGER: TWO 2.5 PERCENT TAPS ABOVE AND TWO 2.5 PERCENT TAPS BELOW NORMAL FULL CAPACITY.
   4. INSULATION CLASS: 220 DEG C, UL -COMPONENT-RECOGNIZED INSULATION SYSTEM WITH A MAXIMUM OF 150 DEG C RISE ABOVE 40 DEG C AMBIENT TEMPERATURE.
   5. TRANSFORMERS SHALL HAVE AN EFFICIENCY RATING IN COMPLIANCE WITH NEMA TP1, CLASS 1 EFFICIENCY LEVELS.
4. DRAWINGS INDICATE DIMENSIONS FOR SELECTED PANEL BOARDS INCLUDING CLEARANCES. COORDINATE LAYOUT AND INSTALLATION OF TRANSFORMERS WITH OTHER CONSTRUCTION THAT PENETRATES WALLS OR IS SUPPORTED BY THEM. MAINTAIN REQUIRED WORKSPACE CLEARANCES AND REQUIRED CLEARANCES FOR EQUIPMENT ACCESS DOORS AND PANELS.
5. INSTALL FLOOR-MOUNTED TRANSFORMER ON CONCRETE HOUSEKEEPING PAD WITH VIBRATION ISOLATION PADS TO PREVENT TRANSMISSION OF TRANSFORMER VIBRATION.
6. INCOMING AND OUTGOING RACEWAY SHALL BE FLEXIBLE TO PREVENT TRANSMISSION OF TRANSFORMER VIBRATION. INSTALL BONDING JUMPER ON EXTERIOR OF THE FLEXIBLE RACEWAY.
7. GROUND EQUIPMENT ACCORDING TO NFPA 70 FOR A SEPARATELY DERIVED SYSTEM AND DIVISION 26 SECTION "GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS."
8. RECORD TRANSFORMER SECONDARY VOLTAGE AT EACH UNIT FOR AT LEAST 48 HOURS OF TYPICAL OCCUPANCY PERIOD. ADJUST TRANSFORMER TAPS TO PROVIDE OPTIMUM VOLTAGE CONDITIONS AT SECONDARY TERMINALS. OPTIMUM IS DEFINED AS NOT EXCEEDING NAMEPLATE VOLTAGE PLUS 10 PERCENT AND NOT BEING LOWER THAN NAMEPLATE VOLTAGE MINUS 3 PERCENT AT MAXIMUM LOAD CONDITIONS. SUBMIT RECORDING AND TAP SETTINGS AS TEST RESULTS.

SECTION 26 05 53 - IDENTIFICATION FOR ELECTRICAL SYSTEMS

1. VERIFY IDENTITY OF EACH ITEM BEFORE INSTALLING IDENTIFICATION PRODUCTS.
2. APPLY IDENTIFICATION DEVICES TO SURFACES THAT REQUIRE FINISH OR CLEANING AFTER COMPLETING WORK.
3. ATTACH SIGNS AND PLASTIC LABELS WITH MECHANICAL FASTENERS APPROPRIATE TO THE LOCATION AND SUBSTRATE.
4. IDENTIFY CONDUCTORS IN ENCLOSURES AND BOXES, USING COLOR-CODING TO IDENTIFY THE PHASE, FACTORY APPLIED OR FIELD APPLIED CONDUCTOR TAPE OR CABLE TIES FOR SIZES LARGER THAN #8 AWG. LOCATE BANDS OF TAPE OR TIES WITHIN 6" FROM TERMINATION AND AVOID OBSCURING FACTORY CABLE MARKINGS.
   1. COLORS FOR 208/120V CIRCUITS:
      1. PHASE A: BLACK.
      2. PHASE B: RED.
      3. PHASE C: BLUE.
      4. NEUTRAL: WHITE.
      5. GROUND: GREEN
   2. COLORS FOR 480/277V CIRCUITS:
      1. PHASE A: BROWN.
      2. PHASE B: PURPLE.
      3. PHASE C: YELLOW.
      4. NEUTRAL: GRAY.
      5. GROUND: GREEN
5. APPLY SELF-ADHESIVE FACTORY PRINT CIRCUIT NUMBER FOR CIRCUIT DESIGNATION AT EACH ENCLOSURE, BOX, AND DEVICE.
6. IDENTIFY THE COVERS OF EACH JUNCTION AND PULL BOX OF THE FOLLOWING SYSTEMS WITH FIELD-APPLIED PAINT. AFTER PAINT HAS BEEN APPLIED, PROVIDE PERMANENT WRITTEN IDENTIFICATION OF THE SOURCE AND CIRCUIT NUMBER, SIZES OF LETTERS SHALL BE APPROPRIATE FOR VIEWING FROM THE FLOOR. SYSTEM COLOR LEGENDS SHALL BE AS FOLLOWS:
   1. GENERAL POWER: NO COLOR
   2. FIRE ALARM AND PROTECTION: RED.
   3. SECURITY SYSTEM: BLUE.
   4. TELECOMMUNICATION: ORANGE.
7. ATTACH MARKER TAPE TO CONDUCTORS TO BE EXTENDED IN THE FUTURE AND LIST THEIR USEAGE.
8. INSTALL 2" WIDE PRESSURE-SENSITIVE VINYL FLOOR MARKING TAPE WITH BLACK AND YELLOW' STRIPES TO SHOW WORKING CLEARANCES IN THE DIRECTION OF ACCESS TO LIVE PARTS. WORKSPACE SHALL BE AS REQUIRED BY NFPA 70 AND 29 CFR 1926.403. INSTALL WARNING LABEL ON EQUIPMENT WHICH READS "WARNING - AREA IN FRONT OF ELECTRICAL EQUIPMENT MUST BE KEPT CLEAR FOR 36 INCHES." DISTANCE INDICATED SHALL BE AS DEFINED IN NFPA 70. DO NOT INSTALL FLOOR MARKINGS OR WARNING SIGNS IN FINISHED SPACES.
9. INSTALL UNDERGROUND-LINE WARNING TAPE AS RECOMMENDED BY MANUFACTURER FOR THE METHOD OF INSTALLATION AND SUITABLE TO IDENTIFY AND LOCATE UNDERGROUND POWER AND COMMUNICATIONS UTILITY LINES. USE RED-COLOR TAPES FOR ELECTRICAL WITH INSCRIPTION OF "ELECTRICAL LINE - HIGH VOLTAGE" AND ORANGE-COLORED TAPES FOR COMMUNICATION WITH INSCRIPTION OF "TELEPHONE CABLE, CAW CABLE, OR COMMUNICATION CABLE." DURING BACKFILLING OF TRENCHES INSTALL CONTINUOUS UNDERGROUND-LINE WARNING TAPE DIRECTY ABOVE LINE AT 6"-8" BELOW FINISHED GRADE.
10. INSTALL UNIQUE DESIGATION ENGRAVED, LAMINATED ACRYLIC OR MELAMINE LABEL WITH STAINLESS-STEEL MACHINE SCREWS WITH NUTS ON EACH PIECE OF EQUIPMENT. PROVIDE A SINGLE LINE OF TEXT WITH 1/2" HIGH LETTERS ON 1-1/2" HIGH LABEL; WHERE TWO LINES OF TEXT ARE REQUIRED, USE LABELS 2" HIGH. FOR ELEVATED COMPONENTS, INCREASE SIZES OF LABELS AND LETTERS TO THOSE APPROPRIATE FOR VIEWING FROM THE FLOOR. LABEL SHALL INDICATE EQUIPMENT OR ITEM NAME/DESIGNATION, SERVICE VOLTAGE, SOURCE OF SERVICE, AND FOR SEPARATELY DERIVED SYSTEM, EQUIPMENT SUPPLIED BY SYSTEM. LABEL THE FOLLOWING EQUIPMENT:
    1. SWITCHBOARDS, SWITCHGEAR, MOTOR CONTROL CENTERS, PANELBOARDS, AND OVERCURRENT PROTECTION DEVICES WITHIN THEM.
    2. CONTACTORS, PUSH-BUTTONS, ENCLOSURES, CABINETS, ENCLOSED SWITCHES AND CONTROLLERS.
    3. TRANSFORMERS
    4. MONITORING AND CONTROL EQUIPMENT.

SECTION 26 24 16 - PANELBOARDS

1. SUBJECT TO COMPLIANCE WITH REQUIREMENTS, MANUFACTURERS INCLUDE, BUT ARE NOT LIMITED TO; EATON CUTLER-HAMMER, GE, SIEMENS, AND SQUARE D.
2. ENCLOSURES: SURFACE-MOUNTED CABINETS, RATED FOR ENVIRONMENTAL CONDITIONS AT INSTALLED LOCATION. BACK BOX AND TRIM/DOOR SHALL BE GALVANIZED STEEL, WITH MANUFACTURER'S STANDARD BAKED-ON FINISH APPLIED TO THE TRIM/DOOR.
3. TRIM/DOOR: PROVIDE TRIM WITH ENTIRE FRONT TRIM HINGED TO BOX AND WITH STANDARD DOOR WITHIN HINGED TRIM COVER. DOOR SHALL SECURE WITH VAULT-TYPE LATCH WITH TUMBLER LOCK, ALL KEYED ALIKE. PROVIDE METAL FRAMED DIRECTORY CARD WITH TRANSPARENT PROTECTIVE COVER ON INSIDE OF DOOR.
4. BUSSING: HARD-DRAWN, 98% CONDUCTIVITY COPPER OF CAPACITY INDICATED. WHERE INDICATED PROVIDE OVERSIZED NEUTRAL BUSSING. PROVIDE EQUIPMENT GROUND BUS OF ADEQUATE SIZE FOR ALL CONDUCTOR TERMINATIONS, BONDED TO BOX. WHERE INDICATED, PROVIDE ISOLATED GROUND BUS OF ADEQUATE SIZE FOR ALL CONDUCTOR TERMINATIONS, INSULATED FROM BOX. ALUMINUM BUSSING IS ACCEPTABLE FOR MULTI-FAMILY RESIDENTIAL UNIT PANELS
5. MAINS: CIRCUIT BREAKER OR LUGS ONLY, AS INDICATED. CONDUCTOR CONNECTIONS SHALL BE COMPRESSION TYPE, SUITABLE FOR USE WITH CONDUCTOR MATERIAL AND SIZES. PROVIDE FEED-THROUGH LUGS AT THE OPPOSITE END OF BUS FROM INCOMING MAINS, WHERE INDICATED.
6. INSTALL SERVICE EQUIPMENT LABEL FOR PANELBOARDS WITH ONE OR MORE MAIN SERVICE DISCONNECTING AND OVERCURRENT PROTECTIVE DEVICES.
7. PANEL BOARD SHORT-CIRCUIT CURRENT RATING: RATED FOR SERIES-CONNECTED SYSTEM WITH INTEGRAL OR REMOTE UPSTREAM OVERCURRENT PROTECTIVE DEVICES.
8. BRANCH OVERCURRENT PROTECTIVE DEVICES: BOLT-ON MOLDED-CASE CIRCUIT BREAKERS. PANELBOARD SHALL HAVE MOUNTING BRACKETS, BUS CONNECTIONS, FILLER PLATES, AND NECESSARY APPURTENANCES REQUIRED FOR FUTURE INSTALLATION OF DEVICES WITHOUT DISRUPTING EXISTING DEVICES. SNAP-IN TYPE CIRCUIT BREAKERS ARE ACCEPTABLE FOR BRANCH CIRCUITS FROM ALL NON-DISTRIBUTION TYPE PANELBOARDS.
9. MOLDED-CASE CIRCUIT BREAKER (MCCB): WITH INTERRUPTING CAPACITY TO MEET AVAILABLE FAULT CURRENTS AND APPLICATION LISTED FOR CONNECTED LOAD.
   1. MCCB NOT LARGER THAN 400A: THERMAL-MAGNETIC CIRCUIT BREAKER, INVERSE TIME-CURRENT ELEMENT FOR LOW-LEVEL OVERLOADS, AND INSTANTANEOUS MAGNETIC TRIP ELEMENT FOR SHORT CIRCUITS, ADJUSTABLE MAGNETIC TRIP SETTING FOR CIRCUIT-BREAKER FRAME SIZES 400A AND LARGER.
   2. MCCB 400A AND LARGER: ELECTRONIC TRIP CIRCUIT BREAKER WITH RMS SENSING, FIELD-REPLACEABLE RATING PLUG OR FIELD-REPLICABLE ELECTRONIC TRIP, AND THE FOLLOWING FIELD-ADJUSTABLE INSTANTANEOUS TRIP, LONG- AND SHORT-TIME PICKUP LEVELS, LONG- AND SHORT-TIME TIME ADJUSTMENTS, GROUND-FAULT PICKUP LEVEL, TIME DELAY, AND 12T RESPONSE.
   3. LUGS: MECHANICAL STYLE, SUITABLE FOR NUMBER, SIZE, TRIP RATINGS, AND CONDUCTOR MATERIALS
   4. MULTI-POLE UNITS ENCLOSED HAVE A SINGLE HOUSING.
   5. GROUND-FAULT CIRCUIT INTERRUPTION (GFI): WHERE INDICATED OR REQUIRED, CLASS A GROUND-FAULT PROTECTION (6-MA TRIP) INTEGRALLY MOUNTED RELAY AND TRIP UNIT WITH ADJUSTABLE PICKUP AND TIME DELAY SETTINGS, PUSH-TO-TEST FEATURE, AND GROUND-FAULT INDICATOR.
   6. SHUNT TRIP: WHERE INDICATED, 120V TRIP COIL ENERGIZED FROM SEPARATE CIRCUIT, SET TO TRIP AT 75% OF RATED VOLTAGE.
   7. KEY INTERLOCK: WHERE INDICATED, EXTERNALLY MOUNTED TO PROHIBIT CIRCUIT-BREAKER OPERATION; KEY SHALL BE REMOVABLE ONLY WHEN CIRCUIT BREAKER IS IN OFF POSITION.
   8. SET FIELD-ADJUSTABLE CIRCUIT-BREAKER TRIP RANGES AS INDICATED.
10. MOUNT PANELBOARD CABINET PLUMB AND RIGID WITHOUT DISTORTION OF BOX WITH TOP OF TRIM 72" AFF.
11. DRAWINGS INDICATE DIMENSIONS FOR SELECTED PANELBOARDS INCLUDING CLEARANCES. COORDINATE LAYOUT AND INSTALLATION OF PANELBOARDS AND COMPONENTS WITH OTHER CONSTRUCTION THAT PENETRATES WALLS OR IS SUPPORTED BY THEM. MAINTAIN REQUIRED WORKSPACE CLEARANCES AND REQUIRED CLEARANCES FOR EQUIPMENT ACCESS DOORS AND PANELS.
12. SURFACE-MOUNTED PANELBOARDS: INSTALL ENCLOSURE WITH 1/4" MINIMUM GAP BETWEEN ENCLOSURE AND WALL SURFACE.
13. INSTALL FILLER PLATES IN UNUSED SPACES.
14. WHEN ADDING NEW OVERCURRENT PROTECTION DEVICES TO EXISTING PANELBOARDS, INSTALL DEVICES OF THE SAME INTERRUPTING RATING, STYLE AND FROM THE SOME MANUFACTURER AS THE REMAINDER OF THE PANELBOARD.
15. CREATE A DIRECTORY TO INDICATE INSTALLED CIRCUIT LOADS AFTER BALANCING PANELBOARD LOADS; INCORPORATE FINAL ROOM DESIGNATIONS. USE A COMPUTER OR TYPEWRITER TO CREATE DIRECTORY.
16. LOAD BALANCING: AFTER SUBSTANTIAL COMPLETION, BUT NOT MORE THAN 60 DAYS AFTER FINAL ACCEPTANCE, MEASURE LOAD BALANCING AND MAKE CIRCUIT CHANGES TO BALANCE PHASE LOADS TO LESS THAN 20% PHASE IMBALANCE. MEASURE DURING PERIOD OF NORMAL SYSTEM LOADING. HOWEVER, PERFORM LOAD-BALANCING CIRCUIT CHANGES OUTSIDE NORMAL OCCUPANCY/WORKING SCHEDULE AT TIME DIRECTED. AFTER CIRCUIT CHANGES, RECHECK LOADS DURING NORMAL LOAD PERIOD AND RE-BALANCE AS NEEDED. RECORD ALL LOAD READINGS BEFORE AND AFTER CHANGES AND SUBMIT TEST RECORDS.

SECTION 26 27 26 - WIRING DEVICES

1. SUBJECT TO COMPLIANCE WITH REQUIREMENTS, MANUFACTURERS INCLUDE, BUT ARE NOT LIMITED TO; COOPER, HUBBELL, LEVITON, LUTRON, AND PASS & SEYMOUR. THE FOLLOWING MODEL NUMBERS FOR PASS & SEYMOUR ARE FOR REFERENCE DEVICES SHALL MATCH EXISTING BUILDING STANDARD, IF APPLICABLE. IF DEVICE STYLE IS NOT INDICATED BY THE ARCHITECT, THEY SHALL BE "DECORA" STYLE AS INDICATED BELOW. RECEPTACLE TYPE REQUIRED FOR CODE COMPLIANCE (GFCI, TR, ETC.) SHALL BE PROVIDED WHETHER OR NOT INDICATED ON PLANS.
2. CONVENIENCE RECEPTACLES, 125V, 20A: NEMA 5-20R, P&S #26361 (SINGLE), P&S #26352 (DUPLEX).
3. TAMPER RESISTANT RECEPTACLES, 125V, 20A, NEMA 5-20R, P&S #TR26352-W.
4. GFI RECEPTACLES, 125V, 20A: NEMA 5-20R, P&S #2094. STRAIGHT BLADE, NON-FEED-THROUGH TYPE, INCLUDING INDICATOR LIGHT THAT IS LIGHTED WHEN DEVICE IS TRIPPED.
5. SNAP SWITCHES, 120/277V, 20A: P&S #2621 (SINGLE POLE), P&S 2622 (TWO POLE), P&S 2623 (THREE WAY), P&S 2624 (FOUR WAY).
6. OCCUPANCY SENSORS
   1. WALL-SWITCH SENSORS: HUBBELL #LHMTS1, ADAPTIVE-, DUAL TECHNOLOGY TYPE, 120/277 V, ADJUSTABLE TIME DELAY UP TO 30 MINUTES, 100-DEGREE FIELD OF VIEW, WITH A MINIMUM COVERAGE AREA OF 1000 SQ. FT.
   2. CEILING-MOUNTED SENSORS: HUBBELL #OMNI-DT, ADAPTIVE-, DUAL TECHNOLOGY TYPE, SELF-ADJUSTING TIME DELAY UP TO 30 MINUTES, 360-DEGREE FIELD OF VIEW, WITH A MINIMUM COVERAGE OF 2000 SQ. FT. PROVIDE HUBBELL #UPI UNIVERSAL VOLTAGE POWER SWITCH PACK TO POWER SENSORS AND CONTROL LIGHTING CIRCUIT. CONNECT MULTIPLE SENSORS TO SINGLE POWER SWITCH PACK AS INDICATED.
6. WALL PLATES: SINGLE AND COMBINATION TYPES TO MATCH CORRESPONDING WIRING DEVICES. DO NOT USE OVERSIZED OR EXTRA-DEEP PLATES. REPAIR WALL FINISHES AND REMOUNT OUTLET BOXES WHEN STANDARD DEVICE PLATES DO NOT FIT FLUSH OR DO NOT COVER ROUGH WALL OPENING.
   1. PLATE-SECURING SCREWS: METAL WITH HEAD COLOR TO MATCH PLATE FINISH.
   2. FINISHED SPACES: SMOOTH, HIGH-IMPACT THERMOPLASTIC.
   3. UNFINISHED SPACES: GALVANIZED STEEL.
   4. DAMP AND WET LOCATIONS: CAST ALUMINUM WITH SPRING-LOADED LIFT COVER, AND LISTED AND LABELED FOR USE IN "WET LOCATIONS."
7. DEVICE COLOR: WIRING DEVICE CATALOG NUMBERS IN SECTION TEXT DO NOT DESIGNATE DEVICE COLOR. UNLESS INDICATED OTHERWISE ON ARCHITECTURAL DRAWINGS, PROVIDE THE FOLLOWING COLORS.
   1. DEVICES CONNECTED TO NORMAL POWER: MATCH EXISTING OR WHITE, UNLESS OTHERWISE INDICATED OR REQUIRED BY NFPA 70.
   2. DEDICATED DEVICE CONNECTED TO NORMAL POWER: ORANGE.
8. MOUNTING HEIGHT: UNLESS INDICATED OTHERWISE, INSTALL DEVICES AT THE FOLLOWING HEIGHTS ABOVE FINISH FLOOR TO THE CENTER OF THE BOX. (VERIFY HEIGHTS WITH ARCHITECT PRIOR TO INSTALL.)
   1. GENERAL RECEPTACLES: 18".
   2. LIGHT SWITCHES AND DIMMERS: 42".
   3. ABOVE-COUNTER RECEPTACLES: 42" OR 6" ABOVE COUNTER HEIGHT, WHICHEVER IS HIGHER.
9. PROTECTION: KEEP OUTLET BOXES FREE OF PLASTER, DRYWALL JOINT COMPOUND, MORTAR, CEMENT, CONCRETE, DUST, PAINT, AND OTHER MATERIAL THAT MAY CONTAMINATE THE RACEWAY SYSTEM, CONDUCTORS, AND CABLES. INSTALL WIRING DEVICES AFTER ALL WALL PREPARATION, INCLUDING PAINTING, IS COMPLETE.
10. REPLACE ALL DEVICES THAT HAVE BEEN IN TEMPORARY USE DURING CONSTRUCTION OR THAT SHOW SIGNS THAT THEY WERE INSTALLED BEFORE BUILDING FINISHING OPERATIONS WERE COMPLETE.
11. WHEN CONDUCTORS LARGER THAN #12 AWG ARE INSTALLED ON 15A OR 20A CIRCUITS, SPLICE #12 AWG PIGTAILS FOR DEVICE CONNECTIONS.
12. WHEN MOUNTING INTO METAL BOXES, REMOVE THE FIBER OR PLASTIC WASHERS USED TO HOLD DEVICE MOUNTING SCREWS IN YOKES, ALLOWING METAL-TO-METAL CONTACT.
13. INSTALL GROUNDING OF VERTICALLY MOUNTED RECEPTACLES UP, AND ON HORIZONTALLY MOUNTED RECEPTACLES TO THE LEFT.
14. DEVICE PLATES: DO NOT USE OVERSIZED OR EXTRA-DEEP PLATES. REPAIR WALL FINISHES AND REMOUNT OUTLET BOXES WHEN STANDARD DEVICE PLATES DO NOT FIT FLUSH OR DO NOT COVER ROUGH WALL OPENING.
15. ARRANGEMENT OF DEVICES: GROUP ADJACENT SWITCHES UNDER SINGLE, MULTIGANG WALL PLATES.
16. IDENTIFY PANELBOARD AND CIRCUIT NUMBER FROM WHICH SERVED. USE DURABLE WIRE MARKERS OR TAGS INSIDE OUTLET BOXES.
17. TEST CONVENIENCE RECEPTACLES WITH DIGITAL WIRING ANALYZER WITH DEVICES AT LED INDICATORS.
   1. LINE VOLTAGE: ACCEPTABLE RANGE IS 105V TO 132V.
   2. PERCENT VOLTAGE DROP UNDER 15A LOAD: A VALUE OF 6% OR HIGHER IS NOT ACCEPTABLE.
   3. GFI TRIP: TEST FOR TRIPPING VALUES SPECIFIED IN UL 1436 AND UL 943.
   4. USING THE TEST PLUG, VERIFY THAT THE DEVICE AND ITS OUTLET BOX ARE SECURELY MOUNTED.

SECTION 26 28 13 - FUSES

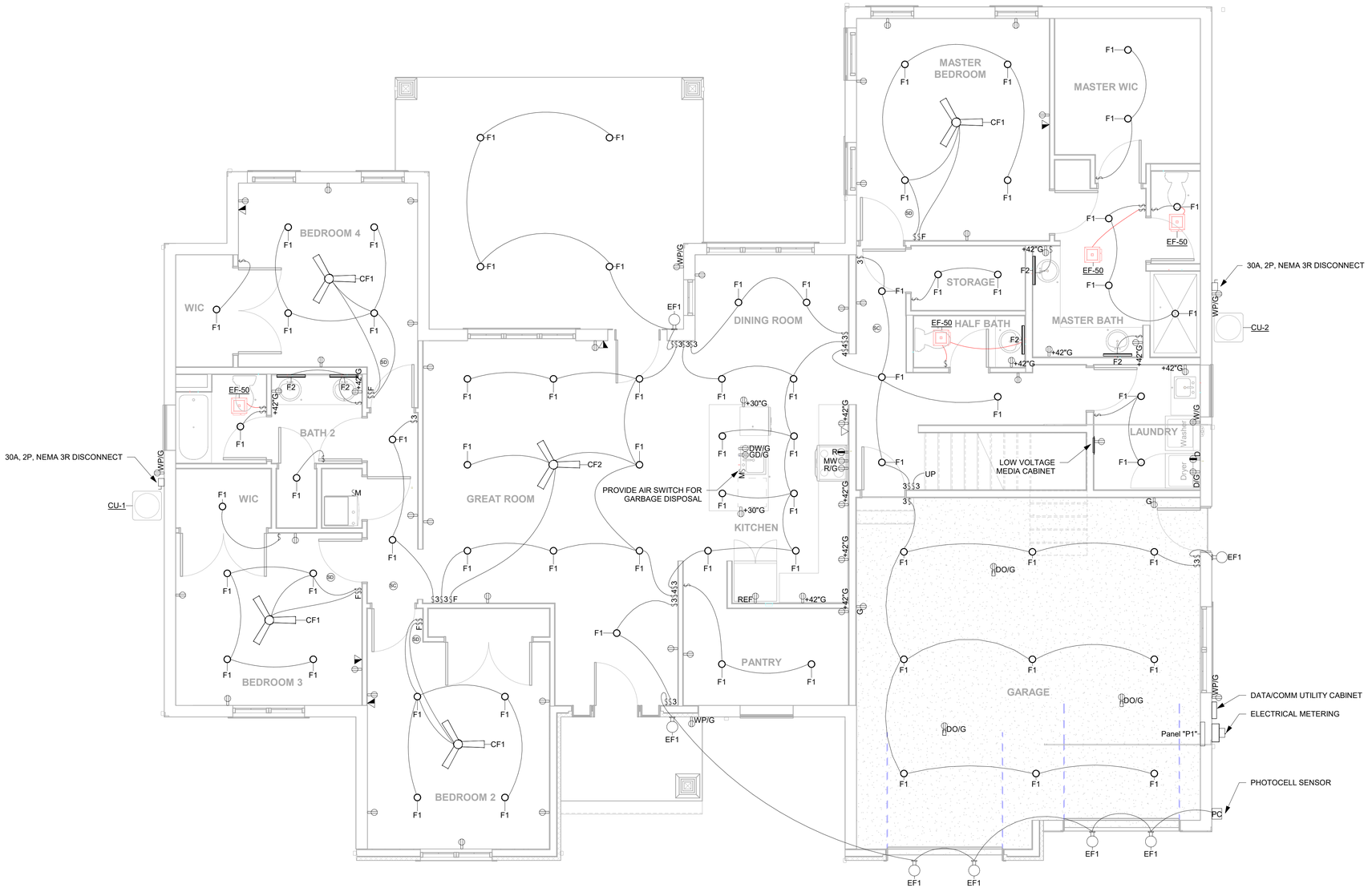
1. SUBMITTAL: IN ADDITION TO THE REQUIREMENTS OF DIVISION 1 PROVIDE CURRENT-LIMITATION CURVES, TIME-CURRENT COORDINATION CURVES (AVERAGE MELT), CURRENT-LIMITATION CURVES (INSTANTANEOUS PEAK LET-THROUGH CURRENT), AND COORDINATION CHARTS AND TABLES FOR EACH TYPE AND RATING OF FUSE.
2. EXTRA MATERIALS: FURNISH EXTRA FUSES; AT LEAST 10% OF QUANTITY INSTALLED FOR EACH TYPE AND SIZE, BUT NOT LESS THAN 3 OF EACH; THAT MATCH PRODUCTS INSTALLED.
3. SUBJECT TO COMPLIANCE WITH REQUIREMENTS, MANUFACTURERS INCLUDE, BUT ARE NOT LIMITED TO; BUSSMANN AND LITTELFUSE.
4. CARTRIDGE FUSES: NONRENEWABLE CARTRIDGE FUSES WITH VOLTAGE RATINGS CONSISTENT WITH CIRCUIT VOLTAGES.
   1. SERVICE ENTRANCE: CLASS T, FAST ACTING.
   2. FEEDERS: CLASS RK1, FAST ACTING.
   3. MOTOR BRANCH CIRCUITS: CLASS RK1, TIME DELAY.
   4. OTHER BRANCH CIRCUITS: CLASS RK5, TIME DELAY.
   5. CONTROL CIRCUITS: CLASS CC, FAST ACTING.
5. EXAMINE EQUIPMENT, FUSES, AND HOLDERS BEFORE INSTALLATION FOR CHARACTERISTICS, TOLERANCES, AND DAMAGE. REPLACE FUSES THAT ARE MOISTURE DAMAGED OR PHYSICALLY DAMAGED. INSTALL FUSES OF SIZES AND WITH CHARACTERISTICS APPROPRIATE FOR EACH PIECE OF EQUIPMENT.
6. INSTALL FUSES IN FUSIBLE DEVICES. ARRANGE FUSES SO RATING INFORMATION IS READABLE WITHOUT REMOVING FUSE.
7. INSTALL LABELS INDICATING FUSE REPLACEMENT INFORMATION ON INSIDE DOOR OF EACH FUSED SWITCH AND ADJACENT TO EACH FUSE BLOCK, SOCKET, AND HOLDER.
8. SPARE-FUSE CABINET: WALL-MOUNTED STEEL UNIT WITH FULL-LENGTH, RECESSED PIANO-HINGED DOOR AND KEY-CODED CAM LOCK AND PULL SIZED FOR ADEQUATE STORAGE OF SPARE FUSES SPECIFIED WITH 15% SPARE CAPACITY MINIMUM. PROVIDE 2 FUSE PULLERS FOR EACH SIZE OF FUSE FROM FUSE MANUFACTURER.

SECTION 26 28 16 - ENCLOSED SWITCHES AND CIRCUIT BREAKERS

1. SUBJECT TO COMPLIANCE WITH REQUIREMENTS, MANUFACTURERS INCLUDE, BUT ARE NOT LIMITED TO; EATON CUTLER-HAMMER, GE, SIEMENS, AND SQUARE D.
2. FUSIBLE / NON-FUSIBLE SWITCHES
   1. FUSIBLE SWITCH - HEAVY DUTY, SINGLE THROW, 600V: UL 98 AND NEMA KS 1, HORSEPOWER RATED, WITH CLIPS OR BOLT PADS TO ACCOMODATE SPECIFIED FUSES, LOCKABLE HANDLE WITH CAPABILITY TO ACCEPT THREE PADLOCKS, AND INTERLOCKED WITH COVER IN CLOSED POSITION. DISCONNECT FOR MULTI-FAMILY USE, CAN BE STANDARD IF VOLTAGE IS BELOW 250V.
   2. NON-FUSIBLE SWITCH - HEAVY DUTY, SINGLE THROW, 600V: UL 98 AND NEMA KS 1, HORSEPOWER RATED, LOCKABLE HANDLE WITH CAPABILITY TO ACCEPT THREE PADLOCKS, AND INTERLOCKED WITH COVER IN CLOSED POSITION.DISCONNECT FOR MULTI-FAMILY USE, CAN BE STANDARD IF VOLTAGE IS BELOW 250V.
   3. EQUIPMENT GROUND KIT: INTERNALLY MOUNTED AND LABELED FOR COPPER AND ALUMINUM GROUND CONDUCTORS.
   4. NEUTRAL KIT: INTERNALLY MOUNTED, INSULATED, CAPABLE OF BEING GROUNDED AND BONDED; LABELED FOR COPPER AND ALUMINUM NEUTRAL CONDUCTORS.
3. SERVICE-RATED SWITCHES: WHERE APPLICABLE, LABELED FOR USE AS SERVICE EQUIPMENT.
4. DRAWINGS INDICATE DIMENSIONS FOR SELECTED PANELBOARDS INCLUDING CLEARANCES. COORDINATE LAYOUT AND INSTALLATION OF SWITCHES AND BREAKERS WITH OTHER CONSTRUCTION THAT PENETRATES WALLS OR IS SUPPORTED BY THEM. MAINTAIN REQUIRED WORKSPACE CLEARANCES AND REQUIRED CLEARANCES FOR EQUIPMENT ACCESS DOORS AND PANELS
5. INSTALL INDIVIDUAL WALL-MOUNTED SWITCHES AND CIRCUIT BREAKERS WITH TOPS AT UNIFORM HEIGHT UNLESS OTHERWISE INDICATED.
6. INSTALL FUSES IN FUSIBLE DEVICES.

SECTION 26 51 00 - INTERIOR LIGHTING

1. SUBMITTAL: IN ADDITION TO THE REQUIREMENTS OF DIVISION 1 PROVIDE FOR EACH TYPE OF LIGHTING FIXTURE, ARRANGED IN ORDER OF FIXTURE DESIGNATION, THE FOLLOWING:
   1. EMERGENCY LIGHTING UNITS INCLUDING BATTERY AND CHARGER.
   2. BALLAST, INCLUDING BF.
   3. LIFE, OUTPUT (LUMENS, CCT, AND CRI), AND ENERGY-EFFICIENCY DATA FOR LAMPS.
   4. PHOTOMETRIC DATA BASED ON LABORATORY TESTS OF EACH LIGHTING FIXTURE TYPE, BY A CERTIFIED MANUFACTURER'S LABORATORY.
   5. SPECIAL WARRANTY.
2. SPECIAL WARRANTY PERIODS: 10 YEARS FOR EMERGENCY LIGHTING UNIT BATTERIES AND 7 YEARS FOR EMERGENCY FLUORESCENT BALLAST AND SELF-POWERED EXIT SIGN BATTERIES. WARRANTIES SHALL BE FROM DATE OF FINAL ACCEPTANCE. FULL WARRANTY SHALL APPLY FOR FIRST YEAR, AND PRORATED WARRANTY FOR THE REMAINING YEARS.
3. SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, PRODUCT(S) INDICATED ON THE LIGHTING FIXTURE SCHEDULE.
4. DIFFUSERS, LENSES AND GLOBES: ACRYLIC SHALL BE 1/8" MINIMUM. 100 % VIRGIN UV STABILIZED ACRYLIC PLASTIC WITH A HIGH RESISTANCE TO YELLOWING AND OTHER CHANGES DUE TO AGING, EXPOSURE TO HEAT, AND UV RADIATION. GLASS SHALL BE ANNEALED CRYSTAL GLASS UNLESS OTHERWISE INDICATED.
5. FACTORY-APPLIED LABELS: INDICATE RECOMMENDED LAMPS AND BALLASTS, INCLUDING LAMP TYPE AND WATTAGE AND BALLAST TYPE. LABELS SHALL BE LOCATED WHERE THEY WILL BE READILY VISIBLE TO SERVICE PERSONNEL, BUT NOT SEEN FROM NORMAL VIEWING ANGLES WHEN LAMPS ARE IN PLACE.
6. EMERGENCY POWER UNIT: INTERNAL, SELF-CONTAINED, MODULAR, BATTERY-INVERTER UNIT, FACTORY INSTALLED WITH LIGHTING FIXTURE BODY AND COMPATIBLE WITH BALLAST NIGHTLIGHT / EMERGENCY OPERATION SHALL BE ONE LAMP CONTINUOUSLY AT A MINIMUM OUTPUT OF 1100 LUMENS. CONNECT UNSWITCHED CIRCUIT TO BATTERY-INVERTER UNIT AND SWITCHED CIRCUIT TO FIXTURE BALLAST. PROVIDE TEST BUTTON AND INDICATOR LIGHT WHERE VISIBLE AND ACCESSIBLE WITHOUT OPENING FIXTURE OR ENTERING CEILING SPACE. TEST BUTTON SHALL SIMULATE LOSS OF NORMAL POWER AND DEMONSTRATE UNIT OPERABILITY. INDICATOR LIGHT SHALL BE LED AND SHALL INDICATE NORMAL POWER "ON." 90 MINUTE BATTERY SHALL BE SEALED, MAINTENANCE-FREE, NICKEL-CADMIUM TYPE WITH FULLY AUTOMATIC, SOLID STATE, CONSTANT-CURRENT TYPE CHARGER WITH SEALED POWER TRANSFER RELAY. PROVIDE FACTORY-INSTALLED INTEGRAL SELF-TEST DEVICE TO AUTOMATICALLY INITIATE CODE-REQUIRED TEST OF UNIT EMERGENCY OPERATION OT REQUIRED INTERVALS. TEST FAILURE IS ANNUNCIATED BY AN INTEGRAL AUDIBLE ALARM AND A FLASHING RED LED. BALLAST SHALL AUTOMATICALLY ENERGIZE LAMP FROM BATTERY WHEN CIRCUIT VOLTAGE DROPS TO 80% OF NOMINAL VOLTAGE OR BELOW. WHEN NORMAL VOLTAGE IS RESTORED, BATTERY IS AUTOMATICALLY RECHARGED AND FLOATED ON CHARGER.
7. EXIT SIGNS: SELF-POWERED (BATTERY TYPE) SIGN WITH 50,000 HOURS LAMP LIFE LED SOURCE, AND INTEGRAL AUTOMATIC CHARGER IN A SELF-CONTAINED POWER PACK. 90 MINUTE BATTERY SHALL BE SEALED, MAINTENANCE-FREE, NICKEL-CADMIUM TYPE WITH FULLY AUTOMATIC, SOLID STATE, CONSTANT-CURRENT TYPE CHARGER WITH SEALED POWER TRANSFER RELAY. PROVIDE FACTORY-INSTALLED INTEGRAL SELF-TEST DEVICE TO AUTOMATICALLY INITIATE CODE-REQUIRED TEST OF UNIT EMERGENCY OPERATION AT REQUIRED INTERVALS. TEST FAILURE IS ANNUNCIATED BY AN INTEGRAL AUDIBLE ALARM AND A FLASHING RED LED. SIGN SHALL AUTOMATICALLY ENERGIZE LAMPS FROM BATTERY WHEN CIRCUIT VOLTAGE DROPS TO 80% OF NOMINAL VOLTAGE OR BELOW. WHEN NORMAL VOLTAGE IS RESTORED, BATTERY IS AUTOMATICALLY RECHARGED AND FLOATED ON CHARGER.
8. LAMPS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE GE, PHILIPS, AND OSRAM-SYLVANIA. PROVIDE LAMPS OF SIMILAR PERFORMANCE AS INDICATED IN THE LIGHTING FIXTURE SCHEDULE. LAMP COLOR, BEAM ANGLE, WATTAGE AND OTHER PERFORMANCE CHARACTERISTIC SHALL BE CONFIRMED WITH BUILDING STANDARDS AND EXISTING FIXTURES IN THE AREA.
9. SET LUMINARIES LEVEL, PLUMB, AND SQUARE WITH CEILINGS AND WALLS UNLESS OTHERWISE INDICATED AND INSTALL LAMPS ONCE LUMINAIRE INSTALLATION IS COMPLETE.
10. LAY-IN CEILING FIXTURES MAY USE THE GRID AS A SUPPORT ELEMENT. ADDITIONALLY, INSTALL CEILING SUPPORT SYSTEM RODS OR WIRES, INDEPENDENT OF THE CEILING SUSPENSION DEVICES, FOR EACH FIXTURE. LOCATE NOT MORE THAN 6" FROM LIGHTING FIXTURE CORNERS.
11. FIXTURES OF SIZES LESS THAN CEILING GRID: INSTALL AS INDICATED ON REFLECTED CEILING PLANS OR CENTER IN ACOUSTICAL PANEL, AND SUPPORT FIXTURES INDEPENDENTLY.
12. TEMPORARY LIGHTING: IF IT IS NECESSARY, AND APPROVED BY ARCHITECT, TO USE PERMANENT LUMINAIRES FOR TEMPORARY LIGHTING, INSTALL AND ENERGIZE THE MINIMUM NUMBER OF LUMINAIRES NECESSARY. WHEN CONSTRUCTION IS SUFFICIENTLY COMPLETE, REMOVE THE TEMPORARY LUMINAIRES, DISASSEMBLE, CLEAN THOROUGHLY, INSTALL NEW LAMPS, AND RE



1 FIRST LEVEL ELECTRICAL PLAN
1/4" = 1'-0"

CONSTRUCTION NOTES

1. LOW VOLTAGE SYSTEMS SHALL BE DESIGN-BUILD BY CONTRACTOR. CONFIRM ALL FIXTURE LOCATIONS SHOWN WITH OWNER.
2. COORDINATE LOCATION OF COLD WATER PIPE HEAT TRACE RECEPTACLES.
3. PROVIDE (1) 50A, 240V SPARE CIRCUIT BREAKER IN PANEL FOR FUTURE VEHICLE CHARGER.
4. PROVIDE DE-ICING EQUIPMENT FOR ALL EAVES, GUTTERS, AND DOWNSPOUTS. SEE DE-ICING EQUIPMENT SCHEDULE FOR PARTS.
5. COORDINATE QUANTITY AND LOCATION OF DE-ICING HEAT TAPE RECEPTACLES.
6. PROVIDE RECEPTACLES FOR BOTH GAS AND ELECTRIC DRYER AND RANGE.

REVIEWED FOR CODE COMPLIANCE
THOMAS PETERSON
05/19/2025
DIVISION OF FACILITIES CONSTRUCTION AND MANAGEMENT

DATE
MARCH 3, 2025

epic ENGINEERING

REVISIONS

MARK	DATE	DESCRIPTION
1	2/28/2025	CLIENT: Add bedroom clg fans

DRAWN: NNS
DESIGNER: NNS
REVIEWED: DIO

PROJECT # 25SM5271.29

REGISTERED PROFESSIONAL ENGINEER — STATE OF UTAH — No. 169278 — DONI OLSEN — 3/3/25

SCALES
1/4" = 1'-0"
0 1"
BAR SCALE MEASURES 1" ON A FULL SIZE SHEET. ADJUST ACCORDINGLY

PROJECT NAME:
DWR LOGAN FISH HATCHERY RESIDENCE

PROJECT LOCATION:
1465 W 200 N
LOGAN, UT

SHEET TITLE:
FIRST LEVEL ELECTRICAL PLAN

PLAN SET: PERMIT
SHEET E1.1

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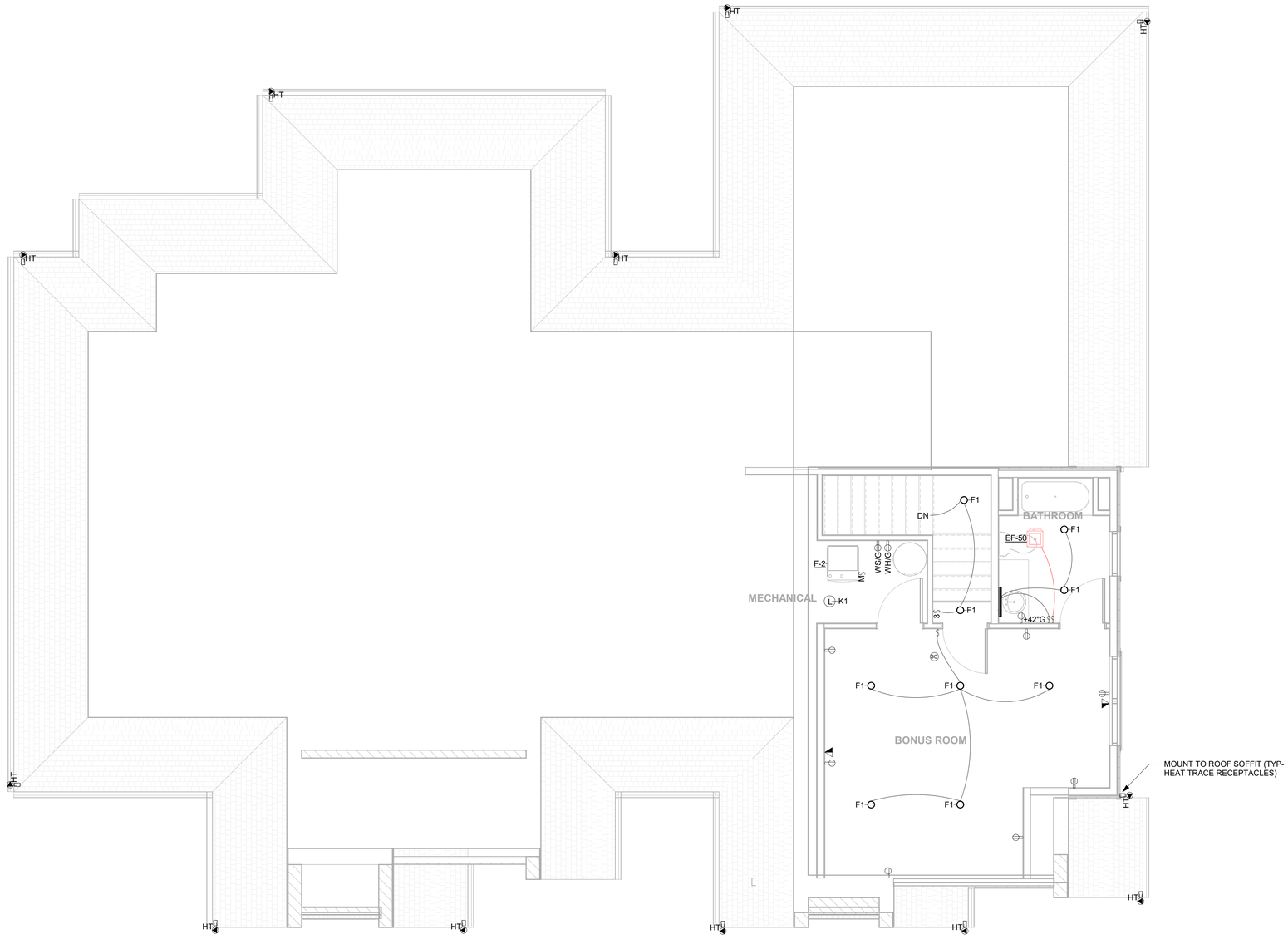

1 SECOND LEVEL ELECTRICAL PLAN
1/4" = 1'-0"

CONSTRUCTION NOTES

1. LOW VOLTAGE SYSTEMS SHALL BE DESIGN-BUILD BY CONTRACTOR. CONFIRM ALL FIXTURE LOCATIONS SHOWN WITH OWNER.
2. COORDINATE LOCATION OF COLD WATER PIPE HEAT TRACE RECEPTACLES.
3. PROVIDE (1) 50A, 240V SPARE CIRCUIT BREAKER IN PANEL FOR FUTURE VEHICLE CHARGER.
4. PROVIDE DE-ICING EQUIPMENT FOR ALL EAVES, GUTTERS, AND DOWNSPOUTS. SEE DE-ICING EQUIPMENT SCHEDULE FOR PARTS.
5. COORDINATE QUANTITY AND LOCATION OF DE-ICING HEAT TAPE RECEPTACLES.
6. PROVIDE RECEPTACLES FOR BOTH GAS AND ELECTRIC DRYER AND RANGE.

REVIEWED FOR CODE COMPLIANCE
THOMAS PETERSON
05/19/2025
DIVISION OF FACILITIES CONSTRUCTION AND MANAGEMENT

DATE
MARCH 3, 2025

epic ENGINEERING

REVISIONS

MARK	DATE	DESCRIPTION

DRAWN: NNS
DESIGNER: NNS
REVIEWED: DIO
PROJECT # 25SM5271.29

REGISTERED PROFESSIONAL ENGINEER No. 169278 DONN J. OLSEN STATE OF UTAH

SCALES
1/4" = 1'-0"
0 1"
PLOT TO FULL SIZE FOR A FULL SIZE SHEET, ADJUST FOR A HALF SIZE SHEET

PROJECT NAME:
DWR LOGAN FISH HATCHERY RESIDENCE

PROJECT LOCATION:
1465 W 200 N
LOGAN, UT

SHEET TITLE:
SECOND LEVEL ELECTRICAL PLAN

PLAN SET: PERMIT
SHEET E1.2

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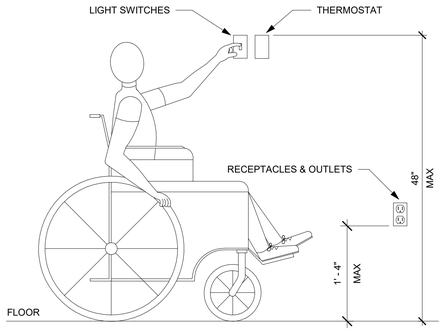
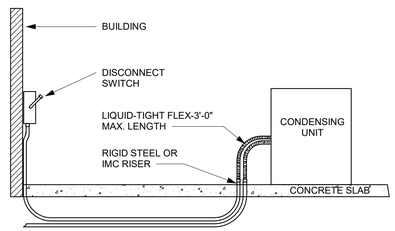
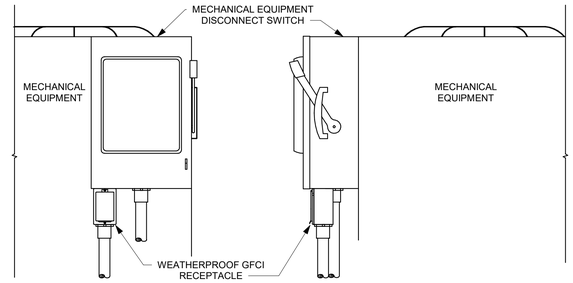


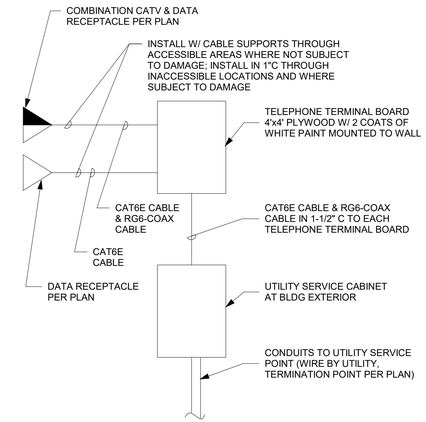
1 MOUNTING HEIGHTS DETAIL
N.T.S.



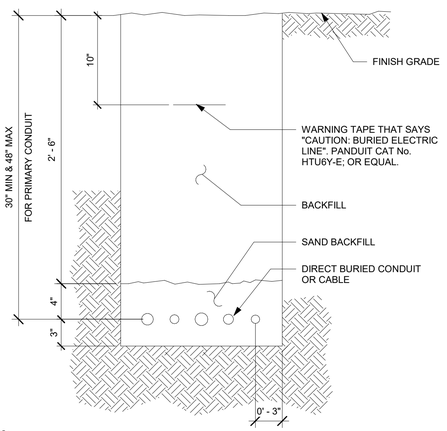
2 CONDENSING UNIT CONDUIT DETAIL
N.T.S.



3 WEATHER PROOF RECEPTACLE MOUNTING DETAIL
N.T.S.



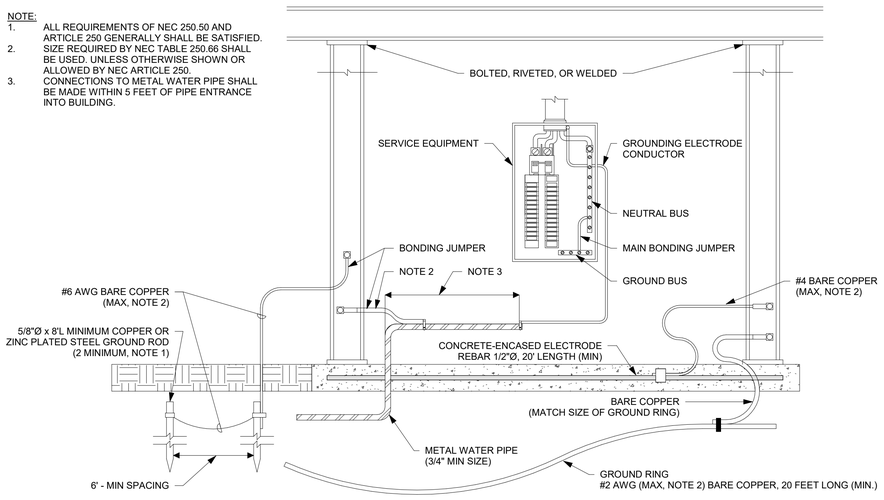
4 DATA/COMM RISER DETAIL
N.T.S.



NOTES:
1. ALL DIMENSIONS ARE MINIMUM UNLESS OTHERWISE INDICATED ON THE DRAWINGS.

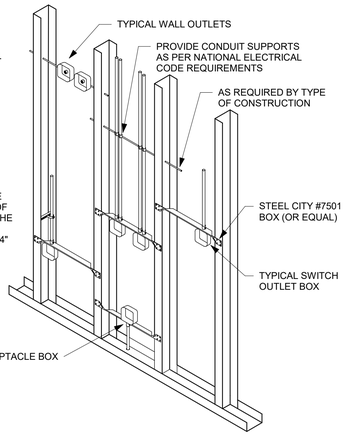
5 DIRECT BURY CONDUIT DETAIL
N.T.S.

NOTE:
1. ALL REQUIREMENTS OF NEC 250.50 AND ARTICLE 250 GENERALLY SHALL BE SATISFIED.
2. SIZE REQUIRED BY NEC TABLE 250.66 SHALL BE USED. UNLESS OTHERWISE SHOWN OR ALLOWED BY NEC ARTICLE 250.
3. CONNECTIONS TO METAL WATER PIPE SHALL BE MADE WITHIN 5 FEET OF PIPE ENTRANCE INTO BUILDING.



6 GROUNDING ELECTRODE CONDUCTOR
N.T.S.

NOTES:
1. TYPICAL FOR WOOD AND METAL STUD ROUGH IN.
2. PLASTER RINGS NOT SHOWN.
3. LOCATE ALL OUTLET BOXES IN ACCORDANCE WITH ARCHITECTURAL AND MECHANICAL DRAWINGS, AND WITH ALL APPLICABLE SHOP DRAWINGS.
4. IN ACCORDANCE WITH INTERNATIONAL BUILDING CODE OUTLETS ON OPPOSITE SIDES OF THE WALLS OR PARTITIONS IN THE SAME STUD SPACE MUST BE SEPERATED BY A MINIMUM OF 24" HORIZONTAL DISTANCE.



7 TYPICAL ROUGH-IN REQUIREMENTS DETAIL
N.T.S.

LIGHTING FIXTURE SCHEDULE

Mark	Manufacturer	Model or Equivalent	Wattage (Max)	Lamp	Notes
CF1	Harbor Breeze	Reidsport 44" Matte Black, standard downrod	60 W	LED	3
CF2	Harbor Breeze	Flanagan 62" Matte Black, 72" downrod	40 W	LED	3
EF1	Hinkley	Forge Wall Mount Medium Barn Light (12070BK)	15 W	LED	1
F1	Lithonia	WF8	10 W	LED	1, 2
F2	Hinkley	Karlie Three Light Vanity (54623BN)	30 W	LED	
K1	Leviton	Keyless Lamp Holder w/ Pull Chain	15 W	LED	

1. WET-LOCATION RATED
2. FIELD-SELECTABLE COLOR TEMPERATURE
3. FAN AND LIGHT SHALL BE SWITCHED SEPARATELY

DE-ICING EQUIPMENT SCHEDULE

1.	PROVIDE DE-ICING EQUIPMENT FOR ALL EAVES, GUTTERS, AND DOWNSPOUTS.
2.	INSTALL ACCORDING TO MANUFACTURER'S DIRECTIONS.
3.	EQUIPMENT SHALL BE CONNECTED ONLY TO A 120V, 20A RECEPTACLE WITH GROUND FAULT PROTECTION OF EQUIPMENT (GFPE).
4.	COORDINATE LOCATION AND QUANITITY OF RECEPTACLES.

MANUFACTURER	MODEL	PART NUMBER	DESCRIPTION
RADIANT SOLUTIONS	HEAT TAPE PRO		SELF-REGULATING PLUG-IN HEAT TAPE, TO LENGTH
RADIANT SOLUTIONS	GRIP CLIP	IDP-325, 625, 875	SHAKE/SHINGLE CLIPS
RADIANT SOLUTIONS	CABLE GUARD	CG-24	HEAT TAPE GUARD
RADIANT SOLUTIONS	DOWNSPOUT HANGER	IDP-115	DOWNSPOUT TRANSITION SHIELD/HANGER
RADIANT SOLUTIONS	MULTI-PURPOSE CLIPS	MPC-325	SHINGLE/FLASHING CLIPS
RADIANT SOLUTIONS	THERMACORD	TC-2000	PLUG-IN POWER CORD AND TEMPERATURE SWITCH

CONSTRUCTION NOTES

REVIEWED FOR CODE COMPLIANCE
THOMAS PETERSON
05/19/2025
DIVISION OF FACILITIES CONSTRUCTION AND MANAGEMENT

DATE
MARCH 3, 2025

epic ENGINEERING

REVISIONS

MARK	DATE	DESCRIPTION

DRAWN: NNS
DESIGNER: NNS
REVIEWED: DIO
PROJECT # 25SM5271.29

REGISTERED PROFESSIONAL ENGINEER No. 169278 DONN J. OLSEN STATE OF UTAH 3/7/25

SCALES
As indicated
0 1"
BAR SCALE. WHEN THIS IS NOT A FULL SIZE SHEET, ADJUST FOR A HALF SIZE SHEET

PROJECT NAME:
DWR LOGAN FISH HATCHERY RESIDENCE

PROJECT LOCATION:
1465 W 200 N
LOGAN, UT

SHEET TITLE:
ELECTRICAL DETAILS & SCHEDULES

PLAN SET: PERMIT
SHEET E5.1

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Part 1 – General

1. The mechanical contractor shall be an experienced firm regularly engaged in the installation of commercial mechanical systems in accordance with local codes. The owner's representative may reject any proposed contractor who cannot show evidence of such qualifications
2. Visit the jobsite prior to bidding, prior to material fabrication and prior to equipment procurement to become familiar with the existing conditions, interferences and any discrepancies.
3. The mechanical contractor shall proved all labor, material, equipment, equipment supports, diffusers and grilles for the HVAC systems finish as required to ensure a complete and operable HVAC system. Furnish all paint, labor, equipment, appliances and materials, and perform all operations in connection with the installation of the heating, ventilation, and air conditioning systems in strict accordance with the drawings. Successful, trouble-free operation of vibration-free system is a perquisite.
4. The mechanical contractor shall schedule all work so as not to interfere and/or disrupt the daily activities and/or operating hours or nearby buildings. Coordinate as required with the general contractor and the owner's representative.
5. The mechanical contractor shall obtain and pay for all fees and permits relating to his work.
6. The new HVAC systems shall be installed in accordance with state and local codes, OSHA, NFPA, SMACNA and ASHRAE guidelines.

Part 2 – Ductwork

1. All duct shall be fabricated from galvanized steel in accordance with SMANCA standards and requirements. Nonmetallic ductwork shall not be used. Concealed supply and return ductwork shall be galvanized steel.
2. Provide flexible contractors between ductwork and HVAC equipment (air handling equipment).
3. All new rectangular supply and return air ductwork shall have 1" thick acoustic duct liner insulation. Duct dimensions shown on the drawings represent inside duct size.
4. Manual balancing dampers shall be opposed blade type, galvanized steel, and shall have locking quadrant operators or extended concealed ceiling operators where access is limited and/or at gypsum board ceilings.
5. Provide turning vanes in all new rectangular supply and return air ductwork elbows. Proved volume dampers with locking quadrants at each new supply air branch take-off, seal all duct joints. Where the volume damper is not accessible, provide young No. 817A or 617B, consisting of an 3/8" square shaft, and a 3/8" regulator (length as required) for operating the volume damper from suspended ceiling.
6. The new duct lining shall be one inch thick fiberglass, 1-1/2 pounds per cubic foot density, noise attenuation factor of NRC = 0.70 with air stream surface faced with a black coated matte.
7. The required fire hazard classification is: flame spread not over 25, fuel contributed not over 50, smoke developed not over 50 when tested in accordance with ASTM E84

Duct Size:	Gauge:	Support:	Spacing:
12" and under	26 GA.	(2) 1"X 22 GA. Straps	Every 10 Ft.
13" to 30"	24 GA.	(2) 1"X 18GA. Straps	Every 10 Ft.
31" to 40"	22 GA.	(2) 1"X 18GA. Straps	Every 10 Ft.
40" and over	20 GA.	(2) 1"X 18GA. Straps	Every 10 Ft.

Part 3- Ductwork Insulation

1. All rectangular supply and return ductwork in the ceiling space shall have acoustic duct liner insulation. All round rigid metal take-off ductwork in the ceiling space shall have 1" thick external duct-wrap insulation with vapor barrier.
2. The finish duct lining shall be one inch thick fiberglass, 1-1/2 pounds per cubic foot density, noise attenuation factor of NRC =0.10 with the air stream surface faced with a black coated matte.
3. The duct-wrap insulation shall be one inch thick fiberglass 1-1/2 pounds per cubic foot density, noise attenuation facto of NRC =0.70.
4. The duct-wrap insulation shall have a thermal conductance of 0.24 BTUH per square foot per degree F. at a mean temperature of 50 degrees f.
5. The required fire hazard classification is: flame spread not over 25, fuel contributed not over 50, smoke developed not over 50 when tested in accordance with ASTM E84.
6. Insulated flexible ductwork meeting class 1 requirements of NFPA 90A and U.L. labeled may be used only at the ceiling diffuser connections in the concealed ceiling space areas and shall be insulated with 1" thick fiberglass insulation with vapor barrier with a flame spread rating of 25 or less and a smoke developed rating of 50 or less when tested in accordance with ASTM E84, and shall be limited to 5-feet in length.
7. Approved acoustic duct liner manufacturers are:
   a. Owens Corning QuietR Rotary Duct Liner
8. Approved external insulation manufacturers are:
   a. Manville Microlite FSK
   b. CSG Type IV Standard Duct Insulation
   c. Owens Corning FRK
   d. Knauf (Duct Wrap FSK)
9. Install insulation in a neat and workmanlike manner with no fishtails. Finish shall be smooth with all joints properly taped, insulation shall be full thickness uncompressed except where required to pass structural interferences.

Part 4 – Line Voltage Wiring

1. Line voltage wiring and conduit is by the electrical contractor shall furnish and disconnect switches that are not provided with the mechanical equipment as required for the HVAC equipment. Coordinate as required with the electrical contractor and the general contractor.

Part 5 – Temperature Controls and Wiring

1. Automatic temperature controls and associated conduit and control wiring shall be by the mechanical contractor provide all devices, components, conduit, control wiring as required to ensure complete operable automatic temperature control systems. New furnace unit shall have new programmable thermostats with automatic changeover and night set-back control. New unit heaters shall have heating thermostats with summer fan switch control.
2. Verify thermostat rough-in locations as shown on the mechanical plan drawing with the owner's representative prior to rough-in installation.
3. All temperature controls are to be tested, adjusted and calibrated for proper operation
4. Refer to the mechanical equipment schedule for additional temperature control requirements.

Part 6 – Installation

1. Coordinate the new HVAC equipment locations with the building structure, the owner's representative, architect, structural engineer, and the general contractor as required prior to installation
2. Coordinate the equipment, controls and cutwork installations with the other trades, plumbing piping, conduit, etc., coordinate the ceiling diffuser return air grilles and exhaust grille locations, with the electrical drawings and the architectural reflected ceiling plan. Route the ductwork so as not to interfere with the structure or the removing and services of light fixtures. Changes required as a result of neglect to coordinate interferences will be made at the mechanical contractor's expense.
3. Run all new ductwork as tight as possible to the bottom of the structure in the dropped ceiling space in order to maintain the finished ceiling heights as schedules on the architectural drawings. Verify the duct height dimensions with available ceiling space and modify the duct sizes if necessary (keeping the same duct area as shown on the mechanical drawings – duct height dimension shall not be less that 8") to accommodate any interferences. Coordinate the new ductwork in the space with conduit and piping. Field verify the routing of ductwork and equipment and piping.
4. Locate all exhaust air outlets and flue vents 10'-0' minimum distance from mechanical equipment outside air intakes.
5. It is understood that while drawings are to be followed as closely as circumstances permit. The mechanical contractor will be held responsible for installation of systems according to the true intent and meaning of contract documents. Anything not clear or in conflict will be explained by making application to architect. Should condition arise where certain changes would be advisable secure approval of those changes before proceeding with work.
6. Arrange ducts and equipment to permit ready access to valves, unions, traps, starters, motors, control components, and to clear opening of doors and access panels.
7. Furnish and install hangers and supports required by the mechanical contractor unless otherwise noted. Furnish sleeves, supports, and equipment that are integral part of other contractor's work in sufficient time to be built into construction as the work proceeds. Locate these items and see that they are properly installed. Expense resulting from improper location or installation of items above shall be borne by the mechanical contractor.
8. Adjust the location of the finish ducts, equipment, etc., to eliminate interference anticipated and encountered. Determine exact route and location of ductwork prior to fabrications. Make offsets, transitions, and changes in direction of ducts as required to maintain proper clearances whether or not indicated on the drawings. Furnish and install fittings as required to effect these offsets, transitions, and changes in direction.
9. Ensure the new HVAC equipment to be furnished along with the ductwork fit in space available. Make necessary field measurements to ascertain and space requirements including those for connections and furnish and install equipment of size and shape so that final installation reflects true intent and meaning of contract documents.
10. Follow manufacturer's direction in delivery, storage, protection, and installation of equipment and materials. Promptly notify architect and/or owner's representative in writing of conflicts between requirements of contract documents and manufacturer's directions and obtain architect's and/or owner's representative written instruction before proceeding with work. Bear expenses for correcting deficiencies of work that do not comply with manufacturer's directions or written instructions.
11. Deliver equipment and material to site and tightly cover and protect against dirt, water, and chemical or mechanical injury. Equipment and material shall be readily accessible for inspection. Store items subject to moisture damage (such as controls) in a dry heated space.
12. All mechanical equipment shall be isolated from the structure with either vibration isolation pads or spring type isolators as applicable to the installation, whether motor is internally isolated or not.
13. Contractor to verify and provide mechanical piping for heating and cooling systems to be thermally insulated per IECC C403.2.10. Mechanical Contractor to verify maximum and minimum temperatures of the mechanical piping so minimum insulations requirements can be met.

Part 7 – Submittals

1. By description, catalog number and specific designation, standards are established for manufactured items such as specialties, fixtures and equipment which the contractor shall furnish as required by this section. Prior to approval is required for substitution of equipment and materials prior to bid. Substitution of products shown shall be submitted to the architect, the owner's representative or engineer for written approval.
   a. Acceptable HVAC equipment manufacturers are: York, Carrier, Lennox and Trane.
2. Shop drawings and up-to-date engineering data sheets and catalog information shall be furnished on the following items of equipment. Provide (6) copies for review.
   1) HVAC equipment
   2) Automatic temperature controls.
   3) All diffusers, grilles, etc.
   4) Ductwork fabrication methods.
   5) Exhaust fans.

Part 8 – Filters

1. Install throw-away filters at the new furnace heating and cooling unit after system start-up. Install 30% efficient 2-inch thick pleated filters – size and quality shall be in accordance with the equipment manufacturer's written instructions.

Part 9 – Cutting and Patching

1. The general contractor shall be responsible for required cutting, and patching incident to work for this division the cost of which shall be paid for by the mechanical contractor. The general contractor shall make required repairs afterwards to satisfaction of architect and/or owner's representative. Cut carefully to minimize necessity for repairs to existing work. Do no cut beams, columns or trusses. Patch and repair walls, floors, ceiling, and roofs with materials of same quality and appearance as adjacent surfaces unless otherwise shown. Surface finishes shall exactly match existing finishes of same materials.
2. The mechanical contractor shall bear expense of cutting, patching, repairing, and replacing of work of other contractors required because of its fault, error, tardiness, or because of damage done by mechanical contractor.

Part 10 – Fire Assembly Penetrations

1. Coordinate requirements with the electrical contractor, general contractor, architect, the owner's representative and the local authorities having jurisdiction.
2. Provide U.L. fire penetration system number WL1002, FC1002, FC2008, FC3001 or FC1001 for combustible construction or system number WL1002, WL2002, FA5001, or FA8001 for non-combustible construction of the U.L. building materials directory and as required by the authorities having jurisdiction.
3. All penetrations through fire rated assemblies shall comply with U.L. fire resistance directory, latest adopted edition.
4. Provide U.L. listed fire dampers with fusible links constructed to U.L. Standard 33 and U.L. listed fire/smoke dampers with smoke detectors conforming to NFPA 90A and meeting UL555 requirements as required y state and local codes, including any additional fire dampers and/or fire/smoke dampers with smoke detectors that may be required, even if not shown on the mechanical drawings. Provide firestop system as required by local codes and ordinances.
5. Provide smoke detectors and wiring control as required for operation of fire/smoke dampers.

Part 11 – Seismic Bracing

1. The mechanical contractor shall furnish and install required seismic bracing, restraints, equipment isolators, etc. for his installed equipment. All of which shall comply with PPIC and SMACNA guidelines for the local seismic zone requirements and in accordance with the authorities having jurisdiction.

Part 12 – As-Built Drawings

1. The mechanical contractor shall keep a record set of drawings neatly marked with all changes from the original design and drawings. These drawings shall be delivered to the architect and/or owner's representative at the completion of the project and prior to receiving final payment.

Part 13 – Check, Test and Start-Up

1. The Mechanical contractor shall provide material and labor required to perform start-up of each respective item of equipment and system prior to the beginning of test, adjust and balance procedures. Submit start-up report to the architect and/or owner's representative.

Part 14 – Testing, Adjusting and Balancing.

1. The Mechanical contractors shall pay for the services of an independent air balancing contractor who is certified and approved by the architect and/or the owner's representative prior to bidding to perform testing adjusting and balancing of new HVAC systems Submit air balance report and AABC standards for field measurement & instruction, latest adopted edition.
2. The mechanical contractor shall make changes to pulleys, belts and dampers as recommended by the balancing contactor.

Part 15 – Equipment Identification

1. Equipment identification: Signs made of laminated plastic with 1/8" or larger engraved letters. Signs shall e securely attached by rust proof screws or some other permanent means.
2. All HVAC equipment shall have equipment identification. Information on the signs shall include: mechanical equipment schedule symbol, name of equipment, rating, electrical characteristics and any other important data.

Part 16 – Operation and Maintenance Manuals

1. Provide three (3) sets of bound operation and maintenance manuals covering all new HVAC equipment for the owner's use. O&M manuals shall have the following format:
   a. Size: 8-1/2"X 11"
   b. Paper: Manufacturer's printed data, or neatly type written.
   c. Provide reinforced punched binder tab, bind in with text.
   d. Provide fly-leaf for each separate product, or each piece of operating equipment. Provide typed description of product, and major component parts of equipment, provide indexed tabs.
   e. Cover: Identify each volume with typed or printed title: "Operation and Maintenance instruction". List title of project, identity of general subject matter covered in the manual.
   f. Binders: Commercial quality three-ring binders with durable and cleanable plastic covers.
   g. Provide neatly typewritten table of contents, list contractor name, address and phone number. List each product by product name and other identifying symbols as set forth in contract documents.
   h. Include copy of each warranty, bond and service chart with maintenance schedule, temperature control diagrams, sequence of operation and provide logical sequence of instruction for each procedure.

Part 17 – Instructions

1. Prior to final inspection or acceptance, fully instruct the owner's designated operation and maintenance personnel in the operation, adjustment and maintenance of products, equipment and systems. (Minimum 2-hours instruction required or more if requested by the owner's representative).

Part 18 – Warranty and Guarantee

1. The mechanical contractor shall provide one (1) year parts and labor warranty for his installed work and HVAC equipment after equipment start-up and the owner's representatives acceptance. Should any trouble develop during this period due to defective materials or faulty workmanship the contractor shall furnish all necessary labor and materials to correct the trouble without any additional cost. Any materials found to be defective during the guarantee period shall be corrected immediately to the entire satisfaction of the owner.

MECHANICAL GENERAL NOTES

1. ALL DRAWINGS SHALL BE CONSIDERED PART OF THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS AND BE RESPONSIBLE FOR THE REVIEW AND COORDINATION OF ALL ASPECTS OF THE CONTRACT DOCUMENTS PRIOR TO SUBMITTING PRICING. ANY AND ALL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO AN INSTALLATION SUCH THAT CLARIFICATIONS CAN BE ISSUED.
2. ANY WORK PERFORMED OR MATERIAL USED WHICH IS SHOWN TO BE IN CONFLICT WITH THE CONTRACT DRAWINGS, SPECIFICATIONS OR ANY APPLICABLE CODE OR GOVERNING REGULATION SHALL BE REMOVED AND REPLACED OR CORRECTED AT THE CONTRACTOR'S EXPENSE.
3. ALL SYMBOLS AND ABBREVIATIONS USED ON THE CONTRACT DRAWINGS ARE CONSIDERED CONSTRUCTION STANDARDS. IF CLARIFICATION IS REQUIRED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO PROCEEDING WITH ANY WORK.
4. DO NO SCALE THE DRAWINGS: ALL EXISTING CONDITIONS AND DIMENSIONS SHALL BE VERIFIED BY THE CONTRACTOR AT THE JOB SITE PRIOR TO FABRICATION OF MATERIALS OR ERECTION OF ASSEMBLIES. IF DISCREPANCIES ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED FOR CLARIFICATION.
5. THE CONTRACTOR SHALL FURNISH ALL MATERIALS, LABOR AND EQUIPMENT, TRANSPORTATION AND SERVICES REQUIRED FOR COMPLETION OF THE WORK. ALL WORK PERFORMED AND MATERIALS INSTALLED SHALL BE DONE IN STRICT COMPLIANCE WITH ALL LOCAL CODES AND GOVERNING REGULATIONS.
6. ALL PERMITS AND FEES WHICH ARE REQUIRED FOR THIS WORK SHALL BE SECURED AND PAID FOR BY THE MECHANICAL CONTRACTOR.
7. ALL PLUMBING AND MECHANICAL INSTALLATIONS SHALL ADHERE TO THE 2015 IECC.
8. PROVIDE OPERATION AND MAINTENANCE MANUALS TO OWNER OR ALL NEWLY INSTALLED EQUIPMENT PER 2015 IECC. O&M MANUALS SHALL BE BOUND IN THREE RING BINDER UTILIZING LABELED TABS TO SEPARATE EQUIPMENT SECTIONS.
9. UNLESS NOTED OTHERWISE, ALL EXISTING MECHANICAL EQUIPMENT, DUCTWORK, AND MECHANICAL ACCESSORIES SHALL REMAIN. NO CHANGES UNLESS NOTED.
10. CONTRACTOR SHALL BE RESPONSIBLE TO CLEAN THE SURFACE OF ALL SUPPLY, RETURN, EXHAUST, AND TRANSFER DIFFUSERS/GRILLES AT COMPLETION OF PROJECT.
11. DUCTWORK SHALL BE FABRICATED TO NFPA 90A STANDARDS. TYPICAL LOW PRESSURE DUCTWORK SHALL BE ASTM A653M GALVANIZED STEEL SHEET, LOCK FORMING QUALITY, HAVING ZINC COATING OF 1.25 OUNCES/SF FOR EACH SIDE PER ASTM A90.
12. FABRICATE AND SUPPORT DUCTWORK IN ACCORDANCE WITH SMACNA LOW PRESSURE DUCT CONSTRUCTION STANDARDS AND ASHRAE HANDBOOKS.
13. ALL BRANCH DUCTWORK SHALL MATCH CONNECTION SIZE OF DIFFUSERS UNLESS NOTED OTHERWISE.
14. ROUTE EXPOSED SPIRAL DUCTWORK AS HIGH AS POSSIBLE TO BOTTOM OF STRUCTURE.

MECHANICAL SYMBOLS

- SD# / ### — SUPPLY DIFFUSER, SD#, ### CFM ARROWS INDICATE DIRECTION OF THROUGH
- SD# / ### — SUPPLY DIFFUSER (4-WAY)
- RG# / ### — RETURN OR EXHAUST REGISTER TYPE 'RG#' ### CFM
- EG# / ### — EXHAUST REGISTER TYPE 'EG#' ### CFM
- ### / ### — SIDEWALL SUPPLY, RETURN, OR EXHAUST REGISTER TYPE ### , ### CFM
- SUPPLY DUCT UP
- SUPPLY DUCT DOWN
- RETURN DUCT UP
- RETURN DUCT DOWN
- EXHAUST DUCT UP
- EXHAUST DUCT DOWN
- AIRFLOW SA — SUPPLY AIR BRANCH CONNECTION WITH VOLUME DAMPER
- AIRFLOW SA/RA — RETURN AIR/EXHAUST AIR BRANCH CONNECTION WITH VOLUME DAMPER
- HORIZONTAL FIRE DAMPER
- VERTICAL FIRE DAMPER
- FS — COMBINATION FIRE/SMOKE HORIZONTAL FIRE DAMPER
- FS — COMBINATION FIRE/SMOKE VERTICAL FIRE DAMPER

MECHANICAL PHASING

(SINGLE LINES SHOWN SIMILAR FOR DOUBLE LINED WORK)

- MECHANICAL PROPOSED
- MECHANICAL EXISTING TO REMAIN
- MECHANICAL FOR DEMOLITION
- POINT OF CONNECTION BETWEEN NEW AND EXISTING
- EXTENT OF DEMOLITION

MECH. ABREVIATIONS

EXISTING	(E)
ABOVE FINISHED FLOOR	AFF
AIR HANDLING UNIT	AHU
BRITISH THERMAL UNIT	BTU
COMBUSTION AIR	CA
CUBIT FEET PER MINUTE	CFM
CONDENSING UNIT	CU
CABINET UNIT HEATER	CUH
DOWN	DN
EXHAUST AIR	EA
EXHAUST VENTILATOR	EV
FAN COIL UNIT	FCU
HORSE POWER	HP
KILOWATT	KW
1,000 BTU'S	MBH
NATURAL GAS	NG
OUTSIDE AIR	OA
PACKAGED TERMINAL AIR CONDITIONER	PTAC
RETURN AIR	RA
REFRIGERANT	REF
RETURN GRILLE	RG
RADIANT HEATER	RH
ROOF TOP UNIT	RTU
SUPPLY AIR	SA
SUPPLY DIFFUSER	SD
SUPPLY GRILLE	SG
TRANSFER GRILLE	TG
12,000 BTU'S	TON
TYPICAL	TYP
UNIT HEATER	UH
WATTS	W

CONSTRUCTION NOTES

REVIEWED FOR CODE COMPLIANCE
Tom Peterson
THOMAS PETERSON
05/19/2025
DIVISION OF FACILITIES CONSTRUCTION AND MANAGEMENT

DATE

MARCH 3, 2025

epic ENGINEERING

REVISIONS		
MARK	DATE	DESCRIPTION

DRAWN: NNS
DESIGNER: NNS
REVIEWED: DIO

PROJECT # 25SM5271.29

REGISTERED PROFESSIONAL ENGINEER — STATE OF UTAH — No. 168279 — 3/3/25 — DONI OLSEN

SCALES

As indicated

0 1"
BAR SCALE MEASURES 1" ON A FULL SIZE SHEET. ADJUST AS APPROPRIATE

PROJECT NAME:

DWR LOGAN FISH HATCHERY RESIDENCE

PROJECT LOCATION:

1465 W 200 N
LOGAN, UT

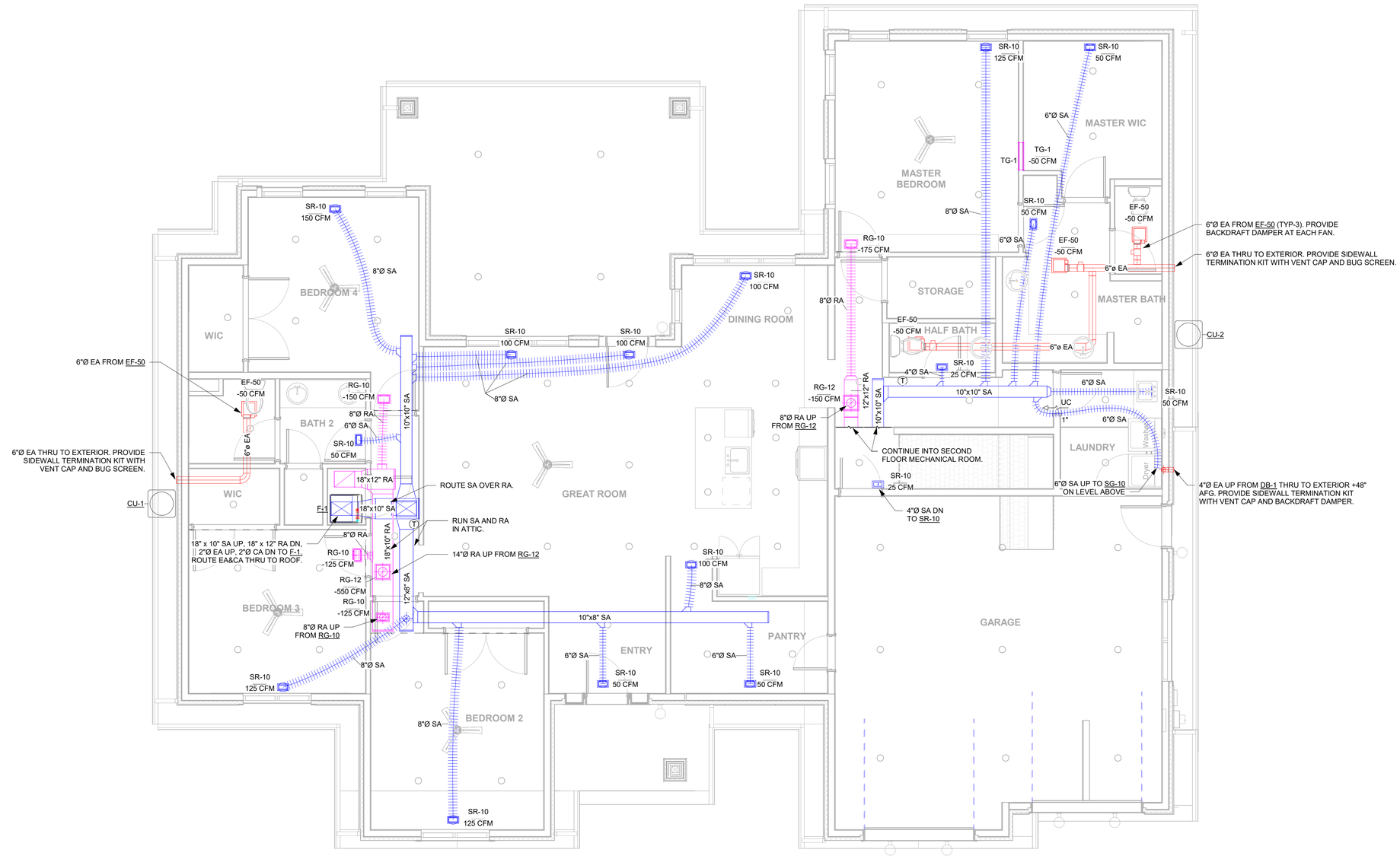
SHEET TITLE:

MECHANICAL GENERAL NOTES

PLAN SET: PERMIT

SHEET M0.1

S:\Projects\25SM5271.29 DWR Fish Hatchery - MEP Design\Drawings\Revit Logic\Caretaker.rvt



1 FIRST LEVEL MECHANICAL PLAN
1/4" = 1'-0"

CONSTRUCTION NOTES

1. PROVIDE BALANCING DAMPER WHERE NOT INTEGRAL TO SUPPLY TERMINAL.
2. PROVIDE R-8 MINIMUM INSULATION WHERE DUCTS ARE IN UNCONDITIONED SPACE.

REVIEWED FOR CODE COMPLIANCE
THOMAS PETERSON
05/19/2025
DIVISION OF FACILITIES CONSTRUCTION AND MANAGEMENT

DATE
MARCH 3, 2025

epic ENGINEERING

REVISIONS

MARK	DATE	DESCRIPTION

DRAWN: NNS
DESIGNER: NNS
REVIEWED: DIO

PROJECT # 25SM5271.29

REGISTERED PROFESSIONAL ENGINEER No. 169278 DON I. OLSEN STATE OF UTAH 3/3/25

SCALES
1/4" = 1'-0"
BAR SCALE MEASURES 1" ON A FULL SIZE SHEET. ADJUST ACCORDINGLY

PROJECT NAME:
DWR LOGAN FISH HATCHERY RESIDENCE

PROJECT LOCATION:
1465 W 200 N
LOGAN, UT

SHEET TITLE:
FIRST LEVEL MECHANICAL PLAN

PLAN SET: PERMIT
SHEET M1.1

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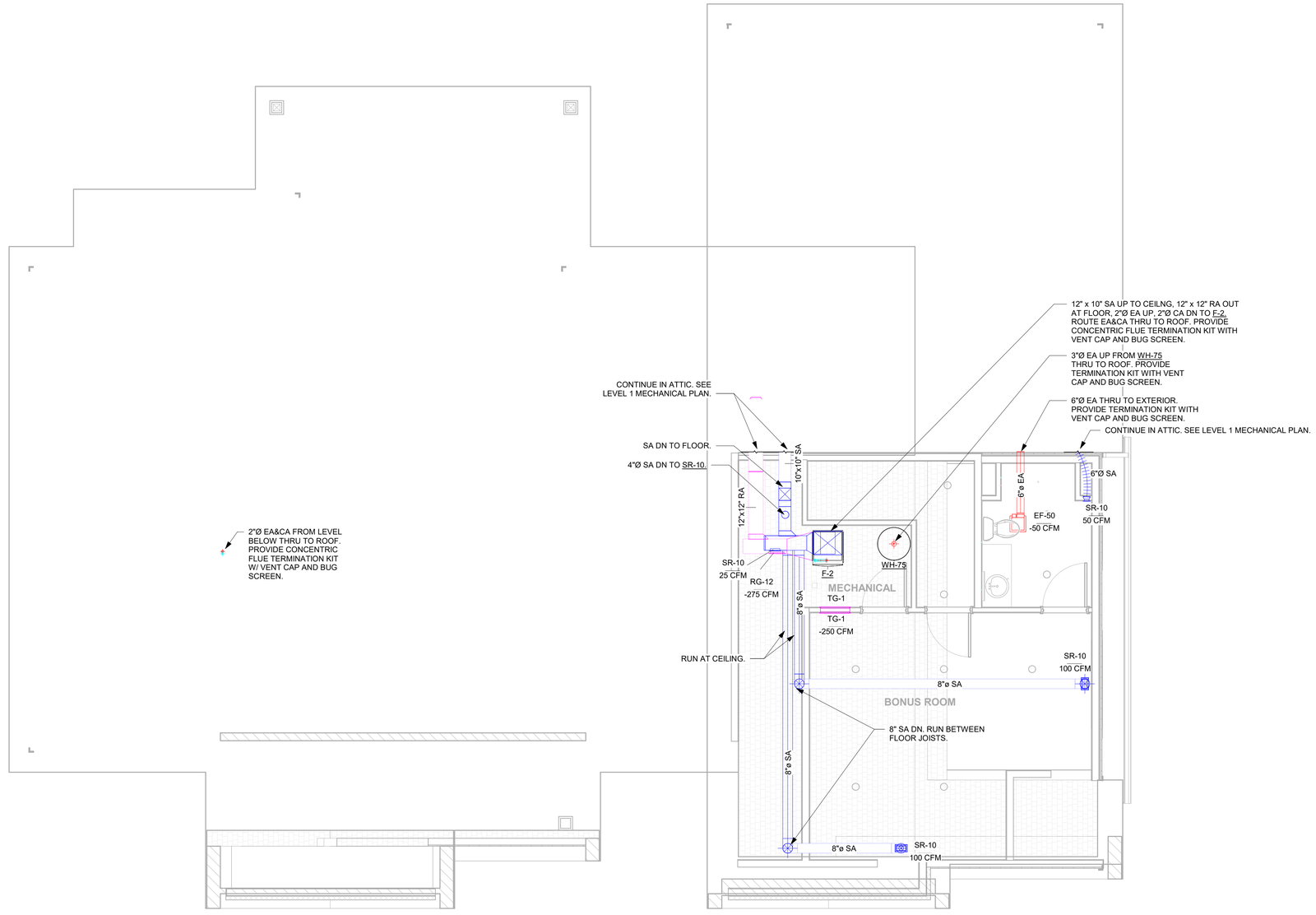

1 SECOND LEVEL MECHANICAL PLAN
1/4" = 1'-0"

CONSTRUCTION NOTES

REVIEWED FOR CODE COMPLIANCE
THOMAS PETERSON
05/19/2025
DIVISION OF FACILITIES CONSTRUCTION AND MANAGEMENT

DATE

MARCH 3, 2025

epic ENGINEERING

REVISIONS

MARK	DATE	DESCRIPTION

DRAWN: NNS
DESIGNER: NNS
REVIEWED: DIO

PROJECT #
25SM5271.29

REGISTERED PROFESSIONAL ENGINEER
No. 169278
DON J. OLSEN
STATE OF UTAH
3/3/25

SCALES

1/4" = 1'-0"

0 1"
RAR SCALE MEASURE 1" ON A FULL SIZE SHEET. ADJUST FOR A HALF SIZE SHEET

PROJECT NAME:

DWR LOGAN FISH HATCHERY RESIDENCE

PROJECT LOCATION:

1465 W 200 N
LOGAN, UT

SHEET TITLE:

SECOND LEVEL MECHANICAL PLAN

PLAN SET: PERMIT

SHEET M1.2

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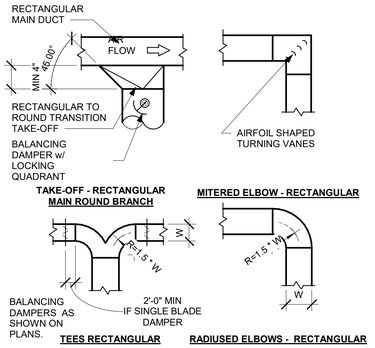
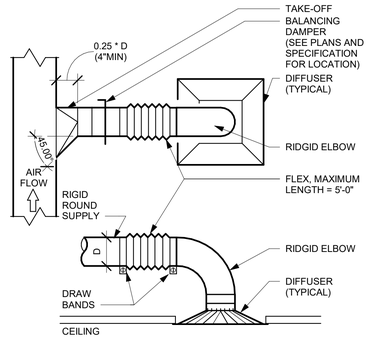


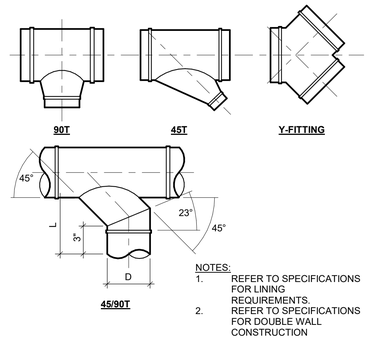
1 LOW PRESSURE RETANGULAR DUCT FITTINGS

N.T.S.



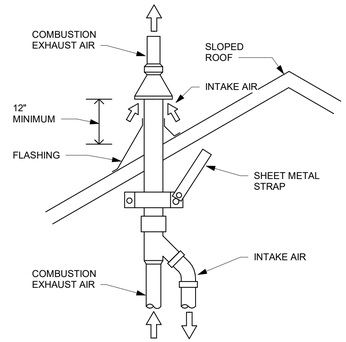
2 TYPICAL DUCT TAKE-OFF DETAIL

N.T.S.



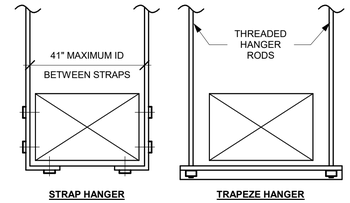
3 TYPICAL SPIRAL DUCT FITTINGS

N.T.S.



4 CONCENTRIC FLUE DETAIL (SLOPED ROOF)

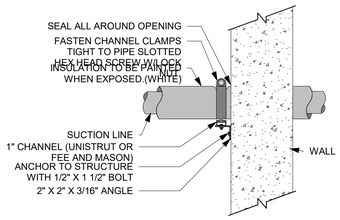
N.T.S.



NOTE:
POP RIVETS ARE NOT ALLOWED. USE SELF-TAPPING SHEETMETAL SCREWS ONLY (TYP)

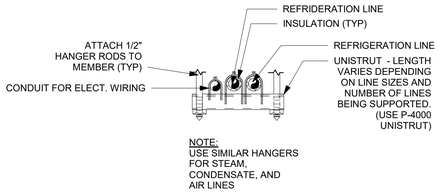
5 DUCTWORK SUPPORT DETAIL

N.T.S.



6 REFRIGERANT PIPE THROUGH WALL

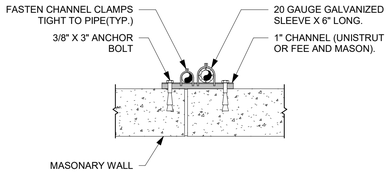
N.T.S.



NOTE:
USE SIMILAR HANGERS FOR STEAM, CONDENSATE, AND AIR LINES

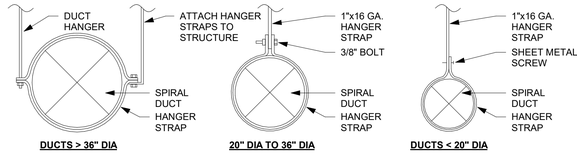
7 TRAPEZE PIPE HANGER

N.T.S.



8 REFRIGERANT PIPE SUPPORT ON WALL

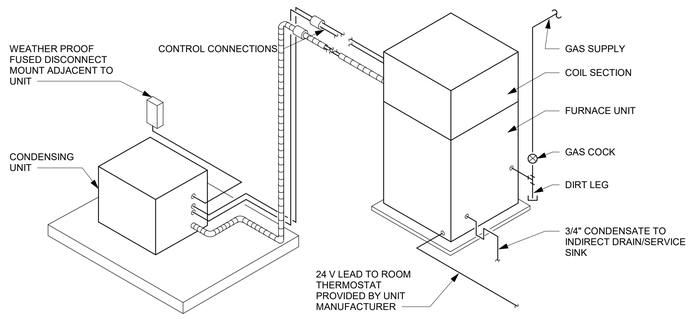
N.T.S.



NOTES:
1. POP RIVETS ARE NOT ALLOWED, USE SELF-TAPPING SHEETMETAL SCREWS ONLY (TYP)
2. HANGERS SHALL NOT DEFORM DUCT SHAPE.
3. MAXIMUM HANGER SPACING OF 10'-0" O.C.

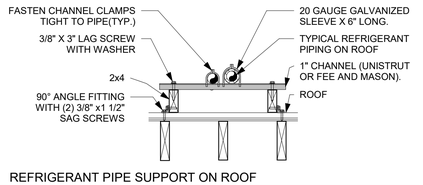
9 ROUND DUCTWORK SUPPORT DETAIL

N.T.S.



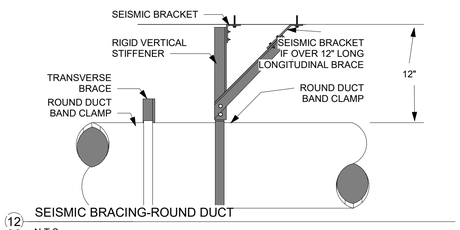
10 FURNACE/CONDENSING UNIT DETAIL (VERTICAL)

N.T.S.



11 REFRIGERANT PIPE SUPPORT ON ROOF

N.T.S.



12 SEISMIC BRACING-ROUND DUCT

N.T.S.

FURNACE SCHEDULE

1. ROUTE 3/4" CONDENSATE TO FLOOR DRAIN.

TAG	MANUFACTURER	MODEL	NOMINAL COOLING	SUPPLY AIR	RETURN AIR	E.S.P. (IN. WG)	ORIENTATION	BTU INPUT	BTU OUTPUT	EFFICIENCY	TOTAL COOLING BTU	MOP	HP	MCA	VOLTAGE	NOTES
F-1	DAIKIN	DM96SN0403BN	2.5 ton	950 CFM	950 CFM	0.50 in-wg	UPFLOW	40,000 Btu/h	38,440 Btu/h	96%	28,200 Btu/h	15 A	0.5 hp	10 A	120/1/60	
F-2	DAIKIN	DM96SN0403AN	1.5 ton	600 CFM	600 CFM	0.50 in-wg	UPFLOW	40,000 Btu/h	38,440 Btu/h	96%	17,200 Btu/h	15 A	0.5 hp	10 A	120/1/60	

CONDENSING UNIT SCHEDULE

1. PROVIDE MANUFACTURER EQUIPMENT PAD.
2. PROVIDE MANUFACTURER'S RECOMMENDED CLEARANCES ON ALL SIDES.

TAG	MANUFACTURER	MODEL	NOMINAL COOLING	SERVES	SEER2	MCA	MOP	VOLTAGE	NOTES
CU-1	DAIKIN	DX3SEN3010	2.5 ton	F-1	13.4	17 A	25 A	240/1/60	
CU-2	DAIKIN	DX3SEN1810	1.5 ton	F-2	13.4	12 A	20 A	240/1/60	

EXHAUST FAN SCHEDULE

1. CONTROL FAN ON BATHROOM LIGHT SWITCH.

TAG	MANUFACTURER	MODEL	DUCT SIZE	MOUNTING	AIR FLOW	RPM	E.S.P.	WATTS	VOLTAGE	NOTES
EF-50	Panasonic	FV-11-15VK1	6"	CEILING	50 CFM	747	0.00 in-wg	4 W	120/1/60	

GRILLE AND DIFFUSER SCHEDULE

TAG	MANUFACTURER	TYPE	FACE SIZE	NECK SIZE	NOTES
RG-10	BY CONTRACTOR	RETURN GRILLE	11 3/4" x 7 3/4"	6"x10"	
RG-12	BY CONTRACTOR	RETURN GRILLE	13 3/4" x 13 3/4"	12"x12"	
RG-12	BY CONTRACTOR	TRANSFER GRILLE	13 3/4" x 13 3/4"	12"x12"	
SR-10	BY CONTRACTOR	SUPPLY GRILLE	10" x 6"	8"x4"	
TG-1	BY CONTRACTOR	TRANSFER GRILLE	25 3/4" x 9 3/4"	8"x24"	

CONSTRUCTION NOTES

REVIEWED FOR CODE COMPLIANCE
THOMAS PETERSON
05/19/2025
DIVISION OF FACILITIES CONSTRUCTION AND MANAGEMENT

DATE
MARCH 3, 2025

epic ENGINEERING

REVISIONS

MARK	DATE	DESCRIPTION

DRAWN: NNS
DESIGNER: NNS
REVIEWED: DIO

PROJECT # 25SM5271.29

REGISTERED PROFESSIONAL ENGINEER No. 169278 DON J. OLSEN STATE OF UTAH 5/7/25

SCALES
As indicated
0 1"
FOR SCALE MEASURES 1" IN A FULL SIZE SHEET. ADJUST ACCORDINGLY.

PROJECT NAME:
DWR LOGAN FISH HATCHERY RESIDENCE

PROJECT LOCATION:
1465 W 200 N
LOGAN, UT

SHEET TITLE:
MECHANICAL DETAILS & SCHEDULES

PLAN SET: PERMIT
SHEET M5.1

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Part 1 – General

1. The plumbing system shall be installed in strict accordance with local, state, and regional plumbing codes, state and local health department regulations, and OSHA regulations.
2. It shall be the responsibility of the plumbing contractor to pay for all fees and permits relating to his work.
   a. The plumbing contractor shall coordinate with the local gas company and shall arrange for the installation of the new gas meters. The new gas piping supplying the gas-fired HVAC equipment is sized for 4 ounce gas pressure.
   b. The plumbing contractor shall be an experienced firm regularly engaged in the installation of commercial plumbing systems in accordance with local codes. The owner's representative may reject any proposed contractor who cannot show evidence of such qualifications
   c. Visit the jobsite prior to bidding the project to become familiar with the existing conditions and any interference. Should a condition arise where a change would be advisable, secure approval of change before proceeding with work.

Part 2 – Piping Materials and Valves

1. Piping materials and fittings shall be as follows:
   a. New domestic water piping shall be ASTM B88 Type L hard drawn copper with ANSI B16.22 wrought copper fittings and 95-5 solder aboveground, and Type K soft copper belowground.
   b. New waste and vent piping 1-1/2" and smaller shall be ASTM A120 Grade A schedule galvanized steel pipe with threaded cast iron drainage fittings, 2" and larger shall be cast iron, ASTM A-888 'no-hub' with ASTM C-1277 standard neoprene gaskets and type 304 stainless steel connector bands aboveground or FM 1680 Class I heavy duty type 304 stainless steel connector bands capable of withstanding 125 in-lbs of torque belowground.
   c. Alternate waste and vent piping shall be either ASTM D2661 or ASTM D2665 PVC piping or fitting. The installation shall comply with IAPMO IS9. Underground ABS or PVC piping shall be laid in 6-inch deep bed of sand.
   d. New gas piping shall be ASTM A53 schedule 40 black steel pipe with ANSI 16 .3 150 lb. malleable iron fittings aboveground and polyethylene as approved by the local gas utility company for below ground installation.
2. Valves:
   All valves must be accessible. Valves located above a hard ceiling or in a wall shall have and approved access door. Valve stems shall be installed horizontal or higher than the valve. All valves shall be of the same manufacturer.
   a. Ball valves: 2" and smaller shall be rated for 125 PSIG WOG at 220 degree F., bronze construction conforming to ASTM B62, solder ends, bubble tight Teflon seat (at 100 PSIG under water), with a hard chrome plated brass or stainless steel ball. The valve shall operate with flow in either direction and shall be suitable for throttling and tight shut off. Provide watts B-6001.

Part 3 – Fixtures, Equipment, Drains and Trim

1. Approved manufacturers for fixtures and trim:
   a. Fixtures: American Standard, Kohler, Eljer, and Elkay
   b. Carriers, etc,: J.R. Smith, Josam, Wade, and Zurn.
   c. Trim: American Standard, Chicago Faucets, Elkay, Kohler and T&S Brass
   d. Flush Valves: Sloan, Delaney, and Zurn Z6000 Series.
2. All water faucets shall meet N.S.F Standard Section 9 for drinking water faucets and shallbe certified by underwriters laboratory. The product shall be manufactured from brass construction, brass components which contact within the faucet shall be from brass which contains no more than 3% lead by dry weight.
3. Water heaters shall be shown on the plumbing drawings.

Part 4 – Piping Insulation

1. Piping insulation shall conform to the current energy code as adopted by the state. No insulation shall be applied until all pressure tests are complete, leaks repaired, and the system is successfully retested. Insulation shall be ASTM C547, Class 1 Fiberglass one-piece preformed pipe insulation with an ASTM C921 all purpose (FASJ) fire retardant jacket. In lieu of fiberglass insulation, ASTM 3552, Type II, Class 2 Foam Glass or ASTM C534, Type 1 Thermacell or expanded polyurethane may be used. Fire and smoke hazard for the complete insulation system shall not exceed: Flame spread – 25, fuel contribution – 50, smoke development – 450 in accordance with ASTM E84 test methods.
2. Piping insulation thickness for new piping shall be as follows:

	Pipe Sizes	
Pipe Type Branch	Up to 2"	2-1/2" & up
Dom. Hot --	1.0"	1.5"
Dom. Cold--	0.5"	0.5"

3. Insulation protection shields equal to Grinnell figure 167 shall be installed on all insulated pipe 1" and larger. Hangers shall not contact the pipe where insulation is specified. Insert insulation shall be the same thickness as the adjoining pipe insulation.

Part 5 – Installation

1. New horizontal waste pipe shall be given a grade of ¼" per foot. 1/8" per foot slope must be approved by the authority having jurisdiction. Roof drain piping shall be given a grade of 1/8" per foot.
2. Vent inlets on the floor drains and floor sinks shall be above the weir of the traps they serve.
3. All plumbing fixture supplies with stops, p-traps, and trap arms shall be chrome plated.
4. Verify the locations and sizes of the existing domestic water, gas, and waste and make necessary new connections as required. Refer to the civil engineering drawings and coordinate with the general contractor the owner's representative.
5. The plumbing contractor shall periodically remove all debris and waste related to his work in order to maintain safe working and operating conditions, and shall dispose of the same in a approved manner at the completion of work, he shall remove all his rubbish, tools, and surplus material from and about the site, leaving his work clean and the area ready for occupancy.
6. Cleanouts shall be the same size as the pipe. Where cleanouts in connection with threaded pipe are accessible, they shall be cast iron drainage T-patter 90 degree branch fitting with extra heavy brass screw plugs of the same size as the pipe (4" cleanout maximum).
7. All cleanouts shall be flush with wall or color complete with stainless steel cover plate for wall cleanouts and nickel bronze for floor cleanouts.
8. Arrange new piping to permit ready access to valves, unions, traps, and to clear opening of doors and access panels.
9. Adjust location of pipes, etc., to accommodate work from interference anticipated and encountered. Determine exact route and location of each pipe prior to fabrication. Make offsets, transition, and changes in direction of pipes as required to maintain proper head room and pitch of sloping lines whether or not indicated on drawings.
10. Insure that items to be furnished fit in space available. Make necessary field measurements to ascertain space requirements including those for connections and furnish and install equipment of size and shape so final installation shall suit true intent and meaning of contract documents.
11. Follow manufacturer's directions in delivery, storage, protection, and installation of materials. Promptly notify architect in writing of conflicts between requirements of contract documents and manufacturer's directions and obtain architects written instruction before proceeding with work. Bear expenses arising from correcting deficiencies of work that to do not comply with manufacturer's direction or such written instruction from architect and/or owner's representative.
12. Deliver material to site and tightly cover and protect against dirt, water, and chemical or mechanical injury but have readily accessible for inspection. Store items subject to moisture damage in a dry heated space.
13. Vertical piping shall be secured at sufficiently close intervals to keep pipe alignment and carry the weight of the pipe and contents. Stacks shall be supported at their bases with approved metal clamps or hangers.
14. Support horizontal piping at sufficiently close intervals to maintain alignment and preventsagging or grade reversals in accordance with local plumbing code. Support each length of pipe by an approved hanger located not more than 18" from the joint. Approved manufacturers are ITT Grinnell fee & Mason MFG. Co., B-Line, or Kin-Line, Inc.
15. Support terminal ends of all horizontal runs or branches and each change of direction or alignment by an approved hanger.
16. All exterior gas piping exposed to weather shall be painted with a gray color enamel paint with rust inhibitor.
17. Changes in direction of horizontal waste and vent shall be made with the appropriate use 45 degree wyes, half wyes, long sweep 1/4/ bends, 1/6, 1/8, or 1/16 bends, except that sanitary tees may be used on waste lines where change in direction of flow is from the horizontal to the vertical.
18. Complete the installation of each plumbing fixture including chrome-plated trap and accessories with accessible chrome-plate trap and accessories with accessible chrome-plated stop or control valve in each hot and a cold water branch supply line. Make joint between water closet and floor flange tight with approved fixture setting compound or gasket. Interior exposed pipe, valves, and completion of project. Caulk between fixtures and wall and compound, point all edges. Install fixture as per local codes and manufacturer's instructions. Do not use flexible water piping.
19. Access panels shall be provided in walls or GWB ceilings where required to access valves or concealed equipment access doors shall be hinged and constructed of metal with a screwdriver latch. All access panels shall be 18" x 18", unless otherwise noted on the drawings. Fire-rated access panels shall be installed in fire-rated assemblies. Installation shall be in neat in final appearance.

Part 6 – Submittals

1. By description, catalog number and specific designation, standards are established for manufactured items which the contractor shall furnish as required by this section. Substitutions must be submitted and approved by the architect and/or owner's representative of products prior to bid for consideration. Substitutions of products shown shall be submitted to the architect, the owner's representative or engineer for written approval.
2. Shop drawings and up-to-date engineering data sheets and catalog information shall be furnished on the following items of equipment. Provide (6) copies for review.
   a. Fixtures and trim
   b. Water heater
   c. Plumbing equipment and specialties
   d. Valves, strainers, etc.

Part 7 – Cutting and Patching

1. Cutting and patching of floors, roof and walls to facilitate the plumbing system installation shall be by the general contractor, the cost of which shall be paid for by the plumbing contractor the plumbing contractor shall coordinate all cutting and patching with the general contractor and owner's representative.
2. The plumbing contractor shall be responsible for required digging, backfilling and compaction.
3. The general contractor shall be perform the required cutting, and patching incident to this work, and make required repairs afterward to satisfaction of architect and the owner's representative. Cut carefully to minimize necessity for repairs to existing work. Do not cut beams, columns, or trusses. Patch and repair walls, floors, ceiling and roofs with materials of same quality and appearance as adjacent surfaces unless otherwise shown. Surface finishes shall exactly match existing finishes of same materials. The plumbing contractor shall bear expense of cutting, patching, repairing, and replacing of work of other contractors required because of his fault, error, tardiness, or because of damage done by the plumbing.
4. Schedule all work so as not to interfere and/or disrupt the daily activities and/or operating hours of nearby buildings or operations. Coordinate as required with general contractor and the owner's representative.

Part 8 – Fire Assembly Penetrations

1. Coordinate the requirements with other trades, general contractor, architect, the owner's representative and the local authorities having jurisdiction
2. Provide sleeve at all floor piping penetrations. Provide U.L. Fire Penetration System Number FC1002, FC2008, FC3007, FC7001, WL002 or WL2002 for combustible construction or system number FA5001, FA8001, WL1002 or WL2002 for non-combustible construction of the U.L. building materials directory and as required by authorities having jurisdiction.
3. All penetrations through fire rated assemblies shall comply with U.L. Fire Resistance Directory, latest edition.
4. Access panels shall be provided in walls or GWB ceilings where required to access dampers or concealed equipment. Access doors shall be hinged and constructed of metal with a screwdriver latch. All access panels shall be minimum of 18" x 18" unless otherwise noted on drawings, or larger if required for the removal of equipment. Fire-rated access panels shall be installed in fire-rated assemblies. Installation shall be neat in final appearance.

Part 9 - Seismic Bracing

1. The plumbing contractors shall furnish and install required seismic bracing, restraints, equipment isolators, etc. for his installed equipment, piping, etc. all of which shall comply with PPIC and SMACNA guidelines for the local seismic zone requirements and in accordance with authorities having jurisdiction.

Part 10 - As-Built Drawings

1. The plumbing contractor shall keep a record set of drawings neatly marked with changes from the original design and drawings. These drawings shall be delivered to the architect and/or owner's representative at the completion of the project and prior to receiving final payment.

Part 11 – Check, Test and Start-Up

1. All new, altered, extended or replaced plumbing shall be left uncovered and unconcealed until it has been tested or approved. Where such work has been covered or concealed before it is tested and approved, it shall be exposed at the plumbing contractor's expense for testing and approval.
2. Each system shall be adjusted to insure proper functioning and shall be left in first class operating condition. Contractor shall perform all tests in the presence of the owner's representative.
   a. Hydrostatically test the new waste and vent system indoors to hold not less than 5 PSIG or 10 feet of head pressure for 2 hours with no decrease in pressure.
   b. Test the new domestic water systems to hold not less than 100 PSIG (or 1-1/2 times the working pressure in the pipe, whichever is greater) air pressure (or hydrostatic) for 4 hours with no decrease in pressure.
   c. Gas piping shall be test at 60 PSIG for no less than 30 minutes in accordance with the local gas company's good practices. All tests shall be maintained without leaks or pressure loss for the specified time, with allowance for the temperature changes. Repair all leaks and repeat tests where required.
3. The plumbing contractor shall provide material and labor required to perform start-up of each respective item of equipment, fixtures and systems. Submit test and start-up report to the architect and/or the owner's representative as applicable.
4. Clean all piping, equipment, etc. remove all grease, dirt and stains that have accumulated during the construction period.

Part 12 – Sterilization

1. Sterilize domestic water system with solution containing 250 parts per million minimum of available chlorine. Introduce chlorinating material into system a manner approved by the architect and local department of health. Allow sterilization solution to remain for 24 hours and open and close valves and faucets several times during that time. After sterilization, flush solution from system with clean water until residual chlorine content is less than 0.2 parts per million. Water system will not be accepted until negative bacteriological test is made on water taken from system. Repeat dosing as necessary until such negative test is accomplished and is acceptable to the local department of health. Provide report to owner's representative for approval.

Part 13 – Operation and Maintenance Manuals

1. Provide three (3) sets of O& M Manuals covering all new valves, equipment and appurtenances for the owner's use as applicable. The format shall be as follows:
   a. Size: 8 1/2x11 inches
   b. Paper: Manufacturer's printed data, or neatly type-written
   c. Provide reinforced punched binder tabs, bound in with text.
   d. Provide fly-leaf for each separate product, or each piece of operating equipment. Provide typed description of product, and major component parts of equipment. Provide indexed tabs.
   e. Cover: Identify each volume with typed or printed title: "Operation and Maintenance instruction". List title of project, identity of general subject matter cover in the manual.
   f. Binders: Commercial quality three-ring binders with durable and cleanable plastic covers
   g. Provide neatly type written table of contents. List product by product name and other indentifying symbols as set for in contract documents.
   h. Include copy of each warranty, bond and service contract issued. Include parts lists, lubrication chart with maintenance schedule.

Part 14 – Instructions

1. Prior to final inspection or acceptance, fully instruct the owner's designated operation and maintenance personnel in the operation, adjustment and maintenance of products, equipment and systems. (Minimum 2-hours instruction period required or more if requested by the owner's representative).

Part 15 – Warranty and Guarantee

1. The plumbing contractor shall be responsible for the complete new plumbing systems installation and shall provide a one (1) year parts and labor warranty for his performed work after equipment start-up and the owner's representative's acceptance. Should any trouble develop during this period due to defective materials or faulty workmanship, the contractor shall furnish all necessary labor and materials to correct the trouble without any cost to the owner. Any materials found to be defective during the guarantee period shall be corrected immediately to the entire satisfaction of the owner.
2. The contract shall be responsible for all damage to any part of the premises cause by leak or breaks in pipe or equipment furnished and/or installed by this contractor for a period of (1) year from the date of acceptance of the work by the owner. The contractor shall make all necessary repairs to the owner's representative's satisfaction and at no additional cost.

PLUMBING GENERAL NOTES

1. VERIFY EXISTING SIZES AND LOCATIONS OF ALL PIPING BEFORE BEGINING CONSTRUCTION. NOTIFY OWNER/ENGINEER OF ANY DISCREPANCIES.
2. ALL HORIZONTAL SANITARY PIPING SHOWN IS LOCATED BELOW FLOOR OF ASSOCIATED LEVEL UNLESS NOTED OTHERWISE.
3. ALL HORIZONTAL DOMESTIC, GAS, REFRIGERANT, AND VENT PIPING SHOWN IS LOCATED IN CEILING SPACE OF ASSOCIATED LEVEL UNLESS NOTED OTHERWISE.
4. BRANCH PIPE SIZE SHALL MATCH FIXTURE CONNECTION SIZE UNLESS NOTED OTHERWISE. SEE PLUMBING FIXTURE SCHEDULE FOR DETAIL
5. PROVIDE ISOLATION VALVES ON ALL PLUMBING FIXTURES AND EQUIPMENT FOR SERVICE.
6. PROVIDE GAS REGULATOR AT ALL NATURAL GAS EQUIPMENT UNLESS EQUIPMENT IS RATED FOR GAS SERVICE PRESSURE.

PLUMBING SYMBOLS

- PRESSURE REDUCING VALVE
- BALL VALVE
- REDUCER
- GATE VALVE
- GLOBE VALVE
- 2 WAY CONTROL VALVE
- 3 WAY CONTROL VALVE
- CHECK VALVE
- SOLENOID VALVE
- BALANCE VALVE
- GAS COCK
- BUTTERFLY VALVE
- OS & Y VALVE
- STRAINER
- SAFETY RELIEF VALVE
- VALVE IN VERTICAL
- FLOOR SINK
- FLOOR DRAIN
- GRADE CLEANOUT
- FLOOR CLEANOUT
- WALL CLEANOUT
- VENT THROUGH ROOF
- PIPE DOWN
- PIPE UP
- UNION
- CAP
- DOUBLE CHECK BACKFLOW PREVENTER
- REDUCED PRESSURE BACKFLOW PREVENTER
- POINT OF CONNECTION

PLUMBING ABREVIATIONS

EXISTING	(E)
AIR ADMITTANCE VALVE	A.A.V.
ABOVE FINISHED FLOOR	A.F.F.
CLEAN OUT	CO
CONDENSATE	COND
COLD WATER	CW
DOWN	DN
DOMESTIC	DOM
FLOOR CLEAN OUT	FCO
HOT WATER	HW
HOT WATER RETURN	HWR
NATURAL GAS	NG
REFRIGERANT	REF
SANITARY	SAN
COLD SOFT WATER	CSW
TEMPERED WATER	TW
VENT	V
VENT THROUGH ROOF	VTR
WALL CLEAN OUT	WCO

CONSTRUCTION NOTES

REVIEWED FOR CODE COMPLIANCE
THOMAS PETERSON
05/19/2025
DIVISION OF FACILITIES CONSTRUCTION AND MANAGEMENT

DATE
MARCH 3, 2025

epic ENGINEERING

REVISIONS

MARK	DATE	DESCRIPTION

DRAWN: NNS
DESIGNER: NNS
REVIEWED: DIO

PROJECT # 25SM5271.29

REGISTERED PROFESSIONAL ENGINEER — STATE OF UTAH — No. 168279 — 5/3/25 — DONI OLSEN

SCALES
As indicated
0 1" — BAR SCALE MEASURES 1" ON A FULL SIZE SHEET. ADJUST ACCORDINGLY

PROJECT NAME:
DWR LOGAN FISH HATCHERY RESIDENCE

PROJECT LOCATION:
1465 W 200 N
LOGAN, UT

SHEET TITLE:
PLUMBING GENERAL NOTES

PLAN SET: PERMIT
SHEET P0.1

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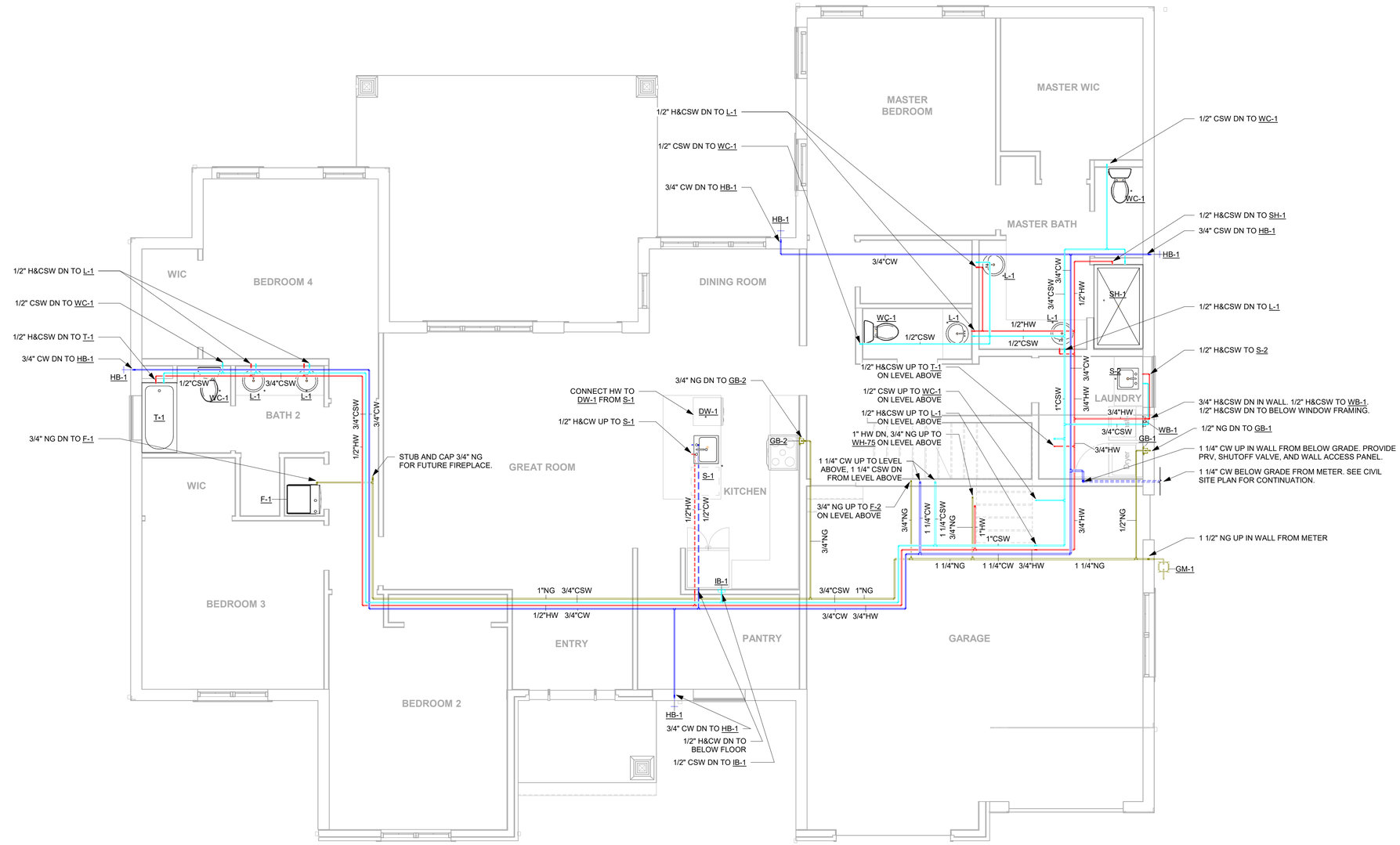

1 FIRST LEVEL PLUMBING PLAN
1/4" = 1'-0"

CONSTRUCTION NOTES

1. PROVIDE INSULATION AND HEAT TRACE WHERE COLD WATER PIPES ARE IN UNCONDITIONED SPACE.
2. DO NOT USE FITTINGS OR JOINTS UPSTREAM OF PRIMARY SHUTOFF VALVE WHERE CW PIPES ARE BELOW STRUCTURE.

REVIEWED FOR CODE COMPLIANCE
THOMAS PETERSON
05/19/2025
DIVISION OF FACILITIES CONSTRUCTION AND MANAGEMENT

DATE
MARCH 3, 2025

epic ENGINEERING

REVISIONS

MARK	DATE	DESCRIPTION

DRAWN: NNS
DESIGNER: NNS
REVIEWED: DIO

PROJECT # 25SM5271.29

REGISTERED PROFESSIONAL ENGINEER No. 169278 DON J. OLSEN STATE OF UTAH 3/7/25

SCALES
1/4" = 1'-0"
0 1"
BAR SCALE. WHEN THIS IS NOT A FULL SIZE SHEET, ADJUST FOR A HALF SIZE SHEET

PROJECT NAME:
DWR LOGAN FISH HATCHERY RESIDENCE

PROJECT LOCATION:
1465 W 200 N
LOGAN, UT

SHEET TITLE:
FIRST LEVEL PLUMBING PLAN

PLAN SET: PERMIT
SHEET P1.1

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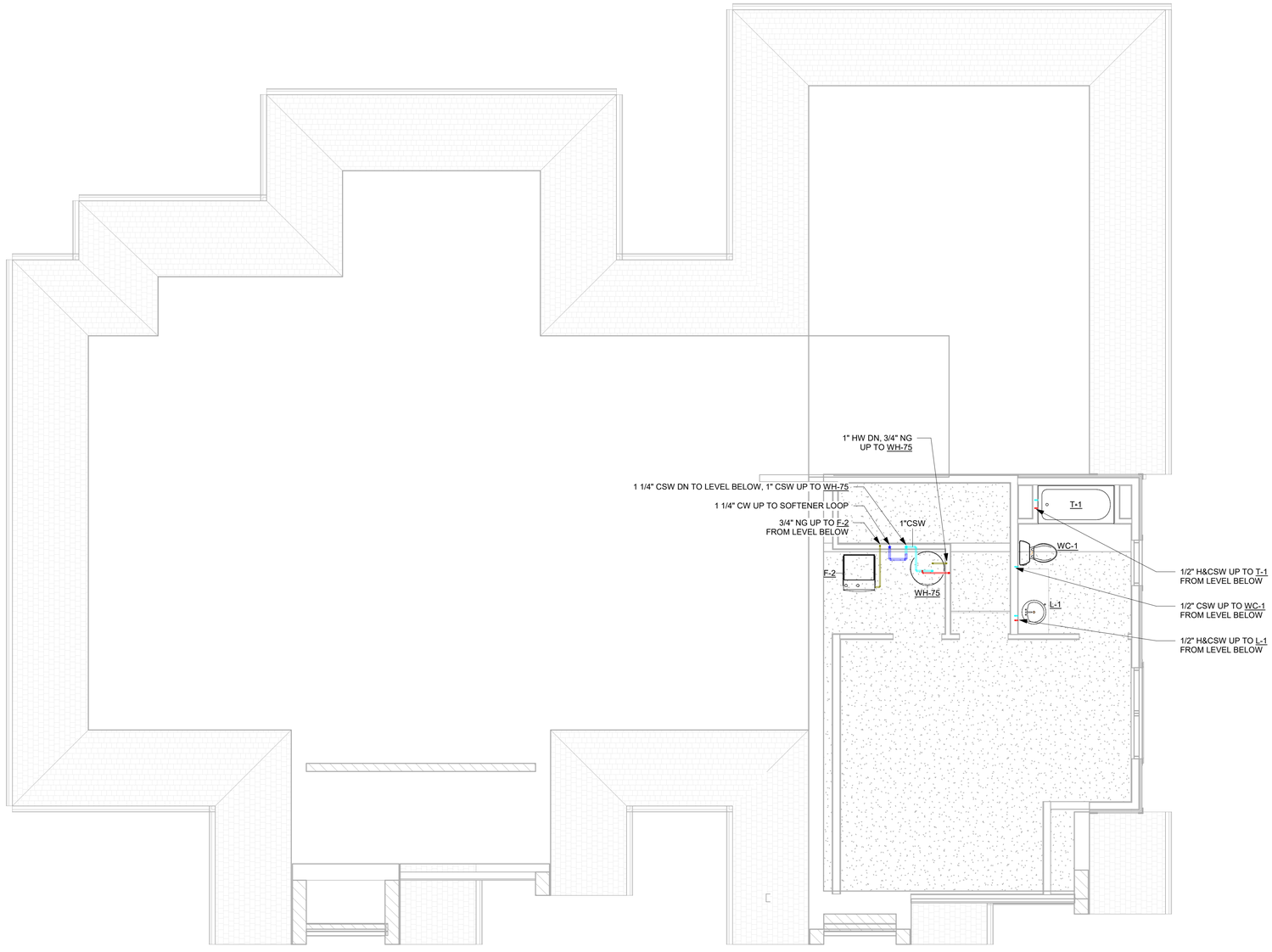

1 SECOND LEVEL PLUMBING PLAN
1/4" = 1'-0"

CONSTRUCTION NOTES

1. PROVIDE INSULATION AND HEAT TRACE WHERE COLD WATER PIPES ARE IN UNCONDITIONED SPACE.
2. DO NOT USE FITTINGS OR JOINTS UPSTREAM OF PRIMARY SHUTOFF VALVE WHERE CW PIPES ARE BELOW STRUCTURE.

REVIEWED FOR CODE COMPLIANCE
THOMAS PETERSON
05/19/2025
DIVISION OF FACILITIES CONSTRUCTION AND MANAGEMENT

DATE
MARCH 3, 2025

epic ENGINEERING

REVISIONS

MARK	DATE	DESCRIPTION

DRAWN:	NNS
DESIGNER:	NNS
REVIEWED:	DIO
PROJECT #	25SM5271.29

REGISTERED PROFESSIONAL ENGINEER
3/3/25
No. 169278
DON J. OLSEN
STATE OF UTAH

SCALES
1/4" = 1'-0"
0 1"
BAR SCALE MEASURES 1" ON A FULL SIZE SHEET

PROJECT NAME:
DWR LOGAN FISH HATCHERY RESIDENCE

PROJECT LOCATION:
1465 W 200 N
LOGAN, UT

SHEET TITLE:
SECOND LEVEL PLUMBING PLAN

PLAN SET: PERMIT

SHEET P1.2

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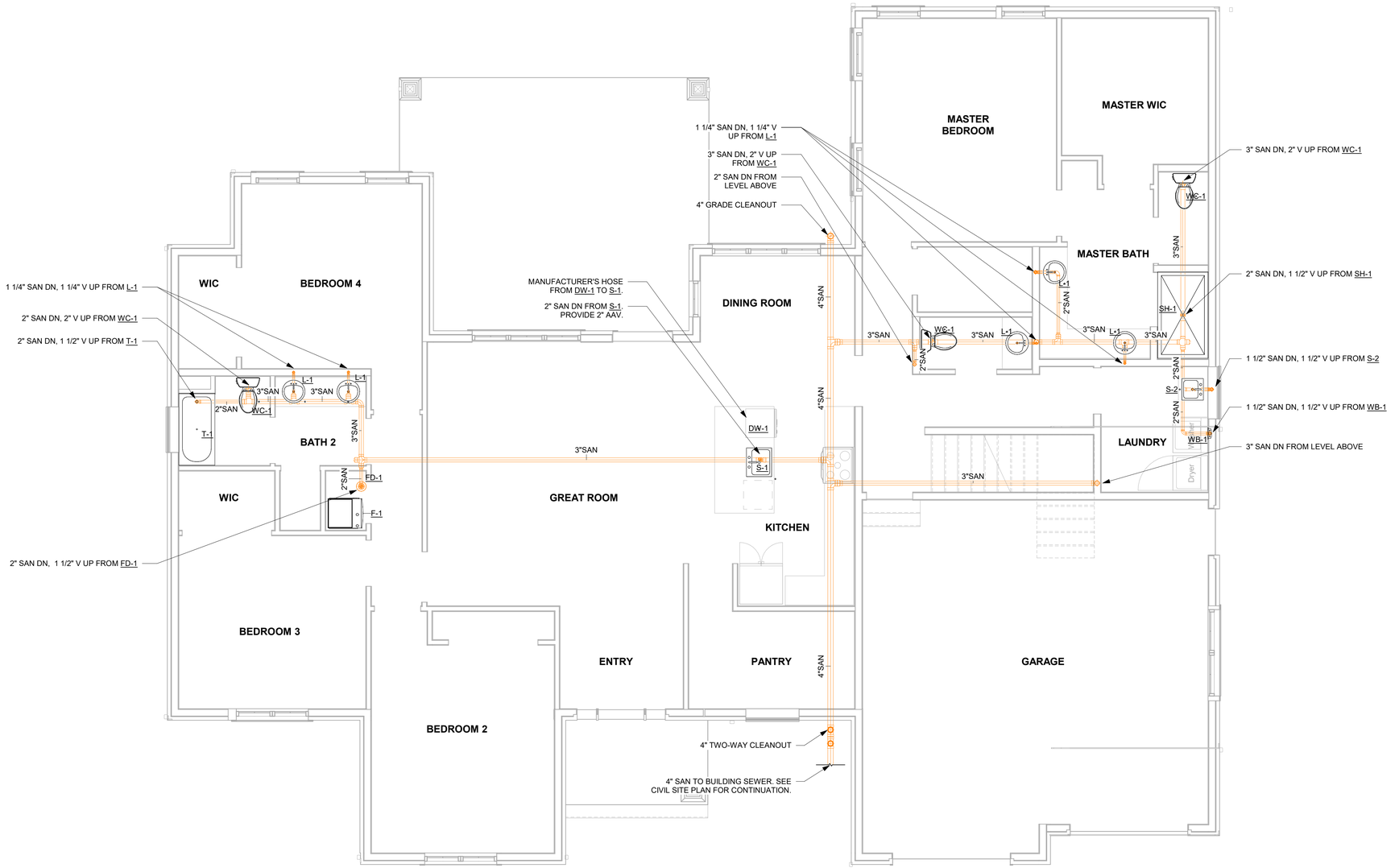

1 FIRST LEVEL SANITARY PLAN
1/4" = 1'-0"

CONSTRUCTION NOTES

REVIEWED FOR CODE COMPLIANCE
THOMAS PETERSON
05/19/2025
DIVISION OF FACILITIES CONSTRUCTION AND MANAGEMENT

DATE
MARCH 3, 2025

epic ENGINEERING

REVISIONS

MARK	DATE	DESCRIPTION

DRAWN: NNS
DESIGNER: NNS
REVIEWED: DIO

PROJECT # 25SM5271.29

REGISTERED PROFESSIONAL ENGINEER
5/7/25
No. 168278
DON J. OLSEN
STATE OF UTAH

SCALES
1/4" = 1'-0"
0 1"
BAR SCALE MEASURES 1" ON A FULL SIZE SHEET. ADJUST ACCORDINGLY.

PROJECT NAME:
DWR LOGAN FISH HATCHERY RESIDENCE

PROJECT LOCATION:
1465 W 200 N
LOGAN, UT

SHEET TITLE:
FIRST LEVEL SANITARY PLAN

PLAN SET: PERMIT
SHEET P1.3

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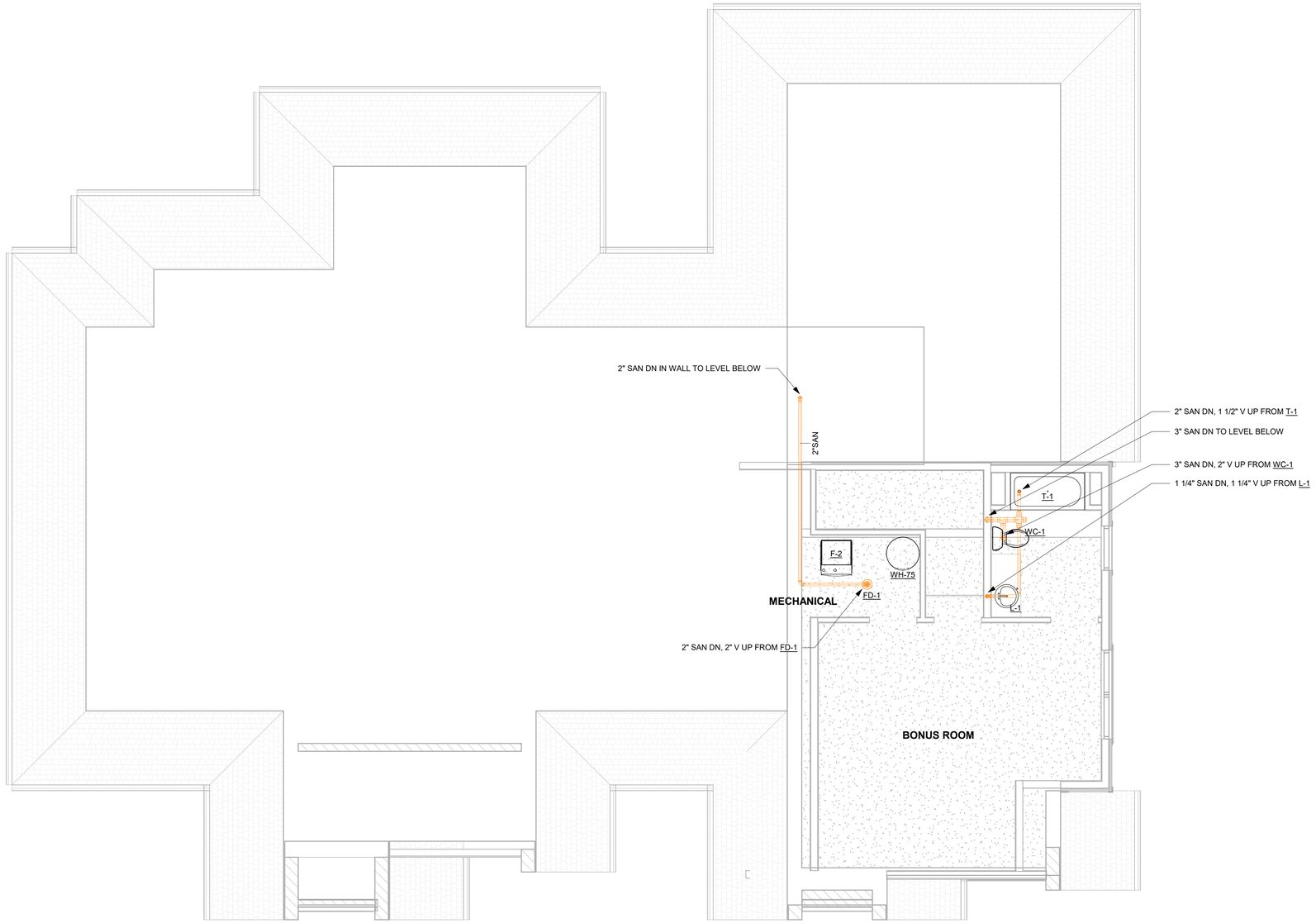

1 SECOND LEVEL SANITARY PLAN
1/4" = 1'-0"

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CONSTRUCTION NOTES

REVIEWED FOR CODE COMPLIANCE
THOMAS PETERSON
05/19/2025
DIVISION OF FACILITIES CONSTRUCTION AND MANAGEMENT

DATE
MARCH 3, 2025

epic ENGINEERING

REVISIONS

MARK	DATE	DESCRIPTION

DRAWN: NNS
DESIGNER: NNS
REVIEWED: DIO

PROJECT #
25SM5271.29

5/7/25
No. 169278
DON I. OLSEN
REGISTERED PROFESSIONAL ENGINEER
STATE OF UTAH

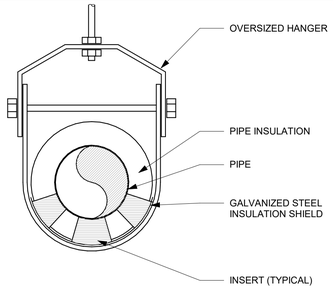
SCALES
1/4" = 1'-0"
0" 1" (BAR IS 1" WHEN PRINTED AT A FULL SIZE SHEET. ADJUST ACCORDINGLY IF NOT)

PROJECT NAME:
DWR LOGAN FISH HATCHERY RESIDENCE

PROJECT LOCATION:
1465 W 200 N
LOGAN, UT

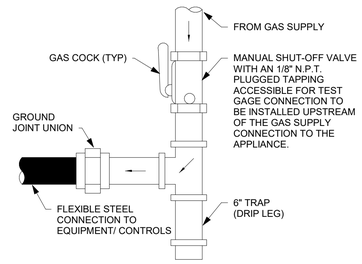
SHEET TITLE:
SECOND LEVEL SANITARY PLAN

PLAN SET: PERMIT
SHEET P1.4



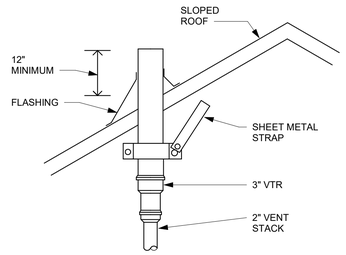
1 PIPE HANGER DETAIL

N.T.S.



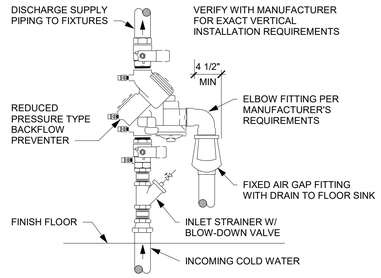
2 GAS CONNECTION

N.T.S.



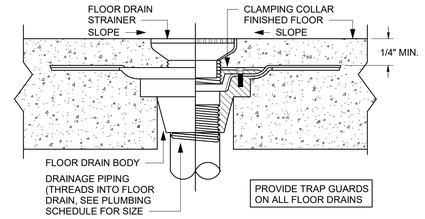
3 VENT THROUGH SLOPED ROOF DETAIL

N.T.S.



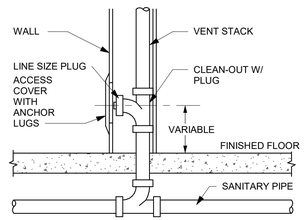
4 REDUCED PRESSURE BACKFLOW PREVENTER

N.T.S.



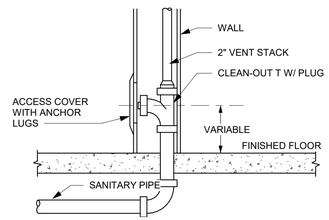
5 FLOOR DRAIN DETAIL

N.T.S.



6 WALL CLEAN-OUT DETAIL (MID LINE)

N.T.S.



7 WALL CLEAN-OUT DETAIL (END LINE)

N.T.S.

GAS SCHEDULE

GAS PIPING SIZED IN ACCORDANCE WITH 2021 IFGC TABLE 402.4(2) WITH THE FOLLOWING CRITERIA:

DEVELOPED LENGTH: 125 FT

INLET PRESSURE: < 2 PSI

PRESSURE DROP: 0.5" W.C.

SPECIFIC GRAVITY: 0.60

MARK	BTU INPUT	BTU INPUT
(F)FP	80,000 Btu/h	80,000 Btu/h
F-1	40,000 Btu/h	40,000 Btu/h
F-2	40,000 Btu/h	40,000 Btu/h
GB-1	30,000 Btu/h	30,000 Btu/h
GB-2	60,000 Btu/h	60,000 Btu/h
WH-75	76,000 Btu/h	76,000 Btu/h
		326,000 Btu/h

PLUMBING FIXTURE SCHEDULE

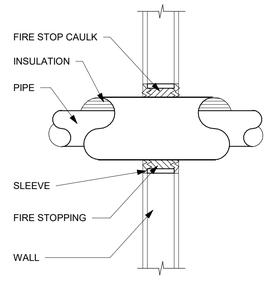
GENERGAL FIXTURE NOTES:

1. THE PLUMBING CONTRACTOR SHALL VERIFY THE REQUIREMENTS OF ALL PLUMBING EQUIPMENT AND THE RELATED ROUGH IN LOCATIONS WITH THE MECHANICAL AND ARCHITECTURAL PLANS AND SPECIFICATIONS. PROVIDE ALL ACCESSORIES AND OPTIONS REQUIRED TO PROVIDE THE OWNER A COMPLETELY FUNCTIONAL PLUMBING SYSTEM.
2. ALL WALL HUNG PLUMBING FIXTURES SHALL BE SUPPORTED BY FLOOR MOUNTED CARRIERS BY WADE, SMITH, JOSHAM, MIFAB, OR WATTS. CARRIERS SHALL BE CONSTRUCTED UTILIZING ALL METAL COMPONENTS WITH SUPPORT FEET SECURELY ANCHORED TO THE FLOOR STRUCTURE FIXTURES ARMS SHALL SUPPORT FIXTURE INDEPENDENT FROM WALL STRUCTURE.
3. EACH INDIVIDUAL FIXTURE SUPPLY SHALL BE PROVIDED WITH A CHROME-PLATED QUARTER TURN STOP VALVE BRASSCRAFT MODEL KTCR OR ENGINEER APPROVED EQUAL.
4. FIXTURES AND ACCESSORIES SHALL BE AS SCHEDULED. EACH ITEM SHALL BE COMPLETE WITH CHROME-PLATED BRASS TRIM.
5. ADA COMPLIANT FIXTURES SHALL BE INSTALLED WITH PRE-FORMED INSULATION AND PROTECTIVE COVERS ON P-TRAPS AND STOPS, COVERS TO BE MANUFACTURED BY BUCKAROOS OR TRUEBRO.
6. CAULK ALL FIXTURES TO THE WALL OR FLOOR WITH APPLICABLE SILICONE COMPOUND. UTILIZE MULTIPLE BEADS TO FILL GAPS AND FINISH TO SMOOTH, FILLETED EDGE. USE APPROPRIATE TOOLS TO PROVIDE PROFESSIONAL APPEARANCE.
7. ALL PLUMBING SHALL BE INSTALLED TO CONFORM TO THE LATEST ADOPTED EDITION OF THE INTERNATIONAL PLUMBING CODE INCLUDING LOCAL AMENDMENTS. CONSULT AUTHORITIES HAVING JURISDICTION.
8. PROVIDE TEMPORARY TOILET FACILITIES DURING CONSTRUCTION PER IPC SECTION 311.1 AND ANSI Z4.3.
9. ALL LAVATORIES TO BE PROVIDED WITH WATER-TEMPERATURE LIMITING DEVICE IN COMPLIANCE WITH ASSE 1070
10. WATER HAMMER ARRESTORS ARE TO BE PROVIDED AT ALL QUICK CLOSING VALVES AND FLUSHOMETERS PER IPC 604.9

TAG	CW	HW	SAN	VENT	MANUFACTURER	MODEL	DESCRIPTION
DW-1	0"	0"	0"	0"	OWNER SUPPLIED		DISHWASHER
FD-1			2"	2"	ZURN	FD2210	2" FLOOR DRAIN
HB-1	3/4"				WOODFORD	MODEL 17 FREEZELESS WALL FAUCET	HOSE BIBB, EXTERIOR, FREEZE RESISTANT, ANTI SIPHON
IB-1	1/2"				BY CONTRACTOR		ICE MAKER OUTLET BOX
L-1	1/2"	1/2"	1 1/4"	1 1/4"	AMERICAN STANDARD	AQUALYN COUNTERTOP SINK	BOWL: FAUCET HOLES 4" OC; FAUCET: AMERICAN STANDARD, CHATFIELD
S-1	1/2"	1/2"	1 1/2"	1 1/2"	AMERICAN STANDARD	QUINCE 33 X 22 DOUBLE BOWL CAST IRON	BOWL: 3 HOLE; FAUCET: AMERICAN STANDARD, DELANCEY (4279300), DECKPLATE
S-2	1/2"	1/2"	1 1/2"	1 1/2"	SELECTION BY OWNER		UTILITY SINK
SH-1	1/2"	1/2"	2"	1 1/2"	AMERICAN STANDARD	CHATFIELD 1 HANDLE SHOWER ONLY	SHOWER; KIT W/ HANDLE ONLY; SHOWER HEAD: AMERICAN STANDARD, SPECTRA FILTER SHOWER RAIL
T-1	1/2"	1/2"	2"	1 1/2"	AMERICAN STANDARD	CHATFIELD 1 HANDLE TUB/SHOWER	TUB/SHOWER KIT W/ SHOWER HEAD, HANDLE, AND FAUCET
WB-1	1/2"	1/2"	1 1/2"	1 1/2"	BY CONTRACTOR		WASHING MACHINE OUTLET BOX
WC-1	1/2"	0"	3"	2"	AMERICAN STANDARD	CHAMPION PRO ELONGATED TOILET	TOILET; SUPPLY VALVE: BY CONTRACTOR

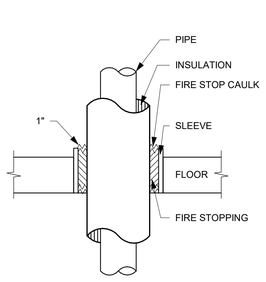
GAS FIRED WATER HEATER SCHEDULE

TAG	MANUFACTURER	MODEL	TYPE	FUEL	BTU INPUT	EFFICIENCY	CW	HW	VOLTAGE	NOTES
WH-75	AO SMITH	G6-S7576NV	75 GAL, TANK	NATURAL GAS	76,000 Btu/h	60%	1"	1"	120/1/60	



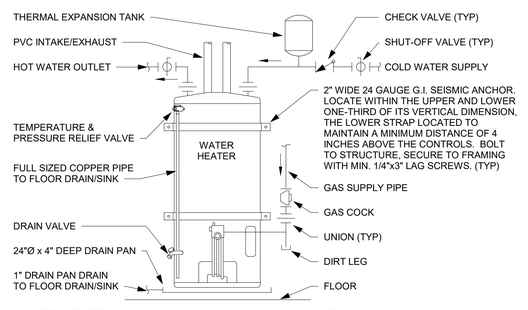
8 PIPE WALL PENTRATION DETAIL

N.T.S.



9 PIPE FLOOR PENTRATION DETAIL

N.T.S.



10 WATER HEATER PIPING (CLOSED COMBUSTION) DETAIL

N.T.S.

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CONSTRUCTION NOTES

REVIEWED FOR CODE COMPLIANCE
THOMAS PETERSON
05/19/2025
DIVISION OF FACILITIES CONSTRUCTION AND MANAGEMENT

DATE

MARCH 3, 2025

epic ENGINEERING

REVISIONS

MARK	DATE	DESCRIPTION

DRAWN: NNS
DESIGNER: NNS
REVIEWED: DIO

PROJECT # 25SM5271.29

REGISTERED PROFESSIONAL ENGINEER — STATE OF UTAH — No. 168279 — DONI OLSEN — 3/3/25

SCALES

As indicated

0 1"
BAR SCALE MEASURES 1" ON A FULL SIZE SHEET. ADJUST AS NECESSARY FOR OTHER SIZES

PROJECT NAME:

DWR LOGAN FISH HATCHERY RESIDENCE

PROJECT LOCATION:

1465 W 200 N LOGAN, UT

SHEET TITLE:

PLUMBING DETAILS AND SCHEDULES

PLAN SET: PERMIT

SHEET P5.1