

## **10.27.14 HOSKINS – KINGS VALLEY RFPD - GENERAL NOTES & SPECIFICATIONS**

### **1. GENERAL REQUIREMENTS**

- A.** All work shall comply with all applicable codes, laws, ordinances, rules and regulations including all state and local having jurisdiction.
- B.** The contractor and all subcontractors shall examine the drawings and shall visit the premises and inspect all conditions thereon and/or therein or existing which may affect the work. No consideration will be given for any alleged misunderstanding of existing conditions or failure to inspect the premises. Contractor and subcontractors are to verify all site and job conditions and check all measurements on the job and shall be responsible for the same.
- C.** The contractor and subcontractors shall carry complete liability and workers compensation insurance and present certificate of such coverage to the owner prior to commencing work.
- D.** All dimensions and details shown on the drawings shall be field verified and coordinated by the contractor and subcontractors before proceeding with work.
- E.** These construction documents show the intent of the work. The contractor and subcontractors are responsible for means and methods of construction and shall comply with best practice guidelines.
- F.** Any questions, or unusual or questionable conditions, shall be reported to the architect prior to the start of work.
- G.** Information shown in any section applies to all similar sections, where applicable, unless otherwise indicated.
- H.** All pre-manufactured items to be installed in this residence shall meet all current governing code requirements.
- I.** Verify the specifications of all floor finishes and provide underlayment per accepted industry practices and acquired for good construction.
- J.** Contractor and subcontractors to install all materials, products, finishes, trim, windows, doors, roofing, fixtures, appliances, etc. according to and following best practices and the manufacturer's instructions and recommendations.
- K.** Should any conflicting information be found in these construction documents, the more restrictive information shall apply.
- L.** Contractor and subcontractors to protect building from elements during construction as to minimize moisture infiltration. Before exterior sheathing and/or weather protection is installed, the building shall be covered with tarps after each work day is completed.
- M.** Contractor and subcontractors to provide temporary bracing and/or protection as required to resist wind, construction loads, and the elements, etc. during construction.
- N.** The contractor and subcontractors are to supervise and direct the work, using their best skills and attention. The general contractor shall be responsible to maintain the site in a clean and safe condition throughout the entire course of the project.
- O.** All work is to be performed in the best workmanlike manner using skilled craftsmen.

- P. Contractor is to repair any damaged caused to "existing areas to remain" or "existing areas" due to construction, to match existing immediate adjacent surfaces in materials, fire rating, finishes, color and texture.
- Q. All materials used for this project are to be new and of good quality and subject to homeowner approval.
- R. All defective or unsatisfactory work will be rejected and must be replaced or restored to final finish by the contractor without any additional cost.
- S. All written dimensions shall take precedence over scaled dimensions on all drawings.
- T. The homeowner is to be informed by the contractor and subcontractors of any unforeseeable conditions encountered in the field during construction for review and recommendations.
- U. Contractor and subcontractor's base bids shall include the obtaining of all permits pertaining to this project. The cost of the permit and other applicable fees is to be paid by the owner.
- V. Upon completion of the work, all new surfaces, including floors, walls, glass, fixtures, and fittings, etc. shall be clean and ready to use.
- W. The contractor shall guarantee all the work to be free from faulty materials and/or workmanship for a period of one year from the date of completion and shall promptly correct and repair any and all issues that arise within this warranty period relating to faulty materials and/or workmanship.

## **2. SITE WORK**

- A. Contractor is responsible for all layout of the work and shall employ appropriate means to accurately establish all work.
- B. Perform earthwork in manner to prevent surface water from flowing into excavations, and to prevent water from flooding the site or surrounding areas.
- C. Do not allow water to accumulate in excavations, remove all water from excavations using appropriate equipment to convey the water away from the site and to prevent softening of foundation bottoms, undercutting footings and soil changes detrimental to the stability of sub grades and foundations.
- D. Protect excavation bottoms against freezing when the atmospheric temperature is less than 35 degrees Fahrenheit (F) by covering with dry insulating materials of sufficient depth to prevent frost penetration.
- E. Excavate unsatisfactory soil materials encountered that extend below the required elevations to the additional depth required, or excavate the unsatisfactory soil material and replace with compacted satisfactory soil materials as required.
- F. Perform any necessary compaction during construction for compliance with the percentage of maximum dry density specified. The maximum dry density of the soil shall be determined by ASTM D 1557 test procedure.
- G. Building foundations shall be placed on controlled compacted fill in layers of 12" to 95% maximum dry density.
- H. Soil and any fill shall be free from rocks and gravel larger than 4" in any direction, debris, waste, frozen materials, vegetable and other deleterious matter of any kind.
- I. Contractor to accurately record actual locations of utilities remaining by horizontal dimensions, elevations or inverts, and slope gradients.
- J. Contractor shall protect above- and below-grade utilities that remain.
- K. Contractor to protect plants, lawns, rock outcroppings, and other features to remain as a portion of final landscaping.
- L. Protect bench marks, survey control points, existing structures, fences, sidewalks, paving, and curbs from grading equipment and vehicular traffic.
- M. Topsoil excavated on-site shall be:
  - 1. Graded.
  - 2. Free of roots, rocks larger than 1/2 inch (12 mm), subsoil, debris, large weeds and foreign matter.

- N. Contractor to verify that survey bench mark and intended elevations for the Work are as indicated.
- O. Contractor to identify required lines, levels, contours, and datum, stake and flag locations of known utilities, locate, identify, and protect utilities that remain, from damage.
- P. Contractor to notify utility company to remove and relocate utilities.
- Q. For rough grading, contractor is to perform the following:
  - 1. Remove topsoil from areas to be further excavated, re-landscaped, or re-graded, without mixing in foreign materials.
  - 2. Do not remove topsoil when wet.
  - 3. Remove subsoil from areas to be further excavated, re-landscaped, or re-graded.
  - 4. Do not remove wet subsoil, unless it is subsequently processed to obtain optimum moisture content.
  - 5. When excavating through roots, perform work by hand and cut roots with sharp axe.
  - 6. Benching Slopes: Horizontally bench existing slopes greater than 1:4 to key fill material to slope for firm bearing.
  - 7. Stability: Replace damaged or displaced subsoil to same requirements as for specified fill.
- R. Contractor to stockpile topsoil and subsoil to be re-used on site; remove remainder from site.
- S. For soil stockpiles: Use areas designated on site; pile depth not to exceed 8 feet (2.5 m); protect from erosion.
- T. Before finish grading Contractor shall:
  - 1. Verify building and trench backfilling have been inspected.
  - 2. Verify subgrade has been contoured and compacted.
  - 3. Remove debris, roots, branches, stones, in excess of 1/2 inch (13 mm) in size. Remove soil contaminated with petroleum products.
  - 4. Where topsoil is to be placed, scarify surface to depth of 3 inches (75 mm).
  - 5. In areas where vehicles or equipment have compacted soil, scarify surface to depth of 3 inches (75 mm).
  - 6. Place topsoil in areas where seeding are indicated.
  - 7. Place topsoil where required to level finish grade.
  - 8. Place topsoil to the following compacted thicknesses:
  - 9. Areas to be seeded with grass: 6 inches (150 mm).
  - 10. Shrub Beds: 18 inches (450 mm).
  - 11. Flower Beds: 12 inches (300 mm).
- U. Contractor to place topsoil during dry weather.
- V. Contractor to remove roots, weeds, rocks, and foreign material while spreading.
- W. Near plants contractor to spread topsoil manually to prevent damage.
- X. Fine grade topsoil to eliminate uneven areas and low spots. Maintain profiles and contour of subgrade.
- Y. Contractor to lightly compact placed topsoil.
- Z. Contractor to grade within stated tolerances of:
  - 1. Top surface of subgrade: Plus or minus 1/10 foot (30 mm) from required elevation.
  - 2. Top surface of finish grade: Plus or minus 1/2 inch (13 mm).
- AA. Remove unused stockpiled topsoil and subsoil. Grade stockpile area to prevent standing water.
- BB. Contractor to leave site clean and raked, ready to receive landscaping.

### 3. **CONCRETE**

- A. Foundations are designed for one and one half (1 ½) ton soil bearing capacity. All soil bearing capacities to be verified by the contractor as required. Elevations are for estimating and are subject to revision when

true conditions are revealed by excavation. Contractor shall notify architect of any doubtful conditions.

- B.** Footing depth to be a minimum of one and one half (1 1/2) feet from surrounding finished grade to bottom of footing. Footings shall be placed on undisturbed soil or controlled compacted fill. See 2-E.
- C.** Footings shall not be placed on frozen ground or in excavations containing water.
- D.** Footings to be placed in wood forms unless otherwise approved by the building official or architect where soil maintains footing profile. Reinforcing bars in footings shall be placed to provide a clear dimension of 3" from both the footing bottom and the footing sides.
- E.** All concrete shall be controlled stone concrete complying with all ACI Building Code Requirements. Concrete shall obtain a 28-Day compressive strength of 4,000 PSI.
- F.** All pours shall be terminated by forms. Provide keys as directed by the engineer.
- G.** All concrete shall conform to ACI Practices for cold weather concreting. All concrete placed at temperatures below 50 degrees Fahrenheit (F) shall contain the water reducing accelerator "Accelguard 80" as manufactured by the Euclid Chemical Co., or approved equal.
- H.** All concrete shall contain the water reducing admixture "Eucon WR-75" or approved equal.
- I.** Concrete Slabs:
  - 1. Concrete slabs in garages to be 6" in thickness, placed on 6 mil polyethylene vapor barrier on 6" gravel fill, reinforced as shown on the drawings or as described below.
  - 2. Garage slab to be reinforced with 6x6 W2.9 welded wire fabric placed 1 1/2" down from the top of slabs, and over any pipes or conduits in slab. Wire mesh must lap one full mesh at side and end laps, and must be wired together. Wire mesh fabric for slabs shall conform to ASTM A185, latest edition.
- J.** The contractor shall ascertain the location of all sleeves, inserts, anchor bolts, etc., required by other trades.
  - 1. Installation of all such embedments shall be checked for completeness and location before concrete is placed.
- K.** Provide clearances from faces of concrete to reinforcement as follows:
  - 1. Cast against and permanently exposed to earth 3"
  - 2. Exposed to earth or weather:
    - 1. #5 or smaller 1 1/2"
    - 2. #6 or larger 1 1/2"
  - 3. Not exposed to weather or in contact with earth:
    - 1. Slabs, Walls, Joists 1 1/2"
    - 2. Beams, Girders, Columns 1 1/2"
- L.** No horizontal pour stops are permitted in concrete walls. Provide vertical pour stops in walls at 40'-0" maximum spacing. At least 24 hours shall elapse before placing adjacent pour.
  - 1. Do not backfill against retaining or basement walls until supporting slabs have been placed and have been allowed to cure, or until floor construction above wall has been installed, and concrete has attained 28-Day compressive strength, and any other walls designed to resist lateral forces have been properly installed.
- M.** Where trenching is required the following shall be observed:
  - 1. Existing embedded utilities (including but not limited to: plumbing, electrical wiring, telephone wiring, gas lines) shall be located and marked along their length before any cutting/drilling occurs.
  - 2. Waste material shall be properly disposed of in appropriate location/receptacle.
  - 3. Contractor shall follow best practice guidelines for trenching a concrete slab.
- N.** Concrete hardener shall be applied to surface of concrete in accordance with manufacturer's recommendations.
  - 1. Products and Manufacturers:
    - i. L&M Construction Chemicals; Seal Hard
    - ii. W.R. Meadows, INC; Liqui-Hard

- iii. H&C Concrete: H&C® Clear Liquid Hardener & Densifier
- iv. Or approved equal.

#### **4. METALS**

- A. Provide all anchors, plates and other connectors and all miscellaneous steel and iron as required to provide a complete finished installation.
- B. All material shall be new and unused hereto before, clean and free of oil, grease, mill scale or rust.
- C. All new steel shall have one coat of primer paint applied at the shop.
- D. Any exposed steel, including lally columns shall receive one coat of finish paint applied after installation.

#### **6. WOOD AND PLASTIC**

- A. All solid lumber shall be Douglas Fir No. 2 or better (unless otherwise noted). All studs shall be Douglas Fir/Stud Grade.
- B. Laminated Veneer Lumber (LVL) members shall be manufactured by Georgia-Pacific, Weyerhaeuser, or other manufacturer meeting the following minimum design values: 260Fb/1.9E/285Fv.
- C. Engineered Wood I-Joists shall be of the size and type as noted on the drawings.
  - a. Manufacturers:
    - i. Weyerhaeuser
    - ii. Georgia-Pacific
- D. Installation of engineered products shall always be accomplished by following the manufacturer's installation specifications as provided by the manufacturer, as well as the information shown in these construction documents. All referenced specifications and information shall be on-site during the construction process.
- E. All lumber shall have the grade identified on the label (grade mark) of an approved lumber grading or an approved inspection agency. Grading practices and identification shall be in accordance with rules published by an approved agency
- F. All framing shall be installed in current code-approved fashion.
- G. All headers shall be (2) 2x10 unless otherwise noted.
- H. All wall and roof sheathing to be Huber Wood Zip system 1/2" sheathing panels.
- I. Unless otherwise noted, wood posts shall be of multiple wood studs spiked together with 10 penny nails @ 8" O.C. Studs shall be spiked together in an additive process with full nailing of all members.
- J. All wood posts shall consist of a king stud and single liner (trimmer) for rough openings up to and including 6'-0" in size, unless otherwise noted on the plans. Openings larger than 6'-0" shall have a king stud and a double liner (trimmer), unless otherwise noted on the plans.
- K. All wood posts shall be solidly blocked down to the foundation with like materials and with the grain oriented in the vertical direction.
- L. Provide all necessary and required bracing, bridging and shoring - temporary or otherwise.
- M. The quantity and size of fasteners connecting wood frame members together and connecting sheathing materials to wood frame members shall not be less than that listed in these construction documents, or as recommended by the manufacturer, whichever is larger.

- N.** Flush connections shall always be made with approved metal hanger-type fasteners, unless otherwise noted.
- O.** These fasteners shall be as manufactured by Kant-Sag/USP or Simpson.
- P.** Unless otherwise noted on the plans, the following metal hangers shall be used at flush connections with the following lumber products:
  - a.** For WI joists use USP Kant-Sag THF or Simpson IUT series hangers sized for the depth and quantity of the joists used (see manufacturer's literature).
  - b.** For conventional 2x wood members use approved hangers by the above-referenced manufacturers, sized for the depth and quantity of the members used.
  - c.** See plans for any hangers not covered by the above information. Contact the architect promptly for any hangers not described on the plans and in the above information.
- Q.** Fasteners for preservative-treated wood shall be of the triple zinc coated, stainless steel or other code-approved corrosion-resistant material compatible with the wood preservative treatment material.
- R.** Notches in solid lumber joists shall not exceed one-sixth of the depth of the member, shall not be longer than one-third of the depth of the member, and shall not be located in the middle one-third of the span.
- S.** The notch depth at the ends of joists, rafters, and beams of solid lumber shall not exceed one-fourth of the depth of the member.
- T.** Holes bored or cut into solid lumber joists shall not be closer than 2" to the top or bottom of the joist, or to any other hole located in the member. Where the members are notched, the hole shall not be closer than 3" to the notch. The diameter of the hole in joists shall not exceed one-third of the depth of the member.
- U.** Cuts, notches, and holes bored in engineered wood products, when allowed by the manufacturer, shall follow the manufacturer's specifications.
- V.** Studs shall be placed with the wide dimension perpendicular to the wall.
- W.** Not less than three studs shall be installed at each corner of an exterior wall.
- X.** Stud walls shall be capped with double top plates installed to provide overlapping corners and wall intersections.
- Y.** Top plate joints shall be offset not less than 48".
- Z.** Studs shall have full support by a plate or sill with a nominal thickness of not less than 2' and a width at least equal to the width of the studs.
- AA.** Notches in solid lumber studs shall not exceed 25% of the stud depth.
- BB.** Bored holes shall not exceed 40% of the stud depth (60% where studs are doubled) and the edge of the hole shall not be closer than 5/8" to the edge of the stud. When a hole is bored in excess of one-third of the stud depth, the stud shall be reinforced with approved stud shoe(s), or equal materials, as approved by the local construction official.
- CC.** Notches and holes shall not occur in the same cross-section.
- DD.** All members framing into girders shall be anchored or tied to secure continuity.
- EE.** The ends of all wood beams that rest on girders shall bear not less than 4" or shall be supported in approved metal hangers.
- FF.** Beams framing from opposite sides shall either lap at least 6" and be bolted or spiked together or, where framed end-to-end, the beams shall be secured together by approved ties, straps, dogs, plates or sheathing.
- GG.** Unless otherwise noted, joists of solid lumber shall bear on plates or beams of wood or steel not less than 1-1/2" or shall be supported by metal hangers.
- HH.** Joists framing over beams from opposite sides shall either lap at least 3" and be securely fastened together or, where framed end-to-end, the joists shall be secured together by approved ties, straps, dogs, plates or sheathing.
- II.** All floor, attic, and roof framing members of 2x10 or larger lumber shall have one edge braced for the entire span with plywood sheathing, or shall have bridging that consists of not less than 1x3 lumber, double-nailed at each end, or of equivalent metal bracing of equal rigidity at 8"-0" O.C.
- JJ.** A line of bridging or blocking shall also be installed at supports of all joists and rafters where lateral support

is not otherwise provided.

- KK.** All sill plates which rest on concrete slabs, or on concrete or masonry exterior walls shall be of approved naturally durable (heartwood of Cedar or redwood) or preservative-treated wood.
- LL.** Clearance between any wood siding and the earth on the exterior of the building shall not be less than 6". Except where siding, sheathing, and wall framing are of preservative-treated wood.
- MM.** All wood framing members, including wood sheathing, which rest on exterior foundation walls and are less than 8" from exposed earth shall be of naturally durable or preservative-treated wood.
- NN.** Sleepers and sills on a concrete slab which is in direct contact with earth shall be of approved naturally durable or preservative-treated wood. A slab on a 6-mil vapor barrier shall not be considered to be in direct contact with the earth for the purposes of this section
- OO.** Fasteners for preservative-treated wood shall be of triple zinc coated, hot-dipped galvanized, stainless steel or other code-approved corrosion-resistant material compatible with the wood preservative treatment material.
- PP.** All wood required to be preservative-treated shall bear the label of an approved agency that maintains continuing supervision, testing and inspection over the quality of the product. The label shall be permanently affixed to each piece unless specifically waived by the code official.
- QQ.** Fireblocking is defined as "Building materials installed to resist the free passage of flame to other areas of the building through concealed spaces".
- RR.** Fireblocking shall consist of approved non-combustible materials of two thicknesses of 1" lumber with broken lap-joint, or one thickness of 23/32" wood structural panel with joints backed by 23/32 wood structural panel, or of 2" (nominal) lumber installed with tight joints.
- SS.** Fireblocking shall be provided in wood-frame construction in the following locations:
- a. Ceiling and floor or roof level and at 10 foot intervals both vertical and horizontal. Batts or blankets of mineral or glass fiber or other approved non-rigid materials shall be allowed as fireblocking in walls constructed using parallel walls of studs or staggered studs.
  - b. At all interconnections between concealed vertical and horizontal spaces such as at soffits, drop ceilings, and cove ceilings.
  - c. In concealed spaces between stairway stringers at the top and bottom of the run.
  - d. At openings around vents, pipes, and ducts at ceiling and floor level, with an approved material to resist the free passage of flame and products of combustion.
  - e. Except as provided in **d** above, fireblocking shall consist of 2" nominal lumber, or two thicknesses of 1" nominal lumber with broken lap joints, or one thickness of 23/32" wood structural panels with joints backed by 23/32" wood structural panels, or one thickness of 3/4" particle board with joints backed by 3/4" particle board, 1/2" gypsum board, or 1/4" cement-based millboard. Batts or blankets of mineral wool or glass fiber or other approved materials installed in such a manner as to be securely retained in place shall be permitted as an acceptable fire block. Loose-fill insulation material shall not be used as a fire block unless specifically tested in the form and manner intended for use to demonstrate its ability to remain in place and to retard the spread of fire and hot gases.
- TT.** Unfaced fiberglass batt insulation used as fireblocking shall fill entire cross section of the wall cavity to a minimum height of 16" measured vertically. When piping, conduit, or similar obstructions are encountered, the insulation shall be packed tightly around the construction.

## **UU. SHEATHING**

### **PART 1 GENERAL**

#### **1. SUMMARY**

##### **a. Section Includes**

- 1) Wall sheathing with integral water-resistive barrier and air barrier.

- 2) Roof sheathing with integral roof underlayment.

## 2. REFERENCES

- a. American Society of Mechanical Engineers (ASME):

- 1) ASME B18.6.1 - Wood Screws (Inch Series)

- b. ASTM International (ASTM):

- 1) ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware
- 2) ASTM E96/E96M - Standard Test Methods for Water Vapor Transmission of Materials
- 3) ASTM E108 - Standard Test Methods for Fire Tests of Roof Coverings
- 4) ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials
- 5) ASTM E2357 - Standard Test Method for Determining Air Leakage of Air Barrier Assemblies

- c. US Department of Commerce (DOC):

- 1) DOC PS 2 - Performance Standard for Wood-Based Structural Panels

- d. International Code Council (ICC):

- 1) ICC IBC - International Building Code

- e. ICC Evaluation Service, Inc. (ICC-ES):

- 1) AC38 – Acceptance Criteria for Weather Resistive Barriers
- 2) ICC-ES AC116 - Acceptance Criteria for Nails and Spikes
- 3) ICC-ES AC148 - Acceptance Criteria For Flexible Flashing Materials
- 4) ICC-ES AC201 - Acceptance Criteria for Staples
- 5) ICC-ES AC266 - Acceptance Criteria for Wood Structural Panel Roof Sheathing Factory-Laminated with an Alternate Roof Underlayment
- 6) ICC-ES AC310 - Acceptance Criteria for Water-Resistive Membranes Factory-bonded to Wood-based Structural Sheathing, Used as Water-Resistive Barriers
- 7) ICC-ES ESR-1539 - Power Driven Staples and Nails for Use in Engineered and Non-Engineered Connections
- 8) ICC-ES NER-272 - Power Driven Staples and Nails for Use in All Types of Building Construction.

- f. Sustainable Forestry Initiative (SFI): [www.sfiprogram.org/](http://www.sfiprogram.org/)

- 1) SFI 2010 - 2014 Standard

## 3. ACTION SUBMITTALS

- a. Product Data: For each type of sheathing product specified.

## 4. INFORMATIONAL SUBMITTALS

- a. Evaluation Reports: From ICC-ES, for wood sheathing and seam tape.
- b. Product Certifications: From manufacturer, indicating that sheathing products comply with ICC-ES AC266 and ICC-ES AC310.



## 5. QUALITY ASSURANCE

- a. Manufacturer Qualifications: Provide wood products from manufacturer certified by SFI, FSC, or comparable sustainable forestry program acceptable to Architect.
- b. Provide wall sheathing products meeting requirements for water-resistive barrier in accordance with ICC-ES AC310.
- c. Provide roof sheathing products meeting requirements for roof underlayments in accordance with ICC-ES AC266.

## 6. DELIVERY, STORAGE, AND HANDLING

- a. Comply with manufacturer's written instructions for protection of sheathing products from weather prior to installation.

## PART 2 PRODUCTS

### 1. MANUFACTURERS

- a. Basis-of-Design Product: Provide sheathing products manufactured by Huber Engineered Woods LLC, Charlotte NC;

### 2. PERFORMANCE REQUIREMENTS

- a. Fire-Test-Response Characteristics:
  - 1) Exterior Fire-Test Exposure: ASTM E108, Class A, when covered with approved Class A coverings.
  - 2) Fire-Resistance Ratings: Where indicated, provide assemblies tested for fire resistance per ASTM E119.
- b. Air-Barrier Assembly Air Leakage: Less than 0.04 cfm/sq. ft. at 1.57 lbf/sq. ft., per ASTM E2375.
- c. Water-Vapor Permeance, Facer: Minimum 12 perms, ASTM E96/E96M.
- d. Weather Exposure: Manufacturer warranty applies for maximum allowable exposure period of 180 days.

### 3. WOOD PANEL PRODUCTS

- a. Single Source Limitations: Provide wall and roof sheathing by a single manufacturer.
- b. Certified Wood: Provide sheathing produced from wood obtained from forests certified by an accredited certification body.
- c. Oriented Strand Board: DOC PS 2, made with binder containing no added urea formaldehyde.

### 4. WALL SHEATHING WITH INTEGRAL WATER-RESISTIVE BARRIER AND AIR BARRIER

- a. Oriented-Strand-Board Wall Sheathing: Exposure 1 sheathing with factory-laminated water-resistive barrier facer with printed fastener location symbols.
  - 1) Basis-of-Design Product: Provide Huber Engineered Woods LLC; ZIP System Sheathing.
  - 2) Span Rating, Panel Grade and Performance Category: Not less than 32/16; Structural 1; 1/2 Performance Category.
  - 3) Edge Profile: Self-spacing.

4) Facer: Medium-density, phenolic-impregnated sheet material qualifying as a Grade D weather-resistive barrier in accordance with ICC AC38.

a) Provide fastener spacing symbols on facer for 16-inch and 24-inch on center spacing.

## 5. ROOF SHEATHING WITH INTEGRAL ROOF UNDERLAYMENT

a. Oriented-Strand-Board Roof Sheathing: Exposure 1 sheathing with factory-laminated water-resistive barrier facer with printed fastener location symbols.

1) Basis-of-Design Product: Provide Huber Engineered Woods LLC; ZIP System Sheathing.

2) Span Rating, Panel Grade and Performance Category: Not less than 32/16; Structural 1; 1/2 Performance category.

3) Edge Profile: Self Spacing.

4) Exterior Surface Facer: Medium-density, phenolic-impregnated kraft paper overlay in accordance with ICC AC266.

a) Provide fastener spacing symbols on facer for 16-inch and 24-inch on center spacing.

b. Panel Edge Clips: Provide panel edge clips approved for application in accordance with code approvals and panel manufacturer's written instructions.

## 6. FASTENERS

a. Fasteners, General: Size and type complying with manufacturer's written instructions for Project conditions and requirements of authorities having jurisdiction.

1) Corrosion Resistance: Hot-dip zinc coating, ASTM A153/A153M.

b. Nails, Brads, and Staples: ICC AC116 and ICC AC201.

c. Power-Driven Fasteners: ICC-ES-1539 or NER-272.

d. Wood Screws: ASME B18.6.1.

## 7. SHEATHING JOINT-AND-PENETRATION TREATMENT MATERIAL

a. Self-Adhering Seam and Flashing Tape: Pressure-sensitive, self-adhering, cold-applied, seam tape consisting of polyolefin film with acrylic adhesive, meeting ICC-ES AC148, and tested as part of an assembly meeting performance requirements.

1) Basis-of-Design Product: Provide Huber Engineered Woods; ZIP System Tape.

2) Thickness: 0.012 inch

b. Liquid-Applied Flashing Membrane: Gun-grade, cold-applied, silyl-terminated polyether (STPE) liquid flashing membrane compatible with sheathing/weather barrier and self-adhering seam and flashing tape, and tested as part of an assembly meeting performance requirements. Follow manufacturer's recommendation for integration with ZIP System Tape.

1) Basis-of-Design Product: Provide Huber Engineered Woods; ZIP System Liquid Flash.

2) Hardness, Shore A, ASTM C 661: 40 to 45.

## PART 3 EXECUTION

### 1. EXAMINATION

- a. Examine framing spacing and alignment to determine if work is ready to receive sheathing. Proceed with sheathing work once conditions meet requirements.

### 2. SHEATHING INSTALLATION

- a. Install sheathing panels in accordance with manufacturer's written instructions, requirements of applicable Evaluation Reports, and requirements of authorities having jurisdiction.
- b. Air and Moisture Barrier: Coordinate sheathing installation with flashing and joint sealant sequencing and installation and with adjacent building air and moisture barrier components to provide complete, continuous air- and moisture- barrier.
- c. Do not bridge expansion joints; allow joint spacing equal to spacing of structural supports.
- d. Install panels with laminated facer to exterior. Stagger end joints of adjacent panel runs. Support all panel edges.
  - 1) Space square-edged panels 0.125 inch (3 mm).
  - 2) Butt edges of self-spacing edge panels.
- e. Roof Sheathing Panel Clips: Where required under code approvals based upon panel thickness and support spacing, provide panel clips located at each unsupported panel butt joint centered between supports.
- f. Attach sheathing panels securely to substrate with manufacturer-approved fasteners in compliance with the following:
  - 1) ICC-ES ESR-1539 or ICC-NES NER-272 for power-driven fasteners.
  - 2) IBC: Table 2304.9.1 Fastening Schedule.
- g. Apply ZIP System Tape at all panel seams, penetrations, and facer defects or cracks to form continuous weathertight surface. Apply tape according to manufacturer's written instructions and requirements of ICC-ES applicable to tape application.
- h. Apply liquid-applied flashing membrane at penetrations, gaps, and cracks to form continuous weathertight surface. Apply liquid membrane according to manufacturer's written instructions. Follow manufacturer's recommendation for integration with ZIP System Tape.

## 7. **THERMAL & MOISTURE PROTECTION**

- A. Roofing material shall be Fabral Grandrib 3 Plus, 29 ga, G90 galvanized exposed fastener metal roofing.
  1. Color: To match existing
  2. Required submittals:
    1. Product Data: Manufacturer's data sheets on each product to be used, including:
    2. Installation instructions and recommendations.
    3. Storage and handling requirements and recommendations.
    4. Manufacturer's best practice guide.
    5. Technical data sheet.
    6. Standard CAD drawings
    7. Shop Drawings: Provide detailed drawings of atypical non-standard applications of cladding

- junctions and penetrations which are outside the scope of the standard details and specifications provided by the manufacturer.
8. Verification Samples: For each finish product specified, two samples, minimum size 4 by 6 inches, representing actual product, color, and patterns.
3. Roofing shall be installed as follows:
    1. Contractor and subcontractors shall follow all manufacturer's guidelines, specifications, and best practice.
    2. Fasteners: #10 WoodTite High Low screws painted to match roof color with EPDM/metal washers.
  4. Self-adhesive bituminous roofing membrane shall be applied following best practice and manufacturer's recommendations
  5. Contractor and subcontractors shall refer to and follow Fabra's guidelines for flashing details.
- B. Provide metal flashing at all junctures between plane changes.
  - C. Provide all roofing accessories including all composition and metal flashing, fasteners, cements, etc. as required to provide a complete finished installation.
  - D. Install one layer 30 lb. asphalt saturated felt, lapped 4" at the seams over roof sheathing.
  - E. Provide all necessary caulking and sealants required to complete the work.
  - F. All window and door openings shall be lined with code approved self-adhesive flashing membrane before installation of window and door units in accordance with best practices.
  - G. Stainless steel or other approved corrosion-resistant flashing shall be provided at the top and sides of all exterior window and door openings in such a manner as to be leak-proof.
  - H. Approved corrosion-resistant flashings shall be installed in the following locations:
    1. Under and at the ends of masonry, wood or metal copings and sills.
    2. Continuously above all projecting wood trim.
    3. At the intersection of exterior walls and porches.
    4. At wall and roof intersections.
  - I. All insulation shall be blown in fiberglass unless otherwise noted, and shall have 'R' values as shown in these construction documents.
  - J. Insulation shall be manufactured by Owens-Corning, CertainTeed, or equal.
  - K. A vapor retarder shall be installed on the interior side of the stud wall.
    1. Product shall be CertainTeed Membrain Vapor Retarder or approved equal.
  - L. Insulation materials, including facings, such as vapor barriers or breather papers installed within floor-ceiling assemblies, roof-ceiling assemblies, wall assemblies, crawl spaces and attics shall have a flame-spread index not to exceed 25, with an accompanying smoke-developed index not to exceed 450 when tested in accordance with ASTM E 84.
  - M. When such materials are installed in concealed spaces, the flame-spread and smoke-developed limitations do not apply to the facings, provided that the facing is installed in substantial contact with the unexposed surface of the ceiling, floor or wall finish.
  - N. Cellulose loose-fill insulation, meeting all code requirements, shall not be used unless first reviewed with, and approved by the Architect.
  - A. All exposed insulation materials installed on Attic floors shall have a critical radiant flux not less than 0/12 watt per square centimeter (verify with manufacturer). Tests for critical radiant flux shall be made in accordance with ASTM E970.
  - B. Fiber Cement Siding shall comply with the following:

## PART 1 GENERAL

### 1.1 SECTION INCLUDES

- A. Fiber cement panels, trim, fascia, and accessories; James Hardie HZ10

Engineered for Climate Siding.

## 1.2 RELATED SECTIONS

- A. Rough Carpentry: Wood framing and bracing.
- B. Rough Carpentry: Sheathing.
- C. Thermal & Moisture Protection.

## 1.3 REFERENCES

- A. ASTM D3359 - Standard Test Method for Measuring Adhesion by Tape Test, Tool and Tape.
- B. ASTM E136 - Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750 degrees C.

## 1.4 SUBMITTALS

- A. Product Data: Manufacturer's data sheets on each product to be used, including:
  - 1. Preparation instructions and recommendations.
  - 2. Storage and handling requirements and recommendations.
  - 3. Installation methods.
- B. Shop Drawings: Provide detailed drawings of atypical non-standard applications of cementitious siding materials which are outside the scope of the standard details and specifications provided by the manufacturer.
- C. Verification Samples: For each finish product specified, two samples, minimum size 4 by 6 inches (100 by 150 mm), representing actual product, color, and patterns.

## 1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Minimum of 2 years experience with installation of similar products.

## 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Store siding on edge or lay flat on a smooth level surface. Protect edges and corners from chipping. Store sheets under cover and keep dry prior to installing.
- C. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

## 1.7 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

## 1.8 WARRANTY

A. Product Warranty: Limited, non-pro-rated product warranty.

1. HardiPanel HZ10 vertical siding for 30 years.
2. HardieTrim HZ10 boards for 15 years.

B. Workmanship Warranty: Application limited warranty for 2 years.

## PART 2 PRODUCTS

### 2.1 MANUFACTURERS

A. Acceptable Manufacturer: James Hardie Building Products, Inc., 26300 La Alameda Suite 400 ; Mission Viejo, CA 92691

B. Substitutions: Not permitted unless written approval from Architect is received.

### 2.2 SIDING

A. HardiPanel HZ10 vertical siding:

3. Fiber-cement Siding - complies with ≈STM C 1186 Type A Grade II.
4. Fiber-cement Siding - complies with ≈STM E 136 as a noncombustible material.
5. Fiber-cement Siding - complies with ASTM E 84 Flame Spread Index = 0, Smoke Developed Index = 5.
6. CAL-FIRE, Fire Engineering Division Building Materials Listing - Wildland Urban Interface (WUI) Listed Product.
7. National Evaluation Report No. NER 405 (BOCA, ICBO, SBCCI, IBC, IRC).
8. City of Los Angeles, Research Report No. 24862.
9. Miami Dade County, Florida Notice of Acceptance 07-0418.04.
10. US Department of Housing and Urban Development Materials Release 1263d
11. California DSA PA-019.
12. City of New York M EA 223-93-M.
13. Florida State Product Approval FL889.
14. Texas Department of Insurance Product Evaluation EC-23.

B. Artisan HZ10 lap siding requirement for Materials:

15. Fiber-cement Siding - complies with ≈STM C 1186 Type A Grade II.
16. Fiber-cement Siding - complies with ≈STM E 136 as a noncombustible material.
17. Fiber-cement Siding - complies with ≈STM E 84 Flame Spread Index = 0, Smoke Developed Index = 5.
18. Warnock Hersey Product Listing.
19. CAL-FIRE, Fire Engineering Division Building Materials Listing - Wildland Urban Interface (WUI) Listed Product.
20. Florida State Product Approval FL10477.
21. Miami Dade County, Florida Notice of Acceptance 08-0514.11.
22. Texas Department of Insurance Product Evaluation EC-55.
23. Manufacturer's Technical Data Sheet.

C. Vertical Siding: HardiePanel HZ10 siding as manufactured by James Hardie Building Products, Inc.

1. Type: Sierra 8 inches (203 mm) Vertical siding panel 4 feet by 8 feet (1219 mm by 2438 mm).

D. Trim:

1. HardieTrim HZ10 boards as manufactured by James Hardie Building Products, Inc.
  - a. Product: 5/4 NT3 Boards, 3-1/2 inch (89 mm) width.
  - b. Product: 5/4 NT3 Boards, 11-1/4 inch (286 mm) width.

- c. Texture: Smooth.
- d. Length: 12 feet (3658 mm).
- e. Thickness: 1 inch (24 mm).

#### E. FURRING (STRAPPING)

- 1. 1x4 pressure treated furring strips

#### F. FASTENERS

- 1. Wood Framing Fasteners:
  - a. Wood Framing: Trim: 16ga stainless steel finishing nails, 2 inch
  - b. Wood Framing: 0.089 inch (2.2 mm) shank by 0.221 inch (5.6 mm) head by 2 inches (51 mm) corrosion resistant siding nails.

#### G. FINISHES

- 1. Factory Primer: Provide factory applied universal primer.
  - a. Primer: Factory primed by James Hardie.
- 2. Topcoat: Refer to Section 09900 and Finish Schedule.

### PART 3 EXECUTION

#### 3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. If framing preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- C. Nominal 2 inch by 6 inch (51 mm by 102 mm) wood framing selected for minimal shrinkage and complying with local building codes, including the use of water-resistive barriers or vapor barriers where required. Minimum 1-1/2 inches (38 mm) face and straight, true, of uniform dimensions and properly aligned.
  - 1. Install water-resistive barriers and claddings to dry surfaces.
  - 2. Repair any punctures or tears in the water-resistive barrier prior to the installation of the siding.
  - 3. Protect siding from other trades.

#### 3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. The water-resistive barrier must be appropriately installed with penetration and junction flashing in accordance with local building code requirements.

#### 3.3 INSTALLATION - HARDIEPANEL HZ10 VERTICAL SIDING

- A. Install materials in strict accordance with manufacturer's installation instructions.
- B. Furring: Install 1x4 furring at 24" OC and at locations indicated on Drawings. Fasten to studs.

- C. Block framing between studs where HardiePanel siding horizontal joints occur.
- D. Install metal Z flashing and provide a 1/4 inch (6 mm) gap at horizontal panel joints.
- E. Place fasteners no closer than 3/8 inch (9.5 mm) from panel edges and 2 inches (51 mm) from panel corners.
- F. Allow minimum vertical clearance between the edge of siding and any other material in strict accordance with the manufacturer's installation instructions.
- G. Maintain clearance between siding and adjacent finished grade.
- H. Specific framing and fastener requirements refer to Tables 2 and 3 in National Evaluation Service Report No. NER-405.

### 3.4 INSTALLATION - HARDIETRIM HZ10 BOARDS

- A. Install materials in strict accordance with manufacturer's installation instructions. Install flashing around all wall openings.
- B. Fasten through trim into structural framing or code complying sheathing. Fasteners must penetrate minimum 3/4 inch (19 mm) or full thickness of sheathing. Additional fasteners may be required to ensure adequate security.
- C. All trim shall be fastened with 16 ga stainless steel finishing nails,
- D. Place fasteners no closer than 3/4 inch (19 mm) and no further than 2 inches (51 mm) from side edge of trim board and no closer than 1 inch (25 mm) from end. Fasten maximum 16 inches (406 mm) on center.
- E. Maintain clearance between trim and adjacent finished grade.
- F. Cornerboards shall be prebuilt where possible.
- G. Trim inside corner with a single board trim both side of corner.
- H. Outside Corner Board Attach Trim on both sides of corner with 16 gage corrosion resistant finish nail 1/2 inch (13 mm) from edge spaced 16 inches (406 mm) apart, weather cut each end spaced minimum 12 inches (305 mm) apart.
- I. Allow 1/8 inch gap between trim and siding.
- J. Seal gap with high quality, paint-able caulk.
- K. Full lengths of trim shall be used where required length is less than 12 feet. Only when trim is required to cover more than 12 feet are splices allowed.
- L. All splices shall be mitered at a 45° angle, orientated to drain water down and away from building structure.
- M. All seams, nail holes, and blemishes shall be filled with exterior grade painting putty and sanded smooth with surface before exterior painting begins.



### 3.5 FINISHING

- A. Finish unprimed siding with a minimum one coat high quality, alkali resistant primer and one coat of either, 100 percent acrylic or latex or oil based, exterior grade topcoats or two coats high quality alkali resistant 100 percent acrylic or latex, exterior grade topcoat within 90 days of installation. Follow paint manufacturer's written product recommendation and written application instructions.
- B. Finish factory primed siding with a minimum of one coat of high quality 100 percent acrylic or latex or oil based exterior grade paint within 180 days of installation. Follow paint manufacturer's written product recommendation and written application instructions.

### 3.6 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

## 8. **DOORS & WINDOWS**

- A. The perimeter of all exterior doors and windows shall be sealed with caulking.
- B. All doors shall be readily operable from the side from which egress is to be made without the use of a key or special knowledge or effort.
- C. The floor or landing at a door shall not be more than 1½" lower than the top of the threshold, except that the landing at an exterior doorway shall not be more than 8" below the top of the threshold, provided that the door, other than an exterior storm or screen door, does not swing over the landing.
- D. For overhead sectional doors, the following shall apply:

#### i. GENERAL

##### 1. SECTION INCLUDES

- a. Sectional overhead doors of the following types:
  - i. Steel doors with minor ribs, thermally-broken, polyurethane insulated. (Models 3730, 3720, 3724, 3717, 3715)

#### ii. RELATED SECTIONS

- 1. Rough Carpentry: Rough wood framing and blocking for door opening.

#### iii. REFERENCES

- 1. ASTM A 653/A 653M - Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
- 2. ASTM A 924/A 924M - Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process.

#### iv. SUBMITTALS

- 1. Product Data: Manufacturer's data sheets on each product to be used, including:
  - a. Preparation instructions and recommendations.
  - b. Storage and handling requirements and recommendations.
  - c. Installation methods.

- d. Operation and maintenance data.
  - 2. Shop Drawings: Include opening dimensions and required tolerances, connection details, anchorage spacing, hardware locations, and installation details.
  - 3. Selection Samples: For each finish specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
  - 4. Verification Samples: For each finish specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and patterns.
- v. WIND PERFORMANCE REQUIREMENTS
- 1. Design doors to withstand positive and negative wind loads as calculated in accordance with applicable building code.
    - a. Design Wind Load: 30 psf.
    - b. Safety Factor: 1.5 times design wind load.
- vi. QUALITY ASSURANCE
- 1. Manufacturer Qualifications: Company specializing in manufacturing the types of doors specified in this section, with not less than ten years of documented experience.
  - 2. Installer Qualifications: Company specializing in installing the types of products specified in this section, with minimum of five years of documented experience, and approved by the door manufacturer.
- vii. WARRANTY
- 1. Delamination Warranty: Provide manufacturer's standard warranty against delamination.
    - a. Warranty period: 10 years.
- viii. PRODUCTS
- 1. MANUFACTURERS
    - a. Clopay Building Products Company, Mason, OH; Model 3720
    - b. Overhead Door Co, Lewisville, TX; Model 592
    - c. Or approved equal.
  - 2. LIGHT RIBBED STEEL DOORS, THERMALLY-BROKEN, POLYURETHANE INSULATED
    - a. Door Construction:
    - b. Panels: Foamed in place Polyurethane core construction between exterior and interior steel skins.
    - c. Steel Skins: Formed from roll formed commercial or drawing quality steel sheet, hot-dip galvanized per ASTM A 924/A 924M and ASTM A 653/A 653M, pre-painted with primer and baked-on polyester topcoat; sections formed to create weather tight tongue-in-groove meeting joint.
    - d. Reinforcing: Galvanized and primed steel reinforcement located under each hinge location, pre-punched for hinge attachment.
    - e. Handle: Step plate/lift handle on bottom panel section.
    - f. Premium Duty 2-inches (51 mm) Door:
      - i. Door Size: As listed in Door Schedule on Drawings.
      - ii. Overall Panel Thickness: 2-inches (51 mm).

- iii. Steel Skin Thickness: Minimum 27 gauge 0.016 inch (0.40 mm) exterior; minimum 28 gauge 0.015 inch (0.38 mm) interior.
  - iv. End Stiles: Galvanized steel end stiles, engineered for easy hardware attachment through pre-punched holes. Minimum 18 gauge, 0.045 inch (1.14 mm) thick for single end hinge style and 16 gauge .056 inch (1.42 mm) minimum for double end hinge style.
- g. Astragal: U-shaped flexible PVC in retainer of full-length 0.055 inch (1.4 mm) rigid PVC.
- h. Thermal Resistance (R-value): Min of 17 deg F hr. sq. ft./Btu (3.0 (K sq. m)/W); calculated door section R-value in accordance with DASMA TDS-163.
- i. Finish: Interior stucco embossed texture with shallow U ribbed pattern, white interior color. Exterior stucco embossed with light ribbed pattern, exterior as follows:
  - i. White.
- j. Locking: Inside spring loaded slide bolt lock on end stile that engages slot in track.
  - i. Provide two inside slide lock.
- k. Weatherstripping: Provide complete perimeter seals. Provide flexible top seal, flexible jamb seal and U shaped bottom seal.
- l. Tracks: Vertical tracks minimum 0.061 inch (1.55 mm) galvanized steel tapered and mounted for wedge type closing. Horizontal tracks minimum 0.075 inch (1.91 mm) galvanized steel, reinforced with minimum 0.0897 inch (2.28 mm) galvanized steel angles as required:
  - i. Track Width: 2 inches (50 mm).
  - ii. Provide low headroom tracks as indicated.
- m. Spring Counterbalance: Torsion spring counterbalance mechanism sized to weight of the door, with a helically wound, oil tempered torsion spring mounted on a steel shaft; cable drum of die cast aluminum with high strength galvanized aircraft cable with minimum 7 to 1 safety factor.
  - i. High Cycle Spring: 25,000 cycles.

## ix. EXECUTION

### 1. EXAMINATION

- a. Examine wall and overhead areas, including opening framing and blocking, with installer present, for compliance with requirements for installation tolerances, clearances, and other conditions affecting performance of Work in this Section.
- b. Proceed with installation only after unsatisfactory conditions have been corrected.
- c. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

### 2. PREPARATION

- a. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

### 3. INSTALLATION

- a. Install overhead doors and track in accordance with approved shop drawings and the manufacturer's printed instructions.

### 4. PROTECTION

- a. Protect installed products until completion of project.
- b. Touch-up, repair or replace damaged products before Substantial Completion.

**E. Swinging doors to comply with the following:**

**i. SUBMITTALS**

1. Product Data: Manufacturer's data sheets on each product to be used, including:
  - a. Preparation instructions and recommendations.
  - b. Storage and handling requirements and recommendations.
  - c. Installation methods.
  - d. Operation and maintenance data.
2. Shop Drawings: Include opening dimensions and required tolerances, connection details, anchorage spacing, hardware locations, and installation details.
3. Selection Samples: For each finish specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
4. Verification Samples: For each finish specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and patterns.

**ii. WIND PERFORMANCE REQUIREMENTS**

1. Design doors to withstand positive and negative wind loads as calculated in accordance with applicable building code.
  - a. Design Wind Load: 30 psf.
  - b. Safety Factor: 1.5 times design wind load.

**iii. QUALITY ASSURANCE**

1. Manufacturer Qualifications: Company specializing in manufacturing the types of doors specified in this section, with not less than ten years of documented experience.
2. Installer Qualifications: Company specializing in installing the types of products specified in this section, with minimum of five years of documented experience, and approved by the door manufacturer.

**iv. WARRANTY**

1. Delamination Warranty: Provide manufacturer's standard warranty against delamination.
  - a. Warranty period: 10 years.

**v. PRODUCTS**

**1. MANUFACTURERS**

- a. Curries Co, Mason City, IA; Model 747
- b. Or approved equal.

**2. FRAMES**

- a. Manufacturers:
  - i. Curries Co, Mason City, IA; Curriseal
  - ii. Or approved equal.
- b. 16 gauge steel

- c. Hot-dipped galvanized
- d. Factory Prime Coated
- e. Style: Single Rabbet
- f. Thermally broken
- g. Provide kerf for weatherstripping.

3. U-value: 0.70

vi. EXECUTION

1. EXAMINATION

- a. Examine wall and overhead areas, including opening framing and blocking, with installer present, for compliance with requirements for installation tolerances, clearances, and other conditions affecting performance of Work in this Section.
- b. Proceed with installation only after unsatisfactory conditions have been corrected.
- c. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

2. PREPARATION

- a. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3. INSTALLATION

- a. Install doors and frames in accordance with approved shop drawings and the manufacturer's printed instructions.

4. PROTECTION

- a. Protect installed products until completion of project.
- b. Touch-up, repair or replace damaged products before Substantial Completion.

**F. Door Hardware Sets:**

i. HDW-1:

- 1. Hinges: 1 ½ pair butt full mortised, ball bearing, heavy duty, stainless steel.
- 2. Exit Device: Von Duprin 98 rim device, exit only
  - a. Finish: Satin Chrome (BHMA 626)
- 3. Weatherstripping: Pemko MAG349D
- 4. Threshold: Pemko 254X5DFG
- 5. Door Shoe: Pemko 2221DV
- 6. Closer: LCN 4020

- a. Finish: Gray Powdercoat
- 7. Rain Drip: Pemko 346D
- ii. HDW-2:
  - 1. All hardware to be provided by overhead door manufacturer.

## **9. FINISHES**

### **SECTION 09 29 00**

#### **GYPSUM BOARD**

## **PART 1 GENERAL**

### **1.1 SECTION INCLUDES**

- A. Gypsum board and accessories.

### **1.2 RELATED SECTIONS**

- A. Section 06 10 00 - Rough Carpentry
- B. Section 07 21 00 - Thermal Insulation
- C. Section 07 92 00 - Joint Sealants
- D. Section 09 90 00 – Painting and Coating

### **1.3 REFERENCES**

- A. American Society for Testing and Materials (ASTM):
  - 1. ASTM C473 - Standard Test Methods for Physical Testing of Gypsum Panel Products.
  - 2. ASTM C475 - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board.
  - 3. ASTM C514 - Standard Specification for Nails for the Application of Gypsum Board.
  - 4. ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board.
  - 5. ASTM C1047 - Standard Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base.
  - 6. ASTM D3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber.
  - 7. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
  - 8. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials.
- B. Gypsum Association (GA):
  - 1. GA-214 - Recommended Levels of Gypsum Board Finish.
  - 2. GA-216 - Application and Finishing of Gypsum Panel Products.
  - 3. GA-801 – Handling and Storage of Gypsum Panel Products.
- C. UL (FRD) - Fire Resistance Directory; Underwriters Laboratories Inc.

### **1.4 SUBMITTALS**

- A. Manufacturer's data sheets on each product to be used, including:
  - 1. Gypsum board, joint tape and finish.
  - 2. Preparation instructions and recommendations.

3. Storage and handling requirements and recommendations.
4. Installation methods.

B. Shop Drawings:

1. Indicate details associated with opening locations and details, and opening termination details.

## 1.5 QUALITY ASSURANCE

- A. Installer must have a minimum of 5 years of experience installing gypsum wallboard products.

## 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Per GA-801, store products inside under cover and keep them dry and protected against damage from weather, direct sunlight, surface contamination, corrosion, construction traffic, and other damaging causes.
1. Neatly stack gypsum boards flat to prevent sagging.
  2. Handle gypsum boards to prevent damage to edges, ends, and surfaces.
  3. Protect adhesives and joint compounds from freezing or overheating per manufacturer's instructions.
  4. Protect metal framing studs.
- B. Store and dispose of solvent-based materials and supplies used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

## 1.7 FIELD CONDITIONS

- A. Environmental Limitations: Comply with ASTM C840 and GA-216 requirements or gypsum board manufacturer's written recommendations, whichever are more stringent.
- B. Do not install paper-faced gypsum panels until installation areas are enclosed and conditioned.
- C. Do not install panels that are wet, those that are moisture damaged, and those that are mold damaged. Glass mat panels with exposure warranties may be installed per manufacturer recommendations.
1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
  2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

## PART 2 PRODUCTS

### 2.1 MANUFACTURERS

- A. US Gypsum
- B. Georgia-Pacific Gypsum
- C. Or approved equal

### 2.2 MATERIALS

- A. Gypsum Board Materials: Comply with ASTM C1396. Board size as suitable for use to minimize joints.
- a. Thickness: 5/8 inch (15.9 mm).

### 2.3 ACCESSORIES

- A. Paper Faced crimp on Metal Corner Beads: ASTM C1047; formed galvanized steel angle, minimum base steel 0.014 inch thick, sizes as required to suit substrate.
- B. Paper Faced Metal Casing Beads: ASTM C1047; formed galvanized steel trim, minimum base steel

0.014 inch thick, sizes as required to suit substrate.

- C. Screws for attaching gypsum board to wood framing shall be Type w or Type S in accordance with ASTM C1002, and shall penetrate the wood not less than 5/8".
- D. Joint Compound and Tape: ASTM C 475.

## **PART 3 EXECUTION**

### **3.1 EXAMINATION**

- A. Examine areas and conditions under which Work of this Section will be performed. Correct conditions detrimental to timely and proper completion of Work. Do not proceed until unsatisfactory conditions are corrected.
- B. Examine substrates to which gypsum board construction attaches or abuts. Verify structural framing for compliance with requirements for installation tolerances and other conditions affecting performance of gypsum board construction.

### **3.2 INSTALLATION**

- A. Gypsum board - General:
  - 1. Gypsum Board Application and Finishing Standards: Install and finish gypsum board to comply with ASTM C840 and GA-216.
  - 2. Locate exposed end-butt joints as far from center of walls and ceilings as possible, and stagger not less than 24 inches (610 mm) in alternate courses of board.
  - 3. Install ceiling boards across framing in the manner which minimizes the number of end-butt joints, and which will avoid end joints in the central area of each ceiling. Stagger end joints a minimum of 24 inches (610 mm).
  - 4. Install wall and partition boards vertically unless otherwise noted.
  - 5. Install exposed gypsum board with face side out. Do not install imperfect, damaged, or damp boards. Butt boards together for a light contact at edges and ends with not more than 1/15.9 inch (1.5 mm) open space between boards. Do not force into place.
  - 6. Locate either edge or end joints over supports, except in horizontal applications or where intermediate supports or gypsum board back-blocking is provided behind end joints. Position boards so that like edges abut, tapered edges against tapered edges, and mill-cut or field-cut ends against mill-cut or field-cut ends. Do not place tapered edges against cut edges or ends. Stagger vertical joints over different studs on opposite sides of partitions.
  - 7. Attach gypsum board to supplementary framing and blocking provided for additional support at openings and cut-outs.
  - 8. Form control joints and expansion joints at locations indicated on Drawings, and as recommended by Gypsum Association, with space between edges of boards prepared to receive trim accessories.
    - a. Maximum distance between control joints: 30 linear feet (9144 mm).
  - 9. Space fasteners in gypsum boards per referenced gypsum board application and finishing standard and manufacturer's recommendations.
- B. Accessories:
  - 1. General: Where feasible, use the same fasteners to anchor trim accessory flanges as required to fasten gypsum board to the supports. Otherwise, fasten flanges to comply with manufacturer's recommendations.
  - 2. Install metal corner beads at external corners.
  - 3. Install metal edge trim whenever edge of gypsum board would otherwise be exposed or semi-exposed, except where plastic trim is indicated on Drawings. Provide type with face flange to receive joint compound except where "U" bead (semi-finishing type) is indicated.
  - 4. Install gypsum board reveals where indicated on Drawings.
  - 5. Install control joints at locations indicated on Drawings, or if not indicated, at spacing and



locations required by referenced gypsum board application and finish standard, and approved by Architect for visual effect.

### **3.3 JOINT TREATMENT**

- A. General:
  - 1. Inspect areas to be joint treated, verifying that the gypsum board fits snugly against supporting framework.
  - 2. In areas where joint treatment and compound finishing will be performed, maintain a temperature of not less than 55 degrees F (13 degrees C) for 24 hours prior to commencing the treatment, and until joint and finishing compounds have dried.
  - 3. Apply the joint treatment and finishing compound by machine or hand tool.
  - 4. Provide a minimum drying time of 24 hours between coats, with additional drying time in poorly ventilated areas.
- B. Embedding Compounds:
  - 1. Apply to gypsum board joints and fastener heads in a thin uniform layer.
  - 2. Spread the compound not less than 3 inches (76 mm) wide at joints, center the reinforcing tape in the joint, and embed the tape in the compound. Then, spread a thin layer of compound over the tape.
  - 3. After this treatment has dried, apply a second coat of embedding compound to joints and fastener heads, spreading in a thin uniform coat to not less than 6 inches (152 mm) wide at joints. Feather edges.
  - 4. Sand between coats.
  - 5. When thoroughly dry, sandpaper to eliminate ridges and high points.
- C. Finishing Compounds:
  - 1. After embedding compound is thoroughly dry and has been completely sanded, apply a coat of finishing compound to joints and fastener heads.
  - 2. Feather the finishing compound to not less than 12 inches (305 mm) wide.
  - 3. When thoroughly dry, sandpaper to obtain a uniform smooth surface, taking care to not scuff the paper surface of the board.

### **3.4 LEVEL OF FINISH**

- A. Level of finish shall be as per Gypsum Association publication, GA-214 as noted herein.
  - 1. Finish types are noted on Drawings or Finish Schedule.
  - 2. Sand between each coat of compound as required to remove ridges and other imperfections.
- B. Level of finish Type 4:
  - 1. Tape embedded in joint compound at joints and interior angles, wiped with joint knife leaving thin coat of compound over tape.
  - 2. Cover tape with two separate coats of joint compound.
  - 3. Accessories covered with three separate coats of joint compound.
  - 4. Fasteners covered with three separate coats of joint compound.
  - 5. Joint compound shall be smooth and free of tool marks and ridges. Sand to achieve a smooth paint-ready surface.

### **3.5 TOLERANCES**

- A. Maximum Variation of Finished Gypsum Board Surface from True Flatness: 1/8 inch (1.5 mm) in 10 feet (3048 mm) in any direction.

### **3.6 PROTECTION**

- A. Provide final protection and maintain conditions that ensure gypsum board construction being without damage or deterioration at time of Substantial Completion.

### **3.7 CLEANING**

- A. In addition to other requirements for cleaning, use necessary care to prevent scattering gypsum board scraps and dust, and to prevent tracking gypsum and joint finishing compound onto floor surfaces.
- B. At completion of each segment of installation in a room or space, promptly pick up and remove scraps, debris, and surplus materials of this Section from working area.

## END OF SECTION

### **Section 09 90 00 – Painting and Coating**

#### PART 4 GENERAL

##### 1. RELATED DOCUMENTS

- a. Drawings and general provisions of the Contract, including General and Supplementary Conditions apply to this Section.

##### 2. SUMMARY

- a. Section includes surface preparation and the application of paint systems on [interior substrates.] [the following interior substrates:]
  - 1) Concrete.
  - 2) Clay masonry.
  - 3) Concrete masonry units (CMU).
  - 4) Steel.
  - 5) Cast iron.
  - 6) Galvanized metal.
  - 7) Aluminum (not anodized or otherwise coated).
  - 8) Wood.
  - 9) Gypsum board.
  - 10) Plaster.
  - 11) Spray-textured ceilings.
  - 12) Cotton or canvas insulation covering.
  - 13) ASJ insulation covering.
- b. Related Requirements:
  - 1) Section 099113 "Exterior Painting" for surface preparation and the application of paint systems on exterior substrates.

##### 3. DEFINITIONS

- a. Gloss Level 3: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523, an eggshell finish.
- b. Gloss Level 4: 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D 523, a satin-like finish.
- c. Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D 523, a semi-gloss finish.

##### 4. ACTION SUBMITTALS

- a. Product Data: For each type of product. Include preparation requirements and application instructions.
- b. Samples for Initial Selection: Submit Interior and Exterior paint samples to both Architect and Owner for color verification.
- c. Samples for Verification: For each type of paint system and in each color and gloss of topcoat.
  - 1) Submit Samples on rigid backing, 8 inches (200 mm) square.
  - 2) Step coats on Samples to show each coat required for system.
  - 3) Label each coat of each Sample.
  - 4) Label each Sample for location and application area.
- d. Product List: For each product indicated, include the following:
  - 1) Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules.
  - 2) VOC content.

## 5. CLOSEOUT SUBMITTALS

- a. Coating Maintenance Manual: Provide coating maintenance manual including area summary with finish schedule, area detail designating location where each product/color/finish was used, product data pages, material safety data sheets, care and cleaning instructions, touch-up procedures, and color samples of each color and finish used.

## 6. MAINTENANCE MATERIAL SUBMITTALS

- a. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
  - 1) Paint: Not less than 1 gal of each material and color applied.

## 7. QUALITY ASSURANCE

- 1) Applicator shall have a minimum of 5 years of paint application experience on similar type projects.

## 8. DELIVERY, STORAGE, AND HANDLING

- a. Delivery and Handling: Deliver products to Project site in an undamaged condition in manufacturer's original sealed containers, complete with labels and instructions for handling, storing, unpacking, protecting, and installing. Packaging shall bear the manufacturer's label with the following information:
  - 1) Product name and type (description).
  - 2) Batch date.
  - 3) Color number.
  - 4) VOC content.
  - 5) Environmental handling requirements.
  - 6) Surface preparation requirements.
  - 7) Application instructions.
- b. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F (7 deg C).
  - 1) Maintain containers in clean condition, free of foreign materials and residue.

- 2) Remove rags and waste from storage areas daily.

## 9. FIELD CONDITIONS

- a. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F (10 and 35 deg C).
- b. Do not apply paints when relative humidity exceeds 85 percent; at temperatures less than 5 deg F (3 deg C) above the dew point; or to damp or wet surfaces.

## PART 5 PRODUCTS

### 1. MANUFACTURERS

- 1) Sherwin Williams
  - 2) Benjamin Moore & Co.
  - 3) PPG Architectural Finishes, Inc.
  - 4) Pratt & Lambert.
  - 5) Or Approved Equal
- b. Source Limitations: Obtain paint materials from single source from single listed manufacturer.
- 1) Manufacturer's designations listed on a separate color schedule are for color reference only and do not indicate prior approval.

### 2. PAINT, GENERAL

- a. MPI Standards: Provide products that comply with MPI standards indicated and that are listed in its "MPI Approved Products List."
- b. Material Compatibility:
  - 1) Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
  - 2) For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.
- c. VOC Content: Products shall comply with VOC limits of authorities having jurisdiction and, for interior paints and coatings applied at Project site, the following VOC limits, exclusive of colorants added to a tint base, when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
  - 1) Flat Paints and Coatings: 50 g/L.
  - 2) Nonflat Paints and Coatings: 150 g/L.
  - 3) Dry-Fog Coatings: 400 g/L.
  - 4) Primers, Sealers, and Undercoaters: 200 g/L.
  - 5) Anticorrosive and Antirust Paints Applied to Ferrous Metals: 250 g/L.
  - 6) Zinc-Rich Industrial Maintenance Primers: 340 g/L.
  - 7) Pretreatment Wash Primers: 420 g/L.
  - 8) Floor Coatings: 100 g/L.
  - 9) Shellacs, Clear: 730 g/L.
  - 10) Shellacs, Pigmented: 550 g/L.

- d. Colors: Match existing exterior and interior colors.

## PART 6 EXECUTION

### 1. EXAMINATION

- a. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers. Where acceptability of substrate conditions is in question, apply samples and perform in-situ testing to verify compatibility, adhesion, and film integrity of new paint application.
  - 1) Report, in writing, conditions that may affect application, appearance, or performance of paint.
- b. Substrate Conditions:
  - 1) Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
    - a) Concrete: 12 percent.
    - b) Wood: 15 percent.
    - c) Gypsum Board: 12 percent.
  - 2) Gypsum Board Substrates: Verify that finishing compound is sanded smooth.
- c. Proceed with coating application only after unsatisfactory conditions have been corrected; application of coating indicates acceptance of surfaces and conditions.

### 2. PREPARATION

- a. Comply with manufacturer's written instructions and recommendations in "MPI Manual" applicable to substrates indicated.
- b. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.
  - 1) After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.
- c. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.
  - 1) Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.
- d. Concrete Substrates: Remove release agents, curing compounds, efflorescence, and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces to be painted exceeds that permitted in manufacturer's written instructions.
  - 1) Concrete Floors: Remove oil, dust, grease, dirt, and other foreign materials. Comply with SSPC-SP-13/NACE 6 or ICRI 03732.

- e. Shop-Primed Steel Substrates: Clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with the same material as used for shop priming to comply with SSPC-PA 1 for touching up shop-primed surfaces.
- f. Galvanized-Metal Substrates: Remove grease and oil residue from galvanized sheet metal fabricated from coil stock by mechanical methods to produce clean, lightly etched surfaces that promote adhesion of subsequently applied paints.
- g. Wood Substrates:
  - 1) Scrape and clean knots, and apply coat of knot sealer before applying primer.
  - 2) Sand surfaces that will be exposed to view, and dust off.
  - 3) Prime edges, ends, faces, undersides, and backsides of wood.
  - 4) After priming, fill holes and imperfections in the finish surfaces with putty or plastic wood filler. Sand smooth when dried.

### 3. APPLICATION

- a. Apply paints according to manufacturer's written instructions and to recommendations in "MPI Manual."
  - 1) Use applicators and techniques suited for paint and substrate indicated.
  - 2) Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
  - 3) Paint front and backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.
  - 4) Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
  - 5) Primers specified in painting schedules may be omitted on items that are factory primed or factory finished if acceptable to topcoat manufacturers.
- b. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

### 4. FIELD QUALITY CONTROL

- a. Dry Film Thickness Testing: Owner may engage the services of a qualified testing and inspecting agency to inspect and test paint for dry film thickness.
  - 1) Contractor shall touch up and restore painted surfaces damaged by testing.
  - 2) If test results show that dry film thickness of applied paint does not comply with paint manufacturer's written recommendations, Contractor shall pay for testing and apply additional coats as needed to provide dry film thickness that complies with paint manufacturer's written recommendations.

### 5. CLEANING AND PROTECTION

- a. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
- b. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
- c. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.

- d. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

## 6. PAINTING SCHEDULE

### a. Concrete floors

- 1) Clear Hardener: See Section 3.N

### b. Metal Substrates (Steel, Galvanized Steel):

#### 1) Latex System:

- a) Prime Coat: Primer, rust-inhibitive, water based, MPI #107:

- b) Products:

- 1) SHERWIN WILLIAMS Pro Industrial Pro-Cryl Universal Primer, B66-310 Series
  - 2) Or approved equal.

- c) Topcoat: Alkyd Enamel (Semigloss):

- d) Products:

- 1) SHERWIN WILLIAMS Pro Industrial Acrylic Semi-Gloss Coating, B66-650 Series
  - 2) Or approved equal.

### c. Wood Substrates: Including exposed wood items not indicated to receive shop-applied finish.

#### 1) Latex System:

- a) Prime Coat: Primer sealer, latex, exterior: Water-based latex primer

- b) Topcoat: Latex, exterior, semi-gloss:

- 1) SHERWIN WILLIAMS SuperPaint Exterior
  - 2) Or approved equal

### d. Fiber Cement Siding:

- 1) Prime Coat: Primer sealer, latex, exterior: Water-based latex primer

- 2) Topcoat: Latex, exterior, semi-gloss:

- 1) SHERWIN WILLIAMS SuperPaint Exterior
  - 2) Or approved equal

### e. Gypsum Board Substrates:

#### 1) Latex System:

- a) Prime Coat: Primer, latex, interior:

- 1) Products:

- a) SHERWIN WILLIAMS High Build Primer
  - b) Or Approved Equal

- b) Topcoat: Latex, interior, eggshell:

- 1) Products:

- a) Sherwin Williams SuperPaint Interior
  - b) Or approved equal

**END OF SECTION 099123**

**10. SPECIALTIES**

**A. Portable Fire extinguishers:**

**i. F.EXT-1:**

1. Wall bracket mounted 5-lb 3-a, 40-b:c UL. rated fire extinguisher

**11. EQUIPMENT – Not Applicable**

**12. FURNISHINGS**

**A. Not Applicable**

**13. SPECIAL CONSTRUCTION**

**A. Not Applicable**

**14. CONVEYING SYSTEMS – Not Applicable**

**15. MECHANICAL**

**A. Not Applicable**

**16. ELECTRICAL**

- A.** All electrical work shall meet the requirements of all governing codes.
- B.** The electrical information shown on these plans is conceptual only and is shown for design intent only.
- C.** The final complete design and related installation shall be the responsibility of a licensed Electrician as allowed/required by the current edition of the Oregon Electrical Specialty Code, and shall meet all requirements as set forth therein.
- D.** Code compliance shall be the responsibility of the licensed Electrician.
- E.** The location of switches, outlets, and lights as shown on the plans may be modified by the licensed electrician to meet the desires of the owner and to meet code requirements.
- F.** Verify the locations of all switches, fixtures, and outlets with the owner and architect prior to installation.
- G.** 3-way switches shall be provided by the licensed electrician where required by code regulations.
- H.** When not already provided, code-approved smoke alarms shall be installed in the following locations (field verify during the bidding phase):
  1. Truck Garage.
- I.** Alarms shall be interconnected in such a manner that the actuation of one alarm will actuate all of the alarms in the building. The alarm shall be clearly audible in all bedrooms over background noise levels with all intervening doors closed. The smoke alarms shall be listed and installed in accordance with the provisions of the Oregon Fire Specialty Code and the fire warning equipment provisions of NFPA 72. The alarms shall receive their power from the building wiring, and when power is interrupted, shall receive power from a battery. Wiring shall be permanent and without a disconnecting switch other than those required for over current protection.

**17. LANDSCAPING**



**A.** All disturbed lawn areas shall be returned to their original condition, with adequate topsoil for good seed growth.

Areas shall be seeded, covered with straw, and watered. Review watering requirements with the owner prior to leaving the job.

**B.** No other landscaping shall be included in the scope of the work under this contract except as otherwise agreed upon with the owner.