PANAMA CITY BEACH
FIRE STATION #32
HUTCHISON BLVD
PCB 23-48 ITB

BID DOCUMENTS
AUGUST 1, 2023

VOLUME I

JRA Commission Number – 22833

JRA ARCHITECTS, INC.
2211 Thomas Drive
Suite 100
Panama City Beach, Fl. 32408
(850) 236-9832

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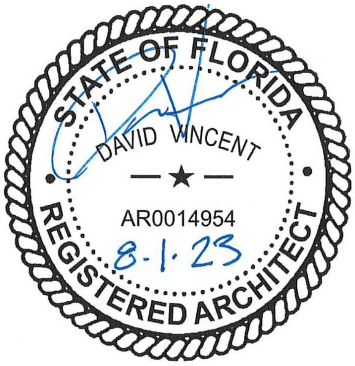

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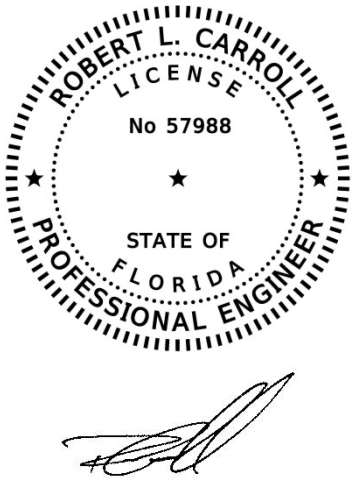

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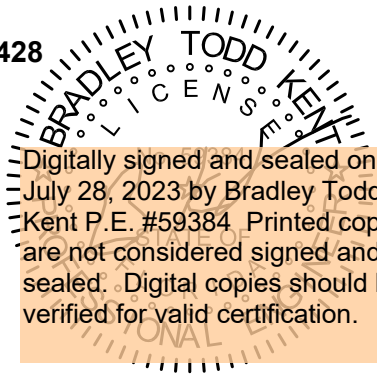
Bradley Todd Kent P.E. #59384
BTK Engineering Services, INC. CA #9613
1101 Brickyard Rd.
Chipley, Florida 32428
850-557-0190



Digitally signed and sealed on July 28, 2023 by Bradley Todd Kent P.E. #59384. Printed copies are not considered signed and sealed. Digital copies should be verified for valid certification.

Subsurface Exploration and Geotechnical Engineering Evaluation for Panama City Beach Fire Station #32, Bay County, Florida

Ardaman & Associates, Inc.

CORPORATE HEADQUARTERS

8008 S. Orange Avenue, Orlando, FL 32809 - Phone: (407) 855-3860 Fax: (407) 859-8121

Branch Office Locations

Florida: Bartow, Cocoa, Fort Myers, Miami, Orlando, Port St. Lucie, Sarasota, Tallahassee, Tampa, West Palm Beach
Louisiana: Baton Rouge, Monroe, New Orleans, Shreveport

Ardaman & Associates, Inc.

Geotechnical, Environmental and
Materials Consultants

June 19, 2023
File No.113-23-40-1649

JRA Architects
2551 Blairstone Pines Drive
Tallahassee, Florida 32301
Email: mnunez@jra-arch.net

Attention: Mr. Mario F. Nunez, Senior Vice President

Subject: Subsurface Exploration and Geotechnical Engineering Evaluation for Panama City Beach Fire Station #32, Bay County, Florida

Dear Mr. Nunez:

As requested and authorized, Ardaman and Associates, Inc. (Ardaman) has completed a subsurface exploration for the subject project. The purposes of performing this exploration were to evaluate the general subsurface conditions, to provide recommendations to guide site preparation for foundation and pavement support, explore the soil stratigraphy in the retention area, and to estimate the normal seasonal high groundwater table at the pond boring locations. This report documents our findings and presents our engineering recommendations.

PROJECT DESCRIPTION

The project site is located southeast of the intersection of Hutchison Boulevard and Alf Coleman Road in Panama City Beach, Florida (Section 26, Township 3 South, Range 16 West) and is shown on Figure 1. The site is wooded and required clearing to access the boring locations.

The proposed development includes a building with a fire station and accompanying parking and drive areas. Grading plans are not complete at this time; therefore, we have assumed that approximately 1 to 2 feet of cut/fill is required to reach the building and parking/drive areas final elevation(s). For the purpose of this report, we understand that maximum loading conditions for the one-story building to be less than 5 klf for wall foundations and 75 kips for individual column foundations. Apparatus bay floor truck loading will be AASHTO HL-93.

If actual building loads or cut/fill heights exceed our assumptions, then the recommendations in this report may not be valid.

REVIEW OF SOIL SURVEY MAPS

Based on information obtained online from the Web Soil Survey as operated by the U.S. Department of Agriculture Natural Resources Conservation Services, the site is located in an area mapped as the “Pamlico-Dorovan Complex” soil series.

The “Pamlico-Dorovan Complex” soil series consists of Herbaceous organic material over sandy marine deposits. According to the Soil Survey, the “Pamlico-Dorovan Complex” soil series is very

3175 West Tharpe Street, Tallahassee, FL 32303 Phone (850) 576-6131 Fax (850)574-0735
Offices in: Bartow, Cocoa, Fort Myers, Miami, Orlando, Port St. Lucie, Sarasota, Tallahassee, Tampa, West Palm Beach

poorly drained and the seasonal high-water table is typically within 12 inches of the natural ground surface.

FIELD EXPLORATION PROGRAM

Soil Borings

The field exploration program included performing soil borings as follow:

Description	Number of Borings	Depth Below Ground Surface (feet)
Building Areas "B" Borings	3	25
Parking/Drive Areas "P" Borings	3	10
Stormwater Management Facility Areas "S" Borings	2	10

Borings performed in the building areas were Standard Penetration Test (SPT) borings advanced to 25 feet below the ground surface using the methodology outlined in ASTM D-1586. A summary of this field procedure is included in the Appendix. The borings performed in the parking/drive areas and Stormwater Management Facility areas were manual bucket auger borings advanced to 10 feet below the ground surface.

We note that the originally requested location for boring B-3, i.e., B-3(O), was not cleared for access and was moved to a new location, i.e., B-3(M), after communicating with JRA Architects. Also, we could not perform boring B-1 at this time of our exploration as the site was wet and our drill rig was stuck on-site several times. We understand that this boring B-1 has since been canceled.

Borings were sampled at 18-inch intervals to 10 feet deep and at 5-foot interval below 10 feet. Soil samples recovered during performance of the borings were visually classified in the field and representative portions of the samples were transported to our laboratory in sealed sample bags.

The groundwater levels at each of the boring locations were measured during drilling. The borings were backfilled with soil cuttings upon completion.

Test Boring Locations

The approximate locations of the borings are schematically illustrated on a site plan shown on Figure 1. The actual boring locations were established in the field by Ardaman & Associates representatives using the GPS coordinates collected from Google Earth and a hand-held GPS unit. The test locations provided on Figure 1 should be considered accurate only to the degree implied by the method used.

LABORATORY PROGRAM

Representative soil samples obtained during our field sampling operation were packaged and transferred to our laboratory for further visual examination and classification. The soil samples were visually classified in general accordance with the Unified Soil Classification System (ASTM D-2488) and AASHTO M-145. The resulting soil descriptions are shown on the soil boring profiles presented on Figure 2.

In addition, we conducted natural moisture content tests (ASTM D2216), percent fines analyses (ASTM D1140), and organic content tests (ASTM D2974) on selected soil samples obtained from the borings. The results of these tests are presented adjacent to the sample depth on the boring profiles on Figure 2.

GENERAL SUBSURFACE CONDITIONS

General Soil Profile

The results of the field exploration are graphically summarized on the soil boring profiles presented on Figure 2. The stratification of the boring profiles represents our interpretation of the field boring logs and the results of laboratory examinations of the recovered samples. The stratification lines represent the approximate boundary between soil types. The actual transitions may be more gradual than implied.

In general, the soil borings initially encountered 0.5 to 3 feet of dark brown to black organic silty medium to fine sand (Stratum 1). Stratum 1 was underlain by tan to brown medium to fine sand with silt (Stratum 2) to the depth of boring termination. Based on SPT “N”-values, the soils encountered were typically medium.

Groundwater Level

Groundwater was encountered in the borings at the depth ranging from 2 to 6 feet below grade on the date drilled. Fluctuations in groundwater levels should be anticipated throughout the year primarily due to seasonal variations in rainfall and other factors that may vary from the time the borings were conducted. We note that this exploration was performed during the dry season.

NORMAL SEASONAL HIGH GROUNDWATER

The groundwater level is affected by a number of factors. The amount of rainfall and the drainage characteristics of the soils, the land surface elevation, relief points such as drainage ditches, lakes, rivers, swamp areas, etc., and distance to relief points are some of the important factors influencing the groundwater level.

The normal seasonal high groundwater level each year is the level in the August-September period at the end of the rainy season during a year of normal (average) rainfall. The water table elevations associated with a higher-than-normal rainfall and in the extreme case, flood, would be higher to much higher than the normal seasonal high groundwater level, and could occur at times outside of the August-September period. The normal high-water levels would more approximate the normal seasonal high groundwater levels.

Based on USDA Soil Survey and our interpretation of the site conditions using our boring logs, we estimate the normal seasonal high groundwater level at the boring locations to be at about 6 inches below grade. Some low areas may have a groundwater level at or above the ground surface or temporarily hold water during wet periods and thus have a seasonal high-water level above the ground surface.

ENGINEERING EVALUATION AND RECOMMENDATIONS

General

The results of our exploration indicate that, with proper site preparation as recommended in this report, the existing soils are suitable for supporting the proposed buildings on a conventional shallow foundation system. Spread footings should provide an adequate support system for the structures.

The following are our recommendations for overall site preparation, and foundation support, and pavement construction for the proposed facility based on the existing subsurface conditions encountered during the exploration. The recommendations are made as a guide for the design engineer and/or architect, parts of which should be incorporated into the project's specifications.

Stripping and Grubbing/ Root-Raking

The "footprints" of the proposed structure, plus a minimum margin of five feet, should be stripped of all surface vegetation, stumps, debris, organic topsoil or other deleterious materials, as encountered.

After stripping, the site should be grubbed or root-raked such that roots with a diameter greater than ½ inch, stumps, or small roots in a dense state, are completely removed. The actual depth(s) of stripping and grubbing must be determined by visual observation and judgment during the earthwork operation.

All existing foundations, slabs, asphalt, and any other underground structures should be removed from the proposed construction area. If pipes or any collapsible or leak prone utilities are not removed or completely filled (with grout or concrete), they might serve as conduits for subsurface erosion resulting in excessive settlements. Over-excavated areas resulting from the removal of underground structures and unsuitable materials should be backfilled in accordance with the fill soils section of this report.

Removal of Organic Soils

The deleterious organic soils (Stratum 1 as shown on the boring profiles) should be removed to its entire vertical limits and to a minimum horizontal margin equivalent to the depth of organic soil layer outside the development area for the building, pavement, and hardscape including all areas requiring at-grade soil support for improvements. A minimum horizontal margin of 5 feet should be used if the depth to the bottom of the organic soil layer is less than 5 feet.

The excavated organic soil must not be used as structural fill material for supporting the building, pavement or hardscapes and should be disposed of as directed by the owner. Removal of the organic soil layer and backfilling operations should be monitored continuously by a representative of Ardaman & Associates to verify that all unsuitable material is removed and that backfill soils are suitable and well compacted.

Excavation slopes and/or bracing are the responsibility of the contractor. However, at a minimum, all excavations should be sloped and/or braced to meet the requirements of the Occupational Health and Safety Administration (OSHA) latest standards.

If the excavation extends below the groundwater table, the control of the groundwater will be required. Removal of organic soil should be conducted “in-the-dry”. The use of well points, rim ditches, sheet piles, etc. may be required to help control groundwater during excavation and backfilling. Regardless of the dewatering method used, we recommend that the groundwater table be lowered in advance of the excavation and be maintained at least 24 inches below earthwork and compaction surfaces at all times.

Actual limits of organic soil removal will be determined based on visual observation during construction. The final quantity of removal should be determined after the removal operation has been completed using methods such as truck volume and/or survey conducted during removal of the organic soils.

Dewatering

Based on the groundwater conditions encountered, the control of the groundwater may be required to achieve the necessary stripping and subsequent construction, backfilling, and compaction requirements presented in the preceding sections. The requirement for control of groundwater should particularly be anticipated for footing and utility excavations.

The actual method(s) of dewatering should be determined by the contractor. However, regardless of the method(s) used, we suggest drawing down the water table sufficiently, say 2 to 3 feet, below the bottom of any excavation or compaction surface to preclude "pumping" and/or compaction-related problems with the foundation soils. The dewatering should be performed in advance of any excavation to minimize soil disturbance caused by water seeping into the excavation.

Proof-rolling

We recommend proof-rolling the cleared surface to locate any unforeseen soft areas or unsuitable surface or near-surface soils, to increase the density of the upper foundation soils, and to prepare the existing surface for the addition of the fill soils, if required. The proof-rolling should occur after cutting but before any filling, if required.

Proof-rolling of the building areas should consist of passes of a loaded dump-truck. Each pass should overlap the preceding pass by 30 percent to achieve complete coverage. If deemed necessary, in areas that "yield", remove all deleterious material and/or moisture sensitive soils (soils with more than 15% fines) and replace with clean, compacted sand backfill. The proof rolling should be observed by an Ardaman representative.

A density equivalent to or greater than 95 percent of the modified Proctor (ASTM D-1557) maximum dry density value is recommended for a depth of 1-foot below the bottoms of foundation and slab elevations. Areas receiving fill should also be compacted to 95 percent of the modified Proctor maximum dry density value to a depth of 1-foot below the cleared surface. Additional passes and/or over-excavation and re-compaction may be required if these minimum density requirements are not achieved. The soil moisture should be adjusted as necessary during compaction. Heavy vibratory compaction should be used with due caution within 200 feet of existing structures, and hardscapes.

Where subgrade soils are persistently wet, a lift of not more than 12 inches of clean sand may be placed over the subgrade prior to proof-rolling. "Heavy" compaction equipment may be used in-lieu of a loaded truck for proof-rolling.

Suitable Fill Material and Compaction of Fill Soils

All fill materials should be free of organic materials, such as roots and vegetation. We recommend using fill with less than 12 percent by dry weight of material passing the U.S. Standard No. 200 sieve size. Soils with more than 12 percent passing the No. 200 sieve can be used but will be more difficult to compact due to their inherent nature to retain soil moisture. This may lead to construction delays. We do not recommend using fill soils with percent passing the No. 200 sieve in excess of 35 percent, or with a liquid limit in excess of 40 and plastic index in excess of 10.

Structural fill should be placed in level lifts not to exceed 12 inches in un-compacted thickness. Each lift should be compacted to at least 95 percent of the modified Proctor (ASTM D-1557) maximum dry density value. The filling and compaction operations should continue in lifts until the desired elevation(s) is achieved. If hand-held compaction equipment is used, the lift thickness should be reduced to no more than 6 inches.

Foundation Support and Foundation Compaction Criteria

Foundations should be excavated to the proposed bottom of footing elevations and, thereafter, the in-place compaction for a depth of 1-foot below the footing bottoms should be verified. If

necessary, compact the soil at the bottom of the excavations to at least 95 percent of the modified Proctor maximum dry density for a depth of 1-foot below the footing bottoms.

Based on the existing soil conditions, and assuming the above outlined organic soils removal, proof-rolling, site preparation, and compaction criteria are implemented, an allowable soil bearing pressure of 2,000 pounds per square foot (psf) may be used in the foundation design. The provided bearing pressures should result in foundation settlement within tolerable limits (i.e., maximum total settlement of 1-inch).

All bearing wall foundations should be a minimum of 18 inches wide and column foundations 24 inches wide. A minimum soil cover of 18 inches should be maintained from the bottom of the foundations to the adjacent finished grades.

Floor Slab Compaction Requirements and Slab Moisture Reducer

Compaction beneath the floor slabs should be verified for a depth of 12 inches and meet the 95 percent criteria (modified Proctor, ASTM D-1557).

Based on the existing soil conditions, and assuming the above outlined proof-rolling and compaction criteria are implemented an allowable subgrade modulus of 125 pci may be used in the slab design.

Precautions should be taken during the slab construction to reduce moisture entry from the underlying subgrade soils. Moisture entry can be reduced by installing a membrane between the subgrade soils and floor slab. Care should be exercised when placing the reinforcing steel (or mesh) and slab concrete such that the membrane is not punctured. We note that the membrane alone does not prevent moisture from occurring beneath or on top of the slab.

If interior columns are isolated from the floor slab, an expansion joint should be provided around the columns and sealed with a water-proof sealant.

Typical Asphaltic Concrete Surface Pavement Section

Site Preparation

Areas to be paved should be prepared as previously outlined. Prior to installation of the first course of the pavement section, the foundation soil compaction should be verified for a depth of 12 inches (i.e., compacted to at least 95 percent of the modified Proctor (ASTM D-1557, AASHTO T-180) maximum dry density value). The subgrade should consist of AASHTO A-1, A-3, and/or A-2-4 soil.

Limerock Base

A limerock base course 6 inches thick overlying a 12-inch-thick stabilized subgrade may be used in automobile parking/drive areas, if grading and drainage plans preclude periodic saturation of

the base material. The periodic saturation of a limerock base material could lead to premature pavement distress. A minimum clearance of 18 inches must be maintained between the bottom of the limerock base and the seasonal high groundwater table. For truck parking and drive areas, the base thickness should be a minimum of 8 inches.

The limerock should have a minimum Limerock Bearing Ratio (LBR) value of 100 and should be compacted to 100 percent of the modified Proctor (ASTM D-1557, AASHTO T-180) maximum density value.

An 8-inch-thick subgrade having a minimum Limerock Bearing Ratio (LBR) value of 40 should be achieved beneath the limerock base. The natural soils may have to be stabilized with suitable clayey soil or other materials in order to achieve the required LBR value. The stabilized subgrade should be compacted to at least 98 percent of the modified Proctor maximum dry density (ASTM D-1557, AASHTO T-180).

Recycled Concrete Aggregate Base (Optional)

Recycled concrete aggregate base supported by a free-draining subgrade may be used. Six inches of recycled concrete aggregate base should be used in parking areas and 8 inches of recycled concrete aggregate base should be used in truck parking and drive areas. A minimum clearance of 12 inches should be maintained between the bottom of the recycled concrete aggregate base and the seasonal high groundwater table.

The recycled concrete aggregate base should have a minimum Limerock Bearing Ratio (LBR) value of 150 and should be compacted to at least 98 percent of the modified Proctor maximum dry density (ASTM D-1557, AASHTO T-180). The recycled concrete aggregate should meet the material requirements outlined in Section 911 of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, 2022 Edition. The subgrade beneath the recycled concrete aggregate base should consist of free draining sand compacted to at least 98 percent of the modified Proctor maximum dry density (ASTM D-1557, AASHTO T-180).

We note that if the contractor's means and methods include stabilizing soils beneath the recycled concrete aggregate base, then the stabilizing material should be coarse material (e.g., gravel). Low permeability soils (e.g., silt and/or clay) should not be used as stabilizing material beneath recycled concrete aggregate base.

Wearing Surface

A minimum 1½ inch layer of Type SP-9.5 or SP-12.5 asphaltic concrete should be used for a wearing surface in automobile parking areas. For truck parking and drive areas, minimum 2 inches of Type SP-9.5 or SP-12.5 asphaltic concrete should be used. The minimum thickness of the SP-9.5 and SP-12.5 layers should be considered in the final design. According to FDOT Specification 334, SP-9.5 may be placed in a single lift between 1 and 1 ½ inches thick while SP-12.5 may be placed in a single lift between 1 ½ and 3 inches thick. We note that SP-12.5 will have a coarse surface finish.

The Type SP asphalt should include Asphalt Binder Grade PG 67-22 (or a higher temperature range binder) and contain no more than 15 percent Recycled Asphalt Pavement (RAP) aggregate. Other requirements for the Type SP asphaltic concrete wearing surface are outlined in Section 334 in the Florida Department of Transportation, Standard Specifications for Road and Bridge Construction, 2022 Edition.

The latest specifications of Florida Department of Transportation should govern the placement of the base and asphaltic concrete wearing surface. The above minimum requirements will satisfactorily support pavements subject to personal vehicle and occasional light truck traffic. If a heavier traffic pattern is anticipated, the design section should be increased accordingly.

The typical pavement sections presented in this report could be damaged by heavier traffic patterns and loads that may be associated with construction vehicles and operations. As such, we recommend that the pavement section(s) be protected during construction unless designed to accommodate the construction loads.

Typical Concrete Pavement Section

This typical pavement section is provided if a rigid, Portland cement concrete pavement is desired for the proposed parking/drive areas. The design of a concrete pavement includes selecting dimensions and other details to provide a section that will adequately carry the anticipated traffic, provide the correct types of joints in the proper locations, and promote positive drainage. The pavement thickness recommendations are based on the “Guide for Design and Construction of Concrete Parking Lots” published by the American Concrete Institute (ACI 330R-08).

All areas to be paved should be prepared as previously outlined, with the additional requirement that the subgrade within 12 inches of the bottom of pavement consist of well-drained soils (Unified Classification SP) compacted to achieve a density equivalent to 95 percent of the modified Proctor (ASTM D-1557, AASHTO T-180) maximum dry density value for a depth of 12 inches. A minimum clearance of 2 feet must be maintained between the bottom of concrete pavement and the seasonal high-water table.

Assuming the pavement will be subjected to Traffic Category C (ADTT=100) levels as described in Table 3.3 of ACI 330R-08, and the subgrade is prepared as outlined above, the concrete pavement should be a minimum of 6.5 inches in thickness and have a minimum compressive strength of 4,000 pounds per square inch. We recommend increasing the pavement thickness to 7 inches for all the access points that the “fire truck” will be required to traverse.

The above minimum design recommendations can be used for unreinforced, fiber-reinforced or steel-reinforced pavements. Steel reinforcement and joint design should be in accordance with the recommendations presented in ACI 330R-08.

Landscape Drainage

It is the landscape designer's responsibility to specify soil types required in greenspace areas. Typically, low permeability soils should be removed from greenspace areas because low permeability soils inhibit internal drainage and promote standing water and/or saturated ground conditions. These water conditions can be harmful to plant survival and can cause deterioration of adjacent pavements and water intrusion into adjacent buildings.

Seepage from landscaped areas, under and over curbs, can result in aesthetic problems, pedestrian safety issues, and in extreme cases, premature pavement failures. Such seepage can be reduced by the use of relatively free draining sands in berms, reducing the height of berms, controlling the frequency and amount of irrigation, the use of full-depth curbs, and/or the use of edge/strip drains or underdrains behind curbs. An often successfully used method of enhancing landscape drainage is to slope the greenspace areas downward away from curbs, buildings, etc., and incorporate catch basins with positive outflow to prevent excess water buildup in the greenspace areas.

QUALITY ASSURANCE

We recommend establishing a comprehensive quality assurance program to verify that all site preparation and foundation construction is conducted in accordance with the appropriate plans and specifications. Materials testing and inspection services should be provided by Ardaman & Associates.

As a minimum, an on-site engineering technician should monitor all stripping and grubbing to verify that all deleterious materials have been removed and should observe the proof-rolling operation to verify that the appropriate number of passes are applied to the subgrade and its response is suitable. In-situ density tests should be conducted during filling activities and below all footing areas to verify that the required densities have been achieved. In-situ density values should be compared to laboratory Proctor moisture-density results for each of the different natural and fill soils encountered.

Additionally, for the pavements, Limerock Bearing Ratio tests should be performed. The base course(s) should be tested for density and thickness. We recommend that Ardaman & Associates be retained to review the asphalt pavement mix design proposed for use on the project prior to pavement placement. During asphalt pavement construction, samples of the asphaltic concrete should be obtained and tested in the laboratory to verify compliance with the mix design. We also recommend full-time monitoring/testing in the batch plant and on the site during pavement placement. The asphaltic concrete thickness should be verified in the field.

We recommend inspecting and testing the construction materials for the foundations and other structural components.

IN-PLACE DENSITY TESTING FREQUENCY

Earthwork testing is typically performed on an on-call basis when the contractor has completed a portion of the work. The test result from a specific location is only representative of a larger area if the contractor has used consistent means and methods and the soils are practically uniform throughout. The frequency of testing can be increased, and full-time construction inspection can be provided to account for variations. We recommend that the following minimum testing frequencies be utilized.

Following proof-rolling, the proposed parking areas and existing, natural ground should be field density tested to a depth of 12 inches for each 4,000 square feet of proof-rolled area. Each 12-inch lift of fill should also be tested at this frequency. Additional testing is recommended in areas where uniform compaction is limited. Utility backfill should be tested at a minimum frequency of one in-place density test for each 12-inch lift for each 100 linear feet of pipe. Additional tests should be performed in backfill for manholes, inlets, etc.

In proposed structural areas, the minimum frequency of in-place density testing should be reduced to one test for each 2,000 square feet of structural area. In-place density testing should be performed at this minimum frequency for a depth of 1-foot below natural ground and for every 1-foot lift of fill placed in the structural area. In addition, density tests should be performed in each column footing and every 50 linear feet of continuous or wall footings.

Representative samples of the various natural ground and fill soils should be obtained and transported to our laboratory for Proctor compaction tests. These tests will determine the maximum dry density and optimum moisture content for the materials tested and will be used in conjunction with the results of the in-place density tests to determine the degree of compaction achieved.

CLOSURE

The analyses and recommendations submitted herein are based on the data obtained from the soil borings presented on Figure 2 and the assumed loading conditions. This report does not reflect any variations which may occur adjacent to or between the borings. The nature and extent of the variations between the borings may not become evident until during construction. If variations then appear evident, it will be necessary to re-evaluate the recommendations presented in this report after performing on-site observations during the construction period and noting the characteristics of the variations.

In the event any changes occur in the design, nature, or location of the proposed construction, Ardaman and Associates, Inc. must review the applicability of the conclusions and recommendations in this report. Recommendations in this report shall not be applicable if all the above is not fulfilled by the client or the consultant involved in the project.

This is a relatively shallow exploration and is not intended to be an evaluation for sinkhole potential. It does not include an evaluation of the environmental (ecological or hazardous/toxic material related) condition of the site and subsurface.

This report has been prepared for the exclusive use of JRA Architects in accordance with generally accepted geotechnical engineering practices. No other warranty, expressed or implied, is made.

We are pleased to be of assistance to you on this phase of the project. When we may be of further service to you or should you have any questions, please contact us.

Very truly yours,
ARDAMAN & ASSOCIATES, INC.

Florida Registry No. 5950

Michael S Wilson

Digitally signed by Michael S Wilson
Date: 2023.06.19 15:15:10 -04'00'

Aayush R. Tiwary, E.I.
Assistant Project Engineer

Michael S. Wilson, P.E.
Tallahassee Branch Manager
Florida License: 46088

ART/MSW

This item has been digitally signed and sealed by Micheal S. Wilson, P.E. on the date indicated adjacent to the seal. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

TEST BORING LOCATION PLAN

(Image Source: Google Earth Pro and JRA's Architectural Site Plan dated 3/9/23)

N

0 70'

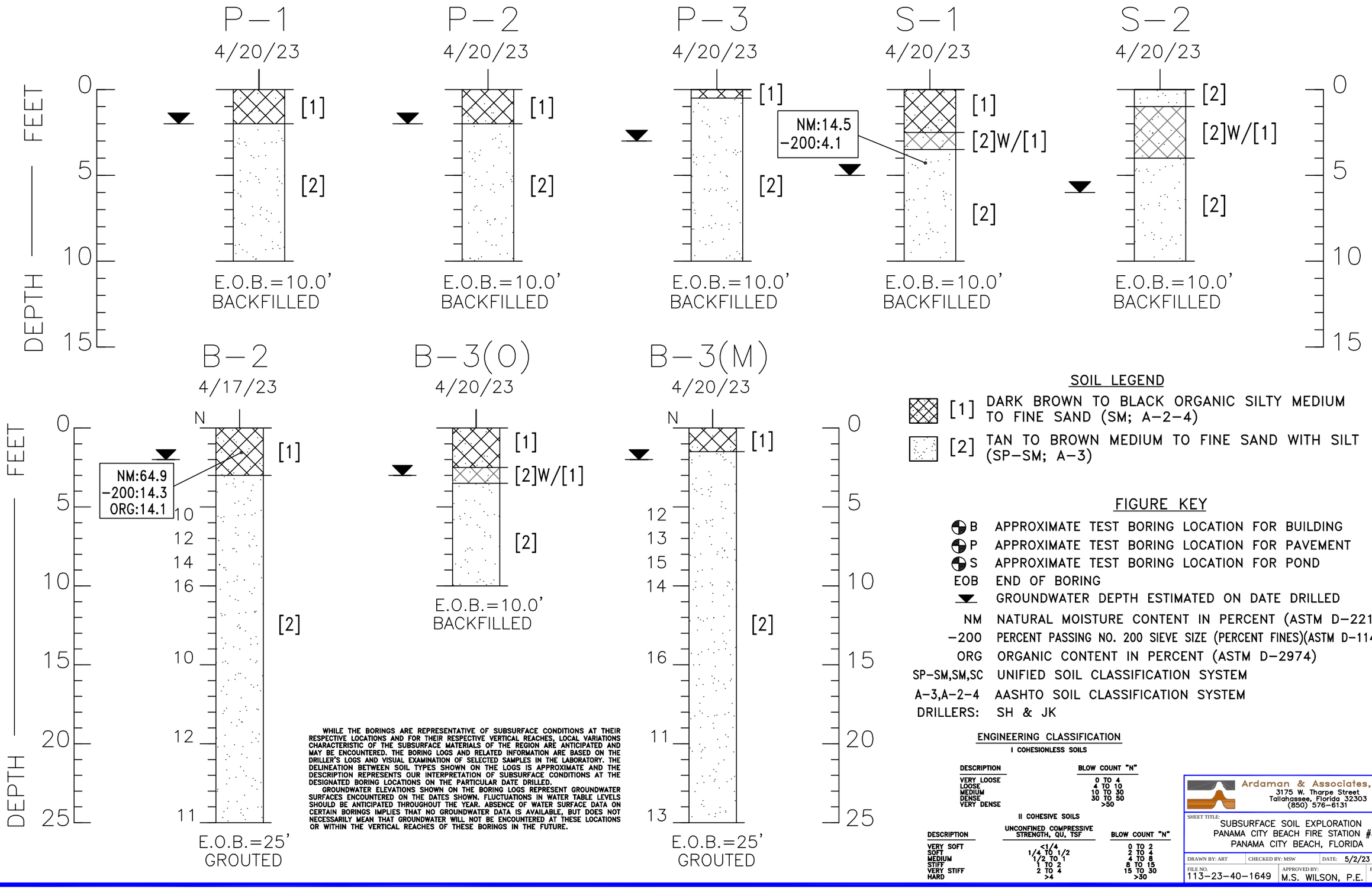
SCALE:1"=70'
(APPROX.)

Ardaman & Associates, Inc.
3175 W. Tharpe Street
Tallahassee, Florida 32303
(850) 576-6131

SHEET TITLE:
SUBSURFACE SOIL EXPLORATION FOR
PANAMA CITY BEACH FIRE STATION #32
PANAMA CITY BEACH, FLORIDA

DRAWN BY: ART	CHECKED BY: MSW	DATE: 05/02/23	
FILE NO. 113-23-40-1649	APPROVED BY: M.S. WILSON, P.E.		FIGURE 1

SOIL BORING PROFILES



WHILE THE BORINGS ARE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT THEIR RESPECTIVE LOCATIONS AND FOR THEIR RESPECTIVE VERTICAL REACHES, LOCAL VARIATIONS CHARACTERISTIC OF THE SUBSURFACE MATERIALS OF THE REGION ARE ANTICIPATED AND MAY BE ENCOUNTERED. THE BORING LOGS AND RELATED INFORMATION ARE BASED ON THE DRILLER'S LOGS AND VISUAL EXAMINATION OF SELECTED SAMPLES IN THE LABORATORY. THE DELINEATION BETWEEN SOIL TYPES SHOWN ON THE LOGS IS APPROXIMATE AND THE DESCRIPTION REPRESENTS OUR INTERPRETATION OF SUBSURFACE CONDITIONS AT THE DESIGNATED BORING LOCATIONS ON THE PARTICULAR DATE DRILLED.

GROUNDWATER ELEVATIONS SHOWN ON THE BORING LOGS REPRESENT GROUNDWATER SURFACES ENCOUNTERED ON THE DATES SHOWN. FLUCTUATIONS IN WATER TABLE LEVELS SHOULD BE ANTICIPATED THROUGHOUT THE YEAR. ABSENCE OF WATER SURFACE DATA ON CERTAIN BORINGS IMPLIES THAT NO GROUNDWATER DATA IS AVAILABLE, BUT DOES NOT NECESSARILY MEAN THAT GROUNDWATER WILL NOT BE ENCOUNTERED AT THESE LOCATIONS OR WITHIN THE VERTICAL REACHES OF THESE BORINGS IN THE FUTURE.

SOIL LEGEND

[1] DARK BROWN TO BLACK ORGANIC SILTY MEDIUM TO FINE SAND (SM; A–2–4)

[2] TAN TO BROWN MEDIUM TO FINE SAND WITH SILT (SP–SM; A–3)

FIGURE KEY

B	APPROXIMATE TEST BORING LOCATION FOR BUILDING
P	APPROXIMATE TEST BORING LOCATION FOR PAVEMENT
S	APPROXIMATE TEST BORING LOCATION FOR POND
EOB	END OF BORING
▼	GROUNDWATER DEPTH ESTIMATED ON DATE DRILLED
NM	NATURAL MOISTURE CONTENT IN PERCENT (ASTM D–2216)
–200	PERCENT PASSING NO. 200 SIEVE SIZE (PERCENT FINES)(ASTM D–1140)
ORG	ORGANIC CONTENT IN PERCENT (ASTM D–2974)
SP–SM,SM,SC	UNIFIED SOIL CLASSIFICATION SYSTEM
A–3,A–2–4	AASHTO SOIL CLASSIFICATION SYSTEM
DRILLERS:	SH & JK

ENGINEERING CLASSIFICATION

I COHESIONLESS SOILS

DESCRIPTION	BLOW COUNT "N"
VERY LOOSE	0 TO 4
LOOSE	4 TO 10
MEDIUM	10 TO 30
DENSE	30 TO 50
VERY DENSE	>50

II COHESIVE SOILS

DESCRIPTION	UNCONFINED COMPRESSIVE STRENGTH, QU, TSF	BLOW COUNT "N"
VERY SOFT	<1/4	0 TO 2
SOFT	1/4 TO 1/2	2 TO 4
MEDIUM	1/2 TO 1	4 TO 8
STIFF	1 TO 2	8 TO 15
VERY STIFF	2 TO 4	15 TO 30
HARD	>4	>30

Ardaman & Associates, Inc.
3175 W. Tharpe Street
Tallahassee, Florida 32303
(850) 576–6131

SHEET TITLE:
SUBSURFACE SOIL EXPLORATION
PANAMA CITY BEACH FIRE STATION #32
PANAMA CITY BEACH, FLORIDA

DRAWN BY: ART | CHECKED BY: MSW | DATE: 5/2/23

FILE NO. 113–23–40–1649 | APPROVED BY: M.S. WILSON, P.E. | FIGURE 2

APPENDIX

Field Testing Procedures

STANDARD PENETRATION TEST

The standard penetration test is a widely accepted test method of *in situ* testing of foundation soils (ASTM D 1586). A 2-foot long, 2-inch O.D. split-barrel sampler attached to the end of a string of drilling rods is driven 18 inches into the ground by successive blows of a 140-pound hammer freely dropping 30 inches. The number of blows needed for each 6 inches of penetration is recorded. The sum of the blows required for penetration of the second and third 6-inch increments of penetration constitutes the test result or N-value. After the test, the sampler is extracted from the ground and opened to allow visual examination and classification of the retained soil sample. The N-value has been empirically correlated with various soil properties allowing a conservative estimate of the behavior of soils under load.

The tests are usually performed at 5-foot intervals. The test holes are advanced to the test elevations by rotary drilling with a cutting bit, using circulating fluid to remove the cuttings and hold the fine grains in suspension. The circulating fluid, which is a bentonitic drilling mud, is also used to keep the hole open below the water table by maintaining an excess hydrostatic pressure inside the hole. In some soil deposits, particularly highly pervious ones, NX-size flush-coupled casing must be driven to just above the testing depth to keep the hole open and/or prevent the loss of circulating fluid.

Representative split-spoon samples from the soils are brought to our laboratory in air-tight jars for further evaluation and testing, if necessary. Samples not used in testing are stored for 30 days prior to being discarded.

HAND AUGER BORINGS

Auger borings are used when continuous sampling of soil strata close to ground surface is desired. A 3-inch diameter, hand-held bucket auger with a cutting head at its end is rotated into the ground in 1-foot sections. The sample is recovered by withdrawing the auger out of the ground without rotating it. The soil sample so obtained, is classified and representative samples put in bags or jars and brought back to the laboratory for further evaluation and testing, if necessary.

PANAMA CITY BEACH
FIRE STATION #32
HUTCHISON BLVD
BID DOCUMENTS
AUGUST 1, 2023

SECTION 00 01 00 – ADVERTISEMENT FOR BIDS

NOTICE TO RECEIVE SEALED BIDS

PANAMA CITY BEACH FIRE STATION #32 HUTCHISON BLVD (PCB 23-48 ITB)

This project, at 11911 Hutchison Blvd., Panama City Beach FL, on City owned property just to the southeast of the intersection of Hutchison Blvd and Alf Coleman Road, consists of the construction of new 12,247 Sq. Ft. Fire Station with office area, living/dormitory areas, Apparatus bays with ancillary spaces & hose drying tower as well as all related Site Improvements including utilities pavement and stormwater management facility.

Bid Documents may be downloaded online at www.demandstar.com or the City's website at https://www.pcbfl.gov/about-us/rfp-posts-list or by contacting the Purchasing Manager at purchasing@pcbfl.gov starting on Wednesday August 9, 2023. The bid must conform to Section 287.133(3) Florida Statutes, with respect to Public Entity Crimes.

Bids will be received until **2:00 pm Central Time, on Tuesday September 12, 2023,** and will be opened and read publicly immediately thereafter. Bids may be submitted electronically through the DemandStar Bid portal. Emailed submissions will not be accepted. Alternatively, paper Bids (one original, one copy, one electronic copy-USB preferred) shall be submitted in an envelope clearly marked **"Sealed Bid –Panama City Beach Fire Station #32 Hutchison Blvd"**. Receipt of a paper bid by any Panama City Beach office, receptionist or personnel other than the City Hall front reception desk does not constitute "receipt" as required by this solicitation. The time received at City Hall shall be conclusive as to the timeliness of receipt. All paper Bids shall be delivered or mailed to: City of Panama City Beach City Hall, Attn: Purchasing Manager, 17007 Panama City Beach Parkway, Panama City Beach, FL 32413.

A Bid Bond in the amount of 5% of the total amount of the Bid shall accompany the Bid. The City of Panama City Beach ("City") reserves the right to reject any and all Bids. All Bids shall be firm (including all labor and material prices) for a period of **45** days after opening.

The City shall award the Contract to the lowest responsive and responsible bidder; provided, however, the City reserves the right to award the Contract to a Bidder who is not the lowest responsive and responsible bidder if the City finds that the lowest Bidder does not offer the reliability, quality of service, or product afforded by such other Bidder.

A mandatory Pre-Bid meeting and tour of existing site will be held at **10:00 am Central Time on Tuesday August 29, 2023 in the Panama City Beach Council Chamber, 17007 Panama City Beach Parkway, Panama City Beach, Florida 32413**. Point of Contact will be **Carrie Jagers, Carrie.Jagers@pcbfl.gov**. Each bidder must comply with all applicable state and local laws concerning licensing, registration, and regulations of contractors doing business in Florida.

Virtual participation will not be permitted.

Advertisement Dates: **August 9 and August 16, 2023.**

Notice to Publisher – Please forward the original "Proof of Publication" and the invoice to:
City of Panama City Beach
17007 Panama City Beach Parkway
Panama City Beach, Florida 32413

END OF SECTION 00 01 00

PANAMA CITY BEACH
FIRE STATION #32
HUTCHISON BLVD
BID DOCUMENTS
AUGUST 1, 2023

SECTION 00 02 00 – INFORMATION FOR BIDDERS

BIDS will be received by City of Panama City Beach City Hall (herein called the "OWNER"), at **2:00 pm Central Time, on Tuesday September 12, 2023, at City of Panama City Beach City Hall, 17007 Panama City Beach Parkway, Panama City Beach, Florida)** then opened and read publicly promptly thereafter.

Each BID must be submitted in a sealed envelope addressed to **City of Panama City Beach, 17007 Panama City Beach Parkway, Panama City Beach, Florida 32413**. Each sealed envelope containing a BID must be plainly marked on the outside as "SEALED BID **Panama City Beach Fire Station #32 Hutchison Blvd** and the envelope should bear on the outside the BIDDER'S name, address and license number if applicable, and the name of the project for which the BID is submitted.

Bidders are advised that http://www.demandstar.com is one of the sourcing methods of notices, addendum, bids and other documented communications. City of Panama City Beach is not under any obligation and does not guarantee that Bidders will receive email notifications concerning the posting, amendment or close of solicitations. Vendors are responsible to check http://www.demandstar.com for information and updates concerning solicitations or contact the Purchasing Manager on the information listed above.

All BIDS must be made on the required BID form. All blank spaces for BID prices must be filled in, in ink or typewritten, and the BID form must be fully completed and executed when submitted. **Paper bids require two complete BID responses (One (1) original and one (1) copy) along with one (1) electronic copy (USB Preferred).**

A complete BID response shall consist of the following executed documents:

1. An executed Bid Proposal Form – Section 00 03 00
2. The required Bid Bond – Section 00 04 00
3. Conflict of Interest Statement – Section 00 09 20
4. Non-Collusion Affidavit – Section 00 09 30
5. E-Verify Form – Section 00 09 40
6. Statement Under Section 287.087, Florida Statutes, On Preference to Businesses with Drug-Free Workplace Programs – Section 00 09 50
7. Trench Safety Act Compliance Document – Section 00 09 60
8. Public Entity Crimes Statement – Section 00 09 70
9. Copies of all Addenda signed by Bidder evidencing receipt
10. Form W-9 – Request for Taxpayer Identification Number & Certification (attached at end of this section)

The OWNER may waive any informalities or minor defects or reject any and all BIDS. Any BID may be withdrawn by the BIDDER prior to the above scheduled time for the opening of BIDS or authorized postponement thereof. Any BID received after the time and date specified shall not be considered, no exceptions. No BIDDER may withdraw a BID within **45** days after the actual date of the opening thereof. Should there be reasons why the contract cannot be awarded within the specified period the time may be extended by mutual agreement between the OWNER and the apparent successful BIDDER.

This is a Lump Sum Contract (subject to the adjustment for specified allowances and alternates under the terms of the Construction Documents). BIDDERS must satisfy themselves of the accuracy of any estimated quantities in the BID Schedules or Contract Documents by examination of the site and a review of the drawings and specifications including any ADDENDA. After BIDS have been submitted, the BIDDER shall not assert that there was misunderstanding concerning the quantities of WORK or of the nature of the WORK to be done. **The CONTRACTOR shall visit the entire site before submitting a BID.**

The OWNER shall provide to BIDDERS prior to BIDDING, information which is pertinent to, and delineates and describes, the land upon which the WORK is to be performed, including its ownership and rights-of-way acquired or to be acquired.

If necessary, ADDENDA will be issued to the Contract Documents. The BIDDERS must submit all questions, if any, in writing at least seven (7) days prior to the BID date.

The CONTRACT DOCUMENTS contain the provisions required for construction of the WORK. Information obtained from an officer, agent, or employee of the OWNER or any other person shall not affect the risks or obligations assumed by the successful BIDDER or relieve the successful BIDDER from fulfilling all of their obligations under the contract.

No Bid shall be considered or accepted unless at the time the Bid is submitted to OWNER the same shall be accompanied by a cashier's check, a cash bond posted with the City Clerk, a certified check payable to Owner on some bank or trust company located in the State of Florida insured by the Federal Deposit Insurance Corporation, or Bid Bond, in an amount not less than 5% of **the bidder's maximum possible award (base bid plus all add alternates)** (collectively referred to herein as the "Bid Deposit"). The Bid Deposit shall be retained by Owner as liquidated damages if the successful Bidder fails to execute and deliver to Owner the unaltered Agreement or fails to deliver the required Performance and Payment Bonds or Certificates of Insurance, all within ten (10) calendar days after receipt of the Notice of Award. Bid Bonds shall be executed by a corporate surety licensed under the laws of the State of Florida to execute such bonds, with conditions that the surety will, upon demand, forthwith make payment to Owner upon said bond.

As soon as the BID prices have been compared, the OWNER will return the BID DEPOSITS of all except the three lowest responsive and responsible BIDDERS. When the required Agreement has been executed by the successful BIDDER and delivered to OWNER, together with the required Certificate(s) of Insurance, Performance Bond and Payment Bond, the BID DEPOSITS of the successful BIDDER and two remaining unsuccessful BIDDERS will be returned (if requested).

A PERFORMANCE BOND and a PAYMENT BOND each in the amount of 100 percent of the CONTRACT PRICE, with a corporate surety approved by the OWNER, will be required for the faithful performance of the contract.

Attorneys-in-fact who sign BID BONDS or PAYMENT BONDS and PERFORMANCE BONDS must file with each BOND a certified and effective dated copy of their power of attorney.

The party to whom the contract is awarded will be required to obtain the required insurance, PAYMENT BOND and PERFORMANCE BOND, execute the AGREEMENT and deliver to OWNER said executed AGREEMENT together with the required Certificate of Insurance and the PERFORMANCE BOND and PAYMENT BOND, within ten (10) calendar days after the date the NOTICE OF AWARD is delivered to the BIDDER; the required forms for such AGREEMENT being set forth in Section 00 05 00, the required form for the PERFORMANCE BOND being set forth in Section 00 06 00, the required form for the PAYMENT BOND being set forth in Section 00070 and the required form for the Certificate of Insurance being set forth in Section 00 09 90. In case of failure of the successful BIDDER to execute and deliver to OWNER, within said ten (10) day period the required AGREEMENT, together with the required Certificates of Insurance, PERFORMANCE BOND and PAYMENT BOND, the OWNER may consider the BIDDER in

default, in which case the entire amount of the BID DEPOSIT accompanying the BID shall be paid to the OWNER. The BID DEPOSIT shall be retained by Owner as liquidated damages if the successful Bidder fails to execute and deliver to Owner the unaltered Agreement or fails to deliver the required Performance and Payment Bonds or Certificate(s) of Insurance, all within ten (10) calendar days after receipt of the Notice of Award.

If the OWNER intends to accept the successful BIDDER'S BID and enter into the contract with them, the OWNER, within **30** days (or such longer period of time the OWNER and successful BIDDER may mutually agree to in writing) of receipt of an acceptable PERFORMANCE BOND, PAYMENT BOND, Certificate(s) of Insurance, and AGREEMENT signed by the successful BIDDER to whom the AGREEMENT was awarded, shall sign the AGREEMENT and return to such party an executed duplicate of the AGREEMENT. BIDDER acknowledges and agrees that unless and until the OWNER executes the AGREEMENT and returns the executed copy to the BIDDER, no contract or agreement between the OWNER and BIDDER shall exist. Should the OWNER not execute the AGREEMENT within such period, the BIDDER shall provide OWNER an additional seven days written notice of BIDDER'S intent to withdraw its signed copy of the AGREEMENT. If OWNER fails to execute the AGREEMENT within such seven days, the AGREEMENT shall be deemed withdrawn and BIDDER shall be released from its BID as of the date of the written notice

The OWNER or its agents may make such investigations as deemed necessary to determine the ability of each BIDDER to perform the WORK, and the BIDDER shall furnish to the OWNER and its agents all such information and data for this purpose as the OWNER, or its agents may request. The OWNER reserves the right to reject any BID if the evidence submitted by, or investigation of, such BIDDER fails to satisfy the OWNER that such BIDDER is properly qualified to carry out the obligations of the AGREEMENT and to complete the WORK contemplated therein.

A conditional or qualified BID may be rejected by OWNER.

Each BIDDER is responsible for inspecting the site and for reading and being thoroughly familiar with the AGREEMENT, PLANS, SPECIFICATIONS, and other CONTRACT DOCUMENTS, prior to submitting their BID. The failure or omission of any BIDDER to do any of the foregoing shall in no way relieve any BIDDER from any obligation in respect to its BID.

Further, the BIDDER agrees to abide by the requirements under Executive Order No. 11246, as amended, including specifically the provisions of the equal opportunity clause set forth in the GENERAL CONDITIONS or any Supplemental Conditions.

No member, officer or employee of the CONTRACTOR or SUBCONTRACTOR or of the locality during his tenure or for 2 years thereafter shall have any interest, direct or indirect, in this contract or the proceeds thereof.

The successful BIDDER of each contract shall supply the names and addresses of major material SUPPLIERS and SUBCONTRACTORS when required to do so by the OWNER.

Each BIDDER shall provide a separate line item in their BID identifying the cost of compliance with the applicable trench safety standards set forth in the Trench Safety Act.

The OWNER shall award the Contract to the lowest responsive and responsible BIDDER as determined by OWNER; provided, however, OWNER reserves the right to award the Contract to a BIDDER who is not the lowest responsive and responsible BIDDER if OWNER finds that the lowest BIDDER does not offer the reliability, quality of service, or product afforded by such other BIDDER. In the event OWNER awards the Contract to a BIDDER other than the lowest responsive and responsible BIDDER, OWNER shall state the basis upon which the award is being made.

END OF SECTION 00 02 00

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Form **W-9**
(Rev. October 2018)
Department of the Treasury
Internal Revenue Service

Request for Taxpayer Identification Number and Certification

▶ **Go to *www.irs.gov/FormW9* for instructions and the latest information.**

Give Form to the requester. Do not send to the IRS.

Print or type. See **Specific Instructions** on page 3.

1 Name (as shown on your income tax return). Name is required on this line; do not leave this line blank.

2 Business name/disregarded entity name, if different from above

3 Check appropriate box for federal tax classification of the person whose name is entered on line 1. Check only **one** of the following seven boxes.

☐ Individual/sole proprietor or single-member LLC ☐ C Corporation ☐ S Corporation ☐ Partnership ☐ Trust/estate

☐ Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=Partnership) ▶ _____

Note: Check the appropriate box in the line above for the tax classification of the single-member owner. Do not check LLC if the LLC is classified as a single-member LLC that is disregarded from the owner unless the owner of the LLC is another LLC that is **not** disregarded from the owner for U.S. federal tax purposes. Otherwise, a single-member LLC that is disregarded from the owner should check the appropriate box for the tax classification of its owner.

☐ Other (see instructions) ▶

4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3):

Exempt payee code (if any) _____

Exemption from FATCA reporting code (if any) _____

(Applies to accounts maintained outside the U.S.)

5 Address (number, street, and apt. or suite no.) See instructions.

Requester's name and address (optional)

6 City, state, and ZIP code

7 List account number(s) here (optional)

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the instructions for Part I, later. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN,* later.

Note: If the account is in more than one name, see the instructions for line 1. Also see *What Name and Number To Give the Requester* for guidelines on whose number to enter.

Social security number

			–			–				

or

Employer identification number

		–							

Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
3. I am a U.S. citizen or other U.S. person (defined below); and
4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions for Part II, later.

Sign Here **Signature of U.S. person** ▶ **Date** ▶

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. For the latest information about developments related to Form W-9 and its instructions, such as legislation enacted after they were published, go to *www.irs.gov/FormW9.*

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following.

- Form 1099-INT (interest earned or paid)
- Form 1099-DIV (dividends, including those from stocks or mutual funds)
- Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
- Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
- Form 1099-S (proceeds from real estate transactions)
- Form 1099-K (merchant card and third party network transactions)
- Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)
- Form 1099-C (canceled debt)
- Form 1099-A (acquisition or abandonment of secured property)

Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See What is backup withholding, *later.*

By signing the filled-out form, you:

1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued),

2. Certify that you are not subject to backup withholding, or

3. Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income, and

4. Certify that FATCA code(s) entered on this form (if any) indicating that you are exempt from the FATCA reporting, is correct. See *What is FATCA reporting,* later, for further information.

Note: If you are a U.S. person and a requester gives you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9.

Definition of a U.S. person. For federal tax purposes, you are considered a U.S. person if you are:

- An individual who is a U.S. citizen or U.S. resident alien;
- A partnership, corporation, company, or association created or organized in the United States or under the laws of the United States;
- An estate (other than a foreign estate); or
- A domestic trust (as defined in Regulations section 301.7701-7).

Special rules for partnerships. Partnerships that conduct a trade or business in the United States are generally required to pay a withholding tax under section 1446 on any foreign partners' share of effectively connected taxable income from such business. Further, in certain cases where a Form W-9 has not been received, the rules under section 1446 require a partnership to presume that a partner is a foreign person, and pay the section 1446 withholding tax. Therefore, if you are a U.S. person that is a partner in a partnership conducting a trade or business in the United States, provide Form W-9 to the partnership to establish your U.S. status and avoid section 1446 withholding on your share of partnership income.

In the cases below, the following person must give Form W-9 to the partnership for purposes of establishing its U.S. status and avoiding withholding on its allocable share of net income from the partnership conducting a trade or business in the United States.

- In the case of a disregarded entity with a U.S. owner, the U.S. owner of the disregarded entity and not the entity;
- In the case of a grantor trust with a U.S. grantor or other U.S. owner, generally, the U.S. grantor or other U.S. owner of the grantor trust and not the trust; and
- In the case of a U.S. trust (other than a grantor trust), the U.S. trust (other than a grantor trust) and not the beneficiaries of the trust.

Foreign person. If you are a foreign person or the U.S. branch of a foreign bank that has elected to be treated as a U.S. person, do not use Form W-9. Instead, use the appropriate Form W-8 or Form 8233 (see Pub. 515, Withholding of Tax on Nonresident Aliens and Foreign Entities).

Nonresident alien who becomes a resident alien. Generally, only a nonresident alien individual may use the terms of a tax treaty to reduce or eliminate U.S. tax on certain types of income. However, most tax treaties contain a provision known as a "saving clause." Exceptions specified in the saving clause may permit an exemption from tax to continue for certain types of income even after the payee has otherwise become a U.S. resident alien for tax purposes.

If you are a U.S. resident alien who is relying on an exception contained in the saving clause of a tax treaty to claim an exemption from U.S. tax on certain types of income, you must attach a statement to Form W-9 that specifies the following five items.

1. The treaty country. Generally, this must be the same treaty under which you claimed exemption from tax as a nonresident alien.

2. The treaty article addressing the income.

3. The article number (or location) in the tax treaty that contains the saving clause and its exceptions.

4. The type and amount of income that qualifies for the exemption from tax.

5. Sufficient facts to justify the exemption from tax under the terms of the treaty article.

Example. Article 20 of the U.S.-China income tax treaty allows an exemption from tax for scholarship income received by a Chinese student temporarily present in the United States. Under U.S. law, this student will become a resident alien for tax purposes if his or her stay in the United States exceeds 5 calendar years. However, paragraph 2 of the first Protocol to the U.S.-China treaty (dated April 30, 1984) allows the provisions of Article 20 to continue to apply even after the Chinese student becomes a resident alien of the United States. A Chinese student who qualifies for this exception (under paragraph 2 of the first protocol) and is relying on this exception to claim an exemption from tax on his or her scholarship or fellowship income would attach to Form W-9 a statement that includes the information described above to support that exemption.

If you are a nonresident alien or a foreign entity, give the requester the appropriate completed Form W-8 or Form 8233.

Backup Withholding

What is backup withholding? Persons making certain payments to you must under certain conditions withhold and pay to the IRS 24% of such payments. This is called "backup withholding." Payments that may be subject to backup withholding include interest, tax-exempt interest, dividends, broker and barter exchange transactions, rents, royalties, nonemployee pay, payments made in settlement of payment card and third party network transactions, and certain payments from fishing boat operators. Real estate transactions are not subject to backup withholding.

You will not be subject to backup withholding on payments you receive if you give the requester your correct TIN, make the proper certifications, and report all your taxable interest and dividends on your tax return.

Payments you receive will be subject to backup withholding if:

1. You do not furnish your TIN to the requester,

2. You do not certify your TIN when required (see the instructions for Part II for details),

3. The IRS tells the requester that you furnished an incorrect TIN,

4. The IRS tells you that you are subject to backup withholding because you did not report all your interest and dividends on your tax return (for reportable interest and dividends only), or

5. You do not certify to the requester that you are not subject to backup withholding under 4 above (for reportable interest and dividend accounts opened after 1983 only).

Certain payees and payments are exempt from backup withholding. See *Exempt payee code,* later, and the separate Instructions for the Requester of Form W-9 for more information.

Also see *Special rules for partnerships,* earlier.

What is FATCA Reporting?

The Foreign Account Tax Compliance Act (FATCA) requires a participating foreign financial institution to report all United States account holders that are specified United States persons. Certain payees are exempt from FATCA reporting. See *Exemption from FATCA reporting code,* later, and the Instructions for the Requester of Form W-9 for more information.

Updating Your Information

You must provide updated information to any person to whom you claimed to be an exempt payee if you are no longer an exempt payee and anticipate receiving reportable payments in the future from this person. For example, you may need to provide updated information if you are a C corporation that elects to be an S corporation, or if you no longer are tax exempt. In addition, you must furnish a new Form W-9 if the name or TIN changes for the account; for example, if the grantor of a grantor trust dies.

Penalties

Failure to furnish TIN. If you fail to furnish your correct TIN to a requester, you are subject to a penalty of $50 for each such failure unless your failure is due to reasonable cause and not to willful neglect.

Civil penalty for false information with respect to withholding. If you make a false statement with no reasonable basis that results in no backup withholding, you are subject to a $500 penalty.

Criminal penalty for falsifying information. Willfully falsifying certifications or affirmations may subject you to criminal penalties including fines and/or imprisonment.

Misuse of TINs. If the requester discloses or uses TINs in violation of federal law, the requester may be subject to civil and criminal penalties.

Specific Instructions

Line 1

You must enter one of the following on this line; **do not** leave this line blank. The name should match the name on your tax return.

If this Form W-9 is for a joint account (other than an account maintained by a foreign financial institution (FFI)), list first, and then circle, the name of the person or entity whose number you entered in Part I of Form W-9. If you are providing Form W-9 to an FFI to document a joint account, each holder of the account that is a U.S. person must provide a Form W-9.

a. **Individual.** Generally, enter the name shown on your tax return. If you have changed your last name without informing the Social Security Administration (SSA) of the name change, enter your first name, the last name as shown on your social security card, and your new last name.

Note: ITIN applicant: Enter your individual name as it was entered on your Form W-7 application, line 1a. This should also be the same as the name you entered on the Form 1040/1040A/1040EZ you filed with your application.

b. **Sole proprietor or single-member LLC.** Enter your individual name as shown on your 1040/1040A/1040EZ on line 1. You may enter your business, trade, or "doing business as" (DBA) name on line 2.

c. **Partnership, LLC that is not a single-member LLC, C corporation, or S corporation.** Enter the entity's name as shown on the entity's tax return on line 1 and any business, trade, or DBA name on line 2.

d. **Other entities.** Enter your name as shown on required U.S. federal tax documents on line 1. This name should match the name shown on the charter or other legal document creating the entity. You may enter any business, trade, or DBA name on line 2.

e. **Disregarded entity.** For U.S. federal tax purposes, an entity that is disregarded as an entity separate from its owner is treated as a "disregarded entity." See Regulations section 301.7701-2(c)(2)(iii). Enter the owner's name on line 1. The name of the entity entered on line 1 should never be a disregarded entity. The name on line 1 should be the name shown on the income tax return on which the income should be reported. For example, if a foreign LLC that is treated as a disregarded entity for U.S. federal tax purposes has a single owner that is a U.S. person, the U.S. owner's name is required to be provided on line 1. If the direct owner of the entity is also a disregarded entity, enter the first owner that is not disregarded for federal tax purposes. Enter the disregarded entity's name on line 2, "Business name/disregarded entity name." If the owner of the disregarded entity is a foreign person, the owner must complete an appropriate Form W-8 instead of a Form W-9. This is the case even if the foreign person has a U.S. TIN.

Line 2

If you have a business name, trade name, DBA name, or disregarded entity name, you may enter it on line 2.

Line 3

Check the appropriate box on line 3 for the U.S. federal tax classification of the person whose name is entered on line 1. Check only one box on line 3.

IF the entity/person on line 1 is a(n) . . .	THEN check the box for . . .
• Corporation	Corporation
• Individual • Sole proprietorship, or • Single-member limited liability company (LLC) owned by an individual and disregarded for U.S. federal tax purposes.	Individual/sole proprietor or single-member LLC
• LLC treated as a partnership for U.S. federal tax purposes, • LLC that has filed Form 8832 or 2553 to be taxed as a corporation, or • LLC that is disregarded as an entity separate from its owner but the owner is another LLC that is not disregarded for U.S. federal tax purposes.	Limited liability company and enter the appropriate tax classification. (P= Partnership; C= C corporation; or S= S corporation)
• Partnership	Partnership
• Trust/estate	Trust/estate

Line 4, Exemptions

If you are exempt from backup withholding and/or FATCA reporting, enter in the appropriate space on line 4 any code(s) that may apply to you.

Exempt payee code.

- Generally, individuals (including sole proprietors) are not exempt from backup withholding.
- Except as provided below, corporations are exempt from backup withholding for certain payments, including interest and dividends.
- Corporations are not exempt from backup withholding for payments made in settlement of payment card or third party network transactions.
- Corporations are not exempt from backup withholding with respect to attorneys' fees or gross proceeds paid to attorneys, and corporations that provide medical or health care services are not exempt with respect to payments reportable on Form 1099-MISC.

The following codes identify payees that are exempt from backup withholding. Enter the appropriate code in the space in line 4.

1—An organization exempt from tax under section 501(a), any IRA, or a custodial account under section 403(b)(7) if the account satisfies the requirements of section 401(f)(2)

2—The United States or any of its agencies or instrumentalities

3—A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities

4—A foreign government or any of its political subdivisions, agencies, or instrumentalities

5—A corporation

6—A dealer in securities or commodities required to register in the United States, the District of Columbia, or a U.S. commonwealth or possession

7—A futures commission merchant registered with the Commodity Futures Trading Commission

8—A real estate investment trust

9—An entity registered at all times during the tax year under the Investment Company Act of 1940

10—A common trust fund operated by a bank under section 584(a)

11—A financial institution

12—A middleman known in the investment community as a nominee or custodian

13—A trust exempt from tax under section 664 or described in section 4947

The following chart shows types of payments that may be exempt from backup withholding. The chart applies to the exempt payees listed above, 1 through 13.

IF the payment is for . . .	THEN the payment is exempt for . . .
Interest and dividend payments	All exempt payees except for 7
Broker transactions	Exempt payees 1 through 4 and 6 through 11 and all C corporations. S corporations must not enter an exempt payee code because they are exempt only for sales of noncovered securities acquired prior to 2012.
Barter exchange transactions and patronage dividends	Exempt payees 1 through 4
Payments over $600 required to be reported and direct sales over $5,000[1]	Generally, exempt payees 1 through 5[2]
Payments made in settlement of payment card or third party network transactions	Exempt payees 1 through 4

[1] See Form 1099-MISC, Miscellaneous Income, and its instructions.

[2] However, the following payments made to a corporation and reportable on Form 1099-MISC are not exempt from backup withholding: medical and health care payments, attorneys' fees, gross proceeds paid to an attorney reportable under section 6045(f), and payments for services paid by a federal executive agency.

Exemption from FATCA reporting code. The following codes identify payees that are exempt from reporting under FATCA. These codes apply to persons submitting this form for accounts maintained outside of the United States by certain foreign financial institutions. Therefore, if you are only submitting this form for an account you hold in the United States, you may leave this field blank. Consult with the person requesting this form if you are uncertain if the financial institution is subject to these requirements. A requester may indicate that a code is not required by providing you with a Form W-9 with "Not Applicable" (or any similar indication) written or printed on the line for a FATCA exemption code.

A—An organization exempt from tax under section 501(a) or any individual retirement plan as defined in section 7701(a)(37)

B—The United States or any of its agencies or instrumentalities

C—A state, the District of Columbia, a U.S. commonwealth or possession, or any of their political subdivisions or instrumentalities

D—A corporation the stock of which is regularly traded on one or more established securities markets, as described in Regulations section 1.1472-1(c)(1)(i)

E—A corporation that is a member of the same expanded affiliated group as a corporation described in Regulations section 1.1472-1(c)(1)(i)

F—A dealer in securities, commodities, or derivative financial instruments (including notional principal contracts, futures, forwards, and options) that is registered as such under the laws of the United States or any state

G—A real estate investment trust

H—A regulated investment company as defined in section 851 or an entity registered at all times during the tax year under the Investment Company Act of 1940

I—A common trust fund as defined in section 584(a)

J—A bank as defined in section 581

K—A broker

L—A trust exempt from tax under section 664 or described in section 4947(a)(1)

M—A tax exempt trust under a section 403(b) plan or section 457(g) plan

Note: You may wish to consult with the financial institution requesting this form to determine whether the FATCA code and/or exempt payee code should be completed.

Line 5

Enter your address (number, street, and apartment or suite number). This is where the requester of this Form W-9 will mail your information returns. If this address differs from the one the requester already has on file, write NEW at the top. If a new address is provided, there is still a chance the old address will be used until the payor changes your address in their records.

Line 6

Enter your city, state, and ZIP code.

Part I. Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. If you are a resident alien and you do not have and are not eligible to get an SSN, your TIN is your IRS individual taxpayer identification number (ITIN). Enter it in the social security number box. If you do not have an ITIN, see *How to get a TIN* below.

If you are a sole proprietor and you have an EIN, you may enter either your SSN or EIN.

If you are a single-member LLC that is disregarded as an entity separate from its owner, enter the owner's SSN (or EIN, if the owner has one). Do not enter the disregarded entity's EIN. If the LLC is classified as a corporation or partnership, enter the entity's EIN.

Note: See *What Name and Number To Give the Requester,* later, for further clarification of name and TIN combinations.

How to get a TIN. If you do not have a TIN, apply for one immediately. To apply for an SSN, get Form SS-5, Application for a Social Security Card, from your local SSA office or get this form online at *www.SSA.gov*. You may also get this form by calling 1-800-772-1213. Use Form W-7, Application for IRS Individual Taxpayer Identification Number, to apply for an ITIN, or Form SS-4, Application for Employer Identification Number, to apply for an EIN. You can apply for an EIN online by accessing the IRS website at *www.irs.gov/Businesses* and clicking on Employer Identification Number (EIN) under Starting a Business. Go to *www.irs.gov/Forms* to view, download, or print Form W-7 and/or Form SS-4. Or, you can go to *www.irs.gov/OrderForms* to place an order and have Form W-7 and/or SS-4 mailed to you within 10 business days.

If you are asked to complete Form W-9 but do not have a TIN, apply for a TIN and write "Applied For" in the space for the TIN, sign and date the form, and give it to the requester. For interest and dividend payments, and certain payments made with respect to readily tradable instruments, generally you will have 60 days to get a TIN and give it to the requester before you are subject to backup withholding on payments. The 60-day rule does not apply to other types of payments. You will be subject to backup withholding on all such payments until you provide your TIN to the requester.

Note: Entering "Applied For" means that you have already applied for a TIN or that you intend to apply for one soon.

Caution: A disregarded U.S. entity that has a foreign owner must use the appropriate Form W-8.

Part II. Certification

To establish to the withholding agent that you are a U.S. person, or resident alien, sign Form W-9. You may be requested to sign by the withholding agent even if item 1, 4, or 5 below indicates otherwise.

For a joint account, only the person whose TIN is shown in Part I should sign (when required). In the case of a disregarded entity, the person identified on line 1 must sign. Exempt payees, see *Exempt payee code,* earlier.

Signature requirements. Complete the certification as indicated in items 1 through 5 below.

1. Interest, dividend, and barter exchange accounts opened before 1984 and broker accounts considered active during 1983. You must give your correct TIN, but you do not have to sign the certification.

2. Interest, dividend, broker, and barter exchange accounts opened after 1983 and broker accounts considered inactive during 1983. You must sign the certification or backup withholding will apply. If you are subject to backup withholding and you are merely providing your correct TIN to the requester, you must cross out item 2 in the certification before signing the form.

3. Real estate transactions. You must sign the certification. You may cross out item 2 of the certification.

4. Other payments. You must give your correct TIN, but you do not have to sign the certification unless you have been notified that you have previously given an incorrect TIN. "Other payments" include payments made in the course of the requester's trade or business for rents, royalties, goods (other than bills for merchandise), medical and health care services (including payments to corporations), payments to a nonemployee for services, payments made in settlement of payment card and third party network transactions, payments to certain fishing boat crew members and fishermen, and gross proceeds paid to attorneys (including payments to corporations).

5. Mortgage interest paid by you, acquisition or abandonment of secured property, cancellation of debt, qualified tuition program payments (under section 529), ABLE accounts (under section 529A), IRA, Coverdell ESA, Archer MSA or HSA contributions or distributions, and pension distributions. You must give your correct TIN, but you do not have to sign the certification.

What Name and Number To Give the Requester

For this type of account:	Give name and SSN of:
1. Individual	The individual
2. Two or more individuals (joint account) other than an account maintained by an FFI	The actual owner of the account or, if combined funds, the first individual on the account[1]
3. Two or more U.S. persons (joint account maintained by an FFI)	Each holder of the account
4. Custodial account of a minor (Uniform Gift to Minors Act)	The minor[2]
5. a. The usual revocable savings trust (grantor is also trustee)	The grantor-trustee[1]
b. So-called trust account that is not a legal or valid trust under state law	The actual owner[1]
6. Sole proprietorship or disregarded entity owned by an individual	The owner[3]
7. Grantor trust filing under Optional Form 1099 Filing Method 1 (see Regulations section 1.671-4(b)(2)(i)(A))	The grantor*
For this type of account:	**Give name and EIN of:**
8. Disregarded entity not owned by an individual	The owner
9. A valid trust, estate, or pension trust	Legal entity[4]
10. Corporation or LLC electing corporate status on Form 8832 or Form 2553	The corporation
11. Association, club, religious, charitable, educational, or other tax-exempt organization	The organization
12. Partnership or multi-member LLC	The partnership
13. A broker or registered nominee	The broker or nominee
14. Account with the Department of Agriculture in the name of a public entity (such as a state or local government, school district, or prison) that receives agricultural program payments	The public entity
15. Grantor trust filing under the Form 1041 Filing Method or the Optional Form 1099 Filing Method 2 (see Regulations section 1.671-4(b)(2)(i)(B))	The trust

[1] List first and circle the name of the person whose number you furnish. If only one person on a joint account has an SSN, that person's number must be furnished.

[2] Circle the minor's name and furnish the minor's SSN.

[3] You must show your individual name and you may also enter your business or DBA name on the "Business name/disregarded entity" name line. You may use either your SSN or EIN (if you have one), but the IRS encourages you to use your SSN.

[4] List first and circle the name of the trust, estate, or pension trust. (Do not furnish the TIN of the personal representative or trustee unless the legal entity itself is not designated in the account title.) Also see *Special rules for partnerships,* earlier.

***Note:** The grantor also must provide a Form W-9 to trustee of trust.

Note: If no name is circled when more than one name is listed, the number will be considered to be that of the first name listed.

Secure Your Tax Records From Identity Theft

Identity theft occurs when someone uses your personal information such as your name, SSN, or other identifying information, without your permission, to commit fraud or other crimes. An identity thief may use your SSN to get a job or may file a tax return using your SSN to receive a refund.

To reduce your risk:

- Protect your SSN,
- Ensure your employer is protecting your SSN, and
- Be careful when choosing a tax preparer.

If your tax records are affected by identity theft and you receive a notice from the IRS, respond right away to the name and phone number printed on the IRS notice or letter.

If your tax records are not currently affected by identity theft but you think you are at risk due to a lost or stolen purse or wallet, questionable credit card activity or credit report, contact the IRS Identity Theft Hotline at 1-800-908-4490 or submit Form 14039.

For more information, see Pub. 5027, Identity Theft Information for Taxpayers.

Victims of identity theft who are experiencing economic harm or a systemic problem, or are seeking help in resolving tax problems that have not been resolved through normal channels, may be eligible for Taxpayer Advocate Service (TAS) assistance. You can reach TAS by calling the TAS toll-free case intake line at 1-877-777-4778 or TTY/TDD 1-800-829-4059.

Protect yourself from suspicious emails or phishing schemes. Phishing is the creation and use of email and websites designed to mimic legitimate business emails and websites. The most common act is sending an email to a user falsely claiming to be an established legitimate enterprise in an attempt to scam the user into surrendering private information that will be used for identity theft.

The IRS does not initiate contacts with taxpayers via emails. Also, the IRS does not request personal detailed information through email or ask taxpayers for the PIN numbers, passwords, or similar secret access information for their credit card, bank, or other financial accounts.

If you receive an unsolicited email claiming to be from the IRS, forward this message to *phishing@irs.gov*. You may also report misuse of the IRS name, logo, or other IRS property to the Treasury Inspector General for Tax Administration (TIGTA) at 1-800-366-4484. You can forward suspicious emails to the Federal Trade Commission at *spam@uce.gov* or report them at *www.ftc.gov/complaint*. You can contact the FTC at *www.ftc.gov/idtheft* or 877-IDTHEFT (877-438-4338). If you have been the victim of identity theft, see *www.IdentityTheft.gov* and Pub. 5027.

Visit *www.irs.gov/IdentityTheft* to learn more about identity theft and how to reduce your risk.

Privacy Act Notice

Section 6109 of the Internal Revenue Code requires you to provide your correct TIN to persons (including federal agencies) who are required to file information returns with the IRS to report interest, dividends, or certain other income paid to you; mortgage interest you paid; the acquisition or abandonment of secured property; the cancellation of debt; or contributions you made to an IRA, Archer MSA, or HSA. The person collecting this form uses the information on the form to file information returns with the IRS, reporting the above information. Routine uses of this information include giving it to the Department of Justice for civil and criminal litigation and to cities, states, the District of Columbia, and U.S. commonwealths and possessions for use in administering their laws. The information also may be disclosed to other countries under a treaty, to federal and state agencies to enforce civil and criminal laws, or to federal law enforcement and intelligence agencies to combat terrorism. You must provide your TIN whether or not you are required to file a tax return. Under section 3406, payers must generally withhold a percentage of taxable interest, dividend, and certain other payments to a payee who does not give a TIN to the payer. Certain penalties may also apply for providing false or fraudulent information.

PANAMA CITY BEACH
FIRE STATION #32
HUTCHISON BLVD
BID DOCUMENTS
AUGUST 1, 2023

SECTION 00 03 00 – BID PROPOSAL FORM

This proposal of _____ (hereinafter called "BIDDER"), organized and existing under the laws of the State of _____, doing business as _____ (a corporation, a partnership or an individual), whose Florida contractor's license number is _____ is hereby submitted to the CITY OF PANAMA CITY BEACH (hereinafter called "OWNER").

In compliance with the requirements of the Advertisement for Bids, BIDDER hereby proposes to perform all WORK for the **PANAMA CITY BEACH FIRE STATION #32 HUTCHISON BLVD** in strict accordance with the CONTRACT DOCUMENTS, within the time set forth therein, and at the prices stated below.

By submission of this BID, each BIDDER certifies, and in the case of a joint BID, each party thereto certifies as to its own organization, that this BID has been arrived at independently, without consultation, communication, or agreement as to any matter relating to this BID with any other BIDDER or with any competitor.

BIDDER hereby agrees to commence WORK under the CONTRACT DOCUMENTS within ten (10) calendar days after the NOTICE TO PROCEED is issued by Owner in writing and achieve Substantial Completion of the WORK within **330** consecutive calendar days thereafter. Final Completion of the WORK shall be achieved by BIDDER within the calendar days specified in the General Conditions after the date of Substantial Completion.

BIDDER further agrees to pay as liquidated damages, the sum of $500 for each consecutive calendar day that expires after the Contract Time until Substantial Completion of the WORK is achieved as provided in Section 15 of the General Conditions.

BIDDER acknowledges receipt of the following ADDENDUM(S):

Addendum No. _____

Addendum No. _____

Addendum No. _____

Addendum No. _____

Addendum No. _____

BASE BID

BIDDER agrees to perform all the WORK described in the CONTRACT DOCUMENTS for the following total sum (including allowances):

_____ dollars ($_____).

The BIDDER proposes and agrees, if this Proposal is accepted, to contract with the OWNER in the required form of the Agreement (Section 00 05 00), to furnish all necessary materials, equipment, machinery, tools, apparatus, means of transportation and labor necessary to complete the WORK in full and in accordance with the shown, noted, described and reasonably intended requirements of the CONTRACT DOCUMENTS according to the following schedule:

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BID SCHEDULE

ITEM NO.	DESCRIPTION	UNIT	QUANTITY	COST
1	**Base Bid:** Construction of new fire station and all associated site improvements	LS	1	$
2	**Allowance No. 1** (Miscellaneous utility connections)	EA	1	$55,000
3	**Allowance No. 2** (Impact and/or permit fees)	EA	1	$55,000
4	**Allowance No. 3** (Hose drying rack lift system)	EA	1	$35,000
5	**Allowance No. 4** (Furniture)	EA	1	$85,000
6	**Alternate No. 1** (LED soffit lighting @ tower)	LS	1	$
7	**Alternate No. 2** (LED soffit lighting @ apparatus bay)	LS	1	$
8	**Alternate No. 3** (LED soffit lighting @ lower soffits)	LS	1	$

TOTAL SUM BID $_____

NOTE:

1. BIDS shall include sales tax and all other applicable taxes and fees. The OWNER may elect to utilize the Sales Tax Exemption Addendum (Section 00 09 80) for material at its sole discretion.
2. BIDS shall be on the basis of a total sum price subject to adjustment for specified allowances and alternates, as noted above, and shall be the total compensation to be paid by OWNER for the complete WORK.
3. The OWNER reserves the right to reject any and all bids received.
4. Failure to insert a bid amount for any item in the Bid Schedule will be considered grounds for the OWNER to determine the BID is non-responsive.
5. By submitting this BID, the BIDDER and the BID BOND surety, are deemed to have stipulated and agreed that any and all claims, demands, actions or suits whatsoever, arising under this BID and/or BID BONDS, shall be subjected to the sole and exclusive jurisdiction and venue of the Circuit Court of Bay County, Florida. The BIDDER and BID BOND surety do agree, by submittal of this BID, that the sole and exclusive jurisdiction and venue in said forum is proper and appropriate since performance of the underlying contract to be awarded is to be accomplished within Bay County, Florida.
6. Alternates cannot be taken out of order. Alternate No. 1 must be accepted before Alternate No. 2 or 3 can be utilized.

Bidder's Certification

BIDDER certifies that it has thoroughly familiarized itself with and inspected the site and has read and is thoroughly familiar with the CONTRACT DOCUMENTS. Additional site investigation, if deemed necessary by the BIDDER, shall be performed prior to BID submittal at the BIDDER's sole expense. Bidder certifies that the BID submitted is complete and is sufficient for the Bidder to provide a fully operational and working system in accordance with the CONTRACT DOCUMENTS. Furthermore, BIDDER certifies its understanding that neither the OWNER, PROJECT REPRESENTATIVE, nor ARCHITECT shall provide any labor, equipment or materials of any kind, which may be required for the performance of the WORK, unless otherwise specifically directed by OWNER. Likewise, BIDDER certifies that it shall provide all equipment, materials, labor and services necessary to complete the WORK in accordance with the CONTRACT DOCUMENTS whether or not such equipment, material, labor, or service is expressly identified. Such occurrences are deemed subsidiary obligations of the contract for which complete compensation is made under the Lump Sum. The failure or omission of any BIDDER to do any of the foregoing shall in no way relieve any BIDDER from any obligation in respect to its BID.

As required, the following documents are to be submitted with this Bid Proposal:

1. An executed Bid Proposal Form – Section 00 03 00
2. The required Bid Bond – Section 00 04 00
3. Conflict of Interest Statement – Section 00 09 20
4. Non-Collusion Affidavit – Section 00 09 30
5. E-Verify Form – Section 00 09 40
6. Statement Under Section 287.087, Florida Statutes on Preference to Businesses with Drug-Free Workplace Programs – Section 00 09 50
7. Trench Safety Act Compliance Document – Section 00 09 60
8. Public Entity Crimes Statement – Section 00 09 70
9. Copies of all Addenda signed by Bidder evidencing receipt

CONTRACTOR:

_____

_____
Address

_____

_____
Phone Number

_____
Date

END OF SECTION 00 03 00

PANAMA CITY BEACH
FIRE STATION #32
HUTCHISON BLVD
BID DOCUMENTS
AUGUST 1, 2023

SECTION 00 04 00 – BID BOND

KNOW ALL PERSONS BY THESE PRESENTS, that we, the undersigned, _____, as Principal, and _____, as Surety, are hereby held and firmly bound unto the City of Panama City Beach, as OWNER, in the penal sum of _____ for the payment of which, will and truly be made, we hereby jointly and severally bind ourselves, successors and assigns. Signed this _____ day of _____, 20___. The Condition of the above obligation is such that whereas the principal has submitted to the OWNER a certain BID, attached hereto and hereby made a part hereof to enter into a contract in writing, for the construction of the **Panama City Beach Fire Station #32 Hutchison Blvd.**

NOW THEREFORE,

(a) If said BID shall be rejected, or

(b) If said BID shall be accepted and the Principal shall execute and deliver the Agreement in the form of contract as set forth in Section 00 05 00 (properly completed in accordance with said BID) and shall furnish a BOND for faithful performance of said contract, and for the payment of all persons performing labor or furnishing materials in connection therewith, and shall in all other respects perform its obligations created by OWNER's acceptance of said BID, then this obligation shall be void, otherwise the same shall remain in force and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

(c) NOW, THEREFORE, if the OWNER shall accept the BID of the Principal and the Principal shall execute and deliver to OWNER the required Agreement and within ten days after the date of a written Notice of Award in accordance with the terms of such BID, and within said ten days deliver to OWNER the required Certificates(s) of Insurance, together with the required Performance and Payment Bonds in an amount of 100% the total Contract Amount as specified in the Bidding Documents or Contract Documents with good and sufficient surety for the faithful performance of the Agreement and for the prompt payment of labor, materials and supplies furnished in the prosecution thereof or, in the event of the failure of the Principal to execute and deliver to OWNER such Agreement or to give such bond or bonds, and deliver to OWNER the required certificates of insurance, if the Principal shall pay to OWNER the fixed penal sum of 5% of total lump sum bid noted above as liquidated damages, and not as a penalty, as provided in the Instructions for

Bidders, then this obligation shall be null and void, otherwise to remain in full force and effect.

The Surety, for value received, hereby stipulates, and agrees that the obligations of said Surety and its BOND shall be in no way impaired or affected by any extension of the time within which the OWNER may have to accept said BID; and Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.

_____
Principal

_____
Surety

By:

IMPORTANT - Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State of Florida.

END OF SECTION 00 04 00

PANAMA CITY BEACH
FIRE STATION #32
HUTCHISON BLVD
BID DOCUMENTS
AUGUST 1, 2023

SECTION 00 05 00 – AGREEMENT

THIS AGREEMENT is made this _____ day of _____, 2022 by and between THE CITY OF PANAMA CITY BEACH, FLORIDA, (hereinafter called "OWNER") and _____ _____, doing business as a _____ having a business address of _____ hereinafter called "CONTRACTOR") , for the performance of the Work (as that terms is defined below) in connection with the construction of **Panama City Beach Fire Station #32 Hutchison Blvd** ("Project"), to be located at 17121 Panama City Beach Parkway, Panama City Beach, Florida, in accordance with the Drawings and Specifications prepared by the JRA Architects, Inc., the Architect of Record (hereinafter called "Architect") and all other Contract Documents hereafter specified.

OWNER and CONTRACTOR, for the consideration herein set forth, agree as follows:

1. The CONTRACTOR shall furnish, at its sole expense, all supervision, labor, parts, equipment, tools, material, and supplies to properly and efficiently perform all of the work required under the Contract Documents and shall be solely responsible for the payment of all taxes, permits and license fees, labor fringe benefits, insurance and bond premiums, and all other expenses and costs required to complete such work in accordance with this Agreement (collectively the "Work"). CONTRACTOR'S employees and personnel shall be qualified and experienced to perform the portions of the Work to which they have been assigned. In performing the Work hereunder, CONTRACTOR shall be an independent contractor, maintaining control over and having sole responsibility for CONTRACTOR'S employees and other personnel. Neither CONTRACTOR, nor any of CONTRACTOR'S sub-contractors or sub-subcontractors, if any, nor any of their respective employees or personnel, shall be deemed servants, employees, or agents of OWNER.

2. The CONTRACTOR will commence the Work required by the Contract Documents within 10 calendar days after the date of the NOTICE TO PROCEED and will achieve Substantial Completion of the Work within 330 calendar days of the required commencement date as follows, except to the extent the period for Substantial Completion is extended pursuant to the terms of the Contract Documents ("Contract Time"):

   Final Completion of the Work shall be achieved by CONTRACTOR within the time period set forth in Section 15.2 of Section 00 10 00, General Conditions.

3. The CONTRACTOR agrees to pay the OWNER, as liquidated damages, the sum of $500 for each consecutive calendar day that expires after the Contract Time until Substantial Completion of the WORK is achieved as provided in Section 15 of the General Conditions. Liquidated damages can accrue concurrently.

4. The CONTRACTOR agrees to perform all of the Work described in the Contract Documents and comply with the terms therein for the total sum of $_____ as shown in the BID SCHEDULE, included within the Bid Proposal Form, as said amount may be hereafter adjusted pursuant to the terms of the Contract Documents ("Contract Price").

5. The term "Contract Documents" means and includes the following documents, all of which are incorporated into this Agreement by this reference:

   a. DRAWINGS AND SPECIFICATIONS prepared or issued by the JRA Architects, Inc. dated **August 1, 2023**.

   b. All other documents referenced in specification section 00 10 00 General Conditions, paragraph 1.9.

   ADDENDA

   No. _____, dated _____

   No. _____, dated _____

   No. _____, dated _____

   No. _____, dated _____

   The Contract Documents also includes any written amendments to any of the above signed by the party to be bound by such amendment. The Contract Documents are sometimes referred to herein as the "Agreement".

6. The OWNER will pay the Contract Price to the CONTRACTOR in the manner and at such times as set forth in Contract Documents.

7. This Agreement shall be binding upon all parties hereto and their respective heirs, executors, administrators, successors, and assigns.

8. This Agreement shall be governed by the laws of the State of Florida.

9. All notices required or made pursuant to this Agreement shall be in writing and, unless otherwise required by the express terms of this Agreement, may be given either (i) by mailing same by United States mail with proper postage affixed thereto, certified, return receipt requested, or (ii) by sending same by Federal Express, Express Mail, Airborne, Emery, Purolator or other expedited mail or package delivery, or (iii) by hand delivery to the appropriate address as herein provided. Notices to OWNER required hereunder shall be directed to the following address:

   If to Owner: City of Panama City Beach
   17007 South Arnold Road
   Panama City Beach, FL 32413
   ATTENTION: Drew Whitman, City Manager

   If to Contractor:_____

ATTENTION: _____

Either party may change its above noted address by giving written notice to the other party in accordance with the requirements of this Section.

10. CONTRACTOR recognizes that OWNER is exempt from sales tax and may wish to generate sales tax savings for the Project. Accordingly, to the extent directed by and without additional charge to OWNER, CONTRACTOR shall comply with and fully implement the sales tax savings program as more fully described in the Sales Tax Exemption Addendum. If required by OWNER, the Sales Tax Exemption Addendum shall be made a part of the Contract Documents, the form of which is set forth in Section 00808.

11. The failure of OWNER to enforce at any time or for any period of time any one or more of the provisions of the Agreement shall not be construed to be and shall not be a continuing waiver of any such provision or provisions or of its right thereafter to enforce each and every such provision.

12. Each of the parties hereto agrees and represents that the Agreement comprises the full and entire agreement between the parties affecting the Work contemplated, and no other agreement or understanding of any nature concerning the same has been entered into or will be recognized, and that all negotiations, acts, work performed, or payments made prior to the execution hereof shall be deemed merged in, integrated, and superseded by this Agreement.

13. Should any provision of the Agreement be determined by a court with jurisdiction to be unenforceable, such a determination shall not affect the validity or enforceability of any other section or part thereof.

14. Unless the context of this Agreement otherwise clearly requires, references to the plural include the singular, references to the singular include the plural. The term “including” is not limiting, and the terms “hereof”, “herein”, “hereunder”, and similar terms in this Agreement refer to this Agreement as a whole and not to any particular provision of this Agreement, unless stated otherwise. Additionally, the parties hereto acknowledge that they have carefully reviewed this Agreement and have been advised by counsel of their choosing with respect thereto, and that they understand its contents and agree that this Agreement shall not be construed more strongly against any party hereto, regardless of who is responsible for its preparation.

15. For this Project, OWNER has designated a Project Representative to assist OWNER with respect to the administration of this Agreement. The Project Representative to be utilized by OWNER for this Project, shall be Mr. Al Shortt – Project Manager.

16. CONTRACTOR acknowledges and agrees that no interruption, interference, inefficiency, suspension or delay in the commencement or progress of the Work from any cause whatever, including those for which the OWNER, PROJECT REPRESENTATIVE, or ARCHITECT may be responsible, in whole or in part, shall relieve CONTRACTOR of its duty to perform or give rise to any right to damages or additional compensation from OWNER. CONTRACTOR expressly

acknowledges and agrees that it shall receive no damages for delay. CONTRACTOR 's sole remedy, if any, against OWNER will be the right to seek an extension to the Contract Time; provided, however, the granting of any such time extension shall not be a condition precedent to the aforementioned "No Damage For Delay" provision. This section shall expressly apply to claims for early completion, as well as to claims based on late completion. Notwithstanding the foregoing, if the Work is delayed due to the fault or neglect of OWNER or anyone for whom OWNER is liable, and such delays have a cumulative total of more than 90 calendar days, CONTRACTOR may make a claim for its actual and direct delay damages accruing after said 90 calendar days as provided in Section 00 80 00 Supplementary Conditions, Contract Claims and Changes. Except as expressly set forth in this section, in no event shall OWNER be liable to CONTRACTOR whether in contract, warranty, tort (including negligence or strict liability) or otherwise for any acceleration, soft costs, lost profits, special, indirect, incidental, or consequential damages of any kind or nature whatsoever.

17. INSURANCE - BASIC COVERAGES REQUIRED

Bidder shall at its expense maintain in force during the Term the insurance on policies and insurers acceptable to the City as required by the City's Insurance Requirements (reference Section 00 09 90 - INSURANCE REQUIREMENTS, attachment 'A').

Within the time period prescribed in the contract documents after the receipt of the Award, and thereafter upon the written request of the City, Bidder shall furnish to the City such certificates of coverage and certified copies of policies pursuant to the City's Insurance Requirements. In order to satisfy this provision, the documentation required by this part must be sent to the following address: Attn: Julie Roeder, Risk Manager, 17007 Panama City Beach Parkway, Panama City Beach, FL 32413.

IN WITNESS WHEREOF, the parties hereto have executed or caused to be executed by their duly authorized officials, this Agreement in two (2) copies each of which shall be deemed an original on the date first written above.(SEAL)

OWNER:

CITY OF PANAMA CITY BEACH, FLORIDA

ATTEST:

BY: _____

_____

_____ NAME: Drew Whitman

City Clerk

(Please type)

TITLE: City Manager

_____

_____

City Attorney (as to form only)

CONTRACTOR:

_____

ATTEST:

BY: _____

_____

_____ NAME: _____

_____

(Please Type)

NAME_____ ADDRESS:

_____

_____

_____

(Please Type)

END OF SECTION 00 05 00

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SECTION 00 06 00 – PERFORMANCE BOND

BOND NO. _____

KNOW ALL PERSONS BY THESE PRESENTS: that

_____
(Name of Contractor)

_____
(Address and Phone Number of Contractor)

a _____, hereinafter called Principal and
(Corporation, Partnership, or Individual)

_____
(Name of Surety)

_____
(Address and Phone Number of Surety)

hereinafter called Surety, are held and firmly bound unto:

City of Panama City Beach
(Name of Owner)

17007 Panama City Beach Parkway, Panama City Beach, Florida 32413, (850) 233-5100
(Address and Phone Number of Owner)

hereinafter called OWNER in the total aggregate penal sum of _____ Dollars ($_____) in lawful money of the United States, for payment of which, we bind ourselves, our heirs, personal representatives, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that if the Principal performs its duties, all the undertakings, covenants, terms, and conditions of that certain Contract between the Principal and the OWNER, dated the _____ day of _____, 20___, a copy of which is hereto attached and made a part hereof for the construction of:

Fire Station #32 for Panama City Beach, FL
11911 Hutchison Boulevard Panama City Beach, Florida 32407
(Project Name and Address)

_____
Contract No.

during the original term thereof, and any extensions thereof which may be granted by the OWNER, with or without notice to the SURETY and during the guaranty period and if the PRINCIPAL shall satisfy all claims and demands incurred under such Contract, and shall fully indemnify and save harmless the OWNER from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the OWNER all outlay and expense which the OWNER may incur in making good any default, then this obligation shall be void, otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said SURETY, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or to WORK to be performed thereunder or the SPECIFICATIONS accompanying same shall in any way affect its obligation on this BOND, and does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to WORK or to the SPECIFICATIONS.

PROVIDED, FURTHER, that it is expressly agreed that the BOND shall be amended automatically and immediately, without formal and separate amendments hereto, upon amendment to the Contract not increasing the Contract Price more than twenty percent, so as to bind the PRINCIPAL and the SURETY to the full and faithful performance of the CONTRACT as so amended. The term "Amendment", wherever used in this BOND, and whether referring to this BOND, or the CONTRACT DOCUMENTS, shall include any alteration, addition, extension, or modification of any character whatsoever.

PROVIDED, FURTHER, that no final settlement between the OWNER and the PRINCIPAL shall abridge the rights of OWNER hereunder. The OWNER is the only beneficiary hereunder.

REMAINDER OF THIS PAGE INTENTIONALLY LEFT BLANK

IN WITNESS WHEREOF, this instrument is executed in __three (3)___ counterparts, each one of which shall be deemed an original, this the _____ day of _____, 20___.

_____
Principal

_____
(Principal) Secretary

(SEAL) BY _____

_____
(Address)

_____

_____
Witness as to Principal

_____
(Address)

_____

_____
(Surety)

ATTEST:

_____ BY _____
Witness to Surety Attorney-In-Fact

_____ _____
(Address) (Address)

_____ _____

NOTE: Date of BOND must not be prior to date of Contract.
Contractor's Surety shall use this form along with their personal documentation.

If CONTRACTOR is partnership, all partners should execute BOND.

IMPORTANT: Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the Project is located.

END OF SECTION 00 06 00

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PANAMA CITY BEACH
FIRE STATION #32
HUTCHISON BLVD
BID DOCUMENTS
AUGUST 1, 2023

SECTION 00 07 10 – PAYMENT BOND

Bond Number: _____

KNOW ALL PERSONS BY THESE PRESENTS: that

_____
(Name of Contractor)

_____
(Address and Phone Number of Contractor)

a _____, hereinafter called Principal and
(Corporation, Partnership, or Individual)

_____
(Name of Surety)

_____
(Address and Phone Number of Surety)

hereinafter called Surety, are held, and firmly bound unto:

City of Panama City Beach
(Name of Owner)

17007 Panama City Beach Parkway, Panama City Beach, Florida 32413, (850) 233-5100
(Address and Phone Number of Owner)

hereinafter called OWNER, and unto all persons, firms and corporations who or which may furnish labor, or who furnish materials to perform as described under the Contract and to their successors and assigns in the total aggregate penal sum of _____ Dollars ($_____) in lawful money of the United States, for the payment of which, we bind ourselves, our heirs, personal representatives, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that if the PRINCIPAL properly makes payment to all claimants, as defined in Section 255.05(1), Florida Statutes, supplying Principal with labor, materials or supplies, used directly or indirectly by the Principal in the prosecution of the WORK provided for under that certain contract between the Principal and the OWNER, dated the ____ day of _____, 20___, a copy of which is hereto attached and made a part hereof for the construction of :

Fire Station #32 for Panama City Beach, FL
11911 Hutchison Boulevard Panama City Beach, Florida 32407
(Project Name and Address)

_____
Contract No.

and any authorized extensions or modification thereof, including all amounts due for materials, lubricants, fuel, repairs on machinery, equipment and tools, consumed or used in connection with the construction of such WORK, and for all labor cost incurred in such WORK including that by a SUBCONTRACTOR or SUPPLIER of any tier, and to any construction lien holder whether it acquires its lien by operation of State or Federal law; then this obligation shall be void, otherwise to remain in full force and effect.

PROVIDED, that said Surety for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or to WORK to be performed thereunder or SPECIFICATIONS accompanying the same shall in any way affect its obligation on this BOND, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the WORK or to the SPECIFICATIONS.

PROVIDED, FURTHER, every suit instituted upon the BOND shall be brought in a court of competent jurisdiction for the county or circuit in which the Contract was to be performed. Owner shall not be joined as a party in any such suit. The notice and time limits of Section 255.05, Florida Statutes, are incorporated herein.

PROVIDED, FURTHER, that it is expressly agreed that this BOND shall be deemed amended automatically and immediately, without formal and separate amendments hereto, upon amendment to the Contract not increasing the Contract Price more than twenty percent so as to bind the PRINCIPAL and the SURETY to the full and faithful performance of the Contract as so amended. The term "Amendment", wherever used in this BOND and whether referring to this BOND, or the CONTRACT DOCUMENTS shall include any change, alteration, addition, extension or modification of any character whatsoever.

PROVIDED, FURTHER, that no final settlement between the OWNER and the CONTRACTOR shall abridge the rights of the OWNER hereunder.

REMAINDER OF THIS PAGE INTENTIONALLY LEFT BLANK

WITNESS WHEREOF, this instrument is executed in ___three (3)___ counterparts, each one of which shall be deemed an original, this the _____ day of _____, 20___.

_____
Principal

_____
(Principal) Secretary

(SEAL) BY _____

_____
(Address)

_____

_____
Witness as to Principal

_____
(Address)

_____

_____
(Surety)

ATTEST:

_____ BY _____
Witness as to Surety Attorney-In-Fact

_____ _____
(Address) (Address)

_____ _____

NOTE: Date of BOND must not be prior to date of Contract.

If CONTRACTOR is partnership, all partners should execute BOND. Contractor's Surety shall use this form along with their personal documentation.

IMPORTANT: Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State where the Project is located.

END OF SECTION 00 07 00

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PANAMA CITY BEACH
FIRE STATION #32
HUTCHISON BLVD
BID DOCUMENTS
AUGUST 1, 2023

SECTION 00 08 00 – NOTICE OF AWARD.

TO: _____

_____

_____

FIRE STATION #31 REPLACEMENT FOR PANAMA CITY BEACH

The City of Panama City Beach ("City") has considered the BID submitted by you for the above-described Project in response to its Advertisement for Bids dated _____, 20____, and associated Information for Bidders.

You are hereby notified that your Bid in the amount of $ _____ has been accepted by the City. Provided, however, nothing in this Notice or your delivery to the City of the Agreement executed by you (with the required Bonds and Certificates of Insurance) shall in any manner or way be deemed to create any contract between you and the City. No such contract shall be created unless and until the City signs the Agreement.

You are required by the Information for Bidders to execute the Agreement and furnish the required CONTRACTOR'S Performance Bond, Payment Bond, and Certificates of Insurance within ten (10) calendar days from the date of this Notice.

If you fail to execute said Agreement, together with the required Certificates of Insurance and Bonds, within ten (10) calendar days from the date of this Notice, City will be entitled to consider all your rights arising out of City's acceptance of your BID as abandoned and as a forfeiture of your Bid Deposit. The City will be entitled to all other rights and remedies as may be available to it at law.

You must return an acknowledged copy of this Notice of Award to the City, with the executed Agreement and required Certificates of Insurance and Bonds, within the above noted ten (10) calendar day period.

Dated this _____ day of _____, 20___

CITY OF PANAMA CITY BEACH
Owner

By _____

Name: ___Drew Whitman_____

Title: _____City Manager_____

ACCEPTANCE OF NOTICE

Receipt of the above Notice of Award is hereby acknowledged.

By_____

This the ____day of _____, 20___

Name_____

Title_____

END OF SECTION 00 08 00

PANAMA CITY BEACH
FIRE STATION #32
HUTCHISON BLVD
BID DOCUMENTS
AUGUST 1, 2023

SECTION 00 09 00 – NOTICE TO PROCEED

TO: _____

_____

_____

PROJECT DESCRIPTION:

PANAMA CITY BEACH FIRE STATION #32 HUTCHISON BLVD

You are hereby notified to commence WORK in accordance with the Agreement dated _____, 20___ on or before _____, 20___, and you are to substantially complete the WORK within 330 consecutive calendar days thereafter. The date of Substantial Completion is therefore _____, 20___. You are to achieve Final Completion within the time period set forth in Section 15.2 of Section 00 10 00, General Conditions after achieving Substantial Completion or after receipt of punch list whichever date occurs last. You must return and acknowledge a copy of this Notice to Proceed to the City within five (5) calendar days of your receipt of this Notice.

CITY OF PANAMA CITY BEACH

By: _____

Name: Drew Whitman

Title: City Manager

ACCEPTANCE OF NOTICE
Receipt of the above Notice to Proceed is hereby acknowledged.

By_____
(Company Name)
This the _____ day of _____, 20___

_____
(Signature)

_____
(Type or Print Name)

_____
(Title)

END OF SECTION 00 09 00

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PANAMA CITY BEACH
FIRE STATION #32
HUTCHISON BLVD
BID DOCUMENTS
AUGUST 1, 2023

SECTION 00 09 20 – CONFLICT OF INTEREST STATEMENT

Check one:

[ ] To the best of our knowledge, the undersigned Respondent has no potential conflict of interest due to any other clients, contracts, or property interest for this project.

or

[ ] The undersigned Respondent, by attachment to this form, submits information which may be a potential conflict of interest due to other clients, contracts, or property interest for this project. This includes and requires disclosure of any officer, director, partner, proprietor, associate or agent of the Respondent who is also an officer or employee of the City or of its boards or committees.

LITIGATION STATEMENT

Check One:

[ ] The undersigned Respondent has had no litigation and/or judgments entered against it by any local, state or federal entity and has had no litigation and/or judgments entered against such entities during the past ten (10) years.

or

[ ] The undersigned Respondent, by attachment to this form, submits a summary and disposition of individual cases of litigation and/or judgments entered by or against any local, state or federal entity, by any state or federal court, during the past ten (10) years.

COMPANY: _____

SIGNATURE: _____

NAME: _____

TITLE: _____

DATE: _____

Failure to check the appropriate blocks above may result in disqualification of your proposal. Likewise, failure to provide documentation of a possible conflict of interest, or a summary of past litigation and/or judgments, may result in disqualification of your proposal.

END OF SECTION 00 90 20

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PANAMA CITY BEACH
FIRE STATION #32
HUTCHISON BLVD
CONSTRUCTION DOCUMENTS
MAY 10, 2023

SECTION 00 09 30 – NON-COLLUSION AFFIDAVIT

STATE OF FLORIDA

COUNTY OF_____

_____ being, first duly sworn, deposes and says that he is of _____, the party making the foregoing Proposal or Bid; that such Bid is genuine and not collusive or sham: that said bidder is not financially interested in or otherwise affiliated in a business way with any other bidder on the same contract; that said bidder has not colluded, conspired, connived, or agreed, directly or indirectly, with any bidders or person, to put in a sham bid or that such other person shall refrain from bidding, and has not in any manner, directly or indirectly, sought by agreement or collusion, or communication or conference, with any person, to fix the bid price or affiant or any other bidder, or to fix any overhead, profit or cost element of said bid price, or that of any other bidder, or to secure any advantage against the City of Panama City Beach, Florida, or any person or persons interested in the proposed contract; and that all statements contained in said proposal or bid are true; and further, that such bidder has not directly or indirectly submitted this bid, or the contents thereof, or divulged information or data relative thereto to any association or to any member or agent thereof.

_____
Affiant

STATE OF _____

COUNTY OF _____

Sworn to and subscribed before me this _____day of _____, 2021.

Personally known _____ OR Produced identification _____

_____
[printed, typed or stamped Commissioned Name of Notary Public]

My commission expires:_____

END OF SECTION 00 09 30

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SECTION 00 09 40 – E-VERIFY FORM

PER FLORIDA STATUTE 448.095, CONTRACTORS AND SUBCONTRACTORS MUST REGISTER WITH AND USE THE E-VERIFY SYSTEM TO VERIFY THE WORK AUTHORIZATION STATUS OF ALL NEWLY HIRED EMPLOYEES.

THIS FORM MUST BE COMPLETED AND SUBMITTED WITH THE BID/PROPOSAL. FAILURE TO SUBMIT THIS FORM AS REQUIRED MAY DEEM YOUR SUBMITTAL NONRESPONSIVE.

The affiant, by virtue of the signature below, certifies that:

1. The Contractor and its Subcontractors are aware of the requirements of Florida Statute 448.095.
2. The Contractor and its Subcontractors are registered with and using the E-Verify system to verify the work authorization status of newly hired employees.
3. The Contractor will not enter into a contract with any Subcontractor unless each party to the contract registers with and uses the E-Verify system.
4. The Subcontractor will provide the Contractor with an affidavit stating that the Subcontractor does not employ, contract with, or subcontract with unauthorized alien.
5. All employees hired by Contractor on or after January 1, 2021, have had their work authorization status verified through the E-Verify system.
6. The City may terminate this Contract on the good faith belief that the Contractor or its Subcontractors knowingly violated Florida Statutes 448.09(1) or 448.095(2)(c).
7. If this Contract is terminated pursuant to Florida Statute 448.095(2)(c), the Contractor may not be awarded a public contract for at least 1 year after the date on which this Contract was terminated.
8. The Contractor is liable for any additional cost incurred by the City as a result of the termination of this Contract.

_____
Authorized Signature

_____
Printed Name

_____
Title

STATE OF _____

COUNTY OF _____

_____
Name of Entity/Corporation

The foregoing instrument was acknowledged before me by means of ☐ physical presence or ☐ online notarization on, this _____day of _____, 20_____, by _____ (name of person whose signature is being notarized) as the _____(title) of _____ (name of corporation/entity), personally known___, or produced _____ (type of identification) as identification, and who did/did not take an oath.

My Commission Expires: _____ _____ Notary Public

_____ NOTARY SEAL ABOVE

_____ Printed Name

END OF SECTION 00 09 40

SECTION 00 09 50 – DRUG-FREE WORKPLACE

STATEMENT UNDER SECTION 287.087 FLORIDA STATUTES, ON PREFERENCE TO BUSINESSES WITH DRUG-FREE WORKPLACE PROGRAMS

IDENTICAL TIE BIDS: Preference shall be given to businesses with drug-free workplace programs. Whenever two or more bids which are equal with respect to price, quality and service are received by the State or by any political subdivision for the procurement of commodities or contractual services, a bid received by the State or by any political subdivision for the procurement of commodities or contractual services, a bid received from a business that certifies that it has implemented a drug-free workplace program shall be given preference in the award process. In order to have a drug-free workplace program, a business shall:

1. Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.
2. Inform employees about the dangers of drug abuse in the workplace, the business' policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violations.
3. Give each employee engaged in providing the commodities or contractual services that are under bid a copy of the statement specified in subsection (1).
4. In the statement specified in subsection (1), notify the employees that, as a condition of working on the commodities or contractual services that are under bid, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or nolo contendere to, any violation of Chapter 893 or of any controlled substance law of the United States or any state, for a violation occurring in the workplace not later than five (5) days after such conviction.
5. Impose a sanction on or require the satisfactory participation in a drug abuse assistance or rehabilitation program is such is available in the employee's community, by an employee who is so convicted.
6. Make a good faith effort to continue to maintain a drug-free workplace through implementation of this section.

As the person authorized to sign this statement, I certify that this firm complies fully with the above requirements.

_____
BIDDER SIGNATURE

END OF SECTION 00 09 50

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SECTION 00 09 60 – TRENCH SAFETY ACT COMPLIANCE

CERTIFICATE OF COMPLIANCE WITH THE FLORIDA TRENCH SAFETY ACT

Bidder acknowledges sole responsibility for complying with the Florida Trench Safety Act (Act). Section 553.60, Florida Statutes. Bidder further acknowledges that included in the various items of its BID and in its Total Lump Sum Bid are costs for complying with the Florida Trench Safety Act. The Bidder further identifies the costs to be summarized below:

Trench Safety Method (Description)	Units of Measure (LF, SY)	Quantity	Unit Cost	Extended Cost	Unit Extended
A. _____	_____	_____	_____	_____	_____
B. _____	_____	_____	_____	_____	_____
C. _____	_____	_____	_____	_____	_____
D. _____	_____	_____	_____	_____	_____

Total $_____

Failure to complete the above may result in your BID being declared non-responsive. The costs indicated above are provided to comply with the Act and shall not constitute grounds for any additional compensation to that listed for the separate line items of the Bid Form.

Bidder: _____

By: _____

Its: _____

Date: _____

_____
Authorized Signature

END OF SECTION 00 09 60

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PANAMA CITY BEACH
FIRE STATION #32
HUTCHISON BLVD
BID DOCUMENTS
AUGUST 1, 2023

SECTION 00 09 70 – PUBLIC ENTITY CRIMES STATEMENT

SWORN STATEMENT UNDER SECTION 287.133(3)(a), FLORIDA STATUTES, ON PUBLIC ENTITY CRIMES

THIS FORM MUST BE SIGNED AND SWORN TO IN THE PRESENCE OF A NOTARY PUBLIC OR OTHER OFFICIAL AUTHORIZED TO ADMINISTER OATHS AND SUBMITTED WITH THE BID

1. This sworn statement is submitted to _____

   by_____

   For_____

   Whose business address is _____

   _____

   _____

   and (if applicable) its Federal Employer Identification Number (FEIN) is _____ (if the entity has no FEIN, include the Social Security Number of the individual signing this sworn statement):_____

2. I understand that a "public entity crime" as defined in Section 287.133 (1)(g), Florida Statutes, means a violation of any state or federal law by a person with respect to and directly related to the transaction of business with any public entity or with an agency of political subdivision of any other state or with the United States, including, but not limited to, any bid or contract for goods or services to be provided to any public entity or such an agency or political subdivision of any other state or of the United States and involving antitrust, fraud, theft, bribery, collusion, racketeering, conspiracy, or material misrepresentation.

   I understand that "convicted" or "conviction" as defined in Paragraph 287.133 (1)(b), Florida Statutes, means a finding of guilt or a conviction of a public entity crime, with or without an adjudication of guilt, in any federal or state trial court of record relating to charges brought by indictment or information after July 1, 1989, as a result of a jury verdict, non-jury trial, or entry of a plea of guilty or nolo contendere.

4. I understand that "affiliate" as defined in Paragraph 2871.33 (1)(a) , Florida Statutes, means:
   (a.) A predecessor or successor of a person or a corporation convicted of a public entity crime, or

   (b.) An entity under the control of any natural person who is active in the management of the entity and who has been convicted of a public entity crime. The term "affiliate" includes officers, directors, executives, partners, shareholders, employees, members

and agents who are active in the management of an affiliate. The ownership by one person of shares constituting a controlling interest in another person, or a pooling agreement of equipment or income among persons when not for fair market value under an arm's length agreement, shall be a prima facie case that one person controls another person. A person knowingly enters into a joint venture with a person who has been convicted of a public entity crime in Florida during the preceding 36 months shall be considered an affiliate.

5. I understand that a "person" as defined in Paragraph 287.133 (1)(e), Florida Statute, means any natural person or entity organized under the laws of any state or of the United States with the legal power to enter in to a binding contract and which bids or applied to bid on contracts for the provision of goods or services let by a public entity, or which otherwise transacts or applies to transact business with a public entity. The term "persons" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in management of an entity.

6. Based on information and belief, the statement which I have marked below is true in relation to the entity submitting this sworn statement. [indicate which statement applies.]

_____Neither the entity submitting this sworn statement, nor any of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, nor any affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989.

_____The entity submitting this sworn statement, or one or more of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, or an affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989.

_____The entity submitting this sworn statement, or one or more of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, or an affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989. However, there has been a subsequent proceeding before a Hearing Office of the State of Florida, Division of Administrative Hearings and the Final Order entered by the Hearing Officer determined that it was not in the public interest to place the entity submitting this sworn statement on the convicted vender list. [Attach a copy of the final order].

7. I understand by my execution of this document, I acknowledge that the entity submitting this sworn statement has informed by the City of Panama City Beach, of the terms of Section 287.133(2)(a) of the Florida Statutes which read as follows:

> "A person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a bid on a contract to provide any goods or services to a public entity for the construction or repair of a public building or public work, may not submit bids on leases of real property to a public entity, may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity in excess of the threshold amount provided in s. 287.017 for CATEGORY TWO for a period of 36 months from the date of being placed on the convicted vendor list."

I UNDERSTAND THAT THE SUBMISSION OF THIS FORM TO THE CONTRACTING OFFICER FOR THE PUBLIC ENTITY IDENTIFIED IN PARAGRAPH 1(ONE) ABOVE IS FOR THE PUBLIC ENTITY ONLY AND, THAT THIS FORM IS VALID THROUGH DECEMBER 31 OF THE CALENDAR YEAR WHICH IT IS FILED. I ALSO UNDERSTAND THAT I AM REQUIRED TO INFORM THE PUBLIC ENTITY PRIOR TO ENTERING INTO A CONTRACT IN EXCESS OF THE THRESHOLD AMOUNT PROVIDED IN SECTION 287.017, FLORIDA STATUES FOR CATEGORY TWO OF ANY CHANGE IN THE INFORMATION CONTAINED IN THIS FORM.

By: _____

Print name: _____

Its: _____

STATE OF _____

COUNTY OF _____

Sworn to and subscribed before me this _____day of _____, 2021.

Personally known _____ OR Produced identification _____

_____
[printed, typed or stamped Commissioned Name of Notary Public]

My commission expires:_____

END OF SECTION 00 09 70

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SECTION 00 09 90 – INSURANCE REQUIREMENTS

Bidder shall at its expense maintain in force during the Term the insurance on policies and insurers acceptable to the City as required by the City's Insurance Requirements attached hereto as Attachment 'A').

Within the time period prescribed in the contract documents after the receipt of the Award, and thereafter upon the written request of the City, Bidder shall furnish to the City such certificates of coverage and certified copies of policies pursuant to the City's Insurance Requirements. In order to satisfy this provision, the documentation required by this part must be sent to the following address: Attn: Julie Roeder, Risk Manager, 17007 Panama City Beach Parkway, Panama City Beach, FL 32413.

END OF SECTION 00 90 90

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Initial Page: _____Owner_____ Contractor

Attachment A

INSURANCE REQUIREMENTS

SECTION 1: DEFINITIONS

"Location" means the location subject of the Subcontract/Purchase Order.

"Project" means the project subject of the Subcontract/Purchase Order.

"Scope" means the scope of work to be provided by the Subcontractor under the Contract or the Goods and Services to be supplied and performed by Seller under the Purchase Order, as applicable.

"State" means a state of the United States or the District of Columbia or the Commonwealth of Puerto Rico, as applicable

"Alternate/ Leased Employer Endorsement" is an endorsement added to a workers compensation policy that provides an entity scheduled as an alternate employer with primary workers compensation and employers liability coverage as if it were an insured under the policy. This endorsement is commonly used when a temporary help agency (the insured) is required by its customer (the alternate employer) to protect the alternate employer from claims brought by the insured's employees.

SECTION 2: STANDARD INSURANCE COVERAGES

Successful Bidder' shall comply with the following:

1. Unless higher limits or additional coverages are required by the Contract/Purchase Order or Owner Contract, the Successful Bidder' shall secure and maintain the minimum from the earlier commencement of work or the effective date of the Contract/Purchase Order insurance coverages and limits required by this Exhibit A.
2. Failure of the Contractor/Buyer to identify deficiencies in any insurance provided by Successful Bidder' shall not relieve Successful Bidder' from any insurance obligations. Required coverages are as follows:

2.1. Commercial General Liability Insurance Coverages:

Commercial General Liability insurance using ISO's CG 00 01 or its substantial equivalent with City of Panama City Beach as an additional insured using ISO's CG 20 10 or its substantial equivalent for ongoing operations and ISO's CG 20 37 or its substantial equivalent for completed operations with the following minimum limits:

- $1,000,000 Each Occurrence
- $1,000,000 Personal and Advertising Injury
- $2,000,000 General Aggregate
- $2,000,000 Products-Completed Operations Limit
- $500,000 Damage to Rented Premises

Per Project using ISO's CG 25 04 or its substantial equivalent

The Successful Bidder' must disclose to City of Panama City Beach any endorsements that limit or exclude coverage customarily provided by ISO's CG 00 01.

The Successful Bidder''s Commercial General Liability policy shall not contain an exclusion or restriction of coverage for the following:

1. Claims by one insured against another insured, if the exclusion or restriction is based solely on the fact that the claimant is an insured, and there would otherwise be coverage for the claim.
2. Claims for property damage to the Successful Bidder''s Work arising out of the products-completed operations hazard where a Subcontractor performed the damaged Work or the Work out of which the damage occurs.
3. Claims for bodily injury other than to employees of the insured.
4. Claims for indemnity arising out of injury to employees of the insured.
5. Claims or loss excluded under a prior work endorsement or other similar exclusionary language.
6. Claims or loss due to physical damage under a prior injury endorsement or similar exclusionary language.
7. Claims related to residential, multi-family, or other habitational projects if the work is to be performed on such a project.
8. Claims related to roofing, if the work involves roofing.
9. Claims related to exterior insulation finish systems (EIFS), synthetic stucco, or similar exterior coatings or surfaces if the work involves such coatings or surfaces.
10. Claims related to earth subsidence or movement, where the work involves such hazards.
11. Claims related to explosion, collapse, and underground hazards, where the work involves such hazards.

The Successful Bidder's Commercial General Liability insurance will remain in force with annual policy periods for the period of the statute of repose applicable to this project. *Alternatively, suppose a "project-specific" General Liability policy is used to satisfy these requirements. In that case, it must be endorsed to provide extended completed operations for the period of the statute of repose applicable to this project.*

2.2. Workers Compensation

Worker's Compensation Insurance and Employer's Liability Insurance (including occupational disease) to cover statutory benefits and limits under the Worker's Compensation laws of any applicable jurisdiction in which the Scope is to be performed and minimum limits.

- Bodily Injury by Accident - $1,000,000 Each Accident
- Bodily Injury by Disease - $1,000,000 Policy Limit
- Bodily Injury by Disease - $1,000,000 Each Employee

Policy coverage terms and conditions to include:

- USL&H – where applicable.
- Jones Act – where applicable.
- All State's endorsement – where applicable.
- Employers Liability/Stop Gap Liability if work is performed in Washington, Wyoming, Ohio, North Dakota, or the Commonwealth of Puerto Rico.

- For the attainment of Workers Compensation in monopolistic states and Puerto Rico, coverage must be secured through the state fund of that State.
- The certificate must identify that coverage applies in the State where the Project is located.

2.3. Automobile Liability

Commercial Automobile Liability insurance covers all owned, leased, and non-owned vehicles used in connection with the Scope. Business Auto Coverage Form using ISO's CA 00 01 or its substantial equivalent including liability coverage for all autos owned (Symbol 1), rented, hired, or borrowed by the contractors, as well as liability coverage for mobile equipment subject to compulsory insurance or financial responsibility laws or other motor vehicle insurance laws with the following minimum limit:

- $1,000,000 – Any One Accident – Combined Single Limit

Suppose the Contractor/Sub-Contractor/Vendor is responsible for removing any pollutants from a site. In that case, the Successful Bidder' will need to cover its automobile exposure for transporting the pollutants from the site to an approved disposal site. Therefore, auto liability coverage should be endorsed to include the required auto pollution endorsements and Motor Carrier Act Endorsement, MCS 90, and the ISO Form CA 9948 (Pollution Liability Broadened Coverage for Business Automobile).

2.4. Umbrella or Excess Liability Required: Yes

Also, the Successful Bidder' shall provide an umbrella or excess liability insurance providing in excess of the underlying Commercial General Liability, Business Automobile Liability, Pollution Liability (if required), and Employers' Liability insurance above, with the following minimum limits:

- $1,000,000 Each Occurrence
- $1,000,000 Annual Aggregate (where applicable in the underlying)

Such umbrella or excess liability policy shall provide substantially the same coverage as the underlying Commercial General Liability (including City of Panama City Beach as additional insured), Business Automobile Liability, Pollution Liability, and Employers' Liability insurance. In addition, it shall expressly provide that the umbrella or excess policy will drop down over the underlying insurance's reduced or exhausted aggregate limit. The umbrella or excess policy shall also be primary insurance to City of Panama City Beach(including primary insurance to City of Panama City Beach's own Commercial General Liability and Umbrella policies), and Successful Bidder's umbrella insurer agrees not to seek contribution from City of Panama City Beach insurance.

2.5. Professional Liability Required: No

Professional Liability Insurance is required to cover liability for claims that arise from the errors, omissions, or acts of the Successful Bidder' or any entity the Successful Bidder' is legally responsible in the provision of professional services. The policy shall be primary and non-contributory, with the insuring agreement to read: "to pay on behalf of" and shall be effective (retroactively, if applicable) from the commencement date of all professional activities in connection with the Scope. The coverage shall be maintained for three years following the final acceptance of the Project.

Initial Page: _____Owner_____ Contractor

Minimum limits are:

- Prime Design Professional: Choose limits when required per claim/annual aggregate;
- Sub-Design Professional: Choose limits when required per claim/annual aggregate.

Upon request, a copy of the policy shall be provided to City of Panama City Beach. Coverages shall not include any exclusions or other limitations related to the scope of the services, delays in project completion, or cost overruns.

For Professional Liability Insurance, the term "Prime Design Professional" means the architect and/or engineer providing architectural, engineering, and/or other professional services under a contract directly with our company. The term "Sub-Design Professional" means any architect and/or engineer providing architectural, engineering, and/or other professional services directly or indirectly to a Prime Design Professional in connection with the project. A Prime Design Professional is also a Contractor/Subcontractor, and a Sub-Design Professional is also a Sub-subcontractor.

2.6 Riggers Liability Required: Yes

If marked as required, the Scope involves the rigging, hoisting, lowering, raising, or moving of property or equipment belonging to others. Riggers Liability Insurance is required to insure against physical loss or damage to the property or equipment.

2.8 Aircraft/Watercraft: Required: No

If marked as required, the Scope involves using any owned, leased, chartered, or hired aircraft or watercraft of any type. As applicable, Aircraft Liability Insurance or Watercraft Liability Insurances required in an amount of not less than Choose limits when required per occurrence, including Passenger Liability for bodily injury and property damage.

2.9 Property Insurance/ Builder's Risk:

Property Insurance coverage for tools and equipment owned, leased, or used by the Subcontractor/Seller in the performance of the Scope. The Property Insurance shall extend to equipment, materials, and supplies stored off the Project site or in transit to the Project site to be furnished as part of the Scope and incorporated into the Project.

2.9.1 Pollution Liability Insurance: Required: No

Successful Bidder' shall secure and maintain the minimum Pollution Liability Insurance coverage and limits required by this Exhibit A from the effective date of the Contract/Purchase Order until the end of the applicable warranty period. The policy shall be submitted to the Contractor/Buyer for review and approval before commencement of the Scope. Failure of the Contractor/Buyer to identify deficiencies in the Pollution Liability Insurance provided by Subcontractor/Vendor shall not relieve Subcontractor/Vendor from any obligations.

Minimum limits are: Including Cleanup Cost

- Choose limits when required per occurrence or claim
- Choose limits when required policy aggregate.

The coverage shall be as follows: Subcontractor shall provide Pollution Liability Insurance covering all asbestos, lead, and any other pollution operations. If the policy contains a general aggregate, this aggregate must apply on a per-project basis and shall be evidenced on Subcontractor's/Vendors Certificate of Insurance. The limits shall not be subject to reduction as to the Contractor/Buyer or Owner because of any claim asserted against the Subcontractor/Vendor other than in connection with the Scope. Instead of indemnifying, the policy must read "to pay on behalf of." In addition, the following coverages must be included: (1) Completed Operations (five (5) year continuation beyond completion of the Scope); (2) Broad Form Contractual and Independent Contractors (including coverage for third party over claims); (3) On-Site, Off-Site and In-Transit exposures; and (4) Loading and Unloading. Exclusions or restrictions pertaining to mold and EIFS are not permitted. The coverage may be written on an "occurrence" or "claims made" basis. If written on a "claims made" basis, the retroactive date must be included to coincide with the effective date of the Subcontract/Purchase Order, and an extended reporting period (three (3) years minimum) must be included.

The coverage may be written on an "occurrence" or "claims made" basis. If written on a "claims made" basis, the retroactive date must be included to coincide with the effective date of the Subcontract/Purchase Order, and an extended reporting period (three (3) years minimum) must be included.

Deductibles/Denial of Claims:

Contractor/Vendor shall be responsible, at no additional cost to Contractor/Buyer, for the payment of any deductibles or self-insured retention in connection with the insurance coverages required by this Exhibit A both for itself and all Additional Insureds. Any self-insured retention or deductible in excess of $25,000 must be declared when Subcontractor/Seller submits its bid and must be approved explicitly by Contractor/Buyer before executing the Subcontract/Purchase Order. Subcontractor/Seller shall be responsible for any loss arising from coverage denial by its insurance carrier.

Leased Successful Bidder' Employee Liability

If the leases one or more employees through the use of a payroll, employee management, or other company, the Successful Bidder' must directly procure workers compensation/employer's liability insurance. The insurance shall be written on a "Minimum Premium" or "If Any" policy form.

In addition, the worker's compensation/employer's liability coverage provided to and for the leased employees by the payroll, employee management, or other company must be evidenced and include an Alternate / Leased Employer Endorsement or its substantial equivalent WC endorsement for that State, naming Successful Bidder' as the alternate employer.

Insurer Requirements

Each insurer providing insurance coverage as required by this contract shall be a licensed admitted insurer authorized to issue such coverages in each State in which any part of the Scope is performed. The insurer shall be acceptable to City of Panama City Beach and have an AM Best rating of "A-" or better.

Before accepting the Contractor/Sub-Contractor/Vendor's bid, City of Panama City Beach reserves the right to require more significant limits based on the nature of the operations performed by the Successful Bidder'.

Initial Page: _____Owner_____ Contractor

Certificate of Insurance

Before commencing its performance and throughout the warranty period under the Contract /Purchase Order, the Successful Bidder' shall provide City of Panama City Beach a current certificate of insurance evidencing the coverages required by this contract (a sample Certificate of Insurance is attached for reference purposes).

Sub-subcontractor/Sub-Vendor

Before permitting any lower tier Sub-subcontractor/Sub-vendor to perform Scope under the Contract/Purchase Order, the Successful Bidder' shall require its sub-subcontractor/Sub-vendor to maintain insurance in like form and amounts to that required herein. Successful Bidder' shall be responsible for ensuring that it's sub-subcontractor/Sub-vendor maintains insurance in like form and amounts and shall provide evidence of same to City of Panama City Beach if requested.

Any subcontractors engaged by the Contractor shall comply with the above requirements. Consideration for specific trades can be made with prior approval.

Notice of Cancellation

All insurance coverages required by this contract shall contain a provision that the coverage afforded hereunder cannot be canceled, non-renewed, allowed to lapse, or have any restricted modifications added unless at least thirty 45) days prior written notice has been given to City of Panama City Beach

Additional Insureds

All insurance required by this contract (excluding only Workers Compensation Insurance and Professional Liability Insurance) shall name the City of Panama City Beach and its officials, employees, and volunteers as Additional Insureds and any other parties as required by the Owner Contract, and shall be primary and non-contributory to any insurance maintained by Indemnified Parties and Additional Insureds and any other parties as required by Owner Contract, all of which shall be stated on the Certificate of Insurance provided by the Successful Bidder'.

The General Liability Additional Insured Endorsement shall use ISO's or CG 2010 or its substantial equivalent for ongoing operations and ISO's CG 20 37 or its substantial equivalent for completed operations. By endorsement or policy language, evidence of Additional Insured and Primary and Non-Contributory coverage must be provided with the certificate of insurance for General Liability. The Successful Bidder''s insurers will provide insurance to City of Panama City Beach , on a primary basis and agree not to seek contribution from insurance by using ISO's CG 20 01 or its substantial equivalent. Successful Bidder's insurers also agree to waive rights of subrogation against City of Panama City Beach using ISO's CG 24 04 or its substantial equivalent.

Waiver of Subrogation

All insurance coverages maintained by Successful Bidder' shall include a waiver of any right of subrogation of the insurers thereunder against Indemnified Parties and Additional Insureds and all of their respective assigns, subsidiaries, affiliates, employees, insurers, and underwriters, and of any right of the insurers to any set-off or counterclaim or any other deduction, whether by attachment or otherwise, in respect of any liability of any person insured under any such policy (Workers Compensation – where permitted).

The Successful Bidder' further waives all claims and all rights of subrogation against Indemnified Parties' and Additional Insureds' other contractors and all of their respective assigns, subsidiaries, affiliates, employees, insurers, and underwriters for loss of, or damage to, contractors Scope, tools, machinery, equipment, material, supplies, or any other losses within the scope of any insurance maintained by City of Panama City Beach. If any of the Indemnified Parties and Additional Insureds are partially or wholly self-insured, then the waiver of subrogation shall apply as if their insurance covered them.

Initial Page: _____Owner_____ Contractor

Insurance Policy Review/Exclusions/Copies

City of Panama City Beach , can receive copies of all insurance policies upon request. Policies shall not contain any exclusions that are unacceptable to City of Panama City Beach. If requested by City of Panama City Beach, all insurance carriers must certify all policies as accurate and complete. At their sole discretion, policies shall not contain any unacceptable exclusions to City of Panama City Beach. City of Panama City Beach 's right to review and approve all insurance policies will not constitute a waiver of any rights created by or provisions contained in this contract should they differ from those contained in such policies.

Claims-Made Policies

Except for Professional Liability Insurance, claims-made policies are not acceptable.

Effect of Specified Coverages

The Insurance obligations under this agreement shall be 1—all the Insurance coverage and/or limits carried by or available to the Contractor; or 2—the minimum Insurance coverage requirements and/or limits shown in this agreement, whichever is greater. Any insurance proceeds in excess of or broader than the minimum required coverage and/or minimum required limits, which apply to a given loss, shall be available to City of Panama City Beach. No representation is made that this agreement's minimum insurance requirements are sufficient to cover the Contractor's obligations under this agreement.

Breach of Insurance Requirements

Successful Bidder''s failure to obtain and maintain insurance coverages as required by this Exhibit A or any other Exhibit or attachment shall constitute a material breach of the Contract/Purchase Order. In such event, in addition to any other rights and remedies contained in the Contract/Purchase Order, (i) City of Panama City Beach may, at its option, terminate the contract for default; (ii) City of Panama City Beach may, at its option, purchase such coverage and back charge the premium and associated costs to Successful Bidder'; and/or (iii) any of the Indemnified Parties, or Additional Insureds can require, that contractor and/or its subcontractors to pay for all attorney's fees, expenses, and liability as a result of any claim or lawsuit for which coverage would have been provided to the Indemnified Parties or Additional Insureds under contractors insurance program but for a breach by Contractor or any of its subcontractors.

Furthermore, to the extent of their respective interests, the Insurers of those entities that were to be included as Additional Insureds are deemed third-party beneficiaries of the insurance procurement obligation and have the same rights against the breaching party as the Indemnified Parties or Additional Insureds.

If any of the preceding insurance coverages are required to remain in force after final payment and are reasonably available, an additional certificate evidencing continuation of such coverage shall be submitted with the final application for payment as required. If the insurer does not furnish any information concerning the reduction of coverage, it shall be furnished by the contract with reasonable promptness according to the Successful Bidder' 's information and belief. Suppose Successful Bidder' fails to maintain insurance.City of Panama City Beach may (at its sole option) terminate the Successful Bidder' or place such insurance and deduct any cost, fees, and related expenses from Successful Bidder' pay request.

Any Successful Bidder' *engaged by the Contractor shall comply with the above requirements. Consideration for specific trades can be made with prior approval.*

Initial Page: _____Owner_____ Contractor

City of Panama City Beach

Endorsements to be attached:

General Liability	Endorsement #	Edition Dates	Carrier	Policy #'s to be listed
Added Insured - Ongoing Operations	CG 20 10	All	ISO Standard or Equal	Yes
Added Insured – Completed Operations	CG 20 37	All	ISO Standard	Yes
Waiver of Subrogation	CG 24 04		ISO Standard	
Primary & Non-Contributory	CG 20 01		ISO Standard	
Automobile Liability				
No Endorsements Required				
Umbrella or Excess Liability				
List all lines this policy applies.				
Workers Compensation				
Waivers of Subrogation	WC 00 03 13		ISO Standard	Yes
Alternate Employer Endorsement	WC 00 03 01 A		ISO Standard	Yes

* State Waiver of Subrogation Provisions Overview: Kansas, Kentucky, Missouri, New Hampshire, and New Jersey disallow waivers of subrogation by statute. However, only Kansas and Missouri bar waivers of subrogation in the construction industry. (Note that Kansas does not prohibit the use of waivers of subrogation for consolidated or wrap-up insurance programs.) The monopolistic states either disallow waivers of subrogation or allow the state fund to make that decision. The remaining states allow for waivers of subrogation through judicial interpretation or administrative rules.

*Stop Gap endorsement required in monopolistic states such as ND, OH, WA WY, or Puerto Rico

*Coverage must apply in the State where the work is being performed if the vendor is from a state other than the one where the project is located.

We accept endorsements that are equal to those requested. Most insurance company forms are manuscript; therefore, they might not be compliant (most are not). We review all forms during the review process. Forms that are compliant today may not be compliant tomorrow. Our decisions are based on case law and claim history. Additional Insured or Organization Name to be listed on all endorsements along with policy numbers as applicable. Blank endorsements will not be excepted. Sample Endorsements Attached

Blanket Certificates of Insurance

For ease of paperwork, subcontractors may submit insurance documentation on a blanket basis to work on multiple projects under just one insurance certificate. (View sample certificate above or in compliance database)

Subcontractor performing work on multiple projects in the same State

Each of our projects requires a project-specific certificate of insurance (COI) for EACH project they work on; however, a lot of our Subcontractors are doing multiple projects in one State, which creates an opportunity to reduce paperwork by providing a blanket certificate of insurance and allowing the Subcontractor to work on all projects (Non-OCIP or CCIP) under one COI. If providing a blanket certificate, the following guidelines will be in addition:

1. On the COI, instead of stating an individual project name, replace with the following verbiage in the Description of Operations section of the certificate: **"All projects performed for City of Panama City Beach**
2. When stating the additional insureds, state the following along with the other required Description of Operations wording: "All insurance (excluding Workers Compensation and Professional Liability) include Owner, City of Panama City Beach, Indemnified Parties, any other parties as required by Owner Contract and their respective directors, officers, employees, and affiliates as Additional Insureds, and shall be primary and non-contributory to any insurance maintained by Additional Insureds."
3. All endorsements and waivers must be blanket-based, either per form or blanket wording. For example, a contract requires endorsements/waivers in such schedules instead of listing each entity.

Initial Page: _____Owner_____ Contractor

Commercial General Liability

CG 20 10 10 01

POLICY NUMBER: Required

COMMERCIAL GENERAL LIABILITY
CG 20 10 10 01

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED – OWNERS, LESSEES OR CONTRACTORS – SCHEDULED PERSON OR ORGANIZATION

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

SCHEDULE

Name of Person or Organization:
Certificate Holders Name

(If no entry appears above, information required to complete this endorsement will be shown in the Declarations as applicable to this endorsement.)

A. **Section II – Who Is An Insured** is amended to include as an insured the person or organization shown in the Schedule, but only with respect to liability arising out of your ongoing operations performed for that insured.

B. With respect to the insurance afforded to these additional insureds, the following exclusion is added:

2. Exclusions

This insurance does not apply to "bodily injury" or "property damage" occurring after:

(1) All work, including materials, parts or equipment furnished in connection with such work, on the project (other than service, maintenance or repairs) to be performed by or on behalf of the additional insured(s) at the site of the covered operations has been completed; or

(2) That portion of "your work" out of which the injury or damage arises has been put to its intended use by any person or organization other than another contractor or subcontractor engaged in performing operations for a principal as a part of the same project.

CG 20 37 10 01

POLICY NUMBER: Required

COMMERCIAL GENERAL LIABILITY
CG 20 37 10 01

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED – OWNERS, LESSEES OR CONTRACTORS – COMPLETED OPERATIONS

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

SCHEDULE

Name of Person or Organization:
Certificate Holders Name
Location And Description of Completed Operations:
All locations required by contract
Additional Premium:

(If no entry appears above, information required to complete this endorsement will be shown in the Declarations as applicable to this endorsement.)

Section II – Who Is An Insured is amended to include as an insured the person or organization shown in the Schedule, but only with respect to liability arising out of "your work" at the location designated and described in the schedule of this endorsement performed for that insured and included in the "products-completed operations hazard".

CG 24 04 05 09

POLICY NUMBER: Required

COMMERCIAL GENERAL LIABILITY
CG 24 04 05 09

WAIVER OF TRANSFER OF RIGHTS OF RECOVERY AGAINST OTHERS TO US

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART
PRODUCTS/COMPLETED OPERATIONS LIABILITY COVERAGE PART

SCHEDULE

Name Of Person Or Organization:
Certificate Holders Name
Information required to complete this Schedule, if not shown above, will be shown in the Declarations.

The following is added to Paragraph **8. Transfer Of Rights Of Recovery Against Others To Us** of **Section IV – Conditions:**

We waive any right of recovery we may have against the person or organization shown in the Schedule above because of payments we make for injury or damage arising out of your ongoing operations or "your work" done under a contract with that person or organization and included in the "products-completed operations hazard". This waiver applies only to the person or organization shown in the Schedule above.

CG 20 01 04 13

COMMERCIAL GENERAL LIABILITY
CG 20 01 04 13

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

PRIMARY AND NONCONTRIBUTORY – OTHER INSURANCE CONDITION

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART
PRODUCTS/COMPLETED OPERATIONS LIABILITY COVERAGE PART

The following is added to the **Other Insurance** Condition and supersedes any provision to the contrary:

Primary And Noncontributory Insurance

This insurance is primary to and will not seek contribution from any other insurance available to an additional insured under your policy provided that:

(1) The additional insured is a Named Insured under such other insurance; and

(2) You have agreed in writing in a contract or agreement that this insurance would be primary and would not seek contribution from any other insurance available to the additional insured.

Initial Page: _____Owner_____ Contractor

Workers Compensation

WC 00 03 13

WORKERS COMPENSATION AND EMPLOYERS LIABILITY INSURANCE POLICY **WC 00 03 13**

(Ed. 4-84)

WAIVER OF OUR RIGHT TO RECOVER FROM OTHERS ENDORSEMENT

We have the right to recover our payments from anyone liable for an injury covered by this policy. We will not enforce our right against the person or organization named in the Schedule. (This agreement applies only to the extent that you perform work under a written contract that requires you to obtain this agreement from us.)

This agreement shall not operate directly or indirectly to benefit anyone not named in the Schedule.

Schedule

In Favor of:

Certificate Holders Name and Project Owner

Work Performed by:

Client (Our Subcontractor)

Client Address

On the Following Project or Location

All Projects or Locations as Required by Contract

This endorsement changes the policy to which it is attached and is effective on the date issued unless otherwise stated.

(The information below is required only when this endorsement is issued subsequent to preparation of the policy.)

Endorsement Effective Policy No. Required Endorsement No.
Insured Required Premium

Insurance Company Countersigned by_____
Required

WC 00 03 13
(Ed. 4-84)

WC 00 03 01 A

WORKERS COMPENSATION AND EMPLOYERS LIABILITY INSURANCE POLICY **WC 00 03 01 A**

(Ed. 2-89)

ALTERNATE EMPLOYER ENDORSEMENT

This endorsement applies only with respect to bodily injury to your employees while in the course of special or temporary employment by the alternate employer in the state named in Item 2 of the Schedule. Part One (Workers Compensation Insurance) and Part Two (Employers Liability Insurance) will apply as though the alternate employer is insured. If an entry is shown in Item 3 of the Schedule the insurance afforded by this endorsement applies only to work you perform under the contract or at the project named in the Schedule.

Under Part One (Workers Compensation Insurance) we will reimburse the alternate employer for the benefits required by the workers compensation law if we are not permitted to pay the benefits directly to the persons entitled to them.

The insurance afforded by this endorsement is not intended to satisfy the alternate employer's duty to secure its obligations under the workers compensation law. We will not file evidence of this insurance on behalf of the alternate employer with any government agency.

We will not ask any other insurer of the alternate employer to share with us a loss covered by this endorsement.

Premium will be charged for your employees while in the course of special or temporary employment by the alternate employer.

The policy may be canceled according to its terms without sending notice to the alternate employer.

Part Four (Your Duties If Injury Occurs) applies to you and the alternate employer. The alternate employer will recognize our right to defend under Parts One and Two and our right to inspect under Part Six.

Schedule

1. **Alternate Employer** — **Address**
   Our Subcontractor - *Not the PEO* — Our Subcontractors Address
2. **State of Special or Temporary Employment**
   All Applicable States
3. **Contract or Project**
   All Locations or Projects Required by Contract

This endorsement changes the policy to which it is attached and is effective on the date issued unless otherwise stated.

(The information below is required only when this endorsement is issued subsequent to preparation of the policy.)

Endorsement Effective Date Here is Required Policy No. Endorsement No.
Policy Number Required Premium $

Insured
Required
Insurance Company
Required

Countersigned by_____

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(Ed 2-89)

PANAMA CITY BEACH
FIRE STATION #32
HUTCHISON BLVD
BID DOCUMENTS
AUGUST 1, 2023

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1.0 DEFINITIONS

1.1 Unless otherwise expressly noted, wherever used in the Contract Documents the following terms shall have the meanings indicated and shall be applicable to both the singular and plural thereof:

1.2 ADDENDA - Written or graphic instruments, issued by Owner or Architect/Engineer prior to the execution of the Agreement, which modify or interpret any of the Contract Documents by additions, deletions, clarifications, or corrections.

1.3 ARCHITECT - The person, firm or corporation named as such in the Agreement.

1.4 BID - The offer or proposal of the Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

1.5 BIDDER - Any person, firm, or corporation submitting a Bid for the Work.

1.6 BONDS - Bid, Performance, and Payment Bonds and other instruments or surety, furnished by the Contractor and the Contractor's surety in accordance with the Contract Documents.

1.7 CHANGE ORDER - A written order to the Contractor issued in accordance with the procedures set forth in the Contract Documents, authorizing an addition, deletion, or revision in the Work within the general scope of the Contract Documents, or authorizing an adjustment in the Contract Price or Contract Time.

1.8 CONSTRUCTION CHANGE DIRECTIVE – A Construction Change Directive is a written order prepared by the Architect/Engineer and signed by the Owner, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Price or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Agreement, order changes in the Work within the general scope of the Agreement consisting of additions, deletions or other revisions, the Contract Price and Contract Time being adjusted accordingly.

1.9 CONTRACT DOCUMENTS – Collectively the Agreement, Proposal Form, Payment Bond, Performance Bond, General Conditions, Supplemental Conditions, if any, Notice of Award, Notice to Proceed, Drug Free Workplace Program Statement, Trench Safety Act Certificate of Compliance, Public Entity Crimes Statement, Sales Tax Exemption Addendum, Certificate of Insurance, Release and Affidavit from Contractor, Release and Affidavit from Subcontractor, Application and Certificate for Payment, Certificate of Substantial Completion, Contract Change Order(s), Construction Change Directives, Field Orders, Drawings, Specifications and Addenda. The Contract Documents are sometimes referred to herein as the Agreement.

1.10 CONTRACT PRICE - The total compensation payable by Owner to Contractor under the terms and conditions of the Contract Documents.

1.11 CONTRACT TIME - The total period of time beginning with the date of commencement of the Work as authorized by the City and ending on the required date for Substantial Completion of the Work. The Contract Time is set forth with more specificity in Section 2 of the Agreement.

1.12 CONTRACTOR - The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The term "Contractor" means the Contractor or the Contractor's authorized representative.

1.13 CITY or OWNER – The City of Panama City Beach, Florida, acting through its City Council and Charter Officers.

1.14 DRAWINGS - The Drawings are the graphic and pictorial portions of the Contract

Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules and diagrams.

1.15 ENGINEER - The person, firm or corporation named as such in the Agreement.

1.16 FIELD ORDER - A written order effecting a clarification or change in the Work not involving an adjustment in the Contract Price or an extension of the Contract Time, issued by Architect/Engineer or Owner to Contractor during construction.

1.17 NOTICE OF AWARD - The written notice of the acceptance of the Bid from the City to the successful Bidder.

1.18 NOTICE TO PROCEED - Written communication issued by the City to the Contractor authorizing it to proceed with the Work and establishing the date for commencement of the Work.

1.19 OWNER - Same as CITY; same as City of Panama City Beach, Florida.

1.20 PROJECT – The Project is the total construction of the Work performed under the Contract Documents.

1.21 PROJECT ADMINISTRATION MANUAL (sometimes referred to herein as the "MANUAL") – The City's manual of forms and standard administrative procedures regarding project administration. Contractor acknowledges and agrees it has received a copy of the current Manual and shall incorporate any modifications or updates issued by the City into its copy of the Manual to ensure the Manual is kept up to date.

1.22 PROJECT REPRESENTATIVE -The Project Representative shall be the City's representative with respect to the Project and may be a City employee or an outside consultant. The Project Representative shall have authority to transmit instructions, receive information, and interpret and define the City's policies and decisions with respect to the Work. However, except as may be otherwise expressly authorized in writing by the City, the Project Representative is not authorized on behalf of the City to issue any verbal or written orders or instructions to Contractor that would have the effect, or be interpreted to have the effect, of amending or modifying the terms or conditions of the Contract Documents or modifying or amending in any way whatever the: (1) scope or quality of Work to be performed and provided by Contractor as set forth in the Contract Document; (2) the time within which Contractor is obligated to complete the Work; or (3) the amount of compensation the City is obligated or committed to pay Contractor as set forth in the Contract Documents.

1.23 SHOP DRAWINGS - All drawings, diagrams, illustrations, brochures, schedules and other data which are prepared by the Contractor, a Subcontractor, manufacturer, supplier or distributor, which illustrate how specific portions of the Work shall be fabricated or installed.

1.24 SPECIFICATIONS - The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

1.25 SUBCONTRACTOR - An individual, firm, or corporation having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work at the site.

1.26 SUBSTANTIAL COMPLETION - That date certified by the Engineer when the Work or an Owner specified part thereof is sufficiently completed, in accordance with the Contract Documents, so that the Work or the Owner specified part thereof can be utilized by Owner for the purposes for which it is intended.

1.27 SUPPLEMENTAL CONDITIONS - Modifications to the General Conditions required by

Owner, set forth in the Section 00800 series of documents.

1.28 SUPPLIER - Any person or organization who supplies materials or equipment for the Work for or on behalf of Contractor, including those fabricated to a special design, but who does not perform labor at the site.

1.29 WORK - The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

2.0 ADDITIONAL INSTRUCTION AND DETAIL DRAWINGS

2.1 From time to time, Contractor may be furnished additional instructions and detail drawings by the Architect as necessary to permit Contractor to carry out the Work required by the Contract Documents.

2.2 Any such additional drawings and instructions supplied to Contractor shall be issued as a Field Order. The Contractor shall carry out the Work in accordance with the additional detail drawings and instructions.

3.0 SCHEDULES, REPORTS AND RECORDS

3.1 The Contractor shall submit to the City such schedule of quantities and costs, progress schedules, payrolls, reports, estimates, records and other data where applicable as are required by the Contract Documents for the Work to be performed.

3.2 Contractor shall prepare and provide its construction progress schedule (“Construction Schedule”) prior to submitting is first Application for Payment, showing the order in which the Contractor proposes to carry on the Work, including dates at which the various parts of the Work will be started, estimated date of completion of each part and, as applicable, the dates at which special drawings will be required and dates for submission of Shop Drawings, the beginning of manufacture, the testing and the installation of materials, supplies and equipment. Further, the Construction Schedule shall not only include the overall progress schedule for the Work to be provided by Contractor hereunder, but also shall include reasonable time periods for Architect’s performance, as accepted by Architect. The Construction Schedule and any other schedules required by the City hereunder shall be updated monthly. The Construction Schedule and all updates to it shall not exceed the time periods established in the Contract Documents and shall be subject to the City’s and Architect’s review and comment. Contractor’s submittal of a satisfactory Construction Schedule and updates thereto and the City’s acceptance of same shall be a condition precedent to the City’s obligation to pay Contractor; provided, however, the acceptance of any such schedule or update by Owner shall not be deemed an admission by Owner that such schedule or update is reasonable, accurate or correct.

3.3 The Contractor shall also submit a schedule of payments, for Owner’s review and approval that the Contractor anticipates will be earned during the course of the Work.

4.0 INTENT OF THE CONTRACT DOCUMENTS, DRAWINGS AND SPECIFICATIONS

4.1 It is the intent of the Contract Documents to describe a functionally complete Project (or portion thereof) to be constructed in accordance with the Contract Documents. Any work, materials or equipment that may reasonably be inferred from the Contract Documents as being required to produce the intended result shall be supplied whether or not specifically called for in the Contract Documents. If the Contract Documents include words or terms that have a generally accepted technical or industry meaning, then such words or terms shall be interpreted to have such standard meaning unless otherwise expressly noted in the Contract Documents. Reference to standard

specifications, manuals or codes of any technical society, organization or association or to the laws or regulations of any governmental authority having jurisdiction over the Project, whether such reference be specific or by implication, shall mean the latest standard specification, manual, code, law or regulation in affect at the time the Work is performed, except as may be otherwise specifically stated herein. Provided, however, in the event the standard specification, manual, code, law or regulation is changed after the Agreement has been executed by the parties, a Change Order shall be issued equitably adjusting the Contract Price and/or Contract Time to the extent such change materially impacts the Contract Time and/or Contract Price.

4.2 Contractor shall perform the Work consistent with the intent of the Drawings, Specifications, and other Contract Documents, and Contractor shall furnish all labor, materials, tools, equipment, and transportation necessary for the proper execution of the Work in accordance with the Contract Documents and all incidental items necessary to complete the Work in an acceptable manner, ready for use, occupancy or operation by the City.

4.3 Drawings are intended to show general arrangements, design and extent of Work and are not intended to serve as shop drawings. Specifications are separated into divisions for convenience of reference only and shall not be interpreted as establishing divisions for the Work, trades, subcontracts or extent of any part of the Work. In the event of a discrepancy between or among the Drawings, Specifications or other Contract Document provisions, Contractor shall be required to comply with the provision which is the more restrictive or stringent requirement upon Contractor, as determined by the City.

4.4 If during the performance of the Work Contractor discovers a conflict, error, or discrepancy in the Contract Documents, including the Drawings and Specifications, Contractor immediately shall report same to Architect and Owner in writing, and before proceeding with the Work affected thereby, shall obtain a written interpretation or clarification from Architect. Work done by the Contractor after discovery of such conflict, error, or discrepancy without such written interpretation or clarification from Architect, shall be done at the Contractor's risk. Prior to commencing the Work, Contractor shall first take all necessary field measurements and verify the applicable field conditions. After taking such measurements and verifying such conditions, Contractor shall carefully compare such measurements and conditions with the requirements of the Contract Documents, taking into consideration all other relevant information known to Contractor, for the purpose of identifying and bringing to Architect’s and City’s attention all conflicts or discrepancies with the Contract Documents. Contractor is solely responsible for verifying all field measurements and conditions.

4.5 Contractor shall comply with the City’s standard forms and procedures as set forth in the City’s Project Administration Manual relating to Project Administration. To the extent there is no form or procedure for a particular matter, then Contractor shall comply with the form or procedure reasonably required by the City. Once a standard form has been executed by Contractor and Owner as necessary, the executed copy shall become part of the Contract Documents.

5.0 SHOP DRAWINGS

5.1 The Contractor shall provide shop drawings as may be necessary for the prosecution of the Work as required by the Contract Documents. The Architect shall promptly review all shop drawings. The Architect's approval of any shop drawing shall not release the Contractor from responsibility for deviations from the Contract Documents. Any shop drawing which deviates from the requirements of the Contract Documents must be first authorized by a Change Order.

5.2 When submitted for the Architect's review, shop drawings shall bear the Contractor's

certification that it has reviewed, checked and approved the shop drawings and that they are in conformance with the requirements of the Contract Documents.

5.3 Portions of the Work requiring a shop drawing or sample submission shall not begin until the shop drawing or submission has been approved by the Architect. A copy of each approved shop drawing and each approved sample shall be kept in good order by the Contractor at the site and shall be available to the Architect.

6.0 MATERIALS, SERVICES AND FACILITIES

6.1 It is understood that, except as otherwise specifically stated in the Contract Documents, the Contractor shall provide and pay for all materials, labor, tools, equipment, water, light, power, transportation, supervision, temporary construction of any nature, and all other services and facilities of any nature whatsoever necessary to execute, complete and deliver the Work within the Contract Time.

6.2 Materials and equipment shall be stored by Contractor to ensure the preservation of their quality and fitness for the Work. Stored materials and equipment to be incorporated in the Work shall be located so as to facilitate prompt inspection.

6.3 Manufactured articles, materials, and equipment shall be applied, installed, connected, erected, used cleaned and conditioned as directed by the manufacturer.

6.4 Materials, supplies, and equipment shall be in accordance with samples submitted by the Contractor and approved by the Architect.

6.5 Materials, supplies and equipment to be incorporated into the Work shall not be purchased by the Contractor or the Subcontractor subject to a chattel mortgage or under a conditional sale contract or other agreement by which an interest or lien is retained by the seller.

7.0 INSPECTION AND TESTING

7.1 All materials and equipment used in the construction of the Project shall be subject to adequate inspection and testing in accordance with generally accepted standards, as required and defined in the Contract Documents or required by applicable governmental law, rule or regulation.

7.2 The City, Architect, their respective representatives, agents and employees and governmental agencies with jurisdiction over the Project shall have access at all times to the Work whether the Work is being performed on or off of the Project site, for their observation, inspection and testing. Contractor shall provide proper and safe conditions for such access, and also for any inspection or testing thereof. Contractor shall provide the City and Architect with timely prior written notice (at least 48 hours) of the readiness of the Work for all required inspections, tests or approvals. In addition, authorized representatives and agents of any participating Federal or State agency shall be permitted to inspect all Work, materials, payrolls, personnel records, material invoices, and other relevant data and records.

7.3 The Contractor shall provide at the Contractor's expense all testing and inspection services required by the Contract Documents or any applicable governmental law, rule or regulation. Re-inspection and re-testing fees and costs of all testing failures shall be at the Contractor's expense.

7.4 If the Contract Documents or any applicable governmental law, rule, or regulation requires any portion of the Work to specifically be inspected, tested, or approved, Contractor shall assume full responsibility therefore, pay all costs in connection therewith and furnish the Architect the required certificates of inspection, testing or approval. All inspections, tests or approvals shall be performed in a manner and by

organizations acceptable to the City and Architect.

7.5 Neither observations by Architect or the City, nor inspections, tests or approvals by the Architect or others shall relieve the Contractor from the obligations to perform the Work in accordance with the requirements of the Contract Documents.

7.6 If any Work is covered contrary to the written instruction of the Architect, it must, if requested by the Architect, be uncovered for the Architect's observation and replaced at the Contractor's expense.

7.7 If any Work that is to be inspected, tested or approved pursuant to the Contract Documents or any applicable governmental law, rule or regulation is covered without such inspection, testing or approval having been satisfactorily obtained by Contractor and without obtaining the written concurrence from Architect, Contractor shall uncover, expose or otherwise make available the Work for such observation, inspection or testing as directed by Architect, and Contractor shall be responsible for all such costs of uncovering, exposing, observation, inspection, testing, and reconstruction.

7.8 If the Architect considers it necessary or advisable that covered Work be inspected or tested by others that was not otherwise required to be tested or inspected by the terms of the Contract Documents or any applicable governmental law, rule or regulation, the Contractor, at the Architect 's request, will uncover, expose or otherwise make available for observation, inspection or testing as the Architect may require, that portion of the Work in question, furnishing all necessary labor, materials, tools, and equipment. If it is found that such Work is defective, the Contractor will bear all the expenses of such uncovering, exposure, observation, inspection and testing and of satisfactory reconstruction. If, however, such Work is not found to be defective, the Contractor will be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to such uncovering, exposure, observation, inspection, testing and reconstruction and an appropriate Change Order shall be issued.

8.0 SUBSTITUTIONS

8.1 Whenever a material, article, or piece of equipment is identified on the Drawings or Specifications by reference to brand name or catalogue numbers, it shall be understood that this is referenced for the purpose of defining the performance or other salient requirements and that other products of equal capacities, quality and function may be considered. The Contractor may recommend the substitution of a material, article, or piece of equipment of equal substance, quality, and function for those referred to in the Contract Documents by reference to brand name or catalogue number, and if, in the opinion of the Architect, such material, article, or piece of equipment is of equal substance, quality and function to that specified, the Architect may allow its substitution and use by the Contractor. If the Contractor based its bid on "or equal" products and the City and/or Architect determine that one or more of the Contractor's proposed "or equal" products included in its bid fails to meet the requirements of the Contract Documents, Contractor may be required, at City's sole discretion, to provide products conforming with the requirements of the Contract Documents at no additional cost to the City per the City's direction.

8.2 If Contractor wishes to furnish or use a substitute item of material or equipment, Contractor shall certify that the proposed substitute shall perform adequately the functions and achieve the results called for by the general design, be similar and of equal substance to that specified and be suited to the same use as that specified. Contractor shall also certify that the evaluation and acceptance of the proposed substitute will not prejudice Contractor's achievement of Substantial Completion of the Work within the Contract Time, whether or not acceptance of the substitute for use in the Work will require a change in any of the Contract Documents (or in the provisions of any other

direct contract with Owner for the Project) to adapt the design to the proposed substitute and whether or not incorporation or use by the substitute in connection with the Work is subject to payment of any license fee or royalty. All variations of the proposed substitute from that specified will be identified in the application and available maintenance, repair and replacement service shall be indicated. Contractor shall also provide an itemized estimate of all costs that will result directly or indirectly from acceptance of such substitute, including costs for redesign and claims of other contractors affected by the resulting change, all of which shall be considered by Architect in evaluating the proposed substitute. Architect or Owner may require Contractor to furnish at Contractor's expense additional data about the proposed substitute. Further, Contractor shall reimburse Owner for the changes of Architect and Architect's consultants for evaluating each proposed substitute submitted after the effective date of the Agreement and all costs resulting from any delays in the Work while the substitute was undergoing review.

9.0 PATENTS

9.1 The Contractor shall pay all applicable royalties and license fees and shall defend all suits or claims for infringement of any patent rights and save the City harmless from loss on account thereof, except that the City shall be responsible for any such loss when a particular process, design, or product of a particular manufacturer or manufacturers is specified. Provided, however, if the Contractor has reason to believe that the design, process or product specified is an infringement of a patent, the Contractor shall be responsible for such loss or claim unless the Contractor promptly gives such information in writing to the Architect and City.

10.0 SURVEYS, PERMITS, REGULATIONS, AND PROJECT LAYOUT

10.1 The City shall furnish all boundary surveys and establish all base lines for locating the principal component parts of the Work together with a suitable number of benchmarks adjacent to the Work as shown in the Contract Documents. From the information provided by the City, unless otherwise specified in the Contract Documents, the Contractor shall develop and make all detail surveys needed for construction such as slope stakes, batten boards, stakes for pipe locations and other working points, lines, elevations and cut sheets.

10.2 The Contractor shall carefully preserve benchmarks, reference points and stakes. Contractor is solely responsible for maintaining all benchmarks, reference points, and stakes, and is solely responsible for any mistake that may be caused by their loss or disturbance. The Contractor shall be held responsible for all mistakes that may be caused by the loss or disturbance of any such benchmarks, reference points or stakes.

10.3 The Contractor shall engage for the performance of Project layout and control, a Professional Land Surveyor registered in the State of Florida to practice land surveying. Said surveyor must carry Professional Liability Insurance in the amount of at least one million dollars ($1,000,000) per occurrence. The land surveyor employed for this Project must comply with the Minimum Technical Standards for Surveying and Mapping pursuant to Florida Statute 472.027.

10.4 Should the Contractor in the course of its Work find that the points, grades and levels which are shown upon the Drawings are not conformable to the physical conditions of the locality at the proposed work or structure, it shall immediately inform the Architect of the discrepancy between actual physical conditions of the locality of the proposed work, and the points, grades and levels which are shown on the drawings. No claim shall be made by the Contractor against the City for compensation or damage by reasons of failure of the Architect to represent upon the Drawings points, grades and levels conformable to the actual physical conditions of the locality of the proposed work.

10.5 All permits and licenses necessary for the prosecution of the Work shall be secured and paid for by the Contractor unless otherwise expressly noted in the Contract Documents. These shall include all building permits, burn permits, debris disposal permits, etc. All licenses, easements and variances for permanent structures or permanent changes in existing facilities shall be secured and paid for by the City, unless otherwise specified in the Contract Documents. The Contractor shall give all notices and comply with all laws, ordinances, rules, regulations and governmental permits and approvals bearing on the conduct of the Work as drawn and specified. If the Contractor observes that the Contract Documents are at variance therewith, the Contractor shall promptly notify the Architect and City in writing, and any necessary changes shall be adjusted as provided in Section 13 below.

11.0 PROTECTION OF WORK, PROPERTY, AND PERSONS

11.1 The Contractor is responsible for the safety and protection of all persons and property on or about the Project site during the progress of the Work, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction. Further, it is Contractor's responsibility to protect from damage or loss all material and equipment to be incorporated into the Work whether in storage on or off the Project site. Contractor shall initiate, maintain and supervise all safety precautions and programs in connection with the Work and shall develop and implement, in accordance with the requirements of the Contract Documents, a safety plan for the Work. Contractor's safety plan shall include a hurricane protection plan. Contractor's duties and responsibilities for the safety and protection of the Work shall continue until such time as the Work is completed and final acceptance of same by the City has occurred.

11.2 The Contractor will comply with all applicable codes, laws, ordinances, rules, regulations and orders of the City and any public body having jurisdiction over the Work, including the Occupational Safety and Health Administration (OSHA) and any State Safety and Health agency requirements and all of their safety codes, laws, ordinances, rules and regulations. The Contractor will erect and maintain, as required by the conditions and progress of the Work, all necessary safeguards for safety and protection. Contractor shall notify owners of adjacent property and of any underground structures or improvements and utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation or replacement of their property. The Contractor will remedy all damage, injury or loss to any property caused by the Contractor, any Subcontractor or anyone directly or indirectly employed by any of them or anyone of whose acts any of them be liable.

11.3 Barricades, Guards and Safety Provisions: To protect persons from injury and to avoid property damage, adequate barricades, construction signs, torches, red lanterns and guards shall be placed and maintained during progress of construction work and until it is safe for both pedestrians and vehicular traffic. Rules and regulations of local authorities regarding safety provisions shall be observed.

11.4 In emergencies affecting the safety of persons or the Work or property at the site or adjacent thereto, the Contractor, without special instructions or authorization from the Architect or City, shall act to prevent threatened damage, injury or loss. The Contractor will give the Architect prompt written notice of any such emergency and to the extent the emergency was not caused by the fault or neglect of Contractor or anyone for whom Contractor is responsible, a Change Order shall be issued covering the necessary and reasonable changes and deviations involved.

11.5 At all times during the performance of the Work at the Project site, Contractor shall have designated, and located on a full-time basis at the Project site, a qualified individual

whose responsibility shall be to monitor and enforce Contractor's safety program at the Project site; such individual shall be deemed to be the Contractor's Project Superintendent. However, Contractor may designate by written notice to the City another individual, reasonably acceptable to the City, who shall be Contractor's safety representative at the Project site.

11.6 Alcohol, drugs and all illegal substances are strictly prohibited on the Project site and any City property. All employees of Contractor, as well as those of all Subcontractors and those of any other person or entity for whom Contractor is legally liable (collectively referred to herein as "Employees"), shall not possess or be under the influence of any such substances while on the Project site or any City property. Further, employees shall not bring on to the Project site or any City property any gun, rifle or other firearm, or explosives of any kind. Provided, however, to the extent explosives are reasonably required with respect to the performance of the Work, Contractor shall strictly comply with the Contract Documents and any and all rules and regulations of Owner or of any applicable governmental agency as it relates to the storage, handling and use of such explosives.

12.0 SUPERVISION BY CONTRACTOR

12.1 The Contractor will supervise and direct the Work. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction. The Contractor will employ and maintain on the Project site on a full time basis a qualified superintendent acceptable to the City. The superintendent and his or her designees shall have full authority to act on behalf of the Contractor and all communications given to the superintendent or his or her designee shall be as binding as if given to the Contractor. The superintendent or his or her designee shall be present on the site at all times when any portion of the Work is being performed to ensure adequate supervision and coordination of the Work.

13.0 CHANGES IN THE WORK

13.1 The City may at any time during the progress of the Work, as the need arises and in its sole discretion, order changes within the general scope of the Work without invalidating the Agreement. Promptly after being notified of a change, but in no event more than fourteen (14) days after its receipt of such notification (unless the City has agreed in writing to a longer period of time), Contractor shall submit an itemized estimate of any cost or time increases or savings it foresees as a result of the change. Except in an emergency endangering life or property, no addition or changes to the Work shall be made except upon a properly issued Change Order, Construction Change Directive or Field Order. No officer, employee or agent of the City is authorized to direct any extra or changed work without a properly issued Change Order, Construction Change Directive, or Field Order.

13.2 All changes to the Work must be authorized by means of a written Change Order that is mutually agreed to by the City and Contractor or a Construction Change Directive issued by the City or a Field Order issued by the City or Architect. If the change is to be accomplished through a Change Order, the Change Order, in the form set forth in the City's Project Administration Manual, shall be prepared by Contractor, reviewed by Architect and the City, and executed promptly by the parties after an agreement is reached between Contractor and the City concerning the requested changes. Contractor shall promptly perform changes authorized by duly executed Change Orders. The Contract Price and Contract Time shall be adjusted in the Change Order in the manner as the City and Contractor shall mutually agree. The Change Order shall identify the changed work. Also, where the Contract Price is based upon unit prices, a Change Order may be used for work for which quantities have been altered from those shown in

the bidding schedule, as well as decreases or increases in the quantities of installed units which are different than those shown in the bidding schedule because of final measurements. All changes must be recorded on an executed Change Order before they can be included in a monthly Application for Payment.

13.3 To the extent the Contract Price is based on unit prices, the City reserves the right to increase or decrease a unit price quantity as may be deemed reasonable or necessary in order to complete the Work contemplated by this Agreement.

13.4 If the City and Contractor are unable to agree on a Change Order for the requested change, Contractor shall, nevertheless, promptly perform the change as directed by the City in a written Construction Change Directive. In that event, the Contract Price and Contract Time shall be adjusted in the Construction Change Directive as determined by the City. If Contractor disagrees with the City's adjustment determination, Contractor must make a claim strictly in accordance with the terms of the Contract Documents or else be deemed to have waived any claim it might otherwise have had on that matter.

13.5 The City shall have the right to conduct an audit of Contractor's books and records, as well as those of its Subcontractors and Suppliers, to verify the accuracy of Contractor's estimates or claims with respect to Contractor's cost and time impacts associated with any Change Order or Construction Change Directive.

13.8 The Architect or City at any time may direct Contractor to make changes to the Work by issuing a Field Order, so long as such changes do not require or result in any adjustment to the Contract Price or Contract Time and are generally within the scope of the Work. Contractor shall proceed with the performance of any changes in the Work so ordered by the Architect or City unless the Contractor believes that such Field Order entitles the Contractor to a change in the Contract Price or Contract Time, or both. In the event Contractor believes the Field Order requires a change to the Contract Price or Contract Time, it must provide written notice to the Architect and City within five (5) business days of receipt of the Field Order and before starting with any changed Work. Failure to provide such notice waives Contractor's right to claim such work requires a change in the Contract Price or Contract Time. Once Contractor has provided timely written notice, it shall proceed as directed by City in writing, and thereafter shall file a claim in accordance with the procedures required herein.

14.0 CHANGES IN CONTRACT PRICE

14.1 The Contract Price may be changed only by a Change Order or Construction Change Directive issued in accordance with the terms of the Contract Documents. If the Change Order or Construction Change Directive provides for an adjustment to the Contract Price, the adjustment shall be based on one of the following methods: mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation; or unit prices stated in the Contract Documents or subsequently agreed upon; or cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or on a time and material basis.

14.2 In the event the Owner elects to proceed with changed work on a time and material basis, the following provisions shall apply:

14.2.1 For all labor, including a foreman in direct charge of the specified operations, the Contractor shall receive a sum equal to the current standard local rate of wages actually paid for every hour that the labor is actually engaged in such changed work, plus the actual cost of social security taxes, unemployment insurance, and workmen's compensation insurance based on the actual wages paid for such labor, to which cost shall be added

an amount equal to ten percent (10%) thereof for all overhead and profit (including all general supervision and for furnishing and repairing small tools and ordinary equipment used in doing the changed work).

14.2.2 For all materials used, the Contractor shall receive the actual cost of such materials, including freight charges as shown by original receipted bills, to which cost shall be added an amount equal to ten percent (10%) thereof for all overhead and profit.

14.2.3 For any construction equipment or special equipment including fuel and lubricants therefore, required for the economical performance of the changed work, the Architect shall allow the Contractor a rental price, to be agreed upon in writing before such work is begun, for every hour that such construction equipment or special equipment is actually operated on the work, which rental price shall include all overhead and profit. Such hourly rental price shall not exceed 1/176 part of the monthly rate stated for such equipment in the latest edition of the "Compilation of Rental Rates for Construction Equipment" by Associated Equipment Distributors.

14.2.4 Subcontractors are subject to the above and the Contractor mark-up for overhead and profit shall not exceed five percent (5%) of the amount due to the Subcontractor.

14.2.5 The Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting of all time and material costs, together with appropriate supporting data.

15.0 TIME FOR COMPLETION AND LIQUIDATED DAMAGES

15.1 Time is of the essence in the performance of the Work under this Agreement. The date of beginning and the time for completion of the Work are essential conditions of the Contract Documents. The required date of commencement of the Work shall be established in the Notice to Proceed to be issued by the City. As noted in the Agreement, Contractor shall commence the Work within ten (10) calendar days after the required date of commencement. Any Work performed by Contractor prior to the required date of commencement shall be at the sole risk of Contractor. The Notice to Proceed shall be issued within thirty (30) days of the execution of the Agreement by the City. Should there be reasons why the Notice to Proceed cannot be issued within such period, the time may be extended by mutual agreement of the City and Contractor. If the Notice to Proceed has not been issued within the thirty (30) day period or within the period mutually agreed upon, the Contractor may terminate the Agreement without further liability on the part of either party by providing the City written notice of such termination, in which event such termination shall be deemed a termination for convenience of the City as set forth in Section 17.5 below. Provided, however, notwithstanding anything in the Contract Documents to the contrary, in the event of such termination pursuant to this Section 15.1, Contractor acknowledges and agrees that no payments will be due. Contractor nor shall the City make any payments to Contractor for any Work that would have been authorized under the Agreement once executed by both parties.

15.2 The Contractor will proceed with the Work at such rate of progress to ensure Substantial Completion within the Contract Time. It is expressly understood and agreed, by and between the Contractor and the City, that the Contract Time for Substantial Completion of the Work is a reasonable period of time. The Construction Schedule shall include the date the Work must be substantially completed by Contractor and all interim milestones required by the City. Substantial Completion of the Work shall be achieved when the Work has been completed to the point where the

City can occupy or utilize the Work for its intended purpose. The Architect shall certify the date Substantial Completion of the Work is achieved. If the City has designated portions of the Work to be turned over to the City prior to Substantial Completion of the entire Work as provided in Section 15.3 below, the Architect shall certify the date as to when Substantial Completion of such designated portions of the Work have been achieved. The entire Work shall be fully completed and ready for final acceptance by the City within 30 calendar days after Substantial Completion of the Work or thirty (60) days after Contractor's receipt of the punch list, whichever date occurs last.

15.2.1 Once the Contractor believes it has achieved Substantial Completion of the Work, it shall notify the City and Architect in writing and request a substantial completion inspection. Concurrent with its delivery of such written notice, Contractor shall submit its initial punch list for the City's and Architect's review. Any Work remaining to be completed or any defective work to be remedied shall be listed on the punch list. Once the substantial completion inspection has been made, Owner and Architect shall modify the Contractor's initial punch list to include all items to be completed or repaired by Contractor in order to achieve final acceptance of the Work. Thereafter, the Architect shall provide Contractor a copy of the final punch list. Such final punch list shall be in compliance with the Contract Documents and all applicable laws, including Section 218.735 of the Florida Statutes. Accordingly, if the Contract Price is less than $10 million, Architect shall provide the final punch list to Contractor within 30 calendar days after Contractor has achieved Substantial Completion. If the Contract Price is $10 million or more, Architect shall provide the final punch list to Contractor within 60 calendar days after Contractor has achieved Substantial Completion. Contractor acknowledges and agrees that the failure to include any corrective work or pending items not yet completed on the punch list does not alter the responsibility of Contractor to complete all the Work required under this Contract.

15.3 The City may take early occupancy of all or any portions of the Work, at the City's election, by designating in writing to Contractor the specific portions of the Work to be occupied and the date such occupancy shall commence. If any such specific early occupancy was not expressly identified in the bidding documents issued with respect to this Agreement (as they may have been modified by any applicable Addenda) and such early occupancy adversely impacts Contractor's cost or time of performance, Contractor shall be entitled to an equitable adjustment to the Contract Price and the Contract Time, all in accordance with the other terms and conditions of the Contract Documents.

15.4 The City and Contractor recognize that, since time is of the essence for this Agreement, the City will suffer financial loss if the Work is not substantially completed within the Contract Time, as said time may be adjusted as provided for herein. In such event, the total amount of the City's damages, will be difficult, if not impossible, to definitely ascertain and quantify, because this is a public construction project that will, when completed, benefit the public. It is hereby agreed that it is appropriate and fair that the City receive liquidated damages from Contractor, if Contractor fails to achieve Substantial Completion of the Work within the required Contract Time. Should Contractor fail to substantially complete the Work within the Contract Time, the City shall be entitled to assess, as liquidated damages, but not as a penalty, the amount for liquidated damages as specified in the Agreement for each calendar day thereafter until Substantial Completion is achieved. Contractor hereby expressly waives and relinquishes any right which it may have to seek to characterize the above noted liquidated damages as a penalty, which the parties agree represents a fair and

reasonable estimate of the City's actual damages at the time of contracting if Contractor fails to achieve Substantial Completion of the Work within the Contract Time.

15.4.1 In the event the Work is not fully completed within 30 days from the date of Substantial Completion, the City reserves the right to assess against Contractor its actual damages incurred as a result of such delay by Contractor.

16.0 CORRECTION OF DEFECTIVE WORK

16.1 Work not conforming to the requirements of the Contract Documents shall be deemed defective Work. If required by the City or Architect, the Contractor shall as direct, either correct all defective Work, whether or not fabricated, installed or completed, or, if the defective Work has been rejected by the City or Architect, remove it from the site and replace it with non-defective Work in accordance with the Contract Documents and without additional expense to the City. Further, Contractor shall bear the expense of making good all work of other contractors performing work on the Project destroyed or damaged by such removal or replacement. Contractor shall bear all direct, indirect and consequential costs of such correction or removal (including, but not limited to fees and charges of Architects, architects, attorneys and other professionals) made necessary thereby, and shall hold the City and Architect harmless for same. Notwithstanding anything herein to the contrary, the City may determine, at its sole discretion, to accept defective Work. If such determination is rendered prior to final payment, a Change Order or Construction Change Directive shall be executed evidencing such acceptance of such defective Work, incorporating the necessary revisions in the Contract Documents and reflecting an appropriate decrease in the Contract Price. If the City accepts such defective Work after final payment, Contractor shall promptly pay the City an appropriate amount determined by the City to adequately compensate the City for its acceptance of the defective Work.

16.2 If the Contractor does not take action to correct defective Work or to remove and replace rejected defective Work or if Contractor fails to comply with any of the provisions of the Contract Documents within ten (10) days after receipt of written notice from the City or Architect, the City may correct and remedy any such deficiency at the expense of the Contractor. To the extent necessary to complete corrective and remedial action, the City may exclude Contractor from any or all of the Project site, take possession of all or any part of the Work, and suspend Contractor's services related thereto, take possession of Contractor's tools, appliances, construction equipment and machinery at the Project site and incorporate in the Work all materials and equipment stored at the Project site or for which the City has paid Contractor but which are stored elsewhere. Contractor shall allow the City, Architect and their respective representatives, agents, and employees such access to the Project site as may be necessary to enable the City to exercise the rights and remedies under this Section. All direct, indirect, and consequential costs of the City in exercising such rights and remedies shall be at Contractor's expense, and a Change Order or a Construction Change Directive shall be issued, incorporating the necessary revisions to the Contract Documents, including an appropriate decrease to the Contract Price. Such direct, indirect and consequential costs shall include, but not be limited to, fees and charges of Architects, Architect's, attorneys and other professionals, and all costs of repair and replacement of work of others destroyed or damaged by correction, removal or replacement of Contractor's defective Work. Contractor shall not be allowed an extension of the Contract Time because of any delay in performance of the Work attributable to the exercise by the City of the City's rights and remedies hereunder.

17.0 SUSPENSION OF WORK, TERMINATION, AND DELAY

17.1 The City shall have the right to suspend the Work or any portion thereof for a period of not more than ninety (90) days or such additional time as agreed upon by the Contractor, upon giving Contractor written notice of such suspension to the Contractor. The City or Architect shall fix the date on which Work shall be resumed. The Contractor will resume that Work on the date so fixed unless otherwise directed by the City. Provided Contractor strictly complies with the Change Order and Claims procedures set forth in the Contract Documents, Contractor will be entitled to a Change Order adjusting the Contract Price and Contract Time, as provided in the Contract Documents, to the extent attributable to any such suspension, unless said suspension is due to the fault or neglect of Contractor or anyone for whom Contractor is responsible.

17.2 If, through no act or fault of the Contractor, the Work is suspended for a period of more than ninety (90) days by the City or under an order of court or other public authority, or the Architect fails to act on any request for payment within thirty (30) days after it is submitted, or the City fails to pay the Contractor any undisputed amounts within thirty (30) days of its approval, then the Contractor may after ten (10) days from delivery of a written notice to the City and the Architect and the City's failure to cure such default (or a maximum of sixty (60) days in the event the default cannot reasonably be cured within ten (10) days provided that the City commences to cure within ten (10) days and thereafter diligently and continuously pursues said cure) terminate the Agreement and recover from the City payment for all Work properly executed and reasonable termination expenses sustained. In addition, and in lieu of terminating the Agreement, if the Architect has failed to act on a request for payment or if the City has failed to make any payment within the aforesaid thirty (30) day periods, the Contractor may upon ten (10) days written notice to the City and the Architect stop the Work until paid all amounts then due, in which event and upon resumption of the Work, a Change Order shall be issued adjusting the Contract Price and Contract Time as provided in the Contract Documents.

17.3 Contractor shall be considered in material default of the Agreement and such default shall be considered cause for the City to terminate the Contractor's right to continue to perform under the Agreement, in whole or in part, as further set forth in this Section, if Contractor: (1) fails to begin the Work under the Contract Documents within the time specified herein; or (2) fails to properly and timely perform the Work as directed by the City or Architect or as provided for in the approved Construction Schedule; or (3) performs the Work unsuitably or neglects or refuses to remove materials or to correct or replace such Work as may be rejected as unacceptable or unsuitable; or (4) discontinues the prosecution of the Work contrary to the requirements of the Agreement; or (5) fails to resume Work which has been suspended within a reasonable time after being notified to do so; or (6) becomes insolvent or is declared bankrupt, or commits any act of bankruptcy; or (7) allows any final judgment to stand against it unsatisfied for more than ten (10) days; or (8) makes an assignment for the benefit of creditors; or (9) fails to comply with any applicable codes, laws, ordinances, rules or regulations with respect to the Work; or (10) fails to supply sufficient skilled workmen or suitable materials or equipment; or (11) fails to promptly pay its Subcontractors and Suppliers; or (12) disregards the authority of the City or Architect; or (12) materially breaches any other provision of the Contract Documents. In rendering its decision as to whether one of the causes under Section 17.3 exist which would permit the City to terminate the Agreement, the City shall be entitled to rely upon the determination of the Architect concerning such matter.

17.3.1 In such event, and after giving the Contractor and its surety a minimum of ten (10) days from delivery of a written notice to cure any such default (or a maximum of sixty (60) days in the event the default cannot reasonably

be cured within ten (10) days provided that Contractor commences to cure within ten (10) days and thereafter diligently and continuously pursues said cure), the City may at its option, and without releasing or waiving its rights and remedies against Contractor's sureties and without prejudice to any other right or remedy, terminate Contractor's right to proceed under the Agreement in whole or in part, and take possession of the Project and of all materials, equipment, tools, construction equipment and machinery thereon owned by the Contractor, take assignments of any of Contractor's subcontracts and purchase orders that the City may designate, and finish the Work by whatever method the City in its sole discretion may deem expedient.

17.3.2 If Contractor's right to proceed under the Agreement is terminated, Contractor shall not be entitled to receive any further payment until the Work is finished. All monies expended and all of the costs, losses, damages and extra expenses, including all management, administrative and other overhead and other direct and indirect expenses (including Architect and attorneys' fees) or damages incurred by the City incident to such completion (collectively "Completion Costs"), shall be deducted from the unpaid balance of the Contract Price. Upon the City's completion, if the unpaid balance of the Contract Price exceeds the Completion Costs, such excess shall be paid to the Contractor. If the Completion Costs exceed the unpaid balance of the Contract Price, Contractor shall pay promptly to the City on demand the full amount of such excess and interest thereon at a rate of 6% per annum until paid.

17.3.3 The liability of Contractor hereunder for Completion Costs shall extend to and include the full amount of any and all sums paid, expenses and losses incurred, damages sustained, and obligations assumed by the City in good faith under the belief that such payments or assumptions were necessary or required, in completing the Work and providing labor, materials, equipment, supplies, and other items therefor or re-letting the Work, and in settlement, discharge or compromise of any claims, demands, suits, and judgments pertaining to or arising out of the Work hereunder. Further, in the event the City has exercised its right to terminate due to Contractor's default, Contractor shall be prohibited from bidding or otherwise seeking additional work from the City in accordance with the City's then current debarment policy.

17.3.4 The City may deduct from any payment, any sum owed by the City to Contractor, either under this Agreement or any other agreement between the City and the Contractor. Further, a default by Contractor under any other agreement with the City shall be deemed a default under this Agreement and a default under this Agreement shall be deemed a default under any other agreement between the City and Contractor.

17.4 Where the Contractor's services have been so terminated by the City, said termination shall not affect any right of the City against the Contractor then existing or which may thereafter accrue. Any retention or payment of monies by the City due the Contractor will not release the Contractor from compliance with the Contract Documents. Further, if after notice of termination of Contractor's right to proceed pursuant to Section 17.3, it is determined for any reason that Contractor was not in default, or that its default was excusable, or that the City is not entitled to the remedies against Contractor provided herein, then such termination shall be deemed a termination for the City's convenience

and Contractor's remedies against the City shall be the same as and limited to those afforded Contractor under Section 17.5 below.

17.5 The City shall have the right to terminate this Agreement without cause upon ten (10) days from delivery of a written notice to the Contractor. In the event of such termination for convenience, Contractor's sole and exclusive recovery against the City shall be limited to that portion of the Contract Price earned through the date of termination, together with any retainage withheld and reasonable termination expenses incurred, but Contractor shall not be entitled to any other or further recovery against the City, including, but not limited to, damages or any anticipated profit on portions of the Work not performed.

18.0 PAYMENT TO CONTRACTOR

18.1 At least ten (10) days before submitting the first Application for Payment, the Contractor shall submit to the City and Architect a schedule of values allocated to various portions of the Work, prepared in such form and supported by such data to substantiate its accuracy as the City or Architect may require. It is anticipated the schedule of values substantially will be based upon the Contractor's completed Bid Proposal Form, attached as Section 00030. This schedule, unless objected to by the City or Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment. On or before the 25th of each month, the Contractor will submit to the Architect an Application for Payment filled out and signed by the Contractor covering the Work performed since the previous month's Application for Payment. The Application for Payment may also include the cost of such materials and equipment which are suitably stored either at or off the site to the extent such payment is approved by City as provided in Section 18.1.1 below. Invoices received after the 25th day of each month shall be considered for payment as part of the next month's Application for Payment. Contractor's Application for Payment shall be in such form and contain such detail and backup as the City reasonably may require.

18.1.1 If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at or off the site, the Application for Payment shall also be accompanied by such supporting data, satisfactory to the City, as will establish the City's title to the material and equipment free and clear of all liens, charges, security interests and encumbrances, together with evidence that the materials and equipment are covered by appropriate property insurance and other arrangements to protect City's interest therein, all of which shall be subject to City's satisfaction. City has the discretion whether or not to pay for such unincorporated materials.

18.1.2.1 The Architect will, within ten (10) days after receipt of each Application for Payment, indicate in writing its recommendation as to that portion of the payment being requested by Contractor in the Application for Payment which Architect believes is due and payable. The City shall pay Contractor that portion of the Application for Payment approved by Architect and Owner within fifteen (15) days of the City's receipt of the Architect's payment recommendation.

18.1.2.2 City shall retain an amount equal to 5% of the approved amount to be paid Contractor under each monthly Application for Payment. The retainage shall be accumulated and not released to Contractor until final payment is due. Provided, however, the City reserves the right, in its sole discretion, to reduce such retainage prior to final payment; but at no time shall the retainage be reduced to less than three percent (3%) prior to Contractor

achieving Substantial Completion. Provided, further however, if at any time during this Agreement, and in the City's sole discretion, the City becomes dissatisfied with Contractor's performance or if Contractor is in default, the City shall have the right to reinstate the full amount of retainage at five percent (5%).

18.1.2.3 Monthly payments to Contractor shall in no way imply approval or acceptance of the Work.

18.1.3 Each Application for Payment shall be accompanied by a claim release and waiver in the form set forth in the City's Project Administration Manual from Contractor for all materials, labor, equipment, services and other bills associated with that portion of the Work payment is being requested in that Application for Payment. Further, each Application for Payment shall be accompanied by a claim release and waiver in the form set forth in the City's Project Administration Manual from all Subcontractors and Suppliers evidencing their payment in full through the previous month's Application for Payment. Also, each Application for Payment shall be accompanied by an updated Construction Schedule, a list inventorying all stored materials, a monthly progress status report, and any other document reasonably requested by City. The City shall not be required to make payment until and unless such releases, documents and information are furnished by Contractor. Further, if Contractor is withholding any portion of a payment to any Subcontractor or Supplier for any labor, services, or materials for which the City has paid Contractor, Contractor agrees to refund such money to the City upon demand by the City.

18.1.4 Architect shall review each Application for Payment submitted by Contractor and shall make recommendations to the City as to the proper amounts, if any, which may be owed Contractor thereunder. Both Architect and the City shall have the right to refuse to approve payment amounts, or portions thereof, requested by Contractor in an Application for Payment, or rescind any amount previously approved, and the City may withhold any payments otherwise due Contractor under this Agreement or any other agreement between the City and Contractor, to the extent it is reasonably necessary, to protect the City from any expense, cost or loss attributable to: (a) defective or deficient Work not properly remedied in accordance with the terms of the Contract Documents; (b) the filing or reasonable evidence indicating the probable filing of third party claims against the City attributable to the fault or neglect of Contractor; (c) Contractor's failure to make timely and proper payments to all Subcontractors and Suppliers; (d) reasonable evidence that the remaining Work cannot be completed for the unpaid Contract Price balance; (e) reasonable evidence indicating that the remaining Work cannot be completed within the remaining Contract Time; (f) Contractor's failure to satisfactorily prosecute the Work in accordance with the requirements of the Contract Documents; or (g) any other material breach of the requirements of the Contract Documents by Contractor. The City shall have the right, but not the obligation, to take any corrective action the City deems appropriate to cure any of the above noted items, at Contractor's expense, if such items are not cured by Contractor to the City's reasonable satisfaction within three (3) days after Contractor's receipt of written notice from the City.

18.1.5 Architect or City may reject an Application for Payment, in whole or in part, submitted by Contractor if such Application for Payment is not submitted in strict accordance with the requirements of this Article 18. In such event,

Architect or City shall notify Contractor in writing within twenty (20) business days after receipt of such Application for Payment that such Application for Payment, or portion thereof, has been rejected and the reasons for such rejection. If Contractor resubmits a corrected Application for Payment correcting, in Architect's and Owner's sole determination, the deficiency specified in the rejection notice, then City shall pay Contractor the corrected portion of the Application for Payment within ten business days after the date the corrected Application for Payment is received by City.

18.2 Prior to Substantial Completion, the City, with the approval of the Architect, may use any completed or substantially completed portions of the Work. Such use shall not constitute an acceptance of such portions of the Work.

18.3 The City shall have the right to enter the Project site for the purposes of doing work not covered by the Contract Documents. This provision shall not be construed as relieving the Contractor of the sole responsibility for the care and protection of the Work, or the restoration of any damaged Work except such as may be caused by agents or employees of the City.

18.4 Upon completion and acceptance of the Work, the Architect shall issue a certificate attached to the final payment request that states the Work has been fully performed in accordance with the requirements of the Contract Documents and that Architect recommends final payment in the amount reflected in the attached final payment request. The City shall make final payment to Contractor within thirty (30) days after the Work is finally accepted by the City, provided that Contractor first, and as an explicit condition precedent to the accrual of Contractor's right to final payment, shall have furnished the City with a properly executed and notarized final release in the form set forth in the City's Project Administration Manual, as well as, a duly executed copy of the surety's consent to final payment and such other documentation that may be required by the Contract Documents or the City.

18.5 Late payments shall accrue interest from the date payment was due until payment is received at the rate of six percent (6%) per annum.

18.6 No error or oversight in the making of payment or completion certificates shall relieve the Contractor from its obligation to do and complete the Work in accordance with the requirements of the Contract Documents.

19.0 ACCEPTANCE OF FINAL PAYMENT AS RELEASE

19.1 The acceptance by the Contractor of final payment shall be and shall operate as a full release and waiver of any and all claims by Contractor against the City arising out of this Agreement or otherwise relating to the Project, except those identified in writing by Contractor as unsettled in its final Application for Payment. Any payment, however, final or otherwise shall not release the Contractor or its sureties from any obligations under the Contract Documents or the Performance and Payment Bonds. Neither the acceptance of the Work nor payment by the City shall be deemed to be a waiver of the City's right to enforce any obligations of Contractor hereunder or to the recovery of damages for defective Work not discovered by the City or Architect at the time of final inspection.

20.0 CONTRACT SECURITY

20.1 The Contractor shall within ten (10) days after the receipt of the Notice of Award and prior to the start of any Work furnish the City with a Performance Bond and a Payment Bond in penal sums equal to 100% of the amount of the Contract Price and in the forms attached as Sections 00060 and 00070. Such Bonds shall be executed by the Contractor and a

corporate bonding company licensed to transact such business in the State of Florida and named on the current lists of "Surety Companies Acceptable on Federal Bonds" as published in the Treasury Department Circular Number 570 and approved by the City. The expense of these Bonds shall be borne by the Contractor. If at any time a surety on any such Bond is declared as bankrupt or loses its rights to do business in Florida or is removed from the list of Surety Companies accepted on Federal Bonds, Contractor shall within ten (10) days after notice from the City to do so, substitute an acceptable Bond (or Bonds) in such form and sum and signed by such other surety or sureties as may be satisfactory to the City. The premiums on such replacement Bond shall be paid by the Contractor. No further payment shall be deemed due nor shall be made until the new surety or sureties shall have furnished an acceptable Bond to the City.

20.2 The Contractor and its Surety, for value received, hereby stipulate and agree that any and all claims, demands, actions or suits whatsoever, arising under this Agreement and/or bonds, shall be subject to the sole and exclusive jurisdiction and venue of the appropriate state court in and for Bay County, Florida. The Contractor and its Surety do agree, by execution of these documents, that the sole and exclusive jurisdiction and venue in said forum is proper and appropriate since performance of the underlying contract for which these documents are executed is to be accomplished within Bay County, Florida.

21.0 ASSIGNMENTS

21.1 Contractor shall not assign this Agreement or any part thereof, without the prior consent in writing of the City, which consent shall be at City's' sole discretion. If Contractor does, with City's written approval, assign this Agreement or any part thereof, Contractor shall not be released from any of its obligations or responsibilities under this Agreement.

22.0 INDEMNIFICATION AND HOLD HARMLESS

22.1 To the maximum extent permitted by Florida law, Contractor shall indemnify and hold harmless the City and its officers and employees from any and all liabilities, claims, damages, penalties, demands, judgments, actions, proceedings, losses or costs, including, but not limited to, reasonable attorneys' fees and paralegals' fees, whether resulting from any claimed breach of this Agreement by Contractor or from personal injury, property damage, direct or consequential damages, or economic loss, to the extent caused by the negligence, recklessness, or intentional wrongful misconduct of Contractor or anyone employed or utilized by the Contractor in the performance of this Agreement.

22.2 Contractor's obligation to indemnify and hold harmless under this Article 22 will survive the expiration or earlier termination of this Agreement until it is determined by final judgment that an action against the City or an indemnified party for the matter indemnified hereunder is fully and finally barred by the applicable statute of limitations.

22.3 The obligation of the Contractor under this Article 22 shall not extend to the liability of the Architect, its agents or employees arising out of the preparation of approval of maps, drawings, opinions, reports, surveys, change orders, designs or specifications.

23.0 SEPARATE CONTRACTS AND COOPERATION

23.1 The City reserves the right to perform other work related to the Project at the site by the City's own forces, have other work performed by utility owners or let other direct contracts for work to be constructed at the same time, and in connection with, the Work included in this Agreement. The Contractor shall cooperate with all other contractors in such a manner, and to such extent, as best to facilitate the completion of the entire Project in the shortest time possible, subject to, at all times, the approval of the Architect and Owner. It shall be the duty of each contractor to work with the other contractors, render such assistance, and to arrange its work in such a manner that shall allow the entire Project to

be delivered complete and in the best possible condition. The Contractor shall afford other contractors and utility owners' reasonable opportunity for the introduction and storage of their materials and the execution of their work and shall properly connect and coordinate the Work with theirs. If the proper execution or results of any part of the Contractor's Work depends upon the work of any other Contractor, the Contractor shall inspect and promptly report to the Architect any defects in such work that render it unsuitable for such proper execution and results.

23.2 If the performance of additional work by other contractors, utility owners, or the City is not noted in the Contract Documents prior to the execution of the Agreement, written notice thereof shall be given to the Contractor prior to starting any such additional work. If the Contractor believes that the performance of such undisclosed additional work by the City or others involves it in additional expense or entitles it to an extension of the Contract Time, the Contractor shall send written notice of that fact to the City and Architect within seven (7) calendar days of being notified of the other work and the Contractor may make a claim thereof as provided in Sections 13 and 14. If Contractor fails to send the above required seven (7) calendar days' notice, Contractor will be deemed to have waived any rights it otherwise may have had to seek an extension to the Contract Time or adjustment to the Contract Price.

23.3 Contractor shall afford each utility owner and City's other contractors (or the City, if the City is performing the additional work with the City's employees) proper and safe access to the site and a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such work and shall properly connect and coordinate its Work with theirs. Contractor shall do all cutting, fitting and patching of the Work that may be required to make its several parts come together properly and integrate with such other work. Contractor shall be responsible for all damage to the work of others caused by the performance of its Work. Further, Contractor shall not in any way cut or alter the work of others without first receiving the written consent of that other person and Architect. If any part of Contractor's Work depends for proper execution or results upon the work of any other contractor or utility owner (or the City), Contractor shall inspect and promptly report to Architect in writing any delays, defects or deficiencies in such work that render it unavailable or unsuitable for such proper execution and results. Such report must be made within three (3) business days of the time Contractor first became aware of the delay, defect or deficiency. Contractor's failure to report within the allotted time will constitute an acceptance of the other work as fit and proper for integration with Contractor's Work, except for latent defects not discovered by Contractor.

23.4 The Contractor shall keep itself fully informed at all times regarding all details of the work of other contractors working at the site, and it shall be responsible for all delays that may result from its failure to install the Work in the proper manner and at the proper time.

23.5 The Contractor shall be responsible for coordinating the relocation of existing utilities (with the respective utility companies) as needed to construct the Project. Attention is called to the fact that Contractor is responsible for contacting all utility companies to obtain locations of all existing utilities or obstructions which it may encounter during construction. After location of utilities by the appropriate utility company, it is the Contractor's liability to protect all such utility lines, including service lines and appurtenances, and to replace at its own expense any which may be damaged by the Contractor's equipment or forces during construction of the Project. The City will pay fees charged by the utility company for relocating these utilities.

24.0 SUBCONTRACTING

24.1 Contractor shall review the design and shall determine how it desires to divide the sequence of construction activities. Contractor will determine the breakdown and

composition of bid packages for award of subcontracts, based on the current Construction Schedule, and shall supply a copy of that breakdown and composition to the City and Architect for their review and approval. The Contractor may utilize the services of specialty Subcontractors on those parts of the Work which, under normal contracting practices, are performed by specialty Subcontractors. Contractor shall be solely responsible for and have control over the Subcontractors.

24.2 Prior to submitting its first Application for Payment, Contractor shall submit to the City a list of the names, addresses, licensing information and phone numbers of the Subcontractors Contractor intends to use for each portion of the Work, as well as identifying in writing those portions of the Work it intends to perform with its own employees. The Contractor shall not use a Subcontractor or Supplier against whom the Owner has a reasonable objection. The list identifying each Subcontractor cannot be modified, changed, or amended without prior written approval from the City. Contractor shall continuously update that list, so that it remains current and accurate throughout the entire performance of the Work. Any and all work to be self-performed by Contractor must be approved in writing by the City in its sole discretion prior to commencement of such Work. The Contractor shall not award work to Subcontractor(s) in excess of fifty percent (50%) of the Contract Price, without prior written approval of the City.

24.3 The Contractor shall be fully responsible for and have control over the acts and omissions of its Subcontractors, and of persons either directly or indirectly employed by them, as the Contractor is for the acts and omissions of persons directly employed by it.

24.4 The Contractor shall cause appropriate provisions to be inserted in all Subcontracts relative to the work to bind Subcontractors to the Contractor by the terms of the Contract Documents insofar as applicable to the work of Subcontractors and give the Contractor the same power to terminate any subcontract that the City may exercise over the Contractor under any provision of the Contract Documents. Further, each subcontract shall require that any claims by a Subcontractor for delay or additional cost must be submitted to Contractor within the time and in the manner in which Contractor must submit such claims to the City, and that failure to comply with such conditions for giving notice and submitting claims shall result in the waiver of such claims.

24.5 All subcontracts between Contractor and its Subcontractors shall be in writing and are subject to the City's approval. Further, all subcontracts shall (1) require each Subcontractor to be bound to Contractor to the same extent Contractor is bound to the City by the terms of the Contract Documents, as those terms may apply to the portion of the Work to be performed by the Subcontractor, (2) provide for the assignment of the subcontracts from Contractor to the City at the election of the City upon termination of Contractor, (3) provide that the City will be an additional indemnified party of the subcontract, (4) provide that the City will be an additional insured on all insurance policies required to be provided by the Subcontractor except workman's compensation, (5) assign all warranties directly to the City, and (6) identify the City as an intended third-party beneficiary of the subcontract.

24.6 Nothing contained in this Agreement shall create any contractual relation between any Subcontractor or Supplier and the City. All subcontracts and purchase orders entered into by Contractor must be in writing, and upon demand from City, Contractor shall deliver to City a full and complete copy of any or all such subcontracts and purchase orders.

24.7 Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract, copies of the Contract Documents to which the Subcontractor will be bound. Each Subcontractor shall similarly make copies of such documents available to its sub-subcontractors.

24.8 The Contractor shall not use a Subcontractor or Supplier against whom the City has a

reasonable objection and Contractor shall not be required to contract with anyone it reasonably objects to.

24.8 The City and Architect are under no duty or obligation whatsoever to any Subcontractor, Supplier, laborer or other party to ensure that payments due and owing by the Contractor to any of them will be made. Such parties shall rely only on the Contractor's surety bonds for remedy of nonpayment by the Contractor.

25.0 ARCHITECT'S AUTHORITY

25.1 The Architect shall act as the City's representative during the construction period, shall decide questions which may arise as to quality and acceptability of materials furnished and Work performed, and shall interpret the intent of the Contract Documents in a fair and reasonable manner. The Architect will make visits to the site and determine if the Work is proceeding in accordance with the Contract Documents.

25.2 The Contractor will be held strictly to the intent of the Contract Documents in regard to the quality of materials, workmanship, and execution of the Work. Inspections may be at the factory or fabrication plant of the source of material supply.

25.3 The Architect and the City will not be responsible for the construction means, controls, techniques, sequences, procedures, or construction safety.

25.4 The Architect shall promptly make decisions relative to interpretation of the Contract Documents.

26.0 LAND AND RIGHT-OF-WAYS

26.1 Prior to the issuance of the NOTICE TO PROCEED, the City shall obtain all land and rights-of-way necessary for carrying out and for the completion of the Work to be performed pursuant to the Contract Documents, unless otherwise noted in the Contract Documents.

26.2 The City shall provide to the Contractor information which delineates and describes the lands owned and rights-of-way acquired.

26.3 The Contractor shall provide at its own expense and without liability to the City any additional land and access thereto that the Contractor may desire for temporary construction facilities, or for storage of materials.

27.0 GUARANTEE

27.1 The Contractor warrants to the City and Architect that materials and equipment furnished under the Agreement will be of good quality and new unless otherwise required or permitted by the Contract Documents, that the Work will be free from defects not inherent in the quality required or permitted, and that the Work will conform to the requirements of the Contract Documents. Contractor further warrants to the City that all materials and equipment furnished under the Contract Documents shall be applied, installed, connected, erected, used, cleaned and conditioned in accordance with the instructions of the applicable manufacturers, fabricators, suppliers or processors except as otherwise provided for in the Contract Documents. Further, any special warranty to be provided will be in such form as is acceptable to the City and shall not include any exclusions, exceptions or modifications except to the extent approved by the City in its sole discretion. Work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, modifications not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear from normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

27.2 Contractor expressly warrants to the City that it shall promptly correct, upon receipt of written notice from the City, any portion of the Work which is found to be defective or otherwise not in conformance with the requirements of the Contract Documents. The City will give notice of observed defects with reasonable promptness. Provided, however, in the event that any defective or non-conforming Work is determined by the City in its sole discretion to present an immediate threat to safety or security, the City shall be entitled to correct or replace such defective or non-conforming portions of the Work, and Contractor shall reimburse the City for all costs and expenses incurred by the City in correcting or replacing such Work. In the event that the Contractor should fail to make such repairs, adjustments, or other work that may be made necessary by such defects, the City may do so and charge the Contractor the cost thereby incurred. The Performance Bond shall remain in full force and effect through the guarantee period. With respect to the correction or replacement of any defective or nonconforming Work, Contractor shall be liable for all damage to any part of the Work itself and to any adjacent property which is caused by such corrective or replacement work.

27.3 If, within one year after the date of final acceptance of the Work by the City, or by terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of written notice from the City to do so unless the City has previously given the Contractor an express written acceptance of such condition. The City shall give such notice promptly after discovery of the condition. If the Contractor fails to correct nonconforming Work within a reasonable period of time (not to exceed 10 days) after receipt of notice from the City or Architect, the Owner may correct or replace it in accordance with Section 27.2 above. This one-year correction period is in addition to all other rights and does not limit the time period the City can seek to have the defective Work corrected.

27.4 Contractor shall obtain and assign to the City all express warranties given to Contractor by any Subcontractors or by Suppliers.

28.0 CLAIMS AND DISPUTES

28.1 The term “Claim” as used herein shall mean any and all demands made by one party hereunder against the other party, whether such demand be for money, time or the assertion of any right or obligation that arises out of the Contract Documents.

28.2 Initial notice of Claims by Contractor shall be made in writing to the City and Architect within seven (7) calendar days after the first day of the event giving rise to such Claim or such other time period as may be expressly provided in the Contract Documents. If Contractor fails to give such written notice within the required time period, Contractor shall be deemed to have waived the Claim. Written data supporting Contractor’s claim shall be submitted to the City and Architect within thirty (30) calendar days after the occurrence of the event, or such other time period as may be expressly provided in the Contract Documents, unless the City grants additional time in writing, or else Contractor shall be deemed to have waived the Claim.

28.3 Contractor shall proceed diligently with its performance as directed by the City, regardless of any pending Claim, unless otherwise agreed to by the City in writing. The City shall continue to make payments of all undisputed amounts in accordance with the Contract Documents during the pendency of any Claim.

28.4 Prior to the initiation of any action or proceeding permitted by this Agreement to resolve disputes between the parties, the parties shall make a good faith effort to resolve any such disputes by negotiation between the President or Vice-President for the Contractor and the City Manager Failing resolution, and prior to the commencement of depositions in any litigation between the parties with respect to the Project, the parties shall attempt

to resolve the dispute through mediation before an agreed-upon Circuit Court Mediator certified by the State of Florida. Should either party fail to submit to mediation as required hereunder, the other party may request a court of law to order mediation under Florida Statutes Section 44.102.

28.5 Any litigation between the City and Contractor (which term for the purposes of this Section shall include Contractor's surety), whether arising out of any Claim or arising out of the Agreement or any breach thereof, shall be brought, maintained and pursued solely and exclusively in the appropriate State courts of the State of Florida as set forth in Section 20.2. The City and Contractor each hereby waive and renounce any and all rights and options which they, or either of them, have or might have to bring or maintain any such litigation or action in the Federal Court system of the United States or in any United States Federal District Court. Venue of any such litigation between the City and Contractor shall lie and be only in the appropriate State courts in and for Bay County, Florida. Contractor consents and submits to the exclusive jurisdiction of any such court and agrees to accept service of process from the State of Florida in any matter to be submitted to any such court.

29.0 TAXES

29.1 The Contractor will pay all applicable sales, consumer, use and other similar taxes required by the laws of the place where the Work is performed.

30.0 CONTRACT TIME, SCHEDULE OF WORK AND TIME EXTENSIONS

30.1 Contractor shall diligently pursue the completion of the Work and coordinate the Work being done on the Project by its Subcontractors and Suppliers, as well as coordinating its Work with all work of others at the Project site, so that its Work or the work of others shall not be delayed or impaired by any act or omission by Contractor or anyone for whom Contractor is liable. All Work under this Agreement shall be arranged and be carried out in such a manner as to complete the Work on or before the required date of Substantial Completion. The Contractor must notify the City at the time of bidding if the chronology of the Work as shown or the subdivision of work will affect warranties or guarantees in any way. No such claims shall be allowed once the Work has begun.

30.2 Should Contractor be obstructed or delayed in the prosecution of or completion of the Work as a result of unforeseeable causes beyond the control of Contractor, and not due to its fault or neglect, including but not restricted to acts of God or of the public enemy, acts of government, fires, floods, epidemics, quarantine regulation, strikes, lockouts, unusually severe weather conditions by comparison with the ten-year Bay County, Florida average not reasonably anticipatable (to the extent Contractor was unable to perform any portion of the Work that was on the critical path of the approved Construction Schedule during those inclement weather days), Contractor shall notify Owner and Architect in writing within seven (7) calendar days after the commencement of such delay, stating the cause or causes thereof, or be deemed to have waived any right which Contractor may have had to request a time extension.

30.3 The Contractor is required to furnish adequate manpower at the Project to complete the Work within the Contract Time and in accordance with the Construction Schedule. Should payment of premium time, bonuses, or the like be necessary to attract sufficient manpower for the Project, such extra labor costs shall be borne by the Contractor without additional compensation from the City. Further, should the Contractor's Work, through no fault of the Architect, the City, or City's other contractors, fail to progress in accordance with the Construction Schedule, and if, in the opinion of the Architect, the Work cannot be substantially completed within the Contract Time, or if deemed necessary to protect this or adjoining work from damage, the Contractor shall work such additional time over the

established hours of work, but excluding Holidays, as required to meet the schedule time without additional expense to the City. In such event, Contractor shall reimburse City for any additional costs incurred by the City associated with such overtime, including any additional costs of the Architect.

30.4 When so ordered in writing by the Architect or City, whether to advance the date of Substantial Completion, or for any other reason for the City's benefit, the Contractor shall work overtime and or additional shifts. If the order for such acceleration is not the result of Contractor being behind the approved Construction Schedule, Contractor shall be entitled to a Change Order increasing the Contract Price by its actual net premium costs of such overtime and or shifts so ordered and so worked, including insurance and taxes applicable thereto, (without other overhead or profit). Such costs and expenses shall be subject to audit by the City.

30.5 When any period of time is referenced by days herein, it shall be computed to exclude the first day and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day recognized by the City as a legal holiday, such day shall be omitted from the computation, and the last day shall become the next succeeding day which is not a Saturday, Sunday or legal holiday. The term “business day” as used herein shall mean all days of the week excluding Saturdays, Sundays and all legal holidays observed by the City.

31.0 USE OF SITE

31.1 The Contractor shall confine its use of the site for storage of materials, erection of temporary facilities and parking of vehicles to areas within its Agreement limits as directed by the Architect. The Contractor shall not unnecessarily encumber the site at any time.

31.2 Contractor acknowledges that areas of the site in which Work under this Agreement may be performed may be used by other contractors for storage of materials, erection of temporary facilities and parking of vehicles. Areas used by other contractors will be vacated, as directed by the Architect to permit Work under this Agreement, provided reasonable notice is given requesting such, all in accordance with the approved Construction Schedule.

31.3 No signs or advertisements shall be displayed on the site or building except with the written consent of the City.

32.0 TEMPORARY FACILITIES

32.1 The Contractor shall provide electric power and water as it may require for its construction purposes and shall pay all costs incurred. At completion of the Work, all temporary facilities shall be removed from the site. Upon Substantial Completion of the Work, Contractor shall cause all permanent utilities to be utilized by the City that were in Contractor’s name during construction of the Project to be transferred over to the City’s name.

32.2 The Contractor shall provide sanitary facilities for its workmen at all times. Sanitary facilities shall be of an approved chemical type with regular servicing and appropriately screened from public view, as approved by the Architect and all applicable health authorities.

33.0 CLEAN UP AND DISPOSAL OF WASTE MATERIALS AND HAZARDOUS MATERIALS

33.1 No burial of waste materials will be permitted on the site. The Contractor shall at all times keep the site free from accumulations of waste material or debris caused by its operations and shall immediately remove same when necessary or required by the Architect or the City. If Contractor fails to keep the Project site clean, the City has the right, after providing

a twenty-four (24) hour written notice, to perform any required clean up and to back charge Contractor for the costs of such clean up. At the completion of the Work, and before final inspection and acceptance of the Work, Contractor shall clean ditches, shape shoulders and restore all disturbed areas, including street crossings, grass plots, re-grassing if necessary, to as good condition as existed before Work started, and remove all debris, rubbish and waste materials from and about the Project site, as well as all of Contractor's (and its Subcontractors') tools, appliances, construction equipment and machinery and surface materials, and shall leave the Project site clean and ready for occupancy by the City. Any existing surface or subsurface improvements, including, but not limited to, pavements, curbs, sidewalks, pipes, utilities, footings, structures, trees and shrubbery, not indicated in the Contract Documents to be removed or altered, shall be protected by Contractor from damage during the prosecution of the Work. Any such improvements so damaged shall be restored by Contractor to condition at least equal to that existing at the time of Contractor's commencement of the Work

33.2 If Contractor encounters on the Project site any materials reasonably believed by Contractor to be petroleum or petroleum related products or other hazardous or toxic substances which have not been rendered harmless, Contractor immediately shall (i) stop Work in the area affected and (ii) report the condition to the City in writing. If the Work is so stopped and hazardous material is found, the Work in the affected area shall not thereafter be resumed except by Change Order. Any such Change Order shall include, but not be limited to, an equitable adjustment to the Contract Time and Contract Price as appropriate and in accordance with the terms of the Contract Documents. If no hazardous material is found after the Work is stopped, no Change Order is required to resume the Work in the affected area. Further, if the hazardous material was generated or caused by Contractor or anyone for whom Contractor is responsible, or if Contractor failed to stop Work or give the written notice required above, no Change Order will be required for an adjustment in the Contract Time or Contract Price and Contractor shall indemnify the City and hold the City harmless for any costs incurred by the City with respect to such hazardous material generated or caused by Contractor or anyone for whom it is responsible or any increased costs incurred by City as a result of Contractor's failure to stop Work or give the required written notice.

34.0 WARRANTY OF TITLE

34.1 No material, supplies or equipment for the Work shall be purchased by the Contractor subject to any chattel mortgage or under a conditional sale or other agreement by which a lien or an interest therein or any part thereof is retained by the seller or supplier. The Contractor warrants good title to all materials, supplies and equipment installed or incorporated in the Work and title to all such items shall pass to the City upon its incorporation into the Work or payment, whichever occurs first. Contractor shall, at all times, keep the site, together with all improvements and appurtenances constructed or placed thereon by it, free from any claims, liens or charges and further agrees that neither Contractor nor any person, firm, or corporation furnishing any material or labor for any Work covered by this Agreement shall have any right to a lien upon the Work, site or any improvements or appurtenances thereon. The Contractor shall not at any time suffer or permit any lien, attachment, or other encumbrances under the law of Florida or otherwise by any person or persons whomsoever to remain on file with the City against any money due or to become due for any work done or materials furnished under the Agreement or by reason of any other claim or demand against the Contractor. Such lien, attachment, or other encumbrance, until it is removed, shall preclude any and all claims or demands for any payment to Contractor under virtue of this Agreement.

35.0 OWNERSHIP OF HIDDEN VALUABLE MATERIALS

35.1 All items having any apparent historical or archaeological interest or treasure or valuable materials discovered during any construction activities shall be carefully preserved and reported immediately to the City for determination of appropriate actions to be taken. Any increases to Contractor's time or cost of performance due to historical or archaeological items discovered on the site shall entitle Contractor to a Change Order equitably adjusting the Contract Time and the Contract Price as appropriate and in accordance with the terms of the Contract Documents. Notwithstanding anything in the Contract Documents to the contrary, Contractor shall have no claim or entitlement to any such historical or archaeological interest or treasure or other valuable materials discovered, and all such items shall remain the property of the City.

36.0 AS-BUILT PLANS and DOCUMENTS TO BE KEPT AT THE SITE

36.1 Before final inspection the Contractor shall turn over to the Architect a set of drawings showing field changes and actual installed conditions. CONTRACTOR shall provide to the ARCHITECT two (2) hard copies and one (1) electronic copy of the as-built plans in accordance with the requirements in Appendix B of these Specifications.

36.2 Contractor shall maintain at the Project site or such other place as may be expressly approved in writing by Owner, originals or copies of, on a current basis, all Project files and records, including, but not limited to, the following administrative records: Subcontracts and Purchase Orders; Subcontractor Licenses; Shop Drawing Submittal/Approval Logs; Equipment Purchase/Delivery Logs; Contract Drawings and Specifications with Addenda; Warranties and Guarantees; Cost Accounting Records; Payment Request Records; Meeting Minutes; Insurance Certificates and Bonds; Contract Changes; Permits; Material Purchase Delivery Logs; Technical Standards; Design Handbooks; "As-Built" Marked Prints; Operating & Maintenance Instruction; Daily Progress Reports; Monthly Progress Reports; Correspondence Files; Transmittal Records; Inspection Reports; Bid/Award Information; Bid Analysis and Negotiations; Punch Lists; and a Construction Schedule (including all updates). The Project files and records shall be available at all times to the City and Architect or their designees for reference, review or copying.

37.0 SILENCE OF SPECIFICATIONS

37.1 To the extent the Work involves road or bridge construction, the apparent silence of the Contract Documents as to any details or the omission from them of a detailed description concerning any point shall be regarded as meaning that such portion of the Work shall be performed in accordance with the latest edition of the Florida DOT Standard Specifications for Road and Bridge Construction.

38.0 GRATUITIES

38.1 If the City finds after a notice and hearing that the Contractor, or any of the Contractor's agents or representatives, offered or gave gratuities (in the form of entertainment, gifts or otherwise) to any official, employee, or agent of the City, the State, or other officials in an attempt to secure this Agreement or favorable treatment in awarding, amending, or making any determinations related to the performance of this Agreement, the City may, by written notice to the Contractor, terminate this Agreement for Contractor default. The City may also pursue other rights and remedies that the law or this Agreement provides.

38.2 In the event this Agreement is terminated as provided in Section 38.1, the City may pursue the same remedies against the Contractor as it could pursue in the event of a breach of the Agreement by the Contractor. As a penalty, in addition to any other damages to which it may be entitled by law, the City may pursue exemplary damages in an amount (as determined by the City) which shall be not less than three nor more than ten times the

costs the Contractor incurs in providing any such gratuities to any such official, agent or employee of the City.

39.0 AUDIT AND ACCESS TO RECORDS

39.1 Contractor shall keep all records and supporting documentation which concern or relate to the Work hereunder for a minimum of three (3) years from the date of termination of this Agreement or the date the Project is completed, whichever is later or such longer period of time as may be required by law. Contractor shall require all of its Subcontractors to likewise retain all of their Project records and supporting documentation. The City, and any duly authorized agents or representatives of the City, shall be provided access to all such records and supporting documentation at any and all times during normal business hours upon request by the City. Contractor shall make all such Project records and supporting documentation available in Bay County, Florida. Further, the City, and any duly authorized agents or representatives of the City, shall have the right to audit, inspect and copy all of Contractor's and any Subcontractor's Project records and documentation as often as they deem necessary and Contractor shall cooperate in any audit, inspection, or copying of the documents. These access, inspection, copying and auditing rights shall survive the termination of this Agreement.

40.0 EQUAL OPPORTUNITY REQUIREMENTS

40.1 For all contracts in excess of $10,000, the Contractor shall comply with Executive Order 11246, entitled "Equal Employment Opportunity", as amended by Executive Order 11375, and as supplemented in Department of Labor regulations (41 CFR Part 60).

40.2 The Contractor's compliance with Executive Order 11246 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the Standard Federal Equal Employment Opportunity Construction Contract Specifications, as set forth in 41 CFR Part 60-4 and its efforts to meet the goals established for the geographic area where the Agreement is to be performed.

41.0 CHANGED CONDITIONS

41.1 Notwithstanding anything in the Contract Documents to the contrary, if conditions are encountered at the Project site which are (i) subsurface or otherwise concealed physical conditions which differ materially from those indicated in the Contract Documents or (ii) unknown physical conditions of an unusual nature, which differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, and which reasonably should not have been discovered by Contractor as part of its scope of site investigative services required pursuant to the terms of the Contract Documents, then Contractor shall provide the City with prompt written notice thereof before conditions are disturbed and in no event later than seven (7) calendar days after first observance of such conditions. the City and Architect shall promptly investigate such conditions and, if they differ materially and cause an increase or decrease in Contractor's cost of, or time required for, performance of any part of the Work, the City will acknowledge and agree to an equitable adjustment to the Contract Price or Contract Time, or both, for such Work. If the City determines that the conditions at the site are not materially different from those indicated in the Contract Documents or not of an unusual nature or should have been discovered by Contractor as part of its investigative services, and that no change in the terms of the Agreement is justified, the City shall so notify Contractor in writing, stating its reasons. Claims by Contractor in opposition to such determination by the City must be made within seven (7) calendar days after Contractor's receipt of the City's written determination notice. If the City and Contractor cannot agree on an adjustment to the Contract Price or Contract Time, the dispute resolution procedure set forth in the Contract Documents shall be complied

with by the parties.

42.0 COMPLIANCE WITH LAWS

42.1 Contractor agrees to comply, at its own expense, with all federal, state and local laws, codes, statutes, ordinances, rules, administrative orders, regulations and requirements applicable to the Project, including but not limited to those dealing with safety (including, but not limited to, the Trench Safety Act, Chapter 553, Florida Statutes). An executed copy of Contractor's Trench Safety Act Certificate of Compliance (the form of which is attached hereto as Section 00096) has been delivered to City with the Contractor's Bid Proposal Form. If Contractor observes that the Contract Documents are at variance therewith, it shall promptly notify the City and Architect in writing. Contractor has provided a separate line item in its Bid identifying the cost of compliance with the applicable trench safety standards set forth in the Trench Safety Act.

43.0 PUBLIC ENTITY CRIMES

43.1 By its execution of the Agreement and the Contractor's Public Entities Crime Statement, in the form set forth in Section 00097). Contractor acknowledges that it has been informed by the City of and warrants that it is in compliance with the terms of Section 287.133(2)(a) of the Florida Statutes which reads as follows:

> "A person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a bid on a contract to provide any goods or services to a public entity for the construction or repair of a public building or public work, may not submit bids on leases of real property to a public entity, may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity in excess of the threshold amount provided in s. 287.017 for CATEGORY TWO for a period of 36 months from the date of being placed on the convicted vendor list."

44.0 INSURANCE

44.1 During the term of this Agreement, Contractor shall provide, pay for, and maintain, with companies satisfactory to the City, the types and limits of insurance required by the Contract Documents. All insurance shall be from responsible companies eligible to do business in the State of Florida. Simultaneously with the execution and delivery of this Agreement by Contractor, Contractor shall deliver to the City the properly completed and executed Certificate of Insurance, in the form set forth in Section 00099 along with any other properly completed and executed Certificates of Insurance that may be necessary, evidencing the fact that Contractor has acquired and put in place the insurance coverages and limits required herein. In addition, certified, true and exact copies of all insurance policies required shall be provided to the City, on a timely basis, if requested by the City. These Certificates and policies shall contain provisions that at least thirty (30) calendar days advanced written notice by registered or certified mail shall be given the City of any cancellation, intent not to renew, or any policy change that would result in a reduction in the policies' coverages, except in the application of the Aggregate Limits Provisions. The renewal of any insurance required to be maintained by Contractor hereunder shall be by a renewal Certificate of Insurance in the same form as was required for the original Certificate of Insurance, which renewal Certificate of Insurance shall be delivered to City at least ten (10) calendar days prior to expiration of current coverages so that there shall be no interruption in the Work due to lack of proof of insurance coverages required of Contractor under this Agreement.

44.2 Contractor shall also notify the City, in the same manner required in Section 44.1 above,

within two (2) calendar days after Contractor's receipt, of any notices of expiration, cancellation, non-renewal or material change in coverages or limits received by Contractor from its insurer, and nothing contained herein shall relieve Contractor of this requirement to provide notice. In the event of a reduction in the aggregate limit of any policy to be provided by it hereunder, Contractor shall immediately take steps to have the aggregate limit reinstated to the full extent permitted under such policy. If, at any time, City requests a written statement from an insurance company as to any impairment to any aggregate limit of any policy to be provided by it hereunder, Contractor shall promptly authorize and cause to be delivered such statement to City. All insurance coverages of Contractor shall be primary to any insurance or self-insurance program carried by the City applicable to this Agreement. Any such self insurance programs or coverages shall not be contributory with any insurance required of the Contractor under the terms of this Agreement. All insurance policies, other than the Workers Compensation policy and the Surveyor's Professional Liability policy, provided by Contractor to meet the requirements of this Agreement shall name the City as an additional insured through the use of ISO Endorsement No. CG 20.10.10.01 and No. CG 20.37.10.01 wording, as to the operations of Contractor under the Contract Documents and shall also provide the Severability of Interest provision (also referred to as the Separation of Insureds provision). Companies issuing the insurance policy or policies shall have no recourse against the City for payment of premiums or assessments for any deductibles which all are at the sole responsibility and risk of Contractor.

44.3 All insurance policies to be provided by Contractor pursuant to the terms hereof shall be performable in Bay County, Florida and must expressly state that the insurance company will accept service of process in Bay County, Florida and that the exclusive venue and exclusive jurisdiction for any action concerning any matter under those policies shall be in the appropriate state court situated in Bay County, Florida.

44.4 The acceptance by the City of any Certificate of Insurance pursuant to the terms of this Agreement evidencing the insurance coverages and limits required hereunder does not constitute approval or agreement by the City that the insurance requirements have been met or that the insurance policies shown on the Certificates of Insurance are in compliance with the requirements of this Agreement.

44.5 Before starting and until completion of all Work required hereunder, Contractor shall procure and maintain insurance of the types and to the limits specified in the Contract Documents. Contractor shall require each of its Subcontractors to procure and maintain, until the completion of that Subcontractor's work or services, insurance of the types and to the limits specified in the Contract Documents, unless such insurance requirement for the Subcontractor is expressly waived or modified in writing by the City. Contractor shall not enter or otherwise occupy the Project site or commence any Work to be performed under this Agreement at the Site or any other property of the City until all insurance required hereunder has been obtained by Contractor and such proof of insurance, as the same is required under this Agreement, has been delivered to City. Contractor shall require all property insurance policies related to the Work and secured and maintained by Contractor and its Subcontractors to include provisions providing that each of their insurance companies shall waive all rights of recovery, under subrogation or otherwise, against the City and any of its separate contractors and the agents, employees and subcontractors of any of them.

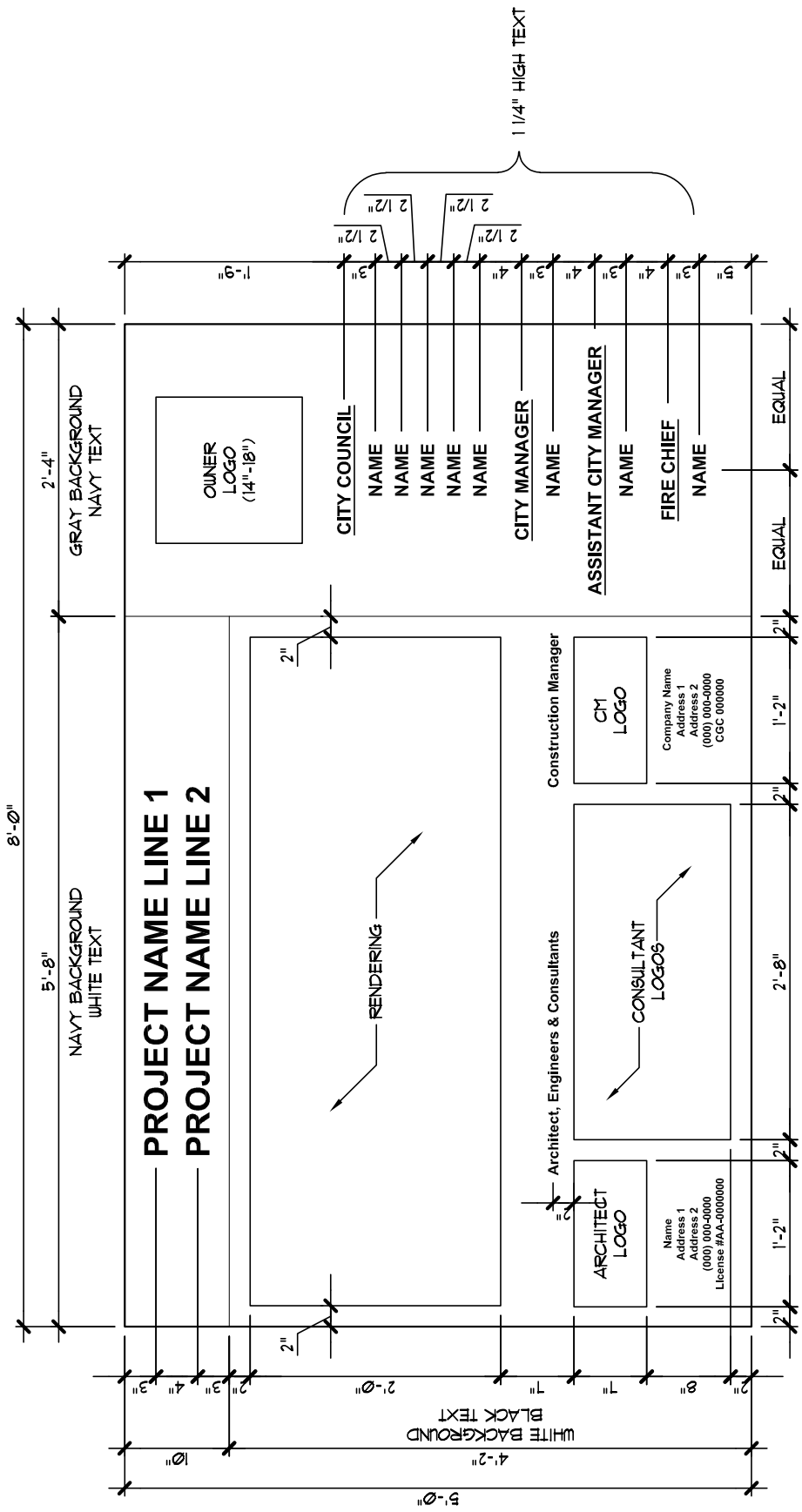
44.6 Should at any time Contractor or any of its Subcontractors not maintain the insurance coverages required in this Agreement, the City may terminate this Agreement for Contractor default or at its sole discretion shall be authorized to purchase such coverages and charge Contractor for such coverages purchased, to include a fifteen percent (15%) administrative fee. If Contractor fails to reimburse the City for such costs within thirty (30) calendar days after demand, the City has the right to offset those costs from any amount

due Contractor under this Agreement. The City shall be under no obligation to purchase such insurance, nor shall it be responsible for the coverages purchased or the insurance company/companies used. The decision of the City to purchase such insurance coverages shall in no way be construed to be a waiver of any of its rights under this Agreement. If the City exercises its option to purchase such required coverages, the coverages shall not be cancelled by Contractor and shall stay in force until the normal expiration date according to the terms and conditions of the insurance policy.

44.7 As may be required by City from time to time, the status of any insurance aggregate limits are to be confirmed in writing by the respective insurance companies. The amounts and types of insurance Contractor shall comply with all of the requirements of this Section 44 unless otherwise agreed to, in writing, by City.

END OF SECTION 00 10 00

ATTACHMENT 'A' - PROJECT SIGN



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PANAMA CITY BEACH
FIRE STATION #32
HUTCHISON BLVD
BID DOCUMENTS
AUGUST 1, 2023

SECTION 00 80 00 – SUPPLEMENTARY CONDITIONS

PART 1 - GENERAL

1.1 CLAIM PERIOD

A. No claim by the Contractor for an equitable adjustment hereunder shall be allowed if asserted after final payment under this Contract.

1.2 REGULAR WORKING HOURS

A. Regular working hours are defined as up to forty hours per week with a maximum of ten hours per day, Monday through Friday, beginning no earlier than 7:00 A.M. and ending no later than 5:00 P.M., excluding holidays. Any work beyond ten hours per day or forty hours per week shall be considered overtime. The Contractor shall not work on holidays. The Contract Time shall not be extended due to holidays falling within the Contract Time. Whenever the Contractor is performing any part of the Work, with the exception of equipment maintenance and cleanup, inspection by Owner's representative will be required. Requests to perform the Work at times other than during regular working hours must be submitted in writing to the Project Representative, at least 48 hours prior to any proposed weekend work or scheduled extended workweeks, to give the Owner ample time to arrange for representation and/or inspection during those periods. Periodic unscheduled overtime on weekdays will be permitted provided that two hours' notice is provided to and acknowledged in writing by the Project Representative prior to the end of the regular working day Maintenance of the Contractor's equipment and cleanup may be performed during hours other than regular working hours.

1.3 DEFECTIVE WORK

A. The Contractor shall not be entitled to an extension of the Contract Time or increase in the Contract Price for correcting or removing defective work.

1.4 CORRECTIVE WORK

A. Where defective or nonconforming Work (including damage to other work resulting therefrom) has been corrected, removed or replaced pursuant to the Contractor's obligations under the Contract Documents including Articles 16.0 and 27.0 of the General Conditions, the correction period set forth in Article 27.0 of the General Conditions with respect to such work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed and accepted by the Owner.

1.5 STORED EQUIPMENT AND MATERIALS

A. The Contractor shall furnish evidence that payment received on the basis of materials and equipment, not incorporated and suitably stored, has in fact been paid to the respective supplier(s) within sixty (60) days of the Application of Payment on which the material/equipment first appeared. Failure to procure said evidence of payment shall result in the withdrawal of previous approval(s) and removal of the related equipment and materials from the Application of Payment.

1.6 SUBSTANTIAL COMPLETION

A. In addition to the other terms and conditions set forth in the Contract Documents, the Work will not be considered substantially complete unless and until Contractor has completed each of the following to the satisfaction of the Owner:
   1. All components of the Work have been installed, tested and approved.
   2. All repair and coating systems have been properly cured.
   3. All data specified in the Contract Documents have been delivered to the Owner.
   4. All instructions have been provided to the Project Representative in accordance with the Contract Documents.
   5. All training to be provided by Contractor pursuant to the terms of the Contract Documents has been completed.
   6. Fire Station and site is fully functional and available for City use.
   7. Certificate of Occupancy has been issued.

END OF SECTION 00 80 00

SECTION 00 80 80 – SALES TAX EXEMPTION ADDENDUM

1. Contractor and City entered into a contract dated _____, (the "Contract") for the performance of the WORK described therein, to which an executed copy of this Sales Tax Exemption Addendum ("Addendum") shall be attached thereto and incorporated therein.
2. Contractor and City desire to enter into an arrangement whereby certain purchases under the Contract can be made through the City as a means of taking advantage of the City's status of being exempt from sales and use taxes.
3. The City is exempt from sales and use taxes. As such it is exempt from the payment of sales and use tax on purchases of building materials or equipment necessary for the performance of work under construction contracts, provided the City determines it is to its best interest to do so, and provided the purchase of such building materials and equipment are handled in the manner hereinafter described.
4. The City has determined it is in its best interest to provide the opportunity to eliminate the payments of sales tax for building materials or equipment to be used in the construction of this project, and notifies the Contractor of its intent to do so.

TERMS AND CONDITIONS

1. The parties intend by this Addendum to comply with the procedures and elements described in Florida Administrative Code 12A-1.051 and 12A-1.094 and any conflict or ambiguity in this Addendum shall be resolved in favor of meeting the elements necessary to make tax exempt the purchases contemplated by this Addendum.
2. The City shall, at its sole discretion, have the option to purchase directly from the supplier or vendor, any building materials or equipment included in the Contractor's bid for the Contract. Contractor shall, from time to time submit, update and keep current, for consideration by the City, a list of all building materials and equipment to be purchased, organized by supplier or vendor. Such list shall include a brief description of the building materials and equipment and the name and address of the supplier or vendor. Suppliers or vendors reasonably anticipated to furnish building materials and equipment with an aggregate purchase value of less than $10,000 need not be listed. Contractor's initial list is attached hereto and incorporated herein. Building materials and equipment not required for the performance of the Contract shall not be purchased under this Addendum. The City reserves the right to delete or add items from this Addendum when it is in the City's best interest.
3. The City will be liable for the payment of all purchases properly made hereunder.
4. Contractor shall notify all suppliers or vendors not to make sales to the Contractor under this Addendum.
5. For each purchase approved by the City to be made under this Addendum, the Contractor shall furnish the City in writing information sufficient for the City to issue to the supplier its City purchase order for the requested building materials or equipment which shall include as an attachment the City's Certificate of Exemption. Suppliers and

vendors will render statements for materials purchased to the City in care of the Contractor. After receiving and inspecting the materials when they arrive at the job site, verifying that all necessary documentation accompanies the delivery and conforms with the purchase order, Contractor will forward the invoices to the City's duly authorized representative for approval, processing, and delivery to the City for payment. The City will process the invoices and issue payment directly to the supplier or vendor. Contractor will keep and furnish to the City all such records, summaries, reports of purchase orders and invoices, and reports of the status and use of goods handled under this Addendum, as the City may reasonably require.

6. The Contract provides that Contractor will perform the work under the Contract for the Contract Price in the amount of $_____, as may be amended from time to time as provided in the Contract. Said amount, as amended, due Contractor under the Contract shall be reduced by the sum of all amounts paid by the City for materials and equipment purchased under this Addendum, including any shipping, handling, insurance or other, similar charges paid by the City, and all of the savings of sales and use tax on the purchase of such items.

7. The Contractor shall submit his proposal for base bid and proposals for each Alternate with the inclusion of all required taxes including applicable sales and use tax, the same as if tax were to be paid in the normal manner. Any sales and use tax savings will be affected during the performance of the Contract.

8. Contractor shall immediately notify all subcontractors and material and equipment suppliers of the City's intent to reduce the construction cost of the Project by the purchase of building materials and equipment in the manner herein described and the Contractor shall not withhold his consent to the arrangement.

9. Administrative costs incurred by the Contractor with this Addendum shall be considered to be included in the Total Lump Sum Bid amount for the Work. No addition shall be added to the Contract Price because of the service provided by the Contractor in the purchase of building materials and equipment by the City.

10. All sales and use tax savings on the purchase of building materials and equipment shall be credited to the City and the amount of the Contract Price shall be reduced by the full amount of savings which result from the omission of payment of sales and use tax.

11. By virtue of its payment of material and equipment invoices, the City further intends to benefit from any discounts offered for timely payment to the extent of one-half of the discount offered, the remaining one-half to accrue to the Contractor as an incentive for the Contractor to process invoices well within the discount period. The Contractor shall pay any late penalties caused by its failure to facilitate the processing of invoices within the allotted time.

12. The Contractor, notwithstanding the terms and conditions of this Addendum, shall select, describe, obtain approvals, submit samples, coordinate, process, prepare shop drawings, pursue, receive, inspect, store, protect and guarantee the same as would have been the case if the tax saving procedures were not implemented.

13. The Contractor as bailee shall have the obligation of receiving, inspecting, storing and safekeeping all goods and materials purchased on behalf of the City pursuant to this Addendum. Further, the Contractor shall be responsible for the cost of replacing or repairing any goods or materials lost, stolen, damaged or destroyed while in the Contractor's possession or control as bailee, as well as processing all warranty claims for defective goods and materials to the same extent as if such goods had been Contractor-supplied or purchased in the name of the Contractor.

14. Contractor shall maintain separate accounting records for all transactions carried out

under the authority granted to it under this Addendum. Such records shall be open to the City or its authorized agent during normal business hours of Contractor.

15. The City will take both legal and equitable title to the building materials and equipment received from the vendor when delivery is made by the vendor at the Project site. Unless already provided for under the terms of the Contract Documents, Contractor shall cause the City to be insured or named as an additional insured as its interest may appear against any loss or damage to such goods to the extent of their full insurable value. All such insurance shall be in such form and through such companies as may be reasonably acceptable to City and Contractor shall provide City certificates thereof requiring each insurer to provide the City ten (10) days written notice in advance of cancellation or modification of coverage.

16. Contractor shall be fully responsible for all matters relating to the procurement of materials and equipment covered by this Addendum, including but not limited to, overseeing that the correct materials and the correct amounts are received timely with appropriate warranties; for inspecting and receiving the goods; and for unloading, handling, and storing the materials until installed. Contractor shall inspect the materials when they arrive at the Project site, verify that all necessary documentation accompanies the delivery and conforms with the City's purchase order, and forward the invoice to the City for payment if the goods are conforming and acceptable. Contractor shall verify that the materials conform to Drawings and Specifications and determine before installation that such materials are not defective. Contractor shall manage and enforce the warranties on all materials and equipment covered by this Addendum. Contractor shall be responsible to the City for its failure to fully and timely perform its obligations under this paragraph, and this Addendum generally.

17. When title to the materials and equipment covered by this Addendum passes to the City prior to being incorporated into the Work, the Contractor's possession of the goods is a bailment until such time as each of such goods is returned to the City by being incorporated into the Work.

18. The City shall not be liable for delays in the Work caused by delays in delivery of or defects in the goods covered by this Addendum, nor shall such delays or defects excuse Contractor in whole or in part from its obligation to timely perform the Contract.

19. In the event Contractor objects to the payment of any invoice for goods covered by this Addendum, Contractor shall at no additional cost to the City, provide all assistance, records, and testimony necessary or convenient for the City to resolve the supplier's claim for payment.

20. This Addendum and the authority granted to Contractor hereunder may be revoked by the City at any time upon verbal or written notice to Contractor at its offices located at _____, during normal business hours.

END OF SECTION 00 80 80

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PANAMA CITY BEACH
FIRE STATION #32
HUTCHISON BLVD
BID DOCUMENTS
AUGUST 1, 2023

SECTION 01 04 00 - COORDINATION

PART 1 - GENERAL

1. WORK INCLUDED

A. Contractor shall supervise and direct the work competently and efficiently, devoting such attention thereto and applying such skills as may be necessary to perform the work in accordance with the Contract Documents.
B. Contractor shall be solely responsible for all means, methods, techniques, sequences and procedures of construction, and for providing adequate safety precautions and coordinating all portions of the work under the Contract Documents.
C. Contractor shall be responsible to see that the finished work complies accurately with the Contract Documents.

2. DESCRIPTION

A. Coordinate scheduling, submittals, and work of the various sections of specifications to assure efficient and orderly sequence of installation of construction elements, with provisions for accommodating items to be installed later.

1. Maintain reports and records at job site:

a. Daily log of progress of work and other pertinent data. Maintain log accessible to Owner, Architect, and his representatives.
b. Assemble documentation for handling of any claims or disputes which may arise.

2. Inspections and Testing:

a. Inspect the work to assure that it is performed in accordance with the requirements of the Contract Documents.
b. Arrange for special inspections and testing required by Sections of the specifications.
c. Reject work which does not conform to requirements of the Contract Documents.

B. Coordinate sequence of work to ensure proposed completion dates are met.

1. Construction Schedule:

a. Prepare detailed schedule of Contractor's operations and for all subcontractors on the project.
b. Monitor schedules as work progresses.

1. Identify potential variances between scheduled and probable completion date.

2. Recommend, to Architect, any adjustments in schedule to meet required completion date.
3. Provide monthly summary reports of each monitoring.

c. Observe work to monitor compliance with schedule.

1. Verify that labor and equipment are adequate to meet and maintain the schedule for the work.
2. Verify that product deliveries are adequate to meet and maintain the schedule for the work.
3. Report any non-compliance to Architect, with recommendations for remedy.
4. Verify that adequate services are provided to comply with requirements for work and climatic conditions.
5. Verify proper maintenance and operation of temporary facilities.
6. Administer traffic and parking controls for construction workers. Construction traffic shall not interfere with surrounding traffic movement or the schedule of the Bay County Courthouse.

2. Coordination of Subcontractors:

a. Coordinate work of all subcontractors and relationship between them.
b. Establish on-site lines of authority and communication. Schedule and conduct progress meetings among Owner and Architect representatives and subcontractors.
c. Ensure that specified cleaning is done during progress of the work and at completion of contract.

3. MEETINGS

In addition to progress meeting specified in Division 01 Section “Project Meetings”, hold coordination meetings and preinstallation conferences with personnel and subcontractors to assure coordination of work.

4. COORDINATION OF SUBMITTALS

A. Schedule and coordinate submittals.

1. Administer processing of shop drawings, product data, and samples.

B. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.

1. Coordinate Testing Laboratory Services:

a. Notify laboratory of test schedule.
b. Verify that required personnel are present.
c. Verify that specified tests are made as scheduled.
d. Verify compliance of the test results with specified criteria. Determine need for retesting and submit recommendations to Architect. Administer and pay for required retesting.

2. Coordinate with Sub-contractors as required:

   a. Provide temporary utilities (electric, water) required by the Subcontractors in the performance of their work.
   b. Provide designated location where the Subcontractors may place construction debris for removal by the Contractor.

C. Coordinate requests for changes to assure compatibility of space, of operating elements, and effect on work of other sections.

1. Recommend necessary of desirable changes to Architect.
2. Review subcontractor's requests for changes and substitutions. Submit recommendations to Architect.
3. Process Change Orders in accord with General Conditions and Change Order Procedures.

5. COORDINATION OF SPACE

A. Coordinate use of Project space and sequence of installation of subcontractor work which is indicated diagrammatically on Drawings. Follow routings shown for pipes, ducts, and conduits as closely as practicable, with due allowance for available physical space; make runs parallel with lines of building. Utilize space efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
B. In finished areas, except as otherwise shown, conceal pipes, ducts, and wiring in the construction. Coordinate locations of fixtures and outlets with finish elements.

6. INTERPRETATION OF CONTRACT DOCUMENTS

A. Consult with Architect to obtain interpretation or clarifications for any portions of the contract documents which are unclear or ambiguous. Transmit all requests for interpretation in writing.
B. Assist in the answering of any questions which may arise.
C. Transmit written interpretations to Sub Contractors, Suppliers and Others whose work may be affected by the clarification.
D. Interpretations shall be based on the Architect review of the Contract Documents. In case of conflicting data, assumption shall be made that the item of greater quality, cost of quantity was bid.

7. START-UP

A. Direct the check-out of utilities, operational systems, and equipment.
B. Assist in initial start-up and testing.
C. Record dates of the start of the operations of systems and equipment.

8. COORDINATION OF CONTRACT CLOSEOUT

A. Substantial Completion:

1. Coordinate completion and cleanup of work of separate sections in preparation for Substantial Completion.
2. When Work is ready for Substantially Complete, prepare for the Architect a list of incomplete or unsatisfactory items. See Prerequisites to Substantial Completion.
3. Secure and transmit to Architect required Substantial Completion submittals.

B. Final Completion:

1. When Work is ready for Final Completion:

a. Submit written notice to Architect that the work is ready for final inspection. See Prerequisites to Final Completion.
b. Secure and transmit to Architect required closeout submittals.

C. After Owner occupancy of premises, coordinate access to site by various sections for correction of defective work and work not in accordance with Contract Documents, to minimize disruption of Owner's activities.
D. Assemble and coordinate closeout submittals specified.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

Not used.

END OF SECTION 01 04 00

PANAMA CITY BEACH
FIRE STATION #32
HUTCHISON BLVD
BID DOCUMENTS
AUGUST 1, 2023

SECTION 01 04 60 - SPECIAL PROVISIONS

PART 1 – GENERAL

1.1 CONSTRUCTION AREAS

A. The Contractor shall limit his use of the construction areas for work and for storage to allow for:

1. Work by other contractors.
2. Owner use.
3. Public use.

B. Coordinate use of work site under the direction of Owner.

C. Assume full responsibility for the protection and safekeeping of materials and products under this Contract, stored on the site.

D. Move any stored products, under Contractor's control, which interfere with operations of the Owner or separate contractor.

E. Obtain and pay for the use of additional storage of work areas needed for operations.

1.2 OWNER OCCUPANCY

It is assumed that portions of the work will be completed prior to completion of the entire work. The Owner, at its sole discretion, may begin operation of the individual facility. However, the one-year guaranty period shall commence on the date of substantial completion issued by the Owner.

1.3 SPECIFICATIONS

A. Specifications

1. The Technical Specifications consist of three parts: General, Products and Execution. The General Section contains General Requirements which govern the work. Products and Execution modify and supplement these by detailed requirements of the work and shall always govern whenever there appears to be a conflict.

B. Intent

1. All work called for in the Specifications applicable to this Contract, but not shown on the plans in their present form, or vise versa, shall be of like effect as if shown or mentioned in both. Work not specified in either the plans or the Specifications, but involved in carrying out their intent or in the complete and proper execution of the work is required and shall be performed by the Contractor as though it were specifically delineated or described.

2. The apparent silence of the specifications as to any detail, or the apparent omission from them of a detailed description concerning any work to be done and materials to be furnished, shall be regarded as meaning that only the best general practice is to prevail and that only material and workmanship of the best quality is to be used, and interpretation of these specifications shall be made upon that basis. The inclusion of the General Requirements (or work specified elsewhere) in the General part of the specifications is only for the convenience of the Contractor and shall not be interpreted as a complete list of related Specification Sections.

1.4 WORK PROGRESS

A. The CONTRACTOR shall construct the work as shown on the drawings and provide equipment which will be efficient, appropriate and large enough to secure a satisfactory quality of work and a rate of progress which will insure the completion of the work within the Contract Time. If at any time such project appears to the OWNER to be inefficient, inappropriate or insufficient for securing the quality of work required or for producing the rate of progress aforesaid, he/she may request the CONTRACTOR to increase the efficiency, change the character or increase the project equipment and the CONTRACTOR shall conform to such request. Failure of the OWNER to give such request shall in no way relieve the CONTRACTOR of his/her obligations to secure the quality of the work and rate of progress required.

1.5 PRIVATE LAND

A. The CONTRACTOR shall not enter or occupy City facilities and parking outside of the project boundaries except as provided by written permission by the Owner.

1.6 WORK LOCATIONS

A. Structures and pipelines shall be located substantially as indicated on the Drawings, but the OWNER reserves the right to make such modifications in locations as may be found desirable to avoid interference with existing structures or for other reasons. Where fittings are noted on the Drawings, such notation is for the CONTRACTOR's convenience and does not relieve him/her from laying and jointing different or additional items where required.

1.7 OPEN EXCAVATIONS

A. All open excavations shall be adequately safeguarded by providing temporary barricades, caution signs, lights, and other means to prevent accidents to persons and damage to property. The CONTRACTOR shall at his/her own expense, provide suitable and safe bridges and other crossings for accommodating travel by pedestrians and workmen. Bridges provided for access during construction shall be removed when no longer required. The length or size of excavation will be controlled by the particular surrounding conditions. The OWNER may require special construction procedures such as limiting the length of the open trench, prohibiting stacking excavated material in the street and requiring that the trench shall not remain open overnight.

B. The CONTRACTOR shall take precautions to prevent injury to the public due to open trenches. All trenches, excavated material, equipment, or other obstacles which could be dangerous to the public shall be well lighted at night.

C. The Contractor shall adhere to the requirements of the Florida Trench Safety Act, and O.S.H.A. Excavation Safety Standards 29 CFRs 1926.650 Subpart P.

1.8 TEST PITS

A. Test pits for the purpose of locating all known and unknown underground pipeline or structures in advance of the construction shall be excavated and backfilled by the CONTRACTOR at the direction of the OWNER. Test pits shall be backfilled immediately after their purpose has been satisfied and the surface restored and maintained in a manner satisfactory to the OWNER. No separate payment will be made.

1.9 CARE AND PROTECTION OF PROPERTY

A. The CONTRACTOR shall be responsible for the preservation of all public and private property and shall use every precaution necessary to prevent damage thereto. If any direct or indirect damage is done to public or private property by or on account of any act, omission, neglect, or misconduct in the execution of the work on the part of the CONTRACTOR, such property shall be restored by the CONTRACTOR, at his/her expense, to a condition similar or equal to that existing before the damage was done, or he/she shall make good the damage in other manner acceptable to the OWNER.

B. All sidewalks, mailboxes, and driveways which are disturbed by the CONTRACTOR's operations shall be restored to their original construction or better and in accordance with the best modern practice.

C. Along the location of this work all fences, walks, bushes, trees, shrubbery, and other physical features shall be protected and restored in a thoroughly workmanlike manner. Fences and other features removed by the CONTRACTOR shall be replaced in the location indicated by the OWNER as soon a conditions permit. All grass areas beyond the limits of construction which have been damaged by the CONTRACTOR shall be regraded and seeded.

D. Trees close to the work shall be boxed or otherwise protected against injury. The CONTRACTOR shall trim all branches that are liable to damage because of his operations, but in no case shall any tree be cut or removed without prior notification of the City. All injuries to bark, trunk, limbs, and roots of trees shall be repaired by dressing, cutting, and painting according to approved methods, using only approved tools and materials. All landscaping to be removed shall be documented and replaced with like kind or better. All palm trees shown on plans shall be spaded out, protected, temporarily stored, and replaced at the same location.

E. The protection, removal, and replacement of existing physical features along the line of work shall be a part of the work under the Contract, and all costs in connection therewith shall be included in the unit and/or lump sum prices established under the items in the Schedule of Prices.

1.10 PROTECTION AND RELOCATION OF EXISTING STRUCTURES AND UTILITIES

A. The CONTRACTOR shall assume full responsibility for the protection of all buildings, structures, and utilities, public or private, including poles, signs, services to buildings, utilities in the street, gas pipes, water pipes, hydrants, sewers, storm drains and electric and telephone cables, whether or not they are shown on the Drawings. The CONTRACTOR shall carefully support and protect all such structures and utilities from injury of any kind. Any damage resulting from the CONTRACTOR's operations shall be repaired by him/her at his/her expense.

B. The CONTRACTOR, however, shall bear full responsibility for obtaining all locations of underground structures and utilities (including existing water services, drain lines and

sewers). Services to buildings shall be maintained, and all costs or charges resulting from damage thereto shall be paid by the CONTRACTOR.

C. Protection and temporary removal and replacement of existing utilities and structures as described in this Section shall be a part of the work under the Contract and all costs in connection therewith shall be included in the Total Price Bid in the Bid Form.

D. The Contractor shall be responsible to maintain water, telephone, power, cable TV, sewer, gas and other related utilities throughout construction at no additional cost to the Owner.

E. The Contractor shall fully cooperate with all private and public utilities during the installation of new facilities, or relocation of existing facilities. The Contractor shall coordinate his work accordingly and shall have no claim except for time extension for delays associated with the proposed utility improvements.

1.11 WATER FOR CONSTRUCTION PURPOSES

A. In locations where public water supply is available, the CONTRACTOR may purchase water for construction purposes.

B. The express approval of the OWNER shall be obtained before water is used. Waste of water by the CONTRACTOR shall be sufficient cause for withdrawing the privilege of unrestricted use. Hydrants shall only be operated under the supervision of the OWNER's personnel.

C. All water drawn from a public water supply shall be metered using a meter supplied by the OWNER.

1.12 MAINTENANCE OF FLOW

A. The CONTRACTOR shall at his/her own cost, provide for the flow of sewers, drains and water courses interrupted during the progress of the work, and shall immediately cart away and remove all offensive matter. The entire procedure of maintaining existing flow shall be fully discussed with the OWNER well in advance of the interruption of any flow.

1.13 COOPERATION WITHIN THIS CONTRACT

A. All firms or persons authorized to perform any work under this Contract shall cooperate with the CONTRACTOR and his/her Subcontractors or trades and shall assist in incorporating the work of other trades where necessary or required.

B. Cutting and patching, drilling and fitting shall be carried out where required by the trade or subcontractor having jurisdiction, unless otherwise indicated herein or approved by the OWNER.

1.14 CLEANUP AND DISPOSAL OF EXCESS MATERIAL

A. During the course of the work, the CONTRACTOR shall keep the site of his/her operations in as clean and neat a condition as is possible. He/She shall dispose of all residues resulting from the construction work and, at the conclusion of the work, he/she shall remove and haul away any surplus excavation, broken pavement, lumber, equipment, temporary structures, and any other refuse remaining from the construction operations and shall leave the entire site of the work in a neat and orderly condition.

B. In order to prevent environmental pollution arising from the construction activities related to the performance of this Contract, the CONTRACTOR and his/her subcontractors shall comply with all applicable Federal, State and local laws and regulations concerning waste

material disposal, as well as the specific requirements stated in this Section and elsewhere in the Specifications.

C. The CONTRACTOR is advised that the disposal of excess excavated material in wetlands, stream corridors and plains is strictly prohibited even if the permission of the property owner is obtained. Any violation of this restriction by the CONTRACTOR or any person employed by him, will be brought to the immediate attention of the responsible regulatory agencies, with a request that appropriate action be taken against the offending parties. Therefore, the CONTRACTOR will be required to remove the fill at his/her own expense and restore the area impacted.

1.15 MAINTENANCE OF ACCESS

A. Portions of the work are located in developed areas requiring the access for fire and other departments to be provided for and at least one free lane be available for all traffic. CONTRACTOR's are to arrange operations in these areas to meet these requirements and secure approval or operating procedures from City of Panama City Beach, or Florida Department of Transportation as the case may be.

1.16 CONNECTION TO WORK BY OTHERS

A. If construction by others occurs at the same time and in the same areas as work being done under this Contract. The CONTRACTOR will then conduct his operations as follows:

1. Force Mains and Water Mains
    a. If shown on the Drawings, pipelines constructed under this Contract may be connected to pipelines to be built by others.
    b. Pipelines built under this Contract will be connected to pipelines constructed by others by removing the plugs at both ends of the pipeline segment and making the connection.
    c. If the pipelines have not been constructed by others, the pipeline under this Contract shall be laid to the required line and grade, terminated with a plugged connection, precisely at the location of the connection indicated on the Drawings, and then backfilled and marked with a stake and the connection made later as specified in (b) above.

1.17 PROTECTION OF CONSTRUCTION AND EQUIPMENT

A. All newly constructed work shall be carefully protected from injury in any way. No wheeling or walking or placing of heavy loads on it shall be allowed and all portions injured shall be reconstructed by the CONTRACTOR at his own expense.

B. All structures shall be protected in a manner approved by the OWNER. If, in the final inspection of the work, any defects, faults or omissions are found, the CONTRACTOR shall cause the same to be repaired or removed and replaced by proper materials and workmanship without extra compensation for the materials and labor required. Further, the CONTRACTOR shall be fully responsible for the satisfactory maintenance and repair of the construction and other work undertaken herein, for at least the guarantee period described in the contract.

B. The CONTRACTOR shall take all necessary precautions to prevent damage to any structure due to water pressure during and after construction and until such structure is accepted and taken over by the OWNER.

C. The CONTRACTOR shall maintain the work during construction and until the project is accepted. This maintenance shall constitute continuous and effective work prosecuted day by day, with adequate equipment and forces to the end that the road or structures are kept in satisfactory condition at all times. In the case of a Contract for the placing of a course or subgrade previously constructed, the CONTRACTOR shall maintain the previous course or subgrade during all construction operations.

D. All cost of maintenance work during construction and before the project is accepted shall be included in the unit prices bid on the various pay items and the CONTRACTOR will not be paid an additional amount for such work.

PART 2 – PRODUCTS
(Not Applicable)

PART 3 – EXECUTION
(Not Applicable)

END OF SECTION 01 04 60

SECTION 01 15 00 – MEASUREMENT AND PAYMENT

PART 1 - SCOPE OF WORK

The scope of this section of the Contract Documents is to further define the items included in each Bid Item in the Bid Proposal section of these Specifications. Payment will be made based on the specified items included in the description in this section for each bid item.

1.1 GENERAL

All Contract Prices included in the Bid Proposal section will be full compensation for all labor, materials, tools, equipment, and incidentals necessary to complete the construction as shown on the drawings and/or as specified in the Contract Documents to be performed under this contract. Actual quantities of each item bid on a unit price basis will be determined upon completion of the construction in the manner set up for each item in this section of the specifications. Payment for all items listed in the Bid Form will constitute full compensation for all work shown and/or specified to be performed under this project.

1.2 ESTIMATED QUANTITIES

The quantities shown are approximate and are given only as a basis of calculation upon which the award of the Contract is to be made. The Owner/Architect does not assume any responsibility for the final quantities, nor shall the Contractor claim misunderstanding because of such estimate of quantities. Final payment will be made only for satisfactorily completed quantity of each item.

1.3 WORK OUTSIDE AUTHORIZED LIMITS

No payment will be made for work constructed outside the authorized limits of work.

1.4 MEASUREMENT STANDARDS

Unless otherwise specified for the particular items involved, all measurements of distance shall be taken horizontally or vertically.

1.5 AREA MEASUREMENTS

In the measurement of items to be paid for on the basis of area of finished work, the lengths and/or widths to be used in the calculations shall be the final dimensions measured along the surface of the completed work within the neat lines shown or designated.

1.6 LUMP SUM ITEMS

Where payment for items is shown to be paid on a lump sum basis, no separate payment will be made for any item of work required to complete the lump sum item. Lump sum bid items shall be complete, tested and fully operable prior to request for final payment. **Measurement shall be based upon the Architect's estimate of percent complete per partial payment period.**

1.7 UNIT PRICE ITEM

Separate payment will be made for the items of work described herein and listed on the Bid Form. Any related work not specifically listed but required for satisfactory completion of the work shall be considered to be included in the scope of the appropriate listed work items.

1.8 OTHER PROVISIONS

No separate payment will be made for the following items and the cost of such work shall be included in the applicable pay items of work unless indicated otherwise in the individual bid item. Final payment shall not be requested by the Contractor or made by the Owner until record drawings have been submitted to the Architect.

. Testing and placing system in operation.

- Any material and equipment required to be installed and utilized for the tests.
- Maintain the existing quality of service during construction.
- Appurtenant work as required for a complete and operable system.

PART 2 – PRODUCTS

(NOT APPLICABLE)

PART 3 – EXECUTION

BASE BID – FIRE STATION #32 REPLACEMENT FOR PANAMA CITY BEACH

3.1 BID ITEM NO. 1:

- **Construction of new fire station and all associated site improvements.**

Measurement of this bid item shall be lump sum. Payment for all work included under this bid item will be made at the lump sum price bid for mobilization and demobilization of all labor, equipment, materials and appurtenances necessary for performing the work indicated. Mobilization shall include all those operations necessary for the movement of personnel, equipment, supplies, and incidentals to the project site and for the establishment of safety equipment and first aid supplies, and other facilities. Also included as part of this bid item is the cost for shop drawings, working drawings, schedules and documents, coordination, and other miscellaneous items associated with the work. **The lump sum price for mobilization/demobilization will be limited to three percent (3%) of the total contract base bid amount.** Seventy percent (70%) of the lump sum price will be payable with the first month's partial payment. The remaining thirty percent (30%) will be payable with the final partial payment.

3.3 BID ITEM NO. 2 – ALLOWANCE NO. 1 (Miscellaneous utility connections)

Include the sum of **$55,000** for miscellaneous utility connections and hook-ups. Payment for this item will be direct reimbursement of invoices paid to primary utility providers.

3.4 BID ITEM NO. 3 – ALLOWANCE NO. 2 (Impact and/or Permit Fees)

Include the sum of **$55,000** for miscellaneous impact and/or permit fees. Payment for this item will be direct reimbursement of invoices paid to City, County or State entities.

3.5 BID ITEM NO. 4 – ALLOWANCE NO. 3 (Hose Drying Lift System)

Include the sum of **$35,000** for material cost and installation including any required accessories) of the hose drying lift system. Payment for this item will be direct reimbursement for invoices paid for equipment & installer.

3.6 BID ITEM NO. 5 – ALLOWANCE NO. 4 (Furniture)

Include the sum of **$85,000** for material cost, receiving, handling, installation of Furniture. Payment for this item will be direct reimbursement for invoices paid to Furniture provider/installer.

3.7 BID ITEM NO. 6 – ALTERNATE NO. 1 (LED soffit lighting @ tower)

Include the sum of _____ for material cost, receiving, handling and installation LED lighting (Fixture "CCA" on Electrical lighting plan and lighting schedule) at tower soffit. Cost shall include miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of this alternate.

3.8 BID ITEM NO. 7 – ALTERNATE NO. 2 (LED soffit lighting @ apparatus bay)

Include the sum of _____ for material cost, receiving, handling and installation LED lighting (Fixture "CCB" on Electrical lighting plan and lighting schedule) at apparatus bay soffit. Cost shall include miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of this alternate

3.9 BID ITEM NO. 8 – ALTERNATE NO. 3 (LED soffit lighting @ lower portion of building)

Include the sum of _____ for material cost, receiving, handling and installation LED lighting (Fixture "CCC" on Electrical lighting plan and lighting schedule) at lower portion of building. Cost shall include miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of this alternate

END OF SECTION 01 15 00

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SECTION 01 25 00 – SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.01 SUBSTITUTIONS: Requests for changes in products, materials, equipment, and methods of construction required by the Contract Documents proposed by the Contractor after award of the Contract are considered requests for "substitutions." The following are not considered substitutions:

A. Substitutions requested during the bidding period and accepted prior to bid opening.
B. Revisions to Contract Documents requested by the Owner or Architect.
C. Specified options of products and construction methods included in Contract Documents.
D. Compliance with governing regulations and orders issued by governing authorities.

1.02 SUBMITTAL: Requests for substitution will be considered if received within 30 days after commencement of the Work. Requests received may be considered or rejected at the discretion of the Architect after review. See mechanical and electrical "General Provisions" section for special substitution requirements. Requests for substitutions shall be in the following form:

A. Submit 3 copies of each request for substitution in the form and in accordance with procedures for Change Order proposals.

B. Identify the product, or installation method to be replaced in each request. Include related Specification Section and Drawing numbers. Document compliance with requirements for substitutions, and the following information, as appropriate:

1. Product Data, including Drawings and descriptions of products, fabrication, and installation procedures.
2. Samples, where applicable or requested.
3. A comparison of significant qualities of the proposed substitution with those specified.
4. A list of changes or modifications needed to other parts of the Work and to construction performed by the Owner and separate Contractors that will be necessary to accommodate the proposed substitution.
5. A statement indicating the substitution's effect on the Construction Schedule compared to the Schedule without approval of the substitution. Indicate the effect of the proposed substitution on overall Contract Time.
6. Cost information, including a proposal of the net change, if any in the Contract Sum.
7. Certification that the substitution is equal-to or better in every respect to that required by Contract Documents, and that it will perform adequately in application indicated. Include Contractor's waiver of rights to additional payment or time that may be necessary because of the substitution's

failure to perform adequately.

C. Architect's Action: Within seven (7) days of receipt of the request for substitution, the Architect will request additional information necessary for evaluation. Within fourteen (14) days of receipt of the request, or seven (7) days of receipt of additional information, whichever is later, the Architect will notify the Contractor of acceptance or rejection. If a decision on use of a substitute cannot be made within the time allocated, use the product specified. Acceptance will be in the form of a Change Order.

1.03 SUBSTITUTIONS: The Contractor's substitution request will be received and considered by the Architect when one or more of the following conditions are satisfied, as determined by the Architect; otherwise, requests will be returned without action except to record noncompliance with these requirements.

A. The request is directly related to an "or approved equal" clause or similar language in the Contract Documents.
B. The specified product or method of construction cannot be provided within the Contract Time. The request will not be considered if the product or method cannot be provided as a result of failure to pursue the Work promptly or coordinate activities properly.
C. The specified product or method of construction cannot receive necessary approval by a governing authority, and the requested substitution can be approved.
D. A substantial advantage is offered the Owner, in terms of cost, time, energy conservation or other considerations of merit, after deducting offsetting responsibilities the Owner may be required to bear. Additional responsibilities for the Owner may include additional compensation to the Architect for redesign and evaluation services, increased cost of other construction by the Owner or separate contractors, increased cost of future maintenance by the Owner and similar considerations.
E. The specified product or method of construction cannot be provided in a manner that is compatible with other materials, and where the Contractor certifies that the substitution will overcome the incompatibility.
F. The specified product or method of construction cannot be coordinated with other materials, and where the Contractor certifies that the proposed substitution can be coordinated.
G. The specified product or method of construction cannot provide a warranty required by the Contract Documents and where the Contractor certifies that the proposed substitution provide the required warranty.

1.04 The Contractor's submittal and Architect's acceptance of Shop Drawings, Product Data or Samples that relate to construction activities not complying with the Contract Documents does not constitute an acceptable or valid request for substitution, nor does it constitute approval.

END OF SECTION 01 25 00

PANAMA CITY BEACH
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SECTION 01 31 00 - PROJECT COORDINATION

PART 1 - GENERAL

1.01 THIS SECTION specifies requirements for project coordination including:

Coordination with other Contractors.
Administrative and supervisory personnel.
General installation provisions.
Cleaning and protection.

1.02 COORDINATION: Coordinate activities included in various Sections to assure efficient and orderly installation of each component. Coordinate operations included under different Sections that are dependent on each other for proper installation and operation.

Where installation of one component depends on installation of other components before or after its own installation, schedule activities in the sequence required to obtain the best results.

Where space is limited, coordinate installation of different components to assure maximum accessibility for maintenance, service, and repair.

Make provisions to accommodate items scheduled for later installation.

Coordinate installations such that items requiring maintenance are readily accessible. Do not block maintenance access to these components with follow on installation. Anything blocked will be corrected by the sub-contractor.

Prepare memoranda for distribution to each party involved outlining required coordination procedures. Include required notices, reports, and attendance at meetings.

Prepare similar memoranda for the Owner and separate Contractors where coordination of their Work is required.

1.03 ADMINISTRATIVE PROCEDURES: Coordinate scheduling and timing of administrative procedures with other activities to avoid conflicts and ensure orderly progress. Such activities include:

Preparation of schedules.
Power and utility shutdowns.
Installation and removal of temporary facilities.
Delivery and processing of submittals.
Progress meetings.
Project closeout activities.

1.04 COORDINATION DRAWINGS: Prepare Coordination Drawings where close coordination is required for installation of products and materials fabricated off-site by separate entities, and where limited space necessitates maximum utilization of space for efficient installation of different components.

Show relationship of components shown on separate Shop Drawings.
Indicate required installation sequences.

1.05 STAFF NAMES: Within 10 days of Notice to Proceed, submit a list of Contractor's staff assignments, including Superintendent and personnel at the site; identify individuals, their duties and responsibilities, addresses and telephone numbers. Staff substitutions must be approved by owner in advance.

Post copies in the Project meeting room, the field office, and at each temporary telephone.

1.06 INSPECTION OF CONDITIONS: The Installer of each component shall inspect the substrate and all other conditions under which Work is to be performed. Do not proceed until unsatisfactory conditions have been corrected and as follows:

a. MVER/RH/BNLT moisture readings for slabs on grade or walls must pass manufacturer requirements.
b. Humidity and temperature control ranges for installation must meet manufacturer requirements.
c. Other items must meet the listed, installation requirements set forth by the manufacturer.

1.07 MANUFACTURER'S INSTRUCTIONS: Comply with manufacturer's installation instructions and recommendations, to the extent that they are more stringent than requirements in Contract Documents.

1.08 INSPECT material immediately upon delivery and again prior to installation. Reject damaged and defective items.

1.09 PROVIDE ATTACHMENT and connection devices and methods necessary for securing each construction element. Secure each construction element true to line and level. Allow for expansion and building movement.

1.10 VISUAL EFFECTS: Provide uniform joint widths in exposed Work. Arrange joints to obtain the best effect. Refer questionable choices to the Architect for decision.

1.11 RECHECK MEASUREMENTS and dimensions, including elevations, before starting installation.

1.12 INSTALL EACH COMPONENT during weather conditions and project status that will ensure the best results. Isolate each part from incompatible material as necessary to prevent deterioration.

1.13 COORDINATE TEMPORARY ENCLOSURES with inspections and tests, to minimize uncovering completed construction for that purpose.

1.14 MOUNTING HEIGHTS: Where mounting heights are not indicated, install components at standard heights for the application indicated or refer to the Architect.

1.15 CLEANING AND PROTECTION: During handling and installation, clean and protect construction in progress and adjoining materials in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

Clean and maintain completed construction as often as necessary through the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

Limiting Exposures: Supervise operations to ensure that no part of construction, completed or in progress, is subject to harmful or deleterious exposure. Such exposures include, but are not limited to the following:

Excessive static or dynamic loading.
Excessive internal or external pressures.
Excessive weathering.
Excessively high or low temperatures or humidity.
Air contamination or pollution.
Water or ice.
Chemicals or solvents.
Heavy traffic, soiling, staining and corrosion.
Rodent and insect infestation.
Unusual wear or other misuse.
Contact between incompatible materials.
Theft or vandalism.

END OF SECTION 01 31 00

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SECTION 01 32 00 - PROJECT MEETINGS

PART 1 - GENERAL

1.01 SUMMARY: This Section specifies requirements for Project meetings including:

Pre-Construction Conference.
Progress Meetings.

1.02 PRE-CONSTRUCTION CONFERENCE: Architect shall conduct a pre-construction conference after execution of the Agreement and prior to issuance of a Notice to Proceed. Review responsibilities and personnel assignments.

Attendees: The Owner, Architect and their consultants, the Contractor and its superintendent, subcontractors, suppliers, manufacturers, and other concerned parties shall be represented by persons authorized to conclude matters relating to the Work.

Agenda: Discuss significant items that could affect progress, including the tentative construction schedule, critical sequencing, use of the premises, procedures for processing Change Orders and equipment deliveries.

Review progress of other activities and preparations for the activity under consideration at each conference, including time schedules, manufacturer's recommendations, weather limitations, substrate acceptability, compatibility problems and inspection and testing requirements.

Record significant discussions, agreements, and disagreements of each conference, along with the approved schedule. Distribute the meeting record to everyone concerned, promptly, including the Owner and Architect.

Do not proceed if the conference cannot be successfully concluded. Initiate necessary actions to resolve impediments and reconvene the conference at the earliest feasible date.

1.03 PROGRESS MEETINGS: Conduct progress meetings no fewer than every thirty (30) days. Notify the Owner and Architect of scheduled dates. Coordinate meeting dates with preparation of the payment request.

Attendees: The Owner and Architect, each subcontractor, supplier, or other entity concerned with progress or involved in planning, coordination or performance of future activities shall be represented by persons familiar with the Project and authorized to conclude matters relating to progress.

Agenda: Review minutes of the previous progress meeting. Review significant items that could affect progress. Include topics appropriate to the current status of the Project including:

RFIs	Change Orders
Scheduling	Submittals

Reporting: Distribute copies of the minutes of the meeting to each party present and to parties who should have been present.

1.04 CONTRACTOR'S CONSTRUCTION SCHEDULE: At each progress meeting, the parties shall: (i) review progress since the last meeting; (ii) determine where each activity is in relation to the Contractor's Construction Schedule, whether on time or ahead or behind schedule; (iii) determine how construction behind schedule will be expedited and secure commitments from parties involved to do so; (iv) discuss whether revisions are required to ensure that current and subsequent activities will be completed within the Contract Time, and (v) review the present and future needs of each entity present, including such items as:

Time.
Sequences.
Deliveries.
Off-site fabrication problems.
Site utilization.
Temporary facilities and services.
Hazards and risks.
Quality and Work standards.
Change Orders.
Documentation of information for payment requests.

1.05 PROJECT CLOSE OUT MEETING: Once the CONTRACTOR has gathered a complete project close out deliverable including both hard copies and electronic copies, warranties, extra parts and any other close out required items, they are to notify the architect that they are ready to schedule the project close out meeting.

END OF SECTION 01 32 00

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SECTION 01 33 00 - SUBMITTALS

PART 1 - GENERAL

1.01 GENERAL PROCEDURES

A. Coordinate submittal preparation with performance of construction activities, and with purchasing or fabrication, delivery, other submittals and related activities. Transmit in advance of performance of related activities to avoid delay.

B. Coordinate transmittal of different submittals for related elements so processing will not be delayed by the need to review concurrently for coordination. The Architect reserves the right to withhold action on a submittal requiring coordination until related submittals are received.

C. As required by Florida Statute 553.842 and Florida Administrative Code 9B-72, provide the information and approval numbers on the building components listed on the Florida Product Approval Specification Sheet (form is attached at the end of this section) if they will be utilized on this construction project. Statewide approved products are listed online at www.floridabuilding.org.

1.02 PROCESSING

A. Allow three weeks for initial review. Allow more time if processing must be delayed for coordination with other submittals. The Architect will notify the Contractor when a submittal must be delayed for coordination. Allow two weeks for reprocessing each submittal.

B. No extension of time will be authorized because of failure to transmit submittals sufficiently in advance of the Work to permit processing.

1.03 SUBMITTAL PREPARATION

A. Place a label or title block on each submittal for identification. Provide two 4" x 5" spaces on the label or beside the title block on Shop Drawings to record Contractor's review and approval markings and action taken. Include the following information on the label for processing and recording action taken. Submittals received without a signed Contractor's Approval Stamp will be returned for resubmittal with no action taken.

1. Project name.
2. Date.
3. Name, address and contact info of Contractor.
4. Name, address and contact info of supplier.
5. Name and contact info of manufacturer.
6. Number and title of appropriate Specification Section.
7. Drawing sheet number and detail references, as required.

1.04 SUBMITTAL TRANSMITTAL

A. Package submittals appropriately for transmittal and handling. Transmit with a transmittal form. Submittals received from other than the Contractor will be returned without action.

B. Transmittal Form: Use AIA Document G 810 or other form acceptable to Architect. On the form record requests for data, and deviations from Contract Documents. Include Contractor's certification that information complies with Contract Documents.

1.05 CONTRACTOR'S CONSTRUCTION SCHEDULE

A. Submit a fully developed, CPM type construction schedule with Gantt chart showing critical path and interrelated installations, within 14 days after the date of the Owner's issuance of a Notice to Proceed. Use the categories of work in the schedule to establish the categories in the "Schedule of Values".

B. As work progresses, mark the schedule to indicate Actual Completion.

C. Provide notations on the Schedule depicting the consequences on the Work from construction phasing.

D. Prepare the schedule on sheets of sufficient width to show data for the entire construction period.

E. Secure commitments for performing critical construction operations from parties involved. Coordinate each activity with other activities and show in proper sequence; include minor elements involved in the construction sequence. Indicate sequences necessary for completion of related portions.

F. Coordinate the Construction Schedule with the Schedule of Values, list of subcontracts, Submittal Schedule, progress reports, payment requests and other schedules.

G. Schedule completion in advance of the date established for Substantial Completion. Schedule Substantial Completion to allow time for the Architect's procedures necessary for certification of Substantial Completion.

H. Print and distribute schedule following initial approval to the Architect, Owner, subcontractors, and other parties required to comply with scheduled dates. Redistribute after any approved revisions. Post copies in the temporary field office. Submit update schedule with each Pay Application.

1.06 DAILY CONSTRUCTION REPORTS

A. Prepare a daily construction report, recording information concerning events at the site. Submit duplicate copies to the Architect at weekly intervals. Include the following information:

1. List of subcontractors at the site.
2. Work Activities.
3. High and low temperatures, general weather conditions.
4. Accidents, stoppages, delays, shortages, losses.
5. Emergency procedures.
6. Change Orders received, implemented.
7. Partial Completions, occupancies.
8. Substantial Completions authorized.
9. Other relevant dates.

1.07 SUBMITTALS

A. Except for Samples illustrating assembly details, workmanship, fabrication techniques, connections, operation and similar characteristics, submit 4 sets plus the number of sets required by the Contractor: maximum eight (8) sets. The Architect will retain four sets and return the others marked with the action taken. (Note: Architect will mark only one (1) set for return to the Contractor with action taken and/or modifications required.) Maintain Sample sets at the Project site, for quality comparisons throughout construction phase.

1. Unless noncompliance with Contract Document provisions is observed, the submittal may serve as the final submittal.

1.08 ARCHITECT'S ACTION

A. Except for submittals for record, information, or similar purposes, where action and return are required, the Architect will review each submittal, mark to indicate action taken, and return. Compliance with specified characteristics is the Contractor's responsibility.

B. Action Stamp:

1. The Architect will stamp each submittal with a self-explanatory action stamp.
2. The stamp will be appropriately marked to indicate action taken.

1.09 DISTRIBUTION:

A. Furnish copies of final submittal to installers, and others required for performance of construction activities. Show distribution on transmittal forms. Do not proceed with installation until an applicable copy of Product Data is in the installer's possession. Do not permit use of unmarked copies of Product Data in connection with construction.

1.10 ELECTRONIC COPIES OF FILES

A. CAD/Electronic files of the Construction Documents may be obtained from the Architect. The request must be accompanied by the “CAD/Electronic File Transfer Agreement” attached at the end of this Section.

1.11 SHOP DRAWINGS:

A. Submit information, drawn to accurate scale. Submittals shall indicate deviations from Contract Documents. Do not reproduce Contract Documents or copy standard information as the basis of Shop Drawings. Include the following information:
1. Project Name.
2. Location.
3. Suppliers Name.
4. Date.
5. Drawing No.
6. Specification Section Reference.
7. Dimensions.
8. Identification of products and materials included.
9. Compliance with specific standards.
10. Notation of coordination requirements.
11. Notation of dimensions established by field measurement.

B. Sheet Size: Except for templates, patterns and similar full-size Drawings, submit Shop

Drawings on sheets at least 8-1/2" x 11" but no larger than 24" x 36".

C. Initial Submittal: Submit one correctable translucent print and two blue-line print for review; the reproducible print will be returned.

D. Final Submittal: Submit four (4) blue or black line prints of the original submittal for use by the Architect/Engineer, Owner and Contractor.

E. Do not use Shop Drawings without an Architect's stamp indicating action taken in connection with construction.

F. The Contractor shall schedule all shop drawing submittals to allow sufficient time for one initial review and two resubmittal reviews.

1.12 COORDINATION DRAWINGS

A. Coordination drawings are a special type of shop drawing depicting relationship and integration of different construction elements requiring coordination during fabrication or installation to fit and function as intended.

B. Preparation of coordination drawings is described in these Specifications under "Project Coordination" and may include components previously shown on shop drawings or product data.

C. Submit for integration of different construction elements. Show sequences and relationships of separate components to avoid conflicts in use of space.

1.13 PRODUCT DATA:

A. Collect Product Data into a single submittal for each element or system. Mark each copy to show applicable choices and options. Where Product Data includes information on several products, some of which are not required, mark copies to indicate the applicable information. Include the following information:

1. Manufacturer's printed recommendations.
2. Compliance with recognized trade association standards.
3. Compliance with recognized testing agency standards.
4. Application of testing agency labels and seals.
5. Notation of dimensions verified by field measurement.
6. Notation of coordination requirements.

B. Submittals: Submit 3 copies. The Architect will retain two and will return the others. Note: The Architect will mark only one set for return to the Contractor with action taken and/or modifications required. The Contractor will be responsible to see that any notes made by the Architect are made on all copies.

C. Unless noncompliance with Contract Documents, the submittal may serve as the final submittal.

D. Distribution: Furnish copies of final submittal to installers and others required for performance of construction activities. Show distribution on transmittal forms. Do not proceed with installation until an applicable copy of Product Data is in the installer's possession.

1.14 SAMPLES

A. Submit Samples for review of kind, color, pattern, and texture, for a final check of these characteristics, and a comparison of these characteristics between the final submittal and the component as delivered and installed. Where variations are inherent in the

product, submit multiple units that show limits of the variations.

1. Refer to other Sections for Samples that illustrate details of assembly, fabrication techniques, workmanship, connections, operation, and similar characteristics.
2. Refer to other Sections for Samples to be returned for incorporation in the Work. Such Samples must be undamaged at time of use. On the transmittal, indicate special requests regarding disposition of Sample submittals.

3. Sample sets may be used to obtain final acceptance of the construction associated with each set.
4. Preliminary submittals: Where Samples are for selection of characteristics from a range of choices, submit a full set of choices for the product. Preliminary submittals will be reviewed and returned indicating selection and other action.

PART 2 - PRODUCTS (Not Applicable).

PART 3 - EXECUTION (Not Applicable).

PART 4 - SCHEDULES

4.01 The following Submittal Schedule is for *REFERENCE ONLY*. Items listed may or may not be required for this project and should not be taken as a complete list. It is the Contractor's responsibility to review the specifications in their entirety and determine what is required for submission.

SUBMITTAL SCHEDULE		
SECTION	TYPE OF SUBMITTAL	DESCRIPTION
Division 00 - Performance Bond and Labor and Material Bond	Bonds	Performance Bond, Labor and Material Bond
Division 00 - List of Subcontractors	List	Subcontractors, Suppliers, Principal Manufactures
Division 01 - Application for Payment	Schedule of Values Application for Payment	Initial and Subsequent Initial and Subsequent
Division 01 - Project Coordination	List	Staff Names
Division 01 - Submittals	Construction Schedule Submittal Schedule Daily Construction Reports	
Division 01 - Project Closeout	Documents Certificate	Record Drawings, Specifications, Submittals, As-Builts, Maintenance Manuals, O & M Instructions OEF Final & Occupancy Inspection
Division 02 - Selective Demolition	Schedule	Demolition Schedule

Division 31 - Termite Control	Warranty	Soil Treatment Solution
Division 02 - Concrete Paving	Shop Drawings	Walkways/Curb Layout
Division 03 - Concrete	Shop Drawings	Formwork Reinforce Placement/Schedule
Division 04 - Unit Masonry	Product Data Field Mock-Up	Grout/Mortar, Joint Reinforcement Masonry Wall
Division 04 - Brick Masonry	Product Data Samples Field Mock-Up	Grout/Mortar, Joint Reinforcement Brick, Mortar Brick Wall
Division 05 - Metal Fabrication	Product Data Shop Drawings Certification	Assembly and Installation Instructions Metal Fabrication Metal and Steel Test Results
Division 05 – Metal Building	Shop Drawings	Sizes, Design Information
Division 06 - Finish Carpentry	Product Data Samples	
Division 06 - Interior Architectural Woodwork	Shop Drawings Samples	Casework Plastic Laminate, Hardware
Division 07 - Sheet Membrane Waterproofing	Product Data	Technical Data and Recommendations
Division 07 - Building Insulation	Product Data	Each Type of Insulation Required
Division 07 - Flashing and Sheet Metal	Product Data Guarantee	Roofing and Flashing Materials Maintenance Guarantee
Division 07 – Preformed wall and roof panels	Product Data Samples	Manufacturer’s Information
Division 07 - Joint Sealers	Product Data Samples Certification	Each Type Sealants Product Test Reports
Division 08 – Hollow Metal Doors and Frames	Shop Drawings Schedules	Frames
Division 08 - Flush Wood Doors	Product Data Shop Drawings Schedule	Wood Doors
Division 08 - Access Doors	Product Data	Doors
Division 08 - Finish Hardware	Schedule Product Hardware	Hardware

Division 08 - Glass and Glazing	Product Data Samples	Glass/Glazing Materials Glass
Division 09 - Tile	Product Data Samples	Tile and Grout Tile
Division 09 - Acoustical Ceilings	Product Data Samples	Panel/Suspension System
Division 09 - Resilient Flooring	Product Data Sample Maintenance Instructions Replacement Material	Tile and Base
Division 09 - Painting	Product Data Samples Mock-Up	Paint Paint Field Application
Division 10 - Markerboards, Chalkboards, Tackboards	Product Data Samples	Each Type of Visual Board Tackboard Fabric
Division 10 - Toilet Partitions	Product Data Shop Drawings Samples	Toilet Partitions Fabrication of Partitions Color and Solid Plastic Selection
Division 10 - Signage	Product Data Schedule Shop Drawings	Signage Sign Layout
Division 10 - Toilet and Bath Accessories	Product Data	Accessories
Division 10 - Miscellaneous Specialties	Product Data Shop Drawings	Each Item Installation Instructions Fabrication Details (where required)
Division 11 - Project Screens and T.V. Mounting Brackets	Product Data Shop Drawings	Screens and Monitor Mounts Installation Details
Division 23 - Mechanical General Provisions		
Division 22 - Plumbing		
Division 26 - Electrical General Provisions		

NOTE: Additional Submittals may be requested by the Architect/Engineer.

END OF SECTION 01 33 00

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PRODUCT APPROVAL SPECIFICATION SHEET

Location:_____ Project Name:_____

As required by Florida Statute 553.842 and Florida Administrative Code 9N-3.006, please provide the information and the product approval number(s) on the building components listed below if they will be utilized on a construction project for which you are applying for a building permit. We recommend you contact your local product supplier should you not know the product approval number for any of the applicable listed products. More information about statewide product approval can be obtained at www.floridabuilding.org.

Category/Subcategory	Manufacturer	Product Description	Approval Number(s)
A. EXTERIOR DOORS			
1. Swinging			
2. Sliding			
3. Sectional			
4. Roll Up			
5. Automatic			
6. Other			
B. WINDOWS			
1. Single Hung			
2. Horizontal Slider			
3. Casement			
4. Double Hung			
5. Fixed			
6. Awning			
7. Pass-through			
8. Projected			
9. Mullion			
10. Wind Breaker			
11. Dual Action			
12. Other			
C. PANEL WALL			
1. Siding			
2. Soffits			
3. EIFS			
4. Storefronts			
5. Curtain Walls			
6. Wall Louver			
7. Glass Block			
8. Membrane			
9. Greenhouse			
10. Other			
D. ROOFING PRODUCTS			
1. Asphalt Shingles			
2. Underlayments			
3. Roofing Fasteners			
4. Non-structural Metal Roof			
5. Built-up Roofing			
6. Modified Bitumen			
7. Single Ply Roofing System			
8. Roofing Tiles			
9. Roofing Insulation			
10. Waterproofing			
11. Wood Shingles/Shakes			
12. Roofing Slate			
13. Liquid Applied Roof System			
15. Roof Tile Adhesive			
16. Spray Applied Polyurethane Roof			
17. Other			

Category/Subcategory	Manufacturer	Product Description	Approval Number(s)
E. SHUTTERS			
1. Accordion			
2. Bahama			
3. Storm Panels			
4. Colonial			
5. Roll-up			
6. Equipment			
7. Other			
F. SKYLIGHTS			
1. Skylight			
2. Other			
G. STRUCTURAL COMPONENTS			
1. Wood Connector/Anchor			
2. Truss Plates			
3. Engineered Lumber			
4. Railing			
5. Coolers – Freezers			
6. Concrete Admixtures			
7. Material			
8. Insulation Forms			
9. Plastics			
10. Deck – Roof			
11. Wall			
12. Sheds			
13. Other			
H. NEW EXTERIOR ENVELOPE PRODUCTS			
1.			
2.			
3.			

The products listed below did not demonstrate product approval at plan review. I understand that at the time of inspection of these products, the following information must be available to the inspector on the job site: 1) copy of the product approval; 2) the performance characteristics which the product was tested and certified to comply with; and 3) copy of the applicable manufacturer's installation requirements.

I understand these products may have to be removed if approval cannot be demonstrated during inspection.

_____

_____

_____

_____

_____ _____

Contractor or Contractor's Authorized Agent Signature Print Name Date

_____ _____

Location Permit # (FOR STAFF USE ONLY)

Revised 3/31/15

CAD/Electronic File Transfer Agreement

Project Name: Panama City Beach Fire Station #32 Hutchinson Blvd.

At your request, JRA Architects (JRA) will provide electronic files for your convenience and use subject to the following terms and conditions:

JRA electronic files are compatible with AutoCAD. JRA makes no representation as to the compatibility of these files with your hardware or your software beyond the specified release of the referenced specifications.

Data contained on these electronic files are part of JRA's instruments of service and shall not be used by you or anyone else receiving this data through or from you for any purpose other than as a convenience in the preparation for construction or as a reference for the referenced project. Any other use or reuse by you or by others will be at your sole risk and without liability or legal exposure to JRA. You agree to make no claim and hereby waive, to the fullest extent permitted by law, any claim or cause of action of any nature against us, our officers, directors, employees, agents, or sub consultants that may arise out of or in connection with your use of the electronic files.

Furthermore, you shall, to the fullest extent permitted by law, indemnify and hold JRA harmless against all damages, liabilities, or costs, including reasonable attorney's fees and defense costs, arising out of, or resulting from your use of these electronic files.

These electronic files are not construction documents. Differences may exist between these electronic files and corresponding hard-copy construction documents. JRA makes no representation regarding the accuracy or completeness of the electronic files you receive. If a conflict arises between the signed or sealed construction documents and the electronic files, the signed or sealed construction documents shall govern. You are responsible for determining if any conflict exists. The use of these electronic files by any contractor having received them does not relieve them of the duty to fully comply with the contract documents, including and without limitation, the need to check, confirm and coordinate all dimensions and details, take field measurements, verify field conditions, and coordinate the work with that of other contractors for the project.

Because information presented on the electronic files can be modified, unintentionally or otherwise, JRA reserves the right to remove all indicia of ownership and/or involvement from each electronic display.

Under no circumstances shall delivery of the electronic files for use by you be deemed a sale by JRA, and JRA makes no warranties, either express or implied, of merchantability and fitness for any particular purpose. In no event, shall JRA be liable for any loss of profit or any consequential damages as a result of your use or reuse of these electronic files.

Re-use of these electronic files in part or whole on a project other than that listed above is strictly forbidden and shall be considered theft unless approval has been granted in writing.

_____

Signature (sign) Date

_____

Name of Company

PANAMA CITY BEACH
FIRE STATION #32
HUTCHISON BLVD
BID DOCUMENTS
AUGUST 1, 2023

SECTION 01 40 00 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.01 GENERAL

A. This Section specifies requirements for quality control services. Quality control services include inspections and tests performed by independent agencies, governing authorities, as well as the Contractor.

1.02 CONTRACTOR RESPONSIBILITIES

A. Provide inspections and tests specified or required by governing authorities, except where they are the Owner's responsibility, or are provided by another entity; services include those specified to be performed by an independent agency not by the Contractor. Costs are included in the Contract.

1. The Contractor shall engage and pay for services of an independent agency, acceptable to the Architect/Engineer to perform inspections and tests specified as Quality Control services.
2. Retesting: The Contractor is responsible for retesting where results prove unsatisfactory and do not indicate compliance with Contract Documents, regardless of whether the original test was the Contractor's responsibility.
3. Cost of retesting construction revised or replaced by the Contractor is the Contractor's responsibility, where required tests were performed on original construction.

B. Associated Services: The Contractor shall cooperate with agencies performing inspections or tests and provide auxiliary services as requested. Notify the agency in advance of operations to permit assignment of personnel. Auxiliary services include but are not limited to:

1. Provide access to the Work and furnish incidental labor and facilities necessary to facilitate inspections and tests.
2. Take representative samples of materials that require testing or assist the agency in taking samples.
3. Provide facilities for storage and curing of samples and deliver samples to testing laboratories.
4. Provide a preliminary design mix proposed for use for material mixes that require control by the testing agency.
5. Provide security and protection of samples and test equipment at the Project site.

1.03 DUTIES OF THE TESTING AGENCY:

A. The agency engaged to perform inspections and testing of materials and construction shall cooperate with the Architect and Contractor in performance of its duties and provide qualified personnel to perform inspections and tests.

1. The agency shall notify the Architect and Contractor promptly of deficiencies observed during performance of its services.

2. The agency is not authorized to release, revoke, alter or enlarge requirements of the Contract Documents, or approve or accept any portion of the Work.

1.04 COORDINATION

A. The Contractor and each agency engaged to perform inspections and tests shall coordinate the sequence of activities to accommodate services with a minimum of delay. The Contractor and each agency shall coordinate activities to avoid removing and replacing construction to accommodate inspections and tests.

B. The Contractor is responsible for scheduling inspections, tests, taking samples and similar activities.

1.05 SUBMITTALS

A. The testing agency shall submit a certified written report of each inspection and test to the Architect, in duplicate, unless the Contractor is responsible for the service. If the Contractor is responsible, submit a certified written report of each inspection and test through the Contractor, in triplicate, who shall send two (2) copies to the Architect.

B. Submit additional copies of each report to the governing authority, when the authority so directs.

C. Report Data: Written reports of each inspection or test shall include, but not be limited to:

1. Date of issue.
2. Project title and number.
3. Name, address and telephone number of testing agency.
4. Testing agency qualifications.
5. Dates and locations of samples and tests or inspections.
6. Names of individuals making the inspection or test.
7. Designation of the Work and test method including applicable industry standards and/or codes.
8. Identification of product and Specification Section.
9. Complete inspection or test data.
10. Test results and an interpretations of test results.
11. Ambient conditions at the time of sample-taking and testing.
12. Comments or professional opinion as to whether inspected or tested Work complies with Contract Document requirements.
13. Name and signature of laboratory inspector or person reviewing results.
14. Recommendations on retesting.

1.06 QUALIFICATION FOR SERVICE AGENCIES

A. Engage inspection and testing agencies which are prequalified as complying with "Recommended Requirements for Independent Laboratory Qualification" by the American Council of Independent Laboratories and specialize in the types of inspections and tests to be performed.

B. Each inspection and testing agency engaged shall be authorized to operate in the State in which the Project is located.

1.07 REPAIR AND PROTECTION

A. Upon completion of inspection and testing repair damaged construction and restore substrates and finishes to eliminate deficiencies. Comply with requirements for "Cutting and Patching."

B. Protect construction exposed by or for quality control service activities and protect

repaired construction.

C. The Contractor is responsible for repair and protection regardless of the assignment of responsibility for inspection and testing.

END OF SECTION 01 40 00

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SECTION 01 55 00 - MATERIALS AND EQUIPMENT

PART 1 - GENERAL

1.01 DEFINITIONS

A. Definitions used in this Article are not intended to change the meaning of other terms used in the Contract Documents, such as "specialties," "systems," "structure," "finishes," "accessories," and similar terms. Such terms are self-explanatory and have well-recognized meanings in the construction industry.

B. "Products" are items purchased for incorporation in the Work, whether purchased for the Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.

C. "Named Products" are items identified by the manufacturer's product name, including make or model number or other designation, shown or listed in the manufacturer's published product literature that is current as of the date of the Contract Documents.

D. "Materials" are products substantially shaped, cut, worked, mixed, finished, refined or otherwise fabricated, processed, or installed to form a part of the Work.

E. "Equipment" is a product with operational parts, whether motorized or manually operated, that requires service connections, such as wiring or piping.

1.02 QUALITY ASSURANCE

A. Source Limitations: To the fullest extent possible, provide products of the same kind from a single source.

B. Compatibility of Options: When the Contractor is given the option of selecting between two or more products for use on the Project, the product selected shall be compatible with products previously selected, even if previously selected products were also options.

C. Nameplates: Except for required labels and operating data, do not attach or imprint manufacturers or producer's nameplates or trademarks on exposed surfaces of products that will be exposed to view in occupied spaces or on the exterior.

D. Labels: Locate required product labels and stamps on concealed surfaces or, where required for observation after installation, on accessible surfaces that are not conspicuous.

E. Equipment Nameplates: Provide a permanent nameplate on each item of service-connected or power-operated equipment. Locate on an easily accessible surface that is inconspicuous in occupied spaces. The nameplate shall contain the following information and other essential operating data:

1. Name of product and manufacturer.
2. Model and serial number.
3. Capacity.
4. Speed.

5. Ratings.

F. Field marking for electrical, mechanical, plumbing and telecom locations:

1. All above ceiling electrical, mechanical, and plumbing shall have below ceiling labeling provided for some specific items IFF located above ceiling.
    a. Electrical – any electrically powered motor or device other than junction boxes located in a concealed location above ceiling shall be labeled below ceiling. See labeling requirements in a separate section “Labeling”.
    b. HVAC – HVAC equipment located above ceiling including but not limited to VAV, VRF, AHU, EF units, and valves shall be baled below ceiling so as to make them easily locatable from below ceiling. Identification should match plan call outs for the items such that plans may be utilized in conjunction with labeling to locate and maintain each item.
    c. Plumbing – all valves located above ceiling shall be labeled below ceiling. Above ceiling valve shall be marked with permanently affixed TAG indicating what areas or items are served by the valve.
    d. Telecomm – see above ceiling labeling requirements per specification section on telecom devices. Any signal repeaters, or other data / telecom equipment located above ceiling shall be labeled on the ceiling below for easy identification in the future.
2. Labels shall be 1” x 4” in size and permanently attached to underside of drywall or permanently affixed to the acoustic ceiling grid within 2 feet of the above ceiling item being labeled.
3. Labels shall be hard plastic.
4. Lettering shall be minimum 12 font engraved into labels.
5. Color coding of labels shall be as follows:
    a. Red = Electrical & Fire
    b. Yellow = Gas
    c. Blue = Water & Sewer
    d. Green = HVAC
    e. Orange = Telecom
    f. Other colors as mutually agreed by owner and architect to be added

1.03 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle products according to the manufacturer's recommendations, using means and methods that will prevent damage, deterioration, and loss, including theft.

B. Coordinate delivery with installation time to assure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses; and to prevent overcrowding of construction spaces.

C. Deliver products to the site in undamaged condition in the manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.

D. Inspect products upon delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.

E. Store products at the site in a manner that will facilitate inspection and measurement of quantity or counting of units.

F. All new installed materials shall be sealed from moisture penetration at the end of each day.

PART 2 - PRODUCTS

2.01 PRODUCT SELECTION

A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, new at the time of installation. Discontinued items will not be accepted.

1. Provide products complete with accessories, trim, finish, safety guards, and other devices and details needed for a complete installation and the intended use and effect.

2. Standard Products: Where available, provide standard products of types that have been produced and used successfully in similar situations on other projects.

B. Product Selection Procedures: The Contract Documents and governing regulations govern product selection. Procedures governing product selection include the following:

1. Semi proprietary Specification Requirements: Where Specifications name two or more products or manufacturers, provide one of the products indicated.

   Where Specifications specify products or manufacturers by name, accompanied by the term "or equal" or "or approved equal", comply with the Contract Document provisions concerning "substitutions" to obtain approval for use of an unnamed product.

2. Descriptive Specification Requirements: Where Specifications describe a product or assembly, listing exact characteristics required, with or without use of a brand or trade name, provide a product or assembly that provides the characteristics and otherwise complies with Contract requirements.

3. Performance Specification Requirements: Where Specifications require compliance with performance requirements, provide products that comply with these requirements and are recommended by the manufacturer for the application indicated.

   Manufacturer's recommendations may be contained in published product literature or by the manufacturer's certification of performance.

4. Compliance with Standards, Codes, and Regulations: Where Specifications only require compliance with an imposed code, standard, or regulation, select a product that complies with the standards, codes, or regulations specified.

5. Visual Matching: Where Specifications require matching an established Sample (match existing), the Architect's decision will be final on whether a proposed product matches satisfactorily.

   Where no product is available within the specified category, matches satisfactorily and complies with other specified requirements; comply with provisions of the Contract Documents concerning "substitutions" (Section 01631 - Product Substitutions) for selection of a matching product in another product category.

6. Visual Selection: Where specified product requirements include the phrase "... as selected from manufacturer's standard colors, patterns, textures ..." or a similar phrase, select a product and manufacturer that complies with specified requirements. The Architect will select the color, pattern, and texture from the product line selected. Any selections within the product line which are unavailable, no longer make or superseded by another should be so marked.

PART 3 - EXECUTION

3.01 INSTALLATION OF PRODUCTS

A. Comply with manufacturer's instructions and recommendations for installation of products in the applications indicated. Anchor each product securely in place, accurately located and aligned with other Work.

B. Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

END OF SECTION 01 55 00

SECTION 01 57 19 - EROSION CONTROL AND ENVIRONMENTAL PROTECTION

1.1 INTENT

It is the intent of these specifications to provide supplemental information to the contents of the construction drawings on the quality of materials, execution, measurement, etc. These specifications are general in nature and may contain products and requirements which are not applicable to the project. Discrepancies between these specifications and the construction drawings, either imagined or real, shall be brought to the attention of the Contracting officer for clarification.

1.2 DESCRIPTION OF WORK

Comply with the provisions of the following codes and standards, except as otherwise shown or specified:

"Standard Specifications for Road and Bridge Construction", Florida Department of Transportation, latest edition. .
"Roadway and Traffic Design Standards", Florida Department of Transportation, latest edition.
"American Society for Testing and Materials (ASTM) Publications" as follow:

D 123-87	Standard Terminology Relating to Textiles
D 1683-81	Failure in Sewn Seams of Woven Fabrics
D 2487-83	Test Method for Classification of Soils for Engineering Purposes
D 3786-80	Standard Test Method for Mullen Burst Strength
D 3787-80	Bursting Strength of Knitted Goods - Constant-Rate-of-Traverse (CRT) Ball Burst
D 4439-87	Standard Terminology for Geotextiles
D 4533-85	Standard Test Method for Trapezoid Tearing Strength of Geotextiles
D 4632-86	Standard Test Method for Breaking Load and Elongation of Geotextiles (Grab Method)
VTM-51-79	Filtration Efficiency
VTM-51-79	Slurry Flow Rate

Certification: The contractor shall be responsible for providing the required material certifications prior to construction. Failure to provide certification may result in rejection of the material and replacement at no cost to the Owner.

Testing: An independent testing and inspection service will not be required for the work of this section.

1.4 SUBMITTALS

Material Certificates: Provide copies of materials certificates signed by material producer and Contractor, certifying that each material item complies with or exceeds specified

requirements. When test requirements are specified, the contractor shall supply results performed by a certified testing laboratory.

1.5 TEMPORARY EROSION CONTROL (VEGETATION AND COVERINGS)

General: Temporary erosion control features shall consist of, but not be limited to, temporary grassing, temporary sodding, temporary mulching, sandbagging, artificial coverings, berms, and baled hay or straw.

Temporary Grassing: Temporary grassing shall be as specified in Section 13 except as modified herein. Perennial grass seed may be omitted if permanent erosion control will be placed prior to death of annual grass.

Temporary Sod: Sod shall be as specified in Section 12.
Temporary Mulch: Mulch shall be as specified in Section 13.

Sandbagging: Sandbagging shall consist of furnishing and placing sandbags in configurations, so as to control erosion and siltation.

Artificial Coverings: This work shall consist of furnishing and applying fiber mats, netting, plastic sheeting, or other approved covering to the earth surfaces.

Baled Hay or Straw: This work shall consist of construction of baled hay or straw dams to protect against downstream accumulations of silt. The baled hay or straw dams shall be constructed in accordance with the details shown in the construction drawings or, when details are not shown, in accordance with the FDOT Standard Index No. 102.

1.6 TEMPORARY EROSION CONTROL (SILT FENCES)

General: Temporary erosion control features shall consist of, but not be limited to, silt fences and staked turbidity barriers. The work shall consist of furnishing, installing, maintaining, and removing temporary fences and barriers in accordance with the manufacturer's recommendations, these specifications, the details shown on the plans, or, when details are not shown, in accordance with the FDOT Standard Index No. 102 & 103. The barrier type(s) will be at the Contractor's option unless otherwise specified in the plans.

Silt Fence: Silt fence or sediment control fence shall consist of a geotextile fabric attached to posts. The geotextile fabric shall be a woven or non-woven fabric as specified herein. Posts shall be a minimum length of five feet rough or surfaced four-inch by four-inch wood, three-inch minimum diameter wood or steel at least 1.33 pounds per linear foot. When called for, wire reinforcement shall be poultry mesh, a minimum height of 36 inches, 20 gauge wire minimum, with a mesh spacing of one inch. As an alternative, Type A fence conforming to Section 966, FDOT Standard Specifications, may be used.

Staked Turbidity Barrier: In addition to the requirements for a temporary silt fence contained herein, the fabric used for staked turbidity barrier shall have a double stitched hem at the top of the fabric into which has been sewn a braided nylon cord with a minimum diameter of 1/8 inch running the full length of that section of fabric. Supports for staked turbidity barriers shall be a minimum length of three feet seasoned two-inch by four-inch wood, 2-1/2 inch minimum diameter wood, or steel at least 1.33 pounds per linear foot.

1.7 GEOTEXTILES

Filter Fabric: The geotextile fabric shall be a woven or non-woven fabric consisting of long-chain polymeric filaments or yarns such as polypropylene, polyethylene, polyester, polyamides, or polyvinyl chloride formed into a stable network such that the filaments or yarns retain their relative position to each other. The base plastic shall contain stabilizers and/or inhibitors to make the filaments resistant to deterioration from ultraviolet light, heat exposure, and commonly encountered chemicals. The edges of the fabric shall be selvaged or otherwise finished to prevent the outer yarn from pulling away from the fabric.

The fabric shall conform to the following physical requirements:

PROPERTIES	TEST METHOD	ACCEPTABLE VALUES
Seam Strength (min)	ASTM D 1683	120 lbs.
Mullen Burst Strength (min)	ASTM D 3786	200 psi
Puncture Strength (min)	ASTM D 3787	60 lbs.
Trapezoidal Tear Strength (min)	ASTM D 4533	50 lbs.
Grab Tensile Strength (min)	ASTM D 4632	120 lbs.
Elongation (max)	ASTM D 4632	25%
Filtration Efficiency (min)	VTM-51-79	75%
Slurry Flow Rate (min)	VTM-51-79	0.3 gpm/sf

Seams: The seams of the fabric shall be sewn with thread of a material meeting the chemical requirements for the fabric. The minimum seam strength shall comply with the property requirements contained herein.

Shipment and Storage: During shipment and periods of storage, the geotextile shall be protected from direct sunlight, ultra-violet rays, temperatures greater than 140 degrees Fahrenheit, mud, dirt, dust, and debris. Stockpiled materials shall be kept covered at all times.

1.8 EXECUTION

General: The installation of temporary erosion control features shall be coordinated with the construction of the permanent erosion control features to the extent necessary to assure effective and continuous control of erosion and water pollution throughout the life of the contract.

The Contractor shall take sufficient precautions to prevent pollution of streams, canals, lakes, reservoirs, and other water impoundments, with fuels, oils, bitumens, calcium chloride, or other harmful materials. Also, he shall conduct and schedule his operations

so as to avoid pollution or siltation of such streams, etc.

Except as necessary for construction, excavated material shall not be deposited in rivers, streams, canals, or impoundments, or in an position close enough thereto to be washed away by high water or runoff.

Where de-watering methods are used, the water shall be treated by one or more of the following methods prior to discharge off-site or into environmental areas: pumping into grassed swales or appropriate vegetated areas, sediment basins, or confined by an appropriate enclosure such as siltation curtains when other methods are not considered appropriate.
The Contractor shall not disturb lands or waters outside the limits of construction as staked, except as may be Found necessary and authorized by the Contracting officer.

The locations of and methods of operation in all detention areas, excavation and stockpile areas, and disposal areas shall meet the approval of the Contracting officer as being such that erosion during and after completion of the work will not likely result in detrimental conditions, siltation, or water pollution.

Limitation of Exposure or Erodible Earth: The Contractor shall limit the surface areas of unprotected erodible earth exposed by clearing and grubbing, excavation, or filling operations and shall provide immediate permanent or temporary erosion or pollution control measures to prevent contamination of any river, stream, lake, tidal water, reservoir, canal, or other impoundment or to prevent detrimental effects on property outside the project and damage to the project. The limitation of area in which excavation and filling operations may be underway shall be commensurate with the contractor's capability and progress in keeping the finish grading, grassing, sodding, and other such permanent erosion control measures current in accordance with the accepted schedule.

Under no conditions shall the surface area or erodible earth exposed by clearing and grubbing operations or by excavation and filling operations exceed one-half acre without specific prior approval by the Contracting officer. This limitation applies separately to clearing and grubbing operations and excavation and filling operations.

The Contracting officer may increase or decrease the amount of surface area allowed to be exposed at any one time, on the basis of his analysis of conditions on the project.

Permanent erosion control features shall be incorporated into the project at the earliest practical time. Temporary erosion control features will be used to control erosion prior to the time it is practical to construct permanent control features or to provide immediate temporary control of erosion that develops during normal construction operations, but is not associated with permanent erosion control features on the project. In no case shall be exposure of erodible earth be for more than five days without erosion control features being implemented.

Temporary erosion control features may be authorized for use in controlling erosion in areas where stage construction or other conditions not under the control of the Contractor preclude completion of a section of work in a continuous manner and in areas where construction operations which must be performed subsequently will cause damage to permanent erosion control features constructed.

When the item of Topsoil or Muck Blanket is included in the contract, the rate of construction of these items may be limited by the availability of topsoil or muck from the normal grading operations. The existence of this condition will be considered as

precluding completion of a section or roadway in a continuous manner, and use of temporary erosion control features will be used in areas so affected.

The Contractor shall schedule his operations such that the area of unprotected erodible earth exposed at any one time is not larger than the minimum area necessary for efficient construction operations, and the duration of exposed, uncompleted construction to the elements shall be as short as practicable.

Clearing and grubbing shall be so scheduled and performed that grading operations can follow immediately thereafter, and grading operations shall be so scheduled and performed that permanent erosion control features can follow immediate thereafter if conditions on the project permit.

1.9 TEMPORARY EROSION CONTROL (VEGETATION AND COVERINGS)

General: Temporary vegetative erosion control features shall be installed in accordance with Section 13. Temporary coverings shall be installed in accordance with the manufacturer's recommendations.

1.10 TEMPORARY EROSION CONTROL (SILT FENCES)

Temporary Silt Fence: Temporary silt fence shall be erected at locations as shown on the plans or as approved by the Contracting officer. The filter fabric shall be reinforced with wire fence, when called for, and the post spacings shall not exceed ten feet. The wire reinforcement shall be installed so that the filter fabric is on the upstream side of the fence, and both the wire fence and the filter fabric are on the upstream side of the posts. Posts shall be uniformly installed with approximately 20 degrees inclination toward the potential silt load (upstream) area. The silt fence shall be maintained in an effective condition at all times while in use.

Filter fabric shall be a minimum of 45 inches wide and shall be secured to the post or fence by suitable staples, tie wire, or hog rings in such a manner as to prevent tearing of the fabric. The bottom of the filter fabric shall be entrenched into the ground a minimum of eight inches to prevent water from flowing under the fence. Filter fabric shall be spliced together only at support posts with a minimum of six-inch overlap and securely sealed.
Staked Turbidity Barrier: Staked turbidity barrier shall be securely fastened to wood or steel supports which are spaced at maximum intervals of six feet and driven a minimum of 12 inches into the ground. A minimum of three supports shall be used. The bottom of the fabric shall be entrenched into the existing ground a minimum of eight inches. The staked turbidity barrier shall be a minimum of 15 inches in height and shall not exceed 18 inches in height.

The support line sewn in the top hem of the filter fabric shall be used at each post location to secure the fabric to the post at an appropriate height.

Staked turbidity barriers shall be installed across ditch lines and at temporary locations as shown on the plans or approved by the Contracting officer where continuous construction activities change the natural contour and drainage runoff.

Posts in staked turbidity barriers shall be installed in the vertical position unless otherwise directed by the Contracting officer.

Floating Turbidity Barrier: This work shall consist of the installation and removal of floating turbidity barriers to contain silt and other deleterious materials that may occur as the result

of dredging, filling, or other construction activities in waters of the State. The type barrier used will be installed in accordance with the details contained in the plans, or, when details are not shown, in accordance with the FDOT Standard Index No. 103, or as approved by the Contracting officer. Alternate methods may be approved provided that compliance with applicable permit conditions and State water quality standards are maintained.

1.11 INSPECTION AND MAINTENANCE

General: The Contractor shall, at his expense, provide routine maintenance of permanent and temporary erosion control features until the project is completed and accepted. The Contractor shall inspect all temporary erosion control measures immediately after each rainfall and at least daily during prolonged rainfall. Any deficiencies shall be immediately corrected by the Contractor.

Silt Fences and Turbidity Barriers: The Contractor shall make a daily review of the location of silt fences and turbidity barriers to ensure that the silt fence or turbidity barriers are properly located for effectiveness and contain no breaches. Where deficiencies exist, additional silt fences or turbidity barriers shall be installed as directed.
Sediment deposits shall be removed when the deposit reaches approximately one-half of the volume capacity of the temporary silt fence or turbidity barrier as directed. Any sediment deposits remaining in place after the temporary silt fence or turbidity barrier is no longer required shall be dressed to conform with the finished grade, prepared and finished as shown on the construction plans, or seeded in accordance with Section 13.

END OF SECTION 01 57 19

PANAMA CITY BEACH
FIRE STATION #32
HUTCHISON BLVD
BID DOCUMENTS
AUGUST 1, 2023

SECTION 01 77 00 – CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.01 SUBSTANTIAL COMPLETION: (See Division 00 Section - General Conditions, Section 9.8). Before requesting inspection for certification of Substantial Completion, complete the following:

A. Change-over permanent locks and transmit keys to the Owner.

B. Complete start-up testing of systems, and instruction of the Owner's personnel. Remove temporary facilities from the site, along with construction tools, mock-ups, and similar elements.

C. Complete final clean up. Touch-up and repair and restore marred exposed finishes.

D. Submit record drawings (As-builts), maintenance manuals, damage or settlement survey, and similar record information.

E. Obtain Occupancy permits.

1.02 INSPECTION PROCEDURES: When the Contractor considers the work substantially complete, he shall prepare and submit a comprehensive list of items to be completed and/or corrected to the Architect. The Contractor shall proceed to promptly complete and/or correct all items on the list.

A. Upon receipt of Contractor's list and assurance by the Contractor that the list has been addressed/ completed, the Architect will make an inspection for final verification that the list provided is comprehensive and includes all remaining work items to be completed or corrections required OR inform the Contractor of work to be completed before an inspection will be conducted.

B. After receipt of the completion/punch list and prior to the architect issuing substantial completion, the architect shall require that every consultant who provided documents for the project (i.e.: electrical, HVAC, Plumbing, Architectural, Roof, telecom, etc.) shall perform an onsite inspection of work completed under the scope of their responsibilities and provide a detailed final completion list of incomplete work or work requiring corrections.

C. This process will be the responsibility of the Architect to ensure this occurs and that the information gathered from those site visits is to be coordinated through the contractor, added to the contractor’s final completion/punch list, and issued to the owner. This will ensure that all required corrections are included in the final punch list prior to substantial completion being awarded.

D. When the work is substantially complete, the Architect will prepare the Certificate of Substantial Completion which shall establish the date of Substantial Completion.

E. Results of the completed inspection will form the basis of requirements for final acceptance, including any items discovered at a later date considered necessary to be completed for final.

1.03 FINAL ACCEPTANCE: (See Division 00 Section - General Conditions, Section 9.10). Before requesting inspection for certification of final acceptance and final payment, complete the following:

A. Submit a copy of the final inspection list stating that each item has been completed or otherwise resolved for acceptance.

B. Submit specific warranties, workmanship bonds, maintenance agreements, final certifications, and similar documents.

C. Refer to Division 01 Section – Payment Procedures - Final Payment Application.

D. Provide the Architect with 'Final Statement of Compliance', for the Owner.

1.04 REINSPECTION PROCEDURE (if required): The Architect will reinspect the Work upon receipt of notice that the Work has been completed, except items whose completion has been delayed because of circumstances acceptable to the Architect.

A. Prior to Final completion, A Final walk through/verification of completion/correction by the various design consultants shall occur. Final payment to the contractor shall not be released until the final completion /punch list is complete 100%.

B. Upon completion of reinspection, the Architect will then prepare a certificate of final acceptance or advise the Contractor of work that is incomplete or of obligations that have not been fulfilled but are required for final acceptance. If necessary, reinspection will be repeated.

1.05 RECORD DRAWINGS: Maintain a clean, undamaged set of blue or black line white-prints of Contract Drawings and Shop Drawings. Mark-up these drawings to show the actual installation where installation varies from that shown originally. Mark whichever drawing is most capable of showing conditions accurately. Give particular attention to concealed elements that would be difficult to measure and recorded at a later date. Maintain and review monthly with the Owner and Architect.

A. Organize record drawing sheets into manageable sets, bind with durable paper cover sheets, and print suitable titles, dates, and other identification on the cover.

B. Maintain Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and lost. Provide access to Project Record Documents for Architect's reference during normal working hours.

C. Upon completion of the Work, submit Record Drawings (red-line field as-builts) to the Architect for Owner's records.

D. As-built documents are a requirement of final close out for the project. As built documents shall include all design revisions issued during the course of the project. Those revisions shall be marked on the documents in a way that provides clarity for the noted changes. It is at the sole discretion of the architect to determine what is and what is not adequate for as built documentation.

E. The contractor is expected to maintain as-built documents throughout the course of the project work. Monthly review of the as built documents wherein the contractor shall show the architect what changes were accepted and have been noted as revisions to the project ON the as built documents each month.

F. Failure to maintain as-built documentation during the course of the project may be grounds to hold progress payment.

G. Failure to provide adequate as built documentation shall be grounds to hold final payment pending receipt of acceptable as-built documentation.

1.06 PROJECT RECORD SPECIFICATIONS: Maintain one copy of the Project Manual, including addenda. Mark-up to indicate the actual product installation where installation

varies from that indicated in Specifications, addenda, and contract modifications. Give particular attention to substitutions, selection of options and similar information on elements that are concealed or cannot be readily discerned later by direct observation. Note related record drawing information and Product Data.

A. Maintain on site, in a 3-ring binder or other organized method, executed RFI's, ASI's, RFP's, CO's and other project record items.
B. All record of revisions is to be incorporated into the Project As-Built drawings
C. Upon completion of the Work, submit record Drawings and Specifications to the Architect for the Owner's records.

1.07 PROJECT AS-BUILT DRAWINGS: The Contractor shall, at his own expense, hire the Architect of Record to prepare as-built drawings. The Contractor shall provide to the Architect record drawings and record specifications. The Contractor is solely responsible for the content of the record drawings and the as-built documents.

A. Site As-built drawings shall comply with the following:

1. Show the actual locations of all components, including depth below grade, along with any changes and/or modifications to the Contract Drawings. Provide GPS coordinates for all below grade installations.

    a. During the course of the project various utilities are buried on site. The project as-built documentation for utilities shall include a layout for as-built conditions of all buried underground utility runs to within 3 feet of actual.
    b. All above ground access points shall be detailed on site as built to within 1 foot of actual with GPS coordinates provided for each item.
    c. Items to be recorded include but are not limited to water Valves, sewer manholes, storm water manholes, and sewer and storm water cleanouts, electronic junction boxes buried on site, electrical junction boxes buried on site, site transformers, and any other items as indicated on the project design documents.
    d. All stub outs for utility tie ins shall be indicated on the as built plan.
    e. All utilities shall be labeled every 50 feet on the as built so as to allow easy identification in the field while using electronic as built plans. All utility items listed in item 3 above shall also be labeled on the as built plans.
    f. All dimensions and elevations, including invert elevations, shall be verified by field measurements.

2. The Contractor is cautioned to make all necessary measurements and elevations during installation to accurately locate all concealed items.

3. The Contractor shall provide Owner a complete set of As-Built Drawings in both PDF and AutoCAD drawing format. The PDF shall be organized and searchable.

B. As-Built Survey: Contractor shall provide signed and sealed As-Built Survey of existing grades and structures as required by authorities having jurisdictions.

1.08 MAINTENANCE MANUALS: The Contractor shall:

A. Organize maintenance data into sets of manageable size. Bind in individual heavy-duty 2-inch, 3-ring vinyl-covered binders, with pocket folders for folded sheet information. Mark identification on front and spine of each binder. Include the following information:

Emergency instructions.	Spare parts list.
Copies of warranties.	Wiring diagrams.
Recommended "turn around" cycles.	Inspection procedures.
Shop Drawings and Product Data.	Fixture lamping schedule.

B. Provide all maintenance manuals in a PDF that is organized and searchable.

1.09 OPERATING AND MAINTENANCE INSTRUCTIONS: Arrange for the installer of equipment that requires regular maintenance to meet with the Owner's personnel to provide instruction in proper operation and maintenance. Acceptance of the owner training provided is at the sole discretion of the owner. Training provided must be comprehensive in nature and include all pertinent aspects of use and maintenance for the item(s) requiring training. Include a detailed review of the following:

Maintenance manuals.	Spare parts and materials.
Tools.	Lubricants.
Control sequences.	Hazards.
Warranties and bonds.	Maintenance agreements and similar continuing commitments.

As part of instruction for operating equipment, demonstrate the following procedures:

Start-up and shutdown.	Emergency operations.
Noise and vibration adjustments.	Safety procedures.

All operation and training sessions shall be recorded in a digital MP4 formatand provided to the Owner on a flashdrive. The contractor may use their own personnel to film the training provided.

1.10 FINAL CLEANING: Employ experienced workers for final cleaning. Clean each surface to the condition expected in a commercial building cleaning and maintenance program. Complete the following, as a minimum before requesting inspection for certification of Substantial Completion:

A. Remove labels that are not permanent labels.

B. Clean transparent materials. Remove glazing compound. Replace chipped or broken glass.

C. Clean exposed hard-surfaced finishes to a dust-free condition, free of stains, films and similar foreign substances. Restore reflective surfaces to their original reflective condition. Leave concrete floors broom clean.

D. Vacuum carpeted surfaces.

E. Wipe surfaces of mechanical and electrical equipment. Remove excess lubrication. Clean plumbing fixtures to a sanitary condition. Clean light fixtures and lamps.

F. Clean the site of rubbish, litter, and other foreign substances. Sweep paved areas; remove stains, spills, and other foreign deposits. Rake grounds that are neither paved nor planted to a smooth even-textured surface.

1.11 REMOVAL OF PROTECTION: Remove temporary protection and facilities.

1.12 CLOSE OUT DOCUMENTATON:

A. All close out documents shall be provided in hard copy and identical electronic copy.
B. Contractor shall provide (2) hard copies for all documents and as built plans.

C. Contractor shall provide (4) electronic copies identical to hard copies as listed above.
   a. Contractor shall utilize “thumb drive” media of sufficient size to accommodate entire close out package including all as built documents being saved onto (1) thumb drive encompassing (1) full copy of all documentation on that (1) drive.
   b. Each successive copy of electronic documents shall be identical and complete.
D. In addition to close out documentation, all spare parts or extra parts required by specification shall be provided at final close out. The method for this to occur is negotiable but final verification including transmittal and owner/architect verification of receipt is a close out requirement.
E. Contractor MAY NOT deliver close out documents in multiple phases or at multiple times or to multiple parties.

   a. Initial submittal of Close out documents shall be to the architect for review and comment.
   b. Upon architect acceptance, the contractor shall gather all hard copies and electronic copies for a full and complete documentation deliverable for the project close out documentation.
   c. In addition to items listed in various parts of the specifications, THE CONTRACTOR SHALL ALSO PROVIDE A COMPREHENSIVE SPREADSHEET THAT LISTS THE NAME AND CONTACT PERSON WITH PHONE NUMBER AND EMAIL FOR EACH SUBCONTRACTOR THAT PERFROMED WORK ON THE PROJECT.
   d. The spreadsheet shall also include the term of any warranty provided by the subcontractor, the date the warranty started, and the end date the warranty will be completed on.
   e. The spreadsheet shall also list any manufacturers extended warranties that may exist for any item under a particular subcontractor’s scope. Include the same information listed in item d. above for manufacturer’s warranties.

F. Once the contractor has gathered a complete project close out deliverable including both hard copies and electronic copies, warranties, extra parts and any other close out required items, they are to notify the architect that they are ready to schedule the project close out meeting.

   a. A list of the attendees with signatures and contact numbers shall be created and all attendees shall be noted and shall sign in.
   b. The project closeout meeting shall consist of a meeting with all stakeholders including but not limited to:
      i. Owner
      ii. Architect, other design consultants as directed by the architect.
      iii. Contractor project management team and project executive.
   c. The project close out meeting agenda shall include a recap of the project scope, presentation of a completed and architect approved final punch list.
   d. Contractor shall deliver close out documents with transmittal to architect and owner.
   e. Architect is to accept close out documents and certify they are complete per previous reviews.
   f. Architect shall sign transmittal accepting final close out documentation and attesting it is complete.

g. Question and answers will be called for all participants. Any necessary follow up meetings for any lingering items associated with the project will be scheduled and coordination responsibility for each item will be assigned.
h. Contractor will provide meeting minutes for the meeting including action items list and schedule for completion of any action items noted during the project close out meeting.

1.13 COMPLIANCE: Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Remove waste materials from the site and dispose of in a lawful manner.

END OF SECTION 01 77 00

PANAMA CITY BEACH
FIRE STATION #32
HUTCHISON BLVD
BID DOCUMENTS
AUGUST 1, 2023

SECTION 01 78 00 - WARRANTIES AND BONDS

PART 1 - GENERAL

1.01 STANDARD PRODUCT WARRANTIES are preprinted written warranties published by individual manufacturers for particular products and are specifically endorsed by the manufacturer to the Owner. Note: All Standard Product Warranties are to be provided.

1.02 SPECIAL WARRANTIES are written warranties required by or incorporated in Contract Documents, to extend time limits provided by standard warranties or to provide greater rights for the Owner. Refer to the General Conditions for terms of the Contractor's special warranty of workmanship and materials.

A. Requirements for warranties for products and installations that are specified to be warranted, are included in the individual Sections of Divisions 02 through 33.

1.03 DISCLAIMERS AND LIMITATIONS: Manufacturer's disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the Work that incorporates the products, nor does it relieve suppliers, manufacturers, and Subcontractors required to countersign special warranties with the Contractor.

1.04 RELATED DAMAGES AND LOSSES: When correcting warranted Work that has failed, remove and replace other Work that has been damaged as a result of such failure or that must be removed and replaced to provide access for correction of warranted Work.

1.05 REINSTATEMENT OF WARRANTY: When Work covered by a warranty has failed and been corrected, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.

1.06 REPLACEMENT COST: On determination that Work covered by a warranty has failed, replace or rebuild the Work to an acceptable condition complying with requirements of Contract Documents. The Contractor is responsible for the cost of replacing or rebuilding defective Work regardless of whether the Owner has benefited from use of the Work through part of its useful service life.

1.07 OWNER'S RECOURSE: Written warranties made to the Owner are in addition to implied warranties, and shall not limit duties, obligations, rights, and remedies otherwise available under the law, nor shall warranty periods be interpreted as limitations on time in which the Owner can enforce such other duties, obligations, rights, or remedies.

A. Rejection of Warranties: The Owner reserves the right to reject warranties and limit selections to products with warranties not in conflict with requirements of the Contract Documents. The Owner reserves the right to refuse to accept Work where a special warranty, or similar commitment is required, until evidence is presented that entities required to countersign commitments are willing to do so.

1.08 SUBMIT WRITTEN WARRANTIES to the Architect prior to the date certified for Substantial Completion. If the Architect's Certificate of Substantial Completion designates a commencement date for warranties other than the date of Substantial Completion, submit written warranties on the Architect's request.

A. When a designated portion of the Work is completed and occupied or used, by separate agreement with the Contractor during the construction period, submit properly executed warranties to the Architect within fifteen days of completion of that designated portion of the Work.

B. When a special warranty is to be executed by the Contractor, or the Contractor and a subcontractor, supplier, or manufacturer, prepare a written document that contains appropriate terms and identification, ready for execution by the required parties. Submit a draft to the Owner through the Architect for approval prior to final execution.

C. Refer to individual Sections of Divisions 02 through 33 for specific content, and particular requirements for submittal of special warranties.

D. Bind warranties and bonds in heavy-duty, commercial quality, durable 3-ring vinyl covered loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2" by 11" paper.

E. Provide heavy paper dividers with celluloid covered tabs for each warranty. Mark the tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product, and the name, address, and telephone number of the installer.

F. Identify each binder on the front and the spine with the typed or printed title "WARRANTIES AND BONDS", the Project title or name, and the name of the Contractor.

G. When operating and maintenance manuals are required for warranted construction, provide additional copies of each warranty, as necessary, for inclusion in each required manual.

END OF SECTION 01 78 00

SECTION 01 79 00 - DEMONSTRATION AND TRAINING

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for instructing Owner's personnel, including the following:

1. Instruction in operation and maintenance of systems, subsystems, and equipment.
2. Demonstration and training video recordings.

1.2 CLOSEOUT SUBMITTALS

A. Demonstration and Training Video Recordings: Submit two copies within seven days of end of each training module.

1. Identification: On each copy, provide an applied label with the following information:

a. Name of Project.
b. Name and address of videographer.
c. Name of Architect.
d. Name of Construction Manager.
e. Name of Contractor.
f. Date of video recording.

2. At completion of training, submit complete training manual(s) for Owner's use prepared in same paper and PDF file format required for operation and maintenance manuals.

1.3 QUALITY ASSURANCE

A. Facilitator Qualifications: A firm or individual experienced in training or educating maintenance personnel in a training program similar in content and extent to that indicated for this Project, and whose work has resulted in training or education with a record of successful learning performance.

B. Instructor Qualifications: A factory-authorized service representative, experienced in operation and maintenance procedures and training.

1.4 COORDINATION

A. Coordinate instruction schedule with Owner's operations. Adjust schedule as required to minimize disrupting Owner's operations and to ensure availability of Owner's personnel.

B. Coordinate instructors, including providing notification of dates, times, length of instruction time, and course content.

C. Coordinate content of training modules with content of approved emergency, operation, and maintenance manuals. Do not submit instruction program until operation and maintenance data have been reviewed and approved by Architect.

1.5 INSTRUCTION PROGRAM

A. Program Structure: Develop an instruction program that includes individual training modules for each system and for equipment not part of a system, as required by individual Specification Sections.

B. Training Modules: Develop a learning objective and teaching outline for each module. Include a description of specific skills and knowledge that participant is expected to master. For each module, include instruction for the following as applicable to the system, equipment, or component:

1. Basis of System Design, Operational Requirements, and Criteria: Include the following:

    a. System, subsystem, and equipment descriptions.
    b. Performance and design criteria if Contractor is delegated design responsibility.
    c. Operating standards.
    d. Regulatory requirements.
    e. Equipment function.
    f. Operating characteristics.
    g. Limiting conditions.
    h. Performance curves.

2. Documentation: Review the following items in detail:

    a. Emergency manuals.
    b. Systems and equipment operation manuals.
    c. Systems and equipment maintenance manuals.
    d. Product maintenance manuals.
    e. Project Record Documents.
    f. Identification systems.
    g. Warranties and bonds.
    h. Maintenance service agreements and similar continuing commitments.

3. Emergencies: Include the following, as applicable:

    a. Instructions on meaning of warnings, trouble indications, and error messages.
    b. Instructions on stopping.
    c. Shutdown instructions for each type of emergency.
    d. Operating instructions for conditions outside of normal operating limits.
    e. Sequences for electric or electronic systems.
    f. Special operating instructions and procedures.

4. Operations: Include the following, as applicable:

    a. Startup procedures.
    b. Equipment or system break-in procedures.
    c. Routine and normal operating instructions.
    d. Regulation and control procedures.
    e. Control sequences.
    f. Safety procedures.
    g. Instructions on stopping.
    h. Normal shutdown instructions.
    i. Operating procedures for emergencies.
    j. Operating procedures for system, subsystem, or equipment failure.
    k. Seasonal and weekend operating instructions.
    l. Required sequences for electric or electronic systems.
    m. Special operating instructions and procedures.

5. Adjustments: Include the following:

    a. Alignments.
    b. Checking adjustments.
    c. Noise and vibration adjustments.
    d. Economy and efficiency adjustments.

6. Troubleshooting: Include the following:

    a. Diagnostic instructions.
    b. Test and inspection procedures.

7. Maintenance: Include the following:

    a. Inspection procedures.
    b. Types of cleaning agents to be used and methods of cleaning.
    c. List of cleaning agents and methods of cleaning detrimental to product.
    d. Procedures for routine cleaning.
    e. Procedures for preventive maintenance.
    f. Procedures for routine maintenance.
    g. Instruction on use of special tools.

8. Repairs: Include the following:

    a. Diagnosis instructions.
    b. Repair instructions.
    c. Disassembly; component removal, repair, and replacement; and reassembly instructions.
    d. Instructions for identifying parts and components.
    e. Review of spare parts needed for operation and maintenance.

1.6 PREPARATION

A. Assemble educational materials necessary for instruction, including documentation and training module. Assemble training modules into a training manual Operation and Maintenance Data.

B. Set up instructional equipment at instruction location.

1.7 INSTRUCTION

A. Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.

B. Scheduling: Provide instruction at mutually agreed-on times. For equipment that requires seasonal operation, provide similar instruction at start of each season.

1. Schedule training with Owner with at least seven days' advance notice.

C. Training Location and Reference Material: Conduct training on-site in the completed and fully operational facility using the actual equipment in-place. Conduct training using final operation and maintenance data submittals.

D. Evaluation: At conclusion of each training module, assess and document each participant's mastery of module by use of an oral performance-based test.

E. Cleanup: Collect used and leftover educational materials and give to Owner. Remove instructional equipment. Restore systems and equipment to condition existing before initial training use.

1.8 DEMONSTRATION AND TRAINING VIDEO RECORDINGS

A. General: Record each training module separately. Include classroom instructions and demonstrations, board diagrams, and other visual aids, but not student practice.

B. Digital Video Recordings: Provide high-resolution, digital video in MPEG format, produced by a digital camera.

1. Submit video recordings on thumb drive in quantities as required by the Owner.
2. File Hierarchy: Organize folder structure and file locations according to Project Manual table of contents. Provide complete screen-based menu.
3. File Names: Utilize file names based on name of equipment generally described in video segment, as identified in Project specifications.
4. Contractor and Installer Contact File: Using appropriate software, create a file for inclusion on the equipment demonstration and training recording that describes the following for each Contractor involved on the Project, arranged according to Project Manual table of contents:

    a. Name of Contractor/Installer.
    b. Business address.
    c. Business phone number.
    d. Point of contact.
    e. Email address.

C. Recording: Mount camera on tripod before starting recording, unless otherwise necessary to adequately cover area of demonstration and training. Display continuous running time.

1. Film training session(s) in segments not to exceed 15 minutes.

    a. Produce segments to present a single significant piece of equipment per segment.

b. Organize segments with multiple pieces of equipment to follow order of Project Manual table of contents.
c. Where a training session on a particular piece of equipment exceeds 15 minutes, stop filming and pause training session. Begin training session again upon commencement of new filming segment.

D. Preproduced Video Recordings: Provide video recordings used as a component of training modules in same format as recordings of live training.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 79 00

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PANAMA CITY BEACH
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SECTION 03 11 19 - INSULATING CONCRETE FORMING

PART 1 GENERAL

1.01 SUMMARY

A. Comply with the requirements for Division 1.

B. Supply & installation of insulated concrete forms, installation of reinforcing steel and placement of concrete within formwork.

C. Adequate bracing and falsework shall be provided by the Installing Contractor to comply with all applicable Codes.

1.02 SCOPE OF WORK

A. ICF installer to furnish all labor, materials, tools and equipment to perform the installation of insulated concrete form wall assembly as per the construction documents and specification.

B. Furnish all labor to include placement of reinforcing steel within forms, placement of concrete into forms, and final cleanup.

1.04 PRODUCTS INSTALLED BUT NOT SPECIFIED OR SUPPLIED UNDER THIS SECTION

A. Sleeves

B. Inserts

C. Anchors

D. Bolts

E. Reinforcing Steel

F. Window & Door Opening Bucks

G. Concrete

H. Air Barriers

I. Waterproofing

1.05 RELATED SECTIONS

A. Division 03 Section Concrete Reinforcement

B. Division 03 Section Cast-In-Place Concrete

C. Division 03 Section Precast Concrete

D. Division 04 Section Reinforced Unit Masonry

E. Division 05 Section Metals

F. Division 06 Section Rough Carpentry

G. Division 07 Section Fluid-Applied Waterproofing

H. Division 07 Section Air Barriers

J. Division 07 Section Fiber-Cement Siding

K. Division 08 Sections Doors & Windows

L. Division 09 Section Gypsum Board Assemblies

1.06 ALTERNATES

A. Alternate manufacturers are listed under Paragraph 2.01. The cost of any changes in reinforcing details and/or architectural details that are necessitated by the selection of an alternate ICF system with varying dimensions (other than basis of design) shall be the sole responsibility of the Contractor.

1.07 REFERENCES

A. ACI 318 Building Code Requirements for Reinforced Concrete

B. ACI 332 Guide to Residential Cast-in-Place Concrete Construction

C. ASTM C236 Steady State Thermal Performance of Building Assemblies

D. ASTM C473 Physical Testing of Gypsum Board Products & Gypsum Lath

E. ASTM D1761 Mechanical Fasteners in Wood

F. ASTM E84 Surface Burning Characteristics of Building Materials

G. UBC 26-3 Uniform Building Code Standard Room Fire Test

H. ASTM 2634 Flat Wall Insulating Concrete Form (ICF) Systems

1.08 DEFINITIONS

A. *EPS*- Acronym for “Expanded Polystyrene” when referencing the insulating foam component of the insulated concrete form.
ICF- Acronym for “Insulated Concrete Form”

B. *ICF Alignment System*- a form alignment & scaffold system designed exclusively for use with insulated concrete forms.

C. *Trained Installer*- An installation contractor, who has received instructional training in the installation of insulated concrete forms.

D. *Technical Associate or Advisor*- A technical representative, usually a staff member of a ICF Manufacturer or Distribution Firm, who has received instructional training in the installation of insulating forms (as administered by manufacture) and is in the capacity of supervising or overseeing an installation crew on site.

F. *Window or Door Opening Buck*- a pre-manufactured or site constructed frame assembly consisting of engineered wood, plastic or metal material (or combination thereof) used to frame a rough opening within the forming system that will retain concrete around the opening. The frame can also provide for subsequent anchorage of doors and windows within the wall assembly.

1.09 SYSTEM DESCRIPTION / PERFORMANCE REQUIREMENTS

A. Insulated concrete wall forming system shall consist of 2 flame resistant panels of expanded polystyrene (*EPS*) connected by either high-density polypropylene hinged pin foldable webs or EPS embedded polystyrene fastening strips interconnected with slide in format - high density polypropylene web connectors.

B. Insulating concrete form system shall provide a minimum insulation panel thickness of 2 5/8-inches (66.7mm) throughout ALL forms and panels forming the form system product inventory (with exception of variance required for brick ledge, tapered top forms and wall areas requiring a one-sided ICF with exposed concrete finish on one face of wall).

C. All web fastening strips to run full height of form and be fitted top and bottom with reversible fitting, “triple-tooth” interlocking mechanisms to enable positive vertical interlocking of forms with each other. Wall system webs to provide min. 1 ½” (38mm) wide fastening strips @ 8” (200mm) o/c approximately 1/2” (13mm) below wall face for full wall height to facilitate finish fastening of both interior and exterior finishes.

D. Full height fastening strips also to be positioned within corner forms to provide capability of connecting finishes full height within 4” (100mm) or less of all corner conditions.

E. All form units shall be capable of being shipped to site in folded condition to minimize shipping cost and site storage space requirement and be capable of being deployed to installation ready condition by simply unfolding the unit in a single pull motion or pull motion combined with insertion of a single web (at corner condition).

F. EPS foam panels shall be molded with single socket 1” (25mm) wide reversible tooth interlocks positioned in pairs along top of all panels.

G. Wall system to provide min. 4”, 6”, 8”, 10” or 12” (100, 160, 200,250 or 300 mm) wall sections (as required) at all locations throughout wall area.

H. Wall system to provide accurate positioning of steel within form cavity to conform to reinforcing requirements of ACI 318.

I. *EPS* foam panels with concrete to provide min. insulation level of R 22.4 across full line of form unit cavity widths:

I. *EPS* foam to provide maximum vapor permeation of 3.5 Perm-in. (200 ng/Pa.s.m^2)/25mm

J. Finished wall assembly to provide min. rating of STC sound attenuation performance as follows:

1. 4” (100mm) core form STC 45 (when installed without finish)
2. 6” core and above - STC 50

1.10 SUBMITTALS

A. Submit relevant laboratory tests or data that validate product compliance with performance criteria specified prior to commencement of work under this Section.

B. Submit copy of manufacturer’s product installation manual

C. Submit copy of valid product ICC-ES evaluation report to the applicable 2018 building code jurisdiction or as indicated by construction specifications Ref: ICC-ES ESR-2092

D. Submit 3rd party agency certification stating that product supplied meets the requirements of ASTM E2634.

E. Submit copy of current Underwriters Laboratories Inc (UL) listing for proposed ICF wall assembly Ref: BXUV.U930.

F. Submit a copy of ICF installer qualification per Section 3.01 prior to commencement of work under this Section.

G. Submit a copy of Technical Advisor qualification per Section 1.11 prior to commencement of work under this Section.

H. General Contractor to coordinate and submit dimensioned shop drawings (Plans, elevations and sections) to show all ICF walls, 'V' groove contraction joint layout, openings, penetrations and structural embeds from associated trades. All associated trades are required to provide information to verify locations of openings, penetrations or structural embeds, etc. which may affect the execution of their scope of work.

1.11 QUALITY ASSURANCE

A. Contractor shall engage the services of a *Trained* ICF *Installer* or *Technical Associate* for the duration of the work under this Section who has been trained in procedures pertaining to the correct installation of the specified form system (*Trained installer* may already be the designated ICF Installing Contractor if providing credentials as such).

B. *Trained ICF Installer /Technical Associate* shall furnish proof of training documentation to Contractor prior to commencement of work under this Section.

C. The ICF manufacturer to assign a *Technical Advisor*, usually a staff member who has received instructional training in the installation of the ICF system forms (as administered by the ICF manufacturer used for the project) and is in the capacity of providing periodic technical oversight of the installation on site for at least 3 projects similar to the proposed project in size, scope, and complexity.

D. The completed ICF surface shall be plane and plumb, with no deviation greater than 1/4 inch in any planar direction when tested with a 10 foot straightedge or shall not exceed the concrete forming tolerances specified in ACI 117, whichever is more applicable. For wall sections with one sided ICF or one side of exposed concrete finish, provide Class B finish per ACI 347. Note: For wall sections requiring concrete finish surface, no plastic or metal webs, furring's or ties should visible or extend to the finish surface.

E. Variation of Linear Building Line: For position shown in plan and related portion of ICF walls, and partitions, do not exceed 1/2 inch in 20 feet (12 mm in 6 m), nor 3/4 inch in 40 feet (19 mm in 12 m) or more.

F. Variation in Cross-Sectional Dimensions: For thickness of ICF walls, from dimensions shown, do not exceed minus 1/4 inch (6 mm) nor plus 1/4 inch (6 mm).

G. Site Mock-up: construct sample wall mock-up panel to include full wall system and details, located where directed by Architect. Panel may form part of finished work if approved by Consultant.

H. *Trained Installer/Technical Associate* to meet with Contractor prior to material delivery on site to co-ordinate provision of access, storage area, and protection of ICF product and spatial requirements for form alignment placement steel storage & forming.

I. Submit a copy of the ICF concrete mix design.

1.12 DELIVERY STORAGE & HANDLING

A. Deliver products in original factory packaging, bearing identification of product, manufacturer, and batch/lot number.

B. *Trained Installer* shall furnish product packaging labels to contractor as required to maintain traceability of product for duration of contract.

C. Handle and store products in location to prevent damaging and soiling.

D. Ensure that UV protection is provided for material, should on-site storage extend beyond 60 days.

1.13 PROJECT CONDITIONS

A. Use appropriate measures for protection and supplementary heating when required to ensure proper curing conditions in accordance with manufacturer's recommendations if installation is carried out during periods of weather where temperatures are below minimum specified by governing Building Code for concrete and masonry.

1.14 COORDINATION

A. Ensure those materials listed under Sub-Section 1.03 & 1.04 are provided to *Contract Installer* prior to commencement of work under this Section.

1.15 WARRANTY

A. Contact the Manufacturer for supply of a written copy of specific warranties of the product.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A **Basis of Design:** NUDURA Systems, Inc
Unit 1, 80 Ellis Drive, Barrie, Ontario Canada L4M 6E7
Phone: (866) 468-6299 Fax: (705) 726-2110
Email : info@nudura.com Web Page: www.nudura.com

B. Subject to compliance with requirements, manufacturers offering product that may be incorporated into the Work include, but are not limited to, the following:

1. Fox Blocks
2. Quad-Lock
3. Logix

C. Should an alternative manufacturer, other than basis of design manufacturer, is used it is the Contractor's responsibility for the following:

1. Coordinating changes and modifications that may be required in materials and detailing of other work that is necessary to accommodate alternate manufacturer's products, and for costs associated with these changes.
2. Coordinating and submitting shop drawings as required, highlighting all necessary changes and deviation of Contract Documents for all trades affected by the use of alternate manufacturer's products.

2.02 MATERIALS

A. Insulated Concrete Form units to be supplied through an authorized distributor.

B. 1" x ½" deep, pre-molded plastic or metal projecting strips to form 'V' groove contraction joints on interior face of exposed (Series-1) concrete walls.

C. Substitutes and alternates will per Section 1.06 above.

2.03 CONCRETE

A. Concrete supplied under Division 03 Cast-in-Place Concrete shall be of strength as specified by the design engineer (measured at 28 days). Recommended maximum aggregate size to be 1/2" (13mm) aggregate for 4" & 6" (100 & 160mm) cavity forms and, ¾" (19mm) aggregate for the 8" (200 mm) cavity forms and higher.

1. Recommended concrete slump is 6" +/- 1" (150mm +/- 25mm) (subject to design revision to suit application). Where required by engineer of record, recommended slump specification shall be attained through addition of super plasticizer/mid-range water reducing agents to achieve design mix strength and concrete flow-ability.

2.04 REINFORCING STEEL

A. Reinforcing steel shall be as specified in Section 03 20 00 and shall be supplied under that Section for placement by the *Trained Installer*.

2.05 WALL ALIGNMENT SYSTEM

A. The Trained Installer shall furnish and utilize the OHSA compliant Form Alignment System (provided as an installation component of the ICF wall system) to facilitate construction of the wall assembly, and to provide adjustment for ensuring plumbness of the wall during construction.

2.06 WATERPROOFING

A. Where specified, waterproofing shall be fluid-applied waterproofing as supplied by concrete form system manufacturer specific to the form system specified under this section. Material to be supplied under this Section & installed as specified under Division 07 Section, Fluid-Applied Waterproofing.

B. Waterproofing material shall be *EPS* foam compatible.

2.07 FINISHING

A. Smooth-Formed Concrete: (See Division 03 Section "Cast-in-Place Concrete".)

1. After removal of plywood forming, float/parge all cracks, spalls, voids, etc. (except tie-down dimples) with cementitious patching compound to match concrete.
2. Remove fins and other projections that exceed specified limits on formed-surface irregularities.

2.08 AIR BARRIER

A. Where a fluid-applied air barrier is to be directly adhered to the ICF substrate, the EPS surface should be prepped per recommendations in section 3.08 below. Additionally, vertical and horizontal joints 1/8" or greater in the ICF surface should be filled level with surface using a compatible low expansion foam, slivers

of EPS and/or joint sealant as recommended by the AWRB manufacturer and compatible with the EPS foam.

B. All flashing, sealants and barrier membranes must provide compatibility and adhesion testing with the ICF system in accordance with ASTM D4541. Adhesion testing results must achieve a minimum of 16 PSI pull-off resistance. Additional surface and joint preparation may be required in accordance with manufacturer's or supplier's recommendations.

2.09 TERMITE TREATMENT – FOAM BELOW GRADE

A. For walls below grade the ICF system must incorporate termite resistant EPS foam with Preventol TM preservative insecticide ICC-ES ESR-2918 (500 ppm).

PART 3 EXECUTION

3.01 INSTALLERS

A. Installer List:

1. Per Section 1.05 Submittals – Bid Submittal requirements, the installing contractor for this section shall be:
   a) An experienced ICF Contractor (*trained installer*) with minimum 3 years of experience in supervising at least 3 commercial ICF projects with gross wall areas over 40,000 ft^2 (3,761 m^2) within the last 5 years or;
   b) A qualified masonry or traditional concrete forming contractor with a minimum of 5 years of experience in commercial construction applications. The Contractor shall engage the services of a *Trained Installer* or *Technical Associate* for the duration of the work under this Section.
2. The installation contractor shall have demonstrated experience with supervising at least 3 commercial construction projects of with gross wall areas of 40,000 ft^2 (3,761 m^2) or greater. (Submit project name(s)/ location(s)).
3. Prior to commencement of ICF installation and associated work, conduct a meeting at project site with the General Contractor, ICF Installer, ICF Technical Advisor, and trades responsible for installing any associated works interfacing directly with the ICF wall assembly to ensure coordination across all trades.

3.02 EXAMINATION

A. Inspect all areas included in Scope of Work to establish the extent of work and verify site access conditions.

3.03 SITE VERIFICATION OF CONDITIONS

A. Verify that site conditions are as set out in Part 1- General Conditions.

B. Examine footings installed under Division 03 Section Cast-in-Place Concrete are within +/-¼" (6mm) of level and that steps footing increments are 18" (457 mm) in height. Where partial or half course is intended for starting course elevation, ensure step footing increment is equal to cut form unit less ½" (13mm).

C. If specified, ensure reinforcing steel dowels are in place at specified centers along footing lengths.

3.04 PREPARATION

A. Clean all debris from the top of footings prior to commencing work.

3.05 INSTALLATION

A. The General Contractor and ICF installation company shall develop and implement an Installation Quality Control Plan (QCP) based on the ICF manufacturer's recommended means and methods. The quality control plan (QCP) shall provide an outline for monitoring the Pre-Installation and Post-Installation process to ensure the work is performed in accordance with the drawings and specifications. The quality control plan shall include the pre-pour inspection check list (See Attachment A) to inspect erected formwork, reinforcement placement, door and window opening construction/locations, steel embed placement, and alignment and bracing systems. The quality control plan shall also include the post pour inspection check list (See Attachment B). The ICF installation company shall ensure that the cast-in-place concrete walls are level, plumb, square, and straight with all dimensions conforming to the drawings and within required tolerances. Notify the designer of record in writing of defective formwork within 7 working days of the date of ICF inspection. Include the fully initialed and signed pre-pour and post pour checklists as part of the appropriate QC Daily Reports.

B. Installation of forms to be in strict accordance with manufacturer’s recommendations and/or product installation manual as supplied in evidence to contractor under Sub Section 1.10 of this Section.

C. Install ‘V’ groove contraction joints at exposed interior face of concrete walls as follows:

1. Horizontal: at 6’-2” AFF and max. 6’-0” O.C. vert. thereafter.
2. Vertical: Third points of each wall at Apparatus Bay.
3. Submit layout drawing for review and approval.

D. The trained installer shall ensure manufacturer’s procedures for the following work are employed on site (as outlined in the manufacturer’s product Installation manual or approved means and methods):

1. First Course Placement
2. Horizontal Reinforcement Placement
3. ‘V’ groove contraction joint projecting strip placement.
4. Successive Course Placement
5. Door & Window Opening Construction
6. Form Alignment & Scaffolding Installation
7. Vertical Reinforcement Placement
8. Pre-Concrete Placement Inspection to QCP
9. Concrete Placement
10. Access & Form Alignment Assembly Removal

3.06 SERVICE PENETRATIONS

A. Service penetrations (e.g.- electrical service conduits, water service pipes, air supply and exhaust ducts etc.) shall be installed at the required locations as indicated by the appropriate trade.

B. Service penetrations exceeding 16” x 16” (400mm x 400mm) in area shall be reinforced.

C. Prior to concrete placement, install service penetration sleeves (supplied by others) at designated locations to create voids where services can be passed through at a later date.

3.07 CLEANUP

A. Clean up and properly dispose of all debris remaining on job site related to the installation of the insulated concrete forms.

3.08 UV SURFACE PREPARATION

A. The expanded polystyrene (EPS) foam used in the manufacture of ICF systems will oxidize when exposed to prolong periods of ultraviolet (UV) light, typically 60 to 120 days. The oxidization manifests on the exposed surface of the ICF form as a chalky dust film. It is recommended that the oxidized layer (chalky dust) remain undisturbed until just prior to the application of any directly applied materials or finish system. The EPS surface should be lightly brushed and washed (hosed down) with clean water to remove the oxidized layer. The EPS surface should be left to fully dry before application of any directly applied materials or finish system, e.g. fluid applied membranes, EIFS system or direct TAFS applications. Additional surface preparations such as but not limited to rasping the surface, may be required as recommended by the fluid applied membrane, EIFS system or direct TAFS supplier or manufacturer.

B. The expanded Consult with exterior finish contractor concerning exposure of EPS to ultraviolet light to ensure proper finish to ICF walls.

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ATTACHMENT A

ICF Pre Pour Checklist

The following checklist shall be initialed and signed/dated, in order, by the following:
ICF Installation Company (ICF Sub),

Contractor's Quality Control System Manager (CQCSM),
Special Inspector as required by code

Concrete pours shall not begin until each item is initialed, AND each person has signed this checklist.

Checklist Item:	ICF Sub	CQC SM	Sp Insp
a. Have ICF walls been installed according to drawing dimensions and verified field survey marks?	_____	_____	_____
b. Has ICF alignment system and shoring been installed per accepted plan and manufactures recommendations?	_____	_____	_____
c. Has wall rebar been installed per construction drawings and specifications in all locations?	_____	_____	_____
d. Has lintel reinforcement been installed per construction drawings and specifications?	_____	_____	_____
e. Are all openings installed and in the correct location?	_____	_____	_____
f. Are all rough openings level, plumb and of correct dimensions per construction documents?	_____	_____	_____
g. Has proper anchorage for buck material been used?	_____	_____	_____
h. Have construction joint forms and reinforcement been installed per agreed details?	_____	_____	_____
i. Have all service penetration sleeves been installed?	_____	_____	_____
j. Have all T junctions, pilasters or columns been shored or braced adequately?	_____	_____	_____
k. Have all beam pockets, steel embeds, or face plates been installed and locations verified?	_____	_____	_____
l. Have all string lines for wall line verification been installed around the perimeter of building?	_____	_____	_____
m. Have the walls been straightened?			
n. Have all corners and openings been verified for level and plumbness	_____	_____	_____
o. If applicable, has the Cold/Hot Weather Concreting Plan been accepted and followed?	_____	_____	_____
p. If no protection was provided, have measures been taken to remove all snow and ice from the forms?	_____	_____	_____
q. Confirm vibrators for internal concrete consolidation are correct size and length and are operational?	_____	_____	_____
r. Are there back up materials in case of blowout? (i.e. blow-out kits and screw gun available)	_____	_____	_____

s. Ensure concrete ordered and delivered to site conforms to pre-approved mix design as specified. _____ _____ _____

t. Has the quantity of concrete been properly calculated and checked against the build? _____ _____ _____

u. Have concrete deliveries and interval timing for trucks been coordinated with concrete supplier? _____ _____ _____

v. Ensure concrete pump operator reviews site condition prior to day of pour and concrete placement plan. _____ _____ _____

w. Ensure concrete pump discharge line has been configured with proper reducers and flexible placement hose. _____ _____ _____

x. Ensure ICF Subcontractor has appropriate number of personnel onsite to manage concrete placement and has assigned crew members to manage post placement wall alignment and plumb checks. _____ _____ _____

ICF Installation Company Rep	Date
Project CQCSM	Date
Special Inspector	Date

ATTACHMENT B

ICF Post Pour Checklist

The following checklist shall be initialed, in order, by the following.

ICF Installation Company (ICF Sub)
Contractor's Quality Control System Manager (CQCSM)
Special Inspector as required by code

Work covering or enclosing the ICF System on either side of the walls shall only occur after each item is initialed AND each person has signed this checklist.

Checklist Item:	ICF Sub	CQC SM	Sp Insp
a. Have all the walls been properly consolidated?	_____	_____	_____
b. Ensure properly consolidated at all beam pockets steel embed or face plates.	_____	_____	_____
c. Ensure properly consolidated at locations of possible rebar congestion, i.e. lintels, pilasters, columns, etc.	_____	_____	_____
d. Check wall areas for possible voids by probe testing to depth gauge at possible rebar congestion locations.	_____	_____	_____
e. Have the walls been preliminarily straightened to plumb?	_____	_____	_____
f. For the final pour, has the top of wall been screeded level?	_____	_____	_____
g. For wall continuing up, is all cold joint reinforcement in place with proper lap splice and top of concrete left rough?	_____	_____	_____
h. Ensure final fine adjustment of all walls been completed using installed string lines tape measure and laser level.	_____	_____	_____
i. Ensure all opening dimensions have been maintained, headers and sills are level and jambs are plumb.	_____	_____	_____
j. Ensure all wall areas are within planer tolerances.			
k. Confirm all structural embeds, face plates and beam pockets installed correctly, and location/elevation verified by surveyor.	_____	_____	_____
l. Cold weather pouring – has top of wall been protected from freezing i.e. Thermal blanket, etc.	_____	_____	_____
m. Has the alignment system been cleaned of all excess concrete?	_____	_____	_____
n. Has all excess concrete been cleared from the job site area?	_____	_____	_____

_____ _____

ICF Installation Company Rep Date

_____ _____

Project CQCSM Date

_____ _____

Special Inspector Date

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PANAMA CITY BEACH
FIRE STATION #32
HUTCHISON BLVD
BID DOCUMENTS
AUGUST 1, 2023

SECTION 032000 – CONCRETE REINFORCING

PART 1 - GENERAL

1.1 SUMMARY

A. This section describes concrete reinforcement.

1.2 RELATED WORK

A. Section 03 11 19, Insulating Concrete Forms

B. Section 03 30 00, Cast-In-Place Concrete

1.3 REFERENCES

A. ACI: American Concrete Institute:
   1. ACI SP-66: ACI Detailing Manual.
   2. ACI 318: Building Code Requirements for Structural Concrete and Commentary.

B. ASTM: American Society for Testing and Materials:
   1. ASTM A82: Standard Specification for Steel Wire, Plain, for Concrete Reinforcement.
   2. ASTM A185: Standard Specification for Steel Welded Wire Reinforcement, Plain, for Concrete.
   3. ASTM A615: Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement.

1.4 SUBMITTAL OF SHOP DRAWINGS

A. Submit complete bar schedule, bar details, and erection drawings in accordance with ACI SP-66.

B. Show each type of bar marked with identification corresponding to identification tag on bar.

C. Erection drawings shall show size and location of all openings.

1.5 REINFORCEMENT STEEL STORAGE

A. Store reinforcing steel blocked up off the ground and in orderly stacks.

B. Each stack shall only contain bars with the same identifying label.

PART 2 - PRODUCTS

2.1 MATERIAL

A. Reinforcement Bars:
   1. No. 4, or larger, bars shall conform to ASTM A615, Grade 60.
   2. No. 3 bars shall conform to ASTM A615, Grade 40.

B. Welded Wire Fabric: Conform to ASTM A185 using bright basic wire meeting ASTM A82.

C. Bolster, Chairs, and Accessories:
   1. Conform to ACI SP-66.
   2. Provide all spacers, bolsters, chairs, ties, and other devices necessary to properly space, place, support, and fasten reinforcement in place.
   3. Metal accessories shall be galvanized or plastic-protected where legs will be exposed in finished concrete surfaces.
   4. Do not use rocks, broken bricks, wood blocks, or concrete fragments for reinforcing support.

D. Testing: Perform at the mill for each heat. Submit certified test results, if required.

2.2 FABRICATION OF BARS

A. Fabricate with cold bends conforming to the recommended dimensions shown in ACI 318, Chapter 7.

B. Field fabrication will be allowed only if the Contractor has equipment to properly fabricate steel.

C. Attach metal tags for identification.

PART 3 - EXECUTION

3.1 PLACING METAL REINFORCEMENT

A. Refer to Structural Drawings for more information.

B. Place in accordance with ACI 318, Chapters 7 and 12.

C. Tie securely with 16-gauge or larger annealed iron wire.

D. Place steel with concrete cover in accordance with ACI 318, Chapter 7, Paragraph 7.7, unless otherwise indicated.

E. Splice steel not less than 30-bar diameter for ASTM A615, Grade 40, and 43-bar diameter for ASTM A615, Grade 60, unless otherwise indicated. For plain bars, splice not less than twice that for deformed bars.

F. Lap welded wire fabric not less than the length of one mesh.

END OF SECTION 03 20 00

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PANAMA CITY BEACH
FIRE STATION #32
HUTCHISON BLVD
BID DOCUMENTS
AUGUST 1, 2023

SECTION 03 31 00 - CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section specifies cast-in place concrete, including formwork, reinforcement, concrete materials, mixture design, placement procedures, and finishes, for the following:

   a. Footings.
   b. Foundation walls.
   c. Slabs-on-grade.
   d. Building frame members.

B. Related Sections include the following:

   a. Division 2 Section “Cement Concrete Pavement” for concrete pavement and walks.

1.3 DEFINITIONS

A. Cementitious Materials: Portland cement ASTM C150 Type I/II, **No fly ash is permitted on the project.**

1.4 SUBMITTALS

A. Product Data: For each type of product indicated.
B. Design Mixtures: For each concrete mixture. Submit alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.

   a. Indicate amounts of mixing water to be withheld for later addition at Project site.

C. Steel Reinforcement Shop Drawings: Placing drawings that detail fabrication, bending, and placement. Include bar sizes, lengths, material, grade, bar schedules, stirrup spacing, bent bar diagrams, bar arrangement, splices and laps, mechanical connections, tie spacing, hoop spacing, and supports for concrete reinforcement.
D. Material Test Reports: For the following, from a qualified testing agency, indicating compliance with requirements:

a. Aggregates.

E. Material Certificates: For each of the following, signed by manufacturers:

a. Cementitious materials.
b. Admixtures.
c. Steel reinforcement and accessories.
d. Waterstops.
e. Curing compounds.
f. Bonding agents.
g. Adhesives.
h. Vapor retarders.
i. Semirigid joint filler.
j. Joint-filler strips.

F. Field quality-control test and inspection reports.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: An experienced installer who has completed concrete Work similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
B. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.
C. Testing Agency Qualifications: An independent agency, qualified according to ASTM C 1077 and ASTM E 329 for testing indicated, as documented according to ASTM E 548.
D. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, obtain aggregate from one source, and obtain admixtures through one source from a single manufacturer.
E. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:

a. ACI 301, "Specification for Structural Concrete," Sections 1 through 5.
b. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."

G. Concrete Testing Service: Engage a qualified independent testing agency to perform material evaluation tests and to design concrete mixtures.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Steel Reinforcement: Deliver, store, and handle steel reinforcement to prevent bending and damage.

B. Waterstops: Store waterstops under cover to protect from moisture, sunlight, dirt, oil, and other contaminants.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:

a. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products specified.
b. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, manufacturers specified.

2.2 FORM-FACING MATERIALS

A. Smooth-Formed Finished Concrete: Form-facing panels that will provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.

    a. Plywood, metal, or other approved panel materials.
    b. Exterior-grade plywood panels, suitable for concrete forms, complying with DOC PS 1, and as follows:

        i. B-B (Concrete Form), Class 1 or better; mill oiled and edge sealed.

B. Rough-Formed Finished Concrete: Plywood, lumber, metal, or another approved material. Provide lumber dressed on at least two edges and one side for tight fit.
C. Forms for Cylindrical Columns, Pedestals, and Supports: Metal, glass-fiber-reinforced plastic, paper, or fiber tubes that will produce surfaces with gradual or abrupt irregularities not exceeding specified formwork surface class. Provide units with sufficient wall thickness to resist plastic concrete loads without detrimental deformation.
D. Chamfer Strips: Wood, metal, PVC, or rubber strips, ¾ by ¾ inch (19 by 19 mm), minimum.
E. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.

    a. Formulate form-release agent with rust inhibitor for steel form-facing materials.

F. Form Ties: Factory-fabricated, removable or snap-off metal or glass-fiber-reinforced plastic form ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal.

    a. Furnish units that will leave no corrodible metal closer than 1 inch (25 mm) to the plane of exposed concrete surface.
    b. Furnish ties that, when removed, will leave holes no larger than 1 inch (25 mm) in diameter in concrete surface.
    c. Furnish ties with integral water-barrier plates to walls indicated to receive damp proofing or waterproofing.

2.3 STEEL REINFORCEMENT

A. Reinforcing Bars: ASTM A 615/A 615M, A616 Grade 60 (Grade 420), deformed.
B. Plain-Steel Welded Wire Reinforcement: ASTM A 185, plain, fabricated from as drawn steel wire into flat sheets.

2.4 REINFORCEMENT ACCESSORIES

A. Joint Dowel Bars: ASTM A 615/A 615M, A616 Grade 60 (Grade 420), plain-steel bars, cut bars true to length with ends square and free of burrs.

B. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire reinforcement in place. Manufacture bar supports from steel wire, plastic, or precast concrete according to CRSI's "Manual of Standard Practice," of greater compressive strength than concrete and as follows:

    a. For concrete surfaces exposed to view where legs of wire bar supports contact forms, use CRSI Class 1 plastic-protected steel wire or CRSI Class 2 stainless steel bar supports.

2.5 CONCRETE MATERIALS

A. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source, throughout Project:

    a. Portland Cement: ASTM C 150, Type I/II.

B. Normal-Weight Aggregates: ASTM C 33, Class 3M coarse aggregate or better, graded.

    a. Maximum Coarse-Aggregate Size:

        i. 3/4" maximum unless noted.

C. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.

D. Water: ASTM C 94/C 94M and potable.

2.6 ADMIXTURES

A. Air-Entraining Admixture: ASTM C 260.

B. Chemical Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures and that will not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.

    a. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.
    b. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.
    c. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.

2.7 WATERSTOPS

A. Flexible Rubber Waterstops: CE CRD-C 513, for embedding in concrete to prevent passage of fluids through joints. Factory fabricate corners, intersections, and directional changes.

B. Self-Expanding Butyl Strip Waterstops: Manufactured rectangular or trapezoidal strip, butyl rubber with sodium bentonite or other hydrophilic polymers, for adhesive bonding to concrete, ¾ by 1 inch (19 by 25 mm).

2.8 VAPOR RETARDERS

A. Plastic Vapor Retarder: ASTM E 1745, Class C**,** or polyethylene sheet, ASTM D 4397, not less than 6 mils thick. Include manufacturer's recommended adhesive or pressure-sensitive joint tape.

2.9 CURING MATERIALS

A. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete.

B. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. (305 g/sq. m) when dry.
C. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap polyethylene sheet.
D. Water: Potable.
E. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1,

B. Class B, dissipating.

F. Clear, Waterborne, Membrane-Forming Curing and Sealing Compound:

a. ASTM C 1315, Type 1, Class A.

2.10 RELATED MATERIALS

A. Expansion- and Isolation-Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber.
B. Semi rigid Joint Filler: Two-component, semi rigid, 100 percent solids, per ASTM D 2240.
C. Bonding Agent: ASTM C 1059, Type II, non-redispersible, acrylic emulsion or styrene butadiene.
D. Epoxy Bonding Adhesive: ASTM C 881, two-component epoxy resin, capable of humid curing and bonding to damp surfaces, of class suitable for application temperature and of grade to suit requirements.
E. Dovetail Anchor Slots: Hot-dip galvanized steel sheet, not less than 0.0336 inch (0.85 mm) thick, with bent tab anchors. Temporarily fill or cover face opening of slots to prevent intrusion of concrete or debris.

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.

a. Use a qualified independent testing agency for preparing and reporting proposed mixture designs based on laboratory trial mixtures.

B. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than portland cement.
C. Admixtures: Use admixtures according to manufacturer's written instructions.

a. Use high-range water-reducing or plasticizing admixture in concrete, as required, for placement and workability and as specified on drawings and schedules.
b. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.
c. Use water-reducing admixture in pumped concrete, concrete for heavy-use industrial slabs and parking structure slabs, concrete required to be watertight, and concrete with a water-cementitious materials ratio below 0.50.

2.12 CONCRETE MIXTURES FOR BUILDING ELEMENTS

A. Proportion normal-weight concrete mixture as follows:

a. Minimum Compressive Strength:
i. Column Footings 3000 psi at 28 days.

ii. Wall Footings 3000 psi at 28 days.
iii. Slab on Grade 4500 psi at 28 days.

b. Maximum Water-Cementitious Materials Ratio: 0.51.
c. Slump Limit: 3” to 6”
d. Air Content: 4 percent, plus or minus 1.5 percent at point of delivery for ¾ inch nominal maximum aggregate size.

2.13 FABRICATING REINFORCEMENT

A. Fabricate steel reinforcement according to CRSI’s “Manual of Standard Practice.”

2.14 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M and ASTM C 1116, and furnish batch ticket information.

B. When air temperature is between 85 and 90 deg F (30 and 32 deg C), reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F (32 deg C), reduce mixing and delivery time to 60 minutes.

PART 3 - EXECUTION

3.1 FORMWORK

A. Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads.
B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.
C. Limit concrete surface irregularities, designated by ACI 347R as abrupt or gradual, as follows:

a. Class A, 1/8 inch (3.2 mm) for smooth-formed finished surfaces.
b. Class C, ½ inch (13 mm) for rough-formed finished surfaces.

D. Construct forms tight enough to prevent loss of concrete mortar.
E. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical.

a. Install keyways, reglets, recesses, and the like, for easy removal.
b. Do not use rust-stained steel form-facing material.

F. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces. Provide and secure units to support screed strips; use strike-off templates or compacting-type screeds.
G. Provide temporary openings for cleanouts and inspection ports where interior area of formwork is inaccessible. Close openings with panels tightly fitted to forms and securely braced to prevent loss of concrete mortar. Locate temporary openings in forms at inconspicuous locations.
H. Chamfer exterior corners and edges of permanently exposed concrete.

I. Form openings, chases, offsets, sinkages, keyways, reglets, blocking, screeds, and bulkheads required in the Work. Determine sizes and locations from trades providing such items.
J. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.
K. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.
L. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.

3.2 EMBEDDED ITEMS

A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
    a. Install anchor rods, accurately located, to elevations required and complying with tolerances in Section 7.5 of AISC's "Code of Standard Practice for Steel Buildings and Bridges."
    b. Install dovetail anchor slots in concrete structures as indicated.

3.3 REMOVING AND REUSING FORMS

A. General: Formwork for sides of beams, walls, columns, and similar parts of the Work that does not support weight of concrete may be removed after cumulatively curing at not less than 50 deg F (10 deg C) for 24 hours after placing concrete, if concrete is hard enough to not be damaged by form-removal operations and curing and protection operations are maintained.
    a. Leave formwork for beam soffits, joists, slabs, and other structural elements that supports weight of concrete in place until concrete has achieved at least 70 percent of its 28-day design compressive strength.
    b. Remove forms only if shores have been arranged to permit removal of forms without loosening or disturbing shores.
B. Clean and repair surfaces of forms to be reused in the Work. Split, frayed, delaminated, or otherwise damaged form-facing material will not be acceptable for exposed surfaces. Apply new form-release agent.
C. When forms are reused, clean surfaces, remove fins and laitance, and tighten to close joints. Align and secure joints to avoid offsets. Do not use patched forms for exposed concrete surfaces unless approved by Architect.

3.4 SHORES AND RESHORES

A. Comply with ACI 318 (ACI 318M) and ACI 301 for design, installation, and removal of shoring and reshoring.

3.5 VAPOR RETARDERS

A. Plastic Vapor Retarders: Place, protect, and repair vapor retarders according to ASTM E 1643 and manufacturer's written instructions.
    a. Lap joints 6 inches (150 mm) and seal with manufacturer's recommended tape.

3.6 STEEL REINFORCEMENT

A. General: Comply with CRSI's "Manual of Standard Practice" for placing reinforcement.

a. Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing concrete.

B. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials that would reduce bond to concrete.

C. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover. Do not tack weld crossing reinforcing bars.
   a. Weld reinforcing bars according to AWS D1.4, where indicated.

D. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.

E. Install welded wire reinforcement in longest practicable lengths on bar supports spaced to minimize sagging. Lap edges and ends of adjoining sheets at least one mesh spacing. Offset laps of adjoining sheet widths to prevent continuous laps in either direction.
   a. Lace overlaps with wire.

3.7 JOINTS

A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.

B. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Architect.
   a. Place joints perpendicular to main reinforcement. Do not continue reinforcement through sides of strip placements of floors and slabs.
   b. Form keyed joints as indicated. Embed keys at least 1-1/2 inches (38 mm) into concrete.
   c. Use a bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.

C. Contraction Joints in Slabs-on-Grade: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of concrete thickness as follows:
   a. Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint to a radius of 1/8 inch (3.2 mm). Repeat grooving of contraction joints after applying surface finishes. Eliminate groover tool marks on concrete surfaces.
   b. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch- (3.2-mm-) wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before concrete develops random contraction cracks.

D. Isolation Joints in Slabs-on-Grade: After removing formwork, install joint-filler strips at slab junctions with vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated.
   a. Extend joint-filler strips full width and depth of joint, terminating flush with finished concrete surface, unless otherwise indicated.
   b. Terminate full-width joint-filler strips not less than ½ inch (13 mm) or more than 1 inch (25 mm) below finished concrete surface where joint sealants, specified in Division 7 Section “Joint Sealants,” are indicated.
   c. Install joint-filler strips in lengths as long as practicable. Where more than one length is required, lace or clip sections together.

3.8 WATERSTOPS

A. Flexible Waterstops: Install in construction joints and at other joints indicated to form a continuous diaphragm. Install in longest lengths practicable. Support and protect exposed waterstops during progress of the Work. Field fabricate joints in waterstops according to manufacturer’s written instructions.

B. Self-Expanding Strip Waterstops: Install in construction joints and at other locations indicated, according to manufacturer's written instructions, adhesive bonding, mechanically fastening, and firmly pressing into place. Install in longest lengths practicable.

3.9 CONCRETE PLACEMENT

A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed.
B. Do not add water to concrete during delivery, at Project site, or during placement unless approved by Engineer.
C. Before test sampling and placing concrete, water may be added at Project site, subject to limitations of ACI 301.
    a. Do not add water to concrete after adding high-range water-reducing admixtures to mixture.
D. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation.
    a. Deposit concrete in horizontal layers of depth to not exceed formwork design pressures and in a manner to avoid inclined construction joints.
    b. Consolidate placed concrete with mechanical vibrating equipment according to ACI 301.
    c. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least 6 inches (150 mm) into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mixture constituents to segregate.
E. Deposit and consolidate concrete for floors and slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.
    a. Consolidate concrete during placement operations so concrete is thoroughly worked around reinforcement and other embedded items and into corners.
    b. Maintain reinforcement in position on chairs during concrete placement.
    c. Screed slab surfaces with a straightedge and strike off to correct elevations.
    d. Slope surfaces uniformly to drains where required.
    e. Begin initial floating using bull floats or darbies to form a uniform and open textured surface plane, before excess bleed water appears on the surface. Do not further disturb slab surfaces before starting finishing operations.
F. Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
    a. When average high and low temperature is expected to fall below 40 deg F (4.4 deg C) for three successive days, maintain delivered concrete mixture temperature within the temperature range required by ACI 301.
    b. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.

c. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mixture designs.

G. Hot-Weather Placement: Comply with ACI 301 and as follows:
   a. Maintain concrete temperature below 90 deg F (32 deg C) at time of placement.
   b. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
   c. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete.
   d. Keep subgrade uniformly moist without standing water, soft spots, or dry areas.

3.10 FINISHING FORMED SURFACES

A. Rough-Formed Finish: As-cast concrete texture imparted by form-facing material with tie holes and defects repaired and patched. Remove fins and other projections that exceed specified limits on formed-surface irregularities.

   a. Apply to concrete surfaces not exposed to public view.

B. Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defects. Remove fins and other projections that exceed 1/8 inch in height.

   a. Apply to concrete surfaces exposed to public view, to receive a rubbed finish, to be covered with a coating or covering material applied directly to concrete.

C. Rubbed Finish: Apply the following to smooth-formed finished as-cast concrete where indicated:

   a. Grout-Cleaned Finish: Wet concrete surfaces and apply grout of a consistency of thick paint to coat surfaces and fill small holes. Mix one part portland cement to one and one-half parts fine sand with a 1:1 mixture of bonding admixture and water. Add white portland cement in amounts determined by trial patches so color of dry grout will match adjacent surfaces. Scrub grout into voids and remove excess grout. When grout whitens, rub surface with clean burlap and keep surface damp by fog spray for at least 36 hours.

D. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces, unless otherwise indicated.

3.11 FINISHING FLOORS AND SLABS

A. General: Comply with ACI 302.1R recommendations for screeding, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.

B. Scratch Finish: While still plastic, texture concrete surface that has been screeded and bull-floated or darbied. Use stiff brushes, brooms, or rakes to produce a profile amplitude of ¼ inch (6 mm) in 1 direction.

a. Apply scratch finish to surfaces indicated and to receive concrete floor toppings to receive mortar setting beds for bonded cementitious floor finishes.

C. Float Finish: Consolidate surface with power-driven floats or by hand floating if area is small or inaccessible to power driven floats. Restraighten, cut down high spots, and fill low spots. Repeat float passes and restraightening until surface is left with a uniform, smooth, granular texture.
   a. Apply float finish to surfaces indicated to receive trowel finish and to be covered with fluid-applied or sheet waterproofing, built-up or membrane roofing, or sandbed terrazzo.

D. Trowel Finish: After applying float finish, apply first troweling and consolidate concrete by hand or power-driven trowel. Continue troweling passes and restraighten until surface is free of trowel marks and uniform in texture and appearance. Grind smooth any surface defects that would telegraph through applied coatings or floor coverings.
   a. Apply a trowel finish to surfaces indicated, exposed to view or to be covered with resilient flooring, carpet, ceramic or quarry tile set over a cleavage membrane, paint, or another thin-film-finish coating system.
   b. Finish surfaces to the following tolerances:
      a. Finish and measure surface so gap at any point between concrete surface and an unleveled, freestanding, 10-foot- (3.05-m-) long straightedge resting on 2 high spots and placed anywhere on the surface does not exceed 1/8 inch (4.8 mm).

E. Trowel and Fine-Broom Finish: Apply a first trowel finish to surfaces indicated where ceramic or quarry tile is to be installed by either thickset or thin-set method. While concrete is still plastic, slightly scarify surface with a fine broom.

   a. Comply with flatness and levelness tolerances for trowel finished floor surfaces.

F. Broom Finish: Apply a broom finish to exterior concrete platforms, steps, and ramps, and elsewhere as indicated.
   a. Immediately after float finishing, slightly roughen trafficked surface by brooming with fiber-bristle broom perpendicular to main traffic route. Coordinate required final finish with Architect before application.

G. Slip-Resistive Finish: Before final floating, apply slip-resistive aluminum granule finish where indicated and to concrete stair treads, platforms, and ramps. Apply according to manufacturer's written instructions and as follows:
   a. Uniformly spread 25 lb/100 sq. ft. (12 kg/10 sq. m) of dampened slip-resistive aluminum granules over surface in 1 or 2 applications. Tamp aggregate flush with surface, but do not force below surface.
   b. After broadcasting and tamping, apply float finish.
   c. After curing, lightly work surface with a steel wire brush or an abrasive stone and water to expose slip-resistive aluminum granules.

3.12 MISCELLANEOUS CONCRETE ITEMS

A. Filling In: Fill in holes and openings left in concrete structures, unless otherwise indicated, after work of other trades is in place. Mix, place, and cure concrete, as specified, to blend with in-place construction. Provide other miscellaneous concrete filling indicated or required to complete the Work.

B. Curbs: Provide monolithic finish to interior curbs by stripping forms while concrete is still green and by steel-troweling surfaces to a hard, dense finish with corners, intersections, and terminations slightly rounded.
C. Equipment Bases and Foundations: Provide machine and equipment bases and foundations as shown on Drawings. Set anchor bolts for machines and equipment at correct elevations, complying with diagrams or templates from manufacturer furnishing machines and equipment.

3.13 CONCRETE PROTECTING AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 301 for hot-weather protection during curing.
B. Evaporation Retarder: Apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h (1 kg/sq. m x h) before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.
C. Formed Surfaces: Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces. If forms remain during curing period, moist cure after loosening forms. If removing forms before end of curing period, continue curing for the remainder of the curing period.
D. Unformed Surfaces: Begin curing immediately after finishing concrete. Cure unformed surfaces, including floors and slabs, concrete floor toppings, and other surfaces.
E. Cure concrete according to ACI 308.1, by one or a combination of the following methods:
    a. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:
        i. Water.
        ii. Continuous water-fog spray.
        iii. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with 12-inch (300-mm) lap over adjacent absorptive covers.
    b. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moistureretaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches (300 mm), and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears during curing period using cover material and waterproof tape.
        i. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive floor coverings.
        ii. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive penetrating liquid floor treatments.
        iii. Cure concrete surfaces to receive floor coverings with either a moistureretaining cover or a curing compound that the manufacturer certifies will not interfere with bonding of floor covering used on Project.
    c. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to

heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.

i. After curing period has elapsed, remove curing compound without damaging concrete surfaces by method recommended by curing compound manufacturer unless manufacturer certifies curing compound will not interfere with bonding of floor covering used on Project.

d. Curing and Sealing Compound: Apply uniformly to floors and slabs indicated in a continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Repeat process 24 hours later and apply a second coat. Maintain continuity of coating and repair damage during curing period.

3.14 JOINT FILLING

A. Prepare, clean, and install joint filler according to manufacturer's written instructions.
   a. Do not fill joints until construction traffic has permanently ceased.
B. Remove dirt, debris, saw cuttings, curing compounds, and sealers from joints; leave contact faces of joint clean and dry.
C. Install semirigid joint filler full depth in saw-cut joints and at least 2 inches (50 mm) deep in formed joints. Overfill joint and trim joint filler flush with top of joint after hardening.

3.15 CONCRETE SURFACE REPAIRS

A. Defective Concrete: Repair and patch defective areas as approved by Architect.
   a. Remove and replace concrete that cannot be repaired and patched to Architect's approval.
B. Patching Mortar: Mix dry-pack patching mortar, consisting of one part portland cement to two and one-half parts fine aggregate passing a No. 16 (1.18-mm) sieve, using only enough water for handling and placing.
C. Repairing Formed Surfaces: Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycombs, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning.
   a. Immediately after form removal, cut out honeycombs, rock pockets, and voids more than ½ inch (13 mm) in any dimension in solid concrete, but not less than 1 inch (25 mm) in depth. Make edges of cuts perpendicular to concrete surface. Clean, dampen with water, and brush-coat holes and voids with bonding agent. Fill and compact with patching mortar before bonding agent has dried. Fill formtie voids with patching mortar or cone plugs secured in place with bonding agent.
   b. Repair defects on surfaces exposed to view by blending white portland cement and standard portland cement so that, when dry, patching mortar will match surrounding color. Patch a test area at inconspicuous locations to verify mixture and color match before proceeding with patching. Compact mortar in place and strike off slightly higher than surrounding surface.
   c. Repair defects on concealed formed surfaces that affect concrete's durability and structural performance as determined by Architect.
D. Repairing Unformed Surfaces: Test unformed surfaces, such as floors and slabs, for finish and verify surface tolerances specified for each surface. Correct low and high areas. Test surfaces sloped to drain for trueness of slope and smoothness; use a sloped template.

a. Repair finished surfaces containing defects. Surface defects include spalls, popouts, honeycombs, rock pockets, crazing and cracks in excess of 0.01 inch (0.25 mm) wide or that penetrate to reinforcement or completely through unreinforced sections regardless of width, and other objectionable conditions.
b. After concrete has cured at least 14 days, correct high areas by grinding.
c. Correct localized low areas during or immediately after completing surface finishing operations by cutting out low areas and replacing with patching mortar. Finish repaired areas to blend into adjacent concrete.
d. Correct other low areas scheduled to receive floor coverings with a repair underlayment. Prepare, mix, and apply repair underlayment and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface. Feather edges to match adjacent floor elevations.
e. Correct other low areas scheduled to remain exposed with a repair topping. Cut out low areas to ensure a minimum repair topping depth of ¼ inch (6 mm) to match adjacent floor elevations. Prepare, mix, and apply repair topping and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface.
f. Repair defective areas, except random cracks and single holes 1 inch (25 mm) or less in diameter, by cutting out and replacing with fresh concrete. Remove defective areas with clean, square cuts and expose steel reinforcement with at least a ¾-inch (19-mm) clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding agent. Mix patching concrete of same materials and mixture as original concrete except without coarse aggregate. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.
g. Repair random cracks and single holes 1 inch (25 mm) or less in diameter with patching mortar. Groove top of cracks and cut out holes to sound concrete and clean off dust, dirt, and loose particles. Dampen cleaned concrete surfaces and apply bonding agent. Place patching mortar before bonding agent has dried. Compact patching mortar and finish to match adjacent concrete. Keep patched area continuously moist for at least 72 hours.

E. Perform structural repairs of concrete, subject to Engineer's approval, using epoxy adhesive and patching mortar.
F. Repair materials and installation not specified above may be used, subject to Engineers's approval.

3.16 FIELD QUALITY CONTROL

A. Testing and Inspecting: Owner will engage a special inspector and qualified testing and inspecting agency to perform field tests and inspections and prepare test reports.
B. Concrete Tests: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements:
    a. Testing Frequency: Obtain one composite sample for each day's pour of each concrete mixture exceeding 5 cu. yd. (4 cu. m), but less than 25 cu. yd. (19 cu. m), plus one set for each additional 50 cu. yd. (38 cu. m) or fraction thereof.
    b. Testing Frequency: Obtain at least one composite sample for each 100 cu. yd. (76 cu. m) or fraction thereof of each concrete mixture placed each day.
        i. When frequency of testing will provide fewer than five compressive strength tests for each concrete mixture, testing shall be conducted from

at least five randomly selected batches or from each batch if fewer than five are used.

c. Slump: ASTM C 143/C 143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.
d. Air Content: ASTM C 231, pressure method, for normal-weight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
e. Concrete Temperature: ASTM C 1064/C 1064M; one test hourly when air temperature is 40 deg F (4.4 deg C) and below and when 80 deg F (27 deg C) and above, and one test for each composite sample.
f. Compression Test Specimens: ASTM C 31/C 31M.
    i. Cast and laboratory cure two sets of two standard cylinder specimens for each composite sample.
g. Compressive-Strength Tests: ASTM C 39/C 39M; test one set of two laboratory cured specimens at 7 days and one set of two specimens at 28 days.
    i. Test one set of two field-cured specimens at 7 days and one set of two specimens at 28 days.
    ii. A compressive-strength test shall be the average compressive strength from a set of two specimens obtained from same composite sample and tested at age indicated.
        1. When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, Contractor shall evaluate operations and provide corrective procedures for protecting and curing in-place concrete.
        2. Strength of each concrete mixture will be satisfactory if every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi (3.4 MPa).
        3. Test results shall be reported in writing to Architect, Engineer, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.
h. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Engineer but will not be used as sole basis for approval or rejection of concrete.
i. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Architect. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42/C 42M or by other methods as directed by Architect.
        a. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
        b. Correct deficiencies in the Work that test reports and inspections indicate dos not comply with the Contract Documents.
        c. Measure floor and slab flatness and levelness within 24 hours of finishing. Report to contractor results within 48hrs.

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SECTION 04 05 11 - MASONRY MORTARING AND GROUTING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Mortar for masonry.

1.02 RELATED REQUIREMENTS

A. Section 04 26 13 - Masonry Veneer: Installation of mortar.

1.03 REFERENCE STANDARDS

A. ASTM C5 - Standard Specification for Quicklime for Structural Purposes 2018.

B. ASTM C91/C91M - Standard Specification for Masonry Cement 2023.

C. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete 2022a.

D. ASTM C144 - Standard Specification for Aggregate for Masonry Mortar 2018.

E. ASTM C207 - Standard Specification for Hydrated Lime for Masonry Purposes 2018.

F. ASTM C270 - Standard Specification for Mortar for Unit Masonry 2019a, with Editorial Revision.

G. ASTM C476 - Standard Specification for Grout for Masonry 2023.

H. ASTM C780 - Standard Test Method for Preconstruction and Construction Evaluation of Mortars for Plain and Reinforced Unit Masonry 2020.

I. ASTM C979/C979M - Standard Specification for Pigments for Integrally Colored Concrete 2016.

J. ASTM C1019 - Standard Test Method for Sampling and Testing Grout for Masonry 2020.

K. ASTM C1714/C1714M - Standard Specification for Preblended Dry Mortar Mix for Unit Masonry 2019a.

L. TMS 402/602 - Building Code Requirements and Specification for Masonry Structures 2022, with Errata.

1.04 SUBMITTALS

A. Product Data: Include design mix and indicate whether the Proportion or Property specification of ASTM C270 is to be used. Also include required environmental conditions and admixture limitations.

B. Samples: Submit two samples of mortar, illustrating mortar color and color range.

C. Reports: Submit reports on mortar indicating compliance of mortar to property requirements of ASTM C270 and test and evaluation reports per ASTM C780.

D. Reports: Submit reports on grout indicating compliance of component grout materials to requirements of ASTM C476 and test and evaluation reports to requirements of ASTM C1019.

E. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

F. Manufacturer's Installation Instructions: Submit packaged dry mortar manufacturer's installation instructions.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Maintain packaged materials clean, dry, and protected against dampness, freezing, and foreign matter.

1.06 FIELD CONDITIONS

A. Cold and Hot Weather Requirements: Comply with requirements of TMS 402/602 or applicable building code, whichever is more stringent.

PART 2 PRODUCTS

2.01 MORTAR AND GROUT APPLICATIONS

A. At Contractor's option, mortar and grout may be field-mixed from packaged dry materials, made from factory premixed dry materials with addition of water only, or ready-mixed.

B. Mortar Mix Designs: ASTM C270, Property Specification.
   1. Exterior Masonry Veneer: Type N.

2.02 MATERIALS

A. Packaged Dry Material for Mortar for Unit Masonry: Premixed Portland cement, hydrated lime, and sand; complying with ASTM C1714/C1714M and capable of producing mortar of the specified strength in accordance with ASTM C270 with the addition of water only.
   1. Type: Type N.
   2. Color: Mineral pigments added as required to produce approved color sample.
   3. Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
      a. LaFarge North America, Inc..
      b. Lehigh Cement Company.
      c. Capital Materials Corporation.

B. Portland Cement: ASTM C150/C150M.
   1. Type: Type I - Normal; ASTM C150/C150M.
   2. Color: Color as required to produce approved color sample.
   3. Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
      a. Solomon Colors: www.solomoncolors.com/#sle.
      b. Cemex.
      c. LaFarge North America, Inc..

C. Masonry Cement: ASTM C91/C91M.
   1. Type: Type N; ASTM C91/C91M.
   2. Colored Mortar: Premixed cement as required to match Architect's color sample.
   3. Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
      a. Solomon Colors: www.solomoncolors.com/#sle.
      b. Cemex.
      c. LaFarge North America, Inc..

D. Hydrated Lime: ASTM C207, Type S.

E. Quicklime: ASTM C5, non-hydraulic type.

F. Mortar Aggregate: ASTM C144.

G. Pigments for Colored Mortar: Pure, concentrated mineral pigments specifically intended for mixing into mortar and complying with ASTM C979/C979M.

1. Color(s): As selected by Architect from manufacturer's full range.

H. Water: Clean and potable.

2.03 MORTAR MIXING

A. Thoroughly mix mortar ingredients using mechanical batch mixer, in accordance with ASTM C270 and in quantities needed for immediate use.

B. Maintain sand uniformly damp immediately before the mixing process.

C. Do not use anti-freeze compounds to lower the freezing point of mortar.

D. If water is lost by evaporation, re-temper only within two hours of mixing.

2.04 GROUT MIXING

A. Mix grout in accordance with ASTM C94/C94M.

B. Thoroughly mix grout ingredients in quantities needed for immediate use in accordance with ASTM C476 for fine and coarse grout.

C. Add admixtures in accordance with manufacturer's instructions; mix uniformly.

D. Do not use anti-freeze compounds to lower the freezing point of grout.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install mortar and grout to requirements of section(s) in which masonry is specified.

B. Work grout into masonry cores and cavities to eliminate voids.

C. Do not install grout in lifts greater than 16 inches without consolidating grout by rodding.

D. Do not displace reinforcement while placing grout.

E. Remove excess mortar from grout spaces.

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PANAMA CITY BEACH
FIRE STATION #32
HUTCHISON BLVD
BID DOCUMENTS
AUGUST 1, 2023

SECTION 04 20 00 – REINFORCED UNIT MASONRY

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes unit masonry assemblies consisting of the following:

1. Concrete masonry units.
2. Mortar and grout.
3. Reinforcing steel.
4. Ties and anchors.
5. Glazed masonry unit.
6. Masonry joint reinforcement, flashing and cavity insulation.

1.2 PERFORMANCE REQUIREMENTS

A. Provide unit masonry that develops the following net-area compressive strengths (f'm) at 28 days. Determine compressive strength of masonry from net-area compressive strengths of masonry units and mortar types according to Tables 1 and 2 in ACI 530.1/ASCE 6/TMS 602.
1. For Concrete Unit Masonry: f'm = 1500 psi.

1.3 SUBMITTALS

A. Product Data: For each masonry unit, accessory, and other manufactured product indicated.

B. Shop Drawings: For masonry reinforcing bars; comply with ACI 315, "Details and Detailing of Concrete Reinforcement.

C. Samples: Showing the full range of colors and textures available for exposed masonry units and colored mortars.

D. Material Test Reports: For each type of masonry unit, mortar, and grout required.

E. Material Certificates: For each type of masonry unit required.
1. Grout Mixes: Include description of type and proportions of ingredients.
2. Masonry Units: Include material test reports substantiating compliance with requirements.

1.4 QUALITY ASSURANCE

A. Fire-Resistance Ratings: Where indicated, provide materials and construction identical to those of assemblies with fire-resistance ratings determined per ASTM E 119 by a testing and inspecting agency, by equivalent concrete masonry thickness, or by another means, as acceptable to authorities having jurisdiction.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Store masonry units on elevated platforms in a dry location. If units are not stored in an enclosed location, cover tops and sides of stacks with waterproof sheeting, securely tied. If units become wet, do not install until they are dry.

1. Protect concrete masonry units from moisture.

B. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.

C. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.

D. Deliver preblended, dry mortar mix in moisture-resistant containers designed for lifting and emptying into dispensing silo. Store preblended, dry mortar mix in delivery containers on elevated platforms, under cover, and in a dry location or in a metal dispensing silo with weatherproof cover.

E. Store masonry accessories, including metal items, to prevent corrosion and accumulation of dirt and oil.

1.6 PROJECT CONDITIONS

A. Protection of Masonry: During construction, cover tops of walls, projections, and sills with waterproof sheeting at end of each day's work. Cover partially completed masonry when construction is not in progress.

1. Extend cover a minimum of 24 inches (600 mm) down both sides and hold cover securely in place.

B. Stain Prevention: Prevent grout, mortar, and soil from staining the face of masonry to be left exposed or painted. Immediately remove grout, mortar and soil that come in contact with such masonry.

C. Cold-Weather Requirements: Do not build on frozen substrates. Remove and replace unit masonry damaged by frost or by freezing conditions. Comply with cold-weather construction requirements in ACI 530.1/ASCE 6/TMS 602.

D. Hot-Weather Requirements: When ambient temperature exceeds 100 deg F (38 deg C), or 90 deg F (32 deg C) with a wind velocity greater than 8 mph (13 km/h), do not spread mortar beds more than 48 inches (1200 mm) ahead of masonry. Set masonry units within one minute of spreading mortar.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. In other Part 2 articles where subparagraph titles below introduce lists, the following requirements apply for product selection:

1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the products specified.
2. Products: Subject to compliance with requirements, provide one of the products specified.

2.2 COLORS AND TEXTURES

A. Exposed Masonry Units: As selected from manufacturer's full range.

2.3 MASONRY UNITS

A. Concrete Masonry Units: ASTM C 90.

1. Unit Compressive Strength: 1900-psi- (13.1-MPa-) minimum, average net-area compressive strength.
2. Weight Classification: Lightweight unless otherwise indicated.
3. Type: I, moisture-controlled units.
4. Exposed Faces of Decorative Units: Lightweight aggregate, ground finish.
5. Special Shapes: Provide for lintels, corners, jambs, sash, control joints, headers, bonding, and other special conditions.

B. Glazed Masonry Units: Lightweight concrete units as indicated above with manufacturer’s standard smooth face resinous tile facing, complying with ASTM C 744.

2.4 MORTAR AND GROUT MATERIALS

A. Portland Cement: ASTM C 150, Type I or II, except Type III may be used for cold-weather construction.

B. Hydrated Lime: ASTM C 207, Type S.

C. Portland Cement-Lime Mix: Packaged blend of portland cement complying with ASTM C 150, Type I or Type III, and hydrated lime complying with ASTM C 207.

D. Mortar Cement: ASTM C 1329.

E. Masonry Cement: ASTM C 91.

F. Pigmented Mortar: Colored cement or cement-lime formulation as required to produce the color indicated, or if not indicated, as selected from manufacturer’s standard formulations.

G. Aggregate for Mortar: ASTM C 144; except for joints less than 1/4 inch (6.5 mm) thick, use aggregate graded with 100 percent passing the No. 16 (1.18-mm) sieve.

H. Aggregate for Grout: ASTM C 404.

I. Epoxy Pointing Mortar: ASTM C 395, epoxy-resin-based material formulated for use as pointing mortar for structural-clay tile facing units.

J. Cold-Weather Admixture: Nonchloride, noncorrosive, accelerating admixture complying with ASTM C 494, Type C, and recommended by the manufacturer for use in masonry mortar of composition indicated.

K. Water: Potable.

2.5 REINFORCING

A. Uncoated Steel Reinforcing Bars: ASTM A 615/A 615M; ASTM A 616/A 616M, including Supplement 1; or ASTM A 617/A 617M, Grade 60 (Grade 400).

B. Masonry Joint Reinforcement: ASTM A 951; hot-dip galvanized, carbon-steel wire for both interior and exterior.

1. Wire Size for Side Rods: See drawings.
2. Wire Size for Cross Rods: See drawings.
3. Single-Wythe Masonry: Use ladder type with single pair of side rods and cross rods spaced not more than 16 inches (407 mm) o.c.

2.6 TIES AND ANCHORS

A. Materials, General: As follows, unless otherwise indicated:

1. Galvanized Carbon-Steel Wire: ASTM A 82; with ASTM A 153, Class B-2 coating for both interior and exterior walls.
2. Galvanized Steel Sheet: ASTM A 366/A 366M cold-rolled, carbon-steel sheet hot-dip galvanized after fabrication to comply with ASTM A 153, at exterior walls; and ASTM A 653/A 653M, G60 (Z180), commercial-quality, steel sheet zinc coated by hot-dip process on continuous lines before fabrication at interior walls.

B. Bent Wire Ties: Rectangular units with closed ends and not less than 4 inches (100 mm) wide, made from 3/16-inch- (4.8-mm-) diameter, galvanized steel wire.

2.7 MISCELLANEOUS ANCHORS

A. Anchor Bolts: Steel bolts complying with ASTM A 307, Grade A (ASTM F 568, Property Class 4.6); with ASTM A 563 (ASTM A 563M) hex nuts and, where indicated, flat washers; hot-dip galvanized to comply with ASTM A 153, Class C; of diameter and length indicated and in the following configurations:

1. Headed bolts.
2. Nonheaded bolts, bent in manner indicated.

B. Postinstalled Anchors: Anchors as described below, with capability to sustain, without failure, load imposed within factors of safety indicated, as determined by testing per ASTM E 488, conducted by a qualified independent testing agency.

1. Type: Expansion anchors.
2. Corrosion Protection: Carbon-steel components zinc plated to comply with ASTM B 633, Class Fe/Zn 5 (5 microns) for Class SC 1 service condition (mild).
3. For Postinstalled Anchors in Concrete: Capability to sustain, without failure, a load equal to four times the loads imposed.
4. For Postinstalled Anchors in Grouted Masonry Units: Capability to sustain, without failure, a load equal to six times the loads imposed.

2.8 EMBEDDED FLASHING MATERIALS

A. Flashing and Accessories:

1. Comply with requirements in Division 04 Section “Unit Masonry Assemblies.”

2.9 MISCELLANEOUS MASONRY ACCESSORIES

A. Compressible Filler: Premolded filler strips complying with ASTM D 1056, Grade 2A1; compressible up to 35 percent; formulated from neoprene, urethane or PVC.

B. Preformed Control-Joint Gaskets: Designed to fit standard sash block and to maintain lateral stability in masonry wall. Made from styrene-butadiene-rubber compound complying with ASTM D 2000, Designation M2AA-805.

C. Bond-Breaker Strips: Asphalt-saturated, organic roofing felt complying with ASTM D 226, Type I (No. 15 asphalt felt).

D. Reinforcing Bar Positioners: Wire units designed to fit into mortar bed joints spanning masonry unit cells with loops for holding reinforcing bars in center of cells. Units are formed from 0.142 inch steel wire hot dip galvanized after fabrication.

E. Round Plastic Weep/Vent Tubing: Medium-density polyethylene, 3/8-inch (9-mm) OD by 4 inches (100 mm) long.

F. Rectangular Plastic Weep/Vent Tubing: Clear butyrate, 3/8 by 1-1/2 by 3-1/2 inches (9 by 38 by 89 mm).

G. Wicking Material: Cotton or polyester rope, 1/4 to 3/8 inch (6 to 10 mm) in diameter, in length required to produce 2-inch (50-mm) exposure on exterior and 18 inches (450 mm) in cavity between wythes.

2.10 INSULATION

A. Comply with requirements in Division 07 Section “Building Insulation.”.

2.11 MASONRY CLEANERS

A. Proprietary Acidic Cleaner: Manufacturer's standard-strength cleaner designed for removing mortar/grout stains, efflorescence, and other new construction stains from new masonry without discoloring or damaging masonry surfaces. Use product approved for intended use by cleaner manufacturer and manufacturer of masonry units being cleaned.

2.12 MORTAR AND GROUT MIXES

A. General: Do not use admixtures, unless otherwise indicated. Do not use calcium chloride in mortar or grout.

B. Mortar for Unit Masonry: Comply with ASTM C 270, Proportion Specification.

1. Extended-Life Mortar for Unit Masonry: Mortar complying with ASTM C 1142 may be used instead of mortar specified above, at Contractor's option.
2. Limit cementitious materials in mortar to portland cement, mortar cement, and lime.
3. For masonry below grade, in contact with earth, and where indicated, use Type M.
4. For exterior, above-grade, load-bearing and non-load-bearing walls and parapet walls; for interior load-bearing walls; and for other applications where another type is not indicated, use Type S.
5. For interior partitions, Type S.

C. Pigmented Mortar: Select and proportion pigments with other ingredients to produce color required. Limit pigments to the following percentages of cement content by weight:

1. For portland cement-lime mortar, not more than 10 percent.
2. For masonry cement or mortar cement mortar, not more than 5 percent.

D. Grout for Unit Masonry: Comply with ASTM C 476.

1. Use grout of type indicated or, if not otherwise indicated, of type (fine or coarse) that will comply with Table 5 of ACI 530.1/ASCE 6/TMS 602 for dimensions of grout spaces and pour height.
2. Provide grout with a slump of 8 to 11 inches (200 to 280 mm) as measured according to ASTM C 143.
3. For CMU applications, use water-resistant grout additives as per manufacturer’s recommendations.

2.13 SOURCE QUALITY CONTROL

A. Engage a qualified independent testing agency to perform source quality-control testing indicated below. Payment for these services will be made by the Contractor.

B. Concrete Masonry Unit Tests: For each type of concrete masonry unit indicated, units will be tested according to ASTM C 140.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Cut masonry units with motor-driven saws. Allow units cut with water-cooled saws to dry before placing, unless wetting of units is specified. Install cut units with cut surfaces and, where possible, cut edges concealed.

B. Select and arrange units for exposed unit masonry to produce a uniform blend of colors and textures.

C. Comply with tolerances in ACI 530.1/ASCE 6/TMS 602 and the following:

1. For conspicuous vertical lines, such as external corners, door jambs, reveals, and expansion and control joints, do not vary from plumb by more than 1/4 inch in 20 feet (6 mm in 6 m), nor 1/2 inch (12 mm) maximum.
2. For conspicuous horizontal lines, such as exposed lintels, sills, parapets, and reveals, do not vary from level by more than 1/4 inch in 20 feet (6 mm in 6 m), nor 1/2 inch (12 mm) maximum.

3.2 LAYING MASONRY WALLS

A. Lay out walls in advance for accurate spacing of surface bond patterns with uniform joint thicknesses and for accurate location of openings, movement-type joints, returns, and offsets. Avoid using less-than-half-size units, particularly at corners, jambs, and, where possible, at other locations.

B. Bond Pattern for Exposed Masonry: Lay exposed masonry in running bond pattern indicated; do not use units with less than nominal 4-inch (100-mm) horizontal face dimensions at corners or jambs.

C. Built-in Work: As construction progresses, build in items specified under this and other Sections of the Specifications. Fill in solidly with masonry around built-in items.

D. Fill cores in hollow concrete masonry units continuous to foundation under bearing plates, beams, lintels, posts, and similar items, unless otherwise indicated.

3.3 MORTAR BEDDING AND JOINTING

A. Lay hollow masonry units as follows:

1. With full mortar coverage on horizontal and vertical face shells.
2. Bed webs in mortar in starting course on footings and in all courses of piers, columns, and pilasters, and where adjacent to cells or cavities to be filled with grout.
3. For starting course on footings where cells are not grouted, spread out full mortar bed, including areas under cells.

B. Lay glazed masonry units as follows:

1. Lay vertical-cell units with full head joints, unless otherwise indicated. Provide bed joints with full mortar coverage on face shells and webs.
2. Lay horizontal-cell units with full bed joints, unless otherwise indicated. Form head joints with sufficient mortar so excess will be squeezed out as units are placed in position.
3. Where epoxy-mortar pointed joints are indicated, rake out setting mortar to a uniform depth of 1/4 inch (6 mm) and point with epoxy mortar.

C. Tool exposed joints slightly concave when thumbprint hard, using a jointer larger than the joint thickness, unless otherwise indicated.

3.4 CAVITIES

A. Keep cavities clean of mortar droppings and other materials during construction.

1. Use wood strips temporarily placed in cavity to collect mortar droppings. As work progresses, remove strips, clean off mortar droppings, and replace in cavity.

3.5 MASONRY JOINT REINFORCEMENT

A. Provide continuous masonry joint reinforcement as indicated. Install with a minimum cover of 5/8 inch (16 mm) on exterior side of walls, 1/2 inch (13 mm) elsewhere. Lap reinforcement a minimum of 6 inches (150 mm).
1. Space reinforcement not more than 16 inches on center.
2. Space reinforcement not more than 8 inches on center in foundation parapet walls.
3. Provide reinforcement not more than 8 inches above and below wall openings and extending 24 inches beyond openings unless stated otherwise in drawings.
4. Cut or interrupt joint reinforcement at control and expansion joints, unless otherwise indicated.

B. Provide continuity at corners and wall intersections by using prefabricated "L" and "T" sections.

3.6 ANCHORING MASONRY

A. Anchor masonry to structural members where masonry abuts or faces structural members to comply with the following:

1. Provide an open space not less than 1 inch (25 mm) in width between masonry and structural member, unless otherwise indicated.
2. Anchor masonry to structural members with flexible anchors embedded in masonry joints and attached to structure.

3.7 LINTELS

A. Provide built-in-place masonry lintels. Use specially formed bond beam units with reinforcing bars placed as indicated and filled with coarse grout. Temporarily support built-in-place lintels until cured.

B. Provide minimum bearing of 16 inches (400 mm) at each jamb, unless otherwise indicated.

3.8 FLASHING, WEEP HOLES, AND VENTS

A. General: Install embedded flashing and weep holes in masonry at shelf angles, lintels, ledges, other obstructions to downward flow of water in wall, and where indicated.

1. Extend flashing 4 inches (100 mm) at ends and turn flashing up not less than 2 inches (50 mm) to form a pan.

2. Install metal drip edges beneath flashing at exterior face of wall. Stop flashing 1/2 inch (13 mm) back from outside face of wall and adhere flashing to top of metal drip edge.
3. Install metal flashing termination beneath flashing at exterior face of wall. Stop flashing 1/2 inch (13 mm) back from outside face of wall and adhere flashing to top of metal flashing termination.

B. Install weep holes in the head joints in exterior wythes of the first course of masonry immediately above embedded flashing.

1. Use round plastic tubing, wicking material, or open head joints to form weep holes.
2. Space weep holes 16 inches (400 mm) o.c.
3. Trim wicking material in weep holes flush with outside face of wall after mortar has set.

3.9 REINFORCED UNIT MASONRY INSTALLATION

A. Temporary Formwork and Shores: Construct formwork and shores to support reinforced masonry elements during construction.

1. Do not remove forms and shores until reinforced masonry members have hardened sufficiently to carry their own weight and other temporary loads that may be placed on them during construction.

B. Placing Reinforcement: Comply with requirements in ACI 530.1/ASCE 6/TMS 602. Use prefabricated rebar positioners at 48” on center to hold reinforcing bars in the proper .

C. Grouting: Do not place grout until entire height of masonry to be grouted has attained sufficient strength to resist grout pressure.

1. Comply with requirements in ACI 530.1/ASCE 6/TMS 602 for cleanouts and for grout placement, including minimum grout space and maximum pour height.

2. Low lift grouting procedures shall be utilized for all masonry filled cell construction. Limit pour heights to a maximum of 60 inches and utilize a course grout mix per ASTM C476.

3.10 FIELD QUALITY CONTROL

A. Inspectors: Engage a qualified independent inspector to perform inspections and prepare reports. Allow inspectors access to scaffolding and work areas as needed for inspection. Place grout only after inspectors have verified grout space and grades, size and location of reinforcement.

B. Engage a qualified independent testing agency to perform field quality-control testing indicated below. Payment for these services will be made by the Contractor.

1. Testing Frequency: Tests and Evaluations listed in these subparagraphs will be performed during construction for each 5000 sq. ft. (465 sq. m) of wall area or portion thereof.
2. Mortar: Properties will be tested per ASTM C 780.
3. Grout: Sampled and tested for compressive strength per ASTM C 1019.

3.11 REPAIRING, POINTING, AND CLEANING

A. Remove and replace masonry units that are loose, chipped, broken, stained, or otherwise damaged or that do not match adjoining units. Install new units to match adjoining units; install in fresh mortar, pointed to eliminate evidence of replacement.

B. Pointing: During the tooling of joints, enlarge voids and holes, except weep holes, and completely fill with mortar. Point up joints, including corners, openings, and adjacent construction, to provide a neat, uniform appearance.

C. Clean unit masonry by dry brushing to remove mortar fins and smears before tooling joints, as work progresses.

D. After mortar is thoroughly set and cured, clean exposed masonry as follows:

1. Test cleaning methods on sample wall panel; leave one-half of panel unclean for comparison purposes.
2. Protect adjacent surfaces from contact with cleaner.
3. Wet wall surfaces with water before applying cleaners; remove cleaners promptly by rinsing the surfaces thoroughly with clear water.
4. Clean brick by the bucket-and-brush hand-cleaning method described in BIA Technical Notes No. 20, using job-mixed detergent solution.
5. Clean masonry with a proprietary acidic cleaner applied according to manufacturer's written instructions.
6. Clean concrete masonry by cleaning method indicated in NCMA TEK 8-2 applicable to type of stain on exposed surfaces.

3.12 MASONRY WASTE DISPOSAL

A. Masonry Waste Disposal: Dispose of clean masonry waste, including broken masonry units, waste mortar, and excess or soil-contaminated sand, by crushing and mixing with fill material as fill is placed.

1. Do not dispose of masonry waste as fill within 18 inches (450 mm) of finished grade.
2. Remove excess, clean masonry waste that cannot be used as fill, as described above, and other masonry waste, and legally dispose of off Owner's property.

END OF SECTION 04 20 00

SECTION 04 26 13 - MASONRY VENEER

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Concrete Masonry Units (Smooth and Split Face CMU Veneer).

B. Reinforcement and anchorage.

C. Flashings.

D. Installation of lintels.

E. Accessories.

1.02 RELATED REQUIREMENTS

A. Section 04 05 11 - Masonry Mortaring and Grouting.

B. Section 07 92 00 - Joint Sealants: Sealing control and expansion joints.

1.03 REFERENCE STANDARDS

A. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware 2023.

B. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement 2022.

C. ASTM C55 - Standard Specification for Concrete Building Brick 2022.

D. ASTM C90 - Standard Specification for Loadbearing Concrete Masonry Units 2022.

E. ASTM C129 - Standard Specification for Nonloadbearing Concrete Masonry Units 2022.

F. ASTM C270 - Standard Specification for Mortar for Unit Masonry 2019a, with Editorial Revision.

G. ASTM C476 - Standard Specification for Grout for Masonry 2023.

H. ASTM C744 - Standard Specification for Prefaced Concrete and Calcium Silicate Masonry Units 2021.

I. ASTM C1634 - Standard Specification for Concrete Facing Brick and Other Concrete Masonry Facing Units 2023.

J. ASTM D4637/D4637M - Standard Specification for EPDM Sheet Used in Single-Ply Roof Membrane 2015, with Editorial Revision (2022).

K. BIA Technical Notes No. 7 - Water Penetration Resistance – Design and Detailing 2017.

L. TMS 402/602 - Building Code Requirements and Specification for Masonry Structures 2022, with Errata.

1.04 SUBMITTALS

A. Product Data: Provide data for masonry units, fabricated wire reinforcement, and mortar.

B. Samples: Submit four samples of decorative block units to illustrate color, texture, and extremes of color range.

C. Manufacturer's Certificate: Certify that masonry units meet or exceed specified requirements.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section with minimum three years of documented experience.

B. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.

1.06 MOCK-UP

A. Construct a masonry wall as a mock-up panel sized 8 feet long by 6 feet high; include mortar and accessories and structural backup in mock-up.

B. Locate where directed.

C. Mock-up may remain as part of the Work.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Deliver, handle, and store masonry units by means that will prevent mechanical damage and contamination by other materials.

1.08 FIELD CONDITIONS

A. Maintain materials and surrounding air temperature to minimum 40 degrees F prior to, during, and 48 hours after completion of masonry work.

B. Maintain materials and surrounding air temperature to maximum 90 degrees F prior to, during, and 48 hours after completion of masonry work.

PART 2 PRODUCTS

2.01 CONCRETE MASONRY UNITS

A. Smooth Face CMU Veneer: Comply with referenced standards and as follows:
   1. Size: Standard units; size as indicated on drawings.
   2. Special Shapes: Provide non-standard blocks configured for corners.
   3. Non-Loadbearing Units: ASTM C129.
      a. Hollow block.
      b. Lightweight.
   4. Pre-Faced Units: ASTM C90, hollow block, with smooth resinous facing complying with ASTM C744.
      a. Colors and Styles: As selected by Architect from manufacturer's full range..
      b. Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
         1) Echelon
         2) Westbrook Concrete Block
         3) York Building Products

B. Split-Face CMU Veneer:
   1. Size: Standard units; size as indicated on drawings.
   2. Concrete Facing Brick: ASTM C1634; solid or cored, lightweight; for architectural and below grade use.
   3. Special Shapes: Provide non-standard blocks configured for corners.
   4. Exposed Faces: Color and texture to be selected from manufacturer's full range.
      a. Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
         1) Echelon.
         2) Westbrook Concrete Block.

3) York Building Products.

2.02 MORTAR AND GROUT MATERIALS

A. Mortar and Grout: As specified in Section 04 05 11.

2.03 REINFORCEMENT AND ANCHORAGE

A. Reinforcing Steel: ASTM A615/A615M, Grade 40 (40,000 psi) yield strength, deformed billet bars; galvanized.

B. Joint Reinforcement Type: Use joint reinforcement as required and approved by ICF manufacturer.

C. Masonry Veneer Anchors: 2-piece anchors that permit differential movement between masonry veneer and structural backup, hot dip galvanized to ASTM A 153/A 153M, Class B.
   1. Designed to penetrate through ICF to provide positive anchorage.
   2. Vertical adjustment: Not less than 3-1/2 inches.
   3. Manufacturers:
      a. As approved by ICF manufacturer.

2.04 FLASHINGS

A. Membrane Asphaltic Flashing Materials:
   1. Rubberized Asphalt Flashing: Self-adhering polymer modified asphalt sheet; 40 mils (0.040 inch) minimum total thickness; 8 mil cross-laminated polyethylene bonded to adhesive rubberized asphalt, with a removable release liner.
      a. Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to the following:
         1) Advanced Building Products, Inc; Peel-N-Seal: www.advancedbuildingproducts.com/#sle.
         2) Heckmann Building Products, Inc; No. 82 Rubberized-Asphalt Thru-Wall Flashing: www.heckmannbuildingprods.com/#sle
         3) WIRE-BOND; Aquaflash 500: www.wirebond.com/#sle.
         4) York Manufacturing, Inc; York Seal: www.yorkmfg.com/#sle.

B. Membrane Non-Asphaltic Flashing Materials:
   1. Composite Polymer Flashings - Self-Adhering: Composite polyethylene; 40 mil thick with pressure-sensitive adhesive and release paper.
      a. Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to the following:
         1) Hohmann & Barnard, Inc; Flex Flash: www.h-b.com/#sle.
         2) Hyload, Inc; Hyload HyTUF Flashing System: www.hyload.com/#sle.
   2. EPDM Flashing: ASTM D4637/D4637M, Type I, 0.040 inch thick.
      a. Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
         1) Heckmann Building Products, Inc: www.heckmannbuildingprods.com/#sle.
         2) Hohmann & Barnard, Inc: www.h-b.com/#sle.
         3) WIRE-BOND: www.wirebond.com/#sle.

C. Flashing Sealant/Adhesives: Silicone, polyurethane, or silyl-terminated polyether/polyurethane, or other type required or recommended by flashing manufacturer; type capable of adhering to type of flashing used.

D. Termination Bars: Stainless steel; compatible with membrane and adhesives.
   1. Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

a. Hohmann & Barnard, Inc: www.h-b.com/#sle.
b. Mortar Net Solutions: www.mortarnet.com/#sle.
c. York Manufacturing, Inc: www.yorkmfg.com/#sle.

2.05 ACCESSORIES

A. Preformed Control Joints: Rubber material. Provide with corner and tee accessories, fused joints.

B. Weeps:
1. Type: Extruded propylene with honeycomb design.
2. Color(s): As selected by Architect from manufacturer's full range.
3. Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
a. Advanced Building Products, Inc: www.advancedbuildingproducts.com/#sle.
b. Blok-Lok Limited: www.blok-lok.com/#sle.
c. CavClear, a Division of Archovations Inc: www.cavclear.com/#sle.
d. Hohmann & Barnard, Inc: www.h-b.com/#sle.
e. WIRE-BOND: www.wirebond.com/#sle.

C. Drainage Fabric: Polyester mesh bonded to a water and vapor-permeable fabric.
1. Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to the following:
a. Advanced Building Products, Inc; Mortairvent: www.advancedbuildingproducts.com/#sle.
b. Mortar Net Solutions; DriPlane: www.mortarnet.com/#sle.
c. York Manufacturing, Inc; Weep Armor Weep Vent Protection: www.yorkmfg.com/#sle.

D. Cleaning Solution: Non-acidic, not harmful to masonry work or adjacent materials.

2.06 MORTAR AND GROUT MIXING

A. Mortar for Unit Masonry: ASTM C270, Proportion Specification.
1. Masonry below grade and in contact with earth; Type S.
2. Exterior, non-loadbearing masonry; Type N.

B. Grout: ASTM C476; consistency as required to fill volumes completely for grouting; fine grout for spaces with smallest horizontal dimension of 2 inches or less; coarse grout for spaces with smallest horizontal dimension greater than 2 inches.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field conditions are acceptable and are ready to receive masonry.

B. Verify that related items provided under other sections are properly sized and located.

C. Verify that built-in items are in proper location, and ready for roughing into masonry work.

3.02 COURSING

A. Establish lines, levels, and coursing indicated. Protect from displacement.

B. Maintain masonry courses to uniform dimension. Form vertical and horizontal joints of uniform thickness.

C. Concrete Masonry Units:
1. Bond: Running. Stack bond at window, see drawings.
2. Coursing: One unit and one mortar joint to equal 8 inches.
3. Mortar Joints: Concave.

4. Where split face units occur at window and door jambs, provide smooth face for frames to terminate into.

3.03 PLACING AND BONDING

A. Lay solid masonry units in full bed of mortar, with full head joints, uniformly jointed with other work.

B. Lay hollow masonry units with face shell bedding on head and bed joints.

C. Buttering corners of joints or excessive furrowing of mortar joints is not permitted.

D. Remove excess mortar as work progresses.

E. Interlock intersections and external corners, except for units laid in stack bond.

F. Do not shift or tap masonry units after mortar has achieved initial set. Where adjustment must be made, remove mortar and replace.

G. Perform job site cutting of masonry units with proper tools to provide straight, clean, unchipped edges. Prevent broken masonry unit corners or edges.

H. Isolate top joint of masonry veneer from horizontal structural framing members or support angles with compressible joint filler.

3.04 WEEPS/CAVITY VENTS

A. Install weeps in veneer walls at 24 inches on center horizontally on top of through-wall flashing above shelf angles and lintels and at bottom of walls.

3.05 CAVITY MORTAR CONTROL

A. Do not permit mortar to drop or accumulate into cavity air space or to plug weep/cavity vents.

B. For cavity walls, build inner wythe ahead of outer wythe to accommodate accessories.

3.06 REINFORCEMENT AND ANCHORAGE - MASONRY VENEER

A. Embed anchors to bond veneer at maximum 16 inches on center vertically and 32 inches on center horizontally. Place additional anchors at perimeter of openings and ends of panels, so maximum spacing of anchors is 8 inches on center.

3.07 MASONRY FLASHINGS

A. Whether or not specifically indicated, install masonry flashing to divert water to exterior at all locations where downward flow of water will be interrupted.
   1. Extend flashings full width at such interruptions and at least 6 inches, minimum, into adjacent masonry or turn up at least 1 inch, minimum, to form watertight pan at non-masonry construction.
   2. Remove or cover protrusions or sharp edges that could puncture flashings.
   3. Seal lapped ends and penetrations of flashing before covering with mortar.

B. Terminate flashing up 8 inches minimum on vertical surface of backing:
   1. Install vertical leg of flashing behind water-resistive barrier sheet over backing.
   2. Install vertical leg of flashing over fluid-applied or self-adhered air/vapor barriers over backing or per manufacturer’s directions.
   3. Anchor vertical leg of flashing into backing with a termination bar and sealant.
   4. Apply cap bead of sealant on top edge of self-adhered flashing.

C. Extend metal flashings through exterior face of masonry and terminate in an angled drip with hemmed edge. Install joint sealer below drip edge to prevent moisture migration under flashing.

D. Support flexible flashings across gaps and openings.

3.08 LINTELS

A. Install loose steel lintels over openings.

3.09 CONTROL AND EXPANSION JOINTS

A. Do not continue horizontal joint reinforcement through control or expansion joints.

B. Install preformed control joint device in continuous lengths. Seal butt and corner joints in accordance with manufacturer's instructions.

C. Size control joints as indicated on drawings; if not indicated, 3/4 inch wide and deep.

3.10 TOLERANCES

A. Install masonry within the site tolerances found in TMS 402/602.

B. Maximum Variation From Unit to Adjacent Unit: 1/16 inch.

C. Maximum Variation from Plane of Wall: 1/4 inch in 10 ft and 1/2 inch in 20 ft or more.

D. Maximum Variation from Plumb: 1/4 inch per story non-cumulative; 1/2 inch in two stories or more.

E. Maximum Variation from Level Coursing: 1/8 inch in 3 ft and 1/4 inch in 10 ft; 1/2 inch in 30 ft.

F. Maximum Variation of Mortar Joint Thickness: Head joint, minus 1/4 inch, plus 3/8 inch.

3.11 CUTTING AND FITTING

A. Cut and fit for pipes and conduit. Coordinate with other sections of work to provide correct size, shape, and location.

B. Obtain approval prior to cutting or fitting masonry work not indicated or where appearance or strength of masonry work may be impaired.

3.12 CLEANING

A. Remove excess mortar and mortar smears as work progresses.

B. Replace defective mortar. Match adjacent work.

C. Clean soiled surfaces with cleaning solution.

D. Use non-metallic tools in cleaning operations.

3.13 PROTECTION

A. Without damaging completed work, provide protective boards at exposed external corners that are subject to damage by construction activities.

END OF SECTION 04 26 13

SECTION 04 72 00 - CAST STONE MASONRY

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Architectural cast stone.

B. Units required are indicated on drawings as "cast stone" or "precast".

1.02 RELATED REQUIREMENTS

A. Section 04 05 11 - Masonry Mortaring and Grouting: Mortar for setting cast stone.

B. Section 04 26 13 - Masonry Veneer: Installation of cast stone in conjunction with masonry veneer.

C. Section 04 20 00 - Unit Masonry: Installation of cast stone in conjunction with masonry.

D. Section 07 92 00 - Joint Sealants: Sealing joints indicated to be left open for sealant.

1.03 REFERENCE STANDARDS

A. ACI CODE-318 - Building Code Requirements for Structural Concrete and Commentary 2019 (Reapproved 2022).

B. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement 2022.

C. ASTM A767/A767M - Standard Specification for Zinc-Coated (Galvanized) Steel Bars for Concrete Reinforcement 2019.

D. ASTM A884/A884M - Standard Specification for Epoxy-Coated Steel Wire and Welded Wire Reinforcement 2019, with Editorial Revision (2020).

E. ASTM A1064/A1064M - Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete 2022.

F. ASTM C33/C33M - Standard Specification for Concrete Aggregates 2018.

G. ASTM C150/C150M - Standard Specification for Portland Cement 2022.

H. ASTM C270 - Standard Specification for Mortar for Unit Masonry 2019a, with Editorial Revision.

I. ASTM C494/C494M - Standard Specification for Chemical Admixtures for Concrete 2019, with Editorial Revision (2022).

J. ASTM C1364 - Standard Specification for Architectural Cast Stone 2023.

1.04 SUBMITTALS

A. Product Data: Test results of cast stone components made previously by the manufacturer.

B. Shop Drawings: Include elevations, dimensions, layouts, profiles, cross sections, reinforcement, exposed faces, arrangement of joints, anchoring methods, anchors, and piece numbers.

C. Mortar Color Selection Samples.

D. Verification Samples: Pieces of actual cast stone components not less than 6 inches square, illustrating range of color and texture to be anticipated in components furnished for the project.

E. Full-Size Samples, For Review:
   1. Basic Shapes: One of each.
   2. Accent, Trim and Specialty Shapes: One of each.

F. Manufacturer's Qualification Data: Documentation showing compliance with specified requirements.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications:
   1. A firm with a minimum of 5 years experience producing cast stone of types required for project.
   2. Current producer member of the Cast Stone Institute or the Architectural Precast Association.
   3. Manufacturer's production facility currently holds a Plant Certification from the Cast Stone Institute or the Architectural Precast Association.
   4. Adequate plant capacity to furnish quality, sizes, and quantity of cast stone required without delaying progress of the work.

B. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.

1.06 MOCK-UPS

A. Provide full size cast stone components for installation in mock-up of exterior wall.

B. Approved mock-up will become standard for appearance and workmanship.

C. Mock-up may remain as part of the completed work.

D. Remove mock-up not incorporated into the work and dispose of debris.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Deliver cast stone components secured to shipping pallets and protected from damage and discoloration. Protect corners from damage.

B. Number each piece individually to match shop drawings and schedule.

C. Store cast stone components and installation materials in accordance with manufacturer's instructions.

D. Store cast stone components on pallets with nonstaining, waterproof covers. Ventilate under covers to prevent condensation. Prevent contact with dirt.

E. Protect cast stone components during handling and installation to prevent chipping, cracking, or other damage.

F. Store mortar materials where contamination can be avoided.

G. Schedule and coordinate production and delivery of cast stone components with unit masonry work to optimize on-site inventory and to avoid delaying the work.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
   1. Premier Stoneworks, LLC.
   2. Advanced Cast Stone, Inc..
   3. American Artstone Co., Inc..
   4. Architectural Cast Stone Corp..
   5. Cast Stone Systems, Inc.
   6. Custom Cast Stone, Inc.
   7. Cut Art Castings Co.

8. Reading Rock, Inc.
9. Rock Cast.

2.02 ARCHITECTURAL CAST STONE

A. Cast Stone: Architectural concrete product manufactured to simulate appearance of natural granite, complying with ASTM C1364.
   1. Compressive Strength: As specified in ASTM C1364; calculate strength of pieces to be field cut at 80 percent of uncut piece.
   2. Freeze-Thaw Resistance: Demonstrated by laboratory testing in accordance with ASTM C1364.
   3. Surface Texture: Fine grained texture, with no bugholes, air voids, or other surface blemishes visible from distance of 20 feet.
   4. Color: Selected by Architect from manufacturer's full range.
   5. Remove cement film from exposed surfaces before packaging for shipment.

B. Shapes: Provide shapes indicated on drawings.
   1. Variation from Any Dimension, Including Bow, Camber, and Twist: Maximum of plus/minus 1/8 inch or length divided by 360, whichever is greater, but not more than 1/4 inch.
   2. Unless otherwise indicated on drawings, provide:
      a. Wash or slope of 1:12 on exterior horizontal surfaces.
      b. Drips on projecting components, wherever possible.
      c. Raised fillets at back of sills and at ends to be built in.

C. Reinforcement: Provide reinforcement as required to withstand handling and structural stresses; comply with ACI CODE-318.

2.03 MATERIALS

A. Portland Cement: ASTM C150/C150M.
   1. For Mortar: Type I or II, except Type III may be used in cold weather.

B. Coarse Aggregate: ASTM C33/C33M, except for gradation; granite, quartz, or limestone.

C. Fine Aggregate: ASTM C33/C33M, except for gradation; natural or manufactured sands.

D. Admixtures: ASTM C494/C494M.

E. Water: Potable.

F. Reinforcing Bars: ASTM A615/A615M, Grade 40 (40,000 psi), deformed bars, galvanized.
   1. Galvanized in accordance with ASTM A767/A767M, Class I.

G. Steel Welded Wire Reinforcement: ASTM A1064/A1064M, galvanized or ASTM A884/A884M, epoxy coated.

H. Embedded Anchors, Dowels, and Inserts: Type 304 stainless steel, of type and size as required for conditions.

I. Mortar: Portland cement-lime, as specified in Section 04 05 11 ; do not use masonry cement.

J. Cleaner: General-purpose cleaner designed for removing mortar and grout stains, efflorescence, and other construction stains from new masonry surfaces without discoloring or damaging masonry surfaces; approved for intended use by cast stone manufacturer and by cleaner manufacturer for use on cast stone and adjacent masonry materials.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine construction to receive cast stone components. Notify Architect if construction is not acceptable.

B. Do not begin installation until unacceptable conditions have been corrected.

3.02 INSTALLATION

A. Install cast stone components in conjunction with masonry, complying with requirements of Section 04 20 00.

B. Mechanically anchor cast stone units indicated; set remainder in mortar.

C. Setting:
   1. Drench cast stone components with clear, running water immediately before installation.
   2. Set units in a full bed of mortar unless otherwise indicated.
   3. Fill vertical joints with mortar.
   4. Fill dowel holes and anchor slots completely with mortar or non-shrink grout.

3.03 TOLERANCES

A. Joints: Make all joints 3/8 inch, except as otherwise detailed.
   1. Rake mortar joints 3/4 inch for pointing.
   2. Remove excess mortar from face of stone before pointing joints.
   3. Point joints with mortar in layers 3/8 inch thick and tool to a slight concave profile.
   4. Leave the following joints open for sealant:
      a. Head joints in top courses, including copings, parapets, cornices, sills, and steps.
      b. Joints in projecting units.
      c. Joints between rigidly anchored units, including soffits, panels, and column covers.
      d. Joints below lugged sills and stair treads.
      e. Joints below ledge and relieving angles.
      f. Joints labeled "expansion joint".

B. Installation Tolerances:
   1. Variation from Plumb: Not more than 1/8 inch in 10 feet or 1/4 inch in 20 feet or more.
   2. Variation from Level: Not more than 1/8 inch in 10 feet or 1/4 inch in 20 feet, or 3/8 inch maximum.
   3. Variation in Joint Width: Not more than 1/8 inch in 36 inches or 1/4 of nominal joint width, whichever is less.
   4. Variation in Plane Between Adjacent Surfaces (Lipping): Not more than 1/16 inch difference between planes of adjacent units or adjacent surfaces indicated to be flush with units.

3.04 CLEANING

A. Keep cast stone components clean as work progresses.

B. Clean completed exposed cast stone after mortar is thoroughly set and cured.
   1. Wet surfaces with water before applying cleaner.
   2. Apply cleaner to cast stone in accordance with manufacturer's instructions.
   3. Remove cleaner promptly by rinsing thoroughly with clear water.
   4. Do not use acidic cleaners.

3.05 PROTECTION

A. Protect completed work from damage.

B. Clean, repair, or restore damaged or mortar-splashed work to condition of new work.

END OF SECTION 04 72 00

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PANAMA CITY BEACH
FIRE STATION #32
HUTCHISON BLVD
BID DOCUMENTS
AUGUST 1, 2023

SECTION 05 12 00 - STRUCTURAL STEEL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:
B. Structural steel.
C. Grout.
D. Related Sections:
   1. Division 1 Section "Quality Requirements" for independent testing agency procedures and administrative requirements.
   2. Division 5 Section "Metal Fabrications" for steel lintels and shelf angles not attached to structural-steel frame, miscellaneous steel fabrications, and other metal items not defined as structural steel.

1.3 DEFINITIONS

A. Structural Steel: Elements of structural-steel frame, as classified by AISC 303, "Code of Standard Practice for Steel Buildings and Bridges."

1.4 SUBMITTALS

A. Product Data: For each type of product indicated.
B. Shop Drawings: Show fabrication of structural-steel components.
   1. Include details of cuts, connections, splices, camber, holes, and other pertinent data.
   2. Include embedment drawings.
   3. Indicate welds by standard AWS symbols, distinguishing between shop and field welds, and show size, length, and type of each weld. Show backing bars that are to be removed and supplemental fillet welds where backing bars are to remain.
   4. Indicate type, size, and length of bolts, distinguishing between shop and field bolts. Identify pretensioned and slip-critical high-strength bolted connections.
   5. Reproduction & Reuse of contract documents for the purpose of preparing shop drawings is strictly prohibited.
C. Qualification Data: For qualified Installer and fabricator.
D. Welding certificates.
E. Mill test reports for structural steel, including chemical and physical properties.
F. Product Test Reports: For the following:
   1. Bolts, nuts, and washers including mechanical properties and chemical analysis.
   2. Shop primers.
   3. Nonshrink grout.
G. Source quality-control reports.

1.5 QUALITY ASSURANCE

A. Fabricator Qualifications: Engage a firm experienced in fabricating structural steel similar to that indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to fabricate structural steel without delaying the Work.
B. Installer Qualifications: Engage an experienced Installer who has completed structural steel work similar in material, design, and extent to that indicated for this Project and with a record of successful in-service performance.
C. Welding Qualifications: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."
D. Comply with applicable provisions of the following specifications and documents:
    1. AISC 303.
    2. AISC 360.
    3. RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts."

1.6 DELIVERY, STORAGE, AND HANDLING

A. Store materials to permit easy access for inspection and identification. Keep steel members off ground and spaced by using pallets, dunnage, or other supports and spacers. Protect steel members and packaged materials from corrosion and deterioration.
B. Do not store materials on structure in a manner that might cause distortion, damage, or overload to members or supporting structures. Repair or replace damaged materials or structures as directed.
C. Store fasteners in a protected place in sealed containers with manufacturer's labels intact.
D. Fasteners may be repackaged provided Owner's testing and inspecting agency observes repackaging and seals containers.
E. Clean and relubricate bolts and nuts that become dry or rusty before use.

1.7 COORDINATION

A. Coordinate installation of anchorage items to be embedded in or attached to other construction without delaying the Work. Provide setting diagrams, sheet metal templates, instructions, and directions for installation.

PART 2 - PRODUCTS

2.1 STRUCTURAL-STEEL MATERIALS

A. W-Shapes: ASTM A 992/A 992M, 50 ksi.
B. Channels, Angles, M, S-Shapes: ASTM A 36/A 36M.
C. Plate and Bar: ASTM A 36/A 36M.
D. Cold-Formed Hollow Structural Sections: ASTM A 500, Grade B, structural tubing.
E. Steel Pipe: ASTM A 53/A 53M, Type E or S, Grade B.
    1. Weight Class: As Indicated.
    2. Finish: Black.
F. Welding Electrodes: Comply with AWS requirements.

2.2 BOLTS, CONNECTORS, AND ANCHORS

A. High-Strength Bolts, Nuts, and Washers: ASTM A 325 (ASTM A 325M), Type 1, heavy-hex steel structural bolts; ASTM A 563, Grade C, (ASTM A 563M, Class 8S) heavy-hex carbon-steel nuts; and ASTM F 436 (ASTM F 436M), Type 1, hardened carbon-steel washers; all with plain finish.
B. Unheaded Anchor Rods: ASTM F 1554, Grade 36.
   1. Configuration: As Indicated.
   2. Nuts: ASTM A 563 (ASTM A 563M) hex carbon steel.
   3. Plate Washers: ASTM A 36/A 36M carbon steel.
   4. Washers: ASTM F 436 (ASTM F 436M), Type 1, hardened carbon steel.
   5. Finish: Plain
C. Headed Anchor Rods: ASTM F 1554, Grade 36, straight.
   1. Nuts: ASTM A 563 (ASTM A 563M) hex carbon steel.
   2. Plate Washers: ASTM A 36/A 36M carbon steel.
   3. Washers: ASTM F 436 (ASTM F 436M), Type 1, hardened carbon steel.
   4. Finish: Plain
D. Threaded Rods: ASTM A 36/A 36M.
   1. Nuts: ASTM A 563 (ASTM A 563M) hex carbon steel.
   2. Washers: ASTM F 436 (ASTM F 436M), Type 1, hardened ASTM A 36/A 36M carbon steel.
E. Finish: Plain

2.3 PRIMER

A. Primer: SSPC-Paint 25, Type I, zinc oxide, alkyd, linseed oil primer.
B. Galvanizing Repair Paint: ASTM A 780.

2.4 GROUT

A. Nonmetallic, Shrinkage-Resistant Grout: ASTM C 1107, factory-packaged, nonmetallic aggregate grout, noncorrosive and nonstaining, mixed with water to consistency suitable for application and a 30-minute working time.

2.5 FABRICATION

A. Structural Steel: Fabricate and assemble in shop to greatest extent possible. Fabricate according to AISC's "Code of Standard Practice for Steel Buildings and Bridges" and AISC 360.
   1. Camber structural-steel members where indicated.
   2. Fabricate beams with rolling camber up.
   3. Identify high-strength structural steel according to ASTM A 6/A 6M and maintain markings until structural steel has been erected.
   4. Mark and match-mark materials for field assembly.
   5. Complete structural-steel assemblies, including welding of units, before starting shop-priming operations.
B. Thermal Cutting: Perform thermal cutting by machine to greatest extent possible.
   1. Plane thermally cut edges to be welded to comply with requirements in AWS D1.1/D1.1M.

C. Bolt Holes: Cut, drill, or punch standard bolt holes perpendicular to metal surfaces.

D. Finishing: Accurately finish ends of columns and other members transmitting bearing loads.
E. Cleaning: Clean and prepare steel surfaces that are to remain unpainted according to SSPC-SP 3, "Power Tool Cleaning."
F. Shear Connectors: Prepare steel surfaces as recommended by manufacturer of shear connectors. Use automatic end welding of headed-stud shear connectors according to AWS D1.1/D1.1M and manufacturer's written instructions.
G. Holes: Provide holes required for securing other work to structural steel and for other work to pass through steel framing members.
    1. Cut, drill, or punch holes perpendicular to steel surfaces. Do not thermally cut bolt holes or enlarge holes by burning.

    2. Baseplate Holes: Cut, drill, mechanically thermal cut, or punch holes perpendicular to steel surfaces.

    3. Weld threaded nuts to framing and other specialty items indicated to receive other work.

2.6 SHOP CONNECTIONS

A. High-Strength Bolts: Shop install high-strength bolts according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts" for type of bolt and type of joint specified.
B. Weld Connections: Comply with AWS D1.1/D1.1M for tolerances, appearances, welding procedure specifications, weld quality, and methods used in correcting welding work.
    1. Assemble and weld built-up sections by methods that will maintain true alignment of axes without exceeding tolerances in AISC 303 for mill material.

2.7 SHOP PRIMING

A. Shop prime steel surfaces except the following:
    1. Surfaces embedded in concrete or mortar. Extend priming of partially embedded members to a depth of 2 inches (50 mm).

    2. Surfaces to be field welded.

    3. Surfaces to be high-strength bolted with slip-critical connections.

    4. Surfaces to receive sprayed fire-resistive materials (applied fireproofing).

    5. Galvanized surfaces.

B. Surface Preparation: Clean surfaces to be painted. Remove loose rust and mill scale and spatter, slag, or flux deposits. Prepare surfaces according to the following specifications and standards:
    1. SSPC-SP 3, "Power Tool Cleaning." All Steel except where noted otherwise.

C. Priming: Immediately after surface preparation, apply primer according to manufacturer's written instructions and at rate recommended by SSPC to provide a minimum dry film thickness of 1.5 mils (0.038 mm). Use priming methods that result in full coverage of joints, corners, edges, and exposed surfaces.
    1. Stripe paint corners, crevices, bolts, welds, and sharp edges.

2. Apply two coats of shop paint to surfaces that are inaccessible after assembly or erection. Change color of second coat to distinguish it from first.

2.8 GALVANIZING

A. Hot-Dip Galvanized Finish: Apply zinc coating by the hot-dip process to structural steel according to ASTM A 123/A 123M.
   1. Fill vent and drain holes that will be exposed in the finished Work unless they will function as weep holes, by plugging with zinc solder and filing off smooth.
   2. Galvanize lintels and shelf angles attached to structural-steel frame and located in exterior walls.

2.9 SOURCE QUALITY CONTROL

A. Testing Agency: Owner will engage an independent testing and inspecting agency to perform shop tests and inspections and prepare test reports.
   1. Provide testing agency with access to places where structural-steel work is being fabricated or produced to perform tests and inspections.
B. Correct deficiencies in Work that test reports and inspections indicate does not comply with the Contract Documents.
C. Bolted Connections: Shop-bolted connections will be inspected according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts."
D. Welded Connections: In addition to visual inspection, shop-welded connections will be tested and inspected according to AWS D1.1/D1.1M and the following inspection procedures, at testing agency's option:
   1. Magnetic Particle Inspection: ASTM E 709; performed on root pass and on finished weld. Cracks or zones of incomplete fusion or penetration will not be accepted.
   2. Ultrasonic Inspection: ASTM E 164.
   3. Radiographic Inspection: ASTM E 94.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify, with steel Erector present, elevations of concrete- and masonry-bearing surfaces and locations and elevations of anchor rods, bearing plates, and other embedments for compliance with requirements.
B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Provide temporary shores, guys, braces, and other supports during erection to keep structural steel secure, plumb, and in alignment against temporary construction loads and loads equal in intensity to design loads. Remove temporary supports when permanent structural steel, connections, and bracing are in place unless otherwise indicated.
   1. Do not remove temporary shoring supporting composite deck construction until cast-in-place concrete has attained its design compressive strength.

3.3 ERECTION

A. Set structural steel accurately in locations and to elevations indicated and according to AISC 303 and AISC 360.
B. Base Bearing Plates: Clean concrete- and masonry-bearing surfaces of bond-reducing materials, and roughen surfaces prior to setting plates. Clean bottom surface of plates.
   1. Set plates for structural members on wedges, shims, or setting nuts as required.
   2. Snug-tighten anchor rods after supported members have been positioned and plumbed. Do not remove wedges or shims but, if protruding, cut off flush with edge of plate before packing with grout.
   3. Promptly pack grout solidly between bearing surfaces and plates so no voids remain. Neatly finish exposed surfaces; protect grout and allow to cure. Comply with manufacturer's written installation instructions for shrinkage-resistant grouts.
C. Maintain erection tolerances of structural steel within AISC's "Code of Standard Practice for Steel Buildings and Bridges."
D. Align and adjust various members that form part of complete frame or structure before permanently fastening. Before assembly, clean bearing surfaces and other surfaces that will be in permanent contact with members. Perform necessary adjustments to compensate for discrepancies in elevations and alignment.
   1. Level and plumb individual members of structure.
   2. Make allowances for difference between temperature at time of erection and mean temperature when structure is completed and in service.
E. Splice members only where indicated.
F. Do not use thermal cutting during erection.
G. Do not enlarge unfair holes in members by burning or using drift pins. Ream holes that must be enlarged to admit bolts.
H. Shear Connectors: Prepare steel surfaces as recommended by manufacturer of shear connectors. Use automatic end welding of headed-stud shear connectors according to AWS D1.1/D1.1M and manufacturer's written instructions.

3.4 FIELD CONNECTIONS

A. High-Strength Bolts: Install high-strength bolts according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts" for type of bolt and type of joint specified.
   1. Joint Type: Snug tightened.

B. Weld Connections: Comply with AWS D1.1/D1.1M and AWS for tolerances, appearances, welding procedure specifications, weld quality, and methods used in correcting welding work.
   1. Comply with AISC 303 and AISC 360 for bearing, alignment, adequacy of temporary connections, and removal of paint on surfaces adjacent to field welds.
   2. Remove backing bars or runoff tabs where indicated, back gouge, and grind steel smooth.
   3. Assemble and weld built-up sections by methods that will maintain true alignment of axes without exceeding tolerances in AISC's "Code of Standard Practice for Steel Buildings and Bridges" for mill material.

3.5 FIELD QUALITY CONTROL

A. Testing Agency: Owner will engage a qualified independent testing and inspecting agency to inspect field welds and high-strength bolted connections.

B. Bolted Connections: Bolted connections will be inspected according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts."
C. Welded Connections: Field welds will be visually inspected according to AWS D1.1/D1.1M.
D. Correct deficiencies in Work that test reports and inspections indicate does not comply with the Contract Documents.

3.6 REPAIRS AND PROTECTION

A. Galvanized Surfaces: Clean areas where galvanizing is damaged or missing and repair galvanizing to comply with ASTM A 780.
B. Touchup Painting: Immediately after erection, clean exposed areas where primer is damaged or missing and paint with the same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.

END OF SECTION 05 12 00

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PANAMA CITY BEACH
FIRE STATION #32
HUTCHISON BLVD
BID DOCUMENTS
AUGUST 1, 2023

SECTION 05 31 00 - STEEL DECK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:
   1. Roof deck.
   2. Soffit/ceiling Deck

B. Related Sections include the following:
   1. Division 5 Section "Metal Fabrications" for framing deck openings with miscellaneous steel shapes.

1.3 SUBMITTALS

A. Product Data: For each type of deck, accessory, and product indicated.
B. Shop Drawings: Show layout and types of deck panels, anchorage details, reinforcing channels, pans, cut deck openings, special jointing, accessories, and attachments to other construction.
C. Product Certificates: For each type of steel deck, signed by product manufacturer.

1.4 QUALITY ASSURANCE

A. Testing Agency Qualifications: An independent agency qualified according to ASTM E 329 for testing indicated.
B. Welding: Qualify procedures and personnel according to AWS D1.3, "Structural Welding Code - Sheet Steel."
C. Fire-Test-Response Characteristics: Where indicated, provide steel deck units identical to those tested for fire resistance per ASTM E 119 by a testing and inspecting agency acceptable to authorities having jurisdiction.
   1. Fire-Resistance Ratings: Indicated by design designations of applicable testing and inspecting agency.
   2. Steel deck units shall be identified with appropriate markings of applicable testing and inspecting agency.

D. AISI Specifications: Comply with calculated structural characteristics of steel deck according to AISI's "North American Specification for the Design of Cold-Formed Steel Structural Members."

1.5 DELIVERY, STORAGE, AND HANDLING

A. Protect steel deck from corrosion, deformation, and other damage during delivery, storage, and handling.
B. Stack steel deck on platforms or pallets and slope to provide drainage. Protect with a waterproof covering and ventilate to avoid condensation.

PART 2 - PRODUCTS

2.1 METAL DECK

A. Steel Roof Deck:
   1. Galvanized Steel Sheet: ASTM A 653/A 653M, Structural Steel (SS), Grade 33 (230) G90 (Z180) zinc coating.
   2. Deck Profile: Type B
   3. Profile Depth: 1-1/2 inches (38 mm).
   4. Thickness: 20 ga.
   5. Span Condition: Triple span or more.
   6. Side Laps: Overlapped.
B. Steel Soffit Deck:
   1. Galvanized Steel Sheet: ASTM A 653/A 653M, Structural Steel (SS), Grade 33 (230) G90 (Z180) zinc coating.
   2. Deck Profile: Type B
   3. Profile Depth: 1-1/2 inches (38 mm).
   4. Thickness: 22 ga.
   5. Span Condition: Triple span or more.
   6. Side Laps: Overlapped

2.2 ACCESSORIES

A. General: Provide manufacturer's standard accessory materials for deck that comply with requirements indicated.
B. Mechanical Fasteners: Corrosion-resistant, low-velocity, power-actuated or pneumatically driven carbon-steel fasteners; or self-drilling, self-threading screws. Fasteners for securing roof deck shall have a 0.40-inch diameter head or shall have an equivalent washer.
C. Side-Lap Fasteners: Corrosion-resistant, hexagonal washer head; self-drilling, carbon-steel screws, No. 10 (4.8-mm) minimum diameter.
D. Flexible Closure Strips: Vulcanized, closed-cell, synthetic rubber.

E. Miscellaneous Sheet Metal Deck Accessories: Steel sheet, minimum yield strength of 33,000 psi (230 MPa), not less than 0.0359-inch (0.91-mm) design uncoated thickness, of same material and finish as deck; of profile indicated or required for application.
F. Galvanizing Repair Paint: ASTM A 780.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine supporting frame and field conditions for compliance with requirements for installation tolerances and other conditions affecting performance.

3.2 INSTALLATION, GENERAL

A. Install deck panels and accessories according to applicable specifications and commentary in SDI Publication No. 30, manufacturer's written instructions, and requirements in this Section.
B. Locate deck bundles to prevent overloading of supporting members.
C. Place deck panels on supporting frame and adjust to final position with ends accurately aligned and bearing on supporting frame before being permanently fastened. Do not stretch or contract side-lap interlocks.
D. Place deck panels flat and square and fasten to supporting frame without warp or deflection.
E. Cut and neatly fit deck panels and accessories around openings and other work projecting through or adjacent to deck.
F. Provide additional reinforcement and closure pieces at openings as required for strength, continuity of deck, and support of other work.
G. Comply with AWS requirements and procedures for manual shielded metal arc welding, appearance and quality of welds, and methods used for correcting welding work.

3.3 DECK INSTALLATION

A. Fasten deck panels to steel supporting members and perimeter edges as indicated on drawings.
B. Side-Lap Fastening: Fasten side laps of panels between supports, at intervals noted on drawings, and as follows:
    1. Mechanically fasten with self-drilling, No. 10 (4.8-mm-) diameter or larger, carbon-steel screws.
C. End Bearing: Install deck ends over supporting frame with a minimum end bearing of 1-1/2 inches (38 mm), with end joints as follows:
    1. End Joints: Lapped 2 inches (51 mm) minimum.
D. Miscellaneous Roof-Deck Accessories: Install ridge and valley plates, finish strips, end closures, and reinforcing channels according to deck manufacturer's written instructions. Mechanically fasten to substrate to provide a complete deck installation.

1. Mechanically fasten cover plates at changes in direction of roof-deck panels, unless otherwise indicated.
    a. **As a minimum install 14 ga 12” wide ridge/hip/valley liners at all conditions.**

E. Flexible Closure Strips: Install flexible closure strips over partitions, walls, and where indicated. Install with adhesive according to manufacturer's written instructions to ensure complete closure.

3.4 FIELD QUALITY CONTROL

A. Testing Agency: Owner will engage a qualified independent testing and inspecting agency to perform field tests and inspections and prepare test reports.
B. Field welds will be subject to inspection.
C. Testing agency will report inspection results promptly and in writing to Contractor and Architect.
D. Remove and replace work that does not comply with specified requirements.
E. Additional inspecting, at Contractor's expense, will be performed to determine compliance of corrected work with specified requirements.

3.5 REPAIRS AND PROTECTION

A. Galvanizing Repairs: Prepare and repair damaged galvanized coatings on both surfaces of deck with galvanized repair paint according to ASTM A 780 and manufacturer's written instructions.
B. Repair Painting: Wire brush and clean rust spots, welds, and abraded areas on both surfaces of deck immediately after installation, and apply galvanizing repair paint.
C. Provide final protection and maintain conditions to ensure that steel deck is without damage or deterioration at time of Substantial Completion.

END OF SECTION 05 31 00

PANAMA CITY BEACH
FIRE STATION #32
HUTCHISON BLVD
BID DOCUMENTS
AUGUST 1, 2023

SECTION 05 40 00 - COLD-FORMED METAL FRAMING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-I Specification sections apply to work of this section.

1.2 DESCRIPTION OF WORK:

A. Work described in this Section includes galvanized steel stud framing systems, and any heavy gauge steel joists and steel rafters indicated, and for use at any new exterior metal stud walls and framing, interior and exterior load-bearing walls, and other locations as indicated on drawings.

1.3 QUALITY ASSURANCE:

A. Component Design: Calculate structural properties of studs and joists in accordance with the more stringent requirements of the American Iron and Steel Institute (AISI) "Specification for Design of Cold-Formed Steel Structural Members", and their co-sponsored publication "Prescriptive Method for Residential Cold-Formed Steel Framing".
B. Welding: Use qualified welders and comply with American Welding Society (AWS) DU, "Structural Welding Code -Sheet Steel."
C. Fire Rated Assemblies: Where framing units are components of assemblies indicated for a fire resistance rating, including those that have been approved by governing authorities that have jurisdiction.
D. Pre-Installation Conference: Prior to start of installation of metal framing systems, meet at project site with installers of other work including door and window frames and mechanical and electrical work.

1.4 SUBMITTALS:

A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections:
   1. Product data and installation instructions for each item of cold-formed metal framing and accessories.

   2. Shop drawings for special components and installations not fully dimensioned or detailed in manufacturer's product data.

   3. Include placing drawings for joists, ceiling, roof related and supplemental and/or related framing system members showing size and gauge designations, number, type, location, and spacing. Indicate supplemental strapping, bracing, splices, bridging, accessories, and details required for proper installation.

4. Include detailed design drawings for headers, including size and gauge designations, locations, assemblies, bearing, anchorage, etc.

5. Shop drawings shall bear the current signed and dated Florida seal and license number of the manufacturer's and/or fabricator's Design Engineer responsible for their design and preparation.

1.5 DELIVERY, STORAGE AND HANDLING:

A. Comply with manufacturer's current written instructions and recommendations.
B. Protect metal framing units from rusting and damage.
C. Deliver to project site in manufacturer's unopened containers or bundles, fully identified with name, brand, type and grade.
D. Store off ground in a dry ventilated space or protect with breathable waterproof tarpaulins.

PART 2 - PRODUCTS

2.1 MANUFACTURERS:

A. Subject to compliance with requirements.

2.2 METAL FRAMING:

A. System Components: With each type of metal framing and headers required. provide manufacturer's standard steel runners (tracks), blocking, bridging, lintels, clip angles, shoes, reinforcements, fasteners, and accessories as recommended by manufacturer for applications indicated, as needed to provide a complete metal framing system.
B. Materials and Finishes:
   1. For 16-gauge and heavier units, fabricate metal framing components of structural quality steel sheet with a minimum yield point of 40,000 psi; ASTM A 446, A 570, or A 611.
   2. For 18-gauge and lighter units, fabricate metal framing components of commercial quality steel sheet with a minimum yield point of 33,000 psi; ASTM A 446, A 570, or A 611.
   3. Provide galvanized finish to metal framing components complying with ASTM A 525 for minimum G60 coating. F
   4. Finish of installation accessories to match that of main framing components, unless otherwise indicated.
C. "C"-Shape Studs: Manufacturer's standard load-healing steel studs of size, shape, and gauge indicated, with 1.625-inch flange and flange return lip.
D. Track: Unless otherwise indicated or required by project conditions, fire-ratings. etc., provide manufacturer's standard Deep Leg Tracks, un-punched unless otherwise indicated, of size, shape and gauge, indicated, with minimum 1-5/8-inch flange.
E. Deflection Track -Typical at Stud Walls Up To Slab or Similar Fixed Structure at Top of Walls: Provide for no less than 1" of vertical movement
F. Stud Wall Bridging: 1-1/2-inches x 16-gauge Cold Rolled Channel, unless otherwise indicated, anchored to each stud with 16-gauge clip angles, or welded connections (where allowed by manufacturer), and 16-gauge splice plates, with spacing at 4' -0" or 4' -6" o.c. vertically, through pre-punched slots in studs.

G. Solid Joist Bridging: 1-5/8-inches x same gauge and depth as joists, unless otherwise indicated, anchored to joists webs with 2-inch x 2-inch x 16-gauge clip angles, or welded with continuous rows spaced at mid-span minimum, or 5' -0" o.c. maximum at clear span where span exceeds 10'-0".
H. Fasteners: Provide self-drilling, self-tapping #10 sheet metal screws and bolts; threaded studs and expansion shields as required for framing.
I. Electrodes for Welding: Comply with AWS Code.
J. Galvanizing Repair Paint: High zinc dust content paint for repair of galvanized surfaces damaged by welding, complying with ASTM A 780.

2.3 FABRICATION:

A. General: Framing components may be prefabricated into assemblies before erection. Fabricate panels plumb, square, true to line, and braced against racking with joints welded. Perform lifting of prefabricated units to prevent damage or distortion.
B. Fabricate units in jig templates to hold members in proper alignment and position and to assure consistent component placement.
C. Fastenings: Attach similar components by welding or screws.
D. Reinforce, stiffen, and brace framing assemblies to withstand handling, delivery, and erection stresses. Lift fabricated assemblies to prevent damage or permanent distortion.
E. Fabrication Tolerances: Fabricate units to a maximum allowable tolerance variation from plumb, level, and true to line of 1/8-inch in 10 feet
F. Headers: Form from at least two equal size C-shapes in a back-to-back or box type configuration.

PART 3 - EXECUTION

3.1 INSTALLATION -GENERAL:

A. Manufacturer's Instructions: Install metal framing system in accordance with manufacturer's current printed or written instructions and recommendations, unless otherwise indicated.
B. Runner Tracks:
   1. Install continuous tracks sized to match studs. Align tracks accurately to layout at base and tops of studs. Secure tracks at all walls anchored to concrete floor and roof structure as indicated.
   2. Track shall be spliced with channel insert fastened with two (2) sheet metal screws, bolts or rivets at each side, each flange, and each corner. Provide fasteners at corners and ends of tracks.
C. Set studs plumb, except as needed for diagonal bracing or required for non-plumb walls or warped surfaces and similar requirements.
D. Where stud system abuts structural columns or walls, including masonry walls, anchor ends of stiffeners and bridging to supporting structure.
E. Install supplemental framing, blocking and bracing in metal framing system wherever walls or partitions are indicated to support fixtures, equipment, services, casework. heavy trim and furnishings, and similar work requiring attachment to the wall or partition. Where type of supplementary support is not otherwise indicated, comply with stud manufacturer's recommendations and industry standards in each case, considering weight or loading resulting from item supported.
F. Erection Tolerances: Bolt or weld panels (at both horizontal and vertical junctures) to produce flush, even, true to line joints. 1/16” out of plane max.

3.2 REPAIRS AND PROTECTION:

A. Galvanizing Repairs: Prepare and repair damaged galvanized coatings on fabricated and installed cold-formed metal framing with galvanized repair paint according to ASTM A 780 and manufacturer's written instructions.

END OF SECTION 05 40 00

PANAMA CITY BEACH
FIRE STATION #32
HUTCHISON BLVD
BID DOCUMENTS
AUGUST 1, 2023

SECTION 05 44 00 - COLD-FORMED METAL TRUSSES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-I Specification sections apply to work of this section.

1.2 DESCRIPTION OF WORK:

A. Work described in this Section includes galvanized metal truss framing system.

1.3 PREINSTALLATION MEETING:

A. Pre-Installation Conference: Prior to start of installation of metal trusses, meet at project site with contractor and structural engineer.

1.4 SUBMITTALS:

A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections:
   1. Product data:
      a. Steel Specification
      b. Expansion Anchors
      c. Power Actuated Anchors
      d. Mechanical Fasteners
      e. Miscellaneous Clips
   2. Shop drawings
      a. Include layout, spacings, sizes, thicknesses, and types of cold-formed steel trusses; fabrication; and fastening and anchorage details, including mechanical fasteners.
      b. The design is to include all temporary and permanent bracing, bridging, strapping, connections and fasteners to complete the roof truss system. Sizes shown on the Contract Documents are minimum requirements and the Specialty Engineer will adjust these as necessary to complete his design. The design may assume that the steel roof deck attachment to the truss provides lateral restraint.
      c. Indicate reinforcing channels, opening framing, supplemental framing, strapping, bracing, bridging, splices, accessories, connection details, and attachment to adjoining work.
         1) For cold-formed steel trusses indicated to comply with design loads, shop drawings and calculations shall be signed and sealed by the delegated (specialty)engineer responsible for their preparation.

1.5 QUALITY ASSURANCE:

A. Qualifications:

1. Fabricator Qualifications: Company with not less than five (5) documented satisfactory experiences designing and fabricating cold-formed steel framing

systems equal in material, design and extent to the systems required for this Project.

2. Installer Qualifications: An experienced installer who has completed cold-formed metal framing similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

B. Engineering Responsibility: Engage a delegated licensed engineer to prepare design calculations, Shop Drawings, and other structural data.

C. Delegated Engineer: A licensed engineer who is legally qualified to practice in State of Florida and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of cold-formed metal framing that are similar to those indicated for this Project in material, design, and extent.

D. Codes and Standards: Comply with the following, unless more stringent provisions are indicated:

1) Florida Building Code, 2020 Edition.
2) ASCE 7, “Minimum Design Loads for Buildings and Other Structures.”
3) AWS D1.1, “Structural Welding Code - Steel.”
4) AWS D1.3, "Structural Welding Code - Sheet Steel."
5) See “Performance Requirements” for additional codes and standards.

1.6 FIELD MEASUREMENTS

A. Verify all dimensions and conditions by field measurement. Indicate and flag on shop drawings all discrepancies between actual conditions and contract documents.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Protect cold-formed steel trusses from corrosion, deformation, and other damage during delivery, storage, and handling.

1.8 PROJECT CONDITIONS

A. A. During construction, adequately distribute all loads applied to member so as not to exceed the carrying capacity of any framing member.

PART 2 - PRODUCTS

A. MANUFACTURERS

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work.

B. PERFORMANCE REQUIREMENTS

1. Delegated Design: Engage a qualified professional engineer, as defined in Section 014000 "Quality Requirements," to design cold-formed steel framing.
2. Structural Performance: Provide cold-formed steel trusses capable of withstanding design loads within limits and under conditions indicated.
   a. Design Loads: As indicated on drawings or required by Code.
   b. Deflection Limits: Design trusses to withstand design loads without deflections greater than the following:
      1) Roof Trusses: Vertical deflection of 1/360 of the span.
   c. Design framing systems to provide for movement of framing members located outside the insulated building envelope without damage or overstressing, sheathing failure, connection failure, undue strain on

fasteners and anchors, or other detrimental effects when subject to a maximum ambient temperature change of 120 deg F.

C. Cold-Formed Steel Framing Design Standards:
   1. Roof Systems: Design according to AISI S210.
   2. Lateral Design: Design according to AISI S213.
   3. Roof Trusses: Design according to AISI S214.

2.2 COLD-FORMED STEEL TRUSS MATERIALS

A. Sizes and grades indicated below are required minimums permitted for use. Sizes indicated on drawings are for reference only and may be adjusted to match project requirements based on final truss configurations developed by Specialty Engineer. Connections of light gage framing to walls, beams or slabs not shown on Contract Documents are to be designed by Specialty Engineer.

B. Steel Sheet: ASTM A 1003, structural grade, Type H, metallic coated, of grade and coating weight as follows:
   1. Grade: As required by structural performance.
   2. Coating: G90.

2.3 ROOF TRUSSES

A. Roof Truss Members: Manufacturer's standard steel sections.
   1. Connecting Flange Width: 2 inches, minimum at top and bottom chords connecting to sheathing or other directly fastened construction.
   2. Minimum Chord Base-Metal Thickness: 16 ga.

2.4 ACCESSORIES

A. Fabricate steel-framing accessories from steel sheet, ASTM A 1003, structural grade, Type H, metallic coated, of same grade and coating weight used for truss members. Provide accessories of manufacturer's standard thickness and configuration unless otherwise indicated.

2.5 ANCHORS, CLIPS, AND FASTENERS

A. Steel Shapes and Clips: ASTM A 36, zinc coated by hot-dip process according toASTM A 123.

B. Expansion Anchors: Fabricated from corrosion-resistant materials, with allowable load or strength design capacities calculated according to ICC-ES AC193 and Appendix D in ACI 318, greater than or equal to the design load, as determined by testing per ASTM E 488 conducted by a qualified testing agency.

C. Power-Actuated Fasteners: Fastener system of type suitable for application, fabricated from corrosion-resistant materials, with capability to sustain, without failure, allowable load capacities calculated according to ICC-ES AC70, greater than or equal to the design load, as determined by testing per ASTM E 1190 conducted by a qualified testing agency.

D. Mechanical Fasteners: ASTM C 1513, corrosion-resistant-coated, self-drilling, self-tapping steel drill screws.
   1. Head Type: Low-profile head beneath sheathing; manufacturer's standard elsewhere.

E. Welding Electrodes: Comply with AWS standards.

2.6 MISCELLANEOUS MATERIALS

A. Galvanizing Repair Paint: SSPC-Paint 20 or MIL-P-21035B.

B. Shims: Load bearing, of high-density multimonomer plastic, nonleaching; or of cold-formed steel of same grade and coating as framing members supported by shims.

2.7 FABRICATION

A. Fabricate cold-formed steel trusses and accessories plumb, square, and true to line, and with connections securely fastened, according to referenced AISI's specifications and standards, manufacturer's written instructions, and requirements in this Section.
   1. Fabricate trusses using jigs or templates.
   2. Cut truss members by sawing or shearing; do not torch cut.
   3. Fasten cold-formed steel truss members by welding, screw fastening, clinch fastening, pneumatic pin fastening, or riveting as standard with fabricator.
   4. Fasten other materials to cold-formed steel trusses by welding, bolting, pneumatic pin fastening, or screw fastening, according to Shop Drawings.

B. Reinforce, stiffen, and brace trusses to withstand handling, delivery, and erection stresses. Lift fabricated trusses to prevent damage or permanent distortion.

C. Fabrication Tolerances: Fabricate assemblies level, plumb, and true to line to a maximum allowable tolerance variation of 1/8 inch in 10 feet and as follows:
   1. Spacing: Space individual framing members no more than plus or minus 1/8 inch from plan location. Cumulative error shall not exceed minimum fastening requirements of sheathing or other finishing materials.
   2. Squareness: Fabricate each cold-formed metal framing assembly to a maximum out of square tolerance of 1/8 inch.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine supporting substrates and abutting cold-formed steel trusses for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Install, bridge, and brace cold-formed steel trusses according to AISI S200, AISI S214, AISI's "Code of Standard Practice for Cold-Formed Steel Structural Framing," and manufacturer's written instructions unless more stringent requirements are indicated.

B. Install cold-formed steel trusses and accessories plumb, square, and true to line, and with connections securely fastened.
   1. Fasten cold-formed steel trusses by mechanical fasteners.
      a. Locate mechanical fasteners and install according to Shop Drawings; comply with requirements for spacing, edge distances, and screw penetration.

C. Install temporary bracing and supports. Maintain braces and supports in place, undisturbed, until entire integrated supporting structure has been completed and permanent connections to framing are secured.

D. Truss Spacing: As indicated.

E. Do not alter, cut, or remove framing members or connections of trusses.

F. Erect trusses with plane of truss webs plumb and parallel to each other, align, and accurately position at spaces indicated.

G. Erect trusses without damaging framing members or connections.

H. Coordinate with wall framing to align webs of bottom chords and load-bearing studs or continuously reinforce track to transfer loads to structure. Anchor trusses securely at all bearing points.

I. Install continuous bridging and permanently brace trusses as indicated on Shop Drawings and designed according to CFSEI's TechNote 551e, "Design Guide: Permanent Bracing of Cold- Formed Steel Trusses.".

J. Erection Tolerances: Install cold-formed steel framing level, plumb, and true to line to a maximum allowable tolerance variation of 1/8 inch in 10 feet and as follows:
    1. Space individual trusses no more than plus or minus 1/8 inch from plan location.
        a. Cumulative error shall not exceed minimum fastening requirements of sheathing or other finishing materials.

3.3 FIELD QUALITY CONTROL

A. Special Inspections: Owner will engage a qualified special inspector to perform inspections as required by the Special Inspection Plan.
B. Remove and replace Work that does not comply with specified requirements.
C. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of corrected Work with specified requirements.

3.4 REPAIRS AND PROTECTION

A. Galvanizing Repairs: Prepare and repair damaged galvanized coatings on fabricated and installed cold-formed metal framing with galvanized repair paint according to ASTM A 780 and manufacturer's written instructions.
B. Provide final protection and maintain conditions, in a manner acceptable to manufacturer and Installer, that ensure that cold-formed metal trusses are without damage or deterioration at time of Substantial Completion.

END OF SECTION 05 44 00

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SECTION 05 50 00 - METAL FABRICATIONS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Shop fabricated steel and aluminum items.

B. Aluminum stairs/landings

C. Downspout boots.

1.02 RELATED REQUIREMENTS

A. Section 05 52 13 - Pipe and Tube Railings.

1.03 REFERENCE STANDARDS

A. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum 2020.

B. AAMA 2604 - Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix) 2022.

C. ASTM A36/A36M - Standard Specification for Carbon Structural Steel 2019.

D. ASTM A48/A48M - Standard Specification for Gray Iron Castings 2022.

E. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless 2022.

F. ASTM A283/A283M - Standard Specification for Low and Intermediate Tensile Strength Carbon Steel Plates 2018.

G. ASTM A307 - Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60 000 PSI Tensile Strength 2021.

H. ASTM A501/A501M - Standard Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing 2021.

I. ASTM B210/B210M - Standard Specification for Aluminum and Aluminum-Alloy Drawn Seamless Tubes 2019a.

J. ASTM B211/B211M - Standard Specification for Aluminum and Aluminum-Alloy Rolled or Cold Finished Bar, Rod, and Wire 2019.

K. ASTM B26/B26M - Standard Specification for Aluminum-Alloy Sand Castings 2018, with Editorial Revision.

L. ASTM B85/B85M - Standard Specification for Aluminum-Alloy Die Castings 2018, with Editorial Revision.

M. ASTM B209/B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate 2021a.

N. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes 2021.

O. ASTM F3125/F3125M - Standard Specification for High Strength Structural Bolts and Assemblies, Steel and Alloy Steel, Heat Treated, Inch Dimensions 120 ksi and 150 ksi Minimum Tensile Strength, and Metric Dimensions 830 MPa and 1040 MPa Minimum Tensile Strength 2022.

P. AWS A2.4 - Standard Symbols for Welding, Brazing, and Nondestructive Examination 2020.

Q. AWS B2.1/B2.1M - Specification for Welding Procedure and Performance Qualification 2021.

R. AWS D1.1/D1.1M - Structural Welding Code - Steel 2020, with Errata (2022).

S. AWS D1.2/D1.2M - Structural Welding Code - Aluminum 2014, with Errata (2020).

T. IAS AC172 - Accreditation Criteria for Fabricator Inspection Programs for Structural Steel AC172 2019.

U. SSPC-Paint 15 - Steel Joist Shop Primer/Metal Building Primer 2004.

V. SSPC-Paint 20 - Zinc-Rich Coating (Type I - Inorganic, and Type II - Organic) 2019.

1.04 SUBMITTALS

A. Shop Drawings: Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories. Include erection drawings, elevations, and details where applicable.
   1. Indicate welded connections using standard AWS A2.4 welding symbols. Indicate net weld lengths.
   2. Design data: Submit drawings and supporting calculations, signed and sealed by a qualified professional structural engineer.
      a. Include the following, as applicable:
         1) Design criteria.
         2) Engineering analysis depicting stresses and deflections.
         3) Member sizes and gauges.
         4) Details of connections.
         5) Support reactions.
         6) Bracing requirements.

B. Welders' Qualification Statement: Welders' certificates in accordance with AWS B2.1/B2.1M and dated no more than 12 months before start of scheduled welding work.

C. Designer's Qualification Statement.

D. Fabricator's Qualification Statement: Provide documentation showing steel fabricator is accredited under IAS AC172.

1.05 QUALITY ASSURANCE

A. Design aluminum stairs under direct supervision of a Professional Structural Engineer experienced in design of this work and licensed in the State in which the Project is located.

B. Welder Qualifications: Welding processes and welding operators qualified in accordance with AWS D1.1/D1.1M and AWS D1.2/D1.2M and dated no more than 12 months before start of scheduled welding work.

C. Fabricator Qualifications: A qualified steel fabricator that is accredited by IAS AC172.

PART 2 PRODUCTS

2.01 MATERIALS - STEEL

A. Steel Sections: ASTM A36/A36M.

B. Steel Tubing: ASTM A501/A501M hot-formed structural tubing.

C. Plates: ASTM A283/A283M.

D. Pipe: ASTM A53/A53M, Grade B Schedule 40, black finish.

E. Mechanical Fasteners: Same material as or compatible with materials being fastened; type consistent with design and specified quality level.

F. Bolts, Nuts, and Washers: ASTM A307, Grade A, plain.

G. Bolts, Nuts, and Washers: ASTM F3125/F3125M, Type 1, plain.

H. Welding Materials: AWS D1.1/D1.1M; type required for materials being welded.

I. Shop and Touch-Up Primer: SSPC-Paint 15, complying with VOC limitations of authorities having jurisdiction.

J. Touch-Up Primer for Galvanized Surfaces: SSPC-Paint 20, Type I - Inorganic, complying with VOC limitations of authorities having jurisdiction.

2.02 MATERIALS - ALUMINUM

A. Extruded Aluminum: ASTM B221 (ASTM B221M), 6063 alloy, T6 temper.

B. Sheet Aluminum: ASTM B209/B209M, 5052 alloy, H32 or H22 temper.

C. Aluminum-Alloy Drawn Seamless Tubes: ASTM B210/B210M, 6063 alloy, T6 temper.

D. Aluminum-Alloy Bars: ASTM B211/B211M, 6061 alloy, T6 temper.

E. Aluminum-Alloy Sand Castings: ASTM B26/B26M.

F. Aluminum-Alloy Die Castings: ASTM B85/B85M.

G. Bolts, Nuts, and Washers: Stainless steel.

H. Welding Materials: AWS D1.2/D1.2M; type required for materials being welded.

2.03 FABRICATION

A. Fit and shop assemble items in largest practical sections, for delivery to site.

B. Fabricate items with joints tightly fitted and secured.

C. Continuously seal joined members by continuous welds.

D. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.

E. Exposed Mechanical Fastenings: Flush countersunk screws or bolts; unobtrusively located; consistent with design of component, except where specifically noted otherwise.

F. Furnish components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.

2.04 FABRICATED ITEMS

A. Bollards: Steel pipe, concrete filled, crowned cap, as detailed; prime paint finish.

B. Ledge Angles, Shelf Angles, Channels, and Plates Not Attached to Structural Framing: For support of metal decking; prime paint finish.

C. Lintels: As detailed; prime paint finish.

2.05 ALUMINUM STAIRS

A. Design of aluminum members shall conform to the current editions of the Aluminum Association and Guidelines for Aluminum Structures and Florida Building Code.

B. Materials:
   1. Aluminum stair assemblies shall be aluminum construction alloy 6061-T6.
   2. All bolt hardware shall be stainless steel grade 304.
   3. Railing and guards shall be made from 1-1/4 inch schedule 40 aluminum pipe.
   4. Decking/treads shall be slip resistant heavy duty bar grating.

C. Stair treads and stringers: shall be designed to meet a minimum uniform live load of 100 psf and a concentrated vertical load of 300 pounds over an area of 4 square inches.

D. Handrails and guards: shall be designed to meet resist a minimum concentrated load of 200 pounds and linear load of 50 plf.

E. Landings: hall be designed to meet a minimum uniform live load of 100 psf and a concentrated vertical load of 300 pounds over an area of 1 suare foot.

2.06 DOWNSPOUT BOOTS

A. Downspout Boots: Smooth interior without boxed corners or choke points; include integral lug slots and on-body cleanout and cover with neoprene gaskets.
   1. Configuration: Angular.
   2. Material: Cast iron; ASTM A48/A48M; casting thickness 3/8 inch (9.5 mm), minimum.
   3. Finish: Manufacturer's standard factory applied powder coat finish.
   4. Color: To be selected by Architect from manufacturer's standard range.
   5. Accessories: Manufacturer's standard stainless steel fasteners, stainless steel building wall anchors, and rubber coupling.
   6. Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
      a. Downspoutboots.com, a division of J. R. Hoe & Sons; A-series: www.downspoutboots.com/#sle.
      b. Jay R. Smith.
      c. Neenah Foundry.

2.07 FINISHES - STEEL

A. Prime paint steel items.

B. Prime Painting: One coat.

2.08 FINISHES - ALUMINUM

A. Exterior Aluminum Surfaces: high performance organic coating.

B. Interior Aluminum Surfaces: mill finish.

C. Class I Natural Anodized Finish: AAMA 611 AA-M12C22A41 Clear anodic coating not less than 0.7 mils thick.

D. High Performance Organic Coating System: AAMA 2604 multiple coat, thermally cured fluoropolymer system; color as selected from manufacturer's standard colors.

E. Apply one coat of bituminous paint to concealed aluminum surfaces in contact with cementitious or dissimilar materials.

2.09 FABRICATION TOLERANCES

A. Squareness: 1/8 inch maximum difference in diagonal measurements.

B. Maximum Offset Between Faces: 1/16 inch.

C. Maximum Misalignment of Adjacent Members: 1/16 inch.

D. Maximum Bow: 1/8 inch in 48 inches.

E. Maximum Deviation From Plane: 1/16 inch in 48 inches.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field conditions are acceptable and are ready to receive work.

3.02 PREPARATION

A. Clean and strip primed steel items to bare metal where site welding is required.

B. Furnish setting templates to the appropriate entities for steel items required to be cast into concrete or embedded in masonry.

3.03 INSTALLATION

A. Install items plumb and level, accurately fitted, free from distortion or defects.

B. Provide for erection loads, and for sufficient temporary bracing to maintain true alignment until completion of erection and installation of permanent attachments.

C. Field weld components as indicated on drawings.

D. Perform field welding in accordance with AWS D1.1/D1.1M.

E. Obtain approval prior to site cutting or making adjustments not scheduled.

F. After erection, prime welds, abrasions, and surfaces not shop primed , except surfaces to be in contact with concrete.

3.04 TOLERANCES

A. Maximum Variation From Plumb: 1/4 inch per story, non-cumulative.

B. Maximum Offset From True Alignment: 1/4 inch.

C. Maximum Out-of-Position: 1/4 inch.

END OF SECTION 05 50 00

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SECTION 05 52 13 - PIPE AND TUBE RAILINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Mezzanine Railing

1.02 REFERENCE STANDARDS

A. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum 2020.

B. ASTM A780/A780M - Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings 2020.

C. ASTM B211/B211M - Standard Specification for Aluminum and Aluminum-Alloy Rolled or Cold Finished Bar, Rod, and Wire 2019.

D. ASTM B241/B241M - Standard Specification for Aluminum and Aluminum-Alloy Seamless Pipe and Seamless Extruded Tube 2022.

E. ASTM B429/B429M - Standard Specification for Aluminum-Alloy Extruded Structural Pipe and Tube 2020.

F. ASTM B483/B483M - Standard Specification for Aluminum and Aluminum-Alloy Drawn Tube and Drawn Pipe for General Purpose Applications 2021.

G. ASTM E935 - Standard Test Methods for Performance of Permanent Metal Railing Systems and Rails for Buildings 2021.

H. AWS D1.1/D1.1M - Structural Welding Code - Steel 2020, with Errata (2022).

1.03 SUBMITTALS

A. Shop Drawings: Indicate profiles, sizes, connection attachments, anchorage, size and type of fasteners, and accessories.

B. Designer's Qualification Statement.

C. Fabricator's Qualification Statement.

1.04 QUALITY ASSURANCE

A. Structural Designer Qualifications: Professional Structural Engineer experienced in design of this work and licensed in the State in which the Project is located, or personnel under direct supervision of such an engineer.

B. Welder Qualifications: Welding processes and welding operators qualified within previous 12 months.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Handrails and Railings: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Spaceguard Products; BeastWire Mezzanine Safety Railguard System: www.spaceguardproducts.com/#sle.
2. Superior Aluminum Products, Inc; Series 5H Pipe Railing: www.superioraluminum.com/#sle.
3. The Wagner Companies; Series 500: www.wagnercompanies.com/#sle.

2.02 RAILINGS - GENERAL REQUIREMENTS

A. Design, fabricate, and test railing assemblies in accordance with the most stringent requirements of applicable local code.

B. Distributed Loads: Design railing assembly, wall rails, and attachments to resist distributed force of 75 pounds per linear foot applied to the top of the assembly and in any direction, without damage or permanent set. Test in accordance with ASTM E935

C. Concentrated Loads: Design railing assembly, wall rails, and attachments to resist a concentrated force of 200 pounds applied at any point on the top of the assembly and in any direction, without damage or permanent set. Test in accordance with ASTM E935

D. Allow for expansion and contraction of members and building movement without damage to connections or members.

E. Dimensions: See drawings for configurations and heights.
   1. Top Rails and Wall Rails: 1-1/2 inches diameter, round.
   2. Intermediate Rails: 1-1/2 inches diameter, round.
   3. Posts: 1-1/2 inches diameter, round.

F. Provide anchors and other components as required to attach to structure, made of same materials as railing components unless otherwise indicated; where exposed fasteners are unavoidable provide flush countersunk fasteners.

G. Provide slip-on non-weld mechanical fittings to join lengths, seal open ends, and conceal exposed mounting bolts and nuts, including but not limited to elbows, T-shapes, splice connectors, flanges, escutcheons, and wall brackets.

2.03 ALUMINUM MATERIALS

A. Aluminum Pipe: Schedule 40; ASTM B429/B429M, ASTM B241/B241M, or ASTM B483/B483M.

B. Solid Bars and Flats: ASTM B211/B211M.

C. Non-Weld Mechanical Fittings: Slip-on cast aluminum, for Schedule 40 pipe, with flush setscrews for tightening by standard hex wrench, no bolts or screw fasteners.

D. Welding Fittings: No exposed fasteners; cast aluminum.

E. Exposed Fasteners: No exposed bolts or screws.

2.04 FABRICATION

A. Accurately form components to suit specific project conditions and for proper connection to building structure.

B. Fit and shop assemble components in largest practical sizes for delivery to site.

C. Fabricate components with joints tightly fitted and secured. Provide spigots and sleeves to accommodate site assembly and installation.

D. Welded Joints:
   1. Exterior Components: Continuously seal joined pieces by intermittent welds and plastic filler. Drill condensate drainage holes at bottom of members at locations that will not encourage water intrusion.
   2. Interior Components: Continuously seal joined pieces by intermittent welds and plastic filler.
   3. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.

E. Weld connections that cannot be shop welded due to size limitations.
   1. Weld in accordance with AWS D1.1/D1.1M.

2. Match shop welding and bolting.
3. Clean welds, bolted connections, and abraded areas.
4. Touch up shop primer and factory-applied finishes.
5. Repair galvanizing with galvanizing repair paint per ASTM A780/A780M.

2.05 ALUMINUM FINISHES

A. Class II Natural Anodized Finish: AAMA 611 AA-M12C22A31 Clear anodic coating not less than 0.4 mils thick.

B. Class I Color Anodized Finish: AAMA 611 AA-M12C22A44 Electrolytically deposited colored anodic coating not less than 0.7 mils thick.

C. Color: To be selected by Architect from manufacturer's full line.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field conditions are acceptable and are ready to receive work.

3.02 PREPARATION

A. Apply one coat of bituminous paint to concealed aluminum surfaces that will be in contact with cementitious or dissimilar materials.

3.03 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Install components plumb and level, accurately fitted, free from distortion or defects, with tight joints.

C. Anchor railings securely to structure.

END OF SECTION 05 52 13

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SECTION 06 10 00 - ROUGH CARPENTRY

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Roofing nailers.

B. Communications and electrical room mounting boards.

C. Concealed wood blocking, nailers, and supports.

1.02 RELATED REQUIREMENTS

A. Section 07 62 00 - Sheet Metal Flashing and Trim: Sill flashings.

1.03 REFERENCE STANDARDS

A. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware 2023.

B. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2023.

C. AWPA U1 - Use Category System: User Specification for Treated Wood 2022.

D. PS 1 - Structural Plywood 2019.

E. PS 20 - American Softwood Lumber Standard 2021.

F. RIS (GR) - Standard Specifications for Grades of California Redwood Lumber 2019.

G. SPIB (GR) - Standard Grading Rules 2021.

H. WCLIB (GR) - Standard Grading Rules for West Coast Lumber No. 17 2018.

I. WWPA G-5 - Western Lumber Grading Rules 2021.

1.04 DELIVERY, STORAGE, AND HANDLING

A. General: Cover wood products to protect against moisture. Support stacked products to prevent deformation and to allow air circulation.

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS

A. Dimension Lumber: Comply with PS 20 and requirements of specified grading agencies.

1. If no species is specified, provide species graded by the agency specified; if no grading agency is specified, provide lumber graded by grading agency meeting the specified requirements.
2. Grading Agency: Grading agency whose rules are approved by the Board of Review, American Lumber Standard Committee at www.alsc.org, and who provides grading service for the species and grade specified; provide lumber stamped with grade mark unless otherwise indicated.

2.02 DIMENSION LUMBER FOR CONCEALED APPLICATIONS

A. Grading Agency: Southern Pine Inspection Bureau, Inc; SPIB (GR).

B. Grading Agency: Redwood Inspection Service; RIS (GR).

C. Grading Agency: West Coast Lumber Inspection Bureau; WCLIB (GR).

D. Grading Agency: Western Wood Products Association; WWPA G-5.

E. Sizes: Nominal sizes as indicated on drawings, S4S.

F. Moisture Content: Kiln-dry or MC15.

G. Miscellaneous Framing, Blocking, Nailers, Grounds, and Furring:
   1. Lumber: S4S, No. 2 or Standard Grade.
   2. Boards: Standard or No. 3.

2.03 CONSTRUCTION PANELS

A. Communications and Electrical Room Mounting Boards: PS 1 A-D plywood, or medium density fiberboard; 3/4 inch thick; flame spread index of 25 or less, smoke developed index of 450 or less, when tested in accordance with ASTM E84.

2.04 ACCESSORIES

A. Fasteners and Anchors:
   1. Metal and Finish: Hot-dipped galvanized steel complying with ASTM A153/A153M for high humidity and preservative-treated wood locations, unfinished steel elsewhere.
   2. Anchors: Toggle bolt type for anchorage to hollow masonry.

B. Sill Flashing: See Section 07 62 00.

2.05 FACTORY WOOD TREATMENT

A. Treated Lumber and Plywood: Comply with requirements of AWPA U1 - Use Category System for wood treatments determined by use categories, expected service conditions, and specific applications.

PART 3 EXECUTION

3.01 PREPARATION

A. Where wood framing bears on cementitious foundations, install full width sill flashing continuous over top of foundation, lap ends of flashing minimum of 4 inches and seal.

B. Where wood-preservative-treated lumber comes in contact with metal decking, install continuous flexible flashing between wood and metal decking.

3.02 INSTALLATION - GENERAL

A. Select material sizes to minimize waste.

B. Reuse scrap to the greatest extent possible; clearly separate scrap for use on site as accessory components, including: shims, bracing, and blocking.

C. Where treated wood is used on interior, provide temporary ventilation during and immediately after installation sufficient to remove indoor air contaminants.

3.03 BLOCKING, NAILERS, AND SUPPORTS

A. Provide framing and blocking members as indicated or as required to support finishes, fixtures, specialty items, and trim.

B. In metal stud walls, provide continuous blocking around door and window openings for anchorage of frames, securely attached to stud framing.

C. Provide the following specific nonstructural framing and blocking:
   1. Cabinets and shelf supports.
   2. Wall brackets.
   3. Handrails.
   4. Grab bars.
   5. Towel and bath accessories.
   6. Wall-mounted door stops.
   7. Chalkboards and marker boards.
   8. Wall paneling and trim.

9. Joints of rigid wall coverings that occur between studs.

3.04 ROOF-RELATED CARPENTRY

A. Coordinate installation of roofing carpentry with deck construction, framing of roof openings, and roofing assembly installation.

3.05 INSTALLATION OF CONSTRUCTION PANELS

A. Communications and Electrical Room Mounting Boards: Secure with screws to studs with edges over firm bearing; space fasteners at maximum 24 inches on center on all edges and into studs in field of board.
   1. At fire-rated walls, install board over wall board indicated as part of the fire-rated assembly.
   2. Where boards are indicated as full floor-to-ceiling height, install with long edge of board parallel to studs.
   3. Install adjacent boards without gaps.

END OF SECTION 06 10 00

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SECTION 06 17 00 - ENGINEERED FRAMING SYSTEM

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Engineered lumber framing systems for the following applications:
   1. Window and door buck engineered framing system.

1.02 SUBMITTALS

A. Product Data: Submit manufacturer's current published data including materials, standard details, and installation instructions.

1.03 QUALITY ASSURANCE

A. Manufacturer Qualifications: Minimum 5 years experience manufacturing similar products.

B. AWPA Standards: Materials shall meet AWPA U1-15 for Use Category UC 2. Service conditions for UC2 are interior construction, above ground, damp; protected from weather, but may be subject to sources of moisture.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Deliver, store and handle materials in accordance with manufacturer's recommendations and as required to avoid damage.

1.05 PROJECT CONDITIONS

A. Maintain temperature and humidity within limits recommended by the manufacturer. Do not install products under environmental conditions outside manufacturer's recommended limits.

1.06 WARRANTY

A. Warranty: Provide manufacturer's standard limited warranty.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Basis of Design: PreBuck,or approved equal.

B. Requests for substitutions will be considered in accordance with provisions of the General Conditions and Division 01.

2.02 WINDOW AND DOOR BUCK ENGINEERED FRAMING SYSTEM

A. Window and Door Buck Engineered Framing System:
   1. Meets AWPA U1-15 for Use Category 2 (UC2).
   2. MDI resin, 100 percent waterproof when cured.
   3. Treated with zinc borate through complete cross section.
   4. Typical material 1-1/2 inches (38 mm) thick; built-up as required.
   5. Metal flange, 1-1/2 inch (38 mm) x 1-1/2 inch (38 mm), 20 gauge galvanized metal as applicable.
   6. Fasteners, 3-4 16D nails, minimum, each corner.
   7. Two continuous dovetail keyways at entire perimeter to eliminate air infiltration.
   8. Non-obstructive with insulated concrete forming (ICF) web.
   9. Unit self-aligns on wall.
   10. Acceptable for direct contact with concrete, non-corrosive to metals, insect and fungi resistive.

11. Materials: Laminated Strand Lumber (LSL) 1.30E Engineered Lumber, ICC ESR-1387.
    a. Treatment: Zinc borate through complete cross section.
    b. Bending Strength: 1900 psi.
    c. Tensile Strength: 1075 psi.
    d. Shear Strength: 150 psi.
    e. Compression - Perpendicular to Grain: 670 psi.
    f. Specific Gravity: 0.50 into the face, 0.42 into the edge.
    g. R-value of 1-1/2 inch thickness (ASTM E 518): 1.86.

PART 3 EXECUTION

3.01 INSTALLATION

A. Install materials in accordance with manufacturer's recommendations and in proper relationship with adjacent construction. Set members level, plumb, and true to line.

B. Coordinate construction sequence with installation of flashings and adjacent materials provided by others to prevent exterior moisture from entering or passing through completed assemblies.

C. Remove excess and waste materials from the job.

END OF SECTION 06 17 00

SECTION 07 14 00 - FLUID-APPLIED WATERPROOFING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Water-based asphalt emulsion waterproofing.

1.02 ABBREVIATIONS

A. HDPE - High-Density Polyethylene.

B. NRCA - National Roofing Contractors Association.

C. SBS - Styrene-Butadiene-Styrene.

1.03 REFERENCE STANDARDS

A. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency current edition.

B. ASTM D412 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers--Tension 2016 (Reapproved 2021).

C. ASTM D4541 - Standard Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Testers 2022.

D. ASTM E96/E96M - Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials 2022a, with Editorial Revision (2023).

E. NRCA (WM) - The NRCA Waterproofing Manual 2021.

1.04 SUBMITTALS

A. Product Data: Provide data for membrane, surface conditioner, flexible flashings, joint cover sheet, and joint and crack sealants.

B. Shop Drawings: Indicate special joint or termination conditions and conditions of interface with other materials.

C. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

D. Manufacturer's Installation Instructions: Indicate special procedures, perimeter conditions requiring special attention, and acceptable installation temperatures.

E. Manufacturer's qualification statement.

F. Installer's qualification statement.

G. Testing Firm's qualification statement.

H. Warranty Documentation:

1. Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.
2. Submit installer's documentation that installation complies with warranty conditions for the field-applied waterproofing.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years documented experience.

B. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.

C. Testing Firm Qualifications: Company specializing in performing work of the type specified and approved by manufacturer.

1.06 MOCK-UPS

A. Construct mock-up consisting of 100 sq ft of horizontal and vertical fluid-applied waterproofing; to represent finished work including internal and external corners, drainage panel, base flashings, control joints, expansion joints, counterflashings, and protective cover.

B. Mock-up may remain as part of work.

1.07 FIELD CONDITIONS

A. Maintain ambient temperatures above 40 degrees F for 24 hours before and during application and until cured.

1.08 WARRANTY

A. Installer Warranty: Provide 2-year warranty for waterproofing failing to resist penetration of water commencing on Date of Substantial Completion. Complete forms in Owner's name and register with installer.

B. Extended Correction Period: Correct defective work within 10-year period commencing on Date of Substantial Completion.

PART 2 PRODUCTS

2.01 FLUID-APPLIED WATERPROOFING MATERIALS

A. Water-Based Asphalt Emulsion Waterproofing:
   1. Cured Thickness: 60 mil, 0.060 inch, minimum.
   2. Suitable for installation over concrete substrates.
   3. Elongation: 800 percent, minimum, measured in accordance with ASTM D412.
   4. VOC Content: Less than 72 g/L when tested in accordance with 40 CFR 59, Subpart D (EPA Method 24).
   5. Water Vapor Permeability: 0.02 perm, maximum, measured in accordance with ASTM E96/E96M.
   6. Adhesion: 150 psi, minimum, measured in accordance with ASTM D4541.
   7. Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
      a. Carlisle Coatings & Waterproofing, Inc: www.carlisleccw.com/#sle.
      b. Mar-flex Waterproofing & Building Products: www.mar-flex.com/#sle.
      c. NaturaSeal: www.naturaseal.com/#sle.
      d. Tremco Commercial Sealants & Waterproofing (Basis of Design); TREMproof 260: www.tremcosealants.com/#sle.
      e. W.R. Meadows, Inc: www.wrmeadows.com/#sle.

2.02 ACCESSORIES

A. Sealant for Joints and Cracks in Substrate: Type compatible with waterproofing material and as recommended by waterproofing manufacturer.

B. Reinforcing Fabric for Between Liquid Applied Membranes (LAM): Polyester fabric, unsaturated spun bond and nonwoven, used as reinforcement between LAM waterproofing systems.
   1. Thickness: 9.5 mil, 0.0095 inch, minimum.

C. Protection Mat: Polyester mat at least 14 oz/sq yd to protect vertical or horizontal waterproofing membranes.
   1. Thickness: 100 mil, 0.10 inch, minimum.
   2. Width: 40 inches.

3. Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
    a. Tremco Commercial Sealants & Waterproofing (Basis of Design); Tremco Protection Mat: www.tremcosealants.com/#sle.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify substrate surfaces are free of frozen matter, dampness, loose particles, cracks, pits, projections, penetrations, or foreign matter detrimental to adhesion or application of waterproofing system.

C. Verify that substrate surfaces are smooth, free of honeycomb or pitting, and not detrimental to full contact bond of waterproofing materials.

D. Verify that items penetrating surfaces to receive waterproofing are securely installed.

3.02 PREPARATION

A. Protect adjacent surfaces from damage not designated to receive waterproofing.

B. Clean and prepare surfaces to receive waterproofing in accordance with manufacturer's instructions; vacuum substrate clean.

C. Do not apply waterproofing to surfaces unacceptable to waterproofing manufacturer.

D. Fill non-moving joints and cracks with a filler compatible with waterproofing materials.

E. Seal moving cracks with sealant and non-rigid filler, using procedures recommended by sealant and waterproofing manufacturers.

F. Prepare building expansion joints at locations as indicated on drawings.

3.03 INSTALLATION

A. Install waterproofing to specified minimum thickness in accordance with manufacturers instructions and NRCA (WM) applicable requirements.

B. Apply primer or surface conditioner at a rate recommended by manufacturer, and protect conditioner from rain or frost until dry.

C. Apply extra thickness of waterproofing material at corners, intersections, and angles.

D. Flexible Flashings: Seal items watertight that penetrate through waterproofing membrane with flexible flashings.

E. Seal membrane and flashings to adjoining surfaces.
    1. Install termination bar along edges.

3.04 FIELD QUALITY CONTROL

A. See Section 01 40 00 - Quality Requirements for additional requirements.

B. Owner will provide testing services, and Contractor to provide temporary construction and materials for testing.

C. Provide daily on-site attendance of roofing and insulation manufacturer's representative during installation of this work.

3.05 PROTECTION

A. Do not permit traffic over unprotected or uncovered membrane.

END OF SECTION 07 14 00

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PANAMA CITY BEACH
FIRE STATION #32
HUTCHISON BLVD
BID DOCUMENTS
AUGUST 1, 2023

SECTION 07 21 00 - THERMAL INSULATION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Board insulation at over roof deck.

B. Batt insulation and vapor retarder in exterior wall, ceiling, and roof construction.

C. Batt insulation for filling perimeter window and door shim spaces and crevices in exterior wall and roof.

1.02 REFERENCE STANDARDS

A. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing 2017.

B. ASTM C1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board 2022a.

C. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2023.

D. ASTM E136 - Standard Test Method for Assessing Combustibility of Materials Using a Vertical Tube Furnace at 750 °C 2022.

1.03 SUBMITTALS

A. Product Data: Provide data on product characteristics, performance criteria, and product limitations.

B. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

C. Manufacturer's Installation Instructions: Include information on special environmental conditions required for installation and installation techniques.

1.04 FIELD CONDITIONS

A. Do not install insulation adhesives when temperature or weather conditions are detrimental to successful installation.

PART 2 PRODUCTS

2.01 APPLICATIONS

A. Insulation in Metal Framed Walls: Batt insulation with integral vapor retarder.

B. Insulation Over Roof Deck: Polyisocyanurate board.

2.02 FOAM BOARD INSULATION MATERIALS

A. Polyisocyanurate (ISO) Board Insulation: Rigid cellular foam, comply with ASTM C1289.
   1. Classifications:
      a. Type I: Faced with aluminum foil on both major surfaces of the core foam.
         1) Class 1 - Non-reinforced core foam.
         2) Compressive Strength: 16 psi, minimum.
         3) Thermal Resistance, R-value: At 1-1/2 inch thick; 9.0, minimum, at 75 degrees F.
   2. Board Size: 48 inch by 96 inch.
   3. Board Thickness: 6 inch.

4. Board Edges: Square.
5. Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
    a. Atlas Roofing Corporation: www.atlasroofing.com/#sle.
    b. Carlisle Coatings & Waterproofing, Inc: www.carlisleccw.com/#sle.
    c. DuPont de Nemours, Inc: building.dupont.com/#sle.
    d. GAF: www.gaf.com/#sle.
    e. Johns Manville: www.jm.com/#sle.

2.03 MINERAL FIBER BLANKET INSULATION MATERIALS

A. Flexible Glass Fiber Blanket Thermal Insulation: Preformed insulation, complying with ASTM C665; friction fit.
    1. Flame Spread Index: 75 or less, when tested in accordance with ASTM E84.
    2. Smoke Developed Index: 450 or less, when tested in accordance with ASTM E84.
    3. Combustibility: Non-combustible, when tested in accordance with ASTM E136, except for facing, if any.
    4. Formaldehyde Content: Zero.
    5. Thickness: 4 inch.
    6. Facing: Unfaced (above ceiling) or kraft face (stud wall cavity).
    7. Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
        a. CertainTeed Corporation: www.certainteed.com/#sle.
        b. Johns Manville: www.jm.com/#sle.
        c. Owens Corning Corporation: www.ocbuildingspec.com/#sle.

2.04 ACCESSORIES

A. Tape: Reinforced polyethylene film with acrylic pressure sensitive adhesive.
    1. Application: Sealing of interior circular penetrations, such as pipes or cables.
    2. Width: Are required for application.
    3. Temperature Resistance: Range of minus 40 to 212 degrees F.

B. Insulation Fasteners: Appropriate for purpose intended and approved by roofing manufacturer.

C. Adhesive: Type recommended by insulation manufacturer for application.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that substrate, adjacent materials, and insulation materials are dry and that substrates are ready to receive insulation.

B. Verify substrate surfaces are flat, free of honeycomb, fins, irregularities, or materials or substances that may impede adhesive bond.

3.02 BATT INSTALLATION

A. Install insulation in accordance with manufacturer's instructions.

B. Trim insulation neatly to fit spaces. Insulate miscellaneous gaps and voids.

C. Fit insulation tightly in cavities and tightly to exterior side of mechanical and electrical services within the plane of the insulation.

3.03 PROTECTION

A. Do not permit installed insulation to be damaged prior to its concealment.

END OF SECTION 07 21 00

SECTION 07 21 29 - SPRAYED INSULATION (CELLULOSE)

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Cellulosic insulation placed in walls for sound attenuation.

1.02 REFERENCE STANDARDS

A. ASTM C177 - Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus 2019.

B. ASTM C518 - Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus 2021.

C. ASTM C739 - Standard Specification for Cellulosic Fiber Loose-Fill Thermal Insulation 2021a.

D. ASTM D1622 - Standard Test Method for Apparent Density of Rigid Cellular Plastics 2020.

E. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2023.

F. ASTM E136 - Standard Test Method for Assessing Combustibility of Materials Using a Vertical Tube Furnace at 750 °C 2022.

1.03 SUBMITTALS

A. Product Data: Provide data on materials, describing insulation properties.

B. Certificates: Certify that products of this section meet or exceed specified requirements.

C. Manufacturer's Installation Instructions: Indicate special procedures and perimeter conditions requiring special attention.

D. Manufacturer's Qualification Statement.

E. Installer's Qualification Statement.

1.04 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years of documented experience.

B. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.

1.05 FIELD CONDITIONS

A. Maintain acceptable ambient and substrate surface temperatures prior to, during, and after installation of primer and insulation materials.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Cellulosic Fiber Sprayed Insulation: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
   1. GreenFiber; 515 Blow-In Low Dust: www.greenfiber.com/#sle.
   2. Celbar Loosefill.

3. Insulmax Cellulose Insulation.
4. Applegate Loose Fill Cellulose Insulation.
5. Nu-Wool Premium Cellulose Insulation.
6. Or equal product meeting the requirements of this specification.

2.02 MATERIALS

A. Cellulosic Fiber Insulation: ASTM C739; treated cellulosic fiber, white color.
1. Thermal Resistance (R-value): 3.9, at 1 inch thick when tested in accordance with ASTM C177 at 75 degrees F temperature
2. Density: 2 lb/cu ft, when tested in accordance with ASTM D1622.
3. Noise Reduction Coefficient (NRC): 0.75 for 1 inch thickness.
4. Moisture Absorption: Maximum 15 percent by weight.
5. Flame Spread / Smoke Developed Index: 0-25 / 0-450, Class A, when tested in accordance with ASTM E84.
6. Combustibility: Passing ASTM E136.

2.03 ACCESSORIES

A. Primer: As required by insulation manufacturer.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that surfaces are clean, dry, and free of matter that may inhibit adhesion.

B. Verify other work on and within spaces to be insulated is complete prior to application.

3.02 PREPARATION

A. Mask and protect adjacent surfaces from overspray or damage.

B. Apply primer in accordance with manufacturer's instructions.

3.03 INSTALLATION

A. Install sprayed insulation in accordance with manufacturer's instructions.

B. Install sprayed insulation to a uniform monolithic density without voids.

C. Install full thickness of wall cavity in which it is installed.

D. Tamp wet sprayed insulation surface to improve adhesion and to achieve a smooth surface.

3.04 PROTECTION

A. Do not permit subsequent construction work to disturb applied sprayed insulation.

END OF SECTION 07 21 29

SECTION 07 24 00 - EXTERIOR INSULATION AND FINISH SYSTEMS

PART 2 PRODUCTS

1.01 EXTERIOR INSULATION AND FINISH SYSTEM

A. Fire Characteristics:
   1. Flammability: Pass, when tested in accordance with NFPA 285.
   2. Ignitibility: No sustained flaming when tested in accordance with NFPA 268.
   3. Potential Heat of Foam Plastic Insulation Tested Independently of Assembly: No portion of the assembly having potential heat that exceeds that of the insulation sample tested for flammability (above), when tested in accordance with NFPA 259 with results expressed in Btu per square foot.

B. Water Penetration Resistance: No water penetration beyond the plane of the base coat/insulation board interface after 15 minutes, when tested in accordance with ASTM E331 at 6.24 psf differential pressure with tracer dye in the water spray; include in tested sample at least two vertical joints and one horizontal joint of same type to be used in construction; disassemble sample if necessary to determine extent of water penetration.

C. Drainage Efficiency: Average minimum efficiency of 90 percent, when tested in accordance with ASTM E2273 for 75 minutes.

D. Salt Spray Resistance: No cracking, checking, crazing, erosion, blistering, peeling, delamination, or corrosion of finish coating after 300 hours exposure in accordance with ASTM B117, using at least three samples matching intended assembly, at least 4 by 6 inches in size.

E. Freeze-Thaw Resistance: No cracking, checking, crazing, erosion, blistering, peeling, delamination, or corrosion of finish coating when viewed under 5x magnification after 10 cycles, when tested in accordance with ICC-ES AC219 or ICC-ES AC235.

F. Weathering Resistance: No cracking, checking, crazing, erosion, blistering, peeling, delamination, or corrosion of finish coating when viewed under 5x magnification after 2000 hours of accelerated weathering conducted in accordance with ASTM G153 Cycle 1 or ASTM G155 Cycles 1, 5, or 9.

G. Water Degradation Resistance: No cracking, checking, crazing, erosion, blistering, peeling, delamination, or corrosion of finish coating after 14 days exposure, when tested in accordance with ASTM D2247.

H. Mildew Resistance: No growth supported on finish coating during 28 day exposure period, when tested in accordance with ASTM D3273.

I. Abrasion Resistance Of Finish: No cracking, checking or loss of film integrity when tested in accordance with ASTM D968 with 113.5 gallons of sand.

1.02 MATERIALS

END OF SECTION 07 24 00

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SECTION 07 27 00 - AIR BARRIERS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Fluid-Applied Membrane Air barriers, Vapor Permeable.

1.02 REFERENCE STANDARDS

A. ASTM D412 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers--Tension 2016 (Reapproved 2021).

B. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2023.

C. ASTM E2178 - Standard Test Method for Determining Air Leakage Rate and Calculation of Air Permeance of Building Materials 2021a.

1.03 SUBMITTALS

A. Product Data: Provide data on material characteristics, performance criteria, and limitations.

B. Shop Drawings: Provide drawings of special joint conditions.

C. Manufacturer's Installation Instructions: Indicate preparation, installation methods, and storage and handling criteria.

D. Manufacturer's qualification statement.

E. Installer's qualification statement.

F. Testing agency qualification statement.

1.04 QUALITY ASSURANCE

A. Installer Qualifications: Company specializing in performing the work of this section with minimum three years documented experience.

B. Manufacturer Qualification: Use evaluated materials from a single manufacturer regularly engaged in air barrier material manufacture, and use secondary materials approved in writing by primary material manufacturer.

C. Testing Agency Qualifications: Independent firm specializing in performing testing and inspections of the type specified in this section.

1.05 MOCK-UPS

A. Construct air barrier mock-up, 10 feet long by 15 feet wide, indicating examples of surface preparation, crack and joint treatment, air barrier application, and flashing, transition, and termination conditions, to set quality standards for execution.

B. Mock-up may remain as part of work.

1.06 FIELD CONDITIONS

A. Maintain temperature and humidity recommended by materials manufacturers before, during, and after installation.

PART 2 PRODUCTS

2.01 AIR BARRIER MATERIALS (AIR IMPERMEABLE AND WATER VAPOR PERMEABLE)

A. Air Barrier, Fluid Applied: Vapor permeable, elastomeric, UV-resistane, synthetic membrane, formulated for application in a range of 48-70 mils (wet), 25-35 mils (dry).

1. Air Barrier Membrane:
    a. Air Permeance: 0.004 cfm/sq ft, maximum, when tested in accordance with ASTM E2178.
    b. Water Vapor Permeance: 12 perms, minimum, when tested in accordance with ASTM E96/E96M using Procedure B - Water Method, at 73.4 degrees F.
    c. Ultraviolet (UV) and Weathering Resistance: Approved by manufacturer for up to 90 days of weather exposure.
    d. Elongation: 600 percent, minimum, when tested in accordance with ASTM D412.
    e. Surface Burning Characteristics: Flame spread index of 25 or less, smoke developed index of 450 or less, Class A when tested in accordance with ASTM E84.
    f. Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
        1) Carlisle Coatings and Waterproofing, Inc: www.carlisleccw.com/#sle.
        2) Parex USA, Inc: www.parexusa.com/#sle.
        3) Tremco Commercial Sealants & Waterproofing (Basis of Design); ExoAir 230: www.tremcosealants.com/#sle.
        4) W.R. Meadows, Inc: www.wrmeadows.com/#sle.

2.02 ACCESSORIES

A. General: Accessory materials as described in manufacturer's written installation instructions, recommended to produce complete air barrier assembly meeting performance requirements, and compaible with air barrier membrane material and adjacent materials.

B. Primer: Liquid primer meeting VOC limitations, recommended for substrate by membrane air barrier manufacturer, when installing modified bituminous self-adhered membranes.
    1. Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
        a. Rubber Polymer Company: www.rpcinfo.com/#sle.
        b. Tremco Commercial Sealants & Waterproofing (Basis of Design); ExoAir Primer.

C. Transitions:
    1. Counterflashing Strip: Modified bituminous, 40 mils thick self-adhering composite sheet sonsisting of 32 mils of SBS rubberized asphalt laminated to and 8 mils high-density, cross-laminated polyethylene film, for counterflashing of metal flashings and for substrate transitions and for termination of air barrier to bituminous roof membranes and to air barrier terminations at openings.
        a. Tremco Commercial Sealants & Waterproofing (Basis of Design); ExoAir TWF Thru-Wall Flashing.
    2. High Temperature Flashing Strip and Underlayment; Butyl, 24 mil thick self-adhering composite sheet consisting of 20 mils of butyl laminated to 4 mils of polyethylene film; thermally stable under intermittent, non-continulous exposure up to 240 deg F.
        a. Tremco Commercial Sealants & Waterproofing (Basis of Design); ExoAir 110 AT
    3. Flexible Flashing: Self-adhesive sheet flashing complying with ASTM D1970/D1970M, except slip resistance requirement waived if not installed on roof. 22 mil thick self-adhering composite sheet consisting of 16 mils of butyl laminate to 6 mil polypropylene film; thermally stable under intermittent, non-continuous exposure up to 240 deg F.

4. Preformed Silicone-Sealant Extrusion: Manufacturer's standard system consisting of cured low-modulous silicone extrusion, size to fit opening widths with manufacturer's recommended siolicone sealant for bonding extrusions to substrates.
    a. Tremco Commercial Sealants & Waterproofing (Basis of Design); Spectrem SimpleSeal.
5. Opening Transition Assembly: Cured low-modulous silicone extrusion, with reinforcing ribs, sized to fit opening widths with aluminum race for insertion into aluminum framing extrusions.
    a. Tremco Commercial Sealants & Waterproofing (Basis of Design); Proglaze ETA Engineered Transition Assembly: www.tremcosealants.com/#sle.

D. Reinforcing Fabric: High strength mesh fabric consisting of open-weave glass fiber saturated with synthetic resins formulated for high moisture resistance, for reinforcing of lquid applications; not less than 2.5 oz./sq. yd.
    1. Tremco Commercial Sealants & Waterproofing (Basis of Design); Tremco 2011

E. Liquid Joint Sealants:
    1. ASTM C 920, single-component, polyurethane, approved by air barrier manufacturer for adhesion and compatibility with membrane air barrier and accessories.
        a. Tremco Commercial Sealants & Waterproofing (Basis of Design); Dynomic 100.
    2. ASTM C 920, single-component, neutral-curing silicone, approved by air barrier manufacturer for adhesion and compatibility with membrane air barrier and accessories post installation of the membrane.
        a. Tremco Commercial Sealants & Waterproofing (Basis of Design); Spectrem 1.

F. Sprayed Polyurethane Foam Sealant: Foamed-in-place, 1.5- to 2.0-lb/cu. ft. density, with flame-spread index of 25 or less per ASTM E 162. for filling gaps at openings and penetrations.
    1. Tremco Commercial Sealants & Waterproofing (Basis of Design); Flexible Low Expanding Foam (LEF)

PART 3 EXECUTION

3.01 INSTALLATION

A. Install materials in accordance with manufacturer's installation instructions.

B. Air Barriers: Install continuous airtight barrier over surfaces indicated, with sealed seams and with sealed joints to adjacent surfaces.

C. Apply sealants and adhesives within recommended temperature range in accordance with manufacturer's installation instructions.

D. Fluid-Applied Coatings or Membranes:
    1. Prepare substrate in accordance with manufacturer's installation instructions; treat joints in substrate and between dissimilar materials as indicated.
    2. Use flashing to seal to adjacent construction and to bridge joints in coating substrate.

E. Openings and Penetrations in Exterior Air Barriers:
    1. Install flashing over sills, covering entire sill frame member, extending at least 5 inches onto air barrier and at least 6 inches up jambs; mechanically fasten stretched edges.
    2. At openings with frames having nailing flanges, seal head and jamb flanges using a continuous bead of sealant compressed by flange and cover flanges with sealing tape at least 4 inches wide; do not seal sill flange.

3. At openings with nonflanged frames, seal air barrier to each side of framing at opening using flashing at least 9 inches wide, and covering entire depth of framing.
4. At head of openings, install flashing under air barrier extending at least 2 inches beyond face of jambs; seal air barrier to flashing.
5. At interior face of openings, seal gap between window/door frame and rough framing, using joint sealant over backer rod.
6. Service and Other Penetrations: Form flashing around penetrating item and seal to air barrier surface.

END OF SECTION 07 27 00

SECTION 07 41 13 - METAL ROOF PANELS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Metal roof panel system of preformed aluminum panels.

1.02 REFERENCE STANDARDS

A. ASTM B209/B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate 2021a.

B. ASTM B209/B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate 2021a.

C. ASTM D1970/D1970M - Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection 2021.

D. ASTM E96/E96M - Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials 2022a, with Editorial Revision (2023).

E. ASTM E1592 - Standard Test Method for Structural Performance of Sheet Metal Roof and Siding Systems by Uniform Static Air Pressure Difference 2005 (Reapproved 2017).

1.03 SUBMITTALS

A. Product Data: Manufacturer's data sheets on each product to be used, including:
   1. Summary of test results, indicating compliance with specified requirements.
   2. Storage and handling requirements and recommendations.
   3. Installation methods.
   4. Specimen warranty.

B. Shop Drawings: Include layouts of roof panels, details of edge and penetration conditions, spacing and type of connections, flashings, underlayments, and special conditions.
   1. Show work to be field-fabricated or field-assembled.
   2. Include structural analysis signed and sealed by qualified structural engineer, indicating compliance of roofing system to specified loading conditions.

C. Selection Samples: For each roofing system specified, submit color chips representing manufacturer's full range of available colors and patterns.

D. Verification Samples: For each roofing system specified, submit samples of minimum size six inches square, representing actual roofing metal, thickness, profile, color, and texture.
   1. Include typical panel joint in sample.
   2. Include typical fastening detail.

E. Manufacturer's qualification statement.

F. Installer's qualification statement.

G. Test Reports: Indicate compliance of metal roofing system to specified requirements.

H. Warranty: Submit specified manufacturer's warranty and ensure that forms have been completed in Owner's name and are registered with manufacturer.

1.04 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section and with at least three years of documented experience.

B. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Provide strippable plastic protection on prefinished roofing panels for removal after installation.

B. Store roofing panels on project site as recommended by manufacturer to minimize damage to panels prior to installation.

1.06 FIELD CONDITIONS

A. Do not install metal roof panels, eave protection membrane or underlayment when surface, ambient air, or wind chill temperatures are below 45 degrees F.

1.07 WARRANTY

A. Finish Warranty: Provide 20-year manufacturer warranty against excessive degradation of exterior finish. Include provision for replacement of units with excessive fading, chalking, or flaking. Complete forms in Owner's name and register with warrantor.

B. Special Warranty: Provide 20-year warranty for weathertightness of roofing system, including agreement to repair or replace metal roof panels that fail to keep out water commencing on the Date of Substantial Completion. Complete forms in Owner's name and register with warrantor.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Architectural Metal Roof Panel Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
   1. Englert, Inc; A1300: www.englertinc.com/#sle.
   2. Fabral; Powerseam II: www.fabral.com/#sle.
   3. Metal Roofing Systems, Inc; System 2500 - Metal Roof Panels: www.metalroofingsystems.biz/#sle.
   4. Petersen Aluminum Corporation; Tite-Loc Plus Panel: www.pac-clad.com/#sle.

B. Metal Soffit Panels Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
   1. Englert, Inc: www.englertinc.com/#sle.
   2. Fabral: www.fabral.com/#sle.
   3. Metal Roofing Systems, Inc: www.metalroofingsystems.biz/#sle.
   4. Petersen Aluminum Corporation: www.pac-clad.com/#sle.

2.02 PERFORMANCE REQUIREMENTS

A. Metal Roof Panels: Provide complete roofing assemblies, including roof panels, clips, fasteners, connectors, and miscellaneous accessories, tested for compliance with the following minimum standards:
   1. Structural Design Criteria: Provide panel assemblies designed to safely support design loads and wind ratings as indicated on Structural Drawings.
   2. Overall: Complete weathertight system tested and approved in accordance with ASTM E1592.

3. Thermal Movement: Design system to accommodate without deformation anticipated thermal movement over ambient temperature range of 100 degrees F.

2.03 METAL ROOF PANELS

A. Metal Roof Panels: Provide complete engineered system complying with specified requirements and capable of remaining weathertight while withstanding anticipated movement of substrate and thermally induced movement of roofing system.

B. Metal Panels: Factory-formed panels with factory-applied finish.
   1. Aluminum Panels:
      a. Alloy and Temper: Aluminum complying with ASTM B209/B209M; temper as required for forming.
      b. Thickness: Minimum 18 gauge, 0.040 inch.
   2. Profile: Standing seam , with minimum 1-1/2-inch seam height; concealed fastener system for field seaming with special tool. Provide a 180 degree seam style.
   3. Texture: Smooth, with intermediate ribs for added stiffness.
   4. Length: Maximum possible length to minimize lapped joints. Where lapped joints are unavoidable, space laps so that each sheet spans over three or more supports.
   5. Width: Maximum panel coverage of 16 inches.

C. Metal Soffit Panels:
   1. Profile: Flush, with venting not provided.
   2. Material: Precoated aluminum sheet, 18 gauge, 0.0403 inch minimum thickness.
   3. Color: As selected by Architect from manufacturer's full line.

2.04 ATTACHMENT SYSTEM

A. Concealed System: Provide manufacturer's standard stainless steel or nylon-coated aluminum concealed anchor clips designed for specific roofing system and engineered to meet performance requirements, including anticipated thermal movement.

2.05 FABRICATION

A. Panels: Provide factory fabricated panels with applied finish and accessory items, using manufacturer's standard processes as required to achieve specified appearance and performance requirements.

B. Joints: Provide captive gaskets, sealants, or separator strips at panel joints to ensure weathertight seals, eliminate metal-to-metal contact, and minimize noise from panel movements.

2.06 FINISHES

A. Fluoropolymer Coil Coating System: Manufacturer's standard multi-coat aluminum coil coating system complying with AAMA 2605, including at least 70 percent polyvinylidene fluoride (PVDF) resin, and at least 80 percent of coil coated aluminum surfaces having minimum total dry film thickness (DFT) of 0.9 mil, 0.0009 inch; color and gloss as selected from manufacturer’s standards.

2.07 ACCESSORIES

A. Miscellaneous Sheet Metal Items: Provide flashings, gutters, downspouts, trim, moldings, closure strips, preformed crickets, caps, and equipment curbs of the same material, thickness, and finish as used for the roofing panels. Items completely concealed after installation may optionally be made of stainless steel.

B. Rib and Ridge Closures: Provide prefabricated, close-fitting components of steel with corrosion resistant finish or combination steel and closed-cell foam.

C. Sealants:

1. Exposed Sealant: Elastomeric; silicone, polyurethane, or silyl-terminated polyether/polyurethane.
2. Concealed Sealant: Non-curing butyl sealant or tape sealant.
3. Seam Sealant: Factory-applied, non-skinning, non-drying type.

D. Underlayment: Self-adhering polymer-modified sheet; 30 mil total thickness; with strippable siliconized release film on bottom side and slip resistant and UV-stable facing on top side.
1. Self Sealability: Nail sealability in accordance with ASTM D1970/D1970M.
2. Water Vapor Permeance: 30 perm, maximum, when tested in accordance with ASTM E96/E96M, Desiccant Method A.
3. Functional Temperature Range: From minus 40 degrees F to 250 degrees F.

PART 3 EXECUTION

3.01 EXAMINATION

A. Do not begin installation of preformed metal roof panels until substrates have been properly prepared.

B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.02 PREPARATION

A. Coordinate roofing work with provisions for roof drainage, flashing, trim, penetrations, and other adjoining work to ensure that completed roof will be free of leaks.

B. Remove protective film from surface of roof panels immediately prior to installation; strip film carefully to avoid damage to prefinished surfaces.

C. Separate dissimilar metals by applying a bituminous coating, self-adhering rubberized asphalt sheet, or other permanent method approved by metal roof panel manufacturer.

D. Protect surrounding areas and adjacent surfaces from damage during execution of this work.

E. At locations where metal will be in contact with wood or other absorbent material subject to wetting, seal joints with sealing compound and apply one coat of heavy-bodied bituminous paint.

3.03 INSTALLATION

A. Overall: Install roofing system in accordance with approved shop drawings and metal roof panel manufacturer's instructions and recommendations, as applicable to specific project conditions; securely anchor components of roofing system in place allowing for thermal and structural movement.
1. Install roofing system with concealed clips and fasteners, except as otherwise recommended by manufacturer for specific circumstances.
2. Minimize field cutting of panels. Where field cutting is required, use methods that will not distort panel profiles. Use of torches for field cutting is prohibited.

B. Accessories: Install necessary components that are required for complete roofing assembly, including flashings, gutters, downspouts, trim, moldings, closure strips, preformed crickets, caps, equipment curbs, rib closures, ridge closures, and similar roof accessory items.

C. Roof Panels: Install metal roof panels in accordance with manufacturer's installation instructions, minimizing transverse joints except at junction with penetrations.
1. Form weathertight standing seams incorporating concealed clips, using an automatic mechanical seaming device approved by panel manufacturer.
2. Install sealant or sealant tape at end laps and side joints as recommended by metal roof panel manufacturer.

3.04 CLEANING

A. Clean exposed sheet metal work at completion of installation. Remove grease and oil films, excess joint sealer, handling marks, and debris from installation, leaving the work clean and unmarked, free from dents, creases, waves, scratch marks, or other damage to the finish.

3.05 PROTECTION

A. Do not permit storage of materials or roof traffic on installed roof panels. Provide temporary walkways or planks as necessary to avoid damage to completed work. Protect roofing until completion of project.

B. Touch-up, repair, or replace damaged roof panels or accessories before Date of Substantial Completion.

END OF SECTION 07 41 13

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SECTION 07 46 46 - FIBER-CEMENT SIDING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Fiber-cement siding.

1.02 REFERENCE STANDARDS

A. ASTM C1186 - Standard Specification for Flat Fiber-Cement Sheets 2022.

1.03 SUBMITTALS

A. Product Data: Submit manufacturer's data sheets on each product to be used, including:
   1. Manufacturer's requirements for related materials to be installed by others.
   2. Preparation instructions and recommendations.
   3. Storage and handling requirements and recommendations.
   4. Installation methods, including nail patterns.

B. Manufacturer's qualification statement.

C. Installer's qualification statement.

D. Maintenance Instructions: Periodic inspection recommendations and maintenance procedures.

E. Warranty: Submit copy of manufacturer’s warranty, made out in Owner’s name, showing that it has been registered with manufacturer.

1.04 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than five years of documented experience.

B. Installer Qualifications: Company specializing in performing work of type specified in this section with not less than three years of experience.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Deliver and store materials in manufacturer's unopened packaging, with labels intact, until ready for installation.

B. Store materials under dry and waterproof cover, well ventilated, and elevated above grade on a flat surface.

C. Protect materials from harmful environmental elements, construction dust, and other potentially detrimental conditions.

1.06 FIELD CONDITIONS

A. Do not install panels when air temperature or relative humidity are outside manufacturer's limits.

1.07 WARRANTY

A. Manufacturer Warranty: Provide manufacturer warranty for years as indicated under Fiber-Cement Siding article sub-headings for "Warranty". Complete forms in Owner's name and register with manufacturer.

PART 2 PRODUCTS

2.01 FIBER-CEMENT SIDING

A. Lap Siding: Individual horizontal boards made of cement and cellulose fiber formed under high pressure with integral surface texture, complying with ASTM C1186, Type A, Grade II; with machined edges, for nail attachment.
   1. Style: Standard lap style.
   2. Texture: Smooth.
   3. Length: 12 feet, nominal.
   4. Width (Height): 8-1/4 inches.
   5. Thickness: 5/16 inch, nominal.
   6. Finish: Factory applied primer.
   7. Color: To be chosen by Architect with all other paint colors..
   8. Warranty: 30 year limited; transferable.
   9. Subject to compliance with requirements, manufacturers offering products which may be included into the Work include, but are not limited to the following:
      a. Allura, a division of Plycem USA, Inc: www.allurausa.com/#sle.
      b. James Hardie Building Products, Inc; Basis of Design: Hardie Plank Lap Siding - Smooth: www.jameshardie.com/#sle.
      c. Nichiha USA, Inc: www.nichiha.com/#sle.

2.02 ACCESSORIES

A. Trim: Same material and texture as siding.

B. Fasteners: Galvanized or corrosion resistant; length as required to penetrate, 1-1/4 inches, minimum.
   1. Coordinate fastener type, size and length with siding and ICF Manufacturers to acheive wind load rating as specified by Structural.

C. Finish Paint: Latex house paint acceptable to siding manufacturer; primer recommended by paint manufacturer.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine substrate, clean and repair as required to eliminate conditions that would be detrimental to proper installation.

B. Do not begin until unacceptable conditions have been corrected.

C. If substrate preparation is responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.02 PREPARATION

A. Protect surrounding areas and adjacent surfaces during execution of this work.

B. Install Sheet Metal Flashing:
   1. Above door and window trim and casings.
   2. Above horizontal trim in field of siding.

3.03 INSTALLATION

A. Install in accordance with manufacturer's instructions and recommendations.
   1. Read warranty and comply with terms necessary to maintain warranty coverage.
   2. Use trim details as indicated on drawings.
   3. Touch up field cut edges before installing.
   4. Pre-drill nail holes if necessary to prevent breakage.

B. Over Insulated Concrete Forming (ICF): Fasten siding to internal furring strips.

C. Allow space for thermal movement between both ends of siding panels that butt against trim; seal joint between panel and trim with specified sealant.

D. Joints in Horizontal Siding: Avoid joints in lap siding except at corners; where joints are inevitable stagger joints between successive courses.

E. Do not install siding less than 6 inches from ground surface, or closer than 1 inch to roofs, patios, porches, and other surfaces where water may collect.

F. After installation, seal joints except lap joints of lap siding; seal around penetrations, and paint exposed cut edges.

G. Finish Painting: Within one week after installation, paint siding and trim with one coat primer and two coats finish paint.

3.04 CLEANING

A. Clean faced panels in accordance with manufacturer's maintenance instructions, using cleaning materials and methods acceptable to manufacturer.

3.05 PROTECTION

A. Protect installed products until Date of Substantial Completion.

B. Touch-up, repair or replace damaged products before Date of Substantial Completion.

END OF SECTION 07 46 46

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SECTION 07 62 00 - SHEET METAL FLASHING AND TRIM

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Fabricated sheet metal items, including flashings, counterflashings, gutters, downspouts, sheet metal roofing, exterior penetrations, and other items indicated in Schedule.

B. Sealants for joints within sheet metal fabrications.

1.02 REFERENCE STANDARDS

A. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum 2020.

B. AAMA 2604 - Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix) 2022.

C. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process 2023.

D. ASTM B209/B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate 2021a.

E. ASTM C920 - Standard Specification for Elastomeric Joint Sealants 2018.

F. ASTM D226/D226M - Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing 2017 (Reapproved 2023).

G. ASTM D4586/D4586M - Standard Specification for Asphalt Roof Cement, Asbestos-Free 2007 (Reapproved 2018).

H. CDA A4050 - Copper in Architecture - Handbook current edition.

I. SMACNA (ASMM) - Architectural Sheet Metal Manual 2012.

1.03 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Convene one week before starting work of this section.

1.04 SUBMITTALS

A. Shop Drawings: Indicate material profile, jointing pattern, jointing details, fastening methods, flashings, terminations, and installation details.

B. Samples: Submit two samples, 4 inches by 4 inches in size, illustrating material of typical standing seam.

C. Samples: Submit two samples, 4 inches by 4 inches in size, illustrating metal finish color.

1.05 QUALITY ASSURANCE

A. Perform work in accordance with SMACNA (ASMM) and CDA A4050 requirements and standard details, except as otherwise indicated.

B. Maintain one copy of each document on site.

C. Fabricator and Installer Qualifications: Company specializing in sheet metal work with three years of documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Stack material to prevent twisting, bending, and abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.

B. Prevent contact with materials that could cause discoloration or staining.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Subject to compliance with requirements, manufacturers offering products which may be included into the Work include, but are not limited to the following:
   1. ALUCOBOND USA: www.alucobondusa.com/#sle.
   2. Fairview Architectural LLC: www.fairview-na.com/#sle.
   3. Hickman Edge Systems: www.hickmanedgesystems.com/#sle.
   4. Petersen Aluminum Corporation: www.pac-clad.com/#sle.

2.02 SHEET MATERIALS

A. Galvanized Steel: ASTM A653/A653M, with G90/Z275 zinc coating; minimum 24-gauge, 0.0239-inch thick base metal.

B. Pre-Finished Galvanized Steel: ASTM A653/A653M, with G90/Z275 zinc coating; minimum 24-gauge, 0.0239-inch thick base metal, shop pre-coated with PVDF coating.
   1. Fluoropolymer Coating: High performance organic powder coating, AAMA 2604; multiple coat, thermally cured fluoropolymer finish system.
   2. Color: As selected by Architect from manufacturer's full colors.

C. Anodized Aluminum: ASTM B209/B209M, 3005 alloy, H12 or H14 temper; 20 gauge, 0.032 inch thick; clear anodized finish.
   1. Color Anodized Finish: AAMA 611, AA-M12C22A42/44, Class I, integrally or electrolytically colored anodic coating not less than 0.7 mil, 0.0007 inch thick.
      a. Color: As selected by Architect from manufacturer's full colors.

D. Pre-Finished Aluminum: ASTM B209/B209M; 18 gauge, 0.040 inch thick; plain finish shop pre-coated with fluoropolymer coating.
   1. Fluoropolymer Coating: High performance organic powder coating, AAMA 2604; multiple coat, thermally cured fluoropolymer finish system.
   2. Color: As selected by Architect from manufacturer's full colors.

2.03 FABRICATION

A. Form sections true to shape, accurate in size, square, and free from distortion or defects.

B. Fabricate cleats of same material as sheet, or from compatable, noncorrosive metal.

C. Form pieces in longest possible lengths.

D. Hem exposed edges on underside 1/2 inch; miter and seam corners.

E. Form material with flat lock seams, except where otherwise indicated; at moving joints, use sealed lapped, bayonet-type or interlocking hooked seams.

F. Fabricate corners from one piece with minimum 18-inch long legs; seam for rigidity, seal with sealant.

G. Fabricate vertical faces with bottom edge formed outward 1/4 inch and hemmed to form drip.

2.04 GUTTERS AND DOWNSPOUTS

A. Gutters: SMACNA (ASMM) Rectangular profile.

B. Downspouts: Rectangular profile.

C. Gutters and Downspouts: Size for rainfall intensity determined by a storm occurrence of 1 in 10 years in accordance with SMACNA (ASMM).

D. Accessories: Profiled to suit gutters and downspouts.
   1. Anchorage Devices: In accordance with SMACNA (ASMM) requirements.
   2. Gutter Supports: Brackets.
   3. Downspout Supports: Brackets.

E. Downspout Boots: Cast iron with 5/8" fastening lug slots for use between sheet metal downspout and stormwater drainage system. See Division 05 Section "Metal Fabrications".

F. Seal metal joints.

2.05 ACCESSORIES

A. Fasteners: Galvanized steel, with soft neoprene washers.

B. Underlayment: ASTM D226/D226M, organic roofing felt, Type II, No. 30.

C. Slip Sheet: Rosin-sized sheathing paper.

D. Self-Adhering, High Temperature Sheet: Minimum 30 mils thick, consisting of a slip-resistant polyethylene- or polypropylene-film top surface laminated to a layer of butyl- or SBS-modified asphalt adhesive, with release-paper backing; specifically designed to withstand high metal temperatures beneath metal roofing. Provide primer according to written recommendations of underlayment manufacuturer.
   1. Products: Subject to compliance with requirements available products that may be incorporated into the work include, but are not limited to, the following:
      a. CCW W IP 300 HT.
      b. Grace Construction Products; Ultra.
      c. Henry Company; Blueskin PE200HT.
      d. Metal-Fab Manufacturing, LLC; MetShield.
      e. Owens Corning; WeatherLock Metal High-Temperature Underlayment.

E. Primer Type: Zinc chromate.

F. Protective Backing Paint: Zinc molybdate alkyd.

G. Concealed Sealants: Non-curing butyl sealant.

H. Exposed Sealants: ASTM C920; elastomeric sealant, with minimum movement capability as recommended by manufacturer for substrates to be sealed; color to match adjacent material.

I. Asphalt Roof Cement: ASTM D4586/D4586M, Type I, asbestos-free.

J. Reglets: Surface-mounted type, galvanized steel; face and ends covered with plastic tape.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify roof openings, curbs, pipes, sleeves, ducts, and vents through roof are solidly set, reglets in place, and nailing strips located.

B. Verify roofing termination and base flashings are in place, sealed, and secure.

3.02 PREPARATION

A. Install starter and edge strips, and cleats before starting installation.

B. Install surface mounted reglets true to lines and levels, and seal top of reglets with sealant.

C. Back paint concealed metal surfaces with protective backing paint to a minimum dry film thickness of 15 mil, 0.015 inch.

3.03 INSTALLATION

A. Insert flashings into reglets to form tight fit; secure in place with plastic wedges; seal flashings into reglets with sealant.

B. Secure flashings in place using concealed fasteners, and use exposed fasteners only where permitted..

C. Apply plastic cement compound between metal flashings and felt flashings.

D. Fit flashings tight in place; make corners square, surfaces true and straight in planes, and lines accurate to profiles.

E. Exterior Flashing Receivers: Install in accordance with manufacturer's recommendations, and in proper relationship with adjacent construction, and as follows:
   1. Secure receiver at perimeter of wall opening with adhesives or fasteners.
   2. Place flashing into receiver channel.

F. Seal metal joints watertight.

G. Secure gutters and downspouts in place with concealed fasteners.

H. Slope gutters 1/4 inch per 10 feet, minimum.

I. Connect downspouts to downspout boots, and grout connection watertight.

END OF SECTION 07 62 00

SECTION 07 84 00 - FIRESTOPPING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Firestopping systems.

B. Firestopping of joints and penetrations in fire-resistance-rated and smoke-resistant assemblies, whether indicated on drawings or not, and other openings indicated.

1.02 REFERENCE STANDARDS

A. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials 2022.

B. ASTM E814 - Standard Test Method for Fire Tests of Penetration Firestop Systems 2013a (Reapproved 2017).

C. ASTM E1966 - Standard Test Method for Fire-Resistive Joint Systems 2015 (Reapproved 2019).

D. ASTM E2174 - Standard Practice for On-Site Inspection of Installed Firestop Systems 2020a.

E. ASTM E2393 - Standard Practice for On-Site Inspection of Installed Fire Resistive Joint Systems and Perimeter Fire Barriers 2020a.

F. ASTM E2307 - Standard Test Method for Determining Fire Resistance of Perimeter Fire Barriers Using Intermediate-Scale, Multi-story Test Apparatus 2020.

G. ASTM E2837 - Standard Test Method for Determining the Fire Resistance of Continuity Head-of-Wall Joint Systems Installed Between Rated Wall Assemblies and Nonrated Horizontal Assemblies 2013 (Reapproved 2017).

H. ASTM G21 - Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi 2015, with Editorial Revision (2021).

I. ITS (DIR) - Directory of Listed Products Current Edition.

J. FM 4991 - Approval Standard of Firestop Contractors 2013.

K. FM (AG) - FM Approval Guide Current Edition.

L. UL 1479 - Standard for Fire Tests of Penetration Firestops Current Edition, Including All Revisions.

M. UL 2079 - Standard for Tests for Fire Resistance of Building Joint Systems Current Edition, Including All Revisions.

N. UL (DIR) - Online Certifications Directory Current Edition.

O. UL (FRD) - Fire Resistance Directory Current Edition.

1.03 SUBMITTALS

A. Product Data: Provide data on product characteristics, performance ratings, and limitations.

B. Sustainable Design Submittal: Submit VOC content documentation for nonpreformed materials.

C. Manufacturer's Installation Instructions: Indicate preparation and installation instructions.

D. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

E. Certificate from authority having jurisdiction indicating approval of materials used.

F. Manufacturer's qualification statement.

G. Installer's qualification statement.

1.04 QUALITY ASSURANCE

A. Fire Testing: Provide firestopping assemblies of designs that provide the scheduled fire ratings when tested in accordance with methods indicated.
   1. Listing in UL (FRD), FM (AG), or ITS (DIR) will be considered as constituting an acceptable test report.
   2. Valid evaluation report published by ICC Evaluation Service, Inc. (ICC-ES) at www.icc-es.org will be considered as constituting an acceptable test report.
   3. Submission of actual test reports is required for assemblies for which none of the above substantiation exists.

B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

C. Installer Qualifications: Company specializing in performing the work of this section and:
   1. Trained by manufacturer.
   2. Approved by Factory Mutual Research Corporation under FM 4991, or meeting any two of the following requirements:
   3. Verification of minimum three years documented experience installing work of this type.
   4. Verification of at least five satisfactorily completed projects of comparable size and type.
   5. Licensed by local authorities having jurisdiction (AHJ).

1.05 MOCK-UPS

A. Install one firestopping assembly representative of each fire rating design required on project.
   1. Where one design may be used for different penetrating items or in different wall constructions, install one assembly for each different combination.
   2. Where firestopping is intended to fill a linear opening, install at least 1 linear foot of firestopping.

B. Obtain approval of authorities having jurisdiction (AHJ) before proceeding.

C. If accepted, mock-up will represent minimum standard for this work.

D. If accepted, mock-up may remain as part of this work. Remove and replace mock-ups not accepted.

1.06 FIELD CONDITIONS

A. Comply with firestopping manufacturer's recommendations for temperature and conditions during and after installation; maintain minimum temperature before, during, and for three days after installation of materials.

B. Provide ventilation in areas where solvent-cured materials are being installed.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Subject to compliance with requirements, manufacturers offering products which may be included into the Work include, but are not limited to the following:
   1. 3M Fire Protection Products: www.3m.com/firestop/#sle.

2. Hilti, Inc: www.us.hilti.com/#sle.
3. Nelson FireStop Products: www.nelsonfirestop.com/#sle.
4. Specified Technologies Inc: www.stifirestop.com/#sle.
5. Tremco Commercial Sealants & Waterproofing: www.tremcosealants.com/#sle.

2.02 MATERIALS

A. Firestopping Materials: Any materials meeting requirements.

B. Mold and Mildew Resistance: Provide firestopping materials with mold and mildew resistance rating of zero(0) in accordance with ASTM G21.

C. Primers, Sleeves, Forms, Insulation, Packing, Stuffing, and Accessories: Provide type of materials as required for tested firestopping assembly.

D. Fire Ratings: Refer to drawings for required systems and ratings.

2.03 FIRESTOPPING ASSEMBLY REQUIREMENTS

A. Perimeter Fire Containment Firestopping: Use system that has been tested according to ASTM E2307 to have fire resistance F Rating equal to required fire rating of floor assembly.
   1. Movement: Provide systems that have been tested to show movement capability as indicated.
   2. Temperature Rise: Provide systems that have been tested to show T Rating as indicated.
   3. Air Leakage: Provide systems that have been tested to show L Rating as indicated.
   4. Where floor assembly is not required to have a fire rating, provide systems that have been tested to show L Rating as indicated.

B. Head-of-Wall (HW) Joint System Firestopping at Joints Between Fire-Rated Wall Assemblies and Non-Rated Horizontal Assemblies: Use system that has been tested according to ASTM E2837 to have fire resistance F Rating equal to required fire rating of wall assembly.
   1. Movement: Provide systems that have been tested to show movement capability as indicated.

C. Floor-to-Floor (FF), Floor-to-Wall (FW), Head-of-Wall (HW), and Wall-to-Wall (WW) Joints, Except Perimeter, Where Both Are Fire-Rated: Use system that has been tested according to ASTM E1966 or UL 2079 to have fire resistance F Rating equal to required fire rating of the assembly in which the joint occurs.
   1. Movement: Provide systems that have been tested to show movement capability as indicated.
   2. Air Leakage: Provide systems that have been tested to show L Rating as indicated.
   3. Watertightness: Provide systems that have been tested to show W Rating as indicated.
   4. Listing by FM (AG), ITS (DIR), UL (DIR), or UL (FRD) in their certification directories will be considered evidence of successful testing.

D. Through Penetration Firestopping: Use system that has been tested according to ASTM E814 to have fire resistance F Rating equal to required fire rating of penetrated assembly.
   1. Temperature Rise: Provide systems that have been tested to show T Rating as indicated.
   2. Air Leakage: Provide systems that have been tested to show L Rating as indicated.
   3. Watertightness: Provide systems that have been tested to show W Rating as indicated.

4. Listing by FM (AG), ITS (DIR), UL (DIR), or UL (FRD) in their certification directories will be considered evidence of successful testing.

2.04 FIRESTOPPING SYSTEMS

A. Firestopping: Any material meeting requirements.
   1. Fire Ratings: Use system that is listed by FM (AG), ITS (DIR), or UL (FRD) and tested in accordance with ASTM E814, ASTM E119, or UL 1479 with F Rating equal to fire rating of penetrated assembly and minimum T Rating Equal to F Rating and in compliance with other specified requirements.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify openings are ready to receive the work of this section.

3.02 PREPARATION

A. Clean substrate surfaces of dirt, dust, grease, oil, loose material, or other materials that could adversely affect bond of firestopping material.

B. Remove incompatible materials that could adversely affect bond.

C. Install backing materials to prevent liquid material from leakage.

3.03 INSTALLATION

A. Install materials in manner described in fire test report and in accordance with manufacturer's instructions, completely closing openings.

B. Do not cover installed firestopping until inspected by Owner's Independent Testing Agency.

C. Do not cover installed firestopping until inspected by authorities having jurisdiction.

D. Install labeling required by code.

3.04 FIELD QUALITY CONTROL

A. Independent Testing Agency: Inspection agency employed and paid by Owner, will examine penetration firestopping in accordance with ASTM E2174 and ASTM E2393.

B. Repair or replace penetration firestopping and joints at locations where inspection results indicate firestopping or joints do not meet specified requirements.

3.05 CLEANING

A. Clean adjacent surfaces of firestopping materials.

3.06 PROTECTION

A. Protect adjacent surfaces from damage by material installation.

END OF SECTION 07 84 00

SECTION 08 11 13 - HOLLOW METAL DOORS AND FRAMES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Non-fire-rated hollow metal doors and frames.

B. Fire-rated hollow metal doors and frames.

1.02 RELATED REQUIREMENTS

A. Section 08 71 00 - Door Hardware.

B. Section 08 80 00 - Glazing: Glass for doors and borrowed lites.

C. Section 09 91 13 - Exterior Painting: Field painting.

D. Section 09 91 23 - Interior Painting: Field painting.

1.03 ABBREVIATIONS AND ACRONYMS

A. ANSI: American National Standards Institute.

B. HMMA: Hollow Metal Manufacturers Association.

C. NAAMM: National Association of Architectural Metal Manufacturers.

D. NFPA: National Fire Protection Association.

E. SDI: Steel Door Institute.

F. UL: Underwriters Laboratories.

1.04 REFERENCE STANDARDS

A. ADA Standards - 2010 ADA Standards for Accessible Design 2010.

B. ANSI/SDI A250.4 - Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors, Frames and Frame Anchors 2022.

C. ANSI/SDI A250.8 - Specifications for Standard Steel Doors and Frames (SDI-100) 2017.

D. ANSI/SDI A250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames 2020.

E. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process 2023.

F. ASTM A1008/A1008M - Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Required Hardness, Solution Hardened, and Bake Hardenable 2021a.

G. ASTM A1011/A1011M - Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength 2023.

H. ASTM C143/C143M - Standard Test Method for Slump of Hydraulic-Cement Concrete 2020.

I. ASTM C476 - Standard Specification for Grout for Masonry 2023.

J. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2023.

K. ICC A117.1 - Accessible and Usable Buildings and Facilities 2017.

L. ITS (DIR) - Directory of Listed Products Current Edition.

M. NAAMM HMMA 840 - Guide Specifications For Receipt, Storage and Installation of Hollow Metal Doors and Frames 2017.

N. NFPA 80 - Standard for Fire Doors and Other Opening Protectives 2022.

O. NFPA 252 - Standard Methods of Fire Tests of Door Assemblies 2022.

P. UL (DIR) - Online Certifications Directory Current Edition.

Q. UL 10C - Standard for Positive Pressure Fire Tests of Door Assemblies Current Edition, Including All Revisions.

1.05 SUBMITTALS

A. Product Data: Materials and details of design and construction, hardware locations, reinforcement type and locations, anchorage and fastening methods, and finishes; and one copy of referenced standards/guidelines.

B. Shop Drawings: Details of each opening, showing elevations, glazing, frame profiles, and any indicated finish requirements.

C. Installation Instructions: Manufacturer's published instructions, including any special installation instructions relating to this project.

D. Manufacturer's Certificate: Certification that products meet or exceed specified requirements.

E. Manufacturer's Qualification Statement.

F. Installer's Qualification Statement.

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years documented experience.

B. Maintain at project site copies of reference standards relating to installation of products specified.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Comply with NAAMM HMMA 840 or ANSI/SDI A250.8 (SDI-100) in accordance with specified requirements.

B. Protect with resilient packaging; avoid humidity build-up under coverings; prevent corrosion and adverse effects on factory applied painted finish.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Subject to compliance with requirements, manufacturers offering products which may be included into the Work include, but are not limited to the following:
   1. Ceco Door, an Assa Abloy Group company: www.assaabloydss.com/#sle.
   2. Curries, an Assa Abloy Group company: www.assaabloydss.com/#sle.
   3. Steelcraft, an Allegion brand: www.allegion.com/#sle.

2.02 PERFORMANCE REQUIREMENTS

A. Requirements for Hollow Metal Doors and Frames:
   1. Steel Sheet: Comply with one or more of the following requirements; galvannealed steel complying with ASTM A653/A653M, cold-rolled steel complying with ASTM A1008/A1008M, or hot-rolled pickled and oiled (HRPO) steel complying with ASTM A1011/A1011M, commercial steel (CS) Type B, for each.

2. Accessibility: Comply with ICC A117.1 and ADA Standards.
3. Door Edge Profile: Manufacturers standard for application indicated.

B. Combined Requirements: If a particular door and frame unit is indicated to comply with more than one type of requirement, comply with the specified requirements for each type; for instance, an exterior door that is also indicated as being sound-rated must comply with the requirements specified for exterior doors and for sound-rated doors; where two requirements conflict, comply with the most stringent.

2.03 HOLLOW METAL DOORS

A. Door Finish: Factory primed and field finished.

B. Exterior Doors: Thermally insulated.
1. Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).
   a. Level 2 - Heavy-duty.
   b. Physical Performance Level C, 250,000 cycles; in accordance with ANSI/SDI A250.4.
   c. Model 2 - Seamless.
   d. Door Face Metal Thickness: 18 gauge, 0.042 inch, minimum.
2. Door Core Material: Polystyrene, 1 lbs/cu ft minimum density.
   a. Foam Plastic Insulation: Manufacturer's standard board insulation with maximum flame spread index (FSI) of 75, and maximum smoke developed index (SDI) of 450 in accordance with ASTM E84, and completely enclosed within interior of door.
3. Door Thickness: 1-3/4 inches, nominal.

C. Interior Doors:
1. Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).
   a. Level 2 - Heavy-duty.
   b. Physical Performance Level C, 250,000 cycles; in accordance with ANSI/SDI A250.4.
   c. Model 2 - Seamless.
   d. Door Face Metal Thickness: 20 gauge, 0.032 inch, minimum.
2. Fire Rating: As indicated on Door Schedule, tested in accordance with UL 10C and NFPA 252 ("positive pressure fire tests").
3. Provide units listed and labeled by UL (DIR) or ITS (DIR).
   a. Attach fire rating label to each fire rated unit.
4. Door Thickness: 1-3/4 inches, nominal.
5. Door Face Sheets: Flush.
6. Door Finish: Factory primed and field finished.

2.04 HOLLOW METAL FRAMES

A. Comply with standards and/or custom guidelines as indicated for corresponding door in accordance with applicable door frame requirements.

B. Exterior Door Frames: Knock-down type.
1. Galvanizing: Components hot-dipped zinc-iron alloy-coated (galvannealed) in accordance with ASTM A653/A653M, with A40/ZF120 coating.
2. Frame Metal Thickness: 14 gauge, 0.067 inch, minimum.
3. Frame Finish: Factory primed and field finished.
4. Weatherstripping: Separate, see Section 08 71 00.

C. Interior Door Frames, Non-Fire Rated: Slip-on type at gypsum board walls, and knock-down type at masonry walls.
1. Frame Metal Thickness: 14 gauge, 0.067 inch, minimum.

2. Frame Finish: Factory primed and field finished.

D. Door Frames, Fire-Rated: Slip-on type at gypsum board walls, and knock-down type at masonry walls.
   1. Fire Rating: Same as door, labeled.
   2. Frame Metal Thickness: 14 gauge, 0.067 inch, minimum.
   3. Frame Finish: Factory primed and field finished.

2.05 FINISHES

A. Primer: Rust-inhibiting, complying with ANSI/SDI A250.10, door manufacturer's standard.

2.06 ACCESSORIES

A. Light Openings and Glazing: Frames with glazing securely fastened within opening.
   1. Frame Material: 14 guage, 0.067 inch, galvanized steel.

B. Glazing: As specified in Section 08 80 00, factory installed.

C. Removable Stops: Formed sheet steel, mitered or butted corners; prepared for countersink style tamper proof screws.

D. Grout for Frames: Mortar grout complying with ASTM C476 with maximum slump of 4 inches as measured in accordance with ASTM C143/C143M for hand troweling in place; plaster grout and thinner pumpable grout are prohibited.

E. Silencers: Except on weather-dtripped or gasketed doors, drill stops to receive door silencers. Silencers to be supplied by frame manufacturer

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify that opening sizes and tolerances are acceptable.

C. Verify that finished walls are in plane to ensure proper door alignment.

3.02 PREPARATION

A. Coat inside of frames to be installed in masonry or to be grouted, with bituminous coating, prior to installation.

3.03 INSTALLATION

A. Install doors and frames in accordance with manufacturer's instructions and related requirements of specified door and frame standards or custom guidelines indicated.

B. Install fire rated units in accordance with NFPA 80.

C. Coordinate frame anchor placement with wall construction.

D. Grout frames in masonry construction, using hand trowel methods; brace frames so that pressure of grout before setting will not deform frames.

E. Install door hardware as specified in Section 08 71 00.

F. Comply with glazing installation requirements of Section 08 80 00.

3.04 TOLERANCES

A. Maximum Diagonal Distortion: 1/16 inch measured with straight edge, corner to corner.

3.05 ADJUSTING

A. Adjust for smooth and balanced door movement.

END OF SECTION 08 11 13

SECTION 08 14 16 - FLUSH WOOD DOORS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Flush wood doors; flush and flush glazed configuration; fire-rated and non-rated.

1.02 RELATED REQUIREMENTS

A. Section 08 11 13 - Hollow Metal Doors and Frames.

B. Section 08 80 00 - Glazing.

1.03 REFERENCE STANDARDS

A. AWI (QCP) - Quality Certification Program Current Edition.

B. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards, 2nd Edition 2014, with Errata (2016).

C. AWMAC/WI (NAAWS) - North American Architectural Woodwork Standards 2021, with Errata.

D. NFPA 80 - Standard for Fire Doors and Other Opening Protectives 2022.

E. UL 10C - Standard for Positive Pressure Fire Tests of Door Assemblies Current Edition, Including All Revisions.

F. WDMA I.S. 1A - Interior Architectural Wood Flush Doors 2021, with Errata (2022).

1.04 SUBMITTALS

A. Product Data: Indicate door core materials and construction; veneer species, type and characteristics.

B. Shop Drawings: Show doors and frames, elevations, sizes, types, swings, undercuts, beveling, blocking for hardware, factory machining, factory finishing, cutouts for glazing and other details.

1. Provide information as required by AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS).

C. Samples: Submit two samples of door veneer, minimum 6 by 6 inches in size illustrating wood grain, stain color, and sheen.

D. Certificate: Submit labels and certificates required by quality assurance and quality control programs.

E. Manufacturer's Installation Instructions: Indicate special installation instructions.

F. Manufacturer's qualification statement.

G. Installer's qualification statement.

H. Specimen warranty.

I. Warranty, executed in Owner's name.

1.05 QUALITY ASSURANCE

A. Maintain one copy of the specified door quality standard on site for review during installation and finishing.

B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section, with not less than three years of documented experience.

1. Accredited participant in the specified certification program prior to the commencement of fabrication and throughout the duration of the project.

C. Installer Qualifications: Company specializing in performing work of the type specified in this section, with not less than three years of documented experience.

D. Woodwork Quality Assurance Program:
   1. Comply with AWI (QCP) woodwork association quality assurance service/program in accordance with requirements for work specified in this section; www.awiqcp.org/#sle.
   2. Provide labels indicating that the installed work complies with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS) requirements for grade or grades specified.
   3. Provide designated labels on shop drawings as required by quality assurance program.
   4. Provide designated labels on installed products as required by quality assurance program.
   5. Submit documentation upon completion of installation that verifies this work is in compliance with specified requirements.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Package, deliver and store doors in accordance with specified quality standard.

B. Accept doors on site in manufacturer's packaging, and inspect for damage.

C. Protect doors with resilient packaging sealed with heat shrunk plastic; do not store in damp or wet areas or areas where sunlight might bleach veneer; seal top and bottom edges with tinted sealer if stored more than one week, and break seal on site to permit ventilation.

1.07 WARRANTY

A. See Section 01 78 00 - Closeout Submittals for additional warranty requirements.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Subject to compliance with requirements, manufacturers offeringproducts which may be included into the Work include, but are not limited to the following:
   1. Graham; an ASSA Abloy Group Company.
   2. Haley Brothers, Inc.
   3. Marshfield - Algoma (by Masonite Architectural).
   4. Mohawk Flush Doors, Inc.; a Masonite Company.
   5. Oshkosh Architectural Door Company.
   6. Trudoor, LLC.

2.02 DOORS

A. Doors: See drawings for locations and additional requirements.
   1. Quality Standard: Custom Grade, Heavy Duty performance, in accordance with WDMA I.S. 1A.
   2. Wood Veneer Faced Doors: 7-ply unless otherwise indicated.

B. Interior Doors: 1-3/4 inches thick unless otherwise indicated; flush construction.
   1. Provide solid core doors at each location.
   2. Fire Rated Doors: Tested to ratings indicated on drawings in accordance with UL 10C - Positive Pressure; Underwriters Laboratories Inc (UL) or Intertek/Warnock Hersey (WHI) labeled without any visible seals when door is open.
   3. Wood veneer facing with factory transparent finish.

2.03 DOOR CORES

A. Non-Rated Solid Core and 20 Minute Rated Doors: Type structural composite lumber core (SCLC), plies and faces as indicated.

B. Fire-Rated Doors: Mineral core type, with fire resistant composite core (FD), plies and faces as indicated above; with core blocking as required to provide adequate anchorage of hardware without through-bolting.

2.04 DOOR FACINGS

A. Veneer Facing for Transparent Finish: Red oak, HPVA Grade A, plain sliced (flat cut), with slip match between leaves of veneer, balance match of spliced veneer leaves assembled on door or panel face; unless otherwise indicated.

B. Facing Adhesive: Type I - waterproof.

2.05 DOOR CONSTRUCTION

A. Fabricate doors in accordance with door quality standard specified.

B. Cores Constructed with stiles and rails:

C. Factory machine doors for hardware other than surface-mounted hardware, in accordance with hardware requirements and dimensions.

D. Factory fit doors for frame opening dimensions identified on shop drawings, with edge clearances in accordance with specified quality standard.

E. Provide edge clearances in accordance with the quality standard specified.

2.06 FINISHES - WOOD VENEER DOORS

A. Finish work in accordance with WDMA I.S. 1A for grade specified and as follows:
   1. Transparent:
      a. Manufacturers standard, in compliance with performance duty level indicated.
      b. Stain: As selected by Architect.
      c. Sheen: Flat.

2.07 ACCESSORIES

A. Hollow Metal Door Frames: See Section 08 11 13.

B. Glazing Stops: Wood, of same species as door facing, butted corners; prepared for countersink style tamper proof screws.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify that opening sizes and tolerances are acceptable.

C. Do not install doors in frame openings that are not plumb or are out-of-tolerance for size or alignment.

3.02 INSTALLATION

A. Install doors in accordance with manufacturer's instructions and specified quality standard.
   1. Install fire-rated doors in accordance with NFPA 80 requirements.

B. Factory-Finished Doors: Do not field cut or trim; if fit or clearance is not correct, replace door.

C. Use machine tools to cut or drill for hardware.

D. Coordinate installation of doors with installation of frames and hardware.

E. Coordinate installation of glazing.

3.03 TOLERANCES

A. Comply with specified quality standard for fit and clearance tolerances.

B. Comply with specified quality standard for telegraphing, warp, and squareness.

3.04 ADJUSTING

A. Adjust doors for smooth and balanced door movement.

B. Adjust closers for full closure.

END OF SECTION 08 14 16

SECTION 08 36 13 - SECTIONAL DOORS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Overhead sectional doors, electrically operated.

B. Operating hardware and supports.

C. Electrical controls.

1.02 REFERENCE STANDARDS

A. 16 CFR 1201 - Safety Standard for Architectural Glazing Materials Current Edition.

B. ANSI Z97.1 - American National Standard for Safety Glazing Materials Used in Buildings - Safety Performance Specifications and Methods of Test 2015 (Reaffirmed 2020).

C. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process 2023.

D. ASTM B209/B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate 2021a.

E. ASTM C1172 - Standard Specification for Laminated Architectural Flat Glass 2019.

F. ASTM E283 - Standard Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen 2004 (Reapproved 2012).

G. ASTM E330/E330M - Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference 2014 (Reapproved 2021).

H. DASMA 102 - American National Standard Specifications for Sectional Doors 2018.

I. ITS (DIR) - Directory of Listed Products Current Edition.

J. NEMA ICS 2 - Industrial Control and Systems Controllers, Contactors and Overload Relays Rated 600 Volts 2008 (Reaffirmed 2020).

K. NEMA MG 1 - Motors and Generators 2021.

L. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum) 2020.

M. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

N. UL (DIR) - Online Certifications Directory Current Edition.

O. UL 325 - Standard for Door, Drapery, Gate, Louver, and Window Operators and Systems Current Edition, Including All Revisions.

1.03 SUBMITTALS

A. Shop Drawings: Indicate opening dimensions and required tolerances, connection details, anchorage spacing, hardware locations, and installation details.

B. Product Data: Show component construction, anchorage method, and hardware.

C. Samples: Submit two panel finish samples, 4 inch by 4 inch in size, illustrating color and finish.

D. Manufacturer's Installation Instructions: Include any special procedures required by project conditions.

E. Manufacturer's Qualification Statement.

F. Installer's Qualification Statement.

G. Operation Data: Include normal operation, troubleshooting, and adjusting.

H. Maintenance Data: Include data for motor and transmission, shaft and gearing, lubrication frequency, spare part sources.

I. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

1.04 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.

B. Installer Qualifications: Company specializing in performing work of type specified and with at least three years documented experience.

C. Comply with applicable code for motor and motor control requirements.

D. Products Requiring Electrical Connection: Listed and classified by ITS (DIR), UL (DIR), or testing firm acceptable to authorities having jurisdiction, as suitable for purpose specified.

1.05 WARRANTY

A. See Section 01 78 00 - Closeout Submittals for warranty requirements.

B. Correct defective Work within a five year period after Date of Substantial Completion.

C. Warranty: Include coverage for electric motor and transmission.

D. Provide five year manufacturer warranty for electric operating equipment.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Basis of Design: AlumaView; AV300 manufactured by Raynor Garage Doors.

B. Subject to compliance with requirements, other manufacturers offering products which may be included into the Work include, but are not limited to the following:
   1. Amarr: www.amarr.com/commercial/#sle.
   2. bp Glass Garage Doors & Entry Systems: www.glassgaragedoors.com/#sle.
   3. C.H.I. Overhead Doors: www.chiohd.com/#sle.
   4. Wayne-Dalton, a Division of Overhead Door Corporation: www.wayne-dalton.com/#sle.
   5. Overhead Door Comapny.

2.02 ALUMINUM DOORS

A. Aluminum Doors: Flush aluminum, insulated; high lift operating style with track and hardware; complying with DASMA 102, Commercial application.
   1. Performance: Withstand positive and negative wind loads as indicated on structural drawings without damage or permanent set, when tested in accordance with ASTM E330/E330M, using 10 second duration of maximum load.
   2. Door Nominal Thickness: 3 inches thick.
   3. Thermal Transmittance: U-factor of 0.31 Btu/hr sq ft degrees F, maximum, in accordance with DASMA 102.
   4. Air Leakage Rate: Less than 0.40 cfm/sf when tested in accordance with ASTM E283 at test pressure difference of 1.57 psf.

5. Finish: Factory finished with polyester baked enamel; color as selected by Architect.
6. Glazed Lights: Full panel width, one row; set in place with resilient glazing channel.
7. Electric Operation: Electric control station.

B. Door Panels: Flush aluminum construction; outer aluminum sheet 0.050 inch thick; inner aluminum sheet 0.050 inch thick; flat profile; rabbeted weather joints at meeting rails; insulated.

C. Glazing: Laminated safety glass; gray tinted; 11/32 inch overall thickness.

2.03 COMPONENTS

A. Track: Rolled galvanized steel, 0.090 inch minimum thickness; 3 inch wide, continuous one piece per side; galvanized steel mounting brackets 1/4 inch thick.
1. Clearance Type: Lift-Clearance
2. Horizontal Clearance: 21'-6" to bottom of track

B. Hinge and Roller Assemblies: Heavy duty hinges and adjustable roller holders of galvanized steel; floating hardened steel bearing rollers, located at top and bottom of each panel, each side.

C. Lift Mechanism: Torsion spring on cross head shaft, with braided galvanized steel lifting cables.

D. Sill Weatherstripping: Resilient hollow rubber strip, one piece; fitted to bottom of door panel, full length contact.

E. Jamb Weatherstripping: Roll formed steel section full height of jamb, fitted with resilient weatherstripping, placed in moderate contact with door panels.

F. Head Weatherstripping: EPDM rubber seal, one piece full length.

G. Panel Joint Weatherstripping: Neoprene foam seal, one piece full length.

H. Furnish door system with locks: exterior lock with five-pin tumbler cylinder, night latch and steel bar engaging track.

I. Lock Cylinders: Master keyed to building keying system.

2.04 MATERIALS

A. Sheet Steel: Hot-dipped galvanized steel sheet, ASTM A653/A653M, with G60/Z180 coating, stucco embossed pencil groove surface.

B. Aluminum Sheet: ASTM B209/B209M, 5005 alloy, H14 temper, plain surface.

C. Aluminum Extrusions: ASTM B221 (ASTM B221M), 6063 alloy, T6 temper.

D. Laminated Safety Glass: ASTM C1172 with at least 0.030 inch thick polyvinyl butyral (PVB) interlayer, and in compliance with safety criteria 16 CFR 1201 Categories 1 and 2, and ANSI Z97.1.

E. Insulation: Expanded polystyrene (EPS), bonded to facing.
1. R-value of 4.31.
2. Same thickness as core framing members.

2.05 ELECTRIC OPERATION

A. Operator, Controls, Actuators, and Safeties: Comply with UL 325; provide products listed by ITS (DIR), UL (DIR), or testing agency acceptable to authorities having jurisdiction.
1. Provide interlock switches on motor operated units.
2. Provide tamperproof operation cycle counter.

B. Electric Operators:

1. Mounting: Side mounted on cross head shaft.
2. Motor Enclosure:
   a. Exterior Doors: NEMA MG 1, Type 4; open drip proof.
3. Motor Rating: 3/4 hp; continuous duty.
4. Motor Voltage: 208 volts, single phase, 60 Hz.
5. Motor Controller: NEMA ICS 2, full voltage, reversing magnetic motor starter.
6. Controller Enclosure: NEMA 250, Type 1.
7. Opening Speed: 12 inches per second.
8. Brake: Dynamic brake.
9. Manual override in case of power failure.
10. Refer to Section 26 05 83 for electrical connections.

C. Wiring Terminations: Provide terminal lugs to match branch circuit conductor quantities, sizes, and materials indicated; enclose terminal lugs in terminal box sized to comply with NFPA 70.

D. Control Station: Provide standard three button (Open-Close-Stop) continuous-contact control device for each operator complying with UL 325.
   1. 24 volt circuit.
   2. Surface mounted, at interior door jamb.
   3. Entrapment Protection Devices: Provide sensing devices and safety mechanisms complying with UL 325.
      a. Primary Device: Provide electric sensing edge, wireless sensing, NEMA 1 photo eye sensors, or NEMA 4X photo eye sensors as required with momentary-contact control device.

E. Safety Edge: Located at bottom of sectional door panel, full width; electro-mechanical sensitized type, wired to stop and reverse door direction upon striking object; hollow neoprene covered to provide weatherstrip seal.

F. Provide interconnection to security system.

G. Provide radio control antenna detector.

H. Provide loop detector and treadle.

I. Hand Held Transmitter: Digital control, and resettable.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that wall openings are ready to receive work and opening dimensions and tolerances are within specified limits.

B. Verify that electric power is available and of the correct characteristics.

3.02 PREPARATION

A. Prepare opening to permit correct installation of door unit to perimeter air and vapor barrier seal.

B. Apply primer to wood frame.

3.03 INSTALLATION

A. Install door unit assembly in accordance with manufacturer's instructions.

B. Anchor assembly to wall construction and building framing without distortion or stress.

C. Securely brace door tracks suspended from structure. Secure tracks to structural members only.

D. Fit and align door assembly including hardware.

E. Coordinate installation of electrical service. Complete power and control wiring from disconnect to unit components.

F. Install perimeter trim.

3.04 TOLERANCES

A. Maximum Variation from Plumb: 1/16 inch.

B. Maximum Variation from Level: 1/16 inch.

C. Longitudinal or Diagonal Warp: Plus or minus 1/8 inch from 10 ft straight edge.

D. Maintain dimensional tolerances and alignment with adjacent work.

3.05 ADJUSTING

A. Adjust door assembly for smooth operation and full contact with weatherstripping.

B. Have manufacturer's field representative present to confirm proper operation and identify adjustments to door assembly for specified operation.

3.06 CLEANING

A. Clean doors and frames and glazing.

B. Remove temporary labels and visible markings.

3.07 PROTECTION

A. Protect installed products from damage until Date of Substantial Completion.

B. Do not permit construction traffic through overhead door openings after adjustment and cleaning.

END OF SECTION 08 36 13

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SECTION 08 43 13 - ALUMINUM-FRAMED STOREFRONTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Aluminum-framed storefront, with vision glass.

B. Aluminum doors and frames.

C. Weatherstripping.

1.02 RELATED REQUIREMENTS

A. Section 08 71 00 - Door Hardware: Hardware items other than specified in this section.

B. Section 08 80 00 - Glazing: Glass and glazing accessories.

1.03 REFERENCE STANDARDS

A. AAMA CW-10 - Care and Handling of Architectural Aluminum from Shop to Site 2015.

B. AAMA 503 - Voluntary Specification for Field Testing of Newly Installed Storefronts, Curtain Walls and Sloped Glazing Systems 2014.

C. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum 2020.

D. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes 2021.

E. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric) 2021.

F. ASTM E283/E283M - Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Skylights, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen 2019.

G. ASTM E330/E330M - Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference 2014 (Reapproved 2021).

H. ASTM E783 - Standard Test Method for Field Measurement of Air Leakage Through Installed Exterior Windows and Doors 2002 (Reapproved 2018).

I. ASTM E1105 - Standard Test Method for Field Determination of Water Penetration of Installed Exterior Windows, Skylights, Doors, and Curtain Walls, by Uniform or Cyclic Static Air Pressure Difference 2015 (Reapproved 2023).

J. FLA (PAD) - Florida Building Code Online - Product Approval Directory Current Edition.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordinate with installation of other components that comprise the exterior enclosure.

B. Preinstallation Meeting: Conduct a preinstallation meeting one week before starting work of this section; require attendance by all affected installers.

1.05 SUBMITTALS

A. Shop Drawings: Indicate system dimensions, framed opening requirements and tolerances, affected related work, expansion and contraction joint location and details, and field welding required.

1. Include design engineer's stamp or seal on shop drawings for attachments and anchors.

B. Manufacturer's Certificate: Certify that the products supplied meet or exceed the specified requirements.

C. Design Data: Provide framing member structural and physical characteristics, engineering calculations, and dimensional limitations.

D. Hardware Schedule: Complete itemization of each item of hardware to be provided for each door, cross-referenced to door identification numbers in Contract Documents.

E. Field Quality Control Submittals: Report of field testing for water penetration and air leakage.

F. Designer's qualification statement.

G. Manufacturer's qualification statement.

H. Installer's qualification statement.

1.06 QUALITY ASSURANCE

A. Designer Qualifications: Design structural support framing components under direct supervision of a Professional Structural Engineer experienced in design of this Work and licensed in the State in which the Project is located.

B. Manufacturer Qualifications: Company specializing in performing work of type specified and with at least three years of documented experience.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Handle products of this section in accordance with AAMA CW-10.

B. Protect finished aluminum surfaces with wrapping. Do not use adhesive papers or sprayed coatings that bond to aluminum when exposed to sunlight or weather.

1.08 FIELD CONDITIONS

A. Do not install sealants when ambient temperature is less than 40 degrees F. Maintain this minimum temperature during and 48 hours after installation.

1.09 WARRANTY

A. See Section 01 78 00 - Closeout Submittals for additional warranty requirements.

B. Correct defective Work within a ten year period after Date of Substantial Completion.

C. Provide ten year manufacturer warranty against failure of glass seal on insulating glass units, including interpane dusting or misting. Include provision for replacement of failed units.

D. Provide ten year manufacturer warranty against excessive degradation of exterior finish. Include provision for replacement of units with excessive fading, chalking, or flaking.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Subject to compliance with requirements, manufacturers offering products which may be included into the Work include, but are not limited to the following:
   1. Arcadia, Inc: www.arcadiainc.com/#sle.
   2. Boyd Aluminum: www.boydaluminum.com/#sle.
   3. Coral Architectural Products, a division of Coral Industries, Inc: www.coralap.com/#sle.
   4. HMI: www.hmiglass.com/#sle.
   5. Kawneer North America: www.kawneer.com/#sle.

6. Manko Window Systems, Inc: www.mankowindows.com/#sle.
7. Oldcastle BuildingEnvelope: www.oldcastlebe.com/#sle.
8. Pittco Architectural Metals Inc: www.pittcometals.com/#sle.
9. Tubelite, Inc: www.tubeliteinc.com/#sle.

2.02 BASIS OF DESIGN -- FRAMING FOR INSULATING GLAZING

A. Center-Set Style, Wind-Borne-Debris Resistance Tested:
   1. Basis of Design: Kawneer North America; IR 501: www.kawneer.com.

2.03 BASIS OF DESIGN -- SWINGING DOORS

A. Wind-Borne-Debris Resistance Tested:
   1. Basis of Design: Kawneer North America; 350 IR - Medium Stile: www.kawneer.com.
   2. Thickness: 1-3/4 inches.

2.04 ALUMINUM-FRAMED STOREFRONT

A. Aluminum-Framed Storefront: Factory fabricated, factory finished aluminum framing members with infill, and related flashings, anchorage and attachment devices.
   1. Finish Color: As selected by Architect from manufacturer's standard line.
   2. Fabrication: Joints and corners flush, hairline, and weatherproof, accurately fitted and secured; prepared to receive anchors and hardware; fasteners and attachments concealed from view; reinforced as required for imposed loads.
   3. Construction: Eliminate noises caused by wind and thermal movement, prevent vibration harmonics, and prevent "stack effect" in internal spaces.
   4. System Internal Drainage: Drain to the exterior by means of a weep drainage network any water entering joints, condensation occurring in glazing channel, and migrating moisture occurring within system.
   5. Expansion/Contraction: Provide for expansion and contraction within system components caused by cycling temperature range of 170 degrees F over a 12 hour period without causing detrimental effect to system components, anchorages, and other building elements.
   6. Movement: Allow for movement between storefront and adjacent construction, without damage to components or deterioration of seals.
   7. Perimeter Clearance: Minimize space between framing members and adjacent construction while allowing expected movement.

B. Performance Requirements
   1. Wind Loads: Design and size components to withstand the specified load requirements without damage or permanent set, when tested in accordance with ASTM E330/E330M, using loads 1.5 times the design wind loads and 10 second duration of maximum load.
      a. Member Deflection: Limit member deflection to flexure limit of glass in any direction, with full recovery of glazing materials.
   2. Wind-Borne-Debris Resistance: Identical full-size glazed assembly without auxiliary protection, having Florida Building Code FLA (PAD) approval for Large and Small Missile impact and pressure cycling at design wind pressure.
   3. Air Leakage: 0.06 cfm/sq ft maximum leakage of storefront wall area when tested in accordance with ASTM E283/E283M at 1.57 psf pressure difference.

2.05 COMPONENTS

A. Aluminum Framing Members: Tubular aluminum sections, thermally broken with interior section insulated from exterior, drainage holes and internal weep drainage system.
   1. Glazing Stops: Flush.

B. Glazing: See Section 08 80 00.

C. Swing Doors: Glazed aluminum.
   1. Thickness: 1-3/4 inches.
   2. Top Rail: 3-1/2 inches wide.
   3. Vertical Stiles: 3-1/2 inches wide.
   4. Bottom Rail: 6 inches wide.
   5. Glazing Stops: Square.
   6. Finish: Same as storefront.

2.06 MATERIALS

A. Extruded Aluminum: ASTM B221 (ASTM B221M).

B. Fasteners: Stainless steel.

C. Glazing Gaskets: Type to suit application to achieve weather, moisture, and air infiltration requirements.

2.07 FINISHES

A. Class I Color Anodized Finish: AAMA 611 AA-M12C22A42 Integrally colored anodic coating not less than 0.7 mils thick.

2.08 HARDWARE

A. For each door, include weatherstripping, sill sweep strip, and threshold.

B. Other Door Hardware: See Section 08 71 00.

C. Weatherstripping: Wool pile, continuous and replaceable; provide on all doors.

D. Sill Sweep Strips: Resilient seal type, retracting, of neoprene; provide on all doors.

E. Threshold: Extruded aluminum, one piece per door opening, ribbed surface; provide on all doors.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify dimensions, tolerances, and method of attachment with other work.

B. Verify that storefront wall openings and adjoining water-resistive and/or air barrier seal materials are ready to receive work of this section.

3.02 INSTALLATION

A. Install wall system in accordance with manufacturer's instructions.

B. Attach to structure to permit sufficient adjustment to accommodate construction tolerances and other irregularities.

C. Provide alignment attachments and shims to permanently fasten system to building structure.

D. Align assembly plumb and level, free of warp or twist. Maintain assembly dimensional tolerances, aligning with adjacent work.

E. Provide thermal isolation where components penetrate or disrupt building insulation.

F. Install sill flashings. Turn up ends and edges; seal to adjacent work to form water tight dam.

G. Where fasteners penetrate sill flashings, make watertight by seating and sealing fastener heads to sill flashing.

H. Pack fibrous insulation in shim spaces at perimeter of assembly to maintain continuity of thermal barrier.

I. Set thresholds in bed of sealant and secure.

J. Touch-up minor damage to factory applied finish; replace components that cannot be satisfactorily repaired.

3.03 TOLERANCES

A. Maximum Variation from Plumb: 0.06 inch per 3 feet non-cumulative or 0.06 inch per 10 feet, whichever is less.

B. Maximum Misalignment of Two Adjoining Members Abutting in Plane: 1/32 inch.

3.04 FIELD QUALITY CONTROL

A. Provide services of storefront manufacturer's field representative to observe for proper installation of system and submit report.

B. Provide field testing of installed storefront system by independent laboratory in accordance with AAMA 503 during construction process and before installation of interior finishes.

1. Perform a minimum of two tests in each designated area as indicated on drawings.
2. Conduct tests in each area prior to 10 percent and 50 percent completion of this work.
3. Field test for water penetration in accordance with ASTM E1105 with uniform static air pressure difference (Procedure A) not less than 4.18 psf.
    a. Maximum allowable rate of water penetration in 15-minute test is 0.5 ounce that is not contained in an area with provisions to drain to exterior, or collected on surface of interior horizontal framing member.
4. Field test for air leakage in accordance with ASTM E783 with uniform static air pressure difference of 1.57 psf.
    a. Maximum allowable rate of air leakage is 0.09 cfm/sq ft.

C. Repair or replace storefront components that have failed designated field testing, and retest to verify performance complies with specified requirements.

3.05 ADJUSTING

A. Adjust operating hardware and sash for smooth operation.

3.06 CLEANING

A. Remove protective material from pre-finished aluminum surfaces.

B. Wash down surfaces with a solution of mild detergent in warm water, applied with soft, clean wiping cloths, and take care to remove dirt from corners and to wipe surfaces clean.

3.07 PROTECTION

A. Protect installed products from damage until Date of Substantial Completion.

END OF SECTION 08 43 13

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SECTION 08 51 13 - ALUMINUM WINDOWS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Extruded aluminum windows with fixed sash, operating sash, and infill panels.

B. Operating hardware.

C. Insect screens.

1.02 RELATED REQUIREMENTS

A. Section 05 50 00 - Metal Fabrications: Steel lintels.

B. Section 07 25 00 - Weather Barriers: Sealing frame to water-resistive barrier installed on adjacent construction.

C. Section 07 92 00 - Joint Sealants: Sealing joints between window frames and adjacent construction.

D. Section 08 80 00 - Glazing.

1.03 REFERENCE STANDARDS

A. AAMA/WDMA/CSA 101/I.S.2/A440 - North American Fenestration Standard/Specification for Windows, Doors, and Skylights 2017.

B. AAMA CW-10 - Care and Handling of Architectural Aluminum from Shop to Site 2015.

C. AAMA 502 - Voluntary Specification for Field Testing of Newly Installed Fenestration Products 2021.

D. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum 2020.

E. AAMA 1503 - Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors and Glazed Wall Sections 2009.

F. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products 2017.

G. ASTM B209/B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate 2021a.

H. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes 2021.

I. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric) 2021.

J. ASTM E283/E283M - Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Skylights, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen 2019.

K. ASTM E331 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference 2000 (Reapproved 2023).

L. ASTM E783 - Standard Test Method for Field Measurement of Air Leakage Through Installed Exterior Windows and Doors 2002 (Reapproved 2018).

M. ASTM E1105 - Standard Test Method for Field Determination of Water Penetration of Installed Exterior Windows, Skylights, Doors, and Curtain Walls, by Uniform or Cyclic Static Air Pressure Difference 2015 (Reapproved 2023).

N. ASTM E1996 - Standard Specification for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Windborne Debris in Hurricanes 2020.

O. SSPC-Paint 20 - Zinc-Rich Coating (Type I - Inorganic, and Type II - Organic) 2019.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Convene one week before starting work of this section.

1.05 SUBMITTALS

A. Product Data: Include component dimensions, information on glass and glazing, internal drainage details, and descriptions of hardware and accessories.

B. Shop Drawings: Indicate opening dimensions, elevations of different types, framed opening tolerances, anchorage locations, and installation requirements.

C. Grade Substantiation: Prior to submitting shop drawings or starting fabrication, submit one of the following showing compliance with specified grade:
   1. Evidence of AAMA Certification.
   2. Evidence of WDMA Certification.
   3. Evidence of CSA Certification.
   4. Test report(s) by independent testing agency itemizing compliance and acceptable to authorities having jurisdiction.

D. Test Reports: Prior to submitting shop drawings or starting fabrication, submit test report(s) by independent testing agency showing compliance with performance requirements in excess of those prescribed by specified grade.

E. Manufacturer's Installation Instructions: Include complete preparation, installation, and cleaning requirements.

F. Field Quality Control Submittals: Report of field testing for water penetration and air leakage.

G. Manufacturer's qualification statement.

H. Installer's qualification statement.

I. Specimen warranty.

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum three years of documented experience.

B. Installer Qualifications: Company specializing in performing work of type specified and with at least three years of documented experience.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Comply with requirements of AAMA CW-10.

B. Protect finished surfaces with wrapping paper or strippable coating during installation. Do not use adhesive papers or sprayed coatings that bond to substrate when exposed to sunlight or weather.

1.08 FIELD CONDITIONS

A. Do not install sealants when ambient temperature is less than 40 degrees F.

B. Maintain this minimum temperature during and 24 hours after installation of sealants.

1.09 WARRANTY

A. See Section 01 78 00 - Closeout Submittals for additional warranty requirements.

B. Correct defective work within a five year period after Date of Substantial Completion.

C. Manufacturer Warranty: Provide 5-year manufacturer warranty against failure of glass seal on insulating glass units, including interpane dusting or misting. Include provision for replacement of failed units. Complete forms in Owner's name and register with manufacturer.

D. Manufacturer Warranty: Provide 20-year manufacturer warranty against excessive degradation of exterior finish. Include provision for replacement of units with excessive fading, chalking, or flaking. Complete forms in Owner's name and register with manufacturer.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Subject to compliance with requirements, products that may be incorporated into the project include, but are not limited to, the following:
   1. Boyd Aluminum; Series 4300: www.boydaluminum.com/#sle.
   2. ES Windows; ES-P7531: www.eswindows.com/#sle.
   3. Winco Window Company, Inc; Series 3325: www.wincowindow.com/#sle.

2.02 ALUMINUM WINDOWS

A. Aluminum Windows: Extruded aluminum frame and sash, factory fabricated, factory finished, with operating hardware, related flashings, and anchorage and attachment devices.
   1. Frame Depth: 5 inch minimum.
   2. Fabrication: Joints and corners flush, hairline, and weatherproof, accurately fitted and secured; prepared to receive anchors; fasteners and attachments concealed from view; reinforced as required for operating hardware and imposed loads.
   3. Perimeter Clearance: Minimize space between framing members and adjacent construction while allowing expected movement.
   4. Movement: Accommodate movement between window and perimeter framing and deflection of lintel, without damage to components or deterioration of seals.
   5. System Internal Drainage: Drain to the exterior by means of a weep drainage network any water entering joints, condensation occurring in glazing channel, and migrating moisture occurring within system.

B. Outswinging Awning Type:
   1. Construction: Thermally broken.
   2. Provide screens.
   3. Exterior Finish: Class I color anodized.
   4. Interior Finish: Class I color anodized.

2.03 PERFORMANCE REQUIREMENTS

A. Grade: AAMA/WDMA/CSA 101/I.S.2/A440 requirements for specific window type:
   1. Performance Class (PC): CW.

B. Wind-Borne-Debris Resistance: Identical full-size glazed assembly without auxiliary protection, tested by independent agency in accordance with ASTM E1996 for Wind Zone 3 - Enhanced Protection for Large and Small Missile impact and pressure cycling at design wind pressure.

C. Water Leakage: No uncontrolled leakage on interior face when tested in accordance with ASTM E331 at differential pressure of 12.11 psf.

D. Air Leakage: 0.1 cfm/sq ft maximum leakage per unit area of outside window frame dimension when tested at 1.57 psf pressure difference in accordance with ASTM E283/E283M.

E. Condensation Resistance Factor of Frame: 50, measured in accordance with AAMA 1503.

2.04 COMPONENTS

A. Frames: 2-3/16 inch wide by 3-1/4 inch deep profile, of 0.125 inch thick section; thermally broken with interior portion of frame insulated from exterior portion; flush glass stops of snap-on type.

B. Glazing: See Section 08 80 00.
   1. For Exterior Windows: Type IG-1.

C. Insect Screens: Extruded aluminum frame with mitered and reinforced corners; screen mesh taut and secure to frame; secured to window with adjustable hardware allowing screen removal without use of tools.
   1. Hardware: Spring loaded steel pins; four per screen unit.
   2. Screen Mesh: Vinyl-coated fiberglass, window manufacturer's standard mesh.
   3. Frame Finish: Same as frame and sash.

D. Operable Sash Weatherstripping: Wool pile; permanently resilient, profiled to achieve effective weather seal.

E. Fasteners: Stainless steel.

F. Glazing Materials: See Section 08 80 00.

G. Sealant for Setting Sills and Sill Flashing: Non-curing butyl type.
   1. See Section 07 92 00 for additional requirements.

2.05 MATERIALS

A. Extruded Aluminum: ASTM B221 (ASTM B221M), 6063 alloy, T6 temper.

B. Sheet Aluminum: ASTM B209/B209M, 5005 alloy, H12 or H14 temper.

C. Concealed Steel Items: Profiled to suit mullion sections; galvanized in accordance with ASTM A123/A123M.

2.06 HARDWARE

A. Sash lock: Manufacturer standard.

B. Operator: Manufacturer standard fitted to projecting sash arms with limit stops.

C. Projecting Sash Arms: Cadmium plated steel, friction pivot joints with nylon bearings, removable pivot clips for cleaning.

2.07 FINISHES

A. Class I Color Anodized Finish: AAMA 611 AA-M12C22A42, integrally colored anodic coating not less than 0.7 mil thick.

B. Finish Color: As selected by Architect from manufacturer's standard range.

C. Operator and Exposed Hardware: Enameled to color as selected from manufacturer's standard line.

D. Apply one coat of bituminous coating to concealed aluminum and steel surfaces in contact with dissimilar materials.

E. Shop and Touch-Up Primer for Steel Components: Zinc oxide, alkyd, linseed oil primer appropriate for use over hand cleaned steel.

F. Touch-Up Primer for Galvanized Steel Surfaces: SSPC-Paint 20, zinc rich.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that wall openings and adjoining water-resistive barrier materials are ready to receive aluminum windows; see Section 07 25 00.

3.02 PRIME WINDOW INSTALLATION

A. Install windows in accordance with manufacturer's instructions.

B. Attach window frame and shims to perimeter opening to accommodate construction tolerances and other irregularities.

C. Align window plumb and level, free of warp or twist. Maintain dimensional tolerances and alignment with adjacent work.

D. Install sill and sill end angles.

E. Provide thermal isolation where components penetrate or disrupt building insulation. Pack fibrous insulation in shim spaces at perimeter of assembly to maintain continuity of thermal barrier.

F. Install operating hardware not pre-installed by manufacturer.

G. Install glass and infill panels in accordance with requirements; see Section 08 80 00.

3.03 TOLERANCES

A. Maximum Variation from Level or Plumb: 1/16 inches every 3 ft non-cumulative or 1/8 inches per 10 ft, whichever is less.

3.04 FIELD QUALITY CONTROL

A. Provide services of aluminum window manufacturer's field representative to observe for proper installation of system and submit report.

B. See Section 01 40 00 - Quality Requirements for independent field testing and inspection requirements, and requirements for monitoring quality of specified product installations.

C. Provide field testing of installed aluminum windows by independent laboratory in accordance with AAMA 502 and AAMA/WDMA/CSA 101/I.S.2/A440 during construction process and before installation of interior finishes.

1. Field test for water penetration in accordance with ASTM E1105 using Procedure B - cyclic static air pressure difference; test pressure shall not be less than 1.9 psf.
2. Field test for air leakage in accordance with ASTM E783 with uniform static air pressure difference of 1.57 psf.

D. Repair or replace fenestration components that have failed designated field testing, and retest to verify performance complies with specified requirements.

3.05 ADJUSTING

A. Adjust hardware for smooth operation and secure weathertight closure.

3.06 CLEANING

A. Remove protective material from factory finished aluminum surfaces.

B. Wash surfaces by method recommended and acceptable to window manufacturer; rinse and wipe surfaces clean.

C. Remove excess glazing sealant by moderate use of mineral spirits or other solvent acceptable to sealant and window manufacturer.

END OF SECTION 08 51 13

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SECTION 08 56 53 - SECURITY WINDOWS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Security transaction windows.

1.02 REFERENCE STANDARDS

A. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum 2020.

B. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes 2021.

C. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric) 2021.

D. SSPC-Paint 33 - Coal Tar Mastic Coating, Cold-Applied 2006, with Editorial Revision (2015).

E. UL 752 - Standard for Bullet-Resisting Equipment Current Edition, Including All Revisions.

1.03 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Prior to start of installation arrange a meeting on site to familiarize installer and installers of related work with requirements relating to this work.

1.04 SUBMITTALS

A. Product Data: Manufacturer's published data showing materials, construction details, dimensions of components, and finishes.

B. Shop Drawings: Drawings prepared specifically for this project, showing plans, elevations, sections, details of construction, anchorage to other work, hardware, and glazing.
   1. For new work show required opening dimensions and allowance for field deviation.

C. Test Reports: Test reports for specific window model and glazing to be furnished, showing compliance with specified requirements; window and glazing may be tested separately, provided window test sample adequately simulates the glazing to be used.
   1. Include testing agency qualifications.
   2. For structural, forced entry, and ballistic tests, provide details on method of anchorage to test frame.

D. Coordination Drawings: For each window opening, show locations and details of items necessary to anchor windows that must be installed by others, in sufficient detail that installer of those items can do so correctly without reference to the actual window itself.

E. Manufacturer's Qualification Statement.

F. Installer's Qualification Statement.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Firm with at least 5 years experience in the manufacture of windows of the type specified.

B. Testing Agency Qualifications: Independent testing agency able to show experience in conducting tests of the type specified and:

C. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.

1.06 WARRANTY

A. Provide manufacturer's warranty agreeing to repair or replace windows and window components that fail within three years after Date of Substantial Completion due to, but not limited to, the following:
   1. Structural failure, failure of welds, and deterioration of metals and finishes beyond that expected under detention use and normal weathering.
   2. Failure of glazing due to excessive deflection of supporting members under wind load.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Security Transaction Windows: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following
   1. Quikserv Corporation; Speak Around: www.quikserv.com/#sle.
   2. Insulgard; AVT: www.insulgard.com.
   3. Armortex; Transaction Window Natural Voice: www.amortex.com.
   4. Chicago Bullet Proof STW

2.02 ASSEMBLIES

A. Security and Detention Windows:
   1. Dimensions, profiles, features, and performance specified and indicated on drawings are required; do not deviate unless specifically approved by Architect under substitution procedures; see Section 01 60 00.
   2. Design to fit openings indicated on drawings; design to accommodate deviation of actual construction from dimensions indicated on drawings.
   3. Fabricate frames and sash with corners mitered or coped full depth with concealed welded joints.
   4. Design anchorages to provide performance equivalent to that required for window unit; provide anchorages at least equivalent to those by which the tested units were anchored to the test frame.
   5. Separate dissimilar metals to prevent corrosion by galvanic action by painting contact surfaces with primer or with sealant or tape recommended by manufacturer for the purpose.
   6. Weld components before finishing and in concealed locations, to greatest extent possible; minimize distortion and discoloration of finish; remove residue of welding; grind exposed welds smooth and finish to match.
   7. Label units to indicate which side is which, such as inside/outside or secure/non-secure; use labels that are removable after installation but durable enough not to be lost during delivery, storage, handling, and installation.

2.03 SECURITY TRANSACTION WINDOWS

A. Security Transaction Windows:
   1. Location: Built within interior wall, as indicated on drawings.
   2. Type of Use: As indicated on drawings.
   3. Ballistic Resistance: Tested to meet UL 752, Level 3.
   4. Window Type: Fixed.
      a. Mounting: Projected from the wall surface.

b. Window Size: As indicated on drawings.
c. Size of Counter Space: As indicated on drawings.

5. Glazing: Single (monolithic), clear, and ballistic resistant.
6. Communication: Extruded aluminum voice rails.

2.04 ASSEMBLY COMPONENTS

A. Aluminum Framing: ASTM B221 (ASTM B221M) extrusions of alloy and temper selected by manufacturer for strength, corrosion resistance, and finish required; not less that 1/8 inch thick at any location of frame and sash members.

B. Frame Anchors: Mild steel plates, shapes, or bars, concealed in completed construction; provide anchorage devices as necessary to securely fasten windows to adjacent construction; use security fasteners for exposed anchors.
   1. Provide minimum of two anchors per side of window plus one additional anchor for each 18 inches or fraction thereof more than 36 inches in height or width.

C. Glazing Seals: Factory installed; molded EPDM or neoprene compressible gaskets and compression strips.

D. Deal Trays: Formed stainless steel, recessed into counter or sill for mounting under glazing frame.
   1. Style: Plain curved recess welded into counter or sill.
   2. Clear Opening Height: 1-1/2 inches.
   3. Tray Dimensions: 12 by 8 inches, wide by deep.
   4. Listed and labeled by UL as bullet resisting to UL 752 Level 3.

E. Bituminous Paint: Cold-applied asbestos-free asphalt mastic, complying with SSPC-Paint 33; 30 mils, 0.030 inch minimum thickness per coat.

2.05 FINISHES

A. Class I Color Anodized Finish: AAMA 611 AA-M12C22A42 Integrally colored anodic coating not less than 0.7 mils thick.

B. Color: As selected by Architect from manufacturer's standard range.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that window openings are ready for installation of windows.

B. Notify Architect if conditions are not suitable for installation of windows; do not proceed until conditions are satisfactory.

3.02 INSTALLATION

A. Install in accordance with manufacturer's instructions and drawing details.

B. Install windows in correct orientation (inside/outside or secure/non-secure).

C. Anchor windows securely in manner so as to achieve performance specified.

D. Separate metal members from concrete and masonry using bituminous paint.

E. Set sill members and sill flashing in continuous bead of sealant.

3.03 CLEANING

A. Clean exposed surfaces promptly after installation without damaging finishes.

B. Remove and replace defective work.

3.04 CLOSEOUT ACTIVITIES

A. Demonstrate operation and maintenance to designated Owner personnel.

END OF SECTION 08 56 53

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PANAMA CITY BEACH
FIRE STATION #32
HUTCHISON BLVD
BID DOCUMENTS
AUGUST 1, 2023

SECTION 08 71 00 - DOOR HARDWARE

PART 1 - GENERAL

1.1 SUMMARY:

A. Section Includes: Finish Hardware for door openings, except as otherwise specified herein.

1. Door hardware for steel (hollow metal) doors.
2. Door hardware for aluminum doors.
3. Door hardware for wood doors.
4. Door hardware for other doors indicated.
5. Keyed cylinders as indicated.

B. Related Sections:
1. Division 06: Rough Carpentry.
2. Division 08: Aluminum Doors and Frames
3. Division 08: Hollow Metal Doors and Frames.
4. Division 08: Wood Doors.
5. Division 26: Electrical
6. Division 28: Electronic Security

C. References: Comply with applicable requirements of the following standards. Where these standards conflict with other specific requirements, the most restrictive shall govern.

1. Builders Hardware Manufacturing Association (BHMA)
2. NFPA 101 Life Safety Code
3. NFPA 80 – Standard for Fire Doors and Other Opening Protectives
4. ANSI-A156.xx- Various Performance Standards for Finish Hardware
5. UL10C – Positive Pressure Fire Test of Door Assemblies
6. ANSI-A117.1 – Accessible and Usable Buildings and Facilities 2009
7. DHI /ANSI A115.IG – Installation Guide for Doors and Hardware
8. Florida Building Code 2020, 7th Edition
9. Miami-Dade / Florida Building Code requirements for Hurricane (NOA) for exterior openings.

D. Intent of Hardware Groups

1. Should items of hardware not definitely specified be required for completion of the Work, furnish such items of type and quality comparable to adjacent hardware and appropriate for service required.
2. Where items of hardware are not definitely or correctly specified, but are required for completion of the Work, a written statement of such omission, error, or other discrepancy must be submitted to Architect, prior to date specified for receipt of bids for clarification by addendum. Otherwise, furnish such items in the type and quality established by this specification, and appropriate to the service intended.

E. Allowances

1. Refer to Division 01 for allowance amount and procedures.

F. Alternates

1. Refer to Division 01 for Alternates and procedures.

1.2 SUBSTITUTIONS:

A. Comply with Division 01.

1.3 SUBMITTALS:

A. Comply with Division 01.

B. Product Data: Manufacturer's specifications and technical data including the following:

1. Detailed specification of construction and fabrication.
2. Manufacturer's installation instructions.
3. Wiring diagrams for each electric product specified. Coordinate voltage with electrical before submitting.
4. Submit 6 copies of catalog cuts with hardware schedule.
5. Provide 9001-Quality Management and 14001-Environmental Management for products listed in Materials Section 2.2

C. Shop Drawings - Hardware Schedule: Submit 6 complete reproducible copy of detailed hardware schedule in a vertical format.

1. List groups and suffixes in proper sequence.
2. Completely describe door and list architectural door number.
3. Manufacturer, product name, and catalog number.
4. Function, type, and style.
5. Size and finish of each item.
6. Mounting heights.
7. Explanation of abbreviations and symbols used within schedule.
8. Detailed wiring diagrams, specially developed for each opening, indicating all electric hardware, security equipment and access control equipment, and door and frame rough-ins required for specific opening.

D. Templates: Submit templates and "reviewed Hardware Schedule" to door and frame supplier and others as applicable to enable proper and accurate sizing and locations of cutouts and reinforcing.

1. Templates, wiring diagrams and "reviewed Hardware Schedule" of electrical terms to electrical for coordination and verification of voltages and locations.

E. Samples: (If requested by the Architect)

1. 1 sample of Lever and Rose/Escutcheon design, (pair).
2. 3 samples of metal finishes

F. Contract Closeout Submittals: Comply with Division 01 including specific requirements indicated.

1. Operating and maintenance manuals: Submit 3 sets containing the following.

a. Complete information in care, maintenance, and adjustment, and data on repair and replacement parts, and information on preservation of finishes.
b. Catalog pages for each product.
c. Name, address, and phone number of local representative for each manufacturer.
d. Parts list for each product.

2. Copy of final hardware schedule, edited to reflect, "As installed".
3. Copy of final keying schedule
4. As installed “Wiring Diagrams” for each piece of hardware connected to power, both low voltage and 110 volts.
5. One set of special tools required for maintenance and adjustment of hardware, including changing of cylinders.

1.4 QUALITY ASSURANCE

A. Comply with Division 01.

1. Exterior Openings Severe Windstorm Components testing: Listed and labeled by a testing and inspecting agency acceptable to authority having jurisdiction, based on testing according to ANSI A250.13. Further compliance with Florida Building Codes for Hurricane (NOA) for Exterior Openings.
2. Statement of qualification for distributor and installers.
3. Statement of compliance with regulatory requirements and single source responsibility.
4. Distributor's Qualifications: Firm with 3 years of experience in the distribution of commercial hardware.

a. Distributor to employ full time Architectural Hardware Consultants (AHC) for the purpose of scheduling and coordinating hardware and establishing keying schedule.
b. Hardware Schedule shall be prepared and signed by an AHC.

5. Installer's Qualifications: Firm with 3 years of experience in the installation of similar hardware to that required for this Project, including specific requirements indicated.
6. Regulatory Label Requirements: Provide testing agency label or stamp on hardware for labeled openings.

a. Provide UL listed hardware for labeled and 20-minute openings in conformance with requirements for class of opening scheduled.
b. Underwriters Laboratories requirements have precedence over this specification where conflict exists.

7. Single Source Responsibility: Except where specified in hardware schedule, furnish products of only one manufacturer for each type of hardware.

B. Review Project for extent of finish hardware required to complete the Work. Where there is a conflict between these Specifications and the existing hardware, notify the Architect in writing and furnish hardware in compliance with the Specification unless otherwise directed in writing by the Architect.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Packing and Shipping: Comply with Division 01.

1. Deliver products in original unopened packaging with legible manufacturer's identification.
2. Package hardware to prevent damage during transit and storage.
3. Mark hardware to correspond with "reviewed hardware schedule".

4. Deliver hardware to door and frame manufacturer upon request.

B. Storage and Protection: Comply with manufacturers' recommendations.

1.6 PROJECT CONDITIONS:

A. Coordinate hardware with other work. Furnish hardware items of proper design for use on doors and frames of the thickness, profile, swing, security, and similar requirements indicated, as necessary for the proper installation and function, regardless of omissions or conflicts in the information on the Contract Documents.

B. Review Shop Drawings for doors and entrances to confirm that adequate provisions will be made for the proper installation of hardware.

1.7 WARRANTY:

A. Refer to Conditions of the Contract

B. Manufacturer's Warranty:

1. Closers: Ten years
2. Exit Devices: Three Years
3. Locksets & Cylinders: Three years
4. All other Hardware: Two years.

1.8 OWNER'S INSTRUCTION:

A. Instruct Owner's personnel in operation and maintenance of hardware units.

1.9 MAINTENANCE:

A. Extra Service Materials: Deliver to Owner extra materials from same production run as products installed. Package products with protective covering and identify with descriptive labels. Comply with Division 01 Closeout Submittals Section.

1. Special Tools: Provide special wrenches and tools applicable to each different or special hardware component.
2. Maintenance Tools: Provide maintenance tools and accessories supplied by hardware component manufacturer.
3. Delivery, Storage and Protection: Comply with Owner's requirements for delivery, storage, and protection of extra service materials.

B. Maintenance Service: Submit for Owner's consideration maintenance service agreement for electronic products installed.

PART 2 - PRODUCTS

2.1 MANUFACTURERS:

A. The following manufacturers are approved subject to compliance with requirements of the Contract Documents. Approval of manufacturers other than those listed shall be in accordance with Division 01.

Item:	Manufacturer:	Approved:
Hinges	Best	PBB, McKinney

Locksets	Best 45H	Schlage L9000, Sargent 8200
Cylinders	Best Cormax™	
Exit Devices	Best	Sargent 80, Dorma 9000
Closers	dormakaba QDC100	Sargent 281, Norton 7500
Push/Pull Plates	Trimco	Burns, Hiawatha
Protection Plates	Trimco	Burns, Hiawatha
Overhead Stops	ABH	Rixson, dormakaba
Door Stops	Trimco	Burns, Hiawatha
Flush Bolts	Trimco	ABH, Rockwood
Coordinator & Brackets	Trimco	ABH, Rockwood
Threshold & Gasketing	National Guard	Reese, K.N. Crowder

2.2 MATERIALS:

A. Hinges:

1. Template screw hole locations
2. Minimum of 2 permanently lubricated non-detachable bearings
3. Equip with easily seated, non-rising pins
4. Sufficient size to allow 180-degree swing of door
5. Furnish hinges with five knuckles and concealed bearings
6. Provide hinge type as listed in schedule.
7. Furnish 3 hinges per leaf to 7-foot, 6-inch height. Add one for each additional 30 inches in height or fraction thereof.
8. Tested and approved by BHMA for all applicable ANSI Standards for type, size, function, and finish
9. UL10C listed for Fire rated doors.

B. Mortise Type Locks and Latches:

1. Tested and approved by BHMA for ANSI A156.13, Series 1000, Operational Grade 1, Extra-Heavy Duty, Security Grade 2 and be UL10C.
2. Furnish UL or recognized independent laboratory certified mechanical operational testing to 4 million cycles minimum.
3. Provide 9001-Quality Management and 14001-Environmental Management.
4. Fit ANSI A115.1 door preparation
5. Functions and design as indicated in the hardware groups
6. Solid, one-piece, 3/4-inch (19mm) throw, anti-friction latch bolt made of self-lubricating stainless steel
7. Deadbolt functions shall have 1-inch (25mm) throw bolt made of hardened stainless steel
8. Latch bolt and Deadbolt are to extend into the case a minimum of 3/8 inch (9.5mm) when fully extended
9. Auxiliary dead latch to be made of one-piece stainless steel, permanently lubricated
10. Provide sufficient curved strike lip to protect door trim
11. Lever handles must be of forged or cast brass, bronze or stainless steel construction and conform to ANSI A117.1. Levers that contain a hollow cavity are not acceptable
12. Lock shall have self-aligning, thru-bolted trim
13. Levers to operate a roller bearing spindle hub mechanism
14. Mortise cylinders of lock shall have a concealed internal setscrew for securing the cylinder to the lockset. The internal setscrew will be accessible only by removing the core, with the control key, from the cylinder body.
15. Spindle to be designed to prevent forced entry from attacking of lever
16. Provide locksets with 7-pin removable and interchangeable core cylinders
17. Each lever to have independent spring mechanism controlling it

18. Core face must be the same finish as the lockset.

C. Exit Devices:

1. Tested and approved by BHMA for ANSI 156.3, Grade 1
2. Provide 9001-Quality Management and 14001-Environmental Management.
3. Furnish UL or recognized independent laboratory certified mechanical operational testing to 10 million cycles minimum.
4. Provide a deadlocking latch bolt
5. Touchpad shall be “T” style
6. Exposed components shall be of architectural metals and finishes.
7. Lever design shall match lockset lever design
8. Provide strikes as required by application.
9. Fire exit devices to be listed for UL10C
10. UL listed for Accident Hazard
11. Shall consist of a cross bar or push pad, the actuating portion of which extends across, shall not be less than one half the width of the door leaf.

D. Cylinders:

1. Provide the necessary cylinder housings, collars, rings & springs as recommended by the manufacturer for proper installation.
2. Provide the proper cylinder cams or tail piece as required to operate all locksets and other keyed hardware items listed in the hardware sets.
3. Coordinate and provide as required for related sections.

E. Door Closers shall:

1. Tested and approved by BHMA for ANSI 156.4, Grade 1
2. UL10C certified
3. Provide 9001-Quality Management and 14001-Environmental Management.
4. Closer shall have extra-duty arms and knuckles
5. Conform to ANSI 117.1
6. Maximum 2-7/16 inch case projection with non-ferrous cover
7. Four separate adjusting valves for closing and latching speed, delayed action and backcheck
8. Provide adapter plates, shim spacers and blade stop spacers as required by frame and door conditions
9. Full rack and pinion type closer with 1½“ minimum bore
10. Mount closers on non-public side of door, unless otherwise noted in specification
11. Closers shall be non-handed, non-sized and multi-sized.

F. Door Stops: Provide a dome floor or wall stop for every opening as listed in the hardware sets.

1. Wall stop and floor stop shall be wrought bronze, brass, or stainless steel.
2. Provide fastener suitable for wall construction.
3. Coordinate reinforcement of walls where wall stop is specified.
4. Provide dome stops where wall stops are not practical. Provide spacers or carpet riser for floor conditions encountered

G. Overhead Stops: Provide a Surface mounted or concealed overhead when a floor or wall stop cannot be used or when listed in the hardware set.

1. Concealed overhead stops shall be heavy duty bronze or stainless steel.
2. Surface overhead stops shall be heavy duty bronze or stainless steel.

H. Kickplates: Provide with four beveled edges ANSI J102, 10 inches high by width less 2 inches on single doors and 1 inch on pairs of doors. Furnish oval-head countersunk screws to match finish.

I. Mop plates: Provide with four beveled edges ANSI J103, 4 inches high by width less 1 inch on single doors and 1 inch on pairs of doors. Furnish oval-head countersunk screws to match finish.

J. Door Bolts: Flush bolts for wood or metal doors.

1. Provide a set of Automatic bolts, Certified ANSI/BHMA 156.3 Type 25 for hollow metal label doors.
2. Provide a set of Automatic bolts, Certified ANSI/BHMA 156.3 Type 27 at wood label doors.
3. Manual flush bolts, Certified ANSI/BHMA 156.16 at openings, where allowed local authority.
4. Provide Dust Proof Strike, Certified ANSI/BHMA 156.16 at doors with flush bolts without thresholds.

K. Coordinator and Brackets: Provide a surface mounted coordinator when automatic bolts are used in the hardware set.

1. Coordinator, Certified ANSI/BHMA A1156.3 Type 21A for full width of the opening.
2. Provide mounting brackets for soffit applied hardware.
3. Provide hardware preparation (cutouts) for latches as necessary.

L. Power Supply: Provide power supply for (MLR) Electric Latch Retraction exit devices.

1. Motherboard will accept up to four plug-in Control Modules. Provide the appropriate necessary control module to operate the number of MLR exit devices used at each opening. The Control Module shall include a Time delay Feature, variable (0-4 minutes) latch retraction period in response to a momentary input.
2. UL Listed for class II output
3. Include circuit breakers for protection of motherboard
4. 115 or 230 Volt user selectable switch, with AC input= 115 Volt at 1 Amp
5. Control module shall include Fire alarm terminal and Auxiliary contacts for remote signaling.

M. Power Supply: UL Listed, Field Selectable 12VDC or 24VDC output. The power supply will be specifically designed to support electric locks and access controls. The power supply uses 115 VAC at 800mA input. The power shall be able to be expanded to four station controls. The filtered and regulated output power is field selectable for 12 or 24 VDC.

1. Fire Alarm/Life Safety emergency release included in power supply.
2. Available options for multiple door options four or more control stations, Adjustable Time delay relay, Battery charging, battery back-up.

N. Door Position Switch: Provide door position switch for door status monitoring as indicated in hardware sets.

1. At all fired rated doors, the door and frames, position switch preparation will be provided by the door and frame manufacturer or by an authorized label service agent.

O. Seals: All seals shall be finished to match adjacent frame color. Seals shall be furnished as listed in schedule. Material shall be UL listed for labeled openings.

P. Weather stripping: Provide at head and jambs only those units where resilient or flexible seal strip is easily replaceable. Where bar-type weather strip is used with parallel arm mounted closers install weather strip first.

1. Weather strip shall be resilient seal of (Neoprene, Polyurethane, Vinyl, Pile, Nylon Brush, Silicone)
2. UL10C Positive Pressure rated seal set when required.

Q. Door Bottoms/Sweeps: Surface mounted or concealed door bottom, where listed in the hardware sets.

1. Door seal shall be resilient seal of (Neoprene, Polyurethane, Nylon Brush, Silicone)
2. UL10C Positive Pressure rated seal set when required.

R. Thresholds: Thresholds shall be aluminum beveled type with maximum height of ½" for conformance with ADA requirements. Furnish as specified and per details. Provide fasteners and screws suitable for floor conditions.

S. Silencers: Furnish silencers on all interior frames, 3 for single doors, 2 for pairs. Omit where any type of seals are installed.

2.3 FINISH:

A. Designations used in Schedule of Finish Hardware - 3.05, and elsewhere to indicate hardware finishes are those listed in ANSI/BHMA A156.18 including coordination with traditional U.S. finishes shown by certain manufacturers for their products

B. Powder coat door closers to match other hardware, unless otherwise noted.

C. Aluminum items shall be finished to match predominant adjacent material. Seals to coordinate with frame color.

2.4 KEYS AND KEYING:

A. Provide keyed brass construction cores and keys during the construction period. Construction control and operating keys and core shall not be part of the Owner's permanent keying system or furnished in the same keyway (or key section) as the Owner's permanent keying system. Permanent cores and keys (prepared according to the accepted keying schedule) will be furnished to the Owner.

B. Cylinders, removable and interchangeable core system: Best CORMAX™ Patented 7-pin SFIC. Coordinate with Owner to verify specific keyway and pinning requirements.

C. Permanent keys and cores: Stamped with the applicable key mark for identification. These visual key control marks or codes will not include the actual key cuts. Permanent keys will also be stamped "Do Not Duplicate."

D. Transmit Grand Master Keys, Master Keys, and other security keys to Owner by Registered Mail, return receipt requested.

E. Furnish keys in the following quantities:

1. 1 each Grand Master Keys
2. 4 each Master Keys
3. 2 each Change Keys for each keyed core
4. 15 each Construction Master Keys
5. 1 each Control Keys

F. The Owner, or the Owner's agent, will install permanent cores and return the construction cores to the Hardware Supplier. Construction cores and keys remain the property of the Hardware Supplier.

G. Keying Schedule: Arrange for a keying meeting, and programming meeting with Architect Owner and hardware supplier, and other involved parties to ensure locksets and locking hardware, are functionally correct and keying and programming complies with project requirements. Furnish three (3) typed copies of keying and programming schedule to Architect.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verification of conditions: Examine doors, frames, related items and conditions under which Work is to be performed and identify conditions detrimental to proper and or timely completion.

1. Do not proceed until unsatisfactory conditions have been corrected.

3.2 HARDWARE LOCATIONS:

A. Mount hardware units at heights indicated in the following publications except as specifically indicated or required to comply with the governing regulations.

1. Recommended Locations for Builder’s Hardware for Standard Steel Doors and Frames, by the Door and Hardware Institute (DHI).

2. Recommended locations for Architectural Hardware for flush wood doors (DHI).

3. WDMA Industry Standard I.S.-1A-04, Industry Standard for Architectural wood flush doors.

3.3 INSTALLATION:

A. Install each hardware item per manufacturer's instructions and recommendations. Do not install surface mounted items until finishes have been completed on the substrate. Set units level, plumb and true to line and location. Adjust and reinforce the attachment substrate as necessary for proper installation and operation.

B. Conform to local governing agency security ordinance.

C. Install Conforming to ICC/ANSI A117.1 Accessible and Usable Building and Facilities.

1. Adjust door closer sweep periods so that from the open position of 70 degrees, the door will take at least 3 seconds to move to a point 3 inches from the latch, measured to the landing side of the door.

D. Installed hardware using the manufacturers fasteners provided. Drill and tap all screw holes located in metallic materials. Do not use “Riv-Nuts” or similar products.

3.4 FIELD QUALITY CONTROL AND FINAL ADJUSTMENT

A. Contractor/Installers, Field Services: After installation is complete, contractor shall inspect the completed door openings on site to verify installation of hardware is complete and properly adjusted, in accordance with both the Contract Documents and final shop drawings.

1. Check and adjust closers to ensure proper operation.

2. Check latch set, lockset, and exit devices are properly installed and adjusted to ensure proper operation.

a. Verify levers are free from binding.
b. Ensure latch bolts and dead bolts are engaged into strike and hardware is functioning.

3. Report findings, in writing, to architect indicating that all hardware is installed and functioning properly. Include recommendations outlining corrective actions for improperly functioning hardware if required.

3.5 SCHEDULE OF FINISH HARDWARE:

Manufacturer List

Code	Name
AB	ABH Manufacturing Inc.
BE	Best Access Systems
BY	By Related Section
DM	Dorma Door Controls
NA	National Guard
PR	BEST Precision Exit Devices
SH	dormakaba Commercial Hardware
ST	BEST Hinges and Sliding
TR	Trimco

Option List

Code	Description
1/4-20 SSMS/EA	STAINLESS MACHINE SCREWS/EXPANSION ANC.
7/8"LTC	7/8" Lip-To-Center Strike
B4E-HEAVY-KP	BEVELED 4 EDGES - KICK PLATES
BF	Barrier Free
C	QUICK CONNECT WIRING OPTION
CSK	COUNTER SINKING OF KICK and MOP PLATES
MLR	MOTORIZED LATCH RETRACTION
R	Full Size Rounded Plastic Cover
SNB	SEX BOLTS
TS	TOUCHBAR MONITORING SWITCH
VIN	Visual Indicator
WS	Windstorm Listed (Miami-Dade / Florida Building Code)

Finish List

Code	Description
26D	Satin Chrome
625	Bright Chromium Plated
626	Satin Chromium Plated
630	Satin Stainless Steel
630W	Stainless Steel, Weatherized
689	Aluminum Painted
AL	Aluminum
GREY	Grey
US32D	Stainless Steel, Dull

Hardware Sets

Set #01 – Sectional Doors

Doors: 100G, 100H, 100J, 100L, 100M, 100N

NOTE: Roll up doors. All hardware by the door Mfg.

Set #02 - Exterior Alum - Remote Release

Doors: 101

1	Cylinder	1E / 12E PATD As Required	626	BE
1	Door Closer	QDC117 R x 8Q00471 x P45HD110	689	SH

NOTE: Balance of hardware and weather-stripping by Aluminum Door / Frame supplier. Electrified exit device and power supply by Aluminum Door / Frame Supplier.

Operation: Door normally closed and locked. Remote Release Button (By Others) allows remote release of the door allowing authorized entry. Location of Remote Release TBD by Owner. Monitor switch in exit device signals access control system for authorized exiting. Egress always allowed. Mechanical key override. Door position switch monitors door status. All wiring and conduit by electrical contractor. Coordinate wiring and installation with Electrical Contractor Security Contractor.

Set #03 - Corridor - Proximity Reader

Doors: 101A

3	Butt Hinge	CB179 4.5" x 4.5" NRP	26D	ST
1	Exit Device	C MLR TS 2103 X 4903D SNB	630	PR
1	Rim Cylinder	12E-72 PATD	626	BE
1	Door Closer	QDC117 BF R	689	SH
1	Kick Plate	K0050 10" x 2" LDW B4E-Heavy CSK	630	TR
1	Proximity Reader	By Security Contractor		BY
1	Door Position Switch	MC4		DM
1	Power Supply	RPSMLR2BB		PR
1	Wiring Diagram	WIRING DIAGRAM FURNISHED BY HWDE. SUPPLIER		BY
1	Power Transfer	EPT-12C		PR
1	Harness	WH-192P		ST
1	Harness	WH-6E		ST
1	Harness	WH-XXP (Length as Req'd)		ST
3	Silencer	1229A	GREY	TR

NOTE: Operation: Door normally closed and locked. Presenting valid credential to Proximity Reader retracts latch bolt of exit device allowing authorized entry. Monitor switch in exit device (TS Option) signals access control system for authorized exiting. Egress always allowed. Mechanical key override. Door position switch monitors door status. All wiring and conduit by electrical contractor. Coordinate wiring and installation with GC / EC / Security Contractor.

Set #04 - Exterior Proximity Reader

Doors: 100F, 100K, 111B, 131A, 132B

3	Butt	CB199 4.5" x 4.5" NRP	630W	ST
1	Exit Device	C MLR TS 2103 X 4903D SNB (2)	630	PR
1	Rim Cylinder	12E-72 PATD	626	BE
1	Door Closer	QDC117 R	689	SH
1	Kick Plate	K0050 10" x 2" LDW B4E-Heavy CSK	630	TR
1	Proximity Reader	By Security Contractor		BY
1	Door Position Switch	MC4		DM
1	Power Supply	RPSMLR2BB		PR
1	Wiring Diagram	WIRING DIAGRAM FURNISHED BY HWDE. SUPPLIER		BY
1	Power Transfer	EPT-12C		PR
1	Harness	WH-192P		ST
1	Harness	WH-6E		ST
1	Harness	WH-XXP (Length as Req'd)		ST
1	Gasketing	127 NA @ Head & Jambs		NA
1	Drip Cap *(@100K only)*	16 A - 4" ODW		NA
1	Door Sweep	C627 A		NA
1	Threshold	896 S 1/4-20 SSMS/EA	AL	NA

NOTE: Operation: Door normally closed and locked. Presenting valid credential to Proximity Reader retracts latch bolt of exit device allowing authorized entry. Monitor switch in exit device (TS Option) signals access control system for authorized exiting. Egress always allowed. Mechanical key override. Door position switch monitors door status. All wiring and conduit by electrical contractor. Coordinate wiring and installation with Electrical Contractor and Security Contractor.

Set #05 - Corridor - Proximity Reader

Doors: 131, 133A

3	Butt Hinge	CB179 4.5" x 4.5" NRP	26D	ST
1	Exit Device	C MLR TS 2103 X 4903D SNB	630	PR
1	Rim Cylinder	12E-72 PATD	626	BE
1	Door Closer	QDC117 BF R	689	SH
1	Kick Plate	K0050 10" x 2" LDW B4E-Heavy CSK	630	TR
1	Proximity Reader	By Security Contractor		BY
1	Door Position Switch	MC4		DM
1	Power Supply	RPSMLR2BB		PR
1	Wiring Diagram	WIRING DIAGRAM FURNISHED BY HWDE. SUPPLIER	BY	
1	Power Transfer	EPT-12C		PR
1	Harness	WH-192P		ST
1	Harness	WH-6E		ST
1	Harness	WH-XXP (Length as Req'd)		ST
1	Seal	5025 C 84"		NA
1	Seal	5025 C 36"		NA

NOTE: Operation: Door normally closed and locked. Presenting valid credential to Proximity Reader retracts latch bolt of exit device allowing authorized entry. Monitor switch in exit device (TS Option) signals access control system for authorized exiting. Egress always allowed. Mechanical key override. Door position switch monitors door status. All wiring and conduit by electrical contractor. Coordinate wiring and installation with Electrical Contractor and Security Contractor.

Set #06 – Corridor

Doors: 132, 133

3	Butt Hinge	CB179 4.5" x 4.5"	26D	ST
1	Exit Device	2114 X 4914D SNB (2)	630	PR
1	Door Closer	QDC115 BF R	689	SH
1	Kick Plate	K0050 10" x 2" LDW B4E-Heavy CSK	630	TR
1	Wall Bumper	1270WV	630	TR
1	Gasketing	2525 C		NA

Set #07 - Bath Room

Doors: 125A

3	Butt Hinge	CB179 4.5" x 4.5"	26D	ST
1	Privacy Set	45H-0L14H VIN	626	BE
1	Mop Plate	KM050 6" x 1" LDW B4E-Heavy CSK	630	TR
1	Wall Bumper	1270WV	630	TR
1	Gasketing	2525 C		NA

Set #08 - Med Supply

Doors: 127

3	Butt Hinge	CB179 4.5" x 4.5"	26D	ST
1	Storeroom Lockset	45H-7D14H PATD	626	BE
1	Door Closer	QDC111 BF R Reg Arm x Inverted 8Q00469 Back Plate	689	SH
1	Kick Plate	K0050 10" x 2" LDW B4E-Heavy CSK	630	TR
1	Wall Bumper	1270WV	630	TR
3	Silencer	1229A	GREY	TR

Set #09 - Storage, Conf

Doors: 100B, 103A, 107, 112, 128

3	Butt Hinge	CB179 4.5" x 4.5"	26D	ST
1	Classroom Lockset	45H-7R14H PATD	626	BE
1	Wall Bumper	1270WV	630	TR
3	Silencer	1229A	GREY	TR

Set #10 – Office

Doors: 103, 105, 106, 109

3	Butt Hinge	CB179 4.5" x 4.5"	26D	ST
1	Office Lockset	45H-7AB14H PATD	626	BE
1	Wall Bumper	1270WV	630	TR
3	Silencer	1229A	GREY	TR

Set #11 - RPT Writing

Doors: 114

3	Butt Hinge	CB179 4.5" x 4.5"	26D	ST
1	Office Lockset	45H-7AB14H PATD	626	BE
1	Door Closer	QDC111 BF R Reg Arm x Inverted 8Q00469 Back Plate	689	SH
1	Kick Plate	K0050 10" x 2" LDW B4E-Heavy CSK	630	TR
1	Wall Bumper	1270WV	630	TR
3	Silencer	1229A	GREY	TR

Set #12 - Bunk Room

Doors: 115, 116, 117, 119, 121, 123

3	Butt Hinge	CB179 4.5" x 4.5"	26D	ST
1	Privacy Set	45H-0L14H VIN	626	BE
1	Door Closer	QDC111 BF R Reg Arm x Inverted 8Q00469 Back Plate	689	SH
1	Kick Plate	K0050 10" x 2" LDW B4E-Heavy CSK	630	TR
1	Wall Bumper	1270WV	630	TR
2	Seal	5025 C 84"		NA
1	Seal	5025 C 36"		NA
1	Auto Door Bottom	423 N 36"		NA

Set #13 – Officer

Doors: 125

3	Butt Hinge	CB179 4.5" x 4.5"	26D	ST
1	Office Lockset	45H-7AB14H PATD	626	BE
1	Door Closer	QDC111 BF R Reg Arm x Inverted 8Q00469 Back Plate	689	SH
1	Overhead Stop	1020 SL Series	US32D	AB
1	Kick Plate	K0050 10" x 2" LDW B4E-Heavy CSK	630	TR
1	Gasketing	2525 C		NA

NOTE: Install door closer back plate inverted to clear overhead stop.

Set #14 - Bath Room

Doors: 100D, 104, 118, 120, 122

3	Butt Hinge	CB179 4.5" x 4.5"	26D	ST
1	Privacy Set	45H-0L14H VIN	626	BE
1	Door Closer	QDC111 BF R Reg Arm x Inverted 8Q00469 Back Plate	689	SH
1	Kick Plate	K0050 10" x 2" LDW B4E-Heavy CSK	630	TR
1	Mop Plate	KM050 6" x 1" LDW B4E-Heavy CSK	630	TR
1	Wall Bumper	1270WV	630	TR
1	Gasketing	2525 C		NA

Set #15 – Laundry

Doors: 124

3	Butt Hinge	CB179 4.5" x 4.5"	26D	ST
1	Classroom Lockset	45H-7R14H PATD	626	BE
1	Door Closer	QDC111 BF R Reg Arm x Inverted 8Q00469 Back Plate	689	SH
1	Kick Plate	K0050 10" x 2" LDW B4E-Heavy CSK	630	TR
1	Wall Bumper	1270WV	630	TR
2	Seal	5025 C 84"		NA
1	Seal	5025 C 36"		NA
1	Auto Door Bottom	423 N 36"		NA

Set #16 – Tools

Doors: 100A

3	Butt Hinge	CB179 4.5" x 4.5"	26D	ST
1	Storeroom Lockset	45H-7D14H PATD	626	BE
1	Wall Bumper	1270WV	630	TR
3	Silencer	1229A	GREY	TR

Set #17 - Gear Storage

Doors: 100C

3	Butt Hinge	CB179 4.5" x 4.5" NRP	26D	ST
1	Classroom Lockset	45H-7R14H PATD	626	BE
1	Door Closer	QDC118 BF R	689	SH
1	Kick Plate	K0050 10" x 2" LDW B4E-Heavy CSK	630	TR
3	Silencer	1229A	GREY	TR

Set #18 - Hose Drying

Doors: 100E

6	Butt Hinge	CB179 4.5" x 4.5" NRP	26D	ST
1	Manual Flush Bolt	3917 Top Bolt	626	TR
1	Classroom Lockset	45H-7R14H PATD 7/8"LTC	625	BE
2	Wall Bumper	1270WV	630	TR
2	Silencer	1229A	GREY	TR

Set #19 – Storage

Doors: 102, 110

3	Butt Hinge	CB179 4.5" x 4.5" NRP	26D	ST
1	Classroom Lockset	45H-7R14H PATD	626	BE
1	Wall Bumper	1270WV	630	TR
3	Silencer	1229A	GREY	TR

Set #20 – IT

Doors: 107A

3	Butt Hinge	CB179 4.5" x 4.5"	26D	ST
1	Storeroom Lockset	45H-7D14H PATD	626	BE
1	Wall Bumper	1270WV	630	TR
1	Gasketing	2525 C		NA

Set #21 - Elec Room

Doors: 108

3	Butt Hinge	CB179 4.5" x 4.5" NRP	26D	ST
1	Exit Device	2103 X 4903D SNB (2)	630	PR
1	Rim Cylinder	12E-72 PATD	626	BE
1	Door Closer	QDC114 BF R	689	SH
1	Kick Plate	K0050 10" x 2" LDW B4E-Heavy CSK	630	TR
1	Gasketing	2525 C		NA

Set #22 - Storage, Janitor

Doors: 111A, 113

3	Butt Hinge	CB179 4.5" x 4.5" NRP	26D	ST
1	Classroom Lockset	45H-7R14H PATD	626	BE
1	Overhead Stop	9020 Series	US32D	AB
3	Silencer	1229A	GREY	TR

Set #23 - Living / Dining / Kitchen

Doors: 111

3	Butt Hinge	CB179 4.5" x 4.5"	26D	ST
1	Classroom Lockset	45H-7R14H PATD	626	BE
1	Door Closer	QDC111 BF R Reg Arm x Inverted 8Q00469 Back Plate	689	SH
1	Overhead Stop	1020 SL Series	US32D	AB
1	Kick Plate	K0050 10" x 2" LDW B4E-Heavy CSK	630	TR
1	Gasketing	2525 C		NA

NOTE: Install door closer back plate inverted to clear overhead stop.

Set #24 - Living / Dining / Kitchen

Doors: 132A

3	Butt Hinge	CB179 4.5" x 4.5" NRP	26D	ST
1	Classroom Lockset	45H-7R14H PATD	626	BE
1	Door Closer	QDC115 BF R	689	SH
1	Kick Plate	K0050 10" x 2" LDW B4E-Heavy CSK	630	TR
1	Wall Bumper	1270WV	630	TR
1	Gasketing	2525 C		NA

Set #25 - Exterior Mech Room

Doors: 129

3	Butt	CB199 5" x 4.5" NRP	630W	ST
1	Storeroom Lockset	45H-7D14H PATD WS	630	BE
1	Door Closer	QDC114 R	689	SH
1	Kick Plate	K0050 10" x 2" LDW B4E-Heavy CSK	630	TR
1	Door Position Switch	MC4		DM
1	Gasketing	127 NA @ Head & Jambs		NA
1	Door Sweep	C627 A		NA
1	Threshold	896 S 1/4-20 SSMS/EA	AL	NA

NOTE: All wiring and conduit by electrical contractor. Coordinate wiring and installation with Electrical Contractor and Security Contractor.

Set #26 - Turnout Gear

Doors: 129

3	Butt Hinge	CB168 5" X 4.5"	26D	ST
1	Classroom Lockset	45H-7R14H PATD	626	BE
1	Door Closer	QDC112 BF R	689	SH
1	Kick Plate	K0050 10" x 2" LDW B4E-Heavy CSK	630	TR
1	Wall Bumper	1270WV	630	TR
1	Gasketing	2525 C		NA

Set #27 - Patio

Doors: 131B

3	Butt	CB199 4.5" x 4.5" NRP	630W	ST
1	Classroom Lockset	45H-7R14H PATD WS	630	BE
1	Door Closer	QDC117 R	689	SH
1	Kick Plate	K0050 10" x 2" LDW B4E-Heavy CSK	630	TR
1	Door Position Switch	MC4		DM
1	Gasketing	127 NA @ Head & Jambs		NA
1	Door Sweep	C627 A		NA
1	Threshold	896 S 1/4-20 SSMS/EA	AL	NA

NOTE: All wiring and conduit by electrical contractor. Coordinate wiring and installation with Electrical Contractor and Security Contractor.

OPENING LIST:

Phase 1 Openings:

Opening	Hdw Set
100A	16
100B	09
100C	17
100D	14
100E	18
100F	04
100G	01
100H	01
100J	01
100K	04
100L	01
100M	01
100N	01
101	02
101A	03
102	19
103	10
103A	09
104	14
105	10
106	10
107	09
107A	20
108	21
109	10
110	19
111	23
111A	22
111B	04
112	09
113	22
114	11
115	12
116	12
117	12
118	14
119	12
120	14
121	12
122	14
123	14
124	15
125	13
125A	07
126	26
127	08
128	13
129	25
130A	08

131	09
131A	04
131B	27
132	06
132A	24
132B	04
133	06
133A	05

END OF SECTION 08 71 00

SECTION 08 80 00 - GLAZING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Insulating glass units.

B. Glazing units.

C. Laminated glass interlayers.

D. Glazing compounds.

1.02 REFERENCE STANDARDS

A. 16 CFR 1201 - Safety Standard for Architectural Glazing Materials Current Edition.

B. ANSI Z97.1 - American National Standard for Safety Glazing Materials Used in Buildings - Safety Performance Specifications and Methods of Test 2015 (Reaffirmed 2020).

C. ASTM C864 - Standard Specification for Dense Elastomeric Compression Seal Gaskets, Setting Blocks, and Spacers 2005 (Reapproved 2019).

D. ASTM C1036 - Standard Specification for Flat Glass 2021.

E. ASTM C1048 - Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass 2018.

F. ASTM C1172 - Standard Specification for Laminated Architectural Flat Glass 2019.

G. ASTM C1193 - Standard Guide for Use of Joint Sealants 2016.

H. ASTM C1376 - Standard Specification for Pyrolytic and Vacuum Deposition Coatings on Flat Glass 2021a.

I. ASTM E1300 - Standard Practice for Determining Load Resistance of Glass in Buildings 2016.

J. ASTM E2190 - Standard Specification for Insulating Glass Unit Performance and Evaluation 2019.

K. ASTM F1233 - Standard Test Method for Security Glazing Materials And Systems 2021.

L. GANA (SM) - GANA Sealant Manual 2008.

M. NFRC 100 - Procedure for Determining Fenestration Product U-factors 2020.

N. NFRC 200 - Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence 2020.

O. NFRC 300 - Test Method for Determining the Solar Optical Properties of Glazing Materials and Systems 2023.

1.03 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Convene a preinstallation meeting one week before starting work of this section; require attendance by each of the affected installers.

1.04 SUBMITTALS

A. Product Data on Insulating Glass Unit and Glazing Unit Glazing Types: Provide structural, physical and environmental characteristics, size limitations, special handling and installation requirements.

B. Product Data on Glazing Compounds and Accessories: Provide chemical, functional, and environmental characteristics, limitations, special application requirements, and identify available colors.

C. Certificate: Certify that products of this section meet or exceed specified requirements.

D. Manufacturer's qualification statement.

E. Installer's qualification statement.

F. Warranty Documentation: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.

B. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years documented experience.

C. Testing Agency Qualifications: Independent firm specializing in performing testing and inspections of the type specified in this section.

1.06 WARRANTY

A. Insulating Glass Units: Provide a ten (10) year manufacturer warranty to include coverage for seal failure, interpane dusting or misting, including providing products to replace failed units.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Float Glass Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
   1. Cardinal Glass Industries: www.cardinalcorp.com/#sle.
   2. Guardian Glass, LLC: www.guardianglass.com/#sle.
   3. Pilkington North America Inc: www.pilkington.com/na/#sle.
   4. Vitro Architectural Glass (formerly PPG Glass): www.vitroglazings.com/#sle.

B. Laminated Glass Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
   1. Cardinal Glass Industries: www.cardinalcorp.com/#sle.
   2. Thompson I.G., LLC: www.thompsonig.com/#sle.
   3. Viracon, Architectural Glass segment of Apogee Enterprises, Inc: www.viracon.com/#sle.

2.02 PERFORMANCE REQUIREMENTS - EXTERIOR GLAZING ASSEMBLIES

A. Provide type and thickness of exterior glazing assemblies to support assembly dead loads, and to withstand live loads caused by positive and negative wind pressure acting normal to plane of glass.
   1. Comply with ASTM E1300 for design load resistance of glass type, thickness, dimensions, and maximum lateral deflection of supported glass.
   2. Provide glass edge support system sufficiently stiff to limit the lateral deflection of supported glass edges to less than 1/175 of their lengths under specified design load.
   3. Glass thicknesses listed are minimum.

B. Weather-Resistive Barrier Seals: Provide completed assemblies that maintain continuity of building enclosure water-resistive barrier, vapor retarder, and/or air

barrier.
1. In conjunction with weather barrier related materials described in other sections, as follows:

C. Thermal and Optical Performance: Provide exterior glazing products with performance properties as indicated. Performance properties are in accordance with manufacturer's published data as determined with the following procedures and/or test methods:
1. Center of Glass U-Value: Comply with NFRC 100 using Lawrence Berkeley National Laboratory (LBNL) WINDOW 6.3 computer program.
2. Center of Glass Solar Heat Gain Coefficient (SHGC): Comply with NFRC 200 using Lawrence Berkeley National Laboratory (LBNL) WINDOW 6.3 computer program.
3. Solar Optical Properties: Comply with NFRC 300 test method.

2.03 GLASS MATERIALS

A. Float Glass: Provide float glass based glazing unless otherwise indicated.
1. Annealed Type: ASTM C1036, Type I - Transparent Flat, Class 1 - Clear, Quality - Q3.
2. Kind FT - Fully Tempered Type: Complies with ASTM C1048.
3. Fully Tempered Safety Glass: Complies with ANSI Z97.1 or 16 CFR 1201 criteria for safety glazing used in hazardous locations.

B. Laminated Glass: Float glass laminated in accordance with ASTM C1172.
1. Laminated Safety Glass: Complies with ANSI Z97.1 - Class A or 16 CFR 1201 - Category II impact test requirements.
2. Polyvinyl Butyral (PVB) Interlayer: 0.090 inch thick, minimum.

2.04 INSULATING GLASS UNITS

A. Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
1. Cardinal Glass Industries: www.cardinalcorp.com/#sle.
2. Guardian Glass, LLC: www.guardianglass.com/#sle.
3. Pilkington North America Inc: www.pilkington.com/na/#sle.
4. Viracon, Apogee Enterprises, Inc: www.viracon.com/#sle.
5. Vitro Architectural Glass (formerly PPG Glass): www.vitroglazings.com/#sle.

B. Fabricator: Certified by glass manufacturer for type of glass, coating, and treatment involved and capable of providing specified warranty.

C. Insulating Glass Units: Types as indicated.
1. Durability: Certified by an independent testing agency to comply with ASTM E2190.
2. Coated Glass: Comply with requirements of ASTM C1376 for pyrolytic (hard-coat) or magnetic sputter vapor deposition (soft-coat) type coatings on flat glass; coated vision glass, Kind CV; coated overhead glass, Kind CO; or coated spandrel glass, Kind CS.
3. Spacer Color: Black.
4. Edge Seal:
a. Dual-Sealed System: Provide polyisobutylene sealant as primary seal applied between spacer and glass panes, and silicone, polysulfide, or polyurethane sealant as secondary seal applied around perimeter.
b. Color: Black.
5. Purge interpane space with dry air, hermetically sealed.

D. Type IG-1 - Insulating Glass Units: Vision glass, double glazed.
1. Applications: Exterior glazing unless otherwise indicated.
2. Space between lites filled with air/argon.

3. Outboard Lite: Fully tempered float glass, 1/4 inch thick, minimum.
    a. Tint: From Manufacturer's Full Range of Colors.
    b. Coating: Low-E (solar control type), on #2 surface.
4. Inboard Lite: Laminated glass, 9/16 inch thick, minimum. Each ply 1/4" minimum with .090-inch thick Level E inner layer.
    a. Tint: Gray.
5. Total Thickness: 1-5/16 inch.
6. Thermal Transmittance (U-Value), Winter - Center of Glass: 0.29/0.25, minimum.
7. Visible Light Transmittance (VLT): 35 percent, minimum.
8. Shading Coefficient: 0.29, nominal.
9. Solar Heat Gain Coefficient (SHGC): 0.25, minimum.
10. Visible Light Reflectance, Solar: 14 percent, minimum.

2.05 GLAZING UNITS

A. Type GL-1 - Monolithic Interior Vision Glazing:
    1. Applications: Interior glazing unless otherwise indicated.
    2. Glass Type: Fully tempered float glass.
    3. Tint: Clear.
    4. Thickness: 1/4 inch, nominal.

B. Type GL-2 - Security Glazing: Laminated glass, 2-Ply.
    1. Applications: Locations as indicated on drawings.
    2. Tint: Clear at interior, Gray at exterior to match other exterior glazing.
    3. Thickness: 9/16 inch.
    4. Outer Lite: Heat-strengthened glass.
    5. Interlayer: Polyvinyl butyral (PVB), thickness as required to meet performance criteria.
    6. Inside Lite: Heat-strengthened glass.
    7. Performance Criteria:
        a. Bullet Resistance: Pass ASTM F1233 tests in compliance with ballistic criteria class and weapon description indicated; Class HG4 - Handgun-High.

2.06 ACCESSORIES

A. Setting Blocks: Silicone, with 80 to 90 Shore A durometer hardness; ASTM C864 Option II. Length of 0.1 inch for each square foot of glazing or minimum 4 inch by width of glazing rabbet space minus 1/16 inch by height to suit glazing method and pane weight and area.

B. Spacer Shims: Neoprene, 50 to 60 Shore A durometer hardness; ASTM C864 Option II. Continuous by one half the height of the glazing stop by thickness to suit application, self adhesive on one face.

C. Glazing Tape, Back Bedding Mastic Type: Preformed, butyl-based, 100 percent solids compound with integral resilient spacer rod applicable to application indicated; 5 to 30 cured Shore A durometer hardness; coiled on release paper; black color.
    1. Width: As required for application.
    2. Thickness: As required for application.
    3. Spacer Rod Diameter: As required for application.

PART 3 EXECUTION

3.01 VERIFICATION OF CONDITIONS

A. Verify that openings for glazing are correctly sized and within tolerances, including those for size, squareness, and offsets at corners.

B. Verify that the minimum required face and edge clearances are being provided.

C. Verify that surfaces of glazing channels or recesses are clean, free of obstructions that may impede moisture movement, weeps are clear, and support framing is ready to receive glazing system.

D. Verify that sealing between joints of glass framing members has been completed effectively.

E. Proceed with glazing system installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Clean contact surfaces with appropriate solvent and wipe dry within maximum of 24 hours before glazing. Remove coatings that are not tightly bonded to substrates.

B. Seal porous glazing channels or recesses with substrate compatible primer or sealer.

C. Prime surfaces scheduled to receive sealant where required for proper sealant adhesion.

3.03 INSTALLATION, GENERAL

A. Install glazing in compliance with written instructions of glass, gaskets, and other glazing material manufacturers, unless more stringent requirements are indicated, including those in glazing referenced standards.

B. Install glazing sealants in accordance with ASTM C1193, GANA (SM), and manufacturer's instructions.

C. Do not exceed edge pressures around perimeter of glass lites as stipulated by glass manufacturer.

D. Set glass lites of system with uniform pattern, draw, bow, and similar characteristics.

E. Set glass lites in proper orientation so that coatings face exterior or interior as indicated.

F. Prevent glass from contact with any contaminating substances that may be the result of construction operations such as, and not limited to the following; weld splatter, fire-safing, plastering, mortar droppings, etc.

3.04 INSTALLATION - DRY GLAZING METHOD (TAPE AND TAPE)

A. Application - Interior Glazed: Set glazing infills from the interior of the building.

B. Cut glazing tape to length and set against permanent stops, projecting 1/16 inch above sight line.

C. Place setting blocks at 1/4 points with edge block no more than 6 inch from corners.

D. Rest glazing on setting blocks and push against tape for full contact at perimeter of pane or unit.

E. Place glazing tape on free perimeter of glazing in same manner described above.

F. Install removable stop without displacement of tape. Exert pressure on tape for full continuous contact.

G. Carefully trim protruding tape with knife.

3.05 CLEANING

A. Remove excess glazing materials from finish surfaces immediately after application using solvents or cleaners recommended by manufacturers.

B. Remove nonpermanent labels immediately after glazing installation is complete.

C. Clean glass and adjacent surfaces after sealants are fully cured.

D. Clean glass on both exposed surfaces not more than 4 days prior to Date of Substantial Completion in accordance with glass manufacturer's written

recommendations.

3.06 PROTECTION

A. After installation, mark pane with an 'X' by using removable plastic tape or paste; do not mark heat absorbing or reflective glass units.

B. Remove and replace glass that is damaged during construction period prior to Date of Substantial Completion.

END OF SECTION 08 80 00

SECTION 08 80 00 - GLAZING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Insulating glass units.

B. Glazing units.

C. Laminated glass interlayers.

D. Glazing compounds.

1.02 REFERENCE STANDARDS

A. 16 CFR 1201 - Safety Standard for Architectural Glazing Materials Current Edition.

B. ANSI Z97.1 - American National Standard for Safety Glazing Materials Used in Buildings - Safety Performance Specifications and Methods of Test 2015 (Reaffirmed 2020).

C. ASTM C864 - Standard Specification for Dense Elastomeric Compression Seal Gaskets, Setting Blocks, and Spacers 2005 (Reapproved 2019).

D. ASTM C1036 - Standard Specification for Flat Glass 2021.

E. ASTM C1048 - Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass 2018.

F. ASTM C1172 - Standard Specification for Laminated Architectural Flat Glass 2019.

G. ASTM C1193 - Standard Guide for Use of Joint Sealants 2016.

H. ASTM C1376 - Standard Specification for Pyrolytic and Vacuum Deposition Coatings on Flat Glass 2021a.

I. ASTM E1300 - Standard Practice for Determining Load Resistance of Glass in Buildings 2016.

J. ASTM E2190 - Standard Specification for Insulating Glass Unit Performance and Evaluation 2019.

K. ASTM F1233 - Standard Test Method for Security Glazing Materials And Systems 2021.

L. GANA (SM) - GANA Sealant Manual 2008.

M. NFRC 100 - Procedure for Determining Fenestration Product U-factors 2020.

N. NFRC 200 - Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence 2020.

O. NFRC 300 - Test Method for Determining the Solar Optical Properties of Glazing Materials and Systems 2023.

1.03 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Convene a preinstallation meeting one week before starting work of this section; require attendance by each of the affected installers.

1.04 SUBMITTALS

A. Product Data on Insulating Glass Unit and Glazing Unit Glazing Types: Provide structural, physical and environmental characteristics, size limitations, special handling and installation requirements.

B. Product Data on Glazing Compounds and Accessories: Provide chemical, functional, and environmental characteristics, limitations, special application requirements, and identify available colors.

C. Certificate: Certify that products of this section meet or exceed specified requirements.

D. Manufacturer's qualification statement.

E. Installer's qualification statement.

F. Warranty Documentation: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.

B. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years documented experience.

C. Testing Agency Qualifications: Independent firm specializing in performing testing and inspections of the type specified in this section.

1.06 WARRANTY

A. Insulating Glass Units: Provide a ten (10) year manufacturer warranty to include coverage for seal failure, interpane dusting or misting, including providing products to replace failed units.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Float Glass Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
   1. Cardinal Glass Industries: www.cardinalcorp.com/#sle.
   2. Guardian Glass, LLC: www.guardianglass.com/#sle.
   3. Pilkington North America Inc: www.pilkington.com/na/#sle.
   4. Vitro Architectural Glass (formerly PPG Glass): www.vitroglazings.com/#sle.

B. Laminated Glass Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
   1. Cardinal Glass Industries: www.cardinalcorp.com/#sle.
   2. Thompson I.G., LLC: www.thompsonig.com/#sle.
   3. Viracon, Architectural Glass segment of Apogee Enterprises, Inc: www.viracon.com/#sle.

2.02 PERFORMANCE REQUIREMENTS - EXTERIOR GLAZING ASSEMBLIES

A. Provide type and thickness of exterior glazing assemblies to support assembly dead loads, and to withstand live loads caused by positive and negative wind pressure acting normal to plane of glass.
   1. Comply with ASTM E1300 for design load resistance of glass type, thickness, dimensions, and maximum lateral deflection of supported glass.
   2. Provide glass edge support system sufficiently stiff to limit the lateral deflection of supported glass edges to less than 1/175 of their lengths under specified design load.
   3. Glass thicknesses listed are minimum.

B. Weather-Resistive Barrier Seals: Provide completed assemblies that maintain continuity of building enclosure water-resistive barrier, vapor retarder, and/or air

barrier.
1. In conjunction with weather barrier related materials described in other sections, as follows:

C. Thermal and Optical Performance: Provide exterior glazing products with performance properties as indicated. Performance properties are in accordance with manufacturer's published data as determined with the following procedures and/or test methods:
1. Center of Glass U-Value: Comply with NFRC 100 using Lawrence Berkeley National Laboratory (LBNL) WINDOW 6.3 computer program.
2. Center of Glass Solar Heat Gain Coefficient (SHGC): Comply with NFRC 200 using Lawrence Berkeley National Laboratory (LBNL) WINDOW 6.3 computer program.
3. Solar Optical Properties: Comply with NFRC 300 test method.

2.03 GLASS MATERIALS

A. Float Glass: Provide float glass based glazing unless otherwise indicated.
1. Annealed Type: ASTM C1036, Type I - Transparent Flat, Class 1 - Clear, Quality - Q3.
2. Kind FT - Fully Tempered Type: Complies with ASTM C1048.
3. Fully Tempered Safety Glass: Complies with ANSI Z97.1 or 16 CFR 1201 criteria for safety glazing used in hazardous locations.

B. Laminated Glass: Float glass laminated in accordance with ASTM C1172.
1. Laminated Safety Glass: Complies with ANSI Z97.1 - Class A or 16 CFR 1201 - Category II impact test requirements.
2. Polyvinyl Butyral (PVB) Interlayer: 0.090 inch thick, minimum.

2.04 INSULATING GLASS UNITS

A. Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
1. Cardinal Glass Industries: www.cardinalcorp.com/#sle.
2. Guardian Glass, LLC: www.guardianglass.com/#sle.
3. Pilkington North America Inc: www.pilkington.com/na/#sle.
4. Viracon, Apogee Enterprises, Inc: www.viracon.com/#sle.
5. Vitro Architectural Glass (formerly PPG Glass): www.vitroglazings.com/#sle.

B. Fabricator: Certified by glass manufacturer for type of glass, coating, and treatment involved and capable of providing specified warranty.

C. Insulating Glass Units: Types as indicated.
1. Durability: Certified by an independent testing agency to comply with ASTM E2190.
2. Coated Glass: Comply with requirements of ASTM C1376 for pyrolytic (hard-coat) or magnetic sputter vapor deposition (soft-coat) type coatings on flat glass; coated vision glass, Kind CV; coated overhead glass, Kind CO; or coated spandrel glass, Kind CS.
3. Spacer Color: Black.
4. Edge Seal:
a. Dual-Sealed System: Provide polyisobutylene sealant as primary seal applied between spacer and glass panes, and silicone, polysulfide, or polyurethane sealant as secondary seal applied around perimeter.
b. Color: Black.
5. Purge interpane space with dry air, hermetically sealed.

D. Type IG-1 - Insulating Glass Units: Vision glass, double glazed.
1. Applications: Exterior glazing unless otherwise indicated.
2. Space between lites filled with air/argon.

3. Outboard Lite: Fully tempered float glass, 1/4 inch thick, minimum.
    a. Tint: From Manufacturer's Full Range of Colors.
    b. Coating: Low-E (solar control type), on #2 surface.
4. Inboard Lite: Laminated glass, 9/16 inch thick, minimum. Each ply 1/4" minimum with .090-inch thick Level E inner layer.
    a. Tint: Gray.
5. Total Thickness: 1-5/16 inch.
6. Thermal Transmittance (U-Value), Winter - Center of Glass: 0.29/0.25, minimum.
7. Visible Light Transmittance (VLT): 35 percent, minimum.
8. Shading Coefficient: 0.29, nominal.
9. Solar Heat Gain Coefficient (SHGC): 0.25, minimum.
10. Visible Light Reflectance, Solar: 14 percent, minimum.

2.05 GLAZING UNITS

A. Type GL-1 - Monolithic Interior Vision Glazing:
    1. Applications: Interior glazing unless otherwise indicated.
    2. Glass Type: Fully tempered float glass.
    3. Tint: Clear.
    4. Thickness: 1/4 inch, nominal.

B. Type GL-2 - Security Glazing: Laminated glass, 2-Ply.
    1. Applications: Locations as indicated on drawings.
    2. Tint: Clear at interior, Gray at exterior to match other exterior glazing.
    3. Thickness: 9/16 inch.
    4. Outer Lite: Heat-strengthened glass.
    5. Interlayer: Polyvinyl butyral (PVB), thickness as required to meet performance criteria.
    6. Inside Lite: Heat-strengthened glass.
    7. Performance Criteria:
        a. Bullet Resistance: Pass ASTM F1233 tests in compliance with ballistic criteria class and weapon description indicated; Class HG4 - Handgun-High.

2.06 ACCESSORIES

A. Setting Blocks: Silicone, with 80 to 90 Shore A durometer hardness; ASTM C864 Option II. Length of 0.1 inch for each square foot of glazing or minimum 4 inch by width of glazing rabbet space minus 1/16 inch by height to suit glazing method and pane weight and area.

B. Spacer Shims: Neoprene, 50 to 60 Shore A durometer hardness; ASTM C864 Option II. Continuous by one half the height of the glazing stop by thickness to suit application, self adhesive on one face.

C. Glazing Tape, Back Bedding Mastic Type: Preformed, butyl-based, 100 percent solids compound with integral resilient spacer rod applicable to application indicated; 5 to 30 cured Shore A durometer hardness; coiled on release paper; black color.
    1. Width: As required for application.
    2. Thickness: As required for application.
    3. Spacer Rod Diameter: As required for application.

PART 3 EXECUTION

3.01 VERIFICATION OF CONDITIONS

A. Verify that openings for glazing are correctly sized and within tolerances, including those for size, squareness, and offsets at corners.

B. Verify that the minimum required face and edge clearances are being provided.

C. Verify that surfaces of glazing channels or recesses are clean, free of obstructions that may impede moisture movement, weeps are clear, and support framing is ready to receive glazing system.

D. Verify that sealing between joints of glass framing members has been completed effectively.

E. Proceed with glazing system installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Clean contact surfaces with appropriate solvent and wipe dry within maximum of 24 hours before glazing. Remove coatings that are not tightly bonded to substrates.

B. Seal porous glazing channels or recesses with substrate compatible primer or sealer.

C. Prime surfaces scheduled to receive sealant where required for proper sealant adhesion.

3.03 INSTALLATION, GENERAL

A. Install glazing in compliance with written instructions of glass, gaskets, and other glazing material manufacturers, unless more stringent requirements are indicated, including those in glazing referenced standards.

B. Install glazing sealants in accordance with ASTM C1193, GANA (SM), and manufacturer's instructions.

C. Do not exceed edge pressures around perimeter of glass lites as stipulated by glass manufacturer.

D. Set glass lites of system with uniform pattern, draw, bow, and similar characteristics.

E. Set glass lites in proper orientation so that coatings face exterior or interior as indicated.

F. Prevent glass from contact with any contaminating substances that may be the result of construction operations such as, and not limited to the following; weld splatter, fire-safing, plastering, mortar droppings, etc.

3.04 INSTALLATION - DRY GLAZING METHOD (TAPE AND TAPE)

A. Application - Interior Glazed: Set glazing infills from the interior of the building.

B. Cut glazing tape to length and set against permanent stops, projecting 1/16 inch above sight line.

C. Place setting blocks at 1/4 points with edge block no more than 6 inch from corners.

D. Rest glazing on setting blocks and push against tape for full contact at perimeter of pane or unit.

E. Place glazing tape on free perimeter of glazing in same manner described above.

F. Install removable stop without displacement of tape. Exert pressure on tape for full continuous contact.

G. Carefully trim protruding tape with knife.

3.05 CLEANING

A. Remove excess glazing materials from finish surfaces immediately after application using solvents or cleaners recommended by manufacturers.

B. Remove nonpermanent labels immediately after glazing installation is complete.

C. Clean glass and adjacent surfaces after sealants are fully cured.

D. Clean glass on both exposed surfaces not more than 4 days prior to Date of Substantial Completion in accordance with glass manufacturer's written

recommendations.

3.06 PROTECTION

A. After installation, mark pane with an 'X' by using removable plastic tape or paste; do not mark heat absorbing or reflective glass units.

B. Remove and replace glass that is damaged during construction period prior to Date of Substantial Completion.

END OF SECTION 08 80 00

SECTION 09 21 16 - GYPSUM BOARD ASSEMBLIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Gypsum sheathing.

B. Cementitious backing board.

C. Gypsum wallboard.

D. Joint treatment and accessories.

1.02 RELATED REQUIREMENTS

A. Section 06 10 00 - Rough Carpentry: Wood blocking product and execution requirements.

B. Section 07 21 00 - Thermal Insulation: Acoustic insulation.

C. Section 07 84 00 - Firestopping: Top-of-wall assemblies at fire-resistance-rated walls.

D. Section 07 92 00 - Joint Sealants: Sealing acoustical gaps in construction other than gypsum board or plaster work.

E. Section 09 22 16 - Non-Structural Metal Framing.

1.03 REFERENCE STANDARDS

A. ANSI A108.11 - American National Standard Specifications for Interior Installation of Cementitious Backer Units 2018.

B. ANSI A118.9 - American National Standard Specifications for Test Methods and Specifications for Cementitious Backer Units 2019.

C. ASTM C475/C475M - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board 2017 (Reapproved 2022).

D. ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board 2020.

E. ASTM C954 - Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs from 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness 2022.

F. ASTM C1002 - Standard Specification for Steel Self-Piercing Tapping Screws for Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs 2022.

G. ASTM C1047 - Standard Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base 2019.

H. ASTM C1177/C1177M - Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing 2017.

I. ASTM C1280 - Standard Specification for Application of Exterior Gypsum Panel Products for Use as Sheathing 2018.

J. ASTM C1325 - Standard Specification for Fiber-Mat Reinforced Cementitious Backer Units 2022.

K. ASTM C1396/C1396M - Standard Specification for Gypsum Board 2017.

L. ASTM D3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber 2021.

M. GA-216 - Application and Finishing of Gypsum Panel Products 2021.

N. UL 2079 - Standard for Tests for Fire Resistance of Building Joint Systems Current Edition, Including All Revisions.

1.04 SUBMITTALS

A. Product Data: Provide data on gypsum board, accessories, joint finishing system, and cement-based board.

PART 2 PRODUCTS

2.01 GYPSUM BOARD ASSEMBLIES

A. Provide completed assemblies complying with ASTM C840 and GA-216.

2.02 BOARD MATERIALS

A. Manufacturers - Gypsum-Based Board: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
   1. American Gypsum Company: www.americangypsum.com/#sle.
   2. CertainTeed Corporation: www.certainteed.com/#sle.
   3. Georgia-Pacific Gypsum: www.gpgypsum.com/#sle.
   4. National Gypsum Company: www.nationalgypsum.com/#sle.
   5. USG Corporation: www.usg.com/#sle.

B. Gypsum Wallboard: Paper-faced gypsum panels as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
   1. Application: Use for vertical surfaces and ceilings, unless otherwise indicated.
   2. Thickness:
      a. Vertical Surfaces: 5/8 inch.
      b. Ceilings: 5/8 inch.

C. Impact Resistant Wallboard:
   1. Application: High-traffic areas indicated.
   2. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
   3. Paper-Faced Type: Gypsum wallboard, as defined in ASTM C1396/C1396M.
   4. Type: Fire-resistance-rated Type X, UL or WH listed.
   5. Thickness: 5/8 inch.
   6. Edges: Tapered.
   7. Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
      a. American Gypsum Company; M-Bloc IR Type X: www.americangypsum.com/#sle.
      b. CertainTeed Corporation; Extreme Impact Resistant Drywall with M2Tech: www.certainteed.com/#sle.
      c. Gold Bond Building Products, LLC provided by National Gypsum Company; Gold Bond XP Hi-Impact Gypsum Board: www.goldbondbuilding.com/#sle.
      d. USG Corporation; Sheetrock Brand Mold Tough VHI Firecode X Panels 5/8 in. (15.9 mm): www.usg.com/#sle.

D. Backing Board For Wet Areas: One of the following products:
   1. Application: Surfaces behind tile in wet areas including tub and shower surrounds and shower ceilings.
   2. Application: Horizontal surfaces behind tile in wet areas including countertops.
   3. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.

4. ANSI Cement-Based Board: Non-gypsum-based; aggregated Portland cement panels with glass fiber mesh embedded in front and back surfaces complying with ANSI A118.9 or ASTM C1325.
    a. Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
        1) Custom Building Products; www.custombuildingproducts.com/#sle.
        2) National Gypsum Company; www.nationalgypsum.com/#sle.

E. Ceiling Board: Special sag resistant gypsum ceiling board as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
1. Application: Ceilings, unless otherwise indicated.
2. Thickness: 5/8 inch.
3. Edges: Tapered.
4. Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
    a. CertainTeed Corporation; www.certainteed.com/#sle.
    b. Georgia-Pacific Gypsum; www.gpgypsum.com/#sle.
    c. USG Corporation; www.usg.com/#sle.

F. Exterior Sheathing Board: Sizes to minimize joints in place; ends square cut.
1. Application: Exterior sheathing, unless otherwise indicated.
2. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
3. Glass Mat Faced Sheathing: Glass mat faced gypsum substrate as defined in ASTM C1177/C1177M.
4. Core Type: Regular.
5. Regular Board Thickness: 5/8 inch.
6. Edges: Square.
7. Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
    a. American Gypsum Company; M-Glass Exterior Sheathing Type X: www.americangypsum.com/#sle.
    b. CertainTeed Corporation; GlasRoc Type X Exterior Sheathing: www.certainteed.com/#sle.
    c. Georgia-Pacific Gypsum; DensGlass Fireguard Sheathing: www.gpgypsum.com/#sle.
    d. Gold Bond Building Products, LLC provided by National Gypsum Company; Gold Bond eXP Fire-Shield Sheathing: www.goldbondbuilding.com/#sle.
    e. USG Corporation; Securock Brand UltraLight Glass-Mat Sheathing Firecode X 5/8 in. (15.9 mm): www.usg.com/#sle.

2.03 GYPSUM BOARD ACCESSORIES

A. Acoustic Insulation: See Section 07 21 00.

B. Acoustic Sealant: Acrylic emulsion latex or water-based elastomeric sealant; do not use solvent-based non-curing butyl sealant.

C. Water-Resistive Barrier: See Section 07 25 00.

D. Beads, Joint Accessories, and Other Trim: ASTM C1047, rigid plastic, galvanized steel, or rolled zinc, unless noted otherwise.
1. Corner Beads: Low profile, for 90 degree outside corners.
    a. Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
        1) CertainTeed Corporatio: www.certainteed.com/#sle.

2) ClarkDietrich: www.clarkdietrich.com/#sle.
3) Phillips Manufacturing Co: www.phillipsmfg.com/#sle.
4) Trim-Tex, Inc: www.trim-tex.com/#sle.

2. L-Trim: Sized to fit 5/8 inch thick gypsum wallboard.
3. Expansion Joints:
   a. Fire-Resistance Rated: 1 hour when joint system tested in accordance with UL 2079.
   b. Type: V-shaped metal with factory-installed protective tape.
   c. Type: Accordian profile with factory-installed protective tape.

E. Joint Materials: ASTM C475/C475M and as recommended by gypsum board manufacturer for project conditions.
   1. Paper Tape: 2 inch wide, creased paper tape for joints and corners, except as otherwise indicated.
   2. Joint Compound: Drying type, vinyl-based, field-mixed.
   3. Joint Compound: Setting type, field-mixed.

F. Screws for Fastening of Gypsum Panel Products to Cold-Formed Steel Studs Less than 0.033 inches in Thickness and Wood Members: ASTM C1002; self-piercing tapping screws, corrosion-resistant.

G. Screws for Fastening of Gypsum Panel Products to Steel Members from 0.033 to 0.112 inch in Thickness: ASTM C954; steel drill screws, corrosion-resistant.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that project conditions are appropriate for work of this section to commence.

3.02 ACOUSTIC ACCESSORIES INSTALLATION

A. Acoustic Insulation: Place tightly within spaces, around cut openings, behind and around electrical and mechanical items within partitions, and tight to items passing through partitions.

B. Acoustic Sealant: Install in accordance with manufacturer's instructions.

3.03 BOARD INSTALLATION

A. Comply with ASTM C840, GA-216, and manufacturer's instructions. Install to minimize butt end joints, especially in highly visible locations.

B. Single-Layer Nonrated: Install gypsum board in most economical direction, with ends and edges occurring over firm bearing.
   1. Exception: Tapered edges to receive joint treatment at right angles to framing.

C. Double-Layer, Nonrated: Use gypsum board for first layer, placed parallel to framing or furring members, with ends and edges occurring over firm bearing. Place second layer perpendicular to framing or furring members. Offset joints of second layer from joints of first layer.

D. Fire-Resistance-Rated Construction: Install gypsum board in strict compliance with requirements of assembly listing.

E. Exterior Sheathing: Comply with ASTM C1280. Install sheathing vertically, with edges butted tight and ends occurring over firm bearing.
   1. Paper-Faced Sheathing: Immediately after installation, protect from weather by application of water-resistive barrier.

F. Cementitious Backing Board: Install over steel framing members and plywood substrate where indicated, in accordance with ANSI A108.11 and manufacturer's instructions.

G. Installation on Metal Framing: Use screws for attachment of gypsum board except face layer of nonrated double-layer assemblies, which may be installed by means of adhesive lamination.

3.04 INSTALLATION OF TRIM AND ACCESSORIES

A. Control Joints: Place control joints consistent with lines of building spaces and in accordance with ASTM C840 and specific locations approved by Architect for visual effect.

B. Corner Beads: Install at external corners, using longest practical lengths.

C. Edge Trim: Install at locations where gypsum board abuts dissimilar materials.

3.05 JOINT TREATMENT

A. Paper Faced Gypsum Board: Use paper joint tape, embed with drying type joint compound and finish with drying type joint compound.

B. Finish gypsum board in accordance with levels defined in ASTM C840, as follows:
   1. Level 5: Walls and ceilings to receive semi-gloss or gloss paint finish and other areas specifically indicated.
   2. Level 4: Walls and ceilings to receive paint finish or wall coverings, unless otherwise indicated.
   3. Level 1: Fire-resistance-rated wall areas above finished ceilings, whether or not accessible in the completed construction.

C. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
   1. Feather coats of joint compound so that camber is maximum 1/32 inch.

D. Where Level 5 finish is indicated, spray apply high build drywall surfacer over entire surface after joints have been properly treated; achieve a flat and tool mark-free finish.

3.06 TOLERANCES

A. Maximum Variation of Finished Gypsum Board Surface from True Flatness: 1/8 inch in 10 feet in any direction.

END OF SECTION 09 21 16

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SECTION 09 22 16 - NON-STRUCTURAL METAL FRAMING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Metal partition, ceiling, and soffit framing.

B. Framing accessories.

1.02 RELATED REQUIREMENTS

A. Section 06 10 00 - Rough Carpentry: Wood blocking within stud framing.

B. Section 09 21 16 - Gypsum Board Assemblies: Metal studs for gypsum board partition framing.

1.03 REFERENCE STANDARDS

A. AISI S220 - North American Standard for Cold-Formed Steel Nonstructural Framing 2020.

B. ASTM A36/A36M - Standard Specification for Carbon Structural Steel 2019.

C. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process 2023.

D. ASTM A1003/A1003M - Standard Specification for Steel Sheet, Carbon, Metallic- and Nonmetallic-Coated for Cold-Formed Framing Members 2015.

E. ASTM C754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products 2020.

F. ASTM C1002 - Standard Specification for Steel Self-Piercing Tapping Screws for Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs 2022.

1.04 SUBMITTALS

A. Product Data: Provide data describing framing member materials and finish, product criteria, load charts, and limitations.

B. Manufacturer's Installation Instructions: Indicate special procedures and perimeter conditions requiring special attention.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Metal Framing, Connectors, and Accessories: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. CEMCO: www.cemcosteel.com/#sle.
2. ClarkDietrich: www.clarkdietrich.com/#sle.
3. Jaimes Industries: www.jaimesind.com/#sle.
4. Marino: www.marinoware.com/#sle.
5. R-stud, LLC: www.rstud.com/#sle.
6. SCAFCO Corporation: www.scafco.com/#sle.
7. Simpson Strong Tie: www.strongtie.com/#sle.
8. Steel Construction Systems: www.steelconsystems.com/#sle.
9. Super Stud Building Products, Inc: www.buysuperstud.com/#sle.
10. The Steel Network, Inc: www.SteelNetwork.com/#sle.

2.02 FRAMING MATERIALS

A. Non-Loadbearing Framing System Components: AISI S220; sheet steel, of size and properties necessary for the spacing indicated, with maximum deflection of wall framing of L/240 at 5 psf.
   1. Studs: C-shaped with flat faces.
   2. Paired Studs for Sound-Rated Assemblies: Engineered single-piece assemblies comprised of paired studs coupled by sound isolators, designed to replace conventional side-by-side, parallel, double-wall partition framing.
      a. Widths: As indicated on drawings.
   3. Runners: U-shaped, sized to match studs.
   4. Ceiling Channels: C-shaped.
   5. Furring: Hat-shaped sections, minimum depth of 7/8 inch.
   6. Resilient Furring Channels: Single or double leg configuration; 1/2 inch channel depth.
   7. Resilient Sound Isolation Clips: Steel resilient clips with molded rubber isolators, attach to framing; improve noise isolation for areas between gypsum board assemblies and adjacent sources of noise.

B. Partition Head to Structure Connections: Provide track fastened to structure with legs of sufficient length to accommodate deflection, for friction fit of studs cut short and braced with continuous bridging on both sides.

C. Non-Loadbearing Framing Accessories:
   1. Ceiling Hangers: Type and size as specified in ASTM C754 for spacing required.
   2. Partial Height Wall Framing Support: Provides stud reinforcement and anchored connection to floor.
      a. Materials: ASTM A36/A36M formed sheet steel support member with factory-welded ASTM A1003/A1003M steel plate base.
   3. Bracing and Bridging: ASTM A653/A653M G90 galvanized steel; for lateral bracing of wall studs with slots for engaging on-module studs.
   4. Framing Connectors: ASTM A653/A653M steel clips; secures cold rolled channel to wall studs for lateral bracing.
   5. Fasteners: ASTM C1002 self-piercing self-tapping screws.
   6. Anchorage Devices: Powder actuated.

2.03 FABRICATION

A. Fabricate assemblies of framed sections to sizes and profiles required.

B. Fit, reinforce, and brace framing members to suit design requirements.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify that rough-in utilities are in proper location.

3.02 INSTALLATION OF STUD FRAMING

A. Extend partition framing to structure where indicated and to ceiling in other locations.

B. Partitions Terminating at Ceiling: Attach ceiling runner securely to ceiling track in accordance with manufacturer's instructions.

C. Partitions Terminating at Structure: Attach extended leg top runner to structure, maintain clearance between top of studs and structure, and brace both flanges of studs as indicated.

D. Align and secure top and bottom runners at 24 inches on center.

E. Fit runners under and above openings; secure intermediate studs to same spacing as wall studs.

F. Align stud web openings horizontally.

G. Secure studs to tracks using crimping method. Do not weld.

H. Fabricate corners using a minimum of three studs.

I. Install double studs at wall openings, door and window jambs, not more than 2 inches from each side of openings.

J. Coordinate installation of bucks, anchors, and blocking with electrical, mechanical, and other work to be placed within or behind stud framing.

K. Sound Isolation Clips: Mechanically attach to framing or structure with fasteners recommended by clip manufacturer. Install at spacing indicated on drawings.

L. Furring: Coordinate with sound isolation clip spacing and locations. Lap splices a minimum of 6 inches.

END OF SECTION 09 22 16

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SECTION 09 30 00 - TILING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Tile for floor applications.

B. Tile for wall applications.

C. Pre-formed accessories.

D. Thresholds.

E. Ceramic trim.

1.02 RELATED REQUIREMENTS

A. Section 07 92 00 - Joint Sealants: Sealing joints between tile work and adjacent construction and fixtures.

B. Section 09 21 16 - Gypsum Board Assemblies: Tile backer board.

1.03 REFERENCE STANDARDS

A. ANSI A108.1a - American National Standard Specifications for Installation of Ceramic Tile in the Wet-Set Method, with Portland Cement Mortar 2017.

B. ANSI A108.1b - American National Standard Specifications for Installation of Ceramic Tile on a Cured Portland Cement Mortar Setting Bed with Dry-Set or Latex-Portland Cement Mortar 2017.

C. ANSI A108.1c - Contractor's Option: Installation of Ceramic Tile in the Wet-Set Method with Portland Cement Mortar or Installation of Ceramic Tile on a Cured Portland Cement Mortar Setting Bed with Dry-Set or Latex-Portland Cement Mortar 1999 (Reaffirmed 2021).

D. ANSI A108.2 - American National Standard General Requirements: Materials, Environmental and Workmanship 2019.

E. ANSI A108.4 - American National Standard Specifications for Installation of Ceramic Tile with Organic Adhesive or Water Cleanable Tile-Setting Epoxy Adhesive 2019.

F. ANSI A108.5 - American National Standard Specifications for Installation of Ceramic Tile with Dry-Set Portland Cement Mortar or Latex-Portland Cement Mortar 2021.

G. ANSI A108.6 - American National Standard Specifications for Installation of Ceramic Tile with Chemical Resistant, Water Cleanable Tile-Setting and -Grout Epoxy 1999 (Reaffirmed 2019).

H. ANSI A108.8 - American National Standard Specifications for Installation of Ceramic Tile with Chemical Resistant Furan Resin Mortar and Grout 1999 (Reaffirmed 2019).

I. ANSI A108.9 - American National Standard Specifications for Installation of Ceramic Tile with Modified Epoxy Emulsion Mortar/Grout 1999 (Reaffirmed 2019).

J. ANSI A108.10 - American National Standard Specifications for Installation of Grout in Tilework 2017 (Reaffirmed 2022).

K. ANSI A108.11 - American National Standard Specifications for Interior Installation of Cementitious Backer Units 2018.

L. ANSI A108.12 - American National Standard for Installation of Ceramic Tile with EGP (Exterior Glue Plywood) Latex-Portland Cement Mortar 1999 (Reaffirmed 2019).

M. ANSI A108.13 - American National Standard for Installation of Load Bearing, Bonded, Waterproof Membranes for Thin-Set Ceramic Tile and Dimension Stone 2005 (Reaffirmed 2021).

N. ANSI A108.19 - American National Standard Specifications for Interior Installation of Gauged Porcelain Tiles and Gauged Porcelain Tile Panels/Slabs by the Thin-Bed Method Bonded with Modified Dry-Set Cement Mortar or Improved Modified Dry-Set Cement Mortar 2020.

O. ANSI A108.20 - American National Standard Specifications for Exterior Installation of Gauged Porcelain Tiles and Gauged Porcelain Tile Panels/Slabs 2020.

P. ANSI A118.4 - American National Standard Specifications for Modified Dry-Set Cement Mortar 2019.

Q. ANSI A118.6 - American National Standard Specifications for Standard Cement Grouts for Tile Installation 2019.

R. ANSI A118.10 - American National Standard Specifications for Load Bearing, Bonded, Waterproof Membranes for Thin-Set Ceramic Tile and Dimension Stone 2014 (Reaffirmed 2019).

S. ANSI A118.12 - American National Standard Specifications for Crack Isolation Membranes for Thin-Set Ceramic Tile and Dimension Stone Installation 2014 (Reaffirmed 2019).

T. ANSI A137.1 - American National Standard Specifications for Ceramic Tile 2022.

U. ASTM C373 - Standard Test Methods for Determination of Water Absorption and Associated Properties by Vacuum Method for Pressed Ceramic Tiles and Glass Tiles and Boil Method for Extruded Ceramic Tiles and Non-tile Fired Ceramic Whiteware Products 2018 (Reapproved 2023).

V. ASTM F710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring 2022.

W. ASTM F1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride 2022.

X. ASTM F2170 - Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes 2019a.

Y. TCNA (HB) - Handbook for Ceramic, Glass, and Stone Tile Installation 2022.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Convene a preinstallation meeting one week before starting work of this section; require attendance by affected installers.

1.05 SUBMITTALS

A. Product Data: Provide manufacturers' data sheets on tile, mortar, grout, and accessories. Include instructions for using grouts and adhesives.

B. Shop Drawings: Indicate tile layout, patterns, color arrangement, perimeter conditions, junctions with dissimilar materials, control and expansion joints, thresholds, ceramic accessories, and setting details.

C. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

D. Installer's Qualification Statement:

E. Maintenance Data: Include recommended cleaning methods, cleaning materials, and stain removal methods.

F. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. Extra Tile: 1 percent of each size, color, and surface finish combination, but not less than 1 box of each type.

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the types of products specified in this section, with minimum five years of documented experience.

B. Installer Qualifications:
   1. Company specializing in performing tile installation, with minimum of five years of documented experience.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Protect adhesives from freezing or overheating in accordance with manufacturer's instructions.

1.08 FIELD CONDITIONS

A. Do not install solvent-based products in an unventilated environment.

B. Maintain ambient and substrate temperature above 50 degrees F and below 100 degrees F during installation and curing of setting materials.

PART 2 PRODUCTS

2.01 TILE

A. Manufacturers: All products by the same manufacturer. Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
   1. American Olean Corporation: www.americanolean.com/#sle.
   2. Dal-Tile Corporation: www.daltile.com/#sle.
   3. Crossville, Inc.: www.crossvilleinc.com..
   4. Marazzi Tile: www.marazziusa.com
   5. Florida Tile, Inc.: www.floridatile.com

B. Ceramic Mosaic Tile (Accent Band): ANSI A137.1 standard grade.
   1. Moisture Absorption: 0 to 0.5 percent as tested in accordance with ASTM C373.
   2. Size: 1 by 1 inch, nominal.
   3. Shape: Square.
   4. Edges: Square.
   5. Surface Finish: Matte glazed.
   6. Color(s): To be selected by Architect from manufacturer's full range.

C. Porcelain Tile (Floor and Wall): ANSI A137.1 standard grade.
   1. Moisture Absorption: 0 to 0.5 percent as tested in accordance with ASTM C373.
   2. Size: 12 by 12 inch, nominal.
   3. Thickness: 5/16 inch.
   4. Edges: Cushioned.
   5. Surface Finish: Matte glazed.
   6. Color(s): To be selected by Architect from manufacturer's full range.
   7. Trim Units: Matching bullnose, cove base, and cove shapes in sizes coordinated with field tile.

2.02 TRIM AND ACCESSORIES

A. Pre-Formed Accessories To Be Covered with Tile: High density expanded polystyrene with ANSI A118.10 waterproofing finish or membrane.
   1. Prefabricated Shower Niche:

a. Water and Vapor-tight, readly to receive tile installation.
b. See manufacturer installation instructions for required accessories for a water-tight installation.
c. Basis of Design: Schluter Systems L.P; Kerdi-Board-SN, 12inch x 20 inch with pre-fabricated adjustable shelf..
d. Or equal meeting requirements..

2. Prefabricated Curb:
a. See manufacturer installation instructions for required accessories for a water-tight installation.
b. Basis of Design: Schluter Systems L.P.; Kerdi-Board-SC, 6" wide x 4-1/2" high x length as required.
c. Or equal meeting requirements.

B. Trim: Matching bullnose, double bullnose, cove base, and cove ceramic shapes in sizes coordinated with field tile.
1. Applications:
a. Open Edges: Bullnose.
b. Inside Corners: Jointed.
c. Floor to Wall Joints: Cove base.
2. Manufacturers: Same as for tile.

C. Thresholds: 2 inches wide by full width of wall or frame opening; beveled edge on both long edges; without holes, cracks, or open seams.
1. Thickness: 1/2 inch.
2. Material: Solid surface acrylic resin, mineral filler, and pigments; non-porous, color and pattern consistent throughout thickness.
3. Color and Pattern: As chosen by Architect from Manufacturer's full range..
4. Applications:
a. At doorways where tile terminates.
b. At open edges of floor tile where adjacent finish is a different height.

2.03 SETTING MATERIALS

A. Provide setting and grout materials from same manufacturer.

B. Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
1. ARDEX Engineered Cements: www.ardexamericas.com/#sle.
2. Bostik Inc: www.bostik-us.com/#sle.
3. Custom Building Products: www.custombuildingproducts.com/#sle.
4. H.B. Fuller Construction Products, Inc: www.tecspecialty.com/#sle.
5. LATICRETE International, Inc: www.laticrete.com/#sle.
6. Merkrete, by Parex USA, Inc: www.merkrete.com/#sle.

C. Latex-Portland Cement Mortar Bond Coat: ANSI A118.4.
1. Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
a. ARDEX Engineered Cements: www.ardexamericas.com/#sle.
b. Custom Building Products, with Multi-Surface Bonding Primer: www.custombuildingproducts.com/#sle.
c. H.B. Fuller Construction Products, Inc: www.tecspecialty.com/#sle.
d. LATICRETE International, Inc: www.laticrete.com/#sle.
e. Merkrete, by Parex USA, Inc: www.merkrete.com/#sle.

2.04 GROUTS

A. Provide setting and grout materials from same manufacturer.

B. Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
   1. ARDEX Engineered Cements: www.ardexamericas.com/#sle.
   2. Bostik Inc: www.bostik-us.com/#sle.
   3. Custom Building Products: www.custombuildingproducts.com/#sle.
   4. LATICRETE International, Inc: www.laticrete.com/#sle.
   5. Merkrete, by Parex USA, Inc: www.merkrete.com/#sle.

C. Standard Grout: ANSI A118.6 standard cement grout.
   1. Applications: Use this type of grout where indicated and where no other type of grout is indicated.
   2. Use sanded grout for joints 1/8 inch wide and larger; use unsanded grout for joints less than 1/8 inch wide.
   3. Color(s): As selected by Architect from manufacturer's full line.
   4. Subject to compliance with requirements, manufacturers offering roducts that may be incorporated into the Work include, but are not limited to, the following:
      a. Custom Building Products; Polyblend Non-Sanded Grout: www.custombuildingproducts.com/#sle.
      b. LATICRETE International, Inc; LATICRETE 1600 Unsanded Grout: www.laticrete.com/#sle.
      c. Merkrete, by Parex USA, Inc; Merkrete Duracolor Non-Sanded Grout: www.merkrete.com/#sle.

2.05 MAINTENANCE MATERIALS

A. Tile Sealant: Gunnable, silicone, siliconized acrylic, or urethane sealant; moisture and mildew resistant type.
   1. Applications: Between tile and plumbing fixtures.
   2. Color(s): As selected by Architect from manufacturer's full line.
   3. Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
      a. ARDEX Engineered Cements; ARDEX SX: www.ardexamericas.com/#sle.
      b. Custom Building Products; Commercial 100% Silicone Caulk: www.custombuildingproducts.com/#sle.
      c. LATICRETE International, Inc; LATICRETE LATASIL: www.laticrete.com/#sle.
      d. Merkrete, by Parex USA, Inc; Merkrete Colored Caulking: www.merkrete.com/#sle.
      e. Rust-Oleum Corporation; Merkrete Colored Caulking: www.rustoleum.com/#sle.

B. Grout Sealer: Liquid-applied, moisture and stain protection for existing or new Portland cement grout.
   1. Composition: Water-based colorless silicone.

2.06 ACCESSORY MATERIALS

A. Concrete Floor Slab Crack Isolation Membrane: Material complying with ANSI A118.12; not intended as waterproofing.
   1. Crack Resistance: No failure at 1/8 inch gap, minimum.

B. Waterproofing Membrane at floors and walls to receive tile: Specifically designed for bonding to cementitious substrate under thick mortar bed or thin-set tile; complying with ANSI A118.10.
   1. Crack Resistance: No failure at 1/16 inch gap, minimum; comply with ANSI A118.12.
   2. Fluid or Trowel Applied Type:

a. Material: Synthetic rubber or Acrylic.
b. Thickness: 25 mils, minimum, dry film thickness.
c. Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
    1) ARDEX Engineered Cements; ARDEX 8+9: www.ardexamericas.com/#sle.
    2) Custom Building Products; RedGard Crack Prevention and Waterproofing Membrane: www.custombuildingproducts.com/#sle.
    3) H.B. Fuller Construction Products, Inc; TEC HydraFlex Waterproofing Crack Isolation Membrane: www.tecspecialty.com/#sle.
    4) LATICRETE International, Inc; LATICRETE HYDRO BAN: www.laticrete.com/#sle.
    5) Merkrete, by Parex USA, Inc; Merkrete Hydro Guard 1: www.merkrete.com/#sle.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that subfloor surfaces are smooth and flat within the tolerances specified for that type of work and are ready to receive tile.

B. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive tile.

C. Cementitious Subfloor Surfaces: Verify that substrates are ready for tiling installation by testing for moisture and alkalinity (pH).
    1. Test as Follows:
        a. Alkalinity (pH): ASTM F710.
        b. Internal Relative Humidity: ASTM F2170.
        c. Moisture Vapor Emission: ASTM F1869.
    2. Obtain instructions if test results are not within limits recommended by tiling material manufacturer and setting material manufacturer.

D. Verify that required floor-mounted utilities are in correct location.

3.02 PREPARATION

A. Protect surrounding work from damage.

B. Vacuum clean surfaces and damp clean.

C. Seal substrate surface cracks with filler. Level existing substrate surfaces to acceptable flatness tolerances.

D. Install backer board in accordance with ANSI A108.11 and board manufacturer's instructions. Tape joints and corners, cover with skim coat of setting material to a feather edge.

E. Prepare substrate surfaces for adhesive installation in accordance with adhesive manufacturer's instructions.

3.03 INSTALLATION - GENERAL

A. Install tile and thresholds and grout in accordance with applicable requirements of ANSI A108.1a through ANSI A108.20, manufacturer's instructions, and TCNA (HB) recommendations.

B. Lay tile to pattern indicated. Do not interrupt tile pattern through openings.

C. Cut and fit tile to penetrations through tile, leaving sealant joint space. Form corners and bases neatly. Align floor joints.

D. Place tile joints uniform in width, subject to variance in tolerance allowed in tile size. Make grout joints without voids, cracks, excess mortar or excess grout, or too little grout.

E. Form internal angles square and external angles bullnosed.

F. Install thresholds where indicated.

G. Sound tile after setting. Replace hollow sounding units.

H. Keep control and expansion joints free of mortar, grout, and adhesive.

I. Prior to grouting, allow installation to completely cure; minimum of 48 hours.

J. Grout tile joints unless otherwise indicated. Use standard grout unless otherwise indicated.

K. At changes in plane and tile-to-tile control joints, use tile sealant instead of grout, with either bond breaker tape or backer rod as appropriate to prevent three-sided bonding.

3.04 INSTALLATION - FLOORS - THIN-SET METHODS

A. Over interior concrete substrates, install in accordance with TCNA (HB) Method F113, dry-set or latex-Portland cement bond coat, with standard grout, unless otherwise indicated.

1. Where waterproofing membrane is indicated, install in accordance with TCNA (HB) Method F122, with latex-Portland cement grout.

3.05 INSTALLATION - FLOORS - FLOATING

A. Install in accordance with manufacturer's instructions.

B. Grout with standard grout as specified above.

3.06 INSTALLATION - SHOWERS AND BATHTUB WALLS

A. At tiled shower receptors install in accordance with TCNA (HB) Method B415, mortar bed floor, and W244, thin-set over cementitious backer unit walls.

B. At bathtub walls install in accordance with TCNA (HB) Method B412, over cementitious backer units with waterproofing membrane.

C. Grout with standard grout as specified above.

3.07 INSTALLATION - WALL TILE

A. Over cementitious backer units on studs, install in accordance with TCNA (HB) Method W244, using membrane at toilet rooms.

3.08 CLEANING

A. Clean tile and grout surfaces.

3.09 PROTECTION

A. Do not permit traffic over finished floor surface for 4 days after installation.

END OF SECTION 09 30 00

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SECTION 09 51 00 - ACOUSTICAL CEILINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Suspended metal grid ceiling system.

B. Acoustical units.

1.02 REFERENCE STANDARDS

A. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process 2023.

B. ASTM C635/C635M - Standard Specification for Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings 2022.

C. ASTM C636/C636M - Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels 2019.

D. ASTM E580/E580M - Standard Practice for Installation of Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels in Areas Subject to Earthquake Ground Motions 2022.

E. ASTM E1264 - Standard Classification for Acoustical Ceiling Products 2022.

1.03 ADMINISTRATIVE REQUIREMENTS

A. Sequence work to ensure acoustical ceilings are not installed until building is enclosed, sufficient heat is provided, dust generating activities have terminated, and overhead work is completed, tested, and approved.

B. Do not install acoustical units until after interior wet work is dry.

1.04 SUBMITTALS

A. Product Data: Provide data on suspension system components and acoustical units.

B. Samples: Submit two samples 6 inch by 6 inch inch in size illustrating material and finish of acoustical units.

C. Samples: Submit two samples each, 6 inches long, of suspension system main runner, cross runner, and perimeter molding.

D. Manufacturer's Installation Instructions: Indicate special procedures and perimeter conditions requiring special attention.

E. Manufacturer's qualification statement.

F. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.

1. See Section 01 60 00 - Product Requirements, for additional provisions.
2. Extra Acoustical Units: Quantity equal to 5 percent of total installed.

1.05 QUALITY ASSURANCE

A. Suspension System Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

B. Acoustical Unit Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented

experience.

1.06 FIELD CONDITIONS

A. Maintain uniform temperature of minimum 60 degrees F, and maximum humidity of 40 percent prior to, during, and after acoustical unit installation.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
   1. Armstrong World Industries, Inc: www.armstrongceilings.com/#sle.
   2. CertainTeed Corporation: www.certainteed.com/#sle.
   3. USG Corporation: www.usg.com/ceilings/#sle.

B. Suspension Systems:
   1. Same as for acoustical units.

2.02 ACOUSTICAL UNITS

A. Acoustical Panels: Painted mineral fiber, with the following characteristics:
   1. Classification: ASTM E1264 Type III.
      a. Form: 2, water felted.
      b. Pattern: "D" - fissured.
   2. Size: 24 by 24 inches.
   3. Light Reflectance: 82 percent, determined in accordance with ASTM E1264.
   4. NRC Range: minimum .75, determined in accordance with ASTM E1264.
   5. Panel Edge: Square.
   6. Color: White.
   7. Suspension System: Exposed grid.
   8. Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
      a. Armstrong World Industries, Inc. (Basis of Design); Fine Fissured: www.armstrongceilings.com/#sle.
      b. USG Corporation: www.usg.com/ceilings/#sle.
      c. CertainTeed Corporation: www.certainteed.com/#sle..

2.03 SUSPENSION SYSTEM(S)

A. Metal Suspension Systems - General: Complying with ASTM C635/C635M; die cut and interlocking components, with perimeter moldings, hold down clips, stabilizer bars, clips, and splices as required.
   1. Materials:
      a. Steel Grid: ASTM A653/A653M, G30 coating, unless otherwise indicated.

B. Exposed Suspension System: Hot-dipped galvanized steel grid with aluminum cap.
   1. Structural Classification: Intermediate-duty, when tested in accordance with ASTM C635/C635M.
   2. Profile: Tee; 15/16 inch face width.
   3. Finish: Baked enamel.
   4. Color: White.

2.04 ACCESSORIES

A. Support Channels and Hangers: Galvanized steel; size and type to suit application, seismic requirements, and ceiling system flatness requirement specified.

B. Hanger Wire: 12 gauge, 0.08 inch galvanized steel wire.

C. Perimeter Moldings: Same metal and finish as grid.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify that layout of hangers will not interfere with other work.

3.02 PREPARATION

A. Install after major above-ceiling work is complete.

B. Coordinate the location of hangers with other work.

3.03 INSTALLATION - SUSPENSION SYSTEM

A. Install suspension system in accordance with ASTM C636/C636M, ASTM E580/E580M, and manufacturer's instructions and as supplemented in this section.

B. Rigidly secure system, including integral mechanical and electrical components, for maximum deflection of 1:360.

C. Lay out system to a balanced grid design with edge units no less than 25 percent of acoustical unit size.

D. Perimeter Molding: Install at intersection of ceiling and vertical surfaces and at junctions with other interruptions.
   1. Use longest practical lengths.

E. Suspension System, Non-Seismic: Hang suspension system independent of walls, columns, ducts, pipes and conduit. Where carrying members are spliced, avoid visible displacement of face plane of adjacent members.

F. Where ducts or other equipment prevent the regular spacing of hangers, reinforce the nearest affected hangers and related carrying channels to span the extra distance.

G. Do not support components on main runners or cross runners if weight causes total dead load to exceed deflection capability.

H. Support fixture loads using supplementary hangers located within 6 inches of each corner, or support components independently.

I. Do not eccentrically load system or induce rotation of runners.

3.04 INSTALLATION - ACOUSTICAL UNITS

A. Install acoustical units in accordance with manufacturer's instructions.

B. Fit acoustical units in place, free from damaged edges or other defects detrimental to appearance and function.

C. Fit border trim neatly against abutting surfaces.

D. Install acoustical units level, in uniform plane, and free from twist, warp, and dents.

E. Cutting Acoustical Units:
   1. Make field cut edges of same profile as factory edges.

F. Where round obstructions occur, provide preformed closures to match perimeter molding.

3.05 TOLERANCES

A. Maximum Variation from Flat and Level Surface: 1/8 inch in 10 feet.

B. Maximum Variation from Plumb of Grid Members Caused by Eccentric Loads: 2 degrees.

END OF SECTION 09 51 00

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SECTION 09 65 10 - RESILIENT BASE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Resilient base.

B. Installation accessories.

1.02 REFERENCE STANDARDS

A. ASTM F1861 - Standard Specification for Resilient Wall Base 2021.

1.03 SUBMITTALS

A. Product Data: Provide data on specified products, describing physical and performance characteristics; including sizes, patterns and colors available; and installation instructions.

B. Selection Samples: Submit manufacturer's complete set of color samples for Architect's initial selection.

C. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. Extra Wall Base: 10 linear feet for every 500 linear feet or fraction thereof, of each type and color installed.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Upon receipt, immediately remove any shrink-wrap and check materials for damage and the correct style, color, quantity and run numbers.

B. Store all materials off of the floor in an acclimatized, weather-tight space.

C. Maintain temperature in storage area between 55 degrees F and 90 degrees F.

D. Do not double stack pallets.

1.05 FIELD CONDITIONS

A. Store materials for not less than 48 hours prior to installation in area of installation at a temperature of 70 degrees F to achieve temperature stability. Thereafter, maintain conditions above 55 degrees F.

PART 2 PRODUCTS

A. Resilient Base: ASTM F1861, Type TV, vinyl, thermoplastic; Style B, Cove.
   1. Subject to compliance with requirements, manufacturers offering products which may be included into the Work include, but are not limited to the following:
      a. Johnsonite, a Tarkett Company: www.johnsonite.com/#sle
      b. Mannington Commercial: www.manningtoncommercial.com#sle.
      c. Roppe Corporation: www.roppe.com/#sle
   2. Height: 6 inch.
   3. Thickness: 0.125 inch.
   4. Finish: Satin.
   5. Length: Roll.
   6. Color: To be selected by Architect from manufacturer's full range.
   7. Accessories: Premolded external corners and internal corners.

2.02 ACCESSORIES

A. Moldings, Transition and Edge Strips: Vinyl. (Where required)
   1. Subject to compliance with requirements, manufacturers offering products which may be included into the Work include, but are not limited to the following:
      a. Mannington Commercial: www.manningtoncommercial.com#sle.
      b. Johnsonite, a Tarkett Company: www.johnsonite.com/#sle
      c. Roppe Corporation: www.roppe.com/#sle.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive resilient base.

B. Cementitious Subfloor Surfaces: Verify that substrates are ready for resilient flooring installation by testing for moisture and alkalinity (pH).

3.02 PREPARATION

A. Prepare floor substrates as recommended by flooring and adhesive manufacturers.

B. Remove subfloor ridges and bumps. Fill minor low spots, cracks, joints, holes, and other defects with subfloor filler to achieve smooth, flat, hard surface.

C. Prohibit traffic until filler is fully cured.

D. Clean substrate.

3.03 INSTALLATION - GENERAL

A. Install in accordance with manufacturer's written instructions.

B. Adhesive-Applied Installation:
   1. Spread only enough adhesive to permit installation of materials before initial set.
   2. Fit joints and butt seams tightly.

C. Install edge strips at unprotected or exposed edges, where flooring terminates, and where indicated.
   1. Resilient Strips: Attach to substrate using adhesive.

3.04 INSTALLATION - RESILIENT BASE

A. Fit joints tightly and make vertical. Maintain minimum dimension of 18 inches between joints.

B. Miter internal corners. At external corners, use premolded units. At exposed ends, use premolded units.

C. Install base on solid backing. Bond tightly to wall and floor surfaces.

D. Scribe and fit to door frames and other interruptions.

3.05 CLEANING

A. Remove excess adhesive from base and wall surfaces without damage.

B. Clean in accordance with manufacturer's written instructions.

END OF SECTION 09 65 10

SECTION 09 68 13 - TILE CARPETING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Carpet tile, fully adhered.

1.02 REFERENCE STANDARDS

A. ASTM D2859 - Standard Test Method for Ignition Characteristics of Finished Textile Floor Covering Materials 2016 (Reapproved 2021).

B. ASTM F710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring 2022.

C. ASTM F1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride 2022.

D. ASTM F2170 - Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes 2019a.

1.03 SUBMITTALS

A. Product Data: Provide data on specified products, describing physical and performance characteristics; sizes, patterns, colors available, and method of installation.

B. Samples: Submit two carpet tiles illustrating color and pattern design for each carpet color selected.

C. Manufacturer's Installation Instructions: Indicate special procedures and perimeter conditions requiring special attention.

D. Concrete Subfloor Test Report: Submit a copy of the moisture and alkalinity (pH) test reports.

E. Manufacturer's Qualification Statement.

F. Installer's Qualification Statement.

G. Operation and Maintenance Data: Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning.

H. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. See Section 01 60 00 - Product Requirements, for additional provisions.
   2. Extra Carpet Tiles: Quantity equal to 5 percent of total installed of each color and pattern installed.

1.04 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing specified carpet tile with minimum three years documented experience.

B. Installer Qualifications: Company specializing in installing carpet tile with minimum three years documented experience and approved by carpet tile manufacturer.

C. Testing Agency Qualifications: Independent firm specializing in performing testing and inspections of the type specified in this section.

1.05 FIELD CONDITIONS

A. Store materials in area of installation for minimum period of 24 hours prior to installation.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
   1. Interface, Inc: www.interface.com/#sle.
   2. Mohawk Group: www.mohawkgroup.com/#sle.
   3. Shaw Contract: www.shawcontract.com/#sle.

2.02 MATERIALS

A. Tile Carpeting: Tufted, manufactured in one color dye lot.
   1. Basis of Design Product: Assembly Collection (Convene, Establish and Support) manufactured by Shaw Contract.
   2. Tile Size: 12 by 48 inch, nominal.
   3. Thickness: 0.19685 inch.
   4. Color: To be chosen from manufacturer's full line of colors.
   5. Surface Flammability Ignition: Pass ASTM D2859 (the "pill test").
   6. Tufted Weight: 20 oz.
   7. Gauge: 1/12 inch.
   8. Secondary Backing Material: EcoWorx.

2.03 ACCESSORIES

A. Subfloor Filler: White premix latex; type recommended by flooring material manufacturer.

B. Edge Strips: Rubber, color as selected by Architect.

C. Carpet Tile Adhesive: Recommended by carpet tile manufacturer.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that subfloor surfaces are dust-free and free of substances that could impair bonding of adhesive materials to subfloor surfaces.

B. Cementitious Subfloor Surfaces: Verify that substrates are ready for flooring installation by testing for moisture and alkalinity (pH).
   1. Test as Follows:
      a. Alkalinity (pH): ASTM F710.
      b. Internal Relative Humidity: ASTM F2170.
      c. Moisture Vapor Emission: ASTM F1869.
   2. Obtain instructions if test results are not within limits recommended by flooring material manufacturer and adhesive materials manufacturer.

C. Verify that required floor-mounted utilities are in correct location.

3.02 PREPARATION

A. Prepare floor substrates as recommended by flooring and adhesive manufacturers.

B. Remove subfloor ridges and bumps. Fill minor or local low spots, cracks, joints, holes, and other defects with subfloor filler.

C. Apply, trowel, and float filler to achieve smooth, flat, hard surface. Prohibit traffic until filler is cured.

D. Vacuum clean substrate.

3.03 INSTALLATION

A. Starting installation constitutes acceptance of subfloor conditions.

B. Install carpet tile in accordance with manufacturer's instructions.

C. Blend carpet from different cartons to ensure minimal variation in color match.

D. Cut carpet tile clean. Fit carpet tight to intersection with vertical surfaces without gaps.

E. Lay carpet tile in Ashlar pattern, with pile direction parallel to next unit, set parallel to building lines.

F. Locate change of color or pattern between rooms under door centerline.

G. Fully adhere carpet tile to substrate.

H. Trim carpet tile neatly at walls and around interruptions.

I. Complete installation of edge strips, concealing exposed edges.

3.04 CLEANING

A. Remove excess adhesive without damage, from floor, base, and wall surfaces.

B. Clean and vacuum carpet surfaces.

END OF SECTION 09 68 13

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PANAMA CITY BEACH
FIRE STATION #32
HUTCHISON BLVD
BID DOCUMENTS
AUGUST 1, 2023

SECTION 09 91 13 - EXTERIOR PAINTING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Surface preparation.

B. Field application of paints.

C. Scope: Finish exterior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated.

D. Do Not Paint or Finish the Following Items:
   1. Items factory-finished unless otherwise indicated; materials and products having factory-applied primers are not considered factory finished.
   2. Items indicated to receive other finishes.
   3. Items indicated to remain unfinished.
   4. Fire rating labels, equipment serial number and capacity labels, and operating parts of equipment.
   5. Non-metallic roofing and flashing.
   6. Stainless steel, anodized aluminum, bronze, terne-coated stainless steel, zinc, and lead.
   7. Marble, granite, slate, and other natural stones.
   8. Floors, unless specifically indicated.
   9. Ceramic and other types of tiles.
   10. Brick, glass unit masonry, architectural concrete, cast stone, integrally colored plaster and stucco.
   11. Glass.
   12. Concealed pipes, ducts, and conduits.

1.02 REFERENCE STANDARDS

A. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency current edition.

B. ASTM D4258 - Standard Practice for Surface Cleaning Concrete for Coating 2005 (Reapproved 2017).

C. ASTM D4442 - Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Based Materials 2020.

D. MPI (APL) - Master Painters Institute Approved Products List; Master Painters and Decorators Association Current Edition.

E. MPI (APSM) - Master Painters Institute Architectural Painting Specification Manual Current Edition.

F. SSPC-SP 1 - Solvent Cleaning 2015, with Editorial Revision (2016).

G. SSPC-SP 2 - Hand Tool Cleaning 2018.

H. SSPC-SP 6 - Commercial Blast Cleaning 2007.

1.03 SUBMITTALS

A. Product Data: Provide complete list of products to be used, with the following information for each:
   1. Manufacturer's name, product name and/or catalog number, and general product category (e.g. "alkyd enamel").

2. MPI product number (e.g. MPI #47).
3. Cross-reference to specified paint system(s) product is to be used in; include description of each system.
4. Manufacturer's installation instructions.
5. If proposal of substitutions is allowed under submittal procedures, explanation of substitutions proposed.

B. Certification: By manufacturer that paints and finishes comply with VOC limits specified.

C. Manufacturer's Instructions: Indicate special surface preparation procedures.

D. Maintenance Data: Submit data including finish schedule showing where each product/color/finish was used, product technical data sheets, material safety data sheets (MSDS), care and cleaning instructions, touch-up procedures, repair of painted and finished surfaces, and color samples of each color and finish used.

E. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
1. Extra Paint and Finish Materials: 1 gallon of each color; from the same product run, store where directed.
2. Label each container with color in addition to the manufacturer's label.

1.04 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified, with minimum three years documented experience.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.

B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.

C. Paint Materials: Store at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

1.06 FIELD CONDITIONS

A. Do not apply materials when surface and ambient temperatures are outside the paint product manufacturer's temperature ranges.

B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.

C. Do not apply exterior paint and finishes during rain or snow, or when relative humidity is outside the humidity ranges required by the paint product manufacturer.

D. Minimum Application Temperatures for Latex Paints: 50 degrees F for exterior; unless required otherwise by manufacturer's instructions.

E. Provide lighting level of 80 ft candles measured mid-height at substrate surface.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Provide paints and finishes used in any individual system from the same manufacturer; no exceptions.

B. Provide paints and finishes from the same manufacturer to the greatest extent possible.
1. Substitution of MPI-approved products by a different manufacturer is preferred over substitution of unapproved products by the same manufacturer.

2. Substitution of a different paint system using MPI-approved products by the same manufacturer will be considered.

C. Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
   1. Behr Process Corporation: www.behr.com/#sle.
   2. Cloverdale Paint, Brand Products of Rodda Paint Company: www.cloverdalepaint.com/#sle.
   3. Diamond Vogel Paints: www.diamondvogel.com/#sle.
   4. PPG Paints: www.ppgpaints.com/#sle.
   5. Rodda Paint Company: www.roddapaint.com/#sle.
   6. Sherwin-Williams Company: www.sherwin-williams.com/#sle.
   7. Vista Paint Corporation: www.vistapaint.com/#sle.

D. Primer Sealers: Same manufacturer as top coats.

2.02 PAINTS AND FINISHES - GENERAL

A. Paints and Finishes: Ready-mixed, unless required to be a field-catalyzed paint.
   1. Where MPI paint numbers are specified, provide products listed in Master Painters Institute Approved Product List, current edition available at www.paintinfo.com, for specified MPI categories, except as otherwise indicated.
   2. Provide paints and finishes of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
   3. Provide materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
   4. For opaque finishes, tint each coat including primer coat and intermediate coats, one-half shade lighter than succeeding coat, with final finish coat as base color.
   5. Supply each paint material in quantity required to complete entire project's work from a single production run.
   6. Do not reduce, thin, or dilute paint or finishes or add materials unless such procedure is described explicitly in manufacturer's product instructions.

B. Volatile Organic Compound (VOC) Content:
   1. Provide paints and finishes that comply with the most stringent requirements specified in the following:
      a. 40 CFR 59, Subpart D--National Volatile Organic Compound Emission Standards for Architectural Coatings.
      b. Ozone Transport Commission (OTC) Model Rule, Architectural, Industrial, and Maintenance Coatings; www.otcair.org; specifically:
         1) Opaque, Flat: 50 g/L, maximum.
         2) Opaque, Nonflat: 150 g/L, maximum.
         3) Opaque, High Gloss: 250 g/L, maximum.
   2. Determination of VOC Content: Testing and calculation in accordance with 40 CFR 59, Subpart D (EPA Method 24), exclusive of colorants added to a tint base and water added at project site; or other method acceptable to authorities having jurisdiction.

C. Flammability: Comply with applicable code for surface burning characteristics.

D. Sheens: Provide the sheens specified; where sheen is not specified, sheen will be selected later by Architect from the manufacturer's full line.

E. Colors: To be selected from manufacturer's full range of available colors.
   1. Selection to be made by Architect after award of contract.

2. Allow for minimum of three colors for each system, unless otherwise indicated, without additional cost to Owner.
3. Extend colors to surface edges; colors may change at any edge as directed by Architect.

2.03 PAINT SYSTEMS - EXTERIOR

A. Paint E-OP - Exterior Surfaces to be Painted, Unless Otherwise Indicated: Including concrete, concrete masonry units, brick, fiber cement siding, primed wood, and primed metal.
   1. Two top coats and one coat primer.
   2. Top Coat(s): Exterior Latex; MPI #10 or 11.
      a. Products:
         1) Behr Marquee Exterior Flat [No.4450]. (MPI #10)
         2) Behr Marquee Exterior Semi-Gloss Enamel [No.5450]. (MPI #11)
         3) Behr Premium Plus Exterior Flat [No.4050]. (MPI #10)
         4) Behr Premium Plus Exterior Semi-Gloss Enamel [No.5050].
         5) Behr Pro e600 Exterior Flat Paint [No.610]. (MPI #10)
         6) Behr Pro e600 Exterior Semi-Gloss Paint [No.PR670]. (MPI #11)
         7) Kilz Pro-X 610 Exterior Flat [No.PX610].
         8) Kilz Pro-X Exterior Flat [No.PX613].
         9) PPG Paints Speedhide Exterior Latex, 6-610XI Series, Flat. (MPI #10)
         10) PPG Paints Speedhide Exterior Latex, 6-900XI Series, Semi-Gloss. (MPI #11)
         11) PPG Paints Acri-Shield Max Exterior Latex, 519-10 Series, Flat. (MPI #10)
         12) PPG Paints Acri-Shield Max Exterior Latex, 649-10 Series, Semi-Gloss.
         13) PPG Paints Advantage 900 Interior/Exterior Latex, 919-10 Series, Semi-Gloss.
         14) Rodda pHlex-Tite Elastomeric Coating, 512301. (MPI #10)
         15) Rodda Unique II Semi-Gloss, 542001. (MPI #11)
         16) Sherwin-Williams Loxon Self-Cleaning Acrylic Exterior, Flat. (MPI #10)
         17) Sherwin-Williams Loxon XP Exterior. (MPI #10)
         18) Sherwin-Williams Solo Series, Flat. (MPI #10)
         19) Sherwin-Williams Solo Series, Semi-Gloss. (MPI #11)
         20) Vista Paint Corporation; 2800 Acriglo Flat Semi-Gloss: www.vistapaint.com/#sle. (MPI #10)
         21) Vista Paint Corporation; 8400 Carefree Semi-Gloss: www.vistapaint.com/#sle. (MPI #11)

2.04 PRIMERS

A. Primers: Provide the following unless other primer is required or recommended by manufacturer of top coats.
   1. Alkali Resistant Water Based Primer; MPI #3.
      a. Products:
         1) Behr Premium Plus Interior/Exterior Multi-Surface Primer and Sealer [No.436]. (MPI #3)
         2) PPG Paints Series Seal Grip Interior/Exterior Acrylic Universal Primer/Sealer, 17-921XI Series. (MPI #3)
         3) PPG Paints Perma-Crete Interior/Exterior Alkali Resistant Primer, 4-603XI. (MPI #3)
         4) Rodda First Coat Interior Exterior Latex Primer, 501601. (MPI #3)
         5) Rodda pHlex-Tite Elastomeric Coating, 512301. (MPI #3)

6) Sherwin-Williams Loxon Concrete and Masonry Primer Sealer, LX02W50. (MPI #3)
7) Vista Paint Corporation; 4600 Uniprime II: www.vistapaint.com/#sle. (MPI #3)

2. Water Based Primer for Galvanized Metal; MPI #134.
   a. Products:
      1) Behr Premium Plus Interior/Exterior Multi-Surface Primer and Sealer [No.436]. (MPI #134)
      2) PPG Paints Pitt-Tech Plus EP DTM Industrial Primer, 90-1912. (MPI #134)
      3) Sherwin-Williams DTM Primer/Finish (MPI #134)
      4) Vista Paint Corporation; 4800 Metal Pro Primer: www.vistapaint.com/#sle. (MPI #134)
3. Latex Primer for Exterior Wood; MPI #6.
   a. Products:
      1) Behr Premium Plus Interior/Exterior Multi-Surface Primer and Sealer [No.436]. (MPI #6)
      2) Kilz Premium Water-Based Primer [No.1300]. (MPI #6)
      3) PPG Paints Seal Grip Interior/Exterior Acrylic Universal Primer/Sealer, 17-921XI Series. (MPI #6)
      4) Rodda First Coat Interior Exterior Latex Primer, 501601. (MPI #6)
      5) Sherwin-Williams Exterior Latex Primer, B42W8041. (MPI #6)
4. Alkyd/Oil Primer for Exterior Wood; MPI #5.
   a. Products:
      1) PPG Paints Seal Grip Interior/Exterior Alkyd Universal Primer/Sealer, 17-941NF. (MPI #5)
      2) Rodda Exterior Control Primer, 701501. (MPI #5)
      3) Sherwin-Williams Extreme Block Stain Blocking Primer. (MPI #5)
5. Bonding Primer, Water Based; MPI #17.
   a. Products:
      1) Behr Interior/Exterior Bonding Primer [No.432]. (MPI #17)
      2) Behr Premium Plus Interior/Exterior Multi-Surface Primer and Sealer [No.436]. (MPI #17)
      3) Kilz Adhesion Bonding Primer [No.L2111].
      4) PPG Paints Seal Grip Interior/Exterior Acrylic Universal Primer/Sealer, 17-921XI Series. (MPI #17)
      5) Rust-Oleum Corporation XIM UMA Advanced Technology Primer Sealer Bonder (White): www.rustoleum.com/#sle. (MPI #17)
      6) Zinsser by Rust-Oleum Corporation Bulls Eye Zero Primer-Sealer: www.rustoleum.com/#sle. (MPI #17)

2.05 ACCESSORY MATERIALS

A. Accessory Materials: Provide primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of painted surfaces.

B. Patching Material: Latex filler.

C. Fastener Head Cover Material: Latex filler.

PART 3 EXECUTION

3.01 EXAMINATION

A. Do not begin application of paints and finishes until substrates have been properly prepared.

B. Verify that surfaces are ready to receive work as instructed by the product manufacturer.

C. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.

D. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

E. Test shop-applied primer for compatibility with subsequent cover materials.

F. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:
   1. Masonry, Concrete, and Concrete Masonry Units: 12 percent.
   2. Exterior Wood: 15 percent, measured in accordance with ASTM D4442.
   3. Concrete Floors and Traffic Surfaces: 8 percent.

3.02 PREPARATION

A. Clean surfaces thoroughly and correct defects prior to application.

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

C. Remove or repair existing paints or finishes that exhibit surface defects.

D. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces for finishing.

E. Seal surfaces that might cause bleed through or staining of topcoat.

F. Remove mildew from impervious surfaces by scrubbing with solution of tetra-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.

G. Concrete:
   1. Remove release agents, curing compounds, efflorescence, and chalk. Do not coat surfaces if moisture content or alkalinity of surfaces to be coated exceeds that permitted in manufacturer's written instructions.
   2. Clean surfaces with pressurized water. Use pressure range of 1,500 to 4,000 psi at 6 to 12 inches. Allow to dry.
   3. Clean concrete according to ASTM D4258. Allow to dry.

H. Masonry:
   1. Remove efflorescence and chalk. Do not coat surfaces if moisture content or alkalinity of surfaces or if alkalinity of mortar joints exceed that permitted in manufacturer's written instructions. Allow to dry.
   2. Prepare surface as recommended by top coat manufacturer.
   3. Clean surfaces with pressurized water. Use pressure range of 600 to 1,500 psi at 6 to 12 inches. Allow to dry.

I. Insulated Coverings: Remove dirt, grease, and oil from canvas and cotton.

J. Galvanized Surfaces:
   1. Remove surface contamination and oils and wash with solvent according to SSPC-SP 1.
   2. Prepare surface according to SSPC-SP 2.

K. Ferrous Metal:
   1. Solvent clean according to SSPC-SP 1.
   2. Shop-Primed Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces. Re-prime entire shop-primed item.

3. Remove rust, loose mill scale, and other foreign substances using methods recommended in writing by paint manufacturer and blast cleaning according to SSPC-SP 6 Commercial Blast Cleaning. Protect from corrosion until coated.

L. Exterior Wood Surfaces to Receive Opaque Finish: Remove dust, grit, and foreign matter. Seal knots, pitch streaks, and sappy sections. Fill nail holes with tinted exterior calking compound after prime coat has been applied. Back prime concealed surfaces before installation.

M. Wood Doors to be Field-Finished: Seal wood door top and bottom edge surfaces with tinted primer.

N. Metal Doors to be Painted: Prime metal door top and bottom edge surfaces.

3.03 APPLICATION

A. Exterior Wood to Receive Opaque Finish: If final painting must be delayed more than 2 weeks after installation of woodwork, apply primer within 2 weeks and final coating within 4 weeks.

B. Apply products in accordance with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual".

C. Where adjacent sealant is to be painted, do not apply finish coats until sealant is applied.

D. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.

E. Apply each coat to uniform appearance.

F. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.

G. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.04 CLEANING

A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

3.05 PROTECTION

A. Protect finishes until completion of project.

B. Touch-up damaged finishes after Substantial Completion.

3.06 SCHEDULE - MPI SYSTEMS

A. Concrete Substrate (Non-traffic Sufaces): Latex System, Exterior .
   1. MPI System: MPI EXT 3.1A (Concrete Vertical Surfaces).
   2. Primer: Aklali-Resistant Primer, W.B.; MPI # 3.
   3. Intermediate Coat: Exterior latex matching topcoat; MPI # 10.
   4. Top Coat: Exterior latex (flat); MPI # 10.

B. Galvanized-Metal Surfaces: Latex System, Exterior .
   1. MPI System: MPI EXT 5.3A.
   2. Primer: Water-Based Galvanized Primer; MPI # 134.
   3. Intermediate Coat: Exterior latex matching topcoat; MPI # 11.
   4. Top Coat: Exterior latex (Semigloss); MPI # 11.

C. Exterior Trim: Latex System, Exterior .
   1. MPI System: MPI EXT 6.4K.
   2. Primer: Aklali-Resistant Primer, W.B.; MPI # 6.
   3. Intermediate Coat: Exterior latex matching topcoat; MPI # 11.

4. Top Coat: Exterior latex (flat); MPI # 11.

D. Exterior Trim: Latex Over Alkyd Wood PrimerSystem, Exterior .
   1. MPI System: MPI EXT 6.4G.
   2. Primer: Aklali-Resistant Primer, W.B.; MPI # 5.
   3. Intermediate Coat: Exterior latex matching topcoat; MPI # 11.
   4. Top Coat: Exterior latex (flat); MPI # 11.

E. Plastic Trim Fabrication Substrates: Latex System, Exterior .
   1. MPI System: MPI EXT 6.8A.
   2. Primer: Bonding Primer (Water Based); MPI # 17.
   3. Intermediate Coat: Exterior latex matching topcoat; MPI # 11.
   4. Top Coat: Exterior latex (flat); MPI # 11.

END OF SECTION 09 91 13

SECTION 09 91 23 - INTERIOR PAINTING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Surface preparation.

B. Field application of paints.

C. Scope: Finish interior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated.

D. Do Not Paint or Finish the Following Items:
   1. Items factory-finished unless otherwise indicated; materials and products having factory-applied primers are not considered factory finished.
   2. Items indicated to receive other finishes.
   3. Items indicated to remain unfinished.
   4. Fire rating labels, equipment serial number and capacity labels, bar code labels, and operating parts of equipment.
   5. Floors, unless specifically indicated.
   6. Glass.
   7. Concealed pipes, ducts, and conduits.

1.02 REFERENCE STANDARDS

A. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency current edition.

B. ASTM D4258 - Standard Practice for Surface Cleaning Concrete for Coating 2005 (Reapproved 2017).

C. ASTM D4442 - Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Based Materials 2020.

D. MPI (APL) - Master Painters Institute Approved Products List; Master Painters and Decorators Association Current Edition.

E. MPI (APSM) - Master Painters Institute Architectural Painting Specification Manual Current Edition.

F. SSPC-SP 1 - Solvent Cleaning 2015, with Editorial Revision (2016).

G. SSPC-SP 2 - Hand Tool Cleaning 2018.

H. SSPC-SP 6 - Commercial Blast Cleaning 2007.

I. SSPC-SP 13 - Surface Preparation of Concrete 2018.

1.03 SUBMITTALS

A. Product Data: Provide complete list of products to be used, with the following information for each:
   1. Manufacturer's name, product name and/or catalog number, and general product category (e.g., "alkyd enamel").
   2. MPI product number (e.g., MPI #47).
   3. Cross-reference to specified paint system products to be used in project; include description of each system.
   4. Manufacturer's installation instructions.

B. Certification: By manufacturer that paints and finishes comply with VOC limits specified.

C. Manufacturer's Instructions: Indicate special surface preparation procedures.

D. Maintenance Data: Submit data including finish schedule showing where each product/color/finish was used, product technical data sheets, material safety data sheets (MSDS), care and cleaning instructions, touch-up procedures, repair of painted and finished surfaces, and color samples of each color and finish used.

E. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. See Section 01 60 00 - Product Requirements, for additional provisions.
   2. Extra Paint and Finish Materials: 1 gal of each color; from the same product run, store where directed.
   3. Label each container with color in addition to the manufacturer's label.

1.04 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified, with minimum three years documented experience.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.

B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.

C. Paint Materials: Store at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

1.06 FIELD CONDITIONS

A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.

B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.

C. Do not apply materials when relative humidity exceeds 85 percent, at temperatures less than 5 degrees F above the dew point, or to damp or wet surfaces.

D. Minimum Application Temperatures for Paints: 50 degrees F for interiors unless required otherwise by manufacturer's instructions.

E. Provide lighting level of 80 fc measured mid-height at substrate surface.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Provide paints and finishes used in any individual system from the same manufacturer; no exceptions.

B. Provide paints and finishes from the same manufacturer to the greatest extent possible.
   1. Substitution of MPI-approved products by a different manufacturer is preferred over substitution of unapproved products by the same manufacturer.
   2. Substitution of a different paint system using MPI-approved products by the same manufacturer will be considered.

C. Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Behr Process Corporation: www.behr.com/#sle.
2. Cloverdale Paint, Brand Products of Rodda Paint Company: www.cloverdalepaint.com/#sle.
3. Diamond Vogel Paints: www.diamondvogel.com/#sle.
4. PPG Paints: www.ppgpaints.com/#sle.
5. Rodda Paint Co: www.roddapaint.com/#sle.
6. Sherwin-Williams Company: www.sherwin-williams.com/#sle.
7. Vista Paint Corporation: www.vistapaint.com/#sle.

D. Primer Sealers: Same manufacturer as top coats.

2.02 PAINTS AND FINISHES - GENERAL

A. Paints and Finishes: Ready-mixed, unless intended to be a field-catalyzed paint.
1. Where MPI paint numbers are specified, provide products listed in Master Painters Institute Approved Product List, current edition available at www.paintinfo.com, for specified MPI categories, except as otherwise indicated.
2. Provide paints and finishes of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
3. Provide materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
4. For opaque finishes, tint each coat including primer coat and intermediate coats, one-half shade lighter than succeeding coat, with final finish coat as base color.
5. Supply each paint material in quantity required to complete entire project's work from a single production run.
6. Do not reduce, thin, or dilute paint or finishes or add materials unless such procedure is specifically described in manufacturer's product instructions.

B. Volatile Organic Compound (VOC) Content:
1. Provide paints and finishes that comply with the most stringent requirements specified in the following:
a. 40 CFR 59, Subpart D--National Volatile Organic Compound Emission Standards for Architectural Coatings.
b. Ozone Transport Commission (OTC) Model Rule, Architectural, Industrial, and Maintenance Coatings; www.otcair.org; specifically:
1) Opaque, Flat: 50 g/L, maximum.
2) Opaque, Nonflat: 150 g/L, maximum.
3) Opaque, High Gloss: 250 g/L, maximum.
2. Determination of VOC Content: Testing and calculation in accordance with 40 CFR 59, Subpart D (EPA Method 24), exclusive of colorants added to a tint base and water added at project site; or other method acceptable to authorities having jurisdiction.

C. Flammability: Comply with applicable code for surface burning characteristics.

D. Sheens: Provide the sheens specified; where sheen is not specified, sheen will be selected later by Architect from the manufacturer's full line.

E. Colors: To be selected from manufacturer's full range of available colors.
1. Selection to be made by Architect after award of contract.
2. Allow for minimum of three colors for each system, unless otherwise indicated, without additional cost to Owner.
3. Extend colors to surface edges; colors may change at any edge as directed by Architect.

4. In finished areas, finish pipes, ducts, conduit, and equipment the same color as the wall/ceiling under which they are mounted.

2.03 PAINT SYSTEMS - INTERIOR

A. Interior Surfaces to be Painted, Unless Otherwise Indicated: Including gypsum board, concrete, concrete masonry units, brick, wood, plaster, uncoated steel, shop primed steel, galvanized steel, aluminum, and acoustical ceilings.
   1. Two top coats and one coat primer.
   2. Top Coat(s): Interior Latex; MPI #52, 53 or 54.
      a. Products:
         1) Behr Marquee Interior Eggshell Enamel [No.2450]. (MPI #52)
         2) Behr Marquee Interior Semi-Gloss Enamel [No.3450]. (MPI #54)
         3) Behr Premium Plus Interior Flat [No.1050]. (MPI #53)
         4) Behr Premium Plus Interior Eggshell Enamel [No.2050]. (MPI #52)
         5) Behr Premium Plus Interior Semi-Gloss Enamel [No.3050]. (MPI #54)
         6) Behr Pro i300 Interior Dead Flat Paint [No.PR310]. (MPI #53)
         7) Behr Pro i300 Interior Semi-Gloss Paint [No.PR370]. (MPI #54)
         8) PPG Paints Speedhide Pro-EV Zero Interior Wall and Ceiling Latex, 12-110XI Series, Flat. (MPI #53)
         9) PPG Paints Speedhide Pro-EV Zero Interior Latex Enamel, 12-510XI Series, Semi-Gloss. (MPI #54)
         10) PPG Paints Speedhide Zero Interior Latex, 6-5110 Series, Flat. (MPI #53)
         11) PPG Paints Speedhide Zero Interior Latex, 6-5410 Series, Satin. (MPI #52)
         12) PPG Paints Speedhide Zero Interior Latex, 6-5510 Series, Semi-Gloss. (MPI #54)
         13) PPG Paints Speedhide Interior Latex, 6-70 Series, Flat. (MPI #53)
         14) PPG Paints Speedhide Interior Latex, 6-3511 Series, Satin. (MPI #52)
         15) PPG Paints Speedhide Interior Latex, 6-500 Series, Semi-Gloss. (MPI #54)
         16) PPG Paints Advantage 900 Interior/Exterior Styrene Acrylic, 919-10 Series, Semi-Gloss. (MPI #54)
         17) Rodda Master Painter Ultra Low VOC Flat, 513601. (MPI #53)
         18) Sherwin-Williams ProMar 200 HP Series, Eg-Shel. (MPI #52)
         19) Sherwin-Williams ProMar 200 Zero VOC Interior Latex, Eg-Shel. (MPI #52)
         20) Sherwin-Williams Solo Series, Flat. (MPI#53)
         21) Vista Paint Corporation; 8100 Carefree Flat: www.vistapaint.com/#sle. (MPI #53)
         22) Vista Paint Corporation; 8300 Carefree Eggshell: www.vistapaint.com/#sle. (MPI #52)
         23) Vista Paint Corporation; 8400 Carefree Semi-Gloss: www.vistapaint.com/#sle. (MPI #54)

B. Paint I-OP-MD-DT - Medium Duty Door/Trim: For surfaces subject to frequent contact by occupants, including metals and wood:
   1. Medium duty applications include doors, door frames, railings, handrails, and guardrails.
   2. Two top coats and one coat primer.
   3. Top Coat(s): Interior Alkyd; MPI #47.
      a. Products:

1) PPG Paints Glyptex Interior Alkyd Enamel, 439-10 Series, Semi-Gloss. (MPI #47)
2) Rodda Porsalite Semi-Gloss, 745001. (MPI #47)

4. Top Coat Sheen:
   a. Semi-Gloss: MPI gloss level 5; use this sheen at all locations.

C. Paint I-OP-MD-WC - Medium Duty Vertical and Overhead: Including gypsum board, plaster, concrete, concrete masonry units, uncoated steel, shop primed steel, galvanized steel, and aluminum.
1. Two top coats and one coat primer.
2. Top Coat(s): Interior Alkyd; MPI #81.
   a. Products:
      1) PPG Paints HPC Rust Preventative Alkyd, 4306, Semi-Gloss. (MPI #47, 81)
3. Top Coat Sheen:
   a. Semi-Gloss: MPI gloss level 5; use this sheen at all locations.

D. Paint I-OP-FL - Concrete and Wood Floors to be Painted.
1. Two top coats and one coat primer.

E. Paint I-TR-C - Transparent Finish on Concrete Floors.
1. Sealer: Water Based Sealer for Concrete Floors; MPI #99.
   a. Products:
      1) Behr Premium Wet-Look Sealer High Gloss [No.985]. (MPI #99)
      2) Behr Premium Wet-Look Sealer Low-Lustre [No.986]. (MPI #99)
      3) PPG Paints Perma-Crete Plex-Seal WB Interior/Exterior Clear Sealer, 4-6200XI, Satin. (MPI #99)
      4) Sherwin-Williams H&C Clarishield Water-Based Wet-Look Concrete Sealer. (MPI #99)
2. Sealer Sheen:
   a. Eggshell: MPI gloss level 3; use this sheen at all locations.

2.04 PRIMERS

A. Primers: Provide the following unless other primer is required or recommended by manufacturer of top coats.
1. Interior/Exterior Latex Block Filler; MPI #4.
   a. Products:
      1) Kilz Pro-X p50 Block Filler Primer.
      2) PPG Paints Speedhide Masonry Hi Fill Latex Block Filler, 6-15XI . (MPI #4)
      3) Rodda Sprayable Block Filler, 501901. (MPI #4)
      4) Sherwin-Williams ConFlex Block Filler. (MPI #4)
      5) Sherwin-Williams Loxon Block Surfacer. (MPI #4)
      6) Vista Paint Corporation; 040 Block Kote: www.vistapaint.com/#sle. (MPI #4)
      7) Zinsser by Rust-Oleum Corporation Block Filler 2X High Build Primer for Concrete: www.rustoleum.com/#sle. (MPI #4)
2. Interior Latex Primer Sealer; MPI #50.
   a. Products:
      1) Behr Premium Plus Interior All-In-One Primer and Sealer [No.75]. (MPI #50)
      2) Behr Premium Plus Interior Drywall Primer and Sealer [No.73]. (MPI #50)
      3) PPG Paints Speedhide Interior Latex Sealer, 6-2. (MPI #50)
      4) PPG Paints Pure Performance Interior Latex Sealer, 9-900. (MPI #50).

5) Rodda Roseal II, 502701. (MPI #50)
6) Vista Paint Corporation; 1100 Hi-Build PVA Sealer: www.vistapaint.com/#sle. (MPI #50)
7) Rust-Oleum Corporation Sierra Acrylic Primer Griptec: www.rustoleum.com/#sle. (MPI #50)
8) Rust-Oleum Corporation XIM Prime Start Multi-Purpose Primer/Sealer: www.rustoleum.com/#sle. (MPI #50)
9) Zinsser by Rust-Oleum Corporation Drywall Primer: www.rustoleum.com/#sle. (MPI #50)

3. Interior/Exterior Quick Dry Alkyd Primer for Metal; MPI #76.
   a. Products:
      1) PPG Paints Multiprime Multi-Purpose Primer, 4160 Series. (MPI #76)
4. Interior Water Based Primer for Galvanized Metal; MPI #134 or #134 X-Green.
   a. Products:
      1) Behr Premium Plus Interior/Exterior Multi-Surface Primer and Sealer [No.436]. (MPI #134)
      2) PPG Paints Pitt-Tech Plus EP DTM Industrial Primer, 90-1912. (MPI #134)
      3) Rodda Metal Master Primer, 508901. (MPI #134)
      4) Sherwin-Williams DTM Primer/Finish. (MPI #134, #134 X-Green)

2.05 ACCESSORY MATERIALS

A. Accessory Materials: Provide primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of painted surfaces.

B. Patching Material: Latex filler.

C. Fastener Head Cover Material: Latex filler.

PART 3 EXECUTION

3.01 EXAMINATION

A. Do not begin application of paints and finishes until substrates have been adequately prepared.

B. Verify that surfaces are ready to receive work as instructed by the product manufacturer.

C. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.

D. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

E. Test shop-applied primer for compatibility with subsequent cover materials.

F. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces is below the following maximums:
   1. Gypsum Wallboard: 12 percent.
   2. Plaster and Stucco: 12 percent.
   3. Masonry, Concrete, and Concrete Masonry Units: 12 percent.
   4. Interior Wood: 15 percent, measured in accordance with ASTM D4442.
   5. Concrete Floors and Traffic Surfaces: 8 percent.

3.02 PREPARATION

A. Clean surfaces thoroughly and correct defects prior to application.

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

C. Remove or repair existing paints or finishes that exhibit surface defects.

D. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces or finishing.

E. Seal surfaces that might cause bleed through or staining of topcoat.

F. Concrete:
   1. Remove release agents, curing compounds, efflorescence, and chalk. Do not coat surfaces if moisture content or alkalinity of surfaces to be coated exceeds that permitted in manufacturer's written instructions.
   2. Clean surfaces with pressurized water. Use pressure range of 1,500 to 4,000 psi at 6 to 12 inches. Allow to dry.
   3. Clean concrete according to ASTM D4258. Allow to dry.
   4. Prepare surface as recommended by top coat manufacturer and according to SSPC-SP 13.

G. Masonry:
   1. Remove efflorescence and chalk. Do not coat surfaces if moisture content, alkalinity of surfaces, or if alkalinity of mortar joints exceed that permitted in manufacturer's written instructions. Allow to dry.
   2. Prepare surface as recommended by top coat manufacturer.
   3. Clean surfaces with pressurized water. Use pressure range of 600 to 1,500 psi at 6 to 12 inches. Allow to dry.

H. Concrete Floors and Traffic Surfaces: Remove contamination, acid etch and rinse floors with clear water. Verify required acid-alkali balance is achieved. Allow to dry.

I. Gypsum Board: Fill minor defects with filler compound. Spot prime defects after repair.

J. Plaster: Fill hairline cracks, small holes, and imperfections with latex patching plaster. Make smooth and flush with adjacent surfaces. Wash and neutralize high-alkali surfaces.

K. Insulated Coverings: Remove dirt, grease, and oil from canvas and cotton.

L. Aluminum: Remove surface contamination and oils and wash with solvent according to SSPC-SP 1.

M. Galvanized Surfaces:
   1. Remove surface contamination and oils and wash with solvent according to SSPC-SP 1.
   2. Prepare surface according to SSPC-SP 2.

N. Ferrous Metal:
   1. Solvent clean according to SSPC-SP 1.
   2. Shop-Primed Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces. Re-prime entire shop-primed item.
   3. Remove rust, loose mill scale, and other foreign substances using methods recommended in writing by paint manufacturer and blast cleaning according to SSPC-SP 6 Commercial Blast Cleaning. Protect from corrosion until coated.

O. Wood Surfaces to Receive Opaque Finish: Wipe off dust and grit prior to priming. Seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after primer has dried; sand between coats. Back prime concealed surfaces before installation.

P. Wood Doors to be Field-Finished: Seal wood door top and bottom edge surfaces with clear sealer.

Q. Metal Doors to be Painted: Prime metal door top and bottom edge surfaces.

3.03 APPLICATION

A. Apply products in accordance with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual".

B. Where adjacent sealant is to be painted, do not apply finish coats until sealant is applied.

C. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.

D. Apply each coat to uniform appearance in thicknesses specified by manufacturer.

E. Sand wood and metal surfaces lightly between coats to achieve required finish.

F. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.

G. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.04 CLEANING

A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

3.05 PROTECTION

A. Protect finishes until completion of project.

B. Touch-up damaged finishes after Substantial Completion.

3.06 SCHEDULE - MPI PAINT SYSTEMS

A. Concrete Substrates, Nontraffic Surfaces: Latex System, Exterior.
   1. MPI System: MPI INT 3.1E.
   2. Primer: Interior Latex matching topcoat; MPI # 53.
   3. Intermediate Coat: Interior latex matching topcoat; MPI # 53.
   4. Topcoat: Interior latex (flat); MPI # 53.

B. CMU Substrates: Latex System
   1. MPI System: MPI INT 4.2A.
   2. Primer: Interior/exterior latex block filler; MPI # 4.
   3. Intermediate Coat: Interior latex matching topcoat; MPI # 52.
   4. Topcoat: Interior latex (eggshell); MPI # 52.

C. Steel Substrates: Quick -Drying Enamel System
   1. MPI System: MPI INT 5.1A.
   2. Primer: Quick-drying alkyd metal primer; MPI # 76.
   3. Intermediate Coat: Quick-drying enamel matching topcoat; MPI # 81.
   4. Topcoat: Quick-drying enamel (semigloss); MPI # 81.

D. Galvanized-Metal Substrates: Latex System
   1. MPI System: MPI INT 5.3J.
   2. Primer: Waterborne galvanized-metal primer; MPI # 134.
   3. Intermediate Coat: Interior latex matching topcoat; MPI # 54.
   4. Topcoat: Interior latex (semigloss); MPI # 54.

E. Gypsum Board Substrates: Latex System
   1. MPI System: MPI INT 9.2A.
   2. Primer: Interior Latex primer/sealer; MPI # 50.
   3. Intermediate Coat: Interior latex matching topcoat; MPI # 52.
   4. Topcoat: Interior latex (eggshell); MPI # 52.

F. Cotton or Canvas Insulation-Covering Substrates: Including pipe and duct coverings Latex System
   1. MPI System: MPI INT 10.1A.
   2. Primer: Interior Latex matching topcoat; MPI # 50.
   3. Intermediate Coat: Interior latex matching topcoat; MPI # 53.
   4. Topcoat: Interior latex (flat); MPI # 53.

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PANAMA CITY BEACH
FIRE STATION #32
HUTCHISON BLVD
BID DOCUMENTS
AUGUST 1, 2023

SECTION 09 96 00 - HIGH-PERFORMANCE COATINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. High performance coatings.

B. Surface preparation.

1.02 REFERENCE STANDARDS

A. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency current edition.

B. ASTM D4258 - Standard Practice for Surface Cleaning Concrete for Coating 2005 (Reapproved 2017).

C. MPI (APL) - Master Painters Institute Approved Products List; Master Painters and Decorators Association Current Edition.

D. MPI (APSM) - Master Painters Institute Architectural Painting Specification Manual Current Edition.

E. NFPA 101 - Life Safety Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

1.03 SUBMITTALS

A. Product Data: Provide complete list of all products to be used, with the following information for each:
   1. Manufacturer's name, product name and/or catalog number, and general product category (e.g. "alkyd enamel").
   2. MPI product number (e.g. MPI #47).
   3. Cross-reference to specified coating system(s) product is to be used in; include description of each system.
   4. Manufacturer's installation instructions.
   5. If proposal of substitutions is allowed under submittal procedures, explanation of all substitutions proposed.

B. Manufacturer's Certificate: Certify that high-performance coatings comply with VOC limits specified.

C. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

D. Manufacturer's Installation Instructions: Indicate special procedures and perimeter conditions requiring special attention.

E. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. Extra Coating Materials: 1 gallon of each type and color.
   2. Label each container with manufacturer's name, product number, color number, and room names and numbers where used.

1.04 QUALITY ASSURANCE

A. Maintain one copy of each referenced document that applies to application on site.

B. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three years documented experience.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Only materials (primers, coatings, etc.) listed in the latest edition of the MPI Approved Product List (APL) are acceptable for use on this project.

B. Provide high performance coating products from the same manufacturer to the greatest extent possible.
   1. Substitution of MPI-approved products by a different manufacturer is preferred over substitution of unapproved products by the same manufacturer.
   2. Substitution of a different high performance coating system using MPI-approved products by the same manufacturer will be considered.

C. Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
   1. Dow: www.dow.com/#sle.
   2. PPG Paints: www.ppgpaints.com/#sle.
   3. Precision Coatings: www.precisioncoatingsinc.com/#sle.
   4. Sherwin-Williams Company: www.protective.sherwin-williams.com/industries/#sle.
   5. Tnemec Company, Inc: www.tnemec.com/#sle.

2.02 HIGH-PERFORMANCE COATINGS

A. Provide coating systems that meet the following minimum performance criteria, unless more stringent criteria are specified:
   1. Surface Burning Characteristics: Flame spread/Smoke developed index of 0/0, maximum, when tested in accordance with ASTM E84.
   2. NFPA 101, Class A rated.
   3. Lead Content: None.

2.03 TOP COAT MATERIALS

A. Coatings - General: Provide complete multi-coat systems formulated and recommended by manufacturer for the applications indicated, in the thicknesses indicated; number of coats specified does not include primer or filler coat.
   1. Lead Content: Not greater than 0.06 percent by weight of total nonvolatile content.
   2. Chromium Content, as Hexavalent Chromium, Zinc Chromate, or Strontium Chromate: None.
   3. Volatile Organic Compound (VOC) Content:
      a. Provide coatings that comply with the most stringent requirements specified in the following:
         1) 40 CFR 59, Subpart D--National Volatile Organic Compound Emission Standards for Architectural Coatings.
         2) Ozone Transport Commission (OTC) Model Rule, Architectural, Industrial, and Maintenance Coatings: www.otcair.org.
      b. Determination of VOC Content: Testing and calculation in accordance with 40 CFR 59, Subpart D (EPA Method 24), exclusive of colorants added to a tint base and water added at project site; or other method acceptable to authorities having jurisdiction.
   4. Colors: Selected from manufacturer's standard colors.

B. Epoxy Coating:
   1. Top Coat(s): Polyamide Epoxy; MPI #77, #177.
      a. Sheen: Gloss.
      b. Products:

1) PPG Paints; Amerlock 400 High Solids Epoxy Coating, AK-400 Series, Semi-Gloss: www.ppgpaints.com/#sle.
2) PPG Paints; Aquapon High Build Polyamide Epoxy, 97-1212 Series, Semi-Gloss: www.ppgpaints.com/#sle.
3) PPG Paints; HPC Epoxy, High Gloss, 95-501 Series: www.ppgpaints.com/#sle.
4) Sherwin-Williams; Macropoxy 646-100 Epoxy, B58-600 Series: www.protective.sherwin-williams.com/#sle.
5) Sherwin-Williams; Macropoxy 646 Fast Cure Epoxy: www.protective.sherwin-williams.com/#sle. (MPI #177)
6) Sherwin-Williams; Macropoxy HS: www.protective.sherwin-williams.com/#sle.
7) Sherwin-Williams; Tile Clad HS: www.protective.sherwin-williams.com/#sle. (MPI #77)
8) Tnemec Company, Inc; Series 287 Enviro-Pox: www.tnemec.com/#sle.

C. Shellac: Pure, white type.

2.04 PRIMERS

A. Primers: Provide the following unless other primer is required or recommended by coating manufacturer.
1. Primer Sealer, Latex, Interior; MPI #50.
a. Products:
1) PPG Paints; Speedhide Latex Quick Dry Sealer, 6-2: www.ppgpaints.com/#sle. (MPI #50)
2) PPG Paints; Speedhide Zero Interior Latex Sealer, 6-4900XI: www.ppgpaints.com/#sle. (MPI #50)
3) PPG Paints; Pure Performance Interior Latex Primer, 9-900; www.ppgpaints.com/#sle. (MPI #50)
4) Sherwin-Williams; ProMar 200 Zero VOC Interior Latex Primer: www.protective.sherwin-williams.com/#sle. (MPI #50)
2. Block Filler, Latex; MPI #4.
a. Products:
1) PPG Paints; Speedhide Masonry Hi Fill Latex Block Filler, 6-15XI: www.ppgpaints.com/#sle. (MPI #4)
2) Sherwin-Williams; Heavy Duty Block Filler: www.protective.sherwin-williams.com/#sle. (MPI #4)
3) Sherwin-Williams; PrepRite Interior/Exterior Block Filler: www.protective.sherwin-williams.com/#sle. (MPI #4)

2.05 ACCESSORY MATERIALS

A. Accessory Materials: Provide primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of coated surfaces.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Do not begin application of coatings until substrates have been properly prepared.

C. Verify that substrate surfaces are ready to receive work as instructed by the coating manufacturer. Obtain and follow manufacturer's instructions for examination and testing of substrates.

D. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.

E. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

F. Test shop-applied primer for compatibility with subsequent cover materials.

G. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:
   1. Gypsum Board: 12 percent.
   2. Masonry, Concrete, and Concrete Unit Masonry: 12 percent.

H. Masonry: Verify masonry joints are struck flush.

I. Proceed with coating application only after unacceptable conditions have been corrected.
   1. Commencing coating application constitutes Contractor's acceptance of substrates and conditions.

3.02 PREPARATION

A. Clean surfaces of loose foreign matter.

B. Remove substances that would bleed through finished coatings. If unremovable, seal surface with shellac.

C. Remove finish hardware, fixture covers, and accessories and store.

D. Masonry:
   1. Remove efflorescence and chalk. Do not coat surfaces if moisture content or alkalinity of surfaces or if alkalinity of mortar joints exceed that permitted in manufacturer's written instructions. Allow to dry.
   2. Prepare surface as recommended by coating manufacturer.
   3. Clean surfaces with pressurized water. Use pressure range of 600 to 1,500 psi at 6 to 12 inches. Allow to dry.

3.03 PRIMING

A. Apply primer to all surfaces, unless specifically not required by coating manufacturer. Apply in accordance with coating manufacturer's instructions.

B. Concrete Masonry: Apply masonry filler to thickness required to fill holes and produce smooth surface; minimum thickness of 30 mils.

3.04 COATING APPLICATION

A. Apply coatings in accordance with manufacturer's written instructions, to thicknesses specified and recommendations in MPI - Architectural Painting and Specification Manual.

B. Apply in uniform thickness coats, without runs, drips, pinholes, brush marks, or variations in color, texture, or finish. Finish edges, crevices, corners, and other changes in dimension with full coating thickness.

3.05 FIELD QUALITY CONTROL

A. See Section 01 40 00 - Quality Requirements for general requirements for field inspection.

3.06 CLEANING

A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

B. Clean surfaces immediately of overspray, splatter, and excess material.

C. After coating has cured, clean and replace finish hardware, fixtures, and fittings previously removed.

3.07 PROTECTION

A. Protect finished work from damage.

3.08 SCHEDULE

A. Substrate: CMU Substrates, Interior.
   1. Primer: Interior/exterior latex block filler; MPI # 4.
   2. Intermediate Coat: Epoxy, cold-cured, gloss; MPI # 77.
   3. Top Coat: Epoxy, cold-cured, gloss; MPI # 77.

B. Substrate: Gypsum Wallboard, Interior.
   1. Primer: Interior/exterior latex primer/sealer; MPI # 50.
   2. Intermediate Coat: Epoxy, cold-cured, gloss; MPI # 77.
   3. Top Coat: Epoxy, cold-cured, gloss; MPI # 77.

END OF SECTION 09 96 00

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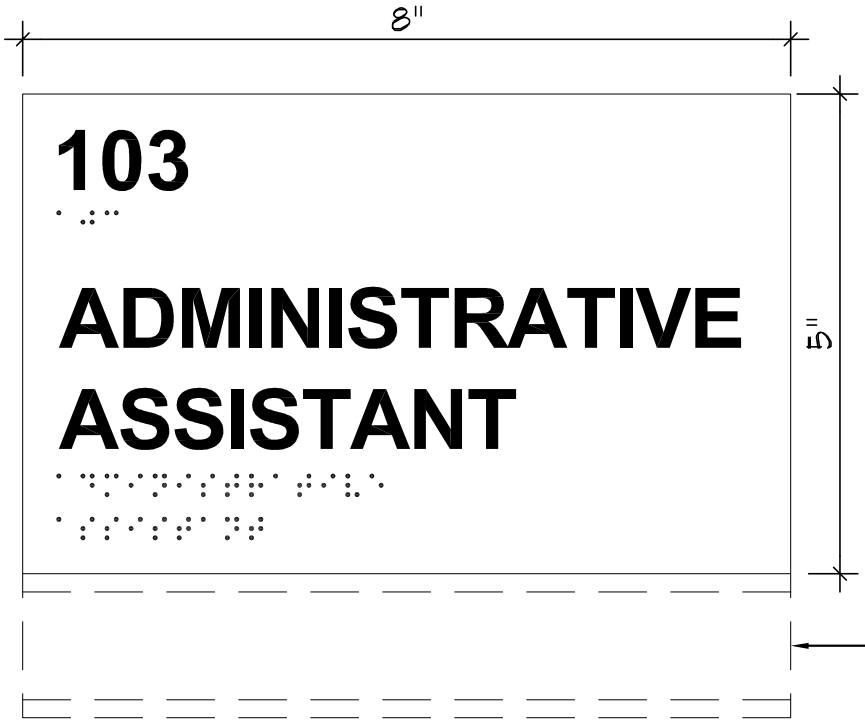
SIGNAGE SCHEDULE

DOOR NO.	SIGN TYPE	SIGN VERBIAGE		REMARKS
		NUMBER	TEXT	
100A	A	100A	TOOLS	
100B	A	100B	FILL STATION	
100C	A	100C	GEAR STORAGE	
100D	C1	-	BATHROOM	ADD HC SYMBOL TO SIGN
100E	A	100E	HOSE DRYING/EXERCISE TOWER	
100F	-	-	-	
100G	-	-	-	
100H	-	-	-	
100J	-	-	-	
100K	-	-	-	
100L	-	-	-	
100M	-	-	-	
100N	-	-	-	
101	-	-	-	
101A	A	101	RECEPTION	LOCATE ON PUSH SIDE
102	A	102	STORAGE	
103	A	103	ADMINISTRATIVE ASSISTANT	
103A	A	103A	STORAGE	
104	C	-	RESTROOM	ADD HC SYMBOL TO SIGN
105	A	105	ADMISTRATIVE ASSISTANT	
106	B	106	FIRE INSPECTOR	
107	A	107	CONFERENCE ROOM	
107A	A	107A	IT	
108	A	108	ELECTRICAL	
109	B	109	TRAINING CHIEF	
110	A	110	STORAGE	
111	D	-	EMPLOYEES ONLY	LOCATE ON PUSH SIDE
111A	A	111A	STORAGE	
111B	-	-	-	
112	A	112	STORAGE	
113	A	113	JANITOR	
114	A	114	REPORT WRITING	
115	A	115	BUNK ROOM 1	
116	A	116	BUNK ROOM 2	
117	A	117	BUNK ROOM 3	
118	C	-	BATHROOM 1	
119	A	119	BUNK ROOM 4	
120	C	-	BATHROOM 2	
121	A	121	BUNK ROOM 5	
122	C	-	BATHROOM 3	
123	A	123	BUNK ROOM 6	
124	A	124	LAUNDRY	
125	A	125	OFFICER	
125A	C	-	BATHROOM	
126	A	126	TURNOUT GEAR LAUNDRY	
127	A	127	MEDICAL SUPPLY	
128	A	128	UNIFORM STORAGE	
129	A	129	MECHANICAL	
133	-	-	-	
131	A	-	ADMINISTRATION	LOCATE ON PULL SIDE
	A	100	APPARATUS BAY	LOCATE ON PUSH SIDE
	D	-	EMPLOYEES ONLY	(2) SIGNS, ONE FOR EACH SIDE
131A	-	-	-	
131B	A	-	PATIO	
132A	-	-	-	
132B	-	-	-	
133	D	-	EMPLOYEES ONLY	LOCATE ON PULL SIDE
133A	D	-	EMPLOYEES ONLY	LOCATE ON PULL SIDE

SIGNAGE SCHEDULE

DOOR NO.	SIGN TYPE	SIGN VERBIAGE		REMARKS
		NUMBER	TEXT	
100A	A	100A	TOOLS	
100B	A	100B	FILL STATION	
100C	A	100C	GEAR STORAGE	
100D	C1	-	BATHROOM	ADD HC SYMBOL TO SIGN
100E	A	100E	HOSE DRYING/EXERCISE TOWER	
100F	-	-	-	
100G	-	-	-	
100H	-	-	-	
100J	-	-	-	
100K	-	-	-	
100L	-	-	-	
100M	-	-	-	
100N	-	-	-	
101	-	-	-	
101A	A	101	RECEPTION	LOCATE ON PUSH SIDE
102	A	102	STORAGE	
103	A	103	ADMINISTRATIVE ASSISTANT	
103A	A	103A	STORAGE	
104	C	-	RESTROOM	ADD HC SYMBOL TO SIGN
105	A	105	ADMISTRATIVE ASSISTANT	
106	B	106	FIRE INSPECTOR	
107	A	107	CONFERENCE ROOM	
107A	A	107A	IT	
108	A	108	ELECTRICAL	
109	B	109	TRAINING CHIEF	
110	A	110	STORAGE	
111	D	-	EMPLOYEES ONLY	LOCATE ON PUSH SIDE
111A	A	111A	STORAGE	
111B	-	-	-	
112	A	112	STORAGE	
113	A	113	JANITOR	
114	A	114	REPORT WRITING	
115	A	115	BUNK ROOM 1	
116	A	116	BUNK ROOM 2	
117	A	117	BUNK ROOM 3	
118	C	-	BATHROOM 1	
119	A	119	BUNK ROOM 4	
120	C	-	BATHROOM 2	
121	A	121	BUNK ROOM 5	
122	C	-	BATHROOM 3	
123	A	123	BUNK ROOM 6	
124	A	124	LAUNDRY	
125	A	125	OFFICER	
125A	C	-	BATHROOM	
126	A	126	TURNOUT GEAR LAUNDRY	
127	A	127	MEDICAL SUPPLY	
128	A	128	UNIFORM STORAGE	
129	A	129	MECHANICAL	
133	-	-	-	
131	A	-	ADMINISTRATION	LOCATE ON PULL SIDE
	A	100	APPARATUS BAY	LOCATE ON PUSH SIDE
	D	-	EMPLOYEES ONLY	(2) SIGNS, ONE FOR EACH SIDE
131A	-	-	-	
131B	A	-	PATIO	
132A	-	-	-	
132B	-	-	-	
133	D	-	EMPLOYEES ONLY	LOCATE ON PULL SIDE
133A	D	-	EMPLOYEES ONLY	LOCATE ON PULL SIDE

ATTACHMENT 'B'
SIGN TYPES

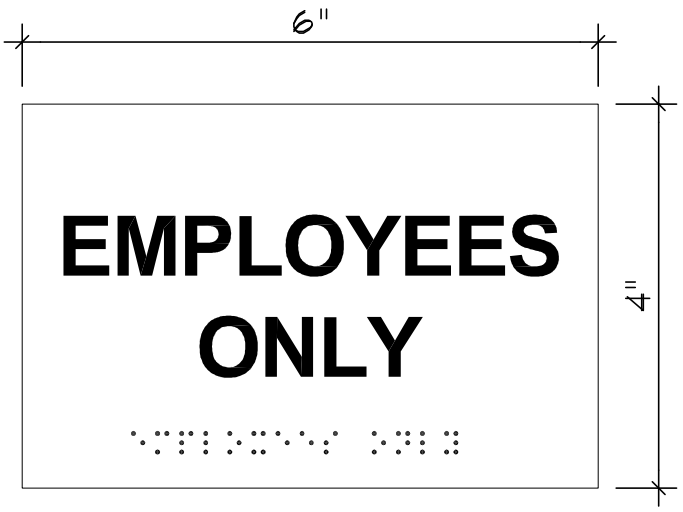


SIGN TYPE 'A'

SIGN TYPE 'B'

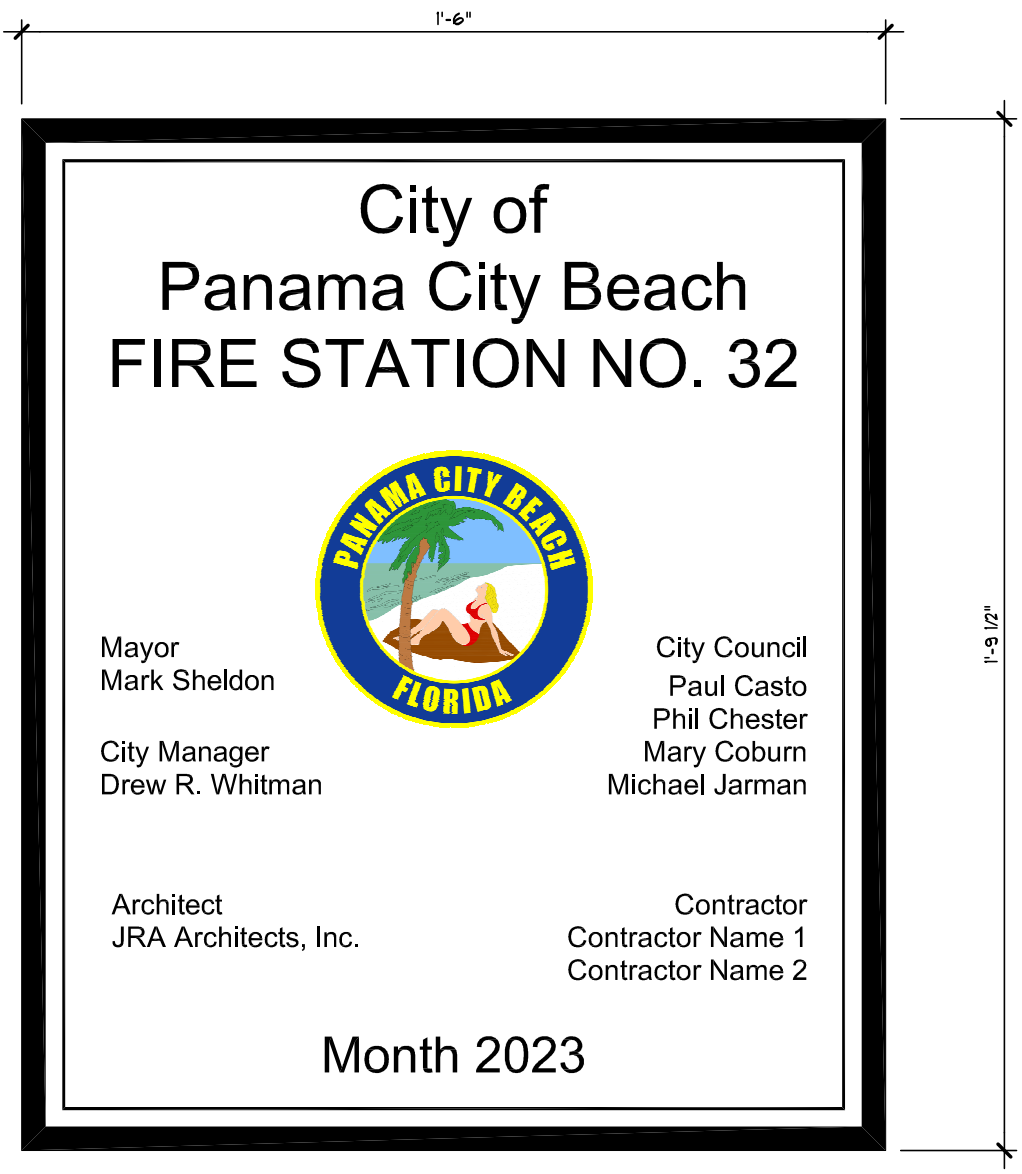
SAME AS SIGN TYPE "A" WITH CHANGEABLE NAME SLOT

SIGN TYPE 'C'



SIGN TYPE 'D'

ATTACHMENT 'C'



BUILDING PLAQUE

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SECTION 10 14 00 - SIGNAGE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Room and door signs.

B. Dimensional Letters.

C. Plaque.

D. Exterior Dimensional Graphics.

E. Surface Applied Graphics.

1.02 REFERENCE STANDARDS

A. 36 CFR 1191 - Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities; Architectural Barriers Act (ABA) Accessibility Guidelines current edition.

B. ADA Standards - 2010 ADA Standards for Accessible Design 2010.

C. ICC A117.1 - Accessible and Usable Buildings and Facilities 2017.

1.03 SUBMITTALS

A. Product Data: Manufacturer's printed product literature for each type of sign, indicating sign styles, font, foreground and background colors, locations, overall dimensions of each sign.

B. Signage Schedule: Provide information sufficient to completely define each sign for fabrication, including room number, room name, other text to be applied, sign and letter sizes, fonts, and colors.

1. When room numbers to appear on signs differ from those on drawings, include the drawing room number on schedule.
2. When content of signs is indicated to be determined later, request such information from Owner through Architect at least 2 months prior to start of fabrication; upon request, submit preliminary schedule.
3. Submit for approval by Owner through Architect prior to fabrication.

C. Selection Samples: Where colors are not specified, submit two sets of color selection charts or chips.

D. Manufacturer's Installation Instructions: Include installation templates and attachment devices.

E. Manufacturer's Qualification Statement.

1.04 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Package signs as required to prevent damage before installation.

B. Package room and door signs in sequential order of installation, labeled by floor or building.

C. Store tape adhesive at normal room temperature.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Room and Door Signs: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the project include, but are not limited to, the following:
   1. Best Sign Systems, Inc: www.bestsigns.com/#sle.
   2. Inpro: www.inprocorp.com/#sle.
   3. Mohawk Sign Systems, Inc: www.mohawksign.com/#sle.

B. Dimensional Letter Signs: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the project include, but are not limited to, the following:
   1. Cosco Industries; Cast Aluminum: www.coscoarchitecturalsigns.com/#sle.
   2. FASTSIGNS: www.fastsigns.com/#sle.
   3. Inpro: www.inprocorp.com/#sle.

C. Plaques: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the project include, but are not limited to, the following:
   1. Cosco Industries; Cast Aluminum: www.coscoarchitecturalsigns.com/#sle.
   2. Metal Designs; www.metaldesignsllc.com/#sle.
   3. Impact Signs Inc.; www.impactsigns.com/#sle

2.02 SIGNAGE APPLICATIONS

A. Accessibility Compliance: Signs are required to comply with ADA Standards and ICC A117.1 and applicable building codes, unless otherwise indicated; in the event of conflicting requirements, comply with the most comprehensive and specific requirements.

B. Room and Door Signs: Provide a sign for every doorway, whether it has a door or not, not including corridors, lobbies, and similar open areas.
   1. Sign Type: Flat signs with applied character panel media as specified.
   2. Provide "tactile" signage, with letters raised minimum 1/32 inch and Grade II braille.
   3. Character Height: Per ADA requirements.
   4. See "Attachment 'A' - Sign Schedule" and "Attachement 'B' - Sign Types" attached at the end of this section for sign verbiage and sizes.

C. Building Identification Signs:
   1. Use individual metal letters.

D. Plaque: See attached "Attachement 'C' - Building Plaque".

2.03 TACTILE SIGNAGE MEDIA

A. Injection Molded Panels: One-piece acrylic plastic, with raised letters and braille.
   1. Total Thickness: 1/8 inch.

B. Applied Character Panels: Acrylic plastic base, with applied acrylic plastic letters and braille.
   1. Total Thickness: 1/8 inch.
   2. Letter Thickness: 1/8 inch.
   3. Letter Edges: Square.

2.04 PLAQUES

A. Metal Plaques:
   1. Metal: Bronze casting.
   2. Metal Thickness: 1/2 inch, minimum.
   3. Text and Typeface:

a. Character Font: Helvetica, Arial, or other sans serif font.
b. Character Case: Upper case only.
c. Character Color: Contrast with background color.

4. Border Style: Double line as shown on detail.
5. Background Texture: Leatherette.
6. Surface Finish: As selected by Architect from manufacturer's full range.
7. Painted Background Color: As selected by Architect from manufacturer's standard background colors.
8. Protective Coating: Manufacturer's standard clear coating.
9. Mounting: Blind studs.

2.05 DIMENSIONAL LETTERS

A. Metal Letters:
1. Metal: Aluminum casting.
2. Metal Thickness: 1/8 inch minimum.
3. Letter Height: As indicated on drawings.
4. Text and Typeface:
a. Character Font: Helvetica, Arial, or other sans serif font.
b. Character Case: Upper case only.
5. Finish: As selected by Architect from manufacturer's full range.
a. Powder Coated
6. Mounting: Concealed screws.

2.06 EXTERIOR DIMENSIONAL GRAPHICS

A. City Logo Sign - City Seal ID
1. Custom 1/2" Polyvinyl Chloride (PVC) with exterior-grade high performance (digital high resolution) graphics applied to the 1st surface, 72" diameter
2. Mounting: Mechanically attached to building face with concealed studs.

B. Fire Department Logo Sign - Fire Rescue Seal ID
1. Custom 1/2" Polyvinyl Chloride (PVC) with exterior-grade high performance (digital high resolution) graphics applied to the 1st surface, 72" diameter.
2. Mounting: Mechanically attached to building face with concealed studs.

C. Apparatus Bay Sign - Fire Rescue Seal ID
1. Custom 1/2" Polyvinyl Chloride (PVC) with exterior-grade high performance (digital high resolution) graphics applied to the 1st surface, 96 diameter.
2. Mounting: Mechanically attached to building face with concealed studs.

2.07 SURFACE APPLIED GRAPHICS

A. Applied Vinyl Graphics - City Seal ID

B. Premium Pressure Sensitive Vinyl (PSV) with high resolution digitally printed full-color graphics (1st surface) with vinyl glass backer (2nd surface).

2.08 ACCESSORIES

A. Concealed Screws: Stainless steel, galvanized steel, chrome plated, or other non-corroding metal.

B. Tape Adhesive: Double sided tape, permanent adhesive.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that substrate surfaces are ready to receive work.

3.02 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Install neatly, with horizontal edges level.

C. Locate signs and mount at heights indicated on drawings and in accordance with ADA Standards and ICC A117.1.

D. Protect from damage until Date of Substantial Completion; repair or replace damaged items.

END OF SECTION 10 14 00

SECTION 10 14 19 - DIMENSIONAL LETTERS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Dimensional letter signage.

B. Illumination system.

1.02 REFERENCE STANDARDS

A. ADA Standards - 2010 ADA Standards for Accessible Design 2010.

B. ICC A117.1 - Accessible and Usable Buildings and Facilities 2017.

C. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

D. UL 879 - Electric Sign Components Current Edition, Including All Revisions.

1.03 SUBMITTALS

A. Product Data: Manufacturer's product literature for each type of dimensional letter sign, indicating style, font, colors, locations, and overall dimensions of each sign.

B. Shop Drawings:
   1. Include dimensions, locations, elevations, materials, text and graphic layout, and attachment details.
   2. Show locations of electrical service connections.
   3. Include diagrams for power, signal, and control wiring.

C. Manufacturer's Installation Instructions: Include installation templates and attachment devices.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Package dimensional letter signs as required to prevent damage before installation.

B. Store under cover and elevated above grade.

1.05 FIELD CONDITIONS

A. Maintain minimum ambient temperature during and after installation.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Dimensional Letter Signs: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the project include, but are not limited to, the following:
   1. FASTSIGNS International, Inc: www.fastsigns.com/#sle.
   2. Inpro Corporation: www.inprocorp.com/#sle.

2.02 ILLUMINATED DIMENSIONAL LETTERS

A. Applications: Exterior Building Signage.
   1. Use individual metal letters.
   2. Mounting Location: Exterior as indicated on drawings.

B. Metal Letters:
   1. Material: Aluminum sheet, fabricated reverse channel.
   2. Thickness: 1/8 inch minimum.

3. Letter Height: As indicated on drawings.
4. Text and Typeface:
    a. Character Font: Helvetica, Arial, or other sans serif font.
5. Finish: Powder Coat.
6. Color: As selected by Architect from manufacturer's full range of colors.
7. Mounting: Concealed screws.
8. Illumination System: Halo-lit reverse channel letters.
    a. Provide products that are listed and labeled as complying with UL 879, where applicable.
    b. Power: 120 V, 60 Hz, 1 phase, 15 A.

2.03 ACCESSORIES

A. Concealed Screws: Noncorroding metal; stainless steel, galvanized steel, chrome plated, or other.

B. Electrical Components and Devices: Listed and labeled as defined in NFPA 70 by a qualified testing agency.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that substrate surfaces are ready to receive work.

B. Verify that electrical service is correctly sized and located to accommodate dimensional letter signs.

C. Notify Architect if conditions are not suitable for installation of signs; do not proceed until conditions are satisfactory.

3.02 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Install with horizontal edges level.

C. Locate dimensional letter signs and mount at heights indicated on drawings.

END OF SECTION 10 14 19

SECTION 10 26 41 - BALLISTICS RESISTANT PANELS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Laminated fiberglass ballistics-resistant panels.

1.02 RELATED REQUIREMENTS

A. Section 06 10 00 - Rough Carpentry: Wood framing to receive ballistics-resistant panels.

B. Section 09 21 16 - Gypsum Board Assemblies: Metal framing to receive ballistics-resistant panels.

C. Section 09 22 16 - Non-Structural Metal Framing: Metal framing to receive ballistics-resistant panels.

1.03 REFERENCE STANDARDS

A. UL 752 - Standard for Bullet-Resisting Equipment Current Edition, Including All Revisions.

1.04 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Conduct a preinstallation meeting one week prior to the start of the work of this section; require attendance by all affected installers.

1.05 SUBMITTALS

A. Product Data: Manufacturer's current data sheets on each product to be used.

B. Shop Drawings: Details of installation of ballistics-resistant panels, including plan views, elevations, sections, and details of the proposed installation with attachment methods.

C. Certificates: Submit printed data to indicate compliance with following requirements.
   1. UL Listing verification and UL 752 Current Test Results as provided by Underwriters Laboratories.

D. Manufacturer's Instructions: Indicate preparation and installation.

E. Manufacturer's qualification statement.

F. Installer's qualification statement.

G. Warranty Documentation: Manufacturer warranty; ensure that forms have been completed in Owner's name and registered with manufacturer.

H. Specimen Warranty: Manufacturer warranty.

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with at least three years of documented experience.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Deliver and store products in manufacturer's unopened packaging bearing the brand name, manufacturer's identification, and required UL and NIJ certification labels until ready for installation.

B. Handle material with care to prevent damage. Stack panels flat, store inside under cover off the ground in a dry location, and protect from other construction activities.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Laminated Glass Fiber Ballistics-Resistant Panels: Subject to compliance with requirements, products that may be incorporated into the project include, but are not limited to, the following:
   1. Armortex; Level 3: www.armortex.com/#sle.
   2. Insulgard Security Products; FG-300: www.insulgard.com/#sle.
   3. Total Security Solutions; BB-3: www.tssbulletproof.com/#sle.
   4. Armorcore; Level 3: www.armorcore.com

2.02 LAMINATED FIBER BALLISTICS-RESISTANT PANELS

A. General:
   1. Laminated fiber ballistics-resistant panels to be non-ricochet type. When struck by a bullet or projectile, the panels to delaminate in such a way that absorbs the energy, stops the projectile, and prevents ricochet or spalling.
   2. Ballistics Resistance of Joints: Equal to that of the panel.

B. Performance Requirements:
   1. Ballistics Resistance Rating: Listed and labeled as tested in accordance with UL 752 Level 3 (super-power handgun) threat rating.

C. Laminated Fiber Panels:
   1. Material: Multiple layers of fiberglass woven roving bonded together with resin and compressed into flat rigid sheets.
   2. Panel Size: 3 ft by 8 ft.
   3. Panel Thickness: Minimum thickness required for selected UL 752 threat level.
   4. Panel Weight: Minimum weight required for selected UL 752 threat level.
   5. Attachment Method: Mechanical fasteners.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verification of Conditions: Verify that substrates have been properly prepared.

B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.02 PREPARATION

A. Clean surfaces thoroughly prior to installation of this work.

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

3.03 INSTALLATION

A. Install panels in accordance with manufacturer's instructions and shop drawings and in proper relationship with adjacent construction.
   1. Maintain ballistics-resistive rating at panel junctures with concrete floor and roof slabs, bullet-resistive door and window frames, and required penetrations.

B. Reinforce panel joints with a minimum 4 inch wide back-up layer of ballistics-resistant material, centered on panel joints.

C. Secure panels using screws.

3.04 PROTECTION

A. Protect installed panels from subsequent construction operations.

B. Touch-up, repair or replace damaged panels before Date of Substantial Completion.

END OF SECTION 10 26 41

SECTION 10 28 00 - TOILET, BATH, AND LAUNDRY ACCESSORIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Commercial toilet accessories.

B. Commercial shower and bath accessories.

C. Utility room accessories.

1.02 REFERENCE STANDARDS

A. ASTM A269/A269M - Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service 2022.

B. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process 2023.

C. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar 2023.

D. ASTM C1036 - Standard Specification for Flat Glass 2021.

E. ASTM C1503 - Standard Specification for Silvered Flat Glass Mirror 2018.

1.03 ADMINISTRATIVE REQUIREMENTS

A. Coordinate the work with the placement of internal wall reinforcement, concealed ceiling supports, and reinforcement of toilet partitions to receive anchor attachments.

1.04 SUBMITTALS

A. Product Data: Submit data on accessories describing size, finish, details of function, and attachment methods.

B. Manufacturer's Installation Instructions: Indicate special procedures and conditions requiring special attention.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Commercial Toilet, Shower, and Bath Accessories: Subject to compliancewith requirements, manufacturers offering products that may be incorporated into the project include, but are not limited to, the following:
   1. AJW Architectural Products: www.ajw.com/#sle.
   2. American Specialties, Inc: www.americanspecialties.com/#sle.
   3. Bradley Corporation: www.bradleycorp.com/#sle.
   4. Georgia-Pacific Professional: www.blue-connect.com/#sle.
   5. Bobrick (Basis of Design unless noted otherwise); www.bobrick.com.
   6. Kohler; us.kohler.com
   7. Umbra; umbra.com

2.02 MATERIALS

A. Accessories - General: Shop assembled, free of dents and scratches and packaged complete with anchors and fittings, steel anchor plates, adapters, and anchor components for installation.
   1. Grind welded joints smooth.
   2. Fabricate units made of metal sheet of seamless sheets with flat surfaces.

B. Stainless Steel Sheet: ASTM A666, Type 304.

C. Stainless Steel Tubing: ASTM A269/A269M, Grade TP304 or TP316.

D. Galvanized Sheet Steel: Hot-dipped galvanized steel sheet, ASTM A653/A653M, with G90/Z275 coating.

E. Mirror Glass: Annealed float glass, ASTM C1036 Type I, Class 1, Quality Q2, with silvering, protective and physical characteristics complying with ASTM C1503.

F. Adhesive: Two component epoxy type, waterproof.

G. Fasteners, Screws, and Bolts: Hot dip galvanized; tamper-proof; security type.

2.03 FINISHES

A. Stainless Steel: Satin finish, unless otherwise noted.

2.04 TOILET ACCESSORIES

A. Toilet Paper Dispenser: Single roll, surface-mounted, stainless steel toilet roll holder (Kohler K-27292, Brushed Nickel or equal).

B. Paper Towel Dispenser: roll paper type, stainless steel, surface-mounted (Umbra Cappa Wall Mount Paper Towel Holder in Nickel or equal).

C. Mirrors: Stainless steel framed, 1/4 inch thick annealed float glass; ASTM C1036.
   1. Annealed Float Glass: Silvering, protective and physical characteristics in compliance with ASTM C1503.
   2. Frame: 0.05 inchangle shapes, with mitered and welded and ground corners, and tamperproof hanging system; satin finish.
   3. Backing: Full-mirror sized, minimum 0.03 inch galvanized steel sheet and nonabsorptive filler material.

D. Grab Bars: Stainless steel, smooth surface.
   1. Standard Duty Grab Bars:
      a. Push/Pull Point Load: 250 pound-force, minimum.
      b. Dimensions: 1-1/2 inch outside diameter, minimum 0.05 inch wall thickness, exposed flange mounting, 1-1/2 inch clearance between wall and inside of grab bar.
      c. Finish: Satin.
      d. Length and Configuration: As indicated on drawings.

2.05 SHOWER AND BATH ACCESSORIES

A. Shower Curtain Rod: Stainless steel tube, 1 inch outside diameter, 0.04 inch wall thickness, satin-finished, with 3 inch outside diameter, minimum 0.04 inch thick satin-finished stainless steel flanges, for installation with exposed fasteners.

B. Shower Curtain:
   1. Material: Nylon, machine washable, and mildew-resistant.
   2. Size: 48 by 72 inches, hemmed edges.
   3. Grommets: Stainless steel; pierced through top hem on 6 inch centers.
   4. Color: White.
   5. Shower Curtain Hooks: Chrome-plated or stainless steel spring wire designed for snap closure.

C. Towel Bar: 24" tubular bar; round brackets, concealed attachment, satin finish (Kohler K-27287 Brush nickel or equal).

D. Robe Hook: single-prong, round bracket and backplate for concealed attachment, satin finish (Kohler K-27290-CP Brushed Nickel or equal).

2.06 UTILITY ROOM ACCESSORIES

A. Combination Utility Shelf/Mop and Broom Holder: 0.05 inch thick stainless steel, Type 304, with 1/2 inch returned edges, 0.06 inch steel wall brackets.
   1. Drying rod: Stainless steel, 1/4 inch diameter.
   2. Hooks: Four, 0.06 inch stainless steel rag hooks at shelf front.
   3. Mop/broom holders: Three spring-loaded rubber cam holders at shelf front.
   4. Length: 36 inches.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify exact location of accessories for installation.

C. Verify that field measurements are as indicated on drawings.

3.02 PREPARATION

A. Deliver inserts and rough-in frames to site for timely installation.

B. Provide templates and rough-in measurements as required.

3.03 INSTALLATION

A. Install accessories in accordance with manufacturers' instructions in locations indicated on drawings.

B. Install plumb and level, securely and rigidly anchored to substrate.

3.04 PROTECTION

A. Protect installed accessories from damage due to subsequent construction operations.

END OF SECTION 10 28 00

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SECTION 10 44 00 - FIRE PROTECTION SPECIALTIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Fire extinguishers.

B. Fire extinguisher cabinets.

C. Accessories.

1.02 RELATED REQUIREMENTS

A. Section 06 10 00 - Rough Carpentry: Wood blocking product and execution requirements.

1.03 REFERENCE STANDARDS

A. ASTM E814 - Standard Test Method for Fire Tests of Penetration Firestop Systems 2013a (Reapproved 2017).

B. FM (AG) - FM Approval Guide Current Edition.

C. NFPA 10 - Standard for Portable Fire Extinguishers 2022.

D. UL (DIR) - Online Certifications Directory Current Edition.

1.04 SUBMITTALS

A. Product Data: Provide extinguisher operational features.

B. Manufacturer's Installation Instructions: Indicate special criteria and wall opening coordination requirements.

C. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

D. Maintenance Data: Include test, refill or recharge schedules and re-certification requirements.

1.05 FIELD CONDITIONS

A. Do not install extinguishers when ambient temperature may cause freezing of extinguisher ingredients.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Fire Extinguishers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
   1. Activar Construction Products Group, Inc. - JL Industries; Cosmic Extinguisher - Multipurpose Chemical: www.activarcpg.com.
   2. Kidde, a unit of United Technologies Corp: www.kidde.com.
   3. Nystrom, Inc: www.nystrom.com.
   4. Potter-Roemer: www.potterroemer.com.

B. Fire Extinguisher Cabinets and Accessories: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
   1. Activar Construction Products Group, Inc. - JL Industries; Ambassador Series: www.activarcpg.com/#sle.

2. Kidde, a unit of United Technologies Corp: www.kidde.com/#sle.
3. Nystrom, Inc: www.nystrom.com/#sle.
4. Potter-Roemer: www.potterroemer.com/#sle.

2.02 FIRE EXTINGUISHERS

A. Fire Extinguishers - General: Comply with product requirements of NFPA 10 and applicable codes, whichever is more stringent.
   1. Provide extinguishers labeled by UL (DIR) or FM (AG) for purpose specified and as indicated.

B. Multipurpose Dry Chemical Type Fire Extinguishers: Carbon steel tank, with pressure gauge.
   1. Class: A:B:C type.
   2. Size: 10 pound.
   3. Finish: Baked polyester powder coat, red color.
   4. Temperature range: Minus 40 degrees F to 120 degrees F.

2.03 FIRE EXTINGUISHER CABINETS

A. Fire Rating: Listed and labeled in accordance with ASTM E814 requirements for fire resistance rating of walls where being installed.

B. Cabinet Construction: Non-fire rated.
   1. Formed primed steel sheet; 0.036 inch thick base metal.

C. Fire Rated Cabinet Construction: One-hour fire rated.

D. Cabinet Configuration: Recessed type.
   1. Size to accommodate accessories.
   2. Trim: Flat square edge, with 1 1/4 to 1 1/2 inch wide face.

E. Door: 0.036 inch metal thickness, reinforced for flatness and rigidity with lock and breakable window access. Hinge doors for 180 degree opening with continuous piano hinge.

F. Door Glazing: Tempered glass, clear, 1/8 inch thick, and set in resilient channel glazing gasket.

G. Cabinet Mounting Hardware: Appropriate to cabinet, with pre-drilled holes for placement of anchors.

H. Alternate Cabinet Configuration: If walls are of insufficient depth for recessed cabinet, provide semi-recessed. If wall is of insufficient depth for either recessed or semi recess, provide surface mounted box fully exposed and mounted directly to wall with no trim.

2.04 ACCESSORIES

A. Extinguisher Brackets: Formed steel, chrome-plated.

B. Lettering: FIRE EXTINGUISHER decal, or vinyl self-adhering, pre-spaced black lettering in accordance with authorities having jurisdiction (AHJ).

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify rough openings for cabinet are correctly sized and located.

3.02 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Install cabinets plumb and level in wall openings, 54 inches from finished floor to Top of Cabinet.

C. Secure rigidly in place.

D. Place extinguishers in cabinets.

3.03 MAINTENANCE

A. Provide a separate maintenance contract for specified maintenance service.

3.04 MAINTENANCE - SELF-SERVICE FIRE EXTINGUISHERS

A. Monthly Inspections: Inspect self-service fire extinguishers on monthly basis in accordance with manufacturer's instructions, and requirements of the authorities having jurisdiction (AHJ).

B. Annual Inspections: Inspect self-service fire extinguishers on annual basis in accordance with manufacturer's instructions, and requirements of the authorities having jurisdiction (AHJ).

C. Inspection Certification Tag: Provide new tag indicating acceptable condition of fire extinguisher, date of inspection, and name of self-service inspector for each inspection.

END OF SECTION 10 44 00

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SECTION 10 51 13 - METAL LOCKERS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Metal gear lockers.

1.02 RELATED REQUIREMENTS

A. Section 06 10 00 - Rough Carpentry: Wood blocking and nailers.

1.03 SUBMITTALS

A. Product Data: Manufacturer's published data on locker construction, sizes, and accessories.

B. Shop Drawings: Indicate locker plan layout, anchoring details, etc..

C. Manufacturer's Installation Instructions: Indicate component installation assembly.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Protect locker finish and adjacent surfaces from damage.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Metal Gear Lockers: Subject to compliance with requirements, products that may be incorporated into the project include, but are not limited to, the following:
   1. Basis of Design: Red Rack; Gear Storage Rack Locker.
   2. GearGrid.

2.02 LOCKER APPLICATIONS

A. Open-Front Turnout Gear Lockers: Open wire gear lockers, free-standing.
   1. Unit Width: 20 inches.
   2. Unit Depth: 20 inches.
   3. Unit Height: 83 inches.
   4. Configuration: 3 unit and 6 unit configurations as required. See floor plan for layout..
   5. Unit Configuration:
      a. One upper and lower shelf.
      b. Coat rod.
      c. Hooks: (3) per opening.
   6. Accessories:
      a. Tube Support Structure.
         1) Size: Determined by locker size.
         2) Construction:
            (a) Vertical Posts: 4x4, 0.25-inch wall thickness ASTM A513 steel tube.
            (b) Floor Mounting Plates: 1/2-inch steel plate welded to vertical posts. 3/16-inch mounting holes in configuation as required by locker layout.
         3) Color and finish: Same as locker units.
   7. Color: Manufacturer's Color Red.

END OF SECTION 10 51 13

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SECTION 10 71 13.13 - EXTERIOR SHUTTERS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Aluminum shutters.

B. Shutter hardware.

1.02 REFERENCE STANDARDS

A. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix) 2022.

B. ASTM E330/E330M - Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference 2014 (Reapproved 2021).

C. ASTM E1996 - Standard Specification for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Windborne Debris in Hurricanes 2020.

1.03 SUBMITTALS

A. Product Data: Manufacturer's data sheets on each product to be used.

B. Shop Drawings: Show materials, layout, dimensions, profiles, fasteners and anchors, hardware, finishes, and interface with adjacent construction.

C. Samples: For each finish product specified, two complete sets of color chips representing manufacturer's standard colors.

D. Certificate: Certify that products of this section meet or exceed specified requirements.

E. Test Reports: Show compliance with specified requirements for windborne debris-resistant shutters.

F. Product Evaluation Reports: Show compliance with specified requirements.

G. Manufacturer's Qualification Statement.

H. Installer's Qualification Statement.

I. Warranty Documentation: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

J. Specimen Warranty.

1.04 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with at least three years of documented experience.

B. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.

C. Testing Agency Qualifications: Independent firm specializing in performing testing and inspections of the type specified in this section.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to site in manufacturer's original, unopened packaging, with labels clearly identifying product name and manufacturer.

B. Store products in manufacturer's unopened packaging until ready for installation.

C. Store materials in a clean, cool and dry area in accordance with manufacturer's instructions. Do not leave unopened shutters in direct sunlight.

D. Protect materials during handling and installation to prevent damage.

1.06 WARRANTY

A. See Section 01 78 00 - Closeout Submittals for additional warranty requirements.

B. Correct defective Work within a five year period after Date of Substantial Completion.

C. Provide five year manufacturer warranty for shutters.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work, include but are not limited to, the following:
   1. New Horizons Shutters; www.newhorzonshutters.com.
   2. Hurricane Shutters Florida; www.hurricaneshuttersflorida.com.
   3. Legends Storm Shutters; www.stormshutters.com.
   4. Town & Country Industries/Brannan Aluminum; www.brannanaluminum.com

2.02 EXTERIOR SHUTTERS

A. General:
   1. Provide operable shutters as indicated on drawings.

B. Material Composition: Aluminum, and as specified below.

C. Type: Top hung (Bahama).
   1. Style: Louvered.

D. Thickness: 1 inch, nominal.

E. Impact Protective System: Shutter manufacturer's standard assembly for specified shutter type.
   1. Leaf Reinforcement: 1/8 inch thick polycarbonate panel mechanically fastened to back of each shutter leaf.
   2. Storm Bars:
      a. Bahama Storm Shutters: Hurricane-rated top hinge with locking system on sides.
   3. Accessories: Provide stainless steel hinges, holders, fasteners, and other accessories to resist design windloads and for proper shutter operations.

2.03 PERFORMANCE REQUIREMENTS

A. Shutters to withstand specified load requirements without damage or permanent set, when tested in accordance with ASTM E330/E330M.

B. Design Wind Loads: Comply with requirements of authorities having jurisdiction.

C. Windborne Debris Resistance: Shutter with impact protective system complying with ASTM E1996 for Wind Zone 1 - Enhanced Protection, including both large and small missile tests, and cyclic pressure loading when tested according to ASTM E1886.

2.04 MATERIALS

A. Manufacturer's standard shutter construction and materials for selected model or product line.

B. Aluminum: Shutters fabricated from individual components of aluminum and other materials as noted below.
   1. Stiles: Extruded aluminum.

2. Rails: Extruded aluminum.
3. Louver Slats: Extruded aluminum; rounded edges.
4. Joinery: Mortise and tenon.
5. Shop-Applied Finish:
    a. Fluoropolymer resin powder coating in compliance with AAMA 2605.
6. Color: As selected by Architect from manufacturer's standard line of colors.

2.05 HARDWARE

A. Hardware for Top-Hung "Bahama" Shutters: Select from shutter manufacturer's standard options.
    1. Two-Piece Continuous Top Hinges:
        a. Material: Aluminum.
        b. Finish: Black matte powder coat.
    2. Tilt Arms:
        a. Aluminum tilt arms with nylon end caps.
        b. Nylon hinges/eye end sets.
        c. Stainless steel clevis pins.
        d. Adjustable for 24 inches extension.
    3. Shutter Fasteners:
        a. Catch mounted on window sill.
        b. Material: Cast iron.
        c. Finish: Black matte powder coat.

PART 3 EXECUTION

3.01 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

C. Commencement of work will imply acceptance of substrate.

3.02 PREPARATION

A. Clean surfaces thoroughly prior to installation.

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

3.03 INSTALLATION

A. Install shutters in accordance with manufacturer's instructions for mounting indicated.

B. Adjust operable units for smooth unobstructed operation.

3.04 PROTECTION

A. Protect installed products from damage by weather and other work until Date of Substantial Completion.

B. Touch-up and repair damaged products before Date of Substantial Completion.

END OF SECTION 10 71 13.13

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SECTION 10 75 00 - FLAGPOLES

PART 1 GENERAL

1.01 RELATED REQUIREMENTS

A. Section 03 30 00 - Cast-in-Place Concrete: Concrete base and foundation construction.

1.02 REFERENCE STANDARDS

A. ASTM B241/B241M - Standard Specification for Aluminum and Aluminum-Alloy Seamless Pipe and Seamless Extruded Tube 2022.

B. NAAMM FP 1001 - Guide Specifications for Design Loads of Metal Flagpoles 2007.

1.03 SUBMITTALS

A. Product Data: Provide data on pole, accessories, and configurations.

B. Shop Drawings: Indicate detailed dimensions, base details, anchor requirements, and imposed loads.

C. Designer's Qualification Statement.

D. Maintenance Data: Provide lubrication and periodic maintenance requirement schedules.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Flagpoles:
   1. Concord American Flagpole; Internal - Sentry: www.concordamericanflagpole.com/#sle.
   2. Morgan-Francis Flagpoles & Accessories; Guardian Series: www.morgan-francis.com/#sle.
   3. Pole-Tech Co, Inc; Internal Halyard, Cam Cleat: www.poletech.com/#sle.
   4. Substitutions: See Section 01 60 00 - Product Requirements.

2.02 FLAGPOLES

A. Flagpoles: Designed in accordance with NAAMM FP 1001
   1. Material: Aluminum.
   2. Design: Cone tapered.
   3. Mounting: Ground mounted type.
   4. Nominal Height: 25 ft; measured from nominal ground elevation.
   5. Halyard: Internal type, cam cleat.

B. Performance Requirements:
   1. Wind Pressure Loading on Flagpole with Flag: Resistant without permanent deformation to 130 miles/hr wind speed, in accordance with NAAMM FP 1001; the factor of safety used is 2.5.

2.03 POLE MATERIALS

A. Aluminum: ASTM B241/B241M , 6063 alloy , T6 temper.

2.04 ACCESSORIES

A. Finial Ball: Aluminum, 6 inch diameter.

B. Truck Assembly: Cast aluminum; revolving, non-fouling.

C. Flag: United States design, 8 ft by 12 ft size, nylon fabric, brass grommets, hemmed edges.

D. Halyard: 3/8 inch diameter nylon, braided, white.

E. Connecting Sleeve For Multiple Section Poles: Same material as pole, precision fit for field assembly of pole, concealed fasteners.

F. Counterbalance: Counterwieght.

2.05 MOUNTING COMPONENTS

A. Pole Base Attachment: Sleeve; aluminum base with base cover.

B. Lightning Ground Cable: Copper No. 6 AWG, soft drawn.

2.06 FINISHING

A. Metal Surfaces in Contact With Concrete: Asphaltic paint.

B. Aluminum: Mill finish.

C. Finial: Gold anodized finish.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that concrete foundation is ready to receive work and dimensions are as indicated on shop drawings.

3.02 PREPARATION

A. Coat metal sleeve surfaces below grade and surfaces in contact with dissimilar materials with asphaltic paint.

3.03 INSTALLATION

A. Install flagpole , base assembly, and fittings in accordance with manufacturer's instructions.

B. Fill foundation tube sleeve with concrete specified in Section 03 30 00.

C. Install foundation plate and centering wedges for flagpoles base set in concrete base and fasten.

3.04 TOLERANCES

A. Maximum Variation From Plumb: 1 inch.

3.05 ADJUSTING

A. Adjust operating devices so that halyard and flag function smoothly.

END OF SECTION 10 75 00

SECTION 11 30 13 - APPLIANCES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Kitchen appliances.

B. Laundry appliances.

C. Commerical Ice Maker

1.02 SUBMITTALS

A. Product Data: Manufacturer's data indicating dimensions, capacity, and operating features of each piece of residential equipment specified.

B. Copies of Warranties: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

1.03 QUALITY ASSURANCE

A. Electric Appliances: Listed and labeled by UL (DIR) and complying with NEMA Standards (National Electrical Manufacturers Association).

B. Gas Appliances: Bearing design certification seal of American Gas Association (AGA).

1.04 WARRANTY

A. Provide Manufacturer's standard warranty.

B. Provide five (5) year manufacturer warranty on refrigeration system of refrigerators.

C. Provide ten (10) year manufacturer warranty on tub and door liner of dishwashers.

PART 2 PRODUCTS

2.01 KITCHEN APPLIANCES

A. Provide Equipment Eligible for Energy Star Rating: Energy Star Rated.

B. Refrigerator: Free-standing, top-mounted freezer, and frost-free.
   1. Capacity: Total minimum storage of 21.9 cubic ft; minimum 15 percent freezer capacity.
   2. Energy Usage: Minimum 20 percent more energy efficient than energy efficiency standards set by U.S. Department of Energy (DOE).
   3. Features: Include glass shelves and automatic icemaker.
   4. Exterior Finish: Stainless steel.
   5. Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
      a. Frigidaire Home Products: www.frigidaire.com/#sle.
      b. GE Appliances; Basis of Design: Model # GTS22KYNRFS: www.geappliances.com/#sle.
      c. Whirlpool Corp: www.whirlpool.com/#sle.

C. Undercounter Ice Maker: Built-in
   1. Storage Capacity: 25 lbs.
   2. Size: 15 inches wide.
   3. Energy Usage: Minimum 20 percent more energy efficient than energy efficiency standards set by U.S. Department of Energy (DOE).
   4. Exterior Finish: Stainless steel.

5. Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
    a. Frigidaire Home Products: www.frigidaire.com/#sle.
    b. GE Appliances; Basis of Design: Model # UCC15NPRII: www.geappliances.com/#sle.
    c. Whirlpool Corp: www.whirlpool.com/#sle.

D. Range: Natural gas, free-standing, with standard burners and removable drip pans.
1. Size: 60 inches wide.
2. Oven: Self-cleaning with electronic ignition.
3. Elements: Six (6).
4. Griddle: 24 inches wide.
5. Controls: Solid state electronic.
6. Exterior Finish: Stainless steel.
7. Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
    a. Basis of Design: American Range; ARGF24G-6B-CC.

E. Dishwasher: Undercounter.
1. Controls: Solid state electronic top controls.
2. Wash Levels: Three (3).
3. Cycles: Six (6), including normal, rinse and hold, short, china/crystal, and pot and pan.
4. Features: Include rinse aid dispenser, optional no-heat dry, optional water temperature boost, adjustable upper rack, and adjustable lower rack.
5. Finish: Stainless steel .
6. Manufacturers:
    a. GE Appliances; Basis of Design: Model # GDT645SYNFS: www.geappliances.com/#sle.
    b. Whirlpool Corp: www.whirlpool.com/#sle.

2.02 LAUNDRY APPLIANCES

A. Provide Equipment Eligible for Energy Star Rating: Energy Star Rated.

B. Clothes Washer: Front-loading.
1. Size: Extra Large - 5.0 cu. ft..
2. Cycles: Include normal, permanent press, delicate, soak, and sanitize.
3. Motor Speed: Two speed, five combinations.
4. Features: Include optional second rinse, bleach dispenser, fabric softener dispenser, self-cleaning lint filter, sound insulation, end of cycle signal, and prewash.
5. Finish: Painted steel , color Gray or black.
6. Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
    a. GE Appliances: www.geappliances.com/#sle.
    b. Whirlpool Corp; (Basis of Design) WFW8620H: www.whirlpool.com/#sle.
    c. LG: www.lg.com/us/washers.

C. Clothes Dryer: Electric, stationary.
1. Size: Extra Large - 7.4 cu. ft..
2. Temperature Selections: five.
3. Cycles: Include normal, knit/delicate, and air only.
4. Features: Include interior light, reversible door, sound insulation, and end of cycle signal.
5. Finish: Painted steel , color ____.

6. Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
    a. GE Appliances: www.geappliances.com/#sle.
    b. Whirlpool Corp; (Basis of Design) WED6620H: www.whirlpool.com/#sle.
    c. LG; DLE: www.lg.com/us/dryers.

D. Accessories: stacking kit for washer and dryer as recommended by the manufacturer.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify utility rough-ins are provided and correctly located.

3.02 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Anchor built-in equipment in place.

3.03 ADJUSTING

A. Adjust equipment to provide efficient operation.

3.04 CLEANING

A. Remove packing materials from equipment and properly discard.

B. Wash and clean equipment.

END OF SECTION 11 30 13

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SECTION 12 21 13 - HORIZONTAL LOUVER BLINDS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Horizontal slat louver blinds.

B. Operating hardware.

1.02 SUBMITTALS

A. Product Data: Provide data indicating physical and dimensional characteristics.

B. Shop Drawings: Indicate opening sizes, tolerances required, method of attachment, clearances, and operation.

C. Manufacturer's Installation Instructions: Indicate special procedures.

D. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. Extra Blind Assemblies: One of each size.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work, include but are not limite to, the following:
   1. Hunter Douglas Architectural: www.hunterdouglasarchitectural.com/#sle.
   2. Levolor: www.levolor.com/commercial/#sle.
   3. SWFcontract, a division of Springs Window Fashions, LLC: www.swfcontract.com/#sle.

2.02 BLINDS

A. Description: Horizontal slat louvers hung from full-width headrail with full-width bottom rail.
   1. Provide at all exterior window locations

B. Manual Operation: Cordless raising and lowering full range locking; blade angle adjustable by control wand.

C. Plastic Slats: Faux Wood or Vinyl, square slat corners.
   1. Width: 2 inch.
   2. Color: As selected by Architect.
   3. Texture: Simulated wood-grain.

D. Slat Support: Woven polypropylene cord, ladder configuration.

E. Head Rail: Pre-finished, formed aluminum box, with end caps; internally fitted with hardware, pulleys, and bearings for operation; same depth as width of slats.
   1. Color: Same as slats.

F. Bottom Rail: Pre-finished, formed vinyl; with end caps.
   1. Color: Same as headrail.

G. Control Wand: Extruded hollow plastic; hexagonal shape.
   1. Non-removable type.
   2. Length of window opening height less 3 inch.
   3. Color: Clear.

H. Headrail Attachment: Wall brackets.

2.03 FABRICATION

A. Determine sizes by field measurement.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that openings are ready to receive the work.

B. Ensure structural blocking and supports are correctly placed.

3.02 INSTALLATION

A. Install blinds in accordance with manufacturer's instructions.

B. Secure in place with flush countersunk fasteners.

3.03 TOLERANCES

A. Maximum Variation of Gap at Window Opening Perimeter: 1/4 inch.

B. Maximum Offset From Level: 1/8 inch.

3.04 ADJUSTING

A. Adjust blinds for smooth operation.

3.05 CLEANING

A. Clean blind surfaces just prior to occupancy.

END OF SECTION 12 21 13

SECTION 12 32 00 - MANUFACTURED WOOD CASEWORK

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Manufactured custom casework, with cabinet hardware.

B. Special purpose units.

1.02 RELATED REQUIREMENTS

A. Section 06 10 00 - Rough Carpentry: Blocking and nailers for anchoring casework.

B. Section 07 92 00 - Joint Sealants: Sealing joints between casework and countertops and adjacent walls, floors, and ceilings.

C. Section 12 36 00 - Countertops: Additional requirements for countertops.

1.03 DEFINITIONS

A. Exposed: Portions of casework visible when drawers and cabinet doors are closed, including end panels, bottoms of cases more than 42 inches above finished floor, tops of cases less than 72 inches above finished floor and all members visible in open cases or behind glass doors.

B. Semi-Exposed: Portions of casework and surfaces behind solid doors, tops of cases more than 72 inches above finished floor and bottoms of cabinets more than 30 inches but less than 42 inches above finished floor.

C. Concealed: Sleepers, web frames, dust panels and other surfaces not generally visible after installation and cabinets less than 30 inches above finished floor.

1.04 REFERENCE STANDARDS

A. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards, 2nd Edition 2014, with Errata (2016).

B. AWMAC/WI (NAAWS) - North American Architectural Woodwork Standards 2021, with Errata.

C. BHMA A156.9 - Cabinet Hardware 2020.

D. NEMA LD 3 - High-Pressure Decorative Laminates 2005.

1.05 ADMINISTRATIVE REQUIREMENTS

A. Preinstallation Meeting: Conduct a preinstallation meeting one week prior to the start of the work of this section; require attendance by all affected installers.

1.06 SUBMITTALS

A. Product Data: Component dimensions, configurations, construction details, joint details, attachments.

B. Shop Drawings: Indicate casework types, sizes, and locations, using large scale plans, elevations, and cross sections. Include rough-in and anchors and reinforcements, placement dimensions and tolerances, clearances required, and keying information.

C. Samples for Finish Selection: Fully finished, for color selection. Minimum sample size: 2 inches by 3 inches.
   1. Plastic laminate samples, for color, texture, and finish selection.

2. Thermally fused laminate samples, for color, texture, and finish selection.

D. Manufacturer's Installation Instructions.

E. Manufacturer's Qualification Statement.

F. Installer's Qualification Statement.

G. Maintenance Data: Manufacturer's recommendations for care and cleaning.

H. Finish touch-up kit for each type and color of materials provided.

1.07 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.

B. Installer Qualifications: Company specializing in performing work of the type specified in this section, with not less than three years of documented experience and approved by manufacturer.

1.08 DELIVERY, STORAGE, AND HANDLING

A. Protect items provided by this section, including finished surfaces and hardware items during handling and installation. For metal surfaces, use polyethylene film or other protective material standard with the manufacturer.

B. Acceptance at Site:
   1. Do not deliver or install casework until the conditions specified under Part 3, Examination Article of this section have been met. Products delivered to sites that are not enclosed and/or improperly conditioned will not be accepted if warping or damage due to unsatisfactory conditions occurs.

C. Storage:
   1. Store casework in the area of installation. If necessary, prior to installation, temporarily store in another area, meeting the environmental requirements specified under Part 3, "Site Verification of Conditions" Article of this section.

1.09 WARRANTY

A. Correct defective Work within a five year period after Date of Substantial Completion, at no additional cost to Owner. Defects include, but are not limited to:
   1. Ruptured, cracked, or stained finish coating.
   2. Discoloration or lack of finish integrity.
   3. Cracking or peeling of finish.
   4. Failure of hardware.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Subject to compliance with requirements, manufacturers offering products which may be included into the Work include, but are not limited to the following:
   1. Case Systems: www.casesystems.com/#sle.
   2. Diversified Fixture: www.diversifiedfixture.com/#sle.
   3. Labscape LLC: www.labscape.com/#sle.
   4. Woodlane.

2.02 CASEWORK, GENERAL

A. Quality Standard: AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), unless noted otherwise.

B. Plastic Laminate Faced Cabinets: Custom Grade.

2.03 FABRICATION

A. Assembly: Shop assemble casework items for delivery to site in units easily handled and to permit passage through building openings.

B. Construction: As required for selected grade.

C. Structural Performance: Safely support the following minimum loads:
   1. Base Units: 500 pounds per linear foot across the cabinet ends.
   2. Suspended Units: 300 pounds static load.
   3. Drawers: 125 pounds, minimum.
   4. Hanging Wall Cases: 300 pounds.
   5. Shelves: 100 pounds, minimum.

D. Fittings and Fixture Locations: Cut and drill components for fittings and fixtures.

E. Hardware Application: Factory-machine casework members for hardware that is not surface applied.

F. Access Panels: Where indicated, for maintenance of utility service and mechanical and electrical components.

G. Removable back panels on all base cabinets. Provide partial height back panels at sink cabinets.

H. Fixed panels at backs of open spaces between base cabinets.
   1. Provide cutouts for power receptacles where indicated on drawings.

I. Edging: Fit shelves, doors, and exposed edges with specified edging. Do not use more than one piece for any single length.

J. Scribes and Fillers: Panels of matching construction and finish, for locations where cabinets do not fit tight to adjacent construction.

2.04 PLASTIC-LAMINATE-CLAD CASEWORK

A. Plastic-Laminate-Clad Casework: Solid wood and wood panel construction (no MDF will be accepted); each unit self-contained and not dependent on adjacent units or building structure for rigidity; in sizes necessary to avoid field cutting except for scribes and filler panels. Include adjustable levelers for base cabinets.
   1. Style: Flush overlay. Ease doors and drawer fronts slightly at edges.
   2. Cabinet Nominal Dimensions: Unless otherwise indicated, provide cabinets of widths and heights indicated on drawings, and with following front-to-back dimensions:
      a. Base Cabinets: 22 inches.
      b. Tall Cabinets: 22 inches.
      c. Wall Cabinets: 12 inches.
   3. Plastic Laminate: Apply plastic laminate finish in full uninterrupted sheets consistent with manufactured sizes. Fit corners and joints hairline.
      a. Finish: Matte or suede, gloss rating of 5 to 20.
      b. Surface Color and Pattern: As selected by Architect from manufacturer's full line.
      c. Exposed Interior Surfaces: Thermally fused laminate.
         1) Color: As selected by Architect from manufacturer's full line of colors.
      d. Cap exposed plastic laminate finish edges with material of same finish and pattern.

2.05 SPECIAL PURPOSE UNITS

A. Wardrobe Units.
   1. Style: Flush overlay. Ease doors and drawer fronts slightly at edges.

2. Primary Construction: Thermally fused laminate units, with solid surfacing countertops.
    a. Cabinet Hardware: Manufacturer's standard, types as required for drawers, doors, shelves, levelers, and similar items.
    b. Fasten side panels, back, top, bottom, partition and fixed shelves using corrosion-resistant mechanical fasteners and shoulder screws.
    c. Finish, Surface Color and Pattern: As selected by Architect from manufacturer's full line.
3. Wardrobes: Manufacturer's standard units with shelves, clothes rod, and drawers. See elevations on drawings.

2.06 CABINET HARDWARE

A. Comply with BHMA A156.9 requirements.
    1. Acceptable base materials for plated finishes include brass, bronze, and steel.

B. Shelves in Cabinets:
    1. Shelf Standards and Rests: Vertical standards with rubber button fitted rests, satin chromium plated over nickel on base material.

C. Swinging Doors: Hinges, pulls, and catches.
    1. Hinges: Concealed, number as required by referenced standards for width, height, and weight of door.
        a. Concealed Hinges: Installed in cabinet edge, and on door back, bright chromium plated over nickel on base material.
            1) European-Style Hinges for Overlay Doors: 110 degree opening angle.
    2. Pulls: Chrome wire pulls, 4 inches wide.
        a. Pull design to comply with project's referenced accessibility requirements.
    3. Catches: Magnetic.

D. Drawers: Pulls and slides.
    1. Pulls: Chrome wire pulls, 4 inches wide.
        a. Pull design to comply with project's referenced accessibility requirements.
    2. Slides: Steel, full extension arms, ball bearings; self-closing; capacity as recommended by manufacturer for drawer height and width.
    3. Heavy Duty rated slides (minimum 200 lb.).

2.07 MATERIALS

A. Wood-Based Materials:
    1. Solid Wood: Air-dried to 4.5 percent moisture content, then tempered to 6 percent moisture content before use.
    2. Plywood: Containing no urea-formaldehyde resin binders.

B. High Pressure Decorative Laminate (HPDL): NEMA LD 3, types as recommended for specific applications. complying with Grade requirements, and standard with the manufacturer.

C. Thermally Fused Laminate (TFL): Melamine resin, NEMA LD 3, Type VGL laminate panels.

2.08 ACCESSORIES

A. Plastic Edge Banding: Extruded PVC, convex shaped; smooth finish; self locking serrated tongue; of width to match component thickness.
    1. Color: As selected by Architect from manufacturer's full range.
    2. Use at exposed shelf edges.

B. Bolts, Nuts, Washers, Lags, Pins, and Screws: Of size and type to suit application; galvanized or chrome-plated finish in concealed locations and stainless steel or

chrome-plated finish in exposed locations.

C. Concealed Joint Fasteners: Corrosion-resistant, standard with manufacturer.

D. Sealant for Use in Casework Installation:
   1. Manufacturer's recommended type.

PART 3 EXECUTION

3.01 PREPARATION

A. Large Components: Ensure that large components can be moved into final position without damage to other construction.

3.02 EXAMINATION

A. Site Verification of Environmental Conditions:
   1. Do not deliver casework until the following conditions have been met:
      a. Building has been enclosed (windows and doors sealed and weather-tight).
      b. An operational HVAC system that maintains temperature and humidity at occupancy levels has been put in place.
      c. Ceiling, overhead ductwork, piping, and lighting have been installed.
      d. Installation areas do not require further “wet work” construction.

B. For Base Cabinets Installation: Examine floor levelness and flatness of installation space. Do not proceed with installation if encountered floor conditions required more than 1/2 inch leveling adjustment. When installation conditions are acceptable, for each space, establish the high point of the floor. Set and make level and plumb first cabinet in relation to this high point.

C. For Wall Cabinets Installation: Examine wall surfaces in installation space. Do not proceed with installation if the following conditions are encountered:
   1. Maximum variation from plane of masonry wall exceeds 1/4 inch in 10 ft and 1/2 inch in 20 ft or more, and/or maximum variation from plumb exceeds 1/4 inchper story.
   2. Maximum Variation of finished gypsum board surface from true flatness: 1/8 inch in 10 feet in any direction.

D. Verify adequacy of support framing and anchors.

E. Verify that service connections are correctly located and of proper characteristics.

3.03 INSTALLATION

A. Perform installation in accordance with manufacturer's instructions.

B. Use anchoring devices to suit conditions and substrate materials encountered. Use concealed fasteners to the greatest degree possible. Use exposed fasteners only where allowed by approved shop drawings, or where concealed fasteners are impracticable.

C. Set casework items plumb and square, securely anchored to building structure.

D. Align cabinets to adjoining components, install filler and/or scribe panels where necessary to close gaps.

E. Fasten together cabinets in continuous runs, with joints flush, uniform and tight. Misalignment of adjacent units not to exceed 1/16 inch. In addition, do not exceed the following tolerances:
   1. Variation of Tops of Base Cabinets from Level: 1/16 inch in 10 feet.
   2. Variation of Faces of Cabinets from a True Plane: 1/8 inch in 10 feet.
   3. Variation of Adjacent Surfaces from a True Plane (Lippage): 1/32 inch.
   4. Variation in Alignment of Adjacent Door and Drawer Edges: 1/16 inch.

F. Secure wall and floor cabinets to concealed reinforcement at gypsum board assemblies.

G. Base Cabinets: Fasten cabinets to service space framing and/or wall substrates, with fasteners spaced not more than 16 inches on center. Bolt adjacent cabinets together with joints flush, tight, and uniform.

H. Wall Cabinets: Fasten to hanging strips, and/or wall substrates. Fasten each cabinet through back, near top, at not less than 16 inches on center.

I. Install hardware uniformly and precisely.

J. Countertops: Install countertops intended and furnished for field installation in one true plane, with ends abutting at hairline joints, and no raised edges.

K. Replace units that are damaged, including those that have damaged finishes.

3.04 ADJUSTING

A. Adjust operating parts, including doors, drawers, hardware, and fixtures to function smoothly.

3.05 CLEANING

A. Clean casework and other installed surfaces thoroughly.

3.06 PROTECTION

A. Do not permit finished casework to be exposed to continued construction activity.

B. Protect casework and countertops from ongoing construction activities. Prevent workmen from standing on, or storing tools and materials on casework or countertops.

C. Repair damage, including to finishes, that occurs prior to Date of Substantial Completion, using methods prescribed by manufacturer; replace units that cannot be repaired to like-new condition.

END OF SECTION 12 32 00

SECTION 12 36 00 - COUNTERTOPS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Countertops for manufactured casework.

1.02 RELATED REQUIREMENTS

1.03 REFERENCE STANDARDS

A. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2023.

B. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards, 2nd Edition 2014, with Errata (2016).

C. AWMAC/WI (NAAWS) - North American Architectural Woodwork Standards 2021, with Errata.

D. ISFA 2-01 - Classification and Standards for Solid Surfacing Material 2013.

E. NEMA LD 3 - High-Pressure Decorative Laminates 2005.

1.04 SUBMITTALS

A. Product Data: Manufacturer's data sheets on each product to be used, including:
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Specimen warranty.

B. Shop Drawings: Complete details of materials and installation ; combine with shop drawings of cabinets and casework specified in other sections.

C. Selection Samples: For each finish product specified, color chips representing manufacturer's full range of available colors and patterns.

D. Verification Samples: For each finish product specified, minimum size 6 inches square, representing actual product, color, and patterns.

E. Test Reports: Chemical resistance testing, showing compliance with specified requirements.

F. Installation Instructions: Manufacturer's installation instructions and recommendations.

G. Maintenance Data: Manufacturer's instructions and recommendations for maintenance and repair of countertop surfaces.

1.05 QUALITY ASSURANCE

A. Installer Qualifications: Company specializing in performing work of the type specified in this section, with not less than three years of documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

B. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.07 FIELD CONDITIONS

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

environmental conditions outside manufacturer's absolute limits.

PART 2 PRODUCTS

2.01 COUNTERTOPS

A. Quality Standard: Custom Grade, in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), unless noted otherwise.

B. Solid Surfacing Countertops: Solid surfacing sheet or plastic resin casting over continuous substrate.
   1. Flat Sheet Thickness: 1/2 inch, minimum.
   2. Solid Surfacing Sheet and Plastic Resin Castings: Complying with ISFA 2-01 and NEMA LD 3; acrylic or polyester resin, mineral filler, and pigments; homogenous, non-porous and capable of being worked and repaired using standard woodworking tools; no surface coating; color and pattern consistent throughout thickness.
      a. Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
         1) Dupont: www.corian.com/#sle.
         2) Formica Corporation: www.formica.com/#sle.
         3) Wilsonart: www.wilsonart.com/#sle.
      b. Surface Burning Characteristics: Flame spread index of 25, maximum; smoke developed index of 450, maximum; when tested in accordance with ASTM E84.
      c. Finish on Exposed Surfaces: Matte, gloss rating of 5 to 20.
      d. Color and Pattern: As selected by Architect from manufacturer's full line.
   3. Other Components Thickness: 1/2 inch, minimum.
   4. Exposed Edge Treatment: Built up to minimum 1-1/4 inch thick; square edge; use marine edge at sinks.
   5. Back and End Splashes: Same sheet material, square top; minimum 4 inches high.

2.02 ACCESSORIES

A. Fixed Top-Mounted Countertop Support Brackets:
   1. Material: Steel.
   2. Finish: Manufacturer's standard, factory-applied, textured powder coat.
   3. Color: Selected by Architect from manufacturer's full line..
   4. Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
      a. Centerline Brackets; Front Mounting Countertop Support: www.countertopbracket.com/#sle.

2.03 FABRICATION

A. Fabricate tops and splashes in the largest sections practicable, with top surface of joints flush.
   1. Join lengths of tops using best method recommended by manufacturer.
   2. Fabricate to overhang fronts and ends of cabinets 1 inch except where top butts against cabinet or wall.
      a. Rout a 1/8 inch drip groove at underside of exposed overlapping edges, set back 1/2 inch from face of edge.
   3. Prepare all cutouts accurately to size; replace tops having improperly dimensioned or unnecessary cutouts or fixture holes.

B. Provide back/end splash wherever counter edge abuts vertical surface unless otherwise indicated.

1. Secure to countertop with concealed fasteners and with contact surfaces set in waterproof glue.
2. Height: 4 inches, unless otherwise indicated.

C. Solid Surfacing: Fabricate tops and wall panels up to 144 inches long in one piece; join pieces with adhesive sealant in accordance with manufacturer's recommendations and instructions.

PART 3 EXECUTION

3.01 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

C. Verify that wall surfaces have been finished and mechanical and electrical services and outlets are installed in proper locations.

3.02 PREPARATION

A. Clean surfaces thoroughly prior to installation.

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

3.03 INSTALLATION

A. Securely attach countertops to cabinets using concealed fasteners. Make flat surfaces level; shim where required.

B. Seal joint between back/end splashes and vertical surfaces.

3.04 TOLERANCES

A. Variation From Horizontal: 1/8 inch in 10 feet, maximum.

B. Offset From Wall, Countertops: 1/8 inch maximum; 1/16 inch minimum.

C. Field Joints: 1/8 inch wide, maximum.

3.05 CLEANING

3.06 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Date of Substantial Completion.

END OF SECTION 12 36 00

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