SECTION 13 34 00

PRE-ENGINEERED BUILDING SYSTEMS

Display hidden notes to specifier. (Don't know how? [Click Here](http://www.arcat.com/sd/display_hidden_notes.shtml))

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\*\* NOTE TO SPECIFIER \*\* Lester Building Systems; pre-engineered wood framed metal clad industrial and agricultural buildings.  
.  
This section is based on the products of Lester Building Systems, which is located at:  
1111 2nd Ave. S.  
Lester Prairie, MN 55354  
Toll Free Tel: 800-826-4439  
Tel: 320-395-2531  
Fax: 320-395-2969  
Email: [request info (sbeste@lesterbuildings.com)](http://admin.arcat.com/users.pl?action=UserEmail&company=Lester+Building+Systems&coid=33790&rep=&fax=320-395-2969&message=RE:%20Spec%20Question%20(13121lbs):%20%20&mf=)  
Web: [www.lesterbuildings.com](http://www.lesterbuildings.com)   
 [ [Click Here](http://www.arcat.com/arcatcos/cos33/arc33790.html) ] for additional information.  
Lester Buildings is one of the largest manufacturers of engineered, wood frame building systems in the United States. Our buildings cover a broad range of customer needs, from simple pole barns to custom, one-of-a-kind structures... and everything in between. Nearly 150,000 Lester buildings dot the American landscape today.  
See our SpecWizard: HYPERLINK "http://www.arcat.com/specwizard/13121lbs/index.htm" Click Here

1. GENERAL
   1. SECTION INCLUDES

\*\* NOTE TO SPECIFIER \*\* Delete items below not required for project.

* + 1. Provide pre-engineered building systems, including but not limited to primary and secondary structural framing systems, roofing, siding, roof and wall insulation, personnel doors, windows and accessories. Basis of design is the following system by Lester Building Systems:
       1. Uni-Frame I, clear span truss and embedded columns.
       2. Uni-Frame II, clear span truss and above grade columns on concrete foundation.
       3. Uni-Frame III, rafter roof framing with interior support columns.
  1. RELATED SECTIONS

\*\* NOTE TO SPECIFIER \*\* Delete any sections below not relevant to this project; add others as required. Include only sections needed to clarify responsibility for work which might be unclear otherwise.

* + 1. Section 31 20 00 - Earth Moving.
    2. Section 03 30 00 - Cast-in-Place Concrete.
    3. Section 08 70 00 - Hardware.
  1. REFERENCES

\*\* NOTE TO SPECIFIER \*\* Delete references from the list below that are not actually required by the text of the edited section.

* + 1. ASTM International (ASTM):
       1. ASTM A153 - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
       2. ASTM A653 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
       3. ASTM C90 - Standard Specification for Loadbearing Concrete Masonry Units.
       4. ASTM C523 - Method of Test for Light Reflectance of Acoustical Materials by the Integrating Sphere Reflectometer.
       5. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing.
       6. ASTM C991 - Standard Specification for Flexible Glass Fiber Insulation for Metal Buildings.
       7. ASTM C1036 - Standard Specification for Flat Glass.
       8. ASTM C1048 - Standard Specification for Heat-Treated Flat Glass-Kind HS, Kind FT Coated and Uncoated Glass.
       9. ASTM D523 - Standard Test Method for Specular Gloss.
       10. ASTM D3363 - Standard Test Method for Film Hardness by Pencil Test.
       11. ASTM D3462 - Standard Specification for Asphalt Shingles Made from Glass Felt and Surfaced with Mineral Granules.
       12. ASTM D3841 - Standard Specification for Glass-Fiber-Reinforced Polyester Plastic Panels.
       13. ASTM D4145 - Standard Test Method for Coating Flexibility of Prepainted Sheet.
       14. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
       15. ASTM E96 - Standard Test Methods for Water Vapor Transmission of Materials.

\*\* NOTE TO SPECIFIER \*\* Post-frame construction is the primary structural frame that typically consists of a clear span truss supported by two columns. This primary framing system is supported by an interlocking system of purlins, girts, and sheathing. Loads are transferred to the ground through columns typically embedded in the ground or surface-mounted to a concrete or masonry foundation.

* 1. SYSTEM DESCRIPTION
     1. Structural Frame Design:

\*\* NOTE TO SPECIFIER \*\* Delete framing system not required.

* + - 1. Design shall be based on the building framing and enclosure as manufactured by Lester Building Systems.
         1. Type: Clear span roof truss or rafter style roof framing with interior column lines.
         2. Maximum Width: 124 feet.
         3. Maximum Clear Height: 30 feet.
         4. Columns: Embedded in ground or bolted to foundation.
         5. Purlins: Recessed between trusses in galvanized steel joist hangers Or on-edge above truss, factory drilled and fastened with 3/16 inch x 6 inches screw.
      2. Design shall be based on the building framing and enclosure Uni-Frame III as manufactured by Lester Building Systems.
         1. Type: Rafter style roof framing with interior column lines.
         2. Maximum Width: 240 feet.
         3. Maximum Clear Height: 24 feet.
         4. Columns: Embedded in ground or bolted to foundation.
         5. Purlins: Recessed between trusses in galvanized steel joist hangers.
    1. Dimensions:

\*\* NOTE TO SPECIFIER \*\* Interior post spacing shall be on center, except for end bays which shall be from center of first interior bay post to the outside of endwall framing.

* + - 1. Width: \_\_\_\_\_\_ feet \_\_\_\_\_\_ inches, outside to outside of primary or secondary wall framing.
      2. Length: \_\_\_\_\_\_ feet \_\_\_\_\_\_ inches, outside to outside of primary or secondary wall framing.
      3. Height: \_\_\_\_\_\_ feet \_\_\_\_\_\_ inches, clearance from top of floor to underside of truss or rafter.
      4. Roof Slope: \_\_\_\_\_\_:12 (units of rise per 12 units of run).
      5. Ceiling Slope: \_\_\_\_\_\_:12 (units of rise per 12 units of run).
    1. Structural Requirements:
       1. Building Code: International building Code (IBC) and ASCE-7, current edition.

\*\* NOTE TO SPECIFIER \*\* Input code requirements and structural analysis.

* + - 1. Design Loads:
         1. Ground Snow Load: \_\_\_\_ psf (\_\_\_\_ MPa)
         2. Ground Exposure Factor: \_\_\_\_\_\_.
         3. Roof Load, Live load: \_\_\_\_ psf (\_\_\_\_ MPa)
         4. Roof Dead Load: \_\_\_\_ psf (\_\_\_\_ MPa)
         5. Ceiling Dead Load: \_\_\_\_ psf (\_\_\_\_ MPa)
         6. Wind Load: Wind speed (3 sec gust): \_\_\_\_ mph (\_\_\_\_ km/h)
         7. Wind Exposure: Maximum Considered Earthquake 0.2 Second Spectral Response Acceleration.
         8. Maximum Considered Earthquake 1.0 Second Spectral Response Acceleration.
         9. Collateral Loads: Additional loads imposed by contract documents other than weight of building systems specified in this section.
         10. Combination Loads: Comply with Building Code.
      2. Structural Design:
         1. Perform calculations using diaphragm and/or frame analysis. Incorporate bracing as required.
         2. Comply with AF&PA "National Design Specification for Wood Construction (NDS)."
         3. Trusses:

\*\* NOTE TO SPECIFIER \*\* Select l/240 below for trusses supporting flexible ceilings; l/360 for trusses supporting plaster ceilings. Delete deflection criteria not required.

Limit deflection for live or snow loads to L/240 for trusses supporting steel ceilings and to L/180 for overhangs and trusses not supporting ceilings.

Limit deflection for live or snow loads to L/360 for trusses supporting GWB or plaster ceilings and to L/180 for overhangs and trusses not supporting ceilings.

Comply with appropriate NDS and Truss Plate Institute (TPI) standards.

\*\* NOTE TO SPECIFIER \*\* Include the following paragraph and subparagraphs if using uni-rib metal roof and/or wall panels. Delete panel application not required.

* + - * 1. Metal Wall and Roof Panels:

Design in accordance with AISI "Specifications for the Design of Light-Gauge, Cold-Formed Steel Structural Members" and in accordance with sound engineering methods and practices.

* + - * 1. Plywood or Oriented Strand Board Sheathing: Comply with APA "Plywood Design Specification."
        2. Expansion/Contraction Provisions: Design roof attachment system to allow for expansion and contraction of metal roofing, due to seasonal temperature variations, without detrimental effect to the roof panels.
  1. SUBMITTALS
     1. Submit under provisions of Section 01 30 00 - Administrative Requirements.
     2. Product Data: Manufacturer's data sheets on each product to be used, including:
        1. Manufacturer's specifications and installation instructions for building components and accessories.
        2. Preparation instructions and recommendations.
        3. Storage and handling requirements and recommendations.
     3. Shop Drawings: Showing roof framing, cross sections, roof and wall covering and trim details and accessory and component details clearly indicating proper assembly.
     4. Structural Engineer Certification: Letter signed by a Professional/Structural Engineer, registered to practice in the jurisdiction of the project, verifying compliance with Snow Design Requirements. Letter shall reference specific dead loads, live loads, wind loads, tributary area load reductions (if applicable) collateral loads, seismic loads, end use categories, and governing building code including edition and load applications.

\*\* NOTE TO SPECIFIER \*\* Delete selection samples if colors have already been selected.

* + 1. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
    2. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and patterns.
  1. QUALITY ASSURANCE
     1. Manufacturer Qualifications: Minimum ten years experience in producing pre-engineered wood buildings of the type specified.
     2. Installer Qualifications: Installer Qualifications: Minimum three years experience in erection of pre-engineered wood buildings of the type specified.
     3. Structural Engineer's Qualifications: Minimum of three years designing post frame structures; registered in the jurisdiction of the project.
  2. DELIVERY, STORAGE, AND HANDLING
     1. Store products in manufacturer's unopened packaging until ready for installation. Follow manufacturer's recommended storage procedures. Do not allow steel siding and roofing to contact the ground.
     2. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of authorities having jurisdiction.
  3. PROJECT CONDITIONS
     1. Anticipate 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.
  4. WARRANTY
     1. Structural Design - Lifetime: Manufacturer warrants that the building designed by Lester will not experience an occurrence of structural failure or an occurrence of structural damage due to improper structural design (excepting ventilation systems) on account of weather conditions, such as wind, ice, and snow, as indicated on the Lester Sales Agreement, "Building Description Section". The foregoing warranty is limited to 50 years with respect to any Owner which is not an individual.
     2. Preservative Treated Materials: 50 years. Preservative treated lumber, including structural columns, are warranted by the original materials manufacturer against failures due to fungal decay and termite infestation.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + 1. Roofing and Siding Finish, steel panel: Warranted by the original materials manufacturer for 40 years from the date of shipment. Refer to Warranty document for complete details.
    2. Individual Building Products: Manufacturer's standard warranty.
    3. Installation Warranty: One year general installation warranty, five years against roof leaks.

1. PRODUCTS
   1. MANUFACTURERS
      1. Acceptable Manufacturer: Lester Building Systems, which is located at: 1111 2nd Ave. S.; Lester Prairie, MN 55354; Toll Free Tel: 800-826-4439; Tel: 320-395-2531; Fax: 320-395-2969; Email: [request info (sbeste@lesterbuildings.com)](http://admin.arcat.com/users.pl?action=UserEmail&company=Lester+Building+Systems&coid=33790&rep=&fax=320-395-2969&message=RE:%20Spec%20Question%20(13121lbs):%20%20&mf=); Web: [www.lesterbuildings.com](http://www.lesterbuildings.com)

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two paragraphs; coordinate with requirements of Division 1 section on product options and substitutions.

* + 1. Substitutions: Not permitted.
    2. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.
  1. STRUCTURAL FRAMING
     1. Footings:
        1. Embedded Column Footings:
           1. Precast 4 by 17 inch diameter 4000 psi concrete footing pad.
           2. PrecastPlus augmented footing consisting of 4 by 17 inch diameter 4000 psi concrete footing pad resting on dry concrete mix of diameter and thickness specified in the shop drawings.
           3. Cast in place concrete footing of 3000 psi ready-mix concrete of size and thickness specified in the shop drawings.
           4. Other: \_\_\_\_\_\_.
        2. Column Foundation, Above Grade:
           1. Monolithic floating slab. Sized and reinforced as specified in the shop drawings.
           2. Pier and Beam. Sized and reinforced as specified in the shop drawings.
           3. Cast in place trenched wall foundation. Sized and reinforced as specified in the shop drawings.
           4. Cast in place frost wall and foundation. Sized and reinforced as specified in the shop drawings.
     2. Primary Framing:
        1. Columns:
           1. Treated Lumber Section:

Lumber: No. 1 or Better Southern Yellow Pine, pressure treated with Chromated Copper Arsenate, Type III, to a retention of 0.6 pcf (9.6 kg/m 3) and kiln dried after treating to 19 percent maximum moisture content.

Fabrication: Laminate individual pieces using ring shank feed nails per manufacturer's engineered nailing pattern. Fasteners shall have ASTM A153 galvanizing.

* + - * 1. Untreated Lumber Section:

Lumber: Lumber: No. 1 or Better Southern Yellow Pine or Douglas Fir-Larch or other equivalent NDS approved species/grade kiln dried to 19 percent maximum moisture content.

Fabrication: Laminate individual pieces using ring shank feed nails per manufacturer's engineered nailing pattern.

Grade and size shall be selected to support imposed loads within deflection limits.

* + - * 1. End Joint Connection of Treated and Untreated Sections: Factory fabricated finger joint.
        2. Configuration:

Sidewall and Endwall Columns: 3 ply or 4 ply combining 2x4, 2x6, 2x8, or 2x10 (50x150, 50x200, 50x250 mm) dimension lumber as required by "Structural Design" requirements specified herein.

Corner Columns: 2 ply or 3 ply 2x4, 2x6 or 2x8 (50x150, 50x200 mm) dimension lumber as required by "Structural Design" requirements specified herein.

\*\* NOTE TO SPECIFIER \*\* UniFrame I and T&C I only. Delete if not required.

* + - * 1. Embedded Column Anchorage:

Anchor blocks factory adhered to column base.

Concrete collar pinned to column base with steel reinforcing rods.

\*\* NOTE TO SPECIFIER \*\* UniFrame II and T&C II only. Delete if not required.

* + - * 1. Column on Concrete Foundation:

\*\* NOTE TO SPECIFIER \*\* Delete one of the two following paragraphs.

Provide screw in concrete anchors.

Provide cast-in-place anchors per shop drawings.

* + - 1. Trusses: Comply with "Structural Design" and "Quality Assurance" requirements as specified herein.
         1. Comply with TPI "Design Specification for Metal Plate Connected Wood Trusses" and "Quality Standard for Metal Plate Connected Wood Trusses."
         2. Manufacturer shall have a third party inspection program to verify compliance with requirements of TPI.

\*\* NOTE TO SPECIFIER \*\* Delete following if inspection agency stamp is not required.

* + - * 1. Stamp trusses with inspection agency identification.
    1. Secondary Framing:
       1. Purlins and Girts:
          1. Lumber: No. 2 or Better dimension lumber kiln dried to 19 percent maximum moisture content.
          2. Configuration: 2x4 or 2x6 or 2x8 (50x100, 50x150, 50x200 mm) as required by "Structural Design" requirements specified herein.

Girts: Size, grade and spacing to meet wind and deflection criterion.

\*\* NOTE TO SPECIFIER \*\* Delete types not required.

Face mounted to exterior side of column.

Precision cut to fit between columns. Flush to exterior and interior faces.

\*\* NOTE TO SPECIFIER \*\* Uni-Frame purlin. Delete if not required.

Purlins: Precision cut to fit between trusses flush with top of top chord. Provide 20 gauge galvanized purlin saddle hangers.

\*\* NOTE TO SPECIFIER \*\* Town and Country purlin. Delete if not required.

Purlins: Factory drilled and dadoed to accept 3/16 inch diameter x 6 inch screw fastener and ensure building modularity.

* + - * 1. Spacing: As required by "Structural Design" requirements specified herein.

\*\* NOTE TO SPECIFIER \*\* UniFrame I and T&C I only. Delete if not required.

* + - 1. Splashplank:
         1. Lumber: No. 2 or Better Southern Yellow Pine, preservative treated, to a retention of 14 pcf (2.2 kg/m3) of micronized copper azole.
         2. Configuration: 2x6 or 2x8 (50x 150 or 50x200 mm) dimension lumber. Milled S4S for single row and milled T&G for multiple rows.

\*\* NOTE TO SPECIFIER \*\* UniFrame II and T&C II only. Delete if not required.

* + - 1. Sill Plate:
         1. Lumber: No. 2 or Better Southern Yellow Pine, preservative treated, to a retention of 0.17 pcf (B2O3) borate (0.25 pcf disodium octaborate tetrahydrate DOT) and kiln dried after treating to 19 percent maximum moisture content.
         2. Configuration: 2x4 or 2x6 or 2x8 or 2x10 (50x100 or 50x150 or 50x200 or 50x250 mm) dimension lumber as required by "Structural Design" requirements specified herein.
      2. Bracing, Wall and Lateral Truss Type (where required by "Structural Design"):
         1. Lumber: No. 2 or Better dimension lumber.
         2. Configuration:

2x4 or 2x6 (50x100, 50x150 mm) as required by "Structural Design" requirements specified herein.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* 1. EXPOSED FASTENER, LAP-SEAM, METAL ROOF PANELS
     1. Metal Roofing: UNI-RIB panel as manufactured by Lester Building Systems.

\*\* NOTE TO SPECIFIER \*\* Select G90 (Z275) or G60 (Z180) galvanized coating below for buildings housing livestock. Select G60 (Z180) for all other applications. Delete two of the three paragraphs following.

* + - 1. Material and Finish: 28 Gauge, ASTM A 653 (A 653 M), Structural Quality, Grade 80 (550) (formerly Grade E), AZ50 (Z180) zinc coating both sides, Triple Spot Test.
         1. Exterior Surface Finish:

Bonderize and provide baked on primer and Valspar Weather-XL (silicone modified polyester) finish coat, 0.9 mil (0.023 mm) minimum dry film thickness.

Gloss (60 Degrees): ASTM D523, 20 to 80.

Pencil Hardness: ASTM D3363, F to 2H.

T-Bend: ASTM D4145: 2T to 4T.

\*\* NOTE TO SPECIFIER \*\* Colors with an asterisk meet Energy Star reflectivity standards. Delete color not required.

Color: Lester Antique Brown.

Color: Lester Barn Red. \*

Color: Lester Black.

Color: Lester Bone White. \*

Color: Lester Burgundy.

Color: Lester Clay. \*

Color: Lester Dark Blue.

Color: Lester Earth Brown. \*

Color: Lester Colony Green.

Color: Lester Evergreen. \*

Color: Lester White Sand. \*

Color: Lester Pewter Gray. \*

Color: Lester Quaker Gray.

Color: Lester Rawhide. \*

Color: Lester Sandstone. \*

Color: Lester Slate Blue. \*

Color: Lester Snow White. \*

\* Meets Energy Star reflectivity standards.

\*\* NOTE TO SPECIFIER \*\* Select G90 (Z275) or G60 (Z180) galvanized coating below for buildings housing livestock. Select G60 (Z180) for all other applications. Delete coating not required.

* + - 1. Material and Finish: 29 Gauge, ASTM A 653 (A 653 M), Structural Quality, Grade 80 (550) (formerly Grade E), galvanized steel with G90 (Z275) zinc coating both sides, Triple Spot Test.
         1. Exterior Surface Finish:

Bonderize and provide baked on primer and Valspar Weather-XL (silicone modified polyester) finish coat, 0.9 mil (0.023 mm) minimum dry film thickness.

Gloss (60 Degrees): ASTM D523, 20 to 80.

Pencil Hardness: ASTM D3363, F

\*\* NOTE TO SPECIFIER \*\* Colors with an asterisk meet Energy Star reflectivity standards. Delete color not required.

Color: Lester Galvanized Only - No Paint.

Color: Lester Antique Brown.

Color: Lester Barn Red. \*

Color: Lester Black.

Color: Lester Bone White. \*

Color: Lester Burgundy.

Color: Lester Clay. \*

Color: Lester Dark Blue.

Color: Lester Earth Brown. \*

Color: Lester Colony Green.

Color: Lester Evergreen. \*

Color: Lester White Sand. \*

Color: Lester Pewter Gray. \*

Color: Lester Quaker Gray.

Color: Lester Rawhide. \*

Color: Lester Sandstone. \*

Color: Lester Slate Blue. \*

Color: Lester Snow White. \*

\* Meets Energy Star reflectivity standards.

* + - 1. Material and Finish: 26 Gauge, ASTM A 653 (A 653 M), Structural Quality, Grade 80 (550) (formerly Grade E), AZ50 zinc coating both sides, Triple Spot Test.
         1. Exterior Surface Finish:

Bonderize and provide baked on primer and Valspar Weather-XL (silicone modified polyester) finish coat, 0.9 mil (0.023 mm) minimum dry film thickness.

Gloss (60 Degrees): ASTM D523, 20 to 80.

Pencil Hardness: ASTM D3363, F

T-Bend: ASTM D4145: 2T to 4T.

\*\* NOTE TO SPECIFIER \*\* Colors with an asterisk meet Energy Star reflectivity standards. Delete color not required.

Color: Lester Antique Brown.

Color: Lester Barn Red. \*

Color: Lester Black.

Color: Lester Bone White. \*

Color: Lester Burgundy.

Color: Lester Clay. \*

Color: Lester Dark Blue.

Color: Lester Earth Brown. \*

Color: Lester Colony Green.

Color: Lester Evergreen. \*

Color: Lester White Sand. \*

Color: Lester Pewter Gray. \*

Color: Lester Quaker Gray.

Color: Lester Rawhide. \*

Color: Lester Sandstone. \*

Color: Lester Slate Blue. \*

Color: Lester Snow White. \*

\* Meets Energy Star reflectivity standards.

* + - 1. Material and Finish: 26 Gauge, ASTM A 653 (A 653 M), Structural Quality, Grade 80 (550) (formerly Grade E), AZ50 zinc coating both sides, Triple Spot Test.
         1. Exterior Surface Finish:

Bonderize and provide baked on primer and factory applied, baked-on 70% Kynar 500 or Hylar 5000 PVDF fluoropolymer resin based Fluropon paint coating as manufactured by Valspar, 0.9 mil (0.023 mm) minimum dry film thickness.

Gloss (60 Degrees): ASTM D523, 20 to 80.

Pencil Hardness: ASTM D3363, F to 2H.

T-Bend: ASTM D4145: 2T to 4T.

\*\* NOTE TO SPECIFIER \*\* Colors with an asterisk meet Energy Star reflectivity standards. Delete color not required.

Color: Lester Antique Brown.

Color: Lester Regal Red. \*

Color: Lester Barn Red. \*

Color: Lester Black.

Color: Lester Bone White. \*

Color: Lester Burgundy.

Color: Lester Clay. \*

Color: Lester Dark Blue.

Color: Lester Earth Brown. \*

Color: Lester Colony Green.

Color: Lester Evergreen. \*

Color: Lester White Sand. \*

Color: Lester Pewter Gray. \*

Color: Lester Quaker Gray.

Color: Lester Rawhide. \*

Color: Lester Sandstone. \*

Color: Lester Slate Blue. \*

Color: Lester Snow White. \*

Color: Lester Metallic Copper. \*

Color: Lester Metallic Champagne. \*

\* Meets Energy Star reflectivity standards.

* + - 1. Configuration:
         1. Roll-formed; 36 inch (915 mm) coverage width. Provide panels covering up to 35 foot (10.5 m) lengths in single pieces.
         2. Four major corrugations, 7/8 inch (22 mm) high, spaced 12 inches (305 mm) on center with 3 minor corrugations, 1/8 inch (3mm) high, spaced 3 inches (76 mm) on center between each major corrugation.
         3. Form one outboard corrugation as overlapping corrugation.
         4. Form opposite outboard corrugation as underneath corrugation with full return leg to support side lap and a continuous anti-siphon drain channel.
         5. Factory cut to required length.
      2. Material and Finish: As shown on Erection Drawings, except as specified herein.
      3. Fasteners: Color coated No. 10 piercing screws with 1/4 inch (6 mm) hex head pre-assembled to 1/2 inch (13 mm) O.D. dome seal or bond seal galvanized steel and EPDM washers.
    1. Basis of Design: Eclipse panel as manufactured by Lester Building Systems. Metal roof panels with side edges lapping adjacent panels. Secured to supports using fasteners through the major ribs.
       1. Configuration:
          1. Roll-formed; 36 inch (915 mm) coverage width. Provide panels covering up to 35 foot (10.5 m) lengths in single pieces.
          2. Three major corrugations, 7/8 inch (25 mm) high, spaced 18 inches (457 mm) on center with 3 minor corrugations, 1/8 inch (3mm) high, spaced 3 inches (76 mm) on center between each major corrugation.
          3. Form one outboard corrugation as overlapping corrugation.
          4. Form opposite outboard corrugation as underneath corrugation with full return leg to support side lap and a continuous anti-siphon drain channel.
          5. Factory cut to required length.

\*\* NOTE TO SPECIFIER \*\* Typically select material below for buildings housing livestock. Delete if not required.

* + - 1. Material and Finish: 28 gauge steel, ASTM A 792 Class AZ50 Galvalume, coated both sides, 0.0157 inches (.398 mm) thick.
         1. Exterior Surface Finish: Bonderize and provide baked-on primer and Valspar Weather-XL (silicone modified polyester) finish coat, 0.7 - 0.8 mil minimum dry film thickness.

\*\* NOTE TO SPECIFIER \*\* Colors below meet Energy Star reflectivity standards except for Antique Brown, Black Burgundy, Dark Blue and Quaker Gray. Delete colors not required.

Color: Lester Antique Brown.

Color: Lester Barn Red. \*

Color: Lester Black.

Color: Lester Bone White. \*

Color: Lester Burgundy.

Color: Lester Clay. \*

Color: Lester Colony Green.

Color: Lester Dark Blue.

Color: Lester Earth Brown. \*

Color: Lester Evergreen. \*

Color: Lester Pewter Gray. \*

Color: Lester Quaker Gray.

Color: Lester Rawhide. \*

Color: Lester Sandstone. \*

Color: Lester Slate Blue. \*

Color: Lester Snow White. \*

Color: Lester White Sand. \*

Color: As selected by Architect.

\* Meets Energy Star reflectivity standards.

\*\* NOTE TO SPECIFIER \*\* Typically select material below for general construction. Delete if not required.

* + - 1. Material and Finish: 26 gauge steel, ASTM A 792 Class AZ50 Galvalume, coated both sides, 0.0187 inches (.474 mm) thick.

\*\* NOTE TO SPECIFIER \*\* Delete exterior surface finish type not required.

* + - * 1. Exterior Surface Finish: Bonderize and provide baked-on primer and Valspar Weather-XL (silicone modified polyester) finish coat, 0.7 - 0.8 mil minimum dry film thickness.
        2. Exterior Surface Finish: Bonderize and provide baked-on primer and factory applied baked-on 70 percent Kynar 500 or Hylar 5000 PVDF fluropolymer resin based paint coating manufactured by Valspar, with a minimum dry film thickness of 0.7 - 0.8 mil..

\*\* NOTE TO SPECIFIER \*\* Colors below meet Energy Star reflectivity standards except for Antique Brown, Black, Burgundy, Dark Blue and Quaker Gray, Metallic Champagne and Metallic Copper. Delete colors not required.

Color: Lester Antique Brown.

Color: Lester Barn Red. \*

Color: Lester Black.

Color: Lester Bone White. \*

Color: Lester Burgundy.

Color: Lester Clay. \*

Color: Lester Colony Green.

Color: Lester Dark Blue.

Color: Lester Earth Brown. \*

Color: Lester Evergreen. \*

Color: Lester Metallic Champagne (only available in PVDF paint). \*

Color: Lester Metallic Copper (only available in PVDF paint). \*

Color: Lester Pewter Gray. \*

Color: Lester Quaker Gray.

Color: Lester Rawhide. \*

Color: Lester Regal Red (only available in PVDF paint). \*

Color: Lester Sandstone. \*

Color: Lester Slate Blue. \*

Color: Lester Snow White. \*

Color: Lester White Sand.

Color: As selected by Architect.

\* Meets Energy Star reflectivity standards.

* + - 1. Fasteners: DS2000 coated No. 14 piercing screws with 3/8 inch (9.5 mm) hex head pre-assembled to 1/2 inch (13 mm) O.D. dome seal or bond seal galvanized steel and EPDM washers.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* 1. CONCEALED FASTENER, LAP-SEAM, METAL ROOF PANELS
     1. Basis of Design: Eclipse panel as manufactured by Lester Building Systems. Metal roof panels with side edges lapping adjacent panels. Secured to supports using fasteners through the major ribs. Fasteners concealed with snap-on batten. Include accessories required for weathertight installation.
        1. Configuration
           1. Roll-formed; 36 inch (915 mm) coverage width. Provide panels covering up to 35 foot (10.5 m) lengths in single pieces.
           2. Rib profile, 1 inch (25 mm) inch high trapezoidal major ribs 18 inches on center. Reversed minor ribs 3 inch (75 mm) wide on centers spaced symmetrically.
           3. One outboard corrugation as overlapping.
           4. Opposite outboard corrugation as underneath corrugation with full return leg to support side lap.
           5. Outboard side Lap Height with Batten (H by W): 1.5 by 1 inches (38 by 25 mm).
           6. Factory cut to required length.

\*\* NOTE TO SPECIFIER \*\* Choose one of the four subparagraphs below. Delete those not required.

* + - * 1. Eave: Hemmed.
        2. Eave: No extension.
        3. Eave: 4 inch (102 mm).

\*\* NOTE TO SPECIFIER \*\* Typically select material below for buildings housing livestock. Delete if not required.

* + - 1. Material and Finish: 28 gauge steel, ASTM A 792 ClassAZ50 Galvalume, coated both sides, 0.0157 inches (.398 mm) thick.
         1. Exterior Surface Finish: Bonderize and provide baked-on primer and Valspar Weather-XL (silicone modified polyester) finish coat, 0.7 - 0.8 mil minimum dry film thickness.

\*\* NOTE TO SPECIFIER \*\* Colors below meet Energy Star reflectivity standards except for Antique Brown, Black Burgundy, Dark Blue and Quaker Gray. Delete colors not required.

Color: Lester Antique Brown.

Color: Lester Barn Red. \*

Color: Lester Black.

Color: Lester Bone White. \*

Color: Lester Burgundy.

Color: Lester Clay. \*

Color: Lester Colony Green.

Color: Lester Dark Blue.

Color: Lester Earth Brown. \*

Color: Lester Evergreen. \*

Color: Lester Pewter Gray. \*

Color: Lester Quaker Gray.

Color: Lester Rawhide. \*

Color: Lester Sandstone. \*

Color: Lester Slate Blue. \*

Color: Lester Snow White. \*

Color: Lester White Sand. \*

Color: As selected by Architect.

\* Meets Energy Star reflectivity standards.

\*\* NOTE TO SPECIFIER \*\* Typically select material below for general construction. Delete if not required.

* + - 1. Material and Finish: 26 gauge steel, ASTM A 792 Class AZ50 Galvalume, coated both sides, 0.0187 inches (.474 mm) thick.

\*\* NOTE TO SPECIFIER \*\* Delete exterior surface finish type not required.

* + - * 1. Exterior Surface Finish: Bonderize and provide baked-on primer and Valspar Weather-XL (silicone modified polyester) finish coat, 0.7 - 0.8 mil minimum dry film thickness.
        2. Exterior Surface Finish: Bonderize and provide baked-on primer and factory applied baked-on 70 percent Kynar 500 or Hylar 5000 PVDF fluoropolymer resin based paint coating manufactured by Valspar, with a minimum dry film thickness of 0.7 - 0.8 mil..

\*\* NOTE TO SPECIFIER \*\* Colors below meet Energy Star reflectivity standards except for Antique Brown, Black, Burgundy, Dark Blue and Quaker Gray, Metallic Champagne and Metallic Copper. Delete colors not required.

Color: Lester Antique Brown.

Color: Lester Barn Red. \*

Color: Lester Black.

Color: Lester Bone White. \*

Color: Lester Burgundy.

Color: Lester Clay. \*

Color: Lester Colony Green.

Color: Lester Dark Blue.

Color: Lester Earth Brown. \*

Color: Lester Evergreen. \*

Color: Lester Metallic Champagne (only available in PVDF paint). \*

Color: Lester Metallic Copper (only available in PVDF paint). \*

Color: Lester Pewter Gray. \*

Color: Lester Quaker Gray.

Color: Lester Rawhide. \*

Color: Lester Regal Red (only available in PVDF paint). \*

Color: Lester Sandstone. \*

Color: Lester Slate Blue. \*

Color: Lester Snow White. \*

Color: Lester White Sand. \*

Color: As selected by Architect.

\* Meets Energy Star reflectivity standards.

* + 1. Fasteners: DS2000 coated No. 14 piercing screws with 3/8 inch (9.5 mm) hex head pre-assembled to 1/2 inch (13 mm) O.D. dome seal or bond seal galvanized steel ASTM A153, and EPDM washers.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* 1. SHINGLE ROOFING
     1. Deck Materials: APA rated sheathing, thickness and span rating as required by "Structural Design" requirements specified herein.
     2. Underlayment: Mechanically attached, coated woven synthetic roofing underlayment for sloped roofs. TITANIUM UDL-30 as manufactured by Interwrap, Inc.
     3. Shingles: ASTM D 3462, 3-tab fiberglass self-sealing shingle with Underwriters Laboratories label for wind resistance and Class A fire rating.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + - 1. Color: As selected by Architect from manufacturer's standard color range.
      2. Color: \_\_\_\_\_\_
    1. Fasteners:
       1. Deck Material to Structural Framing: Nail type, size and spacing as required by "Structural Design" requirements specified herein.
       2. Shingles to Deck Material: Nails or staples of type recommended by the shingle manufacturer.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* 1. ROOFING ACCESSORlES

\*\* NOTE TO SPECIFIER \*\* Following accessories are primarily applicable to buildings with metal roof panels. Edit and modify as required for shingle roofed buildings.

* + 1. Steel Ridge Cap:
       1. The cap materials and construction shall match the roof steel materials and construction.

\*\* NOTE TO SPECIFIER \*\* Verify required accessories below are shown on drawings, including necessary sizes, options, etc.

* + 1. Translucent Ridge Light: Acrylit, standard ridge profile, acrylic and polyester resins with gel coat UV protective layer.; ASTM D3841, minimum 8 ounces per square foot, 65 percent visible light transmission.
    2. Vents: Ridge vent, and/or low profile ridge ventilator as shown on Drawings.

\*\* NOTE TO SPECIFIER \*\* Cupola available in 24 inches (610 mm), 36 inches (914 mm), and 48 inches (1219 mm) base size; Available with Louvered or Windowed sides; Pre-painted 29 gauge steel construction; Roof, Sides, and Base in choice of standard Lester colors. (Note: window color matches side color.) Delete if not required.

* + 1. Cupola: Provide manufacturer's standard cupola or cupola and weathervane as shown on Drawings.
    2. Eave Overhang Fascia Flashing:
       1. Size: 12 inches nominal.
       2. Size: 24 inches nominal.
       3. Fascia Flashing Color: \_\_\_\_\_\_
       4. Vented Soffit Color: \_\_\_\_\_\_\_.
    3. End Overhang Fascia Flashing:
       1. Size: 12 inches nominal.
       2. Size: 24 inches nominal.
       3. Fascia Flashing Color: \_\_\_\_\_\_
       4. Vented Soffit Color: \_\_\_\_\_\_\_.
    4. Gutters and Downspouts: Provide manufacturer's standard gutters and downspouts as shown on Drawings.
    5. Closure Strips: Closed cell, 2 pcf density polyethylene foam, premolded to match configuration of panels.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* 1. SIDING
     1. Siding: UNI-RIB panel as manufactured by Lester Building Systems.

\*\* NOTE TO SPECIFIER \*\* Select G90 (Z275) or G60 (Z180) galvanized coating below for buildings housing livestock. Select G60 (Z180) for all other applications. Delete two of the three paragraphs following.

* + - 1. Material and Finish: 28 Gauge, ASTM A 653 (A 653 M), Structural Quality, Grade 80 (550) (formerly Grade E), AZ50 (Z180) zinc coating both sides, Triple Spot Test.
         1. Exterior Surface Finish:

Bonderize and provide baked on primer and Valspar Weather-XL (silicone modified polyester) finish coat, 0.9 mil (0.023 mm) minimum dry film thickness.

Gloss (60 Degrees): ASTM D523, 20 to 80.

Pencil Hardness: ASTM D3363, F to 2H.

T-Bend: ASTM D4145: 2T to 4T.

\*\* NOTE TO SPECIFIER \*\* Colors with an asterisk meet Energy Star reflectivity standards. Delete color not required.

Color: Lester Antique Brown.

Color: Lester Barn Red. \*

Color: Lester Black.

Color: Lester Bone White. \*

Color: Lester Burgundy.

Color: Lester Clay. \*

Color: Lester Dark Blue.

Color: Lester Earth Brown. \*

Color: Lester Colony Green.

Color: Lester Evergreen. \*

Color: Lester White Sand. \*

Color: Lester Pewter Gray. \*

Color: Lester Quaker Gray.

Color: Lester Rawhide. \*

Color: Lester Sandstone. \*

Color: Lester Slate Blue. \*

Color: Lester Snow White. \*

\* Meets Energy Star reflectivity standards.

* + - 1. Material and Finish: 29 Gauge, ASTM A 653 (A 653 M), Structural Quality, Grade 80 (550) (formerly Grade E), galvanized steel with G90 (Z275) zinc coating both sides, Triple Spot Test.
         1. Exterior Surface Finish:

Bonderize and provide baked on primer and Valspar Weather-XL (silicone modified polyester) finish coat, 0.9 mil (0.023 mm) minimum dry film thickness.

Gloss (60 Degrees): ASTM D523, 20 to 80.

Pencil Hardness: ASTM D3363, F.

\*\* NOTE TO SPECIFIER \*\* Colors with an asterisk meet Energy Star reflectivity standards. Delete color not required.

Color: Lester Galvanized Only - No Paint.

Color: Lester Antique Brown.

Color: Lester Barn Red. \*

Color: Lester Black.

Color: Lester Bone White. \*

Color: Lester Burgundy.

Color: Lester Clay. \*

Color: Lester Dark Blue.

Color: Lester Earth Brown. \*

Color: Lester Colony Green. \*

Color: Lester Evergreen. \*

Color: Lester White Sand. \*

Color: Lester Pewter Gray. \*

Color: Lester Quaker Gray.

Color: Lester Rawhide. \*

Color: Lester Sandstone. \*

Color: Lester Slate Blue. \*

Color: Lester Snow White \*

\* Meets Energy Star reflectivity standards.

* + - 1. Material and Finish: 26 Gauge, ASTM A 653 (A 653 M), Structural Quality, Grade 80 (550) (formerly Grade E), AZ50 (Z180) zinc coating both sides, Triple Spot Test.
         1. Exterior Surface Finish:

Bonderize and provide baked on primer and factory applied, baked-on 70% Kynar 500 or Hylar 5000 PVDF fluoropolymer resin based Fluropon paint coating as manufactured by Valspar, 0.9 mil (0.023 mm) minimum dry film thickness.

Gloss (60 Degrees): ASTM D523, 20 to 80.

Pencil Hardness: ASTM D3363, F to 2H.

T-Bend: ASTM D4145: 2T to 4T.

\*\* NOTE TO SPECIFIER \*\* Colors with an asterisk meet Energy Star reflectivity standards. Delete color not required.

Color: Lester Antique Brown.

Color: Lester Regal Red. \*

Color: Lester Barn Red. \*

Color: Lester Black.

Color: Lester Bone White. \*

Color: Lester Burgundy.

Color: Lester Clay. \*

Color: Lester Dark Blue.

Color: Lester Earth Brown. \*

Color: Lester Colony Green.

Color: Lester Evergreen. \*

Color: Lester White Sand. \*

Color: Lester Pewter Gray. \*

Color: Lester Quaker Gray.

Color: Lester Rawhide. \*

Color: Lester Sandstone. \*

Color: Lester Slate Blue. \*

Color: Lester Snow White. \*

Color: Lester Metallic Copper. \*

Color: Lester Metallic Champagne. \*

\* Meets Energy Star reflectivity standards.

* + - 1. Configuration:
         1. Roll-formed; 36 inch (915 mm) coverage width. Provide panels covering up to 35 foot (10.5 m) lengths in single pieces.
         2. Four major corrugations, 7/8 inch (22 mm) high, spaced 12 inches (305 mm) on center with 3 minor corrugations, 1/8 inch (3 mm) high, spaced 3 inches (76 mm) on center between each major corrugation.
         3. Form one outboard corrugation as overlapping corrugation.
         4. Form opposite outboard corrugation as underneath corrugation with full return leg to support side lap and a continuous anti-siphon drain channel.
         5. Factory cut to required length.

\*\* NOTE TO SPECIFIER \*\* Miter cut gables apply to all gables between 3:12 and 5:12 inclusive. Delete otherwise.

* + - * 1. Factory miter cut gable ends.
        2. Material and Finish: As shown on Erection Drawings, except as specified herein.
        3. Fasteners: Color coated No. 10 piercing screws with 1/4 inch (6 mm) hex head pre-assembled to 1/2 inch (13 mm) O.D. dome seal or bond seal galvanized steel and EPDM washers.
    1. Siding: Moderra mortarless masonry as manufactured by Moderra Concrete Siding, a division of Alliance Concrete Concepts, Inc. (www.moderra.com.)

\*\* NOTE TO SPECIFIER \*\* Delete types below not required.

* + - 1. Standard Unit: Exterior dimension 0.88 square feet and a minimum of 2.25 inches thickness.
      2. Adjustor Unit: Exterior dimension 0.88 square feet and a minimum of 2.25 inches thickness.
      3. Corner Unit: Exterior dimension is 0.88 square feet and a minimum of 2.25 inches thickness.
      4. Sill Unit: Exterior dimension is 0.44 square feet and a minimum of 3.5 inches thickness.
      5. Color: As selected from manufacturer's standard colors (http://moderra.com/newcolors.asp?cat=All).

\*\* NOTE TO SPECIFIER \*\* Delete type below not required.

* + - 1. Face Surface: Fractured rock face with a scored design.
      2. Face Surface: STRI pattern with a scored design.
      3. Performance: ASTM C90, C140, C145 with compressive strength of 4,000 psi, absorption 6 percent, unit height variance plus or minus 1/32 inch.
      4. Sill Attachment: Adhesive meeting the manufacturer's specifications.

\*\* NOTE TO SPECIFIER \*\* Delete type below not required.

* + - 1. Base Pad Material:
         1. Steel Angle: Minimum of 2 inches wide and 3 inches high and 1/4 inch thick, as engineered.
         2. Brick Ledge: Traditional brick ledge, level.
    1. Siding: Acrylit translucent wall panels as manufactured by Glasteel, a division of Stabilit America Inc. (www.glasteel.com).
       1. Type: Corrugated to match wall panel profile, 36 inch coverage.
       2. Material: Acrylic and polyester resins with gel coat UV protective layer, ASTM D3841, minimum 6 ounces per square foot, 65 percent visible light transmission.
    2. Siding: fiber cement lap siding
       1. Material: Composed of cement, sand, cellulose fibers, water and selected additives that have been autoclaved (cured with pressurized steam).

\*\* NOTE TO SPECIFIER \*\* Delete style not required.

* + - 1. Style: - Horizontal Lap Siding: 5/16 inch thick, Widths: 5.25 feet to12 feet; Lengths: 12 feet; Exposures: 4 inches to 10.75 inches.
      2. Style: l - Panel Siding: 5/16 inch thick, Widths: 4 feet; Lengths: 8 feet, 9 feet, 10 feet; Traditional 8 inch on center reverse batten board; Classic Cedar finish; Fiesta Stucco classic tudor finish.
      3. Style: MultiShake - Shakes: 1/4 inch thick; 16 feet wide; 4 feet long; 6 inch exposure; staggered edge or provenzal edge.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + - 1. Factory Finish: Primed and two coat paint system covered by 25 year warranty.

\*\* NOTE TO SPECIFIER \*\* Delete color not required.

* + - * 1. Color: Lester Antique Brown.
        2. Color: Lester Regal Red.
        3. Color: Lester Barn Red.
        4. Color: Lester Black.
        5. Color: Lester Bone White.
        6. Color: Lester Burgundy.
        7. Color: Lester Clay.
        8. Color: Lester Dark Blue.
        9. Color: Lester Earth Brown.
        10. Color: Lester Colony Green.
        11. Color: Lester Evergreen.
        12. Color: Lester White Sand.
        13. Color: Lester Pewter Gray.
        14. Color: Lester Quaker Gray.
        15. Color: Lester Rawhide.
        16. Color: Lester Sandstone.
        17. Color: Lester Slate Blue.
        18. Color: Lester Snow White.
        19. Color: Custom color as selected.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + - 1. Field Finish: Factory Primed, ready for field painting.
    1. Siding: As selected by Architect.
    2. Siding Accessories:
       1. Wall Trim and Flashings: Manufacturer's standard wall trim and flashings.
       2. Louvers: Manufacturer's standard sheet metal unit with 1/2 inch (13 mm) hardware cloth screen, pre-finished enamel in color selected from Lester standard colors, 18 x 24 inch (457 x 610 mm) size.

\*\* NOTE TO SPECIFIER \*\* Closure strips are optional. Delete below if not required.

* + - 1. Closure Strips: Closed cell, 2 pcf (32 kg/m 3) density polyethylene foam, premolded to match configuration of panels.
      2. Material and Finish: As shown on Erection Drawings, except as specified herein.

\*\* NOTE TO SPECIFIER \*\* Select following insulation material(s) as desired. If more than one is used in a project, clearly note the areas and materials on the drawings. Additional r-values are available for most types; see manufacturer's product data. All insulations types are available in all building types. Delete insulation types not required.

* 1. INSULATION
     1. Blanket Insulation: ASTM C 665, Type I, Class A, Unfaced Fiberglass Blanket.

\*\* NOTE TO SPECIFIER \*\* Delete R value not required.

* + - 1. Thermal Resistance: R-11 (R-1.94).
      2. Thermal Resistance: R-19 (R-3.34).
      3. Thermal Resistance: R-30 (R-5.28).
      4. Physical Properties:
         1. Flame Spread, ASTM E 84: Less than 25.
         2. Smoke Developed, ASTM E 84: Less than 50.
    1. Blanket Insulation: ASTM C 665, Type II, Class C, Kraft Faced Fiberglass Blanket.

\*\* NOTE TO SPECIFIER \*\* Delete R value not required.

* + - 1. Thermal Resistance: R-11 (R-1.94).
      2. Thermal Resistance: R-19 (R-3.34).
      3. Thermal Resistance: R-24 (R-4.22).
      4. Physical Properties:
         1. Water Vapor Transmission, ASTM E 96, 1.00 Perm (57.45 ng/(Pa\*s\*m^2) or less.
    1. Blanket Insulation: ASTM C 991, Type II, Preformed Poly-Scrim-Kraft-Faced Fiberglass Blanket, located between framing and exterior sheathing:
       1. Thermal Resistance: R-6 (R-1.06).
       2. Facing: 0.0015 inch white polypropylene film, fiberglass scrim reinforcement, and 12 lb. craft paper. 3 mil cross laminated high density polyethylene.
       3. Physical Properties:
          1. Flame Spread, ASTM E 84: Less than 25
          2. Smoke Developed, ASTM E 84: Less than 50
          3. Water Vapor Transmission, ASTM E 96: 0.02 Perms (1.15 ng/(Pa\*s\*m^2).
          4. Light Reflectivity, ASTM C 523, illuminant D-6500: 87 percent.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* 1. INTERIOR FINISH - WALLS AND CEILINGS
     1. Steel Panel:

\*\* NOTE TO SPECIFIER \*\* Delete types not required.

* + - 1. Type: Uni-Rib panel - 30 Gauge, ASTM A 653 (A 653 M), Structural Quality, Grade 80 (550) (formerly Grade E), galvanized steel with G40 (Z120) zinc coating both sides, Triple Spot Test. Color: Lester Liner White.
      2. Type: Uni-Rib Acoustical panel - perforated with 3/32 inch diameter holes to allow sound dissipation. The holes are arranged in a 1/4 inch on-center staggered pattern. 30 gauge, ASTM A 653 steel, Structural Quality, Grade 80 (550) (formerly Grade E), with G40 (Z120) zinc coating both sides, Triple Spot Test. Colors: Lester Liner White.
      3. Type: Uni-Rib with adhered DripStop Condensation Control membrane: UL 723 approved for flame spread and smoke generation; 20 year adhesion warranty.
    1. Fiber Reinforced Plastic (FRP):

\*\* NOTE TO SPECIFIER \*\* Delete types not required.

* + - 1. FRP Thickness: 0.030 inches.
      2. FRP Thickness: 0.060 inches.

\*\* NOTE TO SPECIFIER \*\* Delete types not required.

* + - 1. FRP Laminated to Substrate: 1/2 inch sanded OSB.
      2. FRP Laminated to Substrate: 5/8 inch sanded OSB.
      3. FRP Laminated to Substrate: 1/2 inch sanded plywood.
      4. FRP Laminated to Substrate: 5/8 inch sanded plywood.

\*\* NOTE TO SPECIFIER \*\* Delete types not required.

* + - 1. Seams: Caulked.
      2. Seams: Plastic Batten System.
      3. Color: White.
    1. High-Density Polypropylene (HDPE):

\*\* NOTE TO SPECIFIER \*\* Delete types not required.

* + - 1. HDPE Thickness: 0.050 inches.

\*\* NOTE TO SPECIFIER \*\* Delete types not required.

* + - 1. HDPE Laminated to Substrate: 1/2 inch sanded OSB.
      2. HDPE Laminated to Substrate: 5/8 inch sanded OSB.
      3. HDPE Laminated to Substrate: 1/2 inch sanded plywood.
      4. HDPE Laminated to Substrate: 5/8 inch sanded plywood.

\*\* NOTE TO SPECIFIER \*\* Delete types not required.

* + - 1. Seams: Caulked.
      2. Seams: Plastic Batten System.
      3. Color: White.
    1. Vinyl Panels:
       1. Type: 16 inches wide, 10 mm thickness, corrugated, smooth seamless, tongue and groove, concealed fastener, vinyl panel. High gloss bright white, UV protected, (class A fire rating) sanitary panel system.
       2. Color: White.
    2. Interior Finish Type: As selected by Architect.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* 1. PERSONNEL DOORS
     1. Steel Frame, Steel Clad, Hinged Doors: Commercial Series by AJ Manufacturing, HYPERLINK "http://www.ajdoor.com." (www.ajdoor.com).

\*\* NOTE TO SPECIFIER \*\* Delete types not required.

* + - 1. Non-Thermally Broken Doors: Series 5100 doors, frames and hardware.
         1. Frame: 16 gauge, G60 galvanized, 50 ksi.

Sill: Solid extruded aluminum, 0.062 inch minimum wall thickness, 1/2 inch low-profile, ADA compliant sill.

Head: Solid extruded aluminum, 0.062 inch minimum wall thickness, field installed snap-in parting stop.

Overall Frame Depth: 3-1/2 inches,.

Weatherstripping: Field-installed, frame-mounted, dual seal, bulb and leaf, extruded Santoprene sides and head; bulb and wand Alcryn sweep bottom rail.

* + - * 1. Door Panel: 1-3/4 inches thick, pressure injected, 2.2 pcf polyurethane foam insulation, R-12, 24 gauge, G60 galvanized steel skin, both sides, rolled edges wrap into the stiles and rails. No perimeter frame.

Rails and Stiles: Extruded aluminum rails and stiles, painted to match skins.

Reinforcing: Extruded aluminum reinforcing blocks at lock, deadbolt, panic hardware and closer locations.

Hardware Preparation: 2-3/4 inch backset with 2-1/8 inch diameter lock bore hole.

Finish: Factory-painted siliconized polyester.

\*\* NOTE TO SPECIFIER \*\* Delete color not required.

Color: AJ White.

Color: AJ Bronze.

Color: AJ Brown.

Color: AJ Clay.

Color: Lester Antique Brown.

Color: Lester Regal Red.

Color: Lester Barn Red.

Color: Lester Black.

Color: Lester Bone White.

Color: Lester Burgundy.

Color: Lester Clay.

Color: Lester Dark Blue.

Color: Lester Earth Brown.

Color: Lester Colony Green.

Color: Lester Evergreen.

Color: Lester White Sand.

Color: Lester Pewter Gray.

Color: Lester Quaker Gray.

Color: Lester Rawhide.

Color: Lester Sandstone.

Color: Lester Slate Blue.

Color: Lester Snow White.

* + - 1. Thermally Broken Doors: Series 7100 doors, frames and hardware.
         1. Frame: 16 gauge, G60 galvanized, 50 ksi.

Sill: Thermally-broken extruded aluminum, 0.062 inch minimum wall thickness, 1/2 inch low-profile, ADA compliant sill.

Head: Thermally-broken extruded aluminum, 0.062 inch minimum wall thickness, field installed snap-in parting stop.

Overall Frame Depth: 3-1/2 inches.

Weatherstripping: Field-installed, frame-mounted, dual seal, bulb and leaf, extruded Santoprene sides and head; bulb and wand Alcryn sweep bottom rail.

* + - * 1. Door Panel: 1-3/4 inches thick, pressure injected, 2.2 pcf polyurethane foam insulation, R-12. 24 gauge, G60 galvanized steel skin, both sides, rolled edges wrap into the stiles and rails. No perimeter frame.

Rails and Stiles: Pultruded figerglass rails and tiles, painted to match skins.

Reinforcing: High density molded urethane reinforcing blocks at lock, deadbolt, panic hardware and closer locations.

Hardware Preparation: 2-3/4 inch backset with 2-1/8 inch diameter lock bore hole.

Finish: Factory-painted siliconized polyester.

\*\* NOTE TO SPECIFIER \*\* Delete color not required.

Color: AJ White.

Color: AJ Bronze.

Color: AJ Brown.

Color: AJ Clay.

Color: Lester Antique Brown.

Color: Lester Regal Red.

Color: Lester Barn Red.

Color: Lester Black.

Color: Lester Bone White.

Color: Lester Burgundy.

Color: Lester Clay.

Color: Lester Dark Blue.

Color: Lester Earth Brown.

Color: Lester Colony Green.

Color: Lester Evergreen.

Color: Lester White Sand.

Color: Lester Pewter Gray.

Color: Lester Quaker Gray.

Color: Lester Rawhide.

Color: Lester Sandstone.

Color: Lester Slate Blue.

Color: Lester Snow White.

* + - 1. Glazing:
         1. Glass: Float glass, ASTM C1036, Quality 1.
         2. Glass: Tempered glass, ASTM C1048.
         3. Glass: As selected by Architect.
         4. Door Lites: 22 by 22 inch lite, 3/4 inch double pane insulating glass with 1/2 inch air filled space.
         5. Door Lites: 22 by 36 inch lite, 3/4 inch double pane insulating glass with 1/2 inch air filled space.

Grid: None.

Grid: 3x3.

\*\* NOTE TO SPECIFIER \*\* Delete grid color not required.

Grid Color: AJ White.

Grid Color: AJ Bronze.

Grid Color: AJ Brown.

Grid Color: AJ Clay.

* + - * 1. Door Lites: 22 by 64 inch lite, 3/4 inch double pane insulating glass with 1/2 inch air filled space.

Grid: None.

Grid: 3x5.

\*\* NOTE TO SPECIFIER \*\* Delete grid color not required.

Grid Color: AJ White.

Grid Color: AJ Bronze.

Grid Color: AJ Brown.

Grid Color: AJ Clay.

* + - 1. Grade 2 Commercial Hardware:
         1. Lever-Lever Lockset: Entry, privacy and passage models as applicable, satin chrome finish, 1/2 inch stainless steel latch bolt, anti-lockout feature.
         2. Deadbolt: Satin chrome finish, 1 inch hardened throwbolt, free spinning cylinder collar, double ball-bearing anti-drill design.
         3. Hinges: Three 4x4 stainless steel ball-bearing hinges with tamperproof pins.
      2. Installation Accessories:
         1. Corrugated Steel Siding:

Steel J flashing at head, standard color.

Steel C flashing at jambs, standard color.

Sealant, Manus 75-A caulk, clear.

Sealant, Manus 75-A caulk, color matched to siding.

* + - * 1. Vertical or Horizontal Wood or Vinyl Siding:

Flexible bituminous self-adhesive flashing at head and jambs, 6 inches wide.

Sealant, Manus 75-AM caulk, clear.

* + 1. Steel Frame, Steel Clad, Hinged Doors: Expi-Door Systems, Inc., HYPERLINK "http://www.bayindustries.com." (www.bayindustries.com).
       1. Non-Thermally Broken Doors: Series 500 doors, frames and hardware.
          1. Frame: 16 gauge galvanized A60 with welded corners; 14 gauge galvanized A60 top and bottom channels, 7 gauge hinge reinforcement.

Threshold: 5-3/4 inch full aluminum, ADA compliant.

* + - * 1. Door Panel: 20 gauge galvanized smooth skin, polystyrene core, beveled edge with interlocking seam.
        2. Weather Protection: Self-adhesive weather seal and U concealed sweep.
        3. Hardware: Schlage grade 2 lever lock and 3 stainless steel ball bearing hinges with tamperproof pins.
      1. Finish: Factory-painted siliconized polyester.

\*\* NOTE TO SPECIFIER \*\* Delete color not required.

* + - * 1. Color: Expi-White.
        2. Color: Expi-Bronze.
        3. Color: Lester Antique Brown.
        4. Color: Lester Regal Red.
        5. Color: Lester Barn Red.
        6. Color: Lester Black.
        7. Color: Lester Bone White.
        8. Color: Lester Burgundy.
        9. Color: Lester Clay.
        10. Color: Lester Dark Blue.
        11. Color: Lester Earth Brown.
        12. Color: Lester Colony Green.
        13. Color: Lester Evergreen.
        14. Color: Lester White Sand.
        15. Color: Lester Pewter Gray.
        16. Color: Lester Quaker Gray.
        17. Color: Lester Rawhide.
        18. Color: Lester Sandstone.
        19. Color: Lester Slate Blue.
        20. Color: Lester Snow White.
      1. Installation Accessories:
         1. Corrugated Steel Siding:

Steel J flashing at head, standard color.

Steel C flashing at jambs, standard color.

Sealant, Manus 75-A caulk, clear.

Sealant, Manus 75-A caulk, color matched to siding.

* + - * 1. Vertical or Horizontal Wood or Vinyl Siding:

Flexible bituminous self-adhesive flashing at head and jambs, 6 inches wide.

Sealant, Manus 75-AM caulk, clear.

* 1. JOINT SEALANT MATERIAL
     1. Sealant: Manus 75-A for applications that will not be painted, contains no solvents or isocyanates, non-yellowing.

\*\* NOTE TO SPECIFIER \*\* Delete color not required.

* + - 1. Color: Manus Clear.
      2. Color: Manus White.
      3. Color: Manus Bronze.
    1. Sealant: Manus 75-AM for applications that will be painted, contains no solvents or isocyanates, non-yellowing. Use white or bronze color for nearest match to adjacent substrate.

\*\* NOTE TO SPECIFIER \*\* Delete color not required.

* + - 1. Color: Manus Clear.
      2. Color: Manus White.
      3. Color: Manus Bronze.
    1. Tape Sealant: Manus-Bond 64-A Polysul Grip tape.

1. EXECUTION
   1. EXAMINATION
      1. Verify that site conditions are acceptable for erection/installation of pre-engineered wood building system.
      2. Coordinate with responsible entity to perform corrective work on unsatisfactory conditions.
      3. Commencement of work by erector/installer is acceptance of site conditions.
   2. ERECTION- STRUCTURAL FRAMING
      1. Erect in accordance with manufacturer's instructions and approved shop drawings.
      2. Provide temporary erection and wind load bracing to maintain structure plumb and in alignment until installation of permanent bracing and/or roofing and wall coverings are completed.
      3. Do not field cut or alter structural members without approval of Architect and manufacturer.
   3. INSTALLATION
      1. Erect building per manufacturer's instructions and sequencing.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + 1. Metal Roofing:
       1. General: Install in accordance with manufacturer's instructions. Secure to structural framing aligned, level and plumb. Space fasteners as shown on Erection Drawings.

\*\* NOTE TO SPECIFIER \*\* Delete following note regarding installation of sealant for Uni-Rib panels.

* + - 1. Sidelap: Minimum one full corrugation.
      2. Endlap: 8 inches (200 mm) for slopes 4 in 12 to 5 in 12. Secure together over and to structural members.
      3. Endlap: 12 inches (300 mm) for slopes 2 in 12 to 4 in 12. Secure together over and to structural members.
      4. Endlap: 6 inches (150 mm) for slopes greater than 5 in 12. Secure together over and to structural members.
      5. Special detailing is required for slopes less than 2 in 12. Refer to construction documents.
      6. Accessories: Install as shown on Erection Drawings.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + 1. Deck at Shingle Roofing: Comply with applicable recommendations "APA Design/Construction Guide - Residential & Commercial" using specified fasteners.

END OF SECTION