ITD Clarkia Salt Shed

PROJECT TEAM

OWNER			ARCHITECT		CIVIL ENGINEER	STRUCTURAL ENGINEER	ELECTRICAL ENGINEER	MECHANICAL ENGINEER	LANDSCAPE ARCHITECT
PROJECT MANAGER	CONTRACTING OFFICER	FIELD REPRESENTATIVE	ARCHITECT OF RECORD	PROJECT MANAGER	CIVIL ENGINEER	STRUCTURAL ENGINEER	ELECTRICAL ENGINEER	MECHANICAL ENGINEER	PROJECT LANDSCAPE ARCHITECT
TONY PIRC Idaho Transportation Department 11331 W. Chinden Blvd., Bldg. 8 Boise, Idaho 83714 Email: tony.pirc@itd.idaho.gov Ph: (208) 334-8600	TRAVIS FREI Idaho Transportation Department 11331 W. Chinden Blvd., Bldg. 8 Boise, Idaho 83714 Email: Travis.frei@itd.idaho.gov Ph: (208) 334-8622	CHRIS WILLIAMS Idaho Transportation Department 600 W. Prairie Ave. Coeur d'Alene, Idaho 83815 Email: chris.williams@itd.idaho.gov Ph: (208) 772-1225	MICHEAL WALKER Miller Stauffer Architects 601 E. Front Ave. Ste 201 Coeur d'Alene, Idaho 83814 Email: mike@millerstauffer.com Ph: (208) 664-1773	MARC NELSON Miller Stauffer Architects 601 E. Front Ave. Ste 201 Coeur d'Alene, Idaho 83814 Email: marcn@millerstauffer.com Ph: (208) 664-1773	MATT GIBB DCI Engineers 208 N. 4th St. Coeur d'Alene, Idaho 83814 Email: mgibb@dci-engineers.com Ph: (208) 820-1195	KELLY ANDERSEN DCI Engineers 208 N. 4th St. Coeur d'Alene, Idaho 83814 Email: kandersen@dci-engineers.com Ph: (208) 820-1195	Matthew Bradley Musgrove Engineering P.A. 645 West 25th St. Idaho Falls, Idaho 83402 Email: mattb@musgrovepa.com Ph: (208) 666-4001	Chris Dyke Musgrove Engineering P.A. 645 West 25th St. Idaho Falls, Idaho 83402 Email: chrisd@musgrovepa.com Ph: (208) 666-4001	NOT APPLICABLE / NO LANDSCAPE SCOPE

PROJECT INFO

Site Area:
5.4 Acres
235,224 Sq. Ft.

Proposed Impervious:
.629 Acres
27,436 Sq. Ft.

Proposed Pervious:
4.77 Acres
207,788 Sq. Ft.

Proposed Building Area:
10,080 Sq. Ft.

Proposed Building Height:
+/- 35'-9"

Project Site Location:
Shoshone County

Legal Description:
Parcel No.: 43N01E237900

BUILDING CODES

2018 International Building Code (IBC), with amendments
2018 International Energy Conservation Code (IECC)
2017 NEC with admendments
2018 International Mechanical Code (IMC)
2018 International Fuel Gas Code (IFGC)
2017 Idaho State Plumbing Code (ISPC)
2018 International Fire Code

PERMIT JURISDICTION

State of Idaho Division of Public Safety

PROJECT CODE INFORMATION

Minimum Design Criteria

Occupancy Risk Category: II
Wind Design:
- Wind Speed: Ultimate Design Wind Speed: 103
- Exposure Category: B
- Internal Pressure Coefficient: +/- 0.18
- Topographic Factor: 1.0

Seismic Design Category: C
Snow Load:
- Flat Roof Snow Load (PSF): 86
- Snow Drift Loading: Yes
- Snow Load Importance Factor: 1.0
- Ground Snow Load (PSF): 114
- Snow Exposure Factor: B
- Thermal Factor: 1.2

Design Soil Values:
- Allowable Foundation Bearing Pressure: 2500 psf
- Active Lateral Pressure (unrestrained): 30 psf / ft
- At-Rest Lateral Pressure (restrained): 35 psf / ft
- Coefficient of Sliding Friction: 0.45

Air Freezing Index: 1500
Weathering: Severe
Frost Depth: 30"

Code Analysis

Occupancy: S-2 (Low-Hazard Storage)
Mixed Occupancy: No
Sprinkler System: No
Construction Type: V-B (Combustible Non-Rated)
Allowable Height: 40'-0"
Allowable Stories: 2 Stories
Allowable Area:13,500 Sq. Ft. (No Increase Used)

Chapter 4 (Special Detailed Requirements)
- Section 402 - 405: No
- Section 406: Yes (Private)
- Section 407 - 428: No

Exterior Wall Seperation (X greater than 30'): 0 hrs
Occpuant Load:
- Warehouse (500 gross):
  - Refer to Egress Plan
- Parking Garage (200 Gross):
  - Refer to Egress Plan

Egress Path
- Spaces / Storeis with one Exit:
  - S: 29 Occupants
- Common Path: 100'-0" (OL≤30)

Exit Access Travel Distance: 300 ft.
Stairways:
- Minimum Width: 36" (OL≤50)
- Minimum Width: 44" (OL≥51)

Energy Code Analysis

Attic: R-38 Min. / Entirly abv. deck: R-30 (CI)
WD. Stud Wall: R-20
Slab on Grade: R-10 (24")
Doors: (Swing: U-0.37 / Non-Swing: R-4.75)
Standard Garage Door: U-0.31

Scope Narrative

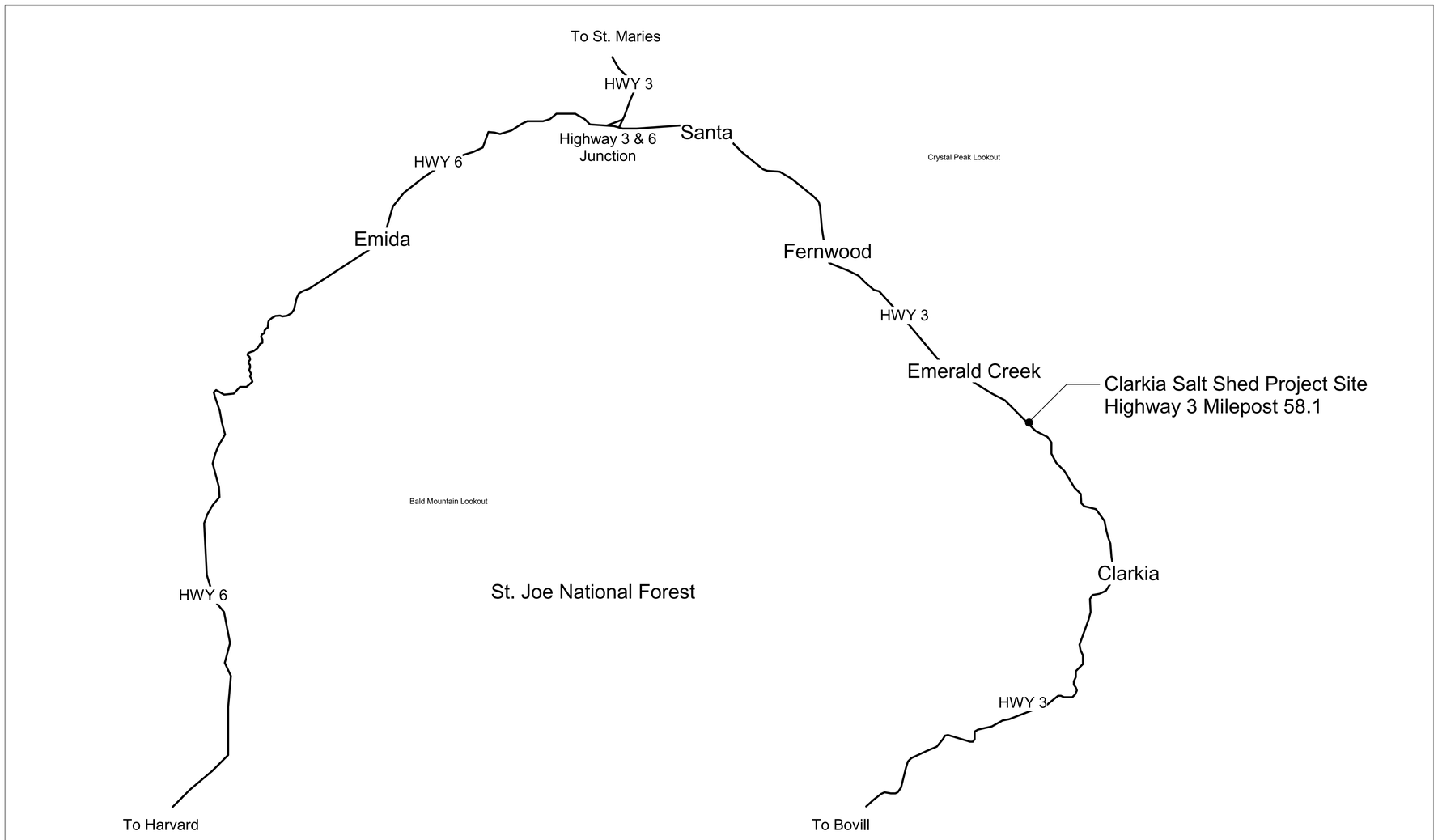
The scope of the project is to construct a new salt storage facility. The facility is to be built with light wood framing & pre-engineered wood trusses. The foundation to cast-in-place concrete. The base bid to include all necessary grading as shown in the civil drawings. The asphalt pavement and expanded footprint as shown in drawings not to be included in base bid. Base bid to include all electrical as shown in drawings, except for electrical shown in Alternate 1 area.

Alternate Scope Narratives

Alternate 1 Scope
Is the cost to include additional area & construction built to the East of the base bid structure. The construction to include the loader shed, future mag storage area, and the misc. storage area as shown on sheet A2.2A.

Alternate 2 Scope
Is the cost to install all asphalt pavement as shown on sheet A1.0. If Alternate 2 is not selected by the owner the contractor is to prepare the site for future installation by installing the gravel sub base. Contractor to slope gravel base up to concrete threshold to allow for smooth transition between the concrete floor and gravel base.

Copyright



Vicinity Map
12" = 1'-0"

SHEET INDEX

MILLER STAUFFER ARCHITECTS
601 E. FRONT AVE., STE 201
COEUR D' ALENE, IDAHO 83814
P 208.664.1773 F 208.667.3174
WWW.MILLERSTAUFFER.COM

Project Information
Bid / Permit
2/21/2023

ITD Clarkia Salt Shed
Highway 3 - Milepost 58.1
Clarkia, Idaho

LICENSED ARCHITECT
AR-984031
MICHEAL P. WALKER
STATE OF IDAHO

No.	Description	Date

PROJECT NUMBER 1954
PRINCIPAL MPW
PROJECT MANAGER MSN

G1.0

ITD SALT SHED

ST. HWY 3 MILE POST 58.10
CLARKIA, IDAHO

ABBREVIATIONS

ACP	ASPHALT CONCRETE PAVEMENT
ADD'L	ADDITIONAL
AD	AREA DRAIN
ADJ	ADJACENT
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APPROX.	APPROXIMATE(LY)
ARCH	ARCHITECT(URAL)
ASSY	ASSEMBLY
BLDG	BUILDING
BM	BENCHMARK
BNDRY	BOUNDARY
BOW	BOTTOM OF WALL (AT FINISHED GRADE)
BVC	BEGINNING OF VERTICAL CURVE
CTV	CABLE TV
C&G	CURB AND GUTTER
CB	CATCH BASIN
CC	CURB CUT
CD	CONCRETE DRIVE
CF	CUBIC FEET (FOOT)
CI	CAST IRON
CJ	CONSTRUCTION JOINT
CL	CLASS
CL	CENTER LINE
CMP	CORRUGATED METAL PIPE
CONC.	CONCRETE
CONST.	CONSTRUCTION
CPEP	CORRUGATED POLYETHYLENE PIPE
CTR	CENTER(ED)
CY	CUBIC YARD
DCVA	DOUBLE CHECK VALVE ASSEMBLY
DDCV	DOUBLE DETECTOR CHECK VALVE
DEPT.	DEPARTMENT
DET	DETAIL
D.I.	DUCTILE IRON
DIA (ø)	DIAMETER
DIM	DIMENSION
DS	DOWN SPOUT
DWG	DRAWING
E	EAST(ING)
EC	ELECTRICAL CONDUIT
ECC	EXTRUDED CONCRETE CURB
EL.=	ELEVATION
EOP	EDGE OF PAVEMENT
EQUIV.	EQUIVALENT
EVC	END OF VERTICAL CURVE
EXIST.	EXISTING
FD	FLOOR DRAIN
FDC	FIRE DEPARTMENT CONNECTION
FDN	FOUNDATION
FFE	FINISH FLOOR ELEVATION
FH	FIRE HYDRANT
FL	FLANGED
FLR	FLOOR
FOC	FACE OF CURB
F.S.	FINISHED SURFACE
FT (')	FOOT (FEET)
FTG	FOOTING
G	GAS MAIN
GB	GRADE BREAK
GM	GAS METER
GRD	GRADE
GV	GATE VALVE
HB	HOSE BIB
HDPE	HIGH DENSITY POLYETHYLENE
HORIZ(H)	HORIZONTAL
HT	HEIGHT
HYD	HYDRANT
ID	INSIDE DIAMETER
I.E.	INVERT ELEVATION
IN (")	INCH(ES)
INV	INVERT
IRR	IRRIGATION WATER
LB	POUND(S)
LCPE	LINED CORRUGATED POLYETHYLENE PIPE
LF	LINEAR FEET
MAT'L	MATERIAL
MAX	MAXIMUM
MFR	MANUFACTURER
MH	MANHOLE
MJ	MECHANICAL JOINT
MIN.	MINIMUM
MISC.	MISCELLANEOUS
N	NORTH(ING)
NO (#)	NUMBER
OC	ON CENTER
O/W	OIL WATER
P	POWER
PC	POINT OF CURVATURE
PIV	POST INDICATOR VALVE
PP	POWER POLE
PL	PROPERTY LINE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	POINT OF TANGENCY
PVC	POLYVINYL CHLORIDE
PVI	POINT OF VERTICAL INFLECTION
QTY.	QUANTITY
RAD (R)	RADIUS
RCP	REINFORCED CONCRETE PIPE
RD	ROAD
REF	REFERENCE
REQD.	REQUIRED
RET	RETAINING
ROW	RIGHT OF WAY
SD	STORM DRAIN
S.F.	SQUARE FEET
SHT	SHEET
SIM	SIMILAR
SPEC	SPECIFICATION(S)
SQ	SQUARE
SS	SANITARY SEWER
STA	STATION
STD	STANDARD
TOE	TOE OF WALL, OR SLOPE
T	TELEPHONE WIRE
TBM	TEMPORARY BENCH MARK
T.C.	TOP OF CURB
TG OR RIM	TOP OF GRATE
TEMP.	TEMPORARY
TOP	TOP OF SLOPE
TOW	TOP OF WALL
TV	TELEVISION WIRE
TYP.	TYPICAL
VC	VERTICAL CURVE
VERT (V)	VERTICAL
WM	WATER METER
W/	WITH
WT	WEIGHT
WWF	WELDED WIRE FABRIC
YD	YARD DRAIN

LEGEND

STORM PIPE — SD

NEW & EXISTING CATCH BASINS — CB / C.B.

NEW & EXISTING DRYWELLS — DW / DW

STORM MANHOLE — SDMH / SDMH

SANITARY SEWER PIPE — SS

SANITARY SEWER MANHOLE — SSMH / SSMH

WATER MAINS — W

FIRE HYDRANTS (NEW AND EXISTING) AND FDC — FH / FH

WATER METERS

WATER VALVES

FITTINGS WITH THRUST BLOCKS — TEE, 90°, 45°, 22.5°, 11.25°

SURFACE WTR AND PIPE DIRECTION FLOW — OR

EXISTING CONTOUR LABELS — (457)

PROPOSED CONTOUR LABELS — 457

EXISTING SURFACE ELEVATIONS — (XXX.XX) F.S. / (XXX.XX T.C.) (XXX.XX F.S.)

FINISHED SURFACE ELEVATIONS — XXX.XX F.S. / XXX.XX T.C. XXX.XX F.S.

NEW EASEMENT

NEW DITCH

TRAFFIC ARROWS

TOP OF WALL/BOTTOM OF WALL — TOW XXX.XX XXX.XX BOW

SLOPE INDICATORS — 3:1, 2:1

RIP RAP

FILTER FABRIC FENCING

FOOTING DRAINS

DOWNSPOUTS — DS

CLEANOUTS (C.O.) SS, AND RWL (NEW AND EXISTING) — CO / CO

INTERCEPTOR AND BIO-SWALES

CEMENT CONCRETE

COORDINATES, & LEADERS — N 1000.00 E 5000.00

STUBBED & PLUGGED LINE

CONCRETE CURB

CONCRETE CURB & GUTTER

NEW ASPHALT/CONCRETE PAVEMENT

CURB INLET/UNDER SIDEWALK INLET

DRAINAGE SWALE

RETAINING WALL

STRAW BALE

ROCK CHECK DAM

GENERAL CONSTRUCTION NOTES:

1. ALL WORK SHALL CONFORM TO THE 'IDAHO STANDARDS FOR PUBLIC WORKS CONSTRUCTION', (ISPWC) CURRENT EDITION, AND THE IDAHO TRANSPORTATION DEPARTMENT (ITD) STANDARD DRAWINGS AND SPECIFICATIONS. IN THE CASE OF CONFLICT, THE MOST STRINGENT STANDARD SHALL APPLY.

2. NO REVISIONS SHALL BE MADE TO THESE PLANS WITHOUT THE APPROVAL OF THE ITD ENGINEER. ALL PROPOSED REVISIONS SHALL BE SUBMITTED BY THE ENGINEER OF RECORD FOR REVIEW AND APPROVAL BY THE CITY.

3. NO REVISIONS SHALL BE MADE TO THE ITD STANDARD DRAWINGS OR NOTES WITHOUT WRITTEN APPROVAL OF THE ITD ENGINEER. REVISIONS OF ITD STANDARD DRAWINGS SHALL BE CLEARLY IDENTIFIED UPON THE APPROVED DRAWINGS; REVISIONS OR ADDITIONS TO STANDARD NOTES SHALL BE PROVIDED ONLY WITHIN THE SUPPLEMENTAL NOTES.

4. ALL SAFETY STANDARDS AND REQUIREMENTS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND COMPLIED WITH AS SET FORTH BY OSHA.

5. EXISTING UTILITIES SHALL BE LOCATED BY CONTACTING CALL BEFORE YOU DIG AT 811, AT LEAST 48 HOURS PRIOR TO STARTING ANY EXCAVATIONS. THE CONTRACTOR SHALL NOTIFY THE APPROPRIATE UTILITY COMPANIES PRIOR TO STARTING WORK NEAR ANY FACILITIES AND SHALL COORDINATE THEIR WORK WITH COMPANY REPRESENTATIVES.

6. WORK SHALL NOT BEGIN UNTIL A PERMIT AND NOTICE TO PROCEED IS ISSUED BY THE ITD.

7. THE CONTRACTOR SHALL NOTIFY THE ITD ENGINEERING INSPECTOR AT LEAST 48 HOURS PRIOR TO STARTING WORK OR PROCEEDING WITH NEW PHASES OF CONSTRUCTION. ALL INSPECTIONS SHALL BE SCHEDULED WITH A MINIMUM 24-HOUR NOTICE PRIOR TO TESTING.

8. AN APPROVED SET OF IMPROVEMENT PLANS SHALL BE KEPT ON THE JOB SITE AT ALL TIMES.

9. THE CONTRACTOR SHALL MAINTAIN THE STREETS, SIDEWALKS, AND ALL OTHER PUBLIC RIGHTS-OF-WAY IN A CLEAN, SAFE AND USEABLE CONDITION. ALL SOIL, ROCK, OR CONSTRUCTION DEBRIS SHALL BE PROMPTLY REMOVED FROM THE PUBLICLY OWNED PROPERTY DURING CONSTRUCTION, AND UPON COMPLETION OF THE PROJECT. ALL ADJACENT PROPERTY; PRIVATE OR PUBLIC, SHALL BE MAINTAINED IN A CLEAN, SAFE AND USEABLE CONDITION.

10. EXISTING PROPERTY CORNERS OR SURVEY MONUMENTS SHALL BE PROTECTED DURING THE COURSE OF CONSTRUCTION. ANY DAMAGED OR OBLITERATED CORNERS OR MONUMENTS SHALL BE RE-ESTABLISHED BY PROFESSIONAL SURVEYORS, LICENSED TO WORK IN THE STATE OF IDAHO, PRIOR TO FINAL ACCEPTANCE.

11. TREES NOT IDENTIFIED FOR REMOVAL SHALL BE PRESERVED OR PROTECTED IN AN APPROVED MANOR PRIOR TO COMMENCEMENT OF GRADING OPERATIONS.

12. THE ENGINEER OF RECORD SHALL VERIFY THE ADEQUACY OF EROSION AND SEDIMENTATION CONTROL MEASURES PRIOR TO THE START OF CONSTRUCTION, AND AS NECESSARY DURING THE COURSE OF THE PROJECT. EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH THESE PLANS, AND THE 'CATALOG OF STORM WATER BEST MANAGEMENT PRACTICES FOR IDAHO CITIES AND COUNTIES" AS PREPARED BY THE IDAHO DIVISION OF ENVIRONMENTAL QUALITY.

13. ALL PROJECTS HAVING THE POTENTIAL FOR RUNOFF DISCHARGE TO ANY SURFACE WATER BODY; SHALL FILE A NOTICE OF INTENT (NOI), WITH THE EPA. COPIES OF ANY REQUIRED STORM WATER POLLUTION PREVENTION PLANS (SWPPP) OR NOI SHALL BE PROVIDED TO THE ITD PRIOR TO START OF CONSTRUCTION.

14. ALL CONCRETE, UNLESS OTHERWISE SPECIFIED, SHALL BE COMMERCIAL GRADE PORTLAND CEMENT WITH AIR ENTRAINMENT (6.5% ±1.5%), AND A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 3000 PSI.

15. ALL UNDERGROUND UTILITY LATERALS SHALL BE INSTALLED AND APPROVED BEFORE CONSTRUCTION OF CURBS, CROSS GUTTERS, SIDEWALKS OR THE SURFACING OF STREETS.

16. SURFACE RESTORATION OF ROADWAY CUTS SHALL COMPLY WITH THE ITD'S ROADWAY CUT POLICY. PERMANENT ROADWAY PATCHING SHALL BE PLACED WITHIN 7 DAYS OF THE INITIAL ROADWAY CUT. TEMPORARY PATCHING THAT UTILIZES A MINIMUM OF 2 INCHES OF ASPHALT CONCRETE (COLD MIX) SHALL BE PLACED WITHIN 24 HOURS OF THE INITIAL ROADWAY CUT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF ALL TEMPORARY PATCHING AND SHALL WARRANT ALL PERMANENT PATCHING FOR A PERIOD OF 2.

17. ALL TRENCHES AND ROADWAY CUTS WITHIN PUBLIC EASEMENTS OR RIGHTS-OF-WAY SHALL BE COMPACTED IN ACCORDANCE WITH SD 301. COMPACTION TEST RESULTS SHALL BE CERTIFIED BY THE ENGINEER OF RECORD AND SUBMITTED TO THE ITD ENGINEER FOR APPROVAL PRIOR TO ANY PAVING AND FINAL ACCEPTANCE OF WORK.

18. ALL OPERATIONS CONDUCTED ON THE PREMISES SHALL BE RESTRICTED TO THE HOURS BETWEEN 6:00 A.M. AND 10:00 P.M., UNLESS OTHERWISE APPROVED BY THE ITD. THIS INCLUDES THE WARMING UP, REPAIR, ARRIVAL, DEPARTURE OR RUNNING OF TRUCKS, EARTHMOVING EQUIPMENT, CONSTRUCTION EQUIPMENT OR ANY OTHER ASSOCIATED EQUIPMENT.

19. ALL IMPROVEMENTS SHALL BE JOINED OR MATCHED IN A MANNER SATISFACTORY TO THE ITD ENGINEER. THIS INCLUDES ALL UTILITY CONNECTIONS AND NECESSARY SAW CUTTING, REMOVAL, REPLACEMENT, EXTENSION, AND CAPPING ASSOCIATED WITH CURB AND GUTTER, SIDEWALKS, SWALES, ASPHALT, CONCRETE OR OTHER PAVING.

20. THE ENGINEER OF RECORD SHALL BE RESPONSIBLE FOR ALL PROJECT INSPECTIONS, INCLUDING MATERIALS TESTING AND QUALITY CONTROL. COPIES OF DAILY REPORTS AND TEST RESULTS SHALL BE MADE AVAILABLE TO THE ITD ENGINEER FOR REVIEW ON A WEEKLY BASIS, FAILURE TO PROVIDE REPORTS MAY RESULT IN SUSPENSION OF CONSTRUCTION. PROJECT CERTIFICATION AND AS-BUILT DRAWINGS SHALL BE SUBMITTED TO THE ITD ENGINEER PRIOR TO FINAL ACCEPTANCE AND IN CONFORMANCE WITH THE ITD'S ELECTRONIC SUBMITTAL STANDARDS.

21. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRAFFIC CONTROL, IN ACCORDANCE WITH THE M.U.T.C.D., CURRENT EDITION. AT LEAST 48 HOURS PRIOR TO DISRUPTION OF ANY TRAFFIC, TRAFFIC CONTROL PLANS SHALL BE PREPARED AND SUBMITTED TO THE ITD ENGINEERING DIVISION FOR APPROVAL. NO WORK SHALL COMMENCE UNTIL A PERMIT IS ISSUED AND ALL APPROVED TRAFFIC CONTROL IS IN PLACE.

22. ALL LANDSCAPING MAINTAINED BY THE PROPERTY OWNERS ASSOCIATION SHALL HAVE AN IRRIGATION INSTALLED AND FUNCTIONING.

23. ALL DISTURBED AREAS OF THE PUBLIC RIGHTS-OF-WAY SHALL BE TOP COATED WITH A MINIMUM OF 1 INCH OF TOPSOIL AND SEEDED WITH A DRY LAND MIX EQUIVALENT TO THE CITY'S STORM DRAINAGE STANDARDS.

24. ALL PAVING PROJECTS WILL NEED TO ADHERE TO THE ITD PAVEMENT CUT POLICY.

PROJECT LOCATION:
ST. HWY 3 MILE POST 58.10

VICINITY MAP

NOT TO SCALE

PROJECT TEAM:

OWNER:
IDAHO TRANSPORTATION DEPARTMENT
600 W. PRAIRIE AVENUE
COEUR D'ALENE, IDAHO 83815

ARCHITECT:
MILLER STAUFFER ARCHITECTS
601 E. FRONT AVENUE
COEUR D'ALENE, IDAHO 83814
CONTACT: MICHEAL WALKER
PHONE: (208) 664-1773

CONTRACTOR:
TBD

CIVIL ENGINEER:
DCI ENGINEERS
707 W. 2ND AVENUE
SPOKANE, WASHINGTON 99201
CONTACT: MATT GIBB, P.E.
PHONE: (509) 455-4448

UTILITY PURVEYORS:

POWER:
CLEARWATER POWER CO
4230 HATWAI ROAD
LEWISTON, IDAHO 83501
PHONE: (208) 743-1501

PHONE:
FRONTIER COMMUNICATIONS
2115 NORTH GOVERNMENT WAY
COEUR D'ALENE, IDAHO 83814
PHONE: (208) 664-7111

SHEET INDEX

FOR BID
(NOT FOR CONSTRUCTION)

THESE DRAWINGS HAVE BEEN RELEASED AT THE REQUEST OF THE CLIENT FOR THE PURPOSE OF BIDDING. THESE DRAWINGS ARE NOT INTENDED FOR PURPOSES OF OBTAINING A PERMIT OR CONSTRUCTION.

CONTRACTOR NOTE

ALL EXISTING UTILITIES SHOWN ON PLANS ARE TO BE VERIFIED HORIZONTALLY AND VERTICALLY PRIOR TO ANY CONSTRUCTION. ALL EXISTING FEATURES INCLUDING BURIED UTILITIES ARE SHOWN AS INDICATED ON RECORD MAPS AND SURVEYS FURNISHED BY OTHERS. WE ASSUME NO LIABILITY FOR THE ACCURACY OF THOSE RECORDS AND SURVEYS. CONTACT THE UTILITY OWNER/AGENCY FOR THE FINAL LOCATION OF EXISTING UTILITIES IN AREAS CRITICAL TO CONSTRUCTION.

UNDERGROUND SERVICE ALERT
ONE-CALL NUMBER
811
CALL TWO BUSINESS DAYS BEFORE YOU DIG

NW 1/4, SE 1/4, SEC. 23, T. 43 N., R. 1 E., B.M.

MILLER STAUFFER ARCHITECTS
601 E. Front Ave., Ste 201
Coeur d'Alene, ID 83814
P. 208.664.1773 . F 208.667.3174
www.millerstauffer.com

GENERAL CIVIL INFORMATION
01/25/2023

PROFESSIONAL ENGINEER — LICENSED — 17233 — STATE OF IDAHO — MATTHEW R. GIBB — 01/25/2023

ITD SALT SHED
ST. HWY 3 MILE POST 58.10
CLARKIA, IDAHO

REV.	DATE:

PROJECT NO.: 20042-0022
DESIGNED BY: MRG
DRAWN BY: JFS

C0.0

GENERAL EROSION AND SEDIMENT CONTROL NOTES:

1. AN EROSION AND SEDIMENTATION CONTROL (ESC) PLAN IS REQUIRED FOR THIS PROJECT. IMPLEMENTATION OF THE ESC PLAN, AND CONSTRUCTION, MAINTENANCE, AND UPGRADING OF THE ESC FACILITIES ARE THE RESPONSIBILITY OF THE CONTRACTOR UNTIL ALL CONSTRUCTION IS COMPLETED AND ACCEPTED BY THE ITD, OR UNTIL VEGETATION IS ESTABLISHED THROUGHOUT THE SITE, AND ACCEPTED BY THE ITD, WHICHEVER IS LATER.

2. APPROVAL OF THE ESC PLAN DOES NOT CONSTITUTE APPROVAL OF ANY OF THE PROPOSED ROAD, STORM WATER, GRADING OR UTILITY DESIGN ELEMENTS SHOWN ON THE ESC PLAN.

3. THE EROSION/SEDIMENTATION CONTROL MEASURES SHOWN ARE THE MINIMUM REQUIREMENTS OF THE ANTICIPATED SITE CONDITIONS. THE CONTRACTOR SHALL INSPECT AND MAINTAIN THESE ESC MEASURES DAILY, AND SHALL MAINTAIN AND UPGRADE THESE MEASURES AS NECESSARY TO PREVENT SEDIMENT-LADEN WATER FROM EITHER FLOWING OFF-SITE, OR INTO NEW/EXISTING STORM WATER FACILITIES, SUCH AS DRYWELLS, CULVERTS, OR GRAVEL GALLERIES.

4. CONTRACTOR IS RESPONSIBLE FOR INSTALLING A ROCK CONSTRUCTION ENTRANCE AT ANY AND ALL LOCATIONS USED TO ENTER OR EXIT THE PROJECT SITE TO PREVENT SEDIMENTS FROM BEING TRACKED OFF THE SITE BY CONSTRUCTION TRAFFIC. SEE DETAIL 1/C5.1.

5. ANY DISTURBED AREAS, EXCEPT FOR POND BOTTOMS AND SLOPES, THAT WILL BE LEFT BARE FOR MORE THAN 7 DAYS AND ARE NOT INTENDED TO BE REWORKED WITHIN 30-45 DAYS, SHALL BE SEEDED WITH A FAST STARTING NATIVE DRYLAND GRASS SUCH AS ANNUAL RYE, OR APPROVED EQUAL, AT A RATE OF 60 LBS./ACRE.

6. GRADED POND AREAS, THAT WILL BE LEFT BARE FOR MORE THAN 7 DAYS, SHALL HAVE A MULCH APPLIED AT A RATE OF TWO THOUSAND (2,000) POUNDS PER ACRE. MULCH SHALL BE A VIRGIN WOOD CELLULOSE FIBER SPECIALLY PROCESSED AS A HYDROSEEDING MULCH AND CONTAIN NO GROWTH OR GERMINATION INHIBITING FACTORS. IF POND CONSTRUCTION HAS BEEN COMPLETED, INCLUDING DRAINAGE STRUCTURES, AND HAVE RECEIVED FINAL INSPECTION APPROVAL, THEY SHALL BE SODDED.

7. DUST CONTROL: AN APPROVED METHOD OF DUST CONTROL, MEETING THE REQUIREMENTS OF LOCAL REGULATIONS, SHALL BE UTILIZED DURING CONSTRUCTION OF THIS PROJECT.

8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY MATERIALS THAT SPILL ONTO LOCAL STREETS DURING THE TRANSPORTATION OF EQUIPMENT. SHOULD A SPILL OCCUR, THE CONTRACTOR SHALL REMOVE THE MATERIAL BY THE END OF THE WORK DAY. NO MATERIAL SHALL BE ALLOWED TO SET, DRY, OR BE WASHED INTO ADJACENT STORM WATER FACILITIES.

9. GEOTEXTILE FABRIC SHALL BE PLACED ON THE RIMS OF ALL DRYWELLS, CATCH BASINS, AND INLETS UNTIL SUCH TIME AS THE VEGETATION ON THE SITE IS ESTABLISHED AND THE THREAT OF SEDIMENT DEPOSITION INTO THE DRAINAGE SYSTEM IS MITIGATED. DRAINAGE STRUCTURES LOCATED IN PAVEMENT CAN HAVE THE FILTER FABRIC REMOVED ONCE FINAL PAVEMENT HAS BEEN COMPLETED AND CLEANED.

10. THE CONTRACTOR SHALL PROTECT ALL CATCH BASINS, DRYWELLS, AND OTHER STORM WATER STRUCTURES FROM BEING CONTAMINATED WITH SILT BY INSTALLING FILTER FABRIC OVER THE METAL FRAME DURING CONSTRUCTION AND KEEPING IT IN PLACE UNTIL THE SITE/STREET HAS BEEN PAVED AND CLEANED.

11. ALL PONDS/SWALES SHALL BE SODDED AND IRRIGATED.

12. CONTRACTOR SHALL INSTALL FILTER FABRIC FENCE AS NEEDED ON-SITE TO PREVENT SEDIMENTS FROM LEAVING THE SITE.

EROSION CONTROL MAINTENANCE NOTES:

1. SEDIMENT BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL PRODUCING RUNOFF AND AT LEAST DAILY DURING PROLONGED RAINFALL OF 24 CONTINUOUS HOURS OR 48 HOURS IN ANY ONE WEEK.

2. NECESSARY REPAIRS TO BARRIERS OR REPLACEMENT OF BARRIERS SHALL BE ACCOMPLISHED PROMPTLY.

3. SEDIMENT MUST BE REMOVED WHEN IT REACHES A HEIGHT OF 6 INCHES UP THE BASE OF THE FILTER FABRIC BARRIER, THE DEPTH OF THE CUTOFF DITCH, OR THE SEDIMENT POND. ALL EROSION CONTROL SHALL BE CHECKED AFTER ANY RAIN STORM.

4. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE ESC STRUCTURE IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED, AND HYDRO/HAND SEEDED OR SODDED.

5. ALL TEMPORARY AND PERMANENT ESC PRACTICES SHALL BE MAINTAINED AND PREPARED AS NEEDED TO ASSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION.

6. ALL TEMPORARY ESC MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED OR AFTER THE TEMPORARY BMP'S ARE NO LONGER NEEDED. TRAPPED SEDIMENT SHALL BE REMOVED OR STABILIZED ON-SITE. DISTURBED SOIL AREAS RESULTING FROM REMOVAL WITHOUT PERMISSION OF THE ENGINEER OR INSPECTOR THAT RESULTS IN CONTAMINATION OF THE DRYWELLS SHALL BE THE CONTRACTOR'S SOLE RESPONSIBILITY TO REMEDY. REMEDY MAY ENTAIL DRYWELL CLEANING OR REMOVAL AND RECONSTRUCTION.

7. ROADWAYS ADJACENT TO THE CONSTRUCTION SITE SHALL BE INSPECTED DAILY. CLEANING IS REQUIRED IF SEDIMENT HAS BEEN TRACKED OFF-SITE AND/OR BEYOND THE ROADWAY APPROACH.

8. STREET WASHING IS REQUIRED TO CLEAN SEDIMENT TRACKED OFF-SITE. STREET WASH WASTEWATER SHALL BE CONTROLLED BY PUMPING BACK ON-SITE OR OTHERWISE PREVENTED FROM DISCHARGING INTO A STORM SYSTEM. IF NECESSARY, SEDIMENT SHALL BE REMOVED BY SHOVELING OR PICKUP SWEEPING PRIOR TO STREET WASHING.

9. CONSTRUCT STORM WATER CONTROL FACILITIES (STORAGE PONDS, SWALES, ETC.) BEFORE GRADING BEGINS. THESE FACILITIES SHALL BE OPERATIONAL BEFORE THE CONSTRUCTION OF IMPERVIOUS SITE IMPROVEMENTS.

10. STOCKPILE MATERIALS SUCH AS TOPSOIL ON SITE, KEEPING OFF OF ROADWAY AND SIDEWALKS.

11. COVER, CONTAIN, AND PROTECT ALL CHEMICALS, LIQUID PRODUCTS, PETROLEUM PRODUCTS, AND NON-INERT WASTES PRESENT ON-SITE FROM VANDALISM. USE SECONDARY CONTAINMENT FOR ONSITE FUELING TANKS.

12. CONDUCT MAINTENANCE AND REPAIR OF HEAVY EQUIPMENT AND VEHICLES INVOLVING OIL CHANGES, HYDRAULIC SYSTEM REPAIRS, SOLVENT AND DE-GREASING OPERATIONS, FUEL TANK DRAIN DOWN AND REMOVAL, AND OTHER ACTIVITIES THAT MAY RESULT IN DISCHARGE OR SPILLAGE OF POLLUTANTS TO THE GROUND OR INTO STORM WATER RUNOFF USING SPILL PREVENTION MEASURES, SUCH AS DRIP PANS. CLEAN ALL CONTAMINATED SURFACES IMMEDIATELY FOLLOWING ANY DISCHARGE OR SPILL INCIDENT. IF RAINING OVER EQUIPMENT OR VEHICLE, PERFORM EMERGENCY REPAIRS ON SITE USING TEMPORARY PLASTIC BENEATH THE VEHICLE.

13. THE CONTRACTOR IS REQUIRED TO KEEP AN UPDATED COPY OF THE TESC PLAN ON-SITE.

14. THE CONTRACTOR IS RESPONSIBLE FOR DESIGNATING A LOCATION WHERE CONCRETE TRUCK AND EQUIPMENT CAN BE WASHED OUT. THIS AREA SHALL NOT BE LOCATED NEAR OR DRAINING INTO A STORM DRAINAGE AREA, TREATMENT AREA, OR FACILITY.

PAVING NOTES:

1. ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE ITD STANDARD DRAWINGS AND SPECIFICATIONS (LATEST EDITION) AND THE IDAHO STANDARDS FOR PUBLIC WORKS CONSTRUCTION (LATEST EDITION).

2. CONTRACTOR SHALL CONTACT ALL APPROPRIATE UTILITY COMPANIES AND THE ITD TO OBTAIN NECESSARY LOCATES 48 HOURS BEFORE CONSTRUCTION BEGINS.

3. NO VARIANCE FROM THE SPECIFICATIONS AND NOTES SHALL BE ACCEPTED WITHOUT PRIOR WRITTEN APPROVAL FROM THE ITD AND/OR THE ENGINEER.

4. ALL EXISTING PAVEMENT SHALL BE REMOVED IN THE SECTIONS REQUIRING REMOVAL AND REPLACEMENT. THE EXISTING BASE COURSE MATERIALS IN THESE SECTIONS SHALL BE COMPACTED TO A MINIMUM OF 95% OF MODIFIED PROCTOR DRY DENSITY @ +/-95% OF THE OPTIMUM MOISTURE CONTENT. ALL COMPACTION SHALL BE DONE IN ACCORDANCE WITH ASTM D-1557. THE NEW PAVEMENT SHALL BE REPLACED TO A DEPTH OF THE PAVEMENT DETAIL SHOWN ON THESE PLANS.

5. ASPHALT/CONCRETE PAVING SHALL CONFORM TO IDAHO STANDARDS FOR PUBLIC WORKS CONSTRUCTION. ON-SITE ASPHALT PAVED AREAS SHALL BE A MINIMUM OF 3.5 INCHES OF ASPHALT/CONCRETE PAVEMENT PLACED OVER A MINIMUM OF 8 INCHES OF FREE-DRAINING, COMPACT, GRANULAR BASE MATERIAL.

6. ALL AREAS TO BE PAVED SHALL BE CLEARED OF ALL GRASS, ROOTS, TRASH, METAL AND ORGANIC MATERIALS DOWN TO FULL DEPTH BELOW THE PAVING MAT. THE EXPOSED SURFACE SHOULD THEN BE PROOF ROLLED TO 95% OF MAXIMUM COMPACTION AS DETERMINED BY ASTM D-1557 USING A MECHANICAL VIBRATORY COMPACTOR. ANY BACK FILL MATERIAL SHOULD BE SIMILARLY COMPACTED.

7. BEFORE PLACING THE BASE MATERIAL, THE SURFACE OF THE SUBGRADE SHALL BE COMPACTED TO 95% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D-1557. THE GRANULAR BASE MATERIAL SHALL BE PLACED IN LAYERS NOT EXCEEDING 3 INCHES IN THICKNESS AND COMPACTED TO 95% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D-1557.

8. BITUMINOUS TACK COAT SHALL BE APPLIED BETWEEN ASPHALT PAVING LIFTS AND SHALL BE USED PRIOR TO OVERLAY, (CSS-1H), 50:50 DILUTION, 0.05 GAL/SY TO 0.15 GAL/SY OR AS DIRECTED BY THE ENGINEER. ALL EDGES ABUTTING NEW PAVEMENT SHALL BE TACKED.

9. TESTS SHALL BE CONDUCTED AT 100 FOOT INTERVALS OR 1 PER 3000 SQUARE FEET FOR EACH LIFT OR AS DIRECTED BY THE ENGINEER. ALL TEST REPORTS SHALL BE SUBMITTED TO THE OWNER PRIOR TO PROOF ROLLS. SINGLE-AXLE 5-TON TRUCK PROOF ROLLS MONITORED BY THE OWNER'S INSPECTOR PRIOR TO PLACEMENT OF ROAD/PARKING LOT BASE AND ASPHALT ARE REQUIRED. CONCRETE AND ASPHALT TESTING SHALL BE AS DIRECTED BY THE OWNER'S INSPECTOR.

10. ALL VALVE AND MANHOLE COVERS SHALL BE ADJUSTED TO PAVEMENT GRADE DURING INITIAL CONSTRUCTION.

11. ALL CONCRETE EDGES MUST BE ROUNDED TO A 1/4 INCH RADIUS, EXCEPT WHERE SHOWN OTHERWISE ON DRAWINGS. ALL ASPHALT SHALL BE 1/4 INCH ABOVE CONCRETE EDGES, MANHOLES, AND VALVES.

12. HALF-INCH EXPANSION JOINTS SHALL BE INSTALLED AT PROPERTY LINES; HOWEVER, JOINTS SHALL NOT EXCEED 100 FEET APART. CONTROL JOINTS SHALL BE INSTALLED AT 10 FOOT INTERVALS, HALF STONES ARE NOT ALLOWED.

13. ALL PHASES OF WORK SHALL BE INSPECTED AND APPROVED BY THE ITD.

14. ALL TRAFFIC CONTROL, IF REQUIRED, SHALL CONFORM TO THE APPLICABLE REGULATIONS SET FORTH IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).

15. ALL THE OPERATIONS SHALL CONFORM TO THE APPLICABLE REGULATIONS SET FORTH BY ICC AND OSHA.

16. ALL ON-SITE CONCRETE PAVEMENT SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4500 PSI.

UTILITY NOTES:

1. CONTRACTOR SHALL COORDINATE WITH CLEARWATER POWER CO. FOR POWER SERVICE.

2. CONTRACTOR SHALL COORDINATE WITH FRONTIER COMMUNICATIONS FOR ALL TELEPHONE SERVICE WORK ON THE PROJECT SITE.

3. CONTRACTOR SHALL PLACE MARKING TAPE IN THE EXCAVATION TRENCH AT MID-DEPTH LOCATION FOR ALL UNDERGROUND SIDE SERVICE INSTALLATIONS FOR THE PURPOSE OF ALERTING ANY FUTURE EXCAVATION IN THE SPECIFIC AREA.

GRADING NOTES:

1. EXCAVATION AND EMBANKMENT SHALL BE IN ACCORDANCE WITH APPLICABLE REQUIREMENTS OF THE ITD STANDARD STANDARD SPECIFICATIONS (CURRENT EDITION). ALL COMPACTION OF SUBGRADES, ROCK, AND ASPHALT SHALL BE IN ACCORDANCE WITH THE ITD STANDARD SPECIFICATIONS (CURRENT EDITION).

2. ALL FINISHED GRADING ELEVATIONS SHALL MATCH EXISTING ELEVATIONS AT THE SITE'S BOUNDARY, EXCEPT AS SHOWN OTHERWISE ON THE GRADING PLAN. WHERE CONFLICTS EXIST, THE CONTRACTOR SHALL NOTIFY THE OWNER TO RESOLVE THE ISSUE PRIOR TO PROCEEDING.

3. NO QUANTITIES HAVE BEEN CALCULATED TO DETERMINE VOLUMES OF EXCAVATION AND EMBANKMENT ON THIS PROJECT. CONTRACTOR SHALL CALCULATE THEIR OWN EARTHWORK QUANTITIES.

4. GRADING: ALL GRADING SHALL BE LIMITED TO THE AREAS IDENTIFIED IN THE GRADING PLAN AND SHALL NOT INFRINGE ON ADJACENT OWNERSHIPS.

5. CUT SLOPES IN SOLID ROCK SHALL NOT EXCEED 1/2:1 (HORIZONTAL:VERTICAL), AND SOIL CUT SLOPES SHALL NOT EXCEED 2:1 (HORIZONTAL:VERTICAL), EXCEPT AS SHOWN OTHERWISE ON THE PLANS.

6. FILL SLOPES ACROSS THE PROPERTY SHOULD BE DESIGNED FOR A MAXIMUM SLOPE OF 2:1 (HORIZONTAL:VERTICAL), EXCEPT AS SHOWN OTHERWISE ON THE PLANS.

7. ALL CURB AND GUTTER, STREET GRADES, SIDEWALK GRADES, AND ANY OTHER VERTICAL AND OR HORIZONTAL ALIGNMENT SHALL BE STAKED BY AN ENGINEERING OR SURVEYING FIRM CAPABLE OF PERFORMING SUCH WORK.

8. FORM AND SUBGRADE INSPECTION BY THE INSPECTOR IS REQUIRED BEFORE POURING THE CONCRETE. TWENTY-FOUR HOURS NOTICE IS REQUIRED FOR FORM INSPECTION.

9. TOP OF CURB (T.C.) IS 0.5' ABOVE ACP OR CCP UNLESS OTHERWISE NOTED.

10. RIM ELEVATIONS OF UTILITY AND DRAINAGE STRUCTURES SHALL BE INSTALLED SO THAT RIM MAY BE ADJUSTED ±0.5 FEET TO MATCH FINISHED GRADE.

STORM WATER NOTES:

1. THE CONTRACTOR SHALL TAKE PRECAUTIONS TO PROTECT THE INFILTRATION CAPACITY OF STORMWATER FACILITIES (E.G. LINE THE FACILITY WITH FILTER FABRIC, OVER-EXCAVATE UPON COMPLETION OF THE INFRASTRUCTURE, ETC.).

2. STORM DRAINAGE PIPING SHALL BE (UNLESS OTHERWISE NOTED) PVC ASTM D 3034, SDR 35, OR ASTM F 789 WITH PUSH-ON JOINTS AND RUBBER GASKETS CONFORMING TO ASTM D 3212 AND ASTM F 477. PROVIDE TRENCHING AND BEDDING PER ITD STANDARDS.

FOR BID
(NOT FOR CONSTRUCTION)

THESE DRAWINGS HAVE BEEN RELEASED AT THE REQUEST OF THE CLIENT FOR THE PURPOSE OF BIDDING. THESE DRAWINGS ARE NOT INTENDED FOR PURPOSES OF OBTAINING A PERMIT OR CONSTRUCTION.

CONTRACTOR NOTE

ALL EXISTING UTILITIES SHOWN ON PLANS ARE TO BE VERIFIED HORIZONTALLY AND VERTICALLY PRIOR TO ANY CONSTRUCTION. ALL EXISTING FEATURES INCLUDING BURIED UTILITIES ARE SHOWN AS INDICATED ON RECORD MAPS AND SURVEYS FURNISHED BY OTHERS. WE ASSUME NO LIABILITY FOR THE ACCURACY OF THOSE RECORDS AND SURVEYS. CONTACT THE UTILITY OWNER/AGENCY FOR THE FINAL LOCATION OF EXISTING UTILITIES IN AREAS CRITICAL TO CONSTRUCTION.

UNDERGROUND SERVICE ALERT
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GENERAL NOTES

01/25/2023

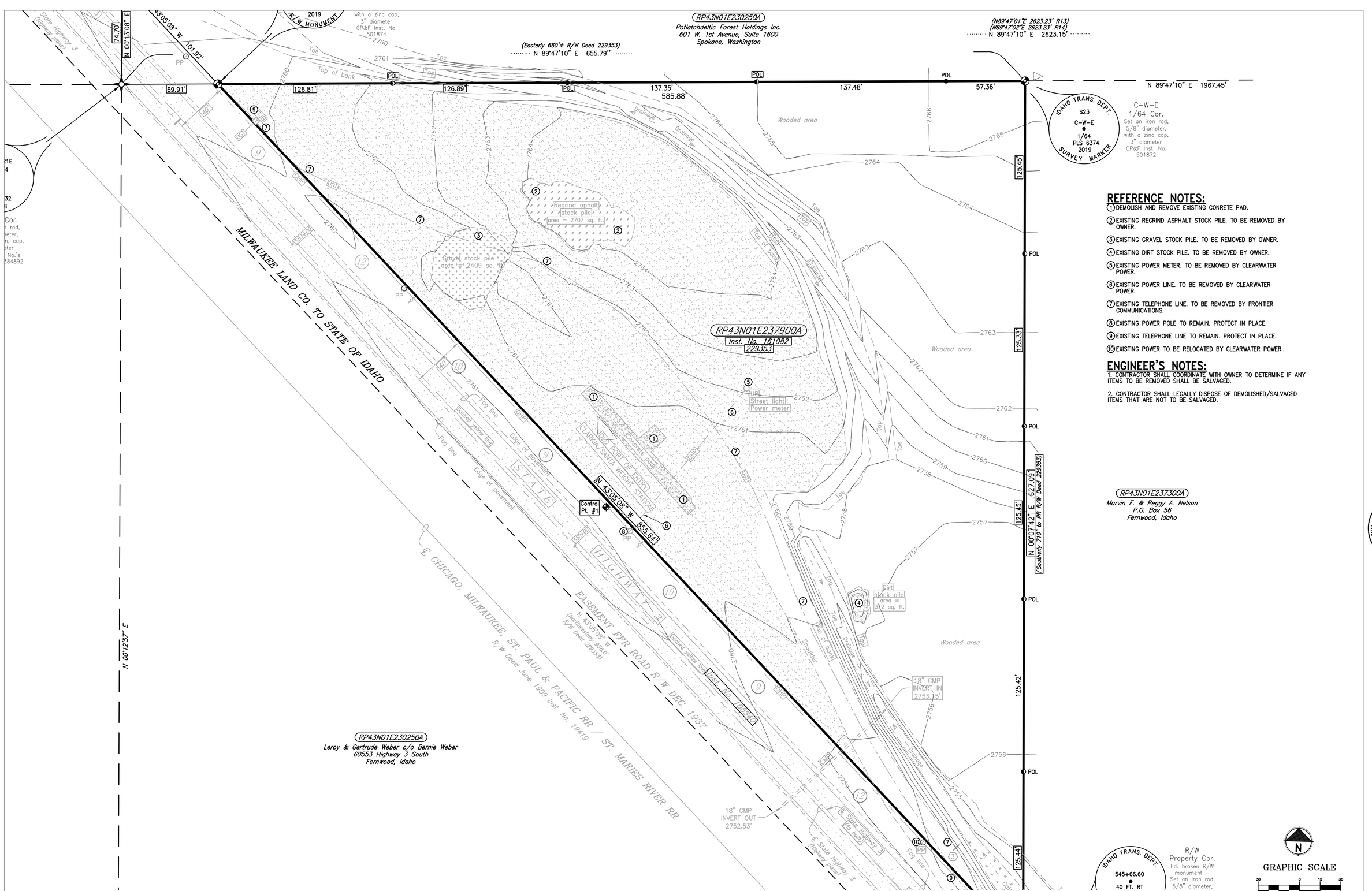
PROFESSIONAL ENGINEER LICENSED STATE OF IDAHO 17233 MATTHEW R. GIBB 01/25/2023

ITD SALT SHED
ST. HWY 3 MILE POST 58.10
CLARKIA, IDAHO

REV.	DATE:

PROJECT NO.: 20042-0022
DESIGNED BY: MRG
DRAWN BY: JFS

C0.1



REFERENCE NOTES:

1. DEMOLISH AND REMOVE EXISTING CONRETE PAD.
2. EXISTING REGRIND ASPHALT STOCK PILE. TO BE REMOVED BY OWNER.
3. EXISTING GRAVEL STOCK PILE. TO BE REMOVED BY OWNER.
4. EXISTING DIRT STOCK PILE. TO BE REMOVED BY OWNER.
5. EXISTING POWER METER. TO BE REMOVED BY CLEARWATER POWER.
6. EXISTING POWER LINE. TO BE REMOVED BY CLEARWATER POWER.
7. EXISTING TELEPHONE LINE. TO BE REMOVED BY FRONTIER COMMUNICATIONS.
8. EXISTING POWER POLE TO REMAIN. PROTECT IN PLACE.
9. EXISTING TELEPHONE LINE TO REMAIN. PROTECT IN PLACE.
10. EXISTING POWER TO BE RELOCATED BY CLEARWATER POWER..

ENGINEER'S NOTES:

1. CONTRACTOR SHALL COORDINATE WITH OWNER TO DETERMINE IF ANY ITEMS TO BE REMOVED SHALL BE SALVAGED.
2. CONTRACTOR SHALL LEGALLY DISPOSE OF DEMOLISHED/SALVAGED ITEMS THAT ARE NOT TO BE SALVAGED.

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GRAPHIC SCALE
30 0 15 30
(IN FEET)
1 inch = 30 ft.

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EXISTING SITE CONDITIONS AND DEMOLITION PLAN

01/25/2023

ITD SALT SHED
ST. HWY 3 MILE POST 58.10
CLARKIA, IDAHO

PROFESSIONAL ENGINEER — LICENSED — 17233 — STATE OF IDAHO — MATTHEW R. GIBB — 01/25/2023

REV.	DATE:

PROJECT NO.: 20042-0022
DESIGNED BY: MRG
DRAWN BY: JFS

C1.0

REFERENCE NOTES:

1. PROVIDE NEW TEMPORARY CONSTRUCTION ENTRANCE AT ALL PROJECT ENTRY/EXIT POINTS PER DETAIL 1/C5.0.
2. PROVIDE NEW TEMPORARY SILT FENCE PER DETAIL 2/C5.0.
3. PROVIDE NEW INLET PROTECTION PER DETAIL 3/C5.0.

ENGINEER'S NOTES:

1. EROSION CONTROL MEASURES SHOWN ON THE PLAN ARE MINIMUM REQUIREMENTS. THE CONTRACTOR SHALL INSTALL ADDITIONAL MEASURES, AS NEEDED, TO PREVENT SEDIMENT–LADEN RUNOFF FROM LEAVING THE SITE OR FROM COMPROMISING THE PROPOSED/EXISTING STORM WATER SYSTEM.
2. SEE SHEET C0.1 FOR ADDITIONAL ESC NOTES.
3. CONTRACTOR SHALL CONSTRUCT NECESSARY EROSION CONTROL FACILITIES BEFORE GRADING BEGINS. THESE FACILITIES SHALL BE OPERATIONAL BEFORE THE CONSTRUCTION OF SITE IMPROVEMENTS.

GRAPHIC SCALE

30 0 15 30

(IN FEET)
1 inch = 30 ft.

FOR BID
(NOT FOR CONSTRUCTION)

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CONTRACTOR NOTE

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EROSION CONTROL PLAN

01/25/2023

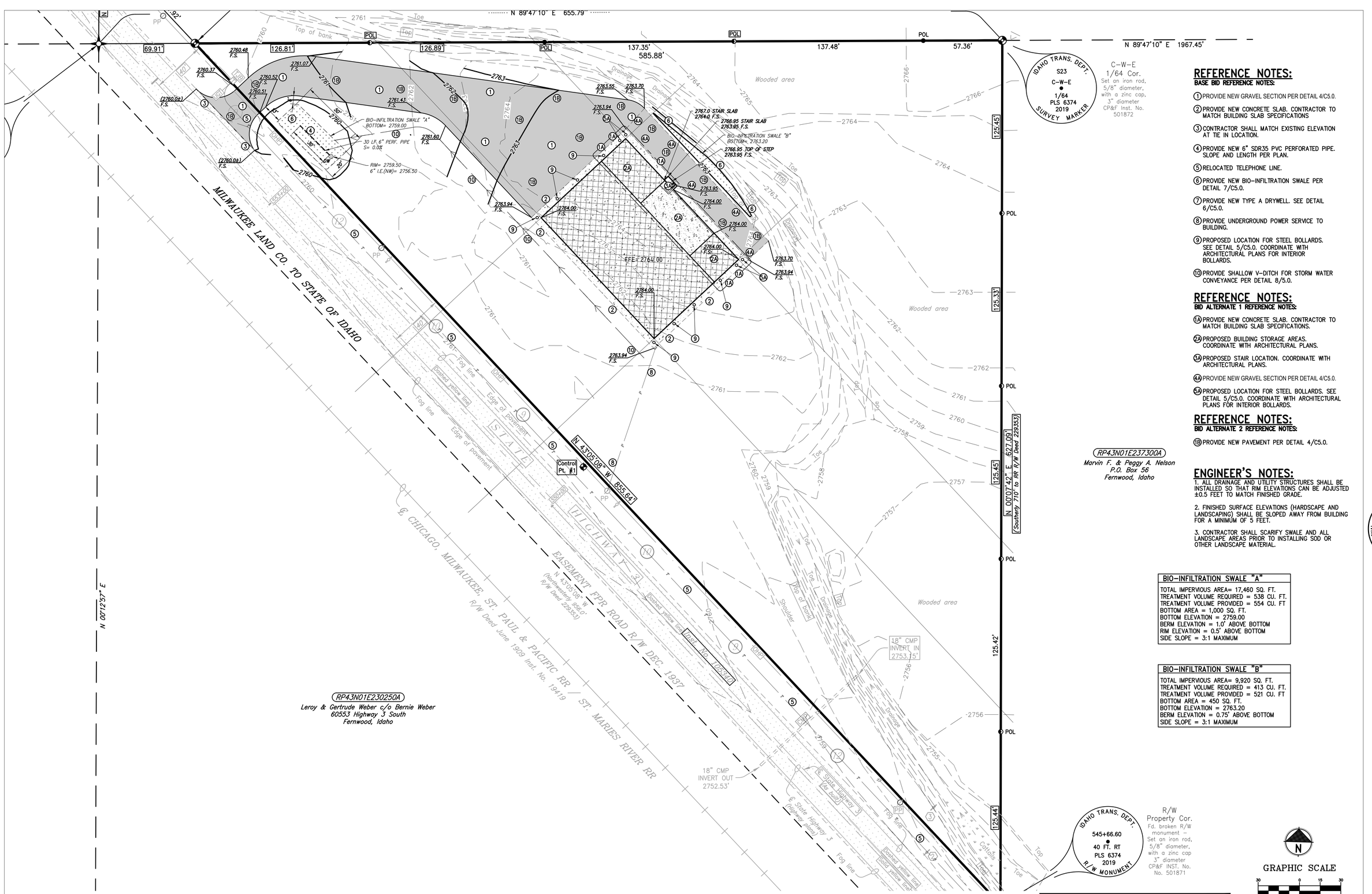
ITD SALT SHED
ST. HWY 3 MILE POST 58.10
CLARKIA, IDAHO

PROFESSIONAL ENGINEER LICENSED IDAHO 17233 STATE OF MATTHEW R. GRID 01/25/2023

REV.	DATE:

PROJECT NO. 20042-0022
DESIGNED BY: MRG
DRAWN BY: JFS

C1.1



REFERENCE NOTES:

BASE BID REFERENCE NOTES:

1. PROVIDE NEW GRAVEL SECTION PER DETAIL 4/C5.0.
2. PROVIDE NEW CONCRETE SLAB. CONTRACTOR TO MATCH BUILDING SLAB SPECIFICATIONS
3. CONTRACTOR SHALL MATCH EXISTING ELEVATION AT TIE IN LOCATION.
4. PROVIDE NEW 6" SDR35 PVC PERFORATED PIPE. SLOPE AND LENGTH PER PLAN.
5. RELOCATED TELEPHONE LINE.
6. PROVIDE NEW BIO-INFILTRATION SWALE PER DETAIL 7/C5.0.
7. PROVIDE NEW TYPE A DRYWELL. SEE DETAIL 6/C5.0.
8. PROVIDE UNDERGROUND POWER SERVICE TO BUILDING.
9. PROPOSED LOCATION FOR STEEL BOLLARDS. SEE DETAIL 5/C5.0. COORDINATE WITH ARCHITECTURAL PLANS FOR INTERIOR BOLLARDS.
10. PROVIDE SHALLOW V-DITCH FOR STORM WATER CONVEYANCE PER DETAIL 8/5.0.

REFERENCE NOTES:

BID ALTERNATE 1 REFERENCE NOTES:

1A. PROVIDE NEW CONCRETE SLAB. CONTRACTOR TO MATCH BUILDING SLAB SPECIFICATIONS.

2A. PROPOSED BUILDING STORAGE AREAS. COORDINATE WITH ARCHITECTURAL PLANS.

3A. PROPOSED STAIR LOCATION. COORDINATE WITH ARCHITECTURAL PLANS.

4A. PROVIDE NEW GRAVEL SECTION PER DETAIL 4/C5.0.

5A. PROPOSED LOCATION FOR STEEL BOLLARDS. SEE DETAIL 5/C5.0. COORDINATE WITH ARCHITECTURAL PLANS FOR INTERIOR BOLLARDS.

REFERENCE NOTES:

BID ALTERNATE 2 REFERENCE NOTES:

1B. PROVIDE NEW PAVEMENT PER DETAIL 4/C5.0.

ENGINEER'S NOTES:

1. ALL DRAINAGE AND UTILITY STRUCTURES SHALL BE INSTALLED SO THAT RIM ELEVATIONS CAN BE ADJUSTED ±0.5 FEET TO MATCH FINISHED GRADE.

2. FINISHED SURFACE ELEVATIONS (HARDSCAPE AND LANDSCAPING) SHALL BE SLOPED AWAY FROM BUILDING FOR A MINIMUM OF 5 FEET.

3. CONTRACTOR SHALL SCARIFY SWALE AND ALL LANDSCAPE AREAS PRIOR TO INSTALLING SOD OR OTHER LANDSCAPE MATERIAL.

BIO-INFILTRATION SWALE "A"
TOTAL IMPERVIOUS AREA= 17,460 SQ. FT.
TREATMENT VOLUME REQUIRED = 538 CU. FT.
TREATMENT VOLUME PROVIDED = 554 CU. FT
BOTTOM AREA = 1,000 SQ. FT.
BOTTOM ELEVATION = 2759.00
BERM ELEVATION = 1.0' ABOVE BOTTOM
RIM ELEVATION = 0.5' ABOVE BOTTOM
SIDE SLOPE = 3:1 MAXIMUM

BIO-INFILTRATION SWALE "B"
TOTAL IMPERVIOUS AREA= 9,920 SQ. FT.
TREATMENT VOLUME REQUIRED = 413 CU. FT.
TREATMENT VOLUME PROVIDED = 521 CU. FT
BOTTOM AREA = 450 SQ. FT.
BOTTOM ELEVATION = 2763.20
BERM ELEVATION = 0.75' ABOVE BOTTOM
SIDE SLOPE = 3:1 MAXIMUM

FOR BID
(NOT FOR CONSTRUCTION)

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CONTRACTOR NOTE

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CIVIL SITE PLAN

01/25/2023

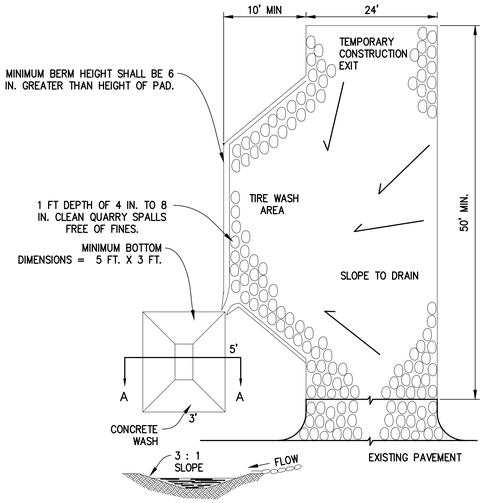
PROFESSIONAL ENGINEER LICENSED IDAHO 17233 STATE OF MATTHEW R. BIBB 01/25/2023

ITD SALT SHED
ST. HWY 3 MILE POST 58.10
CLARKIA, IDAHO

REV.	DATE:

PROJECT NO.: 20042-0022
DESIGNED BY: MRG
DRAWN BY: JFS

C1.2



SECTION A–A

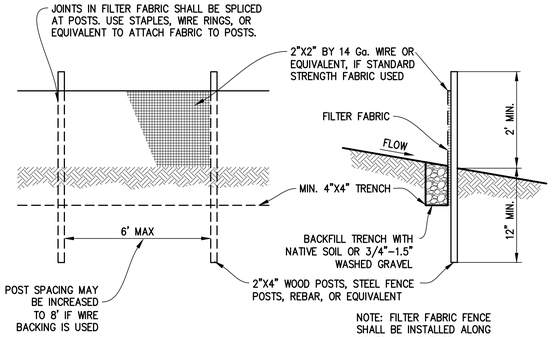
NOTES:

1. TIRE WASH AREA MUST BE INSTALLED ADJACENT TO AND DOWN GRADIENT FROM TEMPORARY CONSTRUCTION EXIT AND AS CLOSE TO EXISTING PAVEMENT AS POSSIBLE.

2. MORE TRUCK TRAFFIC MAY REQUIRE A LARGER AREA.

CONSTRUCTION ENTRANCE 1

SCALE : NTS



NOTE: FILTER FABRIC FENCE SHALL BE INSTALLED ALONG CONTOUR WHENEVER POSSIBLE.

MAINTENANCE STANDARDS:

1. ANY DAMAGE SHALL BE REPAIRED IMMEDIATELY.

2. IF CONCENTRATED FLOWS ARE EVIDENT UPHILL OF THE FENCE, THEY MUST BE INTERCEPTED AND CONVEYED TO A SEDIMENT TRAP OR POND.

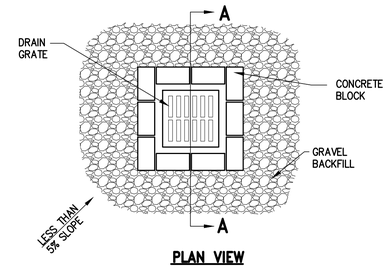
3. IT IS IMPORTANT TO CHECK THE UPHILL SIDE OF THE FENCE FOR SIGN OF THE FENCE CLOGGING AND ACTING AS A BARRIER TO FLOW AND THEN CAUSING CHANNELIZATION OF FLOWS PARALLEL TO THE FENCE. IF THIS OCCURS, REPLACE THE FENCE AND/OR REMOVE THE TRAPPED SEDIMENT.

4. SEDIMENT MUST BE REMOVED WHEN THE SEDIMENT IS 6" HIGH.

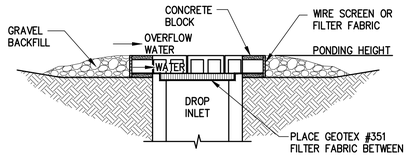
5. IF THE FILTER FABRIC HAS DETERIORATED DUE TO ULTRAVIOLET BREAKDOWN, IT SHALL BE REPLACED.

FILTER FABRIC FENCE DETAIL 2

SCALE : NTS



PLAN VIEW



SECTION A–A

NOTES:

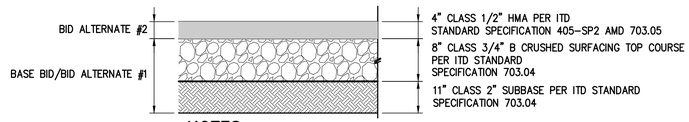
1. DROP INLET SEDIMENT BARRIERS ARE TO BE USED FOR SMALL, NEARLY LEVEL DRAINAGE AREAS. (LESS THAN 5%)

2. EXCAVATE A BASIN OF SUFFICIENT SIZE ADJACENT TO THE DROP INLET.

3. THE TOP OF THE STRUCTURE (PONDING HEIGHT) MUST BE WELL BELOW THE GROUND ELEVATION DOWNSLOPE TO PREVENT RUNOFF FROM BYPASSING THE INLET. A TEMPORARY DIKE MAY BE NECESSARY ON THE DOWNSLOPE SIDE OF THE STRUCTURE.

INLET PROTECTION DETAIL 3

SCALE : NTS

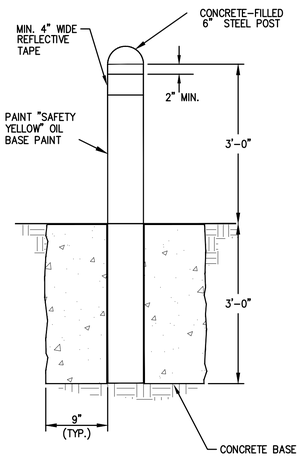


NOTES:

1. PAVEMENT SHALL BE IN ACCORDANCE WITH RECOMMENDATIONS OF THE GEOTECHNICAL EVALUATION ADDENDUM BY ALLWEST TESTING AND ENGINEERING DATED MAY 6, 2020. SEE ADDENDUM FOR PAVEMENT SECTION ALTERNATIVES.

PAVEMENT SECTION 4

SCALE : NTS

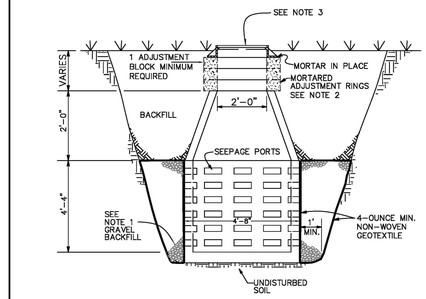


NOTES:

1. REFER TO STRUCTURAL PLANS FOR DETAILS REGARDING INTEGRATION OF BOLLARD AND FOOTING. BOLLARD IS ACCEPTABLE TO SIT ON BUILDING FOOTING. FOOTING DEPTH PER STRUCTURAL PLAN WHERE FOOTING FALLS ON BUILDING FOOTINGS.

BOLLARD DETAIL 5

SCALE : NTS



DRYWELL – TYPE 'A'

NOTES

1. SPECIAL BACKFILL MATERIAL FOR DRYWELLS SHALL CONSIST OF WASHED GRAVEL GRADED FROM 1" TO 3" WITH A MAXIMUM OF 5% PASSING THE U.S. No. 200 SCREEN, AS MEASURED BY WEIGHT.

GRAVEL BACKFILL QUANTITY FOR DRYWELLS:
TYPE "A" – 30 CUBIC YARDS MINIMUM
TYPE "B" – 40 CUBIC YARDS MINIMUM
OR AS SPECIFIED ON PLANS.

2. ADJUSTMENT BLOCKS SHALL BE CEMENT CONCRETE. ONE BLOCK MINIMUM REQUIRED.
3. SEE STANDARD DRAWING SS–5 FOR FRAME AND COVER DETAIL.

REVISION	APPROVED	DATE	CITY OF COEUR d'ALENE STANDARD DRAWING	APPROVED BY:
			TYPE A DRYWELL	CITY ENGINEER, PE(1)3804 5/30/18 DATE
				DWG NO. SD–6A

TYPE "A" DRYWELL 6

SCALE : NTS

NOTES:

1. SEE LANDSCAPE PLANS FOR SWALE PLANTING DETAILS.

2. SOD SHALL BE PLACED IN ALL SWALE BOTTOMS AND SIDE SLOPES.

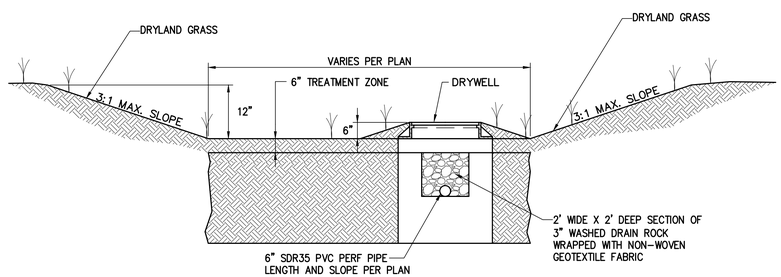
3. THE FOLLOWING REQUIREMENTS MUST BE MET FOR THE PROPOSED SWALES VOLUMES TO BE ALLOWED ON THIS PROJECT:

A. THE SUBGRADE SOILS HAVE LESS THAN 12% FINES.
B. THE SUBGRADE SOILS HAVE AN INFILTRATION RATE GREATER THAN 0.15 IN/HR.
C. THE TREATMENT ZONE (VEGETATED COVER AND TREATMENT LAYER) MUST BE 14" THICK AND HAVE AN INFILTRATION RATE BETWEEN 0.25 AND 0.50 IN/HR.
D. SUBGRADE INFILTRATION RATE MUST BE AT LEAST 0.15 IN/HR AND FACILITY MUST COMPLETELY DRAIN WITHIN 72 HOURS.
E. THE ORGANIC MATTER CONTENT MUST BE AT LEAST 2% BY WEIGHT.
F. THE AVERAGE CATION EXCHANGE CAPACITY (CEC) MUST BE AT LEAST 15 MILLIEQUIVALENTS/100 GRAMS.

4. CONTRACTOR SHALL NOT COMPACT ANY PROPOSED SWALE AREAS VIA CONSTRUCTION TRAFFIC. DO NOT DUMP ANY CONSTRUCTION WASTE MATERIALS, ESPECIALLY CONCRETE WASTE, INTO ANY PROPOSED SWALE AREA.

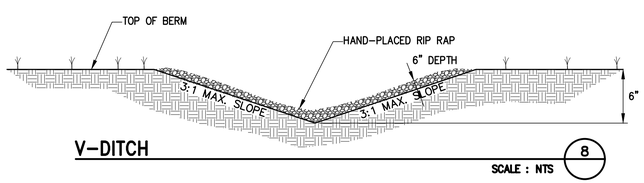
5. FOR SWALES AND PONDS, THE TOP 6" OF SOIL SHALL CONSIST OF A THOROUGHLY BLENDED MIX OF 50% COMPOST WITH 50% NATIVE SOILS. IF THIS SPECIFICATION IS MET, NOTES 3B–3G ARE NOT REQUIRED TO BE MET.

6. DRYLAND GRASS



BIO–INFILTRATION SWALE 7

SCALE : NTS



V–DITCH 8

SCALE : NTS

FOR BID
(NOT FOR CONSTRUCTION)

THESE DRAWINGS HAVE BEEN RELEASED AT THE REQUEST OF THE CLIENT FOR THE PURPOSE OF BIDDING. THESE DRAWINGS ARE NOT INTENDED FOR PURPOSES OF OBTAINING A PERMIT OR CONSTRUCTION.

CONTRACTOR NOTE

ALL EXISTING UTILITIES SHOWN ON PLANS ARE TO BE VERIFIED HORIZONTALLY AND VERTICALLY PRIOR TO ANY CONSTRUCTION. ALL EXISTING FEATURES INCLUDING BURIED UTILITIES ARE SHOWN AS INDICATED ON RECORD MAPS AND SURVEYS FURNISHED BY OTHERS. WE ASSUME NO LIABILITY FOR THE ACCURACY OF THOSE RECORDS AND SURVEYS. CONTACT THE UTILITY OWNER/AGENCY FOR THE FINAL LOCATION OF EXISTING UTILITIES IN AREAS CRITICAL TO CONSTRUCTION.

UNDERGROUND SERVICE ALERT
ONE–CALL NUMBER
811
CALL TWO BUSINESS DAYS BEFORE YOU DIG

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DETAILS
01/25/2023

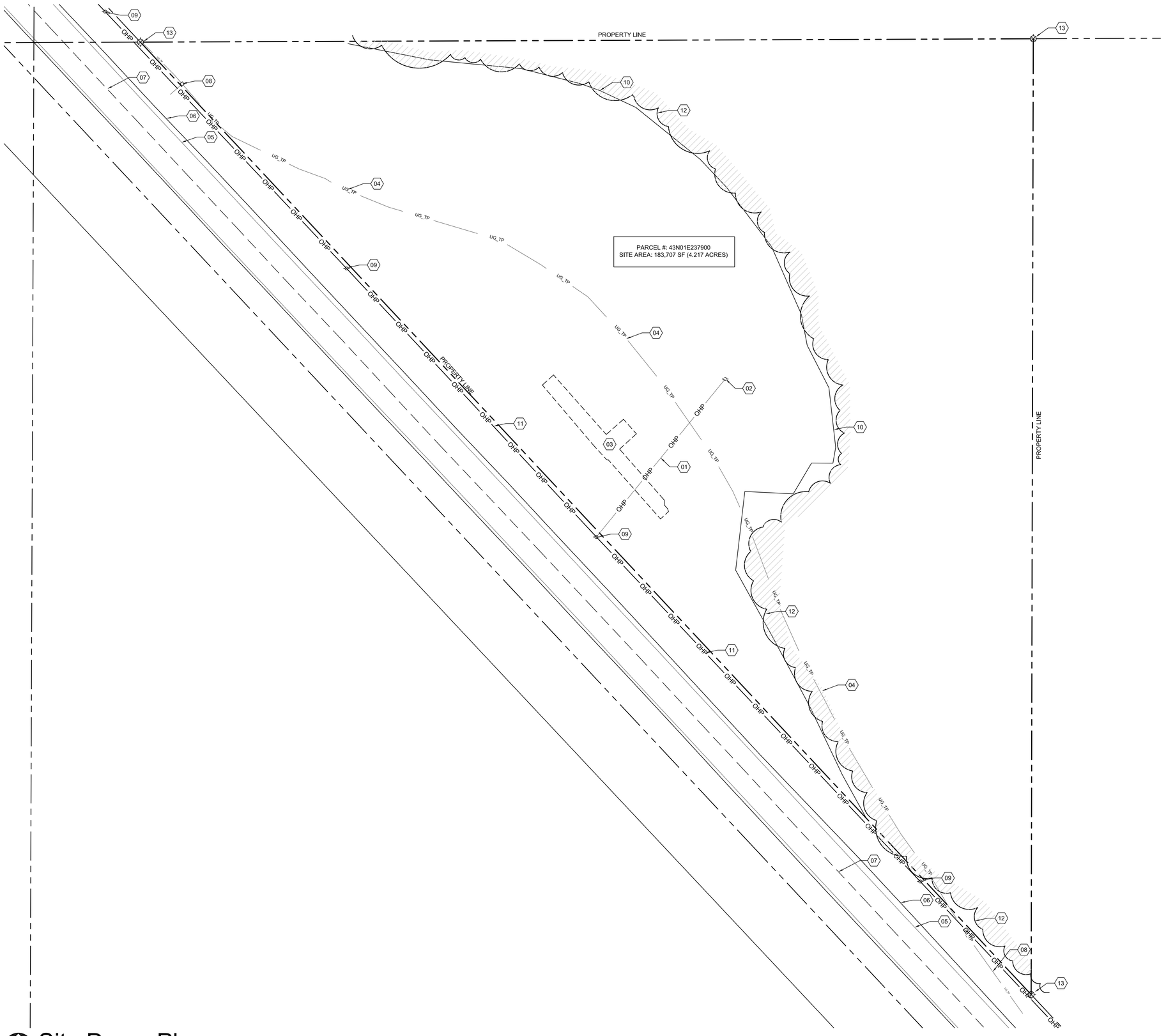
ITD SALT SHED
ST. HWY 3 MILE POST 58.10
CLARKIA, IDAHO

PROFESSIONAL ENGINEER LICENSED IDAHO 17233 STATE OF MATTHEW R. GIBB 01/25/2023

REV.	DATE:

PROJECT NO.: 20042-0022
DESIGNED BY: MRG
DRAWN BY: JFS

C5.0



Site Demo Plan

SCALE: 1" = 30'-0"

GENERAL NOTES

1. ALL MATERIAL DEMOLISHED ARE TO BE DISPOSED PER LOCAL, STATE, AND FEDERAL ORDINANCES.
2. ALL MATERIAL REQUEST TO BE SALVAGED ARE THE OWNERSHIP OF THE OWNER. THIS MATERIAL IS TO BE STORED UNTIL ARRANGEMENTS CAN BE MADE FOR THE OWNER TO REMOVE FROM THE SITE.
3. THE CONTRACTOR IS RESPONSIBLE TO CALL 811 PRIOR TO ANY AND ALL EXCAVATIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CALL FOR LOCATES PRIOR TO WORK PROGRESS CAN BEGIN.
4. THERE IS NO WATER SOURCES ON SITE. THE CONTRACTOR MUST PROVIDE ANY AND ALL WATER NEEDED TO COMPLETE THE SCOPE OF CONSTRUCTION.
5. CONTRACTOR TO PROVIDE A PLAN FOR CONSTRUCTION PRIOR TO THE COMMENCEMENT OF WORK. THIS PLAN SHALL NOTE ALL DUMPSTER LOCATIONS, JOB TRAILERS, PORTABLE RESTROOMS, AND JOB STORAGE NEEDED FOR THE JOB.
6. THE CONTRACTOR IS RESPONSIBLE TO SECURE ALL NECESSARY BUILDING PERMITS FOR THE PROJECT, INCLUDING BUT NOT LIMITED TO ELECTRICAL, SITE DISTURBANCE, AND BUILDING PERMITS. ALL PERMITS FOR THIS PROJECT ARE TO BE OBTAINED FROM STATE OF IDAHO DIVISION OF BUILDING SAFETY.
7. THE CONTRACTOR IS REQUIRED TO MAINTAIN ALL STORM WATER CONTROL MEASURES REQUIRED BY THE STATE OF IDAHO. THIS SCOPE OF WORK SHALL INCLUDE SILT FENCE, CONSTRUCTION ENTRANCE, AND ALL NECESSARY MEASURE TO MAINTAIN COMPLIANCE WITH THE IDAHO DEPARTMENT OF ENVIRONMENTAL QUALITY FOR AIR, WATER, AND SOIL.
8. THE CONTRACT SHALL MAINTAIN A SAFE PROJECT SITE THAT IS COMPLIANT WITH ALL OSHA REGULATIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN THIS STANDARD OF CARE.
9. EVERYTHING IS TO REMAIN AS IS UNLESS OTHERWISE NOTED ELSEWHERE IN THESE DOCUMENTS OR ANY ASSOCIATED DOCUMENTS.

(XX) SITE DEMO PLAN KEYNOTES

NOTE: ALL KEYNOTES MAY NOT BE USED IN DRAWINGS

1. EXISTING OVERHEAD POWER LINE TO BE REMOVED TO ACCOMMODATE THE NEW CONSTRUCTION. THE CONTRACTOR SHALL COORDINATE WITH CLEARWATER POWER COMPANY FOR THE REMOVAL.
2. EXISTING POWER POLE TO BE REMOVED. THE CONTRACTOR SHALL COORDINATE WITH CLEARWATER POWER COMPANY FOR THE REMOVAL.
3. EXISTING CONCRETE PAD TO BE REMOVED.
4. EXISTING ZIPLY FIBER TELEPHONE LINE TO BE REMOVED FROM THE SITE & RELOCATED BACK TO THE RIGHT OF WAY. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH ZIPLY FIBER FOR THIS RECONFIGURATION.
5. EXISTING STATE OF IDAHO HIGHWAY #3 FOG LINE SHOWN FOR REFERENCE
6. EXISTING EDGE OF ASPAHLT PAVEMENT FOR STATE OF IDAHO HIGHWAY #3 SHOWN FOR REFERENCE.
7. EXISTING CENTERLINE OF HIGHWAY #3 - SHOWN ONLY FOR REFERENCE.
8. EXISTING ZIPLY FIBER TELEPHONE COMMUNICATION LINE TO REMAIN
9. EXISTING CLEARWATER POWER COMPANY POWER POLE TO REMAIN
10. EXISTING EDGE OF GRAVEL TO REMAIN
11. EXISTING OVERHEAD POWER LINE
12. APPROXIMATE LOCATION OF EXISTING TREE / VEGETATION LINE TO REMAIN AS SHOWN.
13. CORNER PIN OF PROPERTY LINE

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Site Demo Plan
Bid / Permit
2/21/2023

ITD Clarkia Salt Shed - 2022
State of Idaho Highway #3
Clarkia, Idaho

LICENSED ARCHITECT AR-984931
MICHEAL P. WALKER
STATE OF IDAHO
2/21/2023

REV.	DATE:

PROJECT NO.: ---
DESIGNED BY: MPW
DRAWN BY: MPW/MJC

A1.0

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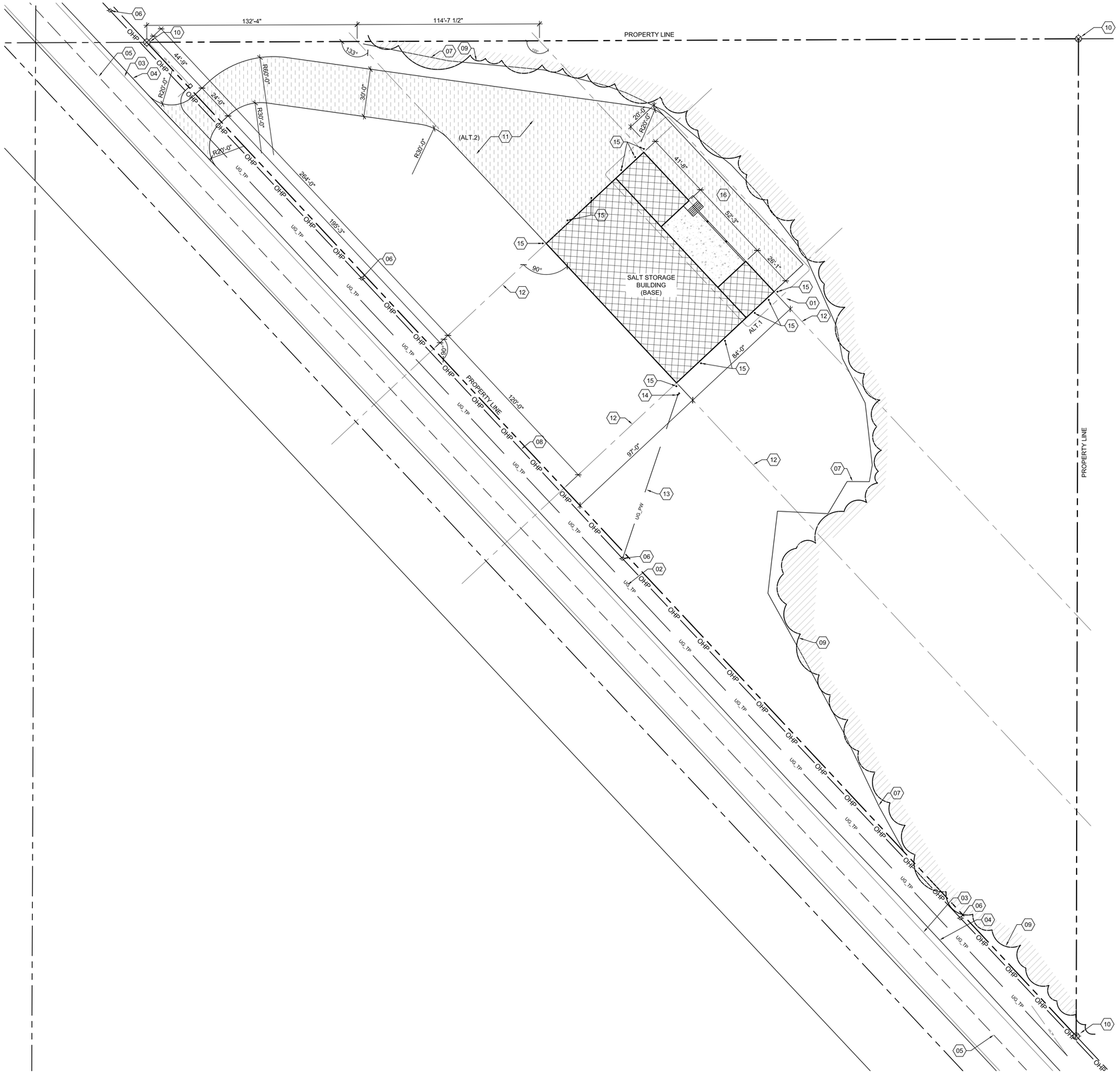

Site Plan
SCALE: 1" = 30'-0"

GENERAL NOTES

1. ALL MATERIAL DEMOLISHED ARE TO BE DISPOSED PER LOCAL, STATE, AND FEDERAL ORDINANCES.
2. ALL MATERIAL REQUEST TO BE SALVAGED ARE THE OWNERSHIP OF THE OWNER. THIS MATERIAL IS TO BE STORED UNTIL ARRANGEMENTS CAN BE MADE FOR THE OWNER TO REMOVE FROM THE SITE.
3. THE CONTRACTOR IS RESPONSIBLE TO CALL 811 PRIOR TO ANY AND ALL EXCAVATIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CALL FOR LOCATES PRIOR TO WORK PROGRESS CAN BEGIN.
4. THERE IS NO WATER SOURCES ON SITE. THE CONTRACTOR MUST PROVIDE ANY AND ALL WATER NEEDED TO COMPLETE THE SCOPE OF CONSTRUCTION.
5. CONTRACTOR TO PROVIDE A PLAN FOR CONSTRUCTION PRIOR TO THE COMMENCEMENT OF WORK. THIS PLAN SHALL NOTE ALL DUMPSTER LOCATIONS, JOB TRAILERS, PORTABLE RESTROOMS, AND JOB STORAGE NEEDED FOR THE JOB.
6. THE CONTRACTOR IS RESPONSIBLE TO SECURE ALL NECESSARY BUILDING PERMITS FOR THE PROJECT, INCLUDING BUT NOT LIMITED TO ELECTRICAL, SITE DISTURBANCE, AND BUILDING PERMITS. ALL PERMITS FOR THIS PROJECT ARE TO BE OBTAINED FROM STATE OF IDAHO DIVISION OF BUILDING SAFETY.
7. THE CONTRACTOR IS REQUIRED TO MAINTAIN ALL STORM WATER CONTROL MEASURES REQUIRED BY THE STATE OF IDAHO. THIS SCOPE OF WORK SHALL INCLUDE SILT FENCE, CONSTRUCTION ENTRANCE, AND ALL NECESSARY MEASURE TO MAINTAIN COMPLIANCE WITH THE IDAHO DEPARTMENT OF ENVIRONMENTAL QUALITY FOR AIR, WATER, AND SOIL.
8. THE CONTRACT SHALL MAINTAIN A SAFE PROJECT SITE THAT IS COMPLIANT WITH ALL OSHA REGULATIONS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN THIS STANDARD OF CARE.
9. EVERYTHING IS TO REMAIN AS IS UNLESS OTHERWISE NOTED ELSEWHERE IN THESE DOCUMENTS OR ANY ASSOCIATED DOCUMENTS.

⟨XX⟩ SITE PLAN KEYNOTES

NOTE: ALL KEYNOTES MAY NOT BE USED IN DRAWINGS

1. BUBBLED ZONE DENOTES BUILDING ALTERNATE SECTION - SEE ALTERNATE PLANS.
2. RELOCATED ZIPLY FIBER TELEPHONE LINE NEW LOCATION.
3. EXISTING STATE OF IDAHO HIGHWAY #3 FOG LINE SHOWN FOR REFERENCE
4. EXISTING EDGE OF ASPAHLT PAVEMENT FOR STATE OF IDAHO HIGHWAY #3 SHOWN FOR REFERENCE.
5. EXISTING CENTERLINE OF HIGHWAY #3 - SHOWN ONLY FOR REFERENCE.
6. EXISTING CLEARWATER POWER COMPANY POWER POLE TO REMAIN
7. EXISTING EDGE OF GRAVEL TO REMAIN
8. EXISTING OVERHEAD POWER LINE
9. APPROXIMATE LOCATION OF EXISTING TREE / VEGETATION LINE TO REMAIN AS SHOWN.
10. CORNER PIN OF PROPERTY LINE
11. ALTERNATE 2 NEW ASPHALT PAVING SURFACE - SEE SITE DETAIL 02/A1.1.
12. BUILDING EXTERIOR FACE GRID REFERENCE LINE
13. NEW BURIED POWER LINE. THE CONTRACTOR SHALL COORDINATE WITH CLEARWATER POWER COMPANY FOR INSTALLATION.
14. NEW POWER METER MOUNTED ON UNISTRUT
15. BOLLARD, PLACE PER FLOOR PLANS - REFER TO SITE DETAIL 01/A1.1.
16. ALTERNATE A NEW ASPHALT PAVING SURFACE - SEE SITE DETAIL 02/A1.1.

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Site Plan
Bid / Permit
2/21/2023

LICENSED ARCHITECT AR-984931
MICHEAL P. MILLER STATE OF IDAHO 2/21/2023

ITD Clarkia Salt Shed - 2022
State of Idaho Highway #3
Clarkia, Idaho

REV.	DATE:

PROJECT NO.: ---
DESIGNED BY: MPW
DRAWN BY: MPWMJC

A1.1

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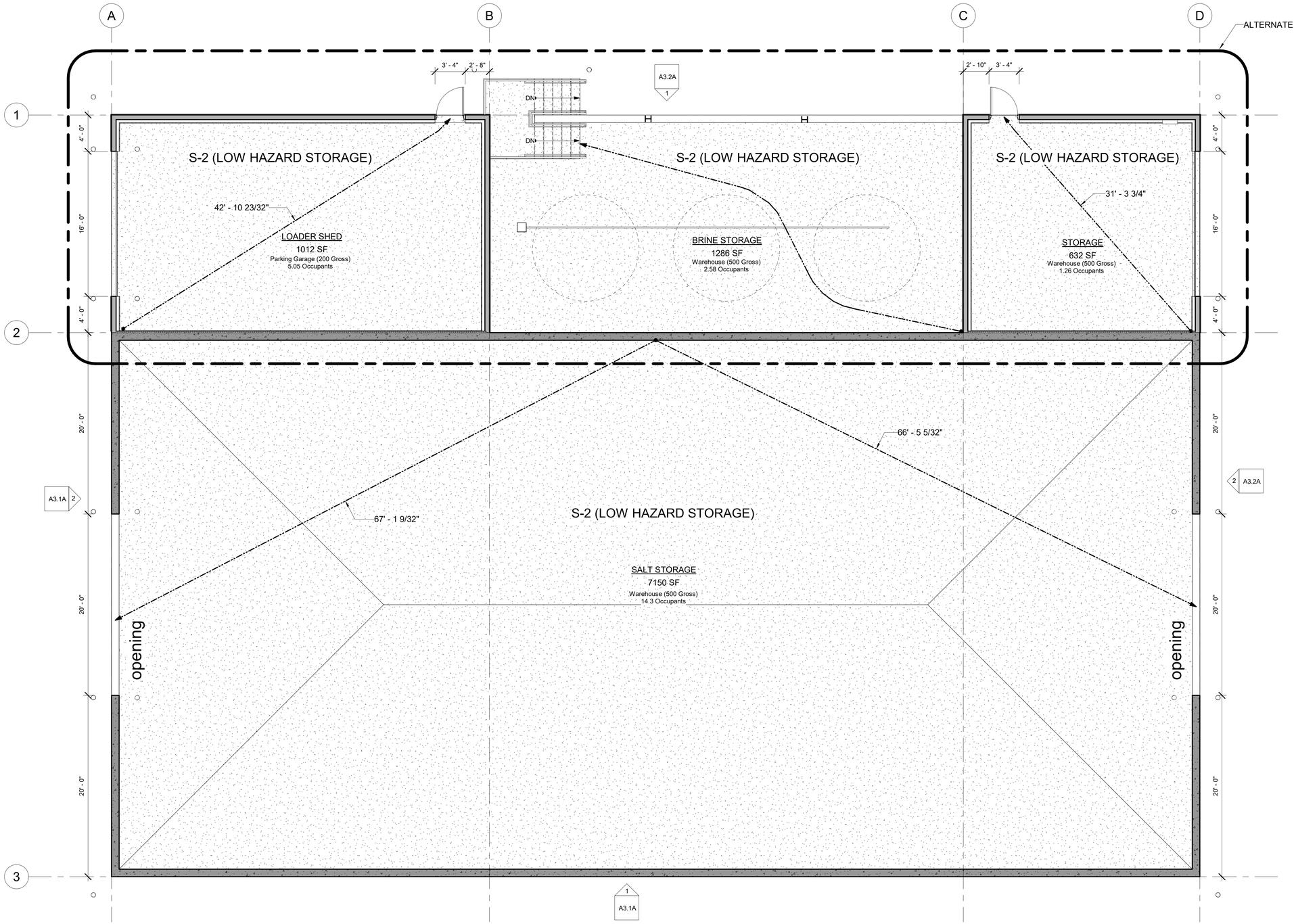
BUILDING SQUARE FEET			
Number	Name	Area	Occupants
A101	SALT STORAGE	7150 SF	15
A102	LOADER SHED	1012 SF	6
A103	BRINE STORAGE	1286 SF	3
A104	STORAGE	632 SF	2
Grand total		10080 SF	26



Egress Floor Plan

3/16" = 1'-0"

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Egress Plan

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2/21/2023

ITD Clarkia Salt Shed

Highway 3 - Milepost 58.1

Clarkia, Idaho

LICENSED ARCHITECT
AR-984931
MICHEAL P. WALKER
STATE OF IDAHO

No.	Description	Date

PROJECT NUMBER 1954
PRINCIPAL Designer
PROJECT MANAGER Author

G1.1

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FLOOR PLAN GENERAL NOTES

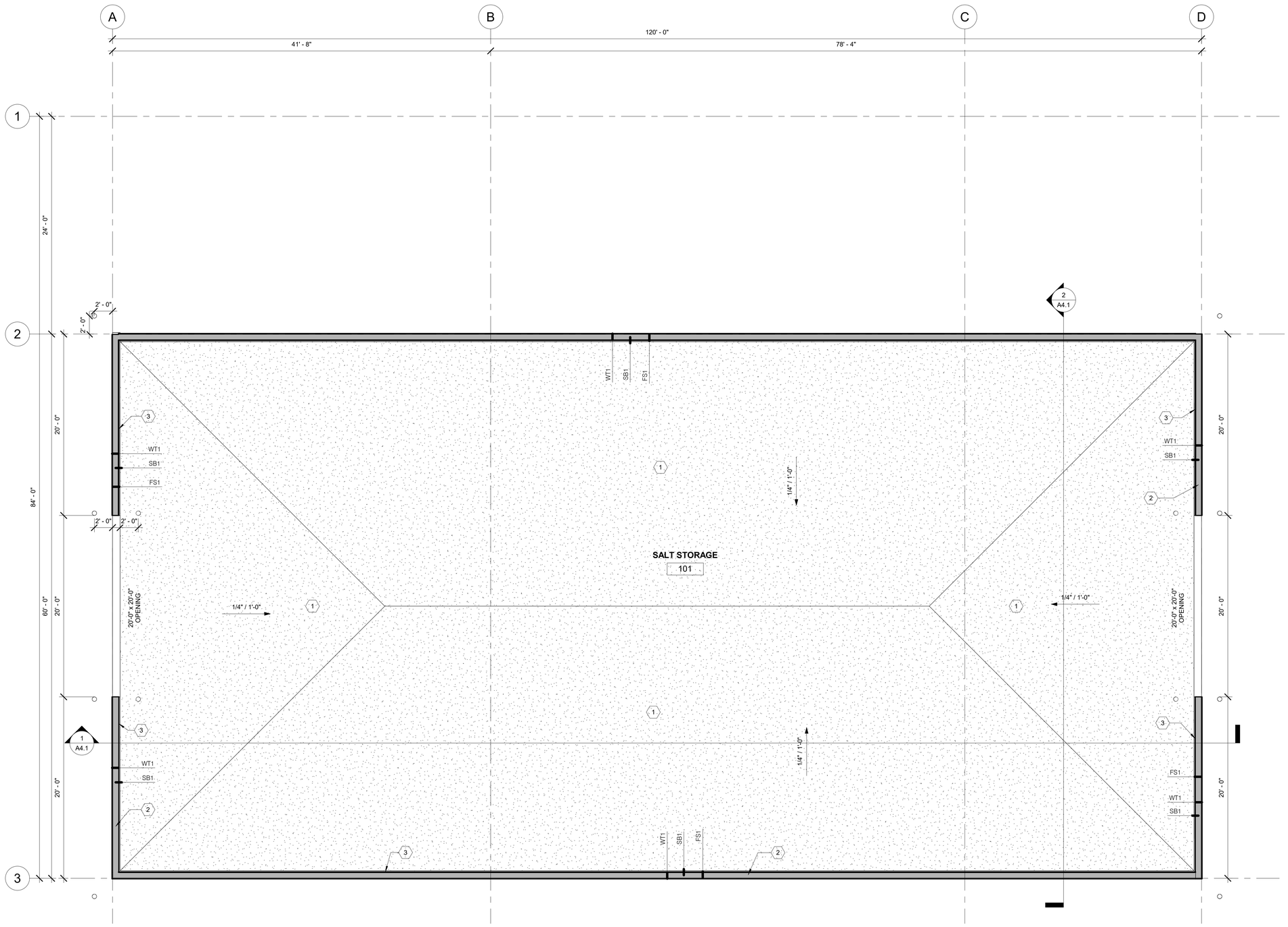
A. REFER TO A5.1 FOR WALL, FLOOR & ROOF ASSEMBLIES.

KEYNOTES

1 6" CONCRETE SLAB ON GRADE W/ CONCRETE SEALER O/ COMPACTED AGGREGATE BASE
2 REFER TO BUILDING ASSEMBLIES FOR WALL TYPES.
3 23/32" PRESSURE TREATED PLYWOOD

AREA SCHEDULE - BASE BID

#	Name	Area
101	SALT STORAGE	6903 SF
102	LOADER SHED	920 SF
103	MAG STORAGE	1207 SF
104	STORAGE ROOM	562 SF
		9591 SF



FLOOR PLAN - BASE BID

3/16" = 1'-0"

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Floor Plan - Base Bid

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2/21/2023

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Highway 3 - Milepost 58.1
Clarkia, Idaho

LICENSED ARCHITECT AR-984931
MICHEAL P. WALKER
STATE OF IDAHO

No.	Description	Date

PROJECT NUMBER 1954
PRINCIPAL MPW
PROJECT MANAGER MSN

A2.1

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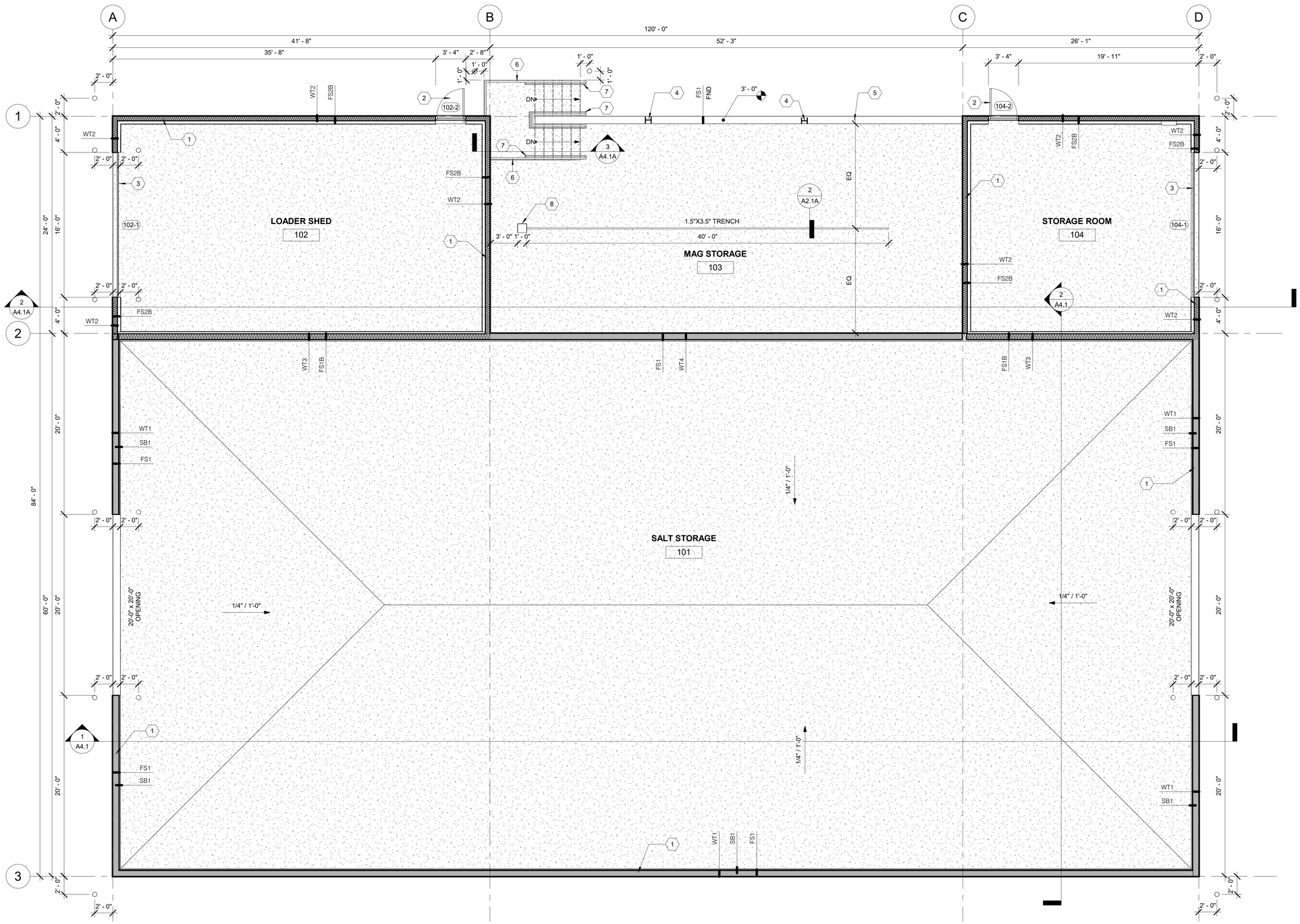
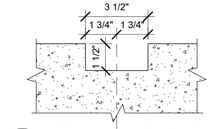
KEYNOTES

1. REFER TO BUILDING ASSEMBLIES FOR WALL TYPES.
2. INSULATED STEEL DOOR IN HOLLOW METAL FRAME - REFER TO DOOR SCHEDULE.
3. OVERHEAD INSULATED STEEL SECTIONAL DOOR - REFER TO DOOR TYPES
4. PAINTED STEEL COLUMN - REFER TO STRUCTURAL.
5. EXPOSED CONCRETE LOW WALL W/ CONCRETE SEALER - REFER TO BUILDING ELEVATIONS & STRUCUTRAL PLANS
6. CUSTOM FIELD PAINTED GUARDRAIL
7. CUSTOM 1 1/4" PIPE HANDRAIL
8. PRECAST CONCRETE 12"x12"x12" SUMP - BELOW SLAB THICKNESS

AREA SCHEDULE - ALTERNATE 1

#	Name	Area
101	SALT STORAGE	6903 SF
102	LOADER SHED	920 SF
103	MAG STORAGE	1206 SF
104	STORAGE ROOM	562 SF
		9591 SF





2 Trench Detail
3" = 1'-0"

FLOOR PLAN - ALTERNATE 1
3/16" = 1'-0"

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Floor Plan - Alternate 1

Bid / Permit

2/21/2023

ITD Clarkia Salt Shed
Highway 3 - Milepost 58.1
Clarkia, Idaho

LICENSED ARCHITECT
AR-984931
MICHEAL P. WALKER
STATE OF IDAHO

No.	Description	Date

PROJECT NUMBER	1954
PRINCIPAL	MPW
PROJECT MANAGER	MSN

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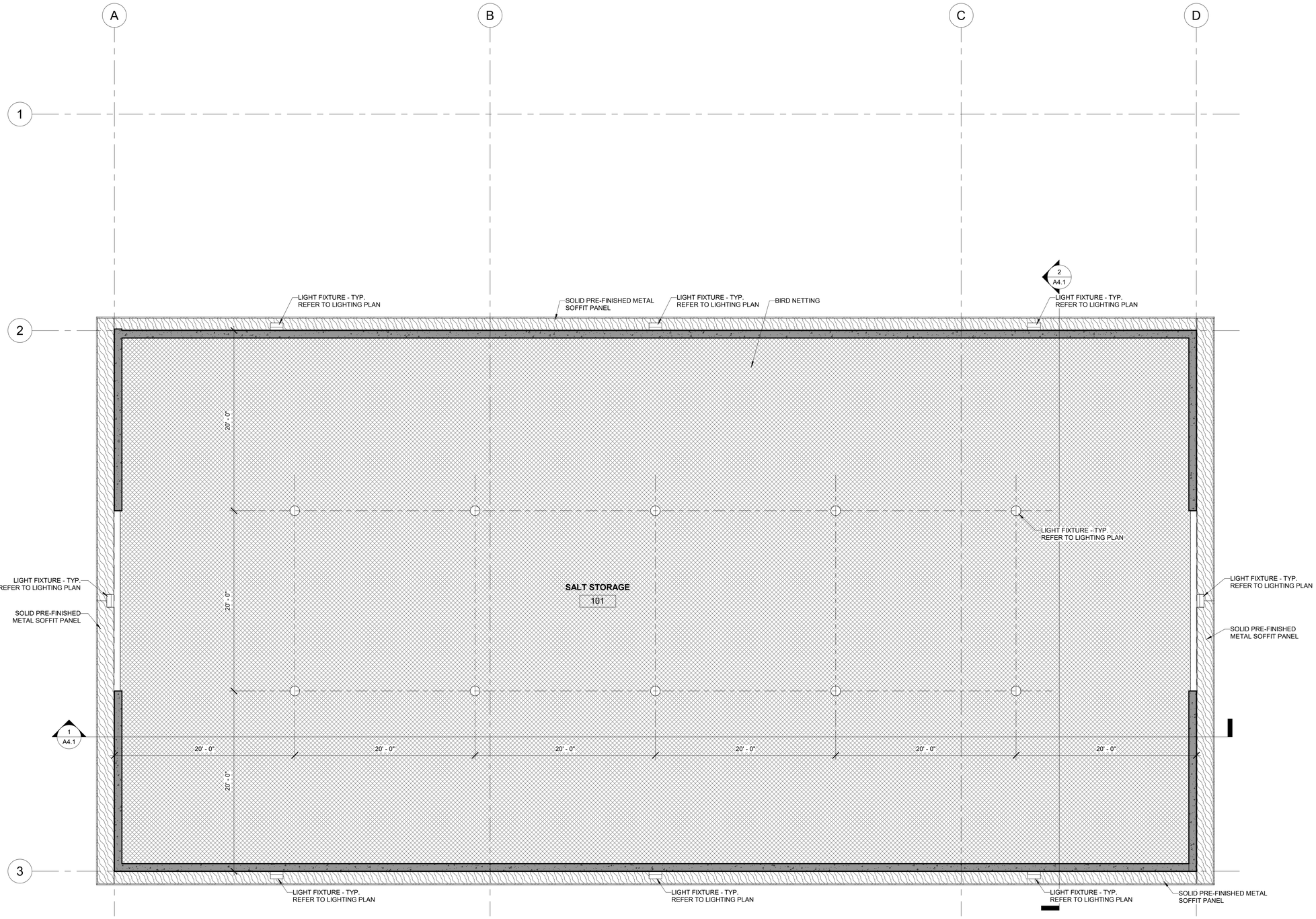

REFLECTED CEILING PLAN - BASE BID

3/16" = 1'-0"

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Reflected Clg. Plan - Base Bid

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2/21/2023

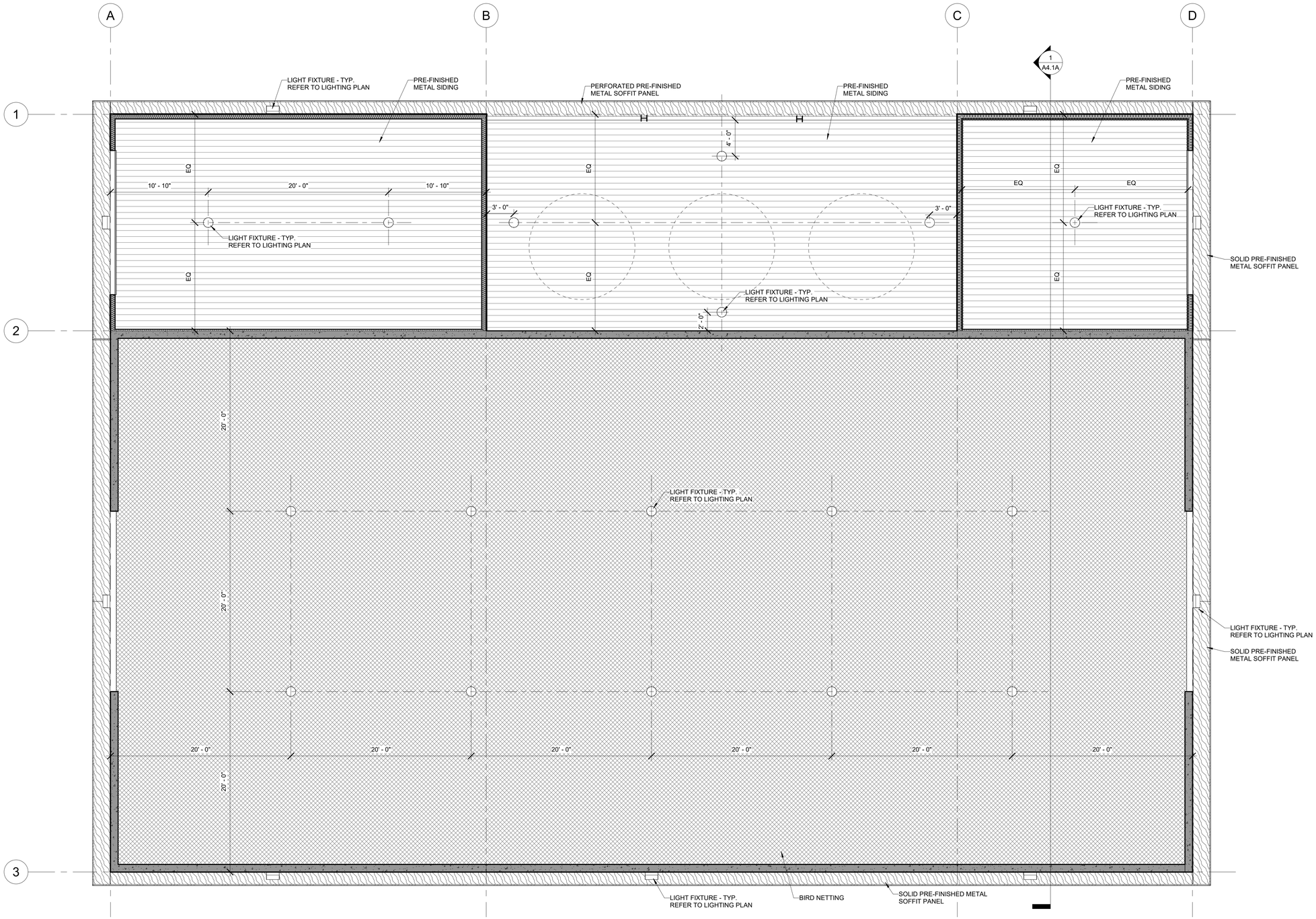
ITD Clarkia Salt Shed
Highway 3 - Milepost 58.1
Clarkia, Idaho

LICENSED ARCHITECT
AR-984931
MICHEAL P. WALKER
STATE OF IDAHO

No.	Description	Date

PROJECT NUMBER	1954
PRINCIPAL	MPW
PROJECT MANAGER	MSN

A2.2



REFLECTED CEILING PLAN - ALTERNATE 1

3/16" = 1'-0"

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Reflected Ceiling Plan - Alt 1

Bid / Permit

2/21/2023

ITD Clarkia Salt Shed
Highway 3 - Milepost 58.1
Clarkia, Idaho

LICENSED ARCHITECT
AR-984931
MICHEAL P. WALKER
STATE OF IDAHO

No.	Description	Date

PROJECT NUMBER	1954
PRINCIPAL	MPW
PROJECT MANAGER	MSN

A2.2A

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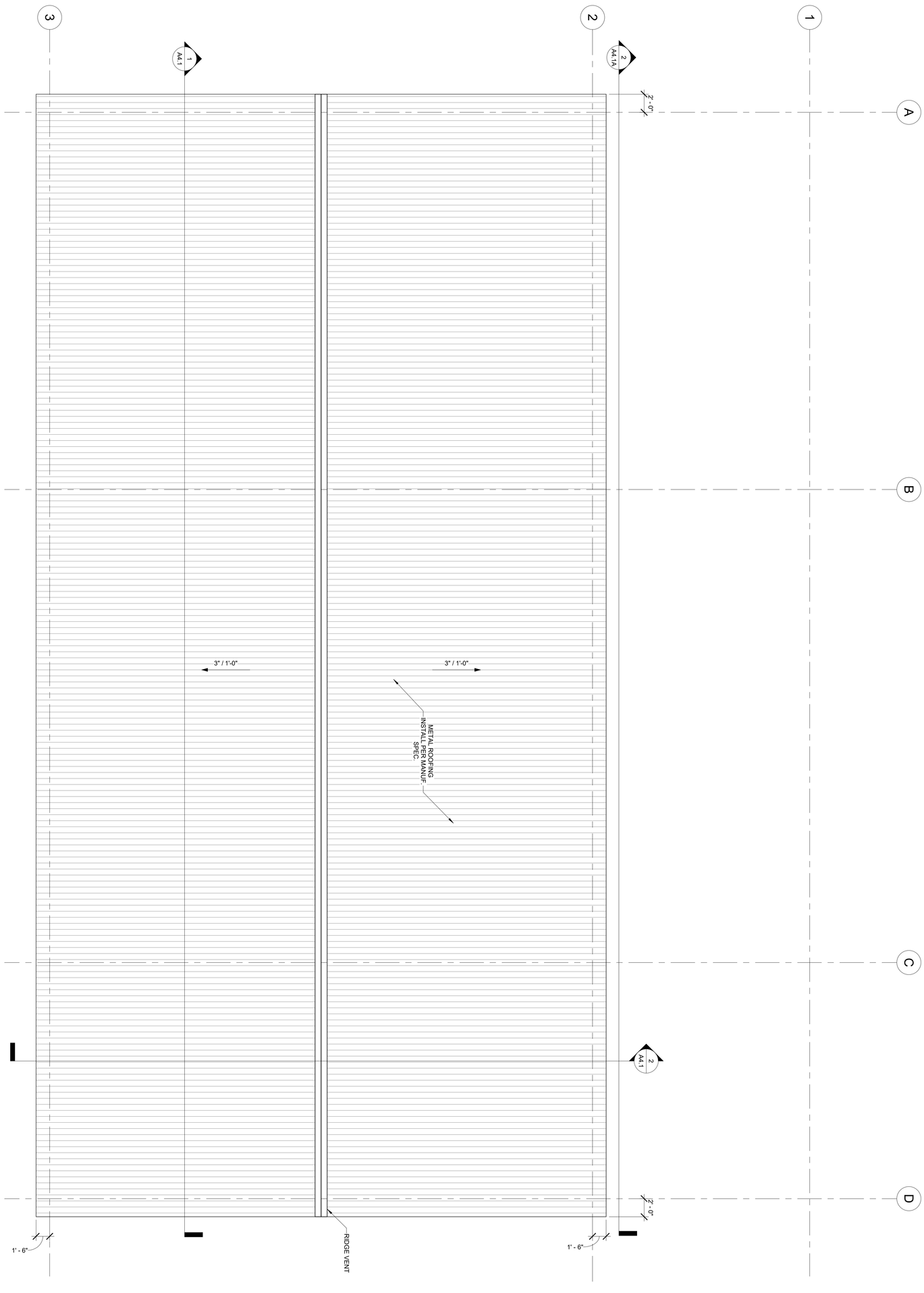
ROOF PLAN - BASE BID

3/16" = 1'-0"



PROJECT NUMBER	1954
PRINCIPAL	MPW
PROJECT MANAGER	MSN

A2.3

No. Description Date

LICENSED ARCHITECT AR-984931 MICHEAL P. WALKER STATE OF IDAHO

ITD Clarkia Salt Shed
Highway 3 - Milepost 58.1
Clarkia, Idaho

Roof Plan - Base Bid
Bid / Permit
2/21/2023

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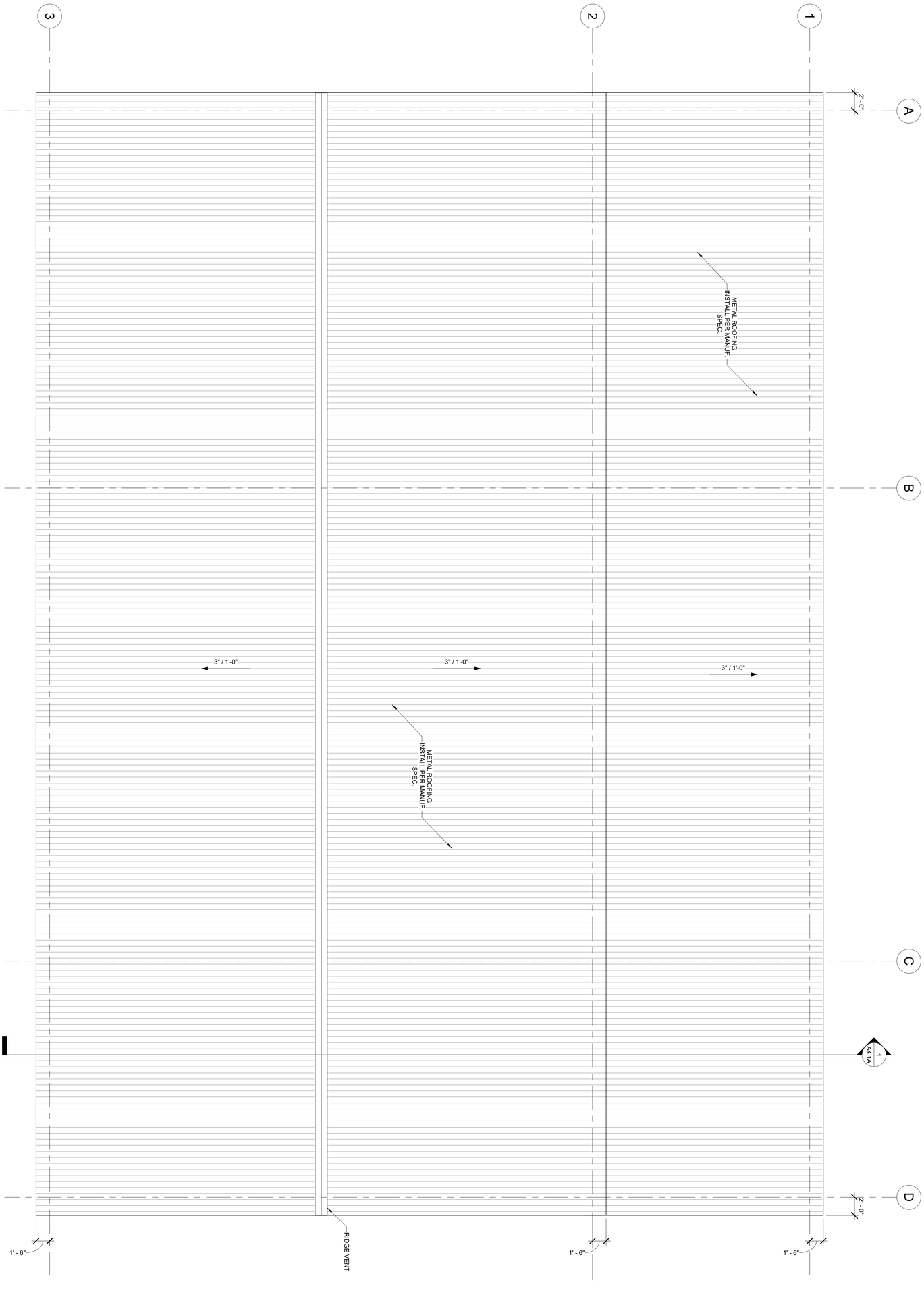
MILLER STAUFFER ARCHITECTS

ROOF PLAN - ALTERNATE 1

3/16" = 1'-0"



PROJECT NUMBER	1954
PRINCIPAL	MPW
PROJECT MANAGER	MSN

A2.3A

No. Description Date

LICENSED ARCHITECT AR-984931 MICHEAL P. WALKER STATE OF IDAHO

ITD Clarkia Salt Shed
Highway 3 - Milepost 58.1
Clarkia, Idaho

Roof Plan - Alt 1
Bid / Permit
2/21/2023

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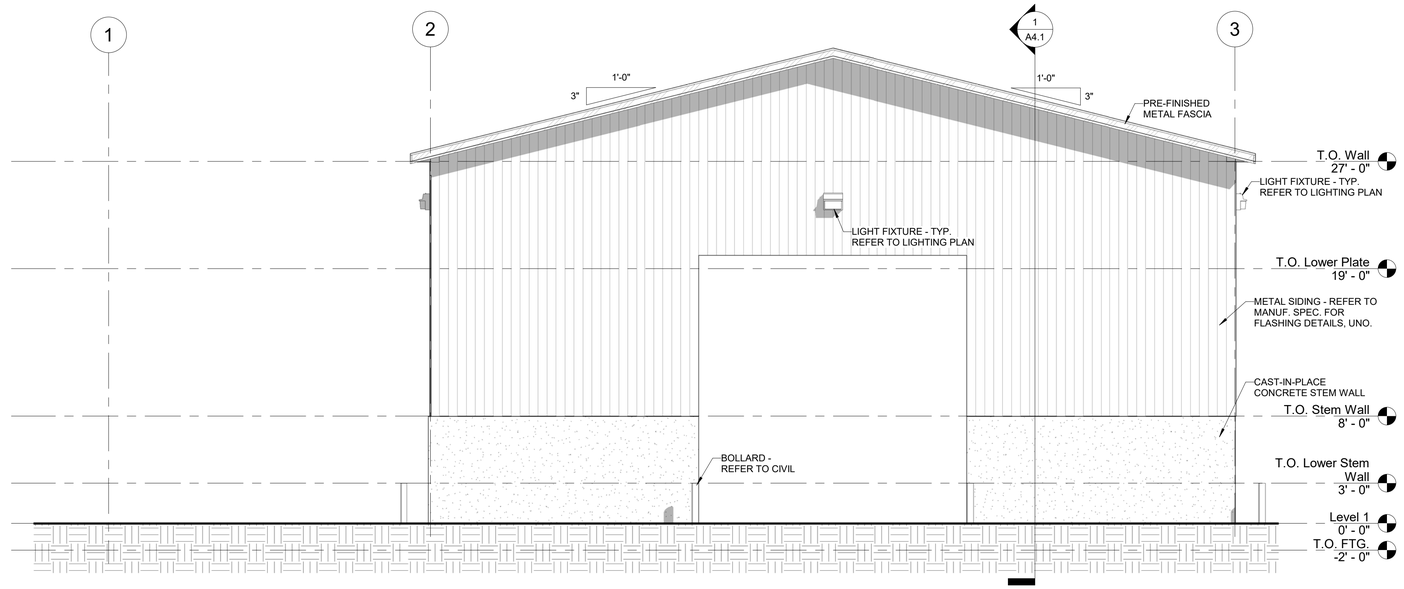
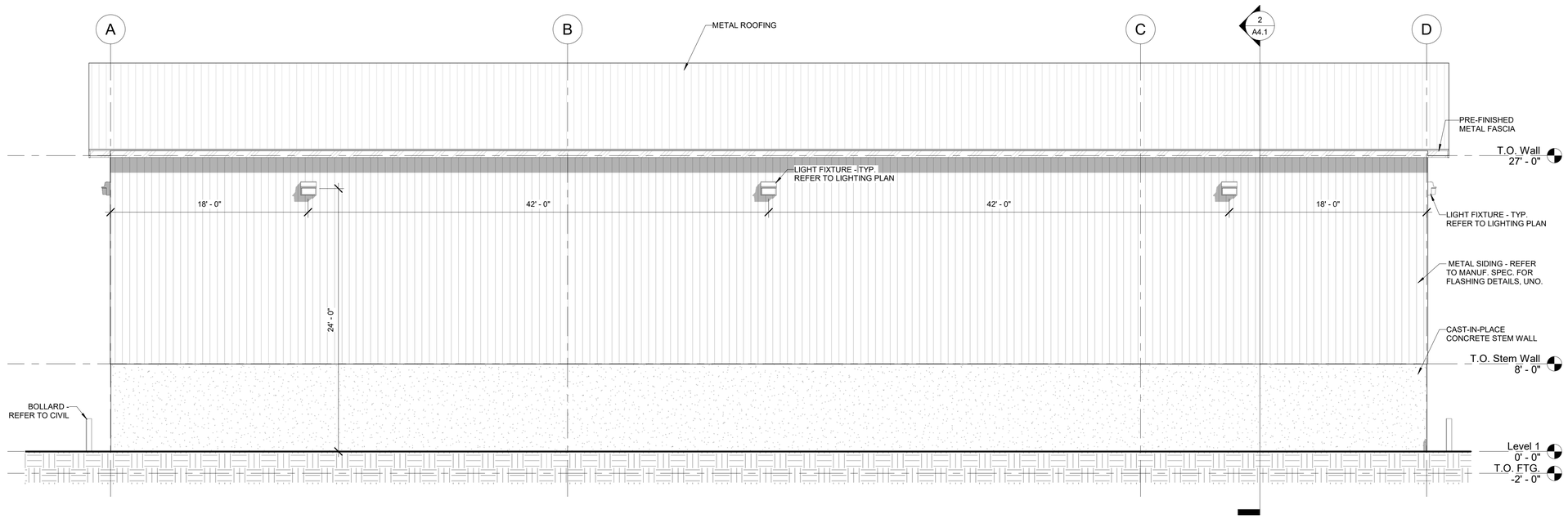
MILLER STAUFFER ARCHITECTS



WEST ELEVATION - BASE BID

3/16" = 1'-0"



SOUTH ELEVATION - BASE BID

3/16" = 1'-0"

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Exterior Elevations - Base Bid

Bid / Permit

2/21/2023

ITD Clarkia Salt Shed

Highway 3 - Milepost 58.1

Clarkia, Idaho

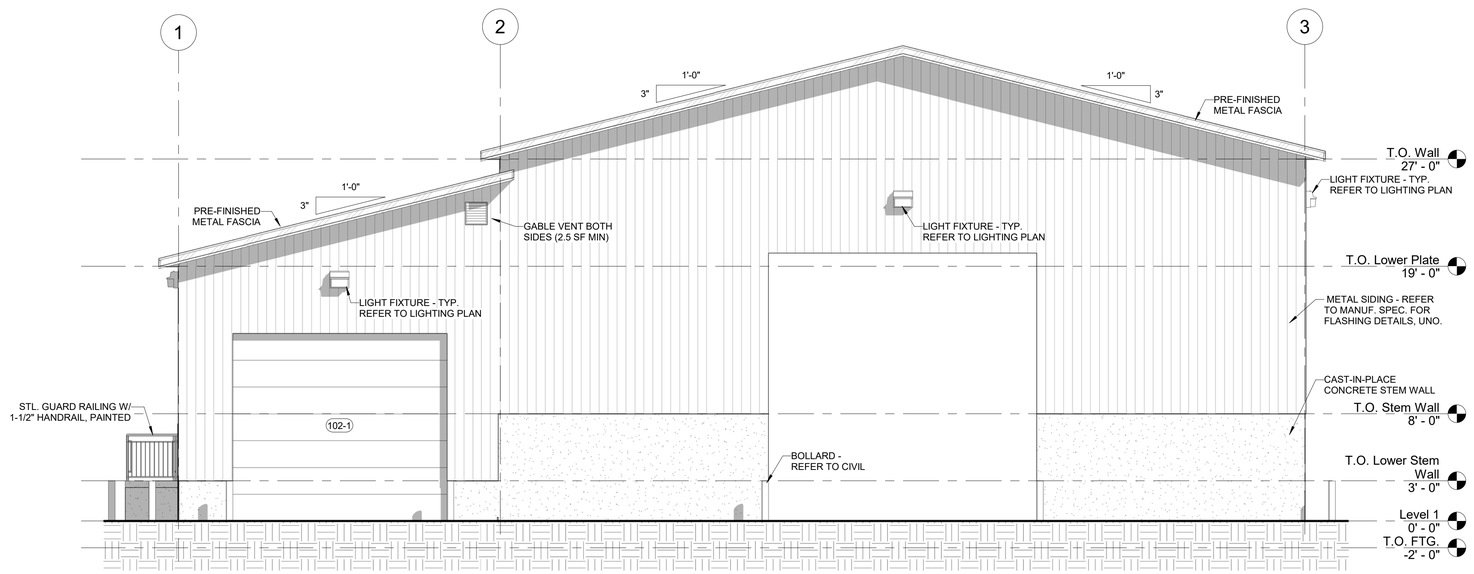
LICENSED ARCHITECT
AR-984931
MICHEAL P. WALKER
STATE OF IDAHO

No.	Description	Date

PROJECT NUMBER 1954
PRINCIPAL Designer
PROJECT MANAGER Author

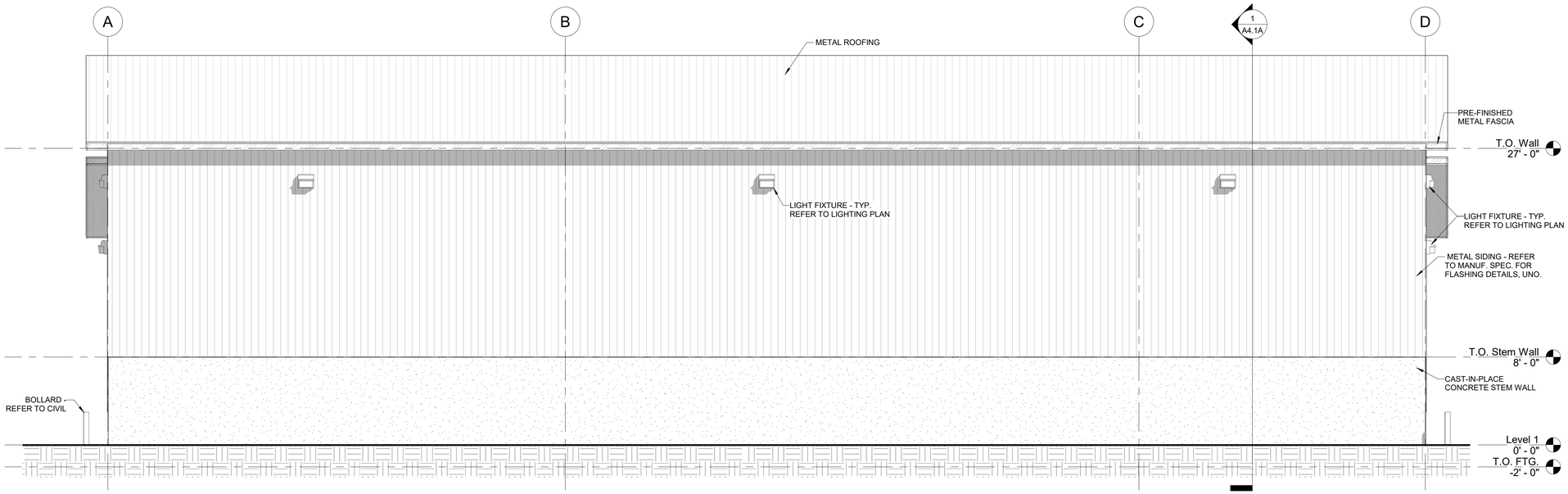
A3.1

2/22/2023 1:48:44 PM C:\Users\Marc Nelson\Documents\ITD Clarkia - Salt Shed_marcnGWCXK.rvt



WEST ELEVATION -ALTERNATE 1

3/16" = 1'-0"



SOUTH ELEVATION -ALTERNATE 1

3/16" = 1'-0"

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Exterior Elevations - Alt 1

Bid / Permit

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ITD Clarkia Salt Shed
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A3.1A

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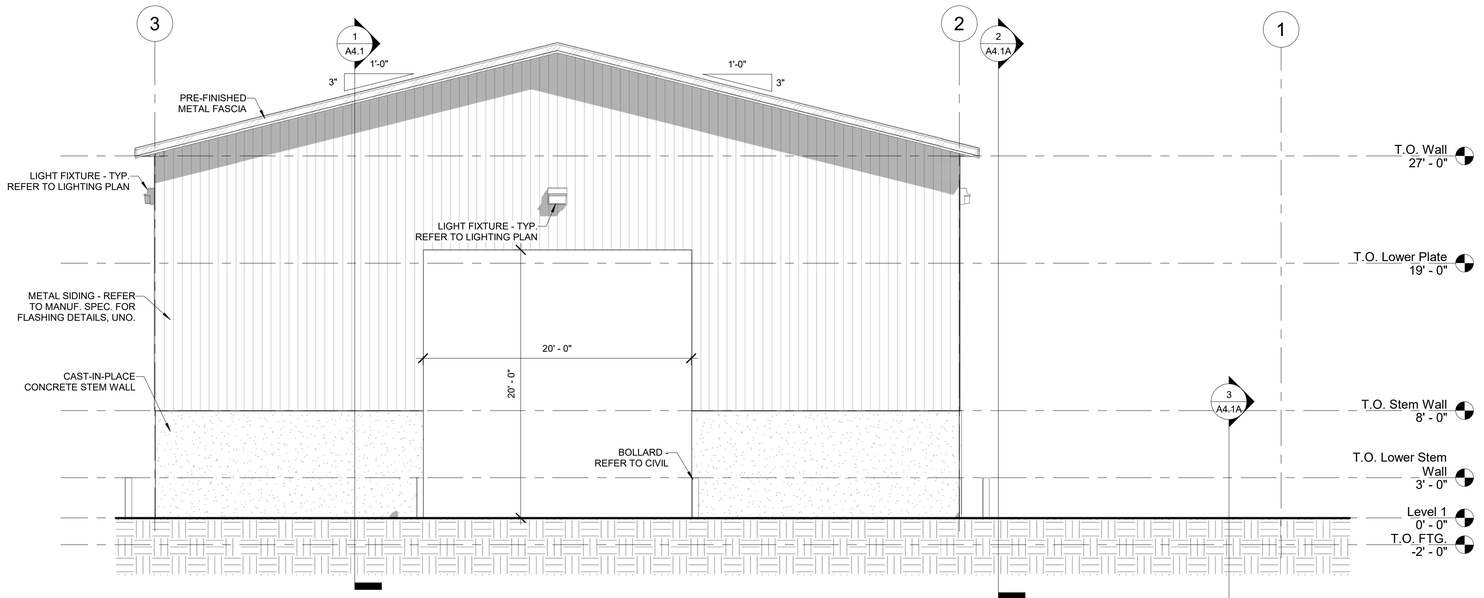
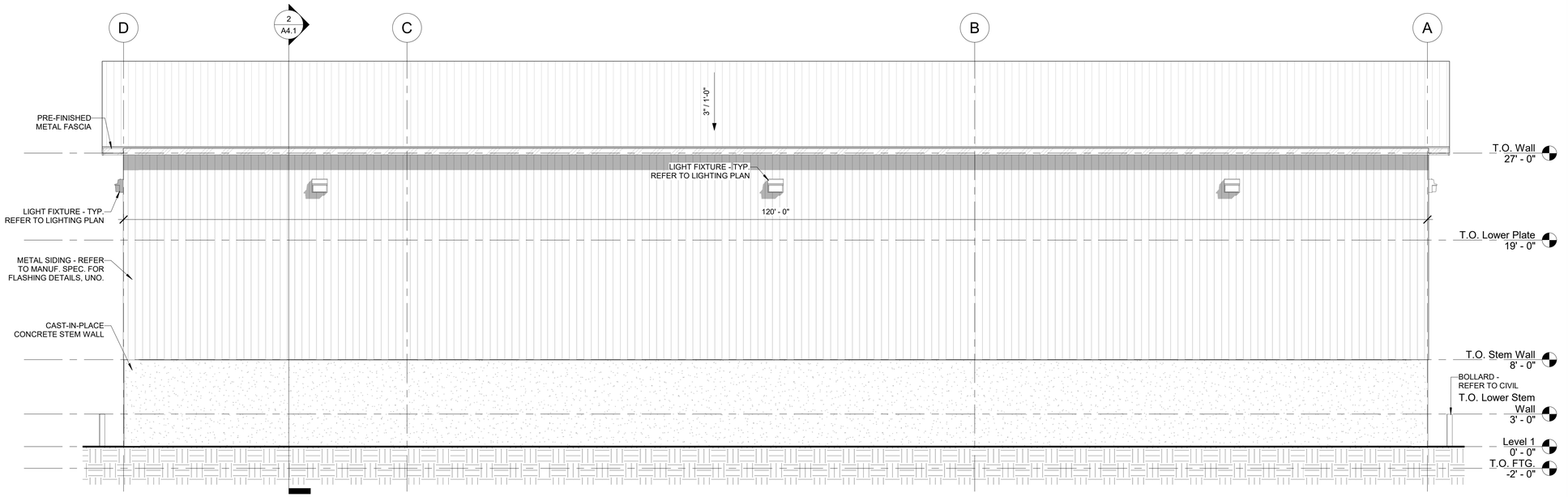


EAST ELEVATION - BASE BID

3/16" = 1'-0"



NORTH ELEVATION - BASE BID

3/16" = 1'-0"

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Exterior Elevations

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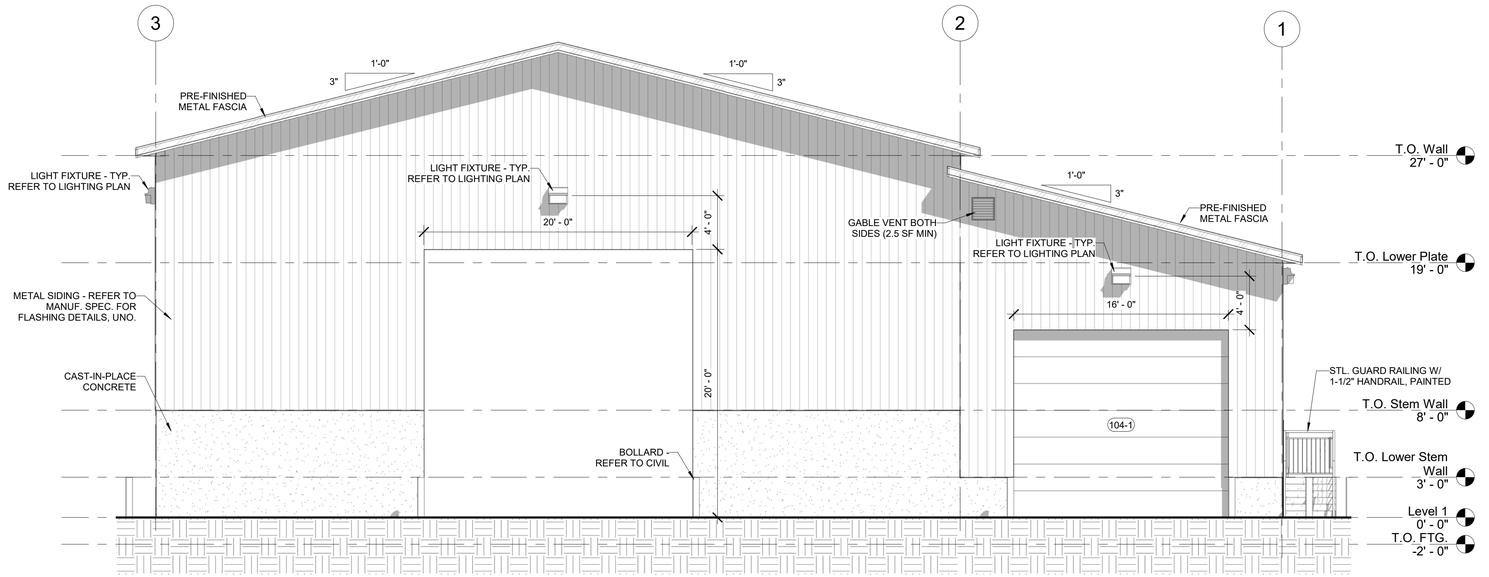
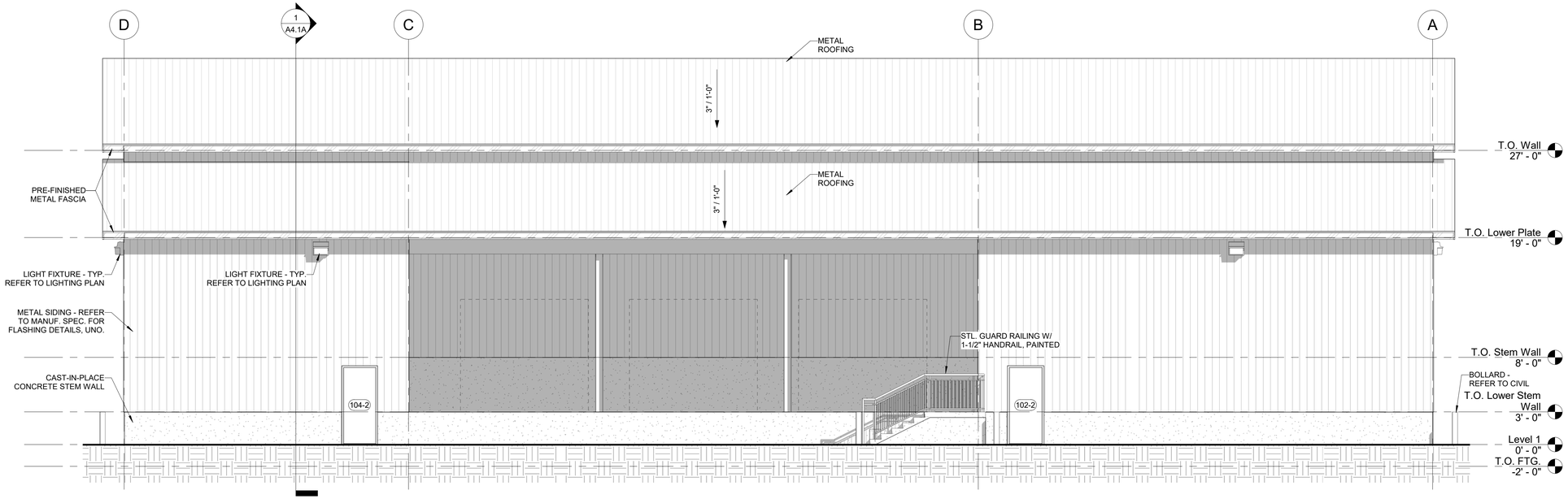


EAST ELEVATION - ALTERNATE 1

3/16" = 1'-0"



NORTH ELEVATION - ALTERNATE 1

3/16" = 1'-0"

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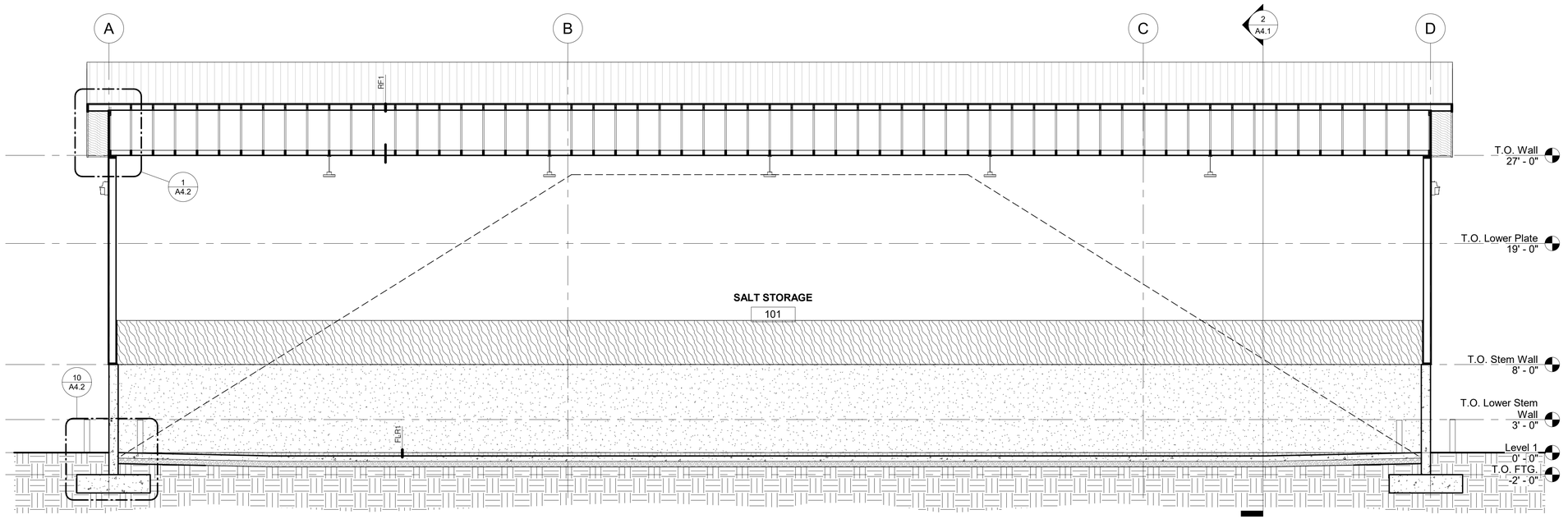
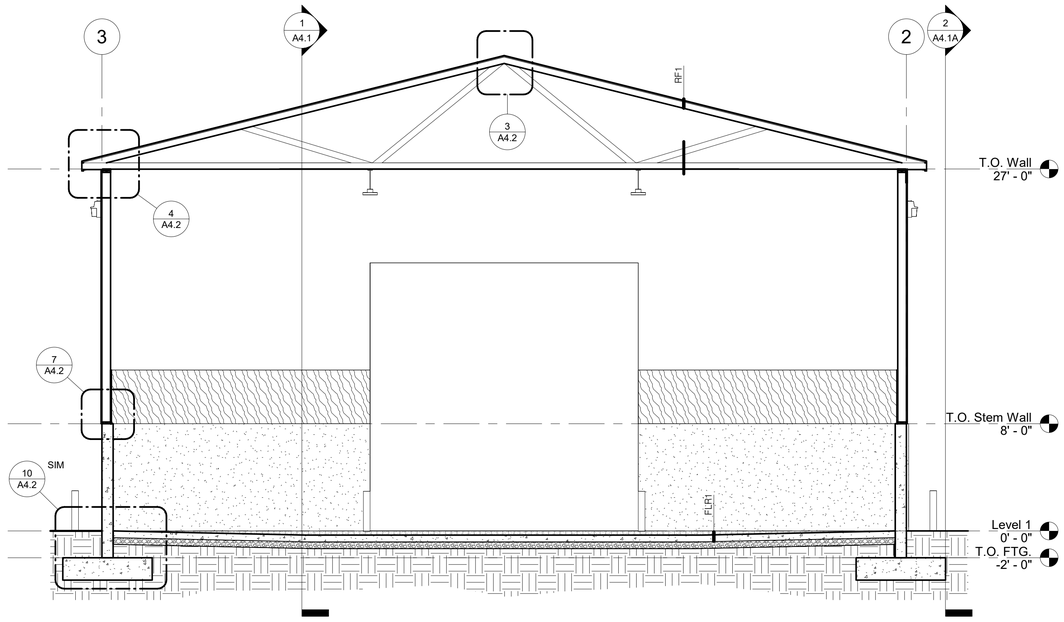


1 BUILDING SECTION A - BASE BID

3/16" = 1'-0"



2 BUILDING SECTION B - BASE BID

3/16" = 1'-0"

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Building Sections

Bid / Permit

2/21/2023

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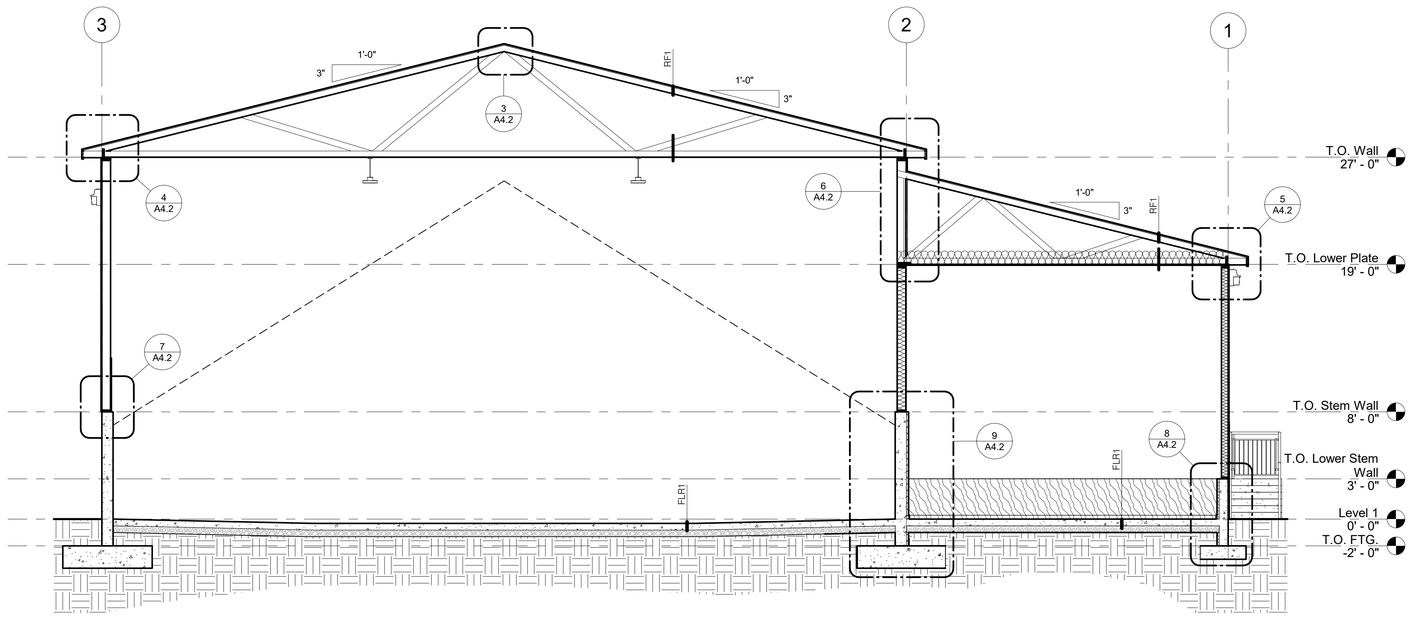
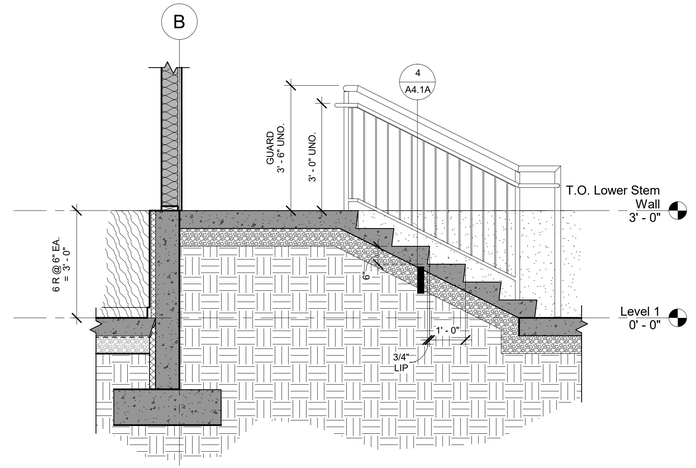
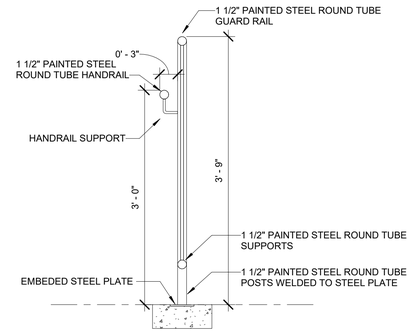


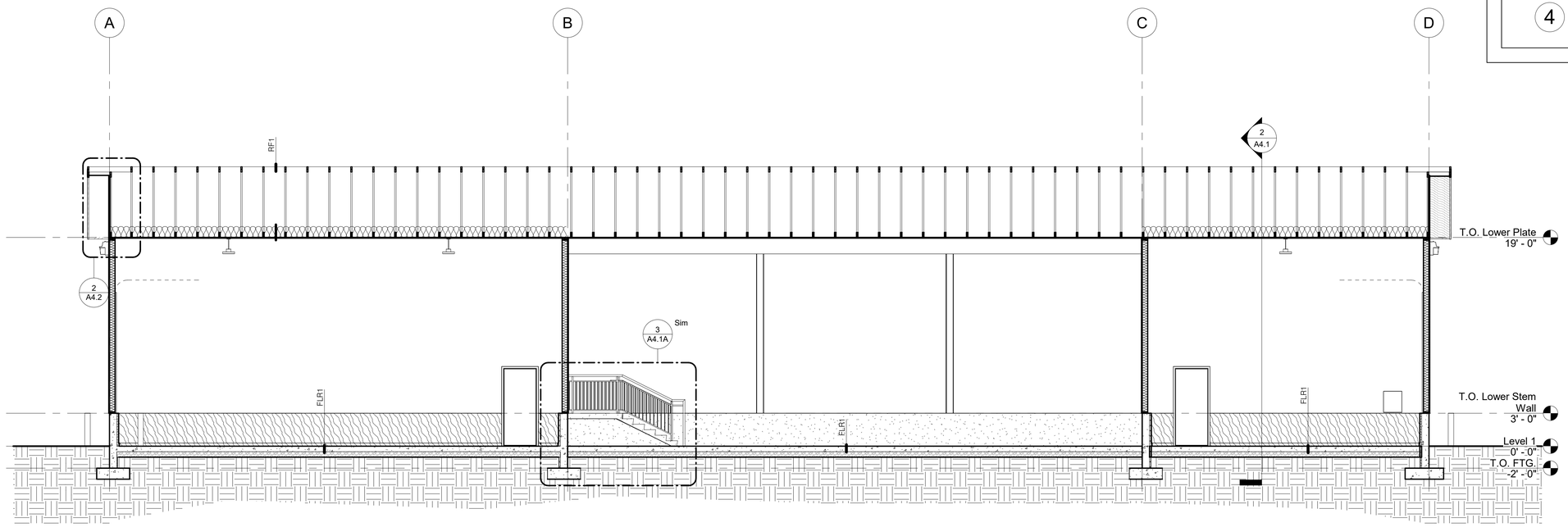
1 BUILDING SECTION B - ALTERNATE 1
3/16" = 1'-0"



3 Stair Section - Alternate 1
1/2" = 1'-0"



4 Handrail Detail
1" = 1'-0"



2 BUILDING SECTION C - ALTERNATE 1
3/16" = 1'-0"

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Building Sections - Alt 1
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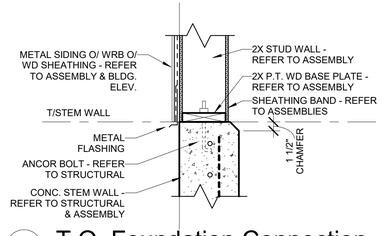
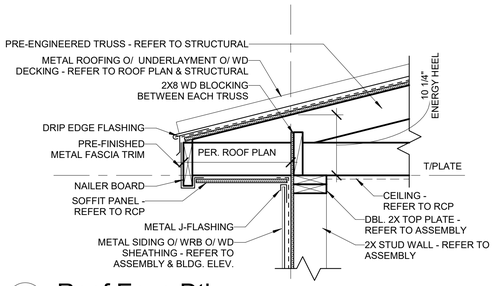
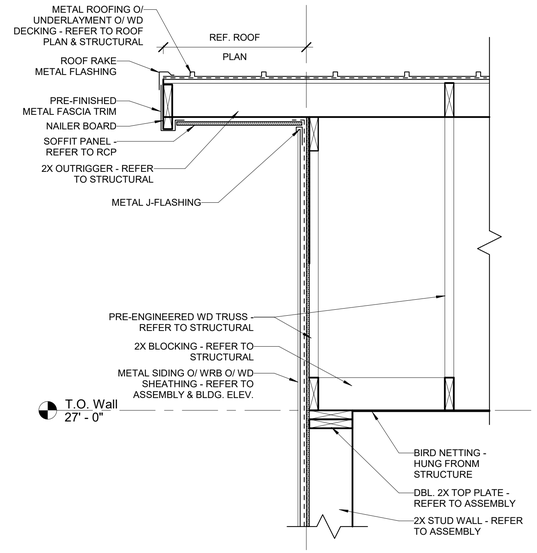


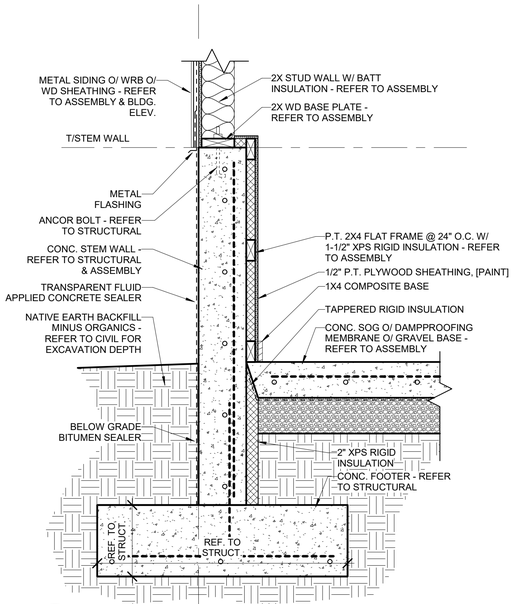
7 T.O. Foundation Connection
1" = 1'-0"



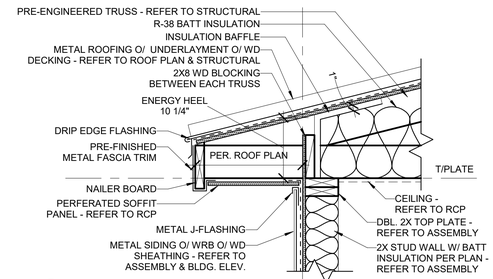
4 Roof Eave Dtl.
1" = 1'-0"



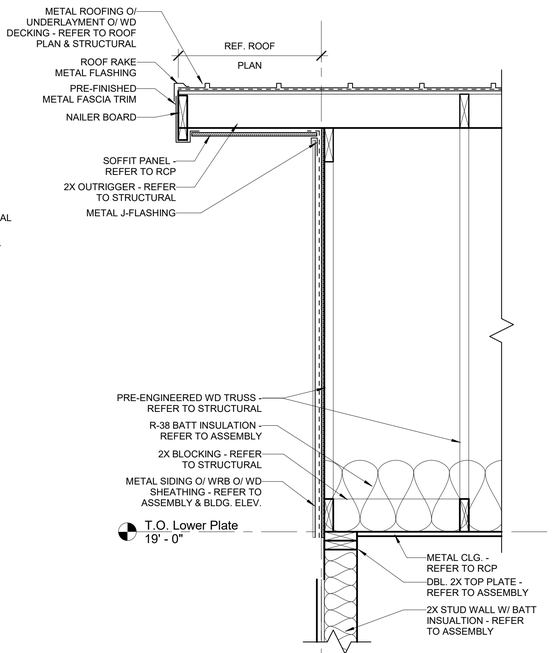
1 Main Wall - Gable End
1" = 1'-0"



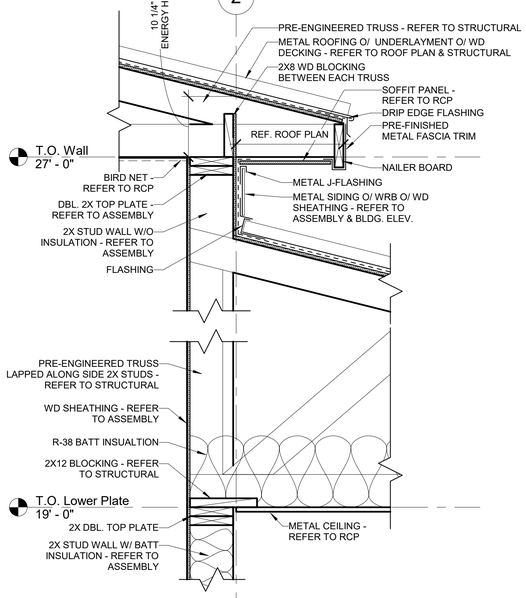
8 Insulated Foundation Dtl.
1" = 1'-0"



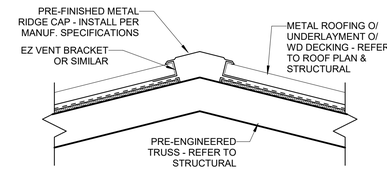
5 Alt.1 - Insulated Roof Eave Dtl.
1" = 1'-0"



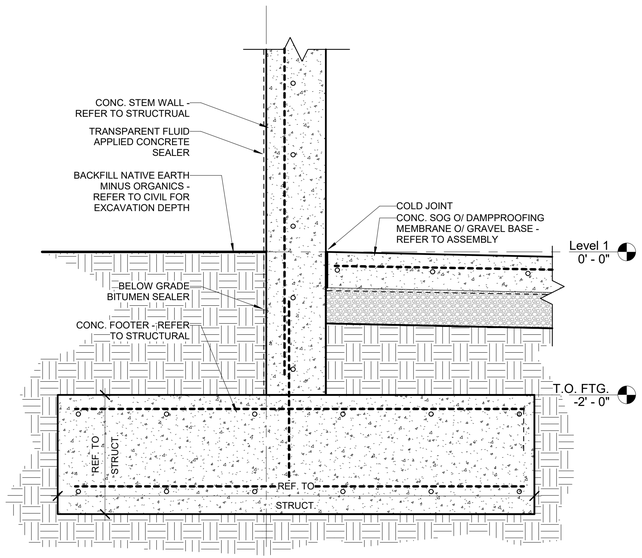
2 Alt.1 - Gable End
1" = 1'-0"



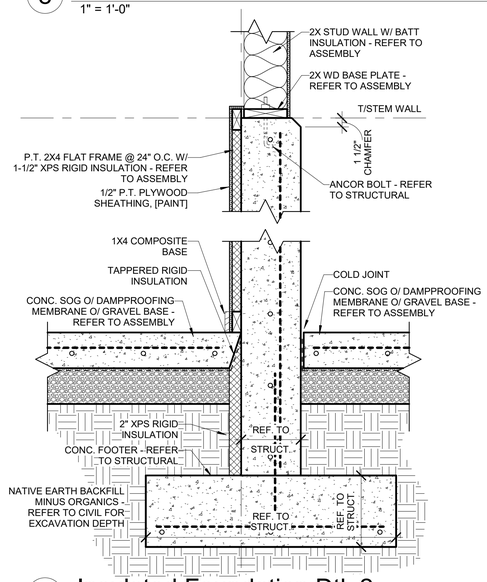
6 Alt.1 Truss to Main Connection
1" = 1'-0"



3 Ridge Vent, Typ.
1" = 1'-0"



10 Main Wall - Foundation Dtl.
1" = 1'-0"



9 Insulated Foundation Dtl. 2
1" = 1'-0"

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ITD Clarkia Salt Shed
Highway 3 - Milepost 58.1
Clarkia, Idaho

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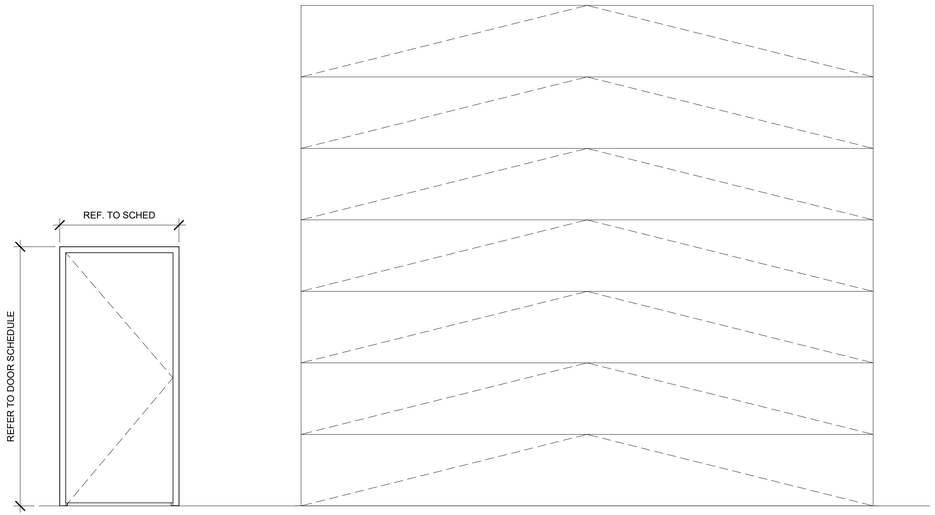
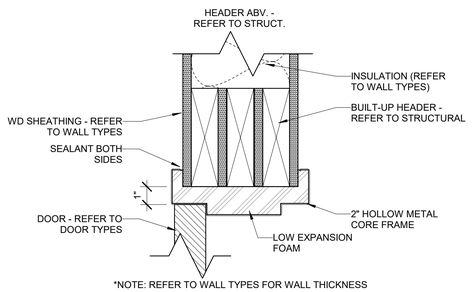


TYPE I
SWING DOOR -
FLUSH INSULATED
METAL DOOR

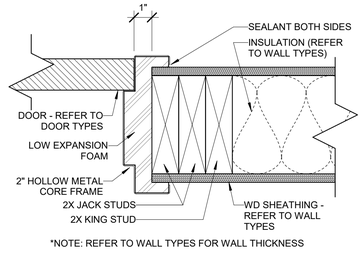
TYPE II
STEEL SECTIONAL GARAGE DOOR
FULLY INSULATED

DOOR TYPES
1/2" = 1'-0"



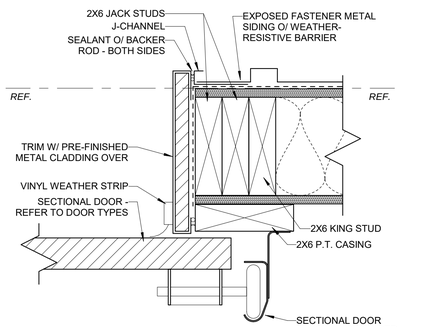
*NOTE: REFER TO WALL TYPES FOR WALL THICKNESS

HM HEADER
3" = 1'-0"

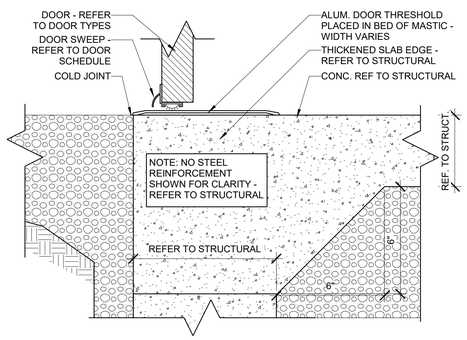


*NOTE: REFER TO WALL TYPES FOR WALL THICKNESS

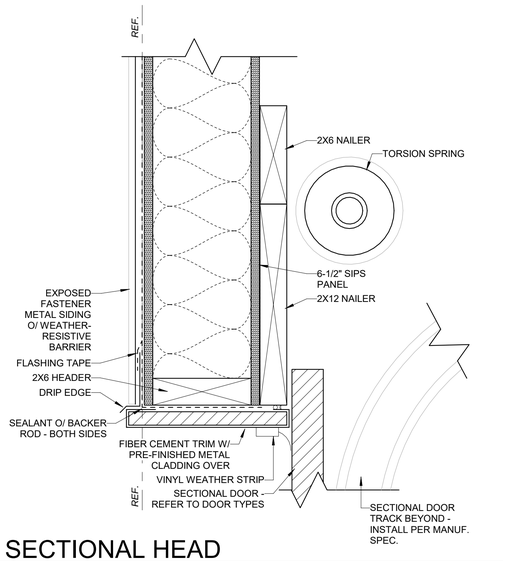
HM JAMB
3" = 1'-0"



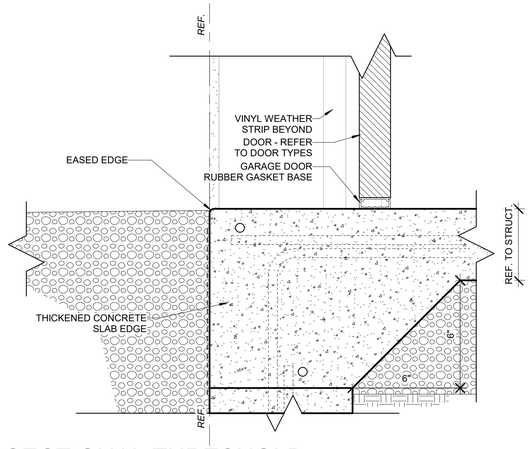
SECTIONAL JAMB (HI)
3" = 1'-0"



HM THRESHOLD
3" = 1'-0"

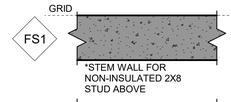


SECTIONAL HEAD
3" = 1'-0"

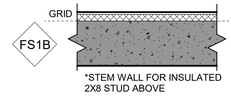


SECTIONAL THRESHOLD
3" = 1'-0"

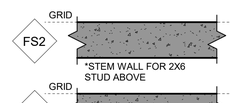
GENERAL NOTES
A. THE LAYERS DESCRIBED IN EACH ASSEMBLY ARE ORGANIZED STARTING FROM THE OUTERMOST LAYER ON THE GRID SIDE OF THE ASSEMBLY.



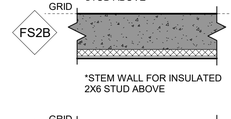
CONCRETE STEM WALL
- CONCRETE SEALER
- 10" CONCRETE WALL (CONFIRM W/ STRUCTURAL)



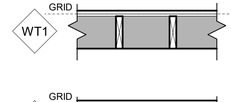
CONCRETE STEM WALL
- 1/2" WD SHEATHING
- 2X4 FLAT FRAMING @ 24" O.C. W/ 1-1/2" RIGID INSULATION
- 10" CONCRETE WALL (CONFIRM W/ STRUCTURAL)
- CONCRETE SEALER



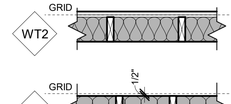
CONCRETE STEM WALL
- CONCRETE SEALER
- 8" CONCRETE WALL (CONFIRM W/ STRUCTURAL)



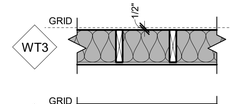
CONCRETE STEM WALL
- CONCRETE SEALER
- 8" CONCRETE WALL (CONFIRM W/ STRUCTURAL)
- 2X4 FLAT FRAMING @ 24" O.C. W/ 1-1/2" RIGID INSULATION
- 1/2" WD SHEATHING



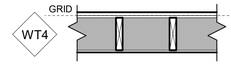
STUD WALL
- METAL SIDING - REFER TO BLDG. ELEVATIONS
- WRB
- 1/2" WD SHEATHING
- 2X8 WD STUDS @ 12" O.C.



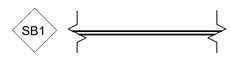
STUD WALL
- METAL SIDING - REFER TO BLDG. ELEVATIONS
- WRB
- 1/2" WD SHEATHING
- 2X6 WD STUDS @ 16" O.C. W/ R-21 VINYL FACED (TO INTERIOR) BATT INSULATION ATTACHED TO STUDS



STUD WALL, INTERIOR
- 2X8 WD STUDS @ 12" O.C. W/ R-25 VINYL FACED (TO INTERIOR) BATT INSULATION ATTACHED TO STUDS
- 1/2" WD SHEATHING

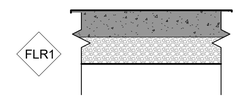


STUD WALL, EXTERIOR
- METAL SIDING - REFER TO BLDG. ELEVATIONS
- WRB
- 1/2" WD SHEATHING
- 2X8 WD STUDS @ 12" O.C.
- 1/2" WD SHEATHING



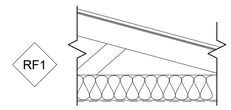
SHEATHING GUARD BAND
- 3/4" EXTERIOR GRADE PLYWOOD (ATTACHED TO FACE OF WD STUD WALL INTERIOR SIDE, 4' BAND STARTING AT T.O. CONCRETE STEM WALL)

Assemblies - Walls
3/4" = 1'-0"



SLAB ON GRADE, TYPICAL
- 6" CONCRETE SLAB ON GRADE (CONFIRM W/ STRUCTURAL)
- 6" GRAVEL BASE (CONFIRM W/STRUCTURAL)

Assemblies - Floors
3/4" = 1'-0"



TYPICAL ROOF
- METAL ROOFING - REFER TO ROOF PLAN / BLDG. ELEVATIONS
- ROOFING MEMBRANE / FELT
- 5/8" WD DECKING - (CONFIRM W/ STRUCTURAL)
- WD TRUSSES @ 24" O.C. (REFER TO TRUSS PACKAGE)

Assemblies - Roof
3/4" = 1'-0"

DOOR SCHEDULE

TAG	TYPE	DOOR Door Size [WxH(T)]	DOOR MAT	DOOR FIN	FIRE RATING	HARDWARE	FRAME MAT	FRAME FIN	FRAME JAMB	FRAME HEAD	REMARKS
102-1	II	16' - 0" x 14' - 0" x 0' - 1 1/2"	STEEL	PAINTED	N/A	HW2	STL.	GALV.	A5.1	A5.1	INSULATED OVERHEAD SECTIONAL DOOR
102-2	I	3' - 0" x 7' - 0" x 0' - 1 3/4"	STEEL	PAINTED	N/A	HW1	HM	PAINTED	A5.1	A5.1	
104-1	II	16' - 0" x 14' - 0" x 0' - 1 1/2"	STEEL	PAINTED	N/A	HW2	STL.	GALV.	A5.1	A5.1	INSULATED OVERHEAD SECTIONAL DOOR
104-2	I	3' - 0" x 7' - 0" x 0' - 1 3/4"	STEEL	PAINTED	N/A	HW1	HM	PAINTED	A5.1	A5.1	

DOOR HARDWARE

GROUP	DESCRIPTION	LOCKSET	DEADBOLT	ELECTRIC STRIKE	HINGES	CLOSER	FLOOR / HEAD BOLT	ASTRAGAL	REMOVABLE MULLION	PANIC	THRESHOLD	HOLD OPEN	DOOR STOP	WEATHERSTRIP	SMOKE SEAL	ACOUSTICAL SEAL	DOOR SWEEP	REMARKS
HW1	EXTERIOR EGRESS DOOR WITH ACCESS CONTROL	STORAGE	N/A	No	BALL BEARING	Yes	No	No	No	No	Yes	CLOSER	CLOSER	Yes	No	No	Yes	KEYPAD ACCESS
HW2	OVERHEAD SECTIONAL DOOR WITH DOOR OPENER	N/A	N/A	No	N/A	No	No	No	No	No	No	N/A	N/A	Yes	No	No	No	AUTOMATIC DOOR OPENER, 3 BUTTON CONTROL

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Door Info and Assemblies
Bid / Permit
2/21/2023

LICENSED ARCHITECT AR-984031 MICHEAL P. WALKER STATE OF IDAHO

ITD Clarkia Salt Shed
Highway 3 - Milepost 58.1
Clarkia, Idaho

No.	Description	Date

PROJECT NUMBER 1954
PRINCIPAL Designer
PROJECT MANAGER Author

A5.1

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STRUCTURAL - GENERAL NOTES

GENERAL REQUIREMENTS

GOVERNING CODE: The design and construction of this project is governed by the **"International Building Code (IBC)", 2018 Edition**, hereafter referred to as the IBC, as adopted and modified by Shoshone County, ID understood to be the Authority Having Jurisdiction (AHJ).

REFERENCE STANDARDS: **Refer to Chapter 35 of 2018 IBC**. Where other Standards are noted in the drawings, use the latest edition of the standard unless a specific date is indicated. Reference to a specific section in a code does not relieve the contractor from compliance with the entire standard.

DEFINITIONS: The following definitions cover the meanings of certain terms used in these notes:

"**Architect/Engineer**" – The Architect of Record and the Structural Engineer of Record.

- "**Structural Engineer of Record**" **(SER)** – The structural engineer who is licensed to stamp & sign the structural documents for the project. The SER is responsible for the design of the Primary Structural System.
- "**Submit for review**" **-** Submit to the Architect/SER for review prior to fabrication or construction.
- "**Per Plan**" – Indicates references to the structural plans, elevations and structural general notes.
- "**Seismic Force Resisting System (SFRS)**" **–** A recognized structural system of components (beams, braces, drags, struts, collectors, diaphragms, columns, walls, etc) of the primary structure that are specially designed and proportioned to resist earthquake-induced ground motions and maintain stability of the structure. Fabrication and installation of components designated as part of the SFRS require the general contractor, subcontractor, or supplier who is responsible for any portion of SFRS fabrication or installation to comply with special requirements (including, but not limited to, material control, compliance certifications, personnel qualifications, documentation, reporting requirements, etc) and to provide the required Quality Control including the required coordination of Special Inspections (Quality Assurance – QA). Special provisions apply to any member designated as part of the SFRS. Refer to plans, elevations, details, Design Criteria and Symbols and Legends for applicable members and connections.
- **"Specialty Structural Engineer" (SSE) –** A professional engineer (PE or SE), licensed in the State where the project is located, (typically not the SER), who performs specialty structural engineering services for selected specialty-engineered elements identified in the Contract Documents, and who has experience and training in the Specialty. Documents stamped and signed by the SSE shall be completed by or under the direct supervision of the SSE.
- **"Bidder-designed" –** Components of the structure that require the general contractor, subcontractor, or supplier who is responsible for the design, fabrication and installation of specialty-engineered elements identified in the Contract Documents to retain the services of an SSE. Submittals of "Bidder-designed" elements shall be stamped and signed by the SSE.

SPECIFICATIONS: Refer to the project specifications issued as part of the contract documents for information supplemental to these drawings.

OTHER DRAWINGS: Refer to the architectural, mechanical, electrical, civil and plumbing drawings for additional information including but not limited to: dimensions, elevations, slopes, door and window openings, non-bearing walls, stairs, finishes, drains, waterproofing, railings, mechanical unit locations, and other nonstructural items.

STRUCTURAL DETAILS: The structural drawings are intended to show the general character and extent of the project and are not intended to show all details of the work. Use entire detail sheets and specific details referenced in the plans as "typical" wherever they apply. Similarly, use details on entire sheets with "typical" in the name wherever they apply.

STRUCTURAL RESPONSIBILITIES: The structural engineer (SER) is responsible for the strength and stability of the primary structure in its completed form.

COORDINATION: The Contractor is responsible for coordinating details and accuracy of the work; for confirming and correlating all quantities and dimensions; for selecting fabrication processes; for techniques of assembly; and for performing work in a safe and secure manner.

MEANS, METHODS and SAFETY REQUIREMENTS: The contractor is responsible for the means and methods of construction and all job related safety standards such as OSHA and DOSH (Department of Occupational Safety and Health). The contractor is responsible for means and methods of construction related to the intermediate structural conditions (i.e. movement of the structure due to moisture and thermal effects; construction sequence; temporary bracing, etc).

BRACING/SHORING DESIGN ENGINEER: The contractor shall at their discretion employ an SSE, a registered professional engineer for the design of any temporary bracing and shoring.

TEMPORARY SHORING, BRACING: The contractor is responsible for the strength and stability of the structure during construction and shall provide temporary shoring, bracing and other elements required to maintain stability until the structure is complete. It is the contractor's responsibility to be familiar with the work required in the construction documents and the requirements for executing it properly.

CONSTRUCTION LOADS: Loads on the structure during construction shall not exceed the design loads as noted in DESIGN CRITERIA & LOADS below or the capacity of partially completed construction as determined by the Contractor's SSE for Bracing/Shoring.

CHANGES IN LOADING: The contractor has the responsibility to notify the SER of any architectural, mechanical, electrical, or plumbing load imposed onto the structure that differs from, or that is not documented on the original Contract Documents (architectural / structural / mechanical / electrical or plumbing drawings). Provide documentation of location, load, size and anchorage of all undocumented loads in excess of **400** pounds. Provide marked-up structural plan indicating locations of any new equipment or loads. Submit plans to the Architect/Engineer for review prior to installation.

NOTE PRIORITIES: Plan and detail notes and specific loading data provided on individual plans and detail drawings supplements information in the Structural General Notes.

DISCREPANCIES: In case of discrepancies between the General Notes, Specifications, Plans/Details or Reference Standards, the Architect/Engineer shall determine which shall govern. Discrepancies shall be brought to the attention of the Architect/Engineer before proceeding with the work. Should any discrepancy be found in the Contract Documents, the Contractor will be deemed to have included in the price the most expensive way of completing the work, unless prior to the submission of the price, the Contractor asks for a decision from the Architect as to which shall govern. Accordingly, any conflict in or between the Contract Documents shall not be a basis for adjustment in the Contract Price.

SITE VERIFICATION: The contractor shall verify all dimensions and conditions at the site. Conflicts between the drawings and actual site conditions shall be brought to the attention of the Architect/Engineer before proceeding with the work.

ADJACENT UTILITIES: The contractor shall determine the location of all adjacent underground utilities prior to earthwork, foundations, shoring, and excavation. Any utility information shown on the drawings and details is approximate and not necessarily complete.

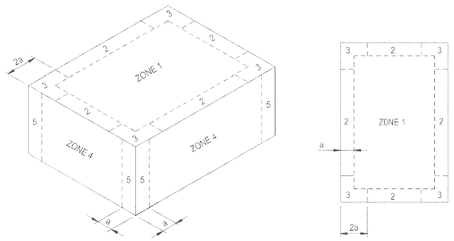
ALTERNATES: Alternate products of similar strength, nature and form for specified items may be submitted with adequate technical documentation (proper test report, etc.) to the Architect/Engineer for review. Alternate materials that are submitted without adequate technical documentation or that significantly deviate from the design intent of materials specified may be returned without review. Alternates that require substantial effort to review will not be reviewed unless authorized by the Owner.

DESIGN CRITERIA AND LOADS

OCCUPANCY:	Risk Category of Building per 2018 IBC Table 1604.5 =	**II**

WIND DESIGN:	**MAIN WIND FORCE RESISTING SYSTEM**		
	Ultimate Design Wind Speed, V_{ULT} (MPH)		**103**
	Exposure Category		**B**
	Internal Pressure Coefficient	**Cpi =**	**+/- 0.18**
	Topographic Factor	**Kzt =**	**1.0**
	Wind Analysis procedure used:		**Envelope**

WIND DESIGN: **COMPONENTS & CLADDING PRESSURES FOR DESIGN (PSF, ULTIMATE)**



ISOMETRIC VIEW PLAN VIEW

EFFECTIVE WIND AREA (SQ. FT)

a = 6'-0"	10	20	50	100	500
ZONE 1	7.8/-30.5	7/-28.9	6.3/-25.6	6.2/-24	6.2/-19.2
ZONE 2	7.8/-40.3	7/-37.8	6.3/-33.8	6.2/-32.1	6.2/-25.6
ZONE 3	7.8/-54.9	7/-50	6.3/-41.9	6.2/-37.8	6.2/-25.6
ZONE 4	19.2/-20.8	18.3/-20	17.5/-19.2	15.9/-17.5	14.3/-15.9
ZONE 5	19.2/-25.6	18.3/-24	17.5/-22.4	15.9/-20.8	14.3/-15.9

1) Components and Cladding Wind Pressures are based on ASCE 7-16 Chapter 30 Part 3: Buildings with h > 60 ft.
2) Components and Cladding zone locations are based on ASCE 7-16 Table 30.5-1 for Flat Roofs $\theta < 10$ deg.
3) For parapets around the perimeter of the roof equal to or higher than 3 ft, Zone 3 shall be treated as Zone 2.
4) All Parapet Components and Cladding Wind Pressures shall be determined through ASCE 7-16 Figure 30.6 -2.

SEISMIC DESIGN:	**Seismic Design Category:**	**SDC =**	**C**
	Basic Structural System		**Bearing Wall**
	Seismic Force Resisting System		**Light-Frame (Wood) Walls**
	Response Modification Factor:	**R =**	**6.5**
	System Over Strength Factor	**Omega =**	**3**
	Deflection Amplification Factor	**Cd =**	**4**
	Site Classification per IBC 1613.3.2 & ASCE 7-16, Ch. 20 **Site Class =**		**D**
	Seismic Importance Factor per ASCE 7-16 Table 1.5-2	**Ie =**	**1.0**
	Spectral Response Acceleration (Short Period)	**S_s =**	**0.308 g**
	Spectral Response Acceleration (1-Second Period)	**S_1 =**	**0.107 g**
	Spectral Design Response Coefficient (Short Period)	**S_{DS} =**	**0.319 g**
	Spectral Design Response Coefficient (1-Second Period)	**S_{DI} =**	**0.17 g**
	Seismic response coefficient(s)	**Cs =**	**0.049**
	Redundancy Factor (North/South Direction)	**N/S rho=**	**1.0**
	Redundancy Factor (East / West Direction)	**E/W rho=**	**1.0**
	Design Base Shear (North/South Direction)	(KIPS)	**12 OR 16 AT ADD ALTERNATE #1**
	Design Base Shear (East / West Direction)	(KIPS)	**12 OR 16 AT ADD ALTERNATE #1**
	Base shear governed by:		**Wind**
	Seismic Analysis procedure used:		**Equivalent Lateral Force (ELF)**

SNOW LOAD: (1)	Flat Roof Snow Load, (PSF)	p_f =	**86** (2)
	Snow Drift Loading required by Authority Having Jurisdiction?		**Yes**
	Snow Load Importance Factor	I_s =	**1.0** (3)
	Ground Snow Load, (PSF)	p_g =	**114**
	Snow Exposure Factor	C_e =	**B**
	Thermal Factor	C_t =	**1.2**
	See Roof Plan for Drift Loading		

1) Snow Load is un-reducible and includes 5 psf rain-on-snow surcharge where ground snow load is greater than zero and 20 psf or less per ASCE 7-16 Section 7.10.
2) Snow Load Importance Factor per ASCE 7-16 Table 1.5-2.

DESIGN LIVE LOADS	**AREA**	**LIVE LOADS (PSF) UNO**	**REMARKS & FOOTNOTES** (6)
	Roofs	20 PSF or 300 LB	Area load is reducible. Point load per note (2). See above for Snow Load

(1) Place 300 lb concentrated load over 2"x2" area at any point to produce maximum stress. Area load and concentrated load are to be considered separately with worst case used for design.

DESIGN DEAD LOADS	BIDDER DESIGN	DEAD LOADS (PSF) UNO	REMARKS & FOOTNOTES
	Roof Dead Load, Total Top Chord Bottom Chord	**[15]** PSF **[10]** PSF **[5]** PSF	For Pre-Fabricated Wood Truss design.

DRAWING LEGEND

MARK	DESCRIPTION	MARK	DESCRIPTION
F2.0	FOOTING SYMBOL (REFER TO SPREAD FOOTING SCHEDULE)		INDICATES DIRECTION OF DECK SPAN
P1	PILE CAP SYMBOL (REFER TO PILE CAP SCHEDULE)		INDICATES WIDE FLANGE COLUMN
A	TILT-UP/PRECAST CONCRETE WALL CONNECTION SYMBOL (REFER TO CONNECTION DETAIL)		INDICATES HOLLOW STRUCTURAL SECTION (HSS) COLUMN OR TUBE STEEL (TS) COLUMN
W6	SHEAR WALL SYMBOL (REFER TO SHEAR WALL SCHEDULE)		INDICATES HOLLOW STRUCTURAL SECTION (HSS) COLUMN OR STEEL PIPE COLUMN
1	REVISION TRIANGLE		INDICATES WOOD POST
1	TILT-UP/PRECAST CONCRETE WALL PANEL NUMBER (REFER TO TILT-UP/ PRECAST CONCRETE WALL ELEVATIONS)		INDICATES BUNDLED STUDS
1	CMU WALL REINFORCING SYMBOL (REFER TO CMU WALL REINFORCING SCHEDULE)		INDICATES CONCRETE COLUMN
8"	CONTINUITY PLATE LENGTH (REFER TO TYPICAL DETAIL)		INDICATES PRECAST CONCRETE COLUMN
DS	INDICATES DOUBLE SHEAR CONNECTION (REFER TO THE DOUBLE SHEAR PLATE CONNECTIONS DETAIL)		INDICATES MOMENT FRAME CONNECTION
SR	INDICATES NUMBER OF STUD RAIL REQUIRED AT COLUMN (REFER TO STUD RAIL DETAILS)		INDICATES DRAG CONNECTION
1	ROOF/FLOOR DIAPHRAGM NAILING SYMBOL (REFER TO DIAPHRAGM NAILING SCHEDULE)		INDICATES WOOD OR STEEL STUD WALL
C1	STEEL COLUMN SYMBOL (REFER TO STEEL COLUMN SCHEDULE)		INDICATES MASONRY/CMU WALL
T/SLAB X"-X"	ELEVATION SYMBOL (T/ REFERS TO COMPONENT THAT THE ELEVATION REFERENCES)		INDICATES CONCRETE/TILT-UP CONCRETE WALL
3	STUD BUBBLE (INDICATES NUMBER OF STUDS REQUIRED IF EXCEEDS NUMBER SPECIFIED IN PLAN NOTE)		INDICATES WOOD OR STEEL STUD SHEAR WALL
STP	INDICATES STEP IN FOOTING (REFER TO TYPICAL STEP IN FOOTING DETAIL)		INDICATES BEARING WALL BELOW
X/SX.X	DETAILS OR SECTION CUT (DETAIL NUMBER/SHEET NUMBER)		INDICATES EXISTING WALL
X SX.X	DETAILS OR SECTION CUT IN PLAN VIEW (DETAIL NUMBER/SHEET NUMBER)		POST-TENSION DEAD END (PLAN)
X/SX.X	INDICATES LOCATION OF CONCRETE WALLS, SHEAR WALLS OR BRACED FRAME ELEVATIONS		POST-TENSION STRESSING END (PLAN)
	STRUCTURAL EXTENT SYMBOL SINGLE ARROW = END OF EXTENT DOUBLE ARROW = CONTINUOUS EXTENT ALONG THE ELEMENT LINE UNTIL THE ELEMENT IS INTERRUPTED	3	POST-TENSION PROFILE (PLAN) (IN INCHES)
			INTERMEDIATE STRESSING (PLAN)

ABBREVIATIONS

∠	Angle	FDN	Foundation	PSI	Pounds Per Square Inch
AB	Anchor Bolt	FIN	Finish	PSL	Parallel Strand Lumber
ADDL	Additional	FLR	Floor	P-T	Post-Tensioned
ADH	Adhesive	FRP	Fiberglass Reinforced Plastic	PT	Pressure Treated
ALT	Alternate	FRT	Fire Retardant Treated	R	Radius
ARCH	Architectural	FTG	Footing	RD	Roof Drain
B or BOT	Bottom	F/	Face of	REF	Refer/Reference
B/	Bottom Of	GA	Gage	REINF	Reinforcing
BLDG	Building	GALV	Galvanized	REQD	Required
BLKG	Blocking	GEOTECH	Geotechnical	RET	Retaining
BMU	Brick Masonry Unit	GL	Glue Laminated Timber	SB	Site-Built
BP	Baseplate	GWB	Gypsum Wall Board	SCBF	Special Concentric Braced Frame
BRBF	Buckling Restrained Braced Frame	HDR	Header	SCHED	Schedule
BRG	Bearing	HF	Hem-Fir	SER	Structural Engineer of Record
BTWN	Between	HGR	Hanger	SFRS	Seismic Force-Resisting System
℄	Centerline	HD	Hold-down	SHTHG	Sheathing
C	Camber	HORIZ	Horizontal	SIM	Similar
CB	Castellated Beam	HP	High Point	SLBB	Short Leg Back-to-Back
C'BORE	Counterbore	HSS	= TS (Hollow Structural Section)	SMF	Special Moment Frame
CIP	Cast in Place	IBC	International Building Code	SOG	Slab on Grade
CJ	Construction or Control Joint	ID	Inside Diameter	SP	Southern Pine
CJP	Complete Joint Penetration	IE	Invert Elevation	SPEC	Specification
CLG	Ceiling	IF	Inside Face	SQ	Square
CLR	Clear	INT	Interior	SR	Studrail
CLT	Cross-Laminated Timber	k	Kips	SF	Square Foot
CMU	Concrete Masonry Unit	KSF	Kips Per Square Foot	SST	Stainless Steel
COL	Column	LF	Lineal Foot	STAGG	Stagger/Staggered
CONC	Concrete	LL	Live Load	STD	Standard
CONN	Connection	LLBB	Long Leg Back-to-Back	STIFF	Stiffener
CONST	Construction	LLH	Long Leg Horizontal	STL	Steel
CONT	Continuous	LLV	Long Leg Vertical	STRUCT	Structural
C'SINK	Countersink	LP	Low Point	SWMJ	Solid Web Wood Joist
CTRD	Centered	LONGIT	Longitudinal	SYM	Symmetrical
ø	Diameter	LSL	Laminated Strand Lumber	T	Top
DB	Drop Beam	LVL	Laminated Veneer Lumber	T/	Top Of
DBA	Deformed Bar Anchor	MAS	Masonry	T&B	Top & Bottom
DBL	Double	MAX	Maximum	TC AX LD	Top Chord Axial Load
DEMO	Demolish	MECH	Mechanical	TCX	Top Chord Extension
DEV	Development	MEZZ	Mezzanine	TDS	Tie Down System
DF	Douglas Fir	MFR	Manufacturer	T&G	Tongue & Groove
DIAG	Diagonal	MIN	Minimum	THKND	Thickened
DIST	Distributed	MISC	Miscellaneous	THRD	Threaded
DL	Dead Load	NIC	Not In Contract	THRU	Through
DN	Down	NLT	Nail-Laminated Timber	TRANSV	Transverse
DO	Ditto	NTS	Not To Scale	TYP	Typical
DP	Depth/Deep	OC	On Center	UNO	Unless Noted Otherwise
DWG	Drawing	OCBF	Ordinary Concentric Braced Frame	URM	Unreinforced Masonry Unit
(E)	Existing	OD	Outside Diameter	VERT	Vertical
EA	Each	OF	Outside Face	W	Wide
EF	Each Face	OPNG	Opening	W/	With
EL	Elevation	OPP	Opposite	W/O	Without
ELEC	Electrical	OWSJ	Open Web Steel Joist	WHS	Welded Headed Stud
ELEV	Elevator	OWWJ	Open Web Wood Joist	WP	Working Point
EMBED	Embedment	PL	Plate	WWF	Welded Wire Fabric
EQ	Equal	PAF	Powder Actuated Fastener	±	Plus or Minus
EQUIP	Equipment	PC	Precast		
EW	Each Way	PERP	Perpendicular		
EXP	Expansion	PLWD	Plywood		
EXP JT	Expansion Joint	PJP	Partial Joint Penetration		
EXT	Exterior	PREFAB	Prefabricated		
FB	Factory-Built	PSF	Pounds per Square Foot		
FD	Floor Drain				

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CIVIL / STRUCTURAL

FOR BID (NOT FOR CONSTRUCTION)

These drawings have been released at the request of the client for the purpose of bidding. These drawings are not intended for purposes of obtaining a permit or construction.

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General Notes
BID SET
02/03/2023

ITD SALT SHED
ST. HWY 3 MILEPOST 58.1
CLARKIA, ID 83812

REV.	DATE

DCI PROJECT NO.: 20041-0058
DESIGNED BY: KEA/KP
DRAWN BY: AJF
SHEET NO.: S1.1

SUBMITTALS

SUBMIT FOR REVIEW: SUBMITTALS of shop drawings, and product data are required for items noted in the individual materials sections and for *bidder designed* elements.

SUBMITTAL REVIEW PERIOD: Submittals shall be made in time to provide a minimum of TWO WEEKS or 10 WORKING DAYS for review by the Architect/Engineer prior to the onset of fabrication.

GENERAL CONTRACTOR'S PRIOR REVIEW: Prior to submission to the Architect/Engineer, the Contractor shall review the submittal for completeness. Dimensions and quantities are not reviewed by the SER, and therefore, must be verified by the General Contractor. Contractor shall provide any necessary dimensional details requested by the Detailer and provide the Contractor's review stamp and signature before forwarding to the Architect/ Engineer.

SHOP DRAWING REVIEW: Once the contractor has completed their review, the SER will review the submittal for general conformance with the design concept and the contract documents of the building and will stamp the submittal accordingly. Markings or comments shall not be construed as relieving the contractor from compliance with the project plans and specifications, nor departures there from. The SER will return submittals in the form they are submitted in (either hard copy or electronic). For hard copy submittals, the contractor is responsible for submitting the required number of copies to the SER for review.

SHOP DRAWING DEVIATIONS: When shop drawings (component design drawings) differ from or add to the requirements of the structural drawings they shall be designed and stamped by the responsible SSE.

DEFERRED SUBMITTALS

BIDDER-DESIGNED ELEMENTS
Submit "Bidder-Designed" deferred submittals to the Architect and SER for review. The deferred submittals shall also be submitted to the city for approval, if required by the city.

Design of prefabricated, "bidder designed", manufactured, pre-engineered, or other fabricated products shall comply with the following requirements:

1) Design considers tributary dead, live, wind and earthquake loads in combinations required by IBC.
2) Design within the Deflection Limits noted herein and as specified or referenced in the IBC.
3) Design shall conform to the specifications and reference standards of the governing code.
4) Submittal shall include:
   a. Calculations prepared, stamped and signed by the SSE demonstrating code conformance.
   b. Engineered component design drawings are prepared, stamped and signed by the SSE.
   c. Product data, technical information and manufacturer's written requirements and Agency approvals as applicable.
   d. SSE may submit to the Architect/Engineer, a request to utilize relevant alternate design criteria of similar nature and generally equivalency which is recognized by the Code and acceptable to the Authority Having Jurisdiction. Submit adequate documentation of design.

DEFLECTION	VERTICAL	LIMIT
LIMITS FOR SSE / BIDDER	Roof Members, Dead + Live or Snow or Wind, Total Load (TL) Deflection	L / 180, where (L is span length,inches)
DESIGNED	Roof, Live or Snow or Wind Load (RLL)	L / 240

GENERAL CONTRACTOR'S PRIOR REVIEW: Once the contractor has completed their review of the SSE component drawings, the SER will review the submittal for general conformance with the design of the building and will stamp the submittal accordingly. Review of the Specialty Structural Engineer's (SSE) shop drawings (component design drawings) is for compliance with design criteria and compatibility with the design of the primary structure and does not relieve the SSE of responsibility for that design. All necessary bracing, ties, anchorage, proprietary products shall be furnished and installed per manufacturer's instructions or the SSE's design drawings and calculations. These elements include but are not limited to:

- Steel Stairs
- Handrails, Guardrails and Balcony Rail Anchorages
- Mechanical, Electrical, Plumbing & Sprinkler Hanger Plans
- Prefabricated Wood Roof Trusses

INSPECTIONS, QUALITY ASSURANCE VERIFICATIONS AND TEST REQUIREMENTS

INSPECTIONS: Foundations, footings, under slab systems and framing are subject to inspection by the Building Official in accordance with IBC 110.3. Contractor shall coordinate all required inspections with the Building Official.

SPECIAL INSPECTIONS, VERIFICATIONS and TESTS: Special Inspections, Verifications and Testing shall be done in accordance with IBC Chapter 17, the STATEMENT AND SCHEDULES OF SPECIAL INSPECTIONS listed in these drawings, and the AHJ STATEMENT OF SPECIAL INSPECTION.

STRUCTURAL OBSERVATION: per IBC Section 1704.6

Structural Observation is the visual observation of the structural system by a registered design professional for general conformance to the approved construction documents. It is not always required on a project, does not include or waive the responsibility for the special inspections and tests required by a Special Inspector per IBC Chapter 17, is not continuous, and does not certify conformance with the approved construction documents.

Structural Observation for this project is not required per IBC Section 1704.6.

CONTRACTOR RESPONSIBILITY: Prior to issuance of the building permit, the Contractor is required to provide the Authority Having Jurisdiction a signed, written acknowledgement of the Contractor's responsibilities associated with the above Statement of Special Inspections addressing the requirements listed in IBC Section 1704.4. Contractor is referred to IBC Sections 1705.12.5 and 1705.12.6 for architectural and MEP building systems that may be subject to additional inspections (based on the building's designated Seismic Design Category listed in the CRITERIA), including anchorage of HVAC ductwork containing hazardous materials, piping systems and mechanical units containing flammable, combustible or highly toxic materials, electrical equipment used for emergency or standby power, exterior wall panels and suspended ceiling systems.

SOILS AND FOUNDATIONS

REFERENCE STANDARDS: Conform to IBC Chapter 18 "Soils and Foundations."

GEOTECHNICAL REPORT: Recommendations contained in **Geotechnical Evaluation Proposed Salt Shed State Highway 3 Mile Post 58.1 Clarkia, Idaho 83812 Allwest project No. 319-167G** by **Allwest** dated **December 6, 2019** were used for design.

CONTRACTOR'S RESPONSIBILITIES: Contractor shall be responsible to review the Geotechnical Report and shall follow the recommendations specified therein including, but not limited to, subgrade preparations, pile installation procedures, ground water management and steep slope Best Management Practices."

GEOTECHNICAL SUBGRADE INSPECTION: The Geotechnical Engineer shall inspect all sub-grades and prepared soil bearing surfaces, prior to placement of foundation reinforcing steel and concrete. Geotechnical Engineers shall provide a letter to the owner stating that soils are adequate to support the "Allowable Foundation Bearing Pressure(s)" shown below.

DESIGN SOIL VALUES:

Safety Factor per Soils Report	1.5	
Allowable Foundation Bearing Pressure	2500	PSF – Structural Fill
Active Lateral Pressure (unrestrained)	30	PSF/FT
At-Rest Lateral Pressure (restrained)	35	PSF/FT
Coefficient of Sliding Friction	0.45	

FOUNDATIONS and FOOTINGS: Foundations shall bear either on competent native soil or compacted structural fill as per the geotechnical report. Exterior perimeter footings shall bear not less than **30** inches below finish grade, unless otherwise specified by the geotechnical engineer and/or the building official.

FOOTING DEPTH: Tops of footings shall be as shown on plans with vertical changes as indicated with steps in the footings; locations of steps shown as approximate and shall be coordinated with the civil grading plans.

SLABS-ON-GRADE: All slabs-on-grade shall bear on compacted structural fill or competent native soil per the geotechnical report. All moisture sensitive slabs-on-grade or those subject to receive moisture sensitive coatings/ covering shall be provided with an appropriate capillary break and vapor barrier/retardant over the subgrade prepared and installed as noted in the geotechnical report, barrier manufacturer's written recommendations and coordinated with the finishes specified by the Architect.

CAST-IN-PLACE CONCRETE

REFERENCE STANDARDS: Conform to:
(1) ACI 301-16 "Specifications for Structural Concrete"
(2) IBC Chapter 19 "Concrete"
(3) ACI 318-14 "Building Code Requirements for Structural Concrete"
(4) ACI 117-10 "Specifications for Tolerances for Concrete Construction and Materials"

FIELD REFERENCE: The contractor shall keep a copy of ACI Field Reference manual, SP-15, "Standard Specifications for Structural Concrete (ACI 301) with Selected ACI and ASTM References."

CONCRETE MIXTURES: Conform to ACI 301 Section 4 "Concrete Mixtures" and IBC Section 1904.1.

MATERIALS: Conform to ACI 301 Section 4.2.1 "Materials" for requirements for cementitious materials, aggregates, mixing water and admixtures.

SUBMITTALS: Provide all submittals required by ACI 301 Section 4.1.2. Submit mix designs for each mix in the table below. Substantiating strength results from past tests shall not be older than 24 months per ACI 318 Section 26.4.3.1 (b).

TABLE OF MIX DESIGN REQUIREMENTS

Member Type/Location	Strength f'c (psi)	Test Age (days)	Nominal Maximum Aggregate	Exposure Class	Max W/C Ratio	Air Content	Notes (1 to 9 Typical UNO)
Foundations and Stemwalls	3000	28	1"	-	-	-	
Interior Slabs on Grade	3000	28	1"	F3	-	-	
Retaining Walls	3000	28	1"	F3	0.50	6%	-

Table of Mix Design Requirements Notes:

(1) W/C Ratio: Water–cementitious material ratios shall be based on the total weight of cementitious materials. Maximum ratios are controlled by strength noted in the Table of Mix Design Requirements and durability requirements given in ACI 318 Section 19.3.

(2) Cementitious Materials:
   a. DCI encourages the reduction of cement content and/or the use of blended hydraulic cements. Where requirements of this section prohibit inclusion of any of these mixes, contact DCI for further coordination.
   b. The use of fly ash, other pozzolans, silica fume, or slag shall conform to ACI 318 Sections 19.3.2 and 26.4.2.2.
   c. For concrete used in elevated floors, minimum cementitious-materials content shall conform to ACI 301 Table 4.1.2.9. Acceptance of lower cement content is contingent on providing supporting data to the SER for review and acceptance.
   d. Cementitious materials shall conform to the relevant ASTM standards listed in ACI 318 Section 26.4.1.1.1(a).

(3) Air Content: Conform to ACI 318 Section 19.3.3.1. Minimum standards for exposure class are noted in the table. If freezing and thawing class is not noted, air content given is that required by the SER. Tolerance is ±1-½%. Air content shall be measured at point of placement.

(4) Aggregates shall conform to ASTM C33.

(5) Slump: Conform to ACI 301 Section 4.2.2.2. Slump shall be determined at point of placement.

(6) Chloride Content: Conform to ACI 318 Table 19.3.2.1.

(7) ACI 318, Section 19.3.1.1 exposure classes shall be assumed to be F0, S0, W0, and C0 unless different exposure classes are listed in the Table of Mix Design Requirements that modify these base requirements.

FORMWORK & RESHORING: Conform to ACI 301 Section 2 "Formwork and Form Accessories." Removal of Forms shall conform to Section 2.3.2 except strength indicated in Section 2.3.2.5 shall be 0.75 f' c.

MEASURING, MIXING, AND DELIVERY: Conform to ACI 301 Section 4.3.

HANDLING, PLACING, CONSTRUCTING AND CURING: Conform to ACI 301 Section 5. In addition, hot weather concreting shall conform to ACI 305R-10 and cold weather concreting shall conform to ACI 306R-10.

CONSTRUCTION JOINTS: Conform to ACI 301 Sections. 2.2.2.5 and 5.3.2.6. Construction joints shall be located and detailed as on the construction drawings. Submit alternate locations per ACI 301 Section 5.1.2.4(a) for review and approval by the SER two weeks minimum prior to forming. Use of an acceptable adhesive, surface retardant, portland cement grout or roughening the surface is not required unless specifically noted on the drawings.

EMBEDDED ITEMS: Position and secure in place expansion joint material, anchors and other structural and non-structural embedded items before placing concrete. Contractor shall refer to mechanical, electrical, plumbing and architectural drawings and coordinate other embedded items.

GROUT: Use 7000 psi non-shrink grout under column base plates.

POST-INSTALLED ANCHORS to CONCRETE: Anchor location, type, diameter and embedment shall be as indicated on drawings. Reference the POST INSTALLED ANCHORS section for applicable Post-Installed Anchor Adhesives. Anchors shall be installed and inspected in strict accordance with the applicable ICC-Evaluation Service Report (ESR). Special inspection shall be per the TESTS and INSPECTIONS section.

CONCRETE PLACEMENT TOLERANCE: Conform to ACI 117-10 for concrete placement tolerance.

CONCRETE REINFORCEMENT

REFERENCE STANDARDS: Conform to:
(1) ACI 301-16 "Standard Specifications for Structural Concrete", Section 3 "Reinforcement and Reinforcement Supports."
(2) ACI SP-66(04) "ACI Detailing Manual"
(3) CRSI MSP-09, 28th Edition, "Manual of Standard Practice."
(4) ANSI/AWS D1.4: 2005, "Structural Welding Code - Reinforcing Steel."
(5) IBC Chapter 19-Concrete.
(6) ACI 318-14 "Building Code Requirements for Structural Concrete."
(7) ACI 117-10 "Specifications for Tolerances for Concrete Construction and Materials"

SUBMITTALS: Conform to ACI 301 Section 3.1.2 "Submittals." Submit placing drawings showing fabrication dimensions and placement locations of reinforcement and reinforcement supports.

MATERIALS:

Reinforcing Bars	ASTM A615, Grade 60, deformed bars. ASTM A706, Grade 60, deformed bars.
Smooth Welded Wire Fabric	ASTM A1064
Deformed Welded Wire Fabric	ASTM A1064
Bar Supports	CRSI MSP-09, Chapter 3 "Bar Supports."
Tie Wire	16 gage or heavier, black annealed.

FABRICATION: Conform to ACI 301, Section 3.2.2. "Fabrication", and ACI SP-66 "ACI Detailing Manual."

WELDING: Bars shall not be welded unless authorized. When authorized, conform to ACI 301, Section 3.2.2.2. "Welding", AWS D1.4, and provide ASTM A706, grade 60 reinforcement.

PLACING: Conform to ACI 301, Section 3.3.2 "Placing." Placing tolerances shall conform to ACI 117.

CONCRETE COVER: Conform to the following cover requirements unless noted otherwise in the drawings.

Concrete cast against earth	3"
Concrete exposed to earth or weather	2"
Ties in columns and beams	1-½"
Bars in walls	¾"

SPLICES: Conform to ACI 301, Section 3.3.2.7, "Splices". Refer to "Typical Lap Splice and Development Length Schedule" for typical reinforcement splices.

FIELD BENDING: Conform to ACI 301 Section 3.3.2.8. "Field Bending or Straightening." Bar sizes #3 through #5 may be field bent cold the first time. Subsequent bends and other bar sizes require preheating. Do not twist bars. Bars shall not be bent past 45 degrees.

TYPICAL CONCRETE REINFORCEMENT: Unless noted on the plans, concrete walls shall have the following minimum reinforcement. Contractor shall confirm minimum reinforcement of walls with SER prior to rebar fabrication.

POST-INSTALLED ANCHORS (INTO CONCRETE AND MASONRY)

REFERENCE STANDARDS: Conform to:
1) IBC Chapter 19 "Concrete"
2) ACI 318-19 "Building Code Requirements for Structural Concrete"
3) IBC Chapter 21 "Masonry"
4) TMS 402-16 "Building Code Requirements for Masonry Structures"

POST-INSTALLED ANCHORS: Install only where specifically shown in the details or allowed by SER. All post-Installed anchors types and locations shall be approved by the SER and shall have a current ICC-Evaluation Service Report that provides relevant design values necessary to validate the available strength exceeds the required strength. Submit current manufacturer's data and ICC ESR report to SER for approval regardless of whether or not it is a pre-approved anchor. Anchors shall be installed in strict accordance to ICC-ESR and the manufacturer's printed installation instructions (MPII) in conjunction with edge distance, spacing and embedment depth as indicated on the drawings. The contractor shall arrange for a manufacturer's field representative to provide installation training for all products to be used, prior to the commencement of work. Only trained installer shall perform post installed anchor installation. A record of training shall be kept on site and be made available to the SER as requested. Adhesive anchors installed in horizontally or upwardly inclined orientation shall be performed by a certified adhesive anchor installer (AAI) as certified through ACI/CRSI or approved equivalent. Proof of current certification shall be submitted to the engineer for approval prior to commencement of installation. No reinforcing bars shall be damaged during installation of post-installed anchors. Special inspection shall be per the TESTS and INSPECTIONS section. Anchor type, diameter and embedment shall be as indicated on drawings.

1. ADHESIVE ANCHORS: The following Adhesive-type anchoring systems have been used in the design and shall be used for anchorage to CONCRETE as applicable and in accordance with corresponding current ICC ESR report. Reference the corresponding ICC ESR report for required minimum age of concrete, concrete temperature range, moisture condition, light weight concrete, and hole drilling and preparation requirements. Drilled-in anchor embedment lengths shall be as shown on drawings, or not less than 7 times the anchor nominal diameter (7D). Adhesive anchors are to be installed in concrete aged a minimum of 21 days, unless otherwise specified in the ICC ESR report.
   a. HILTI "HIT-HY 200" – ICC ESR-3187 for anchorage to CONCRETE
   b. SIMPSON "SET-XP" – ICC ESR 2508 for anchorage to CONCRETE
2. SCREW ANCHORS: The following Screw type anchor is pre-approved for anchorage to CONCRETE or MASONRY in accordance with corresponding current ICC ESR report:
   a. SIMPSON "TITEN HD" – ICC ESR-2713 for CARBON STEEL to CONCRETE
   b. HILTI "KH-EZ" – ICC ESR-3027 for anchorage to CONCRETE

STRUCTURAL STEEL

REFERENCE STANDARDS: Conform to:
1) IBC Chapter 22 – "Steel"
2) ANSI/AISC 303-16 – "Code of Standard Practice for Steel Buildings & Bridges"
3) AISC – "Manual of Steel Construction", Fifteenth Edition (2016)
4) ANSI/AISC 360-16 – "Specification for Structural Steel Buildings"
5) AWS D1.1:2015 – "Structural Welding Code – Steel"
6) 2014 RCSC – "Specification for Structural Joints using High-Strength Bolts"

SUBMITTALS: Submit the following documents to the SER for review:

(1) SHOP DRAWINGS complying with AISC 360 Sections M1and N3 and AISC 303 Section 4.
(2) ERECTION DRAWINGS complying AISC 360 Sections M1and N3 and AISC 303 Section 4.

Make copies of the following documents "Available upon Request" to the SER or Owner's Inspection Agency in electronic or printed form prior to fabrication per AISC 360 Section N3.2 requirements:

(1) Fabricator's written Quality Control Manual that includes, as a minimum:
   a. Material Control Procedures
   b. Inspection Procedures
   c. Non-conformance Procedures
(2) Steel & Anchor Rod suppliers' Material Test Reports (MTR's) indicating the compliance with specifications.
(3) Fastener manufacturer's Certification documenting conformance with the specification.
(4) Filler metal manufacturer's product data for SMAW, FCAW and GMAW indicating:
   a. Product specification compliance
   b. Recommended welding parameters
   c. Recommended storage and exposure requirements including baking
   d. Limitations of use
(5) Welded Headed (Shear) Stud Anchors Manufacturer's certification indicating the meet specifications.
(6) Weld Procedure Specifications (WPS's) for shop and field welding.
(7) Manufacturer's Certificates of Conformance for electrodes, fluxes and gases (welding consumables).
(8) Procedure Qualification Records (PQR's) for WPS's that are not prequalified in accordance with AWS.
(9) Welding personnel Performance Qualification Records (WPQR) and continuity records conforming to AWS standards

MATERIALS:
Structural steel materials shall conform to materials and requirements listed in AISC 360 section A3 including, but not limited to:

Wide Flange (W), Tee (WT) Shapes	ASTM A992 Fy = 50 ksi
Structural Plate (PL)	ASTM A36, Fy = 36 ksi
Heavy Hex Nuts	ASTM A563, Grade and Finish per RCSC Table 2.1
Washers (Hardened Flat or Beveled)	ASTM F436, Grade and Finish per RCSC Table 2.1
Anchor Rods (Anchor Bolts, typical)	ASTM F1554, Gr. 36

STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS:

1) ASTM F3125 Gr. A325-N bolts – "threads NOT excluded in the shear plane".
2) High-strength bolted joints have been designed as "BEARING" connections.
3) Provide ASTM Bolt Grade and Type as specified in the Materials section above.
4) Provide Washers over outer ply of slotted holes and oversize holes per RCSC Table 6.1.
5) Provide Nut and Washer grades, types and finishes conforming to RCSC specification Table 2.1.
6) Provide *fastener assemblies* from a single supplier.
7) Joint Types shall be:
   a. ST - "Snug Tight", for typical beam end "shear" connections, unless noted otherwise.
   b. SC - "Slip Critical", where specifically indicated. Provide with Class A Faying surface.
8) Install bolts in joints in accordance with the RCSC Specification Section 8 and Table 4.1.
9) Inspection is per RCSC Section 9.

ANCHORAGE to CONCRETE:

1) EMBEDDED STEEL PLATES for Anchorage to Concrete: Plates (PL) embedded in concrete with studs (WHS) or dowel bar anchors (DBA) shall be of the sizes and lengths as indicated on the plans with minimum 1/2" dia. WHS x 6" long but provide not less than ¾" interior cover or 1 ½" exterior cover to the opposite face of concrete, unless noted otherwise.
2) COLUMN ANCHOR RODS and BASE PLATES: All columns (vertical member assemblies weighing over 300 pounds) shall be provided with a **minimum of four ¾" diameter anchor rods**. Column base plates shall be at least ¾" thick, unless noted otherwise. Cast-in-place anchor rods shall be provided unless otherwise approved by the Engineer. Unless noted otherwise, embedment of cast-in-place anchor rods shall be 12 times the anchor diameter (12D).

FABRICATION:

1) Conform to AISC 360 Section M2 "Fabrication" and AISC 303 Section 6 "Shop Fabrication".
2) Quality Control (QC) shall conform to:
   a. AISC 360 Chapter N "Quality Control and Quality Assurance" and
   b. AISC 303 Section 8 "Quality Control",
   c. Fabricator and Erector shall establish and maintain written Quality Control (QC) procedures per AISC 360 section N3.
   d. Fabricator shall perform self-inspections per AISC 360 section N5 to ensure that their work is performed in accordance with Code of Standard Practice, the AISC Specification, Contract Documents and the Applicable Building Code.
   e. QC inspections may be coordinated with Quality Assurance inspections per Section N5.3 where fabricators QA procedures provide the necessary basis for material control, inspection, and control of the workmanship expected by the Special Inspector.

WELDING:

1) Welding shall conform to AWS D1.1 with Prequalified Welding Processes except as modified by AISC 360 section J2. Welders shall be qualified in accordance with AWS D1.1 requirements.
2) Use 70ksi strength, low-hydrogen type electrodes (E7018) or E71T as appropriate for the process selected.
3) Welding of high strength anchor rods is prohibited unless approved by Engineer.
4) Welding of headed stud anchors shall be in accordance with AWS D1.1 Chapter 7 "Stud Welding".

DCI ENGINEERS®
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Spokane, Washington 99201
P: (509) 455-4448 www.dci-engineers.com
CIVIL / STRUCTURAL

JUSTIN B. COOK LICENSED 13697 STATE OF IDAHO PROFESSIONAL ENGINEER

FOR BID (NOT FOR CONSTRUCTION)

These drawings have been released at the request of the client for the purpose of bidding. These drawings are not intended for purposes of obtaining a permit or construction.

ERECTION:

1) Conform to AISC 360 Section M4 "Erection" and AISC 303 Section 7 "Erection".
2) Conform to AISC 360 Chapter N "Quality Control and Quality Assurance" and AISC 303 Section 8.
   a. The Erector shall maintain detailed erection quality control procedures that ensure that the work is performed in accordance with these requirements and the Contract Documents.
3) Steel work shall be carried up true and plumb within the limits defined in AISC 303 Section 7.13.
4) High strength bolting shall comply with the RCSC requirements including RCSC Section 7.2 "Required Testing", as applicable and AISC 360 Chapter J, Section M2.5 and Section N5.6.
5) Welding of HEADED STUD ANCHORS shall be in accordance with AWS D1.1 Chapter 7 "Stud Welding.
6) Provide Headed (Shear) Stud Anchors welded through the metal deck to tops of beams denoted in plans.
7) The contractor shall provide temporary bracing and safety protection required by AISC 360 Section M4.2 and AISC 303 Section 7.10 and 7.11.

PROTECTIVE COATING REQUIREMENTS:

1) SHOP PAINTING: Conform to AISC 360 Section M3 and AISC 303 Section 6.5 unless otherwise specified by the project specifications.
2) INTERIOR STEEL:
   a. Unless noted otherwise, ***do not paint*** any of the steel surfaces meeting the following conditions:
      - Concealed by the interior building finishes,
      - Fireproofed,
      - Embedded in concrete,
      - Specially prepared as a "faying surface" for Type-SC "slip-critical" connections including bolted connections that form a part of the Seismic Force Resisting System governed by AISC 341 unless the coating conforms to requirements of the RCSC Bolt Specification and is approved by the Engineer.
      - Welded; if area requires painting, do not paint until after weld inspections and non-destructive testing requirement, if any, are satisfied.
   b. Interior steel, exposed to view, shall be painted with one coat of shop primer unless otherwise indicated in the project specifications. Field touch-ups to match the finish coat or as otherwise indicated in the project specifications.
3) EXTERIOR STEEL: Exposed exterior steel shall be protected by either:
   a. Paint with an exterior multi-coat system as per the project specifications. Field touch-up painting shall be to match top coat.
4) Steel need not be primed or painted unless noted otherwise on the drawings or in the project specifications. Conform to AISC 360 Section M3 and AISC 303 Section 6.5 unless a multi-coat system is required per the project specifications.

STEEL STAIRS

REFERENCE STANDARDS: Conform to:
1) IBC Chapter 10 – "Means of Egress", IBC Table 1607.1 – "Minimum Uniformly Distributed Live Loads and Minimum Concentrated Live Loads"
2) NAAMM – "Metals Stairs Manual"
3) ANSI/AISC 360-16 – "Specification for Structural Steel Buildings"
4) AISI S100-16 – "North American Specification for the Design of Cold-Formed Steel Structural Members"
5) AWS D1.1:2014 - "Structural Welding Code - Steel"
6) AWS D1.3:2008 - "Structural Welding Code - Sheet Steel"

SUBMITTALS: Steel stairs are to be prepared by an SSE. Reference DEFINITIONS and DEFERRED SUBMITTALS above. Submit structural calculations and shop drawings (component design drawings) stamped by a professional Structural Engineer registered in the state of **Idaho.**

MATERIALS:

Structural WF Shapes	ASTM A992
Steel Channels, Angles, Plates & Bar	ASTM A36
Sheet Steel (Galvanized)	ASTM A446
Steel Pipe Rail	ASTM A53, Grade B
Steel Tubing	ASTM A500, Grade B
Steel Rod	ASTM A36 or A307
Steel Deck	1-1/2" Composite Floor Deck
Bolts	ASTM F3125 Gr. A325N
Welds, Structural Steel	AWS D1.1
Welds, Sheet Steel	AWS D1.3
Welded Headed Studs (WHS)	ASTM A108, AWS D1.1
Headed Concrete Anchors (HCA)	ASTM A108, AWS D1.1

STRUCTURAL REQUIREMENTS:

(1) Scope: Include treads, risers, stringers, landings, railings and all connections including connections to the primary structure unless noted otherwise. All inserts required for attachment to the primary structure shall be designed and provided by the stair supplier.

(2) Loads: Stair treads shall be designed for 100 PSF live load or a 300 lb. concentrated load placed to produce maximum stress, whichever controls. Stringers and landings shall be designed for 100 PSF live load. Live load deflection shall not exceed 1/360 of the span. The stair assembly and attachment to the main structure shall be designed for lateral loads per IBC Chapter 16 and ASCE 7-10 Section 13.3 "Seismic Demands on Non-structural Components." Stairs shall be designed as egress stairs with a seismic importance factor (I_p) =1.5 unless otherwise noted by the Architect.

(3) Railings: The completed handrail, guardrail, and supporting structure and their connections shall be designed to resist loads as specified in IBC Section 1607.8.

(4) Deflection Compatibility: Stair design shall account for the load effects generated by the primary structure's seismic inelastic story drifts as provided in the DESIGN CRITERIA AND LOADS section and as defined in ASCE 7-10 Section 12.8.6.

(5) Anchorage to Concrete: Portions of the stair system anchored to concrete shall be designed for the over-strength (Ω_o) factor as defined in ASCE 7-10 Table 13.5-1.

ARCHITECTURAL REQUIREMENTS: Conform to shape and configuration shown on the architectural drawings. Consult the project specifications for additional information. All steel shall be painted per project specifications with one coat of standard shop primer unless noted otherwise on the drawings or in the specifications.

CONCRETE FILL: Conform to notes, this sheet for CAST-IN-PLACE CONCRETE and CONCRETE REINFORCEMENT. Provide minimum 3000 psi concrete and WWF 6x6-W1.4xW1.4 or Fibermesh unless noted on the drawings.

WOOD FRAMING

REFERENCE STANDARDS: Conform to:
(1) IBC Chapter 23 "WOOD"
(2) NDS - "2018 National Design Specification (NDS) for Wood Construction"
(3) ANSI/AWC – SDPWS-15: Special Design Provisions for Wind and Seismic
(4) APA D510C-12 Plywood Design Specification
(5) ANSI/TPI 1-2014 "National Design Standard for Metal-Plate-Connected Wood Truss Construction"
(6) BCSI B1 "Guide to Good Practice for Handling, Installing, Restraining & Bracing of Trusses"
(7) TPI DSB "Recommended Design Specification for Temporary Bracing of Metal Plate Connected Wood Trusses"
(8) APA Report TT-045B "Minimum Nail Penetration for Wood Structural Panel Connections Subject to Lateral Loads"
(9) APA Report TT-061 "1-5/16 Inch-Thick I-Joist Flanges and Diaphragm Nail Penetration

SUBMITTALS: Submit shop drawings to the Architect/Engineer for review. Shop drawings shall include member size, spacing, camber, material type, grade, shop and field assembly details and connections, types and location of bolts and other fasteners. Supply shop drawings for the following:

MILLER STAUFFER ARCHITECTS
601 E. Front Ave., Ste 201
Coeur d'Alene, ID 83814
P 208.664.1773 F 208.667.3174
www.millerstauffer.com

ITD SALT SHED
ST. HWY 3 MILEPOST 58.1
CLARKIA, ID 83812

General Notes
BID SET
02/03/2023

REV.	DATE

DCI PROJECT NO.: 20041-0058
DESIGNED BY: KEA/KP
DRAWN BY: JLP
SHEET NO.: S1.2

20041-0058-S12.dwg 1-Feb-23 11:38 AM jpeterson

DEFERRED SUBMITTALS: Submit product data and proof of ICC approval for framing members and fasteners that have been designed by others. Submit calculations prepared by the SSE in the state of **Idaho** for all members and connections designed by others along with shop drawings. All necessary bridging, blocking, blocking panels and web stiffeners shall be detailed and furnished by the supplier. Temporary and permanent bridging shall be installed in conformance with the manufacturer's specifications. Deflection limits shall be as noted under DEFERRED SUBMITTLALS section specific details. Products included are:

- Metal plate connected trusses (prefabricated trusses) Conform to IBC Section 2303.4. Truss Supplier to provide design and materials for all permanent truss bracing. Shop drawings shall provide for shapes, bearing points, intersections, hips, and valleys shown on the drawings. The manufacturer shall provide special hip, valley and intersection areas (step down trusses, jack trusses and girder trusses) unless specifically indicated on the plans. Provide all truss-to-truss and truss-to-support connection details and required connection materials. Specify temporary and permanent bracing and connections on the shop drawings. Provide all truss reactions on shop drawings.

IDENTIFICATION: All sawn lumber and pre-manufactured wood products shall be identified by the grade mark or a certificate of inspection issued by the certifying agency.

MATERIALS:

- Sawn Lumber: Conform to grading rules of WWPA, WCLIB or NLGA and Table below. Finger jointed studs acceptable at interior walls only.

TABLE of SOLID SAWN LUMBER

Member Use	Size	Species	Grade
Wall Stud/ Top & Bottom Plates	2x4, 3x4, 2x6, 3x6	Doug Fir Larch	No. 2
Sill Plate (at concrete)	2x4, 3x4, 2x6, 3x6	PT Doug Fir Larch	No. 2
Post	4x4, 4x6, 4x8	Doug Fir Larch	No. 2
Floor or Roof Joist	2x6 through 2x12	Doug Fir Larch	No. 2
Beam	4x8 through 4x12	Doug Fir Larch	No. 2
Beam	6x8 through 6x12	Doug Fir Larch	No. 1
Post or Timber	6x6, 8x8	Doug-Fir Larch	No. 1

- Glued Laminated Timber: Conform to ANSI 117**-2015** "Standard Specifications for Structural Glue-laminated Timber of Softwood Species, Manufacturing and Design" and ANSI A190.1 "Structural Glued Laminated Timber." Camber all glued laminated beams, except cantilevered and continuous beams, to 3000' radius, unless shown otherwise on the plans. Fabricate cantilevered and continuous beams flat, unless shown otherwise on plans.

TABLE of GLULAM and GRADE

Member	Sizes	Species	Comb. Symbol	Uses
Beams	All	DF/DF	24F–V4	Simple Spans
Beams	All	DF/DF	24F–V8	Continuous or with Cantilever Spans
Columns	All	DF	L2	Post, Truss Member

- Glued Laminated Timber: PRESERVATIVE TREATMENT – (TREATED AFTER GLUING): Glued laminated timber requiring preservative treatment shall be in accordance with AWPA Standard U1 and T1. Retentions shall be:

  UC1: interior construction, above ground, dry-interior construction and furnishings
  UC2: Interior construction, above ground, damp-interior construction.
  UC3B: Exterior construction, above ground, uncoated or poor water run-off-decking, deck joists, railings, fence pickets, uncoated millwork
  UC4A: Ground contact or fresh water, non-critical components-fence, deck and guardrail posts, crosstie and utility poles.

TABLE of GLULAM USE and PRESERVATIVE PENETRATION (PCF) REQUIREMENTS

USE CATEGORY	PRESERVATIVE SYSTEM		
UC1, UC2, UC3B	**PCP-A or PCP-C**	**Cu-8-Q**	**CuN**
Southern Pine	0.30 PCF	0.02 PCF	0.04 PCF
Coastal Douglas-fir	0.30 PCF	Not Applicable	0.04 PCF
Western Hemlock, Hem-fir	0.30 PCF	0.02 PCF	0.04 PCF
UC4A			
Southern Pine	0.60 PCF	NA	0.06 PCF
Coastal Douglas-fir	0.60 PCF	NA	0.06 PCF
Western Hemlock, Hem-fir	0.60 PCF	NA	0.06 PCF

Glulam that is to be preservative-treated should be trademarked with the APA EWS stamp and must be bonded with wet-use adhesives conforming to ANSI A190.1. **Incising is required** for Douglas-fir, western hemlock and hem-fir. Most glue laminated timber to be pressure-treated will be in custom sizes and should be ordered to exact dimensions when possible to avoid filed cuts, which must be retreated. In addition, all fabrication, cutting and pre-drilling of holes for fasteners is recommended prior to preservative-treating. Field treatment should be applied to saturation by dipping, brushing, spraying, soaking or coating in accordance with AWPA Standard M4.

Fasteners used to connect preservative-treated glue laminated timber should be corrosion resistant to withstand the effects of the high-moisture environment to which these members are typically exposed. Aluminum should not be used in direct contact with wood treated with copper based solutions.

- Wood Structural Sheathing (Plywood): Wood APA-rated structural sheathing includes: all veneer plywood, oriented strand board, waferboard, particleboard, T1-11 siding, and composites of veneer and wood based material with T&G joint. **Architect** may disallow OSB. Confirm with **Architect**. Conform to "Construction and Industrial Plywood" based on Product Standard PS 1-09 by the U.S. Dept. of Commerce, and "Performance Standard for Wood-Based Structural-Use Panels" based on Product Standard PS 2-10 by the U.S. Dept. of Commerce and "Plywood Design Specification" based on APA D510C-12 by the American Plywood Association. Unless noted otherwise, sheathing shall comply with the following table:

TABLE of SHEATHING - Use, Minimum Thickness and Minimum APA Rating

Location	Thickness	Span Rating	Plywood Grade	Exposure
Roof	19/32"	40/20	C-D	1
Walls	15/32"	32/16	C-D	1

Unless noted otherwise on drawings, install roof and floor panels with long dimension across supports and with panel continuous over two or more spans. End joints shall occur over supports.

- Timber Connectors: Shall be "Strong Tie" by Simpson Company as specified in their latest catalog. Alternate connectors by other manufacturers may be substituted provided they have current ICC approval for equivalent or greater load capacities and are reviewed and approved by the SER prior to ordering. Connectors shall be installed per the manufacturer's instructions. Where connector straps connect two members, place one-half of the nails or bolts in each member. Where straps are used as hold-downs, nail straps to wood framing just prior to drywall application, as late as possible in the framing process to allow the wood to shrink and the building to settle. Premature nailing of the strap may lead to strap buckling and potential finish damage.

  Where connectors are in exposed exterior applications in contact with preservative treated wood (PT) other than CCA, connectors shall be either batch hot-dipped galvanized (HDG), mechanically galvanized (ASTM B695, Class 55 minimum) stainless steel, or provided with 1.85 oz/sf of zinc galvanizing equal to or better than Simpson ZMAX finish.

  Nail straps to wood framing as late as possible in the framing process to allow the wood to shrink and the building to settle. Premature nailing of the strap may lead to strap buckling and potential finish damage.

- Fasteners (nails, bolts, screws, etc) attaching timber connectors (joist hangers, post caps and bases, etc) to PT wood shall have similar corrosion resistance properties (matching protective treatments) as the protected connector. Fasteners (nails, bolts, screws, etc) attaching sawn timber members or sheathing (shear walls) to PT wood shall be corrosion resistant; nails and lag bolts shall be either HDG (ASTM A153) or stainless steel. Verify the suitability of the fastener protection/coating with the wood treatment chemical manufacturer/ supplier.

  Provide washers under the heads and nuts of all bolts and lag screws bearing on wood.

- Lag Bolts/Bolts: Conform to ASTM A307 and IBC Section 2304.10.

- Nails and Staples: Conform to ASTM F1667 and IBC Sections 2303.6 and 2304.10.

- Engineered Wood Products (TrusJoist): The following materials are based on lumber manufactured by TrusJoist and were used for the design as shown on the plans. Alternate products by other manufacturers may be substituted provided they have current ICC approval for equivalent or greater load and stiffness properties and are reviewed and approved by the Structural Engineer prior to ordering.

  a. Laminated Veneer Lumber (LVL): Conform to **ICC ES Report No. ESR-1387** or CCMC Report No. 08675–R.
  b. Parallel Strand Lumber (PSL): Conform to **ICC ES Report No. ESR-1387** or CCMC Report No. 11161–R.
  c. Laminated Strand Lumber (LSL): Conform to **ICC ES Report No. ESR-1387** or CCMC Report No. 12627–R.
  d. Parallel Chord I-JOISTS (Deferred Submittal): Conform to **ICC Report No. ESR-1153** or CCMC Report No. 13132-R. The manufacturer shall design the joists for the spans and conditions shown on the plans. Joists shall have wood chords and solid wood webs.

TABLE of ENGINEERED WOOD Requirements

Type	Use	Widths	$E_{(10^6)}$	Fb	Fv	Fc//
			PSI	PSI	PSI	PSI
Timberstrand LSL	Rimboard, Header or Beam ≥ 9" depth	1 ¾", 3 ½"	1.55E	2,325	310	2,170
Timberstrand LSL	Wall Stud 2x4 & 2x6	1 ½"	1.3E	1,700	425	1,835
	Wall Stud >2x6	1 ½"	1.5E	2,525	505	2,105
Microllam LVL	Header, Beam	1 ½", 1 ¾"	2.0E	2,900	285	2,635

NAILING REQUIREMENTS: Conform to IBC Section 2304.10 "Connections and fasteners." Unless noted on plans, nail per Table 2304.10.1, Nailing for roof/floor diaphragms/shear walls shall be per drawings. Nails shall be driven flush and shall not fracture the surface of sheathing. Alternate nails may be used but are subject to review and approval by the Structural Engineer. Substitution of staples for the nailing of rated sheathing is subject to review by the structural engineer prior to construction.

STANDARD LIGHT-FRAME CONSTRUCTION: Unless noted on the plans, construction shall conform to IBC Section 2308 "Conventional Light-Frame Construction."

WOOD SHRINKAGE AND EXPANSION: Wood materials will expand or contract based on relative changes in moisture. The contractor is responsible for means and methods of construction related to mitigating and managing the effects of changes in moisture.

MOISTURE CONTENT: The contractor shall make provisions during handling and construction to prevent the structural wood members from exceeding the appropriate moisture content limits. The moisture content for solid sawn wood material used for this project shall not exceed 19%. The moisture content for engineered wood products, laminated lumber and sheathing shall not exceed the limits required by the manufacturer or 12%, whichever is less. The moisture content limits may be more stringent for particular product requirements (eg. finishes, cladding, insulation systems, etc.). The contractor shall refer to the Architect's drawings, project specifications, or installer/product requirements for additional requirements.

SHRINKAGE COMPENSATION FOR MECHANICAL, ELECTRICAL, AND PLUMBING SYSTEMS: MEP systems, including ductwork, pipes, and other elements that run continuously between levels shall be installed/designed in such a manner to accommodate shrinkage in the wood framing. Wood shrinkage amounts will vary depending on the construction process and materials used. The anticipated shrinkage under typical conditions is expected to range between 1/8" and 1/4" per floor.

CLADDING COMPATIBILITY: The Architect/Owner and contractor shall review the cladding, finishes, insulation systems, other non-structural components and construction procedures proposed for the project with respect to their performance over wood framing. EIFS systems should be avoided on wood-framed projects due to problems with moisture proofing. Note that DCI is not responsible for the attachment of the cladding to the wood studs which needs to be verified and provided by the cladding supplier.

PRESERVATIVE TREATMENT (PT): Wood materials that are required to be "treated wood" in accordance with IBC Section 2304.12. "Protection Against Decay and Termite Protection" shall conform to the appropriate standards of the American Wood-Preservers Association (AWPA) for sawn lumber, glued laminated timber, round poles, wood piles and marine piles. Follow American Lumber Standards Committee (ALSC) quality assurance procedures. Products shall bear the appropriate mark. Fasteners or anchors in treated wood shall be of stainless steel or hot-dipped galvanized or as per IBC 2304.10.5.

Mud sill plates in normally dry interior applications may be treated with Sodium Borate (DOT - Disodium Octaborate Tetrahydrate) as recent studies have noted less connector corrosion potential than other available wood treatments or the original CCA treated sill plates. Wood treated with Sodium Borate shall be protected during shipment, storage and installation to minimize leaching of the water-soluble preservative from the lumber. Sodium borate pressure treated plates do not require hot-dipped galvanized connectors.

If using preservative treatments other than CCA or sodium borate, fasteners must be hot dipped galvanized or stainless steel. Wood treated with Alkaline Copper Quaternary (ACQ) requires steel components in contact with the wood to be stainless (nails, bolts, screws, washers & lag screws). Fasteners (nails, bolts, screws, washers & lag screws) attaching timber connectors (joist hangers, post caps and bases, etc) to PT wood shall have similar corrosion resistance properties (matching protective treatments) as the protected connector; that is, use hot dipped galvanized or stainless-steel fasteners. Fasteners (nails, bolts, screws, washers & lag screws) attaching sawn timber members or sheathing (shear walls) to Pressure Treated wood shall be corrosion resistant (hot dipped galvanized or stainless steel).

Always verify the suitability of the fastener protection/coating with the wood treatment chemical manufacturer/ supplier.

Fire Retardant Treated (FRT) Wood: Wood material that is required to be Fire Retardant Treated Wood to conform to IBC section 2303.2 – "Fire Retardant Treated Wood." Submit ICC report to SEOR for review and approval prior to construction.

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JESSIONA KENCAID LICENSED 13697 STATE OF IDAHO JUSTIN B. COOK

FOR BID (NOT FOR CONSTRUCTION)
These drawings have been released at the request of the client for the purpose of bidding. These drawings are not intended for purposes of obtaining a permit or construction.

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General Notes
BID SET
02/03/2023

ITD SALT SHED
ST. HWY 3 MILEPOST 58.1
CLARKIA, ID 83812

REV.	DATE

DCI PROJECT NO.: 20041-0058
DESIGNED BY: KEA/KP
DRAWN BY: JLP
SHEET NO.: S1.3

SPECIAL INSPECTIONS

The following Statement and Schedules of Inspections are those Special Inspections and Tests that shall be performed for this project. Special Inspectors shall reference these plans and IBC Chapter 17 for all special inspection requirements.
The owner shall retain an "approved agency" per IBC 1703 to provide special inspections for this project. Special Inspectors shall be qualified persons per IBC 1704.2.1.
Special inspection reports shall be provided on a weekly basis. Submit copies of all inspection reports to the Architect/Engineer and the Authority Having Jurisdiction for review. In addition to special inspection reports and tests, submit reports and certificates noted in IBC 1704.5 to the Authority Having Jurisdiction. Final special inspection reports will be required by each special inspection firm per IBC 1704.2.4.

STATEMENT OF SPECIAL INSPECTIONS:
This statement of Special Inspections has been written with the understanding that the Building Official will:
- **Review and approve the qualifications of the Special Inspectors**
- **Monitor the special inspection activity on the project site to assure that Special Inspectors are qualified and performing their duty as state within this statement.**
- **Review all Special Inspection Reports submitted to them by the Special Inspector**
- **Perform inspections as required by IBC Section 110.3.**

The following Special Inspections are applicable to this project:
- **Special Inspections for Standard Buildings (per IBC 1705.1) REQUIRED**
- **Special Inspections for Seismic Resistance (per IBC 1705.12) REQUIRED**
- **Testing for Seismic Resistance (per IBC 1705.13) REQUIRED**
- **Special Inspections for Wind Resistance (per IBC 1705.11) NOT REQUIRED**

SPECIAL INSPECTION OF SHOP FABRICATED GRAVITY LOAD-BEARING MEMBERS AND ASSEMBLIES:
Special Inspection of shop fabricated Gravity Load Bearing Members & Assemblies shall be verified by the Special Inspector as stated in Section 1704.2.5

STRUCTURAL STEEL per IBC 1705.2.1

A qualified Special Inspector of an "approved agency" providing Quality Assurance (QA) Special Inspections for the project shall review and confirm the Fabricator and Erector's Quality Control (QC) procedures for completeness and adequacy relative to AISC 360-16 Chapter N, AISC 303-16 Code of Standard Practice, AWS D1.1-2015 Structural Welding Code, and 2018 IBC code requirements for the fabricator's scope of work.

- QA Agency providing Special Inspections shall provide personnel meeting the minimum qualification requirements for Inspection and Nondestructive Testing NDT per AISC 360 Section N4.
- Verify Fabricator and Erector QC Program per AISC 360 Section N2.
- Inspection of welds and bolts by both QC and QA personnel shall be per the Schedule of Special Inspections below. All provisions of AWS D1.1 Structural Welding Code for statically loaded structures shall apply.
- Nondestructive Testing (NDT) of welds:
  - Non-Destructive Testing (NDT) of welded joints per AISC 360 N5.5
  - Risk Category for determination of extent of NDT per AISC 360 N5.5b is noted in the Design Criteria and Loads section of these General Requirements.
  - NDT performed shall be documented and reports shall identify the tested weld by piece mark and location of the piece.
  - For field work, the NDT report shall identify the tested weld by location in the structure, piece mark and location of the piece.
- Additional Inspection tasks per AISC 360 Section N5.8.
- Inspection for Composite Construction shall be done per AISC 360 Section N6.

POST-INSTALLED ANCHORS TO CONCRETE AND MASONRY: shall comply with IBC Section 1703. Inspections shall be in accordance with the requirements set forth in the approved ICC Evaluation Report and as indicated by the design requirements specified on the drawings. Refer to the POST INSTALLED ANCHORS section of these notes for anchors that are the basis of the design. Special inspector shall verify anchors are as specified in the POST INSTALLED ANCHORS section of these notes or as otherwise specified on the drawings. Substitutions require approval by the SER and require substantiating calculations and current 2018 IBC recognized ICC Evaluation Services (ES) Report. Special Inspector shall document in their Special Inspection Report compliance with each of the elements required within the applicable ICC Evaluation Services (ES) Report.

PREFABRICATED CONSTRUCTION: All prefabricated construction shall conform to IBC Section 1703.

SCHEDULES OF SPECIAL INSPECTIONS:

TABLE 1705.6
REQUIRED SPECIAL INSPECTIONS AND TESTS OF SOILS

TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION
1. Verify materials below shallow foundations are adequate to achieve the design bearing capacity	-	X
2. Verify excavations are extended to proper depth and have reach proper material	-	X
3. Perform classification and testing of compacted fill materials	-	X
4. Verify use of proper materials, densities and list thickness during placement and compaction of compacted fill	X	-
5. Prior to placement of compacted fill, inspect subgrade and verify that site has been prepared properly	-	X

TABLE 1705.3
REQUIRED SPECIAL INSPECTIONS AND TESTS OF CONCRETE CONSTRUCTION

TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION	REFERENCED STANDARD	IBC [CBC] REFERENCE
1. Inspection, reinforcement, including prestressing tendons, and verify placement.	-	X	ACI 318 Ch. 20, 25.2, 25.3, 26.6.1-26.6.3	1908.4
2. Reinforcing bar welding:				
a. Verify weldability of reinforcing bars other than ASTM A706	-	X	AWS D1.4 ACI 318: 26.6.4	-
b. Inspect single pass fillet weld maximum 5/16"	-	X		
c. Inspect all other welds	X	-		
3. Inspect anchors cast in concrete	-	X	ACI 318: 17.8.2	-
5. Verify use of required design mix	-	X	ACI 318: Ch. 19, 26.4.3, 26.4.4	1904.1, 1904.2, 1908.2, 1908.3
6. Prior to concrete placement, fabricate specimens, for strength tests, perform slump and air content tests, and determine the temperature of the concrete	X	-	ASTM C172 ASTM C31 ACI 318: 26.5, 26.12	1908.10
7. Inspect concrete and shotcrete placement for proper application techniques	X	-	ACI 318: 26.5	1908.6, 1908.7, 1908.8
8. Verify maintenance of specified curing temperature and techniques	-	X	ACI 318 :26.5.3 – 26.5.5	1908.9
12. Inspect formwork for shape, location and dimensions of the concrete member being formed	-	X	ACI 318: 26.11.1.2 (b)	-

TABLE 1705.2.3
REQUIRED SPECIAL INSPECTIONS OF OPEN-WEB STEEL JOISTS AND JOIST GIRDERS

TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION	REFERENCED STANDARD
1. Installation of open-web steel joists and joist girders			
a. End connections – welding or bolted	-	X	SJI specifications listed in Section 2207.1
b. Bridging – horizontal or diagonal	-	-	-
1. Standard Bridging	-	X	SJI specifications listed in Section 2207.1
2. Bridging that differs from the SJI specifications listed in Section 2207.1	-	X	-

REQUIRED SPECIAL INSPECTIONS OF WOOD CONSTRUCTION

TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION	REFERENCED STANDARD
2. Metal Plate connected wood trusses spanning 60 feet or greater			
a. Temporary installation restraint/bracing and permanent individual truss member restraint/bracing installation	X	-	IBC Section 1705.5.2
3. Shear Walls (where fastener spacing of the sheathing is 4 inches or less on center)			[IBC Section 1705.11.1] [IBC Section 1705.12.2]
a. Anchor Bolts including proper bottom plate sizes (2x and 3x) and plate washers	-	X	
b. Hold-downs (HD) and Continuous Rod Tie-Down Systems (TDS) including squash blocks and anchors to concrete	-	X	
c. A35 and LPT shear connectors	-	X	
d. Strap Connectors	-	X	
e. Boundary Edge Nailing	-	X	
f. Plate Nailing and Panel Edge Nailing for size and spacing	-	X	
g. Blocking	-	X	
4. Blocked and Unblocked Diaphragms (where fastener spacing of the sheathing is 4 inches or less on center)			[IBC Section 1705.11.1] [IBC Section 1705.12.2]
a. Blocking and strap connections	-	X	
b. Boundary edge and panel shear nailing size and spacing	-	X	
5. Moisture Content of wood studs, plates, beams, decking, and joists	-		As directed by the Contractor to meet moisture content requirements
6. Roof truss 'hurricane clips'	-	X	

MINIMUM REQUIREMENTS FOR INSPECTIONS OF STRUCTURAL STEEL CONSTRUCTION

INSPECTION TASKS	QC	QA	REFERENCED STANDARD
INSPECTION TASKS PRIOR TO WELDING			
1. Welder qualification records and continuity records	P	O	AISC 360 TABLE N5.4-1
2. Welding procedure specifications (WPSs) available	P	P	AISC 360 TABLE N5.4-1
3. Manufacturing certifications for welding consumables available	P	P	AISC 360 TABLE N5.4-1
4. Material identification (type/grade)	O	O	AISC 360 TABLE N5.4-1
5. Welder Identification system	O	O	AISC 360 TABLE N5.4-1
6. Fit-up of groove welds (including joint geometry) • Joint preparation • Dimensions (alignment, root opening, root face, bevel) • Cleanliness (condition of steel surfaces) • Tacking (tack welding quality and location) • Backing type and fit (if applicable)	O	O	AISC 360 TABLE N5.4-1
7. Fit-up of CJP groove welds of HSS T-, Y-, and K-joints without backing (including joint geometry) • Joint preparation • Dimensions (alignment, root opening, root face, bevel) • Cleanliness (condition of steel surfaces) • Tacking (tack welding quality and location)	P	O	AISC 360 TABLE N5.4-1
8. Configuration and finish of access holes	O	O	AISC 360 TABLE N5.4-1
9. Fit-up of fillet welds • Dimensions (alignment, gaps at root) • Cleanliness (condition of steel surfaces) • Tacking (tack weld quality and location)	O	O	AISC 360 TABLE N5.4-1
10. Check welding equipment	O	-	AISC 360 TABLE N5.4-1
INSPECTION TASKS DURING WELDING			
1. Use of qualified welders	O	O	AISC 360 TABLE N5.4-2
2. Control and handling of welding consumables • Packaging • Exposure control	O	O	AISC 360 TABLE N5.4-2
3. No welding over cracked tack welds	O	O	AISC 360 TABLE N5.4-2
4. Environmental conditions • Wind speed within limits • Precipitation and temperature	O	O	AISC 360 TABLE N5.4-2
5. WPS followed • Settings on welding equipment • Travel speed • Selected welding materials • Shielding gas type/flowrate • Preheat applied • Interpass temperature maintained (min/max) • Proper position (F, V, H, OH)	O	O	AISC 360 TABLE N5.4-2
6. Welding techniques • Interpass and final cleaning • Each pass within profile limitations • Each pass meets quality requirements	O	O	AISC 360 TABLE N5.4-2
INSPECTION TASKS AFTER WELDING			
1. Welds cleaned	O	O	AISC 360 TABLE N5.4-3
2. Size, length, and locations of welds	P	P	AISC 360 TABLE N5.4-3
3. Welds meet visual acceptance criteria • Crack prohibition • Weld/base-metal fusion • Crater cross section • Weld profiles • Weld size • Undercut • Porosity	P	P	AISC 360 TABLE N5.4-3
4. Arc strikes	P	P	AISC 360 TABLE N5.4-3
5. k-area	P	P	AISC 360 TABLE N5.4-3
6. Weld access holes in rolled heavy shapes and built-up heavy shapes	P	P	AISC 360 TABLE N5.4-3
7. Backing removed and weld tabs removed (if required)	P	P	AISC 360 TABLE N5.4-3
8. Repair activities	P	P	AISC 360 TABLE N5.4-3
9. Document acceptance or rejection of welded joint or member	P	P	AISC 360 TABLE N5.4-3
10. No prohibited welds have been added without the approval of the EOR	P	P	AISC 360 TABLE N5.4-3

INSPECTION TASKS PRIOR TO BOLTING			
1. Manufacturer's certifications available for fastener materials	O	P	AISC 360 TABLE N5.6-1
2. Fasteners marked in accordance with ASTM requirements	O	O	AISC 360 TABLE N5.6-1
3. Correct fasteners selected for the joint detail (grade, type, bolt length if threads are to be excluded from shear plane)	O	O	AISC 360 TABLE N5.6-1
4. Correct bolting procedure selected for joint detail	O	O	AISC 360 TABLE N5.6-1
5. Connecting elements, including the appropriate faying surface condition and hole preparation, if specified, meet applicable requirements	O	O	AISC 360 TABLE N5.6-1
6. Pre-installation verification testing by installation personnel observed and documented for fastener assemblies and methods used.	P	O	AISC 360 TABLE N5.6-1
7. Proper storage provided for bolts, nuts, washers and other fasteners components	O	O	AISC 360 TABLE N5.6-1
INSPECTION TASKS DURING BOLTING			
1. Fastener assemblies, of suitable condition, placed in all holes and washers are positioned as required	O	O	AISC 360 TABLE N5.6-2
2. Joint brought to the snug-tight condition prior to the pre-tensioning operation	O	O	AISC 360 TABLE N5.6-2
3. Fastener component not turned by the wrench prevented from rotating	O	O	AISC 360 TABLE N5.6-2
4. Fasteners are pre-tensioned in accordance with the RCSC Specification, progressing systematically from the most rigid point toward the free edges	O	O	AISC 360-10 TABLE N5.6-2
INSPECTION TASKS AFTER BOLTING			
1. Document acceptance or rejection of bolted connections	P	P	AISC 360 TABLE N5.6-3
INSPECTION OF STEEL ELEMENTS OF COMPOSITE CONSTRUCTION PRIOR TO CONCRETE PLACEMENT			
1. Placement and installation of steel deck	P	P	AISC 360 TABLE N6.1
2. Placement and installation of steel headed stud anchors	P	P	AISC 360 TABLE N6.1
3. Document acceptance or rejection of steel elements	P	P	AISC 360 TABLE N6.1

O - Observe these items on a random basis. Operations need not be delayed pending these inspections
P - Perform these tasks for each welded joint or member, each bolted connection, or each steel element

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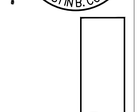

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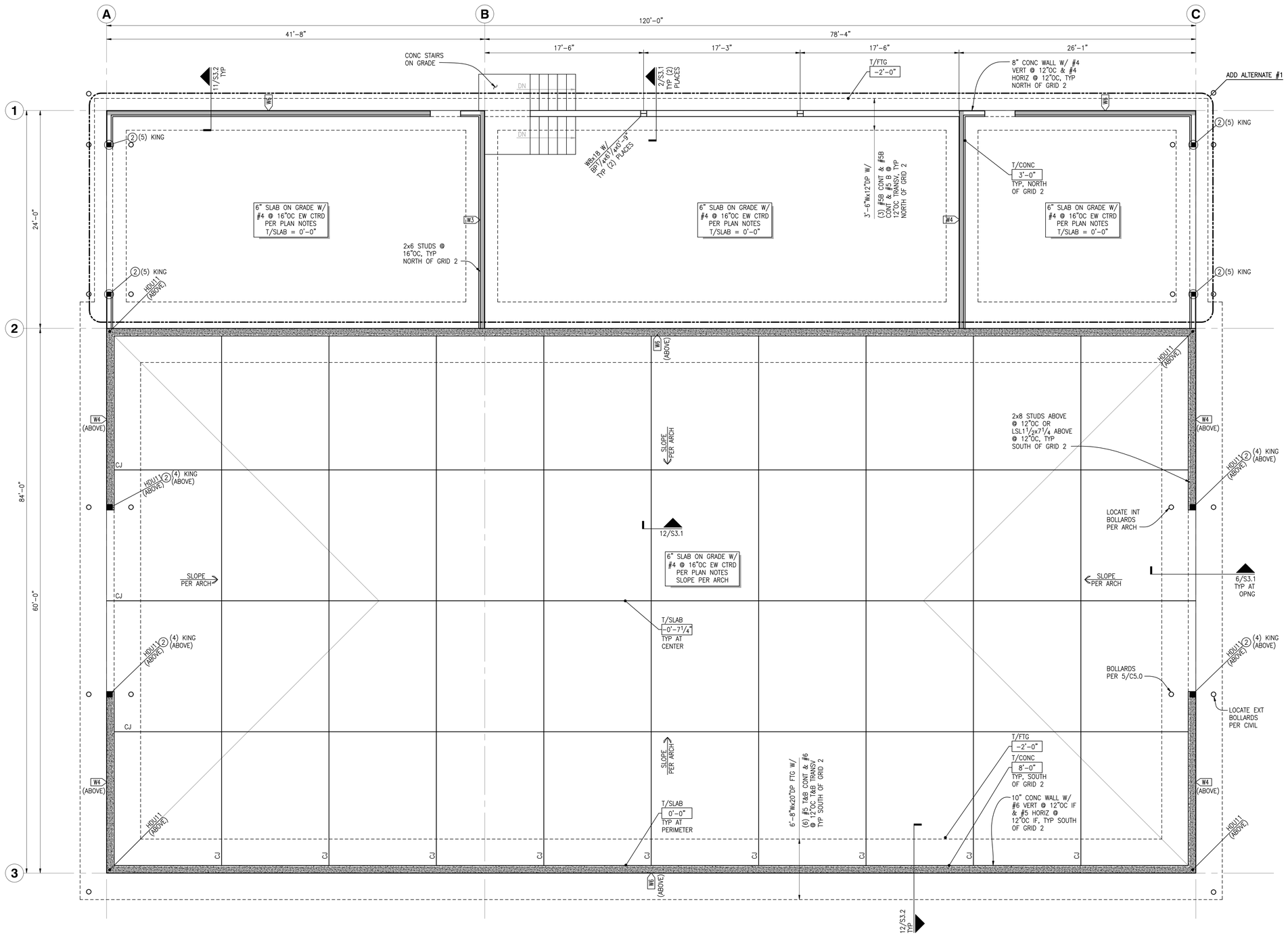
Special Inspections
BID SET
02/03/2023

ITD SALT SHED
ST. HWY 3 MILEPOST 58.1
CLARKIA, ID 83812

REV.	DATE

DCI PROJECT NO.: 20041-0058
DESIGNED BY: KE/AKP
DRAWN BY: JLF
SHEET NO.: S1.4



FOUNDATION PLAN

SCALE: 3/16"=1'-0"

FOUNDATION PLAN NOTES:

1. STRUCTURAL GENERAL NOTES, DESIGN CRITERIA, ABBREVIATIONS AND LEGEND PER S1.1, S1.2, S1.3, AND S1.4.
2. VERIFY ALL DIMENSIONS AND ELEVATIONS WITH THE ARCHITECTURAL DRAWINGS.
3. CONTRACTOR SHALL LOCATE AND VERIFY THE FOLLOWING WITH OTHERS PRIOR TO POURING CONCRETE: ALL DOOR OPENINGS IN FOUNDATION WALLS; DRAINS AND SLOPES; BLOCKOUTS FOR ALL PIPES PER MECHANICAL, PLUMBING, ELECTRICAL AND SPRINKLER DRAWINGS. CONCRETE CURBS AND LOCATIONS PER ARCHITECTURAL DRAWINGS.
4. FOR T/SLAB ELEVATION REFER TO CIVIL AND ARCHITECTURAL DRAWINGS. PROVIDE FREE-DRAINING GRANULAR FILL PER GEOTECH REPORT.
5. TYPICAL TOP OF EXTERIOR (T/EXTERIOR) FOOTING ELEVATIONS = -2'-0", UNO.
6. ALL FOOTINGS AND SLABS TO BEAR ON COMPETENT NATIVE SOIL AND/OR STRUCTURAL FILL. SUBGRADE PREPARATION, STRUCTURAL FILL, FOOTING DRAINS, AND OTHER REQUIREMENTS PER GEOTECH REPORT AS NOTED IN THE STRUCTURAL GENERAL NOTES.
7. CJ INDICATES CONTROL JOINT PER PLAN.
8. CONCRETE SLAB ON GRADE & WALL REINFORCING TO BE EPOXY COATED PER STRUCTURAL GENERAL NOTES.
9. COORDINATE ALL BOLLARD LOCATIONS WITH ARCHITECTURAL AND CIVIL.
10. TYPICAL DETAILS PER:

4/S3.1	TYPICAL LAP SPLICE SCHEDULE
7/S3.1	STANDARD HOOKS AND BAR BENDS
8/S3.1	PLAN – TYPICAL CORNER REINFORCING AT CONCRETE FOOTINGS
10/S3.1	TYPICAL PIPE AND TRENCH LOCATIONS AT CONCRETE STEMWALL/FOOTING
4/S3.2	PLAN – TYPICAL VERTICAL REVEAL AT CONCRETE WALL

STUD AND SHEAR WALL PLAN NOTES:

1. LUMBER GRADE PER STRUCTURAL GENERAL NOTES.
2. HEADERS SHOWN ON FRAMING PLAN SHALL BE SUPPORTED BY (1) TRIMMER AND (1) KING STUD MINIMUM, UNO. WHERE MORE THAN (1) TRIMMER IS REQUIRED, THE NUMBER OF TRIMMER STUDS SHALL BE NOTED THUS: ◯-② . TRIMMERS TO BE CONTINUOUS TO THE FOUNDATION.
3. BEAMS SHOWN ON FRAMING PLAN SHALL BE SUPPORTED BY (2) BUNDLED STUDS MINIMUM, UNO. WHERE MORE THAN (2) BUNDLED STUDS ARE REQUIRED, THE NUMBER OF BUNDLED STUDS SHALL BE NOTED THUS: ◯-③ . BUNDLED STUDS TO BE CONTINUOUS TO THE FOUNDATION.
4. SHEAR WALL AND NAILING REQUIREMENTS PER SHEAR WALL SCHEDULE 12/S4.1.
5. ALL EXTERIOR WALLS REQUIRING WOOD SHEATHING PER THE ARCHITECT SHALL BE SHEAR WALL TYPE W6 UNO.
6. HD 1 2 – INDICATES HOLD-DOWN TYPE PER HOLD-DOWN SCHEDULE 4/S4.1. CIRCLED NUMBER INDICATES NUMBER OF TRIM STUDS REQUIRED AND BOTTOM NUMBER INDICATES NUMBER OF FULL HEIGHT (KING) STUDS REQUIRED IN ADDITION TO BUNDLED OR TRIM STUDS OR POSTS SHOWN ON PLAN.
7. TYPICAL HOLD-DOWN ELEVATION PER 1/S3.1.
8. ANCHOR BOLTS TO BE 5/8"ø x 7" MINIMUM EMBEDMENT PER 5/S3.1. PROVIDE HOT-DIPPED GALVANIZED ANCHOR BOLTS AT PRESSURE-TREATED SILL PLATES.
9. TYPICAL DETAILS PER:

2/S4.1	TYPICAL SHEAR WALL ELEVATION
6/S4.1	TYPICAL STUD WALL OPENING (HEADER) DETAIL
10/S4.1	TYPICAL TOP PLATE SPLICE DETAIL

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Foundation Plan
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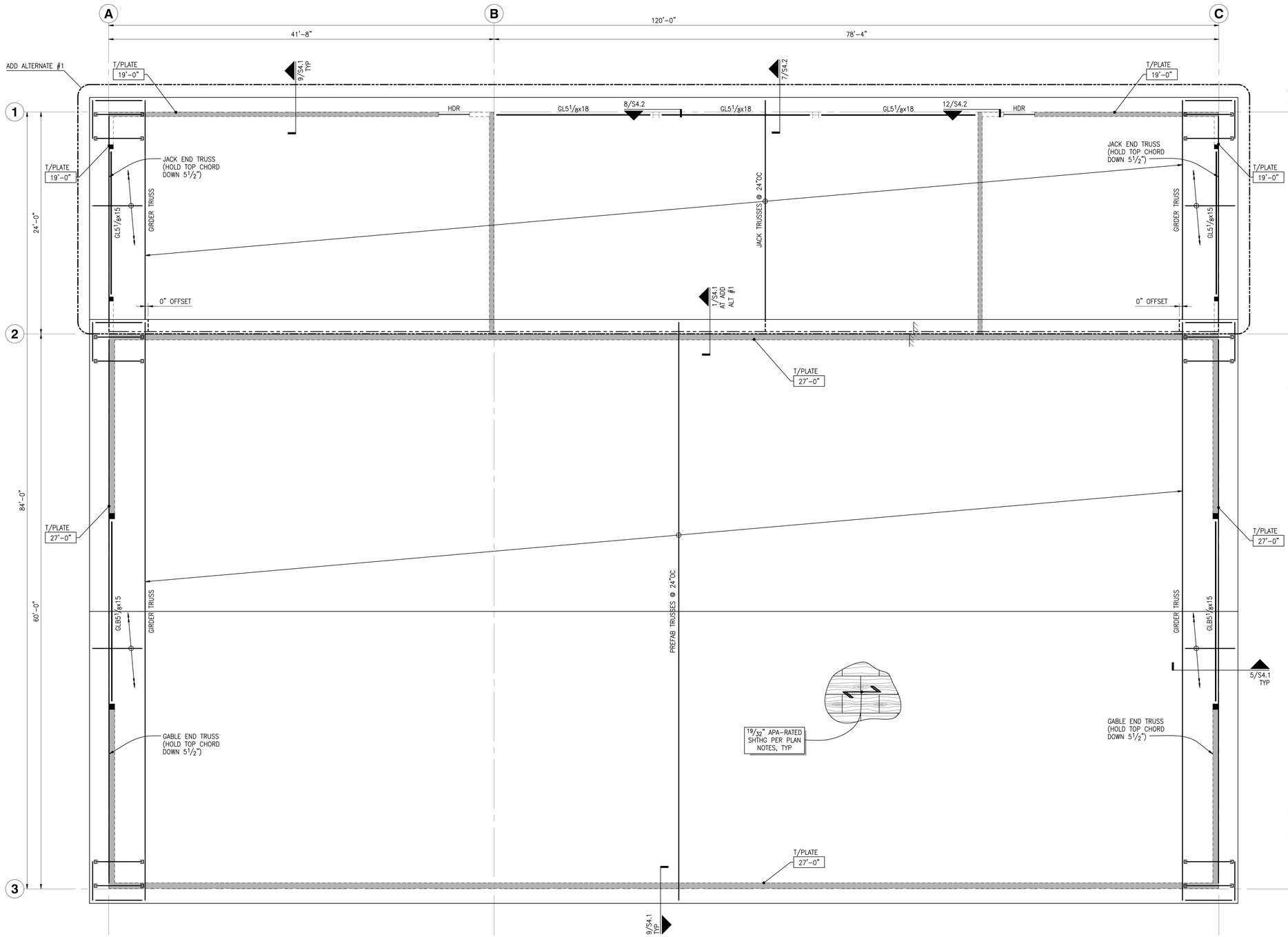
02/03/2023

ITD SALT SHED
ST. HWY 3 MILEPOST 58.1
CLARKIA, ID 83812

REV.	DATE

DCI PROJECT NO.: 20041-0058
DESIGNED BY: KEA/KP
DRAWN BY: JLP
SHEET NO.: S2.1



ROOF FRAMING PLAN NOTES:

1. STRUCTURAL GENERAL NOTES, DESIGN CRITERIA, ABBREVIATIONS AND LEGEND PER S1.1, S1.2, S1.3, AND S1.4.
2. VERIFY ALL DIMENSIONS AND ELEVATIONS WITH THE ARCHITECTURAL DRAWINGS.
3. ALL DUCTS, CHASES AND PIPES SHALL BE PER MECHANICAL, PLUMBING, ELECTRICAL AND SPRINKLER DRAWINGS. STAIR DETAILS AND GUARDRAILS PER ARCHITECTURAL DRAWINGS.
4. ROOF SHEATHING PER PLAN AND STRUCTURAL GENERAL NOTES. SHEATHING TO BE NAILED TO ROOF FRAMING WITH 0.131"ø x 2 1/2" NAILS @ 6"OC AT SUPPORTED PANEL EDGES AND @ 12"OC FIELD, UNO. LAY SHEATHING WITH FACE GRAIN (LONG DIRECTION) PERPENDICULAR TO SUPPORTS AND STAGGER PANEL END JOINTS. ALLOW 1/8" SPACE BETWEEN PANEL ENDS AND EDGES.
5. ALL 2x HANGERS TO BE TOP FLANGE BEARING SIMPSON JB TYPE, UNO. GLULAM, PARALLAM AND MICROLLAM HANGERS ARE AS SPECIFIED ON PLAN.
6. HEADERS SHOWN BUT NOT SPECIFIED ARE TO BE (2) 2x8 MINIMUM. HEADER SUPPORTS PER STUD AND SHEAR WALL PLAN ON FLOOR BELOW.
7. BEAMS ARE FLUSH FRAMED WITH JOISTS UNLESS NOTED OTHERWISE ON DETAILS, OR ON PLANS AS "DB" INDICATING THAT DROPPED BEAM FRAMING IS REQUIRED. BEAM SUPPORTS PER STUD AND SHEAR WALL PLAN ON LEVEL BELOW. PROVIDE A35 CLIP EACH SIDE OF FLUSH BEAMS THAT BEAR ON DOUBLE TOP PLATES.
8. PROVIDE SIMPSON H2.5A TIES AT ALL ROOF TRUSSES TYPICAL.
9. PROVIDE SOLID BLOCKING OVER ALL SHEAR WALLS AND BEARING WALLS. AT SHEAR WALLS PARALLEL TO FRAMING, ALIGN JOIST OR TRUSS OVER SHEAR WALL (ADDITIONAL JOISTS OR TRUSSES MAY BE REQUIRED).
10. HORIZONTAL STRAP TIES INDICATED ON THE FRAMING PLAN ARE TO BE CENTERED OVER WALL TOP PLATE AND/OR HEADER, BLOCKING OR BEAM. SPLICE REQUIREMENTS PER STRAP MANUFACTURER SPECIFICATIONS.
11. ROOF TRUSSES SHALL BE DESIGNED FOR THE FOLLOWING CRITERIA:
    - ROOF SYSTEM TO BE BIDDER DESIGNED. ROOF PLAN SHOWN IS A SUGGESTED LAYOUT. CHANGES MUST BE SUBMITTED TO THE ENGINEER-OF-RECORD THRU THE ARCHITECT WITH BEARING POINTS AND REACTIONS TO STRUCTURE.
    - TRUSS LAYOUT SHOWN IS APPROXIMATE. TRUSS SUPPLIER IS RESPONSIBLE FOR FINAL TRUSS LAYOUT AND CONFIGURATION. NOTIFY ENGINEER OF REVISIONS TO PLAN.
    - STANDARD DEAD AND LIVE LOADS AND SUBMITTAL INFORMATION PER STRUCTURAL GENERAL NOTES.
    - [2000LBS] INDICATES SHEAR TRANSFER LOAD IN ROOF TRUSS TO BE LOCATED ABOVE SHEAR WALLS TRUSS MANUFACTURER SHALL DESIGN THESE TRUSSES FOR THE BRACKETED LATERAL LOAD SPECIFIED ON PLAN, IN ADDITION TO THE DESIGN DEAD AND LIVE LOADS.
    - SHADED REGION INDICATES APPROXIMATE AREA OF OVER-FRAMING. TRUSS MANUFACTURER IS RESPONSIBLE FOR DESIGNING THE OVER-FRAMING REQUIRED. TRUSSES SHALL BE DESIGNED TO SUPPORT OVER-FRAMING IN ADDITION TO THE SPECIFIED DESIGN LOADS.
    - ALL GIRDER TRUSSES SHALL BE SUPPORTED BY A MINIMUM OF TWO STUDS. TRUSS MANUFACTURER TO SUBMIT TO ENGINEER GIRDER TRUSSES REACTIONS.
    - ALL MULTIPLE STUDS SUPPORTING HIP MASTER AND GIRDER TRUSSES TO CONTINUE TO FOUNDATION.
    - ROOF TRUSSES SHALL BE DESIGNED FOR ADDITIONAL LOADS FROM MECHANICAL UNITS, ROOF PATIO AREAS, LANDSCAPING AND PIPING. CONTRACTOR TO PROVIDE THE TRUSS SUPPLIER WITH LOCATIONS AND SUPPORT CONDITIONS OF ALL MECHANICAL, ELECTRICAL, PLUMBING, AND SPRINKLER LOADS. SPECIAL TRUSS SHAPES AND OPENING REQUIREMENTS ARE AS DESIGNATED ON PLANS.
    - PROVIDE SIMPSON H1 OR H2.5A HURRICANE TIES AT ALL ROOF TRUSSES AND ROOF JOISTS, TYPICAL.
    - TRUSS HANGERS SHALL BE SUPPLIED AND DESIGNED BY THE TRUSS SUPPLIER.
    - TRUSS MANUFACTURER TO DESIGN BEARING AT TOP PLATES FOR COMPRESSION PERPENDICULAR TO GRAIN f'c = 405psi.
14. BEARING STUD, SHEAR WALL, HOLD-DOWN, POST SIZE, AND POST CAP AND BASE REQUIREMENTS BELOW PER STUD AND SHEAR WALL PLAN.
15. FABRICATE ALL STEEL COLUMNS [-1/4"] PER FLOOR TO ALLOW FOR WOOD SHRINKAGE.

ROOF FRAMING PLAN

SCALE: 3/16"=1'-0"

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CLARKIA, ID 83812

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DCI PROJECT NO.: 20041-0058
DESIGNED BY: KEA/KP
DRAWN BY: JAP
SHEET NO.: S2.2

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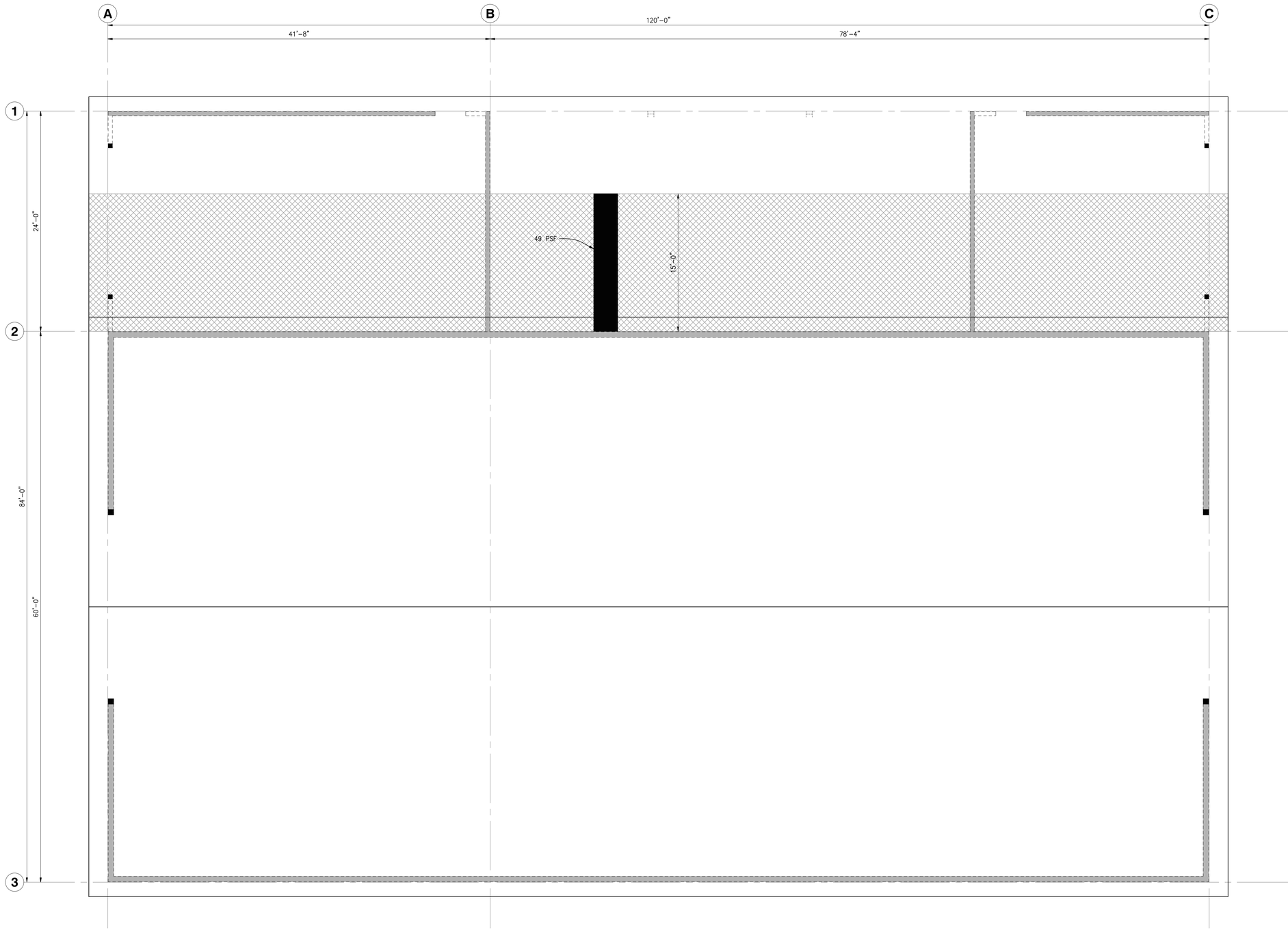

NOTES:

1. LOADS SHOWN ARE SNOW DRIFT LOADS TO BE APPLIED TO JOISTS AND GIRDERS IN addition TO LOADS SPECIFIED ON PLANS.
2. TRIANGULAR LOADS SLOPE UNIFORMLY FROM LOAD SHOWN TO ZERO.

SNOW DRIFT LOADING DIAGRAM

SCALE: 3/16"=1'-0"

N

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Snow Drift Plan
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02/03/2023

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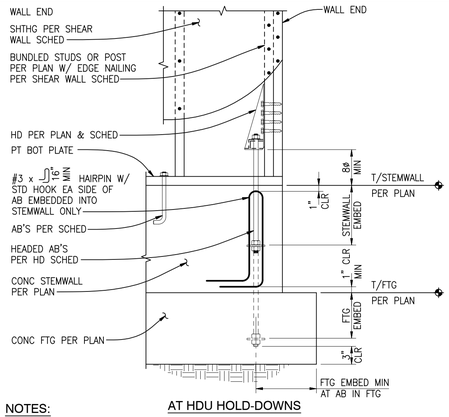
CLARKIA, ID 83812

REV.	DATE

DCI PROJECT NO.: 20041-0058
DESIGNED BY: KEA/KP
DRAWN BY: JAP
SHEET NO.: S2.3



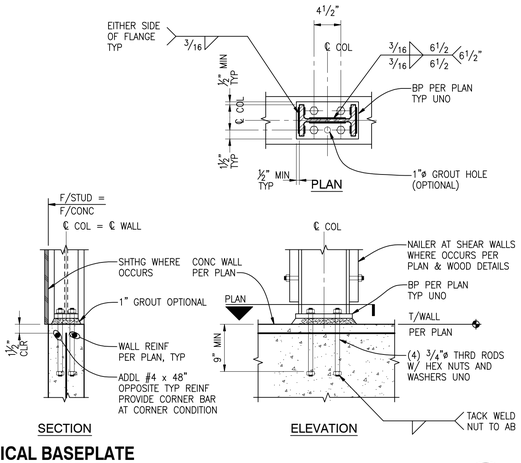
NOTES:

1. HAIRPINS NOT REQUIRED FOR ANCHORS EMBEDDED INTO FOOTING PER [01420] [01420A].
2. MINIMUM FOOTING SIZE FOR ANCHORS EMBEDDED INTO FOOTING IS 2x EMBED SQUARE WITH DEPTH AS INDICATED.

AT HDU HOLD-DOWNS

TYPICAL HOLD-DOWN AT FOUNDATION - CONCRETE STEMWALL

06091 SCALE: 1"=1'-0" (1)



TYPICAL BASEPLATE TO CONCRETE WALL CONNECTION - WF COLUMN

05032M SCALE: 1"=1'-0" (2)

NOTES:

1. ALL TABULATED VALUES ARE IN INCHES.
2. VALUES FOR UNCOATED REINFORCING AND NORMAL WEIGHT CONCRETE WITH CLEAR SPACING > db, CLEAR COVER > db AND MINIMUM STIRRUPS OR TIES THROUGHOUT Ld OR CLEAR SPACING > 2db AND CLEAR COVER > db.
3. DEVELOP ALL REINFORCING IN STRUCTURAL SLABS WITH MINIMUM DEVELOPMENT LENGTH Ld.
4. Ldh = DEVELOPMENT LENGTH OF BAR WITH STANDARD HOOK.
5. TOP BAR = HORIZONTAL BAR WITH MORE THAN 12" OF FRESH CONCRETE BELOW OR AS NOTED ON DOCUMENTS AS "TOP BAR".
6. LAP SPLICE OF DIFFERENT SIZE BARS TO BE THE LARGER OF Ld OF THE LARGER BAR OR SPLICE LENGTH OF THE SMALLER BAR.
7. LAP SPLICE #14 AND #18 BARS IS NOT PERMITTED. LAP SPLICE OF SMALLER BARS TO #14 AND #18 BARS IS NOT PERMITTED.
8. LAP SPLICE OF DIFFERENT GRADES OF REINFORCING TO BE THE LARGER OF Ld OF THE HIGHER GRADE BAR OR SPLICE LENGTH OF THE LOWER GRADE BAR.
9. WHERE EPOXY COATED REINFORCING IN CONCRETE WITH COMPRESSIVE STRENGTH OF f'c = 4,500 psi IS REQUIRED PER PLAN, USE DEVELOPMENT LENGTHS FOR UNCOATED REINFORCING IN CONCRETE WITH COMPRESSIVE STRENGTH OF f'c = 3,000 psi.

01400	GRADE 60 REINFORCING				
BAR SIZE	MISCELLANEOUS BARS		TOP BARS (see note #5)		HOOKED BARS
	Ld	Splice	Ld	Splice	Ldh
f'c = 3000psi (UCOATED BAR) f'c = 4500psi (EPOXY COATED BAR)					
#3	17	22	22	28	9
#4	22	29	29	38	11
#5	28	36	36	47	14
#6	33	43	43	56	17
#7	48	63	63	81	20
#8	55	72	72	93	22
#9	62	81	81	105	25
#10	70	91	91	118	28
#11	78	101	101	131	31
#14	93	N/A	121	N/A	38
#18	124	N/A	161	N/A	50

TYPICAL LAP SPLICE AND DEVELOPMENT LENGTH SCHEDULE

01400 SCALE: NONE (4)

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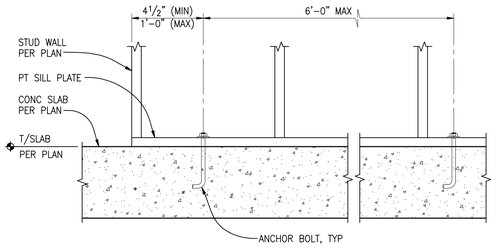
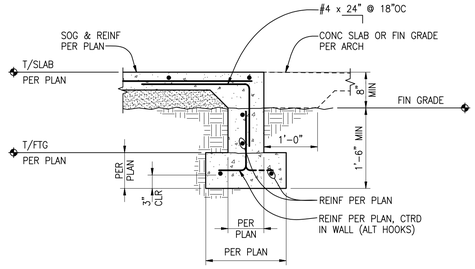


NOTES:

1. USE 5/8"ø ANCHOR BOLTS WITH 7" MINIMUM EMBEDMENT INTO CONCRETE SLAB.
2. EACH SILL PLATE PIECE SHALL HAVE (2) BOLTS MINIMUM. HOLD-DOWN ANCHORS ARE NOT TO BE CONSIDERED AN ANCHOR BOLT.
3. LOCATE BOLTS WITHIN 1'-0" OF SILL PLATE PIECE ENDS AND AT 6'-0"OC MAXIMUM.
4. USE PLATE WASHER PER SHEAR WALL SCHEDULE AT EACH BOLT. STANDARD CUT WASHERS ARE ACCEPTABLE AT NON-SHEAR WALLS.
5. DO NOT DRILL OVERSIZE HOLES THRU SILL PLATE. USE 11/16"ø DRILL BIT.
6. SILL PLATE THICKNESS AND FASTENING AT SHEAR WALLS PER SHEAR WALL SCHEDULE.
7. CONTACT THE ENGINEER-OF-RECORD FOR POST INSTALLED ANCHOR OPTIONS.

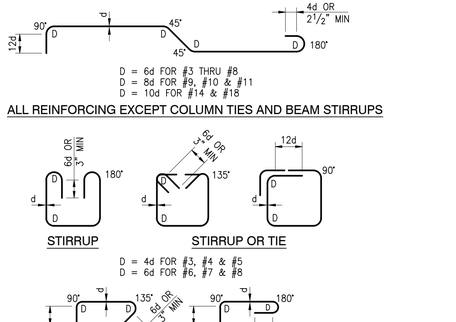
TYPICAL SILL PLATE ANCHORAGE TO CONCRETE

06910 SCALE: 1"=1'-0" (5)



CONCRETE SLAB AND STEMWALL AT OPENINGS

03033 SCALE: 3/4"=1'-0" (6)

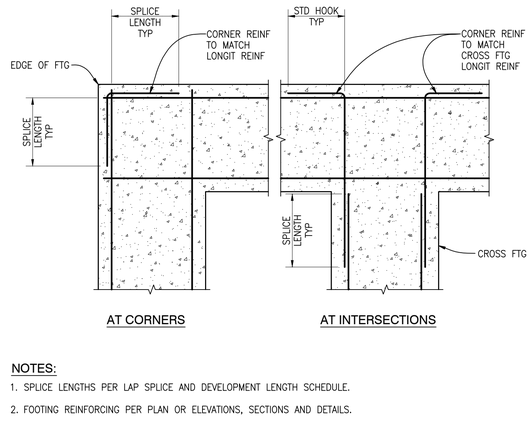


NOTE:

TIES AND CROSSTIES FOR SHEAR WALL BOUNDARY ELEMENTS SHALL BE DETAILED AS COLUMN TIES/CROSSTIES.

STANDARD HOOKS AND BENDS

03400 (FOR REVISIONS TO STANDARD HOOKS & BENDS REF TO CURRENT ACI) SCALE: NONE (7)

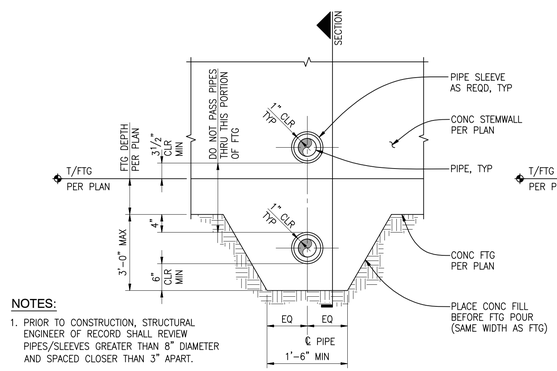


NOTES:

1. SPLICE LENGTHS PER LAP SPLICE AND DEVELOPMENT LENGTH SCHEDULE.
2. FOOTING REINFORCING PER PLAN OR ELEVATIONS, SECTIONS AND DETAILS.

PLAN - TYPICAL CORNER REINFORCING AT CONCRETE FOOTINGS

03907 SCALE: 3/4"=1'-0" (8)

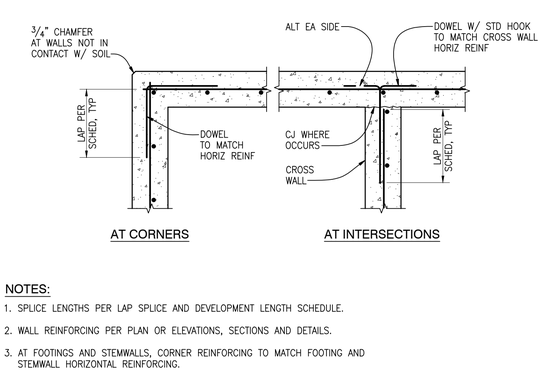


NOTES:

1. PRIOR TO CONSTRUCTION, STRUCTURAL ENGINEER OF RECORD SHALL REVIEW PIPES/SLEEVES GREATER THAN 8" DIAMETER AND SPACED CLOSER THAN 3" APART.
2. ALUMINUM MATERIALS SHALL NOT BE EMBEDDED IN CONCRETE.

TYPICAL PIPE AND TRENCH LOCATIONS AT CONCRETE STEMWALL / FOOTING

03906 SCALE: NONE (10)

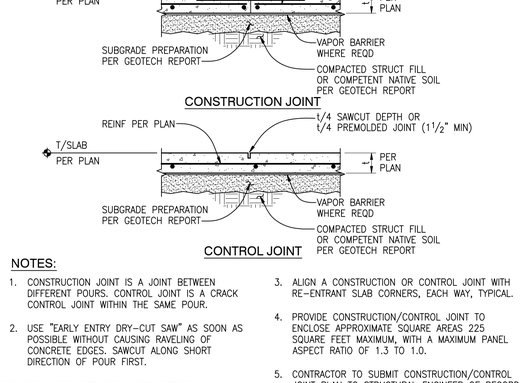


NOTES:

1. SPLICE LENGTHS PER LAP SPLICE AND DEVELOPMENT LENGTH SCHEDULE.
2. WALL REINFORCING PER PLAN OR ELEVATIONS, SECTIONS AND DETAILS.
3. AT FOOTINGS AND STEMWALLS, CORNER REINFORCING TO MATCH FOOTING AND STEMWALL HORIZONTAL REINFORCING.

PLAN - TYPICAL CORNER REINFORCING AT CONCRETE WALLS

03402 (SINGLE MAT) SCALE: 3/4"=1'-0" (11)



NOTES:

1. CONSTRUCTION JOINT IS A JOINT BETWEEN DIFFERENT POURS. CONTROL JOINT IS A CRACK CONTROL JOINT WITHIN THE SAME POUR.
2. USE "EARLY ENTRY DRY-CUT SAW" AS SOON AS POSSIBLE WITHOUT CAUSING RAVELING OF CONCRETE EDGES. SAWCUT ALONG SHORT DIRECTION OF POUR FIRST.
3. ALIGN A CONSTRUCTION OR CONTROL JOINT WITH RE-ENTRANT SLAB CORNERS, EACH WAY, TYPICAL.
4. PROVIDE CONSTRUCTION/CONTROL JOINT TO ENCLOSE APPROXIMATE SQUARE AREAS 225 SQUARE FEET MAXIMUM, WITH A MAXIMUM PANEL ASPECT RATIO OF 1.3 TO 1.0.
5. CONTRACTOR TO SUBMIT CONSTRUCTION/CONTROL JOINT PLAN TO STRUCTURAL ENGINEER OF RECORD FOR REVIEW/APPROVAL.

TYPICAL SLAB ON GRADE JOINT DETAILS WITH REINFORCING

03201 SCALE: 3/4"=1'-0" (12)

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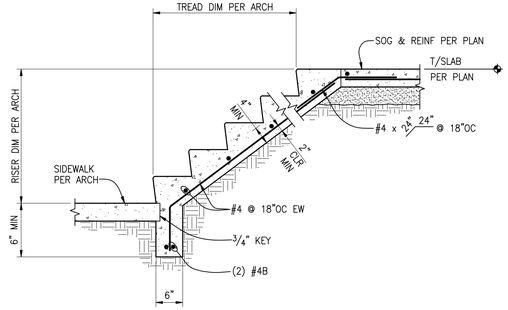
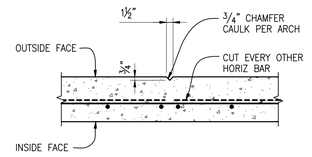


TYPICAL STAIR ON GRADE

03800

SCALE: 3/4"=1'-0"

3



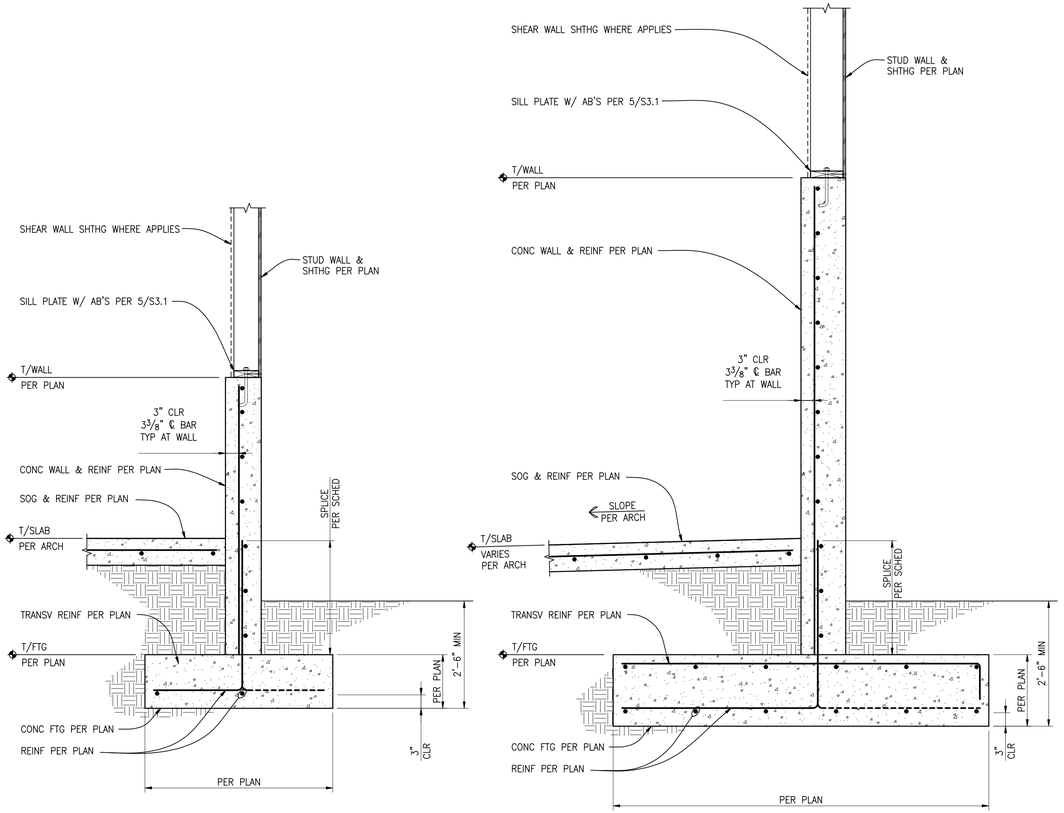
NOTE:

1. ESTABLISH REVEALS PER PLAN.
2. REVEAL LOCATION TO BE APPROVED BY ARCHITECT.

PLAN - TYPICAL VERTICAL REVEAL AT CONCRETE WALL

SCALE: 3/4"=1'-0"

4



TYPICAL WALL SECTION - NORTH OF GRID 2

SCALE: 1"=1'-0"

11

TYPICAL WALL SECTION

SCALE: 1"=1'-0"

12

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DRAWN BY: JJF
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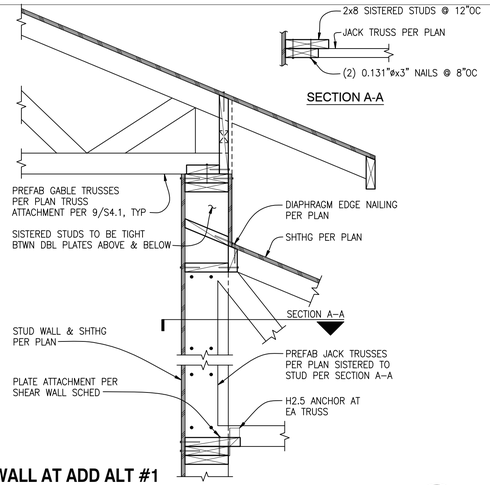
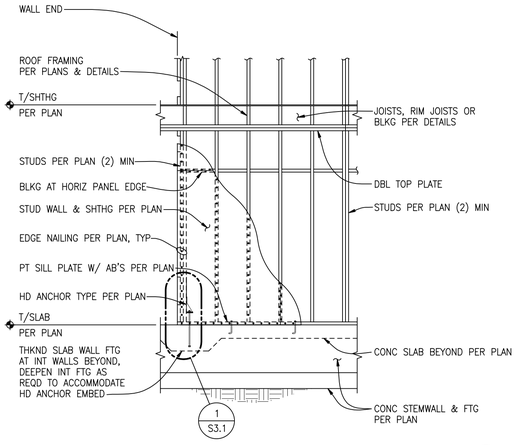
S3.2



INERIOR WALL AT ADD ALT #1 PERPENDICULAR TO GABLE AND JACK ROOF TRUSSES

SCALE: 1"=1'-0" — 1



TYPICAL SHEAR WALL ELEVATION

06090M — SCALE: NONE — 2

NOTES:

[1] SOME HOLD-DOWN TYPES NOTED MAY NOT BE USED ON THIS PROJECT.

[2] TYPICAL HOLD-DOWN DETAILS PER 1/S3.1. ANCHOR REINFORCEMENT REQUIRED AT STEMWALLS.

[3] PROVIDE PANEL EDGE NAILING PER SHEAR WALL SCHEDULE AT HOLD-DOWN STUDS/POST.

[4] BASED ON MINIMUM f'c = 3000 PSI CONCRETE.

[5] STEMWALLS SHALL BE 8" WIDE x 18" TALL MINIMUM.

[6] CAST-IN-PLACE (CIP) TYPE THREADED RODS AT HOLD-DOWNS SHALL HAVE TWO HEX HEAD NUTS WITH OVERSIZED WASHER.

[7] INCLUDES 1.6 LOAD DURATION INCREASE FOR WOOD.

[8] BASED ON $11^7/_8$" DEEP FLOOR JOIST.

[9] TOTAL NAILS SPECIFIED, USE HALF THE NAILS AT THE STUDS ABOVE AND BELOW LEVEL BEING CONNECTED.

[10] AT PRESSURE TREATED SILLS, USE HOT DIPPED GALVANIZED BOLTS.

[11] POST INSTALLED HOLD-DOWN OPTIONS MAY BE AVAILABLE AT SOME CONDITIONS. CONTACT ENGINEER OF RECORD PRIOR TO CONSTRUCTION.

[12] NAIL LAMINATE MULTIPLE 2x STUDS WITH PLATE NAILING PER SHEAR WALL SCHEDULE.

[13] MIDWALL/CORNER WALL END

[14] STUD WALLS SHALL BE 2x6, CENTER HOLD-DOWN IN STUD WALL.

HOLD-DOWN/STRAP SCHEDULE - DOUG-FIR STUDS

[1, 2, 7, 11] → INDICATES FOOTNOTES

	TYPE	NUMBER OF STUDS/POST [3, 12]	NAILS, SCREWS OR BOLTS	ANCHOR [4] DIAMETER [10]	CONCRETE EMBEDMENT/CAPACITY STEMWALL [5] EMBED CIP [6, 14]	STEMWALL [5] CAPACITY	FOOTING EMBED CIP [6]	FOOTING CAPACITY	NOTES
CONCRETE TO WOOD	HDU11	(1) 4x6 OR (1) 6x	(30) SDS$^1/_4$x$2^1/_2$	1"ø	10"	7.8k	12"	9.5k	----

HOLD-DOWN/STRAP SCHEDULE - DOUG FIR STUDS

01420 — SCALE: NONE — 4

EXTERIOR WALL PARALLEL TO ROOF TRUSSES

06064 (GABLE END) — SCALE: 1"=1'-0" — 5

TYPICAL HEADER

06210M — SCALE: 1"=1'-0" — 6

SHEAR WALL SCHEDULE

SOME SHEAR WALL TYPES NOTED MAY NOT BE USED ON THIS PROJECT.

W6 FOR 0.131"ø x$2^1/_2$" NAILS IN DOUG-FIR LARCH (2018 IBC) [17]

WALL TYPE	WALL SHEATHING APA-RATED [1, 2, 12, 13]	NAIL SIZE & SPACING AT ALL PANEL EDGES [4, 5]	BLOCKING & STUD SIZE AT ADJOINING PANEL EDGES [3, 6, 14]	RIM JOIST OR BLOCKING CONN TO TOP PLATE BELOW [7, 8]	2x PLATE ATTACHMENT NAILING TO WOOD RIM JOIST OR BLOCKING BELOW	SILL PLATE ATTACHMENT ANCHOR BOLT TO CONCRETE BELOW [10]	SILL PLATE AT FOUNDATION [11]	SHEAR CAPACITY LBS/FT
W3	$^{15}/_{32}$"	0.131"ø x$2^1/_2$" @ 3"OC STAGG	3x	CLIP @ 12"OC	0.148"ø x$3^1/_4$" @ 4"OC	$^5/_8$"ø @ 32"OC	2x	490
W4	$^{15}/_{32}$"	0.131"ø x$2^1/_2$" @ 4"OC	2x	CLIP @ 16"OC	0.148"ø x$3^1/_4$" @ 6"OC	$^5/_8$"ø @ 48"OC	2x	350
W6	$^{15}/_{32}$"	0.131"ø x$2^1/_2$" @ 6"OC	2x	CLIP @ 16"OC	0.148"ø x$3^1/_4$" @ 8"OC	$^5/_8$"ø @ 48"OC	2x	260

NOTES:

[1] INSTALL PANELS EITHER HORIZONTALLY OR VERTICALLY.

[2] WHERE SHEATHING IS APPLIED ON BOTH SIDES OF WALL, PANEL EDGE JOINTS ON 2x FRAMING SHALL BE STAGGERED SO THAT JOINTS ON THE OPPOSITE SIDES ARE NOT LOCATED ON THE SAME STUDS.

[3] BLOCKING IS REQUIRED AT ALL PANEL EDGES.

[4] PROVIDE SHEAR WALL SHEATHING AND NAILING FOR THE ENTIRE LENGTH OF THE WALLS INDICATED ON THE PLANS. ENDS OF FULL HEIGHT WALLS ARE DESIGNATED BY WINDOWS, OR DOORWAYS OR AS DESIGNATED ON PLANS. HOLD-DOWN REQUIREMENTS PER PLANS. (ALTERNATE NOTE: WALLS SHOWN WITH HORIZONTAL STRAPS BELOW AND/OR ABOVE OPENINGS REQUIRE SHEATHING, SHEAR WALL NAILING, ETC. ABOVE AND BELOW ALL OPENINGS).

[5] SHEATHING EDGE NAILING IS REQUIRED AT ALL HOLD-DOWN POSTS. EDGE NAILING MAY ALSO BE REQUIRED TO EACH STUD USED IN BUILT-UP HOLD-DOWN POSTS. ADDITIONAL INFORMATION PER HOLD-DOWN DETAILS.

[6] INTERMEDIATE FRAMING TO BE 2x MINIMUM MEMBERS. ATTACH SHEATHING TO INTERMEDIATE FRAMING WITH 0.131"ø x$2^1/_2$" NAILS AT 12"OC WHERE STUDS ARE SPACED AT 16"OC AND 0.131"ø x$2^1/_2$" NAILS AT 6"OC WHERE STUDS ARE SPACED AT 24"OC.

[7] BASED ON 0.131"ø x$1^1/_2$" NAILS USED TO ATTACH FRAMING CLIPS DIRECTLY TO FRAMING. USE 0.131"ø x$2^1/_2$" NAILS WHERE INSTALLED OVER SHEATHING.

[8] FRAMING CLIPS: A35 OR LTP5 OR APPROVED EQUIVALENT.

[9] WHERE BOTTOM PLATE ATTACHMENT SPECIFIES (2) ROWS OF NAILS OR SCREWS, PROVIDE DOUBLE JOIST, RIM JOIST OR EQUAL BELOW. STAGGER NAILS/SCREWS IN ROWS $1^1/_2$" APART MINIMUM.

[10] ANCHOR BOLTS SHALL BE PROVIDED WITH HOT DIPPED GALVANIZED STEEL PLATE WASHERS 0.229"x3"x3" MIN. THE HOLE IN THE PLATE WASHER MAY BE DIAGONALLY SLOTTED $^{13}/_{16}$"x$^3/_4$" PROVIDED A STANDARD CUT WASHER IS PLACED BETWEEN THE PLATE WASHER AND NUT. PLATE WASHER TO EXTEND TO WITHIN $^1/_2$" OF THE EDGE OF THE SILL PLATE ON THE SIDE(S) WITH SHEATHING. AT 2x6 WALLS WITH SHEATHING ON BOTH SIDES USE PLATE WASHER 0.229"x$4^1/_2$"x$4^1/_2$" MINIMUM. EMBED ANCHOR BOLTS 7" MINIMUM INTO THE CONCRETE.

[11] PRESSURE TREATED MATERIAL CAN CAUSE EXCESSIVE CORROSION IN THE FASTENERS. PROVIDE HOT-DIPPED GALVANIZED (ELECTRO-PLATING IS NOT ACCEPTABLE) NAILS AND CONNECTOR PLATES (FRAMING ANGLES, ETC.) FOR ALL CONNECTORS IN CONTACT WITH PRESSURE TREATED FRAMING MEMBERS. ADDITIONAL INFORMATION PER STRUCTURAL NOTES.

[12] $^7/_{16}$" APA-RATED SHEATHING (OSB) MAY BE USED IN PLACE OF $^{15}/_{32}$" SHEATHING PROVIDED THAT ALL STUDS ARE SPACED AT 16"OC MAXIMUM.

[13] WHERE WOOD SHEATHING (W) IS APPLIED OVER GYPSUM SHEATHING (G), CONTACT THE ENGINEER OF RECORD FOR ALTERNATE NAILING REQUIREMENTS.

[14] AT ADJOINING PANEL EDGES, (2) 2x STUDS NAILED TOGETHER MAY BE USED IN PLACE OF SINGLE 3x STUD. DOUBLE 2x STUDS SHALL BE CONNECTED TOGETHER BY NAILING THE STUDS TOGETHER WITH 3" LONG NAILS OF THE SAME SPACING AND DIAMETER AS THE PLATE NAILING, PER SECTION.

[15] CONTACT THE STRUCTURAL ENGINEER OF RECORD FOR ADHESIVE OR EXPANSION BOLT ALTERNATIVES TO CAST-IN-PLACE ANCHOR BOLTS. SPECIAL INSPECTION MAY BE REQUIRED.

[16] NAIL STUDS TO 3x SILL PLATES WITH EITHER (2) 0.148"ø x4" END NAILS OR (4) 0.131"ø x$2^1/_2$" TOENAILS.

[17] WX WHERE "W" INDICATES WOOD SHEATHING AND "X" INDICATES EDGE NAIL SPACING.

[18] EDGE NAILS SHALL BE LOCATED $^3/_8$" FROM PANEL EDGES.

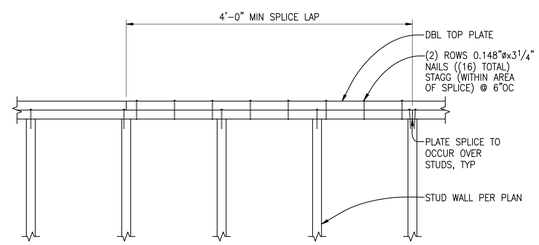
PLAN

NOTE:

CONNECT EACH TRUSS TO TOP PLATES WITH H1 (NOT SHOWN FOR CLARITY).

EXTERIOR WALL PERPENDICULAR TO ROOF TRUSSES

06065 — SCALE: 1"=1'-0" — 9



NOTE:

FLOOR/ROOF JOISTS NOT SHOWN FOR CLARITY.

TYPICAL PLATE SPLICE DETAIL

06904 — SCALE: 1"=1'-0" — 10

SHEAR WALL SCHEDULE - DOUG-FIR LARCH

01430 — SCALE: NONE — 12

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P: (509) 455-4448 www.dci-engineers.com
CIVIL / STRUCTURAL

JUSTIN B. COOK — LICENSED PROFESSIONAL ENGINEER — 13697 — STATE OF IDAHO

FOR BID (NOT FOR CONSTRUCTION)

These drawings have been released at the request of the client for the purpose of bidding. These drawings are not intended for purposes of obtaining a permit or construction.

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Coeur d'Alene, ID 83814
P: 208.664.1713 F: 208.667.3174
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Framing Details
BID SET
02/03/2023

ITD SALT SHED
ST. HWY 3 MILEPOST 58.1
CLARKIA, ID 83812

REV.	DATE

DCI PROJECT NO.: 20041-0058
DESIGNED BY: KEA/KP
DRAWN BY: JAP
SHEET NO.: S4.1

20041-0058-S41.dwg 1-Feb-23 11:01 AM jjohnson

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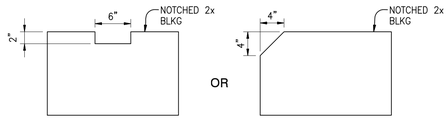
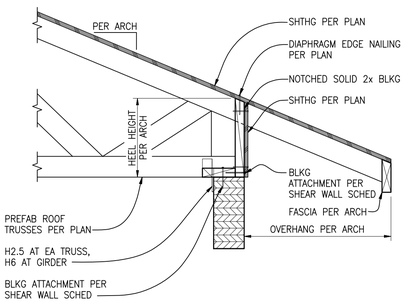


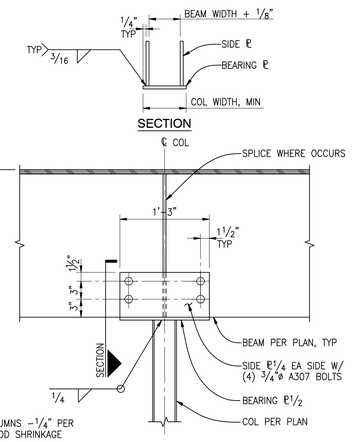
OPTION A - NOTCHED BLOCKING

OPTION B - NOTCHED BLOCKING



EXTERIOR WALL PERPENDICULAR TO ROOF TRUSSES

06065E SCALE: 1"=1'-0" **7**

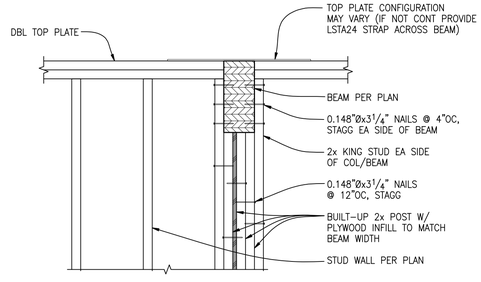


NOTE:

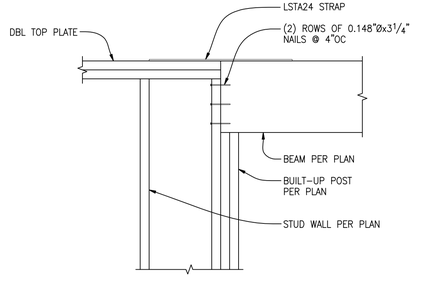
FABRICATE ALL STEEL COLUMNS −1/4" PER FLOOR TO ALLOW FOR WOOD SHRINKAGE

TYPICAL BEAM SADDLE AT STEEL COLUMN

06200 SCALE: 1"=1'-0" **8**



BEAM PERPENDICULAR TO WALL



BEAM PARALLEL TO WALL

TYPICAL BEAM TO STUD WALL

SCALE: 1"=1'-0" **12**

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Framing Details
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CLARKIA, ID 83812

REV.	DATE

DCI PROJECT NO.: 20041-0058
DESIGNED BY: KE/AKP
DRAWN BY: JJF
SHEET NO.: S4.2

MECHANICAL ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR	KW	KILOWATT
ASHRAE	AMERICAN SOCIETY OF HEATING, REFRIGERATION, AND AIR CONDITIONING ENGINEERS	KWH	KILOWATT HOUR
BTU	BRITISH THERMAL UNITS	MAX	MAXIMUM
BTUH	BTUS PER HOUR	MCA	MINIMUM CIRCUIT AMPS
		MOCP	MAXIMUM OVERCURRENT PROTECTION
CA	COMBUSTION AIR	MIN	MINIMUM
CFM	AIR FLOW RATE (CUBIC FEET PER MINUTE)		
CLG	CEILING	NC	NOISE CRITERIA
		NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
DEG or °	DEGREE	NTS	NOT TO SCALE
FD	FIRE DAMPER	OSA	OUTSIDE AIR
FLA	FULL LOAD AMPS		
FLR	FLOOR	PD	PRESSURE DROP
FPM	FEET PER MINUTE	PH or Ø	PHASE
FT	FEET		
		SP	STATIC PRESSURE
HP	HORSE POWER	SYM	SYMBOL
HVAC	HEATING, VENTILATING, AIR CONDITIONING		
		T & P	TEMPERATURE AND PRESSURE
IBC	INTERNATIONAL BUILDING CODE	TEMP	TEMPERATURE
IEEC	INTERNATIONAL ENERGY CONSERVATION CODE	TYP	TYPICAL
IFC	INTERNATIONAL FIRE CODE		
IFGC	INTERNATIONAL FUEL GAS CODE	UMC	UNIFORM MECHANICAL CODE
IMC	INTERNATIONAL MECHANICAL CODE	UPC	UNIFORM PLUMBING CODE
IPC	INTERNATIONAL PLUMBING CODE		
		V	VOLTS
		W/	WITH

NOTE: THIS IS A STANDARD LIST OF COMMONLY USED MECHANICAL ABBREVIATIONS. SOME OF THE ABBREVIATIONS SHOWN ABOVE MAY NOT BE USED IN THIS DRAWING PACKAGE.

MECHANICAL GENERAL NOTES

1. ALL MECHANICAL EQUIPMENT AND SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH THE INTERNATIONAL MECHANICAL CODE (IMC) 2018 EDITION, AND ALL LOCAL & STATE CODES.
2. ALL PLUMBING EQUIPMENT AND SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST ADOPTED PLUMBING CODE, AND ALL LOCAL & STATE CODES.
3. ALL MECHANICAL AND PLUMBING EQUIPMENT SHALL BE INSTALLED PER THE MANUFACTURER'S RECOMMENDATIONS.
4. MECHANICAL CONTRACTORS SHALL RECEIVE PRIOR APPROVAL FROM THE STRUCTURAL ENGINEER BEFORE MAKING CUTS THROUGH ANY STRUCTURAL MEMBER.
5. MECHANICAL CONTRACTORS SHALL COORDINATE INSTALLATION WITH CONSTRUCTION SUPERVISOR AND WITH ALL OTHER TRADES TO AVOID CONFLICTS.
6. THE MECHANICAL CONTRACTORS SHALL VERIFY MOTOR VOLTAGES WITH THE ELECTRICAL DRAWINGS BEFORE ORDERING MOTORIZED EQUIPMENT AND CONTROLS.
7. SEE MECHANICAL SCHEDULE SHEET FOR SCHEDULED CAPACITIES OF ALL MECHANICAL EQUIPMENT AND MATERIALS SPECIFIED.
8. ALL MECHANICAL EQUIPMENT TO BE PROPOSED MUST BE ON THE APPROVED LIST PRIOR TO SUBMITTALS. ALL APPROVED MANUFACTURERS MUST BE CAPABLE OF MEETING THE REQUIREMENTS OF THE SPECIFIED EQUIPMENT.
9. RUNOUT AND HOOKUP SIZES TO INDIVIDUAL PLUMBING FIXTURE CAN BE FOUND ON THE PLUMBING FIXTURE SCHEDULE.

ENERGY CODE COMPLIANCE

A. COMPLIANCE WITH THE 2018 EDITION OF THE INTERNATIONAL ENERGY CONSERVATION CODE IS REQUIRED FOR THIS PROJECT. THESE NOTES COVER MANDATORY REQUIREMENTS OF THE CODE. ADDITIONAL REQUIREMENTS ARE NOTED ON THE DRAWINGS AND IN THE SPECIFICATIONS.

B. AN OPERATING AND MAINTENANCE MANUAL SHALL BE PROVIDED PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY. THE O&M MANUAL SHALL CONTAIN THE FOLLOWING INFORMATION AS A MINIMUM:

1. EQUIPMENT CAPACITY (INPUT & OUTPUT).
2. EQUIPMENT OPERATING AND MAINTENANCE INSTRUCTIONS.
3. CONTROL SYSTEM MAINTENANCE AND CALIBRATION INFORMATION, INCLUDING WIRING DIAGRAMS, SCHEMATICS, AND CONTROL SEQUENCES.
4. CONTROL SYSTEM SETPOINTS SHALL BE SHOWN ON CONTROL DRAWINGS, AT CONTROL DEVICES, OR IN PROGRAMMING COMMENT ON DDC SYSTEMS.
5. A COMPLETE WRITTEN NARRATIVE ON HOW EACH MECHANICAL SYSTEM IS INTENDED TO OPERATE.

SECTION 15100 – MECHANICAL GENERAL PROVISIONS

PART 1 – GENERAL

1.1 SCOPE:
A. General:
1. The Bidding Requirements, Contract Requirements, and the General Requirements of these specifications shall govern all parts of the work
B. Work Included:
1. Install work in accordance with these specifications and the accompanying plans. Furnish all labor, material, and equipment together with all incidental items not specifically shown or specified which are required by good practice to provide the complete mechanical systems as described.
2. The HVAC Contractor(s) and all sub-tier Contractors shall provide installed equipment cut sheets and purchase orders required for utility rebates.
C. Coordination and Site Visits:
1. This section of the work requires examination of and reference to all architectural, structural, and electrical drawings for construction conditions that may affect the work. Inspect the building site and existing facilities for verification of existing conditions. Base all measurements from established benchmarks. Any discrepancy between actual measurements and those indicated, which prevents following good practices or the intent of the drawings and specifications, shall be reported to the Architect/Engineer, and work halted until instructions are received from the Architect/Engineer.

1.2 CODES, PERMITS, FEES:
A. Install all work in accordance with applicable codes and standards. Obtain all required permits; pay all required fees including utility connections or extensions, in connection with this portion of the construction. Obtain all required certificates of inspections for the work.

PART 2 – PRODUCTS

2.1 MATERIALS AND WORKMANSHIP:
A. Materials:
1. All materials and equipment shall be of first quality, new, full size and weight, standard in every respect, and suitable for the space required. Use the same manufacturer for products of similar class or service, such as valves, pumps, controls, and air handlers. Protect all materials against loss, theft, or damage before and after installation.
2. Furnish equipment that will operate under all conditions of load without any sound or vibration that is objectionable in the opinion of the Architect/Engineer. Vibration or noise considered objectionable will be corrected by the Subcontractor at his expense.
3. Furnish and install all necessary foundations, supports, pads, bases, and piers required for all materials and equipment furnished under this contract.
4. Provide all required fire stopping at piping and duct penetrations of fire rated walls, floors, ceilings, and roofs. Fire stopping shall be Dow Corning Fire Stop Sealant 2000 or Fire Stop Foam 2001, or approved equal.
B. Workmanship:
1. All materials and equipment shall be installed in a neat and workmanlike manner by competent specialists for each sub trade. Work shall be installed to the satisfaction of the Architect/Engineer with unsatisfactory work removed and reinstalled to his satisfaction at no extra cost to the Owner.
2. Provide all cutting and patching necessary to install the work specified in this section. Patching shall match adjacent surfaces. No structural members shall be cut without the approval of the Architect/Engineer. Provide all sleeves and inserts required before the floors and walls are built.
3. Locate all equipment that must be serviced in fully accessible positions. Provide clearance for removal of replacement parts and components, and with necessary couplings or flanges to remove the component for maintenance.

2.2 SUBMITTALS AND SUBSTITUIONS:
A. Prebid Approval:
1. Manufacturer's trade names and catalog numbers stated herein are intended to indicate the quality of equipment or materials desired. All manufacturers not specifically listed require prior approval. Submit catalog data, including specifications, of the proposed equipment to the Architect/Engineer for his approval at least 10 calendar days prior to bid opening. Notice of such approvals will be published in an addendum. Approval of listed alternate equipment manufacturers is for bidding only. Final approval is to be based on requirements of the plans and specifications.
B. Submittals:
1. Within thirty days after award of this contract, provide six copies of a complete list of all materials and equipment proposed for this project. List shall contain make, type, manufacturer's name, and trade designation of all materials and equipment. Submittal shall also include manufacturer's complete specification for each item, including capacities, ratings, etc., and dimensions as required to check space requirements. Provide six copies of all submittals. The scheduled equipment is the basis of design for capacity, weights, physical size, etc. Alternate manufacturers shall not exceed the weight or physical size. Any changes to the Architectural, Structural, Mechanical, Electrical, and Control systems due to alternate manufactures shall be the responsibility of the Contractor and Supplier.
2. Approval of submittals shall not relieve the contractor from responsibility for deviations from the plans or specifications, unless he has, in writing, called the Architect's /Engineer's attention to deviations at the time of submission, and obtained his written approval. Approval of submittals does not relieve the contractor from responsibility for errors in shop drawings or literature.
C. Equipment Requiring Submittals
1. Electric Unit Heaters

PART 3 EXECUTION

3.1 ACCESSIBILITY & SAFETY
A. Accessibility:
1. All equipment which must be serviced or operated shall be located in fully accessible position. Minor changes from the drawings may be made to allow for better accessibility. All changes shall be approved prior to actual installation.
2. Access panels shall be provided if required for accessibility. Subcontractor shall furnish the required panels to the General Contractor and the required location for all access panels. Panels shall be installed by the General Contractor.
B. Safety:
1. Subcontractor shall provide guards for all belt drives and rotating machinery. No water piping shall run immediately over or within a 3-foot plan view clearance of any electrical panel or motor starter. Where piping must be located within these zones, install piping inside a conduit to prevent water access to electrical equipment.

3.2 COORDINATION:
A. Coordinate all work with the various trades involved to provide a complete and satisfactory installation. The exact details of piping, ductwork, and equipment are not shown. No additional compensation will be made for offsets or relocation required in coordination with other trades.
B. Alterations required due to improper supervision by the subcontractor shall be made at no extra cost, to the satisfaction of the Architect/Engineer.

3.3 ELECTRICAL:
A. Electric motors required for equipment specified in this section shall be provided and installed by this subcontractor. Motor starters, disconnects, relays, pilot lights, etc., are in general, to be furnished and installed by the Electrical Contractor.
B. Starters, relays, controls, etc., which are factory assembled into packaged equipment shall be furnished by the Mechanical Contractor under this section of the specifications.
C. All motors shall be provided with adequate starting and protective equipment as specified or required. Motor capacity shall be sufficient to operate driven device under all conditions of operation and load without overload. Minimum horsepower shall be as specified.

3.4 EXCAVATION & BACKFILL:
A. Excavate trenches required for underground piping to proper elevation and grade. Provide trenches with solid bottoms to allow support of piping along entire length with excavation at bells as required for jointing and inspection. Provide repairing of finished surfaces, and all required shoring, bracing, pumping, and protection for safety of persons and property. Observe all Local or State Safety Codes. Verify that elevations of existing utilities will allow for proper grading of piping connecting to existing utilities.
B. Excavation and Backfill shall be in accordance with the requirements of Division 2 - Sitework, of these specifications.

3.5 IDENTIFICATION AND CODING:
A. Painting:
1. All painting of mechanical equipment, accessories, ductwork, and piping shall be furnished and applied under the Architectural section of these specifications. All painting shall be completed before any identification markings are applied.
B. Equipment:
1. Identify all equipment with a black Formica label, with white reveal when engraved. Lettering to be 3/16 inch high minimum. In general, identify equipment as to area served in addition to title and code number of the equipment as taken from the plans.

3.6 TESTING:
A. Piping:
1 All plumbing piping (drainage) shall be tested in accordance with the requirements of the Idaho State Plumbing Code, latest edition. Other piping systems shall be tested hydrostatically, to 1.5 times the operating pressure, but not less than 100 psi, for a minimum period of two hours. If the test pressure falls more than 5 percent during the test period, the leak shall be located, repaired, and the test repeated.
2 Piping shall be tested before insulation has been installed. Delicate control mechanisms shall be removed during tests to prevent shock damage. The use of chemicals or compounds to stop leaks shall not be permitted.
3 A test report shall be submitted for each piping system test. Test report forms are part of Specifications Section 15200, or are available from the Engineer.
B. Systems:
1 All systems, including heating, ventilating, air conditioning, and plumbing systems, shall be tested at the completion of the building to establish that the systems operate as specified and required. Testing shall be performed after air and water balancing is completed.
2 All controls shall be calibrated accurately and all equipment shall be adjusted for satisfactory operation, Excessive vibration or noise from any system shall be corrected
3 The air conditioning system shall be tested for satisfactory operation when the outside air temperature reaches 60°F or warmer. All other systems shall be tested at building completion. All tests shall be performed in the presence of the Architect/Engineer or his representative.

3.7 BALANCING:
A. Scope:
1. Prior to final acceptance by the Owners, all air systems shall be balanced to deliver the quantities as specified or directed. The air balance shall be performed by an independent agency specializing in testing, adjusting, and balancing, and is certified by the Testing, Adjusting, and Balancing Bureau (TABB), and the National Environmental Balancing Bureau (NEBB). Total system balance shall be in accordance with TABB.
2. Balance contractor's main office shall be located within 50 miles from the project site. Approved balance contractors are Evolve Engineering, NWESI, Building Systems Technologies, and Blue-Sky Commissioning, All other contractors must receive prior approval from the Engineer, in writing, before bidding the project.
B. Air Balancing
1. Balancing of the air system shall consist of :
a Adjust all air volumes, including outside air, to the quantities shown, with allowable variation of plus 10, minus 10 percent.
b Record all system, outside air, zone, diffuser, grille, and register C.F.M. Use volume control devices to regulate air quantities only to the extent that adjustments do not create objectionable air motion or sound levels. Balancing Engineer shall work with the Contractor to set the CFM quantities for zone dampers or zone damper/heaters.
c Test and record all system static pressures, inlet and discharge, on all packaged units, fans, and terminal units. Vary total system air quantities by adjustment of fan speeds. Provide drive changes as necessary. Vary branch air quantities by damper regulation.
d Test and record motor full load amps and nameplate amps.
e Test and record entering and leaving temperatures at all coils.
f Adjust all automatically operated dampers, in cooperation with the Mechanical Contractor, to the required settings. Adjust outside air automatic dampers, outside air, return air, and exhaust dampers for design conditions within specified tolerances. Where modulating dampers or economizers are provided, take measurements at full return air, minimum outside air, and 100 percent outside air mode of operation.
g Adjust diffusers and grilles for proper deflection, throw, and coverage. Eliminate drafts and excessive noise where possible.
h Mark final positions of all balance dampers with a red felt pen.
i Air systems shall be balanced in accordance with standard procedures and recognized practices of the Associated Air Balance Council, and the Testing, Adjusting, and Balancing Bureau.

3.8 CLEANING AND ADJUSTING:
A. Thoroughly clean all parts of the system at the completion of the work. Flush all water circulating systems with fresh water and then drain. Clean all strainers and refill system. Install new, clean air filters in all systems. Adjust all devices for proper operation and lubricate all equipment as required. Repaint any painted surface that has been damaged.
B. All potable water systems shall be flushed and disinfected after tests are completed. Disinfection shall be in accordance with local municipal and State Plumbing Inspector's criteria. In lieu of such criteria, the following procedure shall be followed for disinfection:
1. Completely flush system. Add alkali or acid (hydrochloric) to bring water ph level to between 7.4 and 7.6.
2. Inject chlorine (liquid, powder, tablet, or gas) throughout the system to obtain 50 to 80 mg/L residual.
3. Bleed water from outlets to ensure distribution, and test for residual at a minimum of 15 percent of the outlets.
4. Maintain disinfection in system for 24 hours.
5. If final disinfectant residual tests less than 25 mg/L, repeat treatment.
6. Flush disinfectant from system until residual is equal to that of incoming water, or 1.0 mg/L.
7. Take samples no sooner than 24 hours after flushing, from 10 percent of the outlets and the incoming water.

3.9 PROJECT CLOSEOUT:
A. Operations & Maintenance Manual:
The Contractor shall provide an operations and maintenance manual at least thirty days prior to completion of work. The manual shall be of the three ring binder type, entitled "Operations and Maintenance Manual", with the job name and year of completion also included. The manual shall include, as a minimum:
1. Maintenance instructions for all equipment, including lubrication requirements.
2. Equipment suppliers names, addresses, and telephone numbers.
3. Equipment catalog cuts, ratings tables, model numbers, serial numbers, and accessories.
4. Parts numbers for all replaceable parts.
5. Air systems balance report as hereinbefore specified.
6. Control diagram or drawing and operation sequence.
7. Valve tagging chart as hereinbefore specified.
8. Filter chart listing unit callout, size of filters, and quantity of filters.
9. Guarantee letter as specified below.
10. Any additional information required to enable the Owner to properly maintain the building mechanical system.
11. After approval of the Operations and Maintenance Manual by the Architect/Engineer, the Contractor shall furnish two copies of the manual to the Owner.
B. Mechanical System Training Period:
1. After the mechanical system is completely installed and operational, the mechanical contractor shall provide a minimum of 1 hours training and instruction time for the building Owner or his representative. During this period, the contractor shall instruct the Owner in the operation and maintenance of all parts of the mechanical system, using the O & M manual where applicable.
C. As-Built-Drawings:
1. Provide two sets of blue-line mechanical drawings showing the work as it was actually installed. The drawings shall indicate all departures from the contract drawings, and shall locate all underground utility lines with dimensions from established building lines. Make all notations neat and legible, with red indelible pencil. At the completion of the work, these as-built drawings shall be signed and dated by the Mechanical Contractor, and returned to the Architect/Engineer.
D. Guarantee:
1. All work furnished under this section shall be guaranteed in writing to be free from defective work or materials for a period of one year after acceptance of the contract. All repairs or replacements because of defective materials or workmanship or noncompliance with code shall be provided without additional cost to the Owner. Contractor shall furnish a letter indicating above guarantee with space for date of acceptance and expiration of guarantee. Letter shall be included in O & M Manual.

END OF SECTION 15100

SECTION 15200 – PLUMBING

PART 1 – GENERAL

1.1 SCOPE:
A. This section covers the work necessary for the plumbing system, complete. The Mechanical General Provisions, Section 15100 are to be included as a part of this section of the specifications.
1.2 CODES:
A. The plumbing system shall be installed in accordance with the Idaho State Plumbing Code, latest edition, International Fuel Gas Code, latest edition; and all local and State Codes.
1.3 FIXTURES & EQUIPMENT:
A. General:
1. Plumbing fixtures and equipment shall be as listed on the drawings. In addition to those specifically listed, the following manufacturers are approved for bidding only. All other manufacturers require prior approval. Final approval for installation is based on submittal data furnished:
a Trench Drains & Catch Basins: J.R. Smith, ABT, Strongwell Polycast, ACO, Zurn, NDS, Wade, Josam, DuraTrench.
2. Plumbing Fixture Standards:
All plumbing fixtures shall meet or exceed the following standards:
a ANSI/AWWA C606 - Grooved and Shouldered Joints

PART 2 - PRODUCTS

2.1 PLUMBING FIXTURES & TRIM:
A. All plumbing fixtures shall be provided complete with all required trim for a complete and operational system. All exposed trim shall be chrome plated. All piping penetrations through finished walls shall be provided with chrome escutcheons. All plumbing fixtures shall be caulked and sealed to surrounding surfaces. All sink traps shall be provided with a clean out plug in the bottom of the trap. Interior exposed pipe, valves, and fixture trim, including trim behind all casework doors, shall be chrome plated. Each fixture shall be provided with stop valves and the stop valves shall be quarter-turn brass ball type. All fixtures and trim must be lead free. All floor drains and floor sinks shall be provided with trap primers (PPP, or Zurn as needed for appropriate use. Provide ball valve type shut-off valve upstream of all trap primer valves).

2.2 PIPING AND FITTINGS:
A. General:
1. Underground sanitary sewer and storm drain lines shall be installed at 1/4" per foot slope, unless otherwise indicated. If such slope is not possible due to existing inverts, approval shall be obtained from the Architect/Engineer and the authority having jurisdiction before any piping is installed at a lesser slope.
2. Connections between piping of dissimilar materials shall be made with dielectric waterway fittings or unions.
3. Provide standard manufactured water hammer arresters at all flush valves. Size and locate per manufacturers recommendations. Provide access panels for access to all water hammer arresters.
B. Sanitary Sewer and Vent:
1. Piping shall be cast iron CISPI 301, ASTM A888 hubless, with cast iron fittings. Standard couplings shall be neoprene gaskets and stainless steel clamp-and-shield assemblies, and shall be NSF compliant. Pipe and fittings shall be listed by NSF International and manufactured by AB&I, Charlotte, or Tyler, or receive prior approval.
2. Piping and fittings beyond 5 feet from the building line shall be PVC, ASTM D3033 or D3034, SDR 35. Joints shall be ASTM F477 with elastomeric gaskets. Underground piping shall be installed per ASTM D-2321.
3. All 90 degree waste line elbows shall be per the latest issue of the Idaho State Plumbing Code, latest edition.
4. All exposed vent piping located in occupied areas or rooms, is to be cast iron with cast iron fittings.
5. Cleanouts shall be provided at each horizontal drainage pipe at its upper terminal, and each run of piping which is more than 100 feet, and shall be provided for each 100 feet developed length, or fraction thereof of such piping. An additional clean out shall be provided for each aggregate horizontal change of direction exceeding one hundred thirty-five degrees, per applicable plumbing code. This shall be provided regardless of what is shown on the drawings.

PART 3 - EXECUTION

3.1 WORKMANSHIP:
A. General:
1. Install all piping, fixtures, equipment, and accessories as shown, and in strict accordance with the plumbing laws, rules, and regulations of the State and/or City. All work shall be done in a neat and orderly fashion, and left in a condition satisfactory to the Architect/Engineer.
B. Piping:
1. All piping shall be run parallel or perpendicular to established building lines. Install piping so as to allow for expansion. Waste and vent piping occurring above floor slab shall be installed true and plumb. Extend vents at least 1 foot above roof, or to the top of the closest adjacent parapet wall, whichever is greater, and provide watertight flashing sleeves. Excavation and backfill shall be in accordance with Section 15100 of these specifications.
C. Fixtures:
1. Install fixtures true and plumb with building walls. Caulk all plumbing fixtures at joints along walls, countertops, and other intersecting surfaces. Locate fixtures as shown and per manufacturer's instructions. Furnish all required trim for fixtures to provide a complete and workable installation.

3.2 TESTS:
A. General:
1. All piping, fixtures, and equipment shall be inspected and approved before concealing or covering. All work shall be tested as required by Section 15100 of these specifications, and shall be leak proof before inspection is requested. All tests shall be repeated if required by those making the inspection.
B. Fixtures and Equipment:
1. Fill all plumbing fixtures with water and check for leaks or retarded flow. Repair as required. Adjust each piece of plumbing equipment as required to insure proper functioning. Leave all fixtures and equipment in first class operating condition.
2. The Plumbing Contractor is responsible for all backflow devices to be inspected by a certified backflow technician before the use of the building potable water system.

END OF SECTION 15200

SECTION 15300 – HEATING, VENTILATING, AND AIR CONDITIONING

PART 1 – GENERAL

1.1 SCOPE:
A. This section covers the work necessary for the heating, ventilating, and air conditioning system, complete. The Mechanical General Provisions, Section 15100, is to be included as a part of this section of the specifications.

1.2 CODES & STANDARDS
A. The heating, ventilating, and air conditioning system shall be installed in accordance with the latest edition of the following codes and standards:
1. International Mechanical Code (IMC)
2. International Building Code (IBC)
3. American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE)
4. National Fire Protection Association (NFPA)
5. Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA)

PART 2 – PRODUCTS

2.1 UNIT HEATERS:
A. See plans for requirements.

2.2 EXHAUST FANS
A. See plans for requirements.

2.3 VIBRATION ISOLATION
A. General:
1. All rotating equipment and appurtenances connected to rotating equipment shall be vibration isolated from the supporting structure. No metal to metal contact will be permitted between fixed and floating parts. All metal isolators exposed to weather shall be hot dipped galvanized after fabrication. Piping connected to rotating equipment shall be hung with spring hangers for first 50 pipe diameters.
B. Spring Hangers:
1. Vibration hanger shall contain a spring and double deflection neoprene element in series. Spring shall have a diameter not less than 0.8 of compressed operating spring height. Spring shall have a minimum additional spring travel of 50 percent between design height and solid height. Spring shall permit a 15 degree angular misalignment without rubbing on hanger box.

2.4 SEISMIC SUPPORTS
A. All equipment, ductwork, and piping shall be seismically supported as required by the International Building Code, latest edition. Support details shall be as indicated on the Drawings.

2.5 CONTROL SYSTEM
A. General:
1. The Mechanical Contractor shall be responsible for a complete and operable control system, including equipment, installation, and accessories required to perform the required control functions. All control conduit and wiring shall be furnished by the Electrical Contractor. Thermostats, sub-base switches, remote control devices, etc., shall be supplied by the Mechanical Contractor and installed and connected by the Mechanical Contractor. The Mechanical Contractor shall furnish the Electrical Contractor with wiring diagrams for all mechanical equipment and controls.
2. The control system shall be basically electric, with supplementary electronic devices as required.
B. Control Equipment and Accessories:
1. Thermostats:
a Thermostats shall be 7-day programmable type, with automatic changeover from heating to cooling, and shall be provided with auxiliary contacts.
b Thermostats shall be provided with lockable covers.
c Thermostats installed on exterior walls shall be mounted on an insulating block, or on foam insulation filled J-box.
d All thermostats shall have a mounting height of 46 inches, to the centerline of the device, unless otherwise noted on the electrical drawings.
2. Equipment Control Schematics:
a See plans for schematics and sequence of operations.

PART 3 – EXECUTION

3.1 WORKMANSHIP:
A. General:
1. Install all materials and equipment as shown and in strict accordance with the applicable codes for the State and/or city. Plans do not attempt to show exact details of all piping and ductwork, and no extra payment will be allowed for offsets required due to obstructions by other trades. All work shall be done in a neat and orderly fashion and left in a condition satisfactory to the Architect/Engineer.
2. All piping shall be run parallel or perpendicular to established building lines. Install piping so as to allow for expansion. Install all valves with stems horizontal or above. Install air vents at all high points. Provide all piping which passes through walls, floors, or ceilings with standard weight pipe sleeves.

END OF SECTION 15300

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MECHANICAL COVER SHEET
BID/PERMIT
2/21/2023

PROFESSIONAL ENGINEER — LICENSED — Christopher Lyke — 16683 — 2/22/2023 — STATE OF IDAHO — CHRISTOPHER LYKE

ITD Clarkia Salt Shed
Clarkia, Idaho

LICENSED ARCHITECT — AR-984931 — MICHEAL P. WALKER — STATE OF IDAHO

No.	Description	Date

PROJECT NUMBER — Number
PRINCIPAL — Designer
PROJECT MANAGER — Author

M1.0

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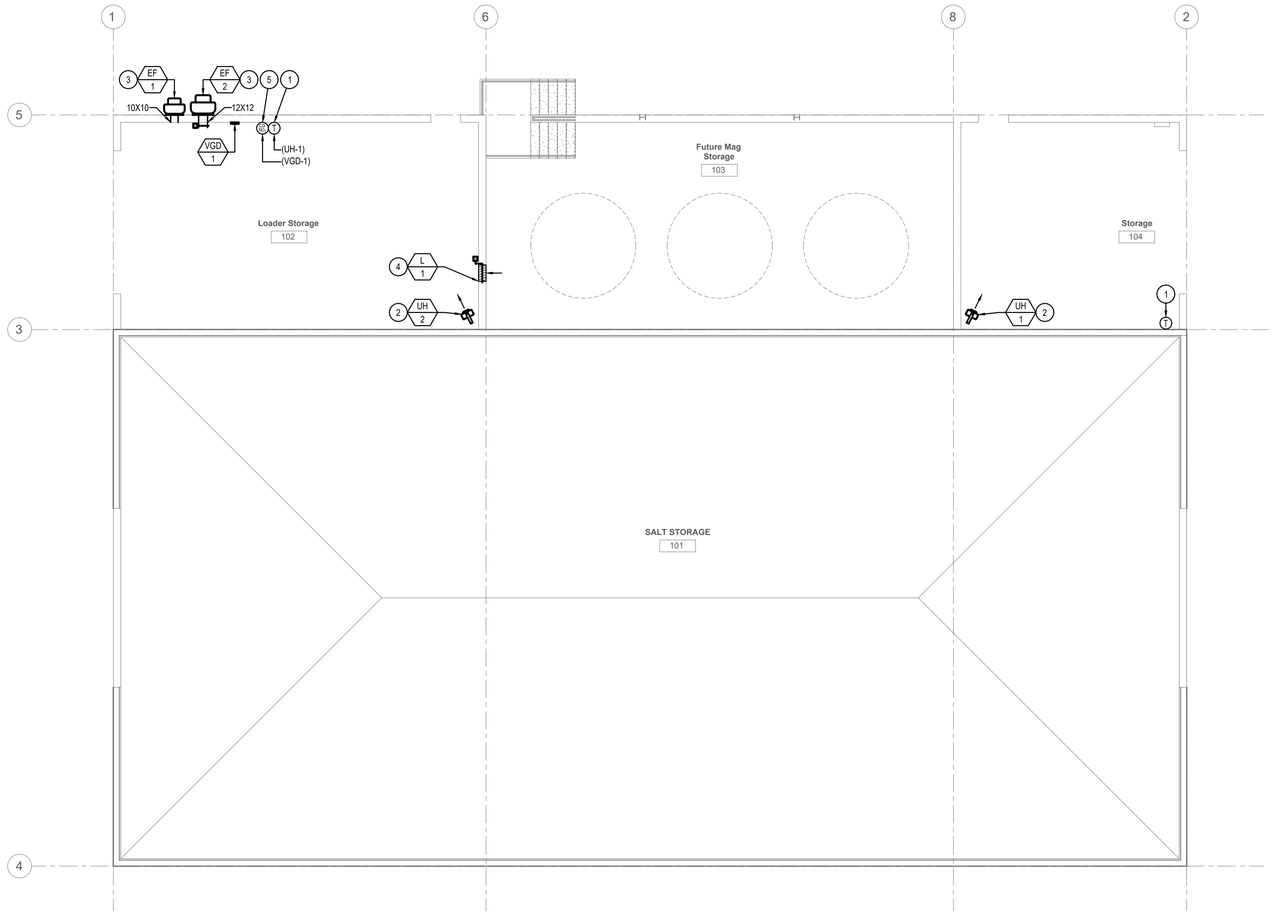

LEVEL 1 HVAC PLAN

1/8" = 1'-0"

KEYED NOTES:

(#) SYMBOL USED FOR NOTE CALLOUT.

1. INSTALL WALL MOUNTED THERMOSTAT IN INSULATED WALL BOX.
2. SUSPEND UNIT HEATER FROM CEILING.
3. INSTALL WALL MOUNTED EXHAUST FAN 9' A.F.F.
4. INSTALL WALL MOUNTED LOUVER 9' A.F.F.
5. INSTALL COMBINATION CO/NO_2 DETECTOR PER MANUFACTURER'S RECOMMENDATIONS. SEE CONTROL SCHEMATIC FOR ADDITIONAL INFORMATION

GENERAL NOTES:

A. ALL WORK ON THIS SHEET IS PART OF BID ALTERNATE A.

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LEVEL 1 HVAC PLAN

BID/PERMIT
2/21/2023

PROFESSIONAL ENGINEER
LICENSED
16683
2/22/2023
STATE OF IDAHO
CHRISTOPHER DYKE

ITD Clarkia Salt Shed
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No.	Description	Date

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ELECTRIC UNIT HEATER SCHEDULE

SYMBOL	AREA SERVED	UNIT TYPE	FAN		ELECTRICAL				OPERATING WEIGHT (LBS)	MANUFACTURER AND MODEL	REMARKS
			CFM	HP	KW	STEPS	V/Ø	AMPS			
UH-1	STORAGE 104	SUSPENDED	310	1/50	3.0	1.0	240/1	12.5	20	REZNOR MODEL EGEB03	1 , 2 , 3
UH-2	LOADER STORAGE 102	SUSPENDED	310	1/50	5.0	1.0	240/1	20.9	20	REZNOR MODEL EGEB05	1 , 2 , 3

REMARKS:

1. APPROVED ALTERNATE MANUFACTURERS: BRASCH, MODINE, QMARK, MARKEL.
2. PROVIDE UNIT WITH REMOTE WALLED LINE-VOLTAGE PROGRAMMABLE THERMOSTAT EQUAL TO HONEYWELL MODEL TL8130A, AND 4-POINT SUSPENSION KIT.
3. PROVIDED UNDER BID ALTERNATE A.

EXHAUST FAN SCHEDULE

SYMBOL	AREA SERVED	UNIT TYPE	BLOWER				ELECTRICAL		MAXIMUM SONES	OPERATING WEIGHT (LBS)	MANUFACTURER AND MODEL	REMARKS
			CFM	ESP	MAXIMUM RPM	DRIVE	HP/W	V/Ø				
EF-1	LOADER STORAGE 102	WALL MOUNTED	50	0.15	1,725	BELT	1/6 HP	115/1	2.4	55	COOK MODEL ACW-B 100W OR70	1 , 2 , 4 , 6
EF-2	LOADER STORAGE 102	WALL MOUNTED	700	0.15	1,050	DIRECT	1/6 HP	115/1	4.3	40	COOK MODEL ACW-D 120W10D	1 , 3 , 5 , 6

REMARKS:

1. APPROVED ALTERNATE MANUFACTURERS: ACME, GREENHECK, PENNBARRY, TWIN CITY FAN COMPANY, & SOLER & PALAU.
2. PROVIDE UNIT WITH MANUFACTURER'S BIRDSCREEN, INLET CONNECTION, THERMAL OVERLOAD PROTECTION, AND BACKDRAFT DAMPER.
3. PROVIDE UNIT WITH MANUFACTURER'S BIRDSCREEN, 120V/1Ø MOTORIZED INLET DAMPER, PREWIRED FAN SPEED CONTROLLER, AND THERMAL OVERLOAD PROTECTION.
4. FAN SHALL RUN CONTINUOUSLY.
5. CONTROL FAN WITH VEHICLE GAS DETECTION SYSTEM. SEE CONTROL SCHEMATIC FOR SEQUENCE OF OPERATION.
6. PROVIDED UNDER BID ALTERNATE A.

LOUVER SCHEDULE

SYMBOL	SERVICE	TYPE	NOMINAL SIZE	MINIMUM FREE AREA (SQ.FT.)	FINISH	MANUFACTURER AND MODEL	REMARKS
L-1	INTAKE	FIXED DRAINABLE	22"X22"	1.51	AAMA 2604	RUSKIN ELF375DX	1 , 2 , 3 , 4 , 5

REMARKS:

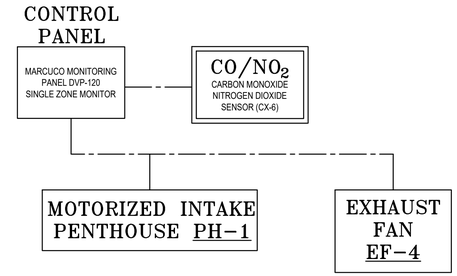
1. APPROVED ALTERNATE MANUFACTURERS: GREENHECK, LOUVERS & DAMPERS, ARROW UNITED, NCA MANUFACTURING, NAILOR, AND UNITED ENERTECH.
2. COLOR TO BE SELECTED BY ARCHITECT.
3. PROVIDE WITH FLANGED FRAME AND BIRD SCREEN, AND 120V/Ø LOW LEAKAGE MOTORIZED DAMPER.
4. LOUVER SHALL BE INTERLOCKED WITH EF-2. SEE CONTROL SCHEMATIC FOR SEQUENCE OF OPERATION.
5. PROVIDED UNDER BID ALTERNATE A.

VEHICLE EXHAUST GAS DETECTION SYSTEM SCHEDULE

SYMBOL	AREA SERVED	EXHAUST FAN INTERLOCK	PRODUCT TYPE	GAS DETECTION RANGE		ELECTRICAL		MANUFACTURER AND MODEL	REMARKS
				CO (PPM)	NO2 (PPM)	SENSORS	CONTROL PANEL		
				LOW / HIGH	LOW / HIGH	VOLTS	V / Ø		
VGD-1	LOADER STORAGE 102	EF-2	MACURCO GAS VENTILATION CONTROL SYSTEM	0-200	0-20	24V	120 / 1	MACURCO CONTROL PANEL MODEL: DVP-120 MACURCO SENSOR MODEL: CX-6	1 , 2 , 3 , 4 , 5

REMARKS:

1. APPROVED ALTERNATE MANUFACTURERS: HONEYWELL AND ARMSTRONG.
2. PROVIDE WITH MANUFACTURER'S CONTROL PANEL, (3) 10-AMP RELAYS, (2) HORNS, (2) STROBE DRIVERS, (12) ANALOG (DVP-120). PANEL INCLUDES TIMED DAY SELECTIONS, ALARMS, WARNINGS, AND TROUBLE INDICATIONS.
3. INSTALL MANUFACTURER SENSORS TO COVER ENTIRE SPACE. MANUFACTURER TO SUBMIT SENSOR LAYOUT FOR FINAL APPROVAL.
4. SEE CONTROL SCHEMATIC FOR SEQUENCE OF OPERATION.
5. PROVIDED UNDER BID ALTERNATE A.



EXHAUST SYSTEM CONTROL SCHEMATIC

SEQUENCE OF OPERATION

WHEN CARBON MONOXIDE (CO) LEVELS EXCEED 25 PPM (ADJUSTABLE) OR NITROGEN DIOXIDE (NO_2) LEVELS EXCEED 1 PPM (ADJUSTABLE), THE VEHICLE GAS DETECTION SYSTEM CONTROL PANEL (VGD-1) SHALL SEQUENCE THE FOLLOWING:

1. SEND AN ENABLE COMMAND TO THE EXHAUST FAN (EF-2).
2. SEND AN ENABLE COMMAND TO THE PENTHOUSE MOTORIZED INTAKE DAMPER (L-1).

WHEN CARBON MONOXIDE (CO) LEVELS FALL BELOW 25 PPM AND NITROGEN DIOXIDE (NO_2) LEVELS FALL BELOW 1 PPM, THE VEHICLE GAS DETECTION SYSTEM CONTROL PANEL (VGD-1) SHALL SEQUENCE THE FOLLOWING:

1. SEND A DISABLE COMMAND TO THE EXHAUST FAN (EF-2).
2. SEND A DISABLE COMMAND TO THE PENTHOUSE MOTORIZED INTAKE DAMPER (L-1).

CO/NO2 SENSOR REQUIREMENTS:

1. CERTIFIED BY THE MANUFACTURER TO BE ACCURATE WITHIN PLUS OR MINUS 5 PERCENT OF MEASUREMENT.
2. FACTORY CALIBRATED.
3. CERTIFIED BY THE MANUFACTURER TO DRIFT NO MORE THAN 5 PERCENT PER YEAR.
4. CERTIFIED BY THE MANUFACTURER TO REQUIRE CALIBRATION NO MORE FREQUENTLY THAN ONCE A YEAR.

EXHAUST SYSTEM CONTROL SEQUENCE OF OPERATION

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MECHANICAL SCHEDULES AND CONTROLS
BID/PERMIT
2/21/2023

PROFESSIONAL ENGINEER LICENSED Christopher D. Yoke 16683 2/22/2023 STATE OF IDAHO CHRISTOPHER D. YOKE

ITD Clarkia Salt Shed
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LICENSED ARCHITECT AR-984931 MICHEAL P. WALKER STATE OF IDAHO

No.	Description	Date

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PROJECT MANAGER Author

M2.0

ELECTRICAL LEGEND - LIGHTING

REFERENCE FIXTURE SCHEDULE FOR MOUNTING TYPE, MOUNTING HEIGHT, AND FIXTURE TYPE.

- DOUBLE FACE EXIT SIGN, CEILING MOUNTED, PROVIDE UNSWITCHED CONDUCTOR.
- WALL MOUNTED DOUBLE FACE EXIT SIGN PROVIDE UNSWITCHED CONDUCTOR. MOUNT AT +6'-0" UNO.
- SINGLE FACE EXIT SIGN, CEILING MOUNTED PROVIDE UNSWITCHED CONDUCTOR.
- WALL MOUNTED SINGLE FACE EXIT SIGN PROVIDE UNSWITCHED CONDUCTOR. MOUNT AT +8'-0" UNO.
- ARROW INDICATES DIRECTION TO BE SHOWN ON SIGN.
- 1'X1' LIGHT FIXTURE.
- 1'X1' LIGHT FIXTURE, PROVIDE EMERGENCY BATTERY BACKUP CONNECTED TO AN UNSWITCHED CONDUCTOR.
- TRACK LIGHT
- 1'X4' LIGHT FIXTURE.
- 1'X4' LIGHT FIXTURE, PROVIDE EMERGENCY BATTERY BACKUP CONNECTED TO AN UNSWITCHED CONDUCTOR.
- 2'X4' LIGHT FIXTURE.
- 2'X4' LIGHT FIXTURE, PROVIDE EMERGENCY BATTERY BACKUP CONNECTED TO AN UNSWITCHED CONDUCTOR.
- 2'X2' LIGHT FIXTURE.
- 2'X2' LIGHT FIXTURE, PROVIDE EMERGENCY BATTERY BACKUP CONNECTED TO AN UNSWITCHED CONDUCTOR.
- DIRECT/INDIRECT LIGHT FIXTURE. SEE SCHEDULE FOR LENGTH.
- DIRECT/INDIRECT LIGHT FIXTURE. SEE SCHEDULE FOR LENGTH. PROVIDE EMERGENCY BATTERY BACKUP CONNECTED TO AN UNSWITCHED CONDUCTOR
- STRIP LIGHT FIXTURE. SEE SCHEDULE FOR LENGTH.
- STRIP LIGHT FIXTURE. SEE SCHEDULE FOR LENGTH. PROVIDE EMERGENCY BATTERY BACKUP CONNECTED TO AN UNSWITCHED CONDUCTOR
- WALL MOUNTED LIGHT FIXTURE.
- WALL MOUNTED LIGHT FIXTURE, PROVIDE EMERGENCY BATTERY BACKUP CONNECTED TO AN UNSWITCHED CONDUCTOR.
- RECESSED LIGHT FIXTURE
- RECESSED LIGHT FIXTURE. PROVIDE EMERGENCY BATTERY BACKUP CONNECTED TO AN UNSWITCHED CONDUCTOR.
- ROUND LIGHT FIXTURE
- ROUND EMERGENCY LIGHT FIXTURE. PROVIDE EMERGENCY BATTERY BACKUP CONNECTED TO AN UNSWITCHED CONDUCTOR.
- WALL MOUNTED LIGHT FIXTURE.
- WALL MOUNTED EMERGENCY LIGHT FIXTURE. PROVIDE EMERGENCY BATTERY BACKUP CONNECTED TO AN UNSWITCHED CONDUCTOR.
- POLE LIGHT 1 HEAD WITH POLE
- TC — TIME CLOCK
- PC — PHOTO CONTROL CELL LOCATED 12" ABOVE ROOF FACING NORTH.
- OS — OCCUPANCY SENSOR. PROVIDE RELAYS AND POWER PACKS AS REQUIRED.
- D — LED DRIVER
- EMERGENCY EGRESS LIGHTING WITH OUT FIXTURE HEADS. CONNECT TO AN UNSWITCHED CONDUCTOR.
- EMERGENCY EGRESS LIGHTING. CONNECT TO AN UNSWITCHED CONDUCTOR.
- WALL MOUNTED SINGLE FACE EXIT SIGN WITH EMERGENCY EGRESS LIGHTING. PROVIDE UNSWITCHED CONDUCTOR. MOUNT AT +8'-0" UNO.
- CEILING MOUNTED. SINGLE FACE EXIT SIGN WITH EMERGENCY EGRESS LIGHTING. PROVIDE UNSWITCHED CONDUCTOR.
- CEILING MOUNTED. DOUBLE FACE EXIT SIGN WITH EMERGENCY EGRESS LIGHTING. PROVIDE UNSWITCHED CONDUCTOR.
- XXX — INDICATES FIXTURE TYPE. REFER TO FIXTURE SCHEDULE.
- EXTERIOR WALL PACK
- EMERGENCY EXTERIOR WALL PACK. PROVIDE EMERGENCY BATTERY BACKUP CONNECTED TO AN UNSWITCHED CONDUCTOR

DEVICES

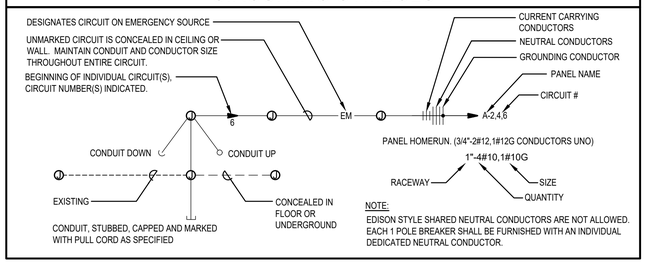
- S — SWITCH, TYPE AS INDICATED. +46"AFF
  - 2 DOUBLE POLE
  - 3 3-WAY
  - 4 4-WAY
  - K KEYED
  - P PILOT LIGHT
  - D DIMMER
  - HP HORSEPOWER RATED
  - TO THERMAL OVERLOAD
  - LV LOW VOLTAGE
  - OS OCCUPANCY SENSOR
  - OR LOW VOLTAGE, MOMENTARY OVERRIDE
  - VS VACANCY SENSOR
  - a SUPERSCRIPT INDICATES LIGHTS TO BE SWITCHED TOGETHER
- DUAL LEVEL SWITCHING, INSIDE AND OUTSIDE LAMPS OF FIXTURE TO BE SWITCHED SEPARATELY.
- DUAL LEVEL SWITCHING WITH OCCUPANCY SENSOR, INSIDE AND OUTSIDE LAMPS OF FIXTURE TO BE SWITCHED SEPARATELY.
- OCCUPANCY SENSOR WITH MANUAL DIMMING, SET FOR 50% AUTOMATIC ON, AUTOMATIC OFF, WITH MANUAL DIMMING.
- SINGLE CONVENIENCE OUTLET, +18" AFF UNO
- FLOOR MOUNT SINGLE CONVENIENCE OUTLET
- DUPLEX CONVENIENCE OUTLET, +18" AFF UNO
- FLOOR MOUNT DUPLEX CONVENIENCE OUTLET
- EMERGENCY DUPLEX CONVENIENCE OUTLET, +18" AFF UNO
- SWITCHED DUPLEX CONVENIENCE OUTLET, +18" AFF UNO
- FLOOR MOUNTED SWITCHED DUPLEX CONVENIENCE OUTLET
- USB DUPLEX CONVENIENCE OUTLET, +18" AFF UNO
- USB FOURPLEX CONVENIENCE OUTLET, +18" AFF UNO
- FOURPLEX CONVENIENCE OUTLET, +18"AFF UNO
- FLOOR MOUNT FOURPLEX CONVENIENCE OUTLET
- CONNECTION POINT TO EQUIPMENT SPECIFIED. ELECTRICAL CONTRACTOR TO SUPPLY RACEWAY AND CONDUCTORS AND MAKE FINAL CONNECTION TO EQUIPMENT UNDER THIS SECTION. UNO
- FLOOR MOUNTED CONNECTION POINT, SEE NOTE ABOVE FOR REQUIREMENTS
- FLOOR MOUNTED JUNCTION BOX
- JUNCTION BOX
- WALL MOUNTED PUSH BUTTON, MOUNT AT SWITCH HEIGHT UNO
- HC — WALL MOUNTED PUSH BUTTON, HANDICAPPED MOUNT AT SWITCH HEIGHT UNO
- WALL MOUNTED PUSH BUTTON, MOUNT AT SWITCH HEIGHT UNO
- MOTOR STARTER/CONTACTOR, SIZE/POLES NEMA 1 UNO AS INDICATED
- COMBINATION STARTER AND DISCONNECT, SIZE/POLES, STARTER SIZE AS INDICATED, NEMA 1 UNO
- F — FUSED DISCONNECT SWITCH, SIZE/POLES, FUSE SIZES AS INDICATED, NEMA 1 UNO
- NON-FUSED DISCONNECT SIZE/ POLES AS INDICATED, NEMA 1 UNO
- T (unit-#) — THERMOSTAT, +46" AFF PROVIDE CONDUIT, J-BOX, CONDUCTORS AS REQUIRED TO CONTROL ASSOCIATED UNITS. UNO COORDINATE WITH DIVISION 15.
- H (unit-#) — HUMIDISTAT, +46" AFF PROVIDE CONDUIT, J-BOX, CONDUCTORS AS REQUIRED TO CONTROL ASSOCIATED UNITS.
- POWER POLE - DUAL CHANNEL
- REB — RECESSED ENTERTAINMENT BOX
- T — TRANSFORMER
- PANELBOARD. SEE SCHEDULE FOR TYPE.
- EQUIPMENT CABINET, SURFACE MOUNTED
- EQUIPMENT CABINET FLUSH MOUNTED
- SURFACE MULTI-OUTLET RACEWAY
- # / # — MECHANICAL EQUIPMENT CALL OUT
- # — KITCHEN EQUIPMENT CALLOUT

ONE LINE

- DELTA WYE TRANSFORMER UNO
- # PANEL NAME VOLTAGE PHASE — PANEL BOARD, SEE SCHEDULE FOR TYPE AND SIZE
- ##A / #P — CIRCUIT BREAKER, SIZE AND POLES INDICATED
- ##A — FUSE, SIZE AND TYPE INDICATED, PROVIDE FUSE FOR EACH POLE
- ##A / #P — INTERRUPTER SWITCH, SIZE AND POLES INDICATED
- ##A / #P — FUSED SWITCH, SIZE/POLES AND FUSE SIZE INDICATED
- ##A / #P — DRAW OUT CIRCUIT BREAKER, SIZE AND POLES INDICATED
- ###A / #P — INDIVIDUAL BREAKER WITH SHUNT TRIP, SIZE AND POLES INDICATED. NEMA 1 UNO
- ###A / #P — INDIVIDUAL BREAKER, SIZE AND POLES INDICATED. NEMA 1 UNO
- GFP — GROUND FAULT PROTECTION
- TVSS — TRANSIENT VOLTAGE SURGE SUPPRESSION
- LSIGR — ADJUSTABLE BREAKER SETTINGS (PER SPECIFICATIONS):
  - 'L'-LONG TIME
  - 'S'-SHORT TIME
  - 'I'-INSTANTANEOUS
  - 'G'-GROUND FAULT
  - 'R'-ENERGY REDUCING MAINTENANCE SWITCH W/STATUS INDICATOR
- GROUND
- ST — SHUNT TRIP COIL
- M — MOTOR
- 100A 3P — DISCONNECT SWITCH, SIZE AND POLES INDICATED. NEMA 1 UNO
- OVERHEAD SERVICE DROP
- ###A/3P — GENERATOR SET, MAIN BREAKER SIZE INDICATED
- AUTOMATIC TRANSFER SWITCH (ATS)
- M — METER AND BASE
- N — NEUTRAL
- T — DRY TYPE TRANSFORMER
- PAD MOUNT TRANSFORMER

NOTE: THIS IS A STANDARD LIST OF COMMONLY USED ELECTRICAL SYMBOLS. SOME OF THE SYMBOLS SHOWN MAY NOT HAVE BEEN USED IN THIS DRAWING PACKAGE.

CIRCUITING SYMBOLS



ELECTRICAL ABBREVIATIONS

A	AMPERES
AC	6" ABOVE BACKSPLASH
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AF	AMP FRAME
AIC	AMPS INTERRUPTING CAPACITY
AT	AMP TRIP
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
BD	BOTTOM OF DECK
BS	BOTTOM OF STRUCTURE
C	CEILING MOUNTED
C	CONDUIT
CB	CIRCUIT BREAKER
CF	COMPACT FLUORESCENT
CKT	CIRCUIT
CO	CONDUIT ONLY, PROVIDE PULL-LINE
CT	CURRENT TRANSFORMER
CTL	CONTROL
DC	DIRECT CURRENT
(D)	DEMOLITION
DEMO	DEMOLITION
DET	DETAIL
DTT	DOUBLE TWIN TUBE
E	EMERGENCY
(E)	EXISTING
EC	ELECTRICAL CONTRACTOR
EL	EMERGENCY LIGHT
F	FUSE
(F)	FUTURE
FACP	FIRE ALARM CONTROL PANEL
G/GND	GROUND
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFI	GROUND FAULT INTERRUPTER
HH	HAND HOLE
HID	HIGH INTENSITY DISCHARGE
HOA	HAND-OFF-AUTO
HPS	HIGH PRESSURE SODIUM
HVAC	HEATING, VENTILATION, & AIR CONDITIONING
IG	ISOLATED GROUND
IPCO	IDAHO POWER COMPANY
J-BOX	JUNCTION BOX
KA	KILOAMP
KVA	KILO VOLT-AMP
KW	KILOWATT
KWH	KILOWATT HOUR
LCP	LIGHTING CONTROL PANEL
MB	MAIN BREAKER
MBR	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MDP	MAIN DISTRIBUTION PANEL
MLO	MAIN LUGS ONLY
MMC	MODULAR METERING CENTER
MH	METAL HALIDE
MSB	MAIN SWITCH BOARD
MTG	MOUNTING
N	NEUTRAL
(N)	NEW
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OH	OVERHEAD
OS	OCCUPANCY SENSOR
P	POLES
PC	PHOTO-CONTROL
PVC	POLYVINYL CHLORIDE
PWR	POWER
RE:	REFERENCE
REC	RECEPTACLE
(R)	RELOCATED
SF	SQUARE FEET
TBD	TO BE DETERMINED
TDR	TIME DELAY RELAY
TK	TOE KICK
TSP	TWISTED SHIELDED PAIR
TRT	TRIPLE TUBE
TTB	TELEPHONE TERMINAL BOARD
(TYP.)	TYPICAL
UC	UNDERCABINET
UG	UNDERGROUND
U.N.O.	UNLESS NOTED OTHERWISE
V	VOLT
VA	VOLT-AMPERE
W	WATT
WG	WIRE GUARD
WP	WEATHER PROOF/NEMA 3R

PROVIDED/ PROVIDE BY INSTALLED/ INSTALL	PROVIDE AND INSTALL / PROVIDED AND INSTALLED BY / PROVIDE AND INSTALL

NOTE: THIS IS A STANDARD LIST OF COMMONLY USED ELECTRICAL ABBREVIATIONS. SOME OF THE ABBREVIATIONS SHOWN ABOVE MAY NOT BE USED IN THIS DRAWING PACKAGE.

ELECTRICAL GENERAL NOTES

A. THESE ELECTRICAL DRAWINGS ARE DIAGRAMMATIC IN NATURE; THEREFORE, THE ELECTRICAL CONTRACTOR SHALL COORDINATE ALL ELECTRICAL EQUIPMENT AND DEVICE LOCATIONS WITH ARCHITECTURAL, MECHANICAL, AND PLUMBING DIVISIONS PRIOR TO ROUGH-IN. REFER TO AND COORDINATE WITH ARCHITECTURAL, MECHANICAL, AND PLUMBING DRAWINGS FOR ADDITIONAL WORK THAT IS REQUIRED BY THE ELECTRICAL CONTRACTOR.

B. ALL CONDUIT AND JUNCTION BOXES ARE TO BE CONCEALED UNLESS LOCATED WITHIN DEDICATED ELECTRICAL OR MECHANICAL ROOMS. USE OF SURFACE MOUNTED RACEWAYS IN ALL OTHER SPACES MUST BE APPROVED BY THE ARCHITECT FOR EACH LOCATION. WHERE SURFACE RACEWAYS ARE APPROVED, UTILIZE WIREMOLD, OR APPROVED EQUAL. SURFACE MOUNTED RACEWAYS PAINTED TO MATCH SURROUNDING WALLS.

C. REFER TO ARCHITECTURAL ELEVATIONS FOR OUTLET HEIGHTS WHERE THE SPECIFIC OUTLET HEIGHT IS NOT INDICATED. REFER TO THE ELECTRICAL LEGEND FOR THE DEFAULT OUTLET HEIGHT WHEN NOT INDICATED ON ELEVATIONS OR ON AT THE DEVICES.

D. PROVIDE PULL-LINE IN ALL EMPTY CONDUITS.

E. TERMINATE ALL LOW-VOLTAGE CONDUITS WITH INSULATED THROAT BUSHING.

F. MECHANICAL EQUIPMENT INDICATED IS SHOWN IN AN APPROXIMATE LOCATION. COORDINATE EXACT LOCATION WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.

SITE:

G. CONTRACTOR SHALL COORDINATE WITH AN UNDERGROUND LOCATING SERVICE PRIOR TO COMMENCING WORK. SEE CIVIL DRAWINGS FOR ADDITIONAL SITE INFORMATION. COORDINATE WITH OTHER SITE DISCIPLINES.

H. SITE LIGHTING AND UTILITY EQUIPMENT SHOWN IN APPROXIMATE LOCATION. COORDINATE EXACT LOCATION WITH CIVIL DRAWINGS, PROPERTY LINES, AND UTILITY COMPANIES PRIOR TO ROUGH-IN.

I. REFER TO POLE BASE DETAIL FOR SITE LIGHTING POLE BASE REQUIREMENTS.

J. ROUTE CONDUITS IN COMMON TRENCH WHERE POSSIBLE REFER TO TRENCHING DETAIL.

COMMUNICATIONS

- JUNCTION BOX FOR FUTURE TELEPHONE/DATA OUTLET. MOUNT AT 18" A.F.F. UNO. PROVIDE SINGLE-GANG MUD RING WITH BLANK COVER PLATE. PROVIDE 1" CONDUIT TO NEAREST ACCESSIBLE CEILING SPACE.
- #D,#T — TELEPHONE/DATA OUTLET. MOUNT AT 18" A.F.F. UNO. PROVIDE 1" CONDUIT TO NEAREST ACCESSIBLE CEILING. INSTALL QUANTITY OF DATA (#D) AND TELEPHONE (#T) CABLES INDICATED TO THE NEAREST DATA RACK. PROVIDE (2) DATA CABLES IF A CABLE QUANTITY IS NOT INDICATED.
- FLOOR MOUNTED BOX FOR FUTURE TELEPHONE/DATA OUTLET. JUNCTION BOX WITH SINGLE-GANG MUD RING. PROVIDE 1" CONDUIT TO NEAREST ACCESSIBLE CEILING SPACE. PROVIDE BLANK COVER PLATE.
- #D,#T — FLOOR MOUNTED TELEPHONE/DATA OUTLET. PROVIDE 1" CONDUIT TO NEAREST ACCESSIBLE CEILING. INSTALL QUANTITY OF DATA (#D) AND TELEPHONE (#T) CABLES INDICATED TO THE NEAREST DATA RACK. PROVIDE (2) DATA CABLES IF A CABLE QUANTITY IS NOT INDICATED.
- IC — INTERCOM SYSTEM CALL BUTTON. +46" UNO.
- SP — CEILING MOUNTED SPEAKER WITH BACKBOX
- SP — WALL MOUNTED SPEAKER, WITH BACKBOX +80" UNO
- V — VOLUME CONTROL, +46" UNO
- TV — TELEVISION OUTLET, +18" AFF UNO. PROVIDE 1-1/4" CONDUIT TO NEAREST ACCESSIBLE CEILING SPACE
- TV — CEILING MOUNTED TELEVISION OUTLET
- TTB — TELEPHONE TERMINAL BOARD
- CT-XX — CABLE TRAY, 4" DEEP, WIRE BASKET STYLE, 'XX' INDICATES WIDTH PROVIDE ALL FITTINGS AND SUPPORT HARDWARE REQUIRED

MUSGROVE ENGINEERING, P.A.
234 S. Whisperwood Way
Boise, ID 83709
208.384.0585
645 West 25th Street
Idaho Falls, ID 83402
208.523.2862
www.musgrovepa.com
PROJECT NO. 23-006

PROFESSIONAL ENGINEER — REGISTERED — 13299 — 2/22/2023 — STATE OF IDAHO — MATTHEW N. BRADLEY

MILLER STAUFFER ARCHITECTS
601 E. FRONT AVE., STE 201
COEUR D ALENE, IDAHO 83814
P 208.664-1773 F 208.667.3174
WWW.MILLERSTAUFFER.COM

Electrical Cover Sheet

BID/PERMIT
2/21/2023

ITD Clarkia Salt Shed
Clarkia, Idaho

LICENSED ARCHITECT
AR-984931
MICHEAL P. WALKER
STATE OF IDAHO

No.	Description	Date

PROJECT NUMBER	---
PRINCIPAL	MB
PROJECT MANAGER	DH

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COMcheck Software Version 4.1.5.5

Interior Lighting Compliance Certificate

Project Information

Energy Code: 2018 IECC
Project Title: ITD CLARKIA SALT SHED
Project Type: New Construction

Construction Site:
CLARKIA, ID

Owner/Agent:

Designer/Contractor:
Matthew N. Bradley
Musgrove Engineering
645 W. 25th St.
Idaho Falls, ID 83402
208-523-2862
mattb@musgrovepa.com

Additional Efficiency Package(s)

Credits: 1.0 Required 1.0 Proposed
High Performance SWH, 1.0 credit

Allowed Interior Lighting Power

A Area Category	B Floor Area (ft2)	C Allowed Watts / ft2	D Allowed Watts (B X C)
1-SALT STORAGE (Warehouse)	8654	0.48	4154
		Total Allowed Watts =	4154

Proposed Interior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
1-SALT STORAGE (Warehouse)				
LED 1: X2: LED HIGH BAY: Other:	1	13	95	1235
			Total Proposed Watts =	1235

Interior Lighting PASSES: Design 70% better than code

Interior Lighting Compliance Statement

Compliance Statement: The proposed interior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been designed to meet the 2018 IECC requirements in COM*check* Version 4.1.5.5 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

MATTHEW N. BRADLEY — Name - Title
Signature
2/21/23 — Date

Project Title: ITD CLARKIA SALT SHED Report date: 02/03/23
Data filename: P:\Files\2023\23006\CALCS\ELEC\23006 Electrical_Compliance.cck Page 1 of 8

COMcheck Software Version 4.1.5.5

Exterior Lighting Compliance Certificate

Project Information

Energy Code: 2018 IECC
Project Title: ITD CLARKIA SALT SHED
Project Type: New Construction
Exterior Lighting Zone 2 (Light industrial area with limited nighttime use (LZ2))

Construction Site:
CLARKIA, ID

Owner/Agent:

Designer/Contractor:
Matthew N. Bradley
Musgrove Engineering
645 W. 25th St.
Idaho Falls, ID 83402
208-523-2862
mattb@musgrovepa.com

Allowed Exterior Lighting Power

A Area/Surface Category	B Quantity	C Allowed Watts / Unit	D Tradable Wattage	E Allowed Watts (B X C)
VEHICLE/MAN DOORS (Pedestrian and vehicular entrances and exits)	62 ft of door	14	Yes	868
MAG STORAGE (Loading dock)	1267 ft2	0.35	Yes	443
			Total Tradable Watts (a) =	1311
			Total Allowed Watts =	1311
			Total Allowed Supplemental Watts (b) =	400

(a) Wattage tradeoffs are only allowed between tradable areas/surfaces.
(b) A supplemental allowance equal to 400 watts may be applied toward compliance of both non-tradable and tradable areas/surfaces.

Proposed Exterior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
VEHICLE/MAN DOORS (Pedestrian and vehicular entrances and exits 62 ft of door width): Tradable Wattage				
LED 2: Other:	1	5	108	540
MAG STORAGE (Loading dock 1267 ft2): Tradable Wattage				
LED 1: X2: LED HIGH BAY: Other:	1	4	95	380
			Total Tradable Proposed Watts =	920

Exterior Lighting PASSES: Design 46% better than code

Exterior Lighting Compliance Statement

Compliance Statement: The proposed exterior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed exterior lighting systems have been designed to meet the 2018 IECC requirements in COM*check* Version 4.1.5.5 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

MATTHEW N. BRADLEY — Name - Title
Signature
2/21/23 — Date

Project Title: ITD CLARKIA SALT SHED Report date: 02/03/23
Data filename: P:\Files\2023\23006\CALCS\ELEC\23006 Electrical_Compliance.cck Page 2 of 8

ENERGY CODE COMMISSIONING COMPLIANCE NOTES

SECTION 408 SYSTEM COMMISSIONING

IT SHALL BE THE ELECTRICAL CONTRACTOR'S RESPONSIBILITY TO PROVIDE ALL BELOW NOTED DOCUMENTS WITHIN 90 DAYS OF CERTIFICATE OF OCCUPANCY:

A. AS-BUILT DRAWINGS - DRAWINGS SHALL INCLUDE THE LOCATION AND PERFORMANCE DATA OF ALL PIECES OF MECHANICAL EQUIPMENT.

B. OPERATING AND MAINTENANCE MANUALS - MANUALS SHALL INCLUDE THE FOLLOWING:

1. SUBMITTAL DATA ON ALL PIECES OF EQUIPMENT REQUIRING MAINTENANCE.
2. MANUFACTURER'S OPERATIONS AND MAINTENANCE DATA ON ALL PIECES OF EQUIPMENT. ROUTINE MAINTENANCE ACTIONS SHALL BE CLEARLY IDENTIFIED.
3. NAME AND ADDRESS AND PHONE NUMBER OF OF AT LEAST ONE (1) SERVICE PROVIDED.
4. LIGHTING CONTROL SYSTEMS MAINTENANCE AND CALIBRATION INFORMATION INCLUDING WIRING DIAGRAMS, EQUIPMENT AND SYSTEM SCHEMATICS, AND CONTROL SEQUENCES OF OPERATIONS. DESIRED OR FIELD DETERMINED SETPOINTS SHALL BE PERMANENTLY RECORDED ON CONTROL DRAWINGS AT ALL CONTROL DEVICES, OR FOR DIGITAL CONTROL SYSTEMS, IN THE SYSTEM PROGRAMMING INSTRUCTIONS.
5. A NARRATIVE ON HOW EACH LIGHTING SYSTEM IN INTENDED TO OPERATE, INCLUDING RECOMMENDED SETPOINTS.

C. LIGHTING SYSTEM FUNCTIONAL TESTING REQUIREMENTS

FUNCTIONAL TESTING - ALL AUTOMATIC LIGHTING CONTROL SYSTEM SHALL BE FULLY TESTED TO ENSURE THE CONTROL HARDWARE AND SOFTWARE ARE CALIBRATED, ADJUSTED, PROGRAMMED, AND IN PROPER WORKING CONDITION IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS AND MANUFACTURER'S INSTALLATION INSTRUCTIONS.

WHERE OCCUPANT SENSORS, TIME SWITCHES, PROGRAMMABLE CONTROLS, PHOTOSENSORS OR DAYLIGHTING CONTROLS ARE INSTALLED, THE FOLLOWING PROCEDURES SHALL BE PREFORMED:

1. CONFIRM THAT THE PLACEMENT, SENSITIVITY AND TIME-OUT ADJUSTMENTS FOR OCCUPANT SENSORS YIELD ACCEPTABLE PERFORMANCE.
2. CONFIRM THAT THE TIME SWITCHES AND PROGRAMMABLE SCHEDULE CONTROLS ARE PROGRAMMED TO TURN THE LIGHTS OFF.
3. CONFIRM THAT THE PLACEMENT AND SENSITIVITY ADJUSTMENTS FOR PHOTOSENSOR CONTROLS REDUCE ELECTRIC LIGHT BASED ON THE AMOUNT OF USABLE DAYLIGHT IN THE SPACE AS SPECIFIED.

D. FINAL LIGHTING SYSTEM FUNCTIONAL REPORT - A REPORT OF TEST PROCEDURES AND RESULTS IDENTIFIED AS THE "FINAL LIGHTING CONTROL REPORT" SHALL BE DELIVERED TO THE BUILDING OWNER. THE REPORT SHALL INCLUDE THE FOLLOWING:

1. LIST OF FUNCTIONAL TESTS USED DURING THE COMMISSIONING PROCESS ON EACH PIECE OF EQUIPMENT.
2. RESULTS OF ALL FUNCTIONAL TESTS ON ALL PIECES OF EQUIPMENT.
3. LIST OF DEFICIENCIES FOUND AND CORRESPONDING CORRECTIVE MEASURES EITHER IMPLEMENTED OR PROPOSED ON EACH PIECE OF EQUIPMENT.
4. LIST OF EQUIPMENT NOT ABLE TO BE FUNCTIONALLY TESTED DUE TO CURRENT CLIMATE CONDITIONS. THESE PIECES OF EQUIPMENT WILL FUNCTIONALLY TESTED ONCE CLIMATE CHANGES ALLOW.

PROFESSIONAL ENGINEER — REGISTERED — MATTHEW N. BRADLEY — 13299 — 2/22/2023 — STATE OF IDAHO

MUSGROVE ENGINEERING, P.A.
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ENERGY CODE
BID/PERMIT
2/21/2023

LICENSED ARCHITECT
AR-984931
MICHEAL P. WALKER
STATE OF IDAHO

ITD Clarkia Salt Shed
Clarkia, Idaho

No.	Description	Date

PROJECT NUMBER ---
PRINCIPAL MB
PROJECT MANAGER DH

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SECTION 26 05 00 - ELECTRICAL GENERAL PROVISIONS

PART 1 - GENERAL

1.1 CONDITIONS AND REQUIREMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

B. Provisions of this Section shall apply to all Sections of Division 26, 27, and 28.

1.2 SCOPE OF WORK

A. Furnish and install all materials and equipment and provide all labor required and necessary to complete the work shown on the drawings and/or specified in all Sections of Division 26 and all other work and miscellaneous items, not specifically mentioned, but reasonably inferred for a complete installation, including all accessories required for testing the system. It is the intent of the drawings and specifications that all systems be complete and ready for operation.

1.3 CODE COMPLIANCE

A. All work and materials shall comply with the latest rules, codes and regulations, including, but not limited to, the following:

1. Occupational Safety and Health Act Standards (OSHA)
2. NFPA #70 – National Electric Code (NEC)
3. ADA Standards – Americans with Disabilities Act
4. ANSI/IEEE C-2 – National Electrical Safety Code
5. NECA – Standard of Installation

B. International Building Code

C. International Fire Code

D. International Energy Conservation Code

E. NFPA #72 – Fire Code

F. NFPA #101 – Life Safety Code

G. All other applicable Federal, State and local laws and regulations.

H. Work to be executed and inspected in accordance with local codes and ordinances. Permits, fees or charges for inspection or other services shall be paid for by the contractor. Local codes and ordinances are to be considered as minimum requirements and must be properly executed without expense to the owner; but do not relieve the contractor from work shown that exceeds minimum requirements.

1.4 CONDITIONS AT SITE

A. Visit to site is recommended of all bidders prior to submission of bid. All will be held to have familiarized themselves with all discernible conditions and no extra payment will be allowed for work required because of these conditions, whether specifically mentioned or not.

B. Lines of other service that are damaged as a result of this work shall be promptly repaired at no expense to the owner to the complete satisfaction of the owner.

1.5 DRAWINGS AND SPECIFICATIONS

A. All drawings and all specifications shall be considered as a whole and work of this Division shown anywhere therein shall be furnished under this Division.

B. Drawings are diagrammatic and indicate the general arrangement of equipment and wiring. Most direct routing of conduits and wiring is not assured. Exact requirements shall be governed by architectural, structural and mechanical conditions of the job. Consult all other drawings in preparation of the bid. Extra lengths of wiring or addition of pull or junction boxes, etc., necessitated by such conditions shall be included in the bid. Check all information and report any apparent discrepancies before submitting bid.

C. Change to location, type, function, brand name, finish, etc., shall not be made without permission of engineer.

D. Some equipment is specifically designated on the drawings. It is not the intent to sole source any item unless explicitly stated. Items have been specified based upon design requirements. All bidders are encouraged to submit products for approval. Prior approval must be obtained as required by these contract documents. Bids submitted with non-approved items will be considered invalid and bidders will be held to provide approved materials at no additional cost to the owner. Submittals received by the engineer after award of contract on non-approved equipment will not be reviewed nor will they be returned.

E. Where conflicting direction is given within the specifications and drawings, the contractor shall include the most expensive option in the bid.

1.6 SAFETY AND INDEMNITY

A. Safety: The contractor shall be solely and completely responsible for conditions of the job site, including safety of all persons and property during performance of the work. This requirement will apply continuously and not be limited to normal working hours.

B. No act, service, drawing review or construction review by the owner is intended to include review of the adequacy of the contractor's safety measures in, on, or near the construction site.

1.7 CONSTRUCTION OBSERVATION BY THE ENGINEER

A. Prior to covering: any major portion of the materials installed under this section, notify the engineer so that an observation can be made. Notification shall be made at least three (3) working days in advance of the date the items will be covered.

1.8 INSTRUCTION OF OWNER'S PERSONNEL

A. The contractor shall conduct an on-site instructional tour of the entire project. The personnel designated by the owner shall be instructed in: operation of all electrical systems, trouble-shooting procedures, preventative maintenance procedures, uses of Operation and Maintenance manuals, maintenance and cleaning of lighting fixtures and operation of all special systems.

B. Contractor will include in his bid 8 hours of instruction time to be held at the project location after substantial completion for instruction of owner's personnel. Coordinate time and number of owner personnel to be present and provide schedule to engineer.

1.9 PROJECT COMPLETION

A. Upon completion of all work and operational checks on all systems, the contractor shall request that a final construction observation be performed.

B. The engineer shall compile a punch list of items to be completed or corrected. The contractor shall notify the engineer upon completion of the items.

1.10 GUARANTEE

A. All work under this section shall be guaranteed in writing to be free of defective work, materials, or parts for a period of one (1) year after final acceptance of the work under this contract or the period indicated under the Division 1 specifications whichever is longer.

B. Repair, revision or replacement of any and all defects, failure or inoperativeness shall be done by the contractor at no cost to the owner.

PART 2 - PRODUCTS

2.1 MATERIAL APPROVAL

A. The design, manufacturer and testing of electrical equipment and materials shall conform to or exceed latest applicable NEMA, IEEE or ANSI standards.

B. All materials must be new, unless noted otherwise, and UL listed. Materials that are not covered by UL testing standards shall be tested and approved by an independent testing laboratory or a governmental agency, which laboratory shall be acceptable to the owner and code enforcing agency.

2.2 SHOP DRAWINGS AND MATERIALS LIST

A. Submit an electronic copy, unless noted otherwise under Division 1, of the Division 26, 27 and 28 shop drawings and material lists proposed for this project to the architect/engineer for review.

2.3 OPERATION AND MAINTENANCE MANUALS

A. Submit an electronic copy, unless noted otherwise under Division 1, of the Operation and Maintenance Manuals for all Division 26, 27 and 28 equipment to the architect/engineer.

2.4 RECORD DRAWINGS

A. Submit record drawings to owner.

2.5 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Deliver, store, and handle materials in a manner to prevent damage.

B. Protect equipment from weather and dampness.

PART 3 - EXECUTION

3.1 WORKMANSHIP AND CONTRACTOR'S QUALIFICATIONS

A. Only quality workmanship will be accepted. Haphazard or poor installation practice will be cause for rejection of work.

B. Provide experienced foreman with a minimum of three years experience working on this type of building placed in charge of this work at all times.

3.2 COORDINATION

A. Coordinate work with other trades to avoid conflict and to provide correct rough-in and connection for equipment furnished under trades that require electrical connections. Inform contractors of other trades of the required access to and clearances around electrical equipment to maintain serviceability and code compliance.

B. Verify equipment dimensions and requirements with provisions specified under this Section. Check actual job conditions before fabricating work. Report necessary changes in time to prevent needless work. Changes or additions subject to additional compensation, which are made without the authorization of the owner, shall be at contractor's risk and expense.

3.3 MANUFACTURER'S INSTRUCTIONS

A. All installations are to be made in accordance with manufacturer's recommendations. A copy of such recommendations shall at all times be kept in the job superintendent's office and shall be available to the engineer.

B. Follow manufacturer's instructions where they cover points not specifically indicated on drawings and specifications. If they are in conflict with the drawings and specifications obtain clarification from the engineer before starting work.

3.4 QUALITY ASSURANCE

A. The contractor shall insure that all workmanship, all materials employed, all required equipment and the manner and method of installation conforms to accepted construction and engineering practices, and that each piece of equipment is in satisfactory working condition to satisfactorily perform its functional operation.

B. Provide quality assurance tests and operational check on all components of the electrical distribution system, all lighting fixtures, and special systems.

3.5 CUTTING AND PATCHING

A. Perform all cutting and fittings required for work of this section in rough construction of the building.

B. All patching of finished construction of building shall be performed under the sections of specifications covering these materials.

C. No joists, beams, girders or columns shall be cut by any contractor without obtaining written permission from the architect/engineer.

END OF SECTION 260500

SECTION 26 05 01 – FIELD TEST AND OPERATIONAL CHECK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

B. 260502 - Short-Circuit-Coordination Study-Arc Flash Hazard Analysis

1.2 SCOPE OF WORK

A. Ground resistance test.

B. 600V cable insulation test.

C. Sectionalizing switch insulating oil test.

D. Transformer insulating liquid test.

E. Primary voltage cable high potential test.

F. Main and distribution switchboard and panelboard operational check and test.

G. Generator test.

1.3 GENERAL SCOPE

A. The contractor shall engage and pay for the services of a recognized independent testing laboratory for the purpose of performing inspections and tests as specified in this Section.

B. The testing laboratory shall provide all material, equipment, labor and technical supervision to perform such tests and inspections.

C. These tests shall assure that all electrical equipment is operational within industry and manufacturer's tolerances, is installed in accordance with design specifications, and shall determine the suitability for energization.

D. The contractor shall schedule the tests and give a minimum of two weeks advance notice to the owner.

1.4 QUALIFICATIONS OF TESTING AGENCY

A. Testing agency shall be Current Technologies Inc. or approved equal.

1.5 TEST INSTRUMENT TRACEABILITY

A. The testing agency shall have a calibration program which maintains all applicable test instrumentation within rated accuracy.

B. Instruments shall be calibrated at the following frequency:

C. Field instruments: Six months maximum

1. Laboratory instruments: 12 months
2. Leased specialty equipment: 12 months (where accuracy is guaranteed by lessor, e.g. Doble)

D. Dated calibration levels shall be visible on all test equipment.

1.6 FINAL SETTINGS

A. The contractor shall set the protective devices in accordance with a short-circuit and protective device coordination report.

1.7 TEST REPORT

A. Submit copies of the test results to the owner. Test results shall be included in the project O &M Manuals.

B. The test report shall include a project summary, description of equipment tested, description of test, list of test equipment used and calibration date, test results, conclusions and recommendations, appendix (including appropriate test forms), and standards used.

C. The test report shall be bound and its contents certified.

1.8 FAILURE TO MEET TEST

A. Any system, material, or workmanship which is found defective on the basis of acceptance tests shall be reported directly to the owner.

B. Contractor shall replace the defective material or equipment and have test repeated until test proves satisfactory without additional cost to the owner.

PART 2 - PRODUCTS - NOT APPLICABLE

PART 3 - EXECUTION

3.1 GROUND RESISTANCE TEST

A. Building grounding electrode resistance testing shall be accomplished with a ground resistance direct-reading single test meter utilizing the Fall-of-Potential method and two reference electrodes. Perform test prior to interconnection to other grounding systems. Orient the concrete-encased ground electrode to be tested and the two reference electrodes in a straight line spaced fifty (50) feet apart. Drive the two reference electrodes five (5) feet deep.

B. Test results shall be in writing and shall show temperature, humidity and condition of the soil at the time of the tests. In the case where the ground resistance exceeds five (5) ohms, the owner will issue additional instructions.

3.2 600 VOLT CABLE INSULATION TEST

A. Megger and record insulation resistances of all 600 volt insulated conductors size 4/0 AWG and larger using a 500 volt megger for one minute. Conduct tests with circuits isolated from source and load.

3.3 SECTIONALIZING SWITCH INSULATING OIL TEST

A. Sample test the insulating oil in accordance with ASTM D-923 for the following:

B. Dielectric strength.

1. Acid neutralization number.
2. Interfacial tension.
3. Color.

3.4 PAD MOUNT TRANSFORMER INSULATING LIQUID TEST

A. Sample test the insulating liquid of the pad mount transformer in accordance with ASDM D-923 for the following:

B. Dielectric strength.

1. Acid neutralization number.
2. Interfacial tension.
3. Color.

3.5 MAIN AND DISTRIBUTION SYSTEM SWITCHBOARD AND PANELBOARD OPERATIONAL CHECK AND TEST

A. Check cleanliness of all interiors and all parts. Remove any excess packaging, shipping bolts, etc. Inspect for shipping damage.

B. Tighten all points of connection with torque wrench to values recommended by the manufacturer.

C. Verify proper operating condition of all equipment mechanically and electrically, including, but not limited to:

D. Wiring for all meters and instrumentation.

1. Verify operation of each circuit breaker trip device with an accurately metered timed instrument (by passing 300 percent rated current through each pole).
2. Verify relay operation by introduction of accurately metered currents into both overcurrent and ground fault circuitry at values which will enable accurate determination of the tripping coordination of main and feeder breakers. Provide this test with the tie breaker when provided.
3. Verify short time pick-up and delay, and instantaneous pick-up current. These should conform with manufacturer's published time current characteristic curves.
4. Auxiliary protective devices such as phase failure relays shall be activated to ensure operation.
5. Determine instantaneous pick-up current by primary injection using run-up or pulse method. Clearing time shall be within four (4) cycles.
6. Perform insulation resistance test per NASET specification section 2.
7. Measure the system neutral to ground resistance with neutral disconnect link removed, for ground fault protected systems.
8. Utilizing primary current injection, verify the breaker picks up and trips within the manufacturer's recommendations.
9. If the ground fault relay is external to the breaker or switch, ensure the operation at reduced voltage (60% for AC control and 80% for DC control).
10. Exercise all devices and components ensuring smooth operation.
11. Devices shall be tested upon settings defined by the breaker coordination study for this project.

E. If any equipment is found defective during operational check, it shall be replaced by the contractor without cost to the owner and tests repeated by the contractor, without cost to the owner, until satisfactory results are obtained.

3.6 PRIMARY VOLTAGE CABLE HIGH POTENTIAL TEST

A. All primary cables shall be given DC high potential tests after installation. All tests shall be performed in the presence of the owner and shall be performed to their complete satisfaction. DC high potential test of cables shall be performed after all splices and cable terminations are made but before connections to equipment are made. A DC micro-ammeter in series with the ground connection of the high voltage transformer shall be used to read the leakage current in the cable at two minute intervals during the test.

B. A variable voltage regulator of adequate rating shall be used to permit the raising of test voltage over a minimum of ten minutes in 5kV increments from zero to final test values as recommended by cable manufacturer. Testing time shall be started when the voltage on the cable has attained final test value and shall be continued for at least ten minutes thereafter.

C. Results of the test shall be plotted, current against voltage at each 5kV increment of rise after two minutes minimum or after value has stabilized, to a maximum test value, and current against time for 10 minutes thereafter in one minute intervals on a separate sheet for each length of cable tested. Curves shall be identified with the cable to which they apply and shall be certified. Time of day, outside temperature, and humidity at time of each test shall appear on each curve sheet.

D. If any primary cable fails or tests, in the opinion of the owner, show unacceptable cable defects, all cables in that conduit between the nearest pulling points on each side of the failure shall be withdrawn. If, in the opinion of the owner, other cables that may have been installed in the same duct are not damaged, they may be re-installed, but the failed cable shall be replaced with new cable without additional charge.

E. After replacement of the faulty cable, and any other damaged cables, all cables of the circuit in that conduit shall be retested. If the cable fails again, or if tests, in the opinion of the owner, show unacceptable cable defects, all cables shall be replaced without charge and this procedure shall be repeated until tests prove satisfactory.

3.7 GENERATOR TEST

A. After the installation and initial start-up of the engine generator set is complete, a test shall be performed and logged in the presence of the owner. The contractor shall have the engine generator manufacturer furnish and engineer to operate the engine during the test, to check all details of the installation and to instruct the operators. The engineer will be required for a period of not less than two days for instruction and tests and all costs in connection therewith shall be included in the contractor's bid. The contractor shall furnish all fuel, lubricants, load banks and instruments necessary to conduct the tests and shall connect all devices required to obtain data required below. The resistor load bank shall be connected to the load side of the automatic transfer switch and the contractor shall make any necessary temporary connections to obtain full load for the test.

B. On site testing shall include all items specified in NFPA-110.

C. Field test requirements: Data shall be recorded every 15 minutes and at the beginning and end of every separate test and shall include all electrical and temperature information. Testing shall be accomplished in the following sequence:

D. Check all engine and generator mounting bolts. Check alignment of engine generator and realign if not within manufacturer's limits.

1. Test generator and exciter insulation resistance with a megger. Take generator readings at circuit breaker or at leads to switchboards. Record all results in the test report.
2. Perform engine manufacturer's recommended prestarting checks. Include a check of water, fuel, and lube oil levels within the engine.
3. Start engine and make engine manufacturer's after starting checks during a reasonable run-in or warm-up period.
4. Operate engine generator for one hour at 50% of rated load.
5. Operate engine generator for one hour at 75% of rated load.
6. Operate engine generator for two hours at 100% of rated load.
7. Measure sound level to assure that the sound spectrum does not exceed the criteria specified.
8. Increase engine speed by manually overriding the governor. Speed shall be measured by a tachometer. Record speed at which overspeed trip operates.
9. Demonstrate functioning of high temperatures coolant circuit by restricting airflow through the radiator. Record temperatures.
10. Shutdown engine and observe operation of low oil pressure control. Record pressure at which trip operates. Note: If safety conditions of the safety system are not met during any of the preceding three steps, the necessary readjustments shall be made and the step repeated until satisfactory results are obtained.
11. Ensure proper operation of the automatic exercising system by setting system for automatic operation then manually initiating and exercise period of at least 30 minutes.
12. A battery starting test shall be performed with the charger disconnected, consisting of four (4) cranking cycles of 10 seconds "on" and 10 seconds "off." The engine fuel supply shall be shut off to prevent starting.

E. Checks to be made during on-site testing:

F. Proper operation of all controls.

1. Proper operation of all gauges and instruments throughout operation.
2. Proper operation of all auxiliary and accessory equipment. All valves, including pilot valves and injection pump, shall be checked during the tests to ensure proper operation.

G. Inspection: Upon completion of the on-site tests, a general inspection shall be made for:

H. Leaks in the engine, piping systems, tank, etc.

1. Excessive blow-by.
2. Any other deficiency which may impair proper operation.
3. Change oil and oil filter and record hour readings.

I. Acceptance: Final acceptance shall be made when the generator set has successfully completed the on-site test and after all defects in material or operation have been corrected with maintenance manuals and training completed.

END OF SECTION 260501

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SPECIFICATIONS
BID/PERMIT
2/21/2023

ITD Clarkia Salt Shed
Clarkia, Idaho

LICENSED ARCHITECT AR-984931 MICHEAL P. WALKER [STATE OF IDAHO]

No.	Description	Date

PROJECT NUMBER ---
PRINCIPAL MB
PROJECT MANAGER DH

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SECTION 26 05 19 - CONDUCTORS AND CABLES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes building wires and cables and associated connectors, splices, and terminations for wiring systems rated 600 V and less.

1.3 SUBMITTALS

A. Submit shop drawings and product data.

1.4 COORDINATION

A. Coordinate layout and installation of cables with other installations.

B. Revise locations and elevations from those indicated, as required to suit field conditions and as approved by the owner.

PART 2 - PRODUCTS

2.1 BUILDING WIRES AND CABLES

A. Conductors: Stranded, copper, 600 volt insulation, type THHN/THWN, THHN/THWN-2, XHHN/XHHW.

B. Conductors:

C. Solid or stranded for No. 10 and smaller, stranded for No. 8 and larger, copper, 600 volt insulation, type THHN/THWN. Aluminum conductors not allowed unless noted otherwise.

1. Insulation Types: THWN-2 for underground, THWN for wet locations, THHN for dry locations; XHHN/XHHW for GFI branch circuits and feeders fed from GFCI breakers.

D. Color-code 208/120-V system secondary service, feeder, and branch-circuit conductors throughout the secondary electrical system as follows:

1. Phase A: Black.
2. Phase B: Red.
3. Phase C: Blue.
4. Neutral: White.
5. Ground: Green.
6. Isolated ground: Green with yellow tracer.

E. Color-code 480/277-V system secondary service, feeder, and branch-circuit conductors throughout the secondary electrical system as follows:

1. Phase A: Brown.
2. Phase B: Orange.
3. Phase C: Yellow.
4. Neutral: White or gray.
5. Ground: Green.

F. Wire connectors and splices: units of size, ampacity rating, material, type and class suitable for service indicated.

G. Signal and communication circuits:

1. Special cables as indicated on the drawings.
2. Conductors for general use: stranded copper conductor, #16 AWG minimum, with THWN-2 insulation for underground, THWN for wet locations and THHN insulation for dry locations.

PART 3 - EXECUTION

3.1 GENERAL WIRING METHODS

A. Examine raceways and building finishes to receive wires and cables for compliance with requirements for installation tolerances and other conditions affecting performance of wires and cables. Do not proceed with installation until unsatisfactory conditions have been corrected.

B. Use no wire smaller than #12 AWG for power and lighting circuits and no smaller than #18 AWG for control wiring.

C. The contractor is responsible for upsizing conductor sizes to ensure the maximum voltage drop of any branch circuit does not exceed 3%. For reference, use No. 10 AWG conductor for 20 Amp, 120 volt branch circuits longer than 75 feet, and for 20 Amp, 277 volt branch circuits longer than 200 feet.

D. Place an equal number of conductors for each phase of a circuit in the same raceway or conduit.

E. Splice only in junction or outlet boxes.

F. Neatly train or lace wiring inside boxes, equipment, and panelboards.

G. Make conductor lengths for parallel circuits equal.

H. Provide a separate neutral conductor for each ungrounded conductor. Ungrounded conductors may share a neutral when all of the following conditions are met:

I. The ungrounded conductors are connected to a multi-pole breaker or breakers that are clipped together with a UL listed means that provide a common trip.

J. The ungrounded conductors contained in the same conduit or raceway.

K. The ungrounded conductors all originate from a separate and unique phase bus in the panel.

3.2 INSTALLATION

A. Install wires and cables as indicated, according to manufacturer's written instructions, and the "National Electrical Installation Standards" by NECA.

B. Remove existing wires from raceway before pulling in new wires and cables.

C. Pull Conductors: Use manufacturer-approved pulling compound or lubricant where necessary; compound used must not deteriorate conductor or insulation. Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.

D. Use pulling means; including fish tape, cable, rope, and basket weave wire/cable grips that will not damage cables or raceway.

E. Install exposed cables parallel and perpendicular to surfaces of exposed structural members, and follow surface contours where possible.

F. Support cables above accessible ceilings; do not rest on ceiling tiles. Do not fasten cables to ceiling support wires. Use cable ties to support cables from structure.

3.3 CONNECTIONS

A. Conductor Splices: Keep to minimum.

B. Install splices and tapes that possess equivalent or better mechanical strength and insulation ratings than conductors being spliced.

C. Use splice and tap connectors compatible with conductor material.

D. Wiring at Outlets: Install conductor at each outlet, with at least 12 inches of slack.

E. Connect outlets and components to wiring and to ground as indicated and instructed by manufacturer.

F. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values.

G. Terminate spare conductors with electrical tape.

3.4 LABELING

A. Provide Brady wire markers or equivalent on all conductors. All wire shall be labeled in each box and panel with the circuit number and panel identification.

3.5 FIELD QUALITY CONTROL

A. Inspect wire and cable for physical damage.

B. Perform continuity testing on all power and equipment branch circuit conductors. Verify proper phasing connections.

END OF SECTION 260519

SECTION 26 05 26 - GROUNDING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including Fixed Price Construction Contract and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes grounding of electrical systems and equipment. Grounding requirements specified in this Section may be supplemented by special requirements of systems described in other Sections.

1.3 SYSTEM DESCRIPTION

A. service entrance equipment to concrete encased electrode, metal underground water pipe, and effectively grounded metal frame of building.

B. Ground each separately-derived system neutral to nearest effectively grounded metal structural frame of building or point of service entrance ground.

C. Provide communications system grounding conductor to point of service entrance ground.

D. Bond together system neutrals, service equipment enclosures, exposed non-current carrying metal parts of electrical equipment, metal raceway systems, grounding conductors in raceways and cables, receptacle ground connectors, and plumbing systems.

1.4 QUALITY ASSURANCE

A. Testing: Refer to Section 26 05 01 – Field Test and Operational Check.

PART 2 - PRODUCTS

2.1 GROUNDING CONDUCTORS

A. For insulated conductors, comply with Section 260519 - Conductors and Cables.

B. Material: Copper.

C. Equipment Grounding Conductors: Insulated with green-colored insulation. Where green insulation is not available, on larger sizes, black insulation shall be used and suitably identified with green tape at each junction box or device enclosure.

D. Isolated Ground Conductors: Insulated with green-colored insulation with yellow tracer. Where not available, green and yellow tape at each junction box or device enclosure.

E. Underground Conductors: Bare, tinned, stranded, unless otherwise indicated.

F. Bare Copper Conductors: Medium hard drawn copper conductor, stranded, sized as shown on the drawings.

G. Hardware: Bolts, nuts and washers shall be bronze; cadmium plated steel or other non-corrosive material, approved for the purpose.

H. Grounding Bus: Bare, annealed copper bars of rectangular cross section, with insulators.

2.2 CONNECTOR PRODUCTS

A. Comply with IEEE 837 and UL 467; listed for use for specific types, sizes, and combinations of conductors and connected items.

B. Bolted Connectors: Bolted-pressure-type connectors, or compression type.

C. Welded Connectors: Exothermic-welded type, in kit form, and selected per manufacturer's written instructions.

D. Below grade compression fittings: Thomas & Betts, Series 52000, 53000, and 54000 or equivalent.

E. Use connector and sealant approved for purpose on all below grade clamp or compression type connections.

2.3 GROUNDING ELECTRODES

A. Ground Rods: Copper-clad steel, 5/8 inch diameter, minimum length 8 feet.

PART 3 - EXECUTION

3.1 APPLICATION

A. Use only copper conductors for both insulated and bare grounding conductors in direct contact with earth, concrete, masonry, crushed stone, and similar materials.

B. In raceways, use insulated equipment grounding conductors.

C. Exothermic-Welded Connections: Use for connections to structural steel and for underground connections.

D. Equipment Grounding Conductor Terminations: Use bolted pressure clamps.

E. Grounding Bus: Install in electrical and telephone equipment rooms, in rooms housing service equipment, and elsewhere as indicated.

1. Use insulated spacer; space 1 inch from wall and support from wall 6 inches above finished floor, unless otherwise indicated.

F. Underground Grounding Conductors: Use copper conductor, No. 2/0 AWG minimum. Bury at least 24 inches below grade.

3.2 EQUIPMENT GROUNDING CONDUCTORS

A. Comply with NEC Article 250, for types, sizes, and quantities of equipment grounding conductors, unless specific types, larger sizes, or more conductors than required by NEC are indicated.

B. Install equipment grounding conductors in all feeders and circuits.

C. Install insulated equipment grounding conductor with circuit conductors for the following items, in addition to those required by NEC:

1. Feeders and branch circuits.
2. Lighting circuits.
3. Receptacle circuits.
4. Single-phase motor and appliance branch circuits.
5. Three-phase motor and appliance branch circuits.
6. Flexible raceway runs.

D. Computer Outlet Circuits: Install insulated equipment grounding conductor in branch-circuit runs from computer-area power panels or power-distribution units.

E. Isolated Grounding Receptacle Circuits: Install an insulated equipment grounding conductor connected to the receptacle grounding terminal. Isolate grounding conductor from raceway and from panelboard grounding terminals. Terminate at equipment grounding conductor terminal of the applicable derived system or service, unless otherwise indicated.

F. Nonmetallic Raceways: Install an equipment grounding conductor in nonmetallic raceways bonded to outlet or equipment, sized per Section 250 of the NEC.

G. Signal and Communication Systems: For telephone, alarm, voice and data, and other communication systems, provide No. 4 AWG minimum insulated grounding conductor in raceway from grounding electrode system to each service location, terminal cabinet, wiring closet, and central equipment location.

1. Service and Central Equipment Locations and Wiring Closets: Terminate grounding conductor on grounding bar.
2. Terminal Cabinets: Terminate grounding conductor on cabinet grounding terminal.

H. Provide green insulated ground conductor to exterior post light standards.

I. Provide grounding and bonding at pad-mounted transformer in accordance with Section 261200.

3.3 INSTALLATION

A. Ground Rods: Where indicated, install at least three rods spaced at least one-rod length from each other and located at least the same distance from other grounding electrodes.

1. Drive ground rods until tops are 2 inches below finished floor or final grade, unless otherwise indicated.
2. Interconnect ground rods with grounding electrode conductors. Use exothermic welds, unless otherwise indicated. Make connections without exposing steel or damaging copper coating.

B. Grounding Conductors: Route along shortest and straightest paths possible, unless otherwise indicated. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage.

C. Bonding Straps and Jumpers: Install so vibration by equipment mounted on vibration isolation hangers and supports is not transmitted to rigidly mounted equipment. Use exothermic-welded connectors for outdoor locations, unless a disconnect-type connection is required; then, use a bolted clamp. Bond straps directly to the basic structure taking care not to penetrate any adjacent parts. Install straps only in locations accessible for maintenance.

D. Metal Water Service Pipe: Provide insulated copper grounding conductors, in conduit, from building's main service equipment, or grounding bus, to main metal water service entrances to building. Connect grounding conductors to main metal water service pipes by grounding clamp connectors. Where a dielectric main water fitting is installed, connect grounding conductor to street side of fitting. Bond metal grounding conductor conduit or sleeve to conductor at each end.

E. UFER Ground (Concrete-Encased Grounding Electrode): Fabricate according to NEC 250, using a minimum of 20 feet of bare copper conductor not smaller than No. 4 AWG. Bond grounding conductor to reinforcing steel in at least four locations and to anchor bolts. Extend grounding conductor below grade and connect to building grounding grid or to a grounding electrode external to concrete.

3.4 CONNECTIONS

A. General: Make connections so galvanic action or electrolysis possibility is minimized. Select connectors, connection hardware, conductors, and connection methods so metals in direct contact will be galvanically compatible.

1. Use electroplated or hot-tin-coated materials to ensure high conductivity and to make contact points closer to order of galvanic series.
2. Make connections with clean, bare metal at points of contact.
3. Make aluminum-to-steel connections with stainless-steel separators and mechanical clamps.
4. Make aluminum-to-galvanized steel connections with tin-plated copper jumpers and mechanical clamps.
5. Coat and seal connections having dissimilar metals with inert material to prevent future penetration of moisture to contact surfaces.

B. Exothermic-Welded Connections: Comply with manufacturer's written instructions. Welds that are puffed up or that show convex surfaces indicating improper cleaning are not acceptable.

C. Equipment Grounding Conductor Terminations: For No. 8 AWG and larger, use pressure-type grounding lugs. No. 10 AWG and smaller grounding conductors may be terminated with winged pressure-type connectors.

D. Noncontact Metal Raceway Terminations: If metallic raceways terminate at metal housings without mechanical and electrical connection to housing, terminate each conduit with a grounding bushing. Connect grounding bushings with a bare grounding conductor to grounding bus or terminal in housing. Bond electrically non-continuous conduits at entrances and exits with grounding bushings and bare grounding conductors, unless otherwise indicated.

E. Tighten screws and bolts for grounding and bonding connectors and terminals according to manufacturer's published torque-tightening values.

F. Compression-Type Connections: Use hydraulic compression tools to provide correct circumferential pressure for compression connectors. Use tools and dies recommended by connector manufacturer. Provide embossing die code or other standard method to make a visible indication that a connector has been adequately compressed on grounding conductor.

G. Moisture Protection: If insulated grounding conductors are connected to ground rods or grounding buses, insulate entire area of connection and seal against moisture penetration of insulation and cable.

3.5 SYSTEM NEUTRAL GROUND

A. Ground the neutral conductor of each transformer or generator to limit the maximum potential above ground due to normal operating voltage and limit the voltage level due to abnormal conditions.

B. Ground generators or transformers with secondary voltage 600 volt or less as follows:

C. 3 phase, 4 wire Wye connected: ground neutral point

D. For transformers 75 kVA or smaller with primary voltage 480 volt or less the primary equipment ground conductor may be used for grounding the secondary neutral provided it is adequately sized in accordance with NEC system ground conductor size.

3.6 EQUIPMENT GROUND

A. Ground non-current carrying metal parts of electrical equipment enclosures, frames, conductor raceways or cable trays to provide a low impedance path for line-to-ground fault current and to bond all non-current carrying metal parts together. Install a grounding conductor in each raceway system. Equipment grounding conductor shall be electrically and mechanically continuous from the electrical circuit source to the equipment to be grounded. Size grounding conductors per NEC 250 unless otherwise shown on the drawings.

B. Install metal raceway couplings, fittings, and terminations secure and tight to ensure good grounding continuity. Provide grounding conductor sized per NEC through all raceway and conduit systems.

C. Lighting fixtures shall be securely connected to equipment grounding conductors. Outdoor lighting standards shall have a factory installed ground lug for terminating the grounding conductor.

D. Motors shall be connected to equipment ground conductors with a bolted solderless lug connection on the metal frame.

3.7 FIELD QUALITY CONTROL

A. Inspect grounding and bonding system conductors and connections for tightness and proper installation.

B. Test ground system per Section 26 05 01.

END OF SECTION 260526

SECTION 26 05 33 - RACEWAYS AND BOXES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes raceways, fittings, boxes, enclosures, and cabinets for electrical wiring.

1.3 DEFINITIONS

A. EMT: Electrical metallic tubing.

B. FMC: Flexible metal conduit.

C. IMC: Intermediate metal conduit.

D. LFMC: Liquidtight flexible metal conduit.

E. RMC: Rigid metal conduit.

F. RNC: Rigid Polyvinyl Chloride conduit.

G. PVC: Rigid Polyvinyl Chloride conduit

H. HDPE: High Density Polyethylene Conduit

1.4 SUBMITTALS

A. Product Data: For surface raceways, wireways and fittings, floor boxes, hinged-cover enclosures, and cabinets.

1.5 COORDINATION

A. Coordinate layout and installation of raceways and boxes with other construction elements to ensure adequate headroom, working clearance, and access.

PART 2 - PRODUCTS

2.1 METAL CONDUIT AND TUBING

A. Rigid Steel Conduit: ANSI C80.1.

B. IMC: ANSI C80.6.

C. PVC coated Steel Conduit and Fittings: NEMA RN 1; rigid steel conduit with external 40 mil PVC coating and internal two mil urethane coating.

D. EMT and Fittings: ANSI C80.3. Fittings: Set-screw type.

E. FMC: Zinc-coated steel.

F. LFMC: Flexible steel conduit with PVC jacket. Fittings: NEMA FB 1; compatible with conduit/tubing materials.

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SPECIFICATIONS
BID/PERMIT
2/21/2023

ITD Clarkia Salt Shed
Clarkia, Idaho

LICENSED ARCHITECT AR-984931 MICHEAL P. WALKER [STATE OF IDAHO]

No.	Description	Date

PROJECT NUMBER ---
PRINCIPAL MB
PROJECT MANAGER DH

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2.2 NONMETALLIC CONDUIT AND TUBING

A. RNC: NEMA TC 2, Schedule 40 PVC. Fittings: NEMA TC 3; match to conduit and material.

2.3 METAL WIREWAYS

A. Material: Sheet metal sized and shaped as indicated.

B. Fittings and Accessories: Include covers, couplings, offsets, elbows, expansion joints, adapters, hold-down straps, end caps, and other fittings to match and mate with wireways as required for complete system.

C. Finish: Manufacturer's standard enamel finish.

2.4 OUTLET AND DEVICE BOXES

A. Sheet Metal Boxes: NEMA OS 1, galvanized steel.

B. Cast-Metal Boxes: NEMA FB 1, Type FD, cast box with gasketed cover.

2.5 FLOOR BOXES

A. Floor Boxes: Cast metal, fully adjustable, rectangular, unless otherwise specified.

2.6 PULL AND JUNCTION BOXES

A. Small Sheet Metal Boxes: NEMA OS 1, galvanized steel.

B. Cast-Metal Boxes: NEMA FB 1, cast aluminum with gasketed cover.

2.7 ENCLOSURES AND CABINETS

A. Hinged-Cover Enclosures: NEMA 250, Type 1, 3R, or 4, with continuous hinge cover and flush latch, key operable.

B. Metal Enclosures: Steel, finished inside and out with manufacturer's standard enamel.

C. Cabinets: NEMA 250, Type 1, galvanized steel box with removable interior panel and removable front, finished inside and out with manufacturer's standard enamel. Hinged door in front cover with flush latch and concealed hinge. Key latch to match panelboards. Include metal barriers to separate wiring of different systems and voltage, and include accessory feet where required for freestanding equipment.

2.8 J-HOOKS

A. J-hooks: Steel, rated for indoor use in non-corrosive environments. J-hooks shall be rated to support Category 5e cable.

B. Fittings and Support Bodies: Manufacturer's recommended fittings including side mount flange clips, bottom mount flange clips, beam clamp, rod and flange clip, C & Z purlin clip, and all other components and assemblies to make the system work.

C. Acceptable Product: Caddy CableCat Hanging System, 1-5/16" and 2" hooks, or approved equal

D. Acceptable Manufacturer: Erico Fastening Products or approved equal.

E. J-hook Supports: Manufacturer's recommended fastening devices.

2.9 INNERDUCT

A. Innerduct: NEMA TC 5. UL Listed, corrugated, specifically designed for optical fiber cable pathways.

B. Acceptable Manufactures: Arnco, Carlon, Dura-line, and Pyramid.

C. Composition:

1. Non-plenum rated: Polyethylene (PE), or High Density Polyethylene (HDPE).
2. Plenum rated: per manufacturer.

D. Nominal Size: 1" (inside diameter), minimum.

E. Pulling Strength: minimum of 600 pounds.

F. Color: Orange, solid.

G. Fittings and Innerduct Bodies: Manufacturer's recommended fittings including couplings, adapters, end caps, end bells, expansion couplings, plugs, sleeves, a full compliment of connective devices, and all other components to make the system work.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine surfaces to receive raceways, boxes, enclosures, and cabinets for compliance with installation tolerances and other conditions affecting performance of raceway installation. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 WIRING METHODS

A. Outdoors: Use the following wiring methods:

1. Exposed: Rigid steel or IMC.
2. Concealed: Rigid steel or IMC.
3. Underground, Single Run: RNC or PVC Externally Coated Rigid Steel Conduit where required by NEC 517.13.
4. Underground, Grouped: RNC or PVC Externally Coated Rigid Steel Conduit where required by NEC 517.13.
5. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): LFMC.
6. Boxes and Enciosures: NEMA 250, Type 3R or Type 4.

B. Indoors: Use the following wiring methods:

1. Exposed: EMT or "Wiremold" metallic raceways or equal.
2. Exposed in public areas: "Wiremold" metallic raceways or equal. Use of exposed raceways in public areas must be approved by the architect prior to installation for each location. Use of exposed EMT in areas visible to the public is not allowed unless specifically approved by the architect prior to installation. Replacement of unapproved installations of exposed raceways will be at the expense of the contractor if deemed necessary by the architect or engineer.
3. Concealed: EMT or MC-Cable. Note: MC-Cable is not approved for "homeruns"
4. Concealed in Patient Care Areas: EMT or Hospital Grade MC-Cable where allowed by code. Note: Hospital Grade MC-Cable is not approved for "homeruns"
5. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): FMC; except in wet or damp locations, use LFMC.
6. Damp or Wet Locations: Rigid steel conduit.
7. Boxes and Enciosures: NEMA 250, Type 1, except as follows:

    a. Damp or Wet Locations: NEMA 250, Type 4, stainless steel.

3.3 INSTALLATION

A. Install raceways, boxes, enclosures, and cabinets as indicated, according to manufacturer's written instructions.

B. Minimum Raceway Size: 1/2-inch trade size. 3/4-inch minimum for "homeruns".

C. Conceal conduit and EMT, unless otherwise indicated, within finished walls, ceilings, and floors.

D. Keep raceways at least 6 inches away from parallel runs of flues and steam or hot-water pipes. Install horizontal raceway runs above water and steam piping.

E. Install raceways level and square and at proper elevations. Provide adequate headroom.

F. Complete raceway installation before starting conductor installation.

G. Route exposed conduit and conduit above accessible ceilings parallel and perpendicular to walls and adjacent piping.

H. Use temporary closures to prevent foreign matter from entering raceways.

I. Protect stub-ups from damage where conduits rise through floor slabs. Arrange so curved portion of bends is not visible above the finished slab.

J. Make bends and offsets so ID is not reduced. Keep legs of bends in the same plane and straight legs of offsets parallel, unless otherwise indicated.

K. Use raceway fittings compatible with raceways and suitable for use and location. For intermediate steel conduit, use threaded rigid steel conduit fittings, unless otherwise indicated.

L. Run concealed raceways, with a minimum of bends, in the shortest practical distance considering the type of building construction and obstructions, unless otherwise indicated.

M. Raceways Embedded in Slabs: Install in middle third of slab thickness where practical, and leave at least 1-inch concrete cover.

1. Secure raceways to reinforcing rods to prevent sagging or shifting during concrete placement.
2. Space raceways laterally to prevent voids in concrete.
3. Run conduit larger than 1-inch trade size parallel to or at right angles to main reinforcement. Where at right angles to reinforcement, place conduit close to slab support.
4. Transition from nonmetallic tubing to rigid steel conduit or IMC before rising above floor.

N. Install exposed raceways parallel to or at right angles to nearby surfaces or structural members, and follow the surface contours as much as practical.

1. Run parallel or banked raceways together, on common supports where practical.
2. Make bends in parallel or banked runs from same centerline to make bends parallel. Use factory elbows only where elbows can be installed parallel; otherwise, provide field bends for parallel raceways.

O. Join raceways with fittings designed and approved for the purpose and make joints tight.

1. Make raceway terminations tight. Use bonding bushings or wedges at connections subject to vibration. Use bonding jumpers where joints cannot be made tight.
2. Use insulating bushings to protect conductors.

P. Tighten set screws of threadless fittings with suitable tools.

Q. Terminations: Where raceways are terminated with locknuts and bushings, align raceways to enter squarely and install locknuts with dished part against the box. Where terminations are not secure with 1 locknut, use 2 locknuts: 1 inside and 1 outside the box.

R. Where raceways are terminated with threaded hubs, screw raceways or fittings tightly into the hub so the end bears against the wire protection shoulder. Where chase nipples are used, align raceways so the coupling is square to the box and tighten the chase nipple so no threads are exposed.

S. Install pull wires in empty raceways. Utilize polyester line with not less than 200-lb tensile strength. Leave at least 12 inches of slack at each end of the pull wire.

T. Telephone and Signal System Raceways: In addition to the above requirements, install raceways in maximum lengths of 150 feet and with a maximum of two 90-degree bends or equivalent. Separate lengths with pull or junction boxes where necessary to comply with these requirements.

U. Install raceway sealing fittings according to manufacturer's written instructions. Locate fittings at suitable, approved, and accessible locations and fill them with UL-listed sealing compound. For concealed raceways, install each fitting in a flush steel box with a blank cover plate having a finish similar to that of adjacent plates or surfaces. Install raceway sealing fittings at the following points:

1. Where conduits pass from warm to cold locations, such as the boundaries of refrigerated spaces.
2. Where conduit pass from the interior to the exterior of a building.
3. Where otherwise required by NEC.

V. Apply firestopping to cable and raceway penetrations of fire-rated floor, ceiling, and wall assemblies to achieve fire-resistance rating of the assembly. Boxes installed in fire-rated floor, ceiling, and wall assemblies shall result in no larger than a 16 square-inch penetration in the fire-rated wall surface and the quantity of penetrations shall not be greater than 100 square-inches for every 100 square feet of fire-rated wall area. Where boxes are located on both sides of a fire-rated wall, the boxes shall have a minimum of a 24" horizontal spacing, where a 24" horizontal spacing cannot be achieved, furnish and install listed fire-rated putty on the boxes as required by the IBC.

W. Route conduit through roof openings for piping and ductwork where possible; otherwise, install roof penetrations in accordance with roofing system requirements. Coordinate with roofing installer.

X. Stub-up Connections: Extend conduits through concrete floor for connection to freestanding equipment. Install with an adjustable top or coupling threaded inside for plugs set flush with the finished floor. Extend conductors to equipment with rigid steel conduit; FMC may be used 6 inches above the floor. Install screwdriver-operated, threaded flush plugs flush with floor for future equipment connections.

Y. Flexible Connections: Use maximum of 6 feet of flexible conduit for recessed and semi-recessed lighting fixtures; for equipment subject to vibration, noise transmission, or movement; and for all motors. Use liquidtight flexible conduit in wet or damp locations. Install separate ground conductor across flexible connections.

Z. PVC Externally Coated, Rigid Steel Conduits: Use only fittings approved for use with that material. Patch all nicks and scrapes in PVC coating after installing conduits.

AA. Surface Raceways: Install a separate, green, ground conductor in raceways from junction box supplying the raceways to receptacle or fixture ground terminals.

BB. Conduits shall not be routed on or above the roof without prior approval from the Engineer. Instead, the branch circuits shall be routed at the structure level below the roof to feed roof-top equipment. When approval is granted to route conduits on or above the roof, the conduits shall be strapped to COOPER industries DB series support blocks at intervals not exceeding NEC requirements. The conduits shall not be rested directly on the roof. It shall be permissible to penetrate the roof adjacent mechanical or electrical equipment to power that respective equipment.

3.4 SUPPORT INSTALLATION

A. Install support devices to securely and permanently fasten and support electrical components.

B. Install individual and multiple raceway hangers and riser clamps to support raceways. Provide U-bolts, clamps, attachments, and other hardware necessary for hanger assemblies and for securing hanger rods and conduits.

C. Support parallel runs of horizontal raceways together on trapeze- or bracket-type hangers, at least every 8 feet.

D. Size supports for multiple raceway installations so capacity can be increased by a 25 percent minimum in the future.

E. Support individual horizontal raceways with separate, malleable-iron pipe hangers or clamps.

F. Install 1/4-inch diameter or larger threaded steel hanger rods, unless otherwise indicated.

G. Spring-steel fasteners specifically designed for supporting single conduits or tubing may be used instead of malleable-iron hangers for 1-1/2-inch and smaller raceways serving lighting and receptacle branch circuits above suspended ceilings and for fastening raceways to slotted channel and angle supports.

H. Arrange supports in vertical runs so the weight of raceways and enclosed conductors is carried entirely by raceway supports, with no weight load on raceway terminals.

I. Simultaneously install vertical conductor supports with conductors.

J. Separately support cast boxes that are threaded to raceways and used for fixture support. Support sheet-metal boxes directly from the building structure or by bar hangers. If bar hangers are used, attach bar to raceways on opposite sides of the box and support the raceway with an approved fastener not more than 24 inches from the box.

K. Install metal channel racks for mounting cabinets, panelboards; disconnect switches, control enclosures, pull and junction boxes, transformers, and other devices unless components are mounted directly to structural elements of adequate strength.

L. Install sleeves for cable and raceway penetrations of concrete slabs and walls unless core-drilled holes are used. Install sleeves for cable and raceway penetrations of masonry and fire-rated gypsum walls and of all other fire-rated floor and wall assemblies. Install sleeves during erection of concrete and masonry walls.

M. Securely fasten electrical items and their supports to the building structure, unless otherwise indicated. Do not fasten supports to piping, ductwork, mechanical equipment, or conduit. Perform fastening according to the following unless other fastening methods are indicated:

1. Masonry: Toggle bolts on hollow masonry units and expansion bolts on solid masonry units.
2. New Concrete: Concrete inserts with machine screws and bolts.
3. Existing Concrete: Expansion bolts.
4. Steel: Spring-tension clamps on steel.
5. Light Steel: Sheet-metal screws.
6. Fasteners: Select so the load applied to each fastener does not exceed 25 percent of its proof-test load.

N. Do not drill structural steel members.

O. All supports and attachments shall meet project seismic zone requirements.

3.5 BOX INSTALLATION

A. Do not install boxes back-to-back in walls.

B. Locate boxes in masonry walls to require cutting of masonry unit edge only. Coordinate masonry cutting to achieve neat openings for boxes.

C. Provide knockout closures for unused openings.

D. Support boxes independently of conduit except for cast boxes that are connected to two rigid metal conduits, both supported within 12 inches of box.

E. Use 4" boxes with multiple-gang mudring where more than one device are mounted together; do not use sectional boxes. Provide barriers to separate wiring of different voltage systems.

F. Install boxes in walls without damaging wall insulation.

G. Coordinate mounting heights and locations of outlets mounted above counters, benches, and backsplashes.

H. Position outlets to locate lighting fixtures as shown on reflected ceiling plans.

I. In inaccessible ceiling areas, position outlets and junction boxes within 6 inches of recessed luminaire, to be accessible through luminaire ceiling opening.

J. Provide recessed outlet boxes in finished areas; secure boxes to interior wall and partition studs, accurately positioning to allow for surface finish thickness. Use stamped steel stud bridges for flush outlets in hollow stud walls, and adjustable steel channel fasteners for flush ceiling outlet boxes.

K. Align wall-mounted outlet boxes for switches, thermostats, and similar devices.

L. For boxes installed in metal construction, use rigid support metal bar hangers or metal bar fastened to two studs or with metal screws to metal studs.

M. Set floor boxes level and adjust to finished floor surface.

N. Set floor boxes level and trim after installation to fit flush to finished floor surface.

O. Install hinged-cover enclosures and cabinets plumb. Support at each corner.

P. Locate pull and junction boxes above accessible ceilings or in unfinished areas. Support pull and junction boxes independent of conduit.

Q. Minimum box size to be 4" square by 2 1/8" deep.

3.6 LABELING

A. Label coverplate of all pull and junction boxes by system served. Indicate panel circuits for power and lighting boxes.

3.7 CLEANING

A. On completion of installation, including outlet fittings and devices, inspect exposed finish. Remove burrs, dirt, and construction debris and repair damaged finish, including chips, scratches, and abrasions.

END OF SECTION 260533

SECTION 26 05 43 – UNDER SLAB AND UNDERGROUND ELECTRICAL WORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes under slab conduits and related electrical work.

PART 2 - PRODUCTS

2.1 CONDUIT

A. All shall be provided with fittings and accessories approved for the purpose. Refer to Section 260533.

2.2 PRECAST CONCRETE MANHOLE

A. Structural reinforced, size as indicated, with inserts for cable racks and pully eyes.

2.3 BARE COPPER GROUND CONDUCTOR

A. Medium hard drawn copper conductor, # 4/0 AWG stranded (unless otherwise noted).

PART 3 - EXECUTION

3.1 GENERAL

A. Electrical system layouts indicated on the drawings are generally diagrammatic, but shall be followed as closely as actual construction and work of other trades will permit.

3.2 CONDUIT INSTALLATION

A. Plastic conduit shall be installed on 2 inch sand base and covered by 2 inch sand back fill. Multiple runs shall maintain 3 inch minimum separation between runs. Plastic conduit shall not be installed in rock base.

B. Underground conduit entering building shall be provided with one 10 foot section of rigid steel conduit at point of penetration of foundation, footing or basement wall, with approximately equal lengths inside and outside building line. Ream the smaller inside diameter conduit smooth to prevent conductor damage.

C. Stagger conduit couplings by a minimum of 12 inches. All risers to grade shall be rigid steel.

D. All rigid steel conduits shall be encased in 3 inch minimum concrete envelope.

E. After completion of concrete encased duct bank, a 12 inch mandrel, ¼ inch less in diameter than a conduit, shall be pulled through each conduit.

F. Install 1/8 inch diameter pull line in each underground conduit.

G. Burial depths of conduits shall comply with the NEC (minimum).

H. Provide underground type plastic line markers: permanent, brightly colored, continuously printed plastic tape, intended for direct burial service, not less than 6 inches wide, reading "Caution Buried Electrical Line." Install continuous line markers located directly over buried line at 6 inches above top of conduit, during back filling operation.

3.3 CONCRETE DUCT BANK CONSTRUCTION

A. Provide plastic spacers at maximum 5'-0" centers to maintain 3 inch spacing between conduits.

B. Drive two reinforcing bars to anchor the conduits at 10'-0" on centers to prevent floating during concrete pour.

C. Provide one warning tape (see 3.2.H. above) for each 12 inch width of concrete duct bank.

END OF SECTION 260543

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SPECIFICATIONS
BID/PERMIT
2/21/2023

ITD Clarkia Salt Shed
Clarkia, Idaho

LICENSED ARCHITECT
AR-984931
MICHEAL P. WALKER
STATE OF IDAHO

No.	Description	Date

PROJECT NUMBER ---
PRINCIPAL MB
PROJECT MANAGER DH

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SECTION 26 08 00 – LIGHTING SYSTEMS COMMISSIONING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Specification Sections, apply to this Section.

1.2 SUMMARY:

A. This Section includes requirements for commissioning the lighting system and its controls.

B. The registered design professional is responsible to provide evidence of lighting systems commissioning and completion in accordance to the provisions of this section.

1.3 DEFINITIONS:

A. Architect: Includes Architect identified in the Contract for Construction between Owner and Contractor, plus consultant/design professionals responsible for design of HVAC, electrical, communications, controls for HVAC systems, and other related systems.

A. RDP: Registered Design Professional

B. Systems, Subsystems, and Equipment: Where these terms are used together or separately, they shall mean "as-built" systems, subsystems, and equipment.

1.4 COMMISSIONING DOCUMENTATION:

A. Commissioning Plan: A commissioning plan will be developed by a registered design professional or approved agency and shall include the following items:

1. A narrative description of the activities that will be accomplished during each phase of commissioning, including the personnel intended to accomplish each of the activities.
2. A listing of the specific equipment, appliances or systems to be tested and a description of the tests to be performed.
3. Functions to be tested.
4. Conditions under which the test will be performed.
5. Measurable criteria for performance

B. Test Checklists: RDP, with assistance of Architect/Engineer, shall develop test checklists for each system, subsystem, or equipment including interfaces and interlocks, and include a separate entry, with space for comments, for each item to be tested. Prepare separate checklists for each mode of operation and provide space to indicate whether the mode under test responded as required. Provide space for testing personnel to sign off on each checklist.

1. Name and identification of tested item.
2. Test number.
3. Time and date of test.
4. Indication of whether the record is for a first test or retest following correction of a problem or issue.
5. Date of the test and name of parties involves as applicable.
6. Individuals present for test.
7. Deficiencies/Issues/Results of test.
8. Note if re-test is necessary.

C. Test and Inspection Reports: RDP shall record test data, observations, and measurements on test checklists. Photographs, forms, and other means appropriate for the application shall be included with data. RDP shall compile test and inspection reports and tests and inspection certificates and include them in systems manual and commissioning report.

D. Corrective Action Documents: RDP shall document corrective action taken for systems and equipment that fail tests. Include required modifications to systems and equipment and revisions to test procedures, if any. Retest systems and equipment requiring corrective action and document retest results.

E. Issues Log: RDP shall prepare and maintain an issues log that describes design, installation, and performance issues that are at variance with the Contract Documents. Identify and track issues as they are encountered, documenting the status of unresolved and resolved issues.

1. Creating an Issues Log Entry:
   a. Identify the issue with unique numeric or alphanumeric identifier by which the issue may be tracked.
   b. Assign a descriptive title of the issue.
   c. Identify date and time of the issue.
   d. Identify test number of test being performed at the time of the observation, if applicable, for cross-reference.
   e. Identify system, subsystem, and equipment to which the issue applies.
   f. Identify location of system, subsystem, and equipment.
   g. Include information that may be helpful in diagnosing or evaluating the issue.
   h. Note recommended corrective action.
   i. Identify commissioning team member responsible for corrective action.
   j. Identify expected date of correction.
   k. Identify person documenting the issue.

2. Documenting Issue Resolution:
   a. Log date correction is completed or the issue is resolved.
   b. Describe corrective action or resolution taken. Include description of diagnostic steps taken to determine root cause of the issue, if any.
   c. Identify changes to the Contract Documents that may require action.
   d. State that correction was completed and system, subsystem, and equipment is ready for retest, if applicable.
   e. Identify person(s) who corrected or resolved the issue.
   f. Identify person(s) documenting the issue resolution.

3. Issues Log Report: On a periodic basis, but not less than for each commissioning team meeting, RDP shall prepare a written narrative for review of outstanding issues and a status update of the issues log. As a minimum, RDP shall include the following information in the issues log and expand it in the narrative:
   a. Issue number and title.
   b. Date of the identification of the issue.
   c. Name of the commissioning team member assigned responsibility for resolution.
   d. Expected date of correction.

F. Commissioning Report: RDP shall document results of the commissioning process including unresolved issues and performance of systems, subsystems, and equipment. The commissioning report shall indicate whether systems, subsystems, and equipment have been completed and are performing according to the Contract Documents. The commissioning report shall include, but is not limited to, the following:

1. Lists and explanations of substitutions; compromises; variances in the Contract Documents; record of conditions; and, if appropriate, recommendations for resolution. This report shall be used to evaluate systems, subsystems, and equipment and shall serve as a future reference document during Owner occupancy and operation. It shall describe components and performance that exceed requirements of the Contract Documents. It may also include a recommendation for accepting or rejecting systems, subsystems, and equipment.
2. Commissioning plan.
3. Testing plans and reports.
4. Corrective modification documentation.
5. Issues log.
6. Completed test checklists.

G. Systems Manual: RDP shall gather required information and compile systems manual. Systems manual shall include, but is not limited to, the following:

1. Submittal Data stating equipment installed and selected options for each piece of equipment requiring maintenance.
2. Operation and maintenance data on each piece of equipment requiring maintenance. Required routine maintenance actions shall be clearly identified.
3. Name and address of at least one service agency.
4. Lighting controls system maintenance and calibration information.
5. A narrative of how each system is intended to operate, including recommended setpoints.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION

3.1 TESTING:

A. Testing shall ensure that the control hardware and software are calibrated, adjusted, programmed and in proper working condition in accordance with the construction documents and manufacturers installation instructions.

B. Testing shall ensure that the lighting controls meet all provisions of the applicable energy code.

C. Perform tests using design conditions whenever possible. Where occupant sensors, time switches, programmable schedule control, photosensor's or daylighting controls are installed, the following procedures shall be performed:

1. Confirm that the placement, sensitivity and time-out adjustments for occupant sensors yield acceptable performance.
2. Confirm that the time switches and programmable schedule controls are programmed to turn the lights off.
3. Confirm that the placement and sensitivity adjustments for photosensor controls reduce electric light based on the amount of usable daylight in the space as specified.

3.2 COMMISSIONING AGENT COORDINATION

A. Contractor shall coordinate with commissioning agent and complete the following work scope:

1. The contractor will be responsible to fill out the forms that UNVC creates for pre-functional testing.
2. The contractor will be responsible to fill out the forms that UNVC creates for Functional testing.
3. Contractor will be responsible for additional testing if the systems fail during our testing with them.
4. UNVC will review the4 O&M Manuals at the end of project.

END OF SECTION 260800

SECTION 26 09 23 - LIGHTING CONTROL DEVICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes time switches, photoelectric relays, occupancy sensors, and multi-pole lighting relays and contactors.

B. Related Sections include the following:

1. Section 262726 - Wiring Devices for wall-box dimmers and manual light switches.

1.3 SUBMITTALS

A. Submit shop drawings and product data, including all wiring diagrams.

PART 2 - PRODUCTS

2.1 GENERAL LIGHTING CONTROL DEVICE REQUIREMENTS

A. Line-Voltage Surge Protection: Include in all 120- and 277-V solid-state equipment. Comply with UL 1449.

2.2 TIME SWITCHES

A. Description: Electromechanical-dial type complying with UL 917.

1. Astronomic dial.
2. Two contacts, rated 30 A at 277-V ac, unless otherwise indicated.
3. Eight-day program uniquely programmable for each weekday and holidays.
4. Skip-day mode.

2.3 LIGHTING CONTROL SYSTEM

A. Description of Work: Extent of lighting control system work is indicated by drawings, and by the requirements of this section. It is defined to include low voltage lighting control panels, switch inputs, and wiring.

1. Type of lighting control equipment and wiring specified in this section include the following: Low Voltage Lighting Control Panels.

B. SYSTEM DESCRIPTION

1. The lighting control system shall consist of low voltage relay control panels with 32 programmable switch inputs and shall offer 32 control relays.
2. Each low voltage lighting control panel shall be microprocessor controlled with an integral 4 x 16 - 64 character display and with a programming keypad.
3. Programmable intelligence shall include Time-Of-Day control, 32 holiday dates, warn occupants of an impending off, timed inputs, preset control, auto daylight savings, astronomical clock w/offsets, and local control.

TOD	64 Time-Of-Day/holiday schedules for 365 day programming
Holidays	32 holiday dates
Warn Off	Flash lights and provide an extra 1 second to 99 minutes of illumination
Preset	Pre-programmed switch patterns
Timed Inputs	Switch input timers 1-999 minutes
Timed Overrides	Timed override 1-999 minutes, resumes to normal schedule
Local Control	From alpha-numeric keypad & local switch
Astronomical	Longitude and latitude input with sunset-sunrise offsets to customize outdoor lighting Clock
Auto Daylight	Automatically adjusts the clock at the appropriate dates, selectable Savings Adjust.
Priorities	Establishes a hierarchy for inputs and network control commands
Masking	Provides permission orientation to switch inputs and network commands thereby ensuring building lighting control integrity.
Soft-Linking	Group linking for rapid programming

4. Relays may be designated as either normally open or normally closed from software. Relay status shall not only disclose commanded relay status but next scheduled state to occur.
5. Each control panel shall provide a Warn Off (flash the lights) to inform the occupants of an impending Off command. The Warn Off command shall provide an adjustable time duration of 1 second to 99 extra minutes. The occupants may exit the premises with adequate lighting or cancel the Warn Off by overriding the lighting zone. This option occurs with all Off commands except local overrides.
6. The controller shall permit lighting to be overridden on for after hours use or cleaning. The controller shall provide optional switch timer assignments or timed overrides. The override choices for various relays shall provide special event occurrences and the controller shall return to the programmed state. Also, the controller shall provide priority and masking choices to customize the functions of switch inputs, thereby enabling switches to function differently at different times of the day to meet special facility operational requirements. These overrides shall be hard-wired inputs.
7. Programming the controller shall be through the local integral keypad. Descriptive information shall assist the user to employ the system without a programming manual.
8. Priorities and/or Masking shall be assigned to inputs, telephone override, and global commands to insure building integrity. Priorities enable or disable the inputs based on Time-Of-Day scheduling in the controller. Masks shall permit: On only, Off only and On & Off control for intelligent after hours utilization of the controlled facility
9. The lighting control system may be fully programmed through PC programming software. Programming shall be permitted through a direct RS-232 or RS-485 connection, and modem.

C. HARDWARE FEATURES

1. Operator Interface: The control panel programming interface resides in firmware in the control panel. The programming interface shall consist of a circuit board mounted keypad capable of linking switch inputs to relay outputs and schedule assignments. Systems that utilize blocking diode technology for relay assignments shall not be acceptable. The integral keypad shall provide access to the main programming features. The keypad shall permit the user to manually command any or all relays individually. Each panel shall control its own loads from internal memory. A control system that relies on a central control computer/processor or external time clocks shall not be permitted.
2. Contact inputs: The control system shall permit 32 dry contacts (Digital/Switch Inputs) for override purposes. Momentary 3 wire or 2 wire (toggle) inputs shall be supported. Maintained contacts shall be supported as 2 wire (SPST) inputs. Inputs shall be dry contacts (24 VDC @ 12 ma. internally supplied to the inputs). An input shall be software linked to any number of relays for override control. The controller shall provide timers for each switch input. Each switch input timer shall be capable of 0-999 minutes. Software shall enable or disable switch inputs based on Time Of Day scheduling.
3. Relay Type: The system shall utilize control relays which are rated to 20 amps at 277 VAC. The relays shall be magnetically held and are provided in groups of eight. Relays that are latched or mechanically held are not acceptable. The relays shall be rated for 10 million mechanical operations. A limited 10 year warranty shall be provided on the individual relays.
4. Photocell Control: The controller shall accept user adjustable ambient light sensors. The controller shall provide power for the sensor thereby eliminating any external power supply. Sensors shall provide for both outdoor and indoor applications and provide a dry contact to the controller once the threshold is reached. The sensor shall provide user adjustable dead band control.
5. Modular Design: The control system shall employ all modular connectors to avoid repeat wiring in case of component failure. The system CPU board shall be mounted on quick release hinge pins that shall permit an entire change out of the processor and input board in less than 1 minute. All connections for the switch inputs shall incorporate modular connectors. The relay board shall be modular and designed for rapid field replacement or upgrading. Systems that do not employ modular connectors shall not be acceptable.
6. Hardware Output Options
   a. Latching Relay Card (LRC): The controller shall provide an option for remote placement of the control relays. A modular card shall connect into the relay compartment. Twisted (3) conductor cable shall power and control the remote mounted relays. Maximum distance is 500 feet employing 18 AWG conductor.
   b. Modular Relay Card (MRC): The controller shall provide an option for modular relay control. The Modular Relay Card (MRC) shall offer the feature of controlling two pole voltages such as 208, 240, and 480VAC in a Normally Open or Normally Closed configuration. Single pole is offered for 120 and 277VAC in a Normally Open and Absolute Zero Configuration. This relay card shall also provide visual indication of relay status. Relays shall be individually exchangeable with plug in low voltage connectors. Combinations of relays shall be permitted since relay modules shall snap into and lock in location. Two pole modules require two relay locations for a maximum of four two pole relays per card. All other relay modules use 1 relay location for a maximum of eight per card. All Modular Relay Card components shall be warranted for 10 years.
   c. Two Pole Relay Card (TPRC): The controller shall provide an option for two pole relay control. The Two Pole Relay Card TPRC shall offer the feature of controlling two pole voltages such as 208, 240, and 480 VAC lighting loads at 20 amps. The relays shall be modular in design and offer manual hand override control. This optional relay card shall also provide a visual indication of relay status. The 208, 240 VAC version shall provide 8 relays per card whereas the 480 VAC version shall provide 4 relays per card. Combinations of relays shall be permitted since relays shall snap into location.
   d. Automatic Relay Card (ARC): The system shall utilize hybrid control relays that are rated to 20 amps at 277 VAC. The hybrid relay shall combine a high speed electronic switch with a mechanical relay to create a unique switching device. The hybrid design shall look at each AC phase and shall close the electronic switch precisely at the absolute zero crossing. The mechanical relay in parallel shall follow and close after the in-rush current condition. The relay shall provide an integral switch for both manual hand operation and visual indication of relay status. The relays shall be rated for 10 million mechanical operations. A limited 2 year warranty shall be provided on the individual relays.
   e. Lighted Switch Card (LSC): The controller shall provide an option for pilot light wall switch annunciation. A modular card shall connect into the controller board and shall provide power to illuminate pilot light switches. This option shall confirm relay operation. When a relay is in the "ON" position the pilot light switch shall be illuminated.
7. Diagnostic Aids: Each control panel shall incorporate diagnostic aids for confirmation of proper operation, or in case of failure these aids shall guide the individual in rapid troubleshooting of the system.

   The control panels shall employ both a backlit supertwist LCD and LED's that indicates:
   - POWER (LED)
   - SYSTEM OK (LED)
   - NETWORK COMMUNICATIONS (LED)
   - ON/OFF STATUS of EACH RELAY (LED & LCD)
   - SYSTEM CLOCK and DATE (LCD)
   - PROGRAMMING CONFIRMATION (LCD)
     (TOD, HOLIDAY, ON/OFF, & PRESET)

   Control systems that do not provide visual self help diagnostics shall not be acceptable.
8. Memory Back-up: The system shall utilize a memory back-up device that is system integrated and shall be non-serviceable. The data in RAM shall be protected against power interruptions lasting as long as 7 days. The power interrupt protection circuit shall be entirely maintenance-free.
9. Multi-tapped Transformer: The control panel shall incorporate the use of a multi-tapped transformer. The panel shall not require specification of voltage for each control location. The voltages of 120 & 277 VAC shall be available with each control panel.
10. Status Indication of Relays: The system shall provide visible status indication of all relays through the window of each control panel. The visual indication shall disclose On/Off status and relay number.
11. Service Override & Priority Override: The control panel shall provide a three position master-service override for the control unit. The service override shall not be accessible from the exterior.

    The master service override provides a single three position switch with the option of All Off, Auto, and All On, respectively. This master switch shall operate all of the relays in the controller. This switch shall override and supersede all commands from the logic board when the switch is in the All On or All Off position. The master switch shall function to override all the relays should the logic board programming differ from the space function.

    The system shall remember the last command to the individual relays. Upon returning the master override switch to the Auto position, the relays shall return to the most recent command state. This will occur even if the last command happened during the master override condition.

    Additionally, the system shall provide external priority override for the entire panel. Through an externally maintained contact the override card shall place the panel in a priority state. This external contact will supersede any other programmed state and will command all the relays ON or OFF depending on operational choice. This priority state will continue until the external contact is removed. Once the external override is removed the control panel will return the relays to the appropriate programmed state.
12. Lockable Enclosure: Each control panel shall be enclosed in a lockable NEMA class 1 enclosure. The enclosure shall be manufactured out of 1/16" steel and shall provide pre-punched knockouts for efficient installation.
13. Panels: The low voltage controller shall exist in two sizes of relay enclosures. The enclosure maximum sizes shall be 32 relays per cabinet. The 16 size will employ two relays cards and the 32 will utilize 4 relay cards. Relays shall be provided in groups of eight relays per card.
14. High Voltage Barriers: The low voltage controller shall provide as an option the ability to provide a barrier for either voltage separation or emergency circuit separation. The 16-size enclosure shall permit one barrier and the 32-size enclosure shall permit up to three locations where the barrier(s) may be installed. The barrier shall be painted red to denote the difference.
15. Modem: The control system shall be capable of modem communications. Each control panel shall provide a serial communications port for external tele-communications. The modem shall utilize the Hayes compatibility standard and enable modem access as defined by the Bell 212A and CCITT V.22 protocol standards.
16. Telephone Overrides (TIM): The control system shall provide intelligent software for the Telephone Interface Module (TIM) option. The optional TIM unit shall allow modem communications and touch tone overrides from any touch tone phone. The control system shall be multi-tasking and permit up to one TIM for each control panel.

    Override Operation: Touch-tone interface shall permit the control panel to command pre-assigned control points On\ Off. All user interfaces shall be through the twelve Touch-tone keys on the telephone. All entries into the override system shall be prompted by a digitized voice. Systems not employing voice guided override instruction are not acceptable.

    The TIM shall provide individual control passwords. Each password shall allow a preset group designation (number of relays) and the duration of the telephone override. TIM shall also provide a password to prevent entry into the override control system.
17. Software: System provided shall include the manufactures PC based interface software package. The PC based interface software shall provide access to lighting control system files within a Microsoft Windows environment. The software package shall allow individual panel programming to be executed locally, direct connection, Ethernet connection or remotely through a modem. The central programming software shall permit the user to modify the control panel programming or configuration in an "OFF-LINE" mode. This software package shall store all programmed data and archive for future use. Systems using third party software are not acceptable.

    The following features shall be standard in the PC based software:

    a. Standard Software Features:
       i. Real Time Relay Status Monitoring
       ii. Alpha-Numeric Descriptors
       iii. Communications: Direct, Network, Ethernet and Modem
       iv. Network Status Indication
       v. Global Software Modifications
       vi. Manual Relay Commands
       vii. Remote Pattern Commands
       viii. Preset Options

    b. File Maintenance
       i. Archive Programs
       ii. Data Base Restoration
       iii. Uploading and Downloading of Programs

    Software package shall permit the PC to be utilized for other functions (i.e. word processing, data-base, & etc..) besides lighting control. Systems that require an "on-line" dedicated computer for control system operation shall not be acceptable.
18. PC Interface (RS-232 port): The controller shall permit PC programming through software. The controller shall provide a RJ-12 connection for RS-232 programming. Programming shall be permitted through either a local connection or remotely through a modem. PC software shall permit multiple file storage for data archival and for seasonal facility requirements. Operator commands may be issued directly from the PC keyboard.

D. MANUFACTURERS

1. Cooper Controls, Greengate
2. Lutron
3. Lighting Control & Design
4. Lightolier

E. PRODUCT SUPPORT AND SERVICE

1. Factory Support: Factory telephone support shall be available at no cost to the owner. Factory assistance shall consist of solving programming or application questions concerning the control equipment.

F. WARRANTY

1. Manufacturer shall supply a 2 year warranty on all hardware and software. A limited 10 year warranty shall be provided on the standard relay card.

2.4 PHOTOELECTRIC RELAYS

A. Description: Solid state, with single-pole, double-throw dry contacts rated to operate connected relay or contactor coils or microprocessor input, and complying with UL 773A.

B. Light-Level Monitoring Range: 0 to 3500 fc, with an adjustment for turn-on/turn-off levels.

C. Time Delay: Prevents false operation.

D. Outdoor Sealed Units: Weather tight housing, resistant to high temperatures and equipped with sun-glare shield and ice preventer.

2.5 OCCUPANCY SENSORS

A. Occupancy sensors indicated on the plans are to establish room controls and sensor quantities. The contractor is to verify sensor placement with the local manufacturer's representative or the manufacture to ensure proper coverage and functionality of the specific sensor(s) installed. The contractor is to return and make any adjustments necessary to the occupancy sensor settings and/or placement needed to maintain proper functionality within 30 days after the owner/tenant takes occupancy of the project.

B. Lighting control system shall include all occupancy sensors, power packs, and control wiring required to form a complete system.

C. All occupancy sensors shall be dual/multi technology, manufactured by Unenco, Wattstopper, Lightolier Controls, Sensor Switch, or pre-approved equal unless otherwise noted.

D. Ceiling and Wall Mount Units: Shall utilize dual/multi technology detection methods. Unit receives control power from a separately mounted auxiliary power and control unit, and operates power switching contacts in that unit.

E. Switch-Box-Mounting Units: Shall utilize dual/multi technology detection methods. Unit receives power directly from switch leg of the 120- or 277-V ac circuit it controls and operates integral power switching contacts. Unit is to have integral manual controls and is to be mounted at standard switch height.

F. Operation: Turns lights on when room or covered area is occupied and off when unoccupied, unless otherwise indicated.

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SPECIFICATIONS
BID/PERMIT
2/21/2023

ITD Clarkia Salt Shed
Clarkia, Idaho

LICENSED ARCHITECT
AR-984931
MICHEAL P. WALKER
[STATE OF IDAHO]

No.	Description	Date

PROJECT NUMBER ---
PRINCIPAL MB
PROJECT MANAGER DH

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1. Time Delay for Turning Lights Off: Adjustable over a range from 1 to 20 minutes, minimum. Time delay to be set at 20 minutes unless otherwise directed. Contractor shall verify time delay with the owner/tenant prior to final occupancy.
2. Manual Override Switch: Where indicated on drawings; turns lights off manually regardless of elapsed time delay.
3. Sensor shall be located and/or adjusted to detect occupancy within 1-foot of entry into room or area controlled by the occupancy sensor.

G. Auxiliary Power and Control Units: As follows:

1. Relays rated for a minimum of 20-A normal ballast load.
2. Sensor Power Supply: Rated to supply the number of connected sensors.
3. Relays shall have an auxiliary contact(s) for integration with HVAC or other building control systems.

H. Passive-Infrared Type: Detects occupancy by a combination of heat and movement in zone of coverage.

I. Ultrasonic Type: Emits a beam of ultrasonic energy and detects occupancy through use of Doppler's principle in discerning movement in zone of coverage by sensing a change in pattern of reflected ultrasonic energy. Ultrasonic frequency shall be 25 Khz or greater and sensor shall be temperature and humidity resistant.

J. Dual-Technology Type: Uses a combination of passive-infrared and ultrasonic or microphonic detection methods to distinguish between occupied and unoccupied conditions for area covered. Particular technology or combination of technologies that controls each function (ON or OFF) is selectable in the field by operating controls on unit.

K. All sensors shall be capable of operating normally with electronic ballast and compact fluorescent systems.

L. Coverage of sensors shall remain constant after sensitivity control has been set. No automatic reduction shall occur in coverage due to the cycling of air conditioner or heating fans.

M. All sensors shall have readily accessible, user adjustable controls for time delay and sensitivity. Controls shall be recessed to limit tampering.

N. In the event of failure, a bypass manual "override on" feature shall be provided on each sensor. When bypass is utilized, lighting shall remain on constantly. The override feature shall be designed for use by building maintenance personnel and shall not be readily accessible by building occupants.

O. All sensors shall provide an LED indication light to verify that motion is being detected and that the unit is working.

P. All sensors shall have no leakage current in OFF mode and shall have voltage drop protection.

2.6 MULTIPOLE CONTACTORS AND RELAYS

A. Description: Electrically operated and mechanically held, and complying with UL 508 and NEMA ICS 2.

1. Current Rating for Switching: UL listing or rating consistent with type of load served.
2. Control Coil Voltage: Match control power source.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install equipment level and plumb and according to manufacturer's written instructions.

3.2 CONTROL WIRING INSTALLATION

A. Install wiring between sensing and control devices according to manufacturer's written instructions.

B. Wiring Method: Install all wiring in raceways.

C. Bundle, train, and support wiring in enclosures.

D. Ground equipment.

E. Connections: Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values.

3.3 IDENTIFICATION

A. Provide Brady wire markers or equivalent on all conductors.

3.4 FIELD QUALITY CONTROL

A. Inspect control components for defects and physical damage.

B. Verify settings of photoelectric devices with photometer.

C. Electrical Tests: Use particular caution when testing devices containing solid-state components. Perform the following according to manufacturer's written instructions:

1. Continuity tests of circuits.
2. Operational Tests: Set and operate devices to demonstrate their functions and capabilities in a methodical sequence that cues and reproduces actual operating functions.

D. Correct deficiencies, make necessary adjustments, and retest. Verify that specified requirements are met.

E. The Lighting Control Panel shall be tested and listed under the UL 906 Energy Management Equipment Standards.

3.5 CLEANING

A. Cleaning: Clean equipment and devices internally and externally using methods and materials recommended by manufacturers, and repair damaged finishes.

END OF SECTION 260923

SECTION 26 24 16 - PANELBOARDS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes load centers and panelboards, overcurrent protective devices, and associated auxiliary equipment rated 600 V and less for the following types:

1. Lighting and appliance branch-circuit panelboards.
2. Distribution panelboards.

B. Related sections:

1. Section 26 05 01 - Field Test and Operational Check.
2. Section 26 05 26 - Grounding.

1.3 SUBMITTALS

A. Product Data: For each type of panelboard, overcurrent protective device, accessory, and component indicated. Include dimensions and manufacturers' technical data on features, performance, electrical characteristics, ratings, and finishes.

B. Shop Drawings: For each panelboard and related equipment.

1. Dimensioned plans, elevations, sections, and details. Show tabulations of installed devices, equipment features, and ratings. Include the following:

a. Enclosure types and details for types other than NEMA 250, Type 1.
b. Bus configuration, current, and voltage ratings.
c. Short-circuit current rating of panelboards and overcurrent protective devices.
d. UL listing for series rating of installed devices.
e. Features, characteristics, ratings, and factory settings of individual overcurrent protective devices and auxiliary components.

C. Panelboard Schedules: For installation in panelboards. Submit final versions after load balancing.

D. Maintenance Data: For panelboards and components, include the following:

1. Manufacturer's written instructions for testing and adjusting overcurrent protective devices.
2. Time-current curves, including selectable ranges for each type of overcurrent protective device.

1.4 QUALITY ASSURANCE

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in the NEC, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

B. Comply with NEMA PB 1.

C. Comply with the NEC.

1.5 COORDINATION

A. Coordinate layout and installation of panelboards and components with other construction that penetrates walls or is supported by them, including electrical and other types of equipment, raceways, piping, and encumbrances to

workspace clearance requirements.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers:

1. Panelboards, Overcurrent Protective Devices and Accessories:

a. Eaton Corp.; Cutler-Hammer Products.
b. General Electric Co.; Electrical Distribution & Control Div.
c. Siemens
d. Square D Co.; Schneider Electric Brands
e. Or approved equal.

2.2 FABRICATION AND FEATURES

A. Enclosures: Flush or surface mounted cabinets (as indicated on drawings). Construct cabinets with code gauge galvanized steel. Provide minimum 20" wide cabinets and extra wiring space where incoming feed-through or parallel lines are shown. NEMA PB 1, Type 1, to meet environmental conditions at installed location.

1. Outdoor Locations: NEMA 250, Type 3R.
2. Kitchen Areas: NEMA 250, Type 4X, stainless steel.
3. Other Wet or Damp Indoor Locations: NEMA 250, Type 4.
4. Hazardous Areas Indicated on Drawings: NEMA 250, Type 7C.

B. Front: Secured to box with concealed trim clamps. For surface-mounted fronts, match box dimensions; for flush-mounted fronts, overlap box.

C. Doors: Provide door-in-door construction, made of cold-rolled steel. Inner door shall provide access to breaker handles and outer door shall provide access to wiring space as well. Inner door shall be completely flush with no visible bolts, screw-heads or hinges and with flush catch and lock. Outer door shall have concealed hinges, flush catch and lock to match inner door, located in line with inner door catch. (Tee bar handles are not acceptable).

D. Finish: Manufacturer's standard enamel finish over corrosion-resistant treatment or primer coat.

E. Directory Card: With transparent protective cover, mounted inside metal frame, inside panelboard door.

F. Bus: Hard-drawn copper, 98 percent conductivity. Attach circuit breakers to bus so that circuits 1, 3, and 5; 2, 4, and 6, or any three similarly numbered circuits form one three-phase, four-wire circuit.

G. Main and Neutral Lugs: Compression or mechanical type suitable for use with conductor material.

H. Equipment Ground Bus: Adequate for feeder and branch-circuit equipment ground conductors; bonded to box.

I. Future Devices: Mounting brackets, bus connections, and necessary appurtenances required for future installation of devices.

J. Isolated Equipment Ground Bus: Where indicated on drawings - Adequate for branch-circuit equipment ground conductors; insulated from box.

K. Extra-Capacity Neutral Bus: Where indicated on drawings, neutral bus rated 200 percent of phase bus and UL listed as suitable for nonlinear loads. Where indicated on plans, On 120/208Y Panels fed by K factor Type Transformer.

L. Skirt for Surface-Mounted Panelboards: Same gage and finish as panelboard front with flanges for attachment to panelboard, wall, and ceiling or floor. Where indicated on plans.

M. Gutter Barrier: Arrange to isolate individual panel sections.

N. Feed-through Lugs: Compression or mechanical type suitable for use with conductor material. Locate at opposite end of bus from incoming lugs or main device. For two-section panels.

O. Panels located adjacent to each other shall have identically sized enclosures and trims.

2.3 PANELBOARD SHORT-CIRCUIT RATING

A. UL label indicating series-connected rating with integral or remote upstream devices. Include size and type of upstream device allowable, branch devices allowable, and UL series-connected short-circuit rating. If not series rated: Fully rated to interrupt symmetrical short-circuit current available at terminals or the rating indicated on the plans, whichever is higher.

2.4 LIGHTING AND APPLIANCE BRANCH-CIRCUIT PANELBOARDS

A. Branch Overcurrent Protective Devices:

1. 120/208Y volt branch circuit panelboards: Quick-make, quick-break, molded case plug-in type designed for 120/208Y volt, three-phase, four-wire service with minimum 10,000 amperes rms short circuit rating.
2. 277/480Y volt branch circuit panelboards: Molded case bolt-on type designed for 277/480Y volt, three-phase, four-wire service with minimum 14,000 amperes rms short circuit rating.
3. Provide multi-pole units with common trip elements.
4. Breaker shall have center-tripped position in addition to the ON and OFF positions.
5. Provide lockouts for all circuits that should not be inadvertently tripped (as indicated on the drawings).

2.5 DISTRIBUTION PANELBOARDS

A. Dead-front, dead-rear, Nema 1 or 3R enclosure as indicated, designed for use on a three-phase, four-wire, 120/208Y or 277/480Y volt system. See drawings for additional details.

B. Construction: Code gauge galvanized steel fully flanged for strength and rigidity. Door and trim shall be cold-rolled steel, code gauge. Provide concealed butt hinges and 3-point catch and lock. Provide separately hinged or bolted vertical access doors over lug and wiring spaces.

C. Bus Bars: Panel shall be fully bussed. Shall be used throughout and shall be hard-rolled, electrolytic copper of 98% conductivity designed for a maximum 1000 amperes per square inch. Bars shall be factory pre-drilled to accept future field installation of 2 or 3 pole circuit breakers in any combination. Brace all bus bars for required short circuit rating of the panel, but in no case less than 35,000 amperes rms, Refer to Short Circuit information above for additional requirements.

D. Main Overcurrent Protective Devices: Circuit breaker unless otherwise noted.

E. Provide handle locking devices for all circuit breakers.

F. Provide engraved nameplates with minimum ¼" high letters secured to panel front and for each circuit protective device in panel.

2.6 OVERCURRENT PROTECTIVE DEVICES

A. Main Breaker (or Feeder) Assemblies rated for 1200 Amps:

1. Main (or feeder) breakers rated for 1200 Amp may be Molded Case with temperature insensitive, solid state trips, current sensors and solid state logic circuit integral with the frame. All circuit breakers shall be of same design for over-current and ground fault trip coordination. The Circuit breakers shall have the following features:

a. UL listed for 80 percent load application unless otherwise indicated on plans as 100% rated.
b. Adjustable [L] Long time time-delay and ampere setting.
c. Adjustable [S] Short time-delay and pick-up.
d. Adjustable [I] Instantaneous trip.
e. For 277/480Y systems rated 1000 Amp or higher - Adjustable [G] Ground fault pick-up and delay is required.
f. Adjustable [G] Ground fault pick-up and delay where indicated or required be NEC.
g. Adjustable [R] Reduced Entergy Lat-Through (RELT) Instantaneous trip. This feature shall be provided on breakers to provide a temporary setting for the instantaneous trip setting of the breaker. Setting shall be adjustable down to 1.5X of the rating plug and shall be enabled through a switch mounted on front of the switchboard. The switch shall be combined with an indicating light that positively indicates that the RELT is enabled or disabled.
h. Where Indicated special zone control interlocking for main breaker and future main and tie breaker of double-ended substation switchboard.
i. Short circuit, overload and ground fault trip indicators.

j.

B. Feeder Circuit Breaker Assemblies 400 Amps or larger:

1. Feeder Circuit breakers 400 Amps or larger shall be digital solid state true RMS sensing Molded Case Circuit Breakers with temperature insensitive, solid state trips, current sensors and solid state logic circuit integral with the frame. All circuit breakers shall be of same design for over-current and ground fault trip coordination. The Circuit Breakers shall have the following minimum features:

a. UL listed for 80 percent load application unless otherwise indicated on plans.
b. Long time pickup (ampere setting) determined by interchangeable rating plug .
c. Adjustable instantaneous with short time tracking function.
d. Circuit Breaker shall allow the UL listed field installation internal accessories (Auxiliary Switch, Shunt Trip, Undervoltage release, Bell Alarm Switch) without removal of cover to install. Circuit Breaker shall include Accessories as indicated on plans.
e. Circuit breaker handle accessories shall provide provisions for locking handle in the 'ON' or 'OFF' position

2. Where specifically indicated or required by NEC

a. Adjustable [L] Long time time-delay and ampere setting.
b. Adjustable [S] Short time-delay and pick-up.
c. Adjustable [I] Instantaneous trip.
d. Adjustable [G] Ground fault pick-up and delay where indicated or required be NEC.
e. Where Indicated special zone control interlocking for main breaker and future main and tie breaker of double-ended substation switchboard
f. Short circuit, overload and ground fault trip indicators.
h. Trip device of circuit breakers shall be of same type for tripping coordination.

C. Feeder Circuit Breaker Assemblies 150 Amp and below:

1. Feeder Circuit breakers 150 Amp and below shall be thermal Magnetic Circuit breaker: Inverse time current element for low level overloads, and instantaneous magnetic trip element for short circuits, unless otherwise indicated or required to meet Section 2.4 C above. Minimum features below:

a. UL listed for 80 percent load application unless otherwise indicated on plans.
b. Circuit Breaker shall allow the UL listed field installation internal accessories (Auxiliary Switch, Shunt Trip, Undervoltage release, Bell Alarm Switch) without removal of cover to install. Circuit Breaker shall include Accessories as indicated on plans.
c. Circuit breaker handle accessories shall provide provisions for locking handle in the 'ON' or 'OFF' position
d.

2. Where specifically indicated or required by NEC

a. Adjustable [L] Long time time-delay and ampere setting with Long time pickup (ampere setting) determined by interchangeable rating plug.
b. Adjustable [S] Short time-delay and pick-up.
c. Adjustable [I] Instantaneous trip.
d. Adjustable [G] Ground fault pick-up and delay where indicated or required be NEC.
e. Where Indicated special zone control interlocking for main breaker and future main and tie breaker of double-ended substation switchboard
f. Short circuit, overload and ground fault trip indicators.

g. Trip device of circuit breakers shall be of same type for tripping coordination.General Breaker Requirements:

1. Minimum interrupting capacity shall match the minimum required interrupt rating of the panel.

2. Standard frame sizes, trip ratings, and number of poles.
3. Lugs: Mechanical or compression style, suitable for number, size, trip ratings, and material of conductors.
4. Application Listing: Appropriate for application; Type SWD for switching fluorescent lighting loads; Type HACR for heating, air-conditioning, and refrigerating equipment.
5. GFCI Circuit Breakers: Single- and two-pole configurations with 5-mA trip sensitivity.
6. Shunt Trip: 120-V trip coil energized from separate circuit.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install panelboards and accessories according to NEMA PB 1.1.

B. Clearances: Minimum code required clearances around panelboards must be maintained.

C. Mounting Heights: Top of trim 78 inches above finished floor, unless otherwise indicated.

D. Mounting: Plumb and rigid without distortion of box. Mount recessed panelboards with fronts uniformly flush with wall finish.

E. Mounting Hardware: Provide all necessary blocking, channels and other hardware for securing panelboards to wall, column or other parts of building structure.

F. Circuit Directory: Create a directory to indicate installed circuit loads after balancing panelboard loads. Obtain approval before installing. Use a computer or typewriter to create directory; handwritten directories are not acceptable.

G. Install filler plates in unused spaces.

H. Wiring in Panelboard Gutters: Arrange conductors into groups and bundle and wrap with wire ties after completing load balancing.

3.2 IDENTIFICATION

A. Identify field-installed conductors, interconnecting wiring, and components.

B. Panelboard Nameplates: Label each panelboard with engraved metal or laminated-plastic nameplate mounted with corrosion-resistant screws. Label shall include panel designation, voltage and phase in minimum ¼" high letters.

3.3 CONNECTIONS

A. Install equipment grounding connections for panelboards with ground continuity to main electrical ground bus.

B. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values.

3.4 FIELD QUALITY CONTROL

A. Testing: Refer to Section 260501 – Field Test and Operational Check.

B. After installing panelboards and after electrical circuitry has been energized, demonstrate product capability and compliance with requirements

1. Procedures: Perform each visual and mechanical inspection and electrical test indicated in NETA ATS, Section 7.6 for molded-case circuit breakers. Certify compliance with test parameters.
2. Correct malfunctioning units on-site, where possible, and retest to demonstrate compliance; otherwise, replace with new units and retest.

C. Balancing Loads: After Substantial Completion, measure load balancing and make circuit changes as follows:

1. Measure as directed during period of normal system loading.
2. Perform load-balancing circuit changes outside normal occupancy/working schedule of the facility and at time directed.
3. After circuit changes, recheck loads during normal load period. Record all load readings before and after changes and submit test records.
4. Tolerance: Difference exceeding 20 percent between phase loads, within a panelboard, is not acceptable. Rebalance and recheck as necessary to meet this minimum requirement.

3.5 ADJUSTING

A. Set field-adjustable switches and circuit breaker trip ranges.

B. Adjust all operating mechanisms for free mechanical movement.

3.6 CLEANING

A. On completion of installation, inspect interior and exterior of panelboards. Remove paint splatters and other spots. Vacuum dirt and debris; do not use compressed air to assist in cleaning. Repair exposed surfaces to match original finish.

END OF SECTION 262416

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SPECIFICATIONS
BID/PERMIT
2/21/2023

ITD Clarkia Salt Shed
Clarkia, Idaho

LICENSED ARCHITECT AR-984931 MICHEAL P. WALKER STATE OF IDAHO

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SECTION 26 27 26 - WIRING DEVICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes receptacles, switches, and finish plates.

1.3 DEFINITIONS

A. GFCI: Ground-fault circuit interrupter.

B. TVSS: Transient voltage surge suppressor.

1.4 SUBMITTALS

A. Submit shop drawings and product data.

1.5 COORDINATION

A. Receptacles for Owner-Furnished Equipment: Match plug configurations.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers:

B. Wiring Devices:

1. Bryant; Hubbell, Inc.
2. GE Company; GE Wiring Devices.
3. Hubbell Wiring Device – Kellems
4. Leviton Manufacturing Co., Inc.
5. Pass & Seymour/Legrand; Wiring Devices Div.
6. Cooper Wiring Devices
7. Or approved equal.

C. Wiring Devices for Hazardous (Classified) Locations:

1. Crouse-Hinds Electrical Co.; Distribution Equipment Div. or approved equal.

D. Multi-outlet Assemblies:

1. Wiremold.
2. Hubbell, Inc.; Wiring Devices Div.
3. Or approved equal.

2.2 RECEPTACLES

A. General Requirements for All Devices:

B. Each device shall have an amperage rating not less than that of the branch circuit(s) overcurrent protection device. White color, unless noted otherwise.

C. For all Emergency devices when backed up by an emergency generator, the color of the device and cover plate shall be Red.

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

E. All devices shall be Commercial Specification Grade (Construction specification grade is prohibited), unless noted otherwise.

F. All Convenience Receptacles, shall be Heavy-Duty 125 V, 20 A: Comply with NEMA WD 1, NEMA WD 6 Configuration 5-20R, UL 498, and FS W-C-596. Subject to compliance with requirements, provide Hubbell Wiring Device-Kellems; 5362 Series or similar

G. All devices in Hospitals and all patient care areas within non-hospital buildings shall be Hospital Grade.

H. Hospital-Grade, Heavy Duty, Duplex Convenience Receptacles, 125 V, 20 A: Comply with NEMA WD 1, NEMA WD 6 Configuration 5-20R, UL 498 Supplement sd, and FS W-C-596. Subject to compliance with requirements, provide Hubbell Wiring Device-Kellems; 8300 Series or similar

I. Straight-Blade: All devices shall be Tamper Resistant where required by the National Electric Code and/or local amendments.

J. Tamper Resistant—Convenience Receptacles: 125 V, 20 A: Comply with NEMA WD 1, NEMA WD 6 Configuration 5-20R, UL 498 Supplement sd, and FS W-C-596. Subject to compliance with requirements, provide Hubbell Wiring Device-Kellems; HBL5362xxTR Series or similar.

K. Tamper Resistant—Convenience Receptacles: 125 V, 20 A: Comply with NEMA WD 1, NEMA WD 6 Configuration 5-20R, UL 498 Supplement sd, and FS W-C-596. Subject to compliance with requirements, provide Hubbell Wiring Device-Kellems; HBL5362xxTR Series or similar.

L. GFCI Receptacles: Duplex convenience receptacle with integral ground fault current interrupter. Provide one device for each location, daisy-chaining devices to achieve GFCI protection is not approved for this project.

M. Duplex GFCI Convenience Receptacles, 125 V, 20 A.

N. Straight Blade, non-feed through type.

O. Comply with NEMA WD 1, NEMA WD 6, UL 498, UL 943 Class A, and FS W-C-596.

P. Include indicator light that shows when the GFCI has malfunctioned and no longer provides proper GFCI protection.

Q. Subject to compliance with requirements, provide Hubbell Wiring Device-Kellems; GFRST20xx Series or similar.

R. Isolated-Ground Receptacles: Equipment grounding contacts connected only to the green grounding screw terminal of the device with inherent electrical isolation from mounting strap, orange plastic face.

S. General Description: Straight Blade, 125 V, 20 A, Configuration 5-20R. Comply with NEMA WD 1, NEMA WD 6, UL 498, UL 1449, and FS W-C-596, with integral TVSS in line to ground, line to neutral, and neutral to ground.

T. TVSS Components: Multiple metal-oxide varistors; with a nominal clamp-level rating of 400 V and minimum single transient pulse energy dissipation of 240 J, according to IEEE C62.41.2 and IEEE C62.45.

U. Active TVSS Indication: Visual and audible, with light visible in face of device to indicate device is "active" or "no longer in service.

V. Subject to compliance with requirements, provide Hubbell Wiring Device-Kellems; HBL5362SA Series or similar.

W. Devices: Listed and labeled as isolated-ground receptacles.

X. Isolation Method: Integral to receptacle construction and not dependent on removable parts.

Y. TVSS Receptacles: Duplex type, NEMA WD 6, with integral TVSS in line to ground, line to neutral, and neutral to ground, blue plastic face.

Z. General Description: Straight Blade, 125 V, 20 A, Configuration 5-20R. Comply with NEMA WD 1, NEMA WD 6, UL 498, UL 1449, and FS W-C-596, with integral TVSS in line to ground, line to neutral, and neutral to ground.

AA. TVSS Components: Multiple metal-oxide varistors; with a nominal clamp-level rating of 400 V and minimum single transient pulse energy dissipation of 240 J, according to IEEE C62.41.2 and IEEE C62.45.

BB. Active TVSS Indication: Visual and audible, with light visible in face of device to indicate device is "active" or "no longer in service."

CC. Subject to compliance with requirements, provide Hubbell Wiring Device-Kellems; HBL5362SA Series or similar.

DD. Mulit-Outlet assemblies: Metal with White color finish.

EE. Two-piece surface (painted steel, brushed aluminum) raceway, with factory-wired multi-outlet harness.

FF. Components shall be products from single manufacturer designed for use as a complete, matching assembly of raceways and receptacles.

GG. Receptacles: 20 A, 125-V, NEMA WD 6 Configuration 5-20R receptacles complying with NEMA WD 1, UL 498, and FS W-C-596.

HH. Receptacle Spacing: [6 inches (150 mm)] [9 inches (230 mm)] [12 inches (300 mm)] [18 inches (460 mm)].

II. Wiring: No. 12 AWG solid, Type THHN copper, [single circuit] [two circuit, connecting alternating receptacles].

2.3 SWITCHES

A. Snap Switches: General-duty, quiet type, rated 20 amperes, 120/277 volts AC. Handle: white plastic. Pilot light type (where indicated): lighted handle.

B. Dimmer Switches: Modular, full-wave, solid-state units with integral, quiet on/off switches and audible and electromagnetic noise filters.

C. Control: Continuously adjustable slide. Single-pole or three-way switch to suit connections.

D. Incandescent Lamp Dimmers: Modular, 120 V, 60 Hz with continuously adjustable slide; single pole with soft tap or other quiet switch; electromagnetic filter to eliminate noise, RF, and TV interference; and 5-inch wire connecting leads.

E. Fluorescent Lamp Dimmers: Modular; compatible with dimmer ballasts; trim potentiometer to adjust low-end dimming; dimmer-ballast combination capable of consistent dimming to a maximum of 1 percent of full brightness.

2.4 WALL PLATES

A. Single and combination types match corresponding wiring devices.

1. Cover plate: Smooth white plastic unless noted otherwise.
2. Cover plate for surface mounted devices: Galvanized steel.
3. Weatherproof cover plate: While in use, gasketed, cast metal, hinged device covers.
4. Plate-Securing Screws: Metal with head color to match plate finish.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install devices and assemblies plumb and secure.

B. Install wall plates when painting is complete.

C. Install wall dimmers to achieve indicated rating after derating for ganging as instructed by manufacturer.

D. Do not share neutral conductor on load side of dimmers.

E. Arrangement of Devices: Unless otherwise indicated, mount flush, vertically, with height as indicated or six inches above counters.

F. Group adjacent switches under single, multigang wall plates.

G. Protect devices and assemblies during painting.

H. Install wall switches with off position down.

I. Install cover plates on switch, receptacle, and blank outlets.

3.2 IDENTIFICATION

A. Switches and receptacles: Identify panelboard and circuit number from which served. Use machine-printed, pressure-sensitive, abrasion-resistant label tape on the outside of the face plate for receptacles and on the inside of the face plate for switches; utilize durable wire markers or tags within all outlet boxes. Labels shall be Brother ½" TZ tape, black ink on clear, extra-strength adhesive tape, with size 18 text or engineer approved equal. Use matching label printer.

3.3 CONNECTIONS

A. Connect wiring device grounding terminal to outlet box with bonding jumper.

B. Connect wiring device grounding terminal to branch-circuit equipment grounding conductor.

C. Isolated-Ground Receptacles: Connect to isolated-ground conductor routed to designated isolated equipment ground terminal of electrical system.

D. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values.

3.4 FIELD QUALITY CONTROL

A. Test wiring devices for proper polarity and ground continuity. Check each device to verify operation.

B. Test GFCI operation according to manufacturer's written instructions.

C. Replace damaged or defective components.

3.5 CLEANING

A. Internally clean devices, device outlet boxes, and enclosures. Replace stained or improperly painted wall plates or devices.

END OF SECTION 26 27 26

SECTION 26 28 13 - FUSES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes cartridge fuses, rated 600 V and less, for use in switches, panelboards, switchboards, starters, and motor control centers; and spare fuse cabinets.

1.3 SUBMITTALS

A. Product Data: Include dimensions and manufacturer's technical data on features, performance, electrical characteristics, and ratings for each fuse type indicated.

1.4 QUALITY ASSURANCE

A. Source Limitations: Provide fuses from a single manufacturer.

B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in the NEC, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

C. Comply with NEMA FU 1.

D. Comply with the NEC.

1.5 PROJECT CONDITIONS

A. Where ambient temperature to which fuses are directly exposed is less than 40 deg F or more than 100 deg F, apply manufacturer's ambient temperature adjustment factors to fuse ratings.

1.6 COORDINATION

A. Coordinate fuse ratings with HVAC and refrigeration equipment nameplate limitations of maximum fuse size.

1.7 EXTRA MATERIALS

A. Furnish extra materials described below that match products installed and that are packaged in original cartons or containers and identified with labels describing contents.

1. Fuses: Furnish one set of three of each type and size.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers:

1. Cooper Industries, Inc.; Bussmann Div.
2. Gould Shawmut.
3. Tracor, Inc.; Littelfuse, Inc. Subsidiary.
4. Or approved equal.

2.2 CARTRIDGE FUSES

A. Characteristics: NEMA FU 1, nonrenewable cartridge fuse; class and current rating indicated; voltage rating consistent with circuit voltage.

2.3 SPARE FUSE CABINET

A. Cabinet: Wall-mounted, 0.05-inch thick steel unit with full-length, recessed piano-hinged door and key-coded cam lock and pull.

1. Size: Adequate for storage of spare fuses specified with 15 percent spare capacity minimum.
2. Finish: Gray, baked enamel.
3. Identification: "SPARE FUSES" in 1-1/2-inch- high letters on exterior of door.
4. Fuse Pullers: For each size fuse.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine utilization equipment nameplates and installation instructions. Install fuses of sizes and with characteristics appropriate for each piece of equipment.

B. Evaluate ambient temperatures to determine if fuse rating adjustment factors must be applied to fuse ratings.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Install fuses in fusible devices. Arrange fuses so rating information is readable without removing fuse.

B. Install spare fuse cabinet.

3.3 IDENTIFICATION

A. Install labels indicating fuse replacement information on inside door of each fused switch.

END OF SECTION 262813

SECTION 26 28 15 - DISCONNECT SWITCHES

PART 1 - GENERAL

1.1 1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification sections, apply to work of this section.

1.2 WORK INCLUDED

A. Provide and install motor disconnects.

B. Provide and install circuit disconnects.

1.3 REFERENCES

A. Underwriters' Laboratory, Inc. - Annual Product Directories.

B. NEMA - Classification of Standard Types of Nonventilated Enclosures for Electric Controllers.

1.4 REGULATORY REQUIREMENTS

A. Conform to National Electrical Code and to applicable inspection authority.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Cutler-Hammer/Westinghouse, General Electric, Siemens, Square D, or approved equal.

2.2 COMPONENTS

A. Motor and circuit disconnects shall have an Underwriters' Laboratory label.

B. Single Phase 120 Volt Disconnect Switches: Single pole toggle switch with thermal overload motor protection where indicated. A Horse Power rated switch may be used where fractional horse power motors have internal overload protection.

C. Single or Three Phase Motor Disconnect Switches: two or three pole heavy duty or fusible where other loads are on same circuit, 250 or 600 volt as required in NEMA Type 1, 3R, or 4 enclosures designed to reject all except Class 'R' fuses.

2.3 ACCEPTABLE MANUFACTURERS - FUSES

A. Cooper Bussmann, Edison, Littelfuse, Ferraz Shawmut, or approved equal.

2.4 FUSES

A. As indicated on the drawings. All shall be of the same manufacturer. Provide one spare set of fuses (minimum of three) for each current rating and type used. See Section 262813.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install motor and circuit disconnect as indicated on Drawings and as required by Code. Where fuses are indicated, provide fuses correlated with full load current of motors provided.

END OF SECTION 262815

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PROJECT NO. 23-006

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SPECIFICATIONS
BID/PERMIT
2/21/2023

ITD Clarkia Salt Shed
Clarkia, Idaho

LICENSED ARCHITECT AR-984931
MICHEAL P. WALKER
STATE OF IDAHO

No.	Description	Date

PROJECT NUMBER ---
PRINCIPAL MB
PROJECT MANAGER DH

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SECTION 26 51 00 - INTERIOR LIGHTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes interior lighting fixtures, lighting fixtures mounted on exterior building surfaces and recessed in canopies, lamps, ballasts, emergency lighting units, and accessories.

B. Related Sections include the following:

1. Section 260923 Lighting Control Devices.

1.3 SUBMITTALS

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

B. Maintenance data for lighting fixtures.

C. Emergency lighting units including battery and charger.

1.4 QUALITY ASSURANCE

A. Fixtures, Emergency Lighting Units, and Accessories: Listed and labeled as defined in the NEC, Article 100, by a testing agency acceptable to authorities having jurisdiction.

B. Comply with the NEC.

C. FM Compliance: Fixtures for hazardous locations shall be listed and labeled for indicated class and division of hazard by FM.

D. NFPA 101 Compliance: Comply with visibility and luminance requirements for exit signs.

1.5 COORDINATION

A. Coordinate layout and installation of lighting fixtures and suspension system with other construction that penetrates ceilings or is supported by them, including HVAC equipment, fire-suppression system, partition assemblies, and other construction.

1.6 WARRANTY

A. Special Warranty for Emergency Lighting Batteries: Manufacturer's standard form in which manufacturer of battery-powered emergency lighting unit agrees to repair or replace components of rechargeable batteries that fail in materials or workmanship within specified warranty period.

1. Warranty Period for Emergency Lighting Unit Batteries: Five years from date of Substantial Completion. Full warranty shall apply for first year, and prorated warranty for the remaining four years.

B. Special Warranty for Ballasts: Manufacturer's standard form in which ballast manufacturer agrees to repair or replace ballasts that fail in materials or workmanship within specified warranty period.

1. Warranty Period for Electronic Ballasts: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Products: As indicated on the drawings.

2.2 FIXTURES AND FIXTURE COMPONENTS, GENERAL

A. Metal Parts: Free from burrs, sharp corners, and edges.

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

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

D. Lenses, Diffusers, Covers, and Globes: 100 percent virgin acrylic plastic or annealed crystal glass, unless otherwise indicated.

1. Plastic: High resistance to yellowing and other changes due to aging, exposure to heat, and ultraviolet radiation.
2. Lens Thickness: 0.125 inch minimum, unless greater thickness is indicated.

2.3 FLUORESCENT LAMP BALLASTS

A. General Requirements: Unless otherwise indicated, features include the following:

1. Designed for type and quantity of lamps indicated at full light output.
2. Total Harmonic Distortion Rating: Less than 10 percent.
3. Sound Rating: A.

B. Electronic Ballasts for Linear Lamps: Unless otherwise indicated, features include the following, besides those in "General Requirements" Paragraph above:

1. Certified Ballast Manufacturer Certification: Indicated by label.
2. Parallel Lamp Circuits: Multiple lamp ballasts connected to maintain full light output on surviving lamps if one or more lamps fail.

C. Electromagnetic Ballasts for Linear Lamps: Unless otherwise indicated, features include the following, besides those in "General Requirements" Paragraph above:

1. Type: Energy saving.
2. Certified Ballast Manufacturer Certification: Indicated by label.

D. Ballasts for Compact Lamps: Electronic programmed start type, complying with ANSI C 82.11, designed for type and quantity of lamps indicated. Ballast shall be designed for full light output unless dimmer or bi-level control is indicated:

1. Lamp end-of-life detection and shutdown circuit.
2. Automatic lamp starting after lamp replacement.
3. Sound Rating: A.
4. Total Harmonic Distortion Rating: Less than 20 percent.
5. Transient Voltage Protection: IEEE C62.41, Category A or better.
6. Operating Frequency: 20 kHz or higher.
7. Lamp Current Crest Factor: 1.7 or less.
8. BF: 0.95 or higher, unless otherwise indicated.
9. Power Factor: 0.95 or higher.
10. Interference: Comply with 47 CFR, Chapter 1, Part 18, Subpart C, for limitations on electromagnetic and radio-frequency interference for nonconsumer equipment.
11. Ballast Case Temperature: 75 deg C, maximum.

E. Ballasts for Dimmer-Controlled Fixtures: Comply with general and fixture-related requirements above for electronic ballasts.

1. Compatibility: Certified by manufacturer for use with specific dimming system indicated for use with each dimming ballast.

F. Ballasts for Low-Temperature Environments: As follows:

1. Temperatures 0 Deg F (Minus 17 Deg C) and Higher: Electronic type rated for 0 deg F (minus 17 deg C) starting and operating temperature with indicated lamp types.

a. Temperatures Minus 20 Deg F (Minus 29 Deg C) and Higher: Electromagnetic type designed for use with indicated lamp types.

2.4 HIGH-INTENSITY-DISCHARGE LAMP BALLASTS

A. Electromagnetic Ballast for Metal-Halide Lamps: Comply with ANSI C82.4 and UL 1029. Include the following features, unless otherwise indicated:

1. Type: Constant wattage autotransformer or regulating high-power-factor type, unless otherwise indicated.
2. Operating Voltage: Match system voltage.
3. Minimum Starting Temperature: Minus 22 deg F for single lamp ballasts.
4. Normal Ambient Operating Temperature: 104 deg F.
5. Open-circuit operation that will not reduce average life.

B. High-Pressure Sodium Ballasts: Electromagnetic type, with solid-state igniter/starter. Igniter-starter shall have an average life in pulsing mode of 10,000 hours at an igniter/starter-case temperature of 90 deg C

C. Minimum Starting Temperature: Minus 40 deg F (Minus 40 deg C).

1. Open-circuit operation shall not reduce average lamp life..

2.5 EXIT SIGNS

A. General Requirements: Comply with UL 924 and the following:

1. Sign Colors and Lettering Size: Comply with authorities having jurisdiction.

B. Internally Lighted Signs: As follows:

1. Lamps for AC Operation: Light-emitting diodes, 70,000 hours minimum rated lamp life.

C. Self-Powered Exit Signs (Battery Type): Integral automatic charger in a self-contained power pack.

1. Battery: Sealed, maintenance-free, nickel-cadmium type.
2. Charger: Fully automatic, solid-state type with sealed transfer relay.
3. Operation: Relay automatically energizes lamp from battery when circuit voltage drops to 80 percent of nominal voltage or below. When normal voltage is restored, relay disconnects lamps from battery, and battery is automatically recharged and floated on charger.
4. Test Push Button: Push-to-test type, in unit housing, simulates loss of normal power and demonstrates unit operability.
5. LED Indicator Light: Indicates normal power on. Normal glow indicates trickle charge; bright glow indicates charging at end of discharge cycle.
6. Remote Test – Where indicated on the drawings: Switch in hand-held remote device aimed in direction of tested unit initiates coded infrared signal. Signal reception by factory-installed infrared receiver in tested unit triggers simulation of loss of its normal power supply, providing visual confirmation of either proper or failed emergency response.
7. Integral Self-Test – Where indicated on the drawings: Factory-installed electronic device automatically initiates code-required test of unit emergency operation at required intervals. Test failure is annunciated by an integral audible alarm and flashing red LED.

2.6 EMERGENCY LIGHTING UNITS

A. Internal Type: Self-contained, modular, battery-inverter unit, factory mounted within lighting fixture body and compatible with ballast. Comply with UL 924.

1. Emergency Connection: Operate 1 fluorescent lamp continuously at an output of 1100 lumens for 90 minutes. Connect unswitched circuit to battery-inverter unit and switched circuit to fixture ballast.
2. Test Push Button and Indicator Light: Visible and accessible without opening fixture or entering ceiling space. Provide integral to fixture or mounted adjacent to fixture.

a. Push Button: Push-to-test type, in unit housing, simulates loss of normal power and demonstrates unit operability.
b. Indicator Light: LED indicates normal power on. Normal glow indicates trickle charge; bright glow indicates charging at end of discharge cycle.

3. Battery: Sealed, maintenance-free, nickel-cadmium type.
4. Charger: Fully automatic, solid-state, constant-current type with sealed power transfer relay.
5. Battery: Sealed, maintenance-free, nickel-cadmium type.
6. Charger: Fully automatic, solid-state type with sealed transfer relay.
7. Night-Light Connection: Where night-light option is called out in the drawings, operate one fluorescent lamp continuously.

B. External Type: Self-contained, modular, battery-inverter unit, suitable for powering one or more fluorescent lamps, remote mounted from lighting fixture. Comply with UL 924.

1. Emergency Connection: Operate 1 or 2 fluorescent lamps continuously at an output of 1100 lumens for 90 minutes. Connect unswitched circuit to battery-inverter unit and switched circuit to fixture ballast.
2. Battery: Sealed, maintenance-free, nickel-cadmium type.
3. Charger: Fully automatic, solid-state, constant-current type.
4. Housing: NEMA 250, Type 1 enclosure.
5. Test Push Button: Push-to-test type, in unit housing, simulates loss of normal power and demonstrates unit operability.
6. LED Indicator Light: Indicates normal power on. Normal glow indicates trickle charge; bright glow indicates charging at end of discharge cycle.

C. Cold weather Compact Fluorescent: Self-contained, modular, battery-inverter unit, suitable for powering one or more fluorescent lamps, integral or remote mounted from lighting fixture. Comply with UL 924.

1. Emergency Connection: Operate 1 or two fluorescent lamps continuously at a minimum output of 1100 lumens for 90 minutes. Connect unswitched circuit to battery-inverter unit and switched circuit to fixture ballast.
2. Battery: Sealed, maintenance-free, nickel-cadmium type.
3. Charger: Fully automatic, solid-state, constant-current type.
4. Housing: NEMA 250, Type 1 enclosure for remote-mounted.
5. Test Push Button: Push-to-test type, in unit housing, simulates loss of normal power and demonstrates unit operability.
6. LED Indicator Light: Indicates normal power on. Normal glow indicates trickle charge; bright glow indicates charging at end of discharge cycle.
7. Operating Temperature Range: -20° C to +55° C (-4° F to +131° F)
8. Ballasts shall be equivalent to or exceed performance as follows:

a. Outdoor Compact Fluorescent Fixtures: Bodine B4CF1 or B4CF2
b. Outdoor Linear Fluorescent Fixtures: Bodine B50 Cold-Pak

2.7 LAMPS

A. Fluorescent Color Temperature and Minimum Color-Rendering Index: 3500 K and 85 CRI, unless otherwise indicated.

B. Non-compact fluorescent Lamp Life: Minimum rated average is 20,000 hours at 3 hours per start.

C. Compact fluorescent Lamp Life: Minimum rated average is 12,000 hours at 3 hours per start.

D. Metal-Halide Color Temperature and Minimum Color-Rendering Index: 3700 K and 65 CRI, unless otherwise indicated.

E. Horizontally mounted Metal-Halide lamps shall be Venture Lamps series H-75 lamps.

2.8 FIXTURE SUPPORT COMPONENTS

A. Single-Stem Hangers: 1/2-inch steel tubing with swivel ball fitting and ceiling canopy. Finish same as fixture.

B. Twin-Stem Hangers: Two, 1/2-inch steel tubes with single canopy arranged to mount a single fixture. Finish same as fixture.

C. Rod Hangers: 3/16-inch- minimum diameter, cadmium-plated, threaded steel rod.

D. Hook Hangers: Integrated assembly matched to fixture and line voltage and equipped with threaded attachment, cord, and locking-type plug.

E. Aircraft Cable Support: Use cable, anchorages, and intermediate supports recommended by fixture manufacturer.

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

2.9 FINISHES

A. Fixtures: Manufacturer's standard, unless otherwise indicated.

1. Paint Finish: Applied over corrosion-resistant treatment or primer, free of defects.
2. Metallic Finish: Corrosion resistant.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Fixtures: Set level, plumb, and square with ceiling and walls, and secure according to manufacturer's written instructions and approved submittal materials. Install lamps in each fixture.

B. Furnish and install a protective barrier around fixtures that are not insulation-contact-rated (non-IC-rated) in locations where insulation is installed. The protective barrier shall be installed to yield a 4" air-gap from the fixture on all sides and top.

C. Support for Fixtures in or on Grid-Type Suspended Ceilings: Attach supports to building structure.

1. Install a minimum of four ceiling support system rods or wires for each fixture. Locate not more than 6 inches from fixture corners.
2. Support Clips: Fasten to fixtures and to ceiling grid members at or near each fixture corner.
3. Fixtures of Sizes Less Than Ceiling Grid: Arrange as indicated on reflected ceiling plans or center in acoustical panel, and support fixtures independently with at least two 3/4-inch metal channels spanning and secured to ceiling tees.

D. Suspended Fixture Support: As follows:

1. Pendants and Rods: Where longer than 48 inches, brace to limit swinging.
2. Stem-Mounted, Single-Unit Fixtures: Suspend with twin-stem hangers.
3. Continuous Rows: Suspend from cable installed according to fixture manufacturer's written instructions and details on Drawings.

3.2 CONNECTIONS

A. Ground equipment.

1. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values.

3.3 FIELD QUALITY CONTROL

A. Inspect each installed fixture for damage. Replace damaged fixtures and components.

B. Tests: As follows:

1. Verify normal operation of each fixture after installation.
2. Emergency Lighting: Interrupt electrical supply to demonstrate proper operation.

C. Malfunctioning Fixtures and Components: Replace or repair, then retest. Repeat procedure until units operate properly.

D. Ballasts: Replace all noisy ballasts. Ballasts that can be heard shall be considered noisy. Repeat the procedure until a ballast is installed that is not noisy.

3.4 CLEANING AND ADJUSTING

A. Clean fixtures internally and externally after installation. Use methods and materials recommended by manufacturer.

B. Adjust aimable fixtures to provide required light intensities.

END OF SECTION 265100

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SPECIFICATIONS
BID/PERMIT
2/21/2023

ITD Clarkia Salt Shed
Clarkia, Idaho

LICENSED ARCHITECT AR-984931
MICHEAL P. WALKER
STATE OF IDAHO

No.	Description	Date

PROJECT NUMBER --- | PRINCIPAL MB | PROJECT MANAGER DH

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MUSGROVE
ENGINEERING, P.A.
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Boise, ID 83709
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Idaho Falls, ID 83402
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www.musgrovepa.com

PROJECT NO. 23-006

SECTION 26 56 00 - EXTERIOR LIGHTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes exterior lighting units with luminaires, lamps, ballasts, poles/support structures, and accessories.

B. Related Sections include the following:

1. Section 260923 - Lighting Control Devices.
2. Section 265100 - Interior Lighting for interior fixtures, lamps, ballasts, emergency lighting units, and accessories; and for exterior luminaires normally mounted on buildings.

1.3 DEFINITIONS

A. Lighting Unit: A luminaire or an assembly of luminaires complete with a common support, including pole, post, or other structure, and mounting and support accessories.

B. Luminaire (Light Fixture): A complete lighting device consisting of lamp(s) and ballast(s), when applicable, together with parts designed to distribute light, to position and protect lamps, and to connect lamps to power supply.

1.4 SUBMITTALS

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

B. Maintenance data for lighting units.

1.5 QUALITY ASSURANCE

A. Luminaires and Accessories: Listed and labeled as defined in the NEC, Article 100, for their indicated use, location, and installation conditions by a testing agency acceptable to authorities having jurisdiction.

B. Comply with ANSI C2.

C. Comply with the NEC.

1.6 DELIVERY, STORAGE, AND HANDLING OF POLES

A. Retain factory-applied pole wrappings on metal poles until just before pole installation. For poles with nonmetallic finishes, handle with web fabric straps.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Products: As indicated on the drawings.

2.2 LUMINAIRES

A. Metal Parts: Free from burrs, sharp corners, and edges.

B. Sheet Metal Components: Corrosion-resistant aluminum, unless otherwise indicated. Form and support to prevent warping and sagging.

C. Housings: Rigidly formed, weather- and light-tight enclosures that will not warp, sag, or deform in use. Provide filter/breather for enclosed luminaires.

D. Doors, Frames, and Other Internal Access: Smooth operating, free from light leakage under operating conditions, and arranged to permit re-lamping without use of tools. Arrange doors, frames, lenses, diffusers, and other pieces to prevent accidental falling during re-lamping and when secured in operating position. Provide for door removal for cleaning or replacing lens. Arrange to disconnect ballast when door opens.

E. Exposed Hardware Material: Stainless steel.

F. Plastic Parts: High resistance to yellowing and other changes due to aging, exposure to heat, and ultraviolet radiation.

G. Lenses and Refractors: Materials as indicated. Use heat- and aging-resistant, resilient gaskets to seal and cushion lens and refractor in luminaire doors.

H. High-Intensity-Discharge Ballasts: Comply with ANSI C82.4. Constant wattage autotransformer or regulating high-power-factor type, unless otherwise indicated.

1. Ballast Fuses: One in each ungrounded supply conductor. Voltage and current ratings as recommended by ballast manufacturer.
2. Single-Lamp Ballasts: Minimum starting temperature of minus 40 deg C.
3. Open-circuit operation will not reduce average life.
4. High-Pressure Sodium Ballasts: Equip with a solid-state igniter/starter having an average life in pulsing mode of 10,000 hours at an igniter/starter case temperature of 90 deg C.
5. Noise: Uniformly quiet operation, with a noise rating of B or better.

I. Verify availability of space to install device at or close to ballast. Unit as specified is suitable for full 15-a branch-circuit protection. Coordinate with Drawings.

J. Lamps: Comply with the standard of the ANSI C78 series that is applicable to each type of lamp. Provide luminaires with indicated lamps of designated type, characteristics, and wattage. Where a lamp is not indicated for a luminaire, provide medium wattage lamp recommended by manufacturer for luminaire.

1. Metal-Halide Color Temperature and Minimum Color-Rendering Index: 3600 K and 70 CRI, unless otherwise indicated.

2.3 LUMINAIRE SUPPORT COMPONENTS

A. Description: Comply with AASHTO LTS-3 for pole or other support structures, brackets, arms, appurtenances, base, and anchorage and foundation.

B. Wind-Load Strength of Total Support Assembly: Adequate to carry support assembly plus luminaires at indicated heights above grade without failure, permanent deflection, or whipping in steady winds of 80 mph with a gust factor of 1.3. Support assembly includes pole or other support structures, brackets, arms, appurtenances, base, and anchorage and foundation.

C. Finish: Match finish of pole/support structure for arm, bracket, and tenon mount materials.

D. Mountings, Fasteners, and Appurtenances: Corrosion-resistant items compatible with support components.

1. Materials: Will not cause galvanic action at contact points.
2. Mountings: Correctly position luminaire to provide indicated light distribution.
3. Anchor Bolts, Nuts, and Washers: Hot-dip galvanized after fabrication unless stainless-steel items are indicated.
4. Anchor-Bolt Template: Steel.

E. Pole/Support Structure Bases: Anchor type with hold-down or anchor bolts, leveling nuts, and bolt covers.

F. Steel Poles: Tubing complying with ASTM A 500, Grade B, carbon steel with a minimum yield of 46,000 psig; one-piece construction up to 40 feet in length with access handhole in pole wall.

G. Steel Mast Arms: Fabricated from NPS 2 black steel pipe, continuously welded to pole attachment plate with span and rise as indicated.

H. Metal Pole Brackets: Match pole metal. Provide cantilever brackets without underbrace, in sizes and styles indicated, with straight tubular end section to accommodate luminaire.

I. Pole-Top Tenons: Fabricated to support luminaire or luminaires and brackets indicated, and securely fastened to pole top.

J. Concrete for Pole Foundations: Comply with Division 3.

2.4 FINISHES

A. Steel: Grind welds and polish surfaces to a smooth, even finish.

1. Galvanized Finish: Hot-dip galvanize after fabrication to comply with ASTM A 123.
2. Surface Preparation: Clean surfaces to remove dirt, oil, grease, and other contaminants that could impair paint bond. Remove mill scale and rust, if present, from uncoated steel.
3. Interior: Apply one coat of bituminous paint on interior of pole, or otherwise treat to prevent corrosion.
4. Polyurethane Enamel: Manufacturer's standard finish consisting of one or more coats of primer and two finish coats of high-gloss, high-build polyurethane enamel.
5. Color: As indicated on the drawings.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Concrete Foundations: Construct according to Division 3.

B. Install poles as follows:

1. Use web fabric slings (not chain or cable) to raise and set poles.
2. Mount pole to foundation with leveling nuts, and tighten top nuts to torque level recommended by pole manufacturer.
3. Secure poles level, plumb, and square.
4. Grout void between pole base and foundation. Use non-shrinking or expanding concrete grout firmly packed in entire void space.
5. Use a short piece of 1/2-inch- diameter pipe to make a drain hole through grout. Arrange to drain condensation from interior of pole.

C. Luminaire Attachment: Fasten to indicated structural supports.

D. Lamp luminaires with indicated lamps according to manufacturer's written instructions. Replace malfunctioning lamps.

3.2 CONNECTIONS

A. Ground equipment.

1. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values.

B. Ground metal poles/support structures.

3.3 FIELD QUALITY CONTROL

A. Inspect each installed unit for damage. Replace damaged units.

3.4 CLEANING AND ADJUSTING

A. Clean units after installation. Use methods and materials recommended by manufacturer.

END OF SECTION 265600

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SPECIFICATIONS
BID/PERMIT
2/21/2023

LICENSED ARCHITECT
AR-984931
MICHEAL P. WALKER
STATE OF IDAHO

ITD Clarkia Salt Shed
Clarkia, Idaho

No.	Description	Date

PROJECT NUMBER ---
PRINCIPAL MB
PROJECT MANAGER DH

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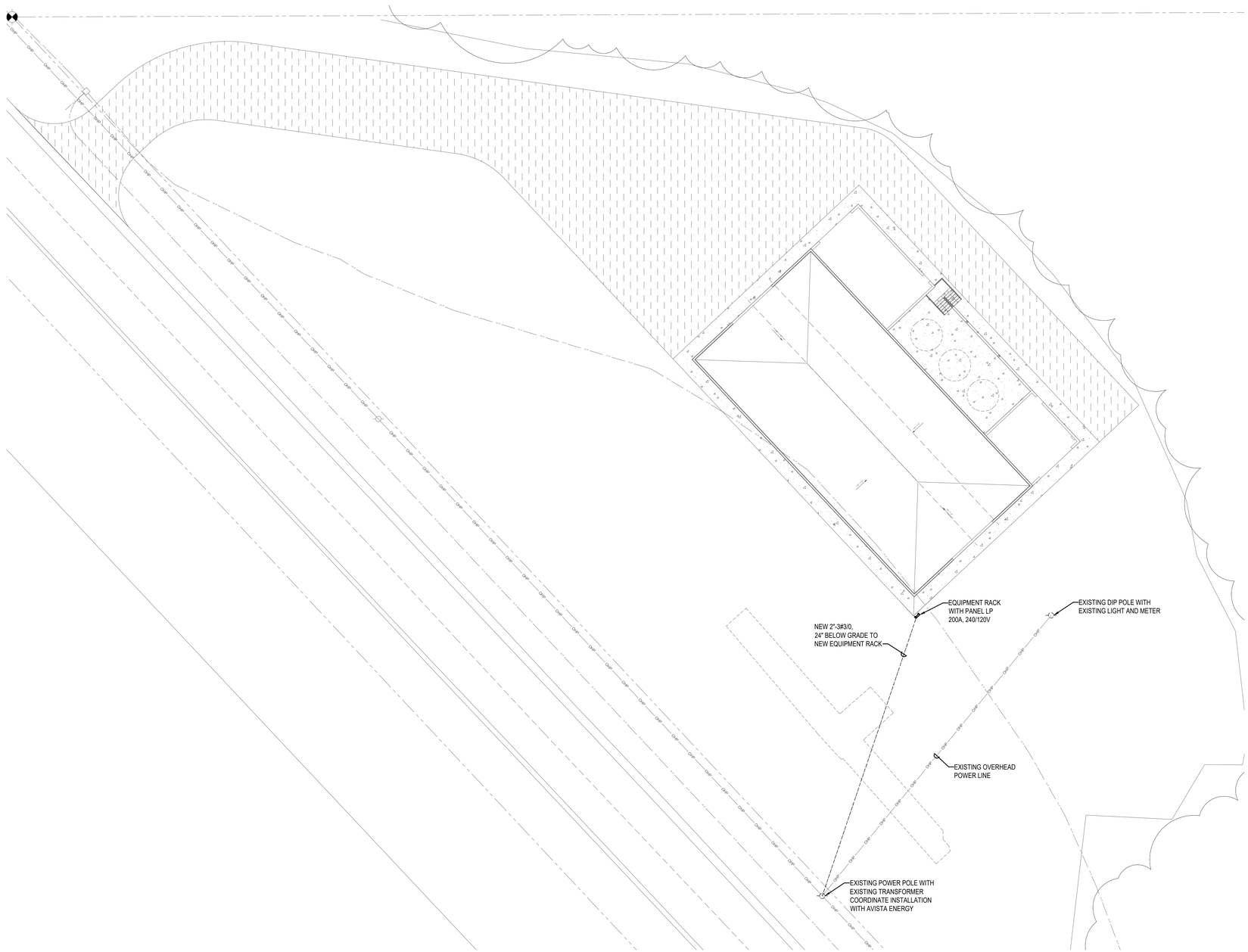

ELECTRICAL SITE PLAN

1" = 20'-0"

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PROJECT NO. 23-006

PROFESSIONAL ENGINEER
REGISTERED
13299
2/22/2023
STATE OF IDAHO
MATTHEW N. BRADLEY

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Level 1 Power Plan, Details, & Schedules

BID/PERMIT
2/21/2023

ITD Clarkia Salt Shed
Clarkia, Idaho

LICENSED ARCHITECT
AR-984931
MICHEAL P. WALKER
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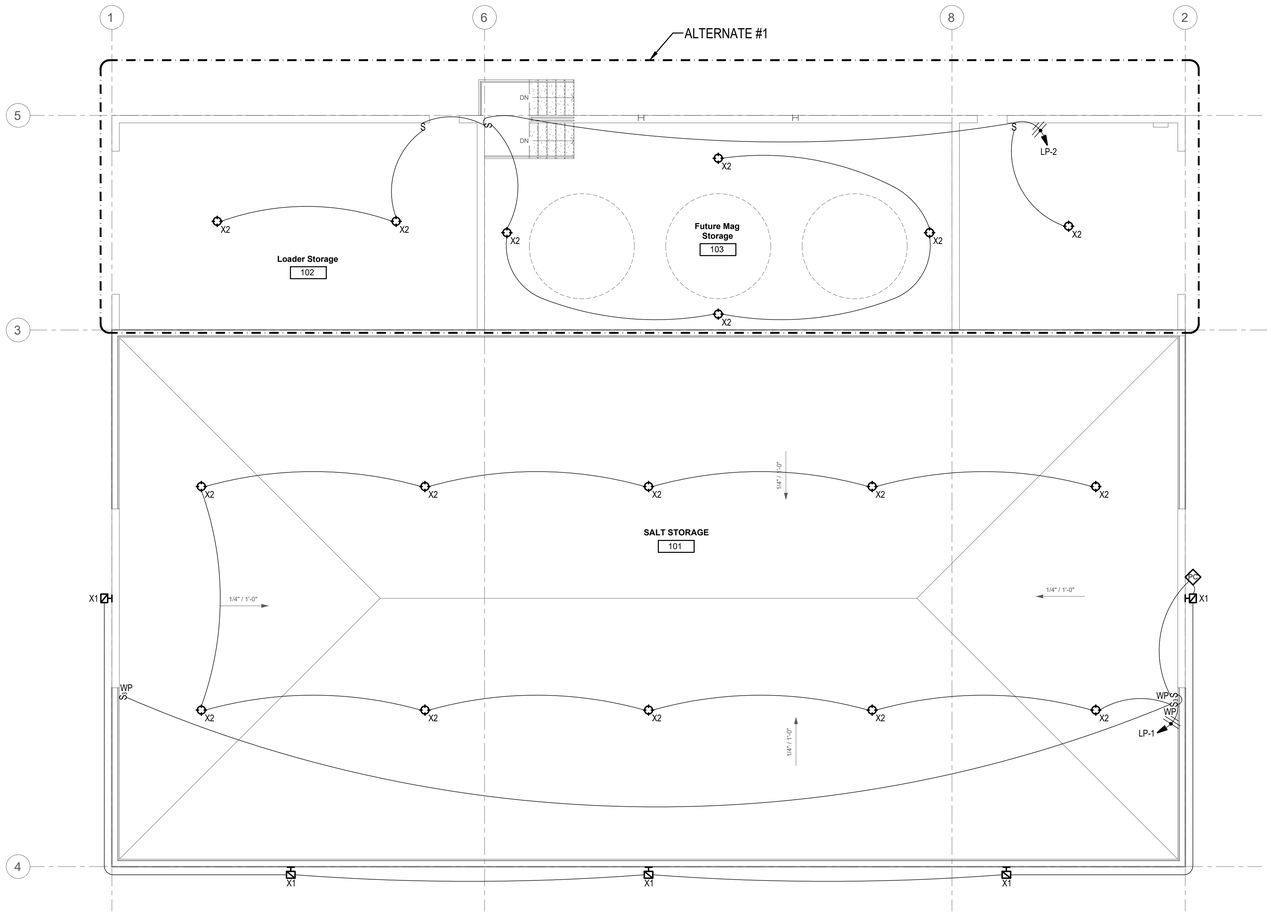

LEVEL 1 LIGHTING PLAN

1/8" = 1'-0"

LIGHTING FIXTURE SCHEDULE (23-006)

TYPE	DESCRIPTION	MTG.	LAMPS	WATTS	MFG. & CATALOG NUMBER	OR EQUAL BY	NOTES
X1	MVOLT, LED WALL PACK 2,900-13,850 LUMENS MEDIUM DISTRIBUTION	WALL +16FT	LED 40K	108	LITHONIA NO. TWX3-LED-ALO-40K-MVOL-DDBTXD	LIGHTOLIER METALUX H.E. WILLIAMS	1
X2	MVOLT, LED HIGH BAY 13,630 LUMENS WITH SURFACE MOUTING KIT	SURFACE MOUNT TO STRUCTURE	LED 40K	95	LITHONIA NO. JEBL-12L-40K-80CRI-WH-JEBLSMB1-M6	LIGHTOLIER METALUX H.E. WILLIAMS	1

LIGHTING FIXTURE SCHEDULE NOTES:

1 SUBSTITUTIONS WILL BE ALLOWED IF SUBMITTED PRIOR TO BID DATE BY THE GREATER OF: 7 BUSINESS DAYS OR THE TIME PERIOD SPECIFIED BY DIVISION 1 SPECIFICATIONS, AND IF DEEMED EQUAL BY THE ENGINEER. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING SUBSTITUTED FIXTURES MEET OR EXCEED THE SPECIFICATIONS OF THE FIXTURES SPECIFIED.

PROFESSIONAL ENGINEER REGISTERED 13299 2/22/2023 STATE OF IDAHO MATTHEW N. BRADLEY

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Level 1 Lighting Plan & Schedules

BID/PERMIT
2/21/2023

ITD Clarkia Salt Shed
Clarkia, Idaho

LICENSED ARCHITECT AR-984931 MICHEAL P. WALKER STATE OF IDAHO

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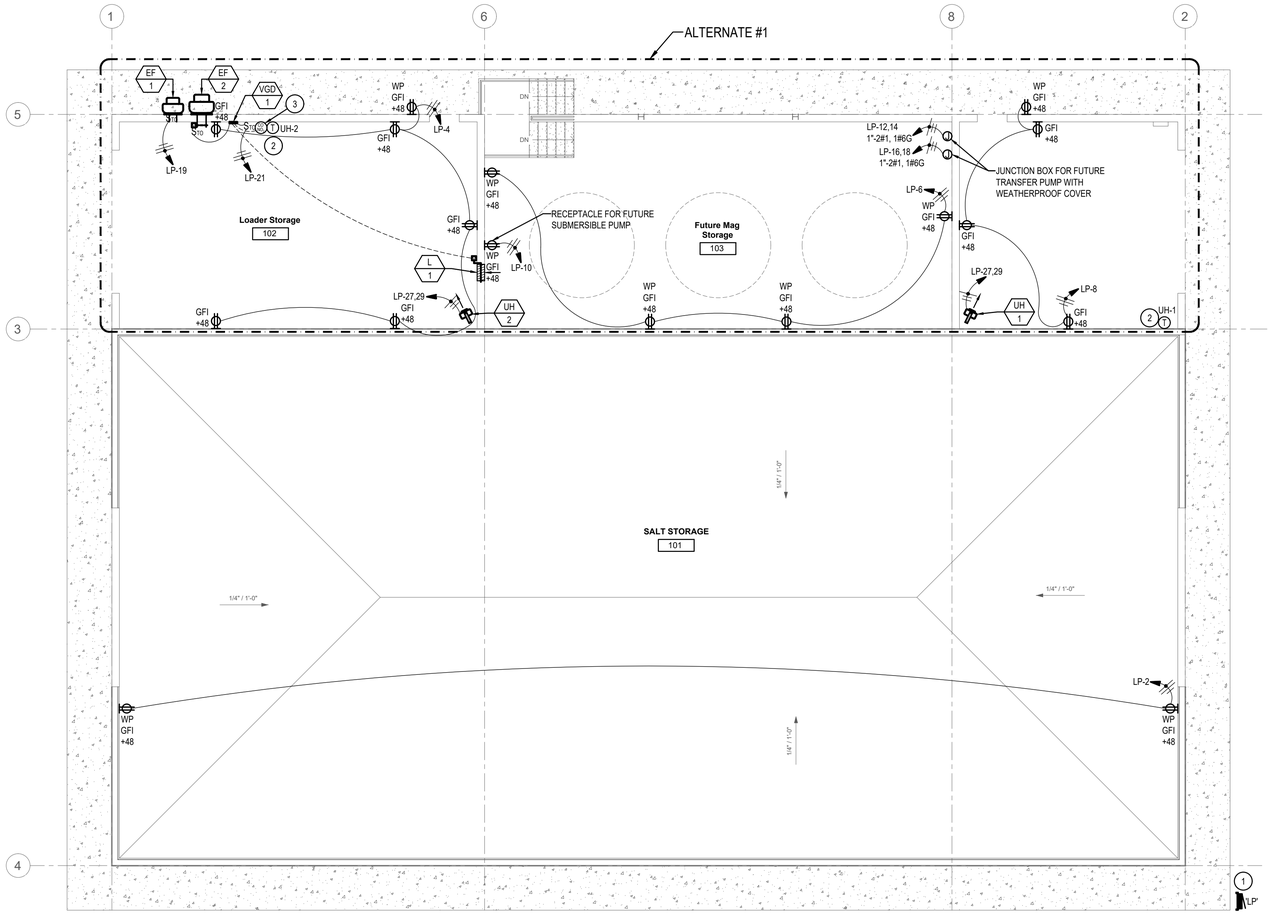


LEVEL 1 POWER PLAN

1/8" = 1'-0"

PANEL: LP				PROJECT: ITD CLARKIA SALT SHED												
VOLTAGE: 240 / 120 V				1 PH	3 WIRE	AMPERE RATING: 225A		WITH 200A CB			MOUNTING: SURFACE					
BASIS OF DESIGN PANEL TYPE:						NEMA ENCLOSURE TYPE: 1					PANEL AIC RATING: 10000 AIC					
CKT NOTES: 1. GFCI FOR PERSONNEL PROTECTION (5mA) 2 GFEP FOR EQUIPMENT PROTECTION (30mA)						REMARKS:										
CKT	DESCRIPTION	CKT NOTE	LOAD VA	LOAD AMPS	AMPS/ POLES	LOAD (VA) A	LOAD (VA) N/A	LOAD (VA) C	AMPS/ POLES	LOAD AMPS	LOAD VA	CKT NOTE	DESCRIPTION	CKT
1	LTS - SAND SHED 101 INTERIOR/EXTERIOR		1490	12.4	20 1	1850			20 1	3.0	360		REC - SAND SHED 101	2
3	LTS - 102, 103, GENERAL STORAGE		475	4.0	20 1			1555	20 1	9.0	1080		REC - LOADER STORAGE 102	4
5	SPARE			0.0	20 1	720			20 1	6.0	720		REC - FUTURE MAG STORAGE 103	6
7	SPARE			0.0	20 1			720	20 1	6.0	720		REC - GENERAL STORAGE	8
9	SPARE			0.0	20 1	750			20 1	6.3	750		REC - SUBMERSIBLE PUMP	10
11	SPARE			0.0	20 1			6000	90 2	50.0	6000		TRANSFER PUMP	12
13	SPARE			0.0	20 1	6000			** *	50.0	6000		***	14
15	SPARE			0.0	20 1			6000	90 2	50.0	6000		TRANSFER PUMP	16
17	SPARE			0.0	20 1	6000			** *	50.0	6000		***	18
19	EXHAUST FAN EF-1		506	4.2	20 1			506	20 1	0.0			SPARE	20
21	VGD-1 CONTROL PANEL (EF-2, L-1)		556	4.6	20 1	556			20 1	0.0			SPARE	22
23	UNIT HEATER UH-1		1500	12.5	20 2			1500	20 1	0.0			SPARE	24
25	***		1500	12.5	** *	1500			20 1	0.0			SPARE	26
27	UNIT HEATER UH-2		2500	20.8	30 2			2500	20 1	0.0			SPARE	28
29	***		2500	20.8	** *	2500			20 1	0.0			SPARE	30
						19876.0		18781.0	VA					
						165.6		156.5	AMPS				38657 TOTAL VA	

KEYED NOTES:

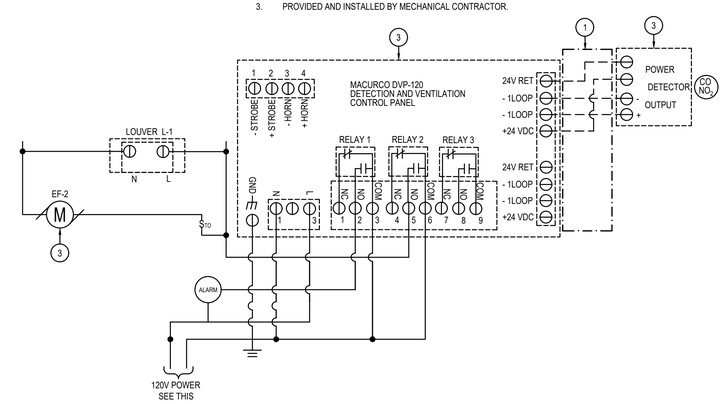
(#) SYMBOL USED FOR NOTE CALLOUT.

1. ELECTRICAL CONTRACTOR TO FABRICATE UNISTRUT SUPPORT RACK FOR PANEL LP.
2. 1/2" CONDUIT TO CORRESPONDING MECHANICAL UNIT.
3. 1/2" CONDUIT FROM CONTROL PANEL TO SENSOR. COORDINATE EXACT LOCATION WITH MECHANICAL CONTRACTOR. LOW VOLTAGE CONDUCTOR AND TERMINATION BY MECHANICAL CONTRACTOR.

KEYED NOTES:

(#) SYMBOL USED FOR NOTE CALLOUT.

1. 1/2"C BY ELECTRICAL CONTRACTOR, LOW VOLTAGE CONDUCTORS BY MECHANICAL CONTRACTOR.
2. PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR.
3. PROVIDED AND INSTALLED BY MECHANICAL CONTRACTOR.



GENERAL NOTES:

1. ALL CONDUIT, JUNCTION BOXES, CONDUIT BODIES AND LINE VOLTAGE CONDUCTORS PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR.
2. ALL LOW VOLTAGE CONDUCTORS / CABLES PROVIDED AND INSTALLED BY MECHANICAL CONTRACTOR.

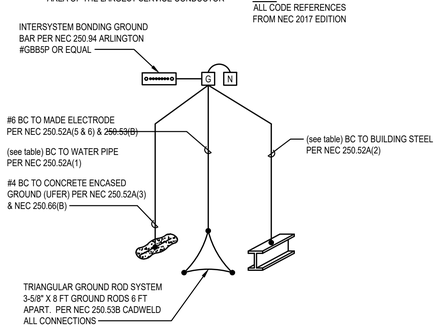
VEHICLE EXHAUST SYSTEM INTERLOCK CONNECTION DIAGRAM
NTS

TABLE 250.66 FROM NEC

SIZE OF LARGEST UNGROUNDED SERVICE-ENTRANCE CONDUCTOR (AWG/KCMIL)	SIZE OF GROUNDING ELECTRODE CONDUCTOR (AWG/KCMIL)	MAX SERVICE SIZE
2 OR SMALLER	8	100A
1 OR 1/0	6	150A
2/0 OR 3/0	4	200A
OVER 3/0 THROUGH 350	2	300A
OVER 350 THROUGH 600	1/0	400A
OVER 600 THROUGH 1100	2/0	500A
OVER 1100	3/0	1000A

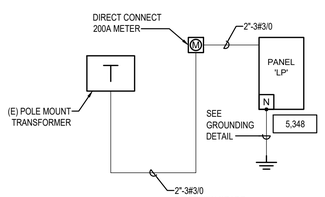
FOR OVER 1100 KCMIL ALSO REFER TO NEC PARAGRAPH 250.24(C)(1) GROUNDED CONDUCTOR SHALL NOT BE SMALLER THAN 12-1/2% OF THE AREA OF THE LARGEST SERVICE CONDUCTOR

NOTE:
ALL CODE REFERENCES FROM NEC 2017 EDITION



GROUNDING SHALL BE COMPLETED TO ALL TYPES SHOWN

GROUNDING DETAIL
NTS



ONE-LINE DIAGRAM
NTS

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