



### ADDENDUM NO. 3

This ADDENDUM NO. 3 is being issued August 22, 2019, to all parties who hold a set of CONTRACT DOCUMENTS on the project entitled:

TOWN OF BEECH MOUNTAIN  
NEW PUBIC WORKS FACILITIES  
BEECH MOUNTAIN, NORTH CAROLINA

This ADDENDUM NO. 3 shall become part of the CONTRACT DOCUMENTS and its receipt acknowledged on the BID DOCUMENTS at the time of bidding.

#### Specifications

1. Advertisement for Bids - The date and time for opening bids is changed. The new date and time is Thursday, September 5, 2019 at 2:00 PM.
2. Bid Form - Article 7, Item C: In lieu of including the approximate value of each subcontract on the list of proposed subcontractors, Bidders may submit this approximate values to the Owner (with copy to the Engineer) within 48 hours of the bid opening.
3. The following specifications are revised and are included herewith:

Section Number	Section Name
03 31 13	Normal Weight Concrete (Page 8 only)
08 11 13	Hollow Metal Doors, Frames and Hardware
08 51 13	Aluminum Windows
09 91 01	Painting
11 11 25	Vehicle-Lifting Equipment
13 34 19.11	Metal Building Systems (Salt Storage)

#### Clarifications

1. Section 09 05 13.13 Interior Finishes, 2.03 Ceramic Tile and Base: The 8"x8" tile shall be installed on room floors, room walls, shower floors, and shower walls, as indicated on the Drawings.
2. Section 03 33 13 Normal Weight Concrete, 2.08: This paragraph applies to all building floor slabs (3 buildings total). The floor hardener shall be selected by the Contractor in consultation with the manufacturers of the selected floor finishes, to ensure compatibility.
3. Section 07 41 13, 1.01 Summary: This specification section also applies to the timber-framed roofs over entry doors of the Office and Shop building.

**Drawings:**

1. Sheet S9 – Public Works Salt Storage Building, Key #1: The description of the non-insulated metal roof as being “METL SPAN LEAF GREEN OR EQUAL, FINAL COLOR BY OWNER” is only a color designation. The material specification for this metal roof shall be as described in Section 13 34 19.11.
2. The following are revised plan sheets and are enclosed herewith.

Civil

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C4 of 14	Utilities
C6 of 14	Site, Grading, Drainage, & Erosion Control Plan - South
C12 of 14	Site Construction Details

Building

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S4 of 9	Details
S6 of 9	Public Works Office – Timber Frame

Mechanical

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M2 of 6	Office and Mezzanine HVAC Plan
M3 of 6	Shop Area HVAC Plan
M4 of 6	Gas Piping Plan
M6 of 6	Gas Piping and Equipment Details and Schedules

Electrical

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E4 of 11	Shop Heater Power Plan
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ADDENDUM NO. 3  
Issued this 22nd day of August 2019



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1. Urethane, NS: Two-component, plus 50 percent and minus 50 percent movement capability, urethane joint sealant; ASTM C 920, Type M, Grade NS, Class 25, Uses T, NT, M, G, A, and O.

#### 2.11 CONCRETE MIXTURES, GENERAL

- A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301.
  1. Use a qualified independent testing agency for preparing and reporting proposed mixture designs based on laboratory trial mixtures.
- B. Cementitious Materials: Use fly ash, pozzolan, slag cement, and silica fume as needed to reduce the total amount of portland cement.
- C. Admixtures: Use admixtures according to manufacturer's written instructions.

#### 2.12 CONCRETE MIXTURES

- A. Normal-weight concrete.
  1. Minimum Compressive Strength unless otherwise noted shall be **5,000 psi** at 28 days; for unexposed footings shall be **3,000 psi**; and for exterior sidewalks shall be **5,000 psi**. Refer to Drawings for further information. Also, higher compressive strengths may be required, if selected by Contractor's designer for building foundations.
  2. Maximum W/C Ratio: 0.45 for all water retaining structures.
  3. Slump Limit: Slabs on grade Max 4"- Min 3", Footings Max 5" – Min 3", All other Max 4" - Min 3", final per mix designer.
  4. Air Content: 6.0 percent, plus or minus 1.0 percent, final per Mix Designer.
  5. Exposure Category: F3

#### 2.13 FABRICATING REINFORCEMENT

- A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

#### 2.14 CONCRETE MIXING

- A. Per Mix designer to achieve required test results. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94, and furnish batch ticket information.

### PART 3 - EXECUTION

#### 3.01 FIELD CONDITIONS

- A. Cold-Weather Placement: Comply with ACI 306.1 "Recommended Practice for Cold Weather Concreting" and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures. Adequate equipment shall be provided for heating the concrete

SECTION 08 11 13  
HOLLOW METAL DOORS, FRAMES AND HARDWARE

PART 1 – GENERAL

1.01 SUMMARY

This section shall include all hollow metal doors, door frames, and door hardware that are indicated on the Drawings and as specified herein. Doors specified elsewhere are also included herein as to hardware only.

Types, sizes, design, and location of hollow metal doors and frames, and accessories shall be as shown on the Drawings.

1.02 REFERENCES

- ASTM B633 Standard Specification for Electrodeposited Coatings of Zinc on Iron and Steel
- ASTM B879 Standard Specification for Steel Sheet, Zinc Coated by the Electrolytic Process for Applications Requiring Designation of the Coating Mass on Each Surface
- HMMA 840 Guide Specification for Installation and Storage of Hollow Metal Doors and Frames

1.03 SUBMITTALS

- A. General – Submit listed submittals in accordance with the General Conditions.
- B. Action Submittals:
  - Product Data: Submit manufacturer's complete product literature for specified door, frames, and hardware, including:
    1. Physical properties and dimensions demonstrating compliance with the Specifications and suitability for the intended use.
    2. Manufacturer's storage, handling, and installation requirements and recommendations.
    3. Project-specific information.
    4. Any clarifications or exceptions.

PART 2 – PRODUCTS

2.01 MATERIALS

Steel shall be commercial quality, carbon steel sheets, free from scale, pitting, and surface defects. Gauges shall be U.S. Standard. Electrolytic, zinc-coated sheets shall conform to ASTM-B633. Steel for face sheets of hollow metal doors, and for broad frame faces, shall be stretcher-leveled.

Shop-coat primer shall be manufacturer's standard rust inhibitive baked primer over phosphatizing treatment. Electro zinc plating where required, shall be not less than 0.1 ounce of zinc per square foot, and conform to ASTM B633.

B. Hollow Metal Doors:

Hollow metal doors shall be flush type, 1 3/4-inch thick, formed of 16 gauge, stretcher-leveled, cold-rolled steel, sheets on both faces. In addition, exterior doors shall be fabricated from zinc-coated, bonderized sheets.

Finished work shall be free from warpage, bulge, or buckle. Corner bends shall be true, straight, and as sharp as possible for the gauge of metal used. Doors shall have no visible seams or joints on faces or stile edges.

Stiffen face sheets by continuous, vertical formed, sheet steel sections occupying full depth of interior space between door faces. Stiffeners shall be not less than 22 gauge, spaced not more than 6 inches apart, and securely attached to both face sheets by spot welds at not more than 6" on centers. Fill spaces between stiffeners for full height of door with a .6 to .7 pound density, inorganic, non-combustible batt-type material to sound-deaden and insulate door.

Join faces at stile edges by a continuous weld extending full height of door. Welds shall be ground, filled, and dressed smooth to make them invisible; and to provide a smooth, flash surface.

Close top and bottom edges of doors with a continuous, recessed steel channel of not less than 16 gauge sheet steel. Extend channel full width of door, and spot weld to both faces. Provide exterior doors with an additional flush closure at top edge. Where required for attaching weather-stripping, provide a flush closure at bottom edges, also. Space holes in bottom closure of exterior doors to permit escape of entrapped moisture.

Provide profiles on both stiles of door as follows:

Single-acting Swing Doors	Beveled 1/8" in 2"
Double-acting Swing Doors	Rounded on 2 1/8" radius

Mortise, reinforce, drill, and tap doors at factory for fully templated hardware in accordance with approved hardware schedule and with templates supplied by the hardware supplier. Reinforcement shall be welded within door. Where surface-mounted hardware is to be applied, provide only reinforcing plates in door. Drill and tap for hardware at factory for both mortised and surface hardware not subject to field relocation due to project conditions.

Treat all surfaces chemically to insure cleaning and maximum adhesion of finish. Install shop coat of rust-inhibitive primer. For exterior doors, clean off and touch-up all welds and areas where zinc-coating has been damaged. Touch-up with zinc-rich primer.

C. Glazing:

Provide insulated safety glass where view lites are indicated, including wire reinforcement as required for fire-rated doors.

D. Hardware:

Finished hardware, unless otherwise noted, necessary to complete building, must be furnished by the Contractor. Incidental hardware that may not be listed herein shall nevertheless be provided, to make each door assembly complete and functional. Any hardware not specifically mentioned must be equal in quality and design to that which is specified. All hardware must be of ample size to perform the duties for which it is intended and must conform with the finished shape or member-taking hardware.

The numbers used in the following hardware set schedule have been taken from the catalogs of Assa Abloy Dss, Inc.; McKinney, Corbin Russwin, Markar; or equal.

Finish:

Finishes shall be US 26D and US 32D, except as otherwise specified herein.

Keying:

All locks shall be identically keyed. Furnish six keys total.

Hardware shall be delivered to the Contractor with a checking list in perfect condition properly packed and marked for the location in which it is to be installed and accompanied by a list of instructions in such form as will facilitate a proper installation. At completion of work, all hardware shall be cleaned, all damaged or broken parts replaced and all hardware left in perfect working order.

E. Door Schedule:

No.	Location	Description	Hardware Set No.
1,2	Main Entrance, Front	Quad 3'0" x 7'0" (AL)(GP)(XOXX)	1
15	Exterior Office Door	3'0" x 7'0" (AL) (GP)	1
18, 22, 25, 29	Exterior Doors	3'0" x 7'0" (HM)	2
3,7,	Hall, Parts	3'0" x 7'0" Flush Solid Wood Core (Paint Grade) w/(HM - Frames)	3
5,6	Restrooms	3'0" x 7'0" Flush Solid Wood Core (Paint Grade) w/(HM - Frames)	4
10-14, 32	Office Storage, Comm. Rm., Offices (2-4), Plumbing Storage,	3'0" x 7'0" Flush Solid Wood Core (Paint Grade) w/(HM - Frames)	5
4, 16	Break Rm., Conference Room	3'0" x 7'0" Flush Solid Wood Core (Paint Grade) w/(HM - Frames)	6
8,9,17,31	Office 5, Shop, Laundry, 2 <sup>nd</sup> Flr	3'0" x 7'0" (HM)	7
19-21, 23, 24, 26-28	Shop Bay Doors	Upward Acting Sectional Door (VL)	8
33	Wash Bay Interior	3'0" x 7'0" (HM)	2
34	Attendant's Office	3'0" x 7'0" (HM)	2
35	Salt Storage Personnel Entry	3'0" x 7'0" (HM)	2
36	Salt Storage Loading	Upward Acting Sectional Door	8
37	Attendant's Restroom	3'0" x 7'0" (HM)	4

Legend: HM = Hollow Metal, VL = View Lite, GP = Glass Panel, AL=Aluminum "Store Front"

F. Hardware Schedule:

Quantity	Description	Catalog No.	Finish	Manufacturer
Hardware Set #1				
1	Continuous Hinge	HG305 with adjust-a screw fasteners	630	MA
1	Lockset	As Required	626	CR
1	Door Closer	DC6210 X A12 with prop open feature	689	CR
1	Set Weatherstrip	303APK		PE
1	Door Bottom Sweep	3452 CNB		PE
1	Threshold			PE

SECTION 08 11 13  
HOLLOW METAL DOORS, FRAMES AND HARDWARE

Hardware Set #2				
1	Continuous Hinge	HG305 with adjust-a screw fasteners	630	MA
1	Lockset	ML2065 NSA	US32D	CR
1	Kickplate	K1050 8" x 2" LDW	US32D	RO
1	Door Closer	DC6210 X A12	689	CR
1	Set Weatherstrip	303APK		PE
1	Door Bottom Sweep	3452 CNB		PE
1	Threshold	171A		PE
Hardware Set #3				
1	Continuous Hinge	HG305 with adjust-a screw fasteners	630	MA
1	Lockset	5010CWL	26D	K
1	Kickplate	K1050 8" x 2" LDW	US32D	RO
1	Door Closer	DC6210 X A12	689	CR
1	Set Weatherstrip	303APK		PE
1	Door Bottom Sweep	3452 CNB		PE
1	Threshold	171A		PE
Hardware Set #4				
3	Hinges	TA2714	26D	MC
1	Privacy Lockset	ML2030 NSA	630	CR
1	Door Closer	DC6200	689	CR
1	Kick Plate	KP1050 8" X 2" LDW	32D	MC
1	Wall Stop	406	32D	RO
3	Door Silencers	608		RO
Hardware Set #5				
3	Hinges	TA2714	26D	MC
1	Lockset	ML2051 NSA	26D	CR
1	Wall Stop	406	32D	RO
3	Door Silencers	608		RO
Hardware Set #6 Same as HW set #5				
1	Lockset	ML2010 NSA	26D	CR
Hardware Set #7 Same as HW set #5				
1	Lockset	ML2051 NSA (Doors 8,9,31)	26D	CR
1	Lockset	ML2010 NSA (Door 17)	26D	CR
1	Door Closer	DC6210 x A12	689	CR
Hardware Set #8				
1	Cylinder	AS REQUIRED	626	CR
<b>Finish Legend</b>		<b>Manufacturer Legend</b>		
26D	Satin Chrome	CR	Corbin Russwin	
32D	Satin Stainless Steel	MC	McKinney	
630	Satin Stainless Steel	MA	Markar	
689	Aluminum Painted	RO	Rockwood	
US32D	Stainless Steel, Dull	PE	Pemko	
626	Satin Chrome	K	Kaba	

PART 3 – EXECUTION

3.01 INSTALLATION

Follow guidelines of HMMA 840.

Install frames, plumb, rigid, and in true alignment. Brace properly until built into wall. Inspect frames for plumbness and correct positioning before being tied finally into wall structure. Frames installed out of correct position shall be torn out and replaced.

Secure door frames to floor with countersunk expansion device at each jamb. If applicable, build adjustable anchors into masonry walls as the work progresses.

Hang metal doors plumb and true, with doors making uniform contact with metal frames on all sides. Metal doors that cannot be hung to fit evenly on all sides shall be removed and replaced.

END OF SECTION



SECTION 08 51 13  
ALUMINUM WINDOWS

PART 1 – GENERAL

1.01 SUMMARY

This section covers supply of aluminum framed windows and glazing.

1.02 REFERENCES

AAMA	American Architectural Manufacturers Association
ASTM E-283	Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen
ASTM E-331	Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference
ASTM E-330	Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference

1.03 SUBMITTALS

- A. General – Submit listed submittals in accordance with the General Conditions.
- B. Action Submittals:
  - Product Data: Submit manufacturer’s complete product literature for specified products and accessories, including:
    1. Physical properties demonstrating compliance with the Specifications and suitability for the intended use.
    2. Manufacturer’s storage, handling, and application requirements and recommendations.
    3. Project-specific information
    4. Any clarifications or exceptions.
    5. Samples of all window frames and glazing shall be submitted to the Engineer for approval.
- C. Closeout Submittals:
  1. Manufacturer’s standard warranty, and any project-specific warranty, if elsewhere required. Warranties that extend beyond the Contractor’s correction period shall be project-specific documents executed by the manufacturer and shall clearly indicate beginning and ending dates of the warranty period.

PART 2 – PRODUCTS

2.01 WINDOWS

- A. Frames and Sashes:

Thermal-efficient windows shall have extruded aluminum frames with extruded aluminum sash of 6063-T5 alloy, meeting or exceeding AAMA specifications. Frames and sash shall have overlapping corners, fully secured with fasteners and sealed, drainage to outside by means of factory fabricated weep holes. All frame and sash members shall be thermally broken and utilize high-density, low thermal conductive polyurethane structural material that shall structurally combine the inner and outer frame and sash sections. The sash members shall provide for one-inch “drop-in” glazing to allow convenient reglazing when required. All hardware such as fasteners that are exposed shall be of aluminum or stainless steel non corrosive material

with aluminum. All weather stripping shall conform to AAMA specifications and shall be high density poly-pile with mylar seal. Air infiltration shall be in accordance with ASTM E-283. Water resistance shall be in accordance with ASTM E-331. All frame and sash members shall be factory anodized finished, medium or dark bronze color, final color selection by Owner. All windows shall be completely assembled, ready for installation. Finish shall meet AAMA 2605 (10-year finish warranty).

B. Glazing:

1. Glazing to be thermal-efficient 1" insulated type, Low E, hermetically sealed, with both panes heat-strengthened and/or reinforced as required to meet the structural requirements herein specified.
2. Tinting: Glazing of outer pane to be tinted, medium to dark bronze, final selection by Owner.
3. All glazing shall be tempered.

C. Wind Zone:

1. Window assemblies shall be designed in accordance with the Building Code for wind loads (45 psf negative design pressure) and shall be labeled in accordance with AAMA A440 or shall be tested in accordance with ASTM E330. Test shall be for 10 seconds at a load equal to 1.5 times the design pressure.
2. Windows shall meet the wind load provisions for the building codes special wind region. The wind zone is (V ult.) 170 mph LRFD/strength design as per ASCE7-10, NC Building code 2018. Risk Category III. Wind exposure should be C.

PART 3 – EXECUTION

3.01 GENERAL

All installation shall be as recommended by product manufacturers, applicable codes, and the Drawings.

END OF SECTION

SECTION 09 91 01  
PAINTING

PART 1 – GENERAL

1.01 SUMMARY

This section includes preparation of surfaces to be painted on site, all field painting, and the repairs to the shop priming or finish coats of paint. In general, all equipment furnished with standard shop finishes shall be field painted, except graphic panels, electrical equipment, instruments, and similar items with baked-on enamel finishes.

1.02 REFERENCES

- A. Without limiting the general aspects of other requirements of these specifications, all surface preparation, coating and painting of surfaces shall conform to the applicable requirements of the Steel Structures Painting Council, National Association of Corrosion Engineers (NACE), International Concrete Repair Institute (ICRI), and the manufacturer's printed instructions.
- B. The Owner's decision shall be final as the interpretation and/or conflict between any of the referenced specifications and standards contained herein.

1.03 SUBMITTALS

- A. General – Submit listed submittals in accordance with the General Conditions.
- B. Action Submittals:  
Product Data: Submit manufacturer's complete product literature for specified pipe paint, including:
  - 1. Physical properties demonstrating compliance with the Specifications and suitability for the intended use.
  - 2. Manufacturer's storage, handling, and application requirements and recommendations.
  - 3. Project-specific information
  - 4. Any clarifications or exceptions.
  - 5. Paint schedules shall be submitted to the Engineer for selection of colors by the Owner. Manufacturer's color charts shall be submitted to the Owner at least 30 days prior to paint application.
- C. Closeout Submittals:
  - 1. Manufacturer's standard warranty, and any project-specific warranty, if elsewhere required. Warranties that extend beyond the Applicator's correction period shall be project-specific documents executed by the manufacturer and shall clearly indicate beginning and ending dates of the warranty period.

1.04 APPLICATOR QUALIFICATIONS

- A. The applicator shall have five years' practical experience and successful history in the application of specified products in similar projects. Applicator shall substantiate this requirement by furnishing a list of references and job completions.
- B. The Contractor shall provide a site mock up with each paint system as a representative of how the systems shall be installed and their final appearance, which is to be approved by the Owner and Engineer before any

work is started. For overcoat projects this mock up shall be used to test for adequate adhesion. This approved mock up shall be the quality standard for the rest of the project.

1.05 QUALITY ASSURANCE

- A. General: Quality assurance procedures and practices shall be utilized to monitor all phases of surface preparation, application, and inspection throughout the duration of the project. Procedures or practices not specifically defined herein may be utilized provided they meet recognized and accepted professional standards and are approved by the Engineer.
- B. Surface Preparation: Surface preparation will be based upon comparison with: "Pictorial Surface Preparation Standards for Painting Steel Surfaces", SSPC Vis 1 and ASTM Designation D2200; "Standard Methods of Evaluating Degree of Rusting on Painted Steel Surfaces" SSPC Vis 2 and ASTM Designation D610; "Visual Standard for Surfaces of New Steel Airblast Cleaned with Sand Abrasive" or "Guideline for Selecting and Specifying Concrete Surface Preparation for Sealers, Coating and Polymer Overlays" and ICRI CSP Surface Profile Chips.
- C. Application: No coating or paint shall be applied: When the surrounding air temperature or the temperature of the surface to be coated is below the minimum required temperature for the specified product; to wet or damp surfaces or in fog or mist; when the temperature is less than 5 degrees F above the dewpoint; or when the air temperature is expected to drop below 40 degrees F within six hours after application of coating. Dewpoint shall be measured by use of an instrument such as a Sling Psychrometer in conjunction with U.S. Department of Commerce Weather Bureau Psychrometric Tables. If above conditions are prevalent, coating or painting shall be delayed or postponed until conditions are favorable. The day's coating or painting shall be completed in time to permit the film sufficient drying time prior to damage by atmospheric conditions.
- D. Thickness and Holiday Checking: Thickness of coatings and paint shall be checked with a nondestructive, magnetic type thickness gauge. The integrity of coated interior surfaces shall be tested with an approved inspection device. Nondestructive holiday detectors shall not exceed the voltage recommended by the manufacturer of the coating system. For thicknesses between 10 and 20 mils (250 microns and 500 microns), a non sudsing type wetting agent, such as Kodak Photo Flo, may be added to the water prior to wetting the detector sponge. All pinholes shall be marked, repaired in accordance with the manufacturer's printed recommendations, and retested. No pinholes or other irregularities will be permitted in the final coating.
- E. Inspection Devices: The Contractor shall furnish, until final acceptance of coating and painting, inspection devices in good working condition for detection of holidays and measurement of dry film thickness of coating and paint. The Contractor shall also furnish U.S. Department of Commerce; National Bureau of Standard certified thickness calibration plates to test accuracy of dry film thickness gauges and certified instrumentation to test accuracy of holiday detectors.
- F. All necessary testing equipment shall be made available for the Engineer's use at all times until final acceptance of application. Holiday detection devices shall be operated in the presence of the Owner.
- G. All parties, to include the Owner, Engineer, Contractor, applicator, and the product manufacturer, shall meet prior to any work is started to review the Section and discuss project specific expectations, needs and requirements.

1.06 SAFETY AND HEALTH REQUIREMENTS

In accordance with requirements set forth by regulatory agencies applicable to the construction industry and manufacturer's printed instructions and appropriate technical bulletins and manuals, the Contractor shall provide and require use of personnel protective lifesaving equipment for persons working on or about the project site.

1.07 DELIVERY, STORAGE, AND HANDLING

All materials shall be brought to the jobsite in original, sealed containers. They shall not be used until the Owner has inspected contents and obtained data from information on containers or labels. Materials exceeding storage life recommended by the manufacturer shall be rejected.

All coatings and paints shall be stored in enclosed structures to protect them from weather and excessive heat or cold. Flammable coatings or paint must be stored to conform to City, County, State and Federal safety codes for flammable coating or paint materials. At all times, coating and paints shall be protected from freezing.

PART 2 – PRODUCTS

2.01 MANUFACTURER

Manufacturers of paint products for water process components shall only be those companies that have regularly and successfully manufactured coating systems for the municipal water and wastewater industry for at least ten (10) years consecutively prior to this contract. Approved manufacturers include Tnemec, Sherwin-Williams, Ameron, and Carboline. Other approved manufacturers for coatings for certain components are as listed in the following schedules.

2.02 COATING SYSTEMS

- A. Exterior cement board surfaces:  
Prime Coat: Tnemec Series 10-99W, or equal.  
Finish Coats: Tnemec Series 1029 Enduratone, or equal. Apply two coats over primer at 2.0 to 3.0 mils per coat. Color shall be selected by Owner.
- B. Interior wood surfaces (trim) and interior cement board: Applies to items not fully prefinished.  
Prime Coat: Glidden UH-250 or Sherwin Williams or Devoe equals, or other equal.  
Finish Coats: Glidden #7770 flat or low gloss latex paint, or Sherwin-Williams or Devoe Equals, Tnemec Series 1029 Enduratone, or other equal. Apply two coats over primer at 2.0 to 3.0 mils per coat. Color shall be selected by Owner.
- C. Interior walls and metal surfaces (restrooms gypsum board, and all hollow metal):  
Prime Coat : Hollow metal shall be shop primed with gray enamel.  
Finish Coats:  
1. Pittsburg Pitt Glaze and High Solids Pitt Glaze Semi-Gloss or Sherwin-Williams Tile-Clad II Epoxy, B62 Series/B60 V70 or Glidden Glid-Guard Chemical Resistant Epoxy #4508 Series or Tnemec Series 113 Tnemec-Tufcoat. Application: 2 coats at 4.0 to 6.0 mils dry film thickness each. Color to be selected by Owner.

- D. Interior gypsum board walls (excluding restrooms):  
Prime Coat: Glidden 1000-1200 drywall primer, Sherwin-Williams equal, Devoe equal, or other equal.  
Application: 1 coat.  
Finish Coats: Glidden 1416 Ultrahide Semi-gloss Interior Acrylic, Sherwin-Williams equal, Devoe equal, Tnemec Series 1029 Enduratone or other equal. Application: 2 coats at 2.0 to 3.0 mils per coat. Color to be selected by Owner.
- E. Traffic Paint (stall striping):  
Paint shall be Sherwin-Williams "Pro-Mar" traffic marking paint, Series B29.Y.2 or Glidden traffic paint No. 63228, Devoe equal, or other equal. Apply two (2) coats of paint at manufacturer's recommended rate with total minimum of 15 mil dry film thickness. Apply with mechanical equipment to provide uniform straight edges.
- F. Steel (all steel surfaces except those pre-finished such as metal roof and wall panels; includes fabricated steel such as stairway):  
Shop Surface Preparation: SSPC SP-6/NACE No. 3 Commercial Blast to a 1.5 mil angular surface profile.  
Shop Prime Coat: Polyamide epoxy applied at 4.0 to 6.0 dry mils (performance equivalent to Tnemec Series 161).  
Field Surface Preparation: SSPC-SP3 Power Tool Cleaning to remove any corrosion or film issues. Spot prime as need with a modified aromatic polyurethane (performance equal to Tnemec Series 1 Omnithane). The surface shall be clean and dry before painting.  
1<sup>st</sup> Coat: Aliphatic Acrylic Polyurethane applied at 2.0 – 3.0 dry mils (performance equal to Tnemec Series 72 or 73 Endura-Shield)  
2<sup>nd</sup> Coat: Aliphatic Acrylic Polyurethane applied at 2.0 – 3.0 dry mils (performance equal to Tnemec Series 72 or 73 Endura-Shield)
- G. Exterior Concrete Walls (Salt Storage Building, Recycle Center Attendant Building and Container Shelter knee walls where exposed to view):  
Surface preparation: New concrete must be cured 28 days; all form-release agents and other matter must be removed; patch and smooth all form tie holes and other imperfections;  
Prime coat: compatible with substrate and finish coat as recommended by finish coat manufacturer (performance equal to Tnemec Series 151 at 0.7 to 1.5 dry mils).  
Finish coat: sand-textured acrylic, Parex DPR Standard Acrylic, Tnemec Enviro-Crete Series 157, or equal.  
Color: Beige, as selected by Owner from among manufacturer's available colors.  
Application: Trowel or spray, one or two coats at 6.0 to 9.0 mils, as needed to hide concrete substrate and any form lines or other imperfections in concrete surfaces.
- H. Interior Concrete Floors (new office/shop building and recycle center attendant building) where indicated on Drawings:  
1. Office Area Rooms (except for break room and floors to receive tile):  
Surface Preparation: NACE No. 6/ SSPC-SP13 Surface Preparation of Concrete to ICRI concrete surface profile (CSP) 4. Allow new poured-in-place concrete to cure for a minimum of 28 days at 75 degrees F. Contractor may select one of the following systems or approved equal:  
**Option A:**  
Primer: Apply modified polyamine epoxy Tnemec Series 237 Power-Tread at 8.0-10.0 dry mils  
Double-Broadcast: Apply modified polyamine epoxy Tnemec Series 237 Power-Tread resin at 80 sqft/gal. Broadcast decorative quartz or flake aggregate (based on Owner's selection) to refusal for thickness of approximately 1/16" in a single broadcast. Double broadcast to 1/8".  
Finish: Apply aliphatic moisture cured urethane Tnemec Series 248 Everthane at 2.0-3.0 dry mils  
Color: clear or other color selected by Owner from among manufacturer's standard offerings.

**Option B:**

Apply Sikafloor 161 Epoxy Primer at 8.0-10.0 dry mils  
Double-Broadcast: Apply Sikafloor 217 Epoxy resin at 16 mils  
Broadcast decorative quartz or flake aggregate (based on Owner's selection) to refusal for thickness of approximately 1/16" in a single broadcast. Double broadcast to 1/8".  
Grout Coat- Apply Sikafloor 217 Epoxy resin at 16 mils  
Finish: Apply Sikafloor 315N High Wear Urethane at 3.0-4.0 dry mils  
Color: clear or other color selected by Owner from among manufacturer's standard offerings

2. Break Room Floor:

Surface Preparation: NACE No. 6/ SSPC-SP13 Surface Preparation of Concrete to ICRI concrete surface profile (CSP) 4. Allow new poured-in-place concrete to cure for a minimum of 28 days at 75 degrees F. Contractor may select one of the following systems or approved equal:

**Option A:**

Primer: Apply polyurethane modified concrete Tnemec Series 242 Ultra-Tread-S at 1/8" neat.  
Broadcast aggregate to refusal to 3/16".  
Intermediate: Apply modified polyamine epoxy Tnemec Series 280 Tnemec-Glaze at 10.0-12.0 dry mils.  
Finish: Apply aliphatic moisture cured urethane Tnemec Series 248 Everthane at 2.0-3.0 dry mils.  
Color: clear or other color selected by Owner from among manufacturer's standard offerings.

**Option B:**

Primer: Apply Sikafloor 24NA Purcem urethane cement at 1/8" neat. Broadcast aggregate Sikafloor 506 to refusal to 3/16".  
Intermediate: Apply Sikafloor 264 Epoxy Coating at 10.0-12.0 dry mils.  
Finish: Apply Sikafloor 315N High Wear Urethane at 3.0-4.0 dry mils.  
Color: clear or other color selected by Owner from among manufacturer's standard offerings.

3. Shop Floor and Attendant Building Floor:

Surface Preparation: NACE No. 6/ SSPC-SP13 Surface Preparation of Concrete to ICRI CSP 4. Allow new poured-in-place concrete to cure for a minimum of 10 days at 75 degrees F. Contractor may select one of the following systems or approved equal:

**Option A:**

Urethane Concrete Primer: Apply Tnemec Series 241 Ultra-Tread MVT or equal at 70-80 sqft/gallon.  
Broadcast aggregate to refusal.  
Double Broadcast: Apply Tnemec Series 237 Power-Tread or equal at 20 mils wet. Aggregate (selected by Contractor for slip resistance) is then broadcast into wet resin until a uniformly dry appearance is obtained to an approximate thickness of 1/16" per broadcast. Double broadcast to 1/8".  
Grout: Apply Tnemec Series 237 Power-Tread or equal at 8.0-16.0 dry mils.  
Finish: Apply Tnemec Series 248 Everthane or equal at 2.0-3.0 dry mils.  
Color: clear or other color selected by Owner from among manufacturer's standard offerings.

**Option B:**

Urethane Concrete Primer: Apply Sikafloor 24NA Purcem urethane cement at 1/8" neat. Sikafloor 506  
Broadcast aggregate to refusal.  
2<sup>nd</sup> Broadcast: Apply Sikafloor 264 Epoxy Coating at 16 mils and broadcast to rejection Aggregate  
Sikafloor 506  
Grout: Apply Sikafloor 264 Epoxy Coating at 12.0-16.0 dry mils.

Finish: Apply Sikafloor 340 Aliphatic Urethane at 2.0-3.0 dry mils.  
2<sup>nd</sup> coat may be required depending on finish color choice for uniformity.  
Color: clear or other color selected by Owner from among manufacturer's standard offerings.

I. Salt Storage Building Interior Concrete Surfaces:

1. Floor: Surface Preparation: NACE No. 6/ SSPC-SP13 Surface Preparation of Concrete to ICRI concrete surface profile (CSP) 4. Allow new poured-in-place concrete to cure for a minimum of 28 days at 75 degrees F. Contractor may select one of the following systems or approved equal:

**Option A:**

Primer: Apply Tnemec Series 282 Tneme-Glaze at 10.0-12.0 wet mils. Broadcast aggregate for slip resistance

Finish: Apply Tnemec Series 282 Tneme-Glaze at 10.0-12.0 dry mils

**Option B:**

Primer: Apply Sikafloor 700 Novolac Epoxy at 10.0-12.0 wet mils.  
Broadcast aggregate for slip resistance with Sikafloor 508 aggregate

Finish: Apply Sikafloor 700 Novolac Epoxy at 10.0-12.0 dry mils

2. Walls:

Surface Preparation: SSPC-SP-13/ NACE No. 6 Surface Preparation of Concrete to an ICRI CSP 3 Surface Profile. Concrete must be cured at least 28 days.

Primer: Apply Tnemec Series 104 HS Epoxy at 4.0-6.0 mils DFT

Finish: Apply Tnemec Series 104 HS Epoxy at 4.0-6.0 mils DFT

J. Exterior Wood Surfaces (stain finish):

Surface preparation to be in accordance with manufacturer's recommendation.

Apply one coat of Cabot Australian Timber Oil #3400 Series, or equal. Color to be selected by Owner and be similar to Red Cedar

K. Second Story Storage Area Plywood:

Surface preparation: Wood must be clean and dry

Primer: Sherwin-Williams Minwax Polyurethane for Floors, semigloss

Finish: Sherwin-Williams Minwax Polyurethane for Floors, semigloss

## PART 3 – EXECUTION

### 3.01 GENERAL

- A. All surface preparation, coating and painting shall conform to applicable standards of the Steel Structures Painting Council, NACE, ICRI and the manufacturer's printed instructions. Material applied prior to observation of the surface by the Engineer shall be removed and reapplied at the expense of the Contractor.
- B. All work shall be performed by skilled craftsmen qualified to perform the required work in a manner comparable with the best standards of practice. Continuity of personnel shall be maintained and transfers of key personnel shall be coordinated with the Engineer.



- C. Dust, dirt, oil, grease or any foreign matter that will affect the adhesion or durability of the finish must be removed by washing with clean rags dipped in an approved cleaning solvent and wiped dry with clean rags.
- D. The Contractor's coating and painting equipment shall be designed for application of materials specified and shall be maintained in first class working condition. Compressors shall have suitable traps and filters to remove water and oils from the air. Contractor's equipment shall be subject to approval of the Engineer.
- E. Application of the first coat shall follow immediately after surface preparation and cleaning and before rust bloom or flash rusting occurs. Any cleaned areas not receiving first coat within this period shall be recleaned prior to application of first coat.
- F. Surfaces that have been shop painted and have been damaged during transit or installation, or where the shop coat or coats of paint have deteriorated, shall be cleaned and retouched before any successive painting is done on them in the field. Surfaces with enamel finishes that have been damaged in transit or during installation shall be retouched to match the original finish.
- G. All surfaces to be painted as well as the atmosphere in which painting is to be done shall be kept warm and dry by heating and ventilating if necessary until each coat of paint has hardened. Any defective paint shall be scraped off and repainted in accordance with the Engineers' directions.
- H. Finished surfaces shall not show brush marks or other irregularities. Undercoats shall be thoroughly and uniformly sanded with Number 00 sandpaper or equal to remove defects and provide a smooth even surface. Top and bottom edges of doors shall be painted and all exterior trim shall be backprimed before installation.
- I. Painting shall be continuous and shall be accomplished in an orderly manner so as to facilitate inspection. Materials subject to weathering shall be prime coated as quickly as possible. Surfaces of exposed members that will be inaccessible after erection shall be cleaned and painted before erection.
- J. In general, aluminum, stainless steel, copper, bronze, and pre-finished wall panels shall not be field painted. Care shall be taken not to paint shafts, grease fittings, nameplates, machined parts, sight glasses, etc.

### 3.02 SURFACE PREPARATION

- A. The latest revision of the following surface preparation specifications of the Steel Structures Painting Council and NACE shall form a part of this specification:
  - 1. Solvent Cleaning (SSPC-SP1): Removal of oil, grease, soil and other contaminants by use of solvents, emulsions, cleaning compounds, steam cleaning or similar materials and methods which involve a solvent or cleaning action.
  - 2. Hand Tool Cleaning (SSPC-SP2): Removal of loose rust, loose mill scale and other detrimental foreign matter to degree specified by hand chipping, scraping, sanding and wire brushing.
  - 3. Power Tool Cleaning (SSPC-SP3): Removal of loose rust' loose mill scale and other detrimental foreign matter to degree specified by power wire brushing, power impact tools or power sanders.
  - 4. Brush-Off Blast Cleaning (SSPC-SP7/NACE 4): Brush-off blast cleaned surface, when viewed without magnification, shall be free of all visible oil, grease, dirt, dust, loose mill scale, loose rust, and loose coating. Tightly adherent mill scale, rust, and coating may remain on the surface. Mill scale, rust, and coating are considered tightly adherent if they cannot be removed by lifting with a dull putty knife after abrasive blast cleaning has been performed.
  - 5. Commercial Blast Cleaning (SSPC-SP6/NACE 3): Blast cleaning until at least 66 percent of each element of surface area is free or all visible residues.

6. Near White Blast Cleaning (SSPC-SP10/NACE 2): Blast cleaning to nearly white metal cleanliness, until at least 95 percent of each element of surface area is free of all visible residues.
  7. Surface Preparation of Concrete (SSPC-SP13/NACE 6): This standard gives requirements for surface preparation of concrete by mechanical, chemical, or thermal methods prior to the application of bonded protective coating or lining systems.
  8. Power Tool Cleaning to Bare Metal (SSPC-SP11): This standard covers the requirements for power tool cleaning to produce a bare metal surface and to retain or produce a minimum 25 micrometer (1.0 mil) surface profile. This standard is suitable where a roughened, clean, bare metal surface is required, but where abrasive blasting is not feasible or permissible.
- B. Blast cleaning for all surfaces shall be by dry method unless otherwise directed.
- C. Particle size of abrasives used in blast cleaning shall be that which will produce a 1.5 – 2.0 mil (37.5 microns - 50.0- microns) surface profile or in accordance with recommendations of the manufacturer of the specified coating or paint system to be applied.
- D. Abrasive used in blast cleaning operations shall be new, washed, graded and free of contaminants that would interfere with adhesion of coating or paint and shall not be reused unless specifically approved by the Owner.
- E. During blast cleaning operations, caution shall be exercised to insure that surrounding existing coatings or paint are not exposed to abrasion from blast cleaning.
- F. The Contractor shall keep the area of his work and the surrounding environment in a clean condition. He shall not permit blasting materials to accumulate as to constitute a nuisance or hazard to the accomplishment of the work, the operation of the existing facilities, or nuisance to the surrounding environment.
- G. Blast cleaned surfaces shall be cleaned prior to application of specified coatings or paint. No coatings or paint shall be applied over damp or moist surfaces.
- H. Specific Surface Preparation: Surface preparation for the specific system shall be as noted in Part 2 – Products.

### 3.03 APPLICATION, GENERAL

- A. Coating and paint application shall conform to the requirements of the Steel Structures Painting Council Paint Application Specification SSPC-PA1, latest revision, for "Shop, Field and Maintenance Painting," and to the recommendations of the manufacturer of the coating and paint materials.
- B. Thinning shall be permitted only as recommended by the manufacturer, approved by the Engineer, and utilizing the thinners stated in Part 2 – Products.
- C. Each application of coating or paint shall be applied evenly, free of brush marks, sags, runs, with no evidence of poor workmanship. Care shall be exercised to avoid lapping on glass or hardware. Coatings and paints shall be sharply cut to lines. Finished surfaces shall be free from defects or blemishes.
- D. Protective coverings or drop cloths shall be used to protect floors, fixtures, and equipment. Care shall be exercised to prevent coatings or paint from being splattered onto surfaces that are not to be coated or painted. Surfaces from which materials cannot be removed satisfactorily shall be recoated or repainted as required to produce a finish satisfactory to the Engineer.

- E. When two coats of coating or paint are specified, where possible, the first coat shall contain sufficient approved color additive to act as an indicator of coverage or the two coats must be of contrasting color.
- F. Film thickness per coat specified in Part 2 – Products are minimum required. If roller application is deemed necessary, the Contractor shall apply additional coats so as to achieve the specified thickness.
- G. All welds, edges and other irregular surfaces shall receive a brush coat of the specified product prior to application of the first complete coat.

#### 3.04 MANUFACTURER SERVICES

A NACE-certified technical representative from the paint manufacturer shall visit the Site to support the Contractor's personnel or the Owner as needed and/or requested. Visits shall be made on a weekly basis as a minimum or as needed to review hold points for the Engineer. 48 hours' notice to Engineer and paint manufacturer is required by the Contractor for each hold point inspection.

#### 3.05 SOLVENT VAPOR REMOVAL

Where appropriate all solvent vapors shall be completely removed by suction type exhaust fans and blowers before placing in operating service.

#### 3.06 CLEAN UP

Upon completion of the work, all staging, scaffolding, and containers shall be removed from the site or destroyed in a manner approved by the Engineer. Coating or paint spots and oil or stains upon adjacent surfaces shall be removed and the jobsite cleaned. All damage to surfaces resulting from the work of this section shall be cleaned, repaired, or refinished at no cost to the Owner.

#### 3.07 ANNIVERSERY INSPECTION

Approximately 360 days after the date of Substantial Completion, the Contractor will return for a one-year anniversary inspection of the coatings work. The Contractor will correct any deficiencies found at no cost to the Owner.

END OF SECTION

SECTION 11 11 25  
VEHICLE – LIFTING EQUIPMENT

PART 1 – GENERAL

1.01 SUMMARY

This section covers the supply and installation of two hydraulic and mechanical vehicle lift systems to be located in the shop building.

1.02 SUBMITTALS

- A. General – Submit listed submittals in accordance with the General Conditions.
- B. Action Submittals:
  - Product Data: Submit manufacturer’s complete product literature for lifts and accessories, including:
    1. Physical properties and dimensions demonstrating compliance with the Specifications and suitability for the intended use.
    2. Manufacturer’s storage, handling, and installation requirements and recommendations.
    3. Project-specific information.
    4. Any clarifications or exceptions.
- C. Closeout Submittals:
  1. Operation and maintenance data and instructions.
  2. Manufacturer’s standard warranty, and any project-specific warranty, if elsewhere required. Warranties that extend beyond the Contractor’s correction period shall be project-specific documents executed by the manufacturer and shall clearly indicate beginning and ending dates of the warranty period.

1.03 QUALITY ASSURANCE

- A. Manufacturer: Manufacturers of equipment specified in the Section shall have a minimum of ten (10) years’ experience in the manufacture of the type of equipment specified. Manufacturers shall be Rotary Lift (Dover Corporation), Mohawk Lifts, Steril-Koni, or approved equal.

PART 2 – PRODUCTS

2.01 VEHICLE LIFTS

- A. General – Vehicle lifts shall be of heavy-duty steel construction, four-post design with ramps and runways, dual-function lock system, power system, accessories specified herein, and all incidental items needed for a complete, functional lifting system.
- B. Lift No. 1 – Lift No. 1 shall be a 14,000-pound capacity lift located in Bay #1 of the shop. It shall be Dover-Rotary Lift Model #SM014-L with two (2) RJ7000 rolling jacks, FC5760-14 air line kit, and S100151 ramp chocks to allow drive-through use, Mohawk Lifts equals, Steril-Koni equals, or other approved equals. The lift shall meet the following specifications, allowing for minor deviations as may exist among approved manufacturers:

<b>Max Wheelbase</b>	<b>182"</b>
Rise	78 3/4"
Length Overall	21' 1"
Width Overall	11' 8 1/2"
Inside of Columns	116 1/4"
Between Front and Rear Columns	194 3/4"
Height of Columns	9' 1 1/16"
Width of Runways	20"
Height of Runways	7"
Width Between Runways	43"
Lifting Capacity	14,000 lbs.
Motor	2 HP
Voltage	208v – 230v
Time of Full Rise	65 seconds

- C. Lift No. 2 – Lift No. 2 shall be a 30,000-pound capacity lift located in Bay #2 of the shop. It shall be Dover-Rotary Lift Model #SM30EL3 with two (2) RJ152BK rolling jacks and FC5780-3 ramp chocks to allow drive-through use; Mohawk Lifts equals, Steril-Koni equals, or other approved equals. The lift shall meet the following specifications, allowing for minor deviations as may exist among approved manufacturers:

<b>Max Wheelbase</b>	<b>307"</b>
Rise	68"
Length Overall	<b>31' 8 1/8"</b>
Width Overall	12' 4 13/16"
Inside of Columns	132"
<b>Between Columns</b>	<b>321"</b>
Height of Columns	7' 3/4"
Width of Runways	24"
Height of Runways	8 3/8"
Width Between Runways (min.)	41"
Width Between Runways (max.)	48"
Lifting Capacity	30,000 lbs.
Motor	4 HP
Voltage Single Phase	208v – 230v
Time of Full Rise	105 seconds

**PART 3 – EXECUTION**

**3.01 GENERAL**

All installation shall be as recommended by the manufacturer and in accordance with applicable codes, the Drawings, and approved submittals. Install compressed air lines to both lifts. Furthermore, at least one day/trip of on-site services by the manufacturer's authorized representative shall be provided, for the purpose of verifying proper installation, adjusting equipment, and training Owner's personnel in the proper and safe use of the equipment.

END OF SECTION

SECTION 13 34 19.11  
METAL BUILDING SYSTEMS  
(SALT STORAGE)

PART 1 – GENERAL

1.01 SUMMARY

- A. This section covers the pre-engineered salt storage building as shown on the Drawings and herein specified.
- B. Building system general includes:
  - 1. Clear arch span system
  - 2. Enclosed rear-end wall.
  - 3. Enclosed front-end wall with panels precut to fit roof radius and door openings.
  - 4. Upward acting sectional door and personnel door.
  - 5. All necessary accessories to complete the building.
  - 6. Concrete retaining wall and foundation.

1.02 REFERENCES

ASTM A972	Standard Specification for Fusion Bonded Epoxy-Coated Pipe Piles
ASCE 7-10	Minimum Design Loads for Buildings and Other Structures
AISC	"Manual of Steel Construction," latest edition, American Institute of Steel Construction.
AISC	"Specification for Structural Steel Buildings." latest edition.
AISI	"Cold-Formed Steel Design Manual," latest edition, American Iron and Steel Institute.
2018	NC State Building Code

1.03 SUBMITTALS

- A. General – Submit listed submittals in accordance with General Conditions.
- B. Action Submittals – Submit complete information for methods and materials, including:
  - 1. All Manufacturer drawings and design calculations, which shall bear the professional seal and signature of a licensed professional engineer registered in the state of North Carolina
  - 2. Anchor bolt placement plan, column reactions and calculations in advance of erection drawings.
  - 3. Foundation plan signed and sealed by a licensed professional engineer registered in the state of North Carolina.
- C. Closeout Submittals:
  - 1. Maintenance data and instructions for panels, doors, walls and floors.
  - 2. Manufacturer's standard warranty, and any project-specific warranty, if elsewhere required. Warranties that extend beyond the Contractor's correction period shall be project-specific documents executed by the manufacturer and shall clearly indicate beginning and ending dates of the warranty period.

#### 1.04 QUALITY ASSURANCE

- A. General: The structure shall comply with the current versions of AISC, AISI and ASTM specifications at the time of manufacturing.
- B. Manufacturer: The company manufacturing the products specified in this Section shall have a minimum of 5 years' experience in the manufacture of pre-fabricated steel building systems.
- C. Structural framing and covering shall be the design of a North Carolina licensed professional engineer experienced in design of this work.
- D. Erector shall have specialized experience in the erection of this type of steel building systems for a period of at least 5 years.

#### 1.05 DESIGN REQUIREMENTS

- A. Metal roof and walls:
  - 1. The building metal shall be designed by the Manufacturer as a complete system. Members and connections not indicated on the Drawings shall be the responsibility of the Manufacturer and/or Contractor.
  - 2. All loads given are minimum requirements. All applicable provisions of the 2018 NC Building Code will apply.
  - 3. Basic design loads include live, seismic, wind, and dead load, and shall be calculated according to ASCE 7-10.
  - 4. Design loads are as follows:
    - a. Wind speed  $V_{ult} = 170$  mph LRFD/strength design as per ASCE 7-10
    - b. Exposure: C, Partially Enclosed.
    - c. Importance factor based upon building usage: Wind = 1.00.
    - d. Roof Live load = 20 psf.
    - e. Ground snow load = 30 psf.
    - f. Seismic Zone: Site Class C, as per the subsurface report by S&ME, Inc.
    - g. NC Building Code, 2018 edition, application and combination of loads.
- B. Concrete:

The concrete foundation and retaining walls shall be designed by a North Carolina registered professional engineer for the loads above and to store 600 tons road salt. Salt height shall be as shown on the Drawings. **The unit weight of the salt, for design purposes, shall be 75 pounds per cubic foot.**

#### 1.06 DELIVERY, STORAGE, AND HANDLING

- A. Materials delivered to the site shall be immediately unloaded and stored on site in a clean dry environment, stored at least 6" above ground in a secure area, well ventilated, protected from the weather and secure from leaning and topping in accordance with storage guidelines supplied. Deliver, store and handle all items to prevent bending, corrosion and damage.

#### 1.07 WARRANTIES

- A. Building manufacturer shall provide manufacturer's standard material warranties, including but not limited to, 30-year steel mill and ArcelorMittal Galvalume warranties.

PART 2 - PRODUCTS

2.01 MATERIALS – STEEL.

- A. General: Steel roof and walls shall be Steel Masters Building Systems Model Q40-11-50, or equal.
- B. Arch Panels: Heavy Commercial grade 80, 20 gauge, AZM180/AZ60 minimum triple spot Galvalume Plus steel, in accordance with ASTM A972. Double bolt, 9” lap seams.
- C. Front End Wall: 22-gauge Galvalume Plus steel end wall with 14’ x 16’ 14-gauge cannister door post and header. Panels precut to fit roof radius and door openings.
- D. Rear End Wall: 22-gauge Galvalume Plus steel end wall.
- E. Industrial Base Connector: Complete set for fastening structure to concrete wall. All material is 14 gauge with Galvalume Plus coating.
- F. Premium Grade Hardware: 5/16” grade 8 / DT 1500 hr salt rated preassembled fasteners with polyethylene washers to secure the building components through predrilled holes.
- G. Sealant Manufacturer's standard type.
- H. Exterior Finish: Exterior Finish: One coat 70% polyvinylidene fluoride (PVDF) coil coating, nominal 0.7 mil (0.02 mm), over 0.2 mil (0.005 mm) primer; color as selected (by Owner) from manufacturer’s standard colors.

2.02 MATERIALS – DOORS

- A. Metal Personnel Doors and Frames - Shall conform to section 081113.
- B. Upward Acting Sectional Doors
  - 1. General: The upward action sectional door shall be series 421 un-insulated steel as manufactured by Overhead Door Corp. or approved equal.
  - 2. Door Sections to be of a min. 20 ga. Galvanized interior and exterior, ribbed, un-insulated and shall form a weather tight joint and provide full-width interlocking structural rigidity. Panels shall have factory pre-coated finish, colors selected by owner from manufacturer’s standard colors. Wind load Design: ANSI/DASMA 102 standards and as required by code.
  - 3. Counterbalance shall be helical torsion springs on cross header shaft. Lift cables shall be galvanized with cable safety factor of 7:1, stressed spring wire.
  - 4. Hardware shall be galvanized steel hinges and fixtures, full floating, hardened steel, ball bearing rollers with hardened steel races. Doors reinforced with steel struts as required for size of door.
  - 5. Lock shall be keyed as supplied by door hardware vendor as specified in section 08 11 13.
  - 6. Tracks shall be galvanized steel with a wedge action to create weather tight closure when door is in the lowered position. Provide tracks as recommended by manufacturer to suit loading required and clearances available. Brackets shall be mounted on steel angles provided by others. Provide general contractor with template for all blocking locations required for the installation of this work.
  - 7. Weather-stripping shall be flexible pvc strip on bottom section and top section and be provided and installed by this supplier. Aluminum and vinyl seal for jambs shall be provided by this supplier.
  - 8. Operation shall be by manual (chain pull) hoist.



PART 3 - EXECUTION

3.01 EXECUTION

- A. Preparation:
  - 1. Verify site conditions under provisions of Sections 015000 and 310200.
  - 2. Verify that foundation, floor slab, and electrical utilities, and placed anchors are in correct position and properly squared.
  - 3. Provide access to the work as scheduled for owner provided inspections, if required. The cost of any required inspections is the responsibility of the owner.
  - 4. Do not proceed until unsatisfactory conditions have been corrected.
  
- B. Erection – Wall and Roof Systems
  - 1. Install all wall and roofing systems in accordance with manufacturer's instructions and details.
  - 2. Exercise care when cutting prefinished material to ensure cuttings do not remain on finish surface.
  
- C. Erection – Flashing and Trim
  - 1. Install flashings and trim in strict accordance with manufacturer's instructions, using proper sheet metal procedures.
  
- D. Installation - Accessories
  - 1. Install door frames, doors, overhead doors, in accordance with manufacturer's instructions.
  - 2. All roof and wall accessories to be installed weathertight.
  
- E. Standards
  - 1. All work shall be performed by experienced workmen in a workmanlike manner to published tolerances.
  - 2. Install in accordance with AISC Manual of Steel Construction, approved shop drawings, building code, and Drawings.

END OF SECTION