

SECTION 06100
ROUGH CARPENTRY

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Work included: Furnish and install wood nailers, wood cants, wood curbs, wood blocking, framing and plywood, plywood deck repairs or replacement, in place, as designated in the Summary of Work, as shown in the detail drawings and as specified herein.

1.02 RELATED SECTIONS

- A. Section 07220 – Roof Insulation
- B. Section 07513 – Modified Bitumen Cap Sheet Built-Up Roofing
- C. Section 07620 - Related Sheet Metal

1.03 REFERENCES

- A. All work under this section shall conform to the more stringent product and performance procedures outlined within the project specifications and as outlined in, recommended in, or specified in the latest editions of:
 - 1. Factory Mutual Systems (FM)
 - a. Approval Guide
 - b. Loss Prevention Data Sheet 1 - 49
 - 2. Underwriters Laboratory Inc. (UL)
 - a. Building Materials Directory
 - 3. American Society for Testing and Materials (ASTM)
 - a. Book of Standards
 - 4. National Roofing Contractors Association (NRCA)
 - a. Roofing and Waterproofing Manual
 - b. Handbook of Accepted Roofing Knowledge (HARK)

5. Published material manufacturer's literature and specifications as submitted for approval.
6. American Wood Preservers Institute - Standards
7. American Plywood Association - Standards

1.04 SUBMITTALS

- A. As provided in Sections 01330 and 01340 and as required by the consultant.
- B. Wood treatment data as follows, including chemical treatment manufacturer's instructions for handling, storing, installing, and finishing treated materials:
 1. For each type of preservative-treated wood product, include certification by treating plant stating type of preservative solution and pressure process used, net amount of preservative retained, and compliance with applicable standards.
 2. For waterborne-treated products, include statement that moisture content of treated materials was reduced to levels indicated before shipment to project site.
 3. For fire-retardant-treated wood products, include certification by treating plant that treated materials comply with specified standard and other requirements as well as data relative to bending strength, stiffness, and fastener-holding capacities of treated materials.
- C. Material test reports, from a qualified independent testing agency, indicating and interpreting test results relative to compliance of fire-retardant-treated wood products with performance requirements indicated.
- D. Warranty of chemical treatment manufacturer for each type of treatment.

1.05 QUALITY ASSURANCE

- A. As provided in Section 01450.
- B. Standards: Comply with the standards specified in this section and as listed in the general requirements.
- C. Qualifications of Manufacturer: Products used in the work included in this section shall be produced by manufacturers regularly engaged in the manufacturing of similar items and with history of successful production and product installations.
- D. Qualifications of Installers: Installers shall be thoroughly trained and experienced in the

necessary crafts. Installers shall be made familiar with any unique requirements specified for proper performance of the work in this section.

- E. Roofing Inspections: Cooperate and coordinate with inspectors, testing agencies and manufacturers, in order to facilitate inspection of rough carpentry installation.
- F. Rejection: In the acceptance or rejection of work under this section, no allowance will be made for lack of skill or specification understanding on the part of the workmen. It shall be incumbent upon the contractor to use adequate numbers of skilled installers and to instruct them in the requirements of the project specifications as well as maintaining a set of the project specifications and drawings on the roof at all times.
- G. Replacement: In the event inadequate or improper installation is determined, the contractor shall make all repairs and replacements required to render the installation compliant with the project specifications. Replacements, due to improper performance, shall be at the sole cost of the contractor.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Material shall be delivered in the manufacturers original labeled containers or wrappings and in sufficient quantities to provide for continuous installation progress without disruption or delay due to lack of materials on site.
- B. Storage: Materials shall be stored out of direct exposure to the elements and shall be stored on pallets or other storage supports, a minimum of 6 inches above the roof or ground surface. All materials shall be covered with canvas tarps or fitted synthetic tarp like covers.
 - 1. If materials are to be stored on the roof, they shall be sufficiently distributed around the perimeter or over load bearing supports to prevent over stressing of the roof deck.
 - 2. Polyethylene roll stock material is not an acceptable tarp material.
 - 3. Prior to leaving the job site daily, tarps are to be secured at all edges to immovable objects and anchored sufficiently to prevent blow off or dislocation.
- C. Handling: Material shall be handled in such a manner as to preclude damage or contamination with moisture or foreign matter.
- D. In the event of damage from delivery, storage, or handling of materials under this section, immediately replace deficient materials. Any installation of damaged materials shall be immediately removed and replaced. Replacement of damaged or improperly installed materials shall be at the sole cost of the contractor.

1.07 SITE CONDITIONS

- A. General: Do not uncover or install material under this section during periods of inclement weather. Weather conditions, either current or predicted, that would prevent proper execution of the work under this section shall determine placement acceptability for each days work.
- B. Field Measurements: Verification of all roof termination points and penetration locations, dimensions, sizes, and quantities are the responsibility of the contractor as outlined in the contract documents. Actual field measurements shall be used in preparation of contractor submitted shop drawings.

1.08 SEQUENCING AND SCHEDULING

- A. Verify that all preparatory and sequential prior work is complete and properly installed before performing work of this section.

1.09 WARRANTY

- A. Material and Installation shall meet all the requirements necessary to fulfill the warranty conditions and provisions set forth in this specification and as specifically written in the roof membrane system manufacturers as submitted.

PART 2 - PRODUCTS

2.01 DESCRIPTION

- A. All wood for use in this section shall be either Southern Yellow Pine or Douglas Fir and pressure treated with an industry approved preservative.
- B. All wood for use in this section, where required by local building codes, shall meet the code requirements for construction using fire-retardant treated wood products.

2.02 NAILERS

- A. All nailers shall be #2, or better and pressure treated. Minimum size is 2" x 6".

2.03 CANTS

- A. Wood cants shall be a minimum size of 4" x 4", nominal dimension, on two sides with 45 degree diagonal face plane.

2.04 CURBS AND MISCELLANEOUS WOOD CONSTRUCTION

- A. Wood used for equipment curbs, fan curbs, and other such wooden accessories shall be of 2" x 6" minimum size, unless otherwise dimensioned in the construction details.

2.05 PLYWOOD

- A. All plywood to be incorporated into the roofing assembly, or covered by same, shall be a minimum of 1/2" thickness, exterior type, C-C plugged grade with a minimum of 5 plies, unless otherwise dimensioned or described in the construction details.
- B. All plywood to be incorporated into the roofing assembly as replacement or repair decking material, or covered by same, shall be a minimum of 3/4" thickness, exterior type, Fire-Treated with a minimum of 5 plies, unless otherwise dimensioned or described in the construction details or as specified by local code requirements.

2.06 FASTENERS

- A. All fasteners for wood securement must have a sufficient corrosion resistant coating as to not accumulate more than fifteen (15) percent red rust after fifteen (15) cycles in the Kesternich cabinet as tested per FM 4470 in accordance with modified DIN 50018 standard test procedure. In addition all fasteners shall be corrosion resistant to the type of treated lumber being used.
1. Masonry Fasteners
 - a. Metal Hit Anchor - Hilti
 - b. Zamac Nailin - Rawlplug
 - c. Gripcon - Fastenrite
 2. Concrete Fasteners
 - a. Rawl - Spike - Rawlplug
 - b. Tapcon/Roofgrip - Elco Industries
 3. Steel/Wood Fasteners
 - a. Tru-Fast TRU KOTE PC - 3 - TRU-FAST Corporation
 - b. Insul-Tite Fasteners - Guardian Fasteners
 - c. Dekfast - Construction Fasteners
 4. General Fasteners - Nails/Screws
 - a. Number 10, hot dipped, galvanized steel or 304 stainless steel ringed shank nails.
 - b. Number 10, 300 series stainless steel wood screws.
 - c. Number 14 Phillips Panhead 300 series stainless steel sheet metal

screws.

5. Plywood Deck Clips
 - a. Plywood Clip: 18 gauge galvanized steel H-clip such as "PSC Plywood.
- B. Fasteners and/or manufacturers of same listed herein are given as references only and are not to imply prior approval. Submittals of all fasteners are required with equals to those referenced being subject to approval as well.
- C. Fastener types listed in this section are for securement of wood and are to be used in cases when no specific types are stipulated in construction details. Nondescript fastener references on the construction details shall not relieve the contractor from responsibility for proper fastener selection.

PART 3 - EXECUTION

3.01 GENERAL

- A. All work shall conform to the more stringent requirement of:
 1. The project specifications and contract drawings.
 2. The roof membrane manufacturer's warranty requirements.
 3. The most current edition of FM Loss Prevention Data Sheet 1-49.
- B. Contractor shall perform all cutting and fabrication operations of nailers, cants and plywood in a centralized work area provided with a wood work surface. Every effort shall be made to prevent contamination with debris of the construction area and damage to the contract and non-contract roof areas resulting from cutting and fabrication operations.

3.02 PLYWOOD DECK REPAIRS/REPLACEMENT

- A. Remove deteriorated or non-functional decking. Remove deteriorated and adjacent deck to next member supporting sound wood, providing adequate bearing for new decking material.
- B. Secure new decking material to supports with appropriate nails spaced 6-inches on-center. Provide minimum 1/8-inch space between adjacent panels. Install H-clips to support sides of new plywood decking.

- C. Verify attachment of existing decking and install new and/or additional fasteners spaced 6-inches on-center, where necessary.
- D. Cover holes or openings 12-inches in diameter or smaller with a plate of 18 gauge sheet metal. Extend plate minimum 6-inches beyond edge of hole and onto adjacent unaffected rib..
- E. On decks with undulating surfaces or other irregularities that may prevent level placement of the wood to be anchored to it, the contractor shall either level the deck surface or provide proper shimming for the wood prior to placement.

3.03 NAILERS AND OTHER WOOD ANCHORED TO DECK

- A. All wood shall be placed in accordance with the construction details.
- B. All deck mounted wood shall be anchored to resist a pull out strength of 175 lbs/ft.
- C. Nailers, and other deck mounted wood, shall be secured using two rows of fasteners spaced at 24" on-center with the rows offset or staggered from each other.
- D. All nailers shall be placed with joints spaced 1/8" apart and in full contact with the deck surface.
- E. On decks with undulating surfaces or other irregularities that may prevent level placement of the wood to be anchored to it, the contractor shall either level the deck surface or provide proper shimming for the wood prior to placement.

3.04 CANTS

- A. All wood cants shall be placed in accordance with the construction details and at all points of horizontal to vertical plane junctures.
- B. Cants shall be secured to wood nailers with fasteners at 6"on-center and staggered to prevent splitting of the wood.
- C. Cants shall be beveled at the 90 degree angle when necessary to accommodate irregular wall construction or protrusions that would otherwise prevent firm contact of the cant to the wall or curb surface. In no case, shall a gap between the vertical leg of the cant and the adjoining wall of curb surface exceed 1/4".
- D. All joints in the cant installation shall be true and tight with changes in direction, such as at corners, being miter cut.
- E. When fastening successive layers of wood blocking or nailers or when anchoring wood

cants to nailers, the fastener shall be of a sufficient length to penetrate the wood being anchored to by 1 1/4".

3.05 PLYWOOD

- A. Plywood shall be installed as per detailed drawings.
- B. Plywood joints must be true and well fitting. Follow the manufacturer's recommendations for spacing of plywood panel joints.
- C. Mechanical fasteners shall be a maximum of 12" on-center staggered. Nails shall be spaced a maximum of 6" on-center staggered.

3.06 CLEAN UP

- A. The contractor shall clear the construction areas and shall provide for the removal from the building site of all construction debris.
- B. All debris shall be removed from the premises promptly and the construction area left clean daily.
- C. The contractor is responsible for disposing of all debris relating to the contract.
- D. At the completion of the contract, contractor is to remove all equipment related to the contract.

END OF SECTION