Douglas County JLEC Storage Building Roof

CONSTRUCTION ISSUE

October 9, 2019

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Minden, Nevada 89423

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PLEASE RECYCLE

Project
Douglas County JLEC Storage Building Roof

1038 Buckeye Rd.
Minden, Nevada 89423

Job No: 19-054.00

Owner
Douglas County

CONSTRUCTION ISSUE
October 9, 2019

CLIENT:

Douglas County

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MINDEN, NEVADA 89423

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VICINITY MAP

SHEET INDEX

#	SHEET NAME	OWNER REVIEW SET 09.27.19	BID ISSUE (10.03.19)
00_COVER SHEET			
0.0	COVER SHEET	■	■
05_ARCHITECTURAL			
A0.10	PROJECT SPECIFICATIONS		■
A0.20	PROJECT SPECIFICATIONS		■
A1.01	DEMO FLOOR PLAN, NEW FLOOR PLAN, SECTION & DETAILS	■	■
06_STRUCTURAL			
S1	STRUCTURAL GENERAL NOTES	■	■
S2	STRUCTURAL PLANS AND SECTIONS	■	■
10_ELECTRICAL			
E1	SYMBOL LIST AND SPECIFICATIONS	■	■
E2	SCHEDULE AND ENERGY COMPLIANCE DOCUMENTATION	■	■
E3	DEMOLITION POWER PLAN AND NEW WORK POWER PLAN	■	■

SCOPE

1. BUILD ROOF OVER OPEN PORTION OF GENERATOR BUILDING
2. REMOVE PORTION OF EXISTING CONCRETE SLAB, EXTEND CONDUIT AND PROVIDE NEW CONCRETE SLAB
3. REMOVE EXISTING WALL PACK LIGHT FIXTURE AND INSTALL NEW ROOF MOUNTED LIGHT FIXTURES

SECTION 02 00 06

SELECTIVE BUILDING DEMOLITION

PART 1 – GENERAL
1.1 SECTION INCLUDES
A. Selective demolition of select areas of existing metal roofing and metal siding to accept new wori
1.2 DEFINITIONS
A. Remove: Remove and legally dispose of items except those indicated to be reinstalled, salvaged, or to remain the property of the County..
B. Salvage: Remove items indicated; clean, service, and otherwise prepare items indicated for reinstallation; store and protect against damage. Reinstall items in the same locations or in locations indicated. Items not indicated to be reinstalled remain the property of the County remove, clean and pack or crate items to protect against damage. Identify contents of containers and deliver to the County designated storage area on campus.
C. Existing to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by the Architect, items may be removed to a suitable, protected storage location during demolition and then cleaned and reinstalled in the original locations.
1.3 MATERIALS OWNERSHIP
A. Except for items or materials indicated to be reused, salvaged, reinstalled or otherwise indicated to remain the property of the University, demolished materials shall become the Contractor's property and shall be removed from the site with further disposition at the Contractor's option.

1.1 MATERIALS OWNERSHIP
A. Except for items or materials indicated to be reused, salvaged, reinstalled or otherwise indicated to remain the property of the University, demolished materials shall become the Contractor's property and shall be removed from the site with further disposition at the Contractor's option.
1.2 PROJECT RECORD DOCUMENTS
A. Accurately record actual locations of capped utilities, subsurface obstructions, and other pertinent data.
1.3 REGULATORY REQUIREMENTS
A. Comply with governing EPA notification regulations before starting demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
B. Conform to local codes and ordinances for demolition of structures, safety of adjacent structures, dust control, runoff control and disposal.
C. Obtain required permits from authorities.
D. Notify affected utility companies before starting work and comply with their requirements.
E. Do not close or obstruct roadways, sidewalks, or hydrants without permits.
F. Conform to applicable regulatory procedures when discovering hazardous or contaminated materials.
G. Do not burn waste material on-site.
1.4 SCHEDULING
A. Schedule demolition work to coincide with new construction.
B. Schedule work to minimize disruption of access to and activities within the adjacent facilities.
C. Demolition schedule shall be approved by Using Agency prior to start of any demolition work.
PART 2 – PRODUCTS
2.1 REPAIR MATERIALS
A. Where repairs are required due to damage during demolition, use repair materials matching existing materials.
B. Where matching materials are unavailable or cannot be used for exposed surfaces, use approved materials that visually match existing, adjacent surfaces to the fullest extent possible.
C. Use materials whose installed performance equals or surpasses that of existing materials.
PART 3– EXECUTION
3.1 PREPARATION
A. Erect and maintain weatherproof closures for exterior openings.
B. Protect existing materials and equipment which are not to be demolished.
C. Protect existing landscaping materials, appurtenances, structures, paving and walks which are not to be demolished or are required to remain until completion of other portions of the work.
D. Provide, erect, and maintain temporary barriers and security devices.
E. Mark location of utilities.
F. Remove all equipment and materials designated to be salvaged and returned to the Owner. Deliver to location on site to be designated by Owner.
G. Obtain written approval of Owner prior to start of any Work in structures requiring asbestos abatement.
H. Provide adequate fire protection at all times during construction activities.
3.2 UTILITY SERVICES
A. Maintain existing utilities indicated to remain in service and protect them against damage during demolition operations.
B. Utility requirements: Locate, identify, disconnect, and seal or cap off indicated utility services serving buildings to be selectively demolished.
C. Arrange to shut off indicated utilities with utility companies.
D. Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal the remaining portion of pipe or conduit after bypassing.
3.3 DEMOLITION REQUIREMENTS
A. Conduct demolition to minimize interference with adjacent structures and occupancies.
B. Cease operations immediately if adjacent structures appear to be in danger. Notify Architect/Engineer. Do not resume operations until directed.
C. Conduct operations with minimum interference to public or private accesses. Maintain egress and access at all times.
D. Use Water mist, temporary enclosures, and other suitable methods to limit the spread of dust and dirt. Comply with governing environmental protection regulations.
E. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
F. Remove debris from elevated portions of buildings by chute, hoist or other device that will convey debris to grade level.
G. Clean adjacent structures and improvements of dust, dirt and debris caused by demolition operations. Return adjacent areas to condition existing before start of demolition.
3.4 DEMOLITION
A. Demolish in an orderly and careful manner. Protect existing supporting structural members and finishes.
B. Disconnect, remove, cap and identify utilities within demolition areas. Where utilities to be demolished serve other facilities, reroute services or verify new services have been installed prior to demolition.
C. Remove all abandoned underground utility pipes and electrical wiring and conduit unless approved by Owner. If Owner authorizes pipes to be abandoned in place, fill pipes with flowable fill, such as grout or controlled low strength material approved by Owner.
D. Remove concrete slabs on grade.
E. All penetrations through the floor or roof slab shall be x-rayed for coordination of post-tensioned cables prior to core drilling
F. Where partial removal of concrete or asphalt is required, saw cut concrete or asphalt on straight line.
G. Remove demolished materials from site.
H. Do not burn or bury materials on site. Leave site in clean condition.
I. Drain, purge, or otherwise remove, collect, and dispose of chemicals, gases, explosives, acids, flammables, or other dangerous materials before proceeding with demolition operations.
J. Conduct demolition operations and remove debris to ensure minimum interference with roads and streets.

1. Do not close or obstruct roads without permission from the Government and authorities having jurisdiction.
2. Provide alternate routes around closed or obstructed traffic ways if required by governing regulation.
K. Conduct demolition operations to prevent injury to people and damage to adjacent buildings and facilities to remain. Ensure safe passage or people around demolition area.

1. Erect temporary protection, such as walks, fences, railings, canopies and covered passageways where required by authorities having jurisdiction.
2. Protect existing site improvements, appurtenances, and landscaping to remain.
3. Provide temporary weather protection, during interval between demolition and removal of existing construction, on exterior surfaces and new construction to ensure that no water leakage or damage occurs to structure or interior areas.
4. Protect walls, ceilings, floors, and other existing finish work that are to remain and are exposed during demolition operations.
5. Cover and protect furniture, furnishings and equipment that have not been removed.
L. Provide and maintain interior and exterior shoring, bracing, or structural support to preserve stability and prevent movement, settlement, or collapse of building to be demolished. Strengthen or add new supports when required during progress of demolition.
3.5 SALVAGE
A. Materials and finishes indicated for reuse shall be removed by or under the direct supervision of the craftsmen who will be responsible for its reinstallation. Materials and finishes to be salvaged shall be carefully removed and restored to their pre-removal conditions.
B. Items designated to be salvaged shall be carefully disconnected and removed as indicated or as required by Work. All existing finish materials which are salvageable and/or are designated for reuse in new construction shall be held by the Contractor in storage until a decision by the Architect is made as to their usability.

1. Contractor shall be responsible for all precautions required to ensure that salvaged items are not damaged in removal, handling, transport and storage. Contractor shall replace any damaged or unusable stored items at his own expense.
2. All items to be removed shall be labeled to indicate existing location so that they may be reinstalled in same location.
3.6 PATCHING AND REPAIRS
A. Promptly patch and repair holes and damaged surfaces caused to adjacent construction by demolition operations.
3.7 DISPOSAL OF DEMOLISHED MATERIALS
A. General: Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site.
B. Burning: Do not burn demolished materials on-site.
C. Disposal: Transport demolished materials off Owner's property and legally disposes of them.

END OF SECTION

SECTION 05 50 00

METAL FABRICATIONS

PART 1 – GENERAL

1.1 SECTION INCLUDES
A. Shop fabricated ferrous metal items. (Including Steel Lintels)
B. Miscellaneous steel framing and support members.
C. Site fabricated ferrous metal assemblies.
D. Embedded anchor or edge members required for installation of work of this section.

1.2 SUBMITTALS

A. Shop Drawings:
1. Provide shop drawings for all items listed in schedule except ledge and shelf angles and lintels.
2. Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories.
3. Include erection drawings, elevations, and details where applicable.

B. Indicate welded connections using standard AWS A2.0 welding symbols. Indicate net weld lengths.
C. Product Data: Provide data on premanufactured items and factory finished items.
D. Welders Certificates: Certify welders employed on the Work, verify AWS qualifications within the previous 12 months.

PART 2 – PRODUCTS

2.1 MATERIALS

A. Steel Sections: ASTM A36 unless noted otherwise on Structural Drawings.
B. Steel Tubing: ASTM A500, Grade B.
C. Plates: ASTM A283.
D. Pipe: ASTM A53, Grade B Schedule 40.
E. Bars and Bar Stock: ASTM A108 or ASTM A36
F. Bolts, Nuts, and Washers: ASTM A307 galvanized to ASTM A153 for galvanized components.
G. Welding Materials: AWS D1.1; type required for materials being welded.
H. Shop and Touch-Up Primer: "10-99 Tnemec Primer" or "Rustoleum Number 5769 Primer".
I. Hardware: Galvanized.

2.2 FABRICATION

A. Fit and shop assemble in largest practical sections, for delivery to site.
B. Fabricate items with joints tightly fitted and continuously welded.
C. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.
D. Exposed Mechanical Fastenings: (not allowed).
E. Supply components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.
F. Fabricate custom framing and support members to size and configuration as shown on drawings.

2.3 FINISH

A. Clean surfaces of rust, scale, grease, and foreign matter prior to finishing.
B. Do not prime surfaces in direct contact with concrete or where field welding is required.
C. Prime paint ungalvanized steel items with two (2) coats for field painting. Zero content lead paint.
D. Do not paint galvanized steel.

PART 3 – EXECUTION

3.1 EXAMINATION

A. Coordinate with other trades on scheduling of work requiring placement of embedded items necessary for proper installation of work of this section.
B. Furnish and locate angle edging, cast-in anchor plates and brick/unit masonry anchor plates to respective trades responsible for unit masonry and cast-in-place concrete.
C. Verify that field measurements are as indicated on approved shop drawings.
D. Verify that field conditions are acceptable and are ready to receive work.
E. Beginning of installation means erector accepts existing conditions.

3.2 PREPARATION

A. Clean and strip primed steel items to bare metal where site welding is required. Existing metals, weld under lead safe procedures if required – see MDP.
B. Supply items required to be anchored to metal wall stud framing, to appropriate sections.

3.3 INSTALLATION

A. Install items plumb and level, accurately fitted, free from distortion or defects.
B. Allow for erection loads, and for sufficient temporary bracing to maintain true alignment until completion of erection and installation of permanent attachments.
C. Field weld components indicated on shop drawings.
D. Perform field welding in accordance with AWS D1.1.
E. Obtain Owner acceptance prior to site cutting or making adjustments not scheduled.
F. After erection, prime welds, abrasions, and surfaces not shop primed galvanized, except surfaces to be in contact with concrete.
G. Coordinate placement of angle reinforcing of concrete edges with other trades.

3.4 SCHEDULES

A. The Schedule is a list of principal items only. Refer to Drawing details for items not specifically scheduled.
B. Lintels: min.3x3x1/4" at window heads with prime paint finish.

SECTION 06 10 00

ROUGH CARPENTRY

PART 1 GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General Conditions and Division 01 - General Requirements Specification Sections apply to this section.

1.02 SECTION INCLUDES

A. Preservative treated wood materials.
B. Fire retardant treated wood materials.
C. Communications and electrical room mounting boards.
D. Miscellaneous wood nailers, furring, and grounds.
E. Wall sheathing with factory applied water-resistive and air barrier sheet.
F. Roof sheathing with factory applied roofing underlayment.

1.03 RELATED REQUIREMENTS

A. Section 03 30 00 - Cast-in-Place Concrete: Setting anchors in concrete.
B. Section 05 50 00 - Metal Fabrications:
C. Section 07 62 00 - Sheet Metal Flashing and Trim:
D. Section 07 00 00 – Metal Roofing:
E. Section 09 21 16 - Gypsum Board Assemblies:

1.04 REFERENCE STANDARDS

A. HYPERLINK "http://global.ihs.com/doc_detail.cfm?rid=BSD&document_name=ANSI%20A208.1" ANSI A208.1 - American National Standard for Particleboard; 2018.
B. HYPERLINK "http://global.ihs.com/doc_detail.cfm?rid=BSD&document_name=ASTM%20A153/A153M" ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2016a.
C. HYPERLINK "http://global.ihs.com/doc_detail.cfm?rid=BSD&document_name=ASTM%20C1396/C1396M" ASTM C1396/C1396M - Standard Specification for Gypsum Board; 2017.
D. HYPERLINK "http://global.ihs.com/doc_detail.cfm?rid=BSD&document_name=ASTM%20D2898" ASTM D2898 - Standard Test Methods for Accelerated Weathering of Fire-Retardant-Treated Wood for Fire Testing; 2010 (Reapproved 2017).
E. HYPERLINK "http://global.ihs.com/doc_detail.cfm?rid=BSD&document_name=ASTM%20E2357" ASTM E2357 - Standard Test Method for Determining Air Leakage of Air Barrier Assemblies; 2017.
F. HYPERLINK "https://global.ihs.com/doc_detail.cfm?rid=BSD&document_name=ASTM%20E84" ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2017.
G. HYPERLINK "https://global.ihs.com/doc_detail.cfm?rid=BSD&document_name=ASTM%20E96/E96M" ASTM E96/E96M - Standard Test Methods for Water Vapor Transmission of Materials; 2016.
H. HYPERLINK "http://ts.nist.gov/ts/htdocs/210/sccg/vps.htm" PS 2 - Performance Standard for Wood-Based Structural-Use Panels; 2010.

1.05 QUALITY ASSURANCE

A. Comply with the applicable grading rules of Manufacturer's associations.

1.04 SUBMITTALS

A. See Section 01 33 00 - Submittal Requirements, for submittal procedures.
B. Product Data: Provide technical data on wood preservative materials and application instructions.
C. Structural Composite Lumber: Submit manufacturer's published structural data including span tables, marked to indicate which sizes and grades are being used; if structural composite lumber is being substituted for dimension lumber or timbers, submit grading agency structural tables marked for comparison.
D. Manufacturer's Certificate: Certify that wood products supplied for rough carpentry meet or exceed specified requirements.
E. Warranty: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

1.05 DELIVERY, STORAGE, AND HANDLING

A. General: Cover wood products to protect against moisture. Support stacked products to prevent deformation and to allow air circulation.

1.06 WARRANTY

A. See Section 01 78 36 - Warranties and Bonds, for additional warranty requirements.

PART 2 PRODUCTS

2.01 CONSTRUCTION PANELS

A. Subfloor/Underlayment/Sheathing Combination: Any PS 2 type, rated Single Floor.

1. Bond Classification: Exposure 1.
2. Span Rating: 48.
3. Performance Category: 1-1/8 PERF CAT.
4. Edges: Square.

B. Roof Sheathing: Any PS 2 type, rated Structural I Sheathing.

1. Bond Classification: Exterior.
2. Span Rating: 60.
3. Performance Category: 3/4 PERF CAT.

C. Roof Sheathing: Oriented strand board wood structural panel; PS 2.

1. Grade: Structural 1 Sheathing.
2. Bond Classification: Exposure 1.
3. Performance Category: 5/8 PERF CAT.
4. Span Rating: 32/16.
5. Edges: standard.
6. Exposure Time: Sheathing will not delaminate or require sanding due to moisture absorption from exposure to weather for up to 500 days.
7. Warranty: Manufacturer's standard lifetime limited, warranty against manufacturing defects and that panels will not delaminate or require sanding due to moisture absorption damage from exposure to

D. Wall Sheathing: Oriented strand board structural wood panel with factory laminated water-resistive and air barrier layer.

1. Sheathing Panel: PS 2, Exposure 1.
a. Size: 4 feet wide by 8 feet long.
b. Grade: Structural 1 Sheathing.
c. Performance Category: 7/16 PERF CAT.
d. Span Rating: 24/16.
e. Edge Profile: Square edge.

2. Maximum Allowable Air Leakage of Assembly, complying with ASTM E2357:

a. Infiltration: 0.0072 cfm per square foot, maximum, at a pressure differential of 1.57 pounds per square foot.
b. Exfiltration: 0.0023 cfm per square foot, maximum, at a pressure differential of 1.57 pounds per square foot.

3. Provide fastening guide on top panel surface with separate markings indicating fastener spacing for 16 inches and 24 inches on center, respectively.
4. Seam Tape: Manufacturer's standard pressure-sensitive, self-adhering, cold-applied, seam tape.

2.02 ACCESSORIES

A. Fasteners and Anchors:

1. Metal and Finish: Hot-dipped galvanized steel complying with ASTM A153/A153M for high humidity
2. Drywall Screws: Bugle head, hardened steel, power driven type, refer to section 09 21 16.
3. Anchors: Toggle bolt type for anchorage to hollow masonry.

B. Subfloor Adhesives: Waterproof, air cure type, cartridge dispensed.

2.03 FACTORY WOOD TREATMENT

A. Treated Lumber and Plywood: Comply with requirements of AWPA U1 - Use Category System for wood treatments determined by use categories, expected service conditions, and specific applications.

1. Fire-Retardant Treated Wood: Mark each piece of wood with producer's stamp indicating compliance with specified requirements.

B. Fire Retardant Treatment:

1. Manufacturers:
a. Arch Wood Protection, Inc: www.wolmanizedwood.com.
b. Hoover Treated Wood Products, Inc: www.frtw.com.
c. Pyro-Guard
2. Exterior Type: AWPA U1, Category UCFB, Commodity Specification H, chemically treated and pressure no weathering test performed in accordance with ASTM D2898.
a. Kiln dry wood after treatment to a maximum moisture content of 19 percent for lumber and 15 percent for plywood.
b. Treat all exterior rough carpentry items.
c. Do not use treated wood in direct contact with the ground.

PART 3 EXECUTION

3.01 PREPARATION

A. Coordinate installation of rough carpentry members specified in other sections.

3.02 INSTALLATION – GENERAL

A. Select material sizes to minimize waste.
B. Install treated wood is used on interior, provide temporary ventilation during and immediately after installation sufficient to remove indoor air contaminants.

3.03 FRAMING INSTALLATION

A. Set structural members level, plumb, and true to line. Discard pieces with defects that would lower required strength or result in unacceptable appearance of exposed members.
B. Make provisions for temporary construction loads, and provide temporary bracing sufficient to maintain structure in true alignment and safe condition until completion of erection and installation of permanent bracing.
C. Install structural members full length without splicing unless otherwise specifically detailed.
D. Comply with member sizes, spacing, and configurations indicated, and fastener size and spacing indicated, but not less than required by applicable codes.

3.05 ROOF-RELATED CARPENTRY

A. Coordinate installation of roofing carpentry with deck construction, framing of roof openings, and roofing assembly installation.
B. Provide wood curb at all roof openings except where prefabricated curbs are specified and where specifically indicated otherwise. Form corners by alternating lapping side members.

3.06 INSTALLATION OF CONSTRUCTION PANELS

A. Roof Sheathing: Secure panels with long dimension perpendicular to framing members, with ends staggered and over firm bearing.

1. At long edges use sheathing clips where joints occur between roof framing members.
2. Nail panels to framing; staples are not permitted.

B. Wall Sheathing: Secure with long dimension perpendicular to wall studs, with ends over firm bearing and staggered, using nails, screws, or staples.

1. Use plywood or other acceptable structural panels at building corners, for not less than 96 inches, measured
2. Provide inlet diagonal bracing at corners.

3.07 FIELD QUALITY CONTROL

A. See Section 01 40 00 - Quality Requirements, for additional requirements.

3.08 CLEANING

A. Waste Disposal: Comply with the requirements of Section 01 74 19 - Construction Waste Management and Disposal.

1. Comply with applicable regulations.
2. Do not burn scrap on project site.
3. Do not burn scraps that have been pressure treated.
4. Do not send materials treated with pentachlorophenol, CCA, or ACA to co-generation facilities or "waste-to-energy" facilities.

B. Do not leave any wood, shavings, sawdust, etc. on the ground or buried in fill.

C. Prevent sawdust and wood shavings from entering the storm drainage system.

END OF SECTION

SECTION 07 21 00
THERMAL & ACOUSTICAL INSULATION

PART 1 - GENERAL
1.1 SUMMARY
A. This Section includes the following:

Adjust list below to suit Project. Delete applications, such as cavity wall, that are specified in other Sections.
1. Fiberglass Batt Insulation (3-1/2) at new pony walls.

2" Ridid Insulation at Metal Roof Deck.

1.2 SUBMITTALS
A. Product Data: Provide manufacturer's product data on product characteristics and performance criteria.
Delete paragraph below if no exposed insulation or if no Samples are required.
Retain paragraph and subparagraphs below if recycled content is required for LEED-NC or LEED-CI Credits MR 4.1 and MR 4.2.
Delete paragraph below if this Section has been edited to retain only products with well-known unvarying values.
1.3 QUALITY ASSURANCE
A. Fire-Test-Response Characteristics: Provide insulation and related materials with the fire-test-response characteristics indicated, as determined by testing identical products per test method indicated below by UL or another testing and inspecting agency acceptable to authorities having jurisdiction. Identify materials with appropriate markings of applicable testing and inspecting agency.
Retain subparagraph below if test results are indicated with other product requirements in Part 2. Retain only test methods applicable to types of characteristics specified.
1. Surface-Burning Characteristics: ASTM E 84.
Retain subparagraph below only if products specified in Part 2 are part of a fire-resistance-rated assembly.
2. Fire-Resistance Ratings: ASTM E 119.
Pass-fail test in subparagraph below is for measuring combustibility and is referenced in codes to determine if elementary products are noncombustible. Only selected unfaced mineral-fiber insulation and unfaced cellular-glass insulation pass this test. Delete if not required. See Evaluations.
3. Combustion Characteristics: ASTM E 136.
Retain paragraph below to specify recycled content if required for LEED-NC or LEED-CI Credits MR 4.1 and MR 4.2. An alternative method of complying with Credits MR 4.1 and MR 4.2 requirements is to retain requirement in Division 01 Section "Sustainable Design Requirements" that gives Contractor the option and responsibility for determining how Credits MR 4.1 and MR 4.2 requirements will be met.
1.4 DELIVERY, STORAGE, AND HANDLING
A. Protect insulation materials from physical damage and from deterioration by moisture, soiling, and other sources. Store inside and in a dry location. Comply with manufacturer's written instructions for handling, storing, and protecting during installation.
Delete paragraph and subparagraphs below if no plastic insulation.
PART 2 - PRODUCTS
Delete types of insulation not required from articles below that specify insulation. Coordinate selections with thicknesses indicated on Drawings and with HVAC design and energy program. Where insulation is exposed or open to air spaces in plenums, cavities, or similar voids, include only products that comply with building codes for fire-test-response characteristics. Surface-burning indexes indicated for foam-plastic insulation are examples only and generally represent maximums allowed by model building codes for foam-plastic insulation. Revise to suit products required and code in effect for Project. See Evaluations.
In articles below specifying insulation products, coordinate subparagraphs that introduce a list of manufacturers or manufacturers and products with Part 2 "Manufacturers" Article. Retain "Available" for nonproprietary and delete for semiproprietary specifications.
Flexible glass-fiber board insulation in first two paragraphs below is not significantly different from blanket insulation in batt form but is located in this Article because some manufacturers list it as complying with ASTM standards for insulation in board form.
Delete densities in four subparagraphs below not required. If retaining more than one, indicate location of each on Drawings or by inserts.
Insulation in paragraph and subparagraphs below is intended for installation behind spandrel glass panels, for acoustical applications, and for similar applications where a dark surface is required. Of manufacturers listed, only CertainTeed and Johns Manville provide board insulation faced with black glass-fiber mat. Knauf provides board insulation with a black polymer finish.
2.1 GLASS-FIBER BLANKET INSULATION
A. Available Manufacturers:
1. CertainTeed Corporation.
2. Johns Manville.
3. Knauf Fiber Glass.
4. Owens Corning.
5. Approved equal.
B. Unfaced, Glass-Fiber Blanket Insulation: ASTM C 665, Type I (blankets without membrane facing); consisting of fibers; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively; passing ASTM E 136 for combustion characteristics.
Verify availability of polypropylene-scrim kraft and the relative cost of different facings with manufacturers listed.
C. Unfaced, Glass Fiber Acoustical (Sound) Blanket/Batt Insulation: ASTM C665, Type I (blankets without membrane facing); and as follows:
1. Mineral Fiber Type: Fibers manufactured from glass.
D. Surface Burning Characteristics: Maximum flame spread and smoke developed values of 25 and 50, respectively; passing ASTM E136 for combustion characteristics
E. Faced, Glass-Fiber Blanket Insulation: ASTM C 665, Type III, Class A (membrane-faced surface with a flame-spread index of 25 or less; in all plenum spaces.
F. Batt size to fit each metal framing size as shown n the drawings unless thickness indicated.
G. Unless noted otherwise on drawings, provide thickness for R-19 where insulation is installed to one face only.
H. Use LTTR Method for R-Value determination.
I. Insulation in plenum areas shall have a flame spread rating not to exceed 25 and a smoke development rating not to exceed 50 per ASTM E 84 unless covered by 5/8 inc FR gypsum board.
J. Tape, coated wire, or other devices for anchoring batt insulation shall be approved type furnished by or recommended by the insulation manufacturer.
K. Rigid insulation fasteners shall be 24 gauge, galvanized steel "Z" channels is sizes and configurations shown on drawings.
Delete paragraph and subparagraphs below if both thicknesses and thermal resistances (not thermal resistivities) are indicated on Drawings. See Evaluations.
PART 3 - EXECUTION
3.1 EXAMINATION
A. Examine substrates and conditions, with Installer present, for compliance with requirements of Sections in which substrates and related work are specified and for other conditions affecting performance.
B. Verify stud spacing of framing members is per drawings.
3.2 PREPARATION
A. Clean substrates of substances harmful to insulation or vapor retarders, including removing projections capable of puncturing vapor retarders or of interfering with insulation attachment.
3.3 INSTALLATION, GENERAL
A. Comply with insulation manufacturer's written instructions applicable to products and application indicated.
B. Install insulation that is undamaged, dry, and unsoiled and that has not been left exposed at any time to ice, rain, and snow.
C. Extend insulation in thickness indicated to envelop entire area to be insulated. Cut and fit tightly around obstructions and fill voids with insulation. Remove projections that interfere with placement.
D. Water-Piping Coordination: If water piping is located within insulated exterior walls, coordinate location of piping to ensure that it is placed on warm side of insulation and insulation encapsulates piping.
E. For preformed insulating units, provide sizes to fit applications indicated and selected from manufacturer's standard thicknesses, widths, and lengths. Apply single layer of insulation units to produce thickness indicated unless multiple layers are otherwise shown or required to make up total thickness.
3.4 INSTALLATION OF GENERAL BUILDING INSULATION
A. Apply insulation units to substrates by method indicated, complying with manufacturer's written instructions. If no specific method is indicated, bond units to substrate with adhesive or use mechanical anchorage to provide permanent placement and support of units.
Specify location of vapor retarder in paragraph below based on vapor-flow analysis of a construction assembly.
Delete paragraph and subparagraphs below if no mineral-fiber insulation is used in cavities of framing members.
B. Install mineral-fiber insulation in cavities formed by framing members according to the following requirements:
1. Use insulation widths and lengths that fill the cavities formed by framing members. If more than one length is required to fill cavity, provide lengths that will produce a snug fit between ends.
2. Place insulation in cavities formed by framing members to produce a friction fit between edges of insulation and adjoining framing members.
Delete first subparagraph below if recessed lighting fixtures are rated for contact with insulation.
3. Maintain 3-inch clearance of insulation around recessed lighting fixtures.
4. Install eave ventilation troughs between roof framing members in insulated attic spaces at vented eaves.
Delete subparagraph below if no metal-framed wall construction.
5. For metal-framed wall cavities where cavity heights exceed 96 inches, support unfaced blankets mechanically and support faced blankets by taping flanges of insulation to flanges of metal studs.
Delete subparagraph and associated subparagraphs below if no wood-framed construction.
Delete subparagraph above or below. Retain above with adhesive application of gypsum board. Retain below if mechanical attachment of gypsum board is used.
Revise first paragraph and subparagraphs below to indicate type of concrete substrate, such as architectural precast concrete panels or cast-in-place concrete walls.
C. Install board insulation on concrete substrates with "Z" channels attached with power driven anchors appropriate for the substrate, spaced at 24 inches O.C. unless noted otherwise on drawings.
Delete paragraph and subparagraph below if no loose-fill insulation. If retaining only Type I glass-fiber loose-fill insulation in Part 2, retain "by pouring" option in paragraph below. If retaining only Type II glass-fiber loose-fill insulation, retain "by machine blowing" option.
Delete paragraph below if no voids or if not needed for sound deadening, sound absorption, thermal protection, or air-infiltration reduction.
D. Stuff glass-fiber loose-fill insulation into miscellaneous voids and cavity spaces where shown. Compact to approximately 40 percent of normal maximum volume equaling a density of approximately 2.5 lb/cu. Ft.
3.5 PROTECTION
Protect installed insulation from damage due to harmful weather exposures, physical abuse, and other causes. Provide temporary coverings or enclosures where insulation is subject to abuse and cannot be concealed and protected by permanent construction immediately after installation.

Insert specific protection requirements here.
END OF SECTION

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Consultant

PLEASE RECYCLE

Project
Douglas County JLEC Storage Building Roof

1038 Buckeye Rd.
Minden, Nevada 89423

Job No: 19-054.00

Owner
Douglas County

CONSTRUCTION ISSUE

REVISIONS		
REV	DATE	DESCRIPTION

Sheet Title
PROJECT SPECIFICATIONS

Date: October 9, 2019
Sheet No:

A0.10

SECTION 07 61 13

STANDING SEAM METAL ROOFING

PART 1 - GENERAL
1.1 SECTION INCLUDES
A. Pre-finished metal standing seam roofing system at exterior canopy , associated flashings and underlayment. Canopy Fascia Panels to match color of metal canopy roofing system.
B. Metal counterflashing (adjacent to metal roofing)
1.2 SUBMITTALS
A. Submit to the Architect, four (4) copies of each of the following components for review by the Architect prior to the Pre-Roofing Conference.
1. Submit shop drawings to include large-scaled details showing precise proposed treatment of all flashing conditions as detailed in project documents, including eaves, rakes, gutters, fascias, wall flashings, valleys, etc.
2. Indicate on shop drawings material profile, jointing details, fastening methods, and project-specific installation details. Shop drawings must include all installation details for proposed system for comparison to details on Drawings. Each shop drawing detail shall include a reference to applicable project detail. Clearly indicate any proposed deviations from project documents.
3. Submit two samples 12 x 12 inch in size of metal roofing mounted on plywood backing and illustrating completed standing seam, material and finish.
4. Submit two samples 12 x 12 inch in size each of metal fascia and soffit mounted on plywood backing and illustrating completed lap seam, trim, stiffening, material and finish.
5. Submit two samples of proposed pre-finished counterflashing assembly.
6. Submit manufacturer's installation instructions for proposed roof panel system.
7. Submit material manufacturer product data and MSDS sheets for each product to be used.
8. Submit certified calculations from primary roof panel manufacturer indicating compliance with ASTM E1592 and ASCE 7, including approved fastening patterns, support spacings, clip spacings and any other project-specific requirements from the manufacturer.
9. Submit sample of manufacturer's 20 Year full system warranty, as well as 20 year guarantee on coating performance.
1.3 QUALITY ASSURANCE
A. Installer shall have a minimum of five (5) years experience in successfully applying the same or similar materials and shall be approved by the primary materials manufacturer.
B. Installer representative shall attend the Pre-Roofing Conference.
C. Installer must have a valid applicable Contractors License under the same company name for a period of no less than 10 years.
D. The contractor shall employ sufficient installers and have the proper equipment and material on site so as to complete the work in a timely manner.
E. Performance Requirements: Provide machine crimped, prefinished, continuous interlocking, concealed clip, standing seam metal roof system that has been pre-tested and certified by manufacturer to comply with specified requirements under installed conditions.
1. Provide roof system designed to ASTM E1592 and ASCE-7 standards for uplift resistance designed to withstand minimum 70 mph wind speeds.
2. Resistance to water penetration: No leakage through panel joints when tested in accordance with ASTM E1646 at static pressure differential of 6.24 psf.
3. Resistance to air leakage: Maximum 0.24 cfm/ft. of joint leakage when tested in accordance with ASTM E1680 at static pressure differential of 6.24 psf.
1.4 DELIVERY, STORAGE, AND HANDLING
A. Factory fabricated components shall be crated in cartons marked with the manufacturer's name or trademark.
B. Upon delivery, exercise care in unloading, stacking, moving, storing, and erecting panels and flashings to prevent twisting, bending, scratching, or denting.
C. Stack preformed and prefinished material to prevent twisting, bending, or abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.
D. Prevent contact with materials during storage which may cause discoloration, staining, or electrolysis.
E. Select and handle materials and equipment in such a way as to avoid damage to materials, existing construction, or applied roofing.
F. Do not load or permit any part of structure to be loaded with a weight that will endanger its safety or cause damage. Confine equipment, storage of materials and debris and the operations and movements of workmen within any limits as indicated or as directed by the Owner.
G. Any damaged or defective material shall be marked and removed from the job site by Contractor that same day. This material shall promptly be replaced at no cost to the Owner.
H. Store panels and flashings in a safe, dry environment under a waterproof covering to prevent water damage. Allow for adequate ventilation to prevent condensation. Panels and flashings with strippable film shall not be stored in direct sunlight.
I. Upon installation, immediately remove strippable film from panels and flashings. Protect panels and flashings from foot traffic and from all other trades.
1.5 GUARANTEES
A. Contractor Guarantee:
1. The Contractor shall guarantee the installation of roofing and flashing to be watertight for a period of two (2) years from the date of substantial completion of the project. The Contractor shall make all repairs during this period to maintain the roof watertight and in conformance with these specifications without additional cost to the Owner. The Owner has the right, in the case of emergency at any time during this period and without invalidating this guarantee, to make any temporary repairs that are required in order to protect the building and the contents of the building from damage due to the roof leaking. Owner must use proper materials and repair techniques so that no further damage to the roofing occurs.
B. Manufacturer Guarantee:
1. For a period of twenty (20) years from the date of substantial completion, the roofing manufacturer shall warrant to the Owner that the roofing manufacturer's Roof System, including roof panels, flashing and related items used to fasten the roof panels and flashing including any roof jack and curb attachments to the roof structure, will not allow intrusion of water from the exterior of the roofing manufacturer's Roof System into the building envelope when exposed to ordinary weather conditions and ordinary wear and usage.
2. Insure performance of manufacturer inspections and/or other manufacturer involvement required during construction and/or upon completion, as necessary to comply with manufacturer's guarantee conditions and to confirm that roofing system has been installed in accordance with manufacturer's requirements.
3. The roofing manufacturer's obligation for all warranty work shall commence on the date of substantial completion and shall terminate on the 20 year anniversary of the date certified as Substantial Completion of the roofing manufacturer's Roof System. During the period in which the roofing manufacturer has any warranty obligation, the roofing manufacturer shall take appropriate actions necessary to cause the non-performing portions of the Roof System to perform their proper functions. Status of roofing installer, or his guarantee obligations to the District, shall have no impact on Manufacturer's liability or obligations under this guarantee.
4. The total liability of the roofing manufacturer under his guarantee shall be unlimited (i.e. no dollar limit) with respect to the cost of repair or replacement of the manufacturer's roof system.

PART 2 - PRODUCTS
2.1 MANUFACTURERS/SYSTEMS
A. Machine crimped seams for straight (non-radius) metal roof configurations:
1. Garland Roofing company standing seam panel system (Basis of Design : R-Mer Seam Architectural Standing Seam Roofing System)
2. AEP Span
3. Petersen Aluminum Corporation (Pac-Clad)
4. Berridge Manufacturing Company
5. Englert, Inc.
6. Metal Sales Mfg. Corp.
7. MBCI
2.2 ROOF PANELS
A. Provide flat, non-ribbed panels.
B. Panel edges shall be machine crimped to form a locking seam.
C. Roof panel shall have a seam spacing to match existing adjacent".
D. Roof panels shall use a roof clip allowing for thermal movement of the panel system. There will be no exposed fasteners other than where detailed.
E. Panels shall be manufactured in maximum lengths to minimize end laps.
2.3 SHEET MATERIALS
A. Pre-Finished Galvalume Steel: 24 gauge, Minimum Grade 40 (40 ksi yield strength) structural steel with AZ50 or AZ55 hot dipped coating conforming to ASTM A792.
B. Flashing and Trim: Same material, gauge, finish, and color as the applicable panel components and fabricated in accordance with details and/or approved shop drawings.
C. Concealed Securement Cleats for Flashing: 22 gauge galvanized.
D. Counterflashing (adjacent to metal roofing): Surface-mounted counterflashing assembly fabricated using same material and finish as metal roofing panels, using approved SMACNA design, or as otherwise required or approved by panel manufacturer.
2.4 FACTORY FINISH
A. Minimum 70% Kynar 500® or Hylar 5000 Dark Sage Green on coating. Total dry-film thickness of paint system is a nominal 1.0 mil.
B. Color: all metal to be factory finished to match existing adjacent..
2.5 ACCESSORIES
A. Concealed Securement Clips:
1. As supplied by manufacturer based on manufacturer's certified engineering calculations as submitted for project.
B. Fasteners
1. Securement Clips to substrate: screw fasteners as required based on manufacturer's certified engineering calculations as submitted for project.
2. Flashings to panels (exposed): screws shall be zinc plated with a #14 x 7/8" combination steel and neoprene washer, color to match panel. Pop-rivets (1/8" stainless steel colored to match panel) may be used for vertical securement, or securement that does not penetrate to interior of roofing/flashing (unless sealed with urethane sealant).
3. Z-Purlins to steel deck: screw fasteners as required based on manufacturer's certified engineering calculations as submitted for project.
4. Insulation to steel deck: Factory Mutual approved insulation fastener with cap plate as required for steel deck.
C. Underlayment
1. Primary Underlayment (All slopes): ASTM D1970 self-adhering ice and water shield type membrane with high temperature characteristics such as Grace Ultra, GAF Metal-Mate, Polyglass Polystick MU, or equivalent.
2. Secondary and Gutter Underlayment: ASTM D1970 self-adhering ice and water shield type membrane with high temperature characteristics such as Grace Ultra, GAF Metal-Mate, Polyglass Polystick MU, or equivalent.
D. Underlayment Securement
1. Secure underlayment using approved components, methods and pattern recommended and/or approved by underlayment manufacturer for extended exposure.
E. Sealants
1. Shall not contain oil, asbestos, or asphalt.
2. Factory applied sealant shall be applied in the seam and designed for metal-to-metal concealed joints.
3. Field applied panel end sealant shall be mastic tape sealant supplied by and/or recommended by panel manufacturer.
4. Exposed Sealant shall be low modulus, high performance, one-part polyurethane conforming to Federal Specification No. TT-S-00230C Type II, Class A, such as Mameco Vulkem 921 or Sikaflex- 15LM; or as otherwise recommended by panel manufacturer.
F. Primer: Zinc chromate type, or Chromate water based primer
G. Protective Backing Paint: Zinc chromate alkyd, or Chromate water based primer
2.6 FABRICATION
A. Panels shall be manufactured in maximum lengths to minimize end laps.
B. Shop fabricate to the maximum extent practicable.
C. Form sections true to shape, accurate in size, square, and free from distortion or defects.
D. Provide 2 inch high siding seam sidelap in profile.
E. Fabricate flashings of same material as sheet, continuous, interlockable with sheet.
F. Fabricate exposed cleats of same material and finish as sheet. Concealed cleats shall be minimum 22 gauge galvanized steel or Galvalume. Cleats shall be interlockable with flashing.
G. Form pieces in longest practical lengths.
H. Hem exposed edges on underside 1/2 inch; miter and seam corners.
I. When possible, fabricate corners from one piece with minimum 18 inch long legs; seam for rigidity, seal with sealant.
J. Fabricate vertical faces with bottom edge formed outward 1/2 inch and hemmed to form drip, except when closure strips are required.

PART 3 - EXECUTION
3.1 EXAMINATION
A. Inspect roof deck to verify deck is clean and smooth, free of depressions, waves, or projections, properly sloped to drains, valley or eaves.
B. Verify deck is dry and free of snow or ice. Verify flutes in steel deck are dry.
C. Beginning of installation means acceptance of existing conditions.
3.2 PREPARATION
A. Field measure site conditions prior to fabricating work.
B. Install starter and edge strips, and cleats before starting installation.
C. Protect elements surrounding work of this Section from damage or disfigurement
3.3 Z-PURLIN INSTALLATION
A. At insulated roofs, provide minimum 16 gauge Z-purlins along eaves and in rows spaced at minimum 4 feet o.c., or as required per wind load design as submitted by manufacturer in compliance with ASCE-7. Z-purlin rows shall extend continuously from rake to rake, running perpendicular to the slope of the roof.
B. Secure Z-purlins with appropriate screw fasteners, into steel deck. Fastener spacing shall be as required per wind load design as submitted by manufacturer in compliance with ASCE-7, with maximum spacing at 12" o.c.
3.4 UNDERLAYMENT
A. Lay the underlayment material smooth and free of wrinkles, buckles, or fishmouths. Lap so water flow occurs over or parallel to, but never against the laps.
B. Secondary Underlayment
1. Apply continuous 12-inch wide strip of secondary underlayment at edge of eaves and rakes, overlapping fascia one inch beforeinstalling edge metal flashing.
2. Apply one 36 inch wide course along eaves and rakes, with first course overlapping edge flashing flange and 12 inch wide previously applied strip.
3. Apply 36-inch wide sheet of secondary underlayment centered in valleys over the primary underlayment.
4. Lap end joints 6 inches and side joints 3 inches minimum.
5. Do not leave secondary underlayment exposed to weather more than 30 days after beginning of installation.
C. Primary Underlayment
1. Apply primary underlayment over complete deck, including areas covered with secondary underlayment unless specified otherwise. Install in strict accordance with underlayment manufacturer requirements/recommendations.
2. Secure primary underlayment using approved components, methods and pattern recommended and/or approved by underlayment manufacturer for extended exposure.
3. For Type 30 felt option only, apply two layers of felt shingle fashion, overlapping preceding felts by 19" so that at least two plies of felt cover the insulation at all locations. Set each layer into a continuous application of Type IV asphalt.
4. Extend underlayment four to six inches (4"-6") up vertical surfaces at walls, etc.
5. Do not leave primary underlayment exposed for more than 60 calendar days.
6. Comply with any additional requirements of panel manufacturer for specified warranty.
3.5 PANEL INSTALLATION
A. Comply with manufacturer's product data, including product technical bulletins, product catalog installation instructions, and product cartons for installation of each panel assembly, including roofing, fascia and soffit.
B. Conform to applicable standards established in AISI, NAAMM, SMACNA, and NRCA manuals, as well as the approved drawings and manufacturer's calculation data submitted and approved for this project.
C. Provide appropriate separator material to prevent contact between any dissimilar materials.
D. Space roof panel seams at 16-18 inches on center. Fascia panel seams shall be between 18" and 24", evenly spaced from corner to corner.
E. Lay roofing panels with long dimension perpendicular to eaves. Install panels plumb, level, and straight with the seams parallel, conforming to the design as indicated.
F. Integrate securement clips into concealed panel seams at spacings recommended by manufacturer based on ASCE calculations. Secure clips to Z-purlins using appropriate screw fasteners, or directly to the steel deck through bearing plates.
G. Secure and seal all panel seams and end laps per manufacturer's requirements.
H. Install panel systems so they are watertight, without significant waves, warps, buckles or distortions, and allow for thermal movement considerations.
I. Abrasive devices shall not be used to cut on or near panel systems, nor shall such devices be used for cutting of panels.
J. Apply sealant tape or caulking as necessary at flashing and panel joints to prevent water penetration.
K. Remove any strippable film immediately upon installation.
3.6 FLASHING INSTALLATION
A. All flashing shall be in accordance with roof details on plans, approved shop drawings and/or manufacturers instructions. Where alternative flashing methods exist, these will be considered only upon submission and acceptance of appropriate shop drawings. Where flashing requirements vary from those described herein or on details, submit shop drawings to describe proposed detail modifications prior to job start.
B. At eaves, terminate roofing by hooking over edge strip.
C. Form valleys of sheets not exceeding 10 feet in length. Lap joints 6 inches in direction of drainage with at least two continuous beads of sealant or rows of seal tape between overlapping sections, or as otherwise recommended by manufacturer.
D. Extend valley sheets minimum 12 inches under roofing sheets.
E. At valley, double fold valley and roofing sheets and secure with cleats spaced 18 inches on center.
3.7 FIELD QUALITY CONTROL
A. Inspections may be performed by the Architect and Owner, including unannounced observation and field surveillance of work during installation to ascertain compliance with specified requirements.
B. Water Test:
1. A 48-hr. water test of all completed roof systems, including low-slope and metal roofing, as well as adjacent building components shall be conducted by the Contractor. The water test shall include the following procedures:
2. Apply simulated rain over all roof areas for at least 15 minutes per area, or as otherwise directed.
3. In addition to the simulated rain, direct water to all walls, windows, units, penetrations, etc. that occur adjacent to, or within each roof area, using a continuous, unforced hose stream.
4. Plug all roof drains in each drainage area and allow each to be filled to a depth of 3-4 inches measured at the drain areas. Allow to stand for a minimum of 48 hours.
5. Upon completion of water test, unplug primary drains only and insure that water flows freely without restriction. Verify that no water comes through overflow drain outlets (to insure that pipes are not cross-connected). Then unplug overflow drains and run hose stream directly into overflow drains to insure that water flows freely without restriction through overflow lines.
6. Perform any necessary corrections to defects noted during or after the water test procedures. Perform additional testing as necessary to further define sources of any noted leakage.
7. Contractor shall provide and/or arrange for all necessary equipment, supplies, water, etc. as needed to perform these tests. This may include a water truck with fire hose, if necessary.
8. Water test shall be performed after completion of asphalt paving, and must be completed and verified prior to filing for substantial completion.
C. A final audit punch list shall be prepared by the Architect upon notice by the General Contractor that roofing is complete. The roofing and related work must be 100 percent complete or additional inspections will be back charged.
3.8 CLEAN-UP
A. Keep the roof and premises clean and free from accumulations of waste materials and rubbish at all times. Remove all debris, scrap, and rubbish from the work area daily.
B. Remove debris resulting from the work at completion of metal roofing work. Surplus materials and all equipment shall be promptly removed from the site upon completion of the work.
C. Remove filings, grease, stains, marks, or excess sealants from roof panel system to prevent staining.
D. Remove any markings from finished surfaces. Prior to final acceptance, Restore all areas affected by the work to their original state of cleanliness and repair any damage done to the premises, by workmen or equipment.

END OF SECTION

SECTION 07 92 00

JOINT SEALANTS

PART 1 - GENERAL
1.1 SUMMARY
Retain second option in paragraph below if other Sections refer to this Section for sealant-related requirements.
A. Section includes sealants, joint backing, and accessories.

Adjust list below to suit Project or delete if retaining the Joint-Sealant Schedule at the end of Part 3. List summarizes typical sealant joints; if retained, complement with schedules, details, and designations on Drawings indicating exactly what products are required and where.
1.2 PERFORMANCE REQUIREMENTS
A. Provide elastomeric joint sealants that establish and maintain watertight and airtight continuous joint seals without staining or deteriorating joint substrates.
Delete paragraph above or below if not applicable. Revise wording to reflect performance required for both interior and exterior joints. Add specific applications where watertight or water-resistant performance may not be required or attainable with products selected.
B. Provide joint sealants for interior applications that establish and maintain airtight and water-resistant continuous j oint seals without staining or deteriorating joint substrates.
1.3 SUBMITTALS
A. Product Data: For each joint-sealant product indicated; submit data indicating sealant chemical characteristics, performance criteria, substrate preparation, limitations, and color availability.
Delete paragraph above if colors are preselected and specified or scheduled. Retain first paragraph below with or without above.
B. Samples for Verification: For each type and color of joint sealant required, provide Samples with joint sealants in 1/2 inch wide joints formed between two 6-inch long strips of material matching the appearance of exposed surfaces adjacent to joint sealants.
Retain first paragraph and subparagraph below if low-emitting materials are required for LEED-NC or LEED-CI 1.4 QUALITY ASSURANCE
If a manufacturer's warranty is specified requiring manufacturer's approval or licensing of Installer, retain first paragraph below.
A. Installer Qualifications: Company specializing in performing work of this section with minimum three years experience.
B. Source Limitations: Obtain each type of joint sealant through one source from a single manufacturer.
1.5 PROJECT CONDITIONS
A. Do not proceed with installation of joint sealants under the following conditions:

1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F.
2. When joint substrates are wet.
3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
4. Contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

PART 2 - PRODUCTS
2.1 MATERIALS, GENERAL
A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by sealant manufacturer, based on testing and field experience.
B. VOC Content of Interior Sealants: Provide sealants and sealant primers for use inside the weatherproofing system that comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):

1. Architectural Sealants: 250 g/L.
2. Non-membrane Roof Sealants: 300 g/L.
3. Single-Ply Roof Membrane Sealants: 450 g/L.
4. Sealant Primers for Nonporous Substrates: 250 g/L.
5. Sealant Primers for Porous Substrates: 775 g/L.
6. Modified Bituminous Sealant Primers: 500 g/L.
Delete below if sealant colors are specified in the Joint-Sealant Schedule at the end of Part 3 or on Drawings.
C. Colors of Exposed Joint Sealants: As selected by Architect/Engineer from manufacturer's full range.

2.2 MANUFACTURERS

A. Manufacturers:

1. Sonneborn
2. Tremco
3. Sika Corp.
4. Pecora
5. Dow Corning Corp.
6. G.E.
7. Approved equal.

2.3 JOINT SEALERS

A. Concrete: Horizontal

1. Two-part Polyurethane, self-leveling.
2. ASTM C920, Type M, Grade IP & NS, Class 25, Use T and M.
3. Movement: Plus or minus 25 percent
4. Shore A Hardness: 25
5. Color as selected by Architect from manufacturer's full line of standard colors. More than one color may be selected.
6. Sonneborn "Sonolastic SL-2".
7. Tremco "THC-900/THC-901".
8. Sika "Sikaflex - 2C-SL"
9. Pecora "NR-200 Urexpan"

B. Concrete/CMU: Vertical

1. Two-part Polyurethane, non-sag
2. ASTM C920, Type M, Grade NS & NS, Class 25, Use NT, M, A, and O.
3. Movement: Plus or minus 50 percent.
4. Color as selected by Architect from manufacturer's full line of standard colors. More than one color may be selected.
5. Sonneborn "Sonolastic NP-2".
6. Tremco "Dymeric 511"
7. Sika "Sikaflex - 2C-NS"
8. Pecora "Dynatrol II"

C. Other: Exterior

1. One-part Silicone.
2. ASTM C920, Type S, Grade NS, Class 25, Use NT, M, G and A.
3. Movement: Plus or minus 50 percent
4. Color as selected by Architect from manufacturer's full line of standard colors. More than one color may be selected.
5. Sonneborn "Omniseal"
6. Tremco "Spectrum 2"
7. Pecora "864 Silicone"
8. Dow Corning "Dow 791 Silicone"
9. G.E. "Silpruf"

D. Interior

1. Acrylic latex
2. ASTM C834, Paintable.
3. Color as selected by Architect from manufacturer's full line of standard colors. More than one color may be selected.
4. Sonneborn "Sonolac"
5. Tremco "Tremflex 834"
6. Pecora "AC-20 + Silicone"

E. Restrooms/Counters/Fixtures/Other Wet Locations

1. Acetoxy Silicone/Silicone
2. ASTM C920, Type S, Grade NS, Class 25, Use NT, G and A.
3. Recommended by manufacturer for use in restrooms and other wet areas, and as not supporting growth of fungus/bacteria.
4. Movement: Plus or minus 50 percent
5. Color as selected by Architect from manufacturer's full line of standard colors. More than one color may be selected.
6. Sonneborn "Omniplus"
7. Pecora "898 Silicone Sanitary Sealant"
8. Dow Corning "Dow 786 Mildew Resistant Silicone Sealant"
9. G.E. "1700 Sanitary Silicone Sealant"

2.4 ACCESSORIES

A. Primer: Non-staining type, recommended by sealant manufacturer to suit application.

B. Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.

C. Joint Backing: Round foam rod compatible with sealant; ASTM D 1330, closed cell material with a surface skin, oversized 30 to 50 percent larger than joint width.

D. Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.

PART 3 - EXECUTION
3.1 EXAMINATION
A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.
B. Proceed with installation only after unsatisfactory conditions have been corrected.
3.2 PREPARATION
A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:
As previously noted in "Miscellaneous Materials" Article, purpose of primers is to improve adhesion of sealant to substrate.
B. Joint Priming: Prime joint substrates, where recommended in writing by joint-sealant manufacturer, based on preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.
Delete below if not required.
C. Masking Tape: Use masking tape where required to prevent contact of sealant with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.
3.3 INSTALLATION OF JOINT SEALANTS
A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.
B. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
Delete first paragraph below only if use of acoustical sealants is specified in other Sections without reference to this Section.
C. Install sealant backings of type indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.

1. Do not leave gaps between ends of sealant backings.
2. Do not stretch, twist, puncture, or tear sealant backings.
3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.
Retain first paragraph below for sealants installed in moving joints without sealant backings.
D. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.
E. Install sealants using proven techniques that comply with the following and at the same time backings are installed:

1. Place sealants so they directly contact and fully wet joint substrates.
2. Completely fill recesses in each joint configuration.
3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
F. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.
1. Remove excess sealant from surfaces adjacent to joints.
2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
Retain one or more of three subparagraphs and associated subparagraph below to suit joint configurations required for Project. First subparagraph makes concave configuration the default requirement; second and third subparagraphs and associated subparagraph require that other configurations be indicated on Drawings. Revise if one of the latter two configurations needs to become the default requirement.
3. Provide concave joint configuration unless otherwise indicated.
4. Provide flush joint configuration where indicated.
G. Installation of Preformed Tapes: Install according to manufacturer's written instructions.
3.4 CLEANING
A. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.
3.5 PROTECTION
A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

END OF SECTION

SECTION 09 91 23 - INTERIOR PAINTING
PART 2 PRODUCTS
1.1 PAINTS AND FINISHES - GENERAL
A. Paints and Finishes: Ready mixed, unless intended to be a field-catalyzed paint.
1. Provide paints and finishes of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
2. Supply each paint material in quantity required to complete entire project's work from a single production run.
3. Do not reduce, thin, or dilute paint or finishes or add materials unless such procedure is specifically described in manufacturer's product instructions.
B. Volatile Organic Compound (VOC) Content: Comply with Section 01 61 16.

PART 3 EXECUTION

2.1 PREPARATION
A. Clean surfaces thoroughly and correct defects prior to application.
B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
C. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces or finishing.
D. Seal surfaces that might cause bleed through or staining of topcoat.
2.2 APPLICATION
A. Apply products in accordance with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual".
B. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.
C. Apply each coat to uniform appearance in thicknesses specified by manufacturer.
D. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.
E. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

END OF SECTION

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PATRICK PURNELL REGISTERED No. 2984 ARCHITECT STATE OF NEVADA

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Project
Douglas County JLEC Storage Building Roof

1038 Buckeye Rd.
Minden, Nevada 89423

Job No: 19-054.00

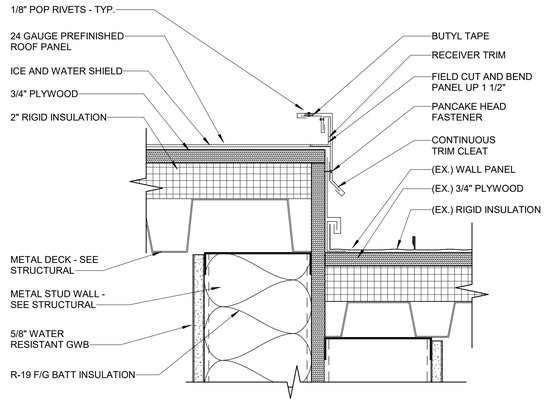
Owner
Douglas County

CONSTRUCTION ISSUE

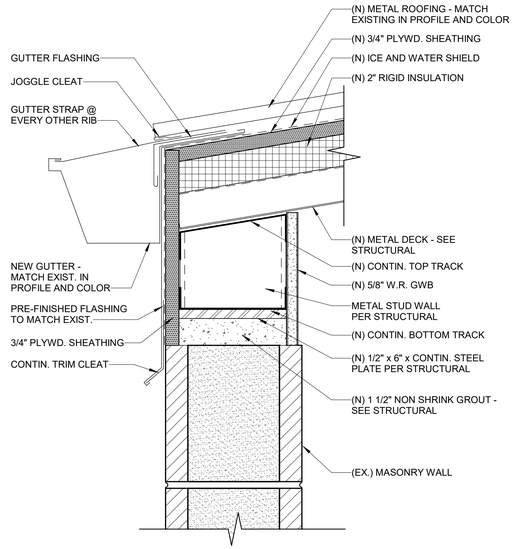
REVISIONS		
REV	DATE	DESCRIPTION

Sheet Title
PROJECT SPECIFICATIONS

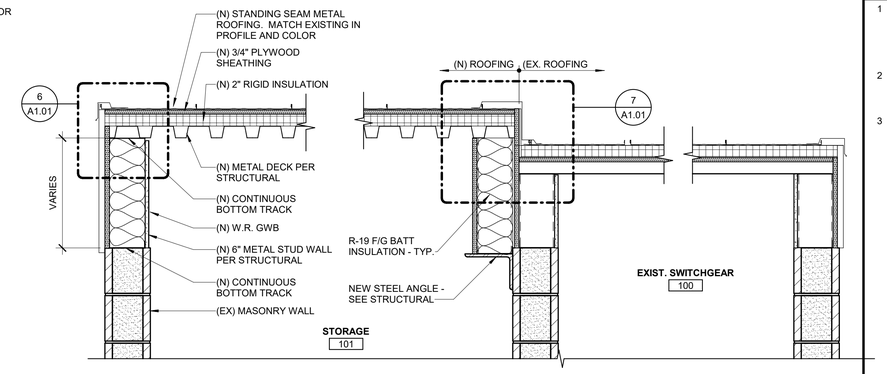
Date: October 9, 2019
Sheet No:
A0.20



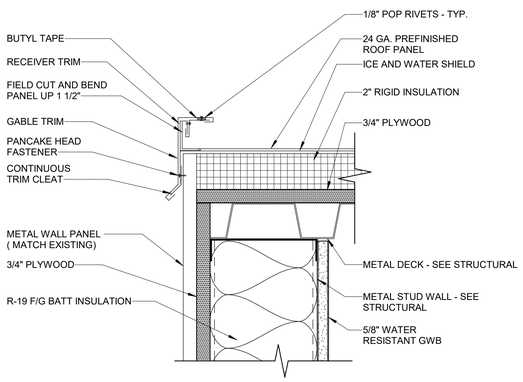
7 NEW / EXISTING RAKE DETAIL
SCALE: 3" = 1'-0"



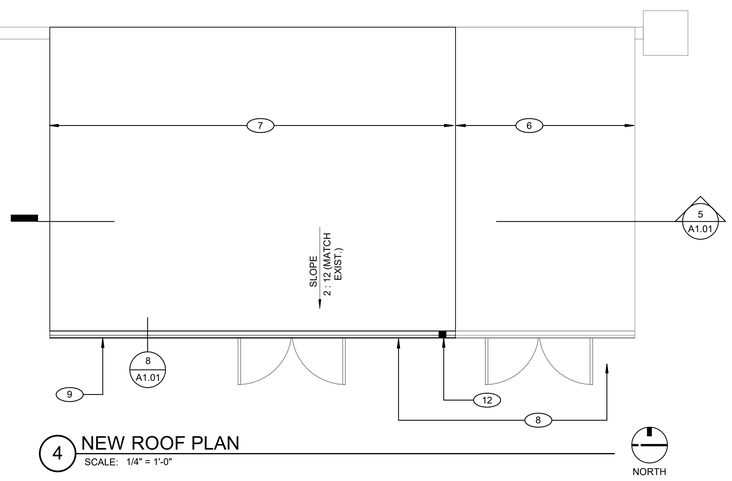
8 GUTTER DETAIL
SCALE: 3" = 1'-0"



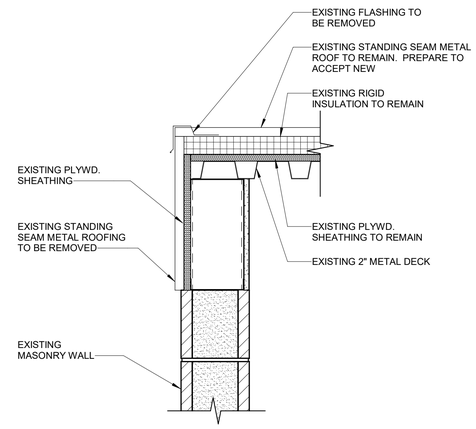
5 BUILDING SECTION
SCALE: 1" = 1'-0"



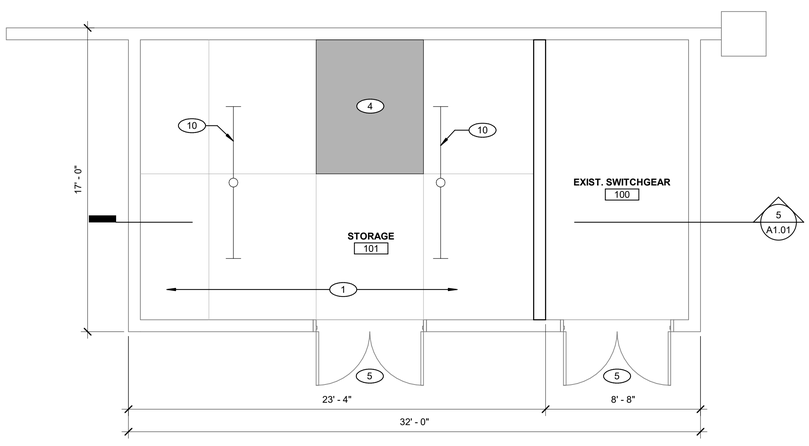
6 ROOF RAKE DETAIL
SCALE: 3" = 1'-0"



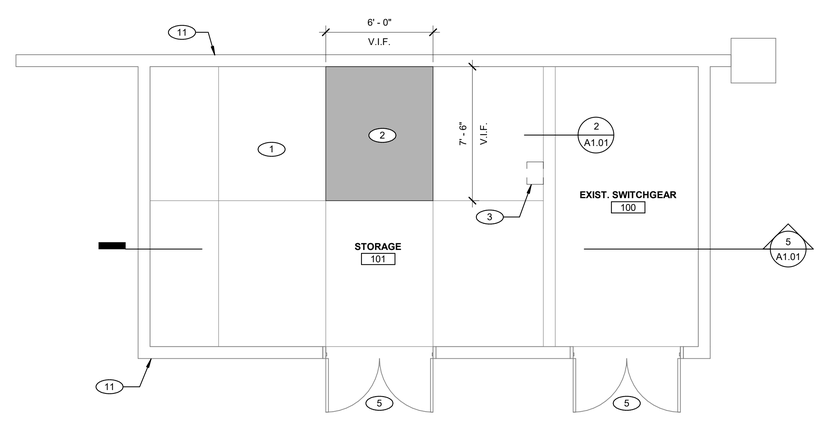
4 NEW ROOF PLAN
SCALE: 1/4" = 1'-0"



2 ROOFING DEMO DETAIL
SCALE: 1 1/2" = 1'-0"



3 NEW FLOOR PLAN
SCALE: 1/4" = 1'-0"



1 DEMO FLOOR PLAN
SCALE: 1/4" = 1'-0"

GENERAL NOTES

1. THESE DRAWING (ALL DISCIPLINES) ARE A COHESIVE SET OF DRAWINGS. EACH TRADE SHALL REVIEW ALL ARCHITECTURAL AND ENGINEERED DRAWINGS FOR INFORMATION THAT CROSSES OVER VARIOUS TRADES
2. CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS AND CONFIRM EXISTING CONDITIONS PRIOR TO COMMENCING WORK
3. CONTRACTOR TO NOTIFY ARCHITECT OF ANY DISCREPANCIES WITH CONTRACT DOCUMENTS AS SOON AS POSSIBLE

KEYNOTES

1. EXISTING CONCRETE SLAB TO REMAIN
2. PORTION OF EXISTING CONCRETE SLAB TO BE REMOVED. ELECTRICAL TO BE RELOCATED. SEE ELECTRICAL
3. EXISTING WALL MOUNTED LIGHT AND PROTECTIVE CAGE TO BE REMOVED. SEE ELECTRICAL
4. NEW CONCRETE SLAB PANEL. SEE STRUCTURAL TO STRENGTH AND DETAILS
5. EXISTING PAIR OF HM DOORS / FRAMES TO REMAIN (NO WORK)
6. EXISTING STANDING SEAM METAL ROOFING TO REMAIN. PROTECT FROM DAMAGE
7. NEW 24 GAUGE STANDING SEAM METAL ROOFING. MATCH EXISTING ADJACENT IN PROFILE AND COLOR
8. EXISTING GUTTER TO REMAIN. PREPARE TO ACCEPT EXTENSION
9. NEW GUTTER. MATCH EXISTING ADJACENT IN SHAPE AND COLOR
10. NEW LIGHT FIXTURE - SEE ELECTRICAL
11. EXISTING MASONRY WALLS TO REMAIN - TYP.
12. NEW DOWNSPOUT

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Owner
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CONSTRUCTION ISSUE

REVISIONS		
REV	DATE	DESCRIPTION

Sheet Title
DEMO FLOOR PLAN, NEW FLOOR PLAN, SECTION & DETAILS

Date: October 9, 2019
Sheet No:
A1.01

A. GENERAL

1. ALL WORK SHALL CONFORM TO THE MINIMUM STANDARDS OF THE FOLLOWING CODE: THE INTERNATIONAL BUILDING CODE, 2018 EDITION, OTHER REGULATING AGENCIES WHICH HAVE AUTHORITY OVER ANY PORTION OF THE WORK, AND THOSE CODES AND STANDARDS LISTED IN THESE NOTES AND SPECIFICATIONS.
2. THE STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, SHORING FOR LOADS DUE TO CONSTRUCTION EQUIPMENT, ETC. OBSERVATION VISITS TO THE SITE BY THE STRUCTURAL ENGINEER SHALL NOT INCLUDE INSPECTIONS OF THE ABOVE ITEMS.
3. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO STARTING CONSTRUCTION. THE ARCHITECT SHALL BE NOTIFIED OF ANY DISCREPANCIES OR INCONSISTENCIES.
4. DIMENSIONS SHALL TAKE PRECEDENCE OVER THE SCALE SHOWN ON DRAWINGS.
5. NOTES AND DETAILS ON PLANS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS.
6. SEE ARCHITECTURAL PLANS FOR THE FOLLOWING:
   A. SIZE AND LOCATION OF ALL DOOR AND WINDOWN OPENINGS, EXCEPT AS NOTED.
   B. SIZE AND LOCATION OF ALL INTERIOR AND EXTERIOR NON-BEARING PARTITIONS.
   C. SIZE AND LOCATION OF ALL CONCRETE CURBS, FLOOR DRAINS, SLOPES, DEPRESSED AREAS, CHANGES IN LEVEL, CHAMFER, GROOVES, INSERTS, ETC.
   D. SIZE AND LOCATION OF FLOOR AND ROOF OPENINGS, (EXCEPT AS SHOWN).
   E. FLOOR AND ROOF FINISHES.
   F. STAIR FRAMING AND DETAILS, (EXCEPT AS SHOWN).
   G. DIMENSIONS NOT SHOWN ON STRUCTURAL PLANS.
7. SEE MECHANICAL PLANS, PLUMBING, AND ELECTRICAL PLANS FOR THE FOLLOWING:
   A. PIPE RUNS, SLEEVES, HANGERS, TRENCHES, WALL AND SLAB OPENINGS, ETC., (EXCEPT AS SHOWN OR NOTED).
   B. ELECTRICAL CONDUIT RUNS, BOXES, OUTLETS IN WALLS AND SLABS.
   C. CONCRETE INSERTS FOR ELECTRICAL, MECHANICAL, OR PLUMBING FIXTURES.
   D. SIZE AND LOCATION OF MACHINE EQUIPMENT BASES, OR ANCHOR BOLTS FOR MOUNTS.
   E. SIZE AND LOCATION OF ALL MECHANICAL UNITS.
8. OPENINGS, POCKETS, ETC. LARGER THAN 6 INCHES SHALL NOT BE PLACED IN SLABS, DECKS, BEAMS, JOISTS, COLUMNS, WALLS, ETC., UNLESS SPECIFICALLY DETAILED ON THE STRUCTURAL PLANS.
9. ASTM SPECIFICATIONS NOTED SHALL BE THE LATEST REVISION.
10. THE CONTRACTOR SHALL INVESTIGATE THE SITE DURING CLEARING AND EARTHWORK OPERATIONS FOR FILLED EXCAVATIONS OR BURIED STRUCTURES SUCH AS CESSPOOLS, CISTERNS, FOUNDATIONS, ETC. IF ANY SUCH STRUCTURES ARE FOUND, THE STRUCTURAL ENGINEER SHALL BE NOTIFIED IMMEDIATELY.
11. CONSTRUCTION MATERIALS SHALL BE SPREAD OUT IF PLACED ON FLOORS OR ROOF. LOAD SHALL NOT EXCEED THE DESIGN LIVE LOAD PER SQUARE FOOT. PROVIDE ADEQUATE SHORING AND/OR BRACING WHERE STRUCTURE HAS NOT ATTAINED DESIGN STRENGTH.
12. WHERE THE LONGEST HORIZONTAL CEILING DIMENSION IS EQUAL TO OR GREATER THAN 20'-0", IT IS RECOMMENDED THAT RESILIENT CHANNEL BE USED TO HELP LIMIT DRYWALL CRACKING.

B. DESIGN CRITERIA

GRAVITY LOAD	LIVE LOAD	DEAD LOAD
ROOF LOAD	20 PSF	12 PSF
ROOF SNOW LOAD	20.8 PSF	

* SEE FRAMING NOTES FOR SPECIAL LOADING CONDITIONS

WIND	
BASIC WIND SPEED	120 MPH
WIND RISK CATEGORY	II
WIND EXPOSURE CATEGORY	C
INTERNAL PRESSURE COEFFICIENT	NA
COMPONENT & CLADDING	
ROOF	+13.0 PSF OR -53.0 PSF
WALL	+32 PSF OR -35.0 PSF

* HIGHER LOADING USED AT CORNERS AND EDGES

SEISMIC	
SEISMIC RISK CATEGORY	II
SEISMIC IMPORTANCE, I_E	1.0
MAPPED SPECTRAL RESPONSE ACCELERATIONS	S_S=1.947 & S_1=0.694
SPECTRAL RESPONSE COEFFICIENTS	S_{DS}=1.558& S_{D1}=NULL
SITE CLASS	D
LATERAL FORCE RESISTING SYSTEM, NORTH/SOUTH	SPECIAL REINFORCED MASONRY SHEAR WALLS, R=5
LATERAL FORCE RESISTING SYSTEM, EAST/WEST	SPECIAL REINFORCED MASONRY SHEAR WALLS, R=5
SEISMIC RESPONSE COEFFICIENT, C_S	0.312
DESIGN BASE SHEAR	C_S x DEAD WEIGHT (W)
ANALYSIS PROCEDURE	EQUIVALENT LATERAL FORCE
SEISMIC DESIGN CATEGORY	E

F. REINFORCING STEEL

1. REINFORCING BARS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A-615 GRADE 60.
2. WELDED REINFORCING BARS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A-706 GRADE 60.
3. ALL REINFORCING BARS SHALL BE MADE COLD.
4. MINIMUM LAP OF THE WELDED WIRE FABRIC SHALL BE 6 INCHES OR ONE AND ONE HALF SQUARES WHICHEVER IS GREATER.
5. ALL BARS SHALL BE MARKED SO THEIR IDENTIFICATION CAN BE MADE WHEN THE FINAL IN-PLACE INSPECTION IS MADE.
6. REBAR SPLICES ARE TO BE CLASS "B" (UNO). MAINTAIN 2 BAR DIA CLEAR SPACE BETWEEN ADJACENT SPLICES

REBAR SIZE	#3	#4	#5	#6	#7	#8	#9	#10
MINIMUM LAP LENGTH, INCHES, CONCRETE	22	29	36	43	68	78	88	98
MINIMUM LAP LENGTH, INCHES, MASONRY	16	26	40	54	63	72	NA	NA
STD. HOOK LENGTH, INCHES	4 1/2	6	7 1/2	9	10 1/2	12	13 1/2	15 1/2

7. REINFORCING SPLICES SHALL BE MADE ONLY WHERE INDICATED ON THE DRAWINGS.
8. DOWELS BETWEEN FOOTINGS AND WALLS OR COLUMNS SHALL BE THE SAME GRADE, SIZE AND SPACING OR NUMBER AS THE VERTICAL REINFORCING, RESPECTIVELY.

G. CONCRETE

1. ALL PHASES OF WORK PERTAINING TO THE CONCRETE CONSTRUCTION SHALL CONFORM TO THE "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" (ACI 318 LATEST ADOPTED EDITION), WITH MODIFICATIONS AS NOTED IN THE DRAWINGS AND SPECIFICATIONS.
2. REINFORCED CONCRETE DESIGN IS BY THE "ULTIMATE STRENGTH DESIGN METHOD", ACI 318-14.
3. SCHEDULE OF STRUCTURAL CONCRETE 28-DAY COMPRESSIVE STRENGTH AND TYPES:

LOCATION IN STRUCTURE	STRENGTH	AGGREGATE	ENTRAINED AIR %
SLAB ON GRADE	3500 PSI	3/4" STONE	NONE

4. A MINIMUM OF THREE (3) CYLINDERS FOR EVERY 100 YARDS OF CONCRETE SHALL BE TAKEN TO DETERMINE CONCRETE STRENGTH.
5. CONCRETE MIX DESIGN SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR APPROVAL WITH THE FOLLOWING REQUIREMENTS:
   A. COMPRESSIVE STRENGTH AT AGE 28 DAYS AS SPECIFIED ABOVE.
   B. AGGREGATE SUBMITTAL: 3/4" MAXIMUM SIZE CONFORMING TO ASTM C-33.
   C. CEMENT: ASTM C-150, TYPE II PORTLAND CEMENT.
   D. MAXIMUM SLUMP: 3 INCHES. ADDITIONAL WORKABILITY MAY BE ACHIEVED WITH AN APPROVED ADMIXTURE THAT DOES NOT PROMOTE SHRINKAGE OF THE CONCRETE.
   E. NO ADMIXTURES, EXCEPT FOR ENTRAINED AIR, OR AS SPECIFIED OR APPROVED BY THE STRUCTURAL ENGINEER.
   F. MAXIMUM WATER/CEMENT RATIO SHALL BE 0.45.
   G. CONCRETE SHALL BE 142 +/- 7 LBS/CU. FT.
6. CONCRETE MIXING OPERATIONS, ETC. SHALL CONFORM TO ASTM C-94.
7. PLACEMENT OF CONCRETE SHALL CONFORM TO ACI STANDARD 614.
8. CLEAR COVERAGE OF CONCRETE OVER OUTER REINFORCING BARS SHALL BE AS FOLLOWS, UNO:
   A. CONCRETE POURED DIRECTLY AGAINST EARTH: 3 INCHES CLEAR
   B. STRUCTURAL SLABS: 3/4 INCHES CLEAR (TOP AND BOTTOM)
   C. FORMED CONCRETE WITH EARTH BACKFILL: 2 INCHES CLEAR
9. ALL REINFORCING BARS, HOLD DOWN BOLTS AND STRAPS, AND OTHER CONCRETE INSERTS SHALL BE WELL SECURED IN POSITION PRIOR TO PLACING CONCRETE.
10. PROVIDE SLEEVES FOR PLUMBING AND ELECTRICAL OPENINGS IN CONCRETE BEFORE PLACING. DO NOT CUT ANY REINFORCING WHICH MAY CONFLICT. CORING IN CONCRETE IS NOT PERMITTED EXCEPT AS SHOWN. NOTIFY THE STRUCTURAL ENGINEER IN ADVANCE OF CONDITIONS NOT SHOWN ON THE DRAWINGS.
11. CONDUIT OR PIPE SIZE (O.D.) SHALL NOT EXCEED 30% OF SLAB THICKNESS AND SHALL BE PLACED BETWEEN THE TOP AND BOTTOM REINFORCING, UNLESS SPECIFICALLY DETAILED OTHERWISE. CONCENTRATIONS OF CONDUITS OR PIPES SHALL BE AVOIDED EXCEPT WHERE DETAILED OPENINGS ARE PROVIDED.
12. MODULUS OF ELASTICITY OF CONCRETE, WHEN TESTED IN ACCORDANCE WITH ASTM C-460, SHALL BE AT LEAST THE VALUE GIVEN BY THE EQUATIONS IN SECTION 8.5.1 OF ACI 318 FOR THE SPECIFIED 28-DAY STRENGTH.
13. SHRINKAGE OF CONCRETE, WHEN TESTED IN ACCORDANCE WITH ASTM C-157, SHALL NOT EXCEED 0.00040 INCHES/INCH.

L. SHEATHING

1. ALL STRUCTURAL SHEATHING SHALL BE C-D INTERIOR SHEATHING WITH EXTERIOR GLUE OR ORIENTED STRAND BOARD (OSB), EXPOSURE I, AND SHALL BEAR THE STAMP OF AN APPROVED TESTING AGENCY. LAY SHEATHING WITH LONG DIMENSION PERPENDICULAR TO SUPPORTS. STAGGER JOINTS AND NAILS.
2. ROOF SHEATHING AT UNBLOCKED DIAPHRAGM (STANDARD, UNO) 15/32" WOOD STRUCTURAL PANEL: PANEL INDEX = 32/16, UNBLOCKED UNO w/ 8d COMMON NAILS AT 6" o.c. AT ALL PANEL BOUNDARIES AND SUPPORTED EDGES, 12" o.c. FIELD. PANELS LESS THAN 2'-0" IN WIDTH SHALL HAVE EDGES BLOCKED.
3. ROOF SHEATHING AT BLOCKED DIAPHRAGM (WHERE NOTED ON PLANS) 15/32" WOOD STRUCTURAL PANEL: PANEL INDEX = 32/16, BLOCKED. NAIL w/ 8d COMMON NAILS AT 4" o.c. AT ALL BOUNDARIES AND SUPPORTED EDGES, 12" o.c. FIELD, UNO ON PLANS. OFFSET (STAGGER) NAILS IN SINGLE ROW PER TJI ESR-1153.
4. FLOOR SHEATHING AT UNBLOCKED DIAPHRAGM (STANDARD, UNO)
5. 1" APA RATED: T AND G, 48" OC STURD-I-FLOOR, UNBLOCKED (UNO.). NAIL WITH 10d COMMON NAILS AT 6" o.c. AT ALL BOUNDARIES AND SUPPORTED EDGES, 12" O.C. FIELD UNO ON PLANS. GLUE AND NAIL TYP. PANELS LESS THAN 2'-0" IN WIDTH SHALL HAVE ALL EDGES BLOCKED. OPTION: QUIK DRIVE #8 WSNTL WOOD SCREWS MAY BE USED IN LIEU OF 10d COMMON NAILS ABOVE. SPACING SHALL BE SAME AS SHOWN FOR 10d COMMON NAILS PER ICC REPORT ESR-1472.
6. FLOOR SHEATHING AT BLOCKED DIAPHRAGM (WHERE NOTED ON PLANS) 1" APA RATED: T & G, 48" OC STURD-I-FLOOR, BLOCKED. NAIL WITH 16d SINKERS AT 4" o.c. AT ALL BOUNDARIES AND SUPPORTED EDGES, 12" o.c. FIELD UNO ON PLANS. GLUE AND NAIL. OPTION: QUIK DRIVE #8 x 2 1/4" SCREWS MAY BE USED IN LIEU OF 16d SINKERS ABOVE. SPACING SHALL BE SAME AS SHOWN FOR 10d COMMON NAILS PER ICC REPORT ESR-1472. OFFSET (STAGGER) NAILS IN SINGLE ROW PER TJI ESR-1153.
7. SHEAR WALL SHEATHING 3/4" WOOD STRUCTURAL PANEL, TYP., U.N.O., UNBLOCKED W/ #8 SCREWS AT 6" O.C. AT ALL PANEL BOUNDARIES AND SUPPORTED EDGES, 12" O.C. FIELD. PANELS LESS THAN 2'-0" IN WIDTH SHALL HAVE EDGES BLOCKED.

M. SHOP DRAWINGS

1. SHOP DRAWINGS SHALL BE SUBMITTED FOR ALL STRUCTURAL ITEMS IN ADDITION TO ITEMS REQUIRED BY ARCHITECTURAL SPECIFICATIONS.
2. THE CONTRACTOR SHALL REVIEW ALL SHOP DRAWINGS PRIOR TO SUBMITTAL. ITEMS NOT IN ACCORDANCE WITH CONTRACT DRAWINGS SHALL BE FLAGGED FOR REVIEW.
3. VERIFY ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS.
4. ANY CHANGES, SUBSTITUTIONS, OR DEVIATIONS FROM ORIGINAL STRUCTURAL DRAWINGS SHALL BE RED-LINED OR FLAGGED BY SUBMITTING PARTIES.
5. THE STRUCTURAL ENGINEER HAS THE RIGHT TO APPROVE OR DISAPPROVE ANY CHANGES TO THE ORIGINAL DRAWINGS AT ANY TIME, BEFORE OR AFTER SHOP DRAWING REVIEW.
6. THE SHOP DRAWINGS DO NOT REPLACE THE ORIGINAL STRUCTURAL DRAWINGS. ITEMS OMITTED OR SHOWN INCORRECTLY BUT NOT FLAGGED BY THE STRUCTURAL ENGINEER OR ARCHITECT ARE NOT TO BE CONSIDERED CHANGES TO THE ORIGINAL CONTRACT DRAWING.
7. THE ADEQUACY OF ENGINEERING DESIGNS AND LAYOUT PERFORMED BY THE OTHERS RESTS WITH THE DESIGNING OR SUBMITTING AUTHORITY.
8. REVIEWING IS INTENDED ONLY AS AN AID TO THE CONTRACTOR IN OBTAINING CORRECT SHOP DRAWINGS. RESPONSIBILITY FOR CORRECTNESS SHALL REST WITH THE CONTRACTOR.
9. THE CONTRACTOR SHALL PROVIDE (1) FILE COPY OF ALL APPROVED SHOP DRAWINGS TO THE STRUCTURAL ENGINEER.

P. STRUCTURAL STEEL

1. HOT-ROLLED STRUCTURAL STEEL SHAPES SHALL BE PER ASTM A992, EXCEPT ANGLES AND CHANNELS SHALL BE PER ASTM A36, UNO.
2. STRUCTURAL PIPE SHALL BE PER ASTM A53 GRADE B, UNO.
3. STRUCTURAL HSS SHAPES SHALL BE PER ASTM A500 GRADE B, UNO.
4. STRUCTURAL PLATE STEEL SHALL BE PER ASTM A36, UNO.
5. NUTS AND BOLTS IN STRUCTURAL STEEL CONNECTIONS SHALL BE PER ASTM 325N, WITH HARDENED WASHERS UNO. DESIGN IS BASED UPON BEARING TYPE CONNECTIONS WITH THREADS NOT EXCLUDED, PERIODIC SPECIAL INSPECTION REQUIRED, UNO.
6. ANCHOR BOLTS SHALL BE PER ASTM F1554 GR. 36, UNO.
7. WELDS SHALL BE BY E70XX, LOW HYDROGEN ELECTRODES.
8. ALL FIELD WELDS SHALL HAVE SPECIAL INSPECTION.
9. PROVIDE SPECIAL INSPECTION IN ACCORDANCE WITH IBC 1705.2.1.

T. METAL DECKING

1. METAL DECK SHALL CONFORM TO THE REQUIREMENTS OF THE STEEL DECK INSTITUTE.
2. TYPE AND GAUGE OF METAL DECK SHALL BE PER THE FRAMING NOTES. METAL DECK FINISH PER ARCHITECTURAL DRAWINGS.
3. UNLESS OTHERWISE INDICATED IN THE DETAILS, METAL EDGE FORM SHALL BE MINIMUM 16 GAUGE COLD FORMED STEEL, WELDED AT SUPPORTING BEAM FLANGE AT 12" ON CENTER.
4. DUCTS OR OTHER UTILITIES SHALL NOT BE SUPPORTED BY THE METAL DECK.

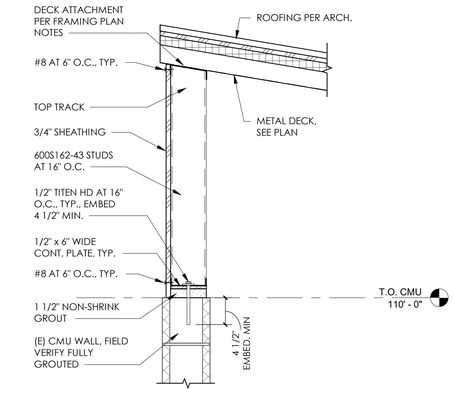
X. COLD FORMED STEEL

1. COLD FORMED STEEL FRAMING SHALL CONFORM TO THE REQUIREMENTS OF THE 2015 EDITION OF THE NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS, THE NORTH AMERICAN STANDARDS FOR COLD-FORMED STEEL FRAMING AND REQUIREMENTS AS STATED IN THE FRAMING NOTES.
2. TYPICAL FASTENER SIZE NOTED IN THE DRAWINGS:
   A. #6 SCREWS = 0.138" DIA. X 1 1/4" MINIMUM LENGTH
   B. #8 SCREWS = 0.164" DIA. X 1 1/4" MINIMUM LENGTH
3. COLD FORMED STEEL STUDS AND JOISTS SHALL BE STRUCTURAL GRADE PER ASTM A653, 33 KSI MINIMUM STUDS AS SHOWN ON THE DRAWINGS. 50 KSI WHERE NOTED.

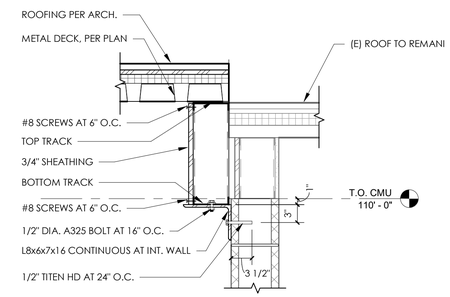
N. SPECIAL INSPECTIONS

1. PROVIDE SPECIAL INSPECTIONS IN ACCORDANCE WITH SECTION 1705 OF THE BUILDING CODE, AS REQUIRED BY THE PERMITTING AGENCY.
2. WHERE SPECIAL INSPECTION IS REQUIRED, IT SHALL BE PERFORMED BY A REGISTERED DEPUTY INSPECTOR EMPLOYED BY THE OWNER AND APPROVED BY THE GOVERNING JURISDICTION. COPIES OF THE INSPECTION REPORTS SHALL BE SUBMITTED TO THE BUILDING DEPARTMENT AND ARCHITECT/STRUCTURAL ENGINEER FOR REVIEW.
3. ITEMS REQUIRING SPECIAL INSPECTIONS:

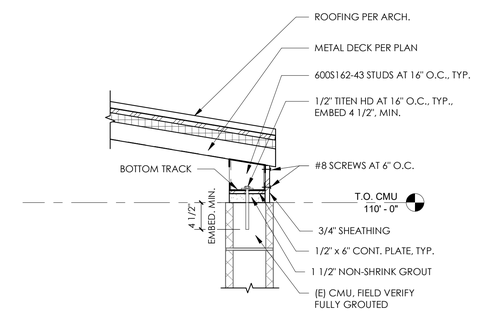
SPECIAL INSPECTION SCHEDULE			
INSPECTION TYPE	CONTINUOS INSPECTION	PERIODIC INSPECTION	REQUIRED FOR THIS PROJECT
CONCRETE CONSTRUCTION			
REINFORCING STEEL		X	REQUIRED
CAST IN ANCHORS		X	NOT REQUIRED
POST INSTALLED ANCHORS		X	REQUIRED
MIX DESIGN VERIFICATION		X	REQUIRED
TAKING OF SPECIMENS FOR STRENGTH TESTS, SLUMP AND AIR CONTENT TESTS, TEMPERATURE DETERMINATION	X		REQUIRED
INSPECTION OF PLACEMENT FOR PROPER TECHNIQUES	X		REQUIRED
CURING TEMPERATURES AND TECHNIQUES		X	REQUIRED
FORMWORK		X	REQUIRED
STEEL CONSTRUCTION			
WELDING		X	NOT REQUIRED
ALL WELDING ON MOMENT RESISTING & BRACED FRAMES	X		NOT REQUIRED
ALL WELDING OF REINFORCING STEEL	X		REQUIRED WHERE OCCURS
FILLET WELDS (FIELD)		X	NOT REQUIRED
WELDED STUDS		X	NOT REQUIRED
FLOOR AND ROOF DECK WELDING		X	REQUIRED
HIGH STRENGTH BOLTING		X	NOT REQUIRED
STRUCTURAL MASONRY CONSTRUCTION			
VERIFY COMPLIANCE w/ APPROVED SUBMITTALS		X	NOT REQUIRED
MORTAR PROPORTIONS, MORTAR JOINT CONSTRUCTION & REINFORCEMENT LOCATION		X	NOT REQUIRED
GROUT SPACE, GRADE, TYPE & SIZE OF REINF. & ANCHOR BOLTS, SITE PREPARED GROUT PROPORTIONS		X	REQUIRED
SIZE & LOCATION OF STRUCTURAL ELEMENTS, TYPE, SIZE & LOCATION OF ANCHORS & ANCHORAGE OR MASONRY TO FRAMES OR OTHER CONTRUCTION		X	NOT REQUIRED
PREPARATION, CONSTRUCTION & PROTECTION OF MASONRY DURING COLD WEATHER (<40 DEG.) OR HOT WEATHER (>90 DEG.)		X	NOT REQUIRED
STRUCTURAL WOOD CONSTRUCTION			
NAILING AT P2, P3, P4 AND P5 SHEAR WALLS		X	NOT REQUIRED
DRAG TRUSS CONNECTIONS TO SHEAR WALLS		X	NOT REQUIRED
SHEAR WALL HOLD DOWNS		X	NOT REQUIRED
CONNECTION OF PRE-MANUFACTURED SHEAR PANELS TO DRAG STRUTS AND ANCHOR BOLTS		X	NOT REQUIRED



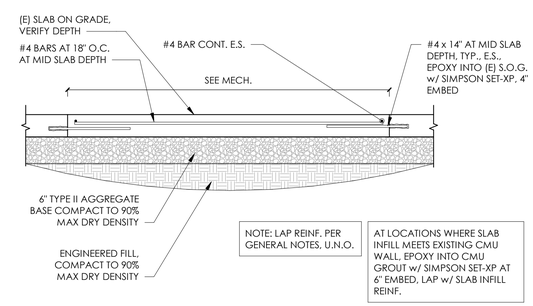
4 SECTION AT HIGH END
1" = 1'-0"



3 SECTION AT INTERIOR WALL
1" = 1'-0"



2 SECTION AT LOW END
1" = 1'-0"



1 SLAB INFILL
3/4" = 1'-0"

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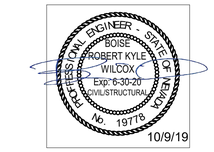

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Project

Douglas County JLEC Storage Building Roof

1038 Buckeye Rd.
Minden, Nevada 89423

Job No: 19-054.00

Owner

Douglas County

CONSTRUCTION ISSUE

REVISIONS		
REV	DATE	DESCRIPTION

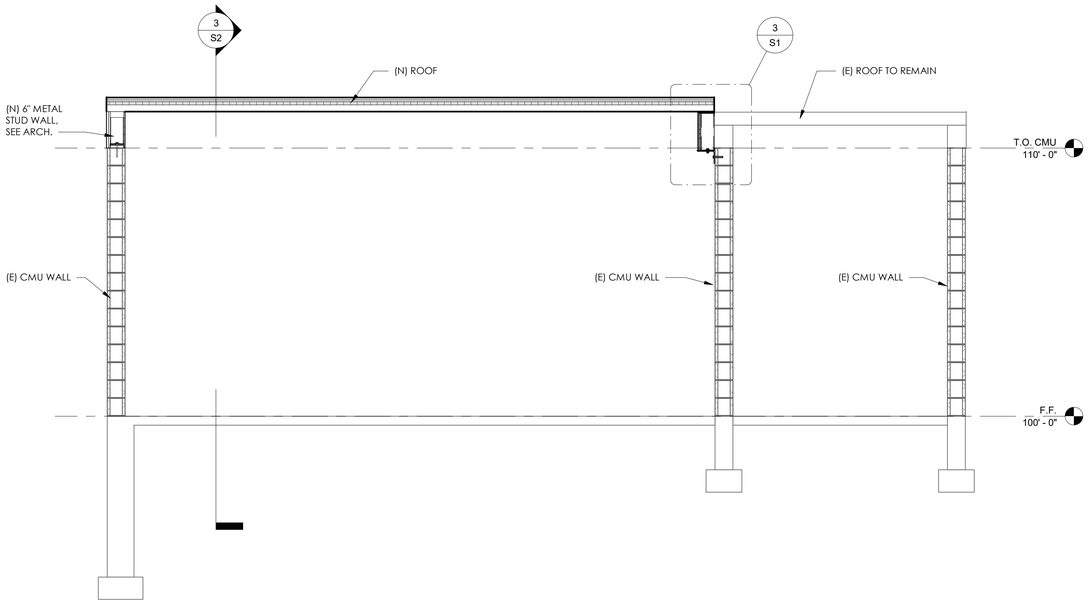
Sheet Title

STRUCTURAL GENERAL NOTES

Date: October 9, 2019

Sheet No:

S1

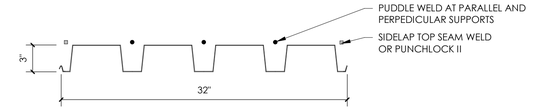


4 LONGITUDINAL SECTION

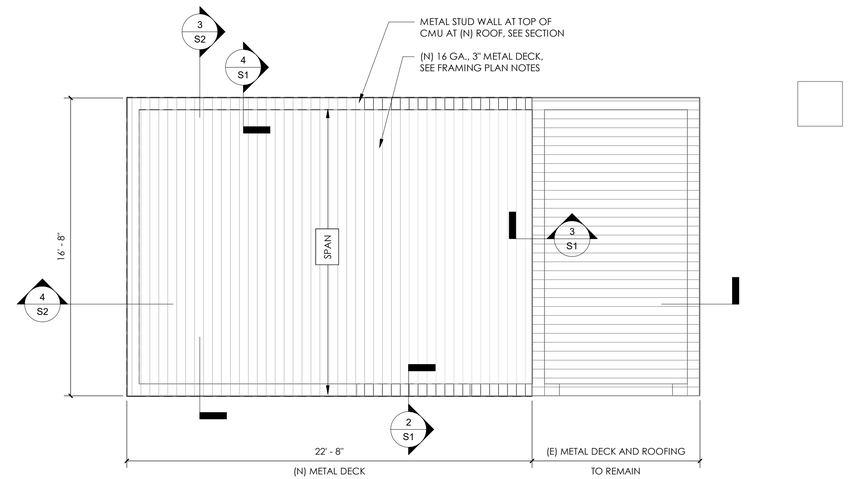
3/8" = 1'-0"

FRAMING PLAN NOTES:

1. CONTRACTOR TO VERIFY AND COORDINATE ALL DIMENSIONS AND CONDITIONS WITH ARCHITECT PRIOR TO FABRICATION OR ERECTION. SEE ARCH.
2. METAL DECK TO BE 3", 16 GA. VERCO PLN3 DECK OR EQUIVALENT.
   A. SEE GENERAL NOTES.
   B. ATTACH SIDELAPS WITH 1 1/2" LONG TOP SEAM WELD @ 24" O.C. OR VERCO (OR EQUAL) PUNCHLOCK II TOOL AT 24" O.C. PUDDLE WELD AT A (5) WELD PATTERN AT PERPENDICULAR SUPPORTS AND AT 12" O.C. AT PARALLEL SUPPORTS. PUDDLE WELDS ARE 1" x 3/8" AT SIDELAPS AND 1/2" DIA. AT INTERIOR FLUTES.

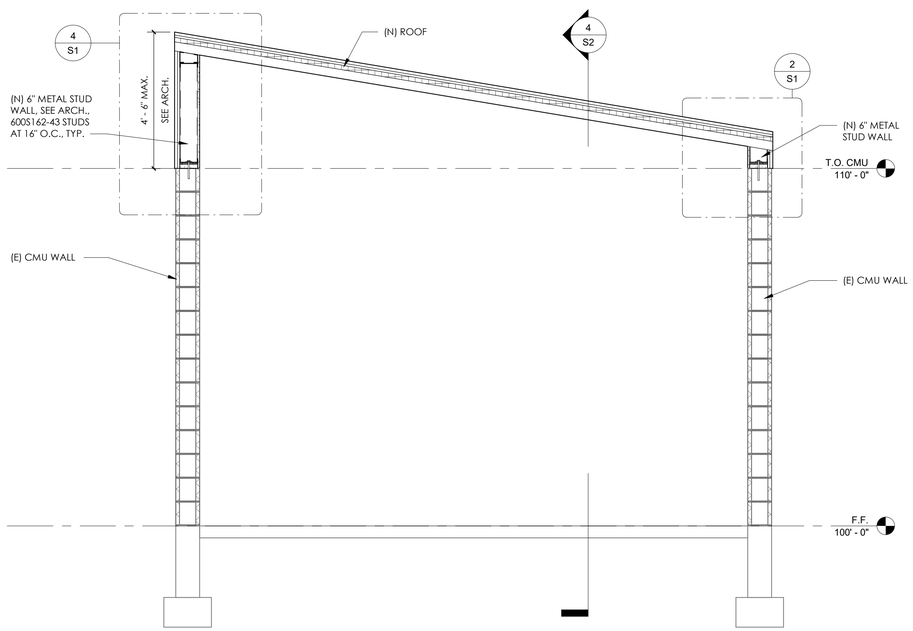


3. (N) STUD WALLS TO BE 6", 18 GA. STUDS AT 16" O.C., TYP. (600S162-43)
4. ALL CMU WALLS ARE ASSUMED TO BE FULLY GROUTED. FIELD VERIFY. IF ANY WALLS ARE FOUND TO NOT BE FULLY GROUTED CONTACT THE ENGINEER IMMEDIATELY.



2 ROOF FRAMING PLAN

1/4" = 1'-0"



3 TRANSVERSE SECTION

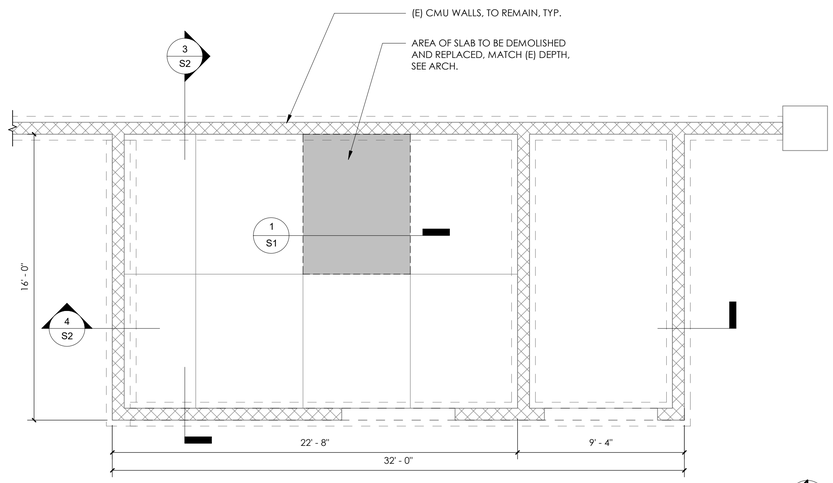
1/2" = 1'-0"

LEGEND:

AREA OF SLAB TO BE DEMOLISHED AND REPLACED

FOUNDATION PLAN NOTES:

1. CONTRACTOR TO VERIFY AND COORDINATE ALL DIMENSIONS AND CONDITIONS WITH ARCH. PRIOR TO FABRICATION OR ERECTION.
2. NO CONDUIT SHALL BE PLACED IN THE SLAB ON GRADE.
3. SEE 1 / S1 FOR SLAB INFILL DETAIL, ENGINEERING FILL REQUIREMENTS AND SUBGRADE PREPARATION REQUIREMENTS.
4. SEE ARCHITECTURAL AND/OR MECHANICAL/PLUMBING DRAWINGS FOR ANY FLOOR DRAINS OR SINKS, CONTRACTOR TO COORDINATE.
5. ALL CMU WALLS ARE ASSUMED TO BE FULLY GROUTED. FIELD VERIFY. IF ANY WALLS ARE FOUND TO NOT BE FULLY GROUTED CONTACT THE ENGINEER IMMEDIATELY.



1 FOUNDATION PLAN

1/4" = 1'-0"

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CONSTRUCTION ISSUE

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Sheet Title

STRUCTURAL PLANS AND SECTIONS

Date: October 9, 2019

Sheet No:

S2

SPECIFICATIONS

ITEM	DESCRIPTION
16.1	STANDARDS AND CODES: ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE (NEC), AS WELL AS ALL APPLICABLE STATE AND LOCAL CODES AND ORDINANCES. THIS DOES NOT RELIEVE THE CONTRACTOR FROM FURNISHING AND INSTALLING WORK SHOWN OR SPECIFIED WHICH MAY EXCEED THE REQUIREMENTS OF SUCH ORDINANCES, LAWS, REGULATIONS AND CODES.
16.2	COMPLETE INSTALLATION: PROVIDE ALL LABOR, MATERIALS, EQUIPMENT, TOOLS, ACCESSORIES, ETC., NECESSARY TO ACCOMPLISH A COMPLETE ELECTRICAL SYSTEM IN ACCORDANCE WITH THE PLANS TOGETHER WITH THE SPECIFICATIONS.
16.3	PERMITS: OBTAIN AND PAY FOR ALL BUILDING AND WORKING PERMITS AND INSPECTION FEES REQUIRED FOR THIS PROJECT.
16.4	DRAWINGS: DATA PRESENTED ON THESE DRAWINGS SHALL BE FIELD VERIFIED SINCE ALL DIMENSIONS, LOCATIONS, AND LEVELS ARE GOVERNED BY ACTUAL FIELD CONDITIONS. REVIEW ALL ARCHITECTURAL, STRUCTURAL, CIVIL, MECHANICAL AND SPECIALTY SYSTEMS DRAWINGS AND ADJUST ALL WORK TO MEET THE REQUIREMENTS ON CONDITIONS SHOWN THEREON. DO NOT SCALE ELECTRICAL PLANS FOR FIXTURE, DEVICE OR APPLIANCE LOCATIONS. USE CONFIGURED DIMENSIONS IF GIVEN OR CHECK ARCHITECTURAL OR MECHANICAL DRAWINGS.
16.5	COPYRIGHT: THESE PLANS, SPECIFICATIONS AND ALL RELATED ADDENDA AND DOCUMENTS CONSTITUTE COPYRIGHT MATERIALS OF JP ENGINEERING. ALL RIGHTS CONFERRED BY THE COPYRIGHT AND SIMILAR LAWS ARE RESERVED TO JP ENGINEERING. THESE MATERIALS SHALL REMAIN THE SOLE PROPERTY OF JP ENGINEERING AND MAY NOT BE REPRODUCED, DISTRIBUTED TO OTHERS OR USED FOR ANY PURPOSE WHATSOEVER WITHOUT THE PRIOR WRITTEN CONSENT OF JP ENGINEERING.
16.6	LOCATIONS: INDICATED LOCATIONS OF ALL OUTLETS AND EQUIPMENT ARE SUBJECT TO CHANGE. SHIFT/RELOCATE/RECONFIGURE ANY OUTLET, EQUIPMENT OR CONNECTION POINT UP TO 10' AS DIRECTED BY ENGINEER, AT NO ADDED COST.
16.7	RECORD DRAWINGS: CONTRACTOR SHALL PROVIDE, PRIOR TO FINAL ACCEPTANCE AND OBSERVATION, ONE SET OF REVISED RECORD ELECTRICAL CONSTRUCTION DOCUMENTS ON REPRODUCIBLE MEDIUM INDICATING THE FOLLOWING ADDITIONAL INFORMATION: EXACT ROUTING OF ALL CONDUITS LARGER THAN 1" EXACT LOCATION OF ALL SERVICE GROUNDING/BONDING CONNECTIONS CONTRACTORS NAME, ADDRESS AND TELEPHONE NUMBER RECORD NOTATIONS SHALL BE CLEARLY DRAWN AT A DRAFTING APPEARANCE EQUAL TO THE ORIGINAL DRAWINGS. CONTRACTOR SHALL ALSO PROVIDE ALL OPERATING AND MAINTENANCE MANUALS PRIOR TO FINAL PAYMENT.
16.8	EXAMINATION OF SITE AND EXISTING CONDITIONS: BEFORE SUBMITTING A PROPOSAL, CONTRACTOR SHALL EXAMINE THE SITE AND FAMILIARIZE HIMSELF WITH THE EXISTING CONDITIONS AND LIMITATIONS. NO EXTRAS WILL BE ALLOWED BECAUSE OF THE CONTRACTOR'S MISUNDERSTANDING OF THE AMOUNT OF WORK INVOLVED OR HIS LACK OF KNOWLEDGE OF ANY SITE CONDITIONS WHICH MAY AFFECT HIS WORK. ANY APPARENT VARIANCE OF THE DRAWINGS OR SPECIFICATIONS FROM THE EXISTING CONDITIONS AT THE SITE SHALL BE CALLED TO THE ATTENTION OF THE ENGINEER BEFORE SUBMITTING A PROPOSAL.
16.9	TESTING: PRIOR TO PLACING IN SERVICE, ALL ELECTRICAL SYSTEMS SHALL BE TESTED FOR OPENS, GROUNDS, AND PHASE ROTATION. THE MAIN SERVICE GROUND AND ALL LOCAL TRANSFORMER MADE GROUNDS SHALL BE MEGGER-TESTED. PROVIDE GFI TESTING FOR SERVICE SWITCHBOARD.
16.10	GROUNDING: GROUND ALL EQUIPMENT AND SYSTEM NEUTRAL IN ACCORDANCE WITH ARTICLE 250 OF THE NEC. EQUIPMENT GROUNDS HAVE NOT BEEN SHOWN ON DRAWINGS – WHERE GROUND WIRES HAVE BEEN SHOWN THEY INDICATE AN INSULATED GROUND.
16.11	EQUIPMENT STANDARDS: ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND OF THE HIGHEST QUALITY AVAILABLE ("SPECIFICATION GRADE"). SERVICE EQUIPMENT SHALL BE FACTORY-ASSEMBLED COMMERCIAL-GRADE, CONFIGURED PER SERVING UTILITY STANDARDS. WIRING DEVICES SHALL BE SPECIFICATION GRADE WITH NYLON PLATES, WHITE UNLESS OTHERWISE NOTED, RAISED STEEL BOX COVERS MAY BE USED IN UTILITY AREAS.
16.12	TAMPER-PROOF: ALL EQUIPMENT AND CIRCUITING ACCESSIBLE BY THE PUBLIC SHALL BE TAMPER-PROOF AND VANDAL RESISTANT. OPENABLE DEVICES AND EQUIPMENT SHALL BE PADLOCKABLE.
16.13	CIRCUITING: ALL WIRING SHALL BE IN CONDUIT, CONCEALED EXCEPT WHERE NOTED. EMT WITH STEEL SET SCREW INSULATED-THROAT FITTINGS MAY BE USED IN DRY, PROTECTED INTERIOR LOCATIONS. PVC SCHEDULE 40 SHALL BE USED BELOW GRADE AT MINIMUM -24". WRAPPED RIGID ELBOWS AND RISERS SHALL BE USED FOR ALL THROUGH-GRADE TRANSITIONS AND STUB-UPS. RGS OR IMC CONDUIT WITH THREADED FITTINGS SHALL BE USED IN ALL LOCATIONS WHERE EXPOSED TO THE ELEMENTS OR SUBJECT TO PHYSICAL DAMAGE. METAL-CLAD CABLE (TYPE MC) WILL BE ACCEPTABLE FOR SINGLE CIRCUIT BRANCH CIRCUITING, FLEXIBLE WHIPS FROM JUNCTION BOXES TO LIGHTING FIXTURES, WITHIN CASEWORK AND ACCESSIBLE AREAS. TYPE MC CABLE MAY BE USED. ENT IS NOT ALLOWED. CONNECT RECESSED AND SUSPENDED LIGHTING FIXTURES, MOTORIZED AND VIBRATING EQUIPMENT WITH STEEL FLEX. ALL CONDUIT SHALL HAVE PULL CORD IF OTHERWISE EMPTY.
16.14	WIRING: WIRE SHALL BE COPPER UNLESS OTHERWISE INDICATED. MINIMUM WIRE SIZE SHALL BE #12 AWG. INSULATION SHALL BE THW, THWN OR THHN.
16.15	UTILITY SERVICES: PROVIDE POWER AND COMMUNICATIONS SYSTEM SERVICES IN ACCORDANCE WITH THE REQUIREMENTS OF THE SERVING UTILITIES. PROVIDE EXCAVATION, RACEWAY, STRUCTURES, GROUNDING, ETC. AS REQUIRED. CONTACT SERVING UTILITIES AND OBTAIN THEIR PROJECT SPECIFIC REQUIREMENTS PRIOR TO BID. UTILITY WORK INDICATED HEREIN IS FOR BIDDING ASSISTANCE ONLY. THESE PLANS DO NOT PURPORT TO INDICATE ALL WORK REQUIRED. (UTILITY SERVICE CHARGES PAID BY OTHERS)
16.16	TEMPORARY CONSTRUCTION POWER: PROVIDE TEMPORARY ELECTRICAL POWER AND LIGHTING FOR ALL TRADES THAT REQUIRE SERVICE DURING THE COURSE OF THIS PROJECT. PROVIDE TEMPORARY SERVICE AND DISTRIBUTION AS REQUIRED. COMPLY WITH THE NEC AND OSHA REQUIREMENTS. (ENERGY COSTS BY OTHERS).
16.17	SUBMITTALS: BEFORE ORDERING ANY EQUIPMENT, CONTRACTOR SHALL SUBMIT SIX COPIES OF FACTORY SHOP DRAWINGS FOR ALL LIGHTING FIXTURES, SWITCHGEAR, PANELS, MOTOR CONTROLLERS, WIRING DEVICES, ETC. PROPOSED FOR THIS PROJECT.
16.18	SUBSTITUTIONS: PROPOSED SUBSTITUTIONS SHALL BE EQUAL OR SUPERIOR TO SPECIFIED ITEMS IN ALL RESPECTS. DETERMINATION OF EQUALITY RESTS SOLELY WITH ENGINEER. SUBSTITUTIONS MUST BE SUBMITTED A MINIMUM OF 10 WORKING DAYS PRIOR TO BID FOR CONSIDERATION. PROPOSED SUBSTITUTIONS PROVIDED LATER WILL NOT BE REVIEWED OR ALLOWED. BID SUBSTITUTED MATERIAL WILL ONLY BE ALLOWED IF ACCEPTED IN WRITING BY ENGINEER.
16.19	IDENTIFICATION: PROVIDE ENGRAVED NAMEPLATES FOR ALL SWITCHBOARDS, PANELS, TRANSFORMERS, DISCONNECTS, MOTOR STARTERS, CONTACTORS, TIME SWITCHES AND CABINETS. NAMEPLATES SHALL INCLUDE THE FOLLOWING INFORMATION AS APPLICABLE: DESIGNATION (i.e. PANEL A) FUNCTION (i.e. AIR HANDLER AH-1) VOLTAGE, PHASE, WIRE (i.e. 480 VOLT, 3ø, 4W.) FEEDER SIZE (i.e. 4-#4/0 THWN CU IN 2" C.) SOURCE (i.e. SWITCHBOARD MSB) NAMEPLATES SHALL BE WHITE LETTERS ON BLACK FOR NORMAL EQUIPMENT AND WHITE LETTERS ON RED FOR EMERGENCY EQUIPMENT.
16.20	GUARANTEE: THE COMPLETE ELECTRICAL SYSTEM, AND ALL PORTIONS THEREOF, SHALL BE GUARANTEED TO BE FREE FROM DEFECTS IN WORKMANSHIP AND MATERIALS FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE. PROMPTLY REMEDY SUCH DEFECTS AND ANY SUBSEQUENT DAMAGE CAUSED BY THE DEFECTS OR REPAIR THEREOF AT NO EXPENSE TO THE OWNER. LAMPS ARE EXEMPT FROM THIS GUARANTEE, BUT SHALL BE NEW AT TIME OF FINAL ACCEPTANCE.
16.20	COORDINATION: THE CIVIL, ARCHITECTURAL, MECHANICAL, KITCHEN AND INTERIOR DRAWINGS CONTAIN DETAIL DESCRIPTIONS, CIRCUITING AND CONNECTION REQUIREMENTS WHICH ARE PART OF DIVISION 16 RESPONSIBILITIES. ELECTRICAL CONTRACTOR SHOULD NOT SUBMIT BIDS ON THIS PROJECT BEFORE REVIEWING ALL PROJECT DRAWINGS, SPECIFICATIONS AND ADDENDA.

MASTER SYMBOL LIST

SIGNAL OUTLETS

	TELEPHONE: 4S BOX WITH SINGLE GANG MUD RING UON, +24" AFF UON
	TELEPHONE: 4S BOX WITH SINGLE GANG MUD RING UON, WALL MOUNT +54" AFF UON
	DATA: 4S BOX WITH SINGLE GANG MUD RING UON, +18" AFF UON
	VOICE/DATA: 4S BOX WITH SINGLE GANG MUD RING UON, +18" AFF UON
TV	TELEVISION: 4S BOX WITH SINGLE GANG MUD RING UON, +18" AFF UON
C	CAMERA: 4S BOX WITH SINGLE GANG MUD RING UON, CEILING MOUNTED UON
M	MICROPHONE: 4S BOX WITH SINGLE GANG MUD RING UON, +18" AFF UON
V	VOLUME CONTROL: 4S BOX WITH SINGLE GANG MUD RING UON, +48" TO TOP UON
S	SPEAKER: 8" COAXIAL WITH BACK BOX AND GRILLE, CEILING MOUNTED UON
	3/4"C (UON) STUB INTO ACCESSIBLE CEILING SPACE

SWITCHES

S	SINGLE POLE: 20A, 120/277V, +42" AFF UON
S_2	TWO POLE: 20A, 120/277V, +42" AFF UON
S_3	THREE WAY: 20A, 120/277V, +42" AFF UON
S_4	FOUR WAY: 20A, 120/277V, +42" AFF UON
S_X	X INDICATES EMERGENCY CIRCUIT
S_P	P INDICATES PILOT LIGHT (LIGHTED WHEN ON)
S_L	L INDICATES PILOT LOCATOR (LIGHTED WHEN OFF)
S_K	K INDICATES KEY OPERATED SWITCH
S_M	MANUAL MOTOR STARTER: 20A, 120/277V, POLES AND HEATERS AS REQUIRED
S_{MC}	MOMENTARY CONTACT: 20A, 120/277V, SPDT CENTER NORMALLY OFF UON, +42" AFF UON
D	DIMMER: 1000 WATT UON, ELECTRONIC SLIDER, WITH ON/OFF TOGGLE, +42" TO TOP UON (PLANS SHALL INDICATE TYPE: FLUOR, INCAND OR LOW-VOLTAGE)
	MOTION/OCCUPANCY SENSOR SWITCH WITH OFF-AUTO SELECTOR – WALL MOUNTED AT +42" AFF UON
OS = 360 OS = 180 OS = 90	ULTRASONIC MOTION/OCCUPANCY SENSOR SWITCH CEILING MOUNTED ARROWS INDICATE DIRECTION AND COVERAGE PROVIDE WITH POWER PACK PER MANUFACTURERS REQUIREMENTS
PE	PHOTO ELECTRIC SWITCH: 1600VA UON

METHODS

S_X	SHADING INDICATES: FIXTURE, OUTLET, EQUIPMENT, ETC. ON EMERGENCY 'X' OR NIGHT LIGHT 'NL' CIRCUIT
SS	DEVICE MOUNTED IN MULTIPLE UNDER COMMON COVER MAXIMUM HEIGHT ON WALL SHALL BE +48" TO TOP UON
	DEVICES MOUNTED IN OR ABOVE COUNTER/BACKSPLASH: MAXIMUM HEIGHT ON WALLS SHALL BE +48" TO TOP UON
	FLUSH FLOOR MOUNTED WIRING DEVICES
	FLUSH FLOOR MOUNTED WIRING DEVICES IN SINGLE MULTI-COMPARTMENT BOX
	RECEPTACLE MOUNTED IN CEILING OR CASEWORK
	FINE DASHING INDICATES EXISTING EQUIPMENT AND DEVICES TO BE REMOVED

DESIGNATIONS

F1	LIGHT FIXTURE: F1 = TYPE (SEE FIXTURE SCHEDULE)
2	SHEET NOTE
1	REVISION DELTA: NUMBER REPRESENTS REVISION
AC 1	MECHANICAL AND PLUMBING EQUIPMENT
A 5	MISCELLANEOUS: THESE AND OTHER SYMBOLS AS INDICATED IN TABLES AND SCHEDULES ON THE PLANS.

NOTE:
- THIS IS A MASTER SYMBOL LIST, ALL SYMBOLS SHOWN MAY NOT BE USED WITHIN THIS SET OF PLANS
- ALL NEW DEVICES SHALL BE INSTALLED TO MATCH THE HEIGHT OF THE ADJACENT EXISTING DEVICES. VERIFY IF MEETS ADA REQUIREMENTS (15" MIN – 48" MAX). CONSULT WITH PROJECT MANAGER PRIOR TO ROUGH-IN.

RECEPTACLES

	DUPLEX: 20A, 125V, NEMA 5-20, +24" AFF
	DOUBLE DUPLEX: 20A, 125V, NEMA 5-20, +24" AFF
	HALF SWITCHED DUPLEX: 20A, 125V, NEMA 5-20, +24" AFF (TOP HALF SWITCHED)
	DUPLEX GFCI: 20A, 125V, GFCI, NEMA 5-20 GFR, +24" AFF
	DUPLEX I.G.: 20A, 125V, ISO. GND., NEMA 5-20 IG +24" AFF (WHITE WITH ORANGE TRIANGLE, UON)
	DOUBLE DUPLEX I.G.: 20A, 125V, ISO. GND., NEMA 5-20 IG +24" AFF (WHITE WITH ORANGE TRIANGLE, UON)
	SPECIAL RECEPTACLE – AS INDICATED ON PLANS, +24" AFF

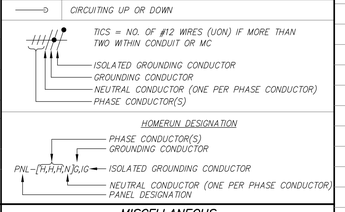
NOTE: DIAMOND SYMBOLS INDICATES DEDICATED CIRCUIT.

EQUIPMENT

	SWITCHBOARD
	PANELBOARD: SURFACE MOUNTED
	PANELBOARD: FLUSH MOUNTED
T	TRANSFORMER
	RELAY (120V COIL , STEP DN XFMR IF REQUIRED, UON)
	CONTACTOR (120V COIL, STEP DN XFMR IF REQUIRED, UON)
	COMBINATION MAGNETIC STARTER/FUSED DISCONNECT
N	NON-FUSIBLE DISCONNECT SWITCH
F	FUSIBLE DISCONNECT SWITCH
	PULLBOX: SIZE AS REQUIRED BY NEC
J	JUNCTION BOX: SIZE AS REQUIRED BY NEC
	SURFACE RACEWAY WITH OR WITHOUT DEVICES
	TELEPOWER POLE

CIRCUITING

	CONDUIT IN WALL OR ABOVE CEILING
	CONDUIT IN FLOOR OR BELOW GRADE
	METAL CLAD CABLE (MC)
—OH—	OVERHEAD SERVICE
— P —	PRIMARY
— S —	SECONDARY
— T —	TELEPHONE
—TV—	TELEVISION
	LOW VOLTAGE AND/OR CONTROL CIRCUITNG
—** —	EMERGENCY CIRCUIT
	STUB OUT: MARK AND CAP (SITE)
	CIRCUITING UP OR DOWN



MISCELLANEOUS

T	THERMOSTAT: AT +48" TO TOP UON (OR PER MECH PLANS)
f	EXHAUST FAN: FRACTIONAL HORSEPOWER
1	MOTOR: NUMBER = HORSEPOWER
SIGN	SIGNAGE CONNECTION
	SHUNT TRIP STATION: +7'-6" AFF, 12" RED TRIANGLE, UON
	CONTROL STATION: AT +48" TO TOP UON
a b	DUAL LEVEL LIGHTING CONTROL SWITCH 'a' = CENTER (1) LAMP SWITCH 'b' = OUTER (2) LAMPS

ABBREVIATIONS

℄	CENTERLINE
AFF	ABOVE FINISHED FLOOR
AIC	AMPERES INTERRUPTING CAPACITY
AFC	ABOVE FINISH CEILING
BMS	BUILDING MANAGEMENT SYSTEM
C	CONDUIT
CB	CIRCUIT BREAKER
CLG	CEILING
CIR	CIRCUIT
DPDT	DOUBLE POLE DOUBLE THROW
DPST	DOUBLE POLE SINGLE THROW
(E)	EXISTING TO REMAIN
ELEV	ELEVATOR
EMT	ELECTRICAL METALLIC TUBING
EPO	EMERGENCY POWER OFF SYSTEM
FBO	FURNISHED BY OTHERS
FPEN	FUSE PER EQUIPMENT NAMEPLATE
FLUOR	FLUORESCENT
FU	FUSE: DUAL-ELEMENT, TIME DELAY
GFI/GFCI	GROUND FAULT INTERRUPTER
GND	GROUND
HOA	HAND-OFF-AUTOMATIC
HID	HIGH INTENSITY DISCHARGE
IG	ISOLATED GROUND
INCAND	INCANDESCENT
K	kcmil (300K = 300 kcmil)
LTG	LIGHTING
LV	LOW VOLTAGE
MCP	MOTOR CIRCUIT PROTECTOR
MC	MULTI-CONDUCTOR CABLE
(N)	NEW
NC	NORMALLY CLOSED
NEUT	NEUTRAL
NL	NIGHT LIGHT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
PNL	PANEL
PVC	POLYVINYL CHLORIDE CONDUIT
(R)	EXISTING TO BE RELOCATED
RAC	RIGID ALUMINUM CONDUIT
RSC	RIGID STEEL CONDUIT
SLD	SINGLE LINE DIAGRAM
SO	SEAL OFF
SPDT	SINGLE POLE DOUBLE THROW
SPEN	SIZE PER EQUIPMENT NAMEPLATE
SPST	SINGLE POLE SINGLE THROW
TEL	TELECOM
TYP	TYPICAL
UNSW	UNSWITCHED
UON	UNLESS OTHERWISE NOTED
WP	WEATHERPROOF (NEMA 3R)
WT	WATERTIGHT
(X)	EXISTING TO BE REMOVED
XFMR	TRANSFORMER
XP	EXPLOSION PROOF

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Exp. 6/30/20 Electrical
10/9/19

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Project
Douglas County JLEC Storage Building Roof

1038 Buckeye Rd.
Minden, NV 89423

Job No: 19-054.00

Owner
Douglas County

CONSTRUCTION ISSUE

REVISIONS		
REV	DATE	DESCRIPTION

Sheet Title
SYMBOL LIST AND SPECIFICATIONS

Date: 10.09.2019
Sheet No:
E1

COMcheck Software Version 4.1.1.0

Interior Lighting Compliance Certificate

Project Information

Energy Code: 2018 IECC
Project Title: Douglas County JLEC Storage Building
Project Type: Alteration

Construction Site:
1038 Buckeye Road
Minden, NV 89423

Owner/Agent:

Designer/Contractor:
James Solaro, PE
JP Engineering
10597 Double R Blvd
Reno, NV 89521
775-852-2337
james@jpengnv.com

Allowed Interior Lighting Power

A Area Category	B Floor Area (ft2)	C Allowed Watts / ft2	D Allowed Watts (B X C)
1-Storage Room (Common Space Types:Storage <50 sq.ft.)	280	0.46	129
		Total Allowed Watts =	129

Proposed Interior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
Storage Room (Common Space Types:Storage <50 sq.ft. 280 sq.ft.)				
LED 1: L1: See Fixture Schedule: Other:	1	2	48	96
			Total Proposed Watts =	96

Interior Lighting PASSES

Interior Lighting Compliance Statement

Compliance Statement: The proposed interior lighting alteration project represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been designed to meet the 2018 IECC requirements in COMcheck Version 4.1.1.0 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Name - Title Signature Date

COMcheck Software Version 4.1.1.0

Inspection Checklist

Energy Code: 2018 IECC

Requirements: 72.0% were addressed directly in the COMcheck 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 # & Req.ID	Plan Review	Complies?	Comments/Assumptions
C103.2 [PR4][1]	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the interior lighting and electrical systems and equipment and document where exceptions to the standard are claimed. Information provided should include interior lighting power calculations, wattage of bulbs and ballasts, transformers and control devices.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met. **Location on plans/spec:** Sheet E1

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Section # & Req.ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
C405.2.2.2 [EL22][1]	Spaces required to have light-reduction controls have a manual control that allows the occupant to reduce the connected lighting load in a reasonably uniform illumination pattern >= 50 percent.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met. **Location on plans/spec:** Sheet E3
C405.2.1.1, C405.2.1.1 [EL18][1]	Occupancy sensors installed in classrooms/lecture/training rooms, conference/meeting/multipurpose rooms, copy/print rooms, lounges/breakrooms, enclosed offices, open plan office areas, restrooms, storage rooms, locker rooms, warehouse storage areas, and other spaces <= 300 sqft that are enclosed by floor-to-ceiling height partitions. Reference section language C405.2.1.2 for control function in warehouses and section C405.2.1.3 for open plan office spaces.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met. **Location on plans/spec:** Sheet E3
C405.2.1.2 [EL19][1]	Occupancy sensors control function in warehouses: In warehouses, the lighting in aisleways and open areas is controlled with occupant sensors that automatically reduce lighting power by 50% or more when the areas are unoccupied. The occupant sensors control lighting in each aisleway independently and do not control lighting beyond the aisleway being controlled by the sensor.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C405.2.1.3 [EL20][1]	Occupant sensor control function in open plan office areas: Occupant sensor controls in open office spaces >= 300 sq.ft. have controls 1) configured so that general lighting can be controlled separately in control zones with floor areas <= 600 sq.ft. within the space, 2) automatically turn off general lighting in all control zones within 20 minutes after all occupants have left the space, 3) are configured so that general lighting power in each control zone is reduced by >= 80% of the full zone general lighting power within 20 minutes of all occupants leaving that control zone, and 4) are configured such that any daylight responsive control will activate space general lighting or control zone general lighting only when occupancy for the same area is detected.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C405.2.2.1, C405.2.2.2 [EL21][2]	Each area not served by occupancy sensors (per C405.2.1) have time-switch controls and functions detailed in sections C405.2.2.1 and C405.2.2.2.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Lighting controlled by occupancy sensors.

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Section # & Req.ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
C405.2.3, C405.2.3.1, C405.2.3.2 [EL23][2]	Daylight zones provided with individual controls that control the lights independent of general area lighting. See code section C405.2.3 Daylight.responsive controls for applicable spaces, C405.2.3.1 Daylight responsive control function and section C405.2.3.2 Sidelit zone.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C405.2.4 [EL26][1]	Separate lighting control devices for specific uses installed per approved lighting plans.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met. **Location on plans/spec:** Sheet E3
C405.2.4 [EL27][1]	Additional interior lighting power allowed for special functions per the approved lighting plans and is automatically controlled and separated from general lighting.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C405.3 [EL6][1]	Exit signs do not exceed 5 watts per face.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C405.6 [EL26][2]	Low-voltage dry-type distribution electric transformers meet the minimum efficiency requirements of Table C405.6.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.7 [EL27][2]	Electric motors meet the minimum efficiency requirements of Tables C405.7(1) through C405.7(4). Efficiency verified through certification under an approved certification program or the equipment efficiency ratings shall be provided by motor manufacturer (where certification programs do not exist).	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.8.2, C405.8.2.1 [EL28][2]	Escalators and moving walks comply with ASME A17.1/CSA B44 and have automatic controls configured to reduce speed to the minimum permitted speed in accordance with ASME A17.1/CSA B44 or applicable local code when not conveying passengers.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.9 [EL29][2]	Total voltage drop across the combination of feeders and branch circuits <= 5%.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Section # & Req.ID	Final Inspection	Complies?	Comments/Assumptions
C303.3, C408.2.5.2 [FI17][3]	Furnished O&M instructions for systems and equipment to the building owner or designated representative.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C405.4.1 [FI18][1]	Interior installed lamp and fixture lighting power is consistent with what is shown on the approved lighting plans, demonstrating proposed watts are less than or equal to allowed watts.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Interior Lighting fixture schedule for values.*
C408.1.1 [FI57][1]	Building operations and maintenance documents will be provided to the owner. Documents will cover manufacturers' information, specifications, programming procedures and means of illustrating to owner how building, equipment and systems are intended to be installed, maintained, and operated.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C408.2.5.1 [FI16][3]	Furnished as-built drawings for electric power systems within 90 days of system acceptance.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C408.3 [FI33][1]	Lighting systems have been tested to ensure proper calibration, adjustment, programming, and operation.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met. **Location on plans/spec:** Sheet E1

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

LIGHTING FIXTURE SCHEDULE

LIGHTING FIXTURE CATALOG NUMBERS ARE SERIES TYPE ONLY. PROVIDE TRIMS, BALLASTS, MOUNTING EQUIPMENT, FITTINGS AND LAMPS AS REQUIRED BY THE SPECIFICATIONS AND PROJECT CONDITIONS FOR A COMPLETE INSTALLATION. THIS IS NOT A STANDALONE SCHEDULE AND FIXTURES MUST INCORPORATE ALL WORK INDICATED OR IMPLIED THROUGHOUT THE DRAWINGS AND SPECIFICATIONS.

TYPE	SYMBOL	SKETCH	DESCRIPTION AND MANUFACTURER
L1			92" LED STRIP LIGHT WITH FROSTED ACRYLIC LENS. **MOUNTING HEIGHT:** +/-9'-0" AFF **LAMP:** 48 WATTS (6,000 LUMENS) 4000K **VOLTAGE:** 120V **MANUFACTURER:** LITHONIA: TZL1N L92 SMR 6000LM FST MVOLT 40K 80CRI WH **SUBSTITUTIONS:** ○ OR EQUAL ◉ SUBJECT TO REVIEW ○ NO EQUAL

LOCATION: **GENERATOR ENCLOSURE**

DF	DESCRIPTION	LOAD	BKR	CIR	A	B	C	CIR	BKR	LOAD	DESCRIPTION	DF
L	EXISTING CARPORT	980	20/1	1	2240			2	20/1	1260	EXISTING HOUSE LIGHTING	L
L	EXISTING CARPORT	640	20/1	3		1540		4	20/1	900	EXISTING HOUSE RECEPTS	R
R	ENCLOSURE RECEPTS	720	20/1	5			1700	6	20/1	980	EXISTING CARPORT	L
				7	640			8	20/1	640	EXISTING CARPORT	L
				9		0		10				
				11			0	12				
					2880	1540	1700					

AMPS:	100	NEUTRAL BUS:	100%	CON. KVA:	6.1
VOLTAGE:	208	GROUND BUS:	STANDARD	CON. AMPS:	17.0
PHASE / WIRE:	3-PH , 4W	AIC RATING:		NET KVA:	7.2
MAIN:		NEMA RATING:	1	NET AMPS:	20.1
LUGS:	MLO	EXISTING PANEL		Notes:	
MOUNTING:	SURFACE	GP		BOLD TEXT EQUALS NEW CIRCUIT BREAKER	
BUS:	COPPER			AND LOAD	
DOOR:	STANDARD				

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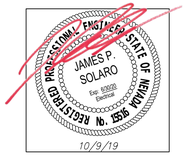

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Douglas County JLEC Storage Building Roof

1038 Buckeye Rd.
Minden, NV 89423

Job No: 19-054.00

Owner
Douglas County

CONSTRUCTION ISSUE

REVISIONS		
REV	DATE	DESCRIPTION

Sheet Title
SCHEDULES AND ENERGY COMPLIANCE DOCUMENTATION

Date: 10.09.2019

Sheet No:

E2

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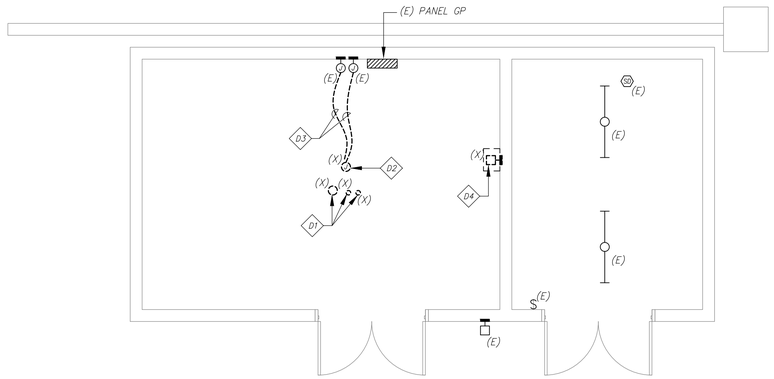
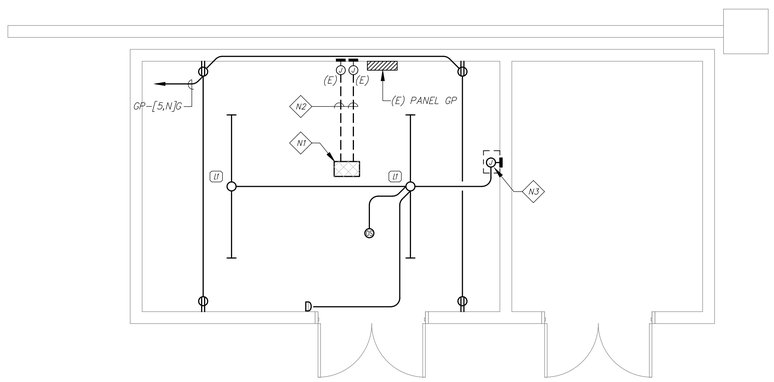


A	DEMOLITION ELECTRICAL PLAN
E3	SCALE: 1/4" = 1'-0"

DEMOLITION SHEET NOTES

D1	CONTRACTOR SHALL CUT CONDUITS OFF BELOW THE FINISH LEVEL OF THE CONCRETE AND CAP THEM OFF.
D2	CONTRACTOR SHALL REMOVE ALL LB FITTINGS AND CONDUIT PENETRATIONS AT THIS LOCATION.
D3	CONTRACTOR SHALL REMOVE THE FLEX CONDUITS BETWEEN THE LB AND THE WALL MOUNTED JUNCTION BOXES.
D4	CONTRACTOR SHALL REMOVE THE EXISTING WALL PACK AND PROVIDE BACK TO OWNER FOR SALVAGE.



B	NEW WORK ELECTRICAL PLAN
E3	SCALE: 1/4" = 1'-0"

NEW WORK SHEET NOTES

N1	ELECTRICAL CONTRACTOR SHALL PROVIDE N9 PULL BOX FLUSH MOUNTED IN CONCRETE.
N2	ELECTRICAL CONTRACTOR SHALL PROVIDE NEW CONDUITS EQUAL TO THE SIZES THAT WERE REMOVED. ROUTE CONDUITS FROM NEW N9 PULLBOX TO THE WALL MOUNTED JUNCTION BOXES. ROUTE CONDUIT IN A MANNER THAT DOESN'T INTERFERE WITH ANY CONCRETE FOOTINGS FOR THE EXISTING EXTERIOR WALL.
N3	ELECTRICAL CONTRACTOR SHALL PROVIDE A NEW WALL MOUNTED 4S JUNCTION BOX WITH BLANK COVER PLATE AT THE LOCATION OF THE REMOVED LIGHT FIXTURE. EXTEND LIGHTING BRANCH CIRCUIT TO NEW LED STRIPLIGHTS.

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REGISTERED PROFESSIONAL ENGINEER JAMES P. SOLARO Exp. 6/30/20 Electrical No. 15516 STATE OF NEVADA
10/9/19

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Douglas County

CONSTRUCTION ISSUE

REVISIONS		
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Sheet Title
DEMOLITION POWER PLAN AND NEW WORK POWER PLAN

Date: 10.09.2019
Sheet No:
E3