

MEL'S ON MADISON

Roof Replacement Project

PROJECT SPECIFICATIONS AND PLANS

201 West Commercial Street
Lebanon, MO 65536



Volume 1 of 1

July 12, 2024

**Mel's On Madison
Roof Replacement
SPECIFICATIONS**

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MEL'S ON MADISON

Roof Replacement Project

INVITATION AND INSTRUCTION TO BIDDERS

Owner: Mel's on Madison, LLC
Contact: Robert Walker
melsbbq2019@gmail.com
201 West Commercial St.
Lebanon, MO 65536
Cell: 417-664-7409

Consultant: Construction Engineering Solutions, LLC
Contact: David Ruggles
kdruggles@gmail.com
Cell: 417-531-0542

You are invited to place a bid on your scope of work for the Project. This is a full and open bid and everyone is invited to submit a bid in accordance with the documents. Minority businesses, women's business enterprises, and labor surplus area firms are encouraged to submit a proposal. The Owner shall award the project to the best qualified bidder in the sole opinion and discretion of the Owner.

Scope of Work: Design, furnish and install a new flat roof system and a new flat metal awning ceiling in accordance with the reference plans and specifications. Contractors (bidders) will be prime contractors, each signatory directly to the Owner. Whereas the Owner has been awarded a federal grant, the work herein is subject to review by the Missouri Main Street Grant program and the National Park Service (NPS) and work shall be performed in accordance with the applicable Code of Federal Regulations (CFR) and The Secretary of the Interior's Standards for the Treatment of Historic Properties: Rehabilitation as a Treatment and Standards for Rehabilitation <https://www.nps.gov/articles/000/treatment-standards-rehabilitation.htm>. The Owner's Consultant, Construction Engineering Solutions, LLC, is not an authority to make decisions on behalf of the Owner and is solely in an advisory capacity to the Owner.

Questions or Requests for Information: Send by email to the Owner and copy the Consultant.

PreBid: July 29, 2024 at 10:00 am at Mel's on Madison, 201 W Commercial St., Lebanon, MO

BIDS DUE: Bids are due by Email to Robert Walker melsbbq2019@gmail.com not later than 5:00 pm on **9 August 2024**. Submit bids using the bid form included in the Specifications.

NOTE: Please attach a detailed cost, value engineering, substitutions, description of work and proposed material manufacturer(s) to the bid form.

Wage Rates: Davis-Bacon Act WD # MO20240032, See specification section.

Taxes: Project is not tax exempt

Sincerely,

A handwritten signature in blue ink, appearing to read "Robert Walker", written over a white background.

Robert Walker
Owner

**MEL'S ON MADISON
ROOF REPLACEMENT
BID FORM**

Name of bidding contractor: _____

Date: _____ Bidding Trade: _____

Project: Mel's on Madison Roof Replacement, 201 West Commercial, Lebanon, MO 65536

I propose, as a separate prime contractor, to design and furnish all labor and materials required for the above Project and to construct the Project in conformity with all plans, photos, Invitation to Bid, proposed contract agreement, other specifications as provided by the Owner and any laws, statutes, ordinances, rules or regulations of any governmental agencies or public authorities relating to the Project, collectively called Bid Documents, for the lump sum of:

BASE BID, Roof Replacement: \$ _____

ALTERNATE NO. 1, Awning Ceiling: \$ _____

ALTERNATE NO. 2, Performance and Payment Bond: \$ _____

Bidder has included Davis Bacon Wages in their bid: **YES** **NO** (circle one)

Bidder has included applicable taxes in their bid: **YES** **NO** (circle one)

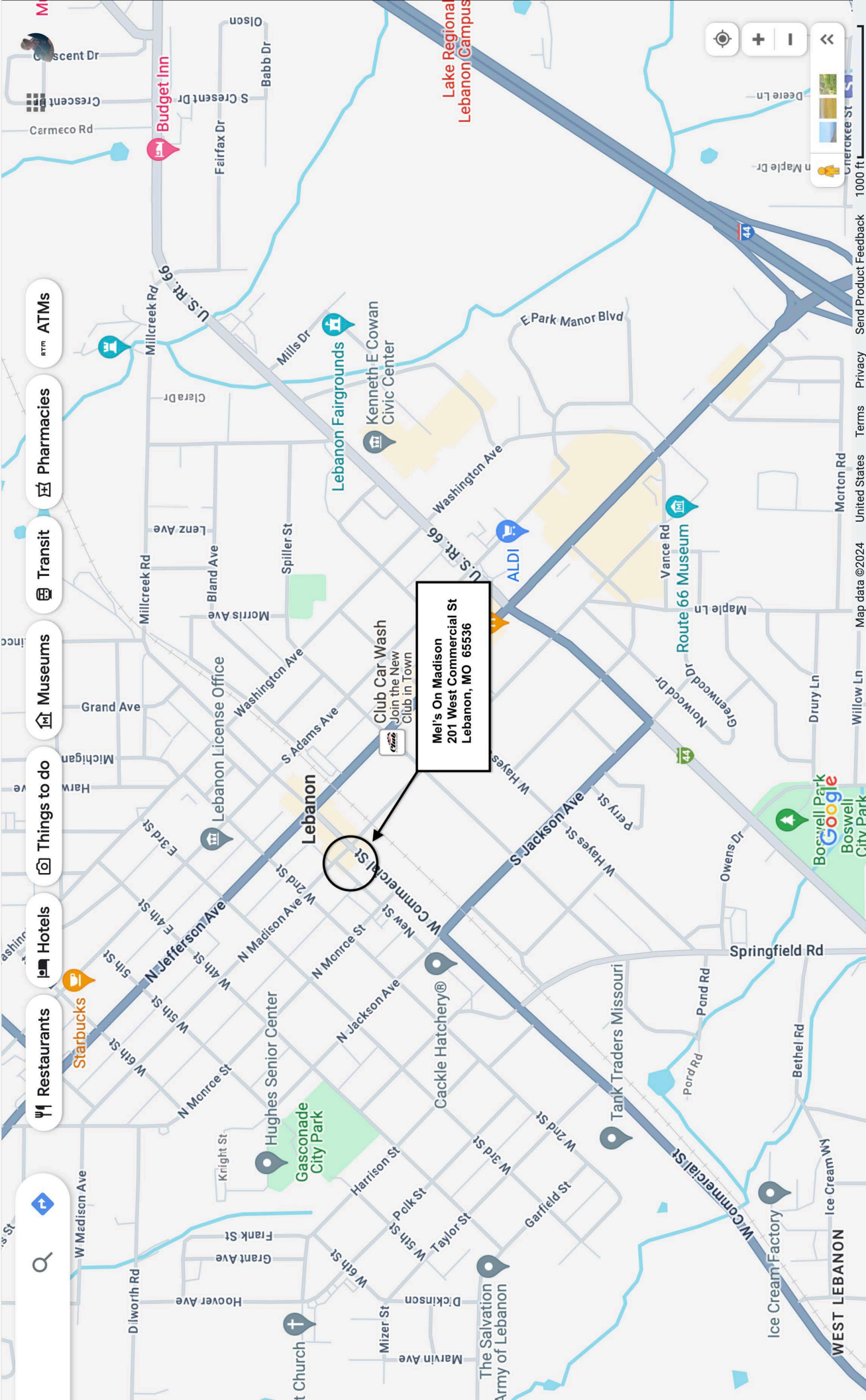
General Liability Insurance limits: Aggregate: \$ _____ Per Occurrence: \$ _____

Valid Statutory Workers Compensation Insurance **YES** **NO** (circle one)

I agree to execute a Contract for the Project, deliver the bonds, if required, commence actual work on the Project within the times specified in the contract documents issued in connection with the Project and to complete the Project within _____ working days, excluding Saturday, Sundays, and legal holidays, after commencement of actual work on the Project unless delayed by any of the causes mentioned in the form of Contract issued in connection with the Project.

I acknowledge that I have carefully examined the existing conditions, Bid Documents, and determined to my own satisfaction all conditions or limitations that exist or that may arise affecting the Project and all difficulties that may be encountered in the construction of the Project.

BY: _____ SIGNATURE: _____
Printed Name



Restaurants

Hotels

Things to do

Museums

Transit

Pharmacies

ATMs



1000 ft

Send Product Feedback

Privacy

Terms

United States

Map data ©2024

Willow Ln

Morton Rd

Maple Ln

Greenwood Dr

Vance Rd

W Hayes St

Perry St

W Jackson Ave

Springfield Rd

Owens Dr

Boswell Park
Boswell City Park

Ice Cream Factory

Route 66 Museum

Tank Traders Missouri

The Salvation Army of Lebanon

Mel's On Madison
201 West Commercial St
Lebanon, MO 65536

Club Car Wash
Join the New Club in Town

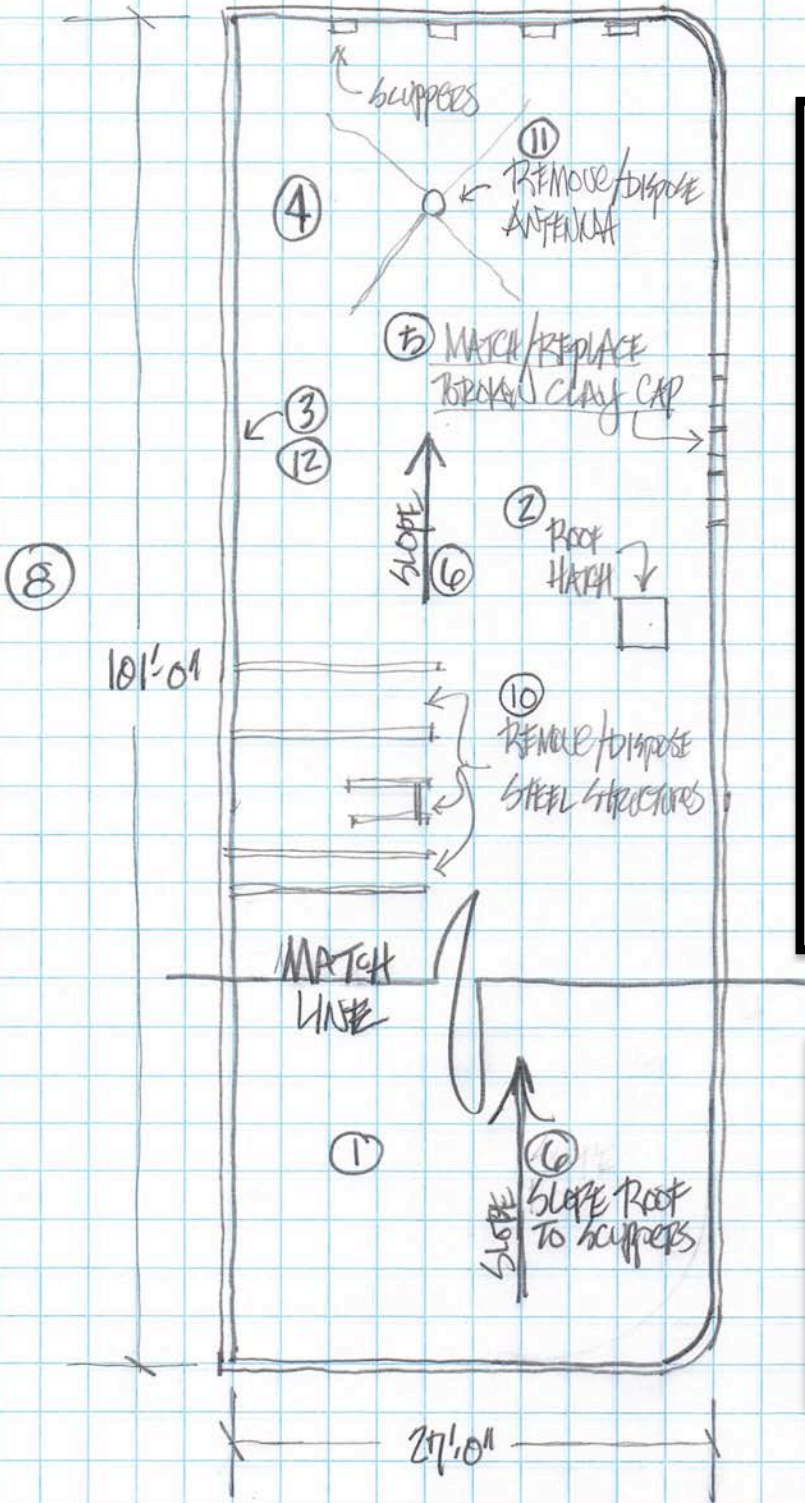
Lebanon Fairgrounds
Kenneth E Cowan Civic Center

Hughes Senior Center
Gasconade City Park

Lebanon License Office

Budget Inn

Lake Regional
Lebanon Campus



GENERAL NOTES

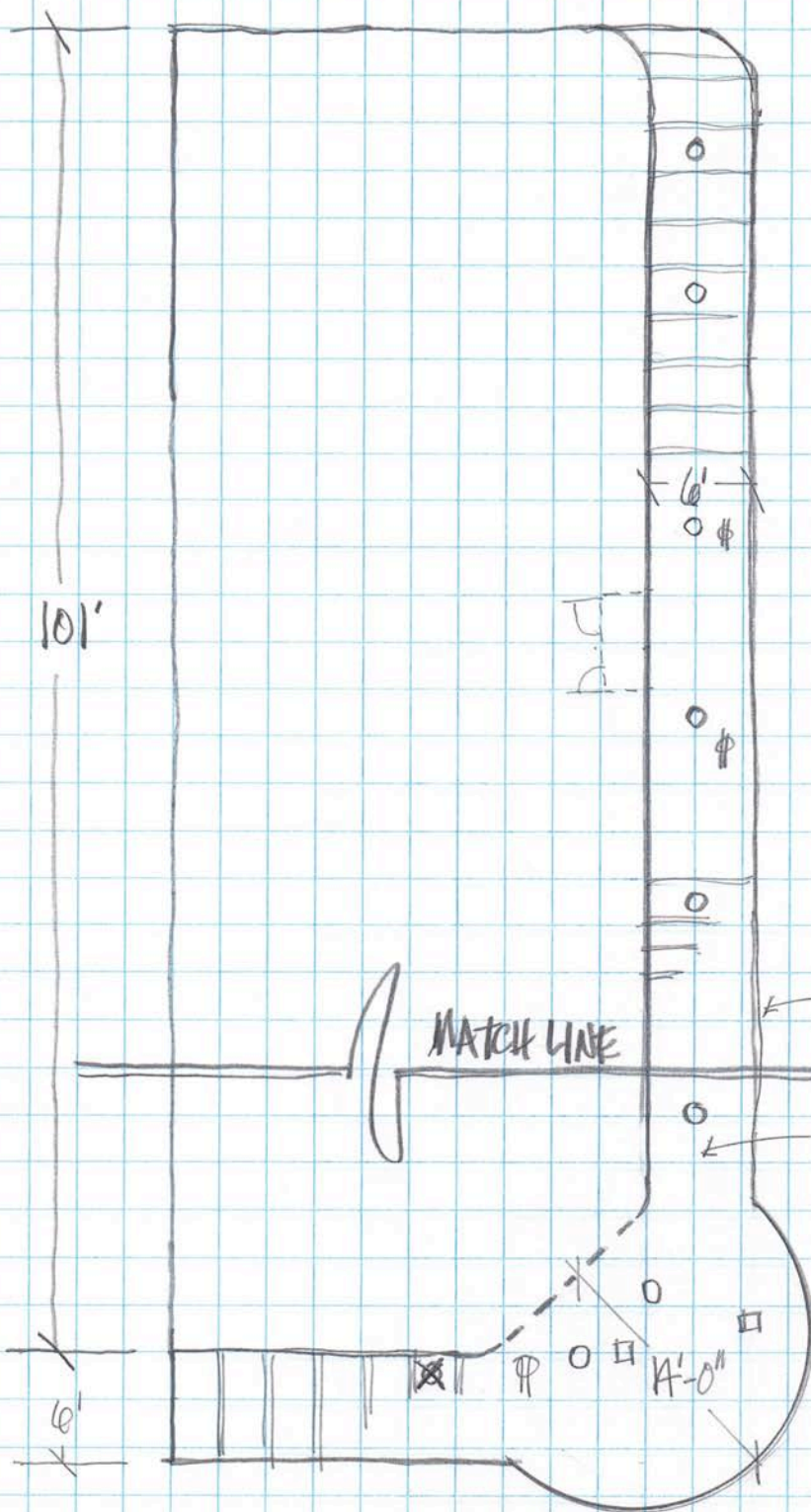
1. Overlay existing roof with 115 mil fleece backed white TPO single ply membrane using 2 part low-rise adhesive.
2. Reroof roof hatch.
3. Flash all walls and penetrations
4. Furnish and install new equipment supports for active, existing HVAC units.
5. Remove and replace stone/clay coping caps.
6. Slope roof from South to North toward scuppers
7. Provide all dumpsters and hoisting.
8. Protect adjacent structures and improvements.
9. Power wash and prepare roof to accept new roof.
10. Remove all un-used HVAC steel support structures and dispose off site.
11. Remove existing antenna and guy wires/supports and dispose off site.
12. Provide new flashing/cap at west wall parapet
13. Provide all new flashings, blocking and caps where required for a water tight and warrantable system by the manufacturer.
13. Contractor is to provide a Water Tight Warranty.
13. Roofing contractor to verify permit requirements and include cost of permit if required.
14. See photos.

Drawings are provided for reference only. The work of this agreement is an extension of design. The contractor is responsible for and will provide the design which is to be reviewed through shop drawing and submittal process.

BASE BID
ROOF PLAN

SCALE $\frac{3}{32}'' = 1'-0''$

Sheet A1.00
July 15, 2024



- ELECTRICAL
- REMOVE AND REPLACE LIGHT FIXTURE WITH (8ea) NEW FIXTURE, SEE ALLOWANCE
 - ⊗ REMOVE AND REPLACE LIGHT WARD FIXTURE (1ea)
 - ⊕ REMOVE AND REINSTALL ELECTRICAL OUTLET (3ea)
 - REMOVE AND REPLACE BLACK COVER PLATE (2ea)

Drawings are provided for reference only. The work of this agreement is an extension of design. The contractor is responsible for and will provide the design which is to be reviewed through shop drawing and submittal process.

- ← FASCIA AND ROOF TO REMAIN
- ← REPLACE WITH PRECUT FLUSH GRAB PANEL OR EQUAL, SEE SPECIFICATION

ALTERNATE BID 1
ALLOWED REFLECTED CEILING PLAN
 SCALE: 3/32" = 1'-0"
 7.15.24



Roof looking North



Close up of parapet wall



Center of roof



Roof looking South



Standing on neighbor's roof
And looking North at West
parapet wall



Steel structure to be removed,
see note 10 sheet A1.00.



Antenna to be removed, see
note 11 sheet A1.00.



Antenna to be removed, see
note 11 sheet A1.00.

Install new equipment supports,
see note 4, sheet A1.00



Steel structure to be removed,
see note 10 sheet A1.00.



Remove and replace stone/clay
coping caps, replace broken cap,
see note 5 sheet A1.00.



Remove and replace awning ceiling, remove and replace light fixtures and outlet, see notes sheet A1.10.



Remove and replace awning ceiling, remove and replace light fixtures and outlet, see notes sheet A1.10.

A1.15
Alternate 1



Remove and replace awning ceiling, remove and replace light fixtures and outlet, see notes sheet A1.10.



Remove and replace awning ceiling, remove and replace light fixtures and outlet, see notes sheet A1.10.

A1.16
Alternate 1

**SECTION 01 00 00
GENERAL REQUIREMENTS**

GENERAL

1.1 SAFETY REQUIREMENTS

- A. Refer to section 01 35 26, SAFETY REQUIREMENTS for safety and infection control requirements.

1.2 GENERAL INTENTION

- A. Contractor shall completely prepare site for building operations, including demolition and removal of existing structures, and furnish labor and materials and perform work for as required by drawings and specifications.

1. Base Bid: Design, furnish and install a new flat roof including accessories and sealants to adjacent surfaces.
2. Alternate 1: design, furnish and install a new, flat metal ceiling on the existing outside awning. Remove existing light fixtures and install new light fixtures at current locations. Include a material only (labor to be included in the Alternate bid) light fixture allowance of \$2,000.
3. Alternate 2: Furnish a Performance and Payment Bond

- B. Visits to the site by Bidders may be made only at the Pre-Bid Meeting.

- C. Construction Engineering Solutions, LLC, serving as a consultant to the Owner, will render certain technical services during construction. Such services shall be considered as advisory to the Owner and shall not be construed as expressing or implying a contractual act of the Owner without affirmations by the Owner.

1.3 STATEMENT OF BID ITEM(S)

SEE BID FORM

1.4 SPECIFICATIONS AND DRAWINGS FOR CONTRACTOR

A. Drawings and contract documents included herein.

1.5 CONSTRUCTION SECURITY REQUIREMENTS

A. Security Plan:

1. The premises are an active business that operates Tuesday through Saturday. Care, conduct and safety of patrons and staff are of the utmost importance.
2. The security plan defines both physical and administrative security procedures that will remain effective for the entire duration of the project.
3. The contractor(s) is responsible for assuring their employees comply with these procedures.

B. Security Procedures:

1. Contractor's employees shall not enter the project site without approval and shall be as directed by the Owner.
2. Before starting work the Contractor shall give one week's notice to the Owner so that safety measures, access and preparations can be determined and implemented for the Owner's employees. This notice is separate from any notices required for utility shutdown described later in this section.
3. No photography of premises is allowed without permission of the Owner. Patrons and staff are not to be photographed at any time.
4. The Owner reserves the right to close down or shut down the project site and order Contractor's employees off the premises in the event of an emergency.

C. Parking Restrictions

1. The only available parking is public parking which is available on a first come basis. Street or alley closures shall be arranged by the Contractor with the City of Lebanon. Cost, if any, for same shall be at the Contractor's expense. When multiple parking spots are available, the Contractor shall use the furthest spots from the front or side door that patrons use for access to the business.

1.6 OPERATIONS AND STORAGE AREAS (FAR 52.236-10)

- A. The Contractor shall confine all operations (including storage of materials) on the Owners premises to areas authorized or approved by the Owner. The Contractor shall hold and save the Owner, its consultants, officers and agents, free and harmless from liability of any nature occasioned by the Contractor's performance.
- B. Temporary buildings are not allowed.
- C. The Contractor shall, under regulations prescribed by the City and AHJs, use only established roadways.
- D. Execute work in such a manner as to interfere as little as possible with work being done by others. Keep roads clear of construction materials, debris, standing construction equipment and vehicles at all times.
- E. Execute work so as to interfere as little as possible with normal functioning of the Owner as a whole, including operations of utility services, fire protection systems and any existing equipment, and with work being done by others.
 1. Do not store materials and equipment in other than assigned areas.
 2. Schedule delivery of materials and equipment to immediate construction working areas within building. Provide

unobstructed access to the building at all times. Areas are required to remain in operation.

F. Utilities Services: Where necessary to cut existing pipes, electrical wires, conduits, cables, etc., of utility services, or of fire protection systems or communications systems (except telephone), they shall be cut and capped at suitable places where shown; or, in absence of such indication, where directed by the Owner. All such actions shall be coordinated with the Owner or Utility Company involved:

G. Phasing:

1. The Owner must maintain its operation. Therefore, any interruption in service must be scheduled and coordinated with the Owner to ensure that no lapses in operation occur. It is the CONTRACTOR'S responsibility to develop a work plan and schedule detailing, at a minimum, the procedures to be employed, the equipment and materials to be used, the interim life safety measure to be used during the work, and a schedule defining the duration of the work with milestone subtasks. The work to be outlined shall include, but not be limited to:
2. To ensure such executions, Contractor shall furnish the Owner with a schedule of approximate, phasing, dates on which the Contractor intends to accomplish work in each specific area of site, building or portion thereof. In addition, Contractor shall notify the Owner one week in advance of the proposed date of starting work in each specific area of site, building or portion thereof.
3. Contractor shall take all measures and provide all material necessary for protecting existing equipment and property in affected areas of construction against dust and debris, so that equipment and affected areas to be

used in the Owner's operations will not be hindered. Contractor shall permit access to the Owner through the construction areas which serve as routes of access to such affected areas and equipment. These routes whether access or egress shall be isolated from the construction area

4. Contractor shall maintain in operating condition existing fire protection and alarm equipment. If necessary, in connection with fire alarm equipment, Contractor shall make arrangements for pre-inspection of site with Fire Department or City.
5. No utility service such as water, gas, steam, sewers or electricity, or fire protection systems and communications systems may be interrupted without prior approval of the Owner. Electrical work shall be accomplished with all affected circuits or equipment de-energized. When an electrical outage cannot be accomplished, work on any energized circuits or equipment shall not commence without a detailed work plan,
6. Contractor shall submit a request to interrupt any such services to the Owner in advance of proposed interruption. Request shall state reason, date, exact time of, and approximate duration of such interruption.
7. Contractor will be advised of approval of request, or of which other date and/or time such interruption will cause least inconvenience to operations of the Owner.
8. Major interruptions of any system must be requested at least 7 calendar days prior to the desired time and shall be performed as directed by the Owner.
9. Whenever it is required that a connection fee be paid to a public utility provider for new permanent service to the construction project, for such items as water, sewer,

- electricity, gas or steam, payment of such fee shall be the responsibility of the Owner and not the Contractor.
- H. Abandoned Lines: All service lines such as wires, cables, conduits, ducts, pipes and the like, and their hangers or supports, shall be removed back to their source. Those which are indicated to be abandoned but are not required to be entirely removed, shall be sealed, capped or plugged at the main, branch or panel they originate from. The lines shall not be capped in finished areas, but shall be removed and sealed, capped or plugged in ceilings, within furred spaces, in unfinished areas, or within walls or partitions; so that they are completely behind the finished surfaces.
- I. To minimize interference of construction activities with flow of the Owner traffic, comply with the following:
1. Keep roads, walks and entrances to grounds, to parking and to occupied areas of buildings clear of construction materials, debris and standing construction equipment and vehicles.
 2. Method and scheduling of required cutting, altering and removal of existing roads, walks and entrances must be approved by the COR.
- J. Coordinate the work for this contract with other construction operations as directed by the Owner. This includes the scheduling of traffic and the use of roadways, as specified.

1.7 ALTERATIONS

- A. Inspection: Before any work is started, the Contractor shall make a thorough inspection with the Owner, of areas of building in which alterations occur and areas which are anticipated routes of access.

1. Existing condition and types of materials and other surfaces not required to be altered throughout the building.
2. Existence and conditions of items such as plumbing fixtures and accessories, electrical fixtures, equipment, venetian blinds, shades, etc., required by drawings to be either reused or relocated, or both.
3. Shall note any discrepancies between drawings and existing conditions at site.
4. Shall designate areas for working space, materials storage and routes of access to areas within buildings where alterations occur and which have been agreed upon by Contractor and the Owner.

1.8 DISPOSAL AND RETENTION

- A. Materials and equipment accruing from work removed and from demolition of buildings or structures, or parts thereof, shall be disposed of as follows:
 1. Reserved items which are to remain property of the the Owner are to be identified or noted on drawings or in specifications as items to be stored. Items that remain property of the Owner shall be removed or dislodged from present locations in such a manner as to prevent damage which would be detrimental to re-installation and reuse. Store such items where directed by the Owner.
 2. Items not reserved shall become property of the Contractor and be removed by Contractor from the building.
 3. Items of portable equipment and furnishings located in rooms and spaces in which work is to be done under this contract shall remain the property of the Owner. When rooms and spaces are vacated by the Owner during the

alteration period, such items which are NOT required by drawings and specifications to be either relocated or reused will be removed by the Owner in advance of work to avoid interfering with Contractor's operation.

4. Any hazardous material that is a part of the scheduled demolition by the Contractor shall be the Contractor's responsibility. Same shall be removed and disposed of in accordance with applicable procedures by Authorities having Jurisdiction (AHJ). Hazardous materials that are NOT a part of the Contractors work shall be reported to the Owner.

a) Copies of the following listed CFR titles may be obtained from the Government Printing Office:

- 40 CFR 261.... Identification and Listing of Hazardous Waste
- 40 CFR 262.... Standards Applicable to Generators of Hazardous Waste
- 40 CFR 263.... Standards Applicable to Transporters of Hazardous Waste
- 40 CFR 761.... PCB Manufacturing, Processing, Distribution in Commerce, and use Prohibitions
- 49 CFR 172.... Hazardous Material tables and Hazardous Material Communications Regulations
- 49 CFR 173.... Shippers - General Requirements for Shipments and Packaging
- 49 CFR 173.... Subpart A General
- 49 CFR 173.... Subpart B Preparation of Hazardous Material for Transportation
- 49 CFR 173.... Subpart J Other Regulated Material; Definitions and Preparation

TSCA..... Compliance Program Policy Nos. 6-PCB-6
and 6-PCB-7//

SPEC WRITER NOTE: Tailor or delete
the following Article and
paragraphs if the scope of work
encompasses only interior work.

**1.9 PROTECTION OF EXISTING VEGETATION, STRUCTURES, EQUIPMENT,
UTILITIES, AND IMPROVEMENTS (FAR 52.236-9)**

- A. The Contractor shall preserve and protect all structures, equipment, and vegetation (such as trees, shrubs, and grass) on or adjacent to the work site, which are not to be removed and which do not unreasonably interfere with the work required under this contract. The Contractor shall only remove trees when specifically authorized to do so, and shall avoid damaging vegetation that will remain in place. If any limbs or branches of trees are broken during contract performance, or by the careless operation of equipment, or by workers, the Contractor shall trim those limbs or branches with a clean cut and paint the cut with a tree-pruning compound as directed by the Owner.
- B. The Contractor shall protect from damage all existing improvements and utilities at or near the work site and on adjacent property of a third party, the locations of which are made known to or should be known by the Contractor. The Contractor shall repair any damage to those facilities, including those that are the property of a third party, resulting from failure to comply with the requirements of this contract or failure to exercise reasonable care in performing the work. If the Contractor fails or refuses to repair the damage promptly, the Owner may have the necessary work performed and charge the cost to the Contractor.

c. Refer to FAR clause 52.236-7, "Permits and Responsibilities," which is included in General Conditions. A National Pollutant Discharge Elimination System (NPDES) permit is required for this project. The Contractor is considered an "operator" under the permit and has extensive responsibility for compliance with permit requirements. Owner will make the permit application available at the Owner's office. The contractor and affected subcontractors shall furnish all information and certifications that are required to comply with the permit process and permit requirements. Many of the permit requirements will be satisfied by completing construction as shown and specified. Some requirements involve the Contractor's method of operations and operations planning and the Contractor is responsible for employing best management practices. The affected activities often include, but are not limited to the following:

1. Designating areas for equipment maintenance and repair;
2. Providing waste receptacles at convenient locations and provide regular collection of wastes;
3. Locating equipment wash down areas on site, and provide appropriate control of wash-waters;
4. Providing protected storage areas for chemicals, paints, solvents, fertilizers, and other potentially toxic materials; and
5. Providing adequately maintained sanitary facilities.

1.10 RESTORATION

A. Remove, cut, alter, replace, patch and repair existing work as necessary to install new work. Except as otherwise shown or specified, do not cut, alter or remove any structural work, and do not disturb any ducts, plumbing, steam, gas,

or electric work without approval of the Owner. Existing work to be altered or extended and that is found to be defective in any way, shall be reported to the Owner before it is disturbed. Materials and workmanship used in restoring work, shall conform in type and quality to that of original existing construction, except as otherwise shown or specified.

- B. Upon completion of contract, deliver work complete and undamaged. Existing work (walls, ceilings, partitions, floors, mechanical and electrical work, lawns, paving, roads, walks, etc.) disturbed or removed as a result of performing required new work, shall be patched, repaired, reinstalled, or replaced with new work, and refinished and left in as good condition as existed before commencing work.
- C. At Contractor's own expense, Contractor shall immediately restore to service and repair any damage caused by Contractor's workers to existing piping and conduits, wires, cables, etc., of utility services or of fire protection systems and communications systems (including telephone) which are not scheduled for discontinuance or abandonment.
- D. Expense of repairs to such utilities and systems not shown on drawings or locations of which are unknown will be covered by adjustment to contract time and price.

1.11 //LAYOUT OF WORK

- A. The Contractor shall lay out the work and shall be responsible for all measurements in connection with the layout. The Contractor shall furnish, at Contractor's own expense, all stakes, templates, platforms, equipment,

tools, materials, and labor required to lay out any part of the work.

1.12 AS-BUILT DRAWINGS

- A. Contractor shall deliver two approved completed sets of as-built drawings in the electronic version (scanned PDF) to the Owner within 15 calendar days after completion.

1.13 WARRANTY MANAGEMENT

- A. Warranty Management Plan: Develop a warranty management plan which contains information relevant to Warranty of Construction in at least 30 days before the planned pre-warranty conference, submit one set of the warranty management plan. Include within the warranty management plan all required actions and documents to assure that the Owner receives all warranties to which it is entitled. The construction warranty period will begin on the date of the project acceptance and continue for the product warranty period. A joint 4 month and 9 month warranty inspection will be conducted, measured from time of acceptance, by the Contractor and the Owner. Include in the warranty management plan, but not limited to, the following:
 1. Roles and responsibilities of all personnel associated with the warranty process, including points of contact and telephone numbers within the company of the Contractor, subcontractors, manufacturers or suppliers involved.
 2. Furnish with each warranty the name, address and telephone number of each of the guarantor's representatives nearest project location.
 3. Listing and status of delivery of all Certificates of Warranty for extended warranty items, to include roofs, etc.

4. A list for each warranted equipment item, feature of construction or system indicating:
 - a. Name of item.
 - b. Model and serial numbers.
 - c. Location where installed.
 - d. Name and phone numbers of manufacturers and suppliers.
 - e. Name and phone numbers of manufacturers or suppliers.
 - f. Names, addresses and phone numbers of sources of spare parts.
 - g. Warranties and terms of warranty. Include one-year overall warranty of construction, including the starting date of warranty of construction. Items which have extended warranties must be indicated with separate warranty expiration dates.
 - h. Starting point and duration of warranty period.
 - i. Summary of maintenance procedures required to continue the warranty in force.
 - j. Cross-reference to specific pertinent Operation and Maintenance manuals.
 - k. Organizations, names and phone numbers of persons to call for warranty service.
 - l. Typical response time and repair time expected for various warranted equipment.
5. The plans for attendance at the 4 and 9-month post construction warranty inspections conducted by the Owner.
6. Procedure and status of tagging of all equipment covered by extended warranties.
7. Copies of instructions to be posted near selected pieces of equipment where operation is critical for warranty and/or safety reasons.

- B. Performance & Payment Bonds: The Performance & Payment Bonds must remain effective throughout the construction period.
1. In the event the Contractor fails to commence and diligently pursue any construction warranty work required, the Owner will have the work performed by others, and after completion of the work, will charge the remaining construction warranty funds of expenses incurred by the Owner while performing the work, including, but not limited to administrative expenses.
 2. In the event sufficient funds are not available to cover the construction warranty work performed by the Owner at the contractor's expenses, the Owner will have the right to recoup expenses from the bonding company.
 3. Following oral or written notification of required construction warranty repair work, the Contractor shall respond in a timely manner. Written verification will follow oral instructions. Failure to respond will be cause for the Owner to proceed against the Contractor.
- C. Pre-Warranty Conference: Prior to contract completion, and at a time designated by the Owner, the Contractor shall meet with the Owner to develop a mutual understanding with respect to the requirements of this section. Communication procedures for Contractor notification of construction warranty defects, priorities with respect to the type of defect, reasonable time required for Contractor response, and other details deemed necessary by the Owner for the execution of the construction warranty will be established/reviewed at this meeting. In connection with these requirements and at the time of the Contractor's quality control completion inspection, furnish the name, telephone number and address of a licensed and bonded company which

is authorized to initiate and pursue construction warranty work action on behalf of the Contractor. This point of contract will be located within the local service area of the warranted construction, be continuously available and be responsive to Owner inquiry on warranty work action and status. This requirement does not relieve the Contractor of any of its responsibilities in conjunction with other portions of this provision.

1.14 USE OF ROADWAYS - SEE SECTION 1.6

1.15 RESIDENT ENGINEER'S FIELD OFFICE - N/A

1.16 TEMPORARY USE OF MECHANICAL AND ELECTRICAL EQUIPMENT - N/A

1.17 TEMPORARY USE OF EXISTING ELEVATORS

- A. Contractor will not be allowed the use of existing elevators. Outside type hoist shall be used by Contractor for transporting materials and equipment.

1.18 TEMPORARY USE OF NEW ELEVATORS - N/A

1.19 TEMPORARY TOILETS

- A. The Contractor may elect to provide a (1) temporary toilet located as directed by the Owner. The Owners toilet facilities will not be available for use by the Contractor. Keep such places clean and free from flies and all connections and appliances connected therewith are to be removed prior to completion of contract, and premises left perfectly clean.

1.20 AVAILABILITY AND USE OF UTILITY SERVICES

- A. The Owner shall make all reasonably required amounts of utilities available to the Contractor from existing outlets and supplies, as specified in the contract.
- B. The Contractor, at Contractor's expense and in a workmanlike manner, in compliance with code and as satisfactory to the Owner, shall install and maintain all necessary temporary connections and distribution lines. Before final acceptance of the work by the Owner, the Contractor shall remove all the temporary connections, distribution lines, meters, and associated paraphernalia and repair restore the infrastructure as required.

1.21 NEW TELEPHONE EQUIPMENT - N/A

1.22 TESTS - N/A

1.23 INSTRUCTIONS

- A. Contractor shall furnish Maintenance and Operating manuals (hard copies and electronic) and verbal instructions when required by the various sections of the specifications.
- B. Manuals: Maintenance and operating manuals and one electronic copy for each separate piece of equipment/system shall be delivered to the Owner prior to final payment. Manuals shall be complete, detailed guides for the maintenance and operation of equipment or system. They shall include complete information necessary for starting, adjusting, maintaining in continuous operation for long periods of time and dismantling and reassembling of the complete units and sub-assembly components.

1.24 OWNER-FURNISHED PROPERTY - N/A

1.25 RELOCATED EQUIPMENT OR ITEMS

- A. Contractor shall disconnect, dismantle as necessary, remove and reinstall in new location, all existing equipment // and items indicated or otherwise shown to be relocated by the Contractor.
- B. Perform relocation of such equipment or items at such times and in such a manner as directed by the Owner.
- C. Suitably cap existing service lines, such as steam, condensate return, water, drain, gas, air, vacuum and/or electrical, at the main whenever such lines are disconnected from equipment to be relocated. Remove abandoned lines in finished areas and cap as specified herein before under paragraph "Abandoned Lines".
- D. Provide all mechanical and electrical service connections, fittings, fastenings and any other materials necessary for assembly and installation of relocated equipment; and leave such equipment in proper operating condition.
- E. All service lines such as noted above for relocated equipment shall be in place at point of relocation ready for use before any existing equipment is disconnected. Make relocated existing equipment ready for operation or use immediately after reinstallation.

1.26 STORAGE SPACE FOR OWNER EQUIPMENT - N/A

1.27 CONSTRUCTION SIGN

- A. Signage is not allowed unless specifically approved by the Owner.

1.28 SAFETY SIGN

- A. Provide Safety Signage if required by AHJs.

1.29 PHOTOGRAPHIC DOCUMENTATION

- A. During the construction period through completion, provide photographic documentation of construction progress and at selected milestones.

1.30 HISTORIC PRESERVATION

- A. Where the Contractor or any of the Contractor's employees, prior to, or during the construction work, are advised of or discover any possible archeological, historical and/or cultural resources, the Contractor shall immediately notify the Owner verbally.

- - - E N D - - -

CONTRACT AGREEMENT

AGREEMENT made as of the ____ day of ____ in the year 2024

BETWEEN

The Owner, Mel's on Madison, LLC, 201 West Commercial, Lebanon, MO 65536, and the

Contractor, _____, _____, for the following Project:

Roof Replacement Project, located at Mel's on Madison, 201 West Commercial, Lebanon, MO 65536,

For the Work as described in Exhibit A, Scope of Work,

In the lump sum amount of \$ _____.

The Owner and Contractor agree as follows:

1. The Contractor shall supervise and direct the Contractor's work and shall cooperate with the Owner in scheduling and performing the work to avoid conflicts, delays, or interference in the Owner's Project. The Contractor shall commence work before _____ 2024 and work shall not exceed ____ working days.
2. This Agreement is a design-build contract and all engineering, design, materials, structural soundness, and construction means and methods are the sole responsibility of the Contractor. Any plans or designs provided by the Owner are solely for the Owner to convey the aesthetic expectations of the project to the Contractor.
3. The Subcontractor shall cooperate and communicate timely with the Owner and furnish periodic progress reports on the Work of this Agreement. The Owner has the right to reject Work for inferior quality or out of sequence installation. The Owner will only pay for work properly installed and approved by the Owner.
4. The Contractor shall comply with federal, state and local tax laws, social security acts, unemployment compensation acts, and workers' compensation acts insofar as applicable to the performance of this Agreement. The Contractor shall take reasonable safety precautions and shall maintain their own safety program with respect to performance of the Work, shall comply with safety measures per applicable laws, statutes, ordinances, rules and regulations, and lawful orders of public authorities for the safety of persons and property.
5. The Contractor shall keep the site clean and place waste in the Contractor provided dumpster, but Contractor will not be held responsible for other's debris.
6. The Contractor shall have valid and current General Liability and Workers Compensation Insurance with limits satisfactory to the Owner. The Contractor shall provide a certificate of insurance to the Owner.
7. To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, their consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to, or destruction of, tangible property, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss, or expense is caused in part, or whole, by a party indemnified hereunder.
8. This Agreement's value, terms or time can only be changed by a written change order signed by both parties.
9. If the Contractor fails or neglects to carry out the work in accordance with this Agreement and fails within a three (3) day period after receipt of written notice to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, by written notice to the Contractor and without prejudice to any other remedy the Owner may have, terminate this Agreement and finish the Contractor's work by whatever method the Owner may deem expedient. If the unpaid balance of the Contract Sum exceeds the expense of finishing the Contractor's work and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such expense and damages exceed such unpaid balance, the Contractor shall pay the difference to the Owner. The Owner may terminate or suspend this Agreement at anytime for convenience and the Owner shall pay the Contractor for Work performed to the date of termination.
10. The Owner shall pay the Contractor for installed and approved work on a **monthly basis or when work is completed if duration is less than five weeks**. A list of material suppliers and independent or subcontractors shall be provided to the Owner. The Owner shall issue two-party checks to the Contractor and material supplier and independent or subcontractors. Should the Contractor provide lien waivers in advance for those parties, two-party checks will not be required.

CONTRACTOR

DATE

Robert Walker, Owner Rep

DATE

EXHIBIT A SCOPE OF WORK

The Contractor shall provide design, labor, materials and equipment to perform the following work:

- 1.

"General Decision Number: MO20240032 07/05/2024

Superseded General Decision Number: MO20230032

State: Missouri

Construction Type: Building

Counties: Dade, Douglas, Henry, Hickory, Laclede, Ozark, St Clair, Stone and Taney Counties in Missouri.

BUILDING CONSTRUCTION PROJECTS (does not include single family homes or apartments up to and including 4 stories).

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658.

Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(1).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	. Executive Order 14026 generally applies to the contract. The contractor must pay all covered workers at least \$17.20 per hour (or the applicable wage rate
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	listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2024.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or all extended on or after January 30, 2022:	. Executive Order 13658 generally applies to the contract.
listed determination,	. The contractor must pay covered workers at least \$12.90 per hour (or the applicable wage rate on this wage if it is higher) for all hours spent performing on that contract in 2024.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a

conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at <http://www.dol.gov/whd/govcontracts>.

Modification Number	Publication Date
0	01/05/2024
1	02/23/2024
2	04/19/2024
3	05/24/2024
4	07/05/2024

ASBE0027-008 10/01/2023

HENRY COUNTY

	Rates	Fringes
ASBESTOS WORKER/HEAT & FROST INSULATOR.....	\$ 40.60	31.22

ASBE0063-003 11/01/2023

REMAINING COUNTIES

	Rates	Fringes
ASBESTOS WORKER/HEAT & FROST INSULATOR.....	\$ 30.22	13.64

BRMO0003-008 06/01/2023

HENRY COUNTY

	Rates	Fringes
TILE SETTER.....	\$ 40.53	15.99

Davis Bacon Wage Rate Determination 01 00 00.01

BRMO0015-012 04/01/2023

REMAINING COUNTIES

	Rates	Fringes
BRICKLAYER.....	\$ 33.67	19.48

BRMO0015-013 04/01/2016

HENRY COUNTY

	Rates	Fringes
BRICKLAYER.....	\$ 34.35	18.06

BRMO0015-022 06/01/2023

REMAINING COUNTIES

	Rates	Fringes
TILE SETTER.....	\$ 26.47	14.89

CARP0005-003 05/01/2022

HENRY COUNTY

	Rates	Fringes
CARPENTER, Includes Drywall Hanging, Form Work, and Metal Stud Installation.....	\$ 39.06	20.00

CARP0005-013 05/01/2023

HICKORY, LACLEDE & ST CLAIR COUNTIES

Rates	Fringes
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ELECTRICIAN (including low voltage wiring for and installation of alarms)

Douglas, Hickory, Laclede, & Ozark Counties.....	\$ 30.60	17.91
Stone & Taney Counties.....	\$ 19.79	13.18
STONE and TANEY COUNTIES....	\$ 26.62	17.11

* ELEV0012-003 01/01/2024

	Rates	Fringes
ELEVATOR MECHANIC.....	\$ 58.18	37.885+a+b

a. VACATION: Employer contributes 8% of basic hourly rate to vacation pay credit for employee who has worked in business more than 5 years and 6% for 6 months to 5 years as Vacation Pay Credit.

b. PAID HOLIDAYS: New Year's Day, Memorial Day, Independence Day, Labor Day, Veterans' Day, Thanksgiving Day, Friday after Thanksgiving Day and Christmas Day.

ENGI0101-010 04/01/2020

DADE, DOUGLAS, HICKORY, LACLEDE, OZARK, ST CLAIR, STONE & TANEY COUNTIES

	Rates	Fringes
POWER EQUIPMENT OPERATOR:		
Bulldozer.....	\$ 26.12	15.32
Grader/Blade.....	\$ 27.91	15.32
Loader.....	\$ 26.12	15.32
Roller.....	\$ 25.41	15.32

Davis Bacon Wage Rate Determination 01 00 00.01

ENGI0101-019 04/01/2020

HENRY COUNTY

	Rates	Fringes
POWER EQUIPMENT OPERATOR:		
Bulldozer.....	\$ 38.93	20.10
Grader/Blade.....	\$ 38.93	20.10
Loader.....	\$ 38.93	20.10
Roller.....	\$ 38.93	20.10

IRON0010-010 04/01/2024

HENRY COUNTY

	Rates	Fringes
IRONWORKER, REINFORCING AND STRUCTURAL.....	\$ 38.00	33.56

IRON0010-028 04/01/2024

DADE, HICKORY, OZARK, ST. CLAIR, & TANEY COUNTIES

	Rates	Fringes
IRONWORKER, REINFORCING AND STRUCTURAL.....	\$ 35.00	33.56

IRON0396-015 08/05/2020

DOUGLAS & LACLEDE COUNTIES

	Rates	Fringes
IRONWORKER, REINFORCING AND STRUCTURAL.....	\$ 31.39	29.20

 IRON0584-017 06/01/2023

STONE COUNTY

	Rates	Fringes
IRONWORKER, REINFORCING AND STRUCTURAL.....	\$ 29.00	16.20

 LABO0663-003 04/01/2024

HENRY & HICKORY COUNTIES

	Rates	Fringes
LABORER		
Brick Mason Tender.....	\$ 27.17	13.01
Common or General & Landscape.....	\$ 25.67	13.01

 LABO0663-006 04/01/2024

DADE, DOUGLAS, LACLEDE, OZARK, ST CLAIR, STONE AND TANEY
COUNTIES

	Rates	Fringes
LABORER		
Brick Mason Tender.....	\$ 29.08	13.01
Common or General & Landscape.....	\$ 26.35	13.01

 PAIN0003-016 04/01/2019

HENRY COUNTY

	Rates	Fringes
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Davis Bacon Wage Rate Determination 01 00 00.01

PAINTER

Brush & Roller Only.....	\$ 24.43	17.76
Drywall Finishing/Taping Only.....	\$ 25.39	17.76

PAIN1185-011 04/01/2024

LACLEDE COUNTY

	Rates	Fringes
PAINTER.....	\$ 32.25	16.86
Brush & Roller Only.....	\$ 31.83	15.13
Drywall Finishing/Taping Only.....	\$ 33.25	16.86

PAIN2015-006 04/01/2012

	Rates	Fringes
PAINTER		
Brush & Roller Only.....	\$ 19.75	11.76

* PLUM0008-012 06/01/2024

HENRY & ST. CLAIR COUNTIES

	Rates	Fringes
PLUMBER, Excludes HVAC Pipe Installation.....	\$ 56.63	24.54

PLUM0178-012 11/01/2023

DADE, DOUGLAS, HICKORY, LACLEDE, OZARK, STONE, & TANEY
COUNTIES

	Rates	Fringes
PIPEFITTER, Includes HVAC		

Davis Bacon Wage Rate Determination 01 00 00.01

Pipe Installation.....\$ 37.15 15.42
 PLUMBER, Excludes HVAC Pipe
 Installation.....\$ 37.15 15.42

 * PLUM0533-009 06/01/2024

HENRY & ST. CLAIR COUNTIES

	Rates	Fringes
PIPEFITTER, Includes HVAC Pipe Installation.....	\$ 55.56	25.80

 ROOF0020-003 02/01/2022

	Rates	Fringes
ROOFER.....	\$ 27.00	12.64

 SHEE0002-021 07/01/2023

HENRY, HICKORY, & ST CLAIR COUNTIES

	Rates	Fringes
SHEET METAL WORKER, Includes HVAC Duct and Unit Installation.....	\$ 47.20	26.28

 SHEE0036-005 07/01/2020

DADE, DOUGLAS, LACLEDE, OZARK, STONE & TANEY COUNTIES

	Rates	Fringes
SHEET METAL WORKER, Includes HVAC Duct and Unit Installation.....	\$ 30.46	15.19

Davis Bacon Wage Rate Determination 01 00 00.01

SUMO2010-031 03/08/2010

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...	\$ 17.95	6.64
GLAZIER.....	\$ 22.71	0.00
OPERATOR: Backhoe/Trackhoe.....	\$ 23.55	7.47
OPERATOR: Paver (Asphalt, Aggregate, and Concrete).....	\$ 24.47	0.00
OPERATOR: Water Truck.....	\$ 28.37	0.00
PAINTER: Spray.....	\$ 18.79	8.12
TRUCK DRIVER: Dump Truck.....	\$ 28.92	0.00

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is

like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at <https://www.dol.gov/agencies/whd/government-contracts>.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (iii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates

the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

State Adopted Rate Identifiers

Classifications listed under the "SA" identifier indicate that the prevailing wage rate set by a state (or local) government was adopted under 29 C.F.R. 1.3(g)-(h). Example: SAME2023-007

01/03/2024. SA reflects that the rates are state adopted.
ME
refers to the State of Maine. 2023 is the year during which
the
state completed the survey on which the listed
classifications
and rates are based. The next number, 007 in the example,
is an
internal number used in producing the wage determination.
01/03/2024 reflects the date on which the classifications
and
rates under the ?SA? identifier took effect under state law
in
the state from which the rates were adopted.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This
can
be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position
on
a wage determination matter
- * a conformance (additional classification and rate)
ruling

On survey related matters, initial contact, including
requests
for summaries of surveys, should be with the Wage and Hour
National Office because National Office has responsibility
for
the Davis-Bacon survey program. If the response from this
initial contact is not satisfactory, then the process
described
in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal
process described here, initial contact should be with the

Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator

(See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION"

STANDARDS AND PROCEDURES INCORPORATED BY REFERENCE:

- The Secretary of the Interior's Standards for the Treatment of Historic Properties: Rehabilitation as a Treatment and Standards for Rehabilitation: <https://www.nps.gov/articles/000/treatment-standards-rehabilitation.htm>
- PAUL BRUHN HISTORIC REVITALIZATION SUBGRANT PROGRAM, GRANT AGREEMENT Between Missouri Main Street Connection and Mel's on Madison LLC.
- Paul Bruhn Historic Revitalization Subgrant Program, Procurement Information for Subgrantees of the Paul Bruhn Historic Revitalization Subgrant Program, included herein.
- Procurement Procedures in accordance with 2CFR200.319-200.320.
- AIA A201-2017, General Conditions of the Contract for Construction is incorporated by reference into the Contract Agreement contained herein.



PROCUREMENT INFORMATION FOR SUBGRANTEES of the Paul Bruhn Historic Revitalization Subgrant Program

Procurement refers to the process of obtaining goods and services for your project and includes your contractors. Because the grant dollars come from a federal source, federal guidelines must be followed. This document is offered to provide as much information as possible about the guidelines and how to meet their specific requirements.

This program is called a subgrant program as a result of a partnership whereby the National Park Service has granted dollars to Missouri Main Street Connection (MMSC) who in turn has given these dollars to property owners for projects in the state of Missouri. Project awardees are referred to as “subgrantees”.

Following is information that subgrantees should incorporate in the process of hiring contractors or obtaining materials for their project.

GENERAL INFORMATION

Missouri Main Street Connection (MMSC) must approve all selected consultants and contractors.

Subgrantees must have and use documented procurement procedures for the acquisition of property or services. They must conform to the procurement standards identified in 2CFR 200.317-200.327.

The subgrantee must maintain written standards of conduct covering conflicts of interest and governing the actions of its employees engaged in the selection award and administration of contracts.

The subgrantee must maintain records sufficient to detail the history of procurement. These include but are not limited to rationale for the method of procurement, selection of contract type, contractor selection or rejection, and the basis for the contract price.

PROCUREMENT PROCEDURES

All procurement transactions for the acquisition of property or services required under a federal award must be conducted in a manner providing full and open competition consistent with the standards of 2CFR 200.319-200.320.

Contractors that develop or draft specifications, requirements, statements of work, invitations for bids, or request for proposals must be excluded from competing for such procurements.

The subgrantee must have written procedures for procurement transactions. These procedures must ensure that all solicitations:

1. Incorporate a clear and accurate description of the technical requirements for the material, product, or service to be procured.
2. Identify all requirements which the offerors must fulfill and all other factors to be used in evaluating bids or proposals.

The subgrantee must ensure that all prequalified lists of persons, firms, or products which are used in acquiring goods and services are current and include enough qualified sources to ensure maximum, open, and free competition.

The standard acceptable procedure is to acquire three (3) bids to establish a competitive process.

- It is understood that it may be a challenge to get multiple quotes in rural areas, but subgrantees must document a good faith effort in attempting to ensure a competitive process.
- There is no expectation that the lowest bid must be selected due to the nature of the work on historic buildings and their materials. Subgrantees are encouraged to select the most qualified bidder.
- Types of Contracts (2 CFR 200.320)
Allowable:
 - Firm Fixed-Price Contracts
 - Fixed-Price Incentive Contracts
 - Cost-Reimbursement ContractsUnallowable
 - Cost plus-a-percentage of cost
 - Percentage of Construction Cost

INFORMAL PROCUREMENT THRESHOLDS

Informal procurement includes micro purchases, except for construction and certain services.

Micro-purchase definition – an acquisition of supplies or services using simplified acquisition procedures, the aggregate amount of which does not exceed the micro-purchase threshold.

For general micro-purchases – threshold is \$10,000.

For construction – threshold is \$2,000.

Subgrantee should consider price to be reasonable based on research, experience, purchase history, or other information and documents it files accordingly.

For services - threshold is \$2,500

ADDITIONAL INFORMATION

The subgrantee must take all necessary affirmative steps to assure that minority businesses, women's business enterprises, and labor surplus area firms are used when possible.

As appropriate, and to the extent consistent with the law, the subgrantee should to the greatest extent practical under a federal award, provide a preference for the purchase, acquisition or use of goods, products, or materials produced in the United States.

LINKS TO ORIGINAL SOURCES OF INFORMATION

Additional information is available in 2CFR 200.317-327.

<https://www.ecfr.gov/current/title-2/subtitle-A/chapter-II/part-200/subpart-D/subject-group-ECFR45ddd4419ad436d/section-200.317>

Procurement practices must follow 2 CFR 200.317.327

<https://www.ecfr.gov/current/title-2/subtitle-A/chapter-II/part-200#200.317>

Definitions related to procurement procedures

<https://www.ecfr.gov/current/title-48/chapter-1/subchapter-A/part-2/subpart-2.1>

SECTION 01 33 23**SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES****PART 1 - GENERAL****1.1 DESCRIPTION**

- A. This specification defines the general requirements and procedures for submittals. A submittal is information submitted for review to establish compliance with the contract documents.
- B. Detailed submittal requirements are found in the technical sections of the contract specifications. The Owner may request submittals in addition to those specified when deemed necessary to adequately describe the work covered in the respective technical specifications at no additional cost to the Owner.
- C. Owner approval of a submittal does not relieve the Contractor of the responsibility for any error which may exist. The Contractor is responsible for fully complying with all contract requirements and the satisfactory construction of all work, including the need to check, confirm, and coordinate the work of all subcontractors for the project. Non-compliant material incorporated in the work will be removed and replaced at the Contractor's expense.

1.2 DEFINITIONS

- A. Preconstruction Submittals: Submittals which are required prior to issuing contract notice to proceed or starting construction. For example, Certificates of insurance; Surety bonds; Site-specific safety plan; Construction progress schedule; Schedule of values; Submittal register; List of proposed subcontractors.
- B. Shop Drawings: Drawings, diagrams, and schedules specifically prepared to illustrate some portion of the work. Drawings prepared by or for the Contractor to show how multiple systems and interdisciplinary work will be integrated and coordinated.
- C. Product Data: Catalog cuts, illustrations, schedules, diagrams, performance charts, instructions, and brochures, which describe and illustrate size, physical appearance, and other characteristics of materials, systems, or equipment for some portion of the work. Samples of warranty language when the contract requires extended product warranties.
- D. Samples: Physical examples of materials, equipment, or workmanship that illustrate functional and aesthetic characteristics of a material or

product and establish standards by which the work can be judged. Color samples from the manufacturer's standard line (or custom color samples if specified) to be used in selecting or approving colors for the project. Field samples and mock-ups constructed to establish standards by which the ensuing work can be judged.

- E. Design Data: Calculations, mix designs, analyses, or other data pertaining to a part of work.
- F. Test Reports: Report which includes findings of a test required to be performed by the Contractor on an actual portion of the work. Report which includes finding of a test made at the job site or on sample taken from the job site, on portion of work during or after installation.
- G. Certificates: Document required of Contractor, or of a manufacturer, supplier, installer, or subcontractor through Contractor. The purpose is to document procedures, acceptability of methods, or personnel qualifications for a portion of the work.
- H. Manufacturer's Instructions: Pre-printed material describing installation of a product, system, or material, including special notices and MSDS concerning impedances, hazards, and safety precautions.
- I. Manufacturer's Field Reports: Documentation of the testing and verification actions taken by manufacturer's representative at the job site on a portion of the work, during or after installation, to confirm compliance with manufacturer's standards or instructions. The documentation must indicate whether the material, product, or system has passed or failed the test.
- J. Operation and Maintenance Data: Manufacturer data that is required to operate, maintain, troubleshoot, and repair equipment, including manufacturer's help, parts list, and product line documentation. This data shall be incorporated in an operations and maintenance manual.
- K. Closeout Submittals: Documentation necessary to properly close out a construction contract. For example, Record Drawings and as-built drawings. Also, submittal requirements necessary to properly close out a phase of construction on a multi-phase contract.

1.3 SUBMITTAL REGISTER - N/A

1.4 SUBMITTAL SCHEDULING

- A. Submittals are to be scheduled, submitted, reviewed, and approved prior to the acquisition of the material or equipment.

- B. Coordinate scheduling, sequencing, preparing, and processing of submittals with performance of work so that work will not be delayed by submittal processing. Allow time for potential resubmittal.
- C. No delay costs or time extensions will be allowed for time lost in late submittals or resubmittals.
- D. All submittals are required to be approved prior to the start of the specified work activity.

1.5 SUBMITTAL PREPARATION

- A. Each submittal is to be complete and in sufficient detail to allow ready determination of compliance with contract requirements.
- B. Collect required data for each specific material, product, unit of work, or system into a single submittal. Prominently mark choices, options, and portions applicable to the submittal. Partial submittals will not be accepted for expedition of construction effort. Submittal will be returned without review if incomplete.
- C. If available product data is incomplete, provide Contractor-prepared documentation to supplement product data and satisfy submittal requirements.
- D. All irrelevant or unnecessary data shall be removed from the submittal to facilitate accuracy and timely processing. Submittals that contain the excessive amount of irrelevant or unnecessary data will be returned without review.
- E. Provide a transmittal form for each submittal with the following information:
 - 1. Project title, location and number.
 - 2. Construction contract number.
 - 3. Date of the drawings and revisions.
 - 4. Name, address, and telephone number of subcontractor, supplier, manufacturer, and any other subcontractor associated with the submittal.
 - 5. List paragraph number of the specification section and sheet number of the contract drawings by which the submittal is required.
 - 6. When a resubmission, add alphabetic suffix on submittal description. For example, submittal 18 would become 18A, to indicate resubmission.
 - 7. Product identification and location in project.
- F. The Contractor is responsible for reviewing and certifying that all submittals are in compliance with contract requirements before

submitting for OWNER review. Proposed deviations from the contract requirements are to be clearly identified. All deviations submitted must include a side by side comparison of item being proposed against item specified. Failure to point out deviations will result in the OWNER requiring removal and replacement of such work at the Contractor's expense.

- G. Stamp, sign, and date each submittal transmittal form indicating action taken.
- H. Stamp used by the Contractor on the submittal transmittal form to certify that the submittal meets contract requirements is to be similar to the following:

CONTRACTOR
(Firm Name)
_____ Approved
_____ Approved with corrections as noted on submittal data and/or attached sheets(s)
SIGNATURE: _____
TITLE: _____
DATE: _____

1.6 SUBMITTAL FORMAT AND TRANSMISSION

- A. Provide submittals in electronic format, with the exception of material samples. Use PDF as the electronic format, unless otherwise specified or directed by the Contracting Officer.
- B. Compile the electronic submittal file as a single, complete document. Name the electronic submittal file specifically according to its contents.
- C. Electronic files must be of sufficient quality that all information is legible. Generate PDF files from original documents so that the text included in the PDF file is both searchable and can be copied. If documents are scanned, Optical Character Resolution (OCR) routines are required.
- D. E-mail electronic submittal documents smaller than 5MB in size to e-mail addresses as directed by the Contracting Officer.

- E. Provide electronic documents over 5MB through an electronic FTP file sharing system. Confirm that the electronic FTP file sharing system can be accessed from the OWNER computer network. The Contractor is responsible for setting up, providing, and maintaining the electronic FTP file sharing system for the construction contract period of performance.
- F. Provide hard copies of submittals when requested by the Contracting Officer. Up to 3 additional hard copies of any submittal may be requested at the discretion of the Contracting Officer, at no additional cost to the OWNER.

1.7 SAMPLES

- A. Submit two sets of physical samples showing range of variation, for each required item.
- B. Where samples are specified for selection of color, finish, pattern, or texture, submit the full set of available choices for the material or product specified.
- C. When color, texture, or pattern is specified by naming a particular manufacturer and style, include one sample of that manufacturer and style, for comparison.
- D. Before submitting samples, the Contractor is to ensure that the materials or equipment will be available in quantities required in the project. No change or substitution will be permitted after a sample has been approved.
- E. The OWNER reserves the right to disapprove any material or equipment which previously has proven unsatisfactory in service.
- F. Physical samples supplied maybe requested back for use in the project after reviewed and approved.

1.8 OPERATION AND MAINTENANCE DATA

- A. Submit data specified for a given item within 30 calendar days after the item is delivered to the contract site.
- B. In the event the Contractor fails to deliver O&M Data within the time limits specified, the Contracting Officer may withhold from progress payments 50 percent of the price of the item with which such O&M Data are applicable.

1.9 TEST REPORTS

Owner may require specific test after work has been installed or completed which could require contractor to repair test area at no additional cost to contract.

1.10 OWNER REVIEW OF SUBMITTALS AND RFIS

- A. The Owner will review all submittals for compliance with the technical requirements of the contract documents. The Consultant for this project will assist the Owner in reviewing all submittals and determining contractual compliance. Review will be only for conformance with the contract requirements and not for conformance with applicable codes, and standards.
- B. Period of review for submittals begins when the Owner receives submittal from the Contractor.
- C. Period of review for each resubmittal is the same as for initial submittal.
- D. OWNER review period is 15 business days for submittals.
- E. OWNER review period is 10 business days for RFIs.
- F. The OWNER will return submittals to the Contractor with the following notations:
 - 1. "Approved": authorizes the Contractor to proceed with the work covered.
 - 2. "Approved as noted": authorizes the Contractor to proceed with the work covered provided the Contractor incorporates the noted comments and makes the noted corrections.
 - 3. "Disapproved, revise and resubmit": indicates noncompliance with the contract requirements or that submittal is incomplete. Resubmit with appropriate changes and corrections. No work shall proceed for this item until resubmittal is approved.
 - 4. "Not reviewed": indicates submittal does not have evidence of being reviewed and approved by Contractor or is not complete. A submittal marked "not reviewed" will be returned with an explanation of the reason it is not reviewed. Resubmit submittals after taking appropriate action.

1.11 APPROVED SUBMITTALS

- A. The OWNER approval of submittals is not to be construed as a complete check, and indicates only that the general method of construction, materials, detailing, and other information are satisfactory.

- B. OWNER approval of a submittal does not relieve the Contractor of the responsibility for any error which may exist. The Contractor is responsible for fully complying with all contract requirements and the satisfactory construction of all work, including the need to check, confirm, and coordinate the work of all subcontractors for the project. Non-compliant material incorporated in the work will be removed and replaced at the Contractor's expense.
- C. After submittals have been approved, no resubmittal for the purpose of substituting materials or equipment will be considered unless accompanied by an explanation of why a substitution is necessary.
- D. Retain a copy of all approved submittals at project site, including approved samples.

1.12 WITHHOLDING OF PAYMENT

Payment for materials incorporated in the work will not be made if required approvals have not been obtained.

- - - E N D - - -

SECTION 01 74 19
CONSTRUCTION WASTE MANAGEMENT

PART 1 - GENERAL

1.1 DESCRIPTION

- A. This section specifies the requirements for the management of non-hazardous building construction and demolition waste.
- B. Waste disposal in landfills shall be minimized to the greatest extent possible. Of the inevitable waste that is generated, as much of the waste material as economically feasible shall be salvaged, recycled or reused.
- C. Contractor shall use all reasonable means to divert construction and demolition waste from landfills and incinerators, and facilitate their salvage and recycle not limited to the following:
- D. Waste Management Plan development and implementation.
- E. Techniques to minimize waste generation.
- F. Sorting and separating of waste materials.
- G. Salvage of existing materials and items for reuse or resale.
- H. Recycling of materials that cannot be reused or sold.
- I. At a minimum the following waste categories shall be diverted from landfills:
 - 1. Soil.
 - 2. Inerts (eg, concrete, masonry and asphalt).
 - 3. Clean dimensional wood and palette wood.
 - 4. Green waste (biodegradable landscaping materials).
 - 5. Engineered wood products (plywood, particle board and I-joists, etc).
 - 6. Metal products (eg, steel, wire, beverage containers, copper, etc).
 - 7. Sheathings
 - 8. Cardboard, paper and packaging.
 - 9. Bitumen roofing materials.
 - 10. Plastics (eg, ABS, PVC).
 - 11. Carpet and/or pad.
 - 12. Gypsum board.
 - 13. Insulation.
 - 14. Paint.
 - 15. Fluorescent lamps.

1.2 RELATED WORK

- A. Section Division 7 and 26, roofing and electrical.

B. Section 01 00 00, GENERAL REQUIREMENTS.

1.3 QUALITY ASSURANCE

- A. Contractor shall practice efficient waste management when sizing, cutting and installing building products. Processes shall be employed to ensure the generation of as little waste as possible. Construction /Demolition waste includes products of the following:
1. Excess or unusable construction materials.
 2. Packaging used for construction products.
 3. Poor planning and/or layout.
 4. Construction error.
 5. Over ordering.
 6. Weather damage.
 7. Contamination.
 8. Mishandling.
 9. Breakage.
- B. Establish and maintain the management of non-hazardous building construction and demolition waste set forth herein. Conduct a site assessment to estimate the types of materials that will be generated by demolition and construction.
- C. Contractor shall be responsible for implementation of any special programs involving rebates or similar incentives related to recycling. Any revenues or savings obtained from salvage or recycling shall accrue to the contractor.
- D. Contractor shall provide all demolition, removal and legal disposal of materials. Contractor shall ensure that facilities used for recycling, reuse and disposal shall be permitted for the intended use to the extent required by local, state, federal regulations.
- E. Contractor shall assign a specific area to facilitate separation of materials for reuse, salvage, recycling, and return. Such areas are to be kept neat and clean and clearly marked in order to avoid contamination or mixing of materials.
- F. Contractor shall provide on-site instructions and supervision of separation, handling, salvaging, recycling, reuse and return methods to be used by all parties during waste generating stages.
- G. Record on daily reports any problems in complying with laws, regulations and ordinances with corrective action taken.

1.4 TERMINOLOGY

- A. Class III Landfill: A landfill that accepts non-hazardous resources such as household, commercial and industrial waste resulting from construction, remodeling, repair and demolition operations.
- B. Clean: Untreated and unpainted; uncontaminated with adhesives, oils, solvents, mastics and like products.
- C. Construction and Demolition Waste: Includes all non-hazardous resources resulting from construction, remodeling, alterations, repair and demolition operations.
- D. Dismantle: The process of parting out a building in such a way as to preserve the usefulness of its materials and components.
- E. Disposal: Acceptance of solid wastes at a legally operating facility for the purpose of land filling (includes Class III landfills and inert fills).
- F. Inert Backfill Site: A location, other than inert fill or other disposal facility, to which inert materials are taken for the purpose of filling an excavation, shoring or other soil engineering operation.
- G. Inert Fill: A facility that can legally accept inert waste, such as asphalt and concrete exclusively for the purpose of disposal.
- H. Inert Solids/Inert Waste: Non-liquid solid resources including, but not limited to, soil and concrete that does not contain hazardous waste or soluble pollutants at concentrations in excess of water-quality objectives established by a regional water board, and does not contain significant quantities of decomposable solid resources.
- I. Mixed Debris: Loads that include commingled recyclable and non-recyclable materials generated at the construction site.
- J. Mixed Debris Recycling Facility: A solid resource processing facility that accepts loads of mixed construction and demolition debris for the purpose of recovering re-usable and recyclable materials and disposing non-recyclable materials.
- K. Permitted Waste Hauler: A company that holds a valid permit to collect and transport solid wastes from individuals or businesses for the purpose of recycling or disposal.
- L. Recycling: The process of sorting, cleansing, treating, and reconstituting materials for the purpose of using the altered form in the manufacture of a new product. Recycling does not include burning, incinerating or thermally destroying solid waste.

1. On-site Recycling - Materials that are sorted and processed on site for use in an altered state in the work, i.e. concrete crushed for use as a sub-base in paving.
 2. Off-site Recycling - Materials hauled to a location and used in an altered form in the manufacture of new products.
- M. Recycling Facility: An operation that can legally accept materials for the purpose of processing the materials into an altered form for the manufacture of new products. Depending on the types of materials accepted and operating procedures, a recycling facility may or may not be required to have a solid waste facilities permit or be regulated by the local enforcement agency.
- N. Reuse: Materials that are recovered for use in the same form, on-site or off-site.
- O. Return: To give back reusable items or unused products to vendors for credit.
- P. Salvage: To remove waste materials from the site for resale or re-use by a third party.
- Q. Source-Separated Materials: Materials that are sorted by type at the site for the purpose of reuse and recycling.
- R. Solid Waste: Materials that have been designated as non-recyclable and are discarded for the purposes of disposal.
- S. Transfer Station: A facility that can legally accept solid waste for the purpose of temporarily storing the materials for re-loading onto other trucks and transporting them to a landfill for disposal, or recovering some materials for re-use or recycling.

1.5 SUBMITTALS - N/A

1.6 APPLICABLE PUBLICATIONS - N/A

1.7 RECORDS

- A. Maintain records to document the quantity of waste generated; the quantity of waste diverted through sale, reuse, or recycling; and the quantity of waste disposed by landfill or incineration. Records shall be kept in accordance with the //LEED Reference Guide and LEED Template// // Green Globes for New Construction 2019 Technical Reference Manual.//

PART 2 - PRODUCTS

2.1 MATERIALS - N/A

PART 3 - EXECUTION

3.1 COLLECTION

- A. Provide all necessary containers, bins and storage areas to facilitate effective waste management.
- B. Hazardous wastes shall be separated, stored, disposed of according to local, state, federal regulations.

3.2 DISPOSAL

- A. Contractor shall be responsible for transporting and disposing of materials that cannot be delivered to a source-separated or mixed materials recycling facility to a transfer station or disposal facility that can accept the materials in accordance with state and federal regulations.
- B. Construction or demolition materials with no practical reuse or that cannot be salvaged or recycled shall be disposed of at a landfill or incinerator.

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SECTION 07410

PREFORMED METAL WALL PANELS

PART 1 - GENERAL

Peterson Aluminum Corporation is the basis of design. Bidders may submit substitutions of equal or better quality for review and possible approval by the Owner. Value Engineering suggestions are invited.

1.1 DESCRIPTION OF WORK

- A. This section covers the pre-finished, pre-fabricated Architectural metal wall panel system. All metal trim, accessories, fasteners, insulation and sealants indicated on the drawings as part of this section.
- B. Drawings and general provisions of the Contract, including general and Supplementary Conditions and Division 01 Specifications, apply to this section.

1.2 SUMMARY

- A. Section Includes
 - 1. Factory formed metal wall panels
- B. Related work specified elsewhere (Note: select from the below or add appropriate sections)
 - 1. Metal Roof Deck: Division 5 - Metal Deck Sections
 - 2. Wood Framing and Decking: Division 6 Roof Carpentry Section
 - 3. Flashing and Trim: Division 7- Flashing and Sheet Metal
 - 4. Coping and Gravel Stops: Division 7 Roof Specialties and Accessories
 - 5. Sealants: Division 7 Joint Sealers Sections

1.3 Definitions

- A. Metal Wall Panel Assembly: Metal wall panels, attachment system components, miscellaneous metal framing, thermal, and accessories necessary for a complete weathertight system.

1.4 QUALITY ASSURANCE

- A. Petersen Aluminum Corp, Acworth, GA, 800-272-4482 Petersen Aluminum Corp, Phoenix, AZ, 833-750-1935 products establish a minimum of quality required.
- B. Manufacturer and erector shall demonstrate experience of a minimum of five (5) years in this type of project.
- C. Sheet Metal Industry Standard: Comply with Sheet Metal and Air Conditioning Contractors National Association (SMACNA) *Architectural Sheet Metal Manual*.
- D. Panels shall be factory-produced only. No portable, installer-owned or installer-rented machines will be permitted.

1.5 SUBSTITUTIONS

- A. The material, products and equipment specified in this section establish a standard for required function, dimension, appearance and quality to be met by any proposed substitution.

1.6 SYSTEM DESCRIPTION

- A. Material to comply with:
 - 1. ASTM A 653 Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy Coated (Galvannealed) by the Hot-Dip Process

1.7 WALL PANEL SYSTEM PERFORMANCE TESTING

- A. General Performance: Metal wall panels shall comply with performance requirements without failure due to defective manufacture, fabrication, installation or other defects in construction.
- B. Panels to meet:
 - 1. Metal Wall or Metal Soffit System shall be designed to meet applicable Local Building Code and the Soffit System shall have been tested by the Manufacturer per ASTM E-330 and have the applicable Load Tables published from this Air Bag testing for negative loads.

1.8 WARRANTIES

- A. Finish warranty: Manufacturer's standard form in which manufacturer agrees to repair finish or replace metal wall panels that show evidence of deterioration of factory-applied finish within specified warranty period.
 - 1. Exposed Panels Finish - deterioration includes the following:
 - a. Color fading more than 5 hunter units when tested according to ASTM D 2244
 - b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214
 - c. Cracking, checking, peeling or failure of a paint to adhere to a bare metal.
 - 2. Warranty Period: 20 Years from the date of substantial completion
- B. Applicator shall furnish written warranty for a two (2) year period from date of substantial completion of building covering repairs required to maintain roof and flashings in watertight condition

1.9 SUBMITTALS

- A. Furnish detailed drawings showing profile and gauge of exterior sheets, location and type of fasteners, location, gauges, shape and method of attachment of all trim locations and types of sealants, and any other details as may be required for a weather-tight installation.
- B. Provide finish samples of all colors specified.
- C. Shop drawings: Show fabrication and installation layouts of metal wall panels or metal soffit panels, details of edge conditions, panel profiles, corners, anchorages, trim,

flashings, closures and accessories, and special details. Distinguish between factory and field-assembled work

- D. Coordination Drawings: Plans, drawn to scale, on which the following are shown and coordinated with each other, based on input from installer of the items involved.
- E. LEED Submittals
 - 1. Product data for Credit MR 4.1 and credit MR 4.2: Indicating the percentages by weight of postconsumer and preconsumer recycled content for products having recycled content.

1.10 DELIVERY, STORAGE AND HANDLING

- A. Ordering: Comply with manufacturer's ordering instruction and lead time requirements to avoid construction delays.
- B. Deliver components, sheets, metal wall panels and other manufactured items so as not to be damaged or deformed. Package metal wall panels for protection during transportation and handling.
- C. Unload, store and erect metal wall panels in a manner to prevent bending, warping, twisting and surface damage.
- D. Stack metal wall panels on platforms or pallets, covered with suitable weathertight and ventilated covering. Store metal wall panels to ensure dryness. Do not store metal wall panels in contact with other materials that might cause staining, denting or other surface damage.
- E. Protect strippable protective coating on any metal coated product from exposure to sunlight and high humidity, except to the extent necessary for material installation.

1.11 PROJECT CONDITIONS

- A. Weather Limitations: proceed with installation only when existing and forecasted weather conditions permit metal wall panel work to be performed.
- B. Field Measurements: Verify actual dimensions of construction contiguous with metal roof panels by field measurements before fabrication.

PART 2 - PRODUCTS

2.1 PANEL DESIGN

- A. General: Provide factory-formed metal wall panels designed for wall, soffit and fascia applications where a flush or flat appearance is desired. A round interlock leg and concealed fastening system act to improve the flush appearance while providing additional strength.
- B. Wall panels shall be Flush Wall 12" widths with 1" height.
- C. Panels to be produced with Pencil Rib - 2. Specifier note: Factory standard is smooth unless specified. Specifier Note: Depending on producing factory, panels may be

specified with venting strips or perforated, aluminum panels only, for soffit applications. Check with local factory for capabilities.

- D. Forming: Use continuous end rolling method. No end laps on panels. No portable rollforming machines will be permitted on this project, no installer-owned or installer-rented machines will be permitted. It is the intent of the Architect to provide Factory-Manufactured panel systems only for this project.

2.2 ACCEPTABLE MANUFACTURERS

- A. This project is detailed around the metal wall product of Petersen Aluminum Corp, Acworth, GA, 800-272-4482 Petersen Aluminum Corp, Phoenix, AZ, 833-750-1935 Flush Wall

2.3 MATERIALS AND FINISHES

- A. Preformed metal panels shall be fabricated of 24 GA and shall be Herr-Voss corrective leveled for flat appearance.
- B. Color shall be ****STANDARD PAC-CLAD FINISH**
- C. Finish shall be Kynar 500 or Hylar 5000 Fluorocarbon coating with a top side film thickness of 0.70 to 0.90 mil over a 0.25 to 0.3 mil prime coat to provide a total dry film thickness of 0.95 to 1.25 mil, to meet AAMA 621. Bottom side shall be coated with a primer with a dry film thickness of 0.25 mil. Finish shall conform to all tests for adhesions, flexibility and longevity as specified by Kynar 500 or Hylar 5000 finish supplier.
- D. If Strippable coating to be applied on the pre-finished panels to the top side to protect the finish during fabrication, shipping and handling, film shall be removed before installation.
- E. Trim: Trim shall be fabricated of the same material and finish to match the profile, and will be press broken in lengths of 10 to 12 feet. Trim shall be formed only by the manufacturer of their approved dealer. Trim to be erected in overlapped condition. Use lap strips only as indicated on drawings. Miter conditions shall be factory welded material to match the sheeting.
- F. Accessories/Fasteners: Fasteners shall be of type, material, size, corrosion resistance, holding power and other properties required to fasten miscellaneous framing members to substrates. Accessories and their fasteners shall be capable of resisting the specified design wind uplift forces and shall allow for thermal movement of the wall panel system. Exposed fasteners shall not restrict free movement of the roof panel system resulting from thermal forces, except at designed points of roof panel fixity
- G. Substrate shall be Plywood
- H. Underlayment
 - 1. 1. On all surfaces to be covered with metal wall panels, furnish and install a 40 mil "Peel & Stick membrane", required as outlined by metal panel manufacturer. Membrane to be a minimum of 40 mil thickness, smooth, non-granular, by one of the following manufacturers:
 - a. W.R Grace "Ice & Water Shield"
 - b. Cetco Strongseal

- c. Carlisle CCW WIP 300HT
 - d. Interwrap Titanium PSU
 - e. MFM Corp "Wind & Water Shield"
 - f. Polyguard Deck Guard HT of Polyglas HT
 - g. Tamko TW Tile and Metal Underlayment
- I. Sealants
- 1. Provide two-part polysulfide class B non-sag type for vertical and horizontal joints or
 - 2. One part polysulfide not containing pitch or phenolic extenders or
 - 3. Exterior grade silicone sealant recommended by roofing manufacturer or
 - 4. One part non-sag, gun grade exterior type polyurethane recommended by the roofing manufacturer.

2.4 FABRICATION

- A. Comply with dimensions, profile limitations, gauges and fabrication details shown and if not shown, provide manufacturer's standard product fabrication.
 - 1. Max panel length is 55'.
- B. Fabricate components of the system in factory, ready for field assembly.
- C. Fabricate components and assemble units to comply with fire performance requirements specified.
- D. Apply specified finishes in conformance with manufacturer's standard, and according to manufacturer's instructions.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Examine alignment of structural steel and related supports, primary and secondary roof framing, solid roof sheathing, prior to installation.
- B. For the record, prepare written report, endorsed by installer, listing conditions detrimental to performance of the Work.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 FASTENERS

- A. Secure units to supports.
- B. Place fasteners as indicated in manufacturer's standards.

3.3 INSTALLATION

- A. Compliance: Comply with manufacturer's product data, recommendations and installation instructions for substrate verification, preparation requirements and installation.

- B. Panels shall be installed plumb and true in a proper alignment and in relation to the structural framing. The erector must have at least five years successful experience with similar applications.
- C. Install metal panels, fasteners, trim and related sealants in accordance with approved shop drawings and as may be required for a weather-tight installation.
- D. Provide uniform, neat seams.
- E. Fasteners: Conceal fasteners where possible in exposed work. Cover and seal fasteners and anchors for watertight and leakproof installation.
- F. Remove all strippable coating and provide a dry-wipe down cleaning of the panels as they are erected.

3.4 DAMAGED MATERIAL

- A. Upon determination of responsibility, repair or replace damaged metal panels and trim to the satisfaction of the Architect and Owner.

3.5 CLEANING

- A. Cleaning: Remove temporary coverings and protection of adjacent work areas. Repair or replace damaged installed products. Clean installed products in accordance with manufacturer's instruction prior to owner's acceptance. Remove construction debris from project site and legally dispose of debris.

END OF SECTION



G U I D E - S P E C

FleeceBACK™ Adhered Roofing System using Bead Applied Flexible FAST Adhesive

January 2024

This **GUIDE-SPEC** is a brief outline of Carlisle's FleeceBACK Adhered Roofing System with Bead Applied Flexible FAST Adhesive and is intended for use as a submittal with a bid package. Specifiers and the Carlisle Authorized Roofing Applicator must comply with the applicable Sections of Carlisle's Technical Manual, prior to design or bid.

PART I GENERAL

1.01 DESCRIPTION

Carlisle is the basis of design. Bidders may submit substitutions of equal or better quality for review and possible approval by the Owner. Value Engineering suggestions are invited.

This **FleeceBACK Adhered Roofing System** incorporates Sure-Seal (black) or Sure-White non-reinforced EPDM, Sure-Weld (white, gray, tan or Special Color TPO) reinforced TPO, Sure-Flex PVC (white, gray, light gray, slate gray or tan) FleeceBACK or Sure-Flex PVC KEE HP (white, gray, light gray, slate gray or tan) FleeceBACK membrane laminated to non-woven polyester fleece-backing. The membrane is fully adhered to an acceptable insulation or substrate with Flexible FAST Adhesive applied in beads.

Adjoining sheets of EPDM FleeceBACK membrane are spliced together using 3" or 6" wide factory-applied SecurTAPE™ in conjunction with Primer. Sheets of Sure-Weld and Sure-Flex FleeceBACK membrane are joined together with a minimum 1-1/2" wide hot air weld.

1.02 QUALITY ASSURANCE

- A. This roofing system must be installed by a Carlisle Authorized Roofing Applicator in compliance with drawings and specifications as approved by Carlisle SynTec.
- B. Upon request, an inspection shall be conducted by a Field Service Representative of Carlisle to ascertain that the membrane roofing system has been installed according to Carlisle's published specifications and details applicable at the time of bid. This inspection is to determine whether a warranty shall be issued. It is not intended as a final inspection for the benefit of the owner.
- C. For specific code approvals achieved with this system, refer to Carlisle's FleeceBACK Code Approval Guide, DORA (Directory of Roof Assemblies), FM Approvals or UL Fire Resistance Directory for Roofing Materials and Systems.

1.03 SUBMITTALS

- A. To ensure compliance with Carlisle's minimum warranty requirements, the following projects should be forwarded to Carlisle for review prior to installation, preferably prior to bid.
 - 1. Air pressurized buildings, canopies, and buildings with large openings, cold storage buildings or freezer facilities, adhered roofing system projects over 100' in height or projects where the membrane is expected to come in direct contact with petroleum-based products, waste products (i.e., grease, oil, animal fats, etc.) and other chemicals.
- B. Shop drawings must be submitted to Carlisle by the Carlisle Authorized Roofing Applicator along with a completely executed Notice of Award (Page 1 of Carlisle's Request For Warranty form) for approval. Approved shop drawings are required for inspection of the roof and on projects where on-site technical assistance is requested.

1.04 GENERAL DESIGN CONSIDERATIONS

- A. It is the responsibility of the building owner or his/her designated representative to verify structural load limitation. In addition, a core cut may be taken to verify weight of existing components when the roofing system is to be specified on an existing facility.
- B. On new construction projects, especially in cold climate regions, moisture generated due to the construction process could adversely impact various components within the roofing assembly if not addressed. [Refer to Design References DR-01-21 "Construction Generated Moisture" included in the Carlisle Technical Manual.]



- C. On structural concrete decks, when a vapor retarder is not used, gaps in the deck along the perimeter and around penetrations must be sealed along with vertical joints between tilt-up panels, if present, to prevent infiltration of hot humid air and possible moisture contamination resulting from condensation. This is specifically important when adhesive is used to attach the roof insulation.

CAUTION: If left unaddressed, collected moisture could weaken insulation boards and facers resulting in a blow-off or increase the probability of mold growth.

D. Vapor Retarders

1. Carlisle does not require a vapor retarder for the protection of the membrane; however, it should be considered by the specifier for the protection of the roofing assembly (i.e. primarily insulation, underlayment and adhesives). The following criteria should be considered by the specifier:
 - a. Use of a vapor retarder to protect insulation and reduce moisture accumulation within an insulated roofing assembly, should be investigated by the specifier.
 - b. In the generally temperate climate of the United States, during the winter months, water vapor flows upward from a heated, more humid interior toward a colder, drier exterior. Vapor retarders are more commonly required in northern climates than in southern regions, where downward vapor pressure may be expected and the roofing membrane itself becomes the vapor retarder.

1.05 WARRANTY

Table I FleeceBACK Adhered Systems Warranty Options

Years	Minimum Membrane Thickness	Warranty Wind Speed			Additional Hail Coverage			
		55, 72 or 80 mph	90 or 100 mph	110 or 120 mph	1" Dia. Hail	2" Dia. Hail	3" Dia. Hail	4" Dia. Hail
5,10, or 15 year	FleeceBACK EPDM 100-mil or FleeceBACK TPO 100-mil	√	√	√	√	√ (1)	N/A	N/A
	FleeceBACK PVC 115-mil (3)	√	√	√	√	√ (1)	N/A	N/A
	FleeceBACK KEE HP 105-mil	√	√	√	√	√ (1)	N/A	N/A
20 year	FleeceBACK EPDM 115-mil or FleeceBACK TPO 115-mil	√	√	√	√	√	√ (1)	N/A
	FleeceBACK PVC 115-mil (3)	√	√	√	√	√ (1)	N/A	N/A
	FleeceBACK KEE HP 105-mil	√	√	√	√	√ (1)	N/A	N/A
25 year	FleeceBACK EPDM 140-mil	√	√	√	√	√	√	√ (2)
	FleeceBACK PVC 135-mil (3)	√	√	√	√	√	√ (1)	N/A
	FleeceBACK TPO 135-mil or FleeceBACK KEE HP 115-mil	√	√	√	√	√	√ (1)	N/A
30 year	FleeceBACK EPDM 140-mil	√	√	√	√	√	√	√ (2)
	FleeceBACK TPO 135-mil or FleeceBACK KEE HP 135-mil	√	√	√	√	√	√	N/A

Notes: N/A = Not Acceptable √ = Acceptable

- (1) Requires Flexible FAST in full coverage or beads spaced at 4" o.c.
- (2) Require Flexible FAST in full coverage or beads spaced at 4" o.c. Contact Carlisle for underlayment requirements.
- (3) FleeceBACK PVC with Polyester or Fiberglass Reinforced Scrim (FRS)

1.06 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Deliver materials to the job site in the original, unopened containers labeled with the manufacturer's name, brand name and installation instructions.

- B. Job site storage temperatures in excess of 90°F may affect shelf life of curable materials (i.e., Flexible FAST Adhesive – Parts A & B, splicing cement, sealants, cleaners, primers, SecurTAPE, Pourable Sealer, Pressure-Sensitive Flashing and uncured flashing).
- C. When liquid adhesives and sealants are exposed to lower temperatures, restore to a minimum of 60°F before use. Do not store containers with opened lids due to loss of solvent which will occur from flash off.
- D. FleeceBACK Membrane should be stored in its original plastic wrap and be covered to protect from moisture. Any moisture absorbed by the fleece-backing must be removed by using a wet-vac system, prior to membrane adhesion.

1.07 JOB CONDITIONS

- A. Refer to Carlisle Technical Manual for applicable project specific Job Conditions.

PART II PRODUCTS

2.01 GENERAL

The components of this roofing system are to be products of Carlisle or accepted by Carlisle as compatible. The installation, performance or integrity of products by others, **when selected by the specifier and accepted as compatible by Carlisle**, is not the responsibility of Carlisle and is expressly disclaimed by the Carlisle Warranty.

2.02 MEMBRANE

FleeceBACK 100, 115, 135 and 145 Membrane incorporates 45-, 60-, or 90-mil thick, Sure-Seal (black) or Sure-White (white) non-reinforced EPDM or 45-, 60- or 90-mil Sure-Weld (white, gray, tan or Special Color TPO) reinforced TPO membrane laminated to a 55-mil thick non-woven polyester fleece-backing resulting in a total finished sheet thickness of 100, 115, 135 or 145 mils. Sure-Flex KEE HP (white, gray, light gray, slate gray or tan) FleeceBACK is available in 105, 115 and 135 mils. Sure-Flex PVC (white, gray, light gray, slate gray, or tan) FleeceBACK is available in 115 and 135 mils.

For available membrane widths and lengths refer to applicable FleeceBACK Specification or Product Data Sheets.

2.03 RELATED MATERIALS

- A. Flexible FAST Adhesive, Cleaners, Splicing Cement, Sealants, Primers, SecurTAPE, Flashing, Pressure-Sensitive Flashing, Elastoform Flashing, Termination Bars, Carlisle Insulation, Insulation Fasteners and Water Cut-Off Mastic are required for use with this roofing system. Other Carlisle products, such as insulation and edgings are also required when a System Warranty is specified.

Other Products: Walkway Pads, Pre-Molded Pipe Flashings, LIQUISEAL Liquid Flashing, Corners and Pourable/Molded Sealer Pockets.

PART III EXECUTION

3.01 GENERAL

- A. When feasible, begin the application at the highest point of the highest roof level and work to the lowest point to prevent moisture infiltration and minimize construction traffic on completed sections. This will include completion of all flashings and terminations.

3.02 ROOF DECK CRITERIA

- A. A proper substrate shall be provided by the building owner. The structure shall be sufficient to withstand normal construction loads and live loads.
- B. Defects in the roof deck must be reported and documented to the specifier, general contractor and building owner for assessment. The Carlisle Authorized Roofing Applicator shall not proceed unless the defects are corrected.
- C. When mechanically attaching the insulation with Carlisle Fasteners and Insulation Plates, refer to FleeceBACK Specification for acceptable decks and the applicable Carlisle Fasteners.

3.03 SUBSTRATE REQUIREMENTS

- A. The membrane may be adhered with Flexible FAST Adhesive directly over structural concrete, wood decks (new or tear-off). An existing smooth surfaced asphalt built-up roof (Type III or IV Asphalt), modified bitumen, or mineral surfaced cap sheet are also

acceptable substrates. Direct application over certain types of cellular or perlite lightweight insulating concrete substrate may also be specified (contact Carlisle for acceptable lightweight insulating concretes).

- B. Acceptable Carlisle insulations include all types currently approved with Design "A" Adhered Roofing Systems.
- C. The substrate must be dry, relatively smooth, free of protrusions, debris, sharp edges or foreign materials and must be free of accumulated water, ice and snow. Cracks or voids in the substrate greater than 1/4" (6 mm) must be filled with a suitable material.
- D. On retrofit-recover projects, cut and remove wet insulation as identified by the specifier and fill all voids with new insulation, so that it is relatively flush, prior to installing an approved insulation.
- E. At angle changes along walls, curbs, skylights, etc., for warranties up to 20 years, FleeceBACK membrane must be adhered in Flexible FAST Adhesive beads placed directly at the angle change and an additional bead spaced a maximum of 3" away from the first bead (at the angle change). For warranties over 20 years, mechanical securement of the membrane is required.

3.04 INSTALLATION

Refer to the applicable Safety Data Sheets and Product Data Sheets for cautions and warnings. For bead application equipment requirements, reference the Spec Supplement, Flexible FAST Adhesive Equipment G-02-22 or FleeceBACK and Insulation Attachment with Flexible FAST Adhesive G-03-22.

A. Insulation Attachment

- 1. Carlisle Flexible FAST Adhesive may be specified for insulation securement in full spray or beads with spacing as outlined in the Carlisle Technical Manual.
- 2. Carlisle Fasteners may be used, when specified, to secure Carlisle Insulation at the specified density outlined in the Carlisle Technical Manual

B. Membrane Adhesion

- 1. FleeceBACK Membrane shall be adhered to an acceptable substrate with a two component, bead applied, low-rise adhesive supplied by Carlisle. Flexible FAST Adhesive is applied to the substrate only and the membrane is rolled into the wet adhesive once it has foamed up approximately 1/8" to 3/4" and begins to "string" when touched with an HP Splice Wipe. Roll the membrane with a 30" wide, 150 pound, segmented steel roller to set the membrane into the adhesive.
- 2. Adjoining sheets of FleeceBACK Membrane are overlapped a minimum of 3" along length of membrane (at selvage edges) in preparation for splicing. At end laps (along width of sheet), membrane shall be butted together and overlaid with a minimum 6" wide Pressure-Sensitive Cured Cover Strip for EPDM or reinforced membrane for TPO or PVC.
- 3. Refer to Carlisle Technical Manual for alternate attachment methods.

4. Membrane Splicing of FleeceBACK Systems

Refer to appropriate splicing procedures published in the Sure-Seal/Sure-White, Sure-Weld or Sure-Flex FleeceBACK Specifications.

D. Flashing

- 1. Flashing of standard penetrations and edge conditions shall conform to the details in Carlisle's EPDM, TPO or PVC FleeceBACK or Adhered Roofing System specifications as applicable.
- 2. Details not depicted in these publications shall be submitted to Carlisle for review prior to installation.

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<http://www.carlisle-syntec.com>

Physical properties of FleeceBACK Membrane can be referenced in Part II, "Products" of the FleeceBACK Specification. Attach copies of the applicable Carlisle Details that pertain to the individual project to complete a bid package submittal.

SECTION 07 92 00
JOINT SEALANTS

PART 1 - GENERAL

1.1 DESCRIPTION:

- A. This section covers interior and exterior sealant and their application, wherever required for complete installation of building materials or systems.

1.2 RELATED WORK (INCLUDING BUT NOT LIMITED TO THE FOLLOWING):

- A. Fleece Backed TPO Roofing: Section 07 54 23.

1.3 QUALITY ASSURANCE:

- A. Installer Qualifications: An experienced installer with a minimum of three (3) years' experience and who has specialized in installing joint sealants similar in material, design, and extent to those indicated for this Project and whose work has resulted in joint-sealant installations with a record of successful in-service performance. Submit qualification.
- B. Source Limitations: Obtain each type of joint sealant through one (1) source from a single manufacturer compatible and as approved by the roof manufacturer.
- C. Product Testing: Obtain test results from a qualified testing agency based on testing current sealant formulations within a 12-month period.
1. Testing Agency Qualifications: An independent testing agency qualified according to ASTM C1021.
 2. Test elastomeric joint sealants for compliance with requirements specified by reference to ASTM C920, and where applicable, to other standard test methods.
 4. Test other joint sealants for compliance with requirements indicated by referencing standard specifications and test methods.
- D. Lab Tests: Submit samples of materials that will be in contact or affect joint sealants to joint sealant manufacturers for tests as follows:
1. Adhesion Testing: Before installing elastomeric sealants, test their adhesion to protect joint substrates according to the method in ASTM C794 to determine if primer or other specific joint preparation techniques are required.

2. Compatibility Testing: Before installing elastomeric sealants, determine compatibility when in contact with glazing and gasket materials.
3. Stain Testing: Perform testing per ASTM C1248 on interior and exterior sealants to determine if sealants or primers will stain adjacent surfaces. No sealant work is to start until results of these tests have been submitted to the Contracting Officer Representative (COR) and the COR has given written approval to proceed with the work.

E. Preconstruction Field-Adhesion Testing: Before installing elastomeric sealants, field test their adhesion to joint substrates according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1.1 in ASTM C1193 or Method A, Tail Procedure, in ASTM C1521.

1. Locate test joints where indicated in construction documents or, if not indicated, as directed by Owner.
2. Conduct field tests for each application indicated below:
 - a. Each type of elastomeric sealant and joint substrate indicated.
 - b. Each type of non-elastomeric sealant and joint substrate indicated.
4. Arrange for tests to take place with joint sealant manufacturer's technical representative present if required by manufacturer./

1.4 CERTIFICATION:N/A

1.5 SUBMITTALS:N/A

1.6 PROJECT CONDITIONS:

A. Environmental Limitations:

1. Do not proceed with installation of joint sealants under following conditions:
 - a. When ambient and substrate temperature conditions are outside limits permitted by joint sealant manufacturer or are below 4.4 degrees C (40 degrees F).
 - b. When joint substrates are wet.

B. Joint-Width Conditions:

1. Do not proceed with installation of joint sealants where joint widths are less than those allowed by joint sealant manufacturer for applications indicated.

C. Joint-Substrate Conditions:

- 1. Do not proceed with installation of joint sealants until
contaminants capable of interfering with adhesion are removed from
joint substrates.

1.7 DELIVERY, HANDLING, AND STORAGE:

- A. Deliver materials in manufacturers' original unopened containers, with brand names, date of manufacture, shelf life, and material designation clearly marked thereon.
- B. Carefully handle and store to prevent inclusion of foreign materials.
- C. Do not subject to sustained temperatures exceeding 32 degrees C (90 degrees F) or less than 5 degrees C (40 degrees F).

1.8 DEFINITIONS:

- A. Definitions of terms in accordance with ASTM C717 and as specified.
- B. Backing Rod: A type of sealant backing.
- C. Bond Breakers: A type of sealant backing.
- D. Filler: A sealant backing used behind a back-up rod.

1.9 WARRANTY:

- A. Construction Warranty: Comply with General Requirements "Warranty of Construction".
- B. Manufacturer Warranty: Manufacturer shall warranty their sealant for a minimum of five (5) years from the date of installation and final acceptance by the Owner. Submit manufacturer warranty.

1.10 APPLICABLE PUBLICATIONS:

- A. Publications listed below form a part of this specification to extent referenced. Publications are referenced in text by basic designation only.
- B. ASTM International (ASTM):
 - C509-06..... Elastomeric Cellular Preformed Gasket and Sealing Material
 - C612-14..... Mineral Fiber Block and Board Thermal Insulation
 - C717-14a..... Standard Terminology of Building Seals and Sealants
 - C734-06(R2012)..... Test Method for Low-Temperature Flexibility of Latex Sealants after Artificial Weathering
 - C794-10..... Test Method for Adhesion-in-Peel of Elastomeric Joint Sealants
 - C919-12..... Use of Sealants in Acoustical Applications.
 - C920-14a..... Elastomeric Joint Sealants.

- C1021-08(R2014)..... Laboratories Engaged in Testing of Building Sealants
- C1193-13..... Standard Guide for Use of Joint Sealants.
- C1248-08(R2012)..... Test Method for Staining of Porous Substrate by Joint Sealants
- C1330-02(R2013)..... Cylindrical Sealant Backing for Use with Cold Liquid Applied Sealants
- C1521-13..... Standard Practice for Evaluating Adhesion of Installed Weatherproofing Sealant Joints
- D217-10..... Test Methods for Cone Penetration of Lubricating Grease
- D1056-14..... Specification for Flexible Cellular Materials—Sponge or Expanded Rubber
- E84-09..... Surface Burning Characteristics of Building Materials
- C. Sealant, Waterproofing and Restoration Institute (SWRI).
The Professionals' Guide
- D. Environmental Protection Agency (EPA):
40 CFR 59(2014)..... National Volatile Organic Compound Emission Standards for Consumer and Commercial Products

PART 2 - PRODUCTS As approved by the roofing manufacturer.

2.1 SEALANTS:

A. Exterior Sealants:

3. Provide location(s) of exterior sealant as follows:
- a. Joints formed where frames and subsills of windows, doors, louvers, and vents adjoin masonry, concrete, or metal frames. Provide sealant at exterior surfaces of exterior wall penetrations.
 - b. Metal to metal.
 - c. Masonry to masonry or stone.
 - d. Stone to stone.
 - e. Cast stone to cast stone.
 - f. Masonry expansion and control joints.
 - g. Wood to masonry.
 - h. Masonry joints where shelf angles occur.
 - i. Voids where items penetrate exterior walls.

- j. Metal reglets, where flashing is inserted into masonry joints, and where flashing is penetrated by coping dowels.

B. Floor Joint Sealant: N/A

2.2 COLOR:

- A. Sealants used with exposed materials are to match color of adjacent surfaces and joints.
- B. Sealants used with unpainted concrete are to match color of adjacent concrete.
- C. Color of sealants for other locations to be light gray or aluminum, unless otherwise indicated in construction documents.

2.3 JOINT SEALANT BACKING:

- A. General: Provide sealant backings of material and type that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.
- B. Cylindrical Sealant Backings: ASTM C1330, of type indicated below and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance:
 - 1. Type C: Closed-cell material with a surface skin.
- C. Elastomeric Tubing Sealant Backings: Neoprene, butyl, EPDM, or silicone tubing complying with ASTM D1056 or synthetic rubber (ASTM C509), nonabsorbent to water and gas, and capable of remaining resilient at temperatures down to minus 32 degrees C (minus 26 degrees F). Provide products with low compression set and of size and shape to provide a secondary seal, to control sealant depth, and otherwise contribute to optimum sealant performance.
- D. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint where such adhesion would result in sealant failure. Provide self-adhesive tape where applicable.

2.7 CLEANERS-NON POROUS SURFACES:

- A. Chemical cleaners compatible with sealant and acceptable to manufacturer of sealants and sealant backing material. Cleaners to be free of oily residues and other substances capable of staining or harming joint substrates and adjacent non-porous surfaces and formulated to promote adhesion of sealant and substrates.

PART 3 - EXECUTION**3.1 INSPECTION:**

- A. Inspect substrate surface for bond breaker contamination and unsound materials at adherent faces of sealant.
- B. Coordinate for repair and resolution of unsound substrate materials.
- C. Inspect for uniform joint widths and that dimensions are within tolerance established by sealant manufacturer.

3.2 PREPARATIONS:

- A. Prepare joints in accordance with manufacturer's instructions and SWRI (The Professionals' Guide).
- B. Clean surfaces of joint to receive caulking or sealants leaving joint dry to the touch, free from frost, moisture, grease, oil, wax, lacquer paint, or other foreign matter that would tend to destroy or impair adhesion.
 - 1. Clean porous joint substrate surfaces by brushing, grinding, blast cleaning, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants.
 - 2. Remove loose particles remaining from above cleaning operations by vacuuming or blowing out joints with oil-free compressed air. Porous joint surfaces include but are not limited to the following:
 - a. Concrete.
 - b. Masonry.
 - c. Unglazed surfaces of ceramic tile.
 - 3. Remove laitance and form-release agents from concrete.
 - 4. Clean nonporous surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants. Nonporous surfaces include but are not limited to the following:
 - a. Metal.
 - b. Glass.
 - c. Porcelain enamel.
 - d. Glazed surfaces of ceramic tile.
- C. Do not cut or damage joint edges.
- D. Apply non-staining masking tape to face of surfaces adjacent to joints before applying primers, caulking, or sealing compounds.
 - 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.
- E. Apply primer to sides of joints wherever required by compound manufacturer's printed instructions or as indicated by pre-construction joint sealant substrate test.
1. Apply primer prior to installation of back-up rod or bond breaker tape.
 2. Use brush or other approved means that will reach all parts of joints. Avoid application to or spillage onto adjacent substrate surfaces.

3.3 BACKING INSTALLATION:

- A. Install backing material, to form joints enclosed on three sides as required for specified depth of sealant.
- B. Where deep joints occur, install filler to fill space behind the backing rod and position the rod at proper depth.
- C. Cut fillers installed by others to proper depth for installation of backing rod and sealants.
- D. Install backing rod, without puncturing the material, to a uniform depth, within plus or minus 3 mm (1/8 inch) for sealant depths specified.
- E. Where space for backing rod does not exist, install bond breaker tape strip at bottom (or back) of joint so sealant bonds only to two opposing surfaces.

3.4 SEALANT DEPTHS AND GEOMETRY:

- A. At widths up to 6 mm (1/4 inch), sealant depth equal to width.
- B. At widths over 6 mm (1/4 inch), sealant depth 1/2 of width up to 13 mm (1/2 inch) maximum depth at center of joint with sealant thickness at center of joint approximately 1/2 of depth at adhesion surface.

3.5 INSTALLATION:

- A. General:
1. Apply sealants and caulking only when ambient temperature is between 5 degrees C and 38 degrees C (40 degrees and 100 degrees F).
 2. Do not install polysulfide base sealants where sealant may be exposed to fumes from bituminous materials, or where water vapor in continuous contact with cementitious materials may be present.
 3. Do not install sealant type listed by manufacture as not suitable for use in locations specified.

4. Apply caulking and sealing compound in accordance with manufacturer's printed instructions.
 5. Avoid dropping or smearing compound on adjacent surfaces.
 6. Fill joints solidly with compound and finish compound smooth.
 7. Tool exposed joints to form smooth and uniform beds, with slightly concave surface conforming to joint configuration per Figure 5A in ASTM C1193 unless shown or specified otherwise in construction documents. Remove masking tape immediately after tooling of sealant and before sealant face starts to "skin" over. Remove any excess sealant from adjacent surfaces of joint, leaving the working in a clean finished condition.
 8. Finish paving or floor joints flush unless joint is otherwise detailed.
 9. Apply compounds with nozzle size to fit joint width.
 10. Test sealants for compatibility with each other and substrate. Use only compatible sealant. Submit test reports.
- C. For application of sealants, follow requirements of ASTM C1193 unless specified otherwise. Take all necessary steps to prevent three-sided adhesion of sealants.

3.6 FIELD QUALITY CONTROL:

- A. Inspect tested joints and report on following:
1. Whether sealants in joints connected to pulled-out portion failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each type of product and joint substrate.
 2. Compare these results to determine if adhesion passes sealant manufacturer's field-adhesion hand-pull test criteria.
 3. Whether sealants filled joint cavities and are free from voids.
 4. Whether sealant dimensions and configurations comply with specified requirements.

3.7 CLEANING:

- A. Fresh compound accidentally smeared on adjoining surfaces: Scrape off immediately and rub clean with a solvent as recommended by manufacturer of the adjacent material or if not otherwise indicated by the caulking or sealant manufacturer.
- B. Leave adjacent surfaces in a clean and unstained condition.

- - - E N D - - -

SECTION 26 05 11
REQUIREMENTS FOR ELECTRICAL INSTALLATIONS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. This section applies to all sections of Division 26.
- B. Furnish and install electrical systems, materials, equipment, and accessories in accordance with the specifications and drawings. Capacities and ratings of motors, transformers, conductors and cable, switchboards, switchgear, panelboards, motor control centers, generators, automatic transfer switches, and other items and arrangements for the specified items are shown on the drawings.
- C. Electrical service entrance equipment and arrangements for temporary and permanent connections to the electric utility company's system shall conform to the electric utility company's requirements. Coordinate fuses, circuit breakers and relays with the electric utility company's system, and obtain electric utility company approval for sizes and settings of these devices.
- D. Conductor ampacities specified or shown on the drawings are based on copper conductors, with the conduit and raceways sized per NEC. Aluminum conductors are prohibited.

1.2 MINIMUM REQUIREMENTS

- A. The latest International Building Code (IBC), Underwriters Laboratories, Inc. (UL), Institute of Electrical and Electronics Engineers (IEEE), and National Fire Protection Association (NFPA) codes and standards are the minimum requirements for materials and installation.
- B. The drawings and specifications shall govern in those instances where requirements are greater than those stated in the above codes and standards.

1.3 TEST STANDARDS

- A. All materials and equipment shall be listed, labeled, or certified by a Nationally Recognized Testing Laboratory (NRTL) to meet Underwriters Laboratories, Inc. (UL), standards where test standards have been established. Materials and equipment which are not covered by UL standards will be accepted, providing that materials and equipment are listed, labeled, certified or otherwise determined to meet the safety requirements of a NRTL. Materials and equipment which no NRTL accepts,

certifies, lists, labels, or determines to be safe, will be considered if inspected or tested in accordance with national industrial standards, such as ANSI, NEMA, and NETA. Evidence of compliance shall include certified test reports and definitive shop drawings.

B. Definitions:

1. Listed: Materials and equipment included in a list published by an organization that is acceptable to the Authority Having Jurisdiction and concerned with evaluation of products or services, that maintains periodic inspection of production or listed materials and equipment or periodic evaluation of services, and whose listing states that the materials and equipment either meets appropriate designated standards or has been tested and found suitable for a specified purpose.
2. Labeled: Materials and equipment to which has been attached a label, symbol, or other identifying mark of an organization that is acceptable to the Authority Having Jurisdiction and concerned with product evaluation, that maintains periodic inspection of production of labeled materials and equipment, and by whose labeling the manufacturer indicates compliance with appropriate standards or performance in a specified manner.
3. Certified: Materials and equipment which:
 - a. Have been tested and found by a NRTL to meet nationally recognized standards or to be safe for use in a specified manner.
 - b. Are periodically inspected by a NRTL.
 - c. Bear a label, tag, or other record of certification.
4. Nationally Recognized Testing Laboratory: Testing laboratory which is recognized and approved by the Secretary of Labor in accordance with OSHA regulations.

1.4 QUALIFICATIONS (PRODUCTS AND SERVICES)

- A. Manufacturer's Qualifications: The manufacturer shall regularly and currently produce, as one of the manufacturer's principal products, the materials and equipment specified for this project, and shall have manufactured the materials and equipment for at least three years.
- B. Product Qualification:
 1. Manufacturer's materials and equipment shall have been in satisfactory operation, on three installations of similar size and type as this project, for at least three years.

2. The Owner reserves the right to require the Contractor to submit a list of installations where the materials and equipment have been in operation before approval.

C. Service Qualifications: There shall be a permanent service organization maintained or trained by the manufacturer which will render satisfactory service to this installation within eight hours of receipt of notification that service is needed. Submit name and address of service organizations.

1.5 APPLICABLE PUBLICATIONS

A. Applicable publications listed in all Sections of Division 26 shall be the latest issue, unless otherwise noted.

B. Products specified in all sections of Division 26 shall comply with the applicable publications listed in each section.

1.6 MANUFACTURED PRODUCTS

A. Materials and equipment furnished shall be of current production by manufacturers regularly engaged in the manufacture of such items, and for which replacement parts shall be available. Materials and equipment furnished shall be new, and shall have superior quality and freshness.

B. When more than one unit of the same class or type of materials and equipment is required, such units shall be the product of a single manufacturer.

C. Equipment Assemblies and Components:

1. Components of an assembled unit need not be products of the same manufacturer.

2. Manufacturers of equipment assemblies, which include components made by others, shall assume complete responsibility for the final assembled unit.

3. Components shall be compatible with each other and with the total assembly for the intended service.

4. Constituent parts which are similar shall be the product of a single manufacturer.

D. Factory wiring and terminals shall be identified on the equipment being furnished and on all wiring diagrams.

E. When Factory Tests are specified, Factory Tests shall be performed in the factory by the equipment manufacturer, and witnessed by the contractor.

1.7 VARIATIONS FROM CONTRACT REQUIREMENTS

- A. Where the Owner requests variations from the contract requirements, the connecting work and related components shall include, but not be limited to additions or changes to branch circuits, circuit protective devices, conduits, wire, feeders, controls, panels and installation methods.

1.8 MATERIALS AND EQUIPMENT PROTECTION

- A. Materials and equipment shall be protected during shipment and storage against physical damage, vermin, dirt, corrosive substances, fumes, moisture, cold, freeze and rain.
 1. Store materials and equipment indoors in clean dry space with uniform temperature to prevent condensation.
 2. During installation, equipment shall be protected against entry of foreign matter, and be vacuum-cleaned both inside and outside before testing and operating. Compressed air shall not be used to clean equipment. Remove loose packing and flammable materials from inside equipment.
 3. Damaged equipment shall be repaired or replaced, as determined by the Owner.
 4. Painted surfaces shall be protected with factory installed removable heavy kraft paper, sheet vinyl or equal.
 5. Damaged paint on equipment shall be refinished with the same quality of paint and workmanship as used by the manufacturer so repaired areas are not obvious.

1.9 WORK PERFORMANCE

- A. All electrical work shall comply with requirements of the latest NFPA 70 (NEC), NFPA 70B, NFPA 70E, NFPA 99, NFPA 110, NFPA 780, OSHA Part 1910 subpart J - General Environmental Controls, OSHA Part 1910 subpart K - Medical and First Aid, and OSHA Part 1910 subpart S - Electrical, in addition to other references required by contract.
- B. Job site safety and worker safety is the responsibility of the Contractor.
- C. Electrical work shall be accomplished with all affected circuits or equipment de-energized. However, energized electrical work may be performed only for the non-destructive and non-invasive diagnostic testing(s), or when scheduled outage poses an imminent hazard to patient care, safety, or physical security. In such case, all aspects of energized electrical work, such as the availability of

appropriate/correct personal protective equipment (PPE) and the use of PPE, shall comply with the latest NFPA 70E, as well as the following requirements:

1. Only Qualified Person(s) shall perform energized electrical work. Supervisor of Qualified Person(s) shall witness the work of its entirety to ensure compliance with safety requirements and approved work plan.
 2. At least two weeks before initiating any energized electrical work, the Contractor and the Qualified Person(s) who is designated to perform the work shall visually inspect, verify and confirm that the work area and electrical equipment can safely accommodate the work involved.
 3. If required by Owner, at least two weeks before initiating any energized electrical work, the Contractor shall develop and submit a job specific work plan, and energized electrical work request to the Owner. At the minimum, the work plan must include relevant information such as proposed work schedule, area of work, description of work, name(s) of Supervisor and Qualified Person(s) performing the work, equipment to be used, procedures to be used on and near the live electrical equipment, barriers to be installed, safety equipment to be used, and exit pathways.
 4. Energized electrical work shall begin only after the Contractor has obtained written approval of the work plan, and the energized electrical work request from the Owner, if required. The Contractor shall make these approved documents present and available at the time and place of energized electrical work.
 5. Energized electrical work shall begin only after the Contractor has invited and received acknowledgment from the Owner to witness the work.
- D. For work that affects existing electrical systems, arrange, phase and perform work to assure minimal interference with normal functioning of the facility. Refer to Article OPERATIONS AND STORAGE AREAS under Section 01 00 00, GENERAL REQUIREMENTS.
- E. New work shall be installed and connected to existing work neatly, safely and professionally. Disturbed or damaged work shall be replaced or repaired to its prior conditions, as required by Section 01 00 00, GENERAL REQUIREMENTS.

- F. Coordinate location of equipment and conduit with other trades to minimize interference.

1.10 EQUIPMENT INSTALLATION AND REQUIREMENTS

- A. Equipment location shall be as close as practical to locations shown on the drawings.
- B. Working spaces or working clearances shall comply with NEC's requirements, at a minimum.
- C. Inaccessible Equipment:
 - 1. Where the Owner determines that the Contractor has installed equipment not readily accessible for operation and maintenance, the equipment shall be removed and reinstalled as directed at no additional cost to the Owner.
 - 2. "Readily accessible" is defined as being capable of being reached quickly for operation, maintenance, or inspections without the use of ladders, or without climbing or crawling under or over obstacles such as, but not limited to, motors, pumps, belt guards, transformers, piping, ductwork, conduit and raceways.
- D. Electrical service entrance equipment and arrangements for temporary and permanent connections to the electric utility company's system shall conform to the electric utility company's requirements. Coordinate fuses, circuit breakers and relays with the electric utility company's system, and obtain electric utility company approval for sizes and settings of these devices.

1.11 EQUIPMENT IDENTIFICATION

- A. In addition to the requirements of the NEC, install an identification sign which clearly indicates information required for use and maintenance of items such as switchboards and switchgear, panelboards, cabinets, motor controllers, fused and non-fused safety switches, generators, automatic transfer switches, separately enclosed circuit breakers, individual breakers and controllers in switchboards, switchgear and motor control assemblies, control devices and other significant equipment.
- B. Identification signs for Normal Power System equipment shall be laminated black phenolic resin with a white core with engraved lettering. Identification signs for Essential Electrical System (EES) equipment, as defined in the NEC, shall be laminated red phenolic resin with a white core with engraved lettering. Lettering shall be a minimum of 12 mm (1/2 inch) high. Identification signs shall indicate equipment

designation, rated bus amperage, voltage, number of phases, number of wires, and type of EES power branch as applicable. Secure nameplates with screws.

- C. Install adhesive arc flash warning labels on all equipment as required by the latest NFPA 70E. Label shall show specific and correct information for specific equipment based on its arc flash calculations. Label shall show the followings:
 1. Nominal system voltage.
 2. Equipment/bus name, date prepared, and manufacturer name and address.
 3. Arc flash boundary.
 4. Available arc flash incident energy and the corresponding working distance.
 5. Minimum arc rating of clothing.
 6. Site-specific level of PPE.

1.12 SUBMITTALS

- A. Submit to the Owner in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. The Owner's approval shall be obtained for all materials and equipment before delivery to the job site. Delivery, storage or installation of materials and equipment which has not had prior approval will not be permitted.
- C. All submittals shall include three copies (or one electronic) of adequate descriptive literature, catalog cuts, shop drawings, test reports, certifications, samples, and other data necessary for the Owner to ascertain that the proposed materials and equipment comply with drawing and specification requirements. Catalog cuts submitted for approval shall be legible and clearly identify specific materials and equipment being submitted.
- D. Submittals for individual systems and equipment assemblies which consist of more than one item or component shall be made for the system or assembly as a whole. Partial submittals will not be considered for approval.
 1. Mark the submittals, "SUBMITTED UNDER SECTION_____".
 2. Submittals shall be marked to show specification reference including the section and paragraph numbers.
 3. Submit each section separately.
- E. The submittals shall include the following:

1. Information that confirms compliance with contract requirements. Include the manufacturer's name, model or catalog numbers, catalog information, technical data sheets, shop drawings, manuals, pictures, nameplate data, and test reports as required.

F. Maintenance and Operation Manuals:

1. Submit as required for systems and equipment specified in the technical sections. Furnish in hardcover binders or an approved equivalent.
2. Inscribe the following identification on the cover: the words "MAINTENANCE AND OPERATION MANUAL," the name and location of the system, material, equipment, building, name of Contractor, and contract name and number. Include in the manual the names, addresses, and telephone numbers of each subcontractor installing the system or equipment and the local representatives for the material or equipment.
3. Provide a table of contents and assemble the manual to conform to the table of contents, with tab sheets placed before instructions covering the subject. The instructions shall be legible and easily read, with large sheets of drawings folded in.
4. The manuals shall include:
 - a. Internal and interconnecting wiring and control diagrams with data to explain detailed operation and control of the equipment.
 - b. A control sequence describing start-up, operation, and shutdown.
 - c. Description of the function of each principal item of equipment.
 - d. Installation instructions.
 - e. Safety precautions for operation and maintenance.
 - f. Diagrams and illustrations.
 - g. Periodic maintenance and testing procedures and frequencies, including replacement parts numbers.
 - h. Performance data.
 - i. Pictorial "exploded" parts list with part numbers. Emphasis shall be placed on the use of special tools and instruments. The list shall indicate sources of supply, recommended spare and replacement parts, and name of servicing organization.
 - j. List of factory approved or qualified permanent servicing organizations for equipment repair and periodic testing and maintenance, including addresses and factory certification qualifications.

- G. Approvals will be based on complete submission of shop drawings, manuals, test reports, certifications, and samples as applicable.

1.13 SINGULAR NUMBER

- A. Where any device or part of equipment is referred to in these specifications in the singular number (e.g., "the switch"), this reference shall be deemed to apply to as many such devices as are required to complete the installation as shown on the drawings.

1.15 ACCEPTANCE CHECKS AND TESTS

- A. The Contractor shall furnish the instruments, materials, and labor for tests.
- B. Where systems are comprised of components specified in more than one section of Division 26, the Contractor shall coordinate the installation, testing, and adjustment of all components between various manufacturer's representatives and technicians so that a complete, functional, and operational system is delivered to the Owner.
- C. When test results indicate any defects, the Contractor shall repair or replace the defective materials or equipment, and repeat the tests for the equipment. Repair, replacement, and re-testing shall be accomplished at no additional cost to the Owner.

1.16 WARRANTY

- A. All work performed and all equipment and material furnished under this Division shall be free from defects and shall remain so for a period of one year from the date of acceptance of the entire installation by the Contracting Officer for the Owner.

1.17 INSTRUCTION

- A. Instruction to designated Owner personnel shall be provided for the particular equipment or system as required in each associated technical specification section.
- B. Furnish the services of competent and factory-trained instructors to give full instruction in the adjustment, operation, and maintenance of the specified equipment and system, including pertinent safety requirements. Instructors shall be thoroughly familiar with all aspects of the installation, and shall be factory-trained in operating theory as well as practical operation and maintenance procedures.
- C. A training schedule shall be developed and submitted by the Contractor and approved by the Owner at least 30 days prior to the planned training.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

---END---

SECTION 26 51 00
EXTERIOR CEILING LIGHTING
ALTERNATE 1

PART 1 - GENERAL

1.1 DESCRIPTION:

- A. This section specifies the furnishing, installation, and connection of the interior lighting systems. The terms "lighting fixture," "fixture," and "luminaire" are used interchangeably.

1.2 RELATED WORK

- B. Section 02 41 00, DEMOLITION: Removal and disposal of lamps and ballasts.
- E. Section 26 05 11, REQUIREMENTS FOR ELECTRICAL INSTALLATIONS: Requirements that apply to all sections of Division 26.

1.3 QUALITY ASSURANCE

- A. Quality Assurance shall be in accordance with Paragraph, QUALIFICATIONS (PRODUCTS AND SERVICES) in Section 26 05 11, REQUIREMENTS FOR ELECTRICAL INSTALLATIONS.

1.4 SUBMITTALS

- A. Submit in accordance with Paragraph, SUBMITTALS in Section 26 05 11, REQUIREMENTS FOR ELECTRICAL INSTALLATIONS, and the following requirements:
1. Shop Drawings:
 - a. Submit the following information for each type of lighting fixture designated on the LIGHTING FIXTURE SCHEDULE, arranged in order of lighting fixture designation.
 - b. Material and construction details, include information on housing and optics system.
 - c. Physical dimensions and description.
 - d. Wiring schematic and connection diagram.
 - e. Installation details.
 - f. Energy efficiency data.
 - g. Photometric data based on laboratory tests complying with IES Lighting Measurements testing and calculation guides.
 - h. Lamp data including lumen output (initial and mean), color rendition index (CRI), rated life (hours), and color temperature (degrees Kelvin).

- i. Ballast data including ballast type, starting method, ambient temperature, ballast factor, sound rating, system watts, and total harmonic distortion (THD).
 - j. For LED lighting fixtures, submit US DOE LED Lighting Facts label, and IES L70 rated life.
2. Manuals:
- a. Submit, simultaneously with the shop drawings, complete maintenance and operating manuals, including technical data sheets, wiring diagrams, and information for ordering replacement parts.
 - b. If changes have been made to the maintenance and operating manuals originally submitted, submit updated maintenance and operating manuals two weeks prior to the final inspection.
3. Certifications: Two weeks prior to final inspection, submit the following.
- a. Certification by the Contractor that the interior lighting systems have been properly installed and tested.

1.5 APPLICABLE PUBLICATIONS

- A. Publications listed below (including amendments, addenda, revisions, supplements, and errata) form a part of this specification to the extent referenced. Publications are referenced in the text by designation only.
- B. American Society for Testing and Materials (ASTM):
C635/C635M-22..... Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings
- C. Environmental Protection Agency (EPA):
40 CFR 261-21..... Identification and Listing of Hazardous Waste
- D. Federal Communications Commission (FCC):
CFR Title 47, Part 15.. Radio Frequency Devices
CFR Title 47, Part 18.. Industrial, Scientific, and Medical Equipment
- E. Illuminating Engineering Society of North America (IESNA):
LM-79-19..... Electrical and Photometric Measurements of Solid-State Lighting Products
LM-80-21..... Measuring Lumen Maintenance of LED Light Sources

- LM-82-19..... Characterization of LED Light Engines and LED
Lamps for Electrical and Photometric Properties
as a Function of Temperature
- F. Institute of Electrical and Electronic Engineers (IEEE):
C62.41-91(R1995)..... Surge Voltages in Low Voltage AC Power Circuits
- G. International Code Council (ICC):
IBC-21..... International Building Code
- H. National Electrical Manufacturer's Association (NEMA):
C78.376-14 (R2021)..... Chromaticity of Fluorescent Lamps
C82.1-04(S2021)..... Lamp Ballasts - Line Frequency Fluorescent Lamp
Ballasts
C82.2-02(S2021)..... Method of Measurement of Fluorescent Lamp
Ballasts
C82.4-17..... Lamp Ballasts - Ballasts for High-Intensity
Discharge and Low-Pressure Sodium (LPS) Lamps
(Multiple-Supply Type)
C82.11-17..... Lamp Ballasts - High Frequency Fluorescent Lamp
Ballasts
LL 9-11..... Dimming of T8 Fluorescent Lighting Systems
SSL 1-16..... Electronic Drivers for LED Devices, Arrays, or
Systems
- I. National Fire Protection Association (NFPA):
70-23..... National Electrical Code (NEC)
101-21..... Life Safety Code
- J. Underwriters Laboratories, Inc. (UL):
496-17..... Lampholders
542-05..... Fluorescent Lamp Starters
844-12..... Luminaires for Use in Hazardous (Classified)
Locations
924-16..... Emergency Lighting and Power Equipment
935-01..... Fluorescent-Lamp Ballasts
1029-94..... High-Intensity-Discharge Lamp Ballasts
1029A-06..... Outline of Investigation for Ignitors and
Related Auxiliaries for HID Lamp Ballasts
1574-04..... Standard for Safety Track Lighting Systems
1598-21..... Standard for Safety Luminaires
2108-15..... Standard for Safety Low-Voltage Lighting
Systems

8750-15.....Standard for Safety Light Emitting Diode (LED)

Light Sources for Use in Lighting Products

SPEC WRITER NOTE: Delete between // ---- // if not applicable to project. Also delete any other item or paragraph not applicable to the section and renumber the paragraphs.

PART 2 - PRODUCTS

2.0 ALLOWANCE: Include a material only allowance of \$300 per fixture totaling \$2,700.

2.1 LIGHTING FIXTURES

- A. Shall be in accordance with NFPA, UL, as shown on drawings, and as specified.
- B. Sheet Metal:
 - 1. Shall be formed to prevent warping and sagging. Housing, trim and lens frame shall be true, straight (unless intentionally curved), and parallel to each other as designed.
 - 2. Wireways and fittings shall be free of burrs and sharp edges, and shall accommodate internal and branch circuit wiring without damage to the wiring.
 - 3. When installed, any exposed fixture housing surface, trim frame, door frame, and lens frame shall be free of light leaks.
 - 4. Hinged door frames shall operate smoothly without binding. Latches shall function easily by finger action without the use of tools.
- C. Ballasts and lamps shall be serviceable while the fixture is in its normally installed position. Ballasts shall not be mounted to removable reflectors or wireway covers unless so specified.
- D. Lamp Sockets:
 - 1. Fluorescent: Single slot entry type, requiring a one-quarter turn of the lamp after insertion. Lampholder contacts shall be the biting edge type.
 - 2. Compact Fluorescent: 4-pin.
 - 3. High Intensity Discharge (HID): Porcelain.
- E. Recessed fixtures mounted in an insulated ceiling shall be listed for use in insulated ceilings.
- F. Mechanical Safety: Lighting fixture closures (lens doors, trim frame, hinged housings, etc.) shall be retained in a secure manner by captive

screws, chains, aircraft cable, captive hinges, or fasteners such that they cannot be accidentally dislodged during normal operation or routine maintenance.

G. Metal Finishes:

1. The manufacturer shall apply standard finish (unless otherwise specified) over a corrosion-resistant primer, after cleaning to free the metal surfaces of rust, grease, dirt and other deposits. Edges of pre-finished sheet metal exposed during forming, stamping or shearing processes shall be finished in a similar corrosion resistant manner to match the adjacent surface(s). Fixture finish shall be free of stains or evidence of rusting, blistering, or flaking, and shall be applied after fabrication.
2. Interior light reflecting finishes shall be white with not less than 85 percent reflectances, except where otherwise shown on the drawing.
3. Exterior finishes shall be as shown on the drawings.

H. Lighting fixtures shall have a specific means for grounding metallic wireways and housings to an equipment grounding conductor.

I. Light Transmitting Components for Fluorescent Fixtures:

1. Shall be 100 percent virgin acrylic.
2. Flat lens panels shall have not less than 3 mm (1/8 inch) of average thickness.
3. Unless otherwise specified, lenses, reflectors, diffusers, and louvers shall be retained firmly in a metal frame by clips or clamping ring in such a manner as to allow expansion and contraction without distortion or cracking.

J. Lighting fixtures in hazardous areas shall be suitable for installation in Class and Division areas as defined in NFPA 70.

K. Compact fluorescent fixtures shall be manufactured specifically for compact fluorescent lamps with ballast integral to the fixture. Assemblies designed to retrofit incandescent fixtures are prohibited except when specifically indicated for renovation of existing fixtures.
with that of surgical light.

2.10 LED LIGHT FIXTURES

A. General:

1. LED light fixtures shall be in accordance with IES, NFPA, UL, as shown on the drawings, and as specified.

2. LED light fixtures shall be Reduction of Hazardous Substances (RoHS)-compliant.
 3. LED drivers shall include the following features unless otherwise indicated:
 - a. Minimum efficiency: 85% at full load.
 - b. Minimum Operating Ambient Temperature: -20° C. (-4° F.)
 - c. Input Voltage: 120 - 277V (±10%) at 60 Hz.
 - d. Integral short circuit, open circuit, and overload protection.
 - e. Power Factor: ≥ 0.95 .
 - f. Total Harmonic Distortion: $\leq 20\%$.
 - g. Comply with FCC 47 CFR Part 15.
 4. LED modules shall include the following features unless otherwise indicated:
 - a. Comply with IES LM-79 and LM-80 requirements.
 - b. Minimum CRI: 80 or higher. Minimum Color Fidelity Index (IES Rf): 80 or higher.
 - c. Color temperature between 3500° - 5000°K and as specified in the drawings' LIGHTING FIXTURE SCHEDULE.
 - d. Minimum Rated Life: 50,000 hours per IES L70.
 - e. Light output lumens as indicated in the LIGHTING FIXTURE SCHEDULE.
- B. LED Downlights:
1. Housing, LED driver, and LED module shall be products of the same manufacturer.
- C. LED Troffers:
1. LED drivers, modules, and reflector shall be accessible, serviceable, and replaceable from below the ceiling.
 2. Housing, LED driver, and LED module shall be products of the same manufacturer.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Installation shall be in accordance with the NEC, manufacturer's instructions, and as shown on the drawings or specified.
- B. Align, mount, and level the lighting fixtures uniformly.
- C. Wall-mounted fixtures shall be attached to the studs in the walls, or to a 20 gauge metal backing plate that is attached to the studs in the

walls. Lighting fixtures shall not be attached directly to gypsum board.

D. Lighting Fixture Supports:

1. Shall provide support for all of the fixtures. Supports may be anchored to channels of the ceiling construction, to the structural slab or to structural members within a partition, or above a suspended ceiling.
2. Shall maintain the fixture positions after cleaning and relamping.
3. Shall support the lighting fixtures without causing the ceiling or
6. Hardware for recessed lighting fixtures:
 - a. All fixture mounting devices connecting fixtures to the ceiling system or building structure shall have a capacity for a horizontal force of 100 percent of the fixture weight and a vertical force of 400 percent of the fixture weight.
 - b. Mounting devices shall clamp the fixture to the ceiling system structure (main grid runners or fixture framing cross runners) at four points in such a manner as to resist spreading of these supporting members. Each support point device shall utilize a screw or approved hardware to "lock" the fixture housing to the ceiling system, restraining the fixture from movement in any direction relative to the ceiling. The screw (size No. 10 minimum) or approved hardware shall pass through the ceiling member (T-bar, channel or spline), or it may extend over the inside of the flange of the channel (or spline) that faces away from the fixture, in a manner that prevents any fixture movement.
 - c. In addition to the above, the following is required for fixtures exceeding 9 kg (20 pounds) in weight.
 - 1) Where fixtures mounted in ASTM Standard C635 "Intermediate Duty" and "Heavy Duty" ceilings and weigh between 9 kg and 25 kg (20 pounds and 56 pounds), provide two 12 gauge safety hangers hung slack between diagonal corners of the fixture and the building structure.
 - 2) Where fixtures weigh over 25 kg (56 pounds), they shall be independently supported from the building structure by approved hangers. Two-way angular bracing of hangers shall be provided to prevent lateral motion.

- d. Where ceiling cross runners are installed for support of lighting fixtures, they must have a carrying capacity equal to that of the main ceiling runners and be rigidly secured to the main runners.
7. Surface mounted lighting fixtures:
- a. Fixtures shall be bolted against the ceiling independent of the outlet box at four points spaced near the corners of each unit. The bolts (or stud-clips) shall be minimum 6 mm (1/4 inch) bolt, secured to main ceiling runners and/or secured to cross runners. Non-turning studs may be attached to the main ceiling runners and cross runners with special non-friction clip devices designed for the purpose, provided they bolt through the runner, or are also secured to the building structure by 12 gauge safety hangers. Studs or bolts securing fixtures weighing in excess of 25 kg (56 pounds) shall be supported directly from the building structure.
 - b. Where ceiling cross runners are installed for support of lighting fixtures, they must have a carrying capacity equal to that of the main ceiling runners and be rigidly secured to the main runners.
 - c. Fixtures less than 6.8 kg (15 pounds) in weight and occupying less than 3715 sq cm (two square feet) of ceiling area may, when designed for the purpose, be supported directly from the outlet box when all the following conditions are met.
 - 1) Screws attaching the fixture to the outlet box pass through round holes (not key-hole slots) in the fixture body.
 - 2) The outlet box is attached to a main ceiling runner (or cross runner) with approved hardware.
 - 3) The outlet box is supported vertically from the building structure.
 - d. Fixtures mounted in open construction shall be secured directly to the building structure with approved bolting and clamping devices.
8. Single or double pendant-mounted lighting fixtures:
- a. Each stem shall be supported by an approved outlet box mounted swivel joint and canopy which holds the stem captive and provides spring load (or approved equivalent) dampening of fixture oscillations. Outlet box shall be supported vertically from the building structure.
9. Outlet boxes for support of lighting fixtures (where permitted) shall be secured directly to the building structure with approved

- devices or supported vertically in a hung ceiling from the building structure with a nine gauge wire hanger, and be secured by an approved device to a main ceiling runner or cross runner to prevent any horizontal movement relative to the ceiling.
- E. Furnish and install the new lamps as specified for all lighting fixtures installed under this project, and for all existing lighting fixtures reused under this project.
 - F. The electrical and ceiling trades shall coordinate to ascertain that approved lighting fixtures are furnished in the proper sizes and installed with the proper devices (hangers, clips, trim frames, flanges, etc.), to match the ceiling system being installed.**
 - G. Bond lighting fixtures to the grounding system as specified in Section 26 05 26, GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS.
 - H. At completion of project, replace all defective components of the lighting fixtures at no cost to the Owner.

3.2 ACCEPTANCE CHECKS AND TESTS

- A. Perform the following:
 - 1. Visual Inspection:
 - a. Verify proper operation by operating the lighting controls.
 - b. Visually inspect for damage to fixtures, lenses, reflectors, diffusers, and louvers. Clean fixtures, lenses, reflectors, diffusers, and louvers that have accumulated dust, dirt, or fingerprints during construction.
 - 2. Electrical tests:
 - a. Exercise dimming components of the lighting fixtures over full range of dimming capability by operating the control devices(s) in the presence of the Owner. Observe for visually detectable flicker over full dimming range, and replace defective components at no cost to the Owner.
 - b.

3.3 FOLLOW-UP VERIFICATION

- A. Upon completion of acceptance checks and tests, the Contractor shall show by demonstration in service that the lighting systems are in good operating condition and properly performing the intended function.

---END---