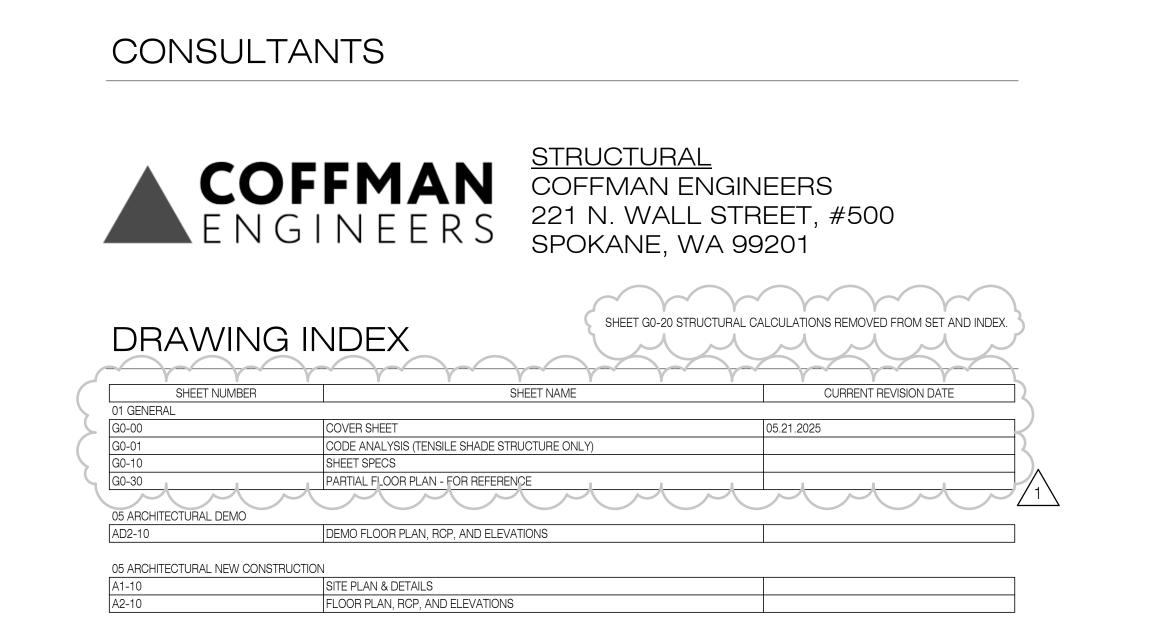


LCSC STUDENT UNION PATIO IMPROVEMENTS 9TH AVENUE, LEWISTON ID 83501



PROJECT SUMMARY

PROJECT SCOPE

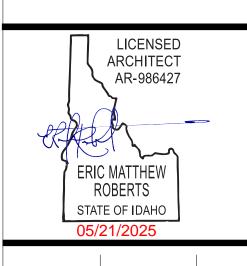
- REPLACEMENT OF EXISTING FIXED STOREFRONT SYSTEM WITH NEW OPERABLE GLASS WALL SYSTEM (NANAWALL SL640) IN THE SAME LOCATION.
- INSTALLATION OF FOUR NEW FREESTANDING FABRIC SHADE STRUCTURES ON THE ADJACENT EXTERIOR PATIO.

CODE COMPLIANCE

THIS PROJECT QUALIFIES AS A LEVEL 1 ALTERATION PER THE 2018 INTERNATIONAL EXISTING BUILDING CODE (IEBC), AS ADOPTED BY THE IDAHO DIVISION OF OCCUPATIONAL AND PROFESSIONAL LICENSES (IDOPL). NO CHANGES ARE PROPOSED TO THE BUILDING'S OCCUPANCY CLASSIFICATION, USE, OCCUPANT LOAD, STRUCTURAL SYSTEM, OR MEANS OF EGRESS.

NO ADDITIONAL CODE UPGRADES OR LIFE SAFETY MODIFICATIONS ARE TRIGGERED. A FULL BUILDING CODE AND EXITING ANALYSIS IS NOT REQUIRED FOR THIS SCOPE OF WORK.





VICINITY MAP

JOB NO: 240027

G0-00

Approved

State of Idaho

PA#: 1636325 Date: 6/23/2025

These plans are approved contingent on the compliance with the mark-ups and notes applied.

This approval shall not be construed to be an approval of any violation of, or variance from, Idaho's adopted codes, standards, laws or rules applicable

DIVISION OF OCCUPATIONAL & PROFESSIONAL LICENSES

Plan Review Note

These plans have been reviewed for code compliance based on the submitted documents and plan sheets, and have been found, to be, substantially compliant, all other code compliance requirements shall be completed through field inspections, verifications, and approvals by the field building inspector.

See Plan Review notes: The plan review notes shall always be attached to the stamped approved plans and documents. These are part of the plans and shall be a permanent record with the plans. Inspection shall not take place without a complete set of the Idaho Division of Occupational and Professional Licenses (IDOPL) plan review notes and approved, stamped plans on site.

Construction Safeguards

Construction safeguards shall be required for any and all demolition and or construction to ensure public safety. Required exits, existing structural elements, fire protection devices and sanitary safeguards shall be maintained at all times during alterations, repairs or additions to any building or structure. All applicable construction safeguards from chapter 31 and 33 shall be in place and maintained while any demolition or construction activities are being undertaken.

CODE ANALYSIS - TENSILE SHADE STRUCTURE ONLY

APPLICABLE CODE

2018 INTERNATIONAL BUILDING CODE (IBC)

DESCRIPTION

PERMANENT TENSILE SHADE STRUCTURE CONSISTING OF FLAME-RESISTANT FABRIC CANOPY ON STEEL COLUMNS, PROVIDING WEATHER PROTECTION FOR AN OUTDOOR GATHERING OR SEATING AREA. THE STRUCTURE IS FREESTANDING AND NON-ENCLOSED.

1. OCCUPANCY CLASSIFICATION

GROUP U – UTILITY AND MISCELLANEOUS

PER IBC SECTION 312.1, GROUP U INCLUDES ACCESSORY STRUCTURES SUCH AS CANOPIES, SHEDS, AND SIMILAR USES NOT CLASSIFIED UNDER OTHER OCCUPANCY GROUPS.

2. CONSTRUCTION TYPE

TYPE IIB - NON-COMBUSTIBLE STRUCTURAL FRAMING, UNPROTECTED

STEEL COLUMNS AND TENSIONED FABRIC CANOPY SYSTEM

3. BUILDING HEIGHT AND AREA STRUCTURE HEIGHT: < 20 FEET

FOOTPRINT AREA: < 1,500 SF

COMPLIANT WITH AREA AND HEIGHT LIMITS FOR GROUP U STRUCTURES PER IBC CHAPTER 5 AND TABLE 504.3.

4. FIRE SEPARATION DISTANCE AND EXTERIOR WALL RATING

THE STRUCTURE IS FREESTANDING, NON-ENCLOSED, AND NON-HABITABLE, AND THEREFORE QUALIFIES AS A CANOPY UNDER IBC SECTION 3105. IN ACCORDANCE WITH IBC 3105, THIS STRUCTURE IS NOT REQUIRED TO COMPLY WITH IBC CHAPTER 7, INCLUDING FIRE-RESISTANCE-RATED EXTERIOR WALLS (TABLE 705.5) OR PROTECTED OPENINGS (TABLE 705.8), PROVIDED:

- IT IS CONSTRUCTED WITH NON-COMBUSTIBLE FRAMING - THE CANOPY MEMBRANE MEETS NFPA 701 FLAME PROPAGATION STANDARDS

- IT DOES NOT INTRODUCE A FIRE HAZARD DUE TO PROXIMITY TO OTHER STRUCTURES

5. STRUCTURAL DESIGN CRITERIA

PER IBC CHAPTER 16 AND ASCE 7-16: - RISK CATEGORY: I (IF UNOCCUPIED UTILITY STRUCTURE)

- WIND LOAD: 1,000 POUNDS WIND LOAD
- SEISMIC DESIGN CATEGORY: C - LIVE LOAD: MINIMUM 1,000 POUNDS SNOW LOAD
- TENSIONED MEMBRANE AND SUPPORTS TO BE ENGINEERED FOR LATERAL AND UPLIFT LOADS

6. MATERIAL AND FLAME RESISTANCE REQUIREMENTS

- FABRIC MEMBRANE: MUST COMPLY WITH IBC 3105.3 AND BE LABELED TO MEET NFPA 701 FLAME PROPAGATION PERFORMANCE - STEEL STRUCTURE: NON-COMBUSTIBLE, CORROSION-RESISTANT AS REQUIRED BY LOCATION AND EXPOSURE

- COMBUSTIBILITY OF COMPONENTS MUST BE VERIFIED IF CANOPY IS WITHIN PROXIMITY OF BUILDINGS WITH OPENINGS OR EAVES

GENERAL DRAWING NOTE

CODE NOTE - TENSILE SHADE STRUCTURE

THIS STRUCTURE IS CLASSIFIED AS A GROUP U (UTILITY AND MISCELLANEOUS) STRUCTURE PER IBC 2018 SECTION 312.1. IT IS A FREESTANDING, NON-ENCLOSED, NON-HABITABLE CANOPY DESIGNED IN ACCORDANCE WITH IBC 3105. AS SUCH, IT IS NOT REQUIRED TO COMPLY WITH FIRE-RESISTANCE-RATED EXTERIOR WALL PROVISIONS OF IBC CHAPTER 7, PROVIDED THAT MEMBRANE MATERIALS MEET FLAME PROPAGATION PERFORMANCE REQUIREMENTS OF NFPA 701 AND THE STRUCTURE DOES NOT CREATE A FIRE HAZARD DUE TO PROXIMITY TO OTHER BUILDINGS. STRUCTURAL DESIGN COMPLIES WITH IBC CHAPTER 16 AND ASCE 7-16 FOR WIND, SEISMIC, AND SNOW LOADS. ACCESSIBILITY TO AND UNDER THE STRUCTURE IS PROVIDED PER IBC CHAPTER 11 AND ICC A117.1. THE STRUCTURE IS EXEMPT FROM THE ENERGY CODE AS A NON-CONDITIONED, OPEN-AIR CANOPY.



ARE INTENDED SOLELY FOR THE PURPOSE OF CONSTRUCTING, USING AND MAINTAINING THE PROJECT. **KNIT** AS THE ARCHITECT OF RECORD FOR THE PROJECT RETAINS OWNERSHIP OF THESE DOCUMENTS.

ANY USE OF THESE DOCUMENTS OR USE OF THIS DESIGN, IDEAS OR CONCEPTS DESCRIBED HEREIN IN WHOLE OR PART BY ANY MEANS WHATSOEVER IS STRICTLY PROHIBITED EXCEPT BY WRITTEN CONSENT OF **KNIT**.

REPRODUCTION OF THIS DOCUMENTS IS STRICTLY PROHIBITED EXCEPT BY WRITTEN

ISSUE DATE: 04.14.2025

REV DATE COMMENT



JOB NO: 240027

Date: 6/23/2025

DIVISION 02 - EXISTING CONDITIONS SECTION 02 4100 DEMOLITION

These plans are approved contingent on the compliance with the mark-ups and notes applied A. Selective demolition of building elements for alteration purposes.

PART 2 PRODUCTS -- NOT USED This approval and fixed to be an approval of any violation or variance from, Idaho's

adopted codes, standards, laws or rules applicable to this project.

A. Remove paving and curbs required to accomplish new work. B. Remove other items indicated, for salvage, relocation, and recycling.

> 3.02 GENERAL PROCEDURES AND PROJECT CONDITIONS A. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public

DIVISION OF 20 CGU PATIONAL resent catastrophic or uncontrolled collapse of structures to be removed; do not allow worker or public access within range of potential collapse of unstable rovide, erect, and maintain temporary barriers and security devices.

. Conduct operations to minimize effects on and interference with adjacent structures and occupants. 5. Do not close or obstruct roadways or sidewalks without permits from authority having jurisdiction. 6. Conduct operations to minimize obstruction of public and private entrances and exits. Do not obstruct required exits at any time. Protect persons using entrances and exits from

B. Do not begin removal until receipt of notification to proceed from Owner. C. Protect existing structures and other elements to remain in place and not removed.

Provide bracing and shoring. Prevent movement or settlement of adjacent structures.

Stop work immediately if adjacent structures appear to be in danger. D. Perform demolition in a manner that maximizes salvage and recycling of materials.

 Dismantle existing construction and separate materials. 2. Set aside reusable, recyclable, and salvageable materials; store and deliver to collection point or point of reuse.

3.03 SELECTIVE DEMOLITION FOR ALTERATIONS

A. Existing construction and utilities indicated on drawings are based on casual field observation and existing record documents only. Verify construction and utility arrangements are as indicated.

Report discrepancies to Architect before disturbing existing installation.

3. Beginning of demolition work constitutes acceptance of existing conditions that would be apparent upon examination prior to starting demolition.

B. Remove existing work as indicated and required to accomplish new work. Remove items indicated on drawings.

C. Services including, but not limited to, HVAC, Plumbing, Fire Protection, Electrical, and Telecommunications: Remove existing systems and equipment as indicated. 1. Maintain existing active systems to remain in operation, and maintain access to equipment and operational components.

D. Protect existing work to remain.

Prevent movement of structure. Provide shoring and bracing as required.

Perform cutting to accomplish removal work neatly and as specified for cutting new work. Repair adjacent construction and finishes damaged during removal work.

Patch to match new work.

3.04 DEBRIS AND WASTE REMOVAL

Remove debris, junk, and trash from site.

B. Leave site in clean condition, ready for subsequent work.

C. Clean up spillage and wind-blown debris from public and private lands.

SECTION 08 4333 THERMALLY BROKEN ALUMINUM FRAMED FOLDING GLASS STOREFRONT

END OF SECTION 02 4100

DIVISION 08 - OPENINGS

PART 1 GENERAL 1.01 SECTION INCLUDES

 Furnishing and installing a sliding-folding, thermally broken, aluminum-framed glass panel system. 1.02 REFERENCE STANDARDS

A. AAMA. American Architectural Manufacturers Association; www.aamanet.org

1. AAMA 205-15, In-Plant Testing Guidelines for Manufacturers and Independent Laboratories.

AAMA 502, Voluntary Specification for Field Testing of Newly Installed Fenestration Products.

AAMA 611, Voluntary Specification for Anodized Architectural Aluminum. AAMA 920-11, Specification for Operating Cycle Performance of Side-Hinged Exterior Door Systems.

AAMA 2604, Voluntary Specifications, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels. AAMA/WDMA/CSA 101/I.S.2/A440-17, NAFS, North American Fenestration Standard Specification for Windows, Doors and Skylights.

B. ANSI. American National Standards Institute; www.ansi.org

1. ANSI Z97.1, Safety Performance Specifications and Methods of Test for Safety Glazing Material Used in Buildings.

C. ASTM. ASTM International; www.astm.org ASTM C1036, Standard Specification for Flat Glass.

ASTM C1048, Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass.

ASTM E90-09, Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.

4. ASTM E283-04 (2012), Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.

ASTM E330-00 (2016), Standard Test Method for Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference. 5. ASTM E331-00 (2016), Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference.

7. ASTM E547-00 (2016), Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Cyclic Static Air Pressure Difference. D. ASTM E2068-00 (2016), Standard Test Method for Determination of Operating Force of Sliding Windows and Doors.

E. ASTM E987-88 (2017), Standard Test Methods for Deglazing Force of Fenestration Products.

F. ASTM E413-16, Classification for Rating Sound Insulation.

G. ASTM E1332, Standard Classification for Rating Outdoor-Indoor Sound Attenuation. . ASTM F842, Standard Test Methods for Measuring the Forced Entry Resistance of Sliding Door Assemblies, Excluding Glazing Impact.

H. CPSC. Consumer Product Safety Commission; www.cpsc.gov

. CPSC 16CFR-1201, Safety Standard for Architectural Glazing Materials

I. Energy Star, U.S. Environmental Protection Agency (EPA) Program; www.energystar.gov

J. NFRC. National Fenestration Rating Council; www.nfrc.org

NFRC 100, Procedure for Determining Fenestration Product U-factors

2. NFRC 200, Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence

K. NFRC 400, Procedure for Determining Fenestration Product Air Leakage L. NFRC 500, Procedure for Determining Fenestration Product Condensation Resistance Rating Values

1.03 ADMINISTRATIVE REQUIREMENTS

 Coordination: Coordinate folding glass door system and framing rough opening. B. Pre-Installation Meeting: Convene one week before starting work of this section.

A. Product Data: Manufacturer's catalog data, detail sheets, and specifications, including:

Preparation instructions and recommendations.

Storage and handling requirements and recommendations.

Installation methods.

B. Shop Drawings: Prepared specifically for this project; show dimensions of doors, sidelights, details of construction, and interface with other products.

Specimen warranty.

C. Samples: Two color cards 6 inches (150 mm) square or larger, showing manufacturer's full range of available colors and patterns for each product specified.

D. Operating and Maintenance Data: Operating and maintenance instructions, and parts lists.

1.05 QUALITY ASSURANCE A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than ten years of documented experience.

B. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience

Installer to be trained and certified by manufacturer.

1.06 DELIVERY, STORAGE, AND HANDLING

B. Store products in manufacturer's unopened packaging until ready for installation.

C. Store products under cover and elevated above grade. 1.07 WARRANTY

A. Deliver products to project site in factory packaging, protected from damage.

A. Manufacturer Warranty: Provide 10-year manufacturer warranty. Complete forms in Owner's name and register with manufacturer.

PART 2 PRODUCTS

2.01 MANUFACTURERS A. Basis of Design: NW Aluminum 640 by Nanawall Systems, Inc.

 Nanawall Systems, Inc. 100 Meadow Creek Drive, Corte Madera, CA 94925

Telephone: 415-383-3148 Email: info@nanawall.com

2.02 PERFORMANCE / DESIGN CRITERIA

A. Performance Criteria (Lab Tested): Swing Panel - Operation / Cycling Performance (AAMA 920): 500,000 cycles

Operating Force (ASTM E2068): a. Swing Panel: Open 2.8 N (1 lbf) and Close 3.9 N (1 lbf) Initiate Motion: Open 20 N (4 lbf) & Close 15 N (3 lbf)

c. Maintain Motion: Open 3 N (1 lbf) & Close 4 N (1 lbf) Thermal Performance (U-Factor): 0.35

Solar Heat Gain Coefficient (SHGC): 0.2 Visible Light Transmission (VT): 0.45

6. Air Leakage: NFRC 400 rated, certified, and labeled

7. Condensation Resistance (CR): 54

B. Design Criteria

Sizes and Configurations: As indicated by the Drawings for selected number and size of panels, location of swing panels, and number of panels stacking to the left and to the right. Unit Operation: Adjustable sliding and folding hardware with top and bottom tracks.

Mounting Type: Floor track supported with upper guide track. Panel Configuration: All panels full height.

Stack Storage Configuration: Outswing. Swing Panel Type:

a. Panel Type: Primary swing panel of paired swing panels, looking from inside: On the right. b. Panel Type: With Entry/Egress panel hinged to bi-folding panels.

Panels: Single lite; standard. 8. Bottom Rail Width: 2-3/8 inch (60 mm).

2.03 MATERIALS

Basis of Design: Model NW Aluminum 640. Thermally Broken Aluminum framed folding glass storefront system 2-5/8 inch (67 mm) thick, floor track supported as manufactured by Nana Wall System, Incorporated. Manufacturer's standard thermally broken panels and frame profiles, with head track, side jambs, sill and panels with dimensions as shown on

1. System Components: Aluminum framed panels, threshold, sliding-folding and locking hardware, weather-stripping, glass and glazing, panel catch, bionic turtle® thermal break, accessories as required for a complete working installation.

Panel Design: a. Panel Pairing Configuration: Bi-folding panels unhinged FourFold panel sets.

3. Panel Size (W x H): As indicated on Drawings. a. Rail Depth: 2-5/8 inch (67 mm).

b. Top Rail Width: 2-5/8 inch (66 mm).

c. Typical Stile Width: 1-3/4 inch (45 mm) on both stiles for a nominal frame stile width of 3-7/8 inch (99 mm) between folding panels.

Frame: Thermally broken top track and side jambs with multipurpose frame insert to hide anchoring connections. For long-term tight, consistent sealing, provide a lateral patented (Patent Number: US10683688B2) adjustment feature at the side jambs capable of adjustment of +/ - 3/16" (5 mm). Frame finish to match panel finish. e. Frame Depth: 2-15/16 inch (74 mm).

Head Track Width: 3-7/8 inch (99 mm) anti-tilt feature for unhinged FourFold panel set configurations. Side Jamb Width: 2 inches (51 mm).

h. Sill Type: Low profile saddle sill - ADA compliant with high-heel protector insert (thermally broken). Sill Finish: Clear anodized.

4. Aluminum Extrusion: AlMgSi0.5 alloy, 6063-T5.

a. Thickness: 0.078 inch (2.0 mm) nominal. b. Thermal Break: 1-15/16 inch (49 mm) wide specially designed and patented (Patent Number: US10550625B2) glass fiber reinforced (GFR) polyamide "Bionic Turtle®" for panels. Standard thermal break elsewhere.

Panel and Frame Aluminum Finish: One color inside and outside (AAMA 611-Anodized or AAMA 2604- Powder Coat).

a. Finish Type: Bronze-M 38/60188. 6. Performance Criteria:

a. Performance Criteria (Lab Tested): LowProfileSaddleSill -OutwardOpening b. Folding Glass Door Units tested to AAMA/WDMA/CSA 101/I.S.2/A440-17 (NAFS-17):

1) Class CW-PG25 - FLD 4000 mm x 2600 mm (157.5 inch x 102 inch) and Class LC-PG35 - FLD 4000 mm x 2600 mm (157.5 inch x 102 inch) with 1L3R configuration for

outward opening units. Structural Load Deflection (ASTM E330):

a. Standard Low E Insulated Tempered Solarban 70.

Design Pressure: +31.41/-31.41psf(+1.51/-1.51kPa) psf (+1508/-NaN Pa). 2) Uniform Load deflection, L/175: Pass 25 psf (1190 Pa). d. Air Infiltration (ASTM E283):

1) 0.12 cfm/ft² (0.61 L/s/m²) at a static air pressure difference of 1.57 psf (75 Pa). 2) 0.28 cfm/ft² (1.50 L/s/m²) at a static air pressure difference of 6.24 psf (300 Pa).

e. Water Penetration (ASTM E331, ASTM E547): 1) No uncontrolled water leakage at a static (with weeps) test pressure of 5.43 psf (260 Pa). (Not applicable for even-even configurations).

Safety Glazing: In compliance with ASTM C1036, ASTM C1048, ANSI Z97.1 and CPSC 16CFR 1201. Manufacturer's glass lites in insulated glazing units for NW Aluminum 640 dry glazed with glass stops on the inside

C. Locking Hardware and Handles:

b. Glass Spacer: Silver Grey, standard.

Main Entry Panel(s) for Models WITH a Swing Panel or Pair of Swing Panel: a. Lever Handles: On inside and outside b. Rods to be concealed and not edge-mounted

Operation: After turn of key or thumb-turn, depression of handles withdraws latch. Lifting handles engages rods and key or thumb turn engages deadbolt and operates lock. Standard lockset with lockable latch.

Multi-point locking with concealed dead bolt and rods at top and bottom on primary panel only. Secondary Swing Panel: Provide concealed two-point, edge locking.

Lever Handle Finish: Brushed satin stainless steel; standard Locking: Standard profile cylinder

Secondary Panels and Pairs of Folding Panels: Provide manufacturer's flat handle and concealed two-point locking hardware operated by 180° turn of handle between each pair. Face applied flush bolt locking NOT acceptable.

a. Handles: Manufacturer's flat handles.

 Flat Handle Finish: Brushed satin stainless steel, standard. Handle Height: 41-3/8 inch (105 cm) centered from bottom of panel unless otherwise indicated on Drawings: standard.

Aluminum Locking Rods with standard fiberglass reinforced polyamide: End caps top and bottom; Rods Stroke: 15/16 inch (24 mm).

Additional profile cylinders: Keyed differently. Burglary Resistance: Standard

Panel Catch: panel catch to hold swing panel to adjacent folding panel to prevent incorrect operation when moving the panel. D. Sliding-Folding Hardware: Provide manufacturer's standard combination sliding and folding hardware with top and bottom tracks and threshold. All running carriages to be with sealed,

self-lubricating, double ball bearing multi-rollers. Surface mounted hinges and running carriages NOT acceptable. 1. Lower Running Carriage Carrying Capacity: 240 lb. (110 kg). Lower running carriage provided with two vertical stainless-steel wheels with double row of ball bearings and two

Upper guide carriage with two horizontal polyamide guiding wheels. For configurations with pairs of panels that can slide left or right, additional concealed, additional vertical tilt protection hardware. Rollers: Double ball bearing stainless-steel wheels.

Roller Finish: Clear. Hinges: Anodized aluminum with stainless steel security hinge pins and set screws. Concealed panel alignment with a tight seal through the patented (Patent Number: US10711510B2) TwinX mechanism reinforced between panels.

Optional Spring-Loaded Pull Handle: For outswing units with larger panel sizes, a spring loaded- pull handle is supplied for ease of closing the system. The pull handle is located above the flat handle. When not in use, the handle lays flat against the adjacent panel and is supplied with bumpers to avoid metal to metal contact. a. Pull Handle – Brushed satin.

Weather stripping: Manufacturer's double layer EPDM between panels and EPDM gasket, Q-lon gasket, or brush seal between panel and frame, or brush seals with a two-layer fiberglass reinforced polyamide fin attached at both inner and outer edge of bottom of door panels with a recessed sill or on frame for sealing between panels and between panel

Fasteners: Installation plates for connecting frame components made of stainless steel with sealing cushion to avoid thermal connectivity. 2.04 FABRICATION

A. Folding Glass Wall: Extruded aluminum frame and panel profiles, corner connectors and hinges, sliding and folding hardware, locking hardware and handles, glass and glazing and weather-stripping components needed to construct a folding glass wall.

a. UniverSILL: For outswing low profile saddle sill, UniverSILL gasket add on available for additional air and water protection.

Each unit factory pre-assembled and shipped with complete system components, installation mounting plates, and installation instructions. Exposed work to be carefully matched to produce continuity of line and design with all joints.

No raw edges visible at joints. PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that openings are plumb, square, and ready for installation of entrances Carefully examine rough openings with Installer present, for compliance with requirements affecting Work performance. a. Examine surfaces of openings and verify dimensions; verify rough openings are level, plumb, and square with no unevenness, bowing, or bumps on the floor; and other

conditions as required by the manufacturer for readiness to receive Work. Verify structural integrity of the header for deflection with live and dead loads limited to the lesser of L/720 of the span or 1/4 inch (6 mm). Provide structural support for lateral loads, and both wind load and eccentric load when the panels are stacked open. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION

1.06 WARRANTY

A. General: Install Folding Glass Door system in accordance with the Drawings, approved submittals, manufacturer's recommendations, and installation instructions, and as follows: Properly flash, waterproof and seal around opening perimeter.

2. Securely attach anchorage devices to rigidly fit frame in place, level, straight, plumb, and square. Install frame in proper elevation, plane, and location, and in proper alignment with other work. When lower track is designed to drain, provide connections to allow for drainage. Install panels, handles, lockset, screens, and other accessories in accordance with manufacturer's recommendations and instructions.

3.03 FIELD QUALITY CONTROL A. Verify the Folding Glass Door system operates and functions properly. Adjust hardware for proper operation.

B. Non-Conforming Work: Repair or replace non-conforming work as directed by the Architect. 3.04 CLEANING AND PROTECTION A. Keep units closed and protect Folding Glass Door installation against damage from construction activities

B. Remove protective coatings and use manufacturer recommended methods to clean exposed surfaces. END OF SECTION 08 4333

> DIVISION 13 - SPECIAL CONSTRUCTION **SECTION 13 3123**

TENSIONED FABRIC STRUCTURES PART 1 GENERAL

1.01 SECTION INCLUDES Tensile membrane structures.

 B. Tensile membranes. 1.02 REFERENCE STANDARDS

A. ASCE 7 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures; Most Recent Edition Cited by Referring Code or Reference Standard. B. ASCE 55 - Tensile Membrane Structures; 2016.

D. ASTM E108 - Standard Test Methods for Fire Tests of Roof Coverings; 2020a. E. ASTM E136 - Standard Test Method for Assessing Combustibility of Materials Using a Vertical Tube Furnace at 750 °C; 2022.

1.03 SUBMITTALS A. Product Data: For tensile membranes and flexible structural elements.

C. ASTM A603 - Standard Specification for Metallic-Coated Steel Structural Wire Rope; 2019.

B. Shop Drawings:

Signed and sealed by Engineer of Record responsible for design of fabric structures

Include column centers, elevations, and dimensions.

Details: Include connections, anchorages, and bearing supports. C. Samples: For each membrane type, two samples, 12 inches by 12 inches (300 mm by 300 mm) in size, indicating specified color.

D. Operating and Maintenance Data: Manufacturer's instructions for routine inspections, emergency repairs, and use of emergency repair materials; include repairing flexible structural elements and cleaning tensile membranes. 1.04 QUALITY ASSURANCE A. Designer Qualifications: Perform design under direct supervision of Professional Engineer experienced in design of this type of work and licensed in the State in which the Project is

located; with at least three years of documented experience. B. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with at least three years of documented experience. C. Fabricator Qualifications: Company specializing in fabricating products specified in this section, with at least three years of documented experience.

A. Manufacturer Warranty: Provide 10-year manufacturer warranty for tensile membranes and perimeter attachment system elements. Complete forms in Owner's name and register with

D. Erector Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience and approved by manufacturer. 1.05 DELIVERY, STORAGE, AND HANDLING A. Deliver materials to project site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.

PART 2 PRODUCTS 2.01 MANUFACTURERS A. Tensile Membrane Structures:

2.05 SEWING

USAShade: www.usa-shade.com 2. Ultrashade: www.performancerec.com/ultra-shade

2.02 TENSILE MEMBRANE STRUCTURES

A. Tensile membrane structures consisting of tensioned membranes stretched over flexible and nonflexible structural support elements Provide smooth uniform membrane surface with even-curved edges and interfaces; without wrinkles, cuts, abrasions, stains, marks, surface defects, or seaming aberrations.

Configuration as indicated on drawings. 2.03 STRUCTURAL DESIGN CRITERIA A. Design and install tensile membrane structures in accordance with ASCE 55. Determine loads in accordance with ASCE 7, except as modified by ASCE 55. Include provision for loads

imposed on tensile membrane structures during erection and dismantling. 2.04 TENSILE MEMBRANES

A. High-Density Polyethylene (HDPE) Membranes.

Weight: 9.6 oz/sq yd (325 g/sq m). Weave Style: Rachel knit to prevent unraveling if cut.

Color: As selected from manufacturer's standard selection

4. Cloth: Shall be made of HDPE with UV stabilizer treatment. 5. Construction: Monofilament tape construction.

A. All corners shall be reinforced with extra non-tear cloth and strap to distribute the load. B. The perimeters that contain the cables shall be double lock stitched.

 C. On-site sewing of fabric will not be accepted. 2.06 THREAD

 A. 100% expanded PFE fiber that is high density, high strength, and low shrinkage. B. Shall be abrasion resistant and immune to UV radiation.

C. Shall have a wide temperature and humidity range. D. Shall be unaffected by cleaning agents, acid rain, mildew, rot, chlorine, saltwater, and pollution.

Schedule 40 black pipe fabrications shall be sand-blasted and primed as described below.

E. Lockstitch thread: 1200 Denier or equal. F. Chainstitch thread: 2400 Denier or equal

2.07 STRUCTURAL STEEL A. All fabricated steel shall conform to approved shop drawings and calculations.

B. All hollow structural steel shapes shall be cold formed HSS ASTM A-53 grade C unless otherwise noted. Schedule 40 pipe shall be A500 Grade B or C. Plate steel shall conform to

C. All steel is cleaned, degreased, or etched to ensure proper adhesion of Superdurable powder coat in accordance with manufacturer's specifications. D. All steel shall be new and accompanied by the mill certificates if requested. Structural steel tubing up to 5" 7 gauge shall be galvanized per Allied Steel FLO-COAT specifications.

2.08 TENSIONING CABLE A. Steel cable determined by calculated engineering load.

2. For heavy loads: 3/8" (nominal) galvanized 7x19 cable. B. Cable connectors and shackles shall be stainless steel or hot dipped galvanized. 2.09 ANCHOR BOLTS

For light and medium loads: 1/4" (nominal) galvanized 7x19 cable.

A. Anchor bolts set in new concrete shall be A36 threaded rod, ASTM A-325, or A-307.

B. All anchor bolts shall be hot dipped galvanized. 2.10 FOOTING REINFORCEMENT

A. All reinforcement shall conform to ASTM A-615 Grade 60.

B. All reinforcing steel shall conform to approved shop drawings and calculations. PART 3 EXECUTION

3.01 EXAMINATION

3.04 ERECTION

A. Examine area to receive flexible structural elements and tensile membrane; notify Architect if area is not acceptable and do not begin installation until unacceptable conditions have been

B. Examine foundations and anchor bolts for location and elevation; notify Architect of inaccuracies, and do not begin installation until unacceptable conditions have been corrected. 3.02 PREPARATION A. Prepare a clear, flat, smooth, and clean layout area on ground of sufficient size for assembly of tensile membrane panels; prepare area adjacent to location of structure installation.

B. Check contact surfaces to remove sharp objects, dirt, grease, oil, and other causes for rips, scratching, or other damage to tensile membrane panels during installation

3.03 WELDING All shop welds shall comply with the latest edition of the American Welding Society Specifications.

B. Welding procedures shall comply with the AWS D1.1-AWS Structural Welding Code-Steel.

C. All welds to be performed by a certified welder. D. All welds shall be continuouswhere length is not given, unless otherwise noted on drawings.

E. All welds shall develop the full strength of the weaker member. F. All welds shall be made using E70xx.035 wire.

G. Shop connections shall be welded unless noted otherwise. H. All fillet welds shall be a minimum of 1/4" unless otherwise noted. All steel shall be welded shut at terminations to prevent leakage.

 Field –welded connections are not acceptable. K. Internal weld sleeving is not acceptable.

Install to avoid damage to tensile membranes.

A. Erect structures & hardware in compliance with fabricators' instructions.

 B. Securely fasten all parts to be attached. C. Ensure all parts interact freely & smoothly without binding.

2. Ensure tensile membranes surfaces are smooth, uniform, and clean, with even-curved edges and interfaces, and with no cuts, scratches, abrasions, stains, marks, blemishes, or 3.05 ADJUSTING

A. Make final adjustments to tensile membranes and flexible structural elements as required for structural integrity, and in accordance with shapes and configuration indicated on drawings.

END OF SECTION 13 3123

3.06 CLEANING A. Clean and touchup flexible structural elements in accordance with manufacturer's field repair recommendations.

E. Install tensile membranes and flexible structural elements in accordance with manufacturer's instructions

STATE OF IDAHO D. Do not undertake erection of tensile membranes during inclement weather conditions; installer has sole responsibility to determine when conditions are safe for erection.

LICENSED **ARCHITECT** AR-986427

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ARE INTENDED SOLELY FOR THE PURPOSE OF CONSTRUCTING, USING AND MAINTAINING THE PROJECT. **KNIT** AS THE ARCHITECT OF RECORD FOR THE PROJECT

ANY USE OF THESE DOCUMENTS OR USE OF THIS DESIGN, IDEAS OR CONCEPTS

DESCRIBED HEREIN IN WHOLE OR PART BY ANY MEANS WHATSOEVER IS STRICTLY PROHIBITED EXCEPT BY WRITTEN CONSENT OF **KNIT**.

ISSUE DATE: 04.14.2025

REV DATE COMMENT

REPRODUCTION OF THIS DOCUMENTS IS STRICTLY PROHIBITED EXCEPT BY WRITTEN

ERIC MATTHEW ROBERTS

Ш Ш IMPR S 出

JOB NO: 240027

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These plans are approved contingent on the compliance with the mark-ups and notes approved STUDENT UNION PATIO IMPROVEMENTS LEWISTON, ID.

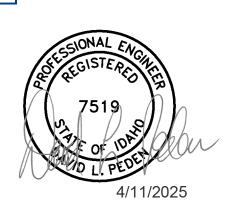
This approval shall not be construed to be an approval of any violation of, or variance from, Idaho's adopted codes, standards, laws or rules applicable to this project.

KNIT Designing Community

DIVISION OF OCCUPATIONAL &

April 11, 2025

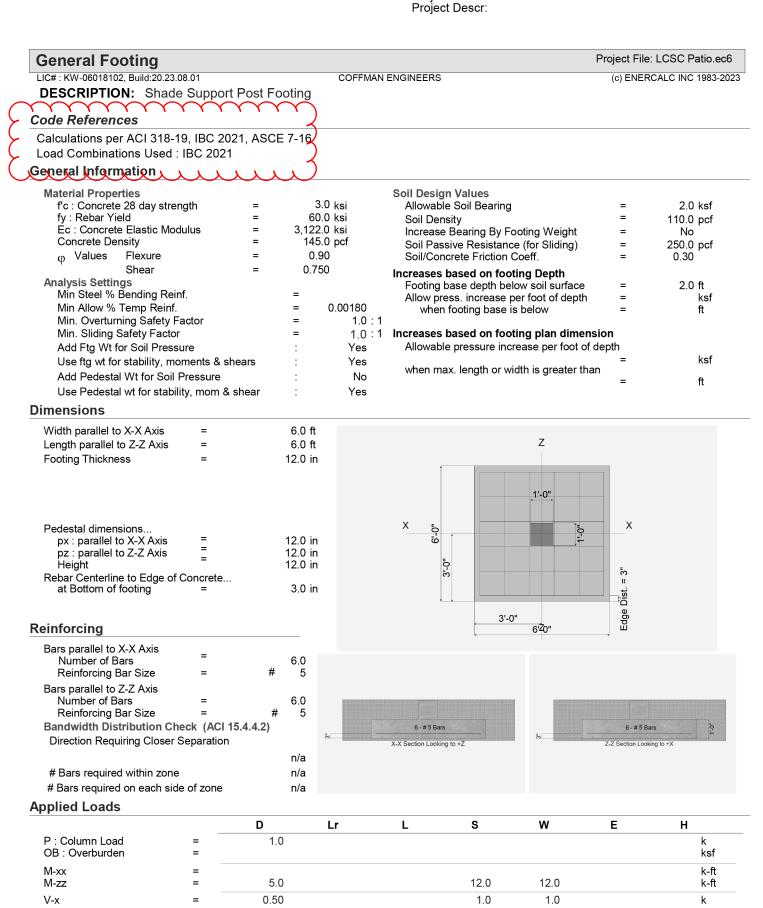
PROFESSIONAL LICENSES STRUCTURAL CALCULATIONS



Prepared By: **COFFMAN** 221 N. Wall Street, SUITE 500 SPOKANE, WA 99201

509.328.2994

Project Title:



These calculations are for the post and footing that support a shade structure over the outdoor patio at the LCSC Student Union Building. The shade fabric, cabling, and connections to the posts are by the supplier. Assumed horizontal loading at the connection points on the column is 500 pounds dead load, 1000 pounds snow load, and 1000 pounds wind load.

Enercalc beam module is used to check the post stress and deflection. The post is bolted to the footing and a concrete pier poured around the post to provide fixity at the base.

The footing is designed for the sliding and overturning forces placed on the footing by the cantilevered post.

See the following Enercalc output.

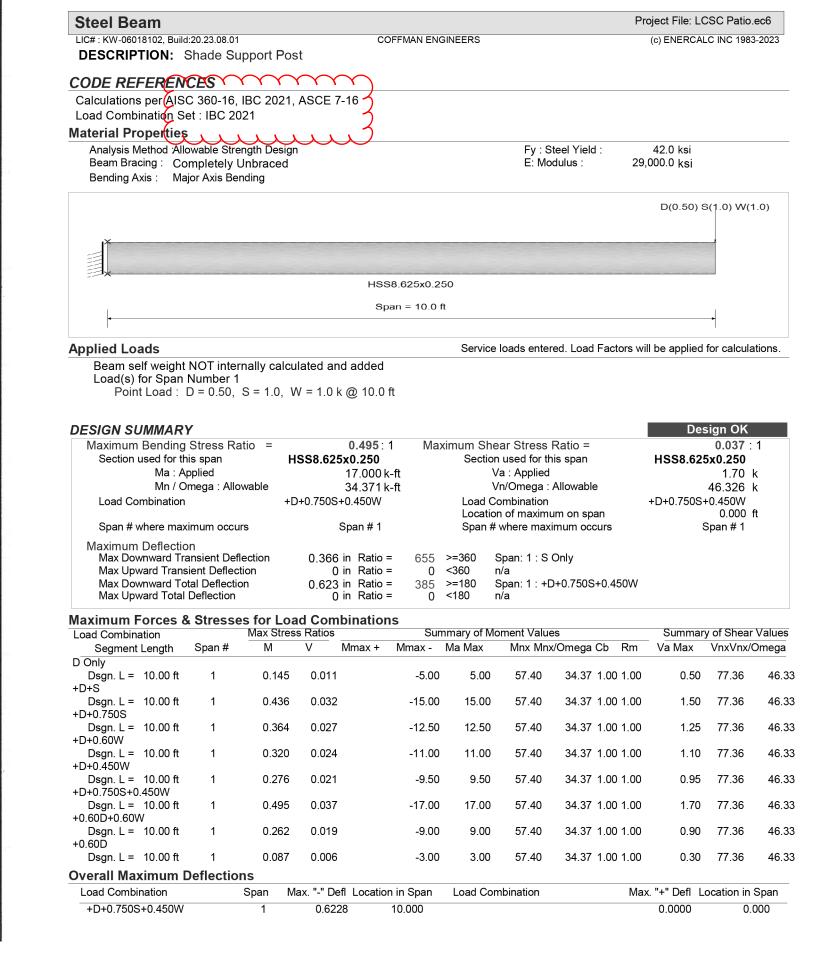
See letter from engineer stateing that the 2018 design is compliant with the 2021 code design

	project	by	sheet no.
▲ COFFMAN	location	date	
ENGINEERS	client	checked	job no.

Project Title:

						Descr:			
General F	ooting						F	Project File: LC	SC Patio.ec6
LIC# : KW-06018	,	.08.01 le Support Post Foo		OFFMAN EN	IGINEERS			(c) ENERCAL	C INC 1983-2023
DESIGN SUI			Ü					Desigr	ı OK
	Min. Ratio	Item	Aı	plied		Capacity	Govern	ing Load Com	bination
PASS	0.750	Soil Bearing		.50 ksf		2.0 ksf	+D+0.7	50S+0.450W a	bout <i>7-7</i> axis
PASS	n/a	Overturning - X-X		0.0 k-ft		0.0 k-ft	No Overturning		DOGE Z Z GAIO
PASS	1.344	Overturning - Z-Z	22.80 k-ft			30.645 k-ft	+D+0.750S+0.450W		
PASS	3.126	Sliding - X-X	1.70 k			5.315 k	+D+0.750S+0.450W		
PASS	n/a	Sliding - Z-Z	0.0 k			0.0 k	No Sliding		
PASS	n/a	Uplift	0.0 k			0.0 k	No Uplift		
PASS	0.2447	Z Flexure (+X)	2.969 k-ft/ft			12.131 k-ft/ft	+1,20D+1.60S		
PASS	0.2777	Z Flexure (-X)				12.131 k-ft/ft			
PASS	0.07882	X Flexure (+Z)	0.9562 k-ft/ft			12.131 k-ft/ft	+1.20D+1.60S		
PASS	0.008915	X Flexure (-Z)	0.1082 k-ft/ft			12.131 k-ft/ft	+1.40D		
PASS	0.006913	` '	0.1082 k-ft/ft						
		1-way Shear (+X)		713 psi		82.158 psi	+1.20D+1.60S		
PASS	0.06001	1-way Shear (-X)		930 psi		82.158 psi	+1.20D+1.60S		
PASS	0.006787	1-way Shear (+Z)		76 psi		82.158 psi	+1.40D		
PASS PASS	0.006787 0.08070	1-way Shear (-Z) 2-way Punching		576 psi 260 psi		82.158 psi 164.317 psi	+1.40D +1.20D	+1.60S+0.50W	
	Top reinford	ing mat required (see	Bending' ta	b).		·			
	Hand check	required for anchor pu	ıllout.						
Detailed Res	sults								
Soil Bearing									
Rotation Axis	& mbination	Gross Allowable	Xecc (ir	Zecc ı)	Actua Bottom, -Z	I Soil Bearing Str Top, +Z	ess @ Loca Left, -X	ation Right, +X	Actual / Allov Ratio
X-X, D Only		2.0	n/a	0.0	0.2797	0.2797	n/a	n/a	0.140
X-X, +D+S		2.0	n/a	0.0	0.2797	0.2797	n/a	n/a	0.140
X-X, +D+0.75		2.0	n/a	0.0	0.2797	0.2797	n/a	n/a	0.140
X-X, +D+0.60 X-X, +D+0.45		2.0 2.0	n/a n/a	0.0 0.0	0.2797 0.2797	0.2797 0.2797	n/a n/a	n/a n/a	0.140 0.140
X-X, +D+0.43 X-X, +D+0.75		2.0	n/a	0.0	0.2797	0.2797	n/a	n/a	0.140
X-X, +0.60D+		2.0	n/a	0.0	0.1678	0.1678	n/a	n/a	0.084
X-X, +0.60D		2.0	n/a	0.0	0.1678	0.1678	n/a	n/a	0.084
Z-Z, D Only		2.0	7.150	n/a	n/a	n/a	0.1147	0.4447	0.222
Z-Z, +D+S	00	2.0	23.833	n/a	n/a	n/a	0.0	1.093	0.547
Z-Z, +D+0.75 Z-Z. +D+0.60		2.0 2.0	19.662 17.160	n/a	n/a	n/a	0.0	0.8158 0.7081	0.408 0.354
Z-Z, +D+0.60 Z-Z, +D+0.45			14.657	n/a n/a	n/a	n/a n/a	0.0 0.0	0.6256	0.313
		2.0			n/a			0.0200	
Z-Z, +D+0.75		2.0 2.0			n/a n/a			1.50	
Z-Z, +0.60D+	0S+0.450W	2.0 2.0	27.170 23.833	n/a n/a	n/a n/a n/a	n/a n/a	0.0 0.0	1.50 0.6556	0.750 0.328
Z-Z, +0.60D+ Z-Z, +0.60D	0S+0.450W 0.60W	2.0	27.170	n/a	n/a	n/a n/a	0.0		0.750 0.328
Z-Z, +0.60D+ Z-Z, +0.60D	0S+0.450W 0.60W ability	2.0 2.0 2.0	27.170 23.833 7.150	n/a n/a n/a	n/a n/a n/a	n/a n/a n/a	0.0 0.0 0.06883	0.6556	0.750 0.328
Z-Z, +0.60D+ Z-Z, +0.60D Overturning Standard Rotation Axis Load Cor	0S+0.450W 0.60W ability	2.0 2.0 2.0	27.170 23.833	n/a n/a n/a Moment	n/a n/a n/a	n/a n/a n/a Resisting Moment	0.0 0.0 0.06883	0.6556 0.2668 ility Ratio	0.750 0.328 0.133 Status
Z-Z, +0.60D+ Z-Z, +0.60D Overturning Standard Axis Load Con X-X, D Only	0S+0.450W 0.60W ability	2.0 2.0 2.0	27.170 23.833 7.150	n/a n/a n/a Moment	n/a n/a n/a	n/a n/a n/a Resisting Moment	0.0 0.0 0.06883	0.6556 0.2668 illity Ratio	0.750 0.328 0.133 Status OK
Z-Z, +0.60D+ Z-Z, +0.60D Overturning Standard Rotation Axis Load Cor	0S+0.450W 0.60W ability s & mbination	2.0 2.0 2.0	27.170 23.833 7.150	n/a n/a n/a Moment	n/a n/a n/a	n/a n/a n/a Resisting Moment	0.0 0.0 0.06883	0.6556 0.2668 ility Ratio	0.750 0.328 0.133 Status
Z-Z, +0.60D+ Z-Z, +0.60D Dverturning Standard Cor X-X, D Only X-X, +D+S X-X, +D+0.75 X-X, +D+0.60	0S+0.450W 0.60W ability s & mbination	2.0 2.0 2.0	27.170 23.833 7.150	n/a n/a n/a None None None None None	n/a n/a n/a	n/a n/a n/a Resisting Moment 0.0 k-ft 0.0 k-ft 0.0 k-ft 0.0 k-ft	0.0 0.0 0.06883	0.6556 0.2668 iility Ratio Infinity Infinity Infinity Infinity	0.750 0.328 0.133 Status OK OK OK OK
Z-Z, +0.60D+ Z-Z, +0.60D Dverturning Standard Cor X-X, D Only X-X, +D+S X-X, +D+0.75 X-X, +D+0.60 X-X, +D+0.45	0S+0.450W 0.60W ability s & mbination	2.0 2.0 2.0	27.170 23.833 7.150	n/a n/a n/a Moment None None None None None	n/a n/a n/a	n/a n/a n/a Resisting Moment 0.0 k-ft 0.0 k-ft 0.0 k-ft 0.0 k-ft	0.0 0.0 0.06883	0.6556 0.2668 iility Ratio Infinity Infinity Infinity Infinity Infinity	0.750 0.328 0.133 Status OK OK OK OK OK
Z-Z, +0.60D+ Z-Z, +0.60D Dverturning Standard Cor X-X, D Only X-X, +D+S X-X, +D+0.75 X-X, +D+0.45 X-X, +D+0.75	0S+0.450W 0.60W ability s & mbination 0S W 0W 0S+0.450W	2.0 2.0 2.0	27.170 23.833 7.150	n/a n/a n/a Moment None None None None None None None	n/a n/a n/a	n/a n/a n/a Resisting Moment 0.0 k-ft 0.0 k-ft 0.0 k-ft 0.0 k-ft 0.0 k-ft	0.0 0.0 0.06883	0.6556 0.2668 illity Ratio Infinity Infinity Infinity Infinity Infinity Infinity	0.750 0.328 0.133 Status OK OK OK OK OK
Z-Z, +0.60D+ Z-Z, +0.60D Dverturning Standard Cor X-X, D Only X-X, +D+9.75 X-X, +D+0.60 X-X, +D+0.45 X-X, +D+0.45 X-X, +D+0.75 X-X, +0.60D+	0S+0.450W 0.60W ability s & mbination 0S W 0W 0S+0.450W	2.0 2.0 2.0	27.170 23.833 7.150	n/a n/a n/a Moment None None None None None None None Non	n/a n/a n/a	n/a n/a n/a Resisting Moment 0.0 k-ft 0.0 k-ft 0.0 k-ft 0.0 k-ft 0.0 k-ft 0.0 k-ft	0.0 0.0 0.06883	0.6556 0.2668 illity Ratio Infinity Infinity Infinity Infinity Infinity Infinity Infinity	0.750 0.328 0.133 Status OK OK OK OK OK OK
Z-Z, +0.60D+ Z-Z, +0.60D Dverturning Standard Cor X-X, D Only X-X, +D+0.75 X-X, +D+0.60 X-X, +D+0.45 X-X, +D+0.75 X-X, +0.60D+ X-X, +0.60D+ X-X, +0.60D	0S+0.450W 0.60W ability s & mbination 0S W 0W 0S+0.450W	2.0 2.0 2.0	27.170 23.833 7.150 Overturning	n/a n/a n/a n/a Moment None None None None None None None Non	n/a n/a n/a	n/a n/a n/a Resisting Moment 0.0 k-ft 0.0 k-ft 0.0 k-ft 0.0 k-ft 0.0 k-ft 0.0 k-ft	0.0 0.0 0.06883	0.6556 0.2668 illity Ratio Infinity Infinity Infinity Infinity Infinity Infinity Infinity Infinity	0.750 0.328 0.133 Status OK OK OK OK OK OK OK
Z-Z, +0.60D+ Z-Z, +0.60D Dverturning Standard Cor X-X, D Only X-X, +D+9.75 X-X, +D+0.60 X-X, +D+0.45 X-X, +D+0.45 X-X, +D+0.75 X-X, +0.60D+	0S+0.450W 0.60W ability s & mbination 0S W 0W 0S+0.450W	2.0 2.0 2.0	27.170 23.833 7.150 Overturning	n/a n/a n/a Moment None None None None None None None Non	n/a n/a n/a	n/a n/a n/a Resisting Moment 0.0 k-ft 0.0 k-ft 0.0 k-ft 0.0 k-ft 0.0 k-ft 0.0 k-ft	0.0 0.0 0.06883	0.6556 0.2668 illity Ratio Infinity Infinity Infinity Infinity Infinity Infinity Infinity	0.750 0.328 0.133 Status OK OK OK OK OK OK
Z-Z, +0.60D+ Z-Z, +0.60D Dverturning Standard Cor X-X, D Only X-X, +D+0.75 X-X, +D+0.75 X-X, +D+0.45 X-X, +D+0.45 X-X, +0.60D+ X-X, +0.60D Z-Z, D Only	0S+0.450W 0.60W ability 6 & mbination 0S W 0W 0S+0.450W 0.60W	2.0 2.0 2.0	27.170 23.833 7.150 Overturning	Moment None None None None None None None None	n/a n/a n/a	n/a n/a n/a n/a Resisting Moment 0.0 k-ft 0.0 k-ft 0.0 k-ft 0.0 k-ft 0.0 k-ft 0.0 k-ft 30.645 k-ft 30.645 k-ft	0.0 0.0 0.06883	0.6556 0.2668 Infinity Infinity Infinity Infinity Infinity Infinity Infinity Infinity Infinity 5.108 1.532 1.857	0.750 0.328 0.133 Status OK
Z-Z, +0.60D+ Z-Z, +0.60D Dverturning St: Load Coi X-X, D Only X-X, +D+S X-X, +D+0.60 X-X, +D+0.45 X-X, +D+0.75 X-X, +0.60D+ X-X, +0.60D Z-Z, D Only Z-Z, +D+S Z-Z, +D+0.60 Z-Z, +D+0.60	0S+0.450W 0.60W ability s & mbination 0S W 0W 0S+0.450W 0.60W	2.0 2.0 2.0	27.170 23.833 7.150 Overturning 2 16 14	Moment None None None None None None None None	n/a n/a n/a	n/a n/a n/a n/a Resisting Moment 0.0 k-ft 0.0 k-ft 0.0 k-ft 0.0 k-ft 0.0 k-ft 0.0 k-ft 30.645 k-ft 30.645 k-ft 30.645 k-ft	0.0 0.0 0.06883	0.6556 0.2668 illity Ratio Infinity Infinity Infinity Infinity Infinity Infinity Infinity 5.108 1.532 1.857 2.128	0.750 0.328 0.133 Status OK
Z-Z, +0.60D+ Z-Z, +0.60D Dverturning St: Load Coi X-X, D Only X-X, +D+S X-X, +D+0.60 X-X, +D+0.45 X-X, +D+0.75 X-X, +0.60D+ X-X, +0.60D Z-Z, D Only Z-Z, +D+S Z-Z, +D+S Z-Z, +D+0.60 Z-Z, +D+0.60 Z-Z, +D+0.45	0S+0.450W 0.60W ability 5 & mbination 0S W 0W 0S+0.450W 0S W 0S W	2.0 2.0 2.0	27.170 23.833 7.150 Overturning 2 16 14 12	Moment None None None None None None None Oo k-ft 0.0 k-ft .50 k-ft .40 k-ft	n/a n/a n/a	n/a n/a n/a n/a Resisting Moment 0.0 k-ft 0.0 k-ft 0.0 k-ft 0.0 k-ft 0.0 k-ft 30.645 k-ft 30.645 k-ft 30.645 k-ft 30.645 k-ft	0.0 0.0 0.06883	0.6556 0.2668 illity Ratio Infinity Infinity Infinity Infinity Infinity Infinity Infinity Infinity 5.108 1.532 1.857 2.128 2.491	0.750 0.328 0.133 Status OK
Z-Z, +0.60D+ Z-Z, +0.60D Dverturning St: Load Coi X-X, D Only X-X, +D+S X-X, +D+0.60 X-X, +D+0.45 X-X, +D+0.75 X-X, +0.60D+ X-X, +0.60D Z-Z, D Only Z-Z, +D+S Z-Z, +D+0.60 Z-Z, +D+0.60	0S+0.450W 0.60W ability 5 & mbination 0S W 0W 0S+0.450W 0S W 0W 0S+0.450W	2.0 2.0 2.0	27.170 23.833 7.150 Overturning 2 16 14 12 22	Moment None None None None None None None None	n/a n/a n/a	n/a n/a n/a n/a Resisting Moment 0.0 k-ft 0.0 k-ft 0.0 k-ft 0.0 k-ft 0.0 k-ft 0.0 k-ft 30.645 k-ft 30.645 k-ft 30.645 k-ft	0.0 0.0 0.06883	0.6556 0.2668 illity Ratio Infinity Infinity Infinity Infinity Infinity Infinity Infinity 5.108 1.532 1.857 2.128	0.750 0.328 0.133 Status OK

Project Title: Engineer: Project ID: Project Descr:



Project Title:

General Footing							Project File: LCS	SC Patio.ec6
LIC#: KW-06018102, Build:20.23.08.01			COFFMA	N ENGINEERS			(c) ENERCALC	INC 1983-2023
DESCRIPTION: Shade Supp	ort Post I	ooting						
Sliding Stability							Al	l units k
Force Application Axis		01			D ! - 4! !		- L. 1114 - D - 41 -	-
Load Combination		SI	iding Force		Resisting I		tability Ratio	Status
X-X, D Only X-X, +D+S			0.50 k 1.50 k			315 k 315 k	10.629 3.543	OK OK
X-X, +D+0.750S			1.250 k	(5.	315 k	4.252	OK
X-X, +D+0.60W			1.10			315 k	4.831	OK
X-X, +D+0.450W X-X, +D+0.750S+0.450W			0.950 k 1.70 k			315 k 315 k	5.594 3.126	OK OK
X-X, +0.60D+0.60W			0.90 k			089 k	4.543	OK
X-X, +0.60D			0.30 k	(4.	089 k	13.629	OK
Z-Z, D Only			0.0			315 k	No Sliding	OK
Z-Z, +D+S Z-Z, +D+0.750S			0.0 k 0.0 k			315 k 315 k	No Sliding No Sliding	OK OK
Z-Z, +D+0.60W			0.0 l	<		315 k	No Sliding	OK
Z-Z, +D+0.450W			0.0			315 k	No Sliding	OK
Z-Z, +D+0.750S+0.450W Z-Z, +0.60D+0.60W			0.0 k 0.0 k			315 k 089 k	No Sliding No Sliding	OK OK
Z-Z, +0.60D			0.0 1			089 k	No Sliding	OK
Footing Flexure Flexure Axis & Load Combination	Mu	Side	Tension	As Req'd	Gvrn. As	Actual As	Phi*Mn	Status
V V .4.40D	k-ft	. 7	Surface	in^2	in^2	in^2	k-ft	OK
X-X, +1.40D X-X, +1.40D	0.1082 0.1082	+Z -Z	Bottom Bottom	0.2592 0.2592	AsMin AsMin	0.310 0.310	12.131 12.131	OK OK
X-X, +1.20D	0.09270	+Z	Bottom	0.2592	AsMin	0.310	12.131	oK
X-X, +1.20D	0.09270	-Z	Bottom	0.2592	AsMin	0.310	12.131	OK
X-X, +1.20D+0.50S X-X, +1.20D+0.50S	0.09270 0.09270	+Z -Z	Bottom Bottom	0.2592 0.2592	AsMin AsMin	0.310 0.310	12.131 12.131	OK OK
X-X, +1.20D+0.50W	0.09270	+Z	Bottom	0.2592	AsMin	0.310	12.131	OK
X-X, +1.20D+0.50W	0.09270	-Z	Bottom	0.2592	AsMin	0.310	12.131	OK
X-X, +1.20D+1.60S X-X, +1.20D+1.60S	0.09270 0.09270	+Z -Z	Bottom Bottom	0.2592 0.2592	AsMin AsMin	0.310 0.310	12.131 12.131	OK OK
X-X, +1.20D+1.60S+0.50W	0.09270	+Z	Bottom	0.2592	AsMin	0.310	12.131	OK
X-X, +1.20D+1.60S+0.50W	0.09270	-Z	Bottom	0.2592	AsMin	0.310	12.131	OK
X-X, +1.20D+W X-X, +1.20D+W	0.09270 0.09270	+Z -Z	Bottom Bottom	0.2592 0.2592	AsMin AsMin	0.310 0.310	12.131 12.131	OK OK
X-X, +1.20D+0.50S+W	0.09270	+Z	Bottom	0.2592	AsMin	0.310	12.131	OK
X-X, +1.20D+0.50S+W	0.09270	-Z	Bottom	0.2592	AsMin	0.310	12.131	OK
X-X, +1.20D+0.70S X-X, +1.20D+0.70S	0.09270 0.09270	+Z -Z	Bottom Bottom	0.2592 0.2592	AsMin AsMin	0.310 0.310	12.131 12.131	OK OK
X-X, +0.90D+W	0.06953	+Z	Bottom	0.2592	AsMin	0.310	12.131	ok
X-X, +0.90D+W	0.06953	-Z	Bottom	0.2592	AsMin	0.310	12.131	OK
X-X, +0.90D X-X, +0.90D	0.06953 0.06953	+Z -Z	Bottom Bottom	0.2592 0.2592	AsMin AsMin	0.310 0.310	12.131 12.131	OK OK
Z-Z, +1.40D	0.4184	-X	Top	0.2592	AsMin	0.310	12.131	OK
Z-Z, +1.40D	0.6347	+X	Bottom	0.2592	AsMin	0.310	12.131	OK
Z-Z, +1.20D Z-Z, +1.20D	0.3586 0.5440	-X +X	Top Bottom	0.2592 0.2592	AsMin AsMin	0.310 0.310	12.131 12.131	OK OK
Z-Z, +1.20D+0.50S	0.7837	-X	Top	0.2592	AsMin	0.310	12.131	OK
Z-Z, +1.20D+0.50S	0.9929	+X	Bottom	0.2592	AsMin	0.310	12.131	OK
Z-Z, +1.20D+0.50W Z-Z, +1.20D+0.50W	0.7837 0.9929	-X +X	Top Bottom	0.2592 0.2592	AsMin AsMin	0.310 0.310	12.131 12.131	OK OK
Z-Z, +1.20D+1.60S	0.9562	-X	Top	0.2592	AsMin	0.310	12.131	OK
Z-Z, +1.20D+1.60S	2.969	+X	Bottom	0.2592	AsMin	0.310	12.131	OK
Z-Z, +1.20D+1.60S+0.50W Z-Z, +1.20D+1.60S+0.50W	0.9562 0.9562	-X +X	Top Top	0.2592 0.2592	AsMin AsMin	0.310 0.310	12.131 12.131	OK OK
Z-Z, +1.20D+1.60S+0.50W Z-Z, +1.20D+W	0.9556	-X	Тор	0.2592	AsMin	0.310	12.131	OK
Z-Z, +1.20D+W	1.661	+X	Bottom	0.2592	AsMin	0.310	12.131	OK
Z-Z, +1.20D+0.50S+W	0.9562 2.736	-X	Top Bottom	0.2592 0.2592	AsMin AsMin	0.310 0.310	12.131 12.131	OK OK
Z-Z, +1.20D+0.50S+W Z-Z, +1.20D+0.70S	0.8946	+X -X	Bottom Top	0.2592	Asiviin AsMin	0.310	12.131	OK
Z-Z, +1.20D+0.70S	1.218	+X	Bottom	0.2592	AsMin	0.310	12.131	OK
Z-Z, +0.90D+W	0.7171	-X	Тор	0.2592	AsMin	0.310	12.131	OK
Z-Z, +0.90D+W	1.761	+X	Bottom	0.2592	AsMin	0.310	12.131	OK

Project Title: Engineer: Project ID: Project Descr:

Project Title:

Engineer: Project ID: Project Descr

Gvrn. As

in^2

AsMin

0.56 psi

0.48 psi 0.48 psi

0.48 psi

0.48 psi

0.48 psi

0.48 psi

0.48 psi

0.48 psi

Actual As

in^2

0.310

5.04 psi

5.04 psi

8.39 psi

13.41 psi

6.18 psi

Vu / Phi*Vn

0.009128 0.007824

0.007904 0.007904 0.01655 0.0807 0.01098 0.01657 0.008393

0.01168 0.005868

82.16 psi 82.16 psi

82.16 psi

82.16 psi

82.16 psi

82.16 psi

82.16 psi

4.93 psi 82.16 psi

8.81 psi 82.16 psi 2.07 psi 82.16 psi

COFFMAN ENGINEERS

Tension As Req'd Surface in^2

Vu @ -Z

Vu @ +X

2.11 psi

1.81 psi

4.01 psi

4.01 psi

4.93 psi

4.93 psi

4.93 psi

4.71 psi

3.70 psi 1.36 psi

3.23 psi 2.77 psi

5.04 psi

5.04 psi

13.71 psi

4.93 psi

8.39 psi

13.41 psi

6.18 psi

1.50 psi

1.29 psi 1.30 psi

1.30 psi 2.72 psi 13.26 psi 1.80 psi 2.72 psi 1.38 psi

1.92 psi 0.96 psi

in^2

0.2592

0.48 psi

8.81 psi 0.36 psi 0.36 psi 2.07 psi 0.36 psi 0.36 psi

164.32 psi

164.32 psi

164.32 psi

164.32 psi

164.32 psi

164.32 psi 164.32 psi

164.32 psi 164.32 psi

164.32 psi 164.32 psi

Vu @ +Z

General Footing

Footing Flexure

Z-Z, +0.90D

Load Combination.

+1.20D+0.50S

+1.20D+0.50W

+1.20D+1.60S

+1.20D+W

+1.20D+1.60S+0.50W

Two-Way "Punching" Shear

+1.20D+0.50S+W

Load Combination.

+1.20D+0.70S

+0.90D+W

+0.90D

+1.40D

+1.20D

+1.20D+0.50S

+1.20D+0.50W

+1.20D+1.60S

+1.20D+0.50S+W

+1.20D+0.70S +0.90D+W +0.90D

+1.20D+1.60S+0.50W +1.20D+W

One Way Shear

+1.40D

+1.20D

LIC#: KW-06018102, Build:20.23.08.01

Flexure Axis & Load Combination

DESCRIPTION: Shade Support Post Footing

Project File: LCSC Patio.ec6

(c) ENERCALC INC 1983-2023

0.06

0.06 0.10

0.08 0.11 0.03

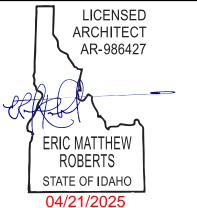
All units k

Steel Beam			Project File: LCSC Patio.ec6		
LIC#: KW-06018102, Build:20.23.08.01	COFFMA	N ENGINEERS	(c) ENERCALC INC 1983-202		
DESCRIPTION: Shade Support Po	st				
/ertical Reactions	Su	ipport notation : Far left is #	Values in KIPS		
Load Combination	Support 1 Support 2				
Max Upward from all Load Conditions	1.700				
Max Upward from Load Combinations	1.700				
Max Upward from Load Cases	1.000				
D Only	0.500				
+D+S	1.500				
+D+0.750S	1.250				
+D+0.60W	1.100				
+D+0.450W	0.950				
+D+0.750S+0.450W	1.700				
+0.60D+0.60W	0.900				
+0.60D	0.300				
S Only	1.000				
W Only	1.000				

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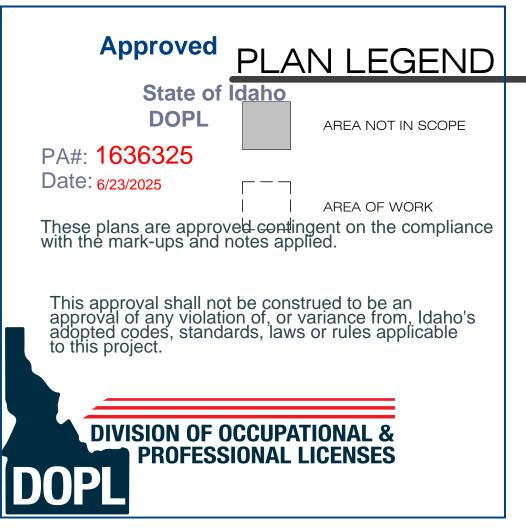
ISSUE DATE: 04.14.2025

REV DATE COMMENT



ALCULATIONS Ž PATIO IMPRO

JOB NO: 240027













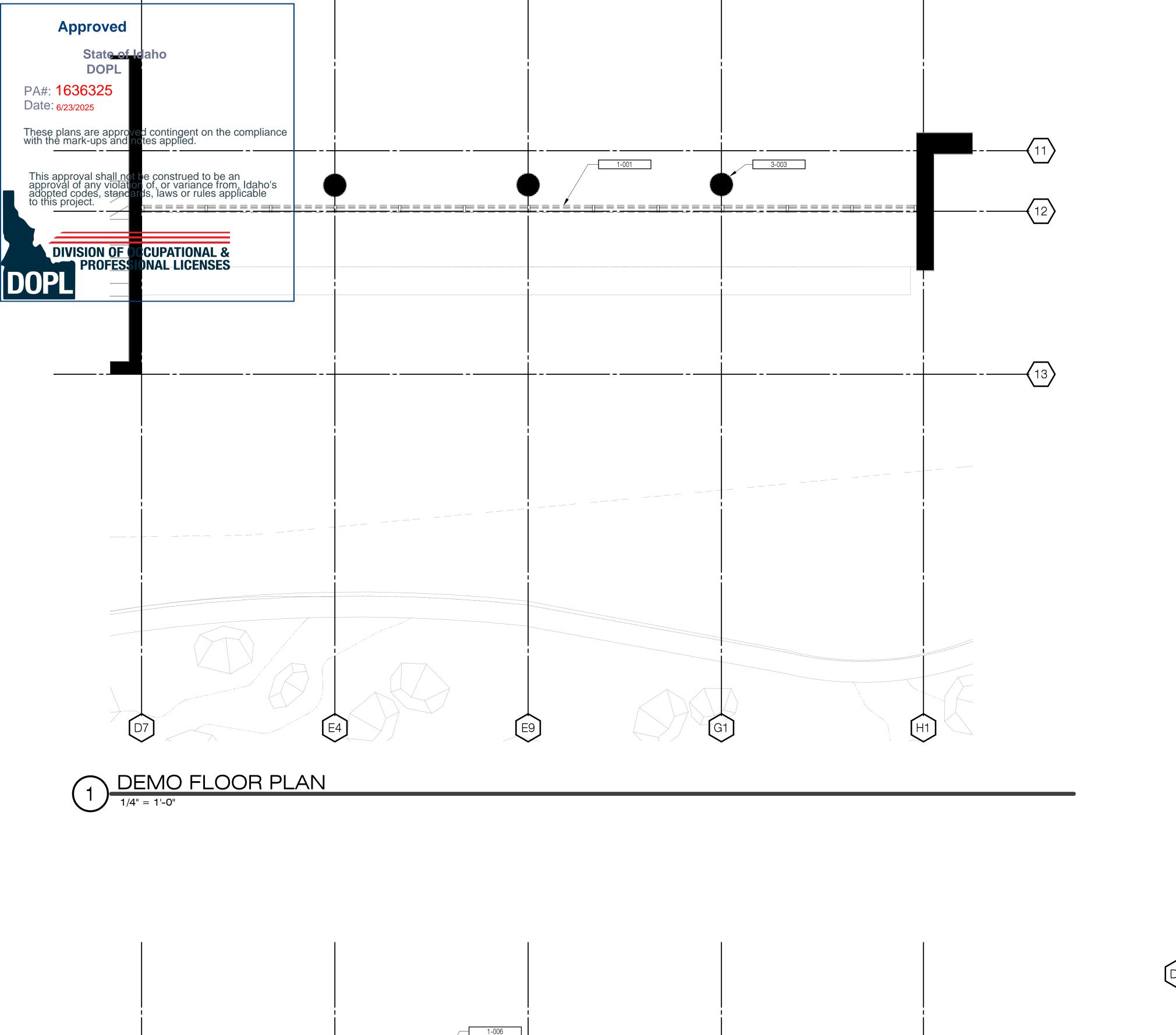
ISSUE DATE: 04.14.2025

REV DATE COMMENT

ERIC MATTHEW
ROBERTS
STATE OF IDAHO
05/21/2025

JOB NO: **240027**

G0-30



1-006

2 RCP - DEMO - LEVEL 1

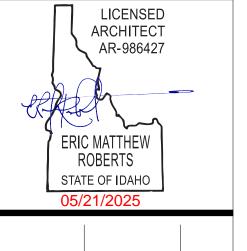
KEYNOTES

- EXISTING STOREFRONT TO BE REMOVED TO PREPARE FOR NEW NANAWALL. SAW CUT EXISTING SLAB TO PREPARE FOR RECESSED SILL PER MANUFACTURER'S INSTRUCTIONS. PROTECT ADJACENT SURFACES. PATCH AND REPAIR WALL, CEILING, AND FLOOR AS NECESSARY TO PREPARE FOR NEW NANAWALL SYSTEM. FINISHES TO MATCH EXISTING, COORDINATE WITH LCSC PROJECT MANAGER.
- EXISTING CEILING TO REMAIN, PATCH AND REPAIR AS REQUIRED. 1-006 EXISTING LIGHTS TO REMAIN, PROTECT DURING CONSTRUCTION.
- NEW OPERABLE GLASS WALL, BASIS OF DESIGN: NANAWALL 640. PATCH AND REPAIR WALL, FLOOR, AND CEILING AS NEEDED AFTER INSTALLATION. FINISHES TO MATCH EXISTING, COORDINATE WITH LCSC PROJECT MANAGER.



ISSUE DATE: 04.14.2025

REV DATE COMMENT



AND ELEVATIONS

LEVEL 2 114.00'

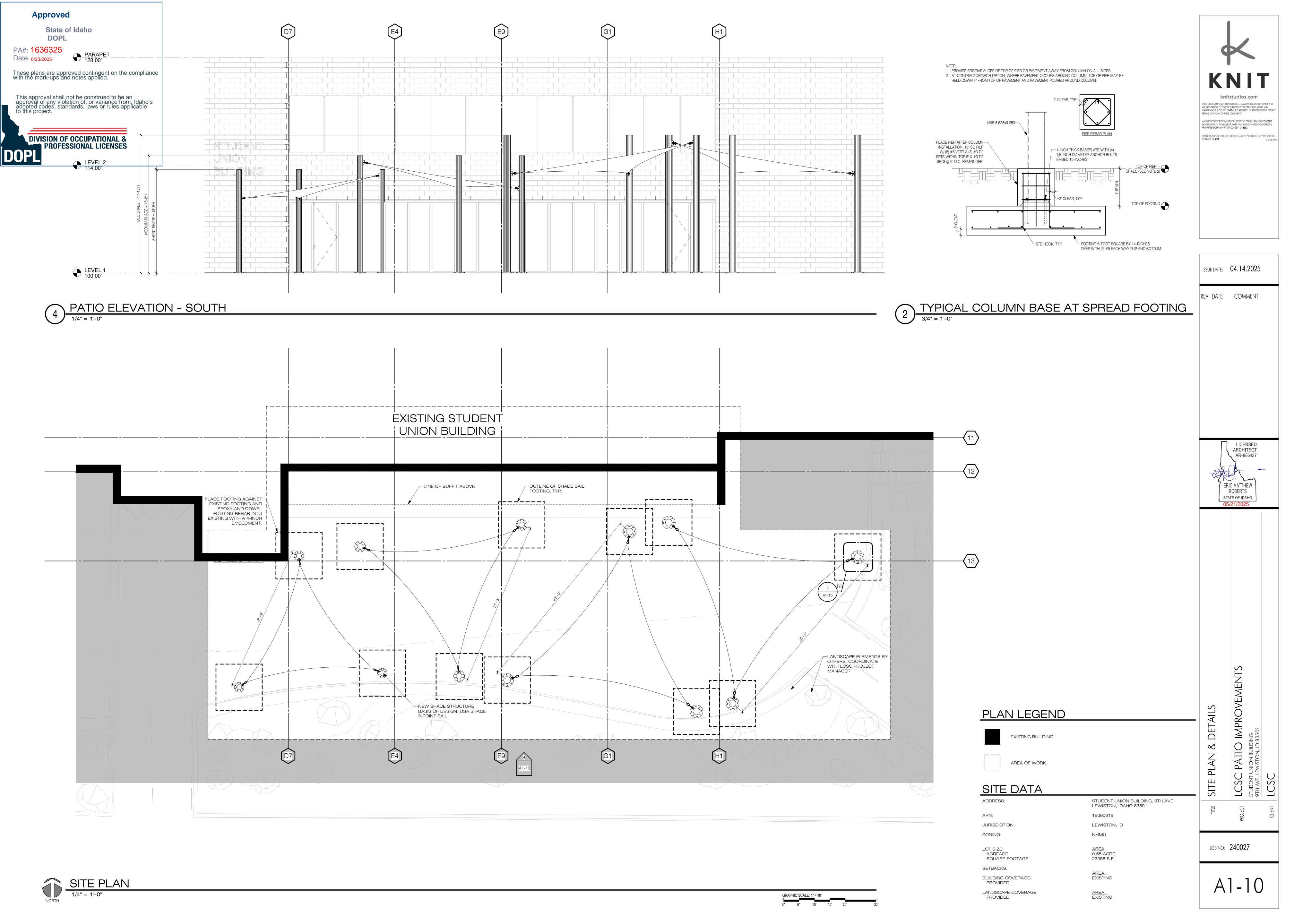
LEVEL 1 100.00'

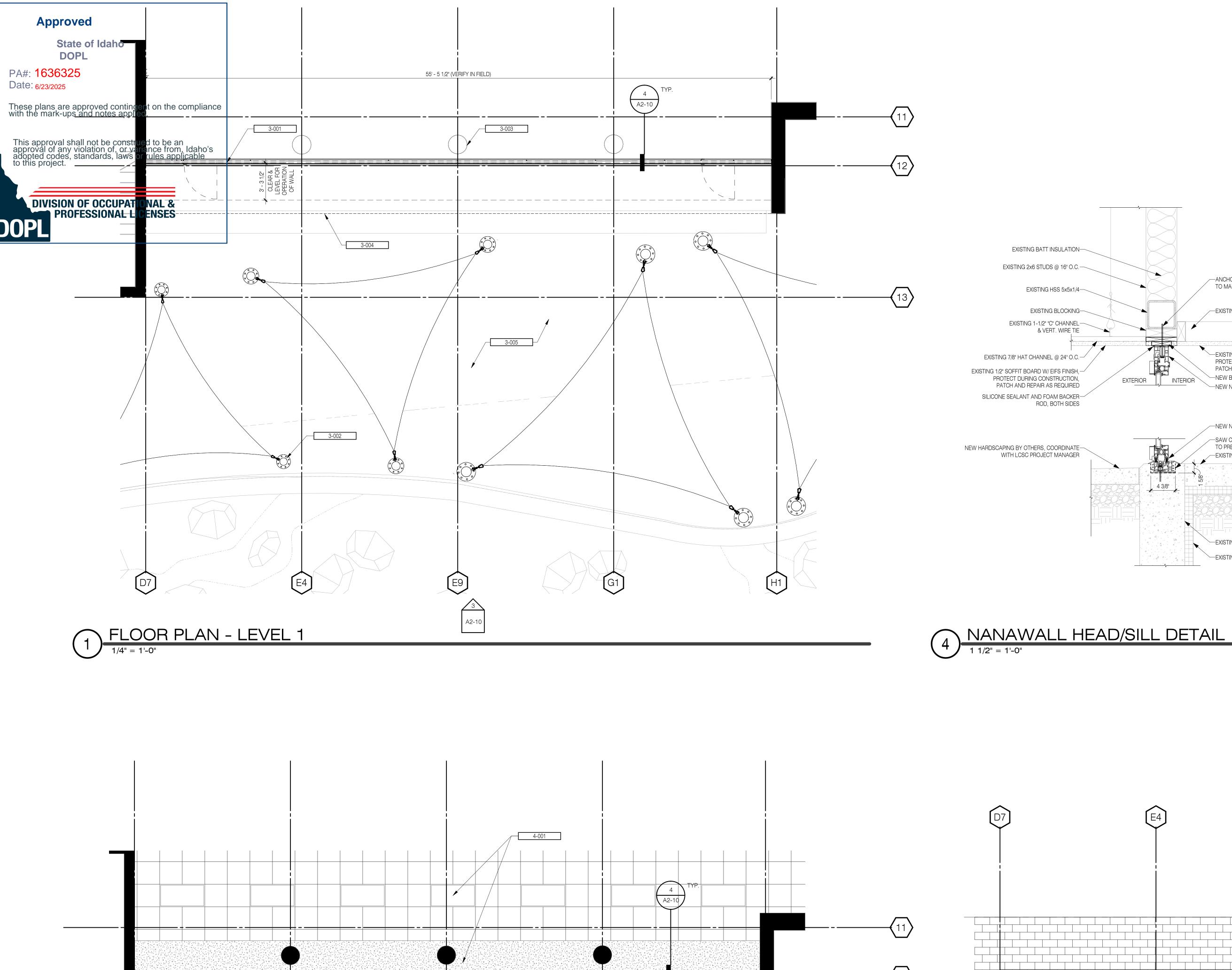
1-001

JOB NO: 240027

AD2-10

3 DEMO BUILDING ELEVATION - SOUTH





SHEET NOTES

A. ALL DIMENSIONS ARE TO FACE OF STUDS, FACE OF CMU WALL OR CENTER LINE OF GRIDS UNLESS NOTED OTHERWISE. ALL CLEAR DIMENSIONS ARE FROM FACE OF FINISH.

KEYNOTES

—ANCHOR TO EXISTING STRUCTURE ACCORDING TO MANUFACTURER'S INSTRUCTIONS

EXISTING 2x4 SOFFIT FRAMING @ 16" O.C.

EXISTING 5/8" TYPE 'X' GWB,

─NEW NANAWALL 640

NEW NANAWALL 640

PROTECT DURING CONSTRUCTION, PATCH AND REPAIR AS REQUIRED

—SAW CUT EXISTING CONCRETE AS REQUIRED

TO PREPARE FOR RECESSED SILL

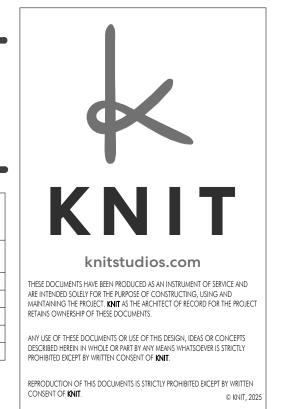
-EXISTING 8" CONCRETE STEM WALL

EXISTING 1-1/2" RIGID INSULATION

EXISTING 4" CONCRETE SLAB ON GRADE

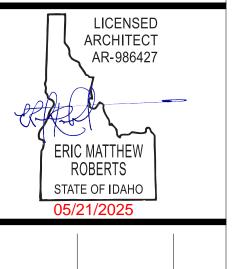
-NEW BLOCKING AS REQUIRED

NEW OPERABLE GLASS WALL, BASIS OF DESIGN: NANAWALL 640. PATCH AND REPAIR WALL, FLOOR, AND CEILING AS NEEDED AFTER INSTALLATION. FINISHES TO MATCH EXISTING, COORDINATE WITH LCSC PROJECT MANAGER. NEW SHADE STRUCTURES, BASIS OF DESIGN: USASHADE 3-POINT SAIL. SEE SHEET G0-20 FOR STRUCTURAL CALCULATIONS. EXISTING COLUMN TO REMAIN. PROTECT DURING CONSTRUCTION. OUTLINE OF SOFFIT ABOVE. NEW HARDSCAPING BY OTHERS. COORDINATE WITH LCSC PROJECT MANAGER. OPERABLE DOOR. COORDINATE WITH MANUFACTURER. EXISTING CEILING AND LIGHTS TO REMAIN. PROTECT DURING CONSTRUCTION.



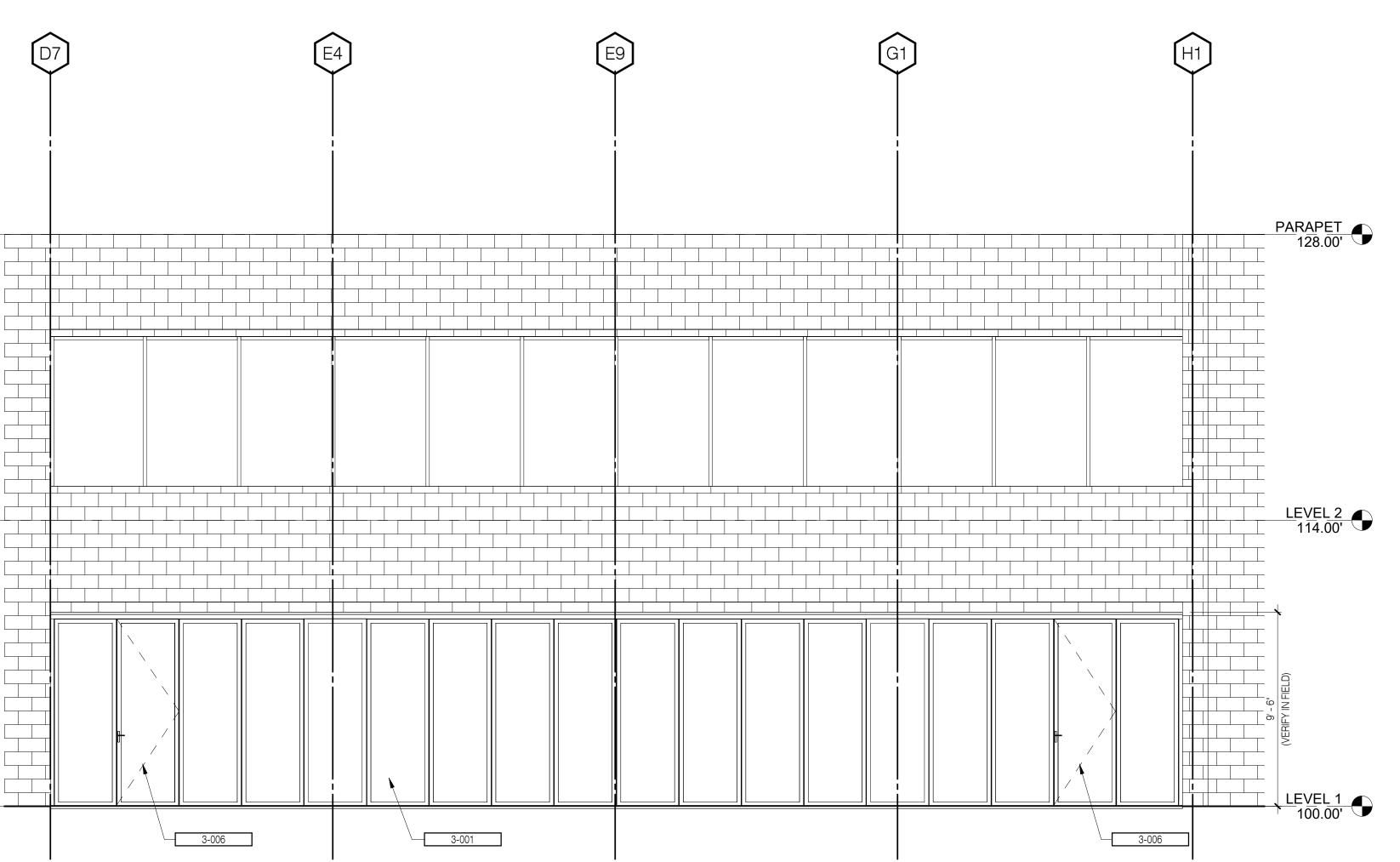
ISSUE DATE: 04.14.2025

REV DATE COMMENT



A2-10

LEVEL 1 100.00' JOB NO: 240027



3 BUILDING ELEVATION - SOUTH

1/4" = 1'-0"

2 RCP - LEVEL 1