ALSEA SCHOOL DISTRICT

POWER PANEL ROOM & HALLWAY ADDITION PHASE 1b.7

100% AGENCY REVIEW & BID DOCUMENTS

January 27th, 2022

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DEFERRED SUBMITTALS:

1. FIRE ALARM SYSTEM

2. SAND & GREASE INTERCEPTOR



Address:

ALSEA SCHOOL DISTRICT 301 SOUTH 3rd STREET ALSEA, OREGON 97324

CONSTRUCTION MANAGER (CM/GC):



Address:

Email:

CB Construction 1202 Adams Avenue LaGrande, Oregon 97850

Contact: Derek Howard

541.786.5315 dhoward@cbconst.us ARCHITECT:



Address:

STRAIGHTLINE Architects 4521 South Cloverdale Road Suite 102 Boise, Idaho 83709

Contact:

Scott Marshall, AIA - NCARB, Principal 208.991.0855 Scott@Straightline.biz | Email:

ELECTRICAL ENGINEER:



Address:

800 S. Industry Way, Suite 350 Meridian, Idaho 83642

Jon Van Stone, PE. Principal Office: 208-378-4450 Email: jvanstone@e2co.com **MECHANICAL ENGINEER:**



Address:

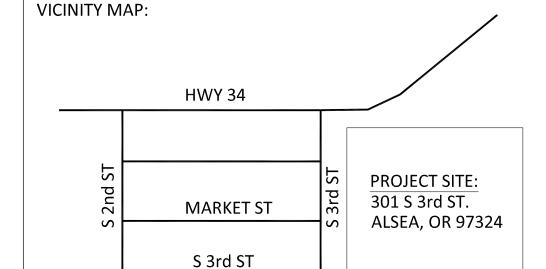
VALUE ENGINEERING INC. 1406 N. Main Street, Suite 107 Meridian, ID 83642

Tyson McFall, P.E., Principal Office: 208-703-9440 Email: Tyson@v-engineering.com STRUCTURAL ENGINEER:



CBSE STRUCTURAL ENGINEERING 1202 Adams Avenue LaGrande, Oregon 97850

Derek Howard *Office:* 541.786.5315 Email: dhoward@cbconst.us



BOISE, IDAHO 5794

ADDITION HALLWAY ALSEA SCHOOL DISTRICT 1b.7: POWER PANEL ROOM &

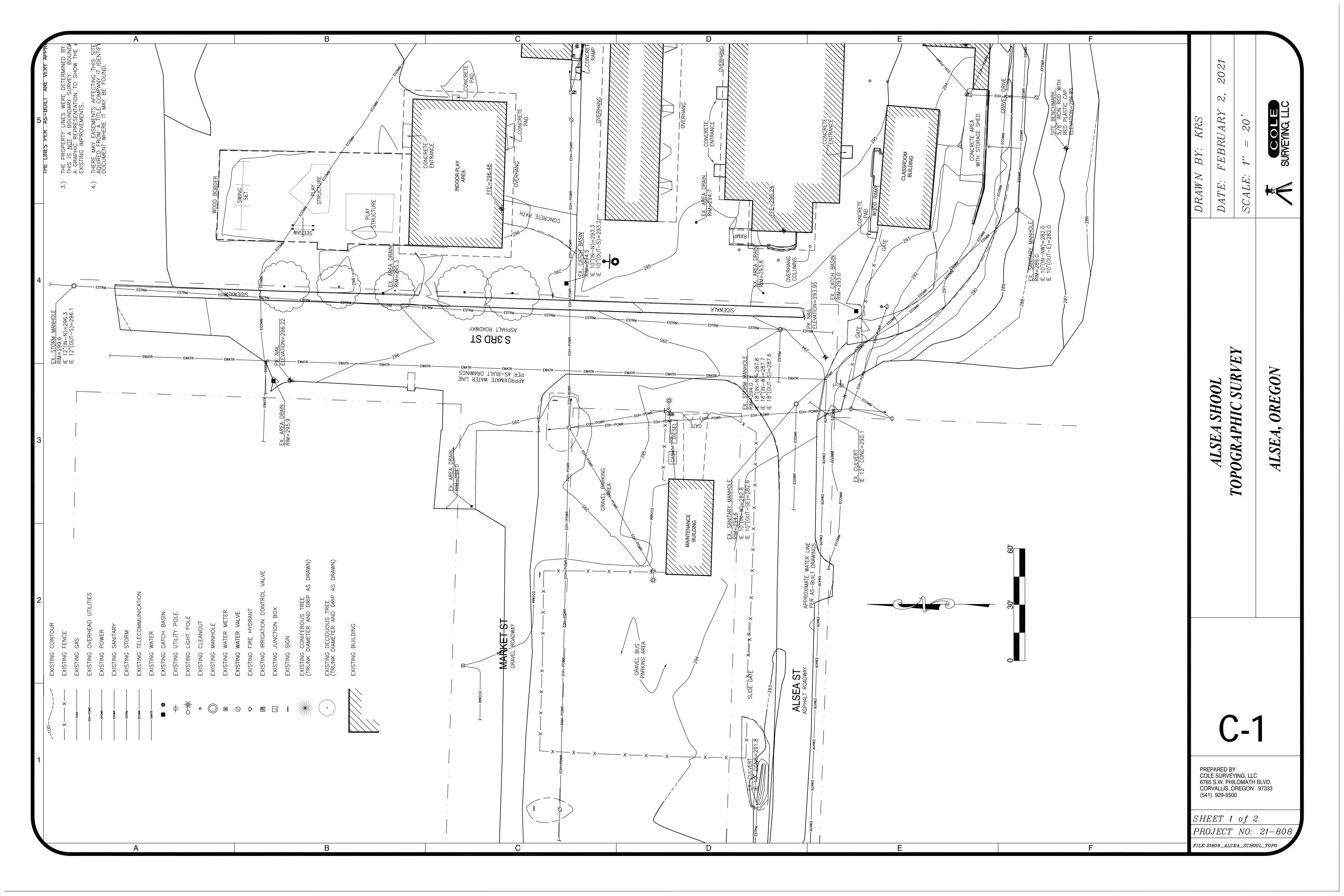


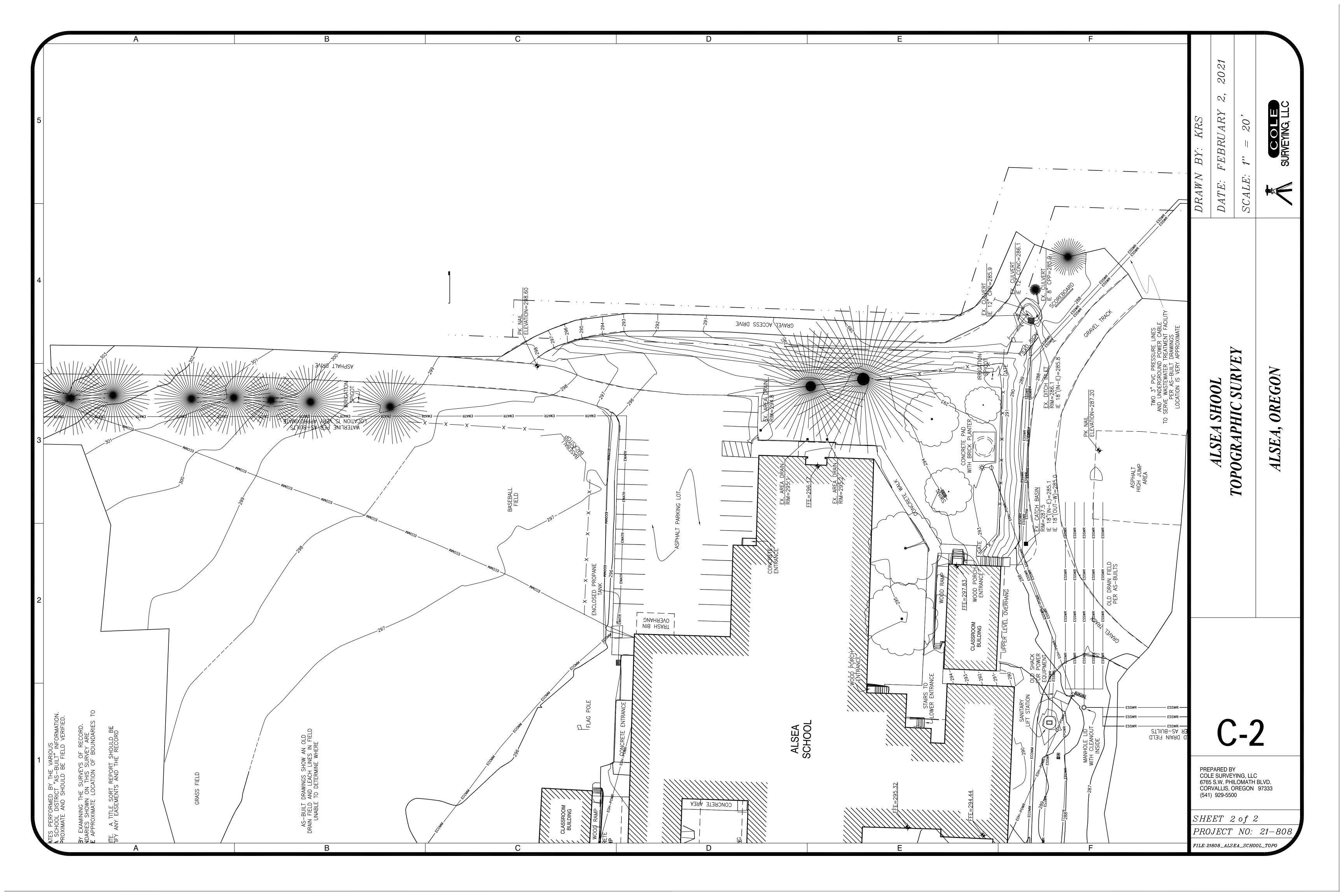
STRAIGHTLINE

1-27-2022 ALS-1821 Version History: V1.0 PHASES (PH): 1b.7

2-1-22 ISSUE: **AGENCY & BID ISSUE**

DRAWING NO.





NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The community map repository should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where Base Flood Elevations (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) Report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS Report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study Report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by flood control structures. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study Report for information on flood control structures for this jurisdiction.

The projection used in the preparation of this map was Universal Transverse Mercator (UTM) zone 10. The horizontal datum was NAD 83, GRS 1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov or contact the National Geodetic Survey at the following

NGS Information Services NOAA, N/NGS12 National Geodetic Survey SSMC-3, #9202 1315 East-West Highway Silver Spring, Maryland 20910-3282 (301) 713-3242

and USDA-FSA (2005) at a scale of 1:24,000.

To obtain current elevation, description, and/or location information for bench marks shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242, or visit its website at http://www.ngs.noaa.gov.

Base map information shown on this FIRM was derived from multiple sources. Base map files were provided in digital format by the State of Oregon and Benton County GIS Department. This information was compiled from Benton County (2007), Oregon Water Resources Department (2006), OR/WA Bureau

of Land Management (2000), U.S. Fish and Wildlife Service (2008), NGS (2007),

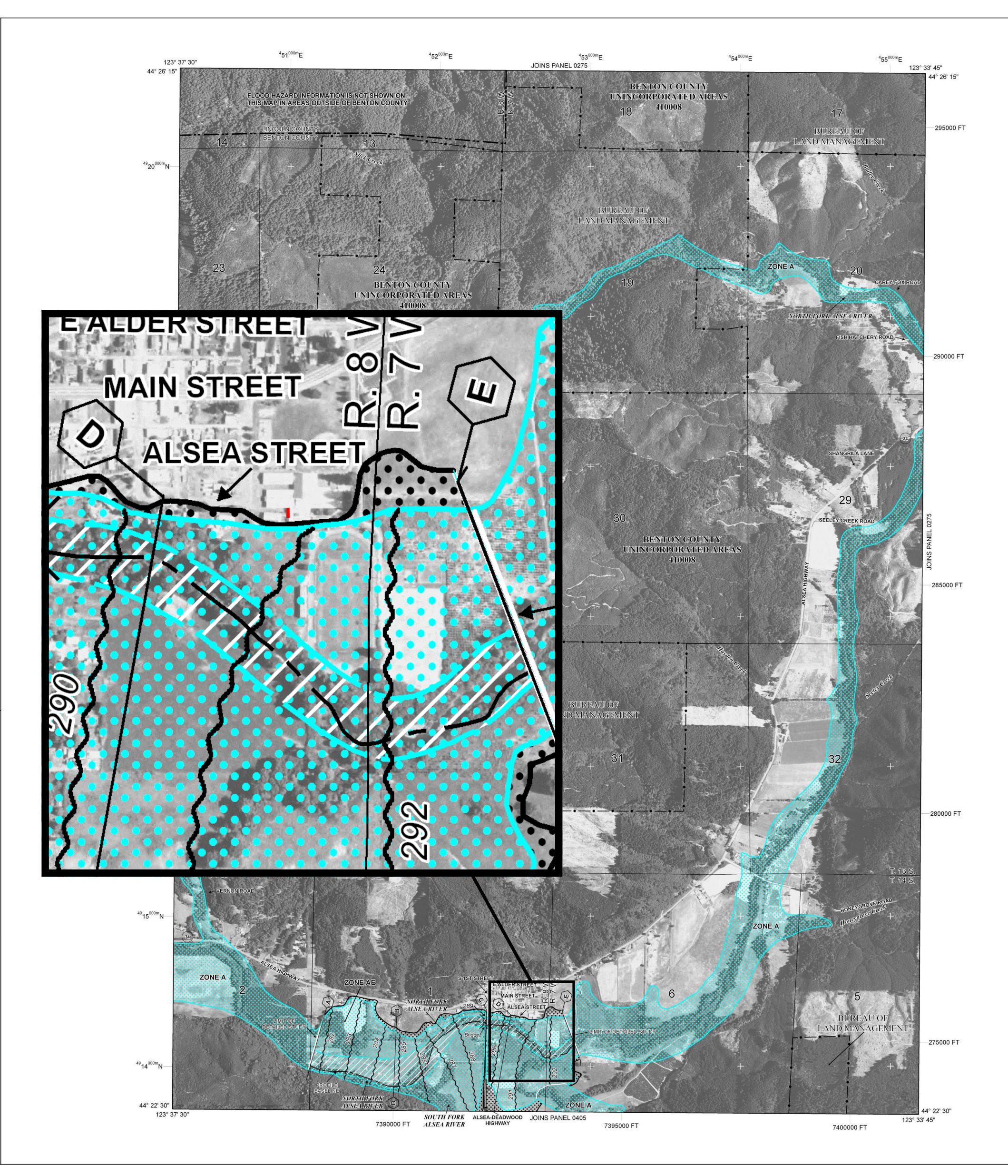
The **profile baselines** depicted on this map represent the hydraulic modeling baselines that match the flood profiles in the FIS report. As a result of improved topographic data, the profile baseline, in some cases, may deviate significantly from the channel centerline or appear outside the SFHA.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community

Contact the FEMA Map Service Center at 1-800-358-9616 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-800-358-9620 and its website at http://msc.fema.gov.

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call **1-877-FEMA MAP** (1-877-336-2627) or visit the FEMA website at http://www.fema.gov/business/nfip/.



LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

No Base Flood Elevations determined. ZONE AE

Base Flood Elevations determined.

Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations

depths determined. For areas of alluvial fan flooding, velocities also determined. Special Flood Hazard Areas formerly protected from the 1% annual chance

flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.

Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average

Coastal flood zone with velocity hazard (wave action); Base Flood Elevations

Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined. ZONE V Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

OTHER AREAS

Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

Areas determined to be outside the 0.2% annual chance floodplain. ZONE D Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas. 1% Annual Chance Floodplain Boundary

0.2% Annual Chance Floodplain Boundary

Floodway boundary Zone D boundary

CBRS and OPA boundary •••••

Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.

~~~ 513~~~ Base Flood Elevation line and value; elevation in feet\*

Base Flood Elevation value where uniform within zone; elevation in (EL 987) \*Referenced to the North American Vertical Datum of 1988

23 - - - - - - 23

• M1.5

Geographic coordinates referenced to the North American Datum of 45° 02' 08", 93° 02' 12" 1983 (NAD 83) Western Hemisphere

5000-foot ticks: Oregon State Plane North Zone (FIPS Zone 3601), 3100000 FT Lambert Conformal Conic projection 1000-meter Universal Transverse Mercator grid values, zone 10N

Bench mark (see explanation in Notes to Users section of this FIRM River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index
EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP JUNE 2, 2011 EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.



FLOOD INSURANCE RATE MAP BENTON COUNTY, OREGON AND INCORPORATED AREAS

PANEL 0265F

PANEL 265 OF 495

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

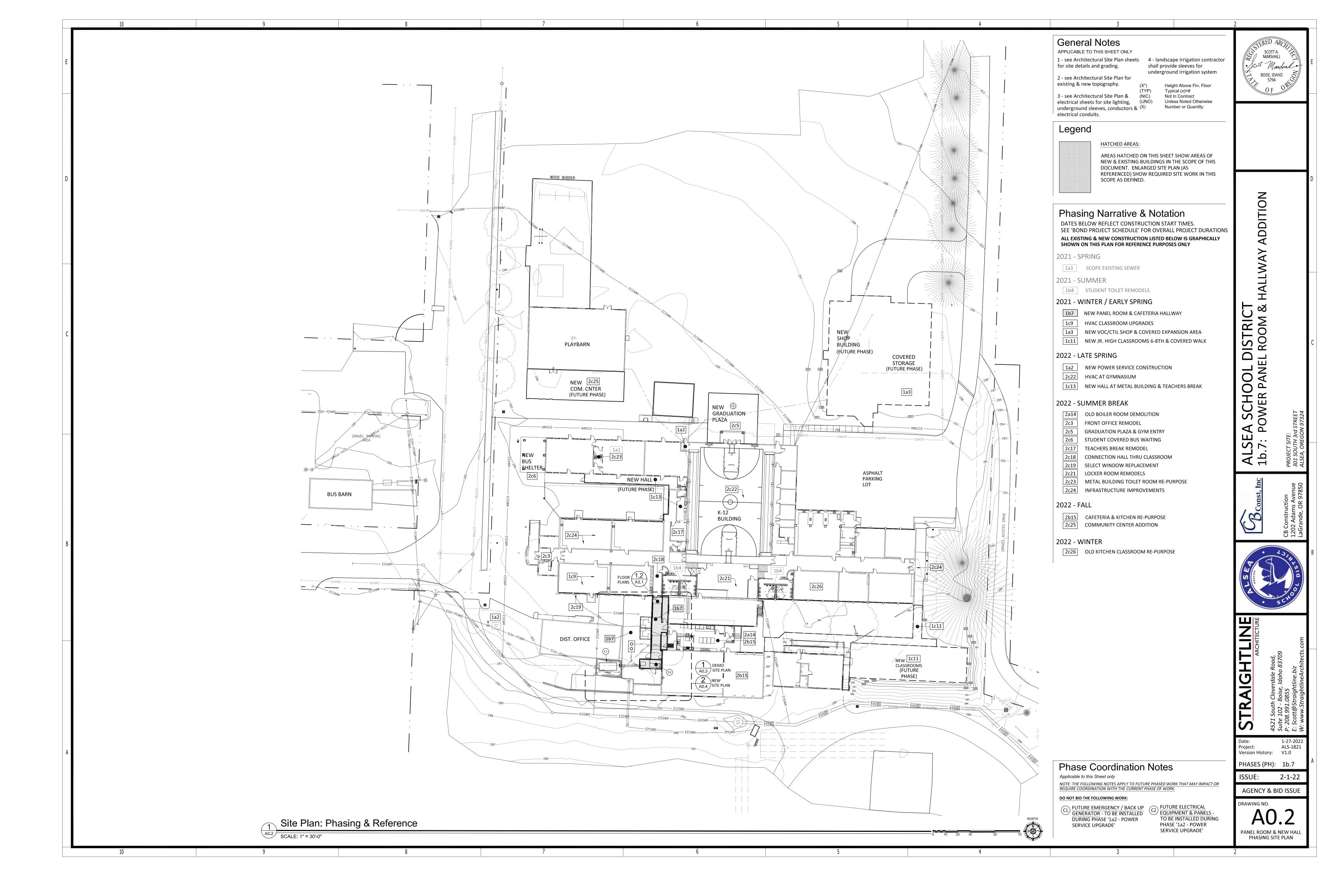
NUMBER PANEL SUFFIX 410008 0265 F BENTON COUNTY

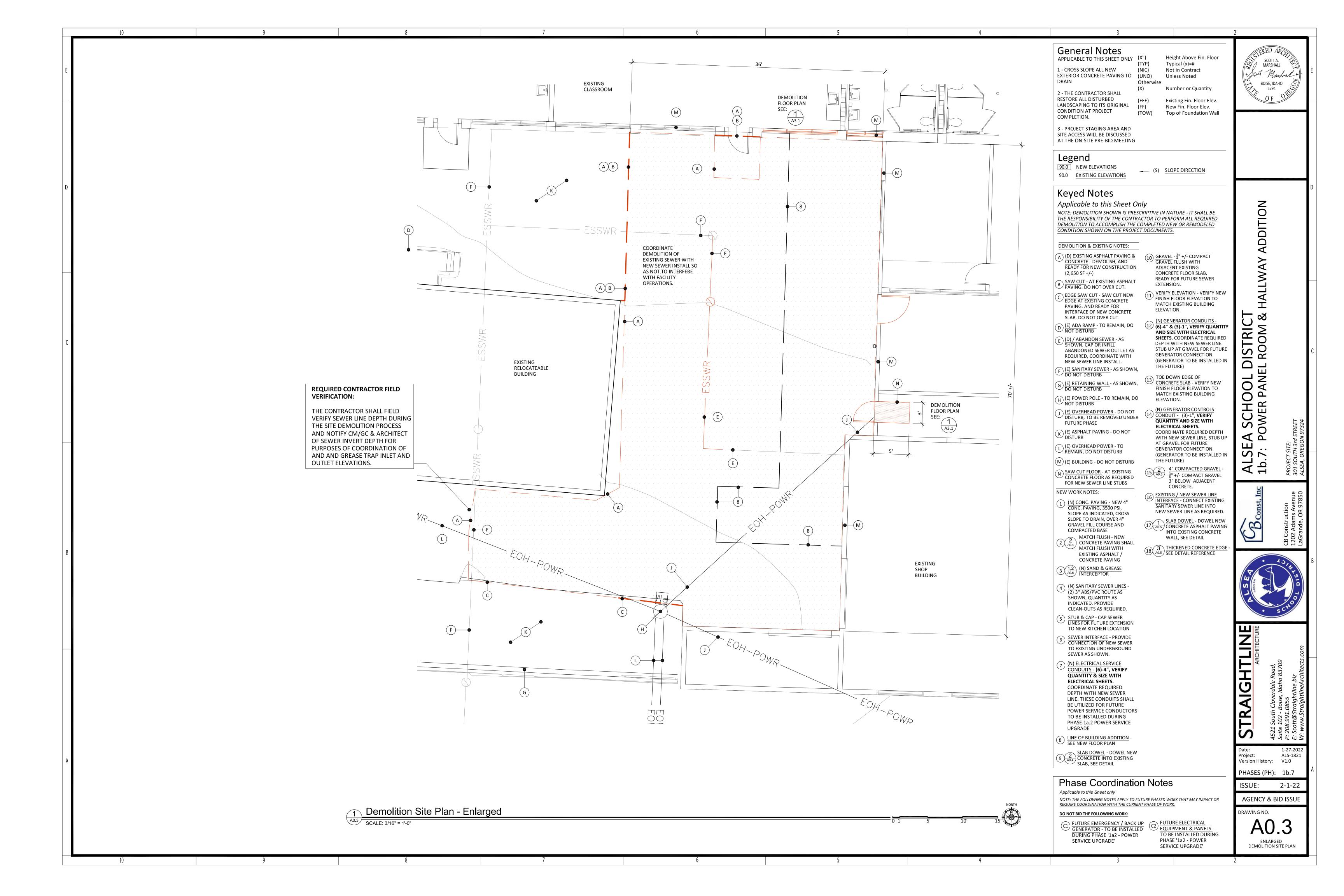
Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

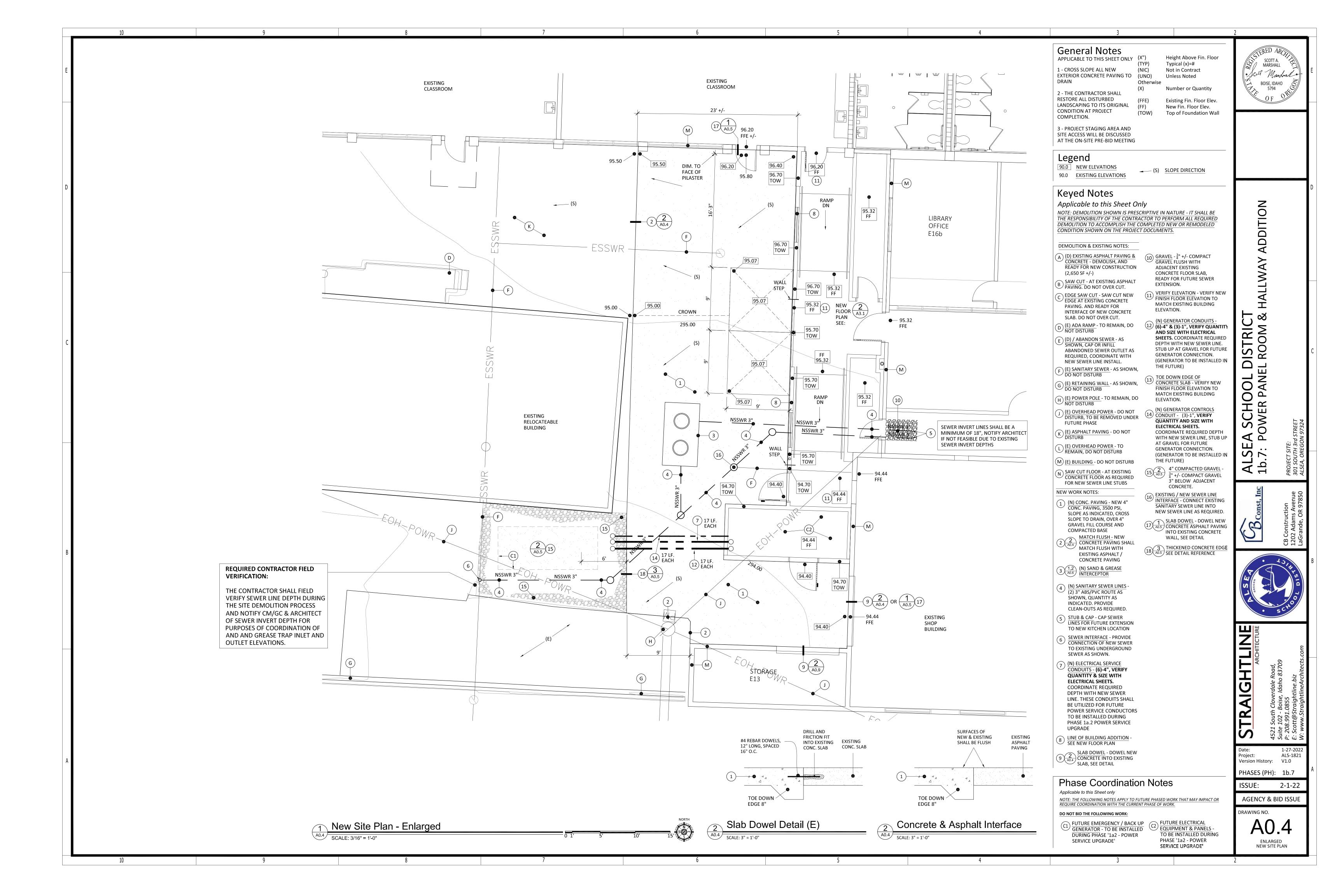


MAP NUMBER 41003C0265F EFFECTIVE DATE **JUNE 2, 2011** 

Federal Emergency Management Agency







### **GENERAL NOTES:**

- 1. ATTENTION: Oregon law requires you to follow rules adopted by the Oregon Utility Notification Center. Those rules are set forth in OAR 952-001-0010 through OAR 952-001-0090. You may obtain copies of the rules by calling the center. (Note: the telephone number for the Oregon Utility Notification Center is (503) 232-1987).
- 2. A copy of final approved construction drawings and any required permits shall be kept on—site at all times, for review by inspectors upon request.
- The Contractor shall perform all work necessary to complete the project in accordance with the approved construction drawings including such incidentals as may be necessary to meet applicable agency requirements and provide a completed project.
- Any inspection by the City, County or other agencies shall not, in any way, relieve the Contractor from any obligation to perform the work in strict compliance with the contract documents, applicable codes, and agency requirements.
- Contractor shall maintain one complete set of approved drowings on the construction site at all times whereon he will record all approved deviations in construction from the approved drawings, as well as the station locations and depths of all existing utilities encountered. These field record drawings shall be kept up to date at all times and shall be available for inspection by the Authority Having Jurisdiction, the Architect, the Design Engineer and the Owner's Authorized Field Representative upon request. Failure to conform to this requirement may result in delay in payment and/or final acceptance of the project.
- Upon completion of construction of all new facilities, Contractor shall submit a clean set of field record drawings containing all as-built information to the Engineer. All information shown on the Contractor's field record drawings shall be subject to verification. If significant errors or deviations are noted, an as—built survey prepared and stamped by a registered professional Land Surveyor shall be completed at the Contractor's expense.
- The contractor shall retain and pay for the services of a registered Civil Engineer and/or Land Surveyor licensed in the State of Oregon to establish construction control and perform initial construction surveys to establish the lines and grades of improvements as indicated on the drawings. Staking for buildings, structures, curbs, gravity drainage pipes/structures and other critical improvements shall be completed using equipment accurate to 0.04 feet horizontally and 0.02 feet vertically, or better. Use of GPS equipment for final construction staking of these critical improvements is prohibited. The registered professional surveyor shall provide the design engineer with copies of all grade sheets for construction staking performed for the project.
- See architectural and plumbing drawings for site dimensioning and continuation

### TRAFFIC CONTROL

Contractor shall erect and maintain barricades, warning signs, traffic cones (and all other traffic control devices required) per City, County and ODOT requirements in accordance with the current MUTCD (including Oregon amendments). Access to driveways shall be maintained at all times. All traffic control measures shall be approved and in place prior to any construction activity. Prior to any work in the existing public right-of-way, Contractor shall submit final traffic control plan to the City, County and ODOT for review and issuance of a Lane Closure or Work in Right-of-Way Permit.

### TESTING AND INSPECTION:

- 10. The Contractor shall be responsible to ensure that all required or necessary inspections are completed by authorized inspectors prior to proceeding with subsequent work which covers or that is dependent on the work to be inspected. Failure to obtain necessary inspection(s) and approval(s) shall result in the Contractor being fully responsible for all problems and/or corrective measures arising from uninspected work.
- Unless otherwise specified, the "Required Testing and Frequency" table outlines the minimum testing schedule for the project. This testing schedule is not complete, and does not relieve the Contractor of the responsibility of obtaining all necessary inspections or observations for all work performed, regardless of who is responsible for payment. Cost for retesting shall be borne by the Contractor.

### **EXISTING UTILITIES & FACILITIES:**

- 12. The location and descriptions of existing utilities shown on the drawings are compiled from available records and/or field surveys. The Engineer or utility companies do not guarantee the accuracy or the completeness of such records. Contractor shall field verify locations and sizes of all existing utilities prior to construction.
- 13. Contractor shall field verify location and depth of all existing utilities where new facilities cross. All utility crossings marked or shown on the drawings shall be potholed using hand tools or other non-invasive methods prior to excavating or boring. Contractor shall be responsible for exposing potential utility conflicts far enough ahead of construction to make necessary grade or alignment modifications without delaying the work. If grade or alignment modification is necessary, Contractor shall notify the Design Engineer and the Owner's Authorized Field Representative.
- 14. All facilities shall be maintained in-place by the Contractor unless otherwise shown or directed. Contractor shall take all precautions necessary to support maintain, or otherwise protect existing utilities and other facilities at all times during construction. Contractor to leave existing facilities in an equal or better—than—original condition and to the satisfaction of the Architect and the Owner's Authorized Field Representative.
- 15. Utilities that are abandoned in place, or interfering portions of utilities, shall be removed by the Contractor to the extent necessary to accomplish the work. The Contractor shall plug the remaining exposed ends of abandoned utilities after appropriate verification procedures have taken place (grout or concrete plugs, if used, shall be installed to fill the full pipe diameter for a distance of two times the pipe diameter back from the pipe end).
- 16. Contractor shall remove all existing signs, mailboxes, fences, landscaping, etc., as required to avoid damage during construction and replace them to existing or better condition.
- 17. The Contractor shall be responsible for managing construction activities to ensure that public streets and right-of-ways are kept clean of mud, dust or debris. Dust abatement shall be maintained by adequate watering of the site by the Contractor.

### GRADING. PAVING & DRAINAGE:

- 18. Unless otherwise noted, all grading, rocking and paving to conform to Oregon Standard Specifications for Construction (OSSC/ODOT/APWA), 2008 edition.
- 19. Strip work limits, removing all organic matter, which cannot be compacted into a stable mass. All trees, brush, and debris associated with clearing, stripping or grading shall be removed and disposed of off-site.
- 20. Immediately following stripping and grading operations, compact subgrade to 95% of the maximum dry density per AASHTO T-180 test method (Modified Proctor). Subgrade must be inspected and approved by the approved testing agency before placing embankments, engineered fills or fine grading for base
- 21. Granular baserock shall conform to the requirements of OSSC (ODOT/APWA) 02630.10 (Dense Graded Base Aggregate).
- 22. Compact granular baserock to 95% of the maximum dry density per AASHTO T-180 test method (Modified Proctor). Written baserock compaction test results from an independent testing laboratory must be received by the Owner's Authorized Field Representative before placing AC pavement.
- 23. Unless otherwise shown on the drawings or details, straight grades shall be run between all finish grade elevations and/or finish contour lines shown (exception: where grades shown cross sidewalks, slopes shall be adjusted to ensure that maximum allowable sidewalk cross slopes are not exceeded).
- 24. Finish pavement grades at transition to existing pavement shall match existing pavement grades or be feathered past joints with existing pavement as required to provide a smooth, free draining surface.
- 25. All existing or constructed manholes, cleanouts, monument boxes, gas valves, water valves and similar structures shall be adjusted to match finish grade of the pavement, sidewalk, landscaped area or median strip wherein they lie. Verify that all valve boxes and risers are clean and centered over the operating

- 26. Curb & sidewalk concrete shall be placed only during periods when it will not be damaged by rain (protect unhardened concrete from precipitation). Concrete shall not be placed on frozen baserock. Do not begin concrete placement until temperature in the shade is a minimum of 35°F and rising, and stop placement if air temperature falls below 35°F. Protect concrete from freezing for a minimum of 5 days after placement per OSSC (ODOT/APWA) 0000440.40.d & 00756.40 or the project specifications, whichever is more stringent.
- 27. Contraction joints shall be installed directly over any pipes that cross under the sidewalk, to control cracking. In general, cracks in new curbs or sidewalks (at locations other than contraction joints) are not acceptable, and cracked panels shall be removed & replaced unless otherwise approved by the City and the design engineer.
- 28. Where trench excavation requires removal of PCC curbs and/or sidewalks, the curbs and/or sidewalks shall be sawcut and removed at a tooled joint unless otherwise authorized in writing by the City. The sawcut lines shown on the drawings are schematic and not intended to show the exact alignment of such cuts.

### PIPED UTILITIES:

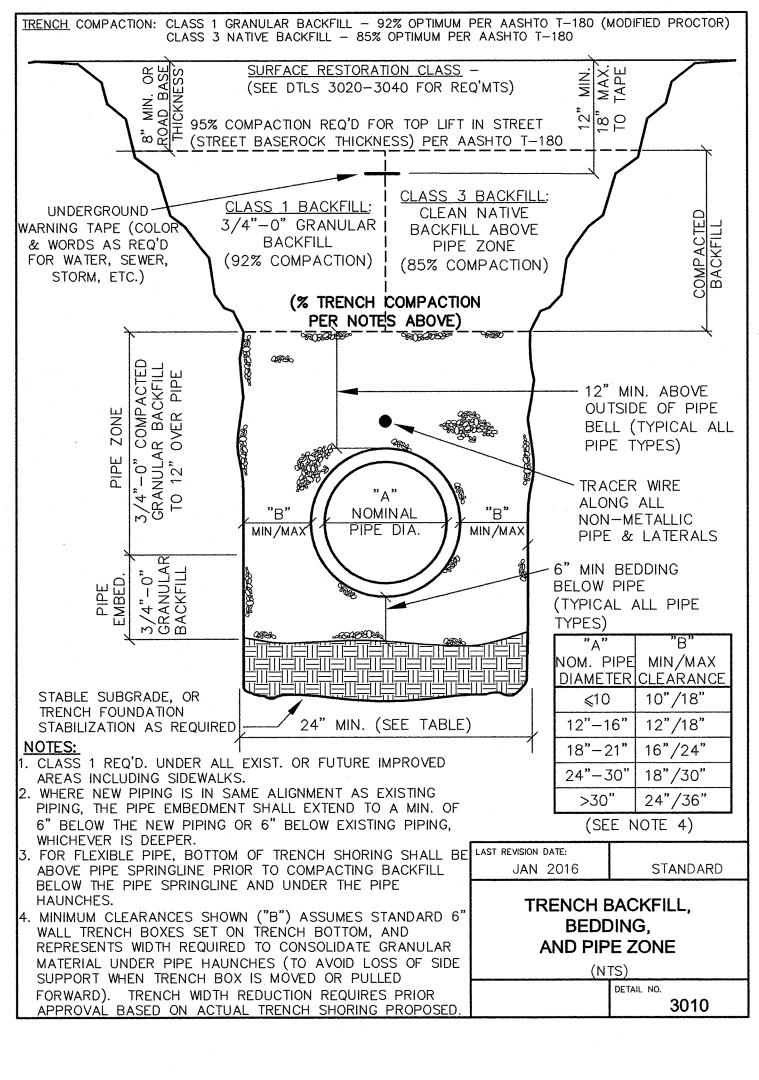
- 29. The Contractor shall have appropriate equipment on site to produce a firm, smooth, undisturbed subgrade at the trench bottom, true to grade. The bottom of the trench excavation shall be shall be smooth, free of loose materials or tooth grooves for the entire width of the trench prior to placing the granular bedding material.
- 30. All pipes shall be bedded with minimum 6--inches of 3/4"-0 crushed rock bedding and backfilled with compacted 3/4"-0 crushed rock in the pipe zone (crushed rock shall extend a minimum of 12-inches over the top of the pipe in all cases). Unless CLSM, CDF or other backfill is shown or noted on the drawings, crushed rock trench backfill shall be used under all improved areas, including pavement, sidewalks, foundation slabs, buildings, etc.
- 31. Granular trench bedding and backfill shall conform to the requirements of OSSC (ODOT/APWA) 02630.10 (Dense Graded Base Aggregate), 3/4"-0. Unless otherwise shown on the drawings, compact granular backfill to 92% of the maximum dry density per AASHTO T-180 test method (Modified Proctor).
- 32. All piped utilities abandoned in place shall have all openings closed with concrete plugs with a minimum length equal to 2 times the diameter of the abandoned pipe.
- 33. No trenches in sidewalks, roads, or driveways shall be left in an open condition overnight. All such trenches shall be closed before the end of each workday and normal traffic and pedestrian flows restored.

## WATER SYSTEM:

- 34. Water service lines shall be installed with a minimum 30—inch cover. Deeper depths may be required as shown on the drawings or to avoid obstructions.
- 35. Unless otherwise noted, water service pipe 3—inch and smaller on the private side of the meter shall be Schedule 40 PVC. Unless otherwise specified, private water service piping shall be hydrostatically pressure tested to a minimum of 150% of the maximum static pressure at the site. All materials and workmanship for all private water lines, including water lines located within any building envelope, shall be installed in conformance with Uniform Plumbing Code requirements. All water service pipe on the private side of the meter shall be installed by a licensed plumber in accordance with Uniform Plumbing Code requirements.
- 36. Pressure Testing. All waterlines, services and appurtenances shall be pressure tested for leakage. All testing shall conform to requirements as outlined in the specifications, City standards and/or testing forms. The hydrostatic test shall be performed with all service line corporation stops open and meter stops closed, and with all hydrant line valves open. Prior to the start of each pressure test, the position of all mainline valves, hydrant line valves and service line corporation stops in the test segment shall verified.

### SANITARY SEWER SYSTEM:

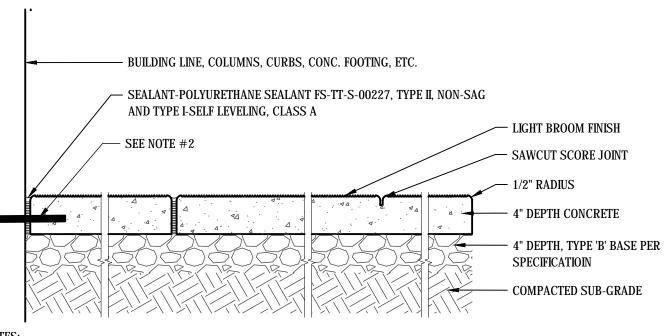
37. Unless otherwise specifically noted on the drawings, manufactured fittings (tee or wye per local jurisdiction) shall be used for all lateral connections to new sewer mainlines.



| REQUIRED TESTING AND FREQUENCY                                                                                                                                                                                |                       | arty Responsible 1     | for paymen                             |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|------------------------|----------------------------------------|
| NEGOTIES TESTINO MAS TREGSENS                                                                                                                                                                                 | 1/10/10/10/10         | Contractor             | Others<br>(see note                    |
| Streets, Fire Lanes, Common Driveways, Parkin                                                                                                                                                                 | g Lots, Pads, F       | ills, etc.             |                                        |
| Subgrade 1 Test/4000 S.F./Lift (4 min)                                                                                                                                                                        |                       | See note 2<br>& note 3 |                                        |
| Baserock 1 Test/4000 S.F./Lift (4 min)                                                                                                                                                                        | ,                     | See note 2<br>& note 3 |                                        |
| Piped Utilities, All                                                                                                                                                                                          |                       |                        |                                        |
| Trench Backfill 1 Test/200 Foot Trench/Lift (                                                                                                                                                                 | 4 min)                | See note 2             |                                        |
| Trench AC Restoration 1 Test/300 Foot Tre                                                                                                                                                                     | nch (4 min)           | See note 2             |                                        |
| Water                                                                                                                                                                                                         |                       |                        |                                        |
| Pressure Test (to be witnessed by Owner's Roor approving agency)                                                                                                                                              | epresentative         | See note 4             |                                        |
| Sanitary Sewer                                                                                                                                                                                                |                       |                        |                                        |
| Air Test Per City or APWA Requirements whichever is more stringent                                                                                                                                            |                       | See note 4             |                                        |
| Concrete, Block, etc.                                                                                                                                                                                         |                       |                        | ······································ |
| Slump, Air & Cylinders for all structures, curbs, PCC pavements. Unless otherwise specified, one cylinders per 100 cubic yards (or portion thereo poured per day. Slump & air tests required on as cylinders. | set of f) of concrete | See note 2             |                                        |

for scheduling testing. All testing must be completed prior to performing subsequent

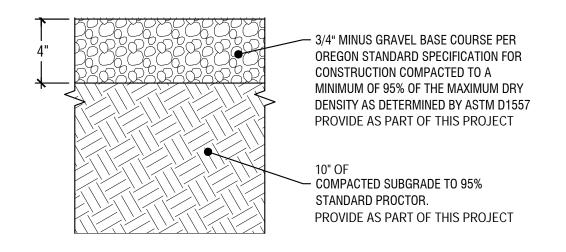
- Note 2: Testing must be performed by an approved independent testing laboratory.
- Note 3: In addition to in-place density testing, the subgrade and base rock shall be proofrolled with a loaded 10 yard dump truck provided by the Contractor. Baserock proofroll shall take place immediately prior to (within 24 hours of) pavina, and shall be witnessed by the Owner's Authorized Field Representative or approving agency. Location and pattern of proofroll to be as directed by said Owner's Authorized Field Representative or approving agency.
- Note 4: To be witnessed by the Owner's Representative or approving agency. The Contractor shall perform pretests prior to scheduling witnessed waterline or sanitary sewer pressure tests, or pipeline mandrel test.



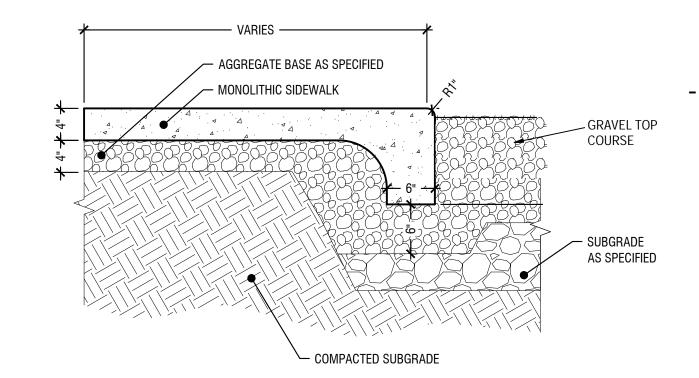
JOINTS SHALL BE SPACED EVENLY THROUGHOUT LENGTH OF WALK, AS SHOWN ON DRAWINGS. . THICKEN CONCRETE TO ACCEPT SMOOTH DOWEL AS NEEDED.

Standard Concrete Flatwork Scale: 1" = 1'

> NOTE: HOLD TOP OF 3/4" MINUS GRAVEL BASE COURSE 3" BELOW NEW CONCRETE FLATWORK AND 8" BELOW TOP OF FOUNDATION WALLS



**Compacted Sub-Base and Aggregate Section** 



Thickened Edge Sidewalk / Standard Concrete Flatwork

**ADDITIO** HALLWAY 二 刻 ISTRIC ROOM 8 CHOOL DI

A P T A

3

TRAIGHTLINE

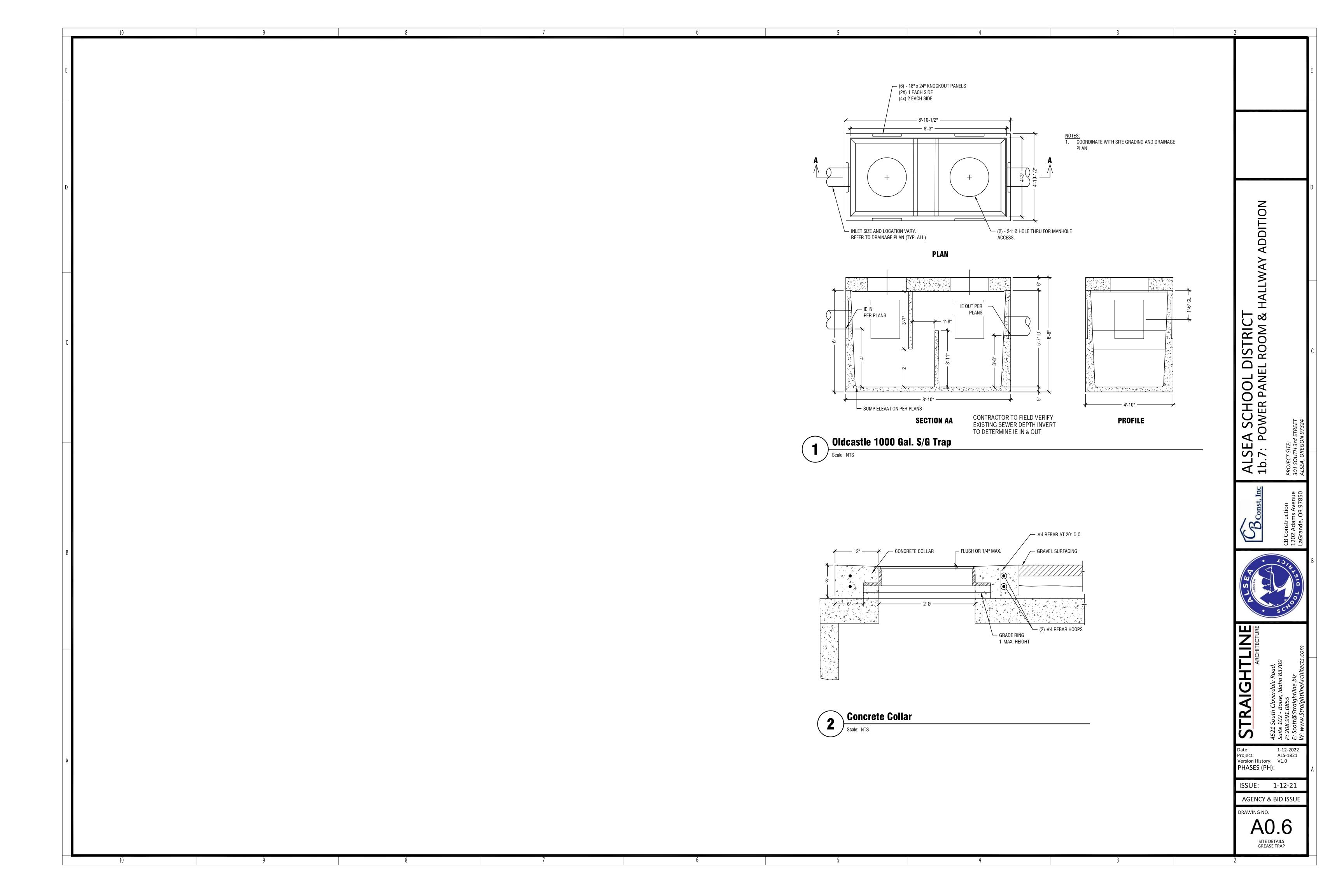
1-12-2022 ALS-1821 Version History: V1.0 PHASES (PH):

ISSUE: 1-12-21

**AGENCY & BID ISSUE** 

DRAWING NO.

& SPECIFICATIONS



### Keyed Notes

- CABINET (FEC) -
  - SEMI-RECESSED, NEW RATED DOOR OPENING AT 2-HOUR FIRE WALL -  $\frac{3}{4}$
- **RATED DOOR OPENING** (FRAME & DOOR) ADA CLEARANCES - RADIUS
- (3) & DOOR APPROACH ADA RAMP & HANDRAILS -
- 1:12 SLOPE RAMP WITH **COMPLIANT LANDINGS** AND HANDRAILS, SEE FLOOR PLAN.
- EXIT SIGNAGE WITH (5) INTERIOR EMERGENCY LIGHTING, SEE ELECTRICAL PLANS.
- (6) LIGHTING SEE EXTERIOR **ELEVATIONS AND ELECTRICAL DRAWINGS** FIRE WALL - AS INDICATED,

EXTERIOR EMERGENCY EXIT

- FIRE RATED CEILING / ROOF - AS INDICATED, SEE FIRE ASSEMBLIES
- AREA OF CEILING JOIST (9) LEDGERS & ROOF GYPSUM BOARD - (AREAS SHADED) 2" NOMINAL, SISTER 2x4 TO SIDE OF ROOF JOIST AND PROVIDE (1) LAYER OF \( \frac{5}{8} \)" GYPSUM **BOARD DIRECTLY UNDER** ROOF DECK AS PER OSSP 706.6. (SEE NOTES ON THIS SHEET FOR MORE DETAILS)
- **EXISTING EXIT THIS EXIT HAS** (10) EXISTING CODE COMPLIANT EXIT SIGNAGE

INTERIOR: PARTITION & BEARING WALL (TYPICAL 1-HOUR)

2x6 WOOD STUDS AT 16" O.C W/ SOLID BLOCKING @ 48"

OC. FACE W/ 5/8" TYPE' X' GYP. BD. (FIRE TAPE) PROVIDE

EXTERIOR: AT BUILDING ENVELOPE (TYPICAL 1-HOUR): 2x6

**2-HOUR FIRE WALL** (NEW 'FWA #1') INTERIOR: 2X4 WOOD

STUDS AT 16" ON CENTER WITH TWO LAYERS OF \( \frac{5}{8} \) TYPE X

**2-HOUR FIRE WALL** (NEW 'FWA #2') EXTERIOR: 2X6 WOOD

EXISTING CMU OR CONCRETE WALL, DO NOT DISTURB. SEE

1-HOUR CEILING ASSEMBLY (NEW): CEILING: SHALL BE A

 $\frac{1}{2}$  BASE LAYER OF  $\frac{5}{8}$ " TYPE 'X' GYPSUM WALLBOARD APPLIED

.-HOUR CEILING ASSEMBLY (NEW): ALL ASSEMBLY 'HLT'

ABOVE APPLY. PROVIDE ADDITIONAL COMPONENTS AS

PROVIDE (1) LAYER OF  $\frac{5}{8}$ " TYPE 'X' GYPSUM BOARD

DIRECTLY UNDER ROOF DECK AS PER OSSP 706.6.

LAYERS OF §" TYPE X GYPSUM WALLBOARD, EXTERIOR

48.0 GYPSUM WALLBOARD EACH SIDE. BASE LAYERS APPLIED

VERTICALLY AND NAILED WITH 6D COOLER OR

WOOD STUDS @ 16"O.C. ON SILL PLATE, ON SILL SEALER,

CELL SPRAY POLYURETHANE FOAM (SPF) - R-27 - SEE

SOUND BATT INSULATION AT ALL INTERIOR WALLS.

THE ALSEA SCHOOL DISTRICT PASSED A BOND LEVY TO MAKE IMPROVEMENTS (N) FIRE EXTINGUISHER TO THEIR EXISTING FACILITY. DUE TO THE BUILDING BEING OCCUPIED DURING CONSTRUCTION ALONG WITH UPGRADING THE HVAC SYSTEM THE PROJECT IS BEING DONE IN PHASES. (SEE SHEET A0.2 FOR PROJECT PHASING).

PROJECT NARRATIVE

THIS PROJECT PHASE 1b.7 IS TO CONSTRUCT A NEW MAIN ELECTRICAL ROOM AND CORRIDOR FROM THE EXISTING CLASSROOMS TO THE EXISTING WOOD SHOP. DURING FUTURE PHASES, THE EXISTING WOOD SHOP WILL BECOME THE CAFETERIA SPACE AT SUCH TIME A DOOR WILL BE ADDED TO PROVIDE ACCESS AND INTERCONNECTING HALLWAY WILL BE CONSTRUCTED IN THE CURRENT

> THE CURRENT PROJECT INITIALLY ADHERES TO ALL EGRESS REQUIREMENTS AND WILL ADHERE TO ALL FUTURE EGRESS REQUIREMENTS ONCE ALL PHASES ARE

## **BUILDING CODE COMPLIANCE SUMMARY**

### (NEW CONSTRUCTION) **BUILDING CODES** (Alsea, Oregon)

2019 Oregon Structural Specialty Code 2021 Oregon Plumbing Specialty Code 2019 Oregon Mechanical Specialty Code 2021 Oregon Electrical Specialty Code 2021 Oregon Energy Efficiency Specialty Code

SECTION 305 OSSC Occupancy Groups: Educational: Group 'E'

SEE FIRE WALL ASSEMBLIES Type VA - non-Sprinkled, One Hour Rated, Construction with Rated Building Elements

### **TYPICAL INTERIOR WALLS:** UL U305 / WP 3605 - (1) HOUR INTERIOR WALL RATING:

5/8" Type 'X' Gypsum Board Board applied horizontally or vertically to each side of 2x4 wood studs 16" o.c. with 6d coated nails, 1-7/8" long, 0.0915" shank, 1/4" heads, 7" o.c. at edges. Joints of square edge, bevel edge or pre-decorated wall board may be left exposed. Joints staggered 16" on opposite sides.

### TYPICAL EXTERIOR WALLS (NOT INDICATED AS FIRE WALLS): 16-1.2 - WOOD STUDS - EXTERIOR WALLS

2x6 Wood studs at 16" centers with double top plates and single bottom plate, interior side covered with  $\frac{5}{8}$ " type 'X' gypsum board, 4' wide applied horizontally or vertically with vertical joints over studs and fastened with  $2\frac{1}{4}$ " type S drywall screws, spaced 12" on center, wall board joints covered with paper tape and joint compound, fastener heads covered with joint compound, exterior side covered with  $\frac{7}{16}$ " wood structural panels fastened with 6D common nails (bright) spaced 12" on center in the field and 6" on center along panel edges. Fully

SECTION 504 OSSC Allowed Height, non-sprinkled 11 ft. Actual Height, non-sprinkled Allowed Stories above grade Actual Stories above grade 9,500 sq. ft. SECTION 506.2 OSSC Allowed Area, non-sprinkled Actual Area, non-sprinkled 783 sq. ft.

SECTION 903.2.3 OSSC Fire sprinkler system not required as per Exception 2; in buildings where every classroom has not fewer than one exterior exit door at ground level, an automatic sprinkler system is not required in any area below the lowest level of exit discharge serving

### ADDED OCCUPANT LOAD: AS PER OSSC 1004.1.2

| DDLD OCCOLA | INI LOAD. AST | LIV 033C 1004 | . 1 . 2   |
|-------------|---------------|---------------|-----------|
| Space       | Area.         | S.F. / Occ.   | Occupants |
| Accessory   | 783 sf        | 300 Gross     | 2.61      |

## (1) EXIT PROVIDED

Exit Access Travel with NO Fire Sprinklers at 'E' Occupancy, 200'

Corridor fire resistance rating at 'E' occupancy with NO fire sprinklers, with an occupant load served by the Corridor 1-hour rating.

TABLE 1020.2 OSSC Corridor minimum width at group 'E' with 100 occupants or more = 72" width minimum. (89" WIDTH ACTUAL)

**EXISTING WOODSHOP TO BECOME** NEW CAFETERIA SPACE. THIS

**BUILDING ADDITION CONSTRUCTION SUMMARY:** 

< 45 ft. to Exit or Horizontal Exit (Existing distance) Travel Distance Min. 36" Leafs with Swing as Shown (Outswing Required Where Occupant Load Exceeds 50)

Door Hardware ADA Compliant. (Panic Hardware Required Where Occupant Load Exceeds 50) Accessible Route consisting of NEW ADA Compliant Accessibility

Entry and Doorway.

new fire alarm components shall be extended fire alarm system into new addition space exterior wall rating

ORS 469 / ORS 330 GREEN ENERGY TECHNOLOGY:

**OVERALL CODE CONSIDERATIONS:** 

This building project is NOT required to comply with ORS 330.135.0018 (1.5% green energy technology) as capital construction will NOT be over \$5,000,000 in overall cost.

ASHRAE 90.1 / ENERGY CODE

Energy code compliance is attached for new addition portion.

ORS 447.241 - BARRIER IMPROVEMENT

Every project for renovation, alteration or modification to affected buildings and related facilities that affects or could affect the usability of or access to an area containing a primary function shall be made to insure that, to the maximum extent feasible, the paths of travel to the altered area and the rest rooms, telephones and drinking fountains serving the altered area are readily accessible to and usable by individuals with disabilities, unless such alterations are disproportionate to the overall alterations in terms of cost and scope.

1 - Newly renovated work shown herein is considered a primary function and conforms to all ADA requirements.

2 - The new work does not impact nor infringe upon the existing accessible path of travel to any portions of the existing building.

FIRE WALLS; 'E' SECTION 706 OSSC

706.5.1

...For purposes of determining area limitations, height 503.1 limitation and type of construction, each portion of a building separated by one or more fire walls complying with section 706 shall be considered to be a separate

THE NEW CONSTRUCTION SHOWN SHALL BE CONSIDERED A SEPARATE BUILDING FOR PURPOSES OF THIS ANALYSIS

Fire walls shall provide a complete separation.

FIRE WALLS PROVIDE A COMPLETE SEPARATION FROM THE NEW CONSTRUCTION AND EXISTING STRUCTURE AS SHOWN HEREIN.

Fire walls shall be designed so as to allow collapse of adjacent structure on either side of the wall without Stability collapse of the wall under fire conditions. 706.2

THE STRUCTURE BEYOND THE FIRE WALL WILL COLLAPSE WITHOUT ADJACENT STRUCTURE COLLAPSE AS ROOF AND OTHER SUPPORTIVE ELEMENTS DO NOT RELY ON EXISTING STRUCTURE FOR SUPPORT.

Constructed with any approved non-combustable materials (Use of exception type V buildings).

Rating 706.4 have a <u>fire-resistance rating of (2) hours.</u>

BOTH NEW AND EXISTING BUILDINGS ARE CONSIDERED AT TYPE 'V', HENCE COMBUSTIBLE MATERIALS SHALL BE ALLOWED IN FIRE ASSEMBLIES. Fire resistance Per Table 706.4, Group 'E', Type 'V' footnote 'a' shall

AS PER TABLE 706.4, NOTE 'a' NEW CONSTRUCTION IS CONSIDERED TYPE 'V' AND EXISTING CONSTRUCTION IS CONSIDERED TYPE 'V', THEREFORE WALLS AND ASSOCIATED ASSEMBLIES SHALL BE 2-HOUR RATED.

Continuous from Exterior wall to exterior wall and shall extend 18" beyond exterior face.

706.5

ALL FIRE WALLS SHOWN COMPLY WITH THE 18" EXTERIOR FACE EXTENSION REQUIREMENT. Fire walls intersect exterior walls, fire resistance rating

& opening protections shall be as follows: Exterior walls both sides of fire wall shall have 1-hour rating & 3/4-hour opening protection and shall extend 4' either side of wall.

ALL NEW AND EXISTING DOOR OPENINGS WILL BE  $\frac{3}{4}$ " RATED. THE NEW FIRE WALL EXTENDS 4' ALONG EITHER SIDE OF THE WALL. THERE ARE NO WINDOWS OR OTHER OPENINGS OCCURRING WITHIN 4' OF THE FIRE WALL.

Fire walls shall extend to the outer edge of horizontal Horizontal projecting elements. Exception 1; Horizontal elements Projecting without concealed spaces, provided that the exterior Elements wall behind and below the projecting element has not 706.5.2 less than a 1-hour fire -resistiance-rated construction for a distance not less than the depth of the projecting element on both sides of the fire wall.

THE EXISTING LOWER ROOF OVERHANG HAS NO CONCEALED SPACES AND THE ADJACENT WALL IS 1 HOUR RATED.

fire walls shall extend from foundation to a Vertical continuity termination point not less than 30" above both adjacent roofs. Exception 4; Type V building, 4.1 No openings in 4'-0" feet, 4.2 Roof is minimum Class B roof covering, 4.3, roof is protected with  $\frac{5}{8}$ " type 'x' gyp bd. for 4'-0" each side of fire wall

THE NEW ROOF CONFORMS TO EXCEPTION 4, THE NEW ROOF HAS NO OPENINGS WITHIN 4' OF THE FIREWALL, THE ROOF HAS A CLASS 'B' ROOF COVERING, THE ROOF SHEATHING IS PROTECTED WITH §" TYPE 'X' GYPSUM BOARD DIRECTLY UNDERNEATH THE ROOF SHEATHING ATTACHED WITH 2" NOMINAL LEDGERS ATTACHED TO THE ROOF FRAMING STRUCTURE FOR A DISTANCE OF 4' FROM THE FIRE WALL.

Where a Fire wall serves as an exterior wall and separates a building having two different roof levels, Buildings such wall shall terminate 30" above lower roof level. Exception 1, the lower roof assembly within 10' of the wall has not less than a 1 hour fire resistance rating and the entire length and span of supporting elements for the rated roof assembly has a fire resistance rating

THE NEW ROOF CONFORMS TO EXCEPTIONS 1 & 2, THE NEW LOWER ROOF ASSEMBLY HAS A FIRE RESISTANCE RATING OF 1-HOUR, AND THERE ARE NO OPENINGS WITHIN 10' OF THE FIRE WALL.

of not less than 1 hour. Exception 2, openings in the

lower roof shall not be located 10' of the fire wall.

Special rules apply if roof pitch is over 2:12. Existing Slope Roof Buildings roof pitch is 1:12 706.6.2

THE NEW ROOF HAS A ROOF PITCH OF  $\frac{1}{4}$ " = 1' THEREFORE NO SLOPED ROOF

Protect openings as per 716.5, and shall not exceed 156 s.f. and shall not exceed 25% of length of wall.

THE FIREWALL HAS (3) PROTECTED OPENINGS (DOORS) TOTALING 70 SQUARE FEET. THE TOTAL FIRE WALL LENGTH IS 80'. THE COMBINED DOOR WIDTHS ARE 10' MAKING THE OPENINGS 8% OF THE FIRE WALL.

### RATED FIRE WALL ASSEMBLIES (FWA): OSSC SECTION 721.1(2) FWA #1 NEW (2) HOUR INTERIOR WALLS:

14-1.5 - WOOD STUDS - INTERIOR PARTITION WITH GYPSUM WALLBOARD EACH

2x4 wood studs at 16" on center with two layers of  $\frac{5}{8}$ " type x gypsum wallboard each side. Base layers applied vertically and nailed with 6D cooler or wallboard nails at 9" on center. Face layer applied vertically or horizontally and nailed with 8D cooler or wallboard nails at 7" on center. for nail adhesive application, base layers are nailed 6" on center. Face layers applied with coating of approved wallboard adhesive and nailed 12" on center.

### FWA #2 NEW (2) HOUR EXTERIOR WALLS: 15-1.16 - WOOD STUDS - EXTERIOR OR INTERIOR WALLS

PANELS GLUED AND NAILED TO THE JOISTS BELOW

2x6 wood studs at 24" centers with double top plates, single bottom plate; interior side covered with two layers of  $\frac{5}{8}$ " type x gypsum wallboard, Exterior covered with two layers of  $\frac{5}{8}$ " 1 hour rated dens-glass, 4' wide, applied horizontally with vertical joints over studs. Base layer fasted with  $2\frac{1}{4}$ " type s drywall screws, spaced 24" on center and face layer fastened with type s drywall screws spaces 8" on center. Wallboard joints covered with paper tape and joint compound fasten heads covered with joint compound. cavity to be filled with  $5\frac{1}{2}$ " mineral wool insulation.

FWA #3 EXISTING (2+) HOUR EXTERIOR WALLS: CMU WALL 3-1.1, 8" THICK

FWA #4 EXISTING (2+) HOUR EXTERIOR WALLS: SOLID CONCRETE 16" THICK

FWA #5 (1) HOUR EXTERIOR ROOF & CEILING: 21-1.1 - WOOD ROOF JOISTS - AT 24" o.c. WITH  $\frac{1}{2}$ " MINIMUM WOOD STRUCTURAL

Ceiling shall be (2) layers of  $\frac{5}{8}$ " type 'X' Gypsum board. One base layer of  $\frac{5}{8}$ " type 'X' Gypsum wallboard applied at right angles to joist at 24" o.c. with  $1\frac{1}{2}$ " type S or type W drywall screws 24" o.c. Second face layer  $\frac{5}{8}$ " type 'X' gypsum wallboard base applied at right angles to joist or truss through base layer with  $1\frac{7}{8}$ " type S or Type W drywall screws 12" o.c. at joints and intermediate joist or truss. Face layer type G

drywall screws placed 2" back on either side of face layer end joints. 12" o.c.

MARSHALL BOISE, IDAHO 5794

7



ALS-1821 Version History: V1.0

PHASES (PH): 1b.7

2-1-22 ISSUE: **AGENCY & BID ISSUE** 

RAWING NO.

Code Analysis

# **▲ COM***check* Software Version COMcheckWeb

### **Project Information**

Energy Code: 90.1 (2019) Standard 1b7 - ALSEA HALL ADDITION Project Title: Corvallis, Oregon Location: Climate Zone:

Addition

Vertical Glazing / Wall Area: Performance Sim. Specs:

20% EnergyPlus 8.1.0.009 (EPW: USA\_OR\_Salem-McNary.Field.726940\_TMY3.epw)

Construction Site: 301 SOUTH 3RD STREET ALSEA, Oregon 97324

**Building Area** 

Project Type:

Owner/Agent: ALSEA SCHOOL DISTRICT 301 SOUTH 3RD STREET ALSEA, Oregon 97324

Designer/Contractor: SCOTT MARSHALL STRAIGHTLINE ARCHITECTURE 4521 S CLOVERDALE RD, STE 102 BOISE, Idaho 83709 208-991-0855 SCOTT@STRAIGHTLINE.BIZ

| 1-School/University : Nonresidential                                                 | 783                           | 3                 |                  |                      |                  |  |  |
|--------------------------------------------------------------------------------------|-------------------------------|-------------------|------------------|----------------------|------------------|--|--|
| Envelope Assemblies                                                                  |                               |                   |                  |                      |                  |  |  |
| Assembly                                                                             | Gross Area<br>or<br>Perimeter | Cavity<br>R-Value | Cont.<br>R-Value | Proposed<br>U-Factor | Budget<br>Factor |  |  |
| Floor: Unheated Slab-On-Grade, Vertical 2 ft., [Bldg. Use 1 - School/University] (b) | 68                            |                   | 15.0             | 0.520                | 0.520            |  |  |
| Roof: Insulation Entirely Above Deck, [Bldg. Use 1 - School/University]              | 783                           |                   | 15.0             | 0.063                | 0.032            |  |  |
| NORTH<br>Int. Wall: Wood-Framed, 16in. o.c., [Bldg. Use 1 -<br>School/University]    | 131                           | 27.0              | 0.0              | 0.054                | 0.089            |  |  |
| EAST                                                                                 |                               |                   |                  |                      |                  |  |  |

Int. Wall: Wood-Framed, 16in. o.c., [Bldg. Use 1 -563 27.0 0.054 0.089 School/University] SOUTH Ext. Wall: Wood-Framed, 16in. o.c., [Bldg. Use 1 -91 27.0 0.055 0.064 School/University1 Door: Insulated Metal, Swinging, [Bldg. Use 1 -0.370 0.360 School/University] <u>WEST</u> Ext. Wall: Wood-Framed, 16in. o.c., [Bldg. Use 1 -27.0 0.055 School/University1 Door: Insulated Metal, Swinging, [Bldg. Use 1 -0.360 0.370 School/University] Window: Vinyl Frame: Fixed, Perf. Type: Energy code default, Triple Pane with Low-E, Tinted , SHGC 0.34, VT 0.21, [Bldg. Use 0.360 1 - School/University] Window: Metal Frame: Fixed, Perf. Type: Energy code default,

Project Title: 1b7 - ALSEA HALL ADDITION Data filename:

Triple Pane with Low-E, Tinted , SHGC 0.42, VT 0.22, [Bldg. Use

Report date: 12/30/21 Page 1 of 11

Floor Area

Cont. Proposed Budget U-R-Value R-Value U-Factor

1 - School/University]

(a) Budget U-factors are used for software baseline calculations ONLY, and are not code requirements.

(b) Slab-On-Grade proposed and budget U-factors shown in table are F-factors.

### velope PASSES: Design 0.1% better than code

**Envelope Compliance Statement** Compliance Statement: The proposed envelope design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed envelope systems have been designed to meet the 90.1 (2019) Standard requirements in COMcheck Version COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist

SCOTT MARSHALL, AIA-NCARB

1-6-2022

Name - Title

**COM***check* Software Version COMcheckWeb

**Inspection Checklist** 

Energy Code: 90.1 (2019) Standard

Requirements: 0.0% were addressed directly in the COM*check* software Text in the "Comments/Assumptions" column is provided by the user in the COMcheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

| Section<br>#<br>& Req.ID                          | Plan Review                                                                                                                                                                      | Complies?                                           | Comments/Assumptions |
|---------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|----------------------|
| 4.2.2,<br>5.4.3.1.1,<br>5.7<br>[PR1] <sup>1</sup> | Plans and/or specifications provide all information with which compliance can be determined for the building envelope and document where exceptions to the standard are claimed. | □Complies □Does Not □Not Observable □Not Applicable |                      |

| Addition                | dditional Comments/Assumptions:                                                                                    |                         |                         |                                     |                                               |  |  |
|-------------------------|--------------------------------------------------------------------------------------------------------------------|-------------------------|-------------------------|-------------------------------------|-----------------------------------------------|--|--|
| ection<br>#<br>Req.ID   | Footing / Foundation<br>Inspection                                                                                 | Plans Verified<br>Value | Field Verified<br>Value | Complies?                           | Comments/Assumptions                          |  |  |
| 2.4<br>01] <sup>2</sup> | Installed below-grade wall insulation type and R-value consistent with insulation specifications reported in plans | R                       |                         | □Complies □Does Not □Not Observable | See the Envelope Assemblies table for values. |  |  |

|    | [101]                         | consistent with insulation specifications reported in plans and COMcheck reports.                                                              |          |                         | □Not Observable □Not Applicable                     |                                                  |
|----|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|----------|-------------------------|-----------------------------------------------------|--------------------------------------------------|
| J- | 4.2.4<br>[FO3] <sup>2</sup>   | Installed slab-on-grade insulation<br>type and R-value consistent with<br>insulation specifications reported<br>in plans and COMcheck reports. | Unheated | R<br>Unheated<br>Heated | □Complies □Does Not □Not Observable □Not Applicable | See the Envelope Assemblies<br>table for values. |
|    | 5.8.1.2<br>[FO4] <sup>2</sup> | Slab edge insulation installed per<br>manufacturer's instructions.                                                                             |          |                         | □Complies □Does Not □Not Observable □Not Applicable |                                                  |
|    | 5.5.3.5<br>[FO5] <sup>2</sup> | Slab edge insulation<br>depth/length.                                                                                                          | ft       | ft                      | □Complies □Does Not □Not Observable □Not Applicable | See the Envelope Assemblies<br>table for values. |
|    | 5.8.1.7<br>[FO6] <sup>1</sup> | Exterior insulation protected against damage, sunlight, moisture, wind, landscaping and equipment maintenance activities.                      |          |                         | □Complies □Does Not □Not Observable □Not Applicable |                                                  |
|    |                               |                                                                                                                                                |          |                         |                                                     |                                                  |

☐Complies

□Does Not

 $\square$ Complies

□Does Not

■Not Observable

See the Envelope Assemblies

table for values.

□Not Applicable

□Not Observable

□Not Applicable

Additional Comments/Assumptions:

insulated to >=R-3.5.

5.8.1.7.3 Insulation in contact with the

[FO11]<sup>3</sup> incorporating radiant heating

ground has <=0.3% water

absorption rate per ASTM C272.

6.4.4.1.5 Bottom surface of floor structures R-\_\_\_\_

| Section<br>#<br>& Req.ID                  | Insulation Inspection                                                                                                                                                                                            | Plans Verified<br>Value             | Field Verified<br>Value             | Complies?                                           | Comments/Assumptions                             |
|-------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|-------------------------------------|-----------------------------------------------------|--------------------------------------------------|
| 4.2.4<br>[IN2] <sup>1</sup>               | Installed roof insulation type and R-value consistent with insulation specifications reported in plans and COMcheck reports. For some ceiling systems, verification may need to occur during Framing Inspection. | R<br>Above deck<br>Metal<br>Attic   | R<br>Above deck<br>Metal<br>Attic   | □Complies □Does Not □Not Observable □Not Applicable | See the Envelope Assemblies<br>table for values. |
| 5.8.1.2,<br>5.8.1.3<br>[IN3] <sup>1</sup> | Roof insulation installed per manufacturer's instructions. Blown or poured loose-fill insulation is installed only where the ceiling slope is <= 3:12.                                                           |                                     |                                     | □Complies □Does Not □Not Observable □Not Applicable |                                                  |
| 4.2.4<br>[IN6] <sup>1</sup>               | Installed above-grade wall insulation type and R-value consistent with insulation specifications reported in plans and COMcheck reports.                                                                         | R<br>Mass<br>Metal<br>Steel<br>Wood | R<br>Mass<br>Metal<br>Steel<br>Wood | □Complies □Does Not □Not Observable □Not Applicable | See the Envelope Assemblies<br>table for values. |
| 5.8.1.2<br>[IN7] <sup>1</sup>             | Above-grade wall insulation installed per manufacturer's instructions.                                                                                                                                           |                                     |                                     | □Complies □Does Not □Not Observable □Not Applicable |                                                  |
| 4.2.4<br>[IN8] <sup>2</sup>               | Installed floor insulation type and R-value consistent with insulation specifications reported in plans and COMcheck reports.                                                                                    | R<br>Mass Steel Wood                | R<br>Mass<br>Steel<br>Wood          | □Complies □Does Not □Not Observable □Not Applicable | See the Envelope Assemblies table for values.    |
| 5.8.1.1<br>[IN10] <sup>2</sup>            | Building envelope insulation is labeled with R-value or insulation certificate has been provided listing R-value and other relevant data.                                                                        |                                     |                                     | ☐Complies ☐Does Not ☐Not Observable ☐Not Applicable |                                                  |
| 5.8.1.9<br>[IN18] <sup>2</sup>            | Building envelope insulation extends over the full area of the component at the proposed rated R or U value.                                                                                                     |                                     |                                     | □Complies □Does Not □Not Observable □Not Applicable |                                                  |
| 5.8.1.4<br>[IN11] <sup>2</sup>            | Eaves are baffled to deflect air to above the insulation.                                                                                                                                                        |                                     |                                     | □Complies □Does Not □Not Observable □Not Applicable |                                                  |
| 5.8.1.5<br>[IN12] <sup>2</sup>            | Insulation is installed in substantial contact with the inside surface separating conditioned space from unconditional space.                                                                                    |                                     |                                     | □Complies □Does Not □Not Observable □Not Applicable |                                                  |
| 5.8.1.6<br>[IN13] <sup>2</sup>            | Recessed equipment installed in building envelope assemblies does not compress the adjacent insulation.                                                                                                          |                                     |                                     | □Complies □Does Not □Not Observable □Not Applicable |                                                  |
| 5.8.1.7.1<br>[IN15] <sup>2</sup>          | Attics and mechanical rooms have insulation protected where adjacent to attic or equipment access.                                                                                                               |                                     |                                     | □Complies □Does Not □Not Observable □Not Applicable |                                                  |

| ons         | Section<br>#<br>& Req.ID                                          | Framing / Rough-In Inspection                                                                                                                                             | Plans Verified<br>Value      | Field Verified<br>Value      | Complies?                                           | Comments/Assumptions                             |
|-------------|-------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|------------------------------|-----------------------------------------------------|--------------------------------------------------|
| 5           | 5.4.2                                                             | Factory-built and site-assembled<br>fenestration and doors are<br>labeled or certified as meeting air<br>leakage requirements.                                            |                              |                              | ☐Complies ☐Does Not ☐Not Observable ☐Not Applicable |                                                  |
| 1 1 -       | 5.5.4.3a<br>FR8] <sup>1</sup>                                     | Vertical fenestration U-Factor.                                                                                                                                           | U                            | U                            | □Complies □Does Not                                 | See the Envelope Assemblies table for values.    |
|             |                                                                   |                                                                                                                                                                           |                              | <br>                         | □Not Observable<br>□Not Applicable                  |                                                  |
| 1 1 -       | 5.5.4.3b<br>FR9] <sup>1</sup>                                     | Skylight fenestration U-Factor.                                                                                                                                           | U                            | U                            | $\square$ Complies $\square$ Does Not               | See the Envelope Assemblies table for values.    |
|             |                                                                   |                                                                                                                                                                           |                              | <br>                         | □Not Observable<br>□Not Applicable                  |                                                  |
| 1 1 -       | 5.5.4.4.1<br>FR10] <sup>1</sup>                                   | Vertical fenestration SHGC value.                                                                                                                                         | SHGC:                        | SHGC:                        | □Complies<br>□Does Not                              | See the Envelope Assemblies table for values.    |
|             |                                                                   |                                                                                                                                                                           |                              | <br>                         | □Not Observable □Not Applicable                     |                                                  |
| 1 1 -       | 5.5.4.4.2<br>FR11] <sup>1</sup>                                   | Skylight SHGC value.                                                                                                                                                      | SHGC:                        | SHGC:                        | □Complies<br>□Does Not                              | See the Envelope Assemblies table for values.    |
|             |                                                                   |                                                                                                                                                                           |                              | <br>                         | □Not Observable □Not Applicable                     | <br>                                             |
| 5<br>5<br>5 | 5.8.2.1,<br>5.8.2.3,<br>5.8.2.4,<br>5.8.2.5<br>FR12] <sup>2</sup> | Fenestration products rated (U-<br>factor, SHGC, and VT) in<br>accordance with NFRC or energy<br>code defaults are used.                                                  |                              |                              | ☐Complies ☐Does Not ☐Not Observable ☐Not Applicable |                                                  |
|             | 5.8.2.2<br>FR13] <sup>1</sup>                                     | Fenestration and door products are labeled, or a signed and dated certificate listing the U-factor, SHGC, VT, and air leakage rate has been provided by the manufacturer. |                              |                              | □Complies □Does Not □Not Observable □Not Applicable |                                                  |
|             | 5.5.3.6<br>FR14] <sup>2</sup>                                     | U-factor of opaque doors<br>associated with the building<br>thermal envelope meets<br>requirements.                                                                       | U<br>Swinging<br>Nonswinging | U<br>Swinging<br>Nonswinging | □Complies □Does Not □Not Observable □Not Applicable | See the Envelope Assemblies<br>table for values. |
|             | 5.4.3.1<br>FR15] <sup>1</sup>                                     | Continuous air barrier is wrapped, sealed, caulked, gasketed, and/or taped in an approved manner, except in semiheated spaces in climate zones 1-6.                       |                              |                              | □Complies □Does Not □Not Observable □Not Applicable |                                                  |
| A           | dditiona                                                          | al Comments/Assumptions:                                                                                                                                                  |                              |                              |                                                     |                                                  |
|             | Section<br>#<br>& Req.ID                                          | Insulation Inspection                                                                                                                                                     | Plans Verified<br>Value      | Field Verified<br>Value      | Complies?                                           | Comments/Assumptions                             |
| 5           | 5.8.1.7.2<br>IN16] <sup>2</sup>                                   | Foundation vents do not interfere with insulation.                                                                                                                        |                              |                              | □Complies □Does Not □Not Observable □Not Applicable |                                                  |
|             |                                                                   |                                                                                                                                                                           |                              |                              |                                                     | 1                                                |

### 5.8.1.8 Insulation intended to meet the roof insulation requirements cannot be installed on top of a suspended ceiling. Mark this

requirement compliant if

insulation is installed accordingly.

| Section<br>#<br>& Reg.ID      | Final Inspection                                                           | Complies?              | Comments/Assumptions |
|-------------------------------|----------------------------------------------------------------------------|------------------------|----------------------|
| 5.4.3.2<br>[FI1] <sup>1</sup> | Weatherseals installed on all loading dock cargo doors in Climate Zones 4- | □Complies<br>□Does Not |                      |
| [111]                         | 8.                                                                         | □Not Observable        |                      |

☐Complies

□Does Not

□Not Observable

☐Not Applicable

**Additional Comments/Assumptions:** 



### COMcheck Supplement

2021 Oregon Energy Efficiency Specialty Code Compliance

| Jurisdiction:                                                                                                                   | INFORMATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | STATE OF THE REAL PROPERTY.    |  |
|---------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--|
|                                                                                                                                 | INFORMATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 200 004 0055                   |  |
| Applicant name: SCOTT MARSHALL, AIA-NCAR                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ber: 208-991-0855              |  |
| Project name: 1b.7 - POWER PANEL ROOM AND H                                                                                     | ALLWAY ADDITION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                |  |
| Address / location: 301 SOUTH 3rd STREET                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                |  |
| City: ALSEA                                                                                                                     | State: OR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | ZIP: 97324                     |  |
| ☐ Check here if not applicable and no items apply                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                |  |
| COM                                                                                                                             | IPLIANCE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                |  |
| DATA CENTERS                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                |  |
| ASHRAE 90.4-2019 compliance (Sections 6.2.2, 6.5.                                                                               | 11, 8.2.1, and 8.5)   Che                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | ck if not applicable           |  |
| Mechanical design - Registered design professional                                                                              | Power design - Registered d                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | lesign professional            |  |
| Printed name:                                                                                                                   | Printed name:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                |  |
| Registration number:                                                                                                            | Registration number:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | *                              |  |
|                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | W                              |  |
| Signature: Date                                                                                                                 | Signature:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Date                           |  |
| SECTION 5: ENVELOPE COMPLIANCE                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                |  |
| 5.1.2.3: Unconditioned space with limited radiant he                                                                            | eating                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ck if not applicable           |  |
| (See Oregon amendment 6.5.8.3 HVAC)  ☐ Space is identified on plans. Coverage area wit 500 ft² or 10% of floor area per 6.5.8.3 | h limited radiant heating is identi                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | fied on plans and the lesser o |  |
| Automatic controls for radiant spot heating per                                                                                 | 6.5.8.3.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                |  |
| Plans and specs.:                                                                                                               | NOT THE PARTY OF T |                                |  |
| 5.4.3.3: Vestibules: additional exception                                                                                       | □ Cho                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | ck if not applicable           |  |
| J.4.J.J. Vestibules, additional exception                                                                                       | - Cne                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | ck ii fiot applicable          |  |

| Building<br>Codes<br>Division | Published by Building Codes Division – Aug. 16, 2021 |
|-------------------------------|------------------------------------------------------|
| Consumer                      |                                                      |

Plans and specifications shall identify building entry door(s) meeting this exception.

Responsible party to provide test results:

| Plans and specs.:                                                                                                              |                                                        |
|--------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|
|                                                                                                                                |                                                        |
| Printed name Signature Registered design professional                                                                          | Registration number Date                               |
| SECTION 6: HVAC                                                                                                                |                                                        |
| 6.4.3.5.1: Packaged HVAC Equipment with Electric Heat                                                                          | Check if not applicable                                |
| Packaged HVAC systems with less than 241,000 Btu/<br>21,500 Btu/h or greater have heat pump operation for<br>Plans and specs.: |                                                        |
| 6.5.8.3: Radiant Heating for Enclosed Unconditioned Space                                                                      | es                                                     |
| Plans and specs.:  SECTION 8: POWER  8.4.2: Receptacle Control Exception                                                       | ■ Check if not applicable                              |
|                                                                                                                                | ■ Check if not applicable                              |
| Building is not providing controlled receptacles required p<br>following method (select one)                                   | per Section 8.4.2. Additional efficiency provided with |
| Performance Compliance report showing minimum 5                                                                                | % better performance than minimum                      |
| Section 11 ECB report included or                                                                                              | Appendix G report included                             |
| COMcheck Envelope Compliance report showing min                                                                                |                                                        |
| ASHRAE 90.1-2019 COMcheck forms incl                                                                                           |                                                        |
| COMcheck Lighting report showing minimum 5% pa                                                                                 |                                                        |
| ASHRAE 90.1-2019 COMcheck forms incl                                                                                           | uded                                                   |
| Printed name Signature                                                                                                         | Registration number Date                               |
| Registered design professional                                                                                                 |                                                        |
| Registered design professional SECTION 9: LIGHTING                                                                             |                                                        |
|                                                                                                                                | ■ Check if not applicable                              |



**ADDITION** 

T A



TRAIGHTLINE

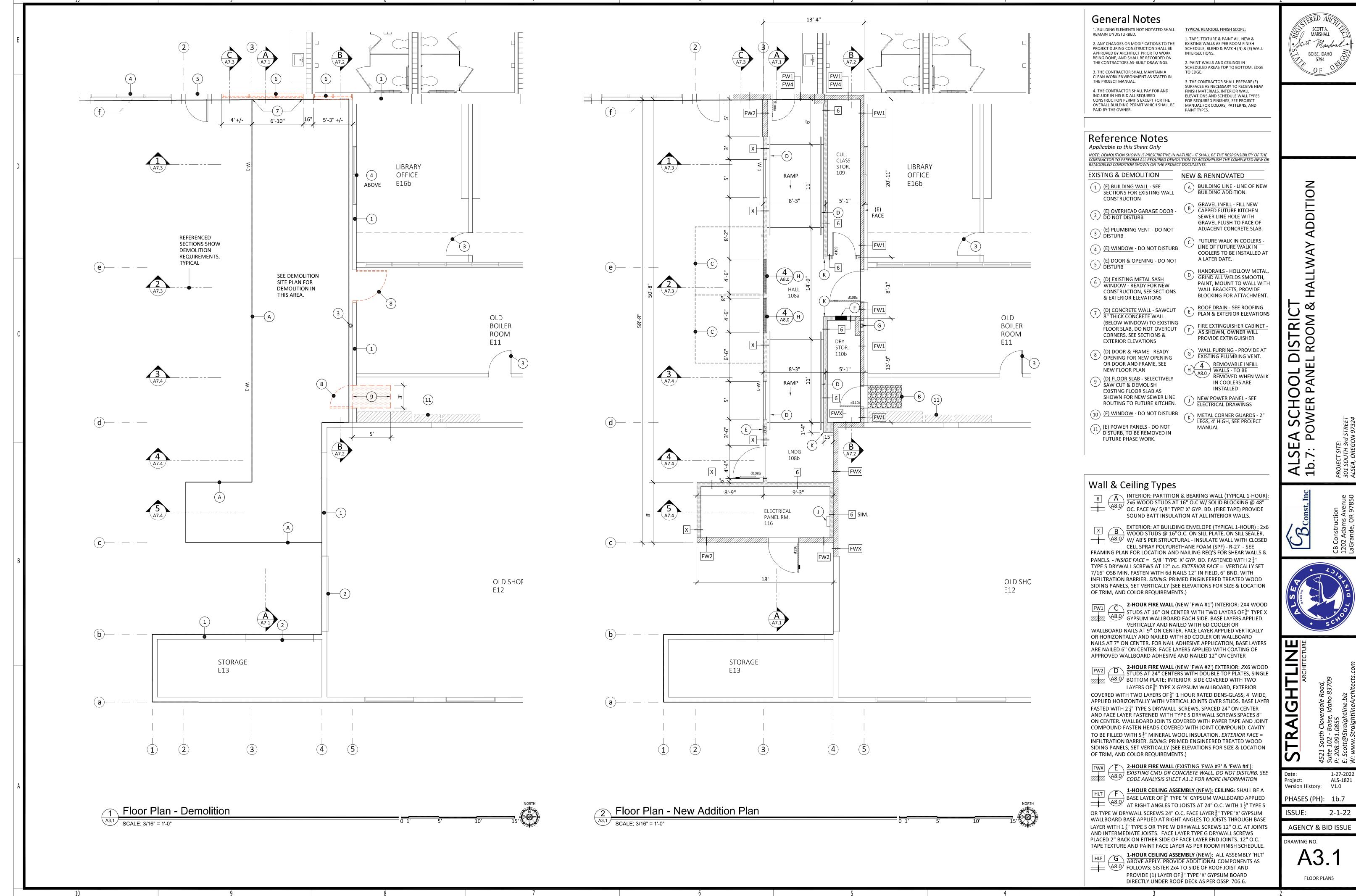
ALS-1821

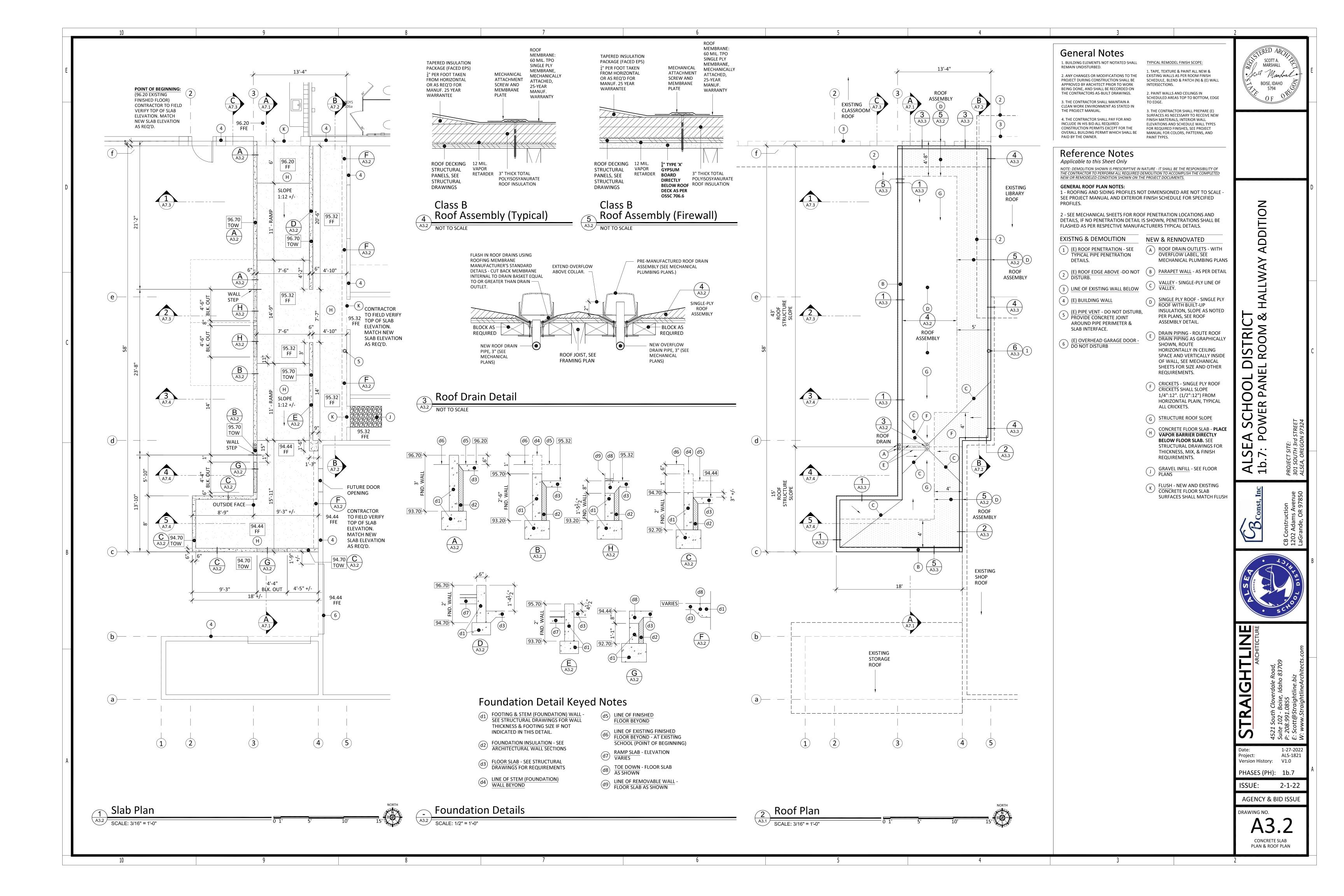
Version History: V1.0 PHASES (PH):

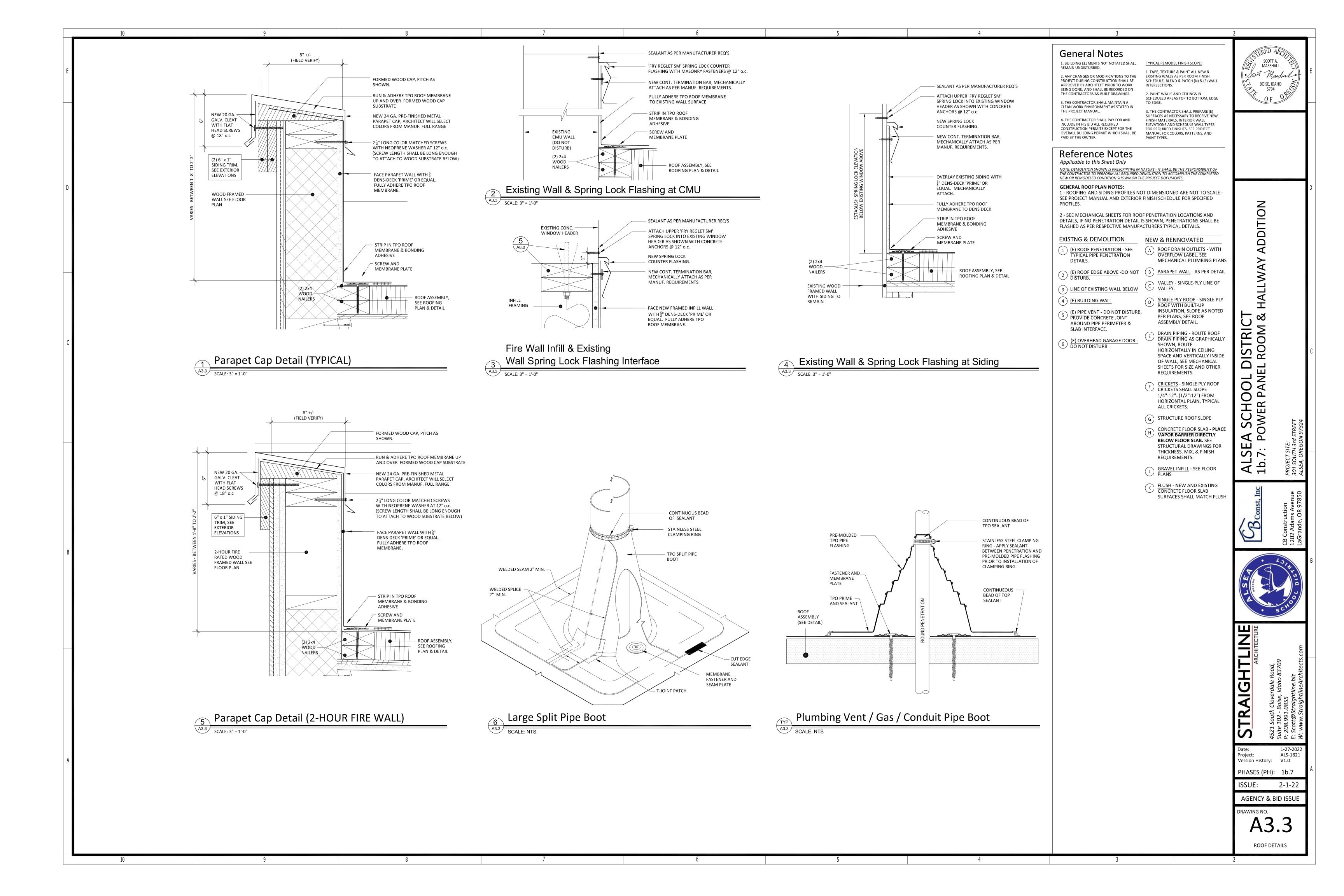
ISSUE: 1-5-21 **AGENCY & BID ISSUE** 

DRAWING NO.

**ENERGY COMPLIANCE** 







GB / CONC Pi-1, FS2

Pi-1, FS3

Pi-1

Pi-1

Pi-1

CMU

GB

GB

GB

| ROOM           | FINISH SCHED | ULE                                              |          |      |             |                           |        |             |          |        |             |          |        |             |          |        |             |          |                    | PHASE 1b.7 |
|----------------|--------------|--------------------------------------------------|----------|------|-------------|---------------------------|--------|-------------|----------|--------|-------------|----------|--------|-------------|----------|--------|-------------|----------|--------------------|------------|
| ROOM ROOM NAME | ROOM NAME    | FLOOR OOM NAME (see Flooring Plan if Applicable) |          |      |             | CEILING<br>CP if Applicab | le)    | NORTH WALL  |          |        | EAST WALL   |          |        | SOUTH WALL  |          |        | WEST WALL   |          | REMARKS & COMMENTS |            |
|                |              | INSTRUCTION                                      | MATERIAL | BASE | INSTRUCTION | MATERIAL                  | FINISH | INSTRUCTION | MATERIAL | FINISH | INSTRUCTION | MATERIAL | FINISH | INSTRUCTION | MATERIAL | FINISH | INSTRUCTION | MATERIAL | FINISH             |            |
| NEW CONS       | TRUCTION     |                                                  |          |      |             |                           |        |             |          |        |             |          |        |             |          |        |             |          |                    |            |

N/A

Pi-1

W1

W2

W1

W1

GB / CONC Pi-1, FS1

GB / CONC Pi-1, FS3

N/A

GB

GB

Pi-1

Pi-1

Pi-1

Pi-1

N/A

W1 / W2

W1

W1

GB

GB

GB

GB

## **REMODELED CONSTRUCTION: NONE**

LANDING

CUL. CLASS STORAGE

DRY STORAGE

ELECTRICAL PANEL ROOM

### **ROOM FINISH NOTES:**

GENERAL AT ALL REMODELED WALLS & CEILINGS PRIOR TO RE-FINISHING / TEXTURING & PAINTING, REMOVE NAILS ALL NAILS, TACKS, TAPE, ETC. FROM THE EXISTING SURFACE

C1

### **FLOORING**

108b

109

110b

NEW CONSTRUCTION & NEW FLOORING AS SCHEDULED

NEW CONSTRUCTION & NEW CEILING AS SCHEDULED

## EXISTING GYPSUM BOARD HARD LID CEILING, DO NOT DISTURB

NEW CONSTRUCTION & NEW WALLS AS SCHEDULED

EXISTING WALL, FINISH AS SCHEDULED

### **NOTES**

PAINT AND TEXTURE GYPSUM BOARD WALL, CLEAN & PAINT EXISTING CONCRETE COLUMN. PROTECT COLUMN TO PREVENT TEXTURE OVERSPRAY.

PAINT AND TEXTURE GYPSUM BOARD WALL, PROTECT NEW INTERIOR CONCRETE RAMP WALL TO PREVENT PAINT & TEXTURE OVERSPRAY.

REMOVE LOOSE PAINT FROM EXISTING CMU / CONCRETE WALL AS REQUIRED. PRIME AND PAINT AS SCHEDULED.

SV-1 RB-1

SV-1 RB-1

SV-1 RB-1

CONC RB-2

RB-1

SV-1

| VER. | 2-1-2022 |  |
|------|----------|--|
|      |          |  |
|      |          |  |

| DOOR SCHEDULE |   |             |          |          |      |            |        |                  |          |                |                | PHASE 1b.7       |                    |        |  |
|---------------|---|-------------|----------|----------|------|------------|--------|------------------|----------|----------------|----------------|------------------|--------------------|--------|--|
| MARK          |   |             |          |          | DOOR | (SEE A4.1) |        | FRAME (SEE A4.1) |          | AME (SEE A4.1) |                | FRAME (SEE A4.1) |                    | ACCESS |  |
| #             | G | INSTRUCTION | LOCATION | SIZE     | TYPE | MATERIAL   | FINISH | TYPE             | MATERIAL | FINISH         | FRAME<br>LABEL | CONTROL          | REMARKS & COMMENTS |        |  |
| d108a         | 1 | NDO         | INTERIOR | 3'x7'    | D2   | METAL      | Pi-2   | F2               | METAL    | Pi-2           | 90 MIN         | NO               | DS1                |        |  |
| d108b         | 2 | NDO         | EXTERIOR | 4'x7'    | D5   | METAL      | Pi-2   | F5               | METAL    | Pi-2           | 20 MIN         | YES              | DS1, DS2, DS4      |        |  |
| d108c         | 3 | NDO         | INTERIOR | 4'x7'    | D3   | METAL      | Pi-2   | D3               | METAL    | Pi-2           | 90 MIN         | NO               |                    |        |  |
| d109          | 4 | NDO         | INTERIOR | 3'x7'    | D1   | WOOD       | FF     | D1               | METAL    | Pi-2           | N/A            | NO               | DS3                |        |  |
| d110b         | 5 | NDO         | INTERIOR | 2'-8"x7' | D4   | METAL      | Pi-2   | D4               | METAL    | Pi-2           | 90 MIN         | NO               |                    |        |  |
| d116          | 6 | NDO         | EXTERIOR | 4'x7'    | D6   | METAL      | Pi-2   | F6               | METAL    | Pi-2           | 90 MIN         | YES              | DS1, DS2, DS4      |        |  |

DOOR SCHEDULE REMARKS & COMMENTS:

DS1 NEW DOOR HAS A PANIC DEVICE, SEE HARDWARE SCHEDULE

DS2 ACCESS CONTROL, KEYPAD & KEYCARD. HANDLE MOUNTED, SEE PROJECT MANUAL

DS3 METAL KICK PLATES, BOTH SIDES

DS4 DOOR SHALL BE INSULATED

DOOR SCHEDULE INSTRUCTION NOTES:

NDO NEW DOOR OPENING: NEW DOOR, FRAME, & HARDWARE

ISSUE 2-1-2022

W1

W1

W1

W1

GB

GB

GB

GB

W1/W2 GB/CONC

Pi-1

Pi-1

Pi-1, FS3

GB / CONC

GB / CONC

GB / CONC

W1

W1

W1

Pi-1 / FS2

Pi-1 / FS2

Pi-1 / FS2

FS2, FS3

FS3

FS3

| DC | OR HARD               | WARE SCH | IEDULE     |                |          |           |                 |           |       | PHASE 1b.7             |
|----|-----------------------|----------|------------|----------------|----------|-----------|-----------------|-----------|-------|------------------------|
| G  | FUNCTION              | DOORS    | HINGES     | EXIT<br>DEVICE | CLOSER   | KICKPLATE | DOOR<br>GASKETS | THRESHOLD | SWEEP | REMARKS                |
| 1  | EXTERIOR<br>PANIC     | d108a    | 1 1/2 PAIR | 1 DEVICE       | 1 CLOSER | NONE      | 1 SET           | NO        | NO    | H1, H3, H4, H6         |
| 2  | EXTERIOR<br>PANIC     | d108b    | 1 1/2 PAIR | 1 DEVICE       | 1 CLOSER | NONE      | 1 SET           | YES       | YES   | H1, H3, H4, H5, H6, H7 |
| 3  | ANSI F84<br>CLASSROOM | d108c    | 1 1/2 PAIR | NONE           | 1 CLOSER | NONE      | 1 SET           | NO        | NO    | H1, H3, H4             |
| 4  | ANSI F86<br>STOREROOM | d109     | 1 1/2 PAIR | NONE           | NONE     | 1 SET     | 1 SET           | NO        | NO    | H1, H2                 |
| 5  | ANSI F75<br>PASSAGE   | d110b    | 1 1/2 PAIR | NONE           | 1 CLOSER | NONE      | 1 SET           | NO        | NO    | H1, H3, H4             |
| 6  | ANSI F86<br>STOREROOM | d116     | 1 1/2 PAIR | 1 DEVICE       | 1 CLOSER | NONE      | 1 SET           | YES       | YES   | H1, H3, H4, H5, H6, H7 |

### REMARKS

H1 DOOR STOPS - Provide and Install one door stop for each leaf of swinging door. Door stops shall be a wall stop. For locations where wall mounted stops are not appropriate, provide a floor stop. Install all wall mounted doorstops centered on lockset cylinder.

**H2** KICKPLATES - kickplates shall be 2" less than width of door

H3 CLOSER ATTACHMENT - All closers at all wood doors shall be installed through bolted with sex bolts. All closers at metal doors shall be installed with machine bolts into holes drilled and tapped in 3/16" minimum reinforcing plates.

H4 CLOSER OPTIONS - All closers shall have the following options: Delayed action valve, heavy duty parallel arms, sex nuts & bolts, corrosion protection at exterior locations, and extream temprature fluid at exterior locations.

**H5** THRESHOLD - Threshold shall be ADA compliant and shall extend full depth of door frame

**H6** PANIC EXIT DEVICE - Provide panic exit device on interior side, provide exterior lock fuctionality with dogable lock, provide exterior lock and handle.

H7 ACCESS CONTROL - Provide handle mounted Access Control with Keypad & Intergrated Proximity Card Reader

## **General Notes**

### Applicable to this sheet only 1. EXISTING BUILDING ELEMENTS

NOT NOTED SHALL REMAIN UNDISTURBED.

2. ANY CHANGES OR MODIFICATIONS TO THE PROJECT DURING CONSTRUCTION SHALL BE APPROVED BY ARCHITECT PRIOR TO WORK BEING DONE, AND SHALL BE RECORDED ON THE CONTRACTORS AS-BUILT DRAWINGS.

3. THE CONTRACTOR SHALL MAINTAIN A CLEAN WORK ENVIRONMENT.

4. THE CONTRACTOR SHALL PAY FOR AND INCLUDE IN HIS BID ALL REQUIRED CONSTRUCTION TRADES PERMITS. THIS (EXCLUDES THE STRUCTURAL BUILDING PERMIT WHICH SHALL BE PAID BY THE OWNER)

TYPICAL REMODEL FINISH SCOPE:

1. TAPE, TEXTURE & PAINT ALL NEW & EXISTING WALLS (TO BE PATCHED) WITH FINISHED GYPSUM BOARD SURFACES, BLEND & PATCH (N) & (E) WALL INTERSECTIONS.

SCOTT A. MARSHALL

BOISE, IDAHO

5794

**ADDITION** 

HALLWAY

 $\infty$ 

A SCHOOL DISTRIC POWER PANEL ROOM

Sin

Al 1b

2. PAINT WALLS AND CEILINGS IN SCHEDULED AREAS TOP TO BOTTOM, EDGE TO EDGE.

3. THE CONTRACTOR SHALL PREPARE (E) SURFACES AS NECESSARY TO RECEIVE NEW FINISH MATERIALS, SEE FINISH SCHEDULE AND WALL TYPES FOR REQUIRED FINISHES, SEE PROJECT MANUAL (IF APPLICABLE) OR PLANS FOR COLORS, PATTERNS, AND PAINT

## Room & Door Finish Material Notes

|          | this sheet only                                                                                | i Material Notes                                                             |  |  |  |  |  |
|----------|------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|--|--|--|--|--|
| FF       | FACTORY FINISH.                                                                                |                                                                              |  |  |  |  |  |
| CONC     | CONCRETE - APPLY SI<br>NATURAL GRAY COLO                                                       |                                                                              |  |  |  |  |  |
| (E) CONC |                                                                                                | - CLEAN AND/OR READY FOR<br>ROOM FINISH SCHEDULE                             |  |  |  |  |  |
| GB       | PEEL SURFACE, PAIN                                                                             | TYPE 'X', LIGHT ORANGE<br>FAS NOTED, SEE ROOM<br>SECTIONS FOR LAYERS.        |  |  |  |  |  |
| (E)CMU   | EXISTING CMU (MASONRY BLOCK) - PREVIOUSLY PAINTED, APPLY NEW PAINT AS PER ROOM FINISH SCHEDULE |                                                                              |  |  |  |  |  |
| HL       |                                                                                                | T CEILING JOISTS, $\frac{5}{8}$ " TYPE 'X', SURFACE, PAINT AS NOTED, HEDULE. |  |  |  |  |  |
| Pi-x     | INTERIOR PAINT<br>(x) = COLOR / TYPE /                                                         | MANUF.                                                                       |  |  |  |  |  |
| SV-x     | $\frac{\text{SHEET VINYL}}{(x)} = \text{COLOR} / \text{PATTER}$                                | RN / MANUF.                                                                  |  |  |  |  |  |
| RB-x     | $\frac{\text{RUBBER BASE}}{(x)} = \text{COLOR} / \text{SIZE} / \text{N}$                       | ΛANUF.                                                                       |  |  |  |  |  |
| METAL    | METAL<br>DOORS / FRAMES                                                                        |                                                                              |  |  |  |  |  |
| PNT      | PAINT<br>DOORS / FRAMES                                                                        | NOTE:<br>Paint hollow metal doors &<br>frames as Scheduled - Pre-            |  |  |  |  |  |

### Glass Types

WOOD TOORS

Applicable to this sheet only

GT 1/4" TEMPERED FLOAT GLASS

PRE STAIN / FINISH

GTi 1" TEMPERED & INSULATED GLASS

WINDOW UNIT AS PER EXTERIOR **ELEVATIONS / PROJECT MANUAL** 

### Interior Color & Material Schedule

## See Project Manual for Material & Finish Requirements & Specifications, if applicable.

FLOORING & BASE

SHEET VINYL COLOR / MANF. , 'SV'

CONCRETE, NATURAL GRAY 'CONC'

RB-1 RUBBER BASE, 4"
COLOR 'RB1' at 'SV' RUBBER BASE, 4" COLOR, 'RB2' at 'CONC'

Finished Components, ie.

aluminum, Vinyl, Anodized, etc. shall be factory finish,

**INTERIOR WALLS & CEILING** 'WHITE' PAINT, INTERIOR, SEMI-GLOSS, COLOR 'P1'

GYP. BD. TEXTURE: LIGHT ORANGE PEEL, 'INTERIOR METAL DOORS & FRAMES' PAINT,

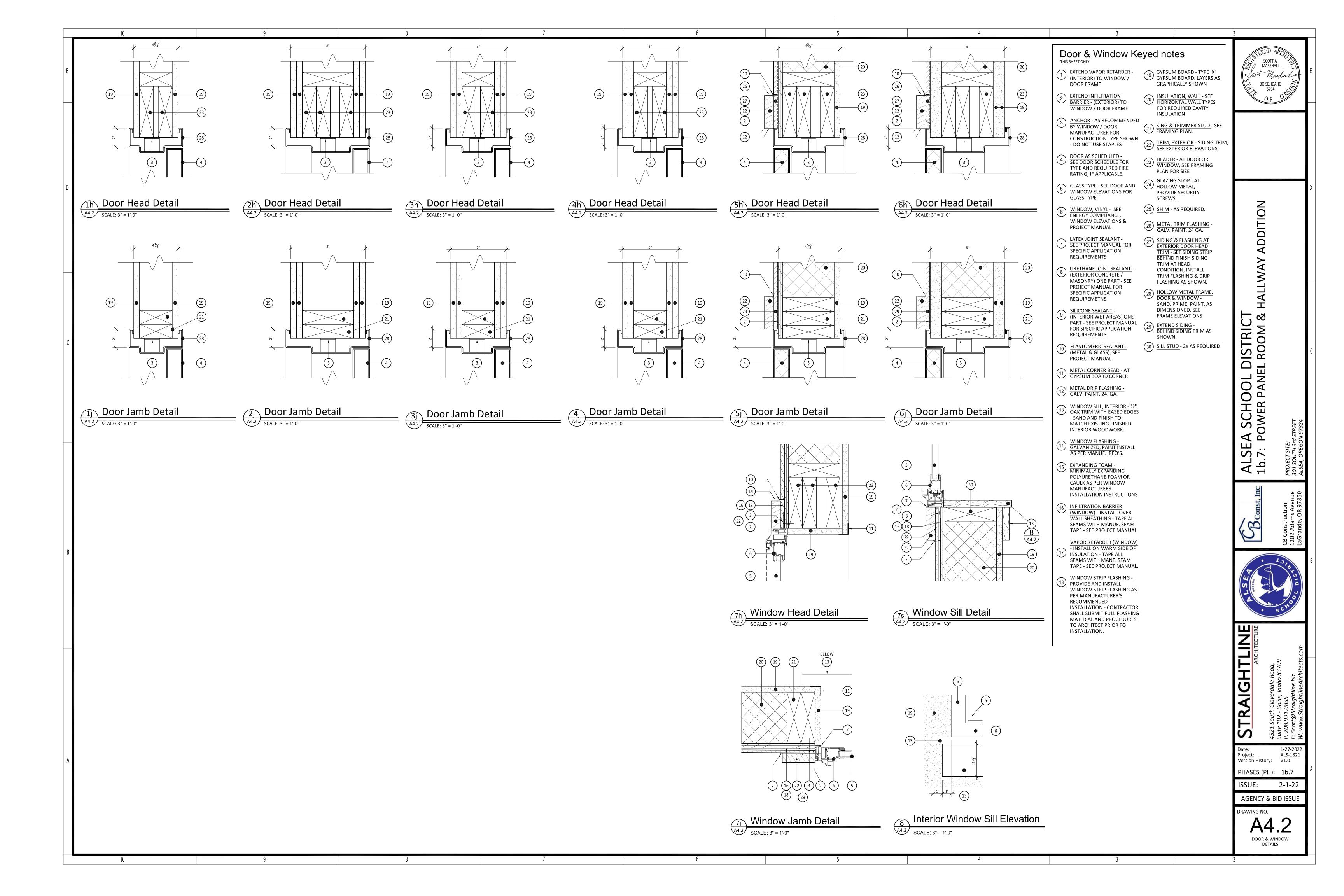
HIGH-GLOSS, COLOR 'P2'

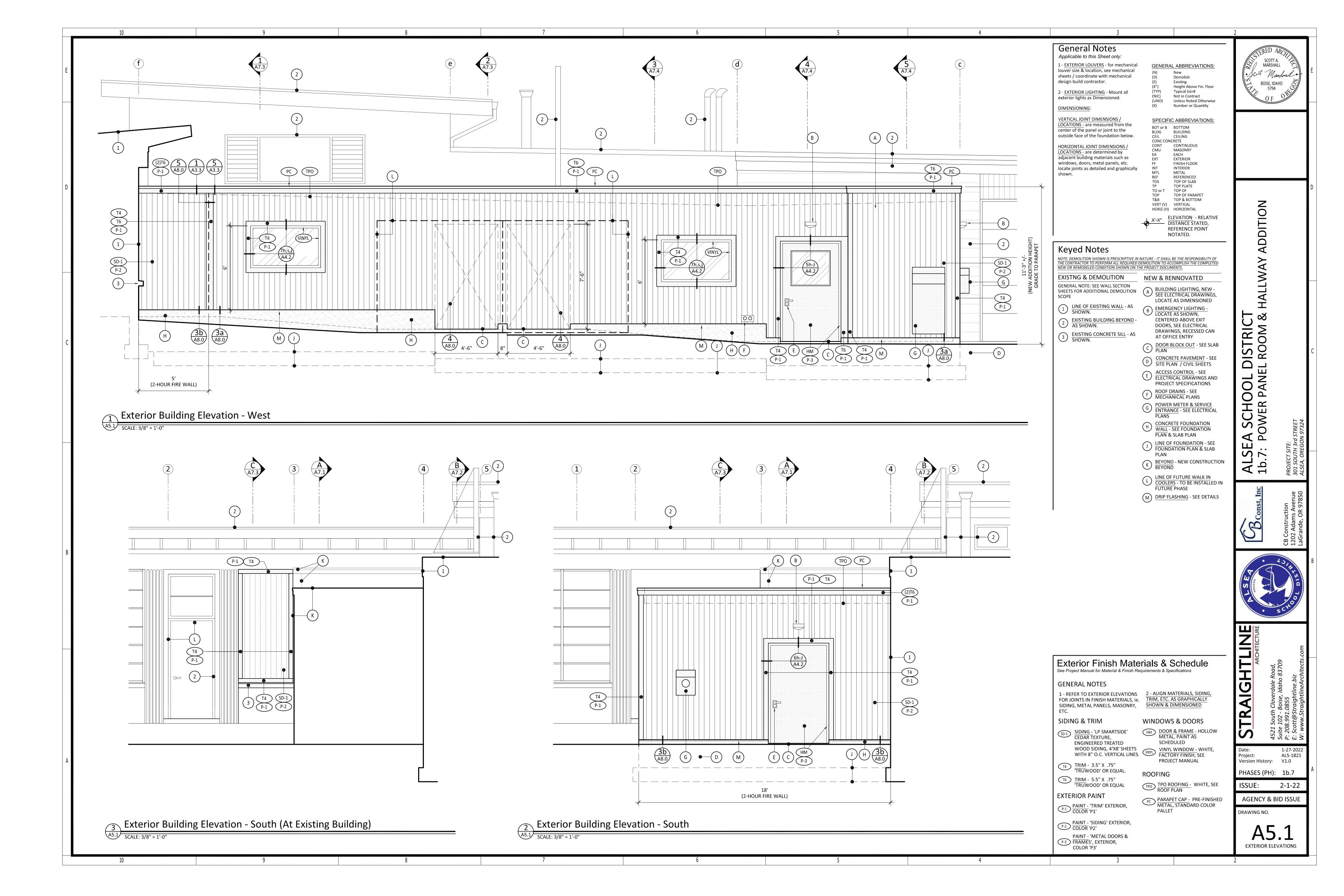
ALS-1821 Version History: V1.0 PHASES (PH): 1b.7

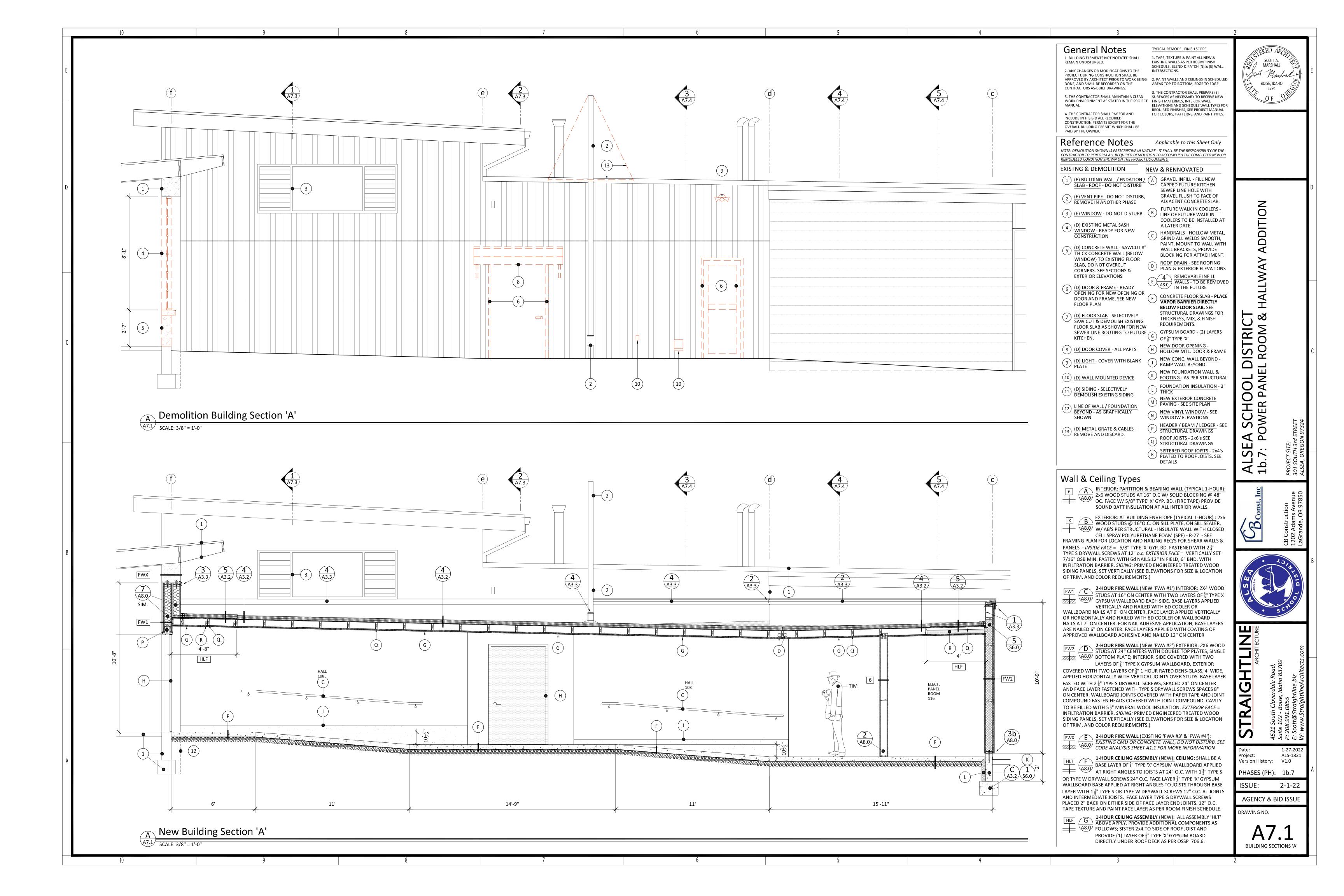
2-1-22 ISSUE:

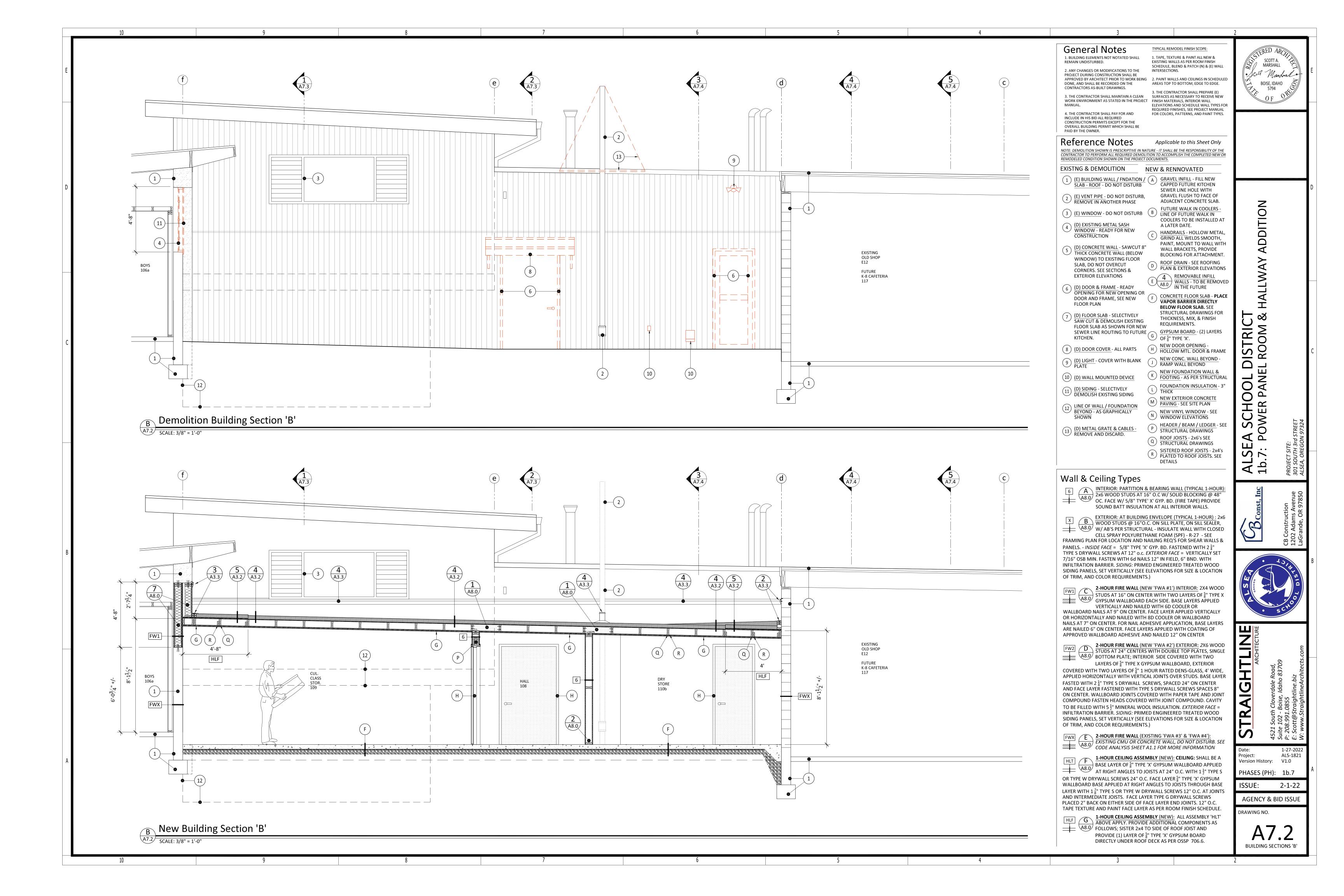
**AGENCY & BID ISSUE** DRAWING NO.

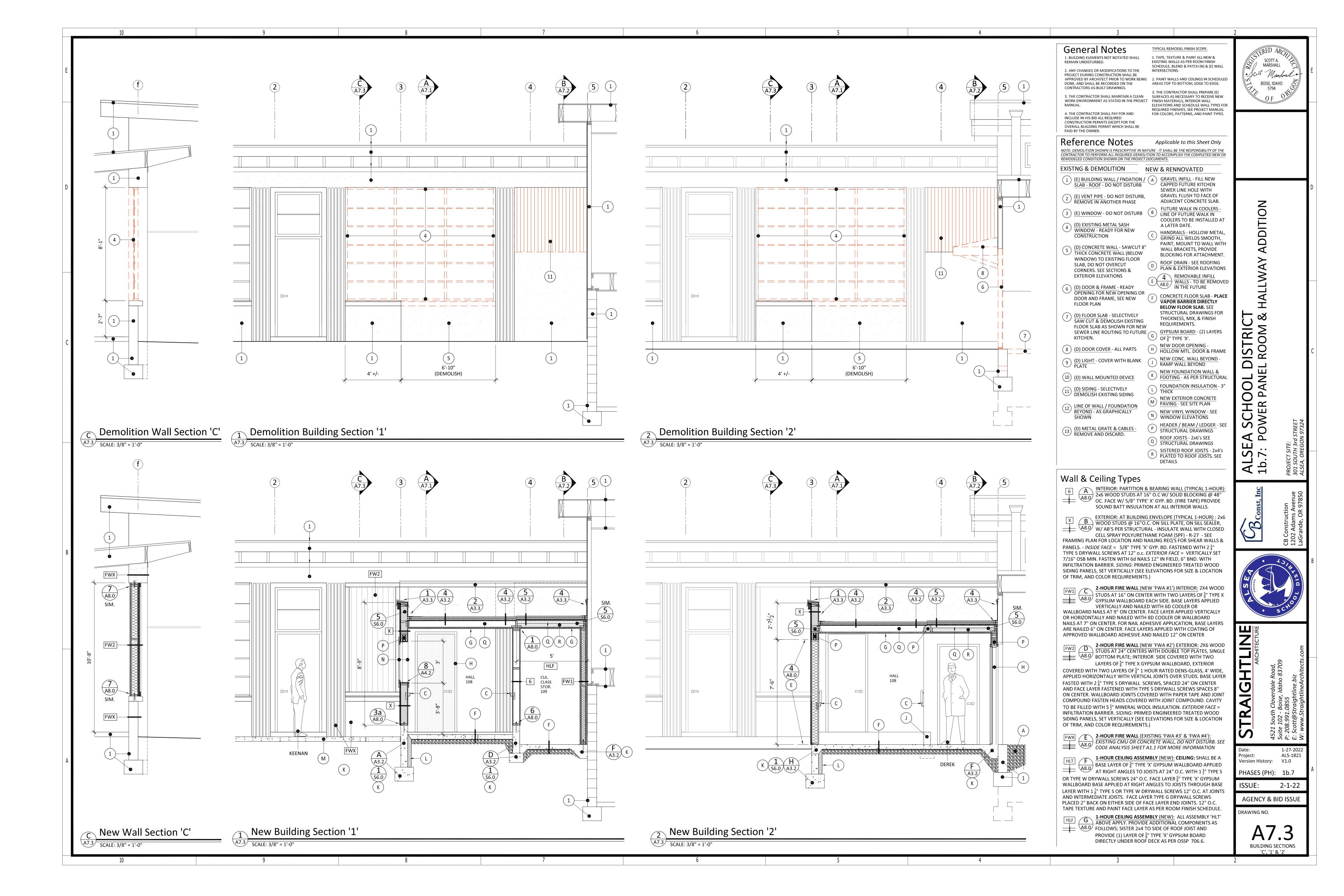
A4. DOOR SCHEDULE & ELEVATIONS

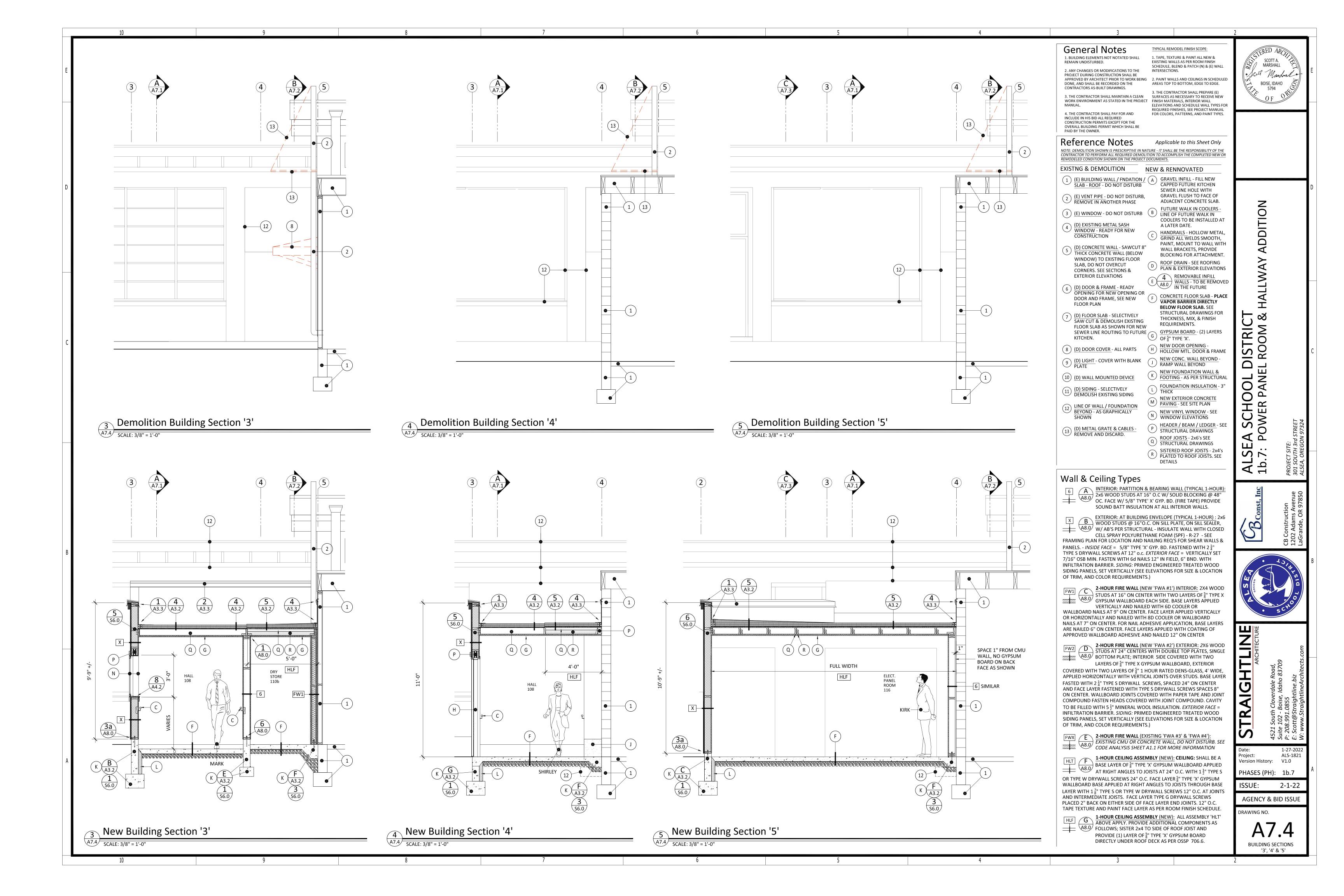


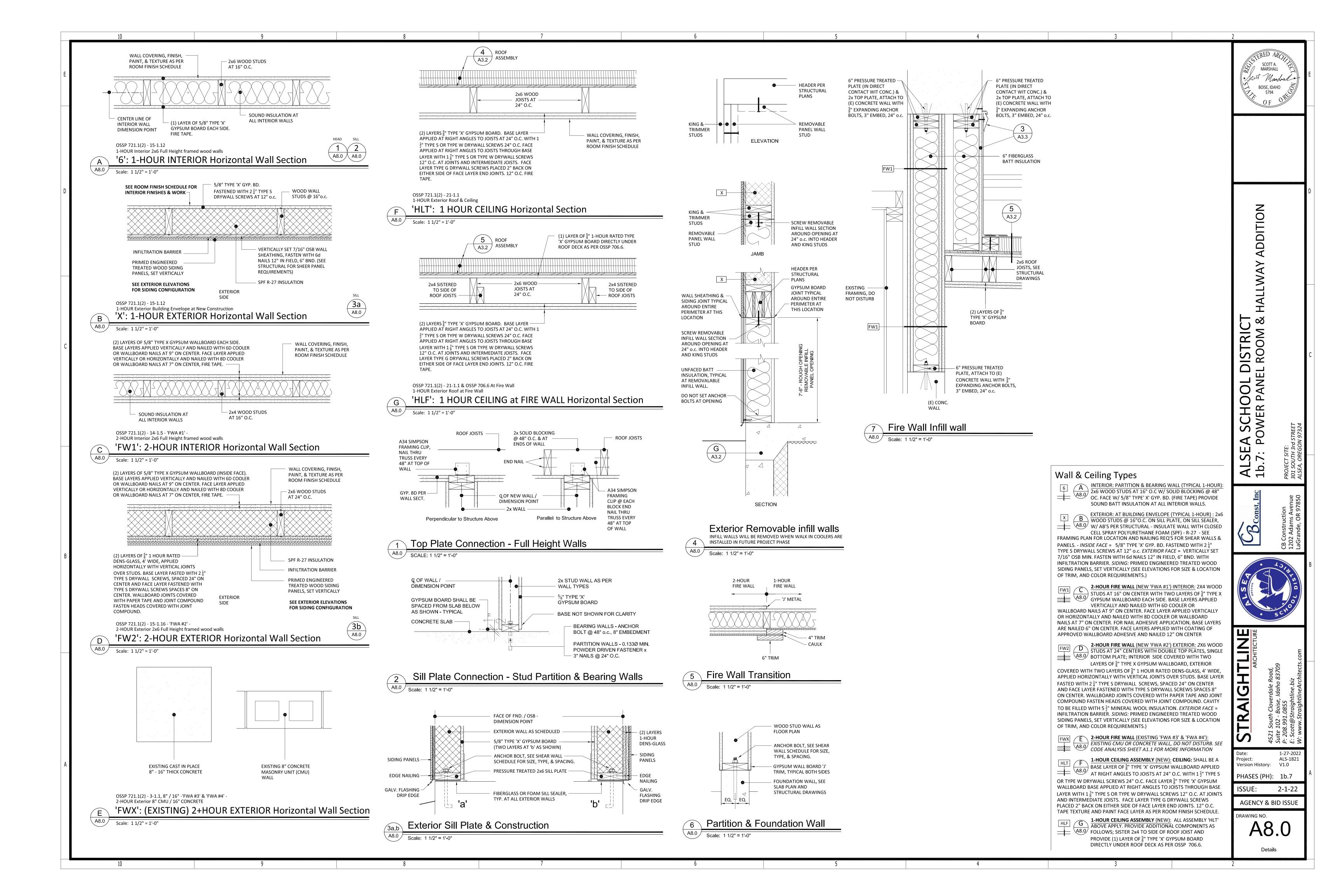


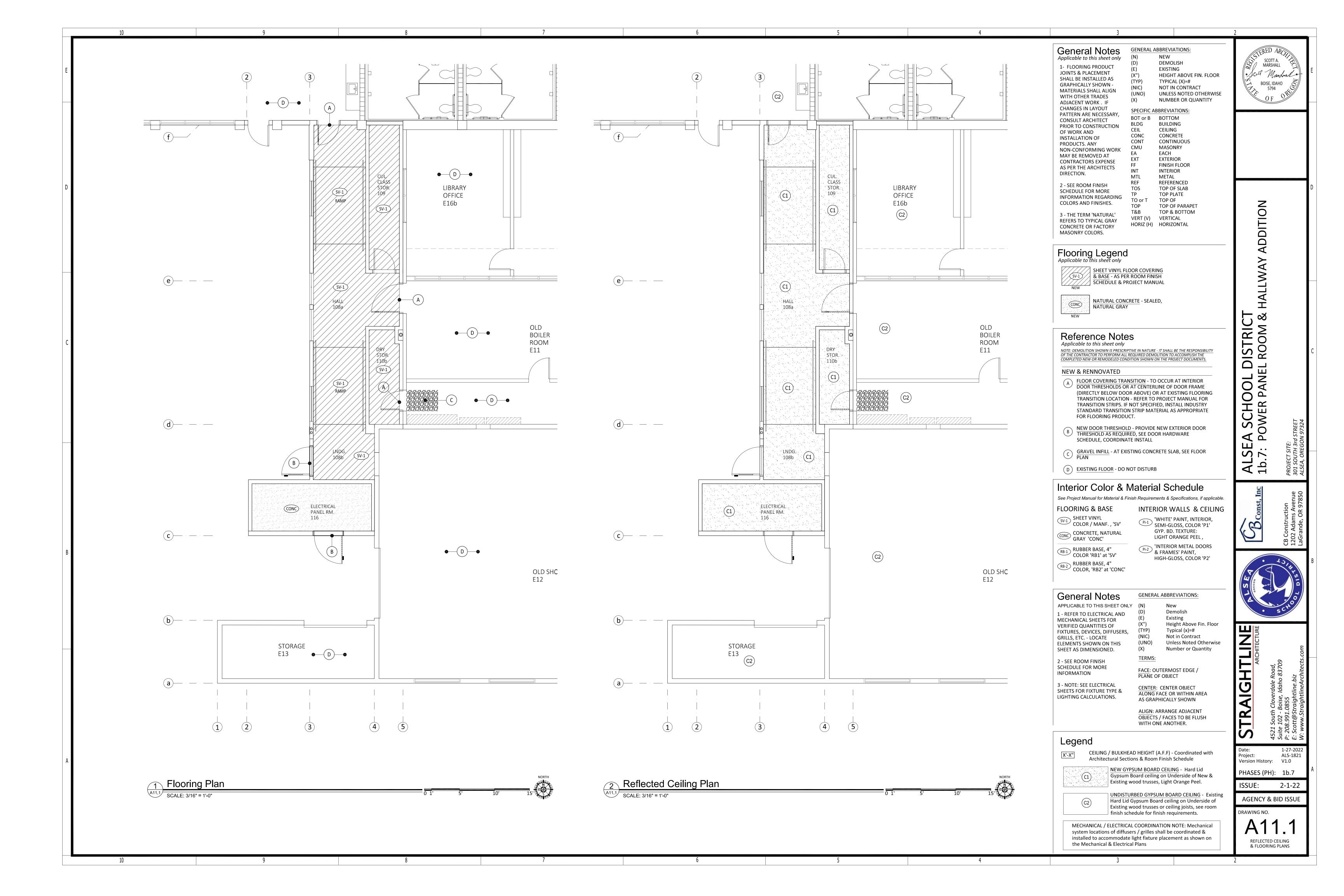












| GENERAL NOTES & DESIGN CRITERIA                                                                                                                                                                             | SPECIAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | INSPEC <sup>-</sup> | TIONS CO             | NTINUED                         | FOUNDATIONS                                                                                                                                                                                                                                                                                                                             | CONCRETE — CONTINUED                                                                                                                                                                                                         |                                       |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|----------------------|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|
| ERAL. nese general structural notes and specifications supplement the project written technical pecifications and the project structural drawings.                                                          | ITEM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                     | QUENCY<br>S PERIODIC | SPECIAL NOTES                   | <ul> <li>1. All footings to be placed on firm undisturbed, inorganic material. Proof roll sub-grade prior to placing concrete where the material has been disturbed by the excavating equipment.</li> <li>2. All piers and footings outside or at the perimeter of the structure, or in other unheated areas shall be set to</li> </ul> | <ol> <li>FORMWORK.</li> <li>A.Forms shall result in a final structure that conforms to shapes, lines, and dimensions of the members as required by the design drawings and specifications.</li> </ol>                        | Qe;                                   |
| e Contractor is responsible for all construction bracing, temporary shoring, and other site safety                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | CON                 | CRETE                |                                 | a depth of at least 12-in. below finish grade, unless otherwise noted on the plans.                                                                                                                                                                                                                                                     | a. Design of formwork shall be in accordance with ACI 318/350 Section 6.1.                                                                                                                                                   | EXPIRE                                |
| ontrols required during construction in accordance with all applicable Local, State and Federal egulations, to insure the stability and safety of all construction until it is completed and                | INSPECTION OF POST-INSTALLED ANCHORS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | ×                   |                      |                                 | 3. All foundations and retaining walls below finish grade shall receive an approved damp-proof coating.  Foundation walls below maximum anticipated ground water levels shall receive an approved water-proof                                                                                                                           | <ul><li>b. Formwork shall be in accordance with ACI 347; Guide to Formwork for Concrete.</li><li>B. Tolerances for finished concrete surfaces shall meet the following requirements, class of surface is per</li></ul>       |                                       |
| elf-supporting.<br>The Contractor is responsible for all water, both above and below ground, runoff and other                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                     |                      |                                 | coating; extend water-proofing to a minimum of $1'-0''$ above the maximum anticipated ground water level.<br>4. Allowable bearing pressure for all footings Qa = 2,500 psf                                                                                                                                                              | Table 3.4 of ACI 347:<br>a. Footings: Class C                                                                                                                                                                                |                                       |
| wironmental controls required during construction to insure the site is maintained in compliance                                                                                                            | REINFORCEMENT PLACEMENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                     | X                    |                                 | 5. Local areas of soft and/or unacceptable material encountered at bottom of footing elevations indicated on                                                                                                                                                                                                                            | b. Foundation walls: Class B                                                                                                                                                                                                 |                                       |
| ith all applicable Local, State and Federal regulations. etails on these plans are intended to depict the general construction details and methods for this                                                 | PLACEMENT OF CAST-IN-PLACE ANCHORS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                     | X                    |                                 | the plans must be over-excavated and brought up to design grade with compacted structural fill or lean concrete fill.                                                                                                                                                                                                                   | <ul><li>c. Above grade concrete not visible to sight: Class B</li><li>d. Above-grade concrete visible to sight: Class A</li></ul>                                                                                            |                                       |
| ructure. Connection details and conditions not specifically shown that are similar in nature to those at are specified shall be assumed one and the same. If questions regarding the application of details | CONCRETE PLACEMENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | X                   |                      |                                 | 6. All structural fill and/or backfill shall be granular, free draining, material; Unified Soils Classification GW, GP,                                                                                                                                                                                                                 | C.REMOVAL OF FORMS.  a. Concrete forms shall not be removed until the retained concrete has reached the following minimum                                                                                                    |                                       |
| re encountered, notify the Architect/Engineer for clarification or instruction.                                                                                                                             | VERIFICATION OF USE OF MIX DESIGN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                     | V                    |                                 | GM or SW; maximum aggregate size of 3-in. and no more than 7% passing a number 200 sieve. Material shall be placed in lifts no greater than 6-in. in depth and compacted to 95% of maximum density as                                                                                                                                   | percentage of the required 28 day compressive strength:                                                                                                                                                                      |                                       |
| rior to implementing any changes to these plans, the Architect/Engineer shall be notified in writing or their written approval. Changes implemented without the Architect/Engineers written approval        | VERIFICATION OF USE OF WITA DESIGN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                     | ^                    |                                 | determined per ASTM D1557.  7. Design for the mitigation of subsurface water flow and/or perched water tables shall be the responsibility                                                                                                                                                                                               | a.a. Footings and base slabs on grade: 50% of f'c. a.b. Foundation walls and columns: 67% of f'c.                                                                                                                            |                                       |
| nall relieve the Architect/Engineer of any claim or liability resulting from that portion of the structure                                                                                                  | TESTING/SAMPLING FOR CONCRETE STRENGTH, SLUMP, AIR CONTENT, AND TEMPERATURE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | X                   |                      |                                 | of others.                                                                                                                                                                                                                                                                                                                              | b. Where concrete cylinder tests are not available for strength verification the following guide may be                                                                                                                      |                                       |
| nanged or affected by the change.                                                                                                                                                                           | SEGIVIT, AIN CONTENT, AND TEIVIT ENATORE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | \\/(                | <br>)OD              |                                 | 8. The Engineer shall be notified in writing if any ground water, clay type soils, debris or unconsolidated materials are encountered during excavations for foundations.                                                                                                                                                               | used when permitted by the Project Engineer: b.a. Footings and base slabs on grade: 12 hours.                                                                                                                                |                                       |
| NTRACTOR RESPONSIBILITY FOR COORDINATION is the Contractors Prime responsibility to coordinate the work shown on all of the Project Drawings,                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | VVC                 |                      |                                 | 9. GEOTECHNICAL REPORT - FOUNDATION ENGINEERING, INC                                                                                                                                                                                                                                                                                    | b.b. Foundation walls and columns: 24 hours.  D.EMBEDMENTS IN CONCRETE.                                                                                                                                                      |                                       |
| eneral, special and technical specifications. he Contractor is responsible to verify all existing construction material types dimensions, elevations                                                        | FABRICATION OF PRE-FABRICATED STRUCTURAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                     | X                    |                                 |                                                                                                                                                                                                                                                                                                                                         | <ul> <li>i. Conduits, pipes, and sleeves of any material not harmful to concrete and within limitations of ACI<br/>318/350 Section 6.3 shall be permitted to be embedded in concrete with approval of the Project</li> </ul> |                                       |
| nd conditions.                                                                                                                                                                                              | ELEMENTS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                     |                      |                                 | CONCRETE                                                                                                                                                                                                                                                                                                                                | Engineer, provided they are not considered to replace structurally the displaced concrete, except as                                                                                                                         |                                       |
| he Contractor shall verify and coordinate the dimensions among all drawings and in the field prior to roceeding with any work or fabrication, any discrepancy shall be immediately reported to the          | MATERIAL VERIFICATION OF STRUCTURAL PANELS AND NAILS FOR DIAPHRAGMS AND                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                     | X                    |                                 | 001,01,212                                                                                                                                                                                                                                                                                                                              | provided in Section 6.3.6.  E. Conduits and pipes of aluminum shall not be embedded in structural concrete unless effectively coated                                                                                         |                                       |
| rchitect/Engineer.                                                                                                                                                                                          | SHEAR WALLS w/EDGE NAILING.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                     |                      |                                 | 1. PROJECT CONCRETE MIX TYPES:                                                                                                                                                                                                                                                                                                          | or covered to prevent aluminum-concrete reaction or electrolytic action between aluminum and steel.                                                                                                                          |                                       |
| is the Contractor's responsibility to carefully study and coordinate the construction requirements nown on both the Architectural and the Structural Drawings. When conflicts or discrepancies are          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                     |                      |                                 | A. Slabs & Footings: f'c = 4,000 psi, Absolute water-cement ratio by weight = 0.45, Air Content = 6% (+/-                                                                                                                                                                                                                               | F. CONSTRUCTION JOINTS.  a. Construction joints shall only be placed where indicated on the project drawings or as approved by                                                                                               |                                       |
| ound between these plan sets and/or within these drawings, the Contractor shall report them nmediately to the project Architect/Engineer for direction and/or clarification.                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                     |                      |                                 | 1.5%). 2. CONCRETE MIX COMPONENTS.                                                                                                                                                                                                                                                                                                      | the Project Engineer. b. Construction joints shall be constructed in accordance with ACI 318/350 Section 6.4                                                                                                                 |                                       |
| ny construction work done by the Contractor before obtaining such clarification from the Project                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                     |                      |                                 | <ul> <li>A. A water-reducing admixture conforming to ASTM C494, used in strict conformance with the<br/>manufacturer's instructions, shall be incorporated in all concrete mix designs.</li> </ul>                                                                                                                                      | <ol> <li>DETAILS OF REINFORCEMENT.</li> <li>A. Placement of all reinforcing steel within concrete structures shall be in conformance with ACI 318/350</li> </ol>                                                             |                                       |
| rchitect/Engineer shall be at the Contractor's own risk and cost. Furthermore; any work required to prect, replace and/or restore the work as directed by the Architect/Engineer shall be at the            | CONNECTIONS FOR DIAPHRAGM CHORDS,                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                     | X                    |                                 | B. Higher water-cement ratios than shown above may be used if substantiated in accordance with ACI 318-89, Chapter 5.                                                                                                                                                                                                                   | Chapter 7.                                                                                                                                                                                                                   |                                       |
| ontractor's own risk and cost.                                                                                                                                                                              | COLLECTORS, DRAG TRUSSES BRACING, AND SHEAR WALL HOLD-DOWNS.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                     |                      |                                 | C.Fly-ash conforming to ASTM C618 Type F or C, may replace up to 20% of the cement content, provided                                                                                                                                                                                                                                    | B. Reinforcing steel hooks, bends, ties, splices and other reinforcement details shall be in accordance with ACI 315; Details and Detailing of Concrete Reinforcement.                                                       |                                       |
| DES.                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                     |                      |                                 | that the mix strength is substantiated by test data.  D. Cement: ASTM C150 Type I or II.                                                                                                                                                                                                                                                | C.Spacing limits for reinforcement shall be in conformance with ACI 318/350 Section 7.6.  D.Concrete protection for reinforcement. Unless noted elsewhere on the drawings, all reinforcing steel                             | 【片                                    |
| Iternational Building Code, IBC Current Edition. Iregon Structural Specialty Code - OSSC Current Edition.                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ST                  | EEL                  |                                 | E. Water: Clean & Potable.  F. Air entraining agent: ASTM C260. Except where noted non-air entrained.                                                                                                                                                                                                                                   | shall have the following concrete cover:                                                                                                                                                                                     | <u>S</u>                              |
| linimum Design Loads for Buildings and Other Structures, ASCE 7; current edition. merican Concrete Institute, ACI 318, Building Code Requirements for Structural Concrete; current                          | FABRICATION OF STRUCTURAL ELEMENTS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                     | Х                    |                                 | G.Aggregate: 0.75-inch Maximum aggregate per ASTM C33. Unless noted otherwise.                                                                                                                                                                                                                                                          | <ul><li>a. For non-liquid containing concrete structures; per ACI 318 Section 7.7:</li><li>b. Concrete cast against earth: 3.00 inch</li></ul>                                                                               |                                       |
| dition.  merican Concrete Institute, ACI 530, Building Code Requirements and Specifications for Masonry                                                                                                     | MATERIAL VERIFICATION OF ANCHOR BOLTS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                     | X                    |                                 | H.Mix Proportioning: ACI 211.1 and 350R.  3. CONCRETE ACCESSORIES:                                                                                                                                                                                                                                                                      | c. Concrete exposed to earth or weather; c.a. No. 5 or smaller bars: 1.50-inch                                                                                                                                               |                                       |
| tructures; current edition.                                                                                                                                                                                 | SINGLE PASS FILLET WELDS > 5/16"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | ×                   |                      |                                 | A.REINFORCING STEEL: Reinforcing steel shall conform to ASTM A615 Grade 60; #3 bars may be Grade 40. B. WELDED WIRE FABRIC: ASTM A185 or A497.                                                                                                                                                                                          | c.b. No. 6 or larger bars: 2.00-inch                                                                                                                                                                                         |                                       |
| merican Concrete Institute, ACI 301, Specifications for Structural Concrete. merican Institute of Steel Construction, AISC 13th Edition, Steel Construction Manual.                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | ^                   |                      |                                 | C. JOINTING MATERIALS: In accordance with ACI 350 Section 4.5.2. All jointing materials including water-stops, expansion joints and sealants, shall be resistant to chemical attack for the design life of the                                                                                                                          | d. Concrete not exposed to earth or weather; d.a. No. 11 or smaller bars: 0.75-inch                                                                                                                                          |                                       |
| merican Welding Society, AWS D1.1 current edition, Structural Welding Code. ational Design Specifications, NDS For Wood Construction; current edition.                                                      | WELDING IN THE SHOP OF AN APPROVED FABRICATOR SHALL NOT REQUIRE SPECIAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                     |                      |                                 | facility. Sealants shall conform to ASTM C 920 and Federal Specification TT-S-00277E and PVC                                                                                                                                                                                                                                            | d.b. No. 14 or larger bars: 1.50-inch e. Beams and columns;                                                                                                                                                                  | 一上                                    |
| IGN CRITERIA.                                                                                                                                                                                               | INSPECTION.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                     |                      |                                 | Water-stop shall conform to ASTM D 570, ASTM D 746, STM D 1149 and CRD-C572.  4. NON-SHRINK GROUT: All non-shrink grout noted on the plans shall be non-shrink, non-metallic grout with                                                                                                                                                 | e.a. Primary reinforcement, ties, stirrups or spirals: 1.50-inch                                                                                                                                                             | SC                                    |
| CCUPANCY OR USE; IBC/OSSC Table 1607.1:<br>VE LOADS:                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                     |                      |                                 | a minimum 28-day compressive strength of 7,000 psi.  5. CONCRETE QUALITY AND DETAILS.                                                                                                                                                                                                                                                   | E. Concrete blocks or plastic-coated bar chairs shall be provided for support of all slab reinforcing steel,<br>sufficient in number to prevent settlement or sagging, but in no case shall such support be continuous.      |                                       |
| a. Minimum Roof Snow Load: 25 psf (snow)<br>b. Ground Snow Load, Pg: 11 psf                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                     |                      |                                 | A. GENERAL. Concrete shall be proportioned to provide an average compressive strength, fc, as prescribed                                                                                                                                                                                                                                | Metal clips or supports shall not be placed in contact with the forms or the sub-grade.  F. Dowels and anchor bolts shall be wired or otherwise held in correct position prior to placing concrete.                          | E∠                                    |
| c. Unbalanced Snow per ASCE-7, Chapter 7                                                                                                                                                                    | *** ALL SPECIAL INSPECTIONS SHALL BE PERFORM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | IED BY ICRO C       | ERTIFIED INISDE      | CTORS                           | in ACI 318/350 Section 5.3.2 and shall satisfy the durability criteria of ACI 318/350 Chapter 4. B. CONCRETE PROPORTIONS.                                                                                                                                                                                                               | Care shall be taken to insure that dowels and anchor bolts remain plum after concrete is poured and                                                                                                                          | S                                     |
| EAD LOADS  a. Roof Dead Load: 22 psf                                                                                                                                                                        | The state of the s |                     |                      | -                               | <ul> <li>a. Concrete mix proportioning shall be in accordance with ACI 211.1; Standard Practice for Selecting         Proportions for Normal, Heavyweight, and Mass Concrete.     </li> </ul>                                                                                                                                           | vibrated. In no case shall dowels or anchor bolts be stabbed into freshly poured concrete!  G.Provide dowels in footings and at construction joints to match vertical reinforcing bar size and spacing,                      |                                       |
| a.a. Truss Top Chord: 15 psf<br>a.b. Truss Bottom Chord: 7 psf                                                                                                                                              | SUBMITTALS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | S & DEF             | FERRED S             | SUBMITTALS                      | b. Concrete mix proportioning for lightweight concrete shall be in accordance with ACI 211.2; Standard                                                                                                                                                                                                                                  | unless otherwise noted on the drawings.  H. Where drilled in anchors are to be post-installed into concrete surfaces take care to locate reinforcing                                                                         |                                       |
| /IND:<br>a. Basic Wind Speed: 110 mph (LRFD)                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                     |                      |                                 | Practice for Selecting Proportions for Lightweight Concrete.  C.CONCRETE MIX VERIFICATION: Concrete mix designs shall be verified by standard 28-day cylinder tests                                                                                                                                                                     | steel so that it will not interfere with the drilling operations. Move bars plus or minus 1 to 2 inches in order to avoid drilling conflicts.                                                                                |                                       |
| b. Site Exposure: C                                                                                                                                                                                         | SUBMITTALS.     A. Submit electronically product and material (                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | decian info         | nation to the Am     | chitect/Engineer for review for | per ASTM C39.  D.EVALUATION AND ACCEPTANCE OF CONCRETE. Concrete shall be tested in accordance with the                                                                                                                                                                                                                                 | I. All bar bends, hooks, splices and other reinforcing steel details shall conform to the requirements of ACI                                                                                                                |                                       |
| EISMIC: a. Earthquake Spectral Response Acceleration:                                                                                                                                                       | the following items:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | acagn million       | .acion to the Alt    | omegy Engineer for review for   | requirements of ACI 318/350 Section 5.6. E. MIXING & PLACING CONCRETE. Concrete shall be prepared, mixed, placed and consolidated in                                                                                                                                                                                                    | 315.  J. Unless otherwise noted on the plans all bars shall be spliced with a minimum Class A lap splice; lap                                                                                                                |                                       |
| b. Importance factor, le: 1.25<br>i. Short Period, Ss: 1.05                                                                                                                                                 | <ul><li>a. Concrete mix designs and admixtures.</li><li>b. Epoxy Anchors.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                     |                      |                                 | accordance with ACI 318/350 Sections 5.7 through 5.10 and as follows:                                                                                                                                                                                                                                                                   | splices of deformed bars and deformed wire in tension zones shall be Class B splices.  K. At all corners and wall intersections provide bent bars to match the horizontal reinforcing steel and in                           | 6                                     |
| ii. 1-Second, S1: 0.56<br>c. Soil Class: D                                                                                                                                                                  | 2. DEFERRED SUBMITTALS.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                     |                      |                                 | <ul><li>a. ACI 304; Guide for Measuring, Mixing, Transporting, and Placing Concrete.</li><li>b. ACI 309; Guide for Consolidation of Concrete.</li></ul>                                                                                                                                                                                 | accordance with the typical corner reinforcing details.  L. Chamfer all exposed corners and fillet entrant angles 3/4" unless otherwise noted on the drawings.                                                               | 6                                     |
| d. Seismic Use Group: III                                                                                                                                                                                   | A. The following items to be designed by other                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                     |                      | •                               | F. MINIMUM TIME BETWEEN ADJACENT PLACEMENTS:  a. Footings & Walls:                                                                                                                                                                                                                                                                      | M.Provide #4, 4'-0" long diagonal bars at each re-entrant corner in slabs; (1) bar for slabs with single                                                                                                                     |                                       |
| e. Seismic Design Category: D<br>IECHANICAL:                                                                                                                                                                | the Engineer of all design documentation are building official, for their review and approven.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | val, prior to fa    | brication and e      | rection. Deferred submittals    | i. Construction Joints: Five (5) days wet cure, or Seven (7) days dry cure.                                                                                                                                                                                                                                                             | layer reinforcing and (2) bars for slabs with double layer reinforcing.  8. CONCRETE FINISHING. All concrete surfaces shall be finished in accordance with ACI 301.                                                          |                                       |
| a. Refer to framing plans and mechanical equipment loads.                                                                                                                                                   | shall be accompanied by design drawings, so<br>signed by a Professional Engineer currently                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                     |                      |                                 | ii. Control Joints: Two (2) days.<br>iii. Expansion Joints: One (1) day.                                                                                                                                                                                                                                                                | A.Formed Concrete Surfaces. After removal of forms, give each formed surface one or more of the following finishes:                                                                                                          |                                       |
|                                                                                                                                                                                                             | a. Pre-engineered and shop fabricated w                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                     |                      |                                 | <ul><li>b. Floor Slabs:</li><li>i. Construction Joints: Seven (7) days wet cure, or Ten (10) days dry cure.</li></ul>                                                                                                                                                                                                                   | a. Non-liquid Retaining Concrete Structures:                                                                                                                                                                                 |                                       |
| SPECIAL INSPECTIONS                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                     |                      |                                 | ii. Control Joints: Four (4) days.                                                                                                                                                                                                                                                                                                      | <ul><li>a.a. Concrete footings and foundations not exposed to view. Provide an As-cast finish per Section</li><li>5.3.3.3a.</li></ul>                                                                                        |                                       |
|                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                     |                      |                                 | iii. Expansion Joints: One (1) day.  G.CONCRETE CURING. Concrete shall be maintained above 50-degrees F and in a moist condition for at                                                                                                                                                                                                 | a.b. Foundation wall and other surfaces below grade and not exposed to view. Provide a Rough-form finish per Section 5.3.3.a.                                                                                                |                                       |
| cial inspections per IBC Chapter 17 are required for the following items listed below.  cial inspection will be provided by a certified or qualified inspector and associated testing will be               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                     |                      |                                 | least 7 days after placement, except when cured in accordance with ACI 318 Section 5.11.3.  a. Curing of concrete shall be per the recommendations given in ACI 308; Guide to Curing Concrete.                                                                                                                                          | a.c. Interior, exterior and top surfaces exposed to view to 6-inches below grade. Provide a                                                                                                                                  |                                       |
| formed by an approved/accredited agency. Inspectors shall be International Code Council (ICC)                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | SHOP D              | RAWINGS              |                                 | H.COLD WEATHER REQUIREMENTS. Adequate equipment shall be provided for heating concrete materials and protecting concrete during freezing or near-freezing weather. The recommended procedures listed                                                                                                                                    | Smooth-form finish per Section 5.3.3.3.b. b. Special or Architectural Finishes: Refer to the Architectural Specifications for Special or Architectural                                                                       |                                       |
| ified or otherwise approved by the building official. special inspector shall observe the indicated work for compliance with the approved contract                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                     |                      |                                 | in ACI 306; Cold Weather Concreting shall be followed.                                                                                                                                                                                                                                                                                  | finish requirements.  B. Unformed Concrete Surfaces. Unformed concrete surfaces including the top surface of all concrete roof                                                                                               | 一一                                    |
| uments and submit records of inspection. All discrepancies will be brought to the immediate attention he contractor for correction.                                                                         | <ol> <li>Submit required shop drawings to the Archite items:</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | ect/Engineer f      | or review prior t    | το τaprication of the following | <ul> <li>a. Cold weather is defined as a period when, for more than 3 consecutive days, the following conditions         exist:</li> </ul>                                                                                                                                                                                              | and floor slabs shall be finished in accordance with ACI 301 Section 5.3.4 and ACI 302 Chapter 8.  a. Interior offices and other areas receiving only light foot traffic shall receive a Troweled finish per                 | TRAIGHTLINE                           |
| cial inspection and associated testing reports will be submitted to the architect, engineer, contractor, ding official, and owner within one week of inspection or within one week of test completion.      | A.Reinforcing steel for all concrete.<br>B. Structural Steel                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                     |                      |                                 | <ul><li>i. The average daily air temperature is less than 40-degrees F and</li><li>ii. The air temperature is not greater than 50-degrees F for more than one-half of any 24-hour period.</li></ul>                                                                                                                                     | Section 5.3.4.2c.                                                                                                                                                                                                            |                                       |
| he conclusion of construction, a final report documenting required special inspections and correction                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                     |                      |                                 | <ol> <li>HOT WEATHER REQUIREMENTS. During hot weather, proper attention shall be given to ingredients,<br/>production methods, handling, placing, protection, and curing to prevent excessive concrete</li> </ol>                                                                                                                       | <ul><li>b. Provide a Nonslip finish for exterior surfaces and where indicated on the plans.</li><li>c. Refer to the Architectural plans for finish requirements for floors to receive Architectural coverings.</li></ul>     | 一                                     |
| reviously noted discrepancies will be submitted to the parties identified in item "4" above. ndation and site preparation, including structural fills, shall be observed by the Geotechnical Engineer       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                     |                      |                                 | temperatures or water evaporation that could impair required strength or serviceability of the member                                                                                                                                                                                                                                   | <ul><li>C. Sawed contraction joints. Conform to ACI 301 Section 5.3.5.</li><li>9. CONCRETE FLOORS AND SLABS.</li></ul>                                                                                                       | 一                                     |
| ccordance with the geotechnical investigation for this project.                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                     |                      |                                 | or structure. The recommended procedures listed in ACI 305; Hot Weather Concreting shall be followed.                                                                                                                                                                                                                                   | A. Concrete floors and slabs shall be constructed in accordance with ACI 302; Concrete Floor and Slab Construction. Provide the following Class Concrete floor slabs in accordance with Table 2.1 unless                     | 1                                     |
|                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                     |                      |                                 | <ul> <li>a. Hot weather is any combination of the following conditions that tends to impair the quality of freshly<br/>mixed or hardened concrete by accelerating the rate of moisture loss and rate of cement hydration,</li> </ul>                                                                                                    | otherwise noted on the drawings:                                                                                                                                                                                             | ✓                                     |
|                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                     |                      |                                 | or otherwise causing detrimental results:                                                                                                                                                                                                                                                                                               | <ul> <li>a. Interior offices and other areas receiving only light foot traffic: Class 1 or 2 floor depending on final<br/>floor covering.</li> </ul>                                                                         | ~                                     |
|                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                     |                      |                                 | <ul><li>i. High ambient temperature.</li><li>ii. High concrete temperature.</li></ul>                                                                                                                                                                                                                                                   | b. Exterior structural floor slabs subject to foot and maintenance traffic loads: Class 4 or 5 floor.                                                                                                                        |                                       |
|                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                     |                      |                                 | iii. Low relative humidity. iv. Wind speed.                                                                                                                                                                                                                                                                                             | Provide a Nonslip finish to all walking surfaces.  B. Placing, Consolidating, and Finishing. Follow the recommendations given in Chapter 8.                                                                                  | S                                     |
|                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                     |                      |                                 | IV VVIIII SUEEU                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                              |                                       |
|                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                     |                      |                                 | v. Solar radiation.                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                              | Date:                                 |
|                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                     |                      |                                 | ·                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                              | Version                               |
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S1.0

GENERAL

STRUCTURAL NOTES

## LUMBER/MATERIALS/HARDWARE

WOOD SHEATHED DIAPHRAGM CONSTRUCTION REQUIREMENTS

- 1. LUMBER: Grading shall be to the Standard Grading Rules of the WWPA. Typical structural lumber shall be Number 2 Douglas-Fir/Larch or better. Members noted as wood beams, posts or columns shall be Number 1 Douglas-Fir/Larch or better. Studs for interior non-bearing walls may be stud grade lumber. Lumber to be left exposed, without other finish and lumber in contact with concrete shall be pressure treated.
- 2. TREATED LUMBER: Lumber, including wood sheathing, to be left exposed without other finish, located within 8" of finish grade, or in contact with concrete shall be pressure treated material. Contractor shall coordinate and verify that all steel items in contact with the treated material, including steel hangars, connectors and fasteners have a galvanized finish of sufficient thickness, or other type of protection, that is compatible with the specific treatment type selected.
- 3. EPOXY SET BOLTS & REBAR: Bolts and reinforcing steel bars noted on the plans as Epoxy or Construction Adhesive Set Bolts or Rebar shall be set in place utilizing the SIMPSON SET High Strength Epoxy system; size and embedment as noted on the drawings, installed per the manufacturers recommendations; or an approved equal.
- 4. BOLTS & LAG SCREWS FOR WOOD CONSTRUCTION: Conform to ANSI/ASME Standards B18.2.1-1981 and the National Design Specification for Wood Construction (NDS) 1991 Edition Part VIII for Bolts and Part IX for Screws.
- 5. WOOD SCREWS: Conform to ANSI/ASME Standards B18.6.1-1981 and the National Design Specification for Wood Construction (NDS) 1991 Edition Part XI
- Wood Construction (NDS) 1991 Edition Part XI.
  6. NAILS & SPIKES: Conform to Federal Specification FF-N-105B and the National Design Specification (NDS)
- 1991 Edition Part XII.
- 7. NAILING: Where not otherwise specified on the plans, nailing shall conform to IBC Table 2304.9.1, Fastening Schedule. All nails shall be common wire nails or pneumatically driven nails with an equivalent cross-section and penetration, unless noted otherwise.
- 8. LUMBER HARDWARE: Wood construction connectors shall be as manufactured by Simpson Strong-Tie Company; current catalog, or an approved equal. Hardware exposed to weather or view, in unheated portions of the structure, or as indicated on the drawings or in the specifications shall be hot-dipped galvanized with galvanized fasteners.
- 9. ROOF SHEATHING: All roof sheathing shall be 5/8" nominal, Exterior APA rated Sheathing {32/16} installed with ply-clips.

### PRE-ENGINEERED/FABRICATED WOOD TRUSSES

- 1. All pre-engineered/fabricated/manufactured wood trusses indicated on the drawings shall be metal press-plate connected wood trusses designed by a Professional Engineer registered in the State of Oregon per these notes and the specifications.
- A. Design wood trusses to the following deflection limits:
- a. Roof Dead + Live Load: Span/240 or 1 in maximum
- b. Roof Live Load only: Span/360 or 1/2-in maximumc. Differential deflection between adjacent trusses shall not exceed 1/4"
- 2. Shop drawings and design calculations signed and stamped by the Design Engineer shall be submitted to
- the Architect/Engineer for review prior to fabrication.

  3. All necessary bridging, blocking, pre-notched or beveled plates, hangers, etc. shall be detailed or specified
- on the shop drawings and furnished by the truss manufacturer.
  4. Truss manufacturer shall verify all setbacks, dimensions, overhangs, vertical controls and dimensions prior
- 5. Alteration of the truss layout shown on the plans may require supporting structural and foundation
- changes; therefore, prior approval by the Architect/Engineer is required for any proposed layout change.

  6. Trusses shall not be field modified without written authorization from the truss manufacturer's Engineer of
- Record.
  7. Trusses shall be handled, erected and braced as directed by the truss manufacturer and per the

## MECHANICAL OPENINGS

requirements of the Truss Plate Institute Manual HIB-91 or current edition.

are interrupted by the opening.

- 1. Mechanical openings are not shown on the structural drawings; refer to mechanical plans for size and
- 2. Openings through concrete or masonry walls greater than 6-inch square or 8-inch round shall be reinforced with a minimum of 1-#5 bar, each of four sides, extending 24" past the opening edge. In masonry walls the
- bars shall be placed in solid grouted cores.

  3. Openings through framed walls shall be solidly blocked on all four sides with full height studs and top and bottom blocking. Provide a header member across the opening per the typical details where bearing studs

- 1. WOOD SHEATHED ROOF DIAPHRAGMS:
- A. Unless otherwise noted on the drawings, orient roof sheathing with face-grain perpendicular to
- supporting members, with joints in adjacent rows staggered 1/2 panel length.

  Provide 2x4 flat blocking at unsupported panel edges in areas noted as "Blocke
- B. Provide 2x4 flat blocking at unsupported panel edges in areas noted as "Blocked Roof Diaphragm". C. Nail roof sheathing to all supporting members and blocking as follows:
- a. 10d nails @ 6-in. o.c. at all diaphragm boundaries.
- b. 10d nails @ 6-in. o.c. at all panel edges.
- c. 10d nails @ 12-in. o.c. to intermediate framing members.

### STEEL

- 1. STRUCTURAL STEEL MATERIALS
- A.PLATES, BARS, CHANNELS & ANGLES: ASTM A36, Fy=36 ksi
- B. SQUARE, RECTANGULAR HSS, STEEL TUBING: ASTM A5000 GRADE B, Fy = 46 ksi
- 2. WELDING OF STRUCTURAL STEEL

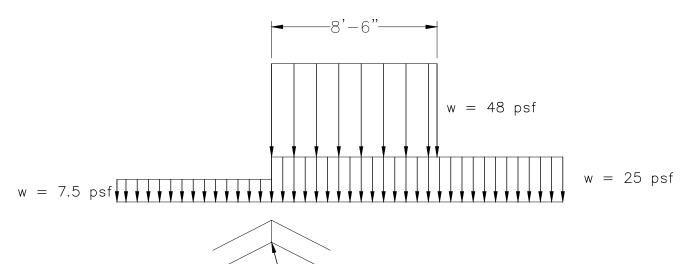
Procedure of the AWS.

- A. All welding shall conform to the requirements of the current AWS Structural Welding Code D1.1-02 A. Weld Metal: Fexx=70 ksi, typical unless otherwise noted or required by AWS.
- B. All welders shall be tested and certified by an independent testing agency.
- C. All welders shall be currently listed with WABO. (For Washington State Projects)

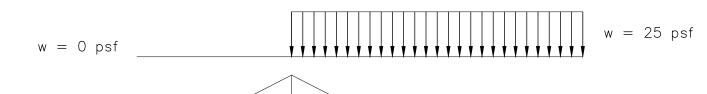
  D. Qualification of welders shall be in accordance with the Specifications for Standard Qualification
- E. Contractor shall submit a WPS for each Type 1 Moment Connection Weld to be performed on the job. The WPS shall follow the requirements of AWS D1.1 and specify at a minimum the following: Procedure identification, base metal identification, welding process, type of welding, position of welding, filler metal specifications, filler metal classification, number of passes, welding current, welding polarity, pre-heat and inter-pass temperatures, controlled cooling requirements, welding parameters such as electrode diameter, amperage range, voltage range, travel speed range, wire feed speed range, and electrical stick-out.

SNOW LOAD — BALANCED, DRIFTING, UNBALANCED

### UNBALANCED SNOW LOAD CONDITION - CASE 1



UNBALANCED SNOW LOAD CONDITION - CASE 2



OREGON

OREGON

OREGON

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EXPIRES: 06/30/2023

SEA SCHOOL DISTRICT
7: POWER PANEL ROOM & HALLWAY ADDITIO

SCon

A 1k

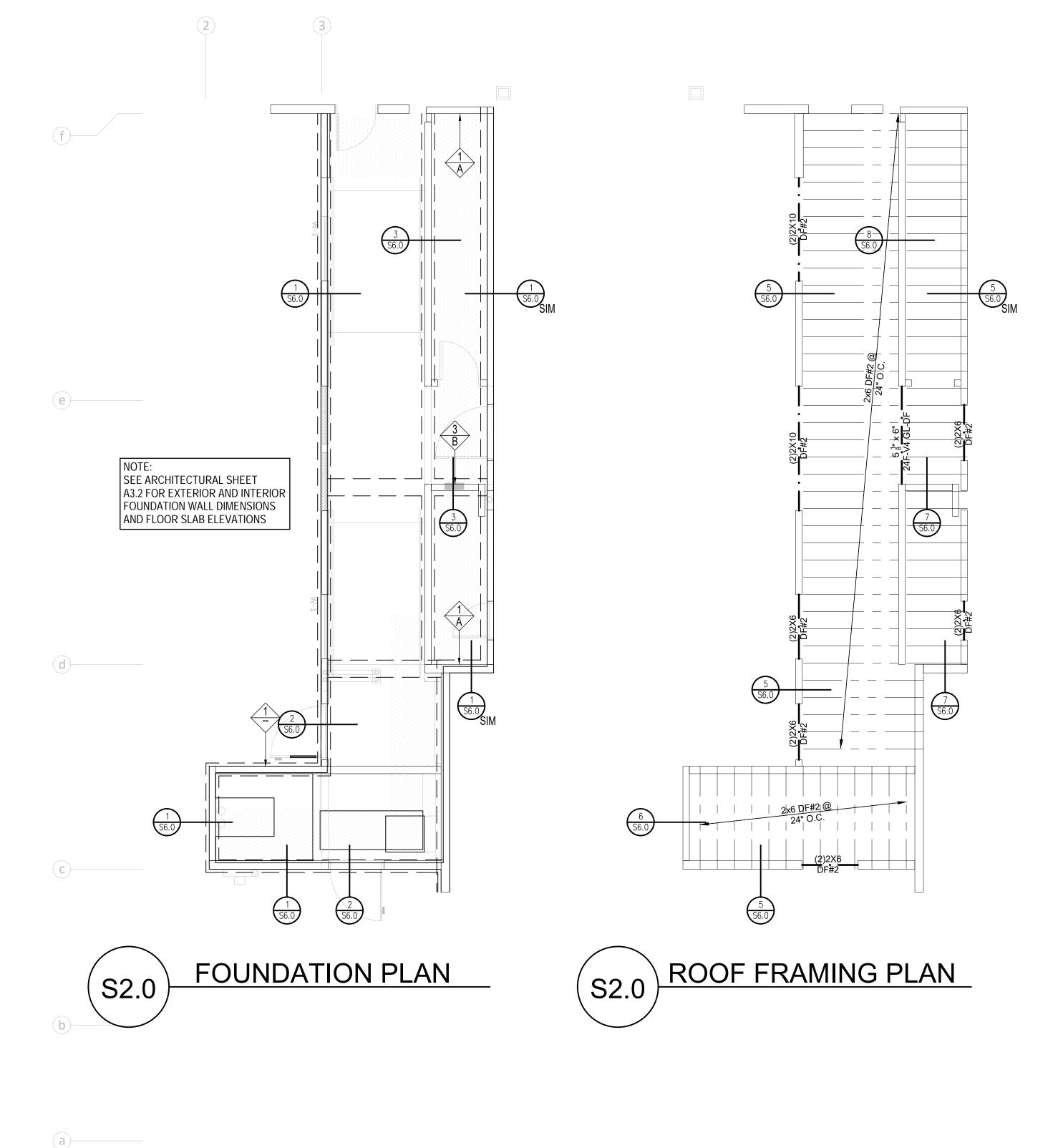
Date: 1-12-2022
Project: ALS-1821
Version History: V1.0
PHASES (PH):

ISSUE: 1-12-21
AGENCY & BID ISSUE

DRAWING NO.

GENERAL STRUCTURAL NOTE

STRAIGHTLINE
ARCHITECTURE
ARCHITECTURE
AS21 South Cloverdale Road.



|      | She                                      | ear Wall S | Schedule  | e         |            |          |                    |                                                                                  |                                                                                              |                                              |
|------|------------------------------------------|------------|-----------|-----------|------------|----------|--------------------|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|----------------------------------------------|
| TYPE | SHEATING                                 | APA RATING | NAIL SIZE | EDGE NAIL | FIELD NAIL | BLOCKING | SHEAR WALL<br>TYPE | SIL PLATE ANCHORAGE                                                              | FLOOR TO FLOOR ANCHORAGE<br>FOR MULTI-STORY CONDITION                                        | TRUSS BLK'G TO DBL<br>TOP PLATE              |
|      | 况。" CDX PLYWOOD OR<br>OSB ONE SIDE ONLY. | 24/16      | 8d        | 6" o.c.   | 12" o.c.   | BLOCKED  | SEGMENTED          | *SIMP. MAS MUD SILL<br>ANCHORS @ 32" O.C. OR<br>5/8" DIA.x10" A.B. @ 32"<br>O.C. | 16d NAILS @ 6" O.C.<br>FROM SIL TO RIM. SIMP.<br>LTP4 @ 24" O.C. FROM<br>BLK'G TO DBL TOP PL | SIMP. A35 @ 24" or<br>SIMP. LTP4's @ 24" O.C |
| 2    | ¼6" CDX PLYWOOD OR<br>OSB ONE SIDE ONLY. | 24/16      | 8d        | 4" o.c.   | 12" o.c.   | BLOCKED  | SEGMENTED          | SIMP. MAS MUD SILL<br>ANCHORS @ 24" O.C. OR<br>5/8" DIA.x10" A.B. @ 24"<br>O.C.  | 16d NAILS @ 4" O.C.<br>FROM SIL TO RIM. SIMP.<br>LTP4 @ 18" O.C. FROM<br>BLK'G TO DBL TOP PL | SIMP. A35 @ 18" or<br>SIMP. LTP4's @ 18" O.C |
| 3    | %6" CDX PLYWOOD OR<br>OSB ONE SIDE ONLY. | 24/16      | 8d        | 3" o.c.   | 12" o.c.   | BLOCKED  | SEGMENTED          | SIMP. MAS MUD SILL<br>ANCHORS @ 16" O.C. OR<br>5/8" DIA.x10" A.B. @ 16"<br>O.C.  | 16d NAILS @ 4" O.C.<br>FROM SIL TO RIM. SIMP.<br>LTP4 @ 12" O.C. FROM<br>BLK'G TO DBL TOP PL | SIMP. A35 @ 12" or<br>SIMP. LTP4's @ 12" O.C |

| NOTES: |  |
|--------|--|
|--------|--|

1. EXTERIOR WALLS NOT INDICATED/SHADED AS SHEAR WALLS ARE TO BE

- SHEATHED, NAILED AND ANCHORED PER SHEAR WALL TYPE 1 ABOVE. TYPICAL.
- 2. SEE HOLD DOWN SCHEDULE FOR RELATED INFORMATION. 3. BLOCK ALL PANEL EDGES, TYP. UNLESS OTHERWISE NOTED.
- 4. DO NOT USE WALL SHEATHING LESS THAN 24" WIDE AT SHEARWALLS. 5. SIMP. TITEN HD'S MAY BE SUBSTITUTED FOR CAST-IN-PLACE ANCHORS FOR
- RETROFIT CONDITIONS. MIN. 8" EMBED REQUIRED.

| *  | SIMP. 5%" x 8" TITEN H.D.'s MAY BE USED IN LIEU OF ANCHOR BOLTS |
|----|-----------------------------------------------------------------|
| ** | 3x SILL PLATE, 3x PANEL EDGE MEMBERS, 3x BLK'G REQUIRED         |

### HOLD DOWN SCHEDULE

|   | Туре                                                 | Required Post Size @ |              | Anchor Rod Attachment           | Alternate Anchor Rod Attachment                            | Alternate Threaded Rod Attachment                                         | Comments                                  |
|---|------------------------------------------------------|----------------------|--------------|---------------------------------|------------------------------------------------------------|---------------------------------------------------------------------------|-------------------------------------------|
|   |                                                      | 2x4 Wall             | 2x6 Wall     |                                 |                                                            |                                                                           |                                           |
| _ | NO HOLD DOWN REQ'D.                                  |                      |              |                                 |                                                            |                                                                           |                                           |
| А | SIMPSON HDU2 W/(6)<br>1/4"x21/2" SDS SCREWS POST     | (2) 2x4 MIN.         | (2) 2x6 MIN. | SIMP. SSTB20 w/12%"<br>EMBED.   | %"ø F1554 ALL THREAD. SECURE w/SIMP. SET EPOXY & 8" EMBED. | ⅓"ø F1554 ALL THREAD w/DBL<br>NUT, ¾"x2½"x2½" PLATE WASHER.<br>EMBED 20". | SEE SIMP. CATALOG<br>FOR INSTALL REQ'MTS. |
| В | SIMPSON HDU8 W/(20) 1/4"x21/2"<br>SDS SCREWS TO POST | 4x6 DF#2             | (3) 2x6 MIN. | SIMP. SSTB28 w/247/8"<br>EMBED. |                                                            | ½"ø F1554 ALL THREAD w/DBL<br>NUT, ¾"x2½"x2½" PLATE WASHER.<br>EMBED 24". | SEE SIMP. CATALOG<br>FOR INSTALL REQ'MTS. |

- NOTE: 1. SEE SHEAR WALL SCHEDULE FOR RELATED INFORMATION. 2. DOUBLE STUDS THAT HOLD DOWNS ATTACH TO MUST BE
- FULL HEIGHT WALL STUDS FROM SILL PLATE TO DBL. TOP PLATE.
- 3. WHERE HOLD DOWN ANCHOR EMBEDMENT IS DEEPER THAN FOOTING, THICKEN FOOTIN AS REQ'D TO PROVIDE 3" CLR TO BTM OF FTG AND EXTEND FTG 12" MIN. BEYOND I
- END OF ANCHOR. TYP. WHERE OCCURS

| ING<br>EA. |                      |
|------------|----------------------|
| EA.        | 1   1   1   24" MIN. |

### FOUNDATION PLAN NOTES

### VERIFY ALL DIMENSIONS WITH THE ARCHITECTURAL DRAWINGS.

- DETAILS ON THESE PLANS ARE INTENDED TO DEPICT THE GENERAL CONSTRUCTION METHODS FOR THIS STRUCTURE. CONNECTIONS, DETAILS AND CONDITIONS NOT SPECIFICALLY SHOWN THAT ARE SIMILAR TO THOSE THAT ARE SPECIFIED SHALL BE ASSUMED ONE AND THE SAME. IF QUESTIONS REGARDING THE APPLICATION OF DETAILS ARE ENCOUNTERED, NOTIFY THE ARCHITECT/ENGINEER FOR CLARIFICATION IN A TIMELY MANNER PRIOR TO CONSTRUCTION.
- FINISHED FLOOR ELEVATION=100'-0" IS THE REFERENCE DATUM FOR THESE STRUCTURAL DRAWINGS.
- INDICATES 2x WOOD STUD SHEAR WALL. SEE SHEAR WALL SCHEDULE FOR OTHER EXTERIOR WALL REQUIREMENTS
- INDICATES SHEAR WALL TYPE, SEE SHEAR WALL SCHEDULE ON THIS SHEET. INDICATES HOLD DOWN TYPE, SEE HOLD DOWN SCHEDULE ON THIS SHEET.
- TYPICAL HEADER SUPPORTS SHALL BE AS FOLLOWS:
- FOR ALL EXTERIOR OPENINGS < 4'-6": (1) 2x6 DF #2 TRIMMER STUD, TYPICAL U.N.O.
- (1) 2x6 DF #2 KING STUD, TYPICAL U.N.O. FOR ALL EXTERIOR OPENINGS > 4'-6":
- (2) 2x6 DF #2 TRIMMER STUD, TYPICAL U.N.O.
- (2) 2x6 DF #2 KING STUD, TYPICAL U.N.O.
- FOR ALL INTERIOR OPENINGS > 9'-0": (2) 2x6 DF #2 TRIMMER STUD, TYPICAL U.N.O.
- (1) 2x6 DF #2 KING STUD, TYPICAL U.N.O. FOR ALL INTERIOR OPENINGS < 9'-0":
  - (1) 2x6 DF #2 TRIMMER STUD, TYPICAL U.N.O.
- 'HD' INDICATES SHEARWALL HOLD DOWN LOCATION. SEE HOLD DOWN SCHEDULE FOR ADDN'L INFO.
- . ALL EXTERIOR AND LOAD BEARING WALL STUDS ARE 2x6 DF STUDS AT 16" O.C. SEE ARCH. FOR ADDN'L INFO.
- ROOF SHEATHING SHALL BE 19/32" SHEATHING (5/8 NOMINAL), APA INDEX 40/20. NAIL W/ 10D NAILS @ 6" O.C. ALONG SUPPORTED PANEL EDGES AND 12" O.C. ALONG INTERMEDIATE FRAMING. INSTALL PANELS W/ FACE GRAIN PERPENDICULAR TO JOIST FRAMING AND STAGGER PANEL END JOINTS.

(1) 2x6 DF #2 KING STUD, TYPICAL U.N.O.

- . ALL HEADER GRADES SHALL BE AS FOLLOWS UNLESS OTHERWISE NOTED:
  - 4X -> DF#2
  - 6X -> DF#1 GL -> 24Ë-V4 - UNO
  - GL -> 24F-V8 BALANCED CONDITION
  - $1\frac{1}{2}$ " VERSA-LAM -> 1.7 2400 DF  $3\frac{1}{2}$ " VERSA-LAM -> 1.7 - 2650 DF

| Slab<br>Thickness | Max Spacing | Max L:W RATIO | Plan Designation |
|-------------------|-------------|---------------|------------------|
| 4"                | 12'-0"      | 1.5 : 1       |                  |
| 5"                | 15'-0"      | 1.5 : 1       | J                |
| 6"                | 15'-0"      | 1.5 : 1       |                  |
| 7"                | 15'-0"      | 1.5 : 1       | C.J.             |
| 8"                | 15'-0"      | 1.5 : 1       |                  |



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ALS-1821 ersion History: V1.0 PHASES (PH):

SSUE: 1-12-2

**S2.0** 

AGENCY & BID ISSU

FDN/FRAMING PLAN

| TYPICAL LAP SPLICE LENGTHS IN INCHES, PER ACI 318 |       |               |               |               |               |  |  |  |
|---------------------------------------------------|-------|---------------|---------------|---------------|---------------|--|--|--|
| BAR                                               | LAP   | f'c=3,000 psi | f'c=4,000 psi | f'c=4,500 psi | f'c=5,000 psi |  |  |  |
| SIZE                                              | CLASS | TYP.          | TYP.          | TYP.          | TYP.          |  |  |  |
| #4                                                | В     | 43            | 37            | 35            | 33            |  |  |  |
| #5                                                | В     | 53            | 46            | 44            | 41            |  |  |  |
| #6                                                | В     | 64            | 55            | 53            | 50            |  |  |  |
| #7                                                | В     | 93            | 81            | 77            | 72            |  |  |  |
| #8                                                | В     | 106           | 92            | 88            | 83            |  |  |  |
| #9                                                | В     | 120           | 104           | 99            | 93            |  |  |  |

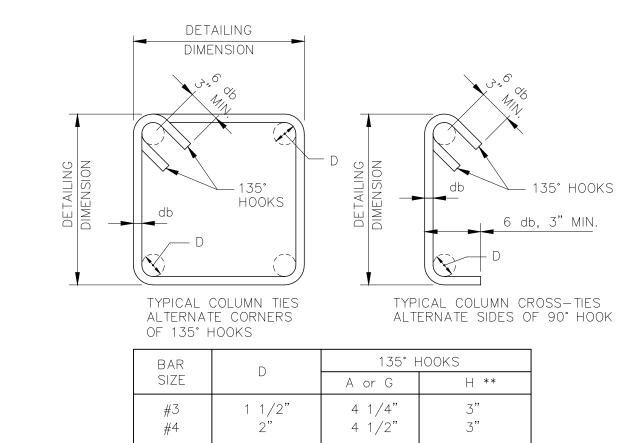
NOTES: 1. FOR GRADE 60 REINFORCING STEEL BARS. 2. FOR TOP BARS MULTIPLY LAP LENGTH LISTED BY 1.30 TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 12" OF CONCRETE CAST BELOW THE BARS.

HOOK DETAILING DETAILING DIMENSION DIMENSION 180° HOOKS 90° HOOKS

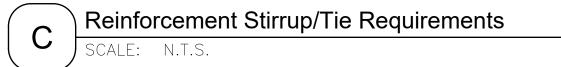
| 100 HUUr | \)                                                 | 90 П                                                                                              | UUN 3                                                                                                                                       |
|----------|----------------------------------------------------|---------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| 0        | 180° H                                             | HOOKS                                                                                             | 90° HOOKS                                                                                                                                   |
| D        | A or G                                             | J                                                                                                 | A or G                                                                                                                                      |
| 2 1/4"   | 5"                                                 | 3"                                                                                                | 6"                                                                                                                                          |
| 3"       | 6"                                                 | 4"                                                                                                | 8"                                                                                                                                          |
| 3 3/4"   | 7"                                                 | 5"                                                                                                | 10"                                                                                                                                         |
| 4 1/2"   | 8"                                                 | 6"                                                                                                | 1'-0"                                                                                                                                       |
| 5 1/4"   | 10"                                                | 7"                                                                                                | 1'-2"                                                                                                                                       |
| 6"       | 11"                                                | 8"                                                                                                | 1'-4"                                                                                                                                       |
| 9 1/2"   | 1'-3"                                              | 11 3/4"                                                                                           | 1'-7"                                                                                                                                       |
| 10 3/4"  | 1'-5"                                              | 1'-1 1/4"                                                                                         | 1'-10"                                                                                                                                      |
| 12"      | 1'-7"                                              | 1'-2 3/4"                                                                                         | 2'-0"                                                                                                                                       |
|          | D 2 1/4" 3" 3 3/4" 4 1/2" 5 1/4" 6" 9 1/2" 10 3/4" | D 180° H A or G  2 1/4" 5" 3" 6" 3 3/4" 7" 4 1/2" 8" 5 1/4" 10" 6" 11" 9 1/2" 1'-3" 10 3/4" 1'-5" | D 180° HOOKS A or G J  2 1/4" 5" 3" 3" 6" 4" 3 3/4" 7" 5" 4 1/2" 8" 6" 5 1/4" 10" 7" 6" 11" 8" 9 1/2" 1'-3" 11 3/4" 10 3/4" 1'-5" 1'-1 1/4" |

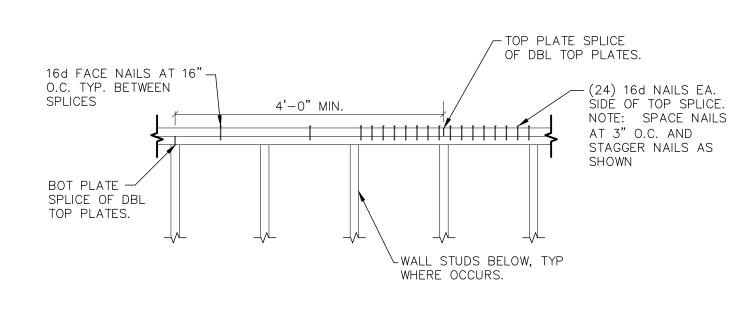
NOTES: db = NOMINAL BAR DIAMETER. D = FINISHED INSIDE BEND DIAMETER.MINIMUM D = 6 db FOR #3 TO #8 BARS MINIMUM D = 8 db FOR #9 TO #11 BARS MINIMUM D = 10 db FOR #14 AND #18 BARS

Reinforcement Hook Requirements

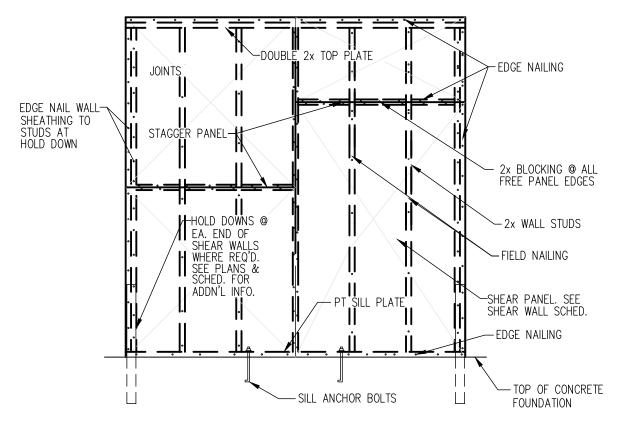


NOTES: db = NOMINAL BAR DIAMETER. D = FINISHED INSIDE BEND DIAMETER. TYPICAL MINIMUM END HOOKS, ALL GRADES OF STEEL. TYPICAL SQUARE OR RECTANGULAR TIE FOR COLUMNS OR PILASTERS



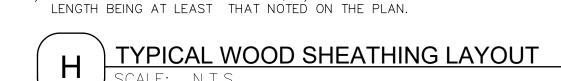


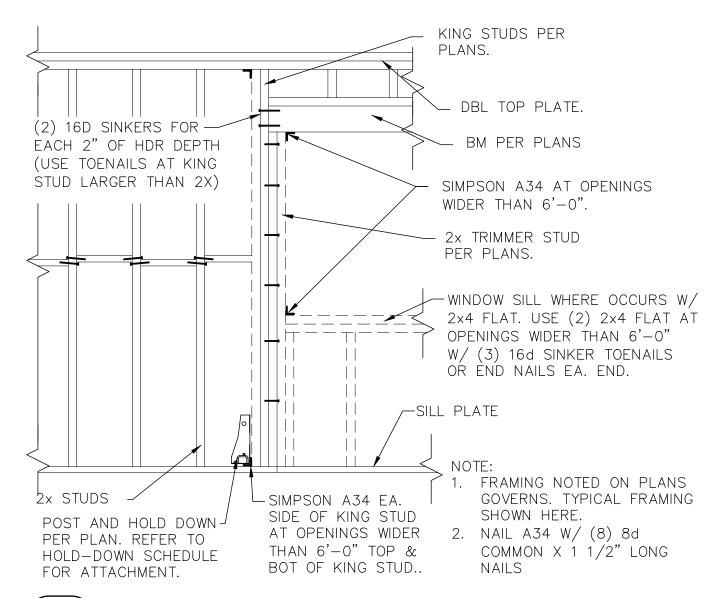
TYPICAL DBL TOP PL SPLICE

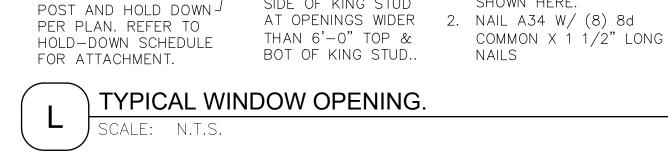


NOTES: 1) STAGGER JOINTS AS SHOWN

2) MIN. SIZE OF SHEET SHALL BE 24" X 24" UNLESS ALL EDGES ARE SUPPORTED WITH MIN 2x4 BLKG. OR FRAMING MEMBER. 3) NAILS SHALL BE DRIVEN TIGHT BUT SHALL NOT FRACTURE SURFACE OF SHEATHING. 4) TOLERANCE ON NAILING SHALL BE; 3/4" WITH THE AVERAGE NAIL SPACING OVER ANY 4 FOOT









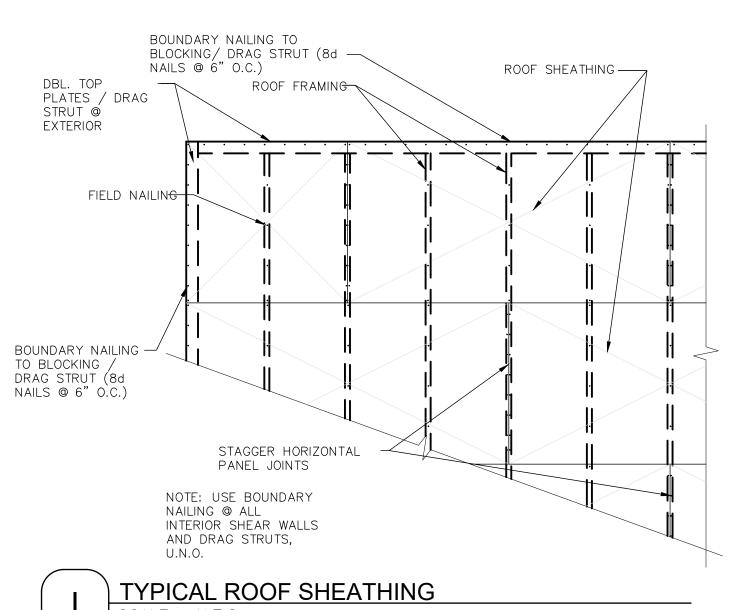
Reinforcment Lap Lengths

- PROVIDE VERTICAL BAR — STD. 90° HOOKS INSIDE HOOK TYPICAL LAP SPLICE LENGTH -TYPICAL LAP SPLICE ── OPTIONAL CONST. JT. - PROVIDE VERTICAL BAR INSIDE OF HOOK

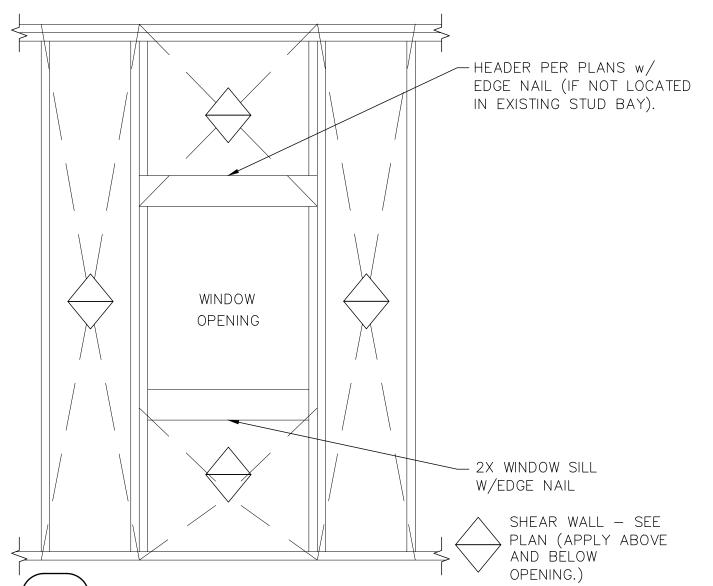
CORNER & INTERSECTION BARS TO MATCH SIZE & SPACING OF HORIZ. BARS. CENTER VERTICAL BARS IN WALL UNLESS NOTED OTHERWISE. 3. REFER TO OTHER DETAILS FOR REQUIRED BAR SIZE AND SPACING.



NOT USED



NOT USED



**NOT USED** 

Perforated Shear Wall

(PIRES: 06/30/2023

**ADDITIO** 

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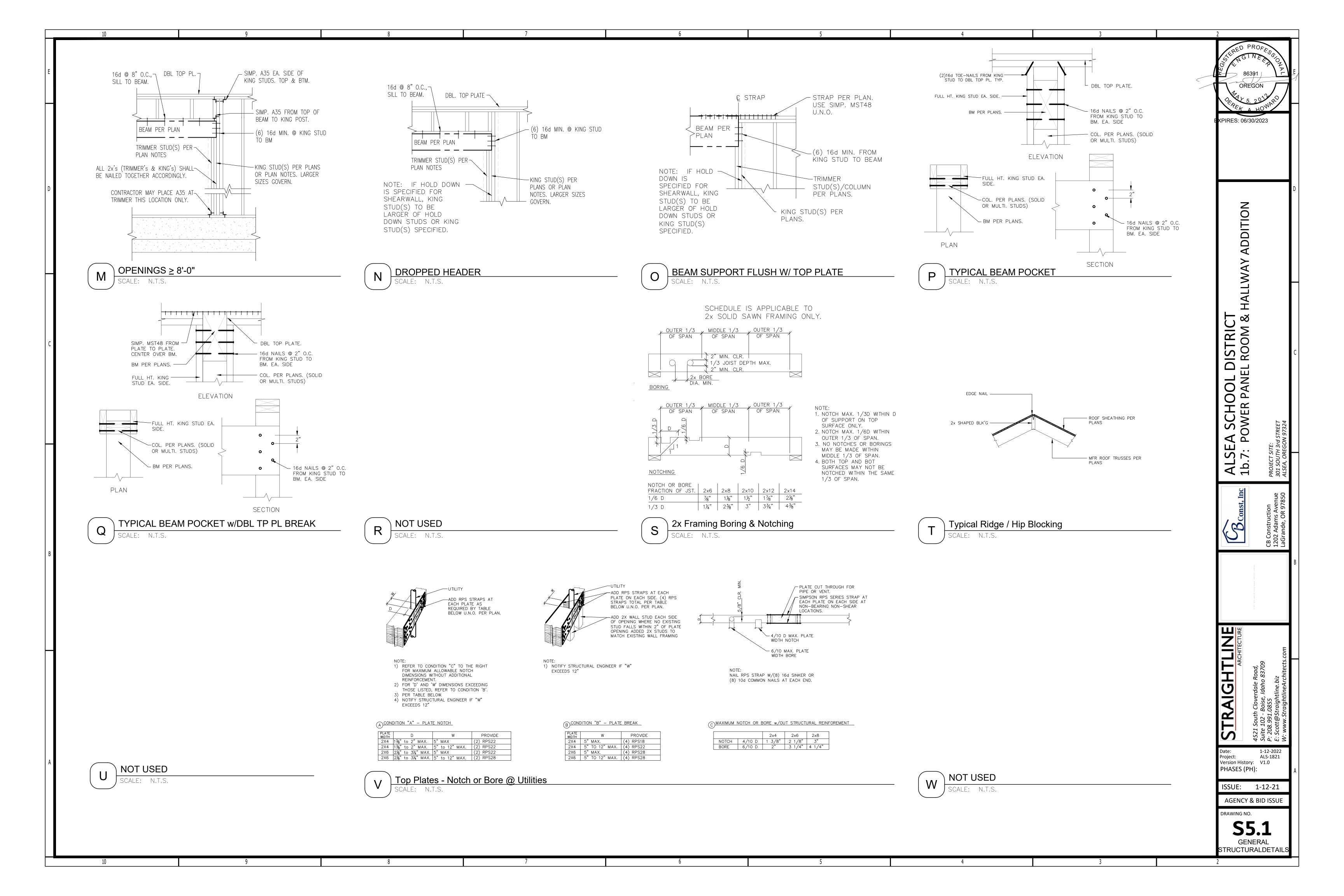
STRAIGHTLINE

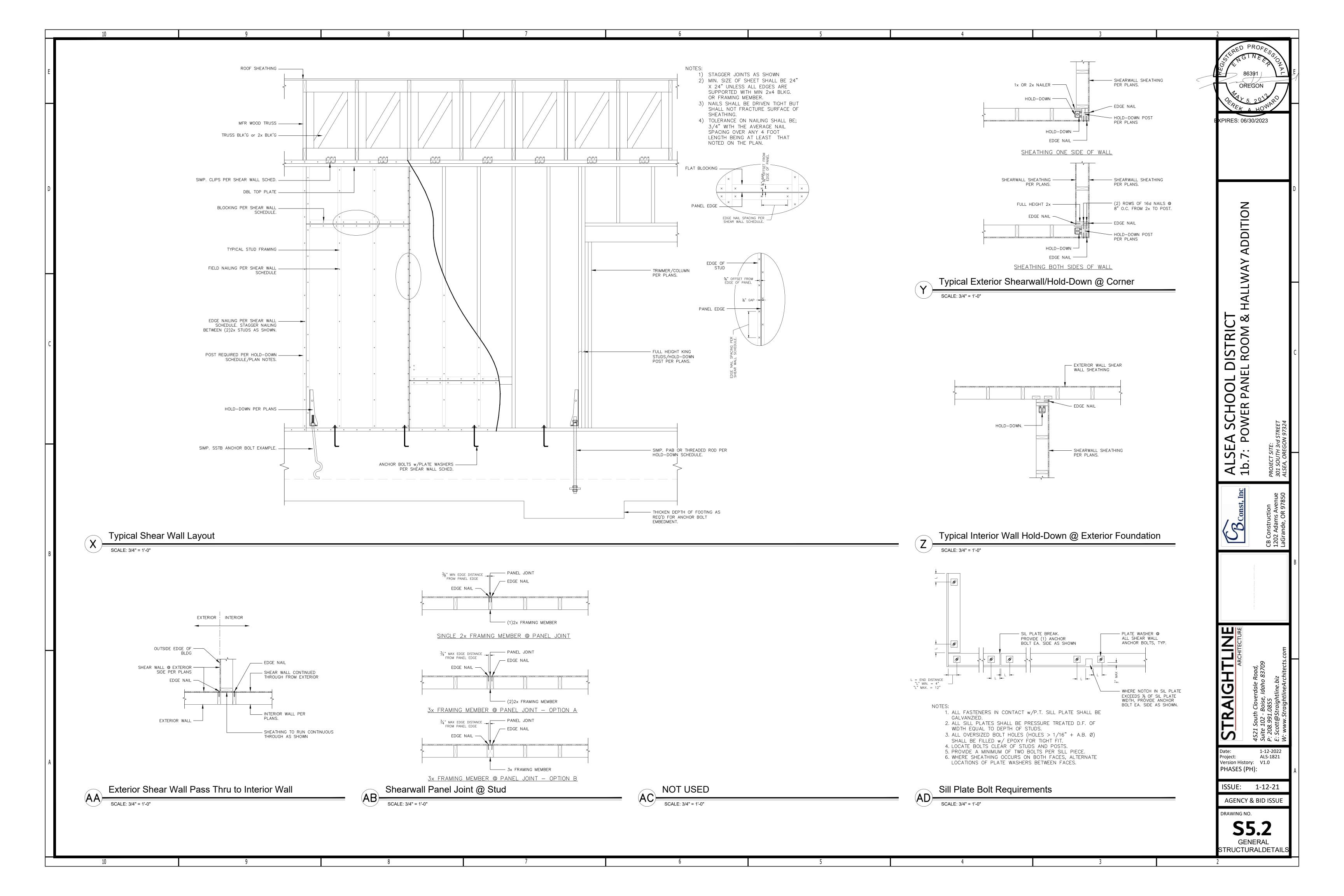
1-12-2022 ALS-1821 Project: Version History: V1.0 PHASES (PH):

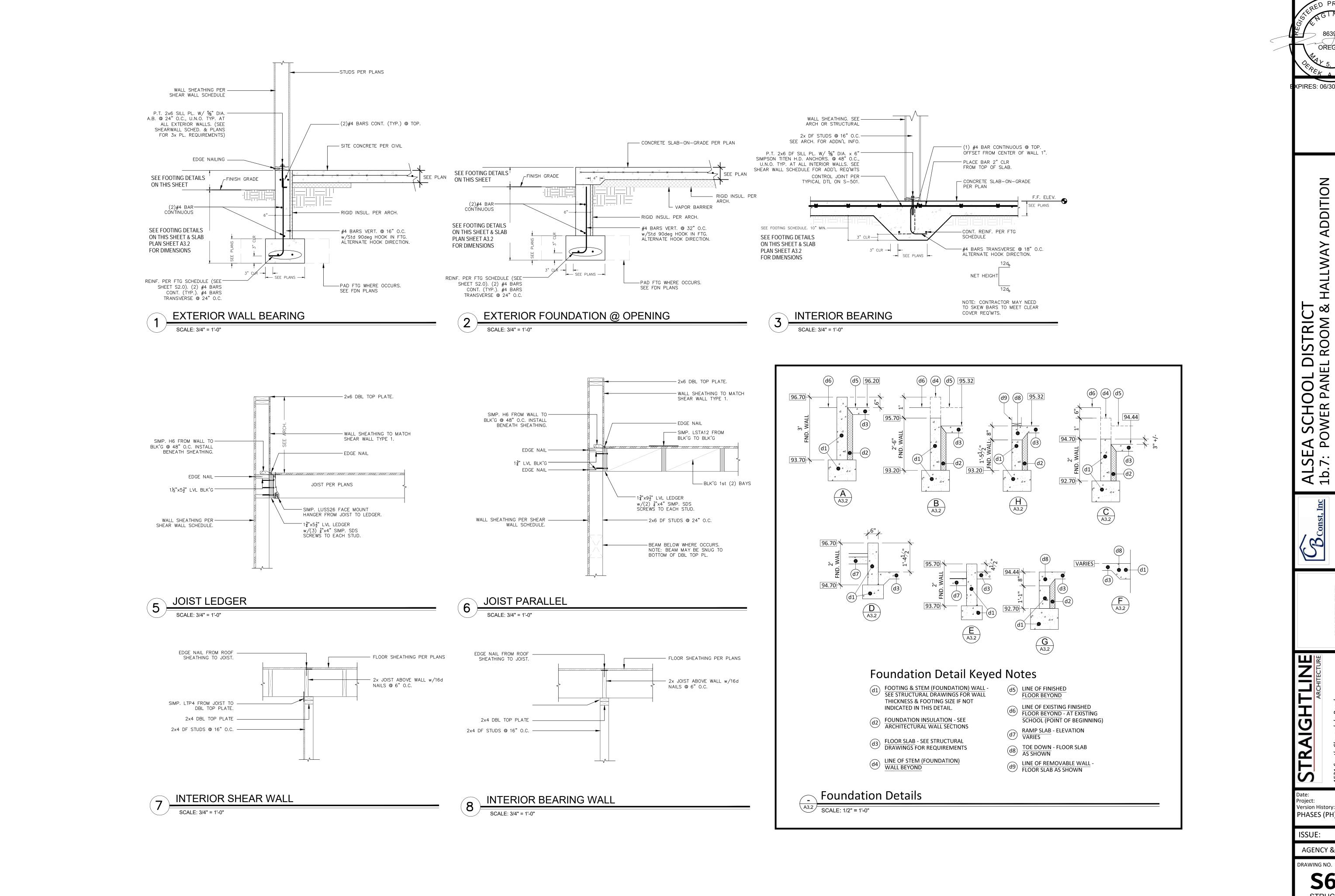
ISSUE: 1-12-21 **AGENCY & BID ISSUE** 

DRAWING NO.

**S5.0** GENERAL STRUCTURALDETAIL







XPIRES: 06/30/2023

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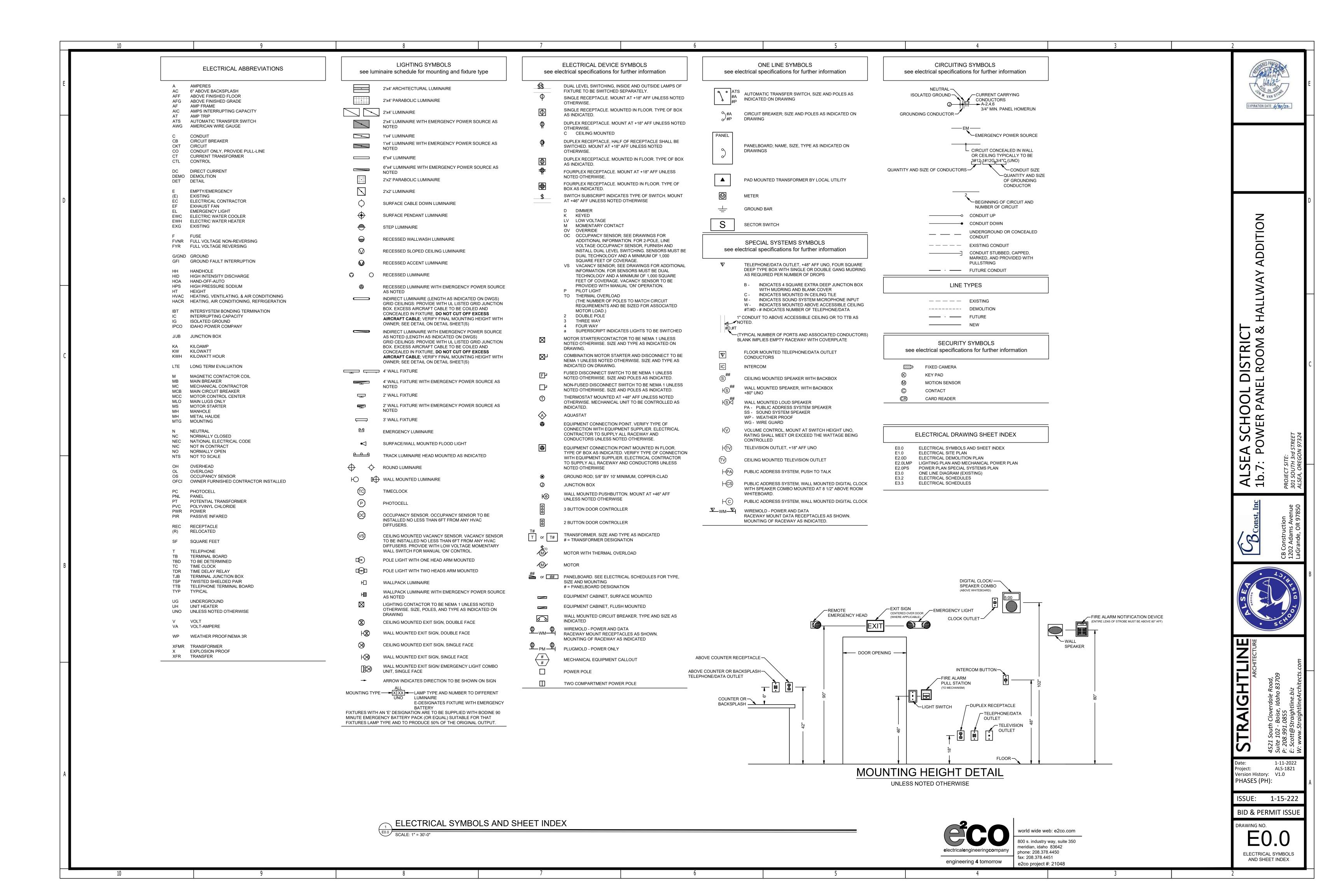
1-12-2022 ALS-1821 Project: ALS-182 Version History: V1.0 PHASES (PH):

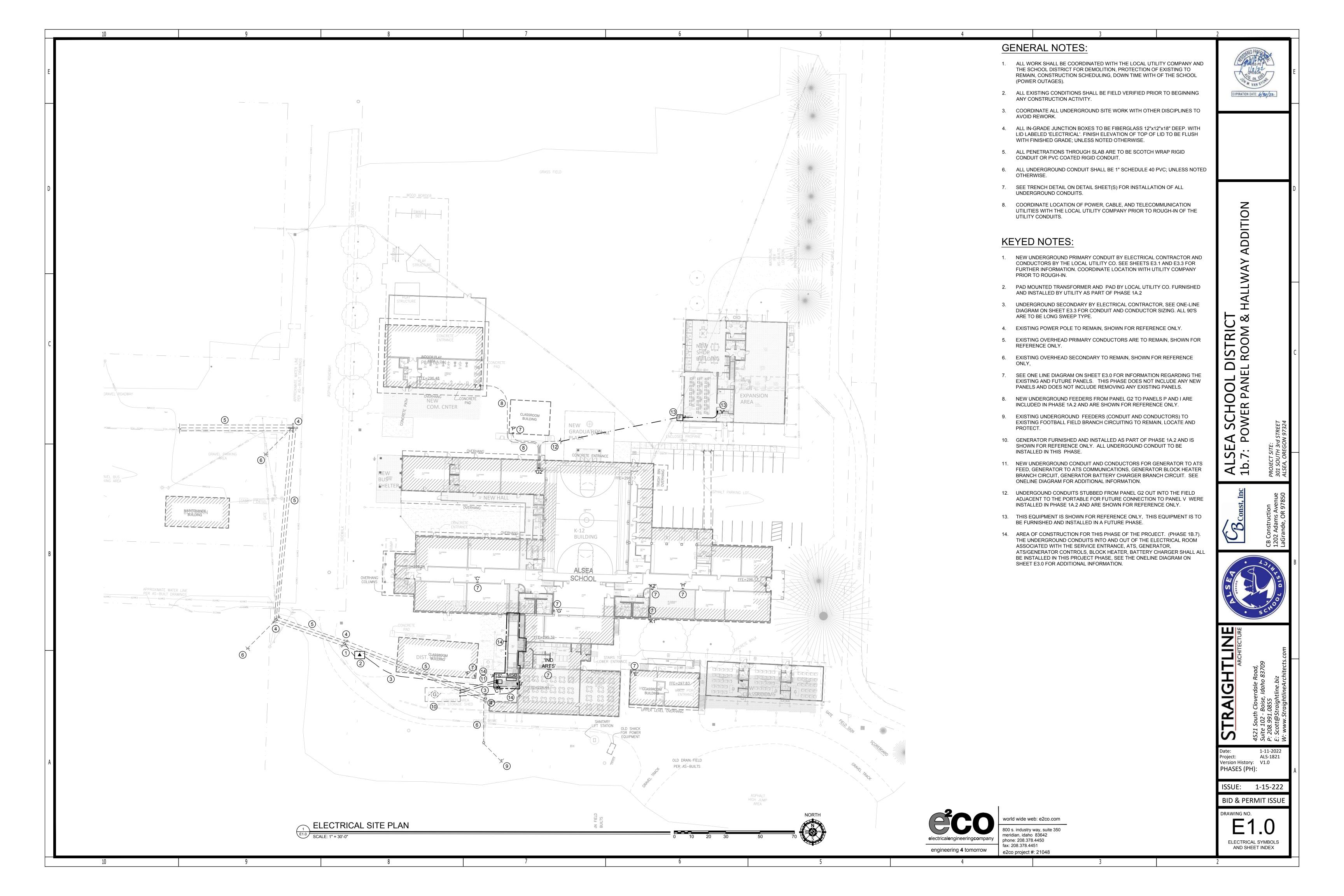
ISSUE: 1-12-21

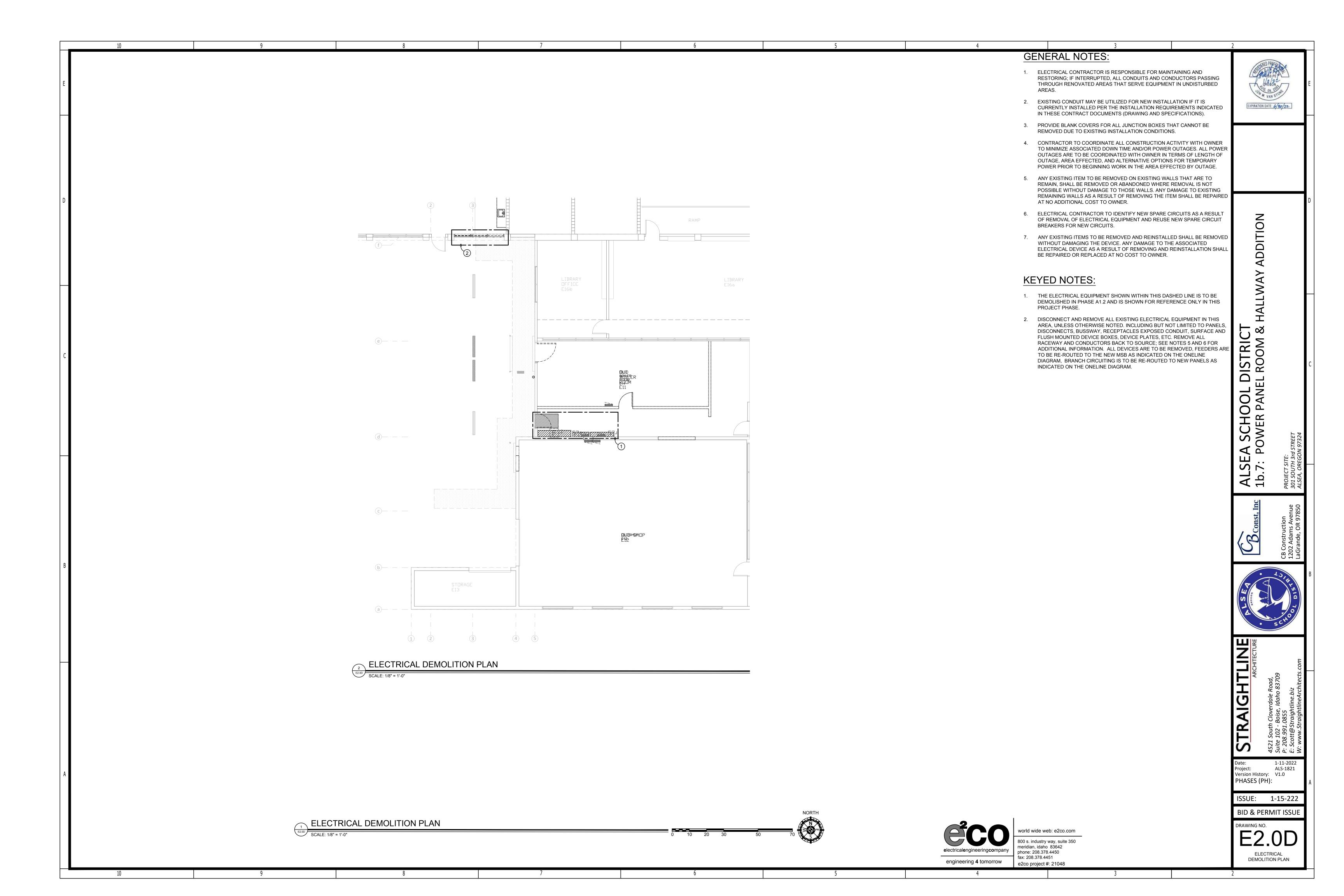
**AGENCY & BID ISSUE** 

DRAWING NO.

**S6.0** STRUCTURAL DETAILS







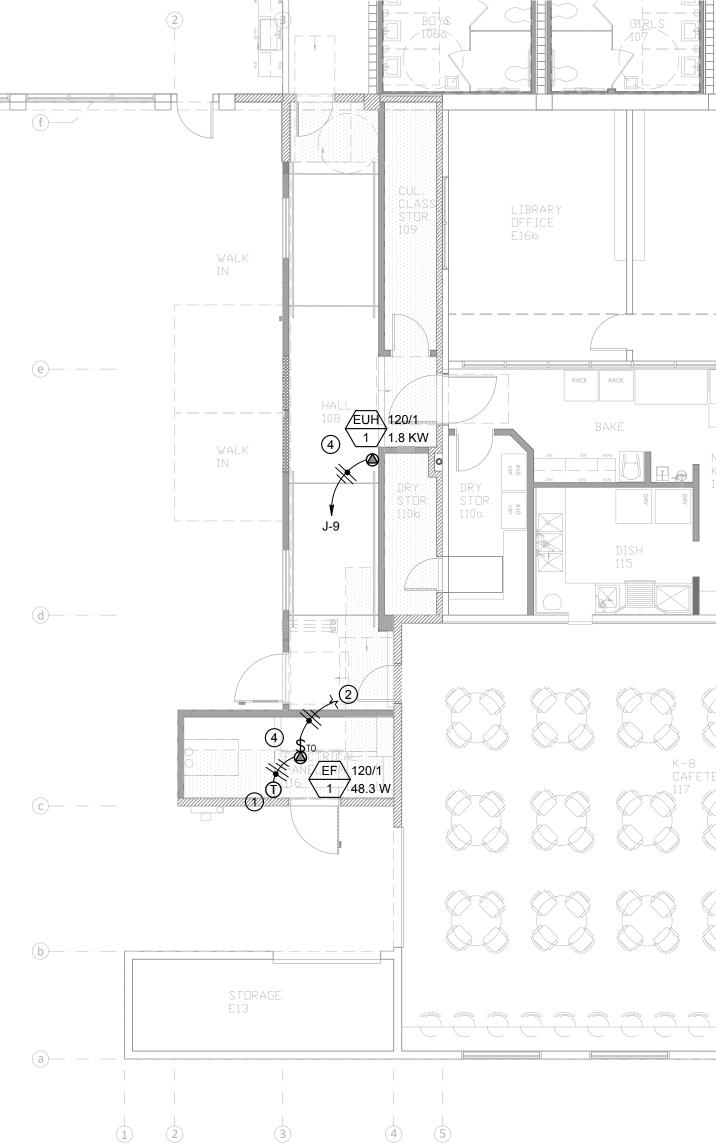
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LIGHTING PLAN

- ALL EMERGENCY FIXTURES SHALL BE PROVIDED WITH AN EMERGENCY BATTERY PACK AS SPECIFIED ON THE FIXTURE SCHEDULE AND THE EMERGENCY FIXTURE SHALL BE PROVIDED WITH AND UNSWITCHED LEG THAT SHALL BE CONNECTED TO THE EMERGENCY BATTERY PACK.
- 2. ALL OCCUPANCY SENSORS THAT ARE INTERCONNECTED WITH THE HVAC CONTROL SYSTEM SHALL BE SET TO A MINIMUM OF 30 MINUTE DELAY.
- ALL UNSWITCHED LEGS OF THE LIGHTING CIRCUIT SHALL BE ROUTED THROUGH OCCUPANCY SENSOR PRIOR TO ROUTING THROUGH SNAP SWITCHES TO PROVIDE UNSWITCHED POWER TO OCCUPANCY SENSOR FOR OCCUPANT INITIATION OF SENSOR.

### LIGHTING KEYED NOTES:

- CONNECT BATTERY PACK TO UNSWITCHED LEG OF LIGHTING CIRCUIT. CARRY UNSWITCHED LEG THROUGH RACEWAY SYSTEM TO EGRESS FIXTURE FOR CONTINUOUS POWER TO BATTERY.
- 2. FIXTURE TO OPERATE AS A NIGHT LIGHT, CONNECT TO UNSWITCHED LEG OF
- LINE VOLTAGE, DUAL-TECHNOLOGY CEILING MOUNTED OCCUPANCY SENSOR SMALL MOTION, SENSOR SWITCH NO. CMR-PDT-9-WH OR PRE-BID APPROVED EQUAL. OCCUPANCY SENSOR TO BE INSTALLED NO LESS THAN 6 FT FROM ANY HVAC DIFFUSERS. SEE WIRING DETAIL ON E3.0.
- 4. LOW-VOLTAGE, WALL MOUNTED, MANUAL ON, 3-WAY LIGHTING CONTROL. LIGHTING CONTROL TO BE SENSOR SWITCH NO. SPODM-SA-3X-WH OR APPROVED EQUAL.
- 5. ALL DEVICES INSTALLED RECESSED IN WALL OR CEILING OR CONDUIT PENETRATION SHALL HAVE FIRE PUTTY PADS INSTALLED TO MAINTAIN THE FIRE RATING OF THE WALL OR CEILING.



MECHANICAL POWER PLAN

### MECHANICAL GENERAL NOTES:

- 1. COORDINATE ALL WORK ON HVAC SYSTEMS WITH DIVISION 15.
- 2. ALL BREAKERS SUPPLYING MECHANICAL EQUIPMENT SHALL BE HACR RATED.
- THERMAL OVERLOAD PROTECTION IS ONLY REQUIRED WHERE EQUIPMENT PROVIDED BY MECHANICAL CONTRACTOR DOES NOT INCORPORATE INTEGRAL THERMAL PROTECTION OF MOTOR. DIVISION 16 TO COORDINATE REQUIREMENTS WITH DIVISION 15 FOR ACTUAL EQUIPMENT SUPPLIED.

## MECHANICAL KEYED NOTES:

- PRIOR TO ROUGH-IN DIVISION 16 TO COORDINATE LOCATION AND MOUNTING HEIGHTS OF T-STAT OR SENSOR WITH DIVISION 15. DIVISION 16 TO FURNISH AND INSTALL BACKBOX, 1/2" CONDUIT, AND CONDUCTORS UP TO ABOVE ACCESSIBLE CEILING; CONTINUE CONDUCTORS TO MECHANICAL EQUIPMENT INDICATED. DIVISION 15 TO FURNISH T-STAT OR SENSOR AND MAKE FINAL CONNECTIONS. COORDINATE SIZE AND NUMBER OF CONDUCTORS WITH DIVISION 15.
- CONNECT EXHAUST FAN TO UNSWITCHED LEG OF LIGHTING CIRCUIT IN ROOM EXHAUST FAN TO BE CONTROLLED VIA THERMOSTAT. THERMOSTAT TO BE FURNISHED AND INSTALLED BY MECHANICAL CONTRACTOR AND CONNECTED BY THE ELECTRICAL CONTRACTOR.
- 3. FURNISH AND INSTALL LOCKABLE BREAKER AT POSITION INDICATED.
- 4. ALL DEVICES INSTALLED RECESSED IN WALL OR CEILING OR CONDUIT PENETRATION SHALL HAVE FIRE PUTTY PADS INSTALLED TO MAINTAIN THE FIRE RATING OF THE WALL OR CEILING.

EXPIRATION DATE: 6/30/22

DDITION OOL DISTRICT

ALSI 1b.7:



STRAIGHTLINE

Date: 1-11-20 Project: ALS-18 Version History: V1.0 1-11-2022 ALS-1821 PHASES (PH):

ISSUE: 1-15-222

BID & PERMIT ISSUE DRAWING NO.

LIGHTING AND MECHANICAL POWER PLAN

world wide web: e2co.com

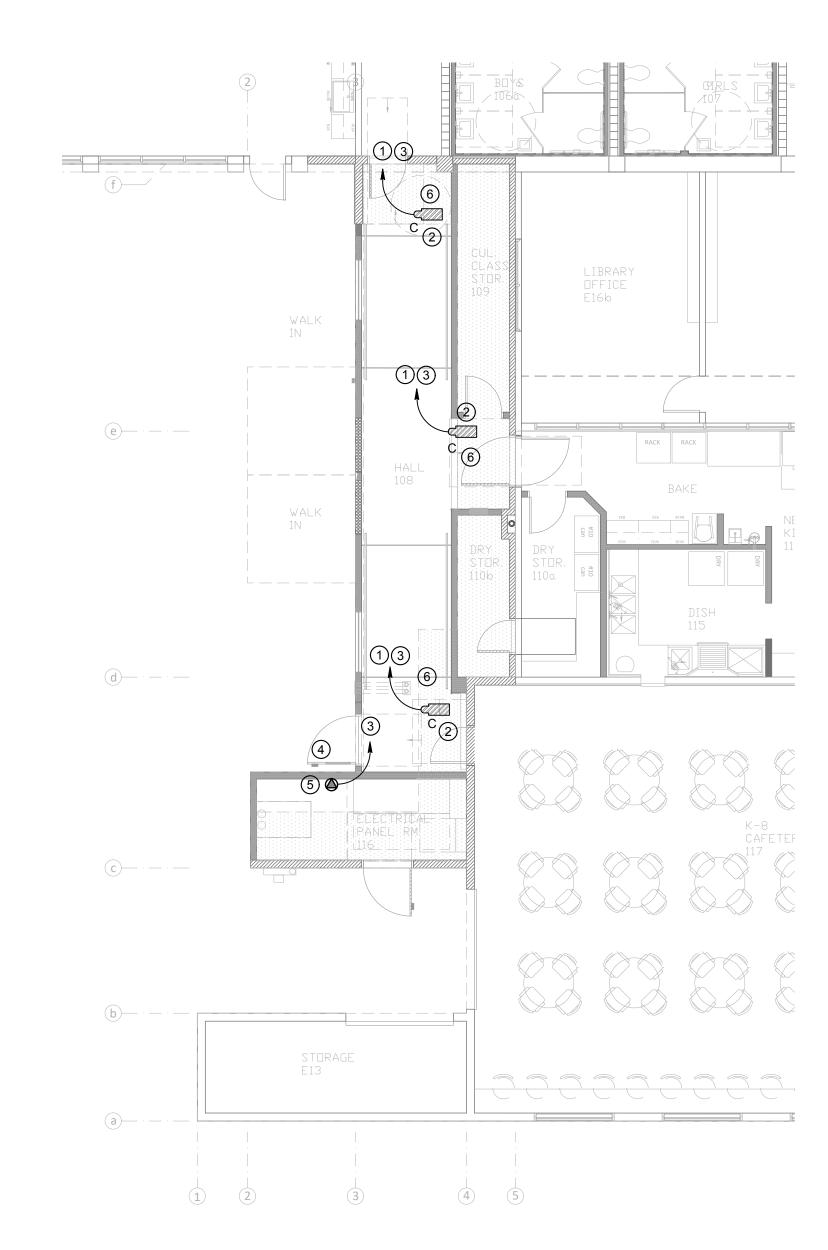
300 s. industry way, suite 350

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POWER PLAN

### **KEYED NOTES:**

1. ALL DEVICES INSTALLED RECESSED IN WALL OR CEILING OR CONDUIT PENETRATION SHALL HAVE FIRE PUTTY PADS INSTALLED TO MAINTAIN THE FIRE RATING OF THE WALL OR CEILING.



SPECIAL SYSTEMS PLAN

SCALE: 1/8" = 1'-0"

### **GENERAL NOTES:**

 ALL INFORMATION INDICATED AS FURNISHED AND INSTALLED BY DIVISION 16 BELOW IS REQUIRED TO MEET ALL SPECIFICATION REQUIREMENTS. ADDITIONAL ITEMS MAY BE REQUIRED FOR A COMPLETE INSTALLATION AS PER SPECIFICATIONS AND DRAWINGS.

### **KEYED NOTES:**

- 1. STUB 1" CONDUIT AND CONDUCTORS TO CEILING SPACE IN MAIN BUILDING FOR ROUTING OF SECURITY CCTV CONDUCTORS, TERMINATE CONDUIT WITH INSULATED THROAT BUSHING, CONTINUE CONDUCTORS TO CCTV HEAD END EQUIPMENT. SUPPORT CONDUCTORS ABOVE CEILING WITH HOOKS INSTALLED ON 36" CENTERS. COORDINATE WITH SCHOOL DISTRICT IT PERSONNEL PRIOR TO ROUGH-IN.
- 2. LOCATION OF OWNER FURNISHED CAMERA, CONTRACTOR TO INSTALL JUNCTION BOX AND RACEWAY TO SECURITY HEAD AND EQUIPMENT AS INDICATED IN KEYNOTE 1.
- 3. CONDUIT AND CAT6 CONDUCTOR TO SECURITY HEAD END.
- ACCESS CONTROL CARD READER SHALL BE DOOR MOUNTED WIFI TYPE. COORDINATE WITH ARCHITECTURAL DOOR HARDWARE SCHEDULE FOR ADDITIONAL INFORMATION.
- 5. SECURITY SYSTEM GATEWAY FOR WIRELESS ACCESS CONTROL. MOUNT HIGH ON WALL IN ACCESSIBLE LOCATION.
- 6. ALL DEVICES INSTALLED RECESSED IN WALL OR CEILING OR CONDUIT PENETRATION SHALL HAVE FIRE PUTTY PADS INSTALLED TO MAINTAIN THE FIRE RATING OF THE WALL OR CEILING.

NO

EXPIRATION DATE: 6/30/22

A SCHOOL DISTRICT POWER PANEL ROOM & HALLWAY ADDITION

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1b.7: POWER PAI

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Adams Avenue

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STRAIGHTLINE

1 South Cloverdale Road, e 102 - Boise, Idaho 83709 28.991.0855 cott@Straightline.biz

Date: 1-11-2022
Project: ALS-1821
Version History: V1.0
PHASES (PH):

ISSUE: 1-15-222

BID & PERMIT ISSUE

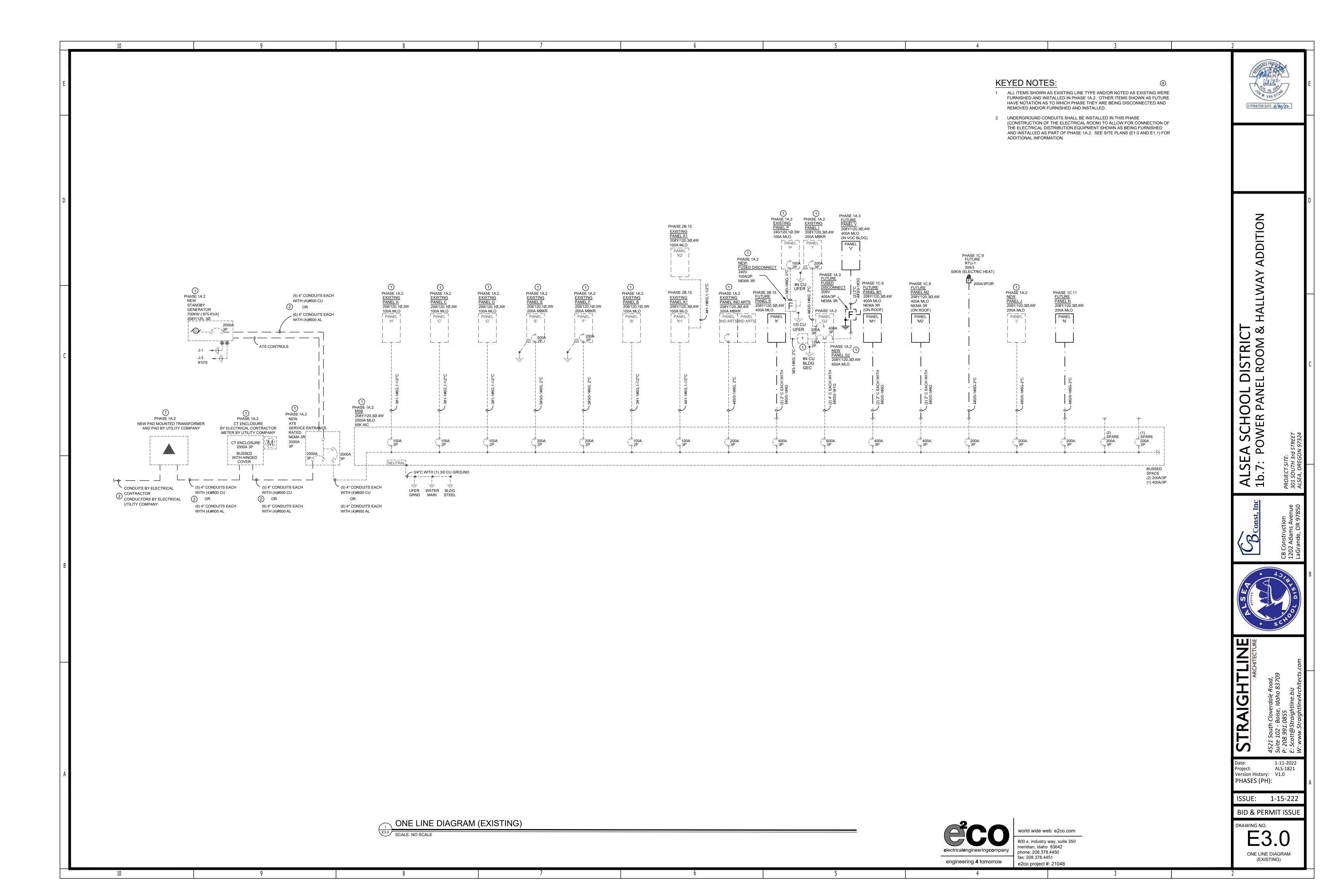
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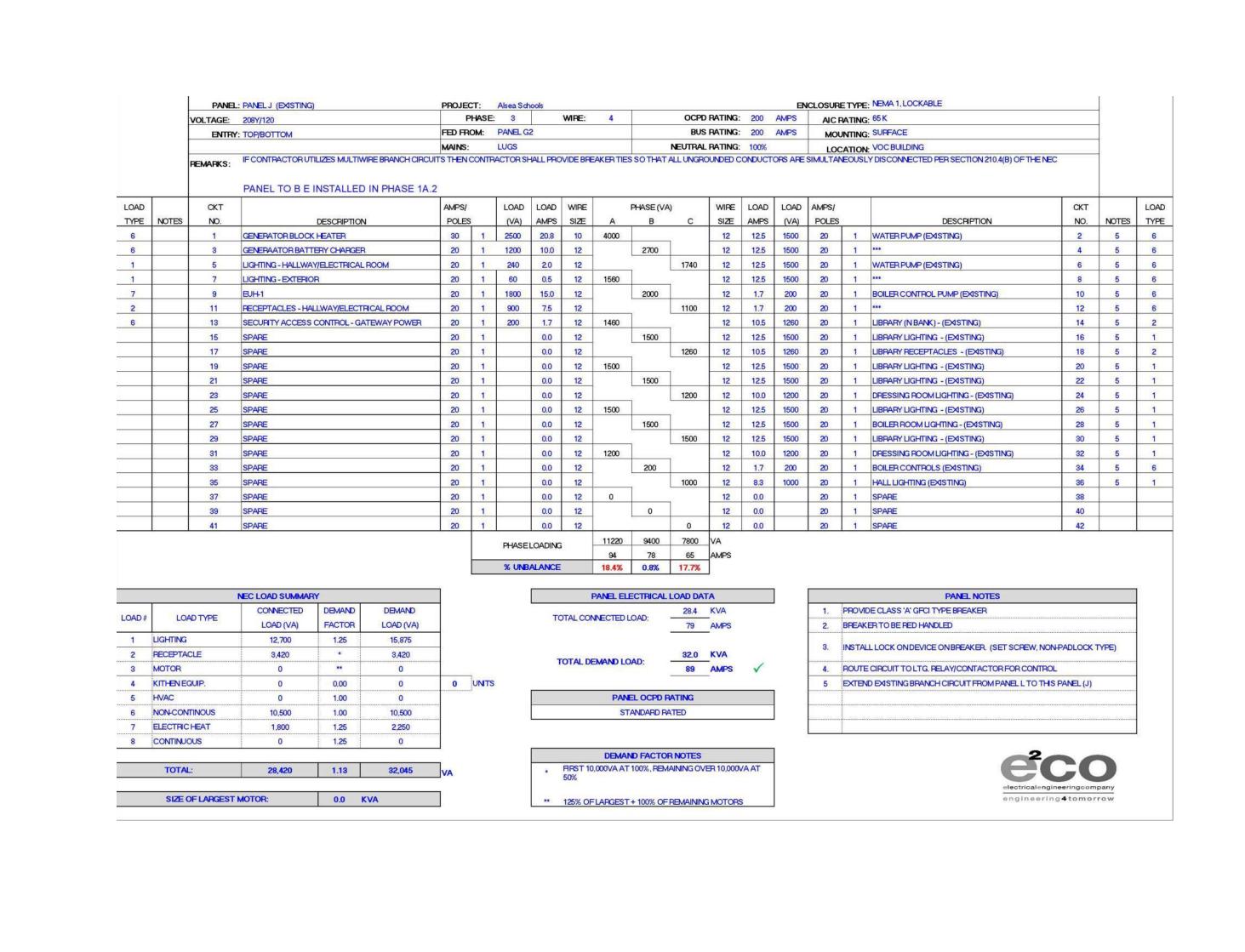
POWER AND SPECIAL SYSTEMS PLAN

POWER AND SPECIAL SYSTEMS PLAN

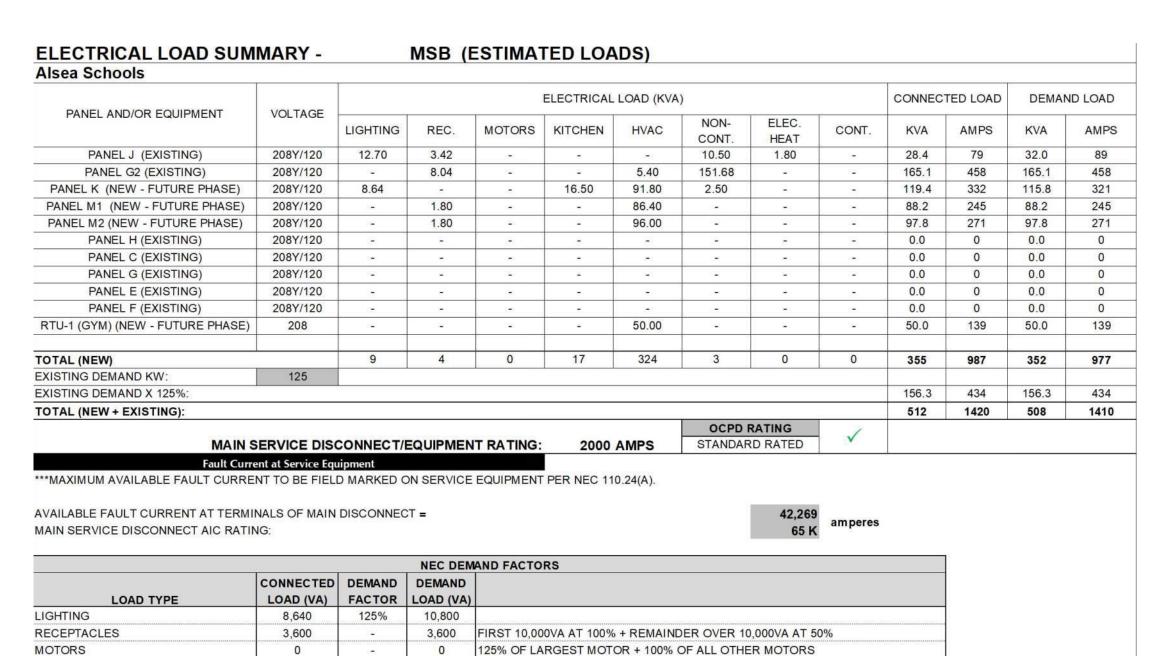
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\*\*\*SERIES RATED EQUIPMENT SHALL BE PROVIDED IN ACCORDANCE WITH N.E.C., AND SERIES RATED COMBINATIONS SHALL BE LISTED BY UNDERWRITERS LABORATORIES\*\*\*

10,725 | 1-2 UNITS=100%, 3 UNITS=90%, 4 UNITS=80%, 5 UNITS=70%, >=6 UNITS=65%

KITCHEN EQUIPMENT

NON-CONTINUOUS LOADS

HVAC EQUIPMENT

ELECTRIC HEAT

CONTINOUS LOADS

16,500

324,201

2,500

65%

100%

125%

125%

355,441 99% 351,826 VA

100% 324,201

2,500

4

>6 UNITS

ADDITION HALLWAY DISTRIC<sup>-</sup> EL ROOM 8 OL [ A SCHOO ALSI 1b.7:

EXPIRATION DATE: 6/30/22



Date: 1-11-2022 Project: ALS-1821 Version History: V1.0 PHASES (PH):

ISSUE: 1-15-222

BID & PERMIT ISSUE DRAWING NO.

ONE LINE DIAGRAM (NEW)

ONE LINE DIAGRAM (NEW)

engineering 4 tomorrow

800 s. industry way, suite 350

meridian, idaho 83642 phone: 208.378.4450

fax: 208.378.4451 e2co project #: 21048

| ALSE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | A SCHOOL DISTE                                                                                                                                                                                                                                                                                                                                                                                                                                                | RICT HALLWAY AND ELECTRICAL ROOM (PHASE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   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                                                                                                                                                             | LIGHTING FIXTURE SCHEDULE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 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| TYPE DESCRIPTION  LED STRIP, 4'FT  BL1E SURFACE MOUNTED AT CEILING                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | MANUFACTURER LITHONIA NO.                                                                                                                                                                                                                                                                                                                                                                                                                                     | CATALOG NUMBER  ZLID-LED-L48-SMR-3000LM-FST-MVOLT-40K-80CRI-E10WLCP-WH                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | MOUNTING<br>CEILING<br>SURFACE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | LAMPS<br>LED<br>30W                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | MVOLT REI                                                                                                                                                    | MARKS 1 |
| WITH LENS WITH EMERGENCY BATTERY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                               | LUON LED B ELA TO LOCALOR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 610 American State of Conference of Conferen | 4000K<br>4028 LUMENS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | an of the Children                                                                                                                                           |         |
| EXIT LIGHT, LED, RED STENCIL  THERMOPLASTIC HOUSING, SINGLE FACE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | LITHONIA NO.                                                                                                                                                                                                                                                                                                                                                                                                                                                  | LHQM-LED-R-ELA-T-Q-LO309-SD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               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                                                                                                                                                                                                                                                           | WITH<br>FIXTURE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 120/277                                                                                                                                                      | 1       |
| NI-CAD BATTERY WITH BUG EYE EGRESS LIGHTING                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                  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| SQUARE SURFACE MOUNTED, LED, SL1 ACRYLIC LENS - 14" SQUARE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | JUNO NO                                                                                                                                                                                                                                                                                                                                                                                                                                                       | JSFSQ-14IN-40K-90CRI-MVOLT-WH-EBX                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | CEILING<br>RECESSED                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        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                                                                                                                                                                                                                                                                                                          | 120/277                                                                                                                                                      | 1       |
| 80 CRI FIRE RATED JUNCTION BOX WITH FIXTURE SQUARE SURFACE MOUNTED, LED,                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | JUNO NO                                                                                                                                                                                                                                                                                                                                                                                                                                                       | FIRE RATED JUNCTION BOX INTERGRAL TO FIXTURE - IC1-JB-JSFSQ  JSFSQ-14IN-40K-90CRI-MVOLT-WH-EL-EBX                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         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                                                                                                                                                                                                                                                           | 4000k<br>1800 LUMENS<br>LED                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 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| SL1E ACRYLIC LENS - 14" SQUARE  80 CRI - WITH EMERGENCY BATTERY  FIRE RATED JUNCTION BOX WITH FIXTURE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 10.50                                                                                                                                                                                                                                                                                                                                                                                                                                                         | FIRE RATED JUNCTION BOX INTERGRAL TO FIXTURE - IC1-JB-JSFSQ                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               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                                                                                                                                                                                                                                                           | 20 W<br>4000k<br>1800 LUMENS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 120/277                                                                                                                                                      | 1,2     |
| WALL MOUNTED LED, EXTERIOR WALL PACK  WL1E WALL MOUNTED ABOVE DOOR - DOWN LIGHT ONLY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | LIGHTWAY                                                                                                                                                                                                                                                                                                                                                                                                                                                      | WPHW-7-LED-018B40-4-Z99-CEG-21(01)-UPD-BB10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | WALL<br>ABOVE DOOF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         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                                                                                                                                                                                                                                                                                                          | 120                                                                                                                                                          | 1,2     |
| CAST ALUMINUM HOUSING, ALUMINUM REFLECTOR<br>BRONZE COLORED WITH GLASS LENS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                  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                                                                                                                                                                                                                                                           | 4000 K<br>5025 LUMENS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                              | 10.7    |
| WITH EMERGENCY BATTERY REMARKS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                  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| OR PRE-BID APPROVED EQUAL     PROVIDE WITH BODINE EMERGENCY BATTERY PACK S                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | IITABLE FOR LAMP TYPE AND                                                                                                                                                                                                                                                                                                                                                                                                                                     | HALF THE LAMP LUMEN OUTPUT, PROVIDE WITH SELF TEST LIGHT AND PUSHBUTTON.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  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                                                                                                                                                                                                                                                                                                          |                                                                                                                                                              |         |
| 2. PACKAGING OF LIGHT FIXTURES WITH OTHER SYSTEM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | S IS NOT ALLOWED<br>G, THE PRICE FOR THAT ITEM                                                                                                                                                                                                                                                                                                                                                                                                                | TED ITEMS NOT APPROVED VIA ADDENDUM WILL BE REJECTED SHALL BE BROKEN OUT SEPERATELY WHEN SUBMITTING PRICING                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    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                                                                                                                                                                                                                                                                                                     |                                                                                                                                                              |         |
| man doors and overhead door (Pedestrian and vehicular entrances and exits)  (a) Wattage tradeoffs are only allowed between tradable areas/sur (b) A supplemental allowance equal to 400 watts may be applied to areas/surfaces.  Proposed Exterior Lighting Power  A  Fixture ID: Description / Lamp / Wattage Per Lamp  man doors and overhead door (Pedestrian and vehicular entra LED: WL1E: LED WALL PACK: LED Panel 33W:  Exterior Lighting PASSES: Design 91% better than code  Exterior Lighting Compliance  Statement  Compliance Statement: The proposed exterior lighting design represspecifications, and other calculations submitted with this permit applied to meet the 90.1 (2019) Standard requirements in COMchec | Designer/Contractor: Jon Van Stone electrical engineerin 800 S Industry Way, Meridian, Icaho 836: 2082846439 jvanstone@e2co.cor  B C D uantity Allowed Tradable Watts / Wattage  18 ft of 14 Yes  Total Tradable Watts (a) = Total Allowed Watts = tal Allowed Supplemental Watts (b) = ces. vard compliance of both non-tradable  B C D Total Tradable Watts (b) = ces. vard compliance of both non-tradable  Total Tradable Propose  Total Tradable Propose | Project Information  Energy Code: 90.1 (2019) State Project Title: | Compliand dard  dard  Floo (1)  Floo (1)  Framp / Ballast  Ex)  The presented in this dermit application. The preconce of the  | Designer/Contractor: Jon Van Stone electrical engineerin 800 S Industry Way, Meridian, Icaho 8364 2082846433 jvanstone@e2co.com  B C Allowed ft2) Watts / ft 600 0.72  Total Allowed Wa  B C Lamps/ # of Fixture Fixture  1 7 1 2  Total Proposed  locument is consistent with roposed interior lighting some merital some proposed interior lighting some proposed lighting some proposed lig | g company Suite 350 42  n  Allowed t2 Watts  432 atts = 432  D E Fixture (C X D) Watt.  20 140 30 60 d Watts = 200  th the building plans, systems have been |         |
| Project Title: Data filename:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Report date: 01/12/22 Page 2 of 6 Data filename:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          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                                                                                                                                                                                                                                                                                                          | Report date: 01/12/22<br>Page 1 of 6                                                                                                                         |         |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                  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1b.7: POWER PANEL ROOM & HALLWAY ADDITION



1-11-2022 ect: ALS-1821 sion History: V1.0 ASES (PH):

D & PERMIT ISSUE

AWING NO.

E3.2

ELECTRICAL SCHEDULES



| EXHAUST FAN SCHEDULE |                |     |      |                  |        |       |             |              |         |
|----------------------|----------------|-----|------|------------------|--------|-------|-------------|--------------|---------|
| NO.                  | AREA<br>SERVED | CFM | SPE  | WATTAGE<br>OR HP | CHAR   | SONES | ТҮРЕ        | MANUFACTURER | REMARKS |
| 1                    | RESTROOM       | 145 | 0.25 | 48.3 W           | 115/1Ø | 3     | CEILING FAN | 'COOK' GC    | 1, 2    |

1 FURNISH WITH INTEGRAL THERMOSTAT. FAN TO OPERATE ABOVE 80°F. PROVIDE MANUAL OVER RIDE SWITCH ON

2 PROVIDE BACK DRAFT DAMPER, BIRD SCREEN, HANGING ISOLATION KIT, ROOF CAP, AND PLUG DISCONNECT.



| ELECTRIC UNIT HEATER SCHEDULE |     |     |     |      |        |      |                 |              |         |
|-------------------------------|-----|-----|-----|------|--------|------|-----------------|--------------|---------|
|                               | NO. | CFM | kW  | МВН  | CHAR   | AMPS | MOUNT           | MANUFACTURER | REMARKS |
|                               | 1   | 100 | 1.8 | 6.14 | 120/1Ø | 15   | WALL - RECESSED | 'QMARK' CWH  | 1       |

1 FURNISH WITH INTEGRAL THERMOSTAT.

| LOAD CALCULATION SUMMARY FORM |           |      |                                      |                                      |  |  |  |
|-------------------------------|-----------|------|--------------------------------------|--------------------------------------|--|--|--|
| ZONE                          | EQUIPMENT | SQFT | COOLING LOAD WITH<br>FRESH AIR (MBH) | HEATING LOAD WITH<br>FRESH AIR (MBH) |  |  |  |
| 1                             | EUH-1     | 388  | -                                    | 5.6                                  |  |  |  |

- 1. MECHANICAL SYSTEMS HAVE BEEN DESIGNED UNDER THE 2019 ASHRAE 90.1.
- 2. LOAD CALCULATIONS HAVE BEEN PERFORMED IN ACCORDANCE WITH ASHRAE 183.
- 3. DUCT SEALING SHALL BE PERFORMED IN ACCORDANCE WITH PROJECT SPECIFICATIONS AND SMACNA HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE.
- 4. ALL THERMOSTATS CONTROLLING HVAC SYSTEMS SHALL BE 7-DAY, SOLID STATE, PROGRAMMABLE THERMOSTATS WITH NIGHT SETBACK CAPABILITIES AT A MINIMUM.



## **▲ COM***check* Software Version COMcheckWeb **Mechanical Compliance Certificate**

**Project Information** 

Project Type:

Data filename:

90.1 (2019) Standard Energy Code: Project Title: Alsea Power Panel Room & Hallway Addition Corvallis, Oregon Location: Climate Zone:

Construction Site: 301 S. 3rd st

Owner/Agent: Designer/Contractor: Tyson McFall Alsea, Oregon 97324 Value Engineering 119 E Calderwood Dr Meridian, Idaho 83642

**New Construction** 

Mechanical Systems List

Quantity System Type & Description

HVAC System (Unknown w/ PerimeterSystem): Heating: 1 each - Unit Heater, Electric, Capacity = 6 kBtu/h No minimum efficiency requirement applies Fan System: FAN SYSTEM 1 -- Compliance (Motor nameplate HP and fan efficiency method): Passes

FAN 1 Supply, Constant Volume, 100 CFM, 0.3 motor nameplate hp, 80.00 fan energy index , far exception: Single fan < 1 HP or < 0.89 kW

**Mechanical Compliance Statement** 

Compliance Statement: The proposed mechanical design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed mechanical systems have been designed to meet the 90.1 (2019) Standard requirements in COMcheck Version COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist. Tyson McFall - Mechanical Engineer

Rεport date: 11/17/21 Project Title: Alsea Power Panel Room & Hallway Addition

Page 1 of 9

## MECHANICAL LEGEND

**ABBREVIATIONS** 

DEGREES FAHRENHEIT

AIR CONDITIONING

ACOUSTIC LINING

BRAKE HORSEPOWER

**BRITISH THERMAL UNITS** 

CUBIC FEET PER MINUTE

CHARACTERISTICS

CONSTANT VOLUME

ENTERING DRY BULB

ENTERING WET BULB

DRY BULB

EXHAUST AIR

DECIBEL

EXISTING

**FULL LOAD AMPS** 

HORSEPOWER

INCH

KILOWATTS

MAXIMUM

MECHANICAL MANUFACTURER

NOISE CRITERIA NATURAL GAS

NUMBER

NOT TO SCALE

OUTSIDE AIR

RETURN AIR

SUPPLY AIR

SMOKE DAMPER

SQUARE FOOTAGE

SQUARE FEET

TEMPERATURE

TYPICAL

VERSUS

WET BULB

WATER COLUMN

WATER GAUGE

TOTAL STATIC PRESSURE

VENT THROUGH ROOF

VARIABLE FREQUENCY DRIVE

FIRE/SMOKE DAMPER

STATIC PRESSURE (INCHES W.G.)

SENSIBLE TO TOTAL COOLING RATIO

PROPYLENE GLYCOL

POINT OF CONNECTION

PRESSURE REDUCING VALVE

POUNDS PER SQUARE INCH

RETURN AIR TEMPERATURE

REFLECTED CEILING PLAN

REVOLUTIONS PER MINUTE

SUPPLY AIR TEMPERATURE

SEASONAL ENERGY EFFICIENCY RATING

STATIC PRESSURE EXTERNAL (INCHES W.G.)

POUNDS PER SQUARE INCH GAUGE

POUNDS

**GALLONS PER MINUTE** 

LEAVING AIR TEMPERATURE

LEAVING WATER TEMPERATURE

MINIMUM CIRCUIT AMPACITY

MOTOR OPERATED DAMPER; MODULATING

LEAVING WET BULB

BTUH'S IN THOUSANDS

**BUILDING MANAGEMENT SYSTEM** 

BRITISH THERMAL UNITS PER HOUR

COEFFICIENT OF PERFORMANCE

ENTERING AIR TEMPERATURE

**ENERGY EFFICIENCY RATIO** 

ENTERING WATER TEMPERATURE

EXTERNAL STATIC PRESSURE (INCHES W.G.)

HEATING, VENTILATION AND AIR CONDITIONING

HEATING SEASONAL PERFORMANCE FACTOR

ALTERNATIVE

AIR CHANGES PER HOUR

ACOUSTICAL CEILING TILE

DESCRIPTION

AMERICAN SOCIETY OF MECHANICAL ENGINEERS

SYMBOL

ACH

ACT

ALT

ASME

BTUH

CHAR

COP

CV

DB

DBA

EER

EWT

(E)

FLA

FT

HVAC

HSPF

IN

LWB

LWT MAX

MECH

MFR

MOD

NO.

NTS

OA

RA

RAT

RCP

RPM

SA

SAT

SD

SEER

SF

F/SD

SP SQFT

S/T TEMP

TSP

TYP

VS

WB

W.G.

SUPPLY DUCT RISE/DROP SIDEWALL SUPPLY GRILLE RETURN RISE/DROP SIDEWALL RETURN GRILLE

XxX Ø SQUARE TO ROUND DUCT TRANSITION

EXHAUST RISE/DROP

**EXHAUST GRILLE** BACKDRAFT DAMPER

DOUBLE WALL TURNING VANES

FLEX DUCT HIDDEN LINE

1,2,3, AND 4 WAY DIFFUSERS, RESPECTIVELY

**VOLUME DAMPER** \_\_\_\_ SPIN IN FITTING DEMOLISHED DUCT CAP CEILING EXHAUST FAN

CABINET (INLINE) EXHAUST FAN

①<sub>EQUIP</sub># THERMOSTAT RETURN GRILLE

# HOUR RATED FIRE DAMPER F #-HR

BALL VALVE GAS PRESSURE REGULATOR

POINT OF CONNECTION POINT OF DEMOLITION

## MECHANICAL SHEET INDEX

# SHEET NAME M0.0 | HVAC COVER SHEET M1.1 | HVAC PLAN M2.1 HVAC SPECS

## **GENERAL PROJECT NOTES**

- CONTRACTOR TO VERIFY EQUIPMENT LOCATIONS, DIMENSIONS, AND COORDINATE ALL WORK WITH OTHER TRADES PRIOR TO THE START OF CONSTRUCTION.
- 2. ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED.
- 3. ALL WORK IS TO BE IN COMPLIANCE WITH CURRENT CODES AS ADOPTED AND AMENDED BY THE LOCAL JURISDICTION. PROVIDE ALL LABOR AND MATERIAL AS NECESSARY TO MEET THE CURRENT ADOPTED CODES.
- RECORD DRAWINGS OF THE INSTALLATION ARE REQUIRED TO BE PROVIDED BY THE CONTRACTOR WITHIN 30 DAYS OF SUBSTANTIAL COMPLETION. REDLINES OF AS-BUILT PLANS AND SPECIFICATIONS ARE ACCEPTABLE.
- PROVIDE OPERATION AND MAINTENANCE MANUALS WITHIN 30 DAYS OF SUBSTANTIAL COMPLETION OF ALL EQUIPMENT INSTALLED.
- INSTALL ALL EQUIPMENT, PIPING, AND DUCTWORK SEISMICALLY BRACED PER CODE, MANUFACTURER RECOMMENDATIONS, OR STANDARD CONSTRUCTION PRACTICES, WHICHEVER IS MORE STRINGENT.
- 7. PROVIDE TRAP PRIMERS FOR ALL FLOOR DRAINS AND FLOOR SINKS.
- 8. INSTALL ALL WATER LINES ON EXTERIOR WALLS, INCLUDING LINES IN ATTIC OR ROOF, ON WARM SIDE (INSIDE) OF INSULATION.

OL ANE

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1

98 30 AL.

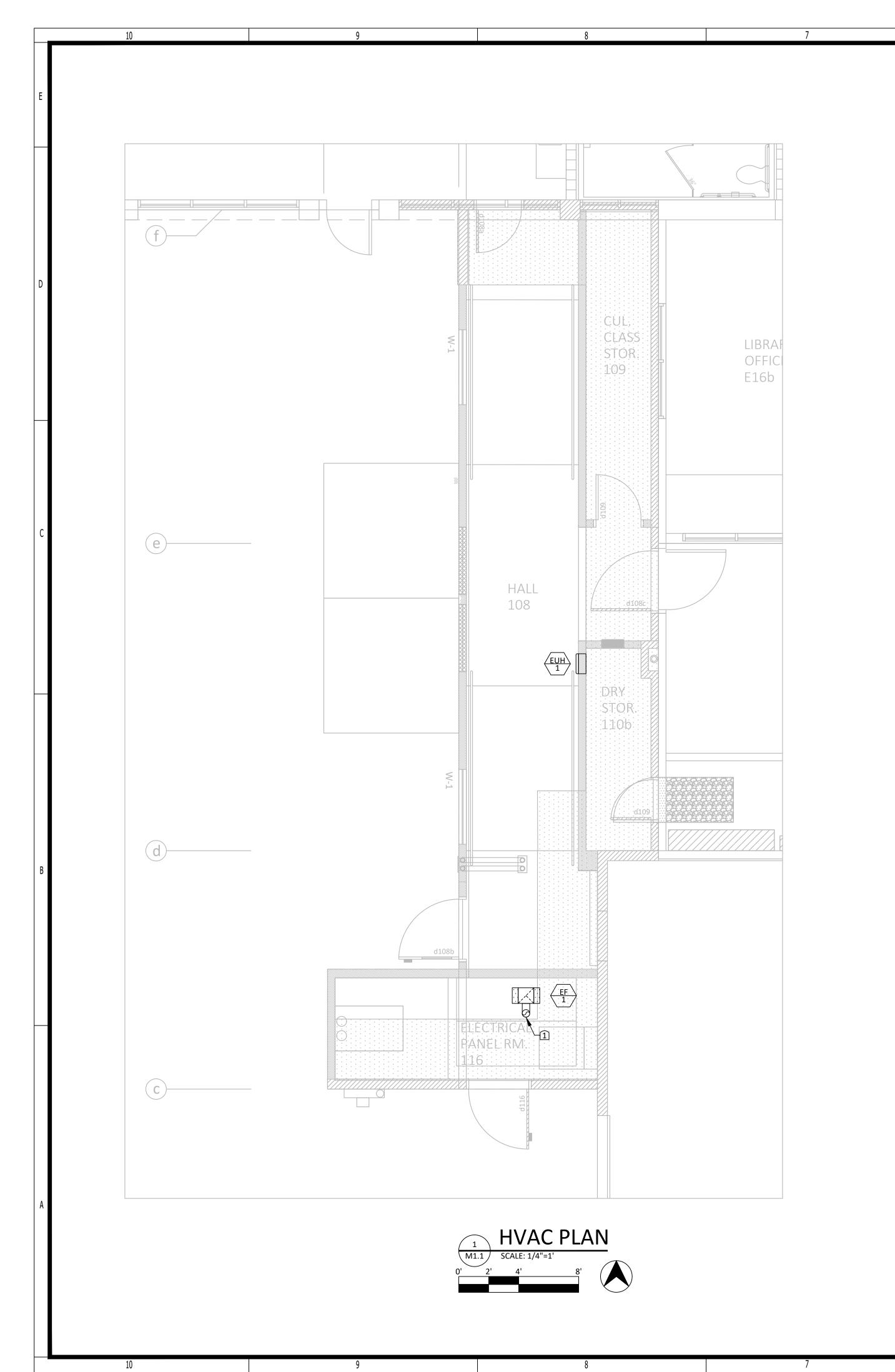


11-17-202 ALS-1821 Version History: V1.0 PHASES (PH):

ISSUE: 11-17-21

**DESIGN DEVELOPMEN** 

**HVAC COVER SHEET** 



### **GENERAL NOTES**

- 1. EXISTING DUCT, PIPE, AND EQUIPMENT SHOWN LIGHT. NEW WORK SHOWN DARK.
- 2. ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED.
- 3. COORDINATE ALL WORK WITH OTHER TRADES.
- 4. DUCT SIZES SHOWN ARE INTERIOR DIMENSIONS AND ARE MEASURED IN INCHES UNLESS OTHERWISE NOTED.
- 5. LINE ALL DUCTWORK WITHIN 15' OF A SUPPLY FAN WITH 1" ACOUSTICAL
- 6. COORDINATE EXACT LOCATIONS OF DUCT, DIFFUSERS, AND GRILLES WITH REFLECTED CEILING, LIGHTING, AND FIRE PROTECTION LAYOUTS.
- 7. COORDINATE DUCT RUNS AND ROOFTOP PENETRATIONS WITH STRUCTURAL AND ROOFING CONTRACTOR.
- 8. SEAL ALL PENETRATIONS THROUGH RATED ASSEMBLIES WITH U.L. APPROVED FIRE-RATED SYSTEM.
- 9. ALL DUCTWORK TO BE CONSTRUCTED PER THE LATEST EDITION OF SMACNA.
- 10. FLEX DUCT RUNOUTS ARE LIMITED TO 5'-0" MAXIMUM.
- 11. INSTALL ALL MECHANICAL EQUIPMENT WITH REQUIRED CLEARANCES AND ACCESS.
- 12. DUCT MAINS AND EQUIPMENT LOCATED IN THE JOIST ARE TO BE COORDINATED WITH STRUCTURAL. COORDINATE FOR REMOVING OF BRACING AS REQUIRED.
- 13. ALL SQUARE TO ROUND WORK CONNECTIONS SHALL HAVE BELL MOUTHS WITH STANDARD PRACTICE RADIUSES.
- 14. ALL DUCTWORK BEHIND RETURN GRILLES SHALL BE PAINTED FLAT BLACK.
- 15. PROVIDE FLUSH CUP REMOTE OPERATORS ON ALL DAMPERS LOCATED ABOVE INACCESSIBLE CEILING.

### **KEYNOTES**

1 ROUTE 8Ø EA TO ROOF AND TERMINATE WITH MANUFACTURER ROOF



DITIO SCHOOL DISTRICT OWER PANEL ROOM &



STRAIGHTLINE

Date: 11-17-2021
Project: ALS-1821
Version History: V1.0
PHASES (PH):

DESIGN DEVELOPMEN

### SCOPE OF WORK

- CONTRACTOR SHALL PROVIDE AND INSTALL ALL REQUIRED LABOR, EQUIPMENT, AND MATERIALS AS SHOWN OR INDICATED IN THESE DRAWINGS. CONTRACTOR SHALL ALSO PROVIDE ANY REQUIRED SUPPORTING MATERIALS IN ORDER TO PROVIDE A FULLY FUNCTIONING SYSTEM AS PER THE DESIGN INTENT OF THESE DRAWINGS.
- PROPER AND REASONABLE EFFORT TO ENSURE COMPLETE CONSTRUCTIONS DOCUMENTS HAS BEEN PROVIDED ON THESE DRAWINGS AND SPECIFICATIONS. CONTRACTOR IS RESPONSIBLE TO VERIFY DRAWINGS AND LOOK FOR ANY INACCURACIES BEFORE BIDDING ON PROJECT. IF ANY INACCURACIES ARE NOTICED, PLEASE REPORT THEM TO THE ENGINEER AS SOON AS POSSIBLE. DO NOT BID OR PERFORM ANY WORK BEFORE NOTIFYING ENGINEER OF THESE DISCREPANCIES.
- 3. CONTRACTOR IS RESPONSIBLE FOR ALL NECESSARY FEES, PERMITS, AND INSPECTIONS REQUIRED TO COMPLETE THE WORK INTENDED IN THESE DOCUMENTS.
- 4. COORDINATE ALL ROOF AND WALL PENETRATIONS WITH STRUCTURAL ENGINEER AND ROOFING CONTRACTOR TO ENSURE ALL PENETRATIONS ARE PROPERLY SEALED AND SUPPORTED.
- PROVIDE ALL NECESSARY WORK INCLUDING ELECTRICAL, STRUCTURAL, AND ARCHITECTURAL TO COMPLETE THE WORK SHOWN IN THESE DRAWINGS UNLESS THAT WORK IS SPECIFICALLY CALLED OUT UNDER ANOTHER DIVISION.
- 6. COORDINATE ALL WORK WITH ALL OTHER DIVISIONS IN ORDER TO ENSURE WORK IS FULLY COMPLETED. ALSO COORDINATE THIS WORK WITH THE GENERAL CONTRACTOR.
- 7. CONTRACTOR IS RESPONSIBLE TO PROVIDE ANY NECESSARY SEISMIC RESTRAINTS PER LISTED CODE, MANUFACTURER, AND STANDARD RECOMMENDATIONS.
- 8. THE CONTRACTOR IS RESPONSIBLE TO REPAIR ANY AND ALL DAMAGE THAT OCCURS AS A RESULT OF THE WORK ON THIS PROJECT. WORK MUST BE REPAIRED TO A CONDITION THAT IS ACCEPTED BY OWNER.
- 9. CONTRACTOR SHALL ONLY EMPLOYEE COMPETENT, QUALITY TRADESMEN IN THE TRADE THEY ARE SKILLED IN FOR THE WORK THEY ARE PROVIDING.
- 10. CONTRACTOR SHALL PROVIDE AND INSTALL NEW MATERIALS AND EQUIPMENT UNLESS THOSE MATERIALS OR EQUIPMENT ARE SPECIFICALLY STATED TO BE REUSED.
- 11. ANY MATERIALS OR TRIM THAT IS REQUIRED IN ORDER TO MAKE A SYSTEM OPERATE PROPERLY SHALL BE PROVIDED AND INSTALLED EVEN IF THOSE MATERIALS ARE NOT
- 12. IF ANY TESTING IS REQUIRED FOR THIS WORK, CONTRACTOR IS RESPONSIBLE FOR PROVIDING ANY REQUIRED MATERIAL, EQUIPMENT, OR LABOR.
- 13. ARCHITECT, ENGINEER, OWNER, OR HIS/HER REPRESENTATIVE MAY INSPECT THE WORK AT ANY TIME. IF WORK HAS BEEN COVERED, IT SHALL BE UNCOVERED FOR INSPECTION.
- 14. GET APPROVAL IN WRITING FROM OWNER. ARCHITECT. AND ENGINEER BEFORE PERFORMING ANY ADDITIONAL WORK YOU EXPECT TO BE COMPENSATED FOR.
- **EQUIPMENT AND MATERIAL HANDLING**

SHOWN IN THESE DRAWINGS.

- 1. ENSURE EQUIPMENT AND MATERIAL ORDERS ARE DELIVERED IN A TIMELY MANNER IN ORDER TO ENSURE PROJECT SCHEDULE IS CONFORMED TO.
- 2. CONTRACTOR IS RESPONSIBLE TO ENSURE EQUIPMENT AND MATERIAL IS NOT DAMAGED WHEN DELIVERED. ANY DAMAGED ITEMS SHALL BE REPLACED AT NO COST TO THE OWNER.
- COORDINATE WITH THE GENERAL CONTRACTOR AND OWNER IN ORDER TO LOCATE A SAFE AND CLEAN SPACE IN ORDER TO STORE MATERIALS, EQUIPMENT, AND TOOLS IN AN ORGANIZED MANNER.
- 4. COORDINATE WORK AREAS WITH GENERAL CONTRACTOR TO ENSURE WORKPLACE SAFETY AND CONTRACTOR COORDINATION.
- 5. DAMAGED OR LOST EQUIPMENT OR MATERIALS SHALL BE REPLACED AT NO COST TO THE OWNER.
- 6. CONTRACTOR IS RESPONSIBLE TO PROVIDE A ONE YEAR WARRANTY FOR ALL WORK COMPLETED ON THIS PROJECT. WARRANTY COVERAGE SHALL INCLUDE EQUIPMENT, CRAFTSMANSHIP, AND ALL OTHER MATERIALS.

### STANDARDS AND CODES

- ALL MATERIALS AND WORK COMPLETED BY CONTRACTOR SHALL BE PERFORMED PER ALL CODE, MANUFACTURER, AND OWNER REQUIREMENTS, WHICHEVER IS MOST STRINGENT.
- 2. CONTRACTOR SHALL FOLLOW THE MOST RECENTLY ADOPTED EDITIONS OF THE FOLLOWING CODES AND STANDARDS:
- 2.1. INTERNATIONAL BUILDING CODE 2.2. INTERNATIONAL FIRE CODE
- 2.3. NATIONAL FIRE PROTECTION ASSOCIATION
- 2.4. INTERNATIONAL FUEL GAS CODE 2.5. INTERNATIONAL ENERGY CONSERVATION CODE
- 2.6. INTERNATIONAL MECHANICAL CODE
- 2.7. IDAHO PLUMBING CODE 2.8. AMERICAN SOCIETY OF HEATING, REFRIGERATION,
- AND AIR CONDITIONING ENGINEERS
- 2.9. SHEET METAL AND AIR CONDITIONING NATIONAL ASSOCIATION 2.10. ALL OTHER APPLICABLE LAWS AND REGULATIONS
- 3. THESE DRAWINGS DO NOT INTENTIONALLY, OR UNINTENTIONALLY PERMIT INSTALLATIONS NOT CONFORMING TO ANY OF THESE STANDARDS OR CODES. CONTRACTOR SHALL ENSURE INSTALLATIONS MEET OR EXCEED THESE REQUIREMENTS.

### **EQUIPMENT SUBMITTALS**

1. PROVIDE EQUIPMENT SUBMITTALS FOR ALL EQUIPMENT NECESSARY FOR THIS PROJECT. THIS INCLUDES MECHANICAL EQUIPMENT, DUCTWORK, ACCESSORIES, PIPING, PLUMBING FIXTURES, VALVES, TRIM, ETC. SUBMIT EVERYTHING REQUIRED FOR THIS PROJECT IN

- ONE PACKAGE NEATLY ORGANIZED AND LABELED FOR REVIEW. CLEARLY STATE CAPACITIES AND EQUIPMENT
- 2. CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF ANY CHANGES FROM ORIGINAL DESIGN INCLUDING, BUT NOT LIMITED TO DIMENSIONS, STRUCTURAL IMPACTS, ELECTRICAL IMPACTS, ETC. CONTRACTOR IS RESPONSIBLE FOR THE COSTS RESULTING FROM THESE CHANGES.

- 1. CLEAN ALL WORK AFTER IT HAS BEEN COMPLETED. THIS INCLUDES, BUT IS NOT LIMITED TO HYDRONIC CHEMICAL TREATMENT, DUCT CLEANING, EQUIPMENT CLEANING, VALVE CLEANING, STRAINER CLEAN OUT, DOMESTIC WATER PIPING CLEANING, AND GAS PIPING CLEANING.
- CLEAN UP SITE AT THE END OF EACH DAY AFTER WORK. ONCE ALL WORK HAS BEEN COMPLETED, CLEAN UP THE SITE IN A CONDITION SATISFACTORILY TO THE OWNER.

### COORDINATION

- 1. ALL WORK DUE TO THESE CONSTRUCTION DOCUMENTS SHALL BE COORDINATED WITH OTHER TRADES TO ENSURE EFFICIENT CONSTRUCTION. THIS COORDINATION SHALL OCCUR BEFORE BEGINNING CONSTRUCTION.
- COORDINATE ALL ELECTRICAL CONNECTIONS WITH ELECTRICAL CONTRACTOR BEFORE BEGINNING WORK
- 3. CONTRACTOR IS RESPONSIBLE FOR ALL CONDUIT, SLEEVES, PIPING, EQUIPMENT, AND DUCT LOCATIONS

### MATERIALS AND EQUIPMENT

### GENERAL EQUIPMENT REQUIREMENTS

BEFORE CONCRETE IS POURED.

- 1. EQUIPMENT MAKE AND MODELS IN THESE CONSTRUCTION DOCUMENTS ARE TO ESTABLISH DESIGN INTENT. ALTERATIONS FROM THESE SELECTIONS ARE ACCEPTABLE AS LONG AS THEY ARE REVIEWED BY THE ENGINEER FOR CONFORMANCE TO DESIGN INTENT. CONTRACTOR IS STILL RESPONSIBLE FOR DIMENSIONS AND ELECTRICAL COORDINATION.
- CONTRACTOR TO ENSURE EQUIPMENT AND MATERIALS ARE UL LISTED OR APPROVED BY A SIMILAR LISTING PROCESS.
- 3. CONTRACTOR IS RESPONSIBLE FOR ALL ACCESS DOORS REQUIRED IN THIS PROJECT FOR EQUIPMENT, FIRE DAMPERS, SMOKE DAMPERS, FIRE/SMOKE DAMPERS, MATERIAL, VALVE, OR FITTING ACCESS. ACCESS PANEL SIZE SHALL BE APPROPRIATE FOR THE EQUIPMENT OR VALVE TO BE ACCESSED. COORDINATE WITH ARCHITECTURAL DRAWINGS. FRAME SHALL BE MOUNTED FLUSH TO THE SURFACE WITH APPROPRIATE LOCKING MECHANISM. ACCESS PANEL SHALL BE APPROPRIATELY RATED AND INSTALLED IF LOCATED IN A RATED ASSEMBLY.

### **MATERIALS**

- 1. ALL G90 GALVANIZED DUCTWORK SHALL BE CONSTRUCTED PER ASTM-A653. ALL DUCTWORK SHALL BE 24 GAUGE AT A MINIMUM.
- 2. ROUND DUCTWORK IN EXPOSED AREAS SHALL BE SPIRAL CONSTRUCTION.
- ROUND DUCTWORK THAT IS LINED SHALL BE MCGILL K-27 OR EQUAL.
- 4. ALL DUCTWORK SHALL BE SEALED WITH DUCT SEALER.
- 5. ALL DUCTWORK SHALL BE SUPPORTED AND BRACED APPROPRIATELY PER MANUFACTURER AND SEISMIC
- 6. FLEXIBLE DUCTWORK RUNOUTS SHALL BE LIMITED TO 5 FEET UNLESS DRAWINGS STATE OTHERWISE OR YOU HAVE APPROVAL FROM THE OWNER AND ENGINEER.

### **DUCT INSULATION**

- 1. CONCEALED FRESH AIR, SUPPLY, AND RETURN DUCTWORK SHALL BE INSULATED WITH 1-1/2" INSULATION WITH A MINIMUM R-VALUE THAT MEETS THE REQUIREMENTS OF
- EXPOSED FRESH AIR, SUPPLY, AND RETURN DUCTWORK SHALL BE ACOUSTICALLY LINED WITH A MINIMUM R-VALUE THAT MEETS THE REQUIREMENTS OF THE IECC.
- 3. EXTERIOR FRESH AIR, SUPPLY, AND RETURN DUCTWORK SHALL BE DOUBLE WALLED CONSTRUCTION WITH 2" INSULATION WITH A MINIMUM R-VALUE THAT MEETS THE REQUIREMENTS OF THE IECC.

### GRILLES, REGISTERS, AND DIFFUSERS

1. VERIFY ALL SURFACES AND REFLECTED CEILING PLANS BEFORE ORDERING DIFFUSERS. ALTERNATE MANUFACTURERS ARE ALLOWED AS LONG AS SUPPLIER VERIFIES SIZING TO ENSURE PROPER THROW AND NOISE CRITERIA. ENSURE APPEARANCE OF ALTERNATE IS SIMILAR TO ORIGINAL DESIGN.

### ACCESSORIES

- CONTRACTOR SHALL PROVIDE FILTERS FOR ALL PIECES OF EQUIPMENT. IF EQUIPMENT IS RAN DURING CONSTRUCTION, REPLACE FILTERS ONCE THE PROJECT IS TURNED OVER TO THE OWNER. SEE THESE DOCUMENTS OF MANUFACTURER RECOMMENDATIONS FOR FILTER SIZES AND REQUIREMENTS.
- 2. PROVIDE AND INSTALL FLEXIBLE CONNECTIONS ON ALL PIECES OF EQUIPMENT THAT HAS A CHANCE OF VIBRATING. THIS INCLUDED DUCTWORK AND PIPING. PROVIDE AN APPROPRIATE FLEX CONNECTION FOR THE APPLICATION IT IS USED.
- 3. CONTRACTOR SHALL SUPPLY FIRE, SMOKE, AND FIRE/SMOKE DAMPERS AS SHOWN ON DRAWINGS AS WELL AS WHERE REQUIRED BY CODE. FIRE DAMPERS SHALL MEET ALL CODE AND UL REQUIREMENTS. PROVIDE FIRE/SMOKE DAMPERS WITH 120 VOLT ACTUATOR.
- PROVIDE PARALLEL BLADE MANUAL BALANCE DAMPERS ON ALL DUCTWORK RUNOUTS UNLESS DRAWINGS STATE

### OTHERWISE. EXECUTION

### MATERIALS

1. DUCTWORK SHALL BE KEPT CLEAN OF ALL DIRT AND

DEBRIS. IT SHALL ALSO BE COVERED AT THE END OF EACH DAY TO LIMIT THE AMOUNT OF DUST INTRUSION. TEST DUCTWORK FOR LEAKAGE PER IMC AND IECC REQUIREMENTS. PROVIDE AND INSTALL APPROPRIATE HANGERS FOR ALL DUCTWORK PER MANUFACTURER AND CODE REQUIREMENTS. ENSURE DUCTWORK CONSTRUCTION MEETS CODE, SMACNA, AND ASHRAE REQUIREMENTS.

2. CLEAN AND SEAL ALL EQUIPMENT PRIOR TO INSTALLING NEW FILTERS. REPLACE FILTER IF EQUIPMENT WAS RAN DURING CONSTRUCTION.

### EQUIPMENT

- 1. INSTALL ALL EQUIPMENT PER MANUFACTURER AND CODE REQUIREMENTS. ENSURE EQUIPMENT IS ACCESSIBLE FOR EASE OF MAINTENANCE.
- 2. ENSURE EQUIPMENT IS PROPERLY ANCHORED AND BRACED FOR CODE, MANUFACTURER, AND STRUCTURAL
- 3. IDENTIFY EACH PIECE OF EQUIPMENT AS SHOWN IN THESE CONSTRUCTION DOCUMENTS WITH PLASTIC TAGS INCLUDING EQUIPMENT ABBREVIATION AND NUMBER. CONTACT ENGINEER IF THERE IS A DISCREPANCY IN NUMBERING.

### CONTROLS

- L. CONTRACTOR SHALL PROVIDE CONTROLS ON THIS PROJECT PER CONSTRUCTION DRAWING REQUIREMENTS. CONTRACTOR SHALL PROVIDE ALL NECESSARY EQUIPMENT, PROGRAMMING, VALVES, AND TRIM TO ENSURE A COMPLETE FUNCTIONING SYSTEM THAT OPERATES PER THE DESIGNED SEQUENCE OF OPERATION.
- 2. COORDINATE ALL WORK WITH THE ELECTRICAL CONTRACTOR FOR ALL WORK INCLUDING CONDUIT, WIRING, AND ELECTRICAL CONNECTIONS.
- 3. EXPOSED WIRING IN A PLENUM SHALL BE PLENUM RATED AND MEET ALL CODE REQUIREMENTS.

### TESTING, ADJUSTING, AND BALANCING

1. PROVIDE TESTING, ADJUSTING, AND BALANCING ON THIS PROJECT INCLUDING ALL AIR FLOWS, STATIC PRESSURES, AND OTHER CONDITIONS OF THE EQUIPMENT. PROVIDE A REPORT SHOWING ALL ACTUAL VERSUS DESIGN CONDITIONS.

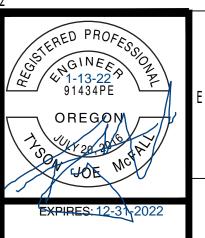
### **EQUIPMENT START UP**

- 1. ENSURE EQUIPMENT IS PROPERLY SET UP BEFORE STARTING. THIS INCLUDES, BUT IS NOT LIMITED TO SAFETY VALVES, VALVES, TRIM, WIRING, LUBRICATION,
- 2. START EQUIPMENT AND PROVIDE OWNER WITH DOCUMENTATION OF START UP AND PROPER EQUIPMENT OPERATION.

### CLEANING AND PATCHING

1. CLEAN THE WORK SITE COMPLETELY AT THE END OF THE PROJECT IN A MANNER ACCEPTABLE TO OWNER. REPAIR ANY DAMAGED FINISHED SURFACES WITH A CRAFTSMAN THAT IS SKILLED IN THAT TRADE.

L. PROVIDE OWNER WITH APPROPRIATE TRAINING ON **EQUIPMENT OPERATION AND MAINTENANCE. PROVIDE** OWNER WITH RED LINE DRAWINGS, SUBMITTALS, WARRANTY INFORMATION, AND OPERATION AND MAINTENANCE MANUALS AT THIS TIME.



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11-17-202 ALS-1821 roject: Version History: V1.0 PHASES (PH):

ISSUE: 11-17-21 **DESIGN DEVELOPMEN** 

DRAWING NO.

**HVAC SPECS** 

|        | PLUMBING FIXTURE SCHEDULE |                      |                     |                 |                |  |  |
|--------|---------------------------|----------------------|---------------------|-----------------|----------------|--|--|
| SYMBOL | DESCRIPTION               | COLD WATER LINE SIZE | HOT WATER LINE SIZE | WASTE LINE SIZE | VENT LINE SIZE |  |  |
| RD-1   | ROOF DRAIN                | -                    | -                   | SEE PLANS       | -              |  |  |
| OD-1   | OVERFLOW DRAIN            | -                    | -                   | SEE PLANS       | -              |  |  |
| DS-1   | DOWN SPOUT NOZZLE         | -                    | -                   | SEE PLANS       | -              |  |  |

- RD-1 ROOF DRAIN: JAY R. SMITH 1015 CID ROOF DRAIN WITH CAST IRON DOME, FLASHING CLAMP, GRAVEL STOP, ADJUSTABLE EXTENSION SLEEVE, UNDERDECK CLAMP AND SUMP
- OD-1 OVERFLOW DRAIN: JAY R. SMITH 1080 CID ROOF DRAIN WITH CAST IRON DOME, FLASHING CLAMP, GRAVEL STOP, ADJUSTABLE EXTENSION SLEEVE, UNDERDECK CLAMP, SUMP RECEIVER AND 2" WATER DAM.
- DS-1 DOWN SPOUT NOZZLE: JAY R SMITH 1770 DOWNSPOUT NOZZLE WITH BIRD SCREEN.

|                                                          | ABBREVIATIONS                                                                                                                                                                                                                                                                                                             |
|----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SYMBOL<br>°F                                             | DESCRIPTION  DEGREES FAHRENHEIT                                                                                                                                                                                                                                                                                           |
| AC                                                       | AIR CONDITIONING                                                                                                                                                                                                                                                                                                          |
| ACH                                                      | AIR CHANGES PER HOUR                                                                                                                                                                                                                                                                                                      |
| ACT                                                      | ACOUSTICAL CEILING TILE                                                                                                                                                                                                                                                                                                   |
| AL<br>ALT                                                | ACOUSTIC LINING  ALTERNATIVE                                                                                                                                                                                                                                                                                              |
| ASME                                                     | AMERICAN SOCIETY OF MECHANICAL ENGINEERS                                                                                                                                                                                                                                                                                  |
| ВНР                                                      | BRAKE HORSEPOWER                                                                                                                                                                                                                                                                                                          |
| BMS                                                      | BUILDING MANAGEMENT SYSTEM                                                                                                                                                                                                                                                                                                |
| BTU                                                      | BRITISH THERMAL UNITS                                                                                                                                                                                                                                                                                                     |
| BTUH<br>CFM                                              | BRITISH THERMAL UNITS PER HOUR  CUBIC FEET PER MINUTE                                                                                                                                                                                                                                                                     |
| CHAR                                                     | CHARACTERISTICS                                                                                                                                                                                                                                                                                                           |
| СОР                                                      | COEFFICIENT OF PERFORMANCE                                                                                                                                                                                                                                                                                                |
| CV                                                       | CONSTANT VOLUME                                                                                                                                                                                                                                                                                                           |
| DB<br>DBA                                                | DRY BULB DECIBEL                                                                                                                                                                                                                                                                                                          |
| EA                                                       | EXHAUST AIR                                                                                                                                                                                                                                                                                                               |
| EAT                                                      | ENTERING AIR TEMPERATURE                                                                                                                                                                                                                                                                                                  |
| EDB                                                      | ENTERING DRY BULB                                                                                                                                                                                                                                                                                                         |
| EER<br>ESP                                               | ENERGY EFFICIENCY RATIO  EXTERNAL STATIC PRESSURE (INCHES W.G.)                                                                                                                                                                                                                                                           |
| EWB                                                      | ENTERING WET BULB                                                                                                                                                                                                                                                                                                         |
| EWT                                                      | ENTERING WATER TEMPERATURE                                                                                                                                                                                                                                                                                                |
| (E)                                                      | EXISTING                                                                                                                                                                                                                                                                                                                  |
| FLA<br>FT                                                | FULL LOAD AMPS FEET                                                                                                                                                                                                                                                                                                       |
| GPM                                                      | GALLONS PER MINUTE                                                                                                                                                                                                                                                                                                        |
| НР                                                       | HORSEPOWER                                                                                                                                                                                                                                                                                                                |
| HVAC                                                     | HEATING, VENTILATION AND AIR CONDITIONING                                                                                                                                                                                                                                                                                 |
| HSPF<br>IN                                               | HEATING SEASONAL PERFORMANCE FACTOR INCH                                                                                                                                                                                                                                                                                  |
| KW                                                       | KILOWATTS                                                                                                                                                                                                                                                                                                                 |
| LB                                                       | POUNDS                                                                                                                                                                                                                                                                                                                    |
| LAT                                                      | LEAVING AIR TEMPERATURE                                                                                                                                                                                                                                                                                                   |
| LWB<br>LWT                                               | LEAVING WET BULB  LEAVING WATER TEMPERATURE                                                                                                                                                                                                                                                                               |
| MAX                                                      | MAXIMUM                                                                                                                                                                                                                                                                                                                   |
| МВН                                                      | BTUH'S IN THOUSANDS                                                                                                                                                                                                                                                                                                       |
| MCA                                                      | MINIMUM CIRCUIT AMPACITY                                                                                                                                                                                                                                                                                                  |
| MECH<br>MFR                                              | MECHANICAL  MANUFACTURER                                                                                                                                                                                                                                                                                                  |
| MOD                                                      | MOTOR OPERATED DAMPER; MODULATING                                                                                                                                                                                                                                                                                         |
| NC                                                       | NOISE CRITERIA                                                                                                                                                                                                                                                                                                            |
| NG<br>NO.                                                | NATURAL GAS  NUMBER                                                                                                                                                                                                                                                                                                       |
| NTS                                                      | NOT TO SCALE                                                                                                                                                                                                                                                                                                              |
| OA                                                       | OUTSIDE AIR                                                                                                                                                                                                                                                                                                               |
| PG                                                       | PROPYLENE GLYCOL                                                                                                                                                                                                                                                                                                          |
| POC                                                      | POINT OF CONNECTION  PRESSURE REDUCING VALVE                                                                                                                                                                                                                                                                              |
| PSI                                                      | POUNDS PER SQUARE INCH                                                                                                                                                                                                                                                                                                    |
| PSIG                                                     | POUNDS PER SQUARE INCH GAUGE                                                                                                                                                                                                                                                                                              |
| RA                                                       | RETURN AIR                                                                                                                                                                                                                                                                                                                |
| RAT<br>RCP                                               | RETURN AIR TEMPERATURE  REFLECTED CEILING PLAN                                                                                                                                                                                                                                                                            |
| RPM                                                      | REVOLUTIONS PER MINUTE                                                                                                                                                                                                                                                                                                    |
|                                                          | SUPPLY AIR                                                                                                                                                                                                                                                                                                                |
| SA                                                       | JOFF ET AIIX                                                                                                                                                                                                                                                                                                              |
| SAT                                                      | SUPPLY AIR TEMPERATURE                                                                                                                                                                                                                                                                                                    |
| SAT<br>SD                                                | SUPPLY AIR TEMPERATURE  SMOKE DAMPER                                                                                                                                                                                                                                                                                      |
| SAT                                                      | SUPPLY AIR TEMPERATURE                                                                                                                                                                                                                                                                                                    |
| SAT<br>SD<br>SEER                                        | SUPPLY AIR TEMPERATURE  SMOKE DAMPER  SEASONAL ENERGY EFFICIENCY RATING                                                                                                                                                                                                                                                   |
| SAT SD SEER SF F/SD SPE                                  | SUPPLY AIR TEMPERATURE  SMOKE DAMPER  SEASONAL ENERGY EFFICIENCY RATING  SQUARE FOOTAGE  FIRE/SMOKE DAMPER  STATIC PRESSURE EXTERNAL (INCHES W.G.)                                                                                                                                                                        |
| SAT SD SEER SF F/SD SPE SP                               | SUPPLY AIR TEMPERATURE  SMOKE DAMPER  SEASONAL ENERGY EFFICIENCY RATING  SQUARE FOOTAGE  FIRE/SMOKE DAMPER  STATIC PRESSURE EXTERNAL (INCHES W.G.)  STATIC PRESSURE (INCHES W.G.)                                                                                                                                         |
| SAT SD SEER SF F/SD SPE                                  | SUPPLY AIR TEMPERATURE  SMOKE DAMPER  SEASONAL ENERGY EFFICIENCY RATING  SQUARE FOOTAGE  FIRE/SMOKE DAMPER  STATIC PRESSURE EXTERNAL (INCHES W.G.)                                                                                                                                                                        |
| SAT SD SEER SF F/SD SPE SP SQFT                          | SUPPLY AIR TEMPERATURE  SMOKE DAMPER  SEASONAL ENERGY EFFICIENCY RATING  SQUARE FOOTAGE  FIRE/SMOKE DAMPER  STATIC PRESSURE EXTERNAL (INCHES W.G.)  STATIC PRESSURE (INCHES W.G.)  SQUARE FEET                                                                                                                            |
| SAT SD SEER SF F/SD SPE SP SQFT S/T TEMP TSP             | SUPPLY AIR TEMPERATURE  SMOKE DAMPER  SEASONAL ENERGY EFFICIENCY RATING  SQUARE FOOTAGE  FIRE/SMOKE DAMPER  STATIC PRESSURE EXTERNAL (INCHES W.G.)  STATIC PRESSURE (INCHES W.G.)  SQUARE FEET  SENSIBLE TO TOTAL COOLING RATIO  TEMPERATURE  TOTAL STATIC PRESSURE                                                       |
| SAT SD SEER SF F/SD SPE SP SQFT S/T TEMP TSP TYP         | SUPPLY AIR TEMPERATURE  SMOKE DAMPER  SEASONAL ENERGY EFFICIENCY RATING  SQUARE FOOTAGE  FIRE/SMOKE DAMPER  STATIC PRESSURE EXTERNAL (INCHES W.G.)  STATIC PRESSURE (INCHES W.G.)  SQUARE FEET  SENSIBLE TO TOTAL COOLING RATIO  TEMPERATURE  TOTAL STATIC PRESSURE  TYPICAL                                              |
| SAT SD SEER SF F/SD SPE SP SQFT S/T TEMP TSP             | SUPPLY AIR TEMPERATURE  SMOKE DAMPER  SEASONAL ENERGY EFFICIENCY RATING  SQUARE FOOTAGE  FIRE/SMOKE DAMPER  STATIC PRESSURE EXTERNAL (INCHES W.G.)  STATIC PRESSURE (INCHES W.G.)  SQUARE FEET  SENSIBLE TO TOTAL COOLING RATIO  TEMPERATURE  TOTAL STATIC PRESSURE                                                       |
| SAT SD SEER SF F/SD SPE SP SQFT S/T TEMP TSP TYP VFD     | SUPPLY AIR TEMPERATURE  SMOKE DAMPER  SEASONAL ENERGY EFFICIENCY RATING  SQUARE FOOTAGE  FIRE/SMOKE DAMPER  STATIC PRESSURE EXTERNAL (INCHES W.G.)  STATIC PRESSURE (INCHES W.G.)  SQUARE FEET  SENSIBLE TO TOTAL COOLING RATIO  TEMPERATURE  TOTAL STATIC PRESSURE  TYPICAL  VARIABLE FREQUENCY DRIVE                    |
| SAT SD SEER SF F/SD SPE SP SQFT S/T TEMP TSP TYP VFD VTR | SUPPLY AIR TEMPERATURE  SMOKE DAMPER  SEASONAL ENERGY EFFICIENCY RATING  SQUARE FOOTAGE  FIRE/SMOKE DAMPER  STATIC PRESSURE EXTERNAL (INCHES W.G.)  STATIC PRESSURE (INCHES W.G.)  SQUARE FEET  SENSIBLE TO TOTAL COOLING RATIO  TEMPERATURE  TOTAL STATIC PRESSURE  TYPICAL  VARIABLE FREQUENCY DRIVE  VENT THROUGH ROOF |

### MECHANICAL LEGEND

|   | MECHANICAL             | LEGEND                                   |
|---|------------------------|------------------------------------------|
|   | $\boxtimes$ $\bigcirc$ | SUPPLY DUCT RISE/DROP                    |
|   | <b>□   -/</b> •        | SIDEWALL SUPPLY GRILLE                   |
|   |                        | RETURN RISE/DROP                         |
|   | <b>-</b>               | SIDEWALL RETURN GRILLE                   |
|   |                        | EXHAUST RISE/DROP                        |
| S | XxX > Ø                | SQUARE TO ROUND DUCT TRANSITION          |
|   | <b>─</b>               | EXHAUST GRILLE                           |
|   | <b>→</b>               | BACKDRAFT DAMPER                         |
|   | ********               | DOUBLE WALL TURNING VANES                |
|   |                        | FLEX DUCT                                |
|   |                        | HIDDEN LINE                              |
|   |                        | 1,2,3, AND 4 WAY DIFFUSERS, RESPECTIVELY |
|   |                        | VOLUME DAMPER                            |
|   | <del></del>            | SPIN IN FITTING                          |
|   | $\Box$                 | DEMOLISHED DUCT CAP                      |
|   |                        | CEILING EXHAUST FAN                      |
|   |                        | CABINET (INLINE) EXHAUST FAN             |

THERMOSTAT

RETURN GRILLE

BALL VALVE

# HOUR RATED FIRE DAMPER

GAS PRESSURE REGULATOR

POINT OF CONNECTION

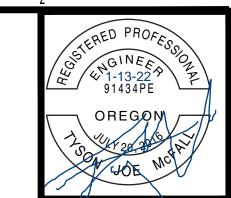
POINT OF DEMOLITION

| PLUIVIBING SHEET INDEX |                    |
|------------------------|--------------------|
| #                      | SHEET NAME         |
| P0.0                   | PLUMB. COVER SHEET |
| P1.1                   | ROOF PLAN          |
| P2.1                   | PLUMBING SPECS     |

## **GENERAL PROJECT NOTES**

①<sub>EQUIP</sub>#

- CONTRACTOR TO VERIFY EQUIPMENT LOCATIONS, DIMENSIONS, AND COORDINATE ALL WORK WITH OTHER TRADES PRIOR TO THE START OF CONSTRUCTION.
- 2. ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED.
- 3. ALL WORK IS TO BE IN COMPLIANCE WITH CURRENT CODES AS ADOPTED AND AMENDED BY THE LOCAL JURISDICTION. PROVIDE ALL LABOR AND MATERIAL AS NECESSARY TO MEET THE CURRENT ADOPTED CODES.
- 4. RECORD DRAWINGS OF THE INSTALLATION ARE REQUIRED TO BE PROVIDED BY THE CONTRACTOR WITHIN 30 DAYS OF SUBSTANTIAL COMPLETION. REDLINES OF AS-BUILT PLANS AND SPECIFICATIONS ARE ACCEPTABLE.
- 5. PROVIDE OPERATION AND MAINTENANCE MANUALS WITHIN 30 DAYS OF SUBSTANTIAL COMPLETION OF ALL EQUIPMENT INSTALLED.
- 6. INSTALL ALL EQUIPMENT, PIPING, AND DUCTWORK SEISMICALLY BRACED PER CODE, MANUFACTURER RECOMMENDATIONS, OR STANDARD CONSTRUCTION PRACTICES, WHICHEVER IS MORE STRINGENT.
- 7. PROVIDE TRAP PRIMERS FOR ALL FLOOR DRAINS AND FLOOR SINKS.
- 8. INSTALL ALL WATER LINES ON EXTERIOR WALLS, INCLUDING LINES IN ATTIC OR ROOF, ON WARM SIDE (INSIDE) OF INSULATION.



ADI SCHOOL DISTRICT OWER PANEL ROOM &

7

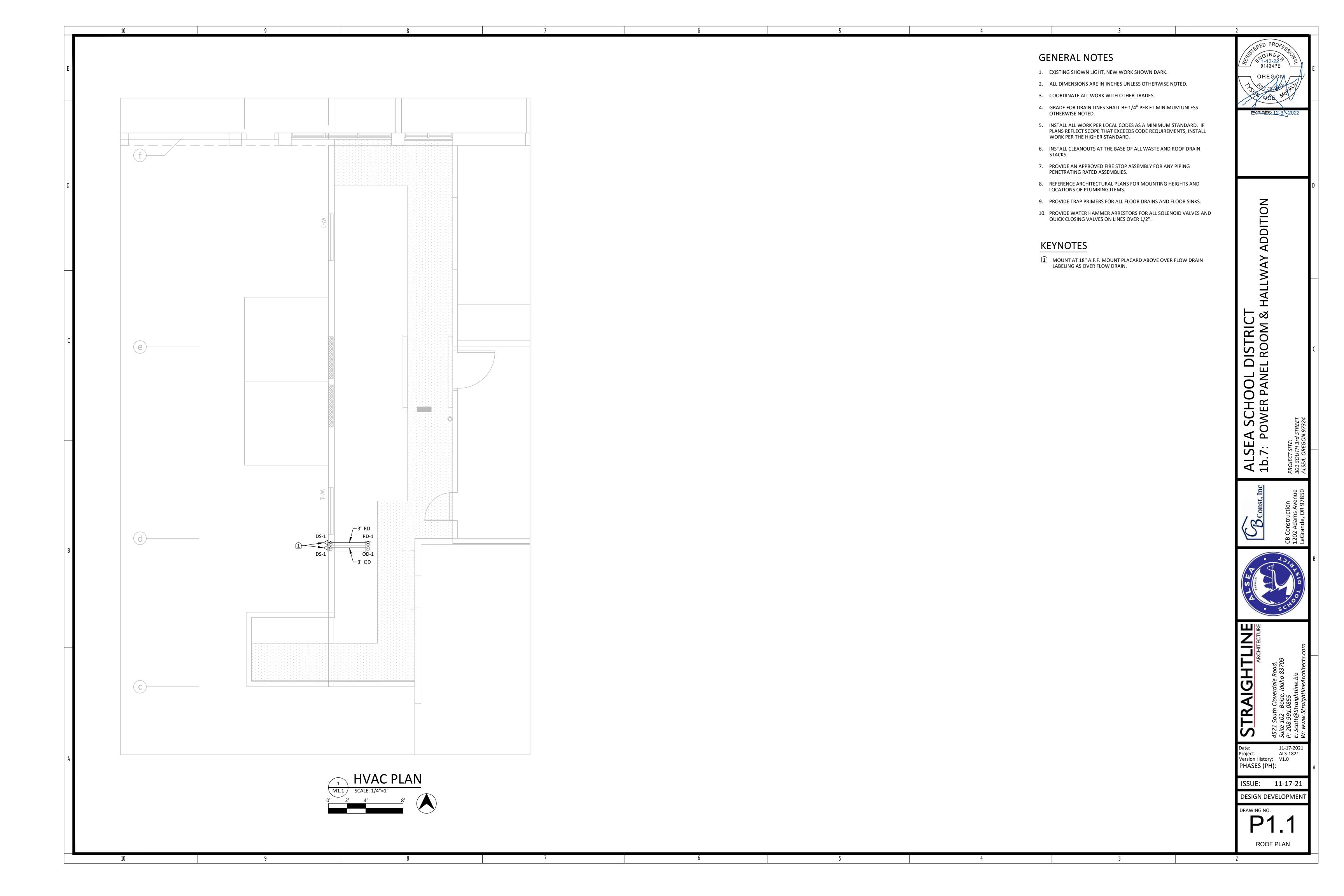


11-17-2021 Project: ALS-1821 Version History: V1.0

PHASES (PH):

ISSUE: 11-17-21 DESIGN DEVELOPMEN

PLUMB. COVER SHEET



### SCOPE OF WORK

- CONTRACTOR SHALL PROVIDE AND INSTALL ALL REQUIRED LABOR, EQUIPMENT, AND MATERIALS AS SHOWN OR INDICATED IN THESE DRAWINGS. CONTRACTOR SHALL ALSO PROVIDE ANY REQUIRED SUPPORTING MATERIALS IN ORDER TO PROVIDE A FULLY FUNCTIONING SYSTEM AS PER THE DESIGN INTENT OF THESE DRAWINGS.
- PROPER AND REASONABLE EFFORT TO ENSURE COMPLETE CONSTRUCTIONS DOCUMENTS HAS BEEN PROVIDED ON THESE DRAWINGS AND SPECIFICATIONS. CONTRACTOR IS RESPONSIBLE TO VERIFY DRAWINGS AND LOOK FOR ANY INACCURACIES BEFORE BIDDING ON PROJECT. IF ANY INACCURACIES ARE NOTICED, PLEASE REPORT THEM TO THE ENGINEER AS SOON AS POSSIBLE. DO NOT BID OR PERFORM ANY WORK BEFORE NOTIFYING ENGINEER OF THESE DISCREPANCIES.
- 3. CONTRACTOR IS RESPONSIBLE FOR ALL NECESSARY FEES, PERMITS, AND INSPECTIONS REQUIRED TO COMPLETE THE WORK INTENDED IN THESE DOCUMENTS.
- 4. COORDINATE ALL ROOF AND WALL PENETRATIONS WITH STRUCTURAL ENGINEER AND ROOFING CONTRACTOR TO ENSURE ALL PENETRATIONS ARE PROPERLY SEALED AND SUPPORTED.
- PROVIDE ALL NECESSARY WORK INCLUDING ELECTRICAL, STRUCTURAL, AND ARCHITECTURAL TO COMPLETE THE WORK SHOWN IN THESE DRAWINGS UNLESS THAT WORK IS SPECIFICALLY CALLED OUT UNDER ANOTHER DIVISION.
- 6. COORDINATE ALL WORK WITH ALL OTHER DIVISIONS IN ORDER TO ENSURE WORK IS FULLY COMPLETED. ALSO COORDINATE THIS WORK WITH THE GENERAL CONTRACTOR.
- 7. CONTRACTOR IS RESPONSIBLE TO PROVIDE ANY NECESSARY SEISMIC RESTRAINTS PER LISTED CODE, MANUFACTURER, AND STANDARD RECOMMENDATIONS.
- 8. THE CONTRACTOR IS RESPONSIBLE TO REPAIR ANY AND ALL DAMAGE THAT OCCURS AS A RESULT OF THE WORK ON THIS PROJECT. WORK MUST BE REPAIRED TO A CONDITION THAT IS ACCEPTED BY OWNER.
- 9. CONTRACTOR SHALL ONLY EMPLOYEE COMPETENT, QUALITY TRADESMEN IN THE TRADE THEY ARE SKILLED IN FOR THE WORK THEY ARE PROVIDING.
- 10. CONTRACTOR SHALL PROVIDE AND INSTALL NEW MATERIALS AND EQUIPMENT UNLESS THOSE MATERIALS OR EQUIPMENT ARE SPECIFICALLY STATED TO BE REUSED.
- 11. ANY MATERIALS OR TRIM THAT IS REQUIRED IN ORDER TO MAKE A SYSTEM OPERATE PROPERLY SHALL BE PROVIDED AND INSTALLED EVEN IF THOSE MATERIALS ARE NOT
- 12. IF ANY TESTING IS REQUIRED FOR THIS WORK, CONTRACTOR IS RESPONSIBLE FOR PROVIDING ANY REQUIRED MATERIAL, EQUIPMENT, OR LABOR.
- 13. ARCHITECT, ENGINEER, OWNER, OR HIS/HER REPRESENTATIVE MAY INSPECT THE WORK AT ANY TIME. IF WORK HAS BEEN COVERED, IT SHALL BE UNCOVERED FOR INSPECTION.
- 14. GET APPROVAL IN WRITING FROM OWNER. ARCHITECT. AND ENGINEER BEFORE PERFORMING ANY ADDITIONAL WORK YOU EXPECT TO BE COMPENSATED FOR.
- **EQUIPMENT AND MATERIAL HANDLING**

SHOWN IN THESE DRAWINGS.

- 1. ENSURE EQUIPMENT AND MATERIAL ORDERS ARE DELIVERED IN A TIMELY MANNER IN ORDER TO ENSURE PROJECT SCHEDULE IS CONFORMED TO.
- . CONTRACTOR IS RESPONSIBLE TO ENSURE EQUIPMENT AND MATERIAL IS NOT DAMAGED WHEN DELIVERED. ANY DAMAGED ITEMS SHALL BE REPLACED AT NO COST TO THE OWNER.
- COORDINATE WITH THE GENERAL CONTRACTOR AND OWNER IN ORDER TO LOCATE A SAFE AND CLEAN SPACE IN ORDER TO STORE MATERIALS, EQUIPMENT, AND TOOLS IN AN ORGANIZED MANNER.
- 4. COORDINATE WORK AREAS WITH GENERAL CONTRACTOR TO ENSURE WORKPLACE SAFETY AND CONTRACTOR COORDINATION.
- 5. DAMAGED OR LOST EQUIPMENT OR MATERIALS SHALL BE REPLACED AT NO COST TO THE OWNER.
- . CONTRACTOR IS RESPONSIBLE TO PROVIDE A ONE YEAR WARRANTY FOR ALL WORK COMPLETED ON THIS PROJECT. WARRANTY COVERAGE SHALL INCLUDE EQUIPMENT, CRAFTSMANSHIP, AND ALL OTHER MATERIALS.

### STANDARDS AND CODES

- ALL MATERIALS AND WORK COMPLETED BY CONTRACTOR SHALL BE PERFORMED PER ALL CODE, MANUFACTURER, AND OWNER REQUIREMENTS, WHICHEVER IS MOST STRINGENT.
- 2. CONTRACTOR SHALL FOLLOW THE MOST RECENTLY ADOPTED EDITIONS OF THE FOLLOWING CODES AND STANDARDS:
- 2.1. INTERNATIONAL BUILDING CODE 2.2. INTERNATIONAL FIRE CODE
- NATIONAL FIRE PROTECTION ASSOCIATION 2.4. INTERNATIONAL FUEL GAS CODE
- 2.5. INTERNATIONAL ENERGY CONSERVATION CODE
- 2.6. INTERNATIONAL MECHANICAL CODE
- 2.7. IDAHO PLUMBING CODE 2.8. AMERICAN SOCIETY OF HEATING, REFRIGERATION,
- AND AIR CONDITIONING ENGINEERS 2.9. SHEET METAL AND AIR CONDITIONING NATIONAL
- ASSOCIATION 2.10. ALL OTHER APPLICABLE LAWS AND REGULATIONS
- 3. THESE DRAWINGS DO NOT INTENTIONALLY, OR UNINTENTIONALLY PERMIT INSTALLATIONS NOT CONFORMING TO ANY OF THESE STANDARDS OR CODES. CONTRACTOR SHALL ENSURE INSTALLATIONS MEET OR EXCEED THESE REQUIREMENTS.

### EQUIPMENT SUBMITTALS

. PROVIDE EQUIPMENT SUBMITTALS FOR ALL EQUIPMENT NECESSARY FOR THIS PROJECT. THIS INCLUDES MECHANICAL EQUIPMENT, DUCTWORK, ACCESSORIES, PIPING, PLUMBING FIXTURES, VALVES, TRIM, ETC. SUBMIT EVERYTHING REQUIRED FOR THIS PROJECT IN

- ONE PACKAGE NEATLY ORGANIZED AND LABELED FOR REVIEW. CLEARLY STATE CAPACITIES AND EQUIPMENT
- 2. CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF ANY CHANGES FROM ORIGINAL DESIGN INCLUDING, BUT NOT LIMITED TO DIMENSIONS, STRUCTURAL IMPACTS, ELECTRICAL IMPACTS, ETC. CONTRACTOR IS RESPONSIBLE FOR THE COSTS RESULTING FROM THESE CHANGES.

- 1. CLEAN ALL WORK AFTER IT HAS BEEN COMPLETED. THIS INCLUDES, BUT IS NOT LIMITED TO HYDRONIC CHEMICAL TREATMENT, DUCT CLEANING, EQUIPMENT CLEANING, VALVE CLEANING, STRAINER CLEAN OUT, DOMESTIC WATER PIPING CLEANING, AND GAS PIPING CLEANING.
- CLEAN UP SITE AT THE END OF EACH DAY AFTER WORK. ONCE ALL WORK HAS BEEN COMPLETED, CLEAN UP THE SITE IN A CONDITION SATISFACTORILY TO THE OWNER.

### COORDINATION

- 1. ALL WORK DUE TO THESE CONSTRUCTION DOCUMENTS SHALL BE COORDINATED WITH OTHER TRADES TO ENSURE EFFICIENT CONSTRUCTION. THIS COORDINATION SHALL OCCUR BEFORE BEGINNING CONSTRUCTION.
- COORDINATE ALL ELECTRICAL CONNECTIONS WITH ELECTRICAL CONTRACTOR BEFORE BEGINNING WORK
- 3. CONTRACTOR IS RESPONSIBLE FOR ALL CONDUIT, SLEEVES, PIPING, EQUIPMENT, AND DUCT LOCATIONS BEFORE CONCRETE IS POURED.

### MATERIALS AND EQUIPMENT

### GENERAL EQUIPMENT REQUIREMENTS

- EQUIPMENT MAKE AND MODELS IN THESE CONSTRUCTION DOCUMENTS ARE TO ESTABLISH DESIGN INTENT. ALTERATIONS FROM THESE SELECTIONS ARE ACCEPTABLE AS LONG AS THEY ARE REVIEWED BY THE ENGINEER FOR CONFORMANCE TO DESIGN INTENT. CONTRACTOR IS STILL RESPONSIBLE FOR DIMENSIONS AND ELECTRICAL COORDINATION.
- CONTRACTOR TO ENSURE EQUIPMENT AND MATERIALS ARE UL LISTED OR APPROVED BY A SIMILAR LISTING
- 3. CONTRACTOR IS RESPONSIBLE FOR ALL ACCESS DOORS REQUIRED IN THIS PROJECT FOR EQUIPMENT, FIRE DAMPERS, SMOKE DAMPERS, FIRE/SMOKE DAMPERS, MATERIAL, VALVE, OR FITTING ACCESS. ACCESS PANEL SIZE SHALL BE APPROPRIATE FOR THE EQUIPMENT OR VALVE TO BE ACCESSED. COORDINATE WITH ARCHITECTURAL DRAWINGS. FRAME SHALL BE MOUNTED FLUSH TO THE SURFACE WITH APPROPRIATE LOCKING MECHANISM. ACCESS PANEL SHALL BE APPROPRIATELY RATED AND INSTALLED IF LOCATED IN A RATED ASSEMBLY.

### **MATERIALS**

- 1. WATER: TYPE L COPPER SUITABLE FOR USE ON DOMESTIC WATER SYSTEMS. ENSURE COMPLIANCE WITH ASTM
- 2. SANITARY WASTE AND VENT: PVC-DWV PIPE AND FITTINGS. CONFIRM COMPLIANCE WITH ASTM D2665.
- FITTINGS. CONFIRM COMPLIANCE WITH ASTM D2661 4. SANITARY WASTE AND VENT: CAST IRON PIPE AND FITTINGS. CONFIRM COMPLIANCE WITH ASTM A888 AND
- 5. NATURAL GAS: SCHEDULE 40 BLACK STEEL CONFORMING WITH ASTM A53A.

### PIPE FITTINGS

- 1. THREADED: PIPES 2 INCHES AND SMALLER SHALL HAVE MALLEABLE IRON FITTINGS AND UNIONS CONFORMING TO ASTM A-197 TO MATCH PIPE MATERIAL.
- 2. SOLDERED: WROUGHT COPPER CONFORMING TO ANSI B16.22 SPECIFICALLY DESIGNED FOR SOLDERING.
- BRAZING: WROUGHT COPPER CONFORMING TO ASTM

B16.22 SPECIFICALLY DESIGNED FOR BRAZING.

- 1. SCREWED JOINTS: APPLY JOINT LUBRICANT SEALER OR TEFLON TAPE PER MANUFACTURER RECOMMENDATIONS. ENSURE PRODUCT IS DESIGNED FOR EACH SPECIFIC APPLICATION.
- 2. SOLDERED: USE LEAD FREE SOLDER AND WATER SOLUBLE FLUX. JOINTS SHALL CONFORM TO ASTM D2564.
- 3. BRAZED: USE PHOS-COPPER BRAZING ALLOY. JOINTS SHALL CONFORM TO ANSI B2.2.
- 4. SOLVENT WELD: APPLY SOLVENT PER MANUFACTURER RECOMMENDATIONS. CONFORM TO ASTM D2564. 5. UNIONS: USE DIELECTRIC UNIONS WHERE TWO

### DISSIMILAR METALS ARE CONNECTED.

### VALVES AND PIPING SPECIALTIES

- 1. VALVES SHALL BE BRONZE AND RATED FOR 125 PSI AS A MINIMUM. INCREASE THIS RATING IF THE SYSTEM WILL BE OPERATING AT PRESSURES HIGHER THAN THIS.
- 2. BALL VALVES SHALL BE FULL PORT WITH CHROME PLATED BRASS BALLS AND STAINLESS STEEL TRIM.
- 3. PROVIDE AND INSTALL ISOLATION VALVES AT EACH SYSTEM MAIN AND AT EACH SYSTEM BRANCH FOR EASE OF SYSTEM MAINTENANCE.

4. INSTALL ALL VALVES WITH PROPER CLEARANCES AND

- EASE OF ACCESS. PROVIDE ACCESS PANELS WHERE VALVES ARE LOCATED BEHIND WALLS OR CEILINGS.
- 5. PROVIDE ALL VALVES AND STRAINERS FULL SIZE UNLESS NOTED OTHERWISE. CONTROL VALVES ARE THE EXCEPTION AND SHALL BE SELECTED BASED ON PROPER CV VALUES.
- 6. SHUT OFF AND THROTTLING: PROVIDE BALL VALVES UP TO 2 INCH AND PROVIDE BUTTERFLY VALVES ON PIPES LARGER THAN THIS.
- 7. THROTTLING: PROVIDE GATE OR GLOBE VALVES.
- 8. STRAINER: BRONZE CONSTRUCTION WITH STAINLESS STEEL STRAINER.

- 9. BALANCE VALVE: BALL VALVE WITH PRESSURE PORTS
- 10. PROVIDE WATER HAMMER ARRESTERS AS REQUIRED TO PREVENT WATER HAMMER. INSTALL PER MANUFACTURER RECOMMENDATIONS.
- 11. PROVIDE ESCUTCHEON PLATES ALL ALL WALL, CEILING, AND FLOOR PENETRATIONS. ENSURE PLATES ARE NEAT, FLAT. AND SECURE THE PIPING IN THE PENETRATION. ESCUTCHEONS TO BE CHROME PLATED BRASS.

### PIPE HANGERS AND SUPPORTS

- 1. PIPE HANGERS AND SUPPORTS SHALL BE INSTALLED PER MANUFACTURER REQUIREMENTS. THEY SHALL ALSO BE INSTALLED PER ASME, MSS, AND ANY STRUCTURAL REQUIREMENTS.
- 2. SUPPORT ALL PIPE INDIVIDUALLY WITH AT LEAST ONE HANGER AT EACH BRANCH.
- 3. SUPPORT ALL PIPING SO THAT IT IS FIRMLY HELD IN PLACE PER CODE AND MANUFACTURER REQUIREMENTS.
- 4. SIZE HANGERS TO ACCOMMODATE INSULATION AND USE INSULATION SHIELDS WHERE APPLICABLE.
- 5. SPACE HANGERS PER BELOW, MANUFACTURER, OR CODE REQUIREMENTS, WHICHEVER IS MORE STRINGENT.
- 5.1. COPPER: 6 FEET 5.2. STEEL: 6 FEET
- 5.3. COPPER: 10 FEET 5.4. PVC AND ABS: 4 FEET
- 5.5. CAST IRON: 4 FEET
- SUPPORT VERTICAL PIPING EVERY 10 FEET.
- 7. DO NOT USE WIRE OR PLUMBERS TAPE. 8. VALVES AND JOINTS SHALL NOT SUPPORT THE WEIGHT OF THE PIPE IN ANY WAY.
- 9. SUPPORT PIPING ON ROOF WITH MANUFACTURER PIPING SUPPORTS SUCH AS MIRO STACKABLE BLOCKING
- 10. ENSURE PIPING IS PROPERLY SEISMICALLY BRACED PER STRUCTURAL AND CODE REQUIREMENTS.

### PIPE INSULATION

- . PIPES SHALL BE INSULATED WITH PREFORMED FIBERGLASS PIPE INSULATION WITH ALL SERVICE JACKET. VALVES AND TRIM SHALL BE INSULATED WITH FIBERGLASS BATT THAT IS COVERED WITH PLASTIC OR CLOTH. SEAL ALL JOINTS AND ENSURE VALVES ARE STILL SERVICEABLE.
- 2. PROVIDE ALL INSULATED EXTERIOR PIPING WITH ALUMINUM JACKET THAT HAS BEEN SEALED WEATHER
- 3. DOMESTIC HOT WATER, COLD WATER, AND RECIRCULATION LINES SHALL BE INSULATED WITH 1 INCH OF FIBERGLASS INSULATION WITH ALL SERVICE JACKET.

### **EXECUTION**

- 1. ALL PIPING SHALL BE CONCEALED UNLESS SPECIFICALLY CALLED OUT IN THE DRAWINGS. EXPOSED PIPING SHALL BE NEAT WITH MINIMUM FITTINGS AND JOINTS.
- 2. PREPARE ALL PIPING TRENCHES, FILL, AND FINISH PER INDUSTRY STANDARDS.
- 3. CLOSE ENDS OF PIPE IMMEDIATELY AFTER INSTALLATION IN ORDER TO ENSURE DUST AND DEBRIS DO NOT ENTER THE PIPING SYSTEM.
- 4. EACH PIPING SYSTEM SHALL BE CLEANED AND FLUSHED
- PER MANUFACTURER AND CODE REQUIREMENTS. 5. PROVIDE UNIONS, FLANGES, AND CONNECTIONS AT EACH PIECE OF EQUIPMENT TO ENSURE EQUIPMENT CAN BE EASILY ACCESSED AND SERVICED.
- 6. SUPPORT ALL PIPE TO ENSURE IT DOES NOT SAG OR BEND. 7. INSTALL DIELECTRIC UNIONS AT CONNECTION POINTS OF
- 8. INSTALL PIPING, SUPPORTS, AND EXPANSION JOINTS TO ENSURE PIPE CAN EXPAND AND CONTRACT DURING NORMAL OPERATION WITHOUT CAUSING DAMAGE TO
- THE SYSTEM. 9. PROVIDE ALL NECESSARY EQUIPMENT AND LABOR FOR ALL PIPING PENETRATIONS THAT REQUIRE CORE DRILLING. ENSURE THE OPERATOR IS TRAINED AND PROTECT ALL

### EQUIPMENT

 INSTALL ALL EQUIPMENT PER MANUFACTURER AND CODE REQUIREMENTS. ENSURE EQUIPMENT IS ACCESSIBLE FOR EASE OF MAINTENANCE.

SURFACES FROM DAMAGE AND DIRT DURING DRILLING.

- 2. ENSURE EQUIPMENT IS PROPERLY ANCHORED AND BRACED FOR CODE, MANUFACTURER, AND STRUCTURAL
- 3. IDENTIFY EACH PIECE OF EQUIPMENT AS SHOWN IN THESE CONSTRUCTION DOCUMENTS WITH PLASTIC TAGS INCLUDING EQUIPMENT ABBREVIATION AND NUMBER. CONTACT ENGINEER IF THERE IS A DISCREPANCY IN NUMBERING.

- 1. CONTRACTOR SHALL PROVIDE CONTROLS ON THIS PROJECT PER CONSTRUCTION DRAWING REQUIREMENTS. CONTRACTOR SHALL PROVIDE ALL NECESSARY EQUIPMENT, PROGRAMMING, VALVES, AND TRIM TO ENSURE A COMPLETE FUNCTIONING SYSTEM THAT OPERATES PER THE DESIGNED SEQUENCE OF OPERATION.
- 2. COORDINATE ALL WORK WITH THE ELECTRICAL CONTRACTOR FOR ALL WORK INCLUDING CONDUIT, WIRING, AND ELECTRICAL CONNECTIONS.
- 3. EXPOSED WIRING IN A PLENUM SHALL BE PLENUM RATED AND MEET ALL CODE REQUIREMENTS.

### TESTING, ADJUSTING, AND BALANCING

L. PROVIDE TESTING, ADJUSTING, AND BALANCING ON THIS PROJECT INCLUDING ALL AIR FLOWS, STATIC PRESSURES, AND OTHER CONDITIONS OF THE EQUIPMENT. PROVIDE A REPORT SHOWING ALL ACTUAL VERSUS DESIGN

### CONDITIONS. EQUIPMENT START UP

1. ENSURE EQUIPMENT IS PROPERLY SET UP BEFORE STARTING. THIS INCLUDES, BUT IS NOT LIMITED TO

SAFETY VALVES, VALVES, TRIM, WIRING, LUBRICATION, CONTROLS, ETC.

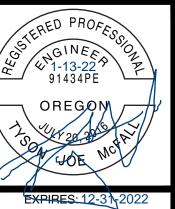
2. START EQUIPMENT AND PROVIDE OWNER WITH DOCUMENTATION OF START UP AND PROPER **EQUIPMENT OPERATION.** 

### CLEANING AND PATCHING

1. CLEAN THE WORK SITE COMPLETELY AT THE END OF THE PROJECT IN A MANNER ACCEPTABLE TO OWNER. REPAIR ANY DAMAGED FINISHED SURFACES WITH A CRAFTSMAN THAT IS SKILLED IN THAT TRADE.

### TRAINING

PROVIDE OWNER WITH APPROPRIATE TRAINING ON EQUIPMENT OPERATION AND MAINTENANCE. PROVIDE OWNER WITH RED LINE DRAWINGS, SUBMITTALS, WARRANTY INFORMATION, AND OPERATION AND MAINTENANCE MANUALS AT THIS TIME.



OA SC 7



11-17-202 ALS-1821 ersion History: V1.0 PHASES (PH):

ISSUE: 11-17-21

**DESIGN DEVELOPMEN** 

PLUMBING SPECS