
PROJECT MANUAL FOR
2016 ROOF REPLACEMENT PROJECT
WHEAT RIDGE MUNICIPAL COURT



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Prepared for:

City of Wheat Ridge
Wheat Ridge, Colorado

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SECTION 010000 GENERAL REQUIREMENTS

PART 1 - GENERAL

1.01 QUALITY ASSURANCE

- A. Comply with industry standards except when specified requirements indicate more rigid standards or precise workmanship.
- B. Comply with manufacturer's instructions in full detail, including each step in sequence.
- C. Provide copies of these Specifications to all subcontractors, and maintain a copy at the job site for the duration of the project.
- D. Notify Engineer verbally, followed in writing, of any condition that Contractor believes will result in unsatisfactory performance, or of any items of non-conformance between these Specifications and manufacturer's recommendations or instructions.

1.02 PROJECT MEETINGS

- A. Attendance is mandatory for all meetings called by Owner or Engineer.
- B. Conduct a pre-construction meeting 10 working days prior to the start of full-scale construction to review coordination and access issues as well as all other necessary items. The delivery of materials or equipment shall not occur until the pre-construction meeting has occurred.
 - 1. Attendance:
 - a. Provide attendance by authorized representatives of the Contractor and major subcontractors. Contractor shall coordinate attendance of these parties. Work shall not begin until such parties have been included in the pre-construction meeting.
 - b. The Engineer will advise other interested parties, including the Owner, and request their attendance.
 - 2. Minimum agenda: Data will be distributed and discussed on at least the following items:
 - a. Organizational arrangement of Contractor's forces and personnel, and those of subcontractors, materials suppliers, Owner, and Engineer;
 - b. Channels and procedures for communication;
 - c. Construction schedule, including sequence of critical Work;
 - d. Contract Documents, including distribution of original Documents and revisions;
 - e. Processing of Shop Drawings and data submitted to Engineer for review;
 - f. Processing of Applications for Payment, field decisions, and Change Orders;
 - g. Rules and regulations governing performance of the Work; and
 - h. Procedures for security, quality control, housekeeping, and related matters.

- C. Schedule and administer project meetings with the Owner's on-site representative and the Engineer throughout the progress of the Work.
1. Attendance:
 - a. To the maximum practical extent, assign the same person or persons to represent the Contractor at project meetings throughout progress of the Work.
 - b. Subcontractors, materials suppliers, and others may be invited to attend those project meetings in which their aspect of the Work is involved.
 2. Minimum agenda:
 - a. Review, revise as necessary, and approve minutes of previous meetings.
 - b. Review progress of the Work since last meeting, including status of submittals.
 - c. Identify problems that impede planned progress.
 - d. Develop corrective measures and procedures to regain planned schedule.
 - e. Complete other current business.
 3. Revisions to minutes:
 - a. Unless published minutes are challenged in writing prior to the next regularly scheduled progress meeting, they will be accepted as properly stating the activities and decisions of the meeting.
 - b. Persons challenging published minutes shall reproduce and distribute copies of the challenge to all indicated recipients of the particular set of minutes.
 - c. Challenge to minutes shall be settled as priority portion of "old business" at the next regularly scheduled meeting.
- D. Contractor representative attending the meetings must have the authority to make binding decisions for the Contractor.
- E. Engineer shall record and distribute minutes of each meeting to the attendees and those delegates identified by the Owner.

1.03 NOTIFICATIONS

- A. Contractor shall provide an updated work schedule on a weekly basis that outlines the anticipated crew levels and work to be performed. This information shall be sent by fax or emailed to both the Engineer and Owner prior to the start of the work week.
- B. On a daily basis, prior to the start of Work, Contractor shall fax or email both the Engineer and the Owner the anticipated work to be completed at the site and crew level. If no work will be on-going, notification shall still be sent so notifying all parties.

1.04 SEQUENCING AND SCHEDULING

- A. The Contractor is prohibited from using any of the facilities except those specifically identified in the bidding documents.
- B. Provide sufficient and adequate materials, personnel, and equipment to facilitate rapid completion of the Work without undue delays. Conduct the Work in a manner to minimize inconvenience to tenants and employees.

1.05 WEATHER CONDITIONS

- A. No Work shall be performed under adverse weather conditions, immediately after rain, or when temperatures are above or below manufacturer's recommended limitations for installation.
- B. Proceed with the Work only when weather forecasts are favorable for proper development of the performance characteristics of the materials.
- C. Protect the building from inclement weather and be responsible for all damage repairs necessary due to lack of protection.

1.06 PRE-JOB DAMAGE SURVEY OF FACILITY

- A. Perform a thorough pre-job survey of property and all affected areas of the building with Owner prior to starting the Work in order to document existing damage, and provide a written summary to the Owner with photographs. Damaged items identified on this list will not be the responsibility of Contractor unless further damaged by Contractor during execution of Project.

1.07 CORRECTION OF DAMAGE TO PROPERTY

- A. Any damage to building or property not identified in the pre-job damage survey as having resulted from execution of this Contract shall be corrected by the Contractor at no additional expense to Owner.

1.08 WORKING HOURS

- A. Allowable working hours will be discussed and documented during the Pre-bid meeting. Work shall be performed allowing the Owner access as agreed upon by Owner and Contractor.
- B. Submit work schedule to Owner prior to commencement of Work.
- C. The Contractor should be aware that occasionally, the Owner may require that noise-making activities be suspended during the previously stated work hours.
- D. Contractor shall comply with local noise restrictions during performance of the work.

PART 2 - PRODUCTS

2.01 GENERAL

- A. Ensure that all materials are new, first quality, and delivered to job site in the manufacturer's original, unopened and properly labeled containers.
- B. Ensure that product labels indicate manufacturer's name, name and type of material, applicable specification number, color, mixing and installation instructions, and curing time, if applicable.
- C. Ensure that containers of those products having a critical shelf life bear the date that the material was packaged, or the expiration date of the material.
- D. Handle materials in a manner to prevent damage, breakage, or chipping.

PART 3 - EXECUTION - NOT USED

END OF SECTION 010000

SECTION 011100 SUMMARY OF WORK

PART 1 - GENERAL

1.01 DESCRIPTION

- A. The purpose of this project is to replace the existing metal roof panels on one roof area at the Wheat Ridge Municipal Court Building located in Wheat Ridge, Colorado. Active leaks have been reported over approximately 3,810 square feet of roof area over selected court rooms. The roof has existing exposed fastener system with a 2 ¼: 12 roof pitch and no roof penetrations.
- B. Include all Work listed in these Specifications and incidentals thereto. Require that all phases of the Work be executed by skilled craftsmen experienced in their respective trades.

1.02 WORK INCLUDED IN THE CONTRACT DOCUMENTS

- A. Provide labor, materials, equipment and supervision to perform the work as required by the Project Manual, and as generally outlined below. Refer to the technical sections and Drawings for detailed description of work. All work shall be performed in accordance applicable building codes and accepted industry standards.
- B. Examine the site and verify dimensions and conditions necessary for completion of the Work. Conditions that exist prior to or during the bidding process shall be considered pre-existing conditions. Conditions that may materially impact the performance of the work that are not indicated on the construction documents shall be noted to the Engineer/Owner for their review prior to submittal of the bid.
- C. Coordinate necessary project review by all material manufacturer representatives to provide maximum manufacturer warranty for all installed products.
- D. **Base Bid Work** - Provide labor, materials, equipment and supervision to perform the work as required by the Project Manual, and as generally outlined below. Refer to the Technical Sections and Drawings for detailed description of work. The following descriptions of work are coordinated to the items listed in the Bid Form.
 - 1. Provide full-time site supervisor, all protection barriers, work curtains, and overhead protection to restrict access to work areas and to maintain safety for the building occupants and pedestrians, and to minimize, control, and contain any debris generated by the work of this Contract. Remove all at the completion of the work.
 - 2. Demolish, remove, salvage/recycle or dispose of the existing roofing systems on the roof areas identified for replacement, including metal roof panels and associated assemblies. Removal shall maintain and protect the underlying substrate and insulation materials.
 - 3. Repair all damaged substrate and install new ½ inch thick plywood deck over the existing insulation materials.
 - 4. Install new self-adhering moisture resistant membrane over the new plywood deck materials.
 - 5. Install new metal roof panels with all termination flashings and seals to provide a watertight roof system installation.

- E. **Alternate No. 1:** Provide a 20 year material and installation warranty in lieu of a 15 year warranty.
- F. Verify all unit priced repair quantities prior to beginning the Work with the Owner/Engineer. Provide documentation of same to Owner/Engineer prior to start of work. Provide documentation and accounting of actual repair quantities with each Application for Payment.
- G. Provide sufficient and adequate personnel, materials, and equipment to accomplish the Work in a timely manner. Include all incidentals necessary to accomplish the Work listed in these Specifications. Require that skilled craftsmen experienced in their respective trades execute all phases of the Work.
- H. Require that a full-time Superintendent with ten or more years' experience be on-site at all times that work is being performed. A project Superintendent approved by the Owner shall be present any time there are personnel under the Contractor's agreement on the property.
- I. Contractor may subcontract any phase or portion of the Work. However, each subcontractor must be approved by the Owner and such subcontract shall not relieve Contractor from enforcing the use of all required safety equipment by subcontractor and its employees providing any phase of the Work. Require and verify that all materials and methods used by subcontractor are consistent with materials, methods and procedures specified in the Contract Documents.
- J. Provide Contractor's 2-year labor and workmanship warranty and product warranties as outlined in the technical specifications.
- K. Clean up all construction debris in areas used in construction of this project on a daily basis and remove from site. Upon completion of the project, perform final clean to the satisfaction of the Owner and Engineer. Debris removal may not interfere with Owner's use for housekeeping personnel and shall not be placed in Owner or building tenant dumpsters.
- L. To achieve satisfactory performance from the Work, it may be necessary to perform unanticipated work items encountered during the course of the Work, as recommended by the Engineer. Notify Owner and Engineer of any additional required work encountered not described in the Specifications.
- M. Change orders for additional payment will only be considered for such additional work items if they represent a substantial change to the Work.

1.03 SCHEDULING AND COORDINATION

- A. Develop a detailed work schedule that includes sequencing of work and duration of work items for each designated work phase. The Contractor shall meet with the Owner for the purpose of expounding in detail the Work schedule. Publish up-dated schedules on a weekly basis, and provide copies to the Engineer and the Owner.
- B. Coordinate the Work with Owner and conduct Work in a manner to minimize inconvenience, and to expedite the Work to maintain the Project Schedule.

- C. The work of this project can occur Sunday through Sunday during daylight between the hours of 8:00 a.m. and 5:00 p.m. Establish a consistent daily work schedule with the Owner. Obtain the Owner's approval prior to revising the established daily work schedule.
- D. Provide sufficient and adequate materials, personnel, and equipment to facilitate rapid completion of the Work without undue delays.

1.04 PERMITS/LICENSING

- A. Contractor shall obtain and pay for all work permits and licenses imposed by all applicable authorities.
- B. A pedestrian protection permit will be required in addition to a roofing permit.

1.05 OWNER OCCUPANCY

- A. The premises will remain occupied during the entire construction period for the conduct of normal operations. Cooperate with Owner in scheduling operations to minimize conflict and to facilitate Owner usage.
- B. Contractor shall at all times conduct its operations as to ensure the least inconvenience to the general public. All Work shall be performed in a manner to protect the building and public from damage and in accordance with California OSHA requirements.
- C. Predetermine and obtain approval in advance from Owner and tenant for vertical and horizontal transportation of labor, materials and equipment around or within the building

1.06 CONTRACTOR USE OF PREMISES

- A. The Contractor and all subcontractors, vendors and materials suppliers accessing the property in the execution of the project must coordinate with the Owner's Representative concerning use of the premises, parking, loading, and unloading. Contractors must comply with Owner's requirements and applicable provisions to access and work on the property.
- B. Where it is necessary for the Contractor to use portions of existing facility or grounds for operations, such use shall be strictly in accordance with requirements and approval of the Owner. Contractor shall provide proper and safe access to Owner occupied areas at all times.
- C. Unless otherwise indicated or specified, or unless otherwise directed by the Owner, existing water, gas, lighting, power, and telephone conduits and wires, sewer lines, and other surface and subsurface structures and lines, shall be maintained operational during progress of Work; should Contractor in performance of the Work, disturb, disconnect or damage any of the above, expenses arising from disturbance, or in replacing or repair, shall be borne by Contractor.
- D. Contractor shall:
 - 1. Not unreasonably encumber site with materials and equipment.
 - 2. Not load structures with weight that will overload structure.
 - 3. Assume full responsibility for protection and safekeeping of stored products.
 - 4. Obtain approval from Owner, and the governing authorities regarding trailer/dumpster storage and the restriction of traffic or parking.

- 5. Obtain and pay for use of additional storage land and/or work areas as needed for operations.
- E. Upon receipt by the Contractor of Notice to Proceed from the Owner, the Owner will make the Project site available to the Contractor to execute the Work under the Contract.

1.07 EXISTING CONDITIONS

- A. Existing conditions are reflected correctly to the best of the Owner's and Engineers knowledge. Should minor conditions be encountered which are not exactly as indicated, modification to accommodate new Work shall be made as required at no additional expense to the Owner.
- B. Verify existing conditions and notify Engineer should the conditions vary from those described in the Contract Documents.
- C. All requests for change orders for additional payment will not be considered for such additional work unless previously approved by the Owner in coordination with the Contractor's contract.

1.08 METHOD OF PAYMENT

- A. Payment shall be made based on 95% of actual materials installed and work completed with a five percent (5%) retainage. Contractor may invoice for installed materials only, unless otherwise agreed in writing with Owner/Agent. Contractor may only invoice for work completed to-date, not for future work.
- B. Contractor shall submit applications on a monthly basis. Release of Liens documentation is required with each Application for Payment.
- C. Allow at least five working days for review by the Engineer following Engineer's receipt of the Application for Payment.

PART 2 PRODUCTS: NOT USED

PART 3 EXECUTION: NOT USED

END OF SECTION 01010

SECTION 015000

CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. General requirements for utilities and services, construction aids, barriers and enclosures, security, access and parking, temporary controls, project signs and field offices and sheds.

1.02 GENERAL REQUIREMENTS

- A. Contractor shall provide all construction facilities and temporary controls specified in this Section and as necessary for the proper and expeditious prosecution of the Work.
- B. Contractor shall make, or have made, and pay all charges for all connections to and distribution from existing services and sources of supply.
- C. Requirements of service and utility authorities relating to the Work shall be ascertained by Contractor. Comply with all such requirements, including those relating to continued protection and maintenance until completion of Work.
- D. Materials and construction for Construction facilities and temporary controls may be new or used, shall be adequate in capacity for required usage, and must not create unsafe conditions. Comply with requirements of Federal, State and Local authorities having jurisdiction.
- E. Construction facilities and temporary controls shall be maintained by Contractor in usable condition at all times until completion of Work or their removal is authorized by Engineer or Owner's Representative.
- F. Relocate temporary services and facilities as required by progress of construction, by storage or work requirements, to accommodate requirements of Owner and other contractors employed at the Site, and when directed by Owner's Representative.
- G. Completely remove temporary services and facilities when their use is no longer required and at completion of Project, when directed by Owner's Representative.
- H. Clean and repair damage caused by temporary services and facilities to new condition for new work and to a condition as good as or better than existed prior to start of Work for existing construction, services, and facilities.

1.03 TEMPORARY UTILITIES AND SERVICES

- A. General: Arrange and pay for connections, materials and appurtenances required to provide temporary utilities and services.
- B. Electricity
 - 1. Coordinate connection to existing power service with the Owner. Power consumption shall not disrupt Owner's need for continuous service.
 - 2. Owner will pay cost of energy used. Exercise measures to conserve energy.
 - 3. Connections to the facility power supply to be provided by Contractor.

- C. Water Services
 - 1. Coordinate with Owner regarding connection to existing water source for construction operations.
 - 2. Owner will pay cost of water used. Exercise measures to conserve water.
 - 3. Connections to the facility water supply to be provided by Contractor.
- D. Sanitary Facilities
 - 1. To be discussed and documented at the pre-bid meeting.
- E. Temporary Fire Protection, if applicable
 - 1. Construction practices, including cutting and welding and fire protection during construction shall be in accordance with applicable requirements of Federal, State, and Local authorities having jurisdiction. Provide prominently located multi-purpose type portable fire extinguishers.
 - 2. The Contractor shall provide a dedicated person to perform fire watch duties any time that burning or welding occurs on the project.
- F. Signage: No sign or advertisement shall be displayed without the Owner's approval.
- G. Telephone: On-site Contractor supervisor shall have a cellular telephone and shall have a crew member available that is fluent in English. Telephone number shall be provided to both the Owner and Engineer.

1.04 BARRIERS AND PROTECTION

- A. Protect facility, glass doors and windows, equipment, sidewalks, plantings, pavements and parking areas impacted by Work. Contractor is responsible for cleaning or repairing any surfaces or property that are marked or otherwise damaged as a result of the Work to the satisfaction of Owner, and at the Contractor's expense. Actively provide and construct barriers to protect the pre-mentioned components.
- B. Provide barriers to prevent unauthorized entry to construction areas and allow for Owner's use of site, and to protect existing facilities and adjacent properties from damage from construction operations and demolition.
- C. Provide barriers to prevent dispersion of construction dust and debris during Work. As a minimum, provide "construction tape" around doors and windows to prevent dust infiltration into the facility. Remove barriers and tape and clean tape residue after dust-generating activities are completed.

1.05 STORAGE/STAGING AREA

- A. Coordinate location of staging area with Owner if not shown on the Drawings.
- B. The allowable method of deliveries will be discussed and documented by the Owner during the Pre-bid meeting.
- C. While not in use, store all materials, tools and equipment in previously approved staging area and in locked storage containers.
- D. Store all materials remaining on-site in locked storage containers, in an environment suitable to maintain material properties, and as otherwise required by regulating authorities.
- E. The method of debris removal will be discussed and documented during the Pre-bid meeting.

1.06 SECURITY

- A. Provide security program and facilities to protect Work, existing facilities and Owner's operations from unauthorized entry, vandalism, and theft. Coordinate with Owner's security program. Project security within limits of construction is Contractor's responsibility.

1.07 PARKING

- A. To be discussed and documented at the Pre-bid meeting.

1.08 TEMPORARY CONTROLS:

- A. **Cleaning During Construction:** Contractor at all times shall keep the premises free from accumulation of waste materials and rubbish caused by operations for the entire Work. Provide a collection can at each area used for eating. Pick up garbage daily. Keep Project Site free of garbage, trash, vermin and rodent infestation. Contractor, by agreement, shall require each subcontractor to collect and deposit waste and rubbish caused by subcontractor operations at pre-designated location. Clean interior areas prior to start of finish work. Maintain areas free of dust and other contaminates during finishing operations.
- B. **Traffic Control:** Conduct construction operations and the removal of debris to be sure minimum interference with roads, streets, walks, and other adjacent occupied or used facilities. Do not close or obstruct streets, walks, or other occupied or used facilities without permission from authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations.
- C. **Noise Control:** In and around occupied areas, minimize use of noise producing equipment. Work with noise producing equipment is subject, at all times, to Owner's approval of entire procedure. Use only on a scheduled basis as agreed with Owner's Representative prior to start of construction operations.

1.09 PROTECTION OF PERSONNEL, MATERIALS, EQUIPMENT, AND PROPERTY

- A. **Temporary Protection Against Theft, Damage and Weather**
1. Payment by the Owner for any materials, equipment or labor incorporated into the Work shall not be deemed to be an acceptance by the Owner. The risk of loss to such materials, equipment or cost of labor spent to install such shall remain with the Contractor and the Contractor shall be fully responsible for such materials, equipment, and labor. Stolen, damaged, vandalized, missing equipment or materials or weather damage shall be considered the property of the Contractor until final acceptance by Owner.
 2. The Contractor shall protect and maintain all streets, vegetation, and sidewalks on the site used in transporting equipment and materials during this Contract.
 3. Protect materials and existing facility from weather as they may be adversely affected by the Work of this Contract.
 4. Any Work, existing property and/or contents damaged by failure to provide protection required above shall be removed and replaced with new Work at the Contractor's expense.

1.10 CONSTRUCTION CLEAN-UP

A. Clean-up During Construction:

1. Purpose: Clean-up shall be performed daily to prevent accidents to persons or property, protect all Work in place, and to effect completion of the project in an orderly manner.
2. Extent of Clean-up: Construction clean-up shall consist of the removal of all mud, oil, grease, sand, gravel, dirt, trash, scrap, debris, and excess materials, from any roof, floor space, granite panels, windows, drive or walking surface, that may cause the tripping or sliding of workmen, facility occupants, clients, visitors, pedestrians, ladders, or equipment. Particular attention shall be given to the prevention of stains on surfaces that will be exposed in the finished Work.
3. Loose materials or debris being removed from the site by the Contractor's vehicles, which becomes deposited on the roadways or other outside access areas, shall be cleaned up and removed daily.
4. "Clean" areas will be judged against a "broom-clean" standard.

PART 2 - PRODUCTS - NOT USED.

PART 3 - EXECUTION - NOT USED.

END OF SECTION 01500

SECTION 017000 CONTRACT CLOSE-OUT

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Contract close-out procedures and warranty requirements.

1.02 CLOSE-OUT PROCEDURES

- A. The Construction and finish Work clean-up shall consist of the removal of all excess dirt, trash, scrap, debris, and other excess materials, from the job site, drive and parking areas. Removal shall also include temporary construction items, trailer, and equipment from the Project, and leave the premises in the same conditions upon beginning of the Work.
- B. Prior to request for final review by the Engineer and Owner, procure certification to the effect that construction has been completed in accordance with local code requirements from Building Inspector, and other inspecting agencies having jurisdiction as provided by law. Forward certificates to Engineer with letter requesting formal, final review.
- C. When Contractor considers Work has reached final completion, submit written certification that Contract Documents have been reviewed, Work has been inspected, and that Work is complete in accordance with Contract documents and is ready for Engineer's review.
- D. Prior to final payment, upon substantial completion of project and prior to acceptance by the Owner, a formal "Punch List" shall be developed. This is not to preclude that punch lists shall be made by the Contractor to check the completion of his Work prior to final punch list inspection.
- E. The Punch List will be jointly developed by the Owner, Contractor, Sub-contractors as appropriate, and Engineer. A punch list of Contractor responsible items will be developed and a schedule for the completion of these items will be agreed upon by the cognizant parties.
- F. The Engineer will forward the final formal consolidated punch list to the Contractor for correction with one (1) copy to the Owner.
- G. The Contractor will then be given a limited, but reasonable period of time to complete the items. The Contractor is to notify the Engineer when all punch list items have been completed.
- H. In addition to submittals required by the conditions of the Contract, provide submittals required by governing authorities, and submit a final statement of accounting giving total adjusted Contract Sum, previous payments, and sum remaining due.
- I. The Engineer's review will be made upon receiving formal notification, in writing, from the Contractor that the work is complete. The Engineer will notify the Owner when the punch list items have been completed and the project is ready for final acceptance and payment.
- J. Provide documentation accounting final repair quantities with final Application for Payment. Engineer will issue final Change Order reflecting approved adjustments to Contract Sum not previously made by Change Order.

1.03 POST-JOB SUBMITTALS

- A. Provide all post-job submittals as required by Section 013300.
- B. Submit documentation prior to final application for payment.

1.04 WARRANTIES

- A. Upon completion of the project and prior to final payment, warranties required by technical divisions of Specifications shall be properly executed in duplicate and submitted to the Engineer. Delivery of warranty shall not relieve Contractor from any obligation assumed under the Contract.
- B. Submit Contractor's Warranty covering entire project for two years. In addition, where separate warranties for certain portions of Work are designated are for longer periods within the Specifications, Contractor's Warranty and Manufacturer's warranty shall be extended to cover such longer periods.
- C. Provide manufacturer's warranties as outlined in the specifications.
- D. Warranties shall become valid and operative upon verification of Substantial Completion by Engineer. Warranties shall not apply to Work where damage is result of abuse or neglect by Owner or successor(s) in interest.
- E. Neither final payment, final certificate, nor any provision of the Contract Documents relieves the Contractor from his responsibilities under the warranties.
- F. If, at any time, deficiencies in the Work are discovered which result from a deliberate attempt to defraud the Owner, the Contractor will be held liable for, but not limited to, replacement or correction, regardless of the time limit on the warranty.
- G. If the Contractor, after receipt of written notification from Owner, fails to proceed promptly to comply with the terms of the warranty, the Owner may have the defects corrected and the Contractor and his Surety shall be liable for all expense incurred.
- H. All warranty repairs made shall be detailed to match and blend with adjacent work. Warranty obligations shall include taking necessary steps to provide as close a match and blend (elevation, finish, texture, color, etc.) as possible.

PART 2 PRODUCTS: NOT USED.

PART 3 EXECUTION: NOT USED.

END OF SECTION 017000

SECTION 024113 SELECTIVE DEMOLITION

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Provide all materials, labor, equipment and services necessary for:
 - 1. Removal and disposal of existing roof materials and assemblies in those areas described in the Drawings.

1.02 SEQUENCING AND SCHEDULING

- A. Sequence and schedule demolition work to allow proper access to the Work.
- B. Conduct demolition to minimize interference with existing building components and facility use.
- C. Conduct operations with minimum interference to public or private thoroughfares. Maintain egress and access at all times.
- D. Conduct demolition in a manner to ensure that a watertight system is maintained. If more area is opened that can be closed in a single day, provide adequate protection to prevent water infiltration or damage.
- E. Do not close or obstruct roadways or sidewalks without Owner's written consent.
- F. Utility components must remain in service during the Work.

PART 2 - PRODUCTS: NOT USED

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify that areas to be demolished are clear of encumbrances.
- B. Verify location and protect all utilities in the work area and Contractor staging areas. Notify Owner prior to de-energizing any mechanical or electrical systems.
- C. Beginning of demolition means acceptance of existing conditions.

3.02 PREPARATION

- A. Install all required barricades and work protections prior to beginning demolition.
- B. Protect existing landscaping materials, appurtenances, structures, paving, roofing and cladding, roof-mounted equipment, roof deck and structure, which are not to be demolished.
- C. Relocate or protect existing utilities with a temporary waterproofing system.
- D. Provide barriers and dust control measures as necessary to protect occupied areas of the property and its occupants.

3.03 EXECUTION

- A. Demolish items indicated in the Drawings or as required to complete the Work. Conduct demolition in an orderly and careful manner. Protect materials not identified for demolition.
- B. Evenly cut edges of existing materials that are to be expanded, replaced, or modified.
- C. Patch holes in the roof deck as needed where existing out-of-service equipment has been removed.
- D. Cease operations and notify Owner immediately if adjacent structures or materials appear to be endangered. Do not resume operations until corrective measures have been taken.
- E. Except when instructed otherwise, immediately remove demolished material from site to an appropriate salvage/recycle/disposal site. Clean site daily to ensure clean condition at the beginning and end of the work day.
- F. Do not burn or bury materials on site.

END OF SECTION 024113

SECTION 061636 WOOD PANEL SHEATHING

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Install underlayment as indicated on Drawings and in these specifications as required for a complete and proper installation. The following items are included:
 - 1. Plywood substrate on existing insulating foam
 - 2. Fasteners

1.02 RELATED SECTIONS

- A. Section 013300 – Submittals
- B. Section 072700 – Slopped Roof Underlayment
- C. Section 074113 – Standing Seam Metal Roofing
- D. Section 076100 – Sheet Metal Roofing

1.03 REFERENCE STANDARDS

- A. APA – The Engineered Wood Association
- B. PFS – Third Party Certification Agency
- C. TECO – Third Party Certification Agency

1.04 SUBMITTALS

- A. Provide manufactures current printed clean data sheet on specified products.

1.05 STORAGE AND HANDLING

- A. Materials shall be delivered in manufacturer's original, unopened, and un-damaged containers with identification labels intact.
- B. Protect sheathing and keep under cover in transit and at job site. Store materials horizontal on a clean, dry, flat, surface protected from all possible damage. Protect material from exposed harmful weather conditions. Pick-up / set down off loading required. No drop/slide off delivery truck allowed.
- C. Do not deliver material unduly long before it is required.
- D. Store sheathing on level racks and keep free of ground. Stack to insure proper ventilation and drainage.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURES

- A. Weyerhaeuser
- B. Georgia-Pacific Wood Products LLC
- C. LP Building Products
- D. Alternate manufacturers approved by the Engineer.

2.02 DISCRIPTION

- A. Furnish and install wood panel product sheathing required to provide a smooth plane surface for support of new metal roof panels as described in Contract Documents.

2.03 MATERIALS

A. Sheathing:

1. Basis of Design Substrate: Roofing sheathing shall be ½-inch minimum exterior grade plywood
2. Meet requirements of PS 1-95, PS 2-92, PRP-108 (APA), or PRP-133 (TECO). Except where plywood is specifically indicated on Drawings.
3. Every sheet of sheathing shall be stamped as follows:
 - a. Appropriate APA, TECO, or PFS grade stamp identifying thickness and span rating.
 - b. Sheathing shall be stamped 'Sized for Spacing'.
 - c. Exposure 1 or Exterior.
4. Sheathing shall not exceed 18 percent moisture content when fabricated or more than 19 percent when installed in Project.
5. Sheathing used for same purpose shall be of same thickness. In all cases, thickness specified is a minimum required regardless of span rating.
6. Minimum span ratings for given thicknesses shall be as follows:

Thickness (min)	Span Rating
½-inch nominal	32 / 16

B. Fasteners:

1. Screws: TruFast 8 inch SIPHD fasteners. (Basis of Design)
2. Nails: 15/32-inch and thicker panels - 10d galvanized common or galvanized box

PART 3 EXECUTION

3.01 EXAMINATION

A. Substrate for barrier application.

1. Examine plywood substrate to ensure proper attachment through insulation into metal deck structural sub-strate.
2. Verify existing insulation has no visual damage and is dry and free of snow or ice. Remove and replace any damaged insulation.
3. Beginning of installation is Contractor acceptance of existing conditions.

3.02 INSTALLATION

- A. Fasten sheathing substrate with the fastening pattern defined on the engineering drawings or approved shop drawings for the wind uplift conditions, to structural metal roof deck through the 7-inches of existing insulation.

- B. General:
1. Top of screws or nail heads shall be flush with sheathing surface.
 2. Use of long edge clips to provide spacing between sheathing panels is required. Place long edge clips at 12-inches from ends and 24-inches on center along the long sheathing edge.
- C. Roof Sheathing:
1. Placement:
 - a. Lay face grain at right angles to supports. Provide blocking for support where framing turns at roof overhang.
 - b. Provide 1/8-inch space between sheets at end and long side joints.
 - c. Stagger panel end joints 48-inches minimum.
 2. Nailing: Place screws and nails at least 3/8-inch in from edge.
 3. Size:
 - a. 1/2 -inch actual minimum thickness.
 - b. Do not install any piece of roof sheathing with shortest dimension of less than 24-inches.
- 3.03 PROTECTION**
- A. Protect roof sheathing from moisture until metal roof underlayment is installed.

END OF SECTION 061636

SECTION 076200 SHEET METAL FLASHING AND TRIM

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Install flashing and sheet metal as indicated on Drawings and in these specifications as required for a complete and proper installation. The following items are included:
 - 1. Edge flashing, counterflashing, and trim.
 - 2. Gutters and downspouts

1.02 RELATED SECTIONS

- A. Section 013300 - Submittals
- B. Section 072700 - Slopped Roof Underlayment
- C. Section 074113 - Standing Seam Sheet Metal Roofing

1.03 REFERENCE STANDARDS

- A. ASTM - American Society for Testing Materials
- B. SMACNA - Sheet Metal and Air Conditioning Contractors National Association

1.04 SUBMITTALS

- A. Product Data
 - 1. Pre-finished Galvanized Steel
 - 2. Sealants (Close color match to substrate being applied to)
 - 3. Fasteners
- B. Product Samples
 - 1. Fasteners (1 of each type and length)
 - 2. Metal Color Charts
- C. Shop Drawings
 - 1. Provide details showing material profile, jointing pattern, jointing details, fastening methods, and installation details for all metal components.

1.05 STORAGE AND HANDLING

- A. Stack preformed materials to prevent twisting, bending, or abrasion and to provide ventilation.
- B. Prevent contact with materials during storage that may cause discoloration, staining or damage.

PART 2 PRODUCTS

2.01 SHEET METAL COMPONENTS

- A. Galvanized Steel: ASTM A 525, G90.
- B. Drip Edge, Flashing, Counterflashing, Metal Panels Gutters, and Downspouts: 24-gauge G90 prefinished galvanized steel with Kynar coating.
- C. Gutter Spacers: 20-gauge G90 prefinished galvanized steel with fluoropolymer finish.
- D. Cover Plates, End Caps, Hangers and Miscellaneous Sheet Metal: Same materials, gauge and profile as adjacent material.

2.02 SEALANT

- A. One part non-sag urethane, Type S, Grade NS, Class 25, Use NT: acceptable manufacturers include Sika, Tremko, or approved equal.

2.03 FASTENERS

- A. Fasteners shall be compatible to all materials to which they come in contact.
- B. Fastener spacing and type to be in accordance with the Engineering Drawings or approved shop drawings.

2.04 FABRICATION

- A. Form sections true to shape, accurate in size, square and free from distortion or defects.
- B. Fabricate continuous cleats and starter strips of same material as sheet, interlockable with sheet, in gauge as shown on Drawings.
- C. Form pieces in longest practical lengths, maximum ten feet (10'-0"). Minimum length of metal cap flashing and counterflashing shall be five feet (5'-0"), or length of section where piece is to be installed.
- D. Hem all exposed edges of metal ½ -inch; miter and seam corners.
- E. Form materials with cover plate seam.
- F. Fabricate cap flashing corners from one piece with minimum 18-inch and maximum 36-inch long legs; weld for rigidity, seal with sealant.
- G. Fabricate cap flashing vertical faces with bottom edge formed outward ¼ -inch and hemmed to form drip.
- H. Fabricate with required connection pieces.
- I. Form sections square, true, and accurate in size and free of distortion or defects detrimental to appearance or performance. Allow for expansion at joints.
- J. Slot all holes for fastening counterflashing, coping, pressure bars and cleats as necessary to allow for thermal expansion and contraction. Cover exposed holes with appropriate washers.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify membrane termination and base flashings are in place, sealed, and secure.
- B. Beginning of installation means acceptance of existing conditions.

3.01 INSTALLATION

- A. Field measure site conditions prior to fabricating work.
- B. Apply urethane sealant or butyl tape on surfaces in contact with dissimilar materials.
- C. Install starter and edge strips, and cleats before starting installation.
- D. Install surface-mounted counterflashing and pressure bars true to lines and levels. Seal top with sealant. Secure flashings in place using concealed fasteners. Use exposed fasteners only in locations approved by Engineer.
- E. Lock and seal all joints.
- F. Apply urethane sealant between metal flashings and flashings.
- G. Fit flashings tight in place. Make corners square, surfaces true and straight in planes, and lines accurate to profiles.
- H. Install sealant under cover plate edges prior to installation.
- I. Join lengths with formed seams sealed watertight.
- J. Unless otherwise shown, comply with SMACNA Architectural Sheet Metal Manual, 5th edition.
- K. Coordinate installation of roof perimeter flashing with installation of roof drainage system.
- L. Join gutter sections with riveted lapped joints sealed with sealant. Joints must be lapped 1-inch and riveted 1-inch on center with continuous sealant applied in the lap. Lap joints in the direction of the water flow. Provide for thermal expansion. Attach gutters at eave or fascia to firmly anchored gutter brackets spaced not more than 18-inches apart. Provide end closures and seal watertight with sealant. Slope to downspout.
 - 1. Slip gutter under the vertical leg of the edge metal.
 - 2. Fasten gutter spacers to front of gutter and in the face of the edge metal or fascia. Spacers to be maximum of 18-inches apart.
 - 3. Install gutter with expansion joints at locations indicated, but not exceeding, 50 feet apart. Install expansion-joint caps.
- M. Join downspout sections with 1-½ -inch telescoping joints.
 - 1. Provide hangers with fasteners designed to hold downspouts securely to walls. Locate hangers at top and bottom and at approximately 60-inches O.C. in between.
 - 2. Provide elbows at base of downspout to direct water away from building.

END OF SECTION 076200

SECTION 072700 SLOPED ROOF UNDERLAYMENT

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Install underlayment as indicated on Drawings and in these specifications as required for a complete and proper installation. The following items are included:
 - 1. Self adhering membrane underlayment installed wood substrate.

1.02 RELATED SECTIONS

- A. Section 013300 – Submittals
- B. Section 061636 – Wood Panel Sheathing
- C. Section 074113 – Standing Seam Metal Roofing
- D. Section 076100 – Sheet Metal Roofing

1.03 SUBMITTALS

- A. Provide manufactures current data sheet on specified products.

1.04 STORAGE AND HANDLING

- A. Materials shall be delivered in manufacturer's original, unopened, and un-damaged containers with identification labels intact.
- B. Store materials upright on a clean, dry, flat, surface protected from all possible damage.
- C. Protect material from exposed harmful weather conditions.

PART 2 PRODUCTS

2.01 DISCRIPTION

- A. Sheet membrane roof underlayment designed to adhere to substrate and can withstand elevated roof temperatures. These membranes are vapor impermeable and resist air pressure differentials and provide secondary water intrusion protection.

2.02 MATERIALS

- A. Barrier: "Peel and Stick" type Styrene-Butadiene-Styrene (SBS) rubber modified self-adhering asphalt membrane.
- B. Substrate: ½-inch plywood substrate.

2.03 ACCEPTABLE PRODUCTS

- A. Firestone Building Products – CLAD-GARD SA (basis of design)
- B. Grace Construction Products – Grace Ice & Water Shield HT
- C. Atlas Roofing Underlayments – Weathermaster Polyseal
- D. Tamko Building Products – TW Metal and Tile
- E. Alternate productes approved by the Engineer. Substitutions shall fully comply wth specified requirements.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Substrate for barrier application.
 - 1. Examine plywood substrate to ensure proper attachment through insulation into metal deck structural sub-strate. Remove or replace any panel or components which are damaged beyond successful repair.
 - 2. Verify deck is dry and free of snow or ice.
 - 3. Beginning of installation means acceptance of existing conditions.

3.02 INSTALLATION

- A. Fasten substrate to structural metal roof deck through 7 inches of insulation with fastening pattern on drawings.
- B. Install underlayment in accordance with the Manufacturer's current installation manual.
- C. Barrier is to be installed from eave to the ridge horizontally with 4 inch minium seam overlap and 6 inch end seam over lap. Stagger end seam overlap 24-inches minimum from each other.

END OF SECTION 072700

SECTION 074113 STANDING SEAM SHEET METAL ROOFING

PART 1 GENERAL

1.01 WORK INCLUDED

- A. Install standing seam metal roof panels as indicated on Drawings and in these specifications as required for a complete and proper installation. The following items are included:
 - 1. Prefinished standing seam metal roof panels
 - 2. Fasteners and fastening devices
 - 3. Miscellaneous prefinished trim, flashing, closures, and drip edge components
 - 4. Sealants

1.02 RELATED SECTIONS

- A. Section 013000 – Submittals
- B. Section 061636 – Wood Panel Sheathing
- C. Section 072700 – Sloped Roof Underlayment
- D. Section 076200 – Sheet Metal Flashing and Trim

1.03 REFERENCE STANDARDS

- A. ASTM – American Society for Testing Materials

1.04 SUBMITTALS

- A. Submit detailed drawings showing layout of panels, anchoring details, joint details, trim flashing, and accessories. Show details of weatherproofing and terminations of metal work.
- B. Submit a sample of each type of roof panel, complete with factory finish and color.
- C. Submit a manufacture warranty for metal panels and color.

1.05 STORAGE AND HANDLING

- A. Upon receipt of panels and other materials, installer shall examine the shipment for damage and completeness.
- B. Panels should be stored in a clean, dry place. One end should be elevated to allow moisture to run off.
- C. Stack all materials to prevent damage and allow for adequate ventilation.
- D. Prevent contact with materials during storage that may cause discoloration, staining, or damage.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Berrudge Manufacturing Company
- B. AEP-Span

- C. United Structures of America
- D. Substitutions shall fully comply with specified requirements.

2.02 SHEET MATERIALS

- A. Kynar coated metal shall be Aluminum-Zinc Alloy Coated Steel Sheet, 24 Gauge, ASTM 792-08, G40, yield strength 40 ksi min.
- B. Color shall be Dark Brown to match existing.
- C. Metal Panel profile shall match the profile specified on the drawings.

2.03 ACCESSORY MATERIALS

- A. Fasteners: No. 12-14 self-drilling tapping fasteners backed with neoprene washer where required.
- B. Sealant: ½-inch continuous butyl tape sealer at end lap seams.

2.04 FABRICATION

- A. Form sections true to shape, accurate in size, square and free from distortion or defects.
- B. All exposed adjacent flashing shall be of the same material, color, and finish as the roof panels.
- C. Hem all exposed edges of flashing on underside ½ inch.
- D. Panel shall be cut accordingly to achieve an 18 in panel stagger at end laps.
- E. Fabricate continuous cleats and starter strips of same material as sheet, interlockable with sheet, in gauge as shown on Drawings.
- F. Hem all exposed edges of metal ½-inch; miter and seam corners.
- G. Form materials with cover plate seam.
- H. Fabricate drip flashing vertical faces with bottom edge formed outward ¼-inch and hemmed to form drip.
- I. Fabricate with required connection pieces.
- J. Form sections square, true, and accurate in size and free of distortion or defects detrimental to appearance or performance. Allow for expansion at joints
- K. Slot all holes for fastening counterflashing as necessary to allow for thermal expansion and contraction. Cover exposed holes with appropriate washers.

2.05 STANDING SEAM METAL ROOF PANELS

- A. 1.5-inch high vertical legs shall be spaced 16-inches O.C. and shall have no exposed fasteners
- B. Standing seam clips shall be spaced 24-inches O.C. and 2 clips are required at eaves.
- C. Sidelap shall be mechanically seamed with a powered seamer.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Substrate - Examine plywood substrate to ensure proper conditions to begin installation of steel roof panels/decking.
- B. Verify membrane underlayment installation is complete and accepted.

- C. Verify deck is dry and free of snow or ice.
- D. Beginning of installation means acceptance of existing conditions.

3.02 INSTALLATION

- A. Field measure site conditions prior to fabricating work standing seam metal panels.
- B. Install starter and edge trim before installing roof panels.
- C. Install metal panels so the horizontal lines are level and vertical lines are plumb.
- D. Remove protective film prior to installation of the panels.
- E. Attach panels using manufactures' standard clips and fasteners, spaced in accordance with approved shop drawings.
- F. Install sealants for performed roof panels as approved on shop drawings.
- G. Protect installed roof panels and trim from damage caused by adjacent construction until completion of installation.
- H. Remove or replace any panel or components which are damaged beyond successful repair.

END OF SECTION 074113