

**HILLSBOROUGH COUNTY
PUBLIC SCHOOLS, FLORIDA**

901 East Kennedy Blvd.
P.O. Box 3408
Tampa, FL 33602

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Superintendent of Schools:
Addison G. Davis



SPECIFICATIONS FOR:

PROJECT TITLE: ROOF REPLACEMENT AT

**FACILITIES: BLAKE HIGH SCHOOL
1701 North Blvd
Tampa, FL 33607**

ARCHITECT PROJECT NO: 202109

HCPS PROJECT LEADER: Stephen Ellis

HCPS PROJECT ID: 100252

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Hillsborough County Public Schools is an equal opportunity institution for education and employment.



C. B. GOLDSMITH & ASSOCIATES, INC.

AR-94537 | www.cbgoldsmith.com

Building Sciences

Roofing & Exterior Envelope Consultants

Forensic Architecture

**100% CONSTRUCTION
DOCUMENTS**

2555 Nursery Road
Clearwater, Florida 33764
Phone: (727) 540-0456
info@cbgoldsmith.com

Contract Document Bidding Issue Date:

October 15, 2021

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SIGNATURE PAGE

PROJECT:

ROOF REPLACEMENT AT
BLAKE HIGH SCHOOL
1701 North Blvd
Tampa, FL 33607

C. B. Goldsmith and Associates, Inc.
Architect

Statement of Compliance:

*To the best of my knowledge, these drawings and the
project manual are complete and comply with the
florida building code.*

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CONTRACTOR NOTES

CONTRACTOR NOTES



Air Analytics LLC.
6790 New Tampa Highway, Suite 107
Lakeland, FL 33815
(863) 937-9922

ASBESTOS AND LEAD-BASED PAINT ROOF SURVEY SUMMARY OF FINDINGS

BLAKE HIGH SCHOOL

1701 N Blvd, Tampa, FL 33607

AIR ANALYTICS PROJECT NO. 21-22015-10

Survey Date: April 15, 2021

Report Date: May 7, 2021

SCHOOL DISTRICT OF HILLSBOROUGH COUNTY
4805 EAST DR. MARTIN LUTHER KING JR. BLVD.
TAMPA, FLORIDA 33610

SAMPLING AND ANALYSIS METHODOLOGY

BULK SAMPLING FOR ASBESTOS

Bulk sampling for asbestos was conducted on suspect roof materials located on Building Nos. 1, 2, 3, 4, & 5. Three (3) suspect materials were identified at this facility. Fourteen (14) bulk samples and two (2) quality assurance samples were collected from these materials and submitted for analysis. Description and locations of these materials are contained in **Table 1**.

TABLE 1. SUSPECT ASBESTOS CONTAINING MATERIALS
BLAKE HIGH SCHOOL

| Homogeneous Area No. | Material Description | Sample No. | Location | ACM Y/N |
|----------------------|-------------------------------|-----------------------|-------------------------------|---------|
| 01 | Built-Up Gravel Roof Material | 210414-ATM-01A to 01I | Building Nos. 1, 2, 3, 4, & 5 | N |
| 02 | Roof Flashing Material | 210414-ATM-02A to 02D | Building Nos. 1, 2, 3, 4, & 5 | N |
| 03 | White Caulking Material | 210414-ATM-02A to 02C | Building Nos. 1, 2, 3, 4, & 5 | N |

PAINT CHIP SAMPLE COLLECTION

Based on the visual inspection conducted on Building Nos. 1, 2, 3, 4, & 5 no paint chip material was identified. Therefore, no lead sample collection activities were conducted during the April 15, 2021 site visit.

RESULTS

BULK SAMPLING FOR ASBESTOS

Laboratory results indicate that ACM (greater than one percent asbestos, by definition) were not detected in any of the Three (3) homogenous areas sampled and analyzed. Refer to **Table 3** for the Summary of Asbestos Containing Materials and **Appendix A** for the Laboratory Analytical Data Sheets.

TABLE 3. SUMMARY OF ASBESTOS CONTAINING MATERIALS
BLAKE HIGH SCHOOL

| Homogeneous Area No. | ACM Description | Location | Approx. Quantity | Asbestos Containing | NF/F | Hazard Ranking |
|---|-----------------|----------|------------------|---------------------|------|----------------|
| No Asbestos Containing Materials Detected | | | | | | |

NF = Non-Friable
F = Friable
Ft² = Square Feet

If = Linear Feet

TABLE 4. SUMMARY OF FINDINGS – LEAD-BASED PAINT (LBP)
LETO HIGH SCHOOL

| Homogeneous Area No. | Paint Description | Location | Asbestos Containing |
|------------------------------|-------------------|----------|------------------------|
| No Lead-Based Paint Detected | | | |

RECOMMENDATIONS AND CONCLUSIONS

The Roof Building Nos. 1, 2, 3, 4, & 5 were accessible to the facility inspector. As laboratory results indicated, no ACM's were detected on any of the Roof Building Areas surveyed on April 15, 2021. Therefore, no recommendations for asbestos removal and/or management are necessary at this time.

Keep in mind that the sampling conducted for this project is representative of the conditions only as they existed during the sampling period.

Air Analytics, LLC. appreciates the opportunity to be of assistance in this regard. Should you have any questions or comments concerning the information provided, or if we may be of further assistance, please do not hesitate to call.

Sincerely,
Air Analytics, LLC.

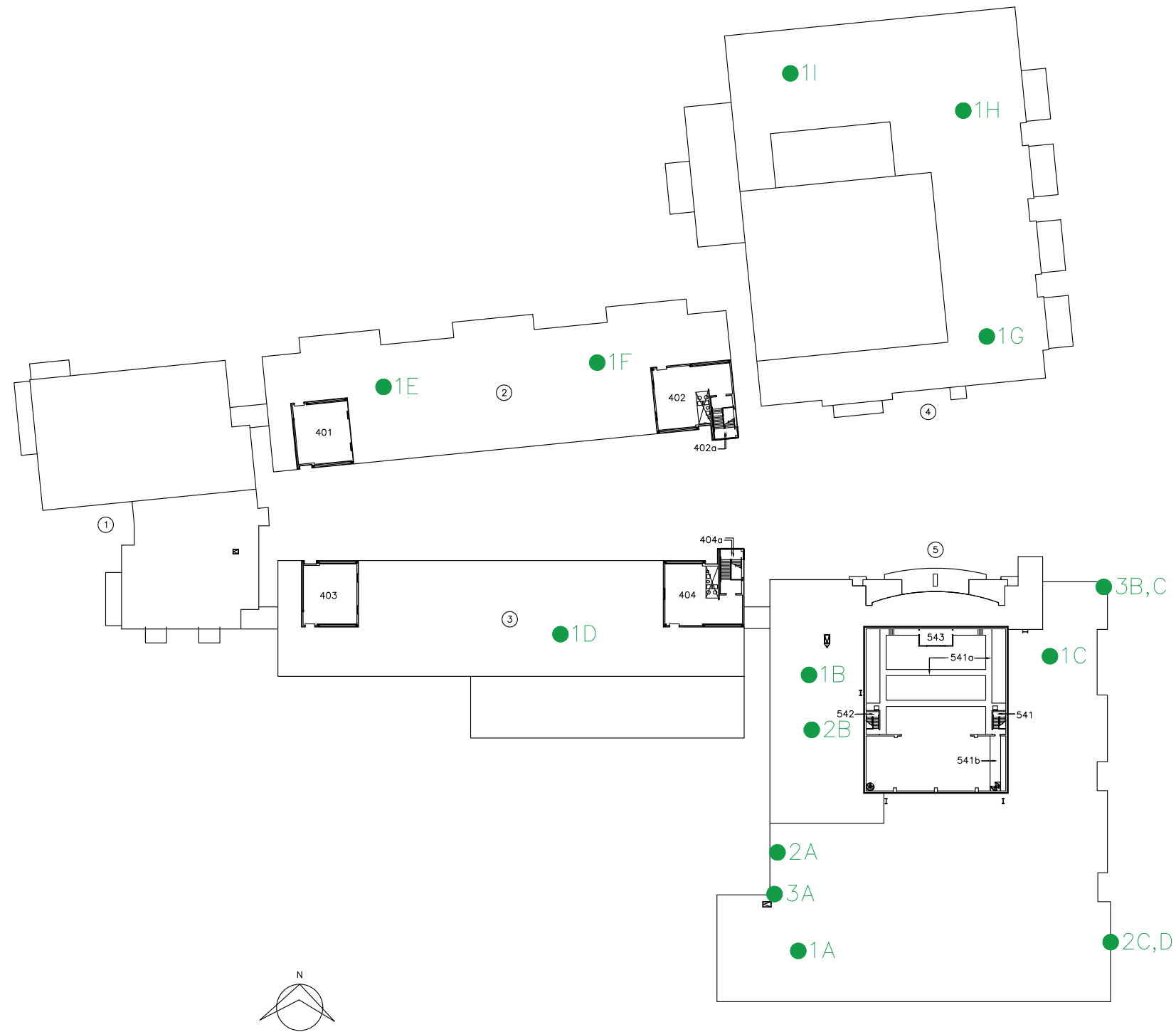


Anthony Morales
Accredited Facility Inspector
Certificate No. AA010521IR10



Edward Nunez, CIH
Licensed Asbestos Consultant No. AX0000048

FIGURE



LEGEND

- NON-ACM SAMPLE LOCATION
- ACM SAMPLE LOCATION
- NON-LEAD SAMPLE LOCATION
- LEAD SAMPLE LOCATION
- ▨ NOT PART OF SURVEY



School Board of Hillsborough County
Blake High School

Building Nos. 1, 2, 3, 4, and 5 Roof Survey

By: AIR ANALYTICS, LLC 6790 New Tampa
Hwy., Suite 107, Lakeland, Florida 33815

DATE:
05/2/21

PROJECT:
21-22015-10

FIGURE 1

**APPENDIX A
CHAIN-OF-CUSTODIES
SHEETS &
LABORATORY ANALYTICAL
DATA SHEETS**

April 20, 2021

Air Analytics
6790 New Tampa Highway, Suite 107
Lakeland, FL 33815

CLIENT PROJECT: Blake High School, 17011 N. Boulevard, Tampa, FL 33607, 21-22015-10
CEI LAB CODE: A214601

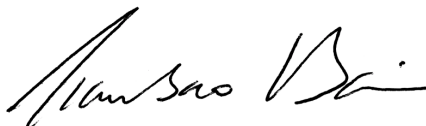
Dear Customer:

Enclosed are asbestos analysis results for PLM Bulk samples received at our laboratory on April 16, 2021. The samples were analyzed for asbestos using polarizing light microscopy (PLM) per the EPA 600 Method.

Sample results containing >1% asbestos are considered asbestos-containing materials (ACMs) per EPA regulatory requirements. The detection limit for the EPA 600 Method is <1% asbestos by weight as determined by visual estimation.

Thank you for your business and we look forward to continuing good relations.

Kind Regards,



Tianbao Bai, Ph.D., CIH
Laboratory Director

ASBESTOS ANALYTICAL REPORT

By: Polarized Light Microscopy

Prepared for

Air Analytics

CLIENT PROJECT: Blake High School, 17011 N. Boulevard, Tampa, FL
33607, 21-22015-10

LAB CODE: A214601

TEST METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

REPORT DATE: 04/20/21

TOTAL SAMPLES ANALYZED: 14

SAMPLES >1% ASBESTOS:

Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: Blake High School, 17011 N. Boulevard, Tampa, FL 33607, 21-22015-10 **LAB CODE:** A214601

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

| Client ID | Layer | Lab ID | Color | Sample Description | ASBESTOS % |
|----------------|---------|--------|-------|-----------------------|---------------|
| 210415-ATM-01A | Layer 1 | A66698 | Black | Built-Up Roofing | None Detected |
| | Layer 2 | A66698 | Tan | Insulation (Type 1) | None Detected |
| | Layer 3 | A66698 | Black | Felt Paper | None Detected |
| | Layer 4 | A66698 | Cream | Insulation (Type 2) | None Detected |
| 210415-ATM-01B | Layer 1 | A66699 | Black | Built-Up Roofing | None Detected |
| | Layer 2 | A66699 | Tan | Insulation (Type 1) | None Detected |
| | Layer 3 | A66699 | Black | Felt Paper | None Detected |
| | Layer 4 | A66699 | Cream | Insulation (Type 2) | None Detected |
| 210415-ATM-01C | Layer 1 | A66700 | Black | Built-Up Roofing | None Detected |
| | Layer 2 | A66700 | Tan | Insulation (Type 1) | None Detected |
| | Layer 3 | A66700 | Black | Felt Paper | None Detected |
| | Layer 4 | A66700 | Cream | Insulation (Type 2) | None Detected |
| 210415-ATM-01D | Layer 1 | A66701 | Tan | Insulation (Type 1) | None Detected |
| | Layer 2 | A66701 | Black | Felt Paper | None Detected |
| | Layer 3 | A66701 | Cream | Insulation (Type 2) | None Detected |
| 210415-ATM-01E | Layer 1 | A66702 | Tan | Insulation (Type 1) | None Detected |
| | Layer 2 | A66702 | Black | Felt Paper | None Detected |
| | Layer 3 | A66702 | Cream | Insulation (Type 2) | None Detected |
| 210415-ATM-01F | Layer 1 | A66703 | Black | Built-Up Roofing | None Detected |
| | Layer 2 | A66703 | Tan | Insulation (Type 1) | None Detected |
| | Layer 3 | A66703 | Black | Felt Paper | None Detected |
| | Layer 4 | A66703 | Cream | Insulation (Type 2) | None Detected |
| 210415-ATM-01G | Layer 1 | A66704 | Black | Built-Up Roofing | None Detected |
| | Layer 2 | A66704 | Tan | Insulation (Type 1) | None Detected |
| | Layer 3 | A66704 | Black | Felt Paper | None Detected |
| | Layer 4 | A66704 | Cream | Insulation (Type 2) | None Detected |
| 210415-ATM-01H | Layer 1 | A66705 | Black | Built-Up Roofing | None Detected |
| | Layer 2 | A66705 | Tan | Insulation (Type 1) | None Detected |
| | Layer 3 | A66705 | Black | Felt Paper | None Detected |
| | Layer 4 | A66705 | Cream | Insulation (Type 2) | None Detected |
| 210415-ATM-01I | Layer 1 | A66706 | Black | Built-Up Roofing | None Detected |

Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: Blake High School, 17011 N. Boulevard, **LAB CODE: A214601**
Tampa, FL 33607, 21-22015-10

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

| Client ID | Layer | Lab ID | Color | Sample Description | ASBESTOS % |
|----------------|---------|--------|------------|-----------------------|---------------|
| | Layer 2 | A66706 | Tan | Insulation (Type 1) | None Detected |
| | Layer 3 | A66706 | Black | Felt Paper | None Detected |
| | Layer 4 | A66706 | Cream | Insulation (Type 2) | None Detected |
| 210415-ATM-02A | | A66707 | Black,Gray | Flashing | None Detected |
| 210415-ATM-02B | Layer 1 | A66708 | Black,Gray | Flashing | None Detected |
| | Layer 2 | A66708 | Tan | Insulation | None Detected |
| 210415-ATM-02C | Layer 1 | A66709 | Black,Gray | Flashing | None Detected |
| | Layer 2 | A66709 | Tan | Insulation | None Detected |
| 210415-ATM-03A | | A66710 | White | Caulking Material | None Detected |
| 210415-ATM-03B | | A66711 | White | Caulking Material | None Detected |

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: Air Analytics
6790 New Tampa Highway, Suite 107
Lakeland, FL 33815

Lab Code: A214601
Date Received: 04-16-21
Date Analyzed: 04-20-21
Date Reported: 04-20-21

Project: Blake High School, 17011 N. Boulevard, Tampa, FL 33607, 21-22015-10

ASBESTOS BULK PLM, EPA 600 METHOD

| Client ID Lab ID | Lab Description | Lab Attributes | NON-ASBESTOS COMPONENTS | | | | ASBESTOS % |
|---|-----------------------|--|-------------------------|-------------------------|-------------|-------------------|---------------|
| | | | Fibrous | | Non-Fibrous | | |
| 210415-ATM -01A Layer 1 A66698 | Built-Up Roofing | Heterogeneous Black Fibrous Bound | 25% | Fiberglass | 75% | Tar | None Detected |
| Layer 2 A66698 | Insulation (Type 1) | Homogeneous Tan Fibrous Loose | 60% 22% | Cellulose Fiberglass | 15% 3% | Perlite Binder | None Detected |
| Layer 3 A66698 | Felt Paper | Homogeneous Black Fibrous Bound | 85% 15% | Cellulose Fiberglass | | | None Detected |
| Layer 4 A66698 | Insulation (Type 2) | Homogeneous Cream Non-fibrous Bound | | | 100% | Foam | None Detected |
| 210415-ATM -01B Layer 1 A66699 | Built-Up Roofing | Heterogeneous Black Fibrous Bound | 25% | Fiberglass | 75% | Tar | None Detected |
| Layer 2 A66699 | Insulation (Type 1) | Homogeneous Tan Fibrous Loose | 60% 22% | Cellulose Fiberglass | 15% 3% | Perlite Binder | None Detected |
| Layer 3 A66699 | Felt Paper | Homogeneous Black Fibrous Bound | 85% 15% | Cellulose Fiberglass | | | None Detected |

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: Air Analytics
6790 New Tampa Highway, Suite 107
Lakeland, FL 33815

Lab Code: A214601
Date Received: 04-16-21
Date Analyzed: 04-20-21
Date Reported: 04-20-21

Project: Blake High School, 17011 N. Boulevard, Tampa, FL 33607, 21-22015-10

ASBESTOS BULK PLM, EPA 600 METHOD

| Client ID Lab ID | Lab Description | Lab Attributes | NON-ASBESTOS COMPONENTS | | | | ASBESTOS % |
|---|-----------------------|--|-------------------------|-------------------------|-------------|-------------------|---------------|
| | | | Fibrous | | Non-Fibrous | | |
| Layer 4 A66699 | Insulation (Type 2) | Homogeneous Cream Non-fibrous Bound | | | 100% Foam | | None Detected |
| 210415-ATM -01C Layer 1 A66700 | Built-Up Roofing | Heterogeneous Black Fibrous Bound | 25% | Fiberglass | 75% Tar | | None Detected |
| Layer 2 A66700 | Insulation (Type 1) | Homogeneous Tan Fibrous Loose | 60% 22% | Cellulose Fiberglass | 15% 3% | Perlite Binder | None Detected |
| Layer 3 A66700 | Felt Paper | Homogeneous Black Fibrous Bound | 85% 15% | Cellulose Fiberglass | | | None Detected |
| Layer 4 A66700 | Insulation (Type 2) | Homogeneous Cream Non-fibrous Bound | | | 100% Foam | | None Detected |
| 210415-ATM -01D Layer 1 A66701 | Insulation (Type 1) | Homogeneous Tan Fibrous Loose | 60% 22% | Cellulose Fiberglass | 15% 3% | Perlite Binder | None Detected |
| Layer 2 A66701 | Felt Paper | Homogeneous Black Fibrous Bound | 85% 15% | Cellulose Fiberglass | | | None Detected |

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: Air Analytics
6790 New Tampa Highway, Suite 107
Lakeland, FL 33815

Lab Code: A214601
Date Received: 04-16-21
Date Analyzed: 04-20-21
Date Reported: 04-20-21

Project: Blake High School, 17011 N. Boulevard, Tampa, FL 33607, 21-22015-10

ASBESTOS BULK PLM, EPA 600 METHOD

| Client ID Lab ID | Lab Description | Lab Attributes | NON-ASBESTOS COMPONENTS | | | | ASBESTOS % |
|--|-----------------------|--|-------------------------|-------------------------|-------------|-------------------|---------------|
| | | | Fibrous | | Non-Fibrous | | |
| Layer 3 A66701 | Insulation (Type 2) | Homogeneous Cream Non-fibrous Bound | | | 100% | Foam | None Detected |
| 210415-ATM-01E Layer 1 A66702 | Insulation (Type 1) | Homogeneous Tan Fibrous Loose | 60% 22% | Cellulose Fiberglass | 15% 3% | Perlite Binder | None Detected |
| Layer 2 A66702 | Felt Paper | Homogeneous Black Fibrous Bound | 85% 15% | Cellulose Fiberglass | | | None Detected |
| Layer 3 A66702 | Insulation (Type 2) | Homogeneous Cream Non-fibrous Bound | | | 100% | Foam | None Detected |
| 210415-ATM-01F Layer 1 A66703 | Built-Up Roofing | Heterogeneous Black Fibrous Bound | 25% | Fiberglass | 75% | Tar | None Detected |
| Layer 2 A66703 | Insulation (Type 1) | Homogeneous Tan Fibrous Loose | 60% 22% | Cellulose Fiberglass | 15% 3% | Perlite Binder | None Detected |
| Layer 3 A66703 | Felt Paper | Homogeneous Black Fibrous Bound | 85% 15% | Cellulose Fiberglass | | | None Detected |

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: Air Analytics
6790 New Tampa Highway, Suite 107
Lakeland, FL 33815

Lab Code: A214601
Date Received: 04-16-21
Date Analyzed: 04-20-21
Date Reported: 04-20-21

Project: Blake High School, 17011 N. Boulevard, Tampa, FL 33607, 21-22015-10

ASBESTOS BULK PLM, EPA 600 METHOD

| Client ID Lab ID | Lab Description | Lab Attributes | NON-ASBESTOS COMPONENTS | | | | ASBESTOS % |
|---|-----------------------|--|-------------------------|-------------------------|-------------|-------------------|---------------|
| | | | Fibrous | | Non-Fibrous | | |
| Layer 4 A66703 | Insulation (Type 2) | Homogeneous Cream Non-fibrous Bound | | | 100% Foam | | None Detected |
| 210415-ATM -01G Layer 1 A66704 | Built-Up Roofing | Heterogeneous Black Fibrous Bound | 25% | Fiberglass | 75% Tar | | None Detected |
| Layer 2 A66704 | Insulation (Type 1) | Homogeneous Tan Fibrous Loose | 60% 22% | Cellulose Fiberglass | 15% 3% | Perlite Binder | None Detected |
| Layer 3 A66704 | Felt Paper | Homogeneous Black Fibrous Bound | 85% 15% | Cellulose Fiberglass | | | None Detected |
| Layer 4 A66704 | Insulation (Type 2) | Homogeneous Cream Non-fibrous Bound | | | 100% Foam | | None Detected |
| 210415-ATM -01H Layer 1 A66705 | Built-Up Roofing | Heterogeneous Black Fibrous Bound | 25% | Fiberglass | 75% Tar | | None Detected |
| Layer 2 A66705 | Insulation (Type 1) | Homogeneous Tan Fibrous Loose | 60% 22% | Cellulose Fiberglass | 15% 3% | Perlite Binder | None Detected |

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: Air Analytics
6790 New Tampa Highway, Suite 107
Lakeland, FL 33815

Lab Code: A214601
Date Received: 04-16-21
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Project: Blake High School, 17011 N. Boulevard, Tampa, FL 33607, 21-22015-10

ASBESTOS BULK PLM, EPA 600 METHOD

| Client ID Lab ID | Lab Description | Lab Attributes | NON-ASBESTOS COMPONENTS | | | | ASBESTOS % |
|---|-----------------------|---|-------------------------|-------------------------------|-------------|-------------------|---------------|
| | | | Fibrous | | Non-Fibrous | | |
| Layer 3 A66705 | Felt Paper | Homogeneous Black Fibrous Bound | 85% 15% | Cellulose Fiberglass | | | None Detected |
| Layer 4 A66705 | Insulation (Type 2) | Homogeneous Cream Non-fibrous Bound | | | 100% | Foam | None Detected |
| 210415-ATM -01I Layer 1 A66706 | Built-Up Roofing | Heterogeneous Black Fibrous Bound | 25% | Fiberglass | 75% | Tar | None Detected |
| Layer 2 A66706 | Insulation (Type 1) | Homogeneous Tan Fibrous Loose | 60% 22% | Cellulose Fiberglass | 15% 3% | Perlite Binder | None Detected |
| Layer 3 A66706 | Felt Paper | Homogeneous Black Fibrous Bound | 85% 15% | Cellulose Fiberglass | | | None Detected |
| Layer 4 A66706 | Insulation (Type 2) | Homogeneous Cream Non-fibrous Bound | | | 100% | Foam | None Detected |
| 210415-ATM -02A A66707 | Flashing | Heterogeneous Black,Gray Fibrous Bound | 30% 10% | Fiberglass Synthetic Fiber | 50% 10% | Tar Gravel | None Detected |

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: Air Analytics
6790 New Tampa Highway, Suite 107
Lakeland, FL 33815

Lab Code: A214601
Date Received: 04-16-21
Date Analyzed: 04-20-21
Date Reported: 04-20-21

Project: Blake High School, 17011 N. Boulevard, Tampa, FL 33607, 21-22015-10

ASBESTOS BULK PLM, EPA 600 METHOD

| Client ID Lab ID | Lab Description | Lab Attributes | NON-ASBESTOS COMPONENTS | | | | ASBESTOS % |
|---|--------------------|-------------------|-------------------------|-----------------|-------------|---------|---------------|
| | | | Fibrous | | Non-Fibrous | | |
| 210415-ATM -02B Layer 1 A66708 | Flashing | Heterogeneous | 30% | Fiberglass | 50% | Tar | None Detected |
| | | Black,Gray | 10% | Synthetic Fiber | 10% | Gravel | |
| | | Fibrous | | | | | |
| | | Bound | | | | | |
| Layer 2 A66708 | Insulation | Homogeneous | 60% | Cellulose | 15% | Perlite | None Detected |
| | | Tan | 25% | Fiberglass | | | |
| | | Fibrous | | | | | |
| | | Loosely Bound | | | | | |
| 210415-ATM -02C Layer 1 A66709 | Flashing | Heterogeneous | 30% | Fiberglass | 50% | Tar | None Detected |
| | | Black,Gray | 10% | Synthetic Fiber | 10% | Gravel | |
| | | Fibrous | | | | | |
| | | Bound | | | | | |
| Layer 2 A66709 | Insulation | Homogeneous | 60% | Cellulose | 15% | Perlite | None Detected |
| | | Tan | 25% | Fiberglass | | | |
| | | Fibrous | | | | | |
| | | Loosely Bound | | | | | |
| 210415-ATM -03A A66710 | Caulking Material | Heterogeneous | | | 100% | Caulk | None Detected |
| | | White | | | <1% | Paint | |
| | | Fibrous | | | | | |
| | | Bound | | | | | |
| 210415-ATM -03B A66711 | Caulking Material | Heterogeneous | | | 100% | Caulk | None Detected |
| | | White | | | <1% | Paint | |
| | | Fibrous | | | | | |
| | | Bound | | | | | |

LEGEND: Non-Anth = Non-Asbestiform Anthophyllite
 Non-Trem = Non-Asbestiform Tremolite
 Calc Carb = Calcium Carbonate

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

REPORTING LIMIT: <1% by visual estimation

REPORTING LIMIT FOR POINT COUNTS: 0.25% by 400 Points or 0.1% by 1,000 Points

REGULATORY LIMIT: >1% by weight

Due to the limitations of the EPA 600 method, nonfriable organically bound materials (NOBs) such as vinyl floor tiles can be difficult to analyze via polarized light microscopy (PLM). EPA recommends that all NOBs analyzed by PLM, and found not to contain asbestos, be further analyzed by Transmission Electron Microscopy (TEM). Please note that PLM analysis of dust and soil samples for asbestos is not covered under NVLAP accreditation. *Estimated measurement of uncertainty is available on request.*

This report relates only to the samples tested or analyzed and may not be reproduced, except in full, without written approval by Eurofins CEI. Eurofins CEI makes no warranty representation regarding the accuracy of client submitted information in preparing and presenting analytical results. Interpretation of the analytical results is the sole responsibility of the client. Samples were received in acceptable condition unless otherwise noted. This report may not be used by the client to claim product endorsement by NVLAP or any other agency of the U.S. Government.

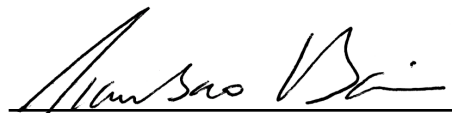
Information provided by customer includes customer sample ID and sample description.

ANALYST:



Miguel Angel Maysonet

APPROVED BY:



Tianbao Bai, Ph.D., CIH
 Laboratory Director

A214601
A66698-A66711 (14)

ASBESTOS SAMPLING DATA SHEET AND CHAIN-OF-CUSTODY



| | | | |
|---------|---|------------------------------------|----------------------------|
| PROJECT | PROJECT NUMBER 21-22015-10 | PROJECT MANAGER Anthony Morales | PAGE X OF Y Page 1 of 3 |
| | PROJECT NAME/LOCATION Blake High School, 17011 N. Boulevard, Tampa, FL 33607 | | |

| | | | | |
|----------|---|-----------------------------|-----------------------|---|
| ANALYSIS | <input type="checkbox"/> Transmission Electron Microscopy (TEM) <input type="checkbox"/> Phase Contrast Microscopy (PCM) <input checked="" type="checkbox"/> Polarized Light Microscopy (PLM) | | | |
| | METHOD EPA 600/R-93/116 | DATE SUBMITTED 4/15/2021 | "TOTAL SAMPLES" 14 | SEND RESULTS TO (EMAIL ADDRESS) aarmaiz@airanalyticsllc.com amorales@airanalyticsllc.com rfarias@airanalyticsllc.com |

| SAMPLES | NO. | AA SAMPLE NO. | AIR VOLUME/DESCRIPTION | LOCATION | LAB ID NO. |
|---------|-----|----------------|----------------------------------|---------------------------|------------|
| | 1 | 210415-ATM-01A | Built Up Gravel Roofing Material | Bldg. 5, Roof Area No. 5G | |
| | 2 | 210415-ATM-01B | Built Up Gravel Roofing Material | Bldg. 5, Roof Area No. 5E | |
| | 3 | 210415-ATM-01C | Built Up Gravel Roofing Material | Bldg. 5, Roof Area No. 5H | |
| | 4 | 210415-ATM-01D | Built Up Gravel Roofing Material | Bldg. 5, Roof Area No. 5N | |
| | 5 | 210415-ATM-01E | Built Up Gravel Roofing Material | Bldg. 4, Roof Area No. 4F | |
| | 6 | 210415-ATM-01F | Built Up Gravel Roofing Material | Bldg. 4, Roof Area No. 4E | |
| | 7 | 210415-ATM-01G | Built Up Gravel Roofing Material | Bldg. 4, Roof Area No. 4D | |
| | 8 | 210415-ATM-01H | Built Up Gravel Roofing Material | Bldg. 4, Roof Area No. 4B | |
| | 9 | 210415-ATM-01I | Built Up Gravel Roofing Material | Bldg. 4, Roof Area No. 4C | |
| | 10 | 210415-ATM-02A | Flashing Material | Bldg. 5, Roof Area No. 5G | |
| | 11 | 210415-ATM-02B | Flashing Material | Bldg. 5, Roof Area No. 5E | |

| | | | | |
|------------------|---------------------------|--|-------------------|------|
| CHAIN-OF-CUSTODY | Samples Collected by: | NAME Anthony Morales <i>Anthony Morales</i> | DATE 4/15/2021 | TIME |
| | Samples Received/Sent by: | Anthony Morales | 4/15/2021 | |
| | Transportation Method: | FedEx | 4/15/2021 | |
| | Lab Acceptance: | J.C. | 04/16 | 9:50 |

J.C.

| | | | |
|---------|---|-----------------|-------------|
| PROJECT | PROJECT NUMBER | PROJECT MANAGER | PAGE X OF Y |
| | 21-22015-10 | Anthony Morales | Page 2 of 2 |
| | PROJECT NAME/LOCATION Blake High School, 17011 N. Boulevard, Tampa, FL 33607 | | |

| NO. | AA SAMPLE NO. | AIR VOLUME/DESCRIPTION | LOCATION | LAB ID NO. |
|-----|----------------|-------------------------|---------------------------|------------|
| 12 | 210415-ATM-02C | Flashing Material | Bldg. 5, Roof Area No. 5H | |
| 13 | 210415-ATM-03A | White Caulking Material | Bldg. 5, Roof Area No. 5G | |
| 14 | 210415-ATM-03B | White Caulking Material | Bldg. 5, Roof Area No. 5N | |

April 20, 2021

Air Analytics
6790 New Tampa Highway, Suite 107
Lakeland, FL 33815

CLIENT PROJECT: Blake High School, 17011 N. Boulevard, Tampa, FL 33607, 21-22015-10, QA/QC
CEI LAB CODE: A214602

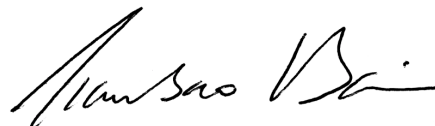
Dear Customer:

Enclosed are asbestos analysis results for PLM Bulk samples received at our laboratory on April 16, 2021. The samples were analyzed for asbestos using polarizing light microscopy (PLM) per the EPA 600 Method.

Sample results containing >1% asbestos are considered asbestos-containing materials (ACMs) per EPA regulatory requirements. The detection limit for the EPA 600 Method is <1% asbestos by weight as determined by visual estimation.

Thank you for your business and we look forward to continuing good relations.

Kind Regards,



Tianbao Bai, Ph.D., CIH
Laboratory Director

ASBESTOS ANALYTICAL REPORT

By: Polarized Light Microscopy

Prepared for

Air Analytics

CLIENT PROJECT: Blake High School, 17011 N. Boulevard, Tampa, FL
33607, 21-22015-10, QA/QC

LAB CODE: A214602

TEST METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

REPORT DATE: 04/20/21

TOTAL SAMPLES ANALYZED: 2

SAMPLES >1% ASBESTOS:

Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: Blake High School, 17011 N. Boulevard, **LAB CODE: A214602**
Tampa, FL 33607, 21-22015-10, QA/QC

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

| Client ID | Layer | Lab ID | Color | Sample Description | ASBESTOS % |
|----------------|---------|--------|-------------|--------------------|---------------|
| 210415-ATM-02D | Layer 1 | A66712 | Black,White | Flashing | None Detected |
| | Layer 2 | A66712 | Brown | Insulation | None Detected |
| 210415-ATM-03C | | A66713 | White | Caulking | None Detected |

ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: Air Analytics
6790 New Tampa Highway, Suite 107
Lakeland, FL 33815

Lab Code: A214602
Date Received: 04-16-21
Date Analyzed: 04-20-21
Date Reported: 04-20-21

Project: Blake High School, 17011 N. Boulevard, Tampa, FL 33607, 21-22015-10, QA/QC

ASBESTOS BULK PLM, EPA 600 METHOD

| Client ID | Lab | Lab | NON-ASBESTOS COMPONENTS | | | | ASBESTOS |
|-------------------------------------|-------------|---------------|-------------------------|------------|-------------|---------|---------------|
| Lab ID | Description | Attributes | Fibrous | | Non-Fibrous | | % |
| 210415-ATM-02D Layer 1 A66712 | Flashing | Heterogeneous | 45% | Fiberglass | 50% | Tar | None Detected |
| | | Black,White | | | 5% | Gravel | |
| | | Fibrous | | | | | |
| | | Bound | | | | | |
| Layer 2 A66712 | Insulation | Homogeneous | 60% | Cellulose | 15% | Perlite | None Detected |
| | | Brown | 15% | Fiberglass | 10% | Binder | |
| | | Fibrous | | | | | |
| | | Loosely Bound | | | | | |
| 210415-ATM-03C A66713 | Caulking | Heterogeneous | | | 100% | Caulk | None Detected |
| | | White | | | <1% | Paint | |
| | | Non-fibrous | | | | | |
| | | Bound | | | | | |

LEGEND: Non-Anth = Non-Asbestiform Anthophyllite
 Non-Trem = Non-Asbestiform Tremolite
 Calc Carb = Calcium Carbonate

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

REPORTING LIMIT: <1% by visual estimation

REPORTING LIMIT FOR POINT COUNTS: 0.25% by 400 Points or 0.1% by 1,000 Points

REGULATORY LIMIT: >1% by weight

Due to the limitations of the EPA 600 method, nonfriable organically bound materials (NOBs) such as vinyl floor tiles can be difficult to analyze via polarized light microscopy (PLM). EPA recommends that all NOBs analyzed by PLM, and found not to contain asbestos, be further analyzed by Transmission Electron Microscopy (TEM). Please note that PLM analysis of dust and soil samples for asbestos is not covered under NVLAP accreditation. *Estimated measurement of uncertainty is available on request.*

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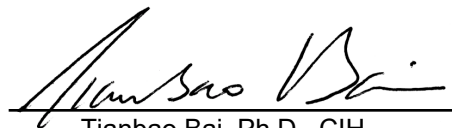
Information provided by customer includes customer sample ID and sample description.

ANALYST:



Kathryn Wescott

APPROVED BY:



Tianbao Bai, Ph.D., CIH
Laboratory Director



A214602
A66712-A66713 @

ASBESTOS SAMPLING DATA SHEET
AND CHAIN-OF-CUSTODY
QA/QC

| | | | |
|---------|--|-----------------|-------------|
| PROJECT | PROJECT NUMBER | PROJECT MANAGER | PAGE X OF Y |
| | 21-22015-10 | Anthony Morales | Page 1 of 1 |
| | PROJECT NAME/LOCATION | | |
| | Blake High School, 17011 N. Boulevard, Tampa, FL 33607 | | |

| | | | | |
|----------|---|----------------|---------------|---|
| ANALYSIS | <input type="checkbox"/> Transmission Electron Microscopy (TEM) <input type="checkbox"/> Phase Contrast Microscopy (PCM) <input checked="" type="checkbox"/> Polarized Light Microscopy (PLM) | | | |
| | METHOD | DATE SUBMITTED | TOTAL SAMPLES | SEND RESULTS TO (EMAIL ADDRESS) |
| | EPA 600/R-93/116 | 4/15/2021 | 2 | aarmaiz@airanalyticsllc.com amorales@airanalyticsllc.com rfarias@airanalyticsllc.com |
| | | | | ANAL. DUE DATE |
| | | | | 4/20/2021 |

| | | | | |
|---------|----------------|-------------------------|---------------------------|------------|
| SAMPLES | AA SAMPLE NO. | AIR VOLUME/DESCRIPTION | LOCATION | LAB ID NO. |
| | 210415-ATM-02D | Flashing Material | Bldg. 5, Roof Area No. 5H | |
| | 210415-ATM-03C | White Caulking Material | Bldg. 5, Roof Area No. 5N | |

| | | | | |
|------------------|---------------------------|--|-----------|------|
| CHAIN-OF-CUSTODY | | NAME | DATE | TIME |
| | Samples Collected by: | Anthony Morales <i>Anthony Morales</i> | 4/15/2021 | |
| | Samples Received/Sent by: | Anthony Morales | 4/15/2021 | |
| | Transportation Method: | FedEx | 4/15/2021 | |
| | Lab Acceptance: | <i>J.C.</i> | 4/16 | 9:50 |

APPENDIX B
CONSULTANT, INSPECTOR &
MANAGEMENT PLANNER



Ron DeSantis, Governor

Halsey Beshears, Secretary



STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION

ASBESTOS LICENSING UNIT

THE ASBESTOS CONSULTANT HEREIN IS LICENSED UNDER THE
PROVISIONS OF CHAPTER 469, FLORIDA STATUTES

NUNEZ, EDWARD A SR

207 W. STATE ROAD 434
SUITE B
WINTER SPRINGS FL 32708

LICENSE NUMBER: AX0000048

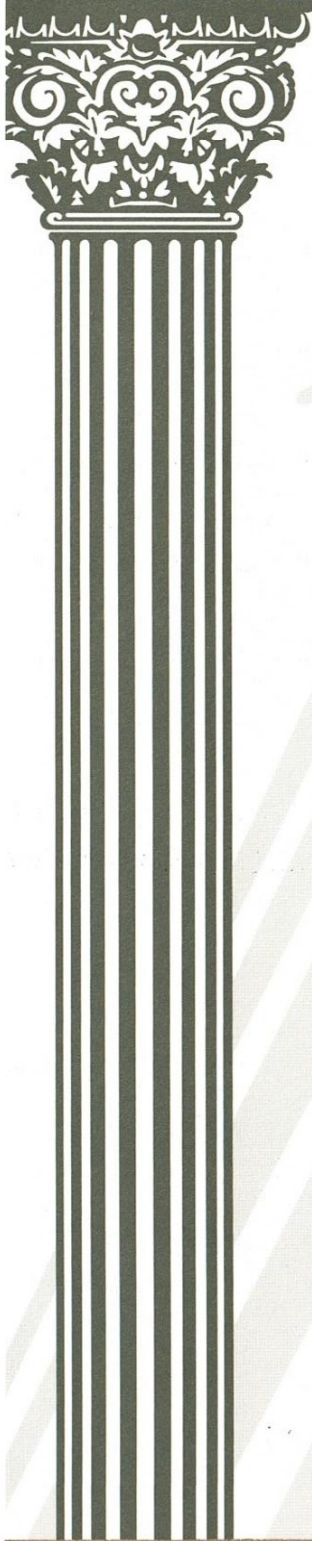
EXPIRATION DATE: NOVEMBER 30, 2022

Always verify licenses online at MyFloridaLicense.com



Do not alter this document in any form.

This is your license. It is unlawful for anyone other than the licensee to use this document.



AIR ANALYTICS

certifies that

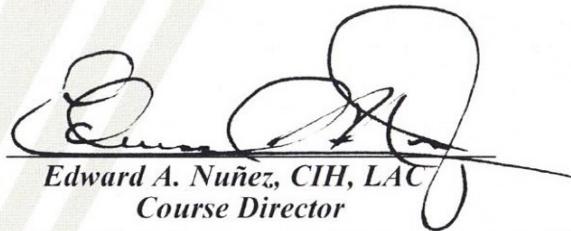
Edward A. Nuñez

**has attended and satisfactorily completed training on 1/5/21,
and passed an examination covering the content of the
asbestos accreditation under Section 206 of TSCA, 15 U.S.C. 2646**

AHERA Management Planner Recertification Training Course

**In accordance with U.S.E.P.A. 40 C.F.R. 763 and in testimony whereof,
we do confer this certificate at Tampa, Florida, January 5, 2021.**

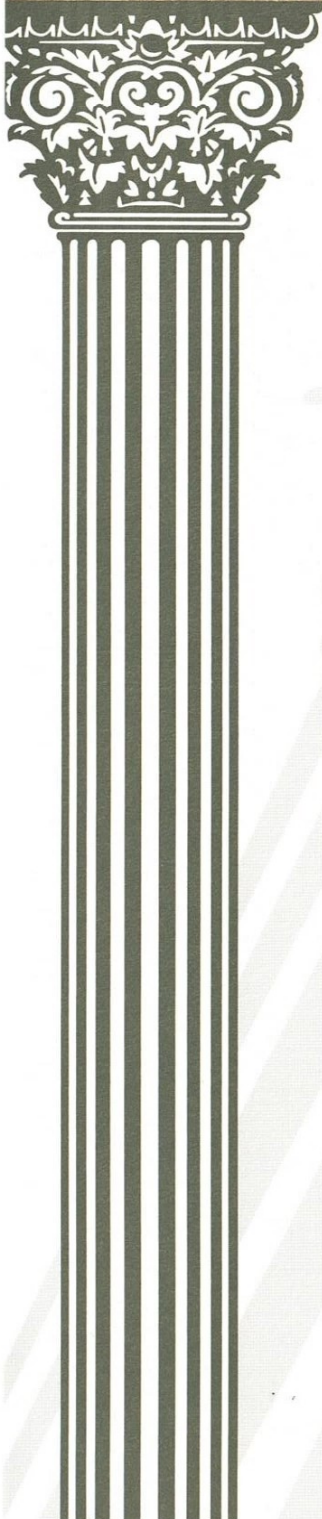
Certificate expires 1/5/22.


Edward A. Nuñez, CIH, LAC
Course Director



Certificate # AA010521MPR05
ID # 8973





AIR ANALYTICS


certifies that

Anthony Morales

**has attended and satisfactorily completed training on 1/5/21,
and passed an examination covering the content of the
asbestos accreditation under Section 206 of TSCA, 15 U.S.C. 2646**

AHERA Facility Inspector Recertification Training Course

**In accordance with U.S.E.P.A. 40 C.F.R. 763 and in testimony whereof,
we do confer this certificate at Tampa, Florida, January 5, 2021.
Certificate expires 1/5/22.**


Edward A. Nuñez, CIH, LAC
Course Director



Certificate # AA010521IR10
ID # 0480



AIR ANALYTICS

certifies that

Ariel Armaiz

2233 Trumpeter Swan Ave, Bartow FL 33830

**has attended and satisfactorily completed training on 1/15/19,
and passed an examination on 1/15/19 covering the content of the
EPA Lead-Based Paint Activity and Renovation Training,**

Lead Based Paint Renovator Initial Certification

**In accordance with U.S.E.P.A. 40 C.F.R. 745.225 and in testimony whereof,
we do confer this certificate at Tampa, Florida, January 15, 2019.
Certificate expires January 15, 2024.**



*Lead RRP Principal Course Instructor
EPA Training Program Manager*



Certificate # R-I-73332-19-00011



PUBLIC PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS: That _____ as Principal, and _____, as Surety, located at _____ (Business Address) are held and firmly bound to The School Board of Hillsborough County, Florida as Obligee in the sum of _____ (\$_____) for the payment whereof we bind ourselves, our heirs, executors, personal representatives, successors and assigns, jointly and severally.

WHEREAS, Principal has entered into a contract dated as of the _____ day of _____, 20____, with Obligee for _____ in accordance with drawings and specifications, which contract is incorporated by reference and made a part hereof, and is referred to as the Contract.

THE CONDITION OF THIS BOND is that if Principal promptly makes payment to all claimants as defined in Section 255.05(1), Florida Statutes, supplying Principal with labor, services, materials or supplies, used directly or indirectly by Principal in the prosecution of the Work provided for in the Contract, then this bond is void; otherwise it remains in full force.

Any changes in or under the Contract and compliance or noncompliance with any formalities connected with the Contract or the changes do not affect Surety's obligation under this Bond.

The provisions of this bond are subject to the time limitations of Section 255.05(2). In no event will the Surety be liable in the aggregate to claimants for more than the penal sum of this Payment Bond, regardless of the number of suits that may be filed by claimants.

IN WITNESS WHEREOF, the above parties have executed this instrument this _____ day of _____, 20____, the name of each party being affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

Signed, sealed and delivered in the presence of:

PRINCIPAL:

By: _____

Name: _____

Its: _____

Witnesses as to Principal

STATE OF _____

COUNTY OF _____

The foregoing instrument was acknowledged before me this _____ day of _____, 20____, by _____, as _____ of _____, a _____ corporation, on behalf of the corporation. He/she is personally known to me OR has produced _____ as identification.

My Commission Expires: _____

(AFFIX NOTARY SEAL)

Notary Public (Signature)

(Printed Name)

(Title or Rank)

(Serial Number, if any)

BOND NO. _____

ATTEST:

SURETY:

(Printed Name)

(Business Address)

(Authorized Signature)

Witnesses as to Surety

(Printed Name)

OR

As Attorney in Fact
(Attached Power of Attorney)

(Business Address)

(Printed Name)

Witnesses

(Telephone Number)

STATE OF _____
COUNTY OF _____

The foregoing instrument was acknowledged before me this _____ day of _____,
200____, by _____, as _____, of _____
_____. Surety, on behalf of Surety. He/She is personally
known to me **OR** has produced _____ as identification.

My Commission Expires:

(AFFIX NOTARY SEAL)

Notary Public (Signature)

(Printed Name)

(Title or Rank)

(Serial Number, if any)

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: That _____ as Principal, and _____, as Surety, located at _____ (Business Address) are held and firmly bound to The School Board of Hillsborough County, Florida as Obligee in the sum of _____ (\$_____) for the payment whereof we bind ourselves, our heirs, executors, personal representatives, successors and assigns, jointly and severally.

WHEREAS, Principal has entered into a contract dated as of the _____ day of _____, 20____, with Obligee for _____ in accordance with drawings and specifications, which contract is incorporated by reference and made a part hereof, and is referred to as the Contract.

THE CONDITION OF THIS BOND is that if Principal:

1. Performs the Contract at the times and in the manner prescribed in the Contract; and
2. Pays Obligee any and all losses, damages, expenses, costs and attorneys' fees, including appellate proceedings, that Obligee sustains because of any default by Principal under the Contract, including, but not limited to, all delay damages, whether liquidated or actual, incurred by Obligee; and
3. Performs the guarantee of all Work and materials furnished under the Contract for the time specified in the Contract,

then this bond is void; otherwise it remains in full force.

Any changes in or under the Contract and compliance or noncompliance with any formalities connected with the Contract or the changes do not affect Surety's obligation under this Bond.

The Surety, for value received, hereby stipulates and agrees that no changes, extensions of time, alterations or additions to the terms of the Contract or other Work to be performed hereunder, or the specifications referred to therein shall in anyway affect its obligations under this bond, and it does hereby waive notice of any such changes, extensions of time, alterations or additions to the terms of the Contract or to Work or to the specifications.

This instrument shall be construed in all respects as a common law bond. It is expressly understood that the time provisions and statute of limitations under Section 255.05, Florida Statutes, shall not apply to this bond.

In no event will the Surety be liable in the aggregate to Obligee for more than the penal sum of this Performance Bond regardless of the number of suits that may be filed by Obligee.

BOND NO. _____

IN WITNESS WHEREOF, the above parties have executed this instrument this _____ day of _____, 20____, the name of each party being affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body.

Signed, sealed and delivered in the presence of:

PRINCIPAL:

By: _____

Name: _____

Its: _____

Witnesses as to Principal

STATE OF _____

COUNTY OF _____

The foregoing instrument was acknowledged before me this _____ day of _____, 20____, by _____, as _____ of _____, a _____ corporation, on behalf of the corporation. He/she is personally known to me OR has produced _____ as identification.

My Commission Expires:

(AFFIX NOTARY SEAL)

Notary Public (Signature)

(Printed Name)

(Title or Rank)

(Serial Number, if any)

ATTEST:

SURETY:

(Printed Name)

(Business Address)

(Authorized Signature)

Witnesses as to Surety

(Printed Name)

BOND NO. _____

OR

As Attorney in Fact
(Attached Power of Attorney)

(Business Address)

(Printed Name)

(Telephone Number)

Witnesses

STATE OF _____
COUNTY OF _____

The foregoing instrument was acknowledged before me this _____ day of _____,
200____, by _____, as _____, of _____
_____. Surety, on behalf of Surety. He/She is personally
known to me **OR** has produced _____ as identification.

My Commission Expires:

(AFFIX NOTARY SEAL)

Notary Public (Signature)

(Printed Name)

(Title or Rank)

(Serial Number, if any)

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Date: _____

To: C. B. Goldsmith & Associates, Inc.
2555 Nursery Road
Clearwater, FL 33764

From: _____

Project No: _____

Contract For: _____

Project: _____

Transmittal No: _____

Check ☐ This is a new transmittal

One: ☐ This is a re-submittal of Transmittal _____

| Item Number | Description of Item(s) Submitted (Type, Size, Model Number, Etc.) | Drawing, Manuf., Contractor, or Brochure Number | No. of Copies | Contract Reference Document | | Action Code* |
|--|--|--|------------------|--------------------------------|---------------------|-----------------|
| | | | | Specification Paragraph No. | Drawing Sheet No | |
| | | | | | | |
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| | | | | | | |
| <div>I certify that the above submitted items have been reviewed in detail and are correct and in strict conformance with the contract drawings and specifications except as otherwise stated.</div> <div>Checking is only for conformance with the design concept of the project and compliance with the information given in the Contract Documents. Architect review does not relieve Contractor for responsibility for errors of any sort in Shop Drawings or Schedules.</div> <div><div>Approved</div><div>Approved as Noted</div><div>Not Approved</div><div>Revise and Resubmit</div><div>Inaccurate</div><div>Inadequate</div><div>See Remarks</div><div>*for CBG&A use only</div></div> <div><div>[A]</div><div>[B]</div><div>[C]</div><div>[D]</div><div>[E]</div><div>[F]</div><div>[G]</div></div> | | | | | | |
| <div>_____ (Name and Signature of Contractor)</div> | | <div>_____ (Name and Signature of Approving Authority)</div> | | | | |

REMARKS:

COPIES: ☐ ☐ ☐ ☐ File

CONTRACTOR DAILY CONSTRUCTION REPORT

(PLEASE PRINT)

DAILY REPORT NO.

DATE:

CONTRACTOR:

PROJECT NO.

PROJECT NAME:

WEATHER:

☐ Clear

☐ Windy

☐ Cool

☐ Overcast

☐ Fog

☐ Warm

☐ Rain

☐ Cold

☐ Hot

SITE CONDITIONS:

☐ Clear

☐ Dusty

☐ Muddy

☐ _____

Temperature Range:

DAY:

☐ Monday

☐ Thursday

☐ Tuesday

☐ Friday

☐ Wednesday

☐ _____

REMARKS: (Describe significant events, work accomplished, materials & equipment on site, special instructions, list of subcontractors, and number count of personnel at the site):

PROJECT LEADER COMMENTS:

NATURE OF EXCEPTION / DEFECTS (include specifications and/or drawing numbers, location, description):

CONTRACT DATE:

COMPLETION DATE:

ACTUAL WORK COMPLETED %

PROBABLE COMPLETION DATE:

OWNER CONFIRMATION OF RAIN:

(Print name and sign)

SUPERVISOR'S SIGNATURE:

☐ ATTACHMENTS:

COPIES:

☐☐☐

☐ File

USE BACK SIDE FOR ADDITIONAL INFORMATION

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**SCHEDULE OF CONTRACT VALUES / APPLICATION AND
CERTIFICATE FOR PAYMENT****PART 1 - GENERAL****1.01 SCHEDULE OF CONTRACT VALUES / APPLICATION AND CERTIFICATE FOR PAYMENT**

- A. Use the Hillsborough County Public Schools Application and Certificate of Payment form, including Continuation Sheet, as published on the Construction Standards website:
https://www.sdhc.k12.fl.us/docs/00/00/15/78/00502_Application_and_Certificate_for_Payment.xlsx
- B. Submit to the Architect a "Schedule of Values" on a Continuation Sheet with completed Columns "B" and "C" from Contractor and each major Sub-trade prior to start of Work, to include but not limited to the following items:
 - 1. General Conditions;
 - 2. Performance & Payment Bond;
 - 3. Owner Contingency;
 - 4. Mobilization;
 - 5. Change Orders;
 - 6. Unit Cost Allowances;
 - 7. Selective demolition;
 - 8. Individual list of each Technical Section specific to their Subcontract, with separate line items for Labor and Material for all values over \$25,000.00; and
 - 9. Close-out documents.
- C. The Architect and Owner shall have the right to re-evaluate the Schedule of Values and adjust the individual line items as required.
- D. Provide one (1) original copy and scanned copy of all payment applications. The original payment application must be submitted on the District's standard form. The signatures on the official copy MUST be original.
 - 1. Delivered and/or stored materials not incorporated in the work-in-place, WILL NOT be certified for payment. Each application for payment shall be only for the cost of the work completed and approved by Architect since the time of the last previous application for payment.
 - 2. When applying for monthly draws, Contractor shall assign the General Condition costs (outlined in the Schedule of Values) a number for payment less than or equal to that of the total percentage of work completed and stored to date. Mobilization costs are paid for on the first application for payment.
- E. Contractor shall include the following documents with each Application for Payment:
 - 1. Original copies of lien releases from all Vendors, Suppliers and/or Subcontractors paid from funds certified on the previous Application for Payment.
 - 2. A revised Progress Schedule. Refer to Section 01 32 16.
 - 3. A revised log of all unit cost work, if applicable.

REFERENCE TO APPLICATION FOR PAYMENT

4. Digital copies of all construction photos and aerial photographs. Refer to Section 01 32 33 - Construction Photographs.
 5. Digital copies of all daily logs (daily construction reports).
 6. Digital copy of recorded weather data downloaded from the weather station located on site, if applicable.
 7. Request for additional time due to delays in weather, unforeseeable conditions, or other excusable or authorized delays in the Work shall be submitted with each Application for Payment. Requests for additional time at the end of the project, will not be accepted.
- F. Application shall be submitted (1) time each month. On the first working day prior to the monthly date established for the Contractor to submit applications for payment to the Architect, the Contractor and a representative of each subcontractor shall meet at the project with the Architect to review, revise and/or approve a draft copy of the application for payment and the current updated progress schedule. If a monthly date has not been established, it shall be the last day of each month.

END OF SECTION

Application and Certificate for Payment

TO OWNER: **Hillsborough County Public Schools**
Operations Division - 2nd Floor
1202 East Palm Avenue
Tampa, FL 33605

FROM
CONTRACTOR:

APPLICATION NO:
APPLICATION DATE:
PERIOD TO:
ARCHITECT'S PROJECT NO:

DISTRIBUTION TO:

OWNER: ☐
CONTRACTOR / CM: ☐
ARCHITECT: ☐
SUBCONTRACTOR: ☐
FIELD: ☐
OTHER: ☐

CONTRACT FOR:

CONTRACT DATE:

CONTRACTOR'S APPLICATION FOR PAYMENT

Application is made for payment, as shown below, in connection with Contract. Continuation Sheet, similar to AIA Document G703, is attached.

The undersigned Contractor certifies that to the best of the Contractor's knowledge, information and belief, the Work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for Work which previous Certificates for Payment were issued, and payments received from the Owner, and that current payment shown herein is now due.

CONTRACTOR:

By: _____ Date: _____

State of: _____
County of: _____

Subscribed and sworn to before me this _____ day of _____.

Notary Public: _____

My commission expires:

CERTIFICATE FOR PAYMENT

In accordance with the Contract Documents, based on on-site observations and the data comprising this application, the Architect certifies to the Owner that to the best of the Architect's knowledge, information and belief the Work has progressed as indicated, the quality of the Work is in accordance with the Contract Documents, and the Contractor is entitled to payment of the AMOUNT CERTIFIED.

AMOUNT CERTIFIED

\$ _____

(Attach explanation if amount certified differs from the amount applied. Initial all figures on the Application and on the Continuation Sheet that are changed to conform with the amount certified.)

ARCHITECT:

By: _____ Date: _____

| | | |
|--|----|---|
| 1. ORIGINAL CONTRACT SUM | \$ | - |
| 2. Net change by Change Orders | \$ | - |
| 3. CONTRACT SUM TO DATE | \$ | - |
| 4. TOTAL COMPLETED AND STORED TO DATE | \$ | - |
| 5. RETAINAGE: | | |
| a. 10% of Completed Work | \$ | - |
| (Column D + E on Continuation Sheet) | | |
| b. 10% of Stored Material | \$ | - |
| (Column F on Continuation Sheet) | | |
| Total Retainage (Lines 5a + 5b or Total in Column I of G703) | \$ | - |
| 6. TOTAL EARNED LESS RETAINAGE | \$ | - |
| (Line 4 Less Line 5 Total) | | |
| 7. LESS PREVIOUS CERTIFICATES FOR PAYMENT | | |
| (Line 6 from prior Certificate) | | |
| 8. CURRENT PAYMENT DUE | \$ | - |
| (Line 6 Less Line 7) | | |
| 9. BALANCE TO FINISH, INCLUDING RETAINAGE | | |
| (Line 3 Less Line 6) | \$ | - |

| CHANGE ORDER SUMMARY | ADDITIONS | DEDUCTIONS |
|--|-----------|------------|
| Changes approved in previous months (C.O. #) | | |
| Changes approved this month (C.O. # 1) | | |
| TOTALS | \$ - | \$ - |
| NET CHANGES by Change Order | \$0.00 | |

SCHEDULE OF CONTRACT VALUES

CONTINUATION SHEET

HCPS PROJECT NUMBER & NAME: _____
 HCPS PURCHASE ORDER NUMBER: _____
 CONTRACT DATE: _____

APPLICATION NO: _____
 APPLICATION DATE: _____
 PERIOD TO DATE: _____
 CONTRACTOR'S PROJECT NO: _____

| A ITEM NO. | B | | C | D | E | F | G | | H | I |
|---|---------------------|--------------------------------|-------------------------------|------------------------------|-------------|----------------------------------|---|------------|----------------------|-----------|
| | DESCRIPTION OF WORK | ORIGINAL SCHEDULED VALUE | REVISED SCHEDULED VALUE | WORK COMPLETED | | MATERIALS PRESENTLY STORED | TOTAL COMPLETED AND STORED TO DATE | % Complete | BALANCE TO FINISH | RETAINAGE |
| | | | | FROM PREVIOUS APPLICATION | THIS PERIOD | | | | | |
| | | | | (D+E) | | (Not in D OR E) | (D+E+F) | (G/C) | (C-G) | (% of G) |
| 1 Construction Management Fee | | \$0.00 | | | | | | | | |
| 1.1 CM Fee | | | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | #DIV/0! | \$0.00 | \$0.00 |
| Do not use this row - Insert rows above this row, and copy formulas down in the last four columns | | | | | | | | | | |
| Revised Contract Value: | | | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | 0.00% | \$0.00 | \$0.00 |
| 2 General Conditions | | \$0.00 | | | | | | | | |
| 2.1 General Conditions | | | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | #DIV/0! | \$0.00 | \$0.00 |
| Do not use this row - Insert rows above this row, and copy formulas down in the last four columns | | | | | | | | | | |
| Revised Contract Value: | | | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | 0.00% | \$0.00 | \$0.00 |
| 3 Payment & Performance Bond | | \$0.00 | | | | | | | | |
| 3.1 Payment & Performance Bond | | | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | #DIV/0! | \$0.00 | \$0.00 |
| Do not use this row - Insert rows above this row, and copy formulas down in the last four columns | | | | | | | | | | |
| Revised Contract Value: | | | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | 0.00% | \$0.00 | \$0.00 |
| 4 Other Insurance | | \$0.00 | | | | | | | | |
| 4.1 General Liability Insurance | | | \$0.00 | | \$0.00 | | \$0.00 | #DIV/0! | \$0.00 | \$0.00 |
| Do not use this row - Insert rows above this row, and copy formulas down in the last four columns | | | | | | | | | | |
| Revised Contract Value: | | | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | 0.00% | \$0.00 | \$0.00 |
| 5 Reimbursables | | \$0.00 | | | | | | | | |
| 5.1 Enter Description | | | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | #DIV/0! | \$0.00 | \$0.00 |
| Do not use this row - Insert rows above this row, and copy formulas down in the last four columns | | | | | | | | | | |
| Revised Contract Value: | | | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | 0.00% | \$0.00 | \$0.00 |
| 6 CM Contingency | | \$0.00 | | | | | | | | |
| 6.1 CM Contingency | | | \$0.00 | | | | | | \$0.00 | \$0.00 |
| Do not use this row - Insert rows above this row, and copy formulas down in the last two columns | | | | | | | | | | |
| Revised Contract Value: | | | \$0.00 | | | | | | \$0.00 | \$0.00 |
| 7 Owner Contingency | | \$0.00 | | | | | | | | |
| 7.1 Owner Contingency | | | \$0.00 | | | | | | \$0.00 | \$0.00 |
| Do not use this row - Insert rows above this row, and copy formulas down in the last two columns | | | | | | | | | | |
| Revised Contract Value: | | | \$0.00 | | | | | | \$0.00 | \$0.00 |
| 8 Unawarded GMP | | \$0.00 | | | | | | | | |
| 8.1 Unawarded GMP | | | \$0.00 | | | | | | \$0.00 | \$0.00 |
| Do not use this row - Insert rows above this row, and copy formulas down in the last two columns | | | | | | | | | | |
| Revised Contract Value: | | | \$0.00 | | | | | | \$0.00 | \$0.00 |
| 9 Change Orders | | \$0.00 | | | | | | | | |
| 9.1 Change order # 1 - Description | | | \$0.00 | | | | | | \$0.00 | \$0.00 |
| Do not use this row - Insert rows above this row, and copy formulas down in the last two columns | | | | | | | | | | |
| Revised Contract Value: | | | \$0.00 | | | | | | \$0.00 | \$0.00 |

| A | B | | C | D | E | F | G | | H | I |
|---|---|--------------------------|-------------------------|---------------------------|-------------|----------------------------|------------------------------------|------------|-------------------|-----------|
| ITEM NO. | DESCRIPTION OF WORK | ORIGINAL SCHEDULED VALUE | REVISED SCHEDULED VALUE | WORK COMPLETED | | MATERIALS PRESENTLY STORED | TOTAL COMPLETED AND STORED TO DATE | % Complete | BALANCE TO FINISH | RETAINAGE |
| | | | | FROM PREVIOUS APPLICATION | THIS PERIOD | | | | | |
| | | | | (D+E) | | (Not in D OR E) | (D+E+F) | (G/C) | (C-G) | (% of G) |
| 10 | Description of Work (Sub Contractor's Name) | \$0.00 | | | | | | | | |
| 10.1 | | | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | #DIV/0! | \$0.00 | \$0.00 |
| Do not use this row - Insert rows above this row, and copy formulas down in the last four columns | | | | | | | | | | |
| | Revised Contract Value: | | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | 0.00% | \$0.00 | \$0.00 |
| 11 | Description of Work (Sub Contractor's Name) | \$0.00 | | | | | | | | |
| 11.1 | | | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | #DIV/0! | \$0.00 | \$0.00 |
| Do not use this row - Insert rows above this row, and copy formulas down in the last four columns | | | | | | | | | | |
| | Revised Contract Value: | | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | 0.00% | \$0.00 | \$0.00 |
| 12 | Description of Work (Sub Contractor's Name) | \$0.00 | | | | | | | | |
| 12.1 | | | \$0.00 | | | | \$0.00 | #DIV/0! | \$0.00 | \$0.00 |
| Do not use this row - Insert rows above this row, and copy formulas down in the last four columns | | | | | | | | | | |
| | Revised Contract Value: | | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | 0.00% | \$0.00 | \$0.00 |
| 13 | Description of Work (Sub Contractor's Name) | \$0.00 | | | | | | | | |
| 13.1 | | | \$0.00 | | | | \$0.00 | #DIV/0! | \$0.00 | \$0.00 |
| Do not use this row - Insert rows above this row, and copy formulas down in the last four columns | | | | | | | | | | |
| | Revised Contract Value: | | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | 0.00% | \$0.00 | \$0.00 |
| 14 | Description of Work (Sub Contractor's Name) | \$0.00 | | | | | | | | |
| 14.1 | | | \$0.00 | | | | \$0.00 | #DIV/0! | \$0.00 | \$0.00 |
| Do not use this row - Insert rows above this row, and copy formulas down in the last four columns | | | | | | | | | | |
| | Revised Contract Value: | | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | 0.00% | \$0.00 | \$0.00 |
| 15 | Description of Work (Sub Contractor's Name) | \$0.00 | | | | | | | | |
| 15.1 | | | \$0.00 | | | | \$0.00 | #DIV/0! | \$0.00 | \$0.00 |
| Do not use this row - Insert rows above this row, and copy formulas down in the last four columns | | | | | | | | | | |
| | Revised Contract Value: | | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | 0.00% | \$0.00 | \$0.00 |
| 16 | Description of Work (Sub Contractor's Name) | \$0.00 | | | | | | | | |
| 16.1 | | | \$0.00 | | | | \$0.00 | #DIV/0! | \$0.00 | \$0.00 |
| Do not use this row - Insert rows above this row, and copy formulas down in the last four columns | | | | | | | | | | |
| | Revised Contract Value: | | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | 0.00% | \$0.00 | \$0.00 |
| 17 | Description of Work (Sub Contractor's Name) | \$0.00 | | | | | | | | |
| 17.1 | | | \$0.00 | | | | \$0.00 | #DIV/0! | \$0.00 | \$0.00 |
| Do not use this row - Insert rows above this row, and copy formulas down in the last four columns | | | | | | | | | | |
| | Revised Contract Value: | | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | 0.00% | \$0.00 | \$0.00 |
| 18 | Description of Work (Sub Contractor's Name) | \$0.00 | | | | | | | | |
| 18.1 | | | \$0.00 | | | | \$0.00 | #DIV/0! | \$0.00 | \$0.00 |
| Do not use this row - Insert rows above this row, and copy formulas down in the last four columns | | | | | | | | | | |
| | Revised Contract Value: | | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | 0.00% | \$0.00 | \$0.00 |
| 19 | Description of Work (Sub Contractor's Name) | \$0.00 | | | | | | | | |
| 19.1 | | | \$0.00 | | | | \$0.00 | #DIV/0! | \$0.00 | \$0.00 |
| Do not use this row - Insert rows above this row, and copy formulas down in the last four columns | | | | | | | | | | |
| | Revised Contract Value: | | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | 0.00% | \$0.00 | \$0.00 |
| 20 | Description of Work (Sub Contractor's Name) | \$0.00 | | | | | | | | |
| 20.1 | | | \$0.00 | | | | \$0.00 | #DIV/0! | \$0.00 | \$0.00 |
| Do not use this row - Insert rows above this row, and copy formulas down in the last four columns | | | | | | | | | | |
| | Revised Contract Value: | | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | 0.00% | \$0.00 | \$0.00 |
| (#) | Description of Work (Sub Contractor's Name) | (Original \$ Amount) | | | | | | | | |
| (#. #) | | | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | #DIV/0! | \$0.00 | \$0.00 |
| Do not use this row - Insert rows above this row, and copy formulas down in the last four columns | | | | | | | | | | |
| | Revised Contract Value: | | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | 0.00% | \$0.00 | \$0.00 |
| GRAND TOTAL (Check Formulas, if rows added after item 20) | | | \$0.00 | \$0.00 | \$0.00 | \$0.00 | \$0.00 | 0.00% | \$0.00 | \$0.00 |



PROPOSAL WORKSHEET SUMMARY

| | | | | | |
|-------|-------|---------------|-------|-------------|-------|
| To: | _____ | Proposal No: | _____ | Project No: | _____ |
| | _____ | Date: | _____ | | _____ |
| | _____ | Contract for: | _____ | | _____ |
| From: | _____ | Project Name: | _____ | | _____ |
| | _____ | | _____ | | _____ |
| | _____ | | _____ | | _____ |

ADDITIONS:

| | Description | Material ¹ | Labor ² | Subtotal |
|--------|-------------|-----------------------|--------------------|----------|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| Totals | | | | |

DEDUCTIONS:

| | Description | Material ¹ | Labor ² | Subtotal |
|--------|-------------|-----------------------|--------------------|----------|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| 6 | | | | |
| 7 | | | | |
| Totals | | | | |

¹ Net cost

² Includes all Out-of-Pocket Costs

Subcontractor's Net:

Subcontractor OH&P:

Subcontractor's Total (or

Contractor OH&P:

Contractor Bond:

WORKSHEET TOTAL

| |
|--|
| |
| |
| |
| |
| |
| |

NOTE: Attach all supplemental documentation for each

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| | | | | | |
|-------|-------|---------------|-------|-----|-------|
| To: | _____ | Project No: | _____ | RFI | _____ |
| | _____ | Date: | _____ | | _____ |
| | _____ | Contract for: | _____ | | _____ |
| From: | _____ | Project | _____ | | _____ |
| | _____ | | _____ | | _____ |
| | _____ | | _____ | | _____ |

We request that the following be reviewed and responded to no later than: _____

Question:

Answer:

| | | | |
|-------------------|-------|----------|-------|
| Response Made By: | _____ | Response | _____ |
|-------------------|-------|----------|-------|

☐ Attachments

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RELEASE AND AFFIDAVIT

STATE OF FLORIDA
COUNTY OF HILLSBOROUGH

Before me, the undersigned authority, personally appeared _____, who after being duly sworn, deposes and says:

(1) In accordance with the Contract Documents and in consideration of \$ _____ paid, _____ ("Construction Contractor") releases and waives for itself and its subcontractors, materialmen, successors and assigns, all claims demands, damages, costs and expenses, whether in contract or in tort, against The School Board of Hillsborough County, Florida, a body corporate existing under the laws of the State of Florida ("Owner") relating in any way to the performance of the Agreement between Construction Contractor and Owner for the project dated _____, 20____, for the period from _____, 20____ to _____, 20____.

(2) Construction Contractor certifies for itself and its subcontractors, materialmen, successors and assigns, that all charges for labor, materials, supplies, lands, licenses and other expenses for which Owner might be sued or for which a lien or a demand against any payment bond might be filed, have been fully satisfied and paid.

(3) Construction Contractor agrees to indemnify, defend and save harmless Owner from all demands or suits, actions, claims of liens or other charges filed or asserted against Owner arising out of the performance by Construction Contractor of the Work covered by this Release and Affidavit.

(4) Construction Contractor certifies that it has paid all its subcontractors and materialmen in full all amounts owed them from any previous payments received by Construction Contractor from Owner and has not withheld any such amounts. In the event Construction Contractor withholds any unpaid amounts due to its subcontractors and/or materialmen from the payment it receives from Owner with respect to the Application for Payment referenced in paragraph 5 below, Construction Contractor agrees to immediately refund all such unpaid amounts to Owner.

(5) This Release and Affidavit is given in connection with Construction Contractor's Application for Payment No. _____.

Construction Contractor:

By: _____

Its: _____

Date: _____, 20____

[Corporate Seal]

Witnesses

STATE OF Florida
COUNTY OF _____

The foregoing instrument was acknowledged before me this _____ day of _____, 20____ by _____, as _____, of _____ a _____, on behalf of the _____. He/She is personally known to me **OR** has produced _____ as identification.

My Commission Expires: _____, 20____

(AFFIX NOTARY SEAL)

Notary Public (Signature)

(Printed Name)

(Title or Rank)

(Serial Number, if any)

CERTIFICATE - LIST OF SUBCONTRACTORS AND MATERIAL SUPPLIERS
(For Final Payment)

RE: _____

Project: _____

KNOW ALL MEN BY THESE PRESENTS, THAT _____ swears that all labor performed, materials supplied, and sub-contractors employed have been paid in full for the above project, and it is also certified that the following is a complete list of all SUB-CONTRACTORS and MATERIAL SUPPLIERS on the above project, including present address, phone number, and contact person.

[illegible]

STATE OF FLORIDA

COUNTY OF _____

The foregoing instrument was acknowledged before me
this _____ day of _____, 20____,

by _____
(Name of person acknowledging).

[] PERSONALLY KNOWN
[] OR PRODUCED IDENTIFICATION
(Attach copy of identification)

(Signature of Notary Public - State of Florida)
Print, Type or Stamp Commissioned Name of Notary Public

(Contractor's firm name - typed)

(Signature of Corporate Officer or Principal)

(Typed name of person signing)

(Title)

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**ABSENCE OF FRIABLE MATERIALS
CERTIFICATION**

The SCHOOL BOARD OF HILLSBOROUGH COUNTY, Florida

Date: _____

RE: _____

Project: _____

I hereby certify that no asbestos or friable materials have been installed in the work performed under my firm's contract for this project.

STATE OF FLORIDA

COUNTY OF _____

The foregoing instrument was acknowledged before
me this ____ day of _____, 20____,

by _____
(Name of person acknowledging).

- ☐ PERSONALLY KNOWN
☐ OR PRODUCED IDENTIFICATION
(Attach copy of identification)

(Signature of Notary Public - State of Florida)
*Print, Type or Stamp Commissioned Name
of Notary Public*

(Contractor's firm name - typed)

(Signature of Corporate Officer or Principal)

(Typed name of person signing)

(Title)

► Submit copy for Contract Closeout

ABSENCE OF FRIABLE MATERIALS CERTIFICATION

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**CONTRACT FOR CONSTRUCTION
(Fixed Price)**

BETWEEN

THE SCHOOL BOARD OF HILLSBOROUGH COUNTY, FLORIDA

AND

CONTRACTOR

FOR

PROJECT NUMBER - PROJECT NAME

DATE: DATE OF AGREEMENT

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| | | |
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LIST OF EXHIBITS

- Exhibit A: General Terms and Conditions
- Exhibit B: Supplemental Terms and Conditions
- Exhibit C: Insurance Requirements
- Exhibit D: List of Plans and Specifications Comprising the Work

CONTRACT FOR CONSTRUCTION

THE SCHOOL BOARD OF HILLSBOROUGH COUNTY, FLORIDA a body corporate existing under the laws of the State of Florida ("Owner"), hereby contracts with **CONTRACTOR** ("Construction Contractor"), a Florida corporation, to perform all work ("Work") in connection with the management and construction of **PROJECT NUMBER - PROJECT NAME** ("Project"), located in Hillsborough County, Florida said Work being set forth in the plans and specifications prepared by DESIGN PROFESSIONAL, Architect and/or Engineer of Record ("Design Professional"), and all other Contract Documents hereafter specified.

Owner and Construction Contractor, for the consideration herein set forth, agree as follows:

Section 1. Contract Documents

A. The Contract Documents consist of this Agreement, the Exhibits described in Section 7 hereof, and any duly executed and issued addenda, Change Orders, Construction Change Directives, Field Orders and amendments relating thereto. Further, the term Contract Documents shall include all plans and specifications for the construction of the Project ("Construction Documents") prepared by Design Professional, identified in Exhibit D attached hereto. All of the foregoing Contract Documents are sometimes referred to herein as the "Contract".

B. Owner shall furnish Construction Contractor with one (1) sealed copy and one (1) reproducible set of the Construction Documents. Any additional copies of Construction Documents, required by Construction Contractor for execution of the Work, shall be made by Construction Contractor from its reproducible set at Construction Contractor's sole cost and expense. The reproducible set of the Construction Documents shall be returned to Owner upon final acceptance of the Work or termination of the Contract, whichever occurs first. Provided, however, Owner is furnishing Construction Contractor a reproducible set of Construction Documents for Construction Contractor's convenience and such furnishing by Owner shall not be deemed to be a waiver by Owner or Design Professional of any copyright, patent or license they may have with respect to the Construction Documents. All such copyrights, patents and licenses hereby being expressly reserved by Owner and Design Professional.

Section 2. Scope of Work

A. Construction Contractor shall furnish and pay for all management, supervision, financing, labor, materials, tools, fuel, supplies, utilities, equipment and services of every kind and type necessary to diligently, timely and fully perform and complete in a good and workmanlike manner the construction of the Work in accordance with all of the terms and conditions of the Contract Documents.

B. The Work includes the following alternates, if any, which are described in the Contract Documents and are hereby accepted by the Owner:

ALTERNATES

| <u>Alternate No.</u> | <u>Description</u> |
|----------------------|--------------------|
| | |
| | |
| | |
| | |

Section 3. Relationship of Parties

A. Construction Contractor accepts the relationship of trust and confidence established by this Agreement. Construction Contractor covenants with Owner to cooperate with Design Professional; to utilize Construction Contractor's best skill, efforts and judgment in furthering the interest of Owner; to furnish efficient business administration and supervision; to furnish at all times an adequate supply of workers and materials; and to perform the Work in the best way and the most expeditious and economical manner, consistent with the interests of Owner. Further, Construction Contractor acknowledges that (i) it has represented to Owner that it has specific expertise in the planning, management and construction of school facilities and (ii) that such representation is a material inducement to Owner to enter into this Contract.

B. Wherever the terms of this Contract refer to some action, consent, or approval to be provided by Owner or some notice, report or document is to be provided to Owner, such reference to "Owner" shall mean Owner, Owner's staff, or Owner's designee (to the extent such designee has been expressly authorized by Owner in writing), unless otherwise stated herein.

C. Owner may utilize the services of a Program Manager to assist it with the management of the design and construction of the Project. In the event Owner does utilize the services of a Program Manager with respect to this Project, Owner shall notify Construction Contractor in writing of such decision and the Program Manager shall be deemed to be an Owner designee as referenced in Paragraph B above. Further, to the extent Construction Contractor is required to name Owner as an additional insured under any insurance policy to be maintained by Construction Contractor pursuant to the terms of the Contract Documents, Construction Contractor shall cause the Program Manager to also be named as an additional insured party under all such policies. If so designated for this Project, Program Manager shall be Owner's representative with respect to the Project, with authority to transmit instructions, receive information, and interpret and define Owner's policies and decisions with respect to the Work. However, except as may be otherwise expressly authorized in writing by Owner, the Program Manager is not authorized on behalf of Owner to issue any verbal or written orders or instructions to Construction Contractor that would have the affect, or be interpreted to have the affect, 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 Construction Contractor as set forth in the Contract Document; (2) the time

within which Construction Contractor is obligated to complete the Work; or (3) the amount of compensation Owner is obligated or committed to pay Construction Contractor as set forth in the Contract Documents.

D. Construction Contractor hereby designates CONTRACTOR PROJECT MANAGER as its Project Manager, with full authority to bind and obligate Construction Contractor on all matters arising out of or relating to the Work or the Contract Documents. Construction Contractor agrees that the Project Manager shall devote whatever time is required to satisfactorily manage the Work and further agrees that the Project Manager shall not be removed or replaced by Construction Contractor without Owner's prior approval, which approval shall not be unreasonably withheld.

Section 4. Contract Amount

In consideration of the full and faithful performance by Construction Contractor of the covenants in this Contract, Owner agrees to pay, or cause to be paid, to Construction Contractor the following amounts (herein "Contract Amount"), in accordance with the terms of this Contract:

A. For any/all Work, a Contract Sum of AMOUNT IN TEXT dollars (\$NUMERICAL AMOUNT). This Contract Sum includes AMOUNT IN TEXT dollars (\$NUMERICAL AMOUNT) for an Owner's Contingency, which shall be reserved for the Owner's sole discretionary use, and shall not be used without the written consent of the Owner. Said amount shall be accounted for separately from other project funds. Any unspent balance of the Owner's Contingency shall be credited to the Owner at the end of the project.

B. All specific cash allowances are included in the above price and have been computed in accordance with the terms of the General Terms and Conditions. For any/all Unit Price work, the Contract Sum above includes an amount equal to the sum of the established Unit Price for each separately identified item of Unit Price Work times the estimated quantity of that item as indicated below.

Unit Price Work

| Item No. | Description | Unit | Estimated Quantity | Unit Price |
|--|-------------|------|--------------------|------------|
| | | | | |
| | | | | |
| | | | | |
| TOTAL OF ESTIMATED UNIT PRICES (included in Contract Sum above): | | | | |

Section 5. Bonds

A. When the Contract Sum is equal to or greater than three hundred thousand dollars (\$300,000), Construction Contractor shall provide Owner with [Performance and Payment Bonds](#),

in the form prescribed by the Owner on the Owner's Operations Division Web Page as of the date of this agreement, in the amount of 100% of the Contract Amount, the costs of which are to be paid by Construction Contractor. The Performance and Payment Bonds must be provided within ten (10) business days after execution of this agreement by Owner and Construction Contractor and prior to execution of the Work, and must comply with the following provisions and be otherwise acceptable to Owner:

1. The Bonds must be underwritten by a surety company which has a currently valid Certificate of Authority issued by the State of Florida, Department of Insurance, authorizing it to write surety bonds in the State of Florida.
2. The surety company shall have currently valid Certificate of Authority issued by the United States Department of Treasury under Sections 9304 to 9308 of Title 31 of the United States Code.
3. The surety company shall be in full compliance with the provisions of the Florida Insurance Code.
4. The surety company shall have at least twice the minimum surplus and capital required by the Florida Insurance Code at the time the bond is issued.
5. The Bonds must be fully performable in Florida, with service and venue in Hillsborough County, Florida.
6. If the Contract Amount exceeds \$500,000.00, the surety company shall also comply with the following provisions:
 - a. The surety company shall have at least the following minimum ratings in the latest issue of Best's Key Rating Guide:

| CONTRACT | POLICYHOLDER'S RATING | REQUIRED FINANCIAL RATING |
|--------------------------|-----------------------|---------------------------|
| \$ 500,000 to 1,000,000 | A | CLASS IV |
| 1,000,000 to 2,500,000 | A | CLASS V |
| 2,500,000 to 5,000,000 | A | CLASS VI |
| 5,000,000 to 10,000,000 | A | CLASS VII |
| 10,000,000 to 25,000,000 | A | CLASS VIII |
| 25,000,000 to 50,000,000 | A | CLASS IX |
| 50,000,000 to 75,000,000 | A | CLASS X |

- b. The surety company shall not expose itself to any loss on any one risk in an amount exceeding ten (10) percent of its surplus to policyholders, provided:

- (1) Any risk or portion of any risk being reinsured shall be deducted in determining the limitation of the risk as prescribed in this section, These minimum requirements shall apply to the reinsuring carrier providing authorization or approval by the State of Florida, Department of Insurance to do business in this state have been met.
- (2) In the case of a surety insurance company, in addition to the deduction for reinsurance, the amount assumed by any co-surety, the value of any surety deposited, pledged or held subject to the consent of the surety and for the protection of the surety shall be deducted.

B. If the surety for any bond furnished by Construction Contractor is declared bankrupt, becomes insolvent, its right to do business is terminated in the State of Florida, or it ceases to meet the requirements imposed by the Contract Documents, Construction Contractor shall, within five (5) calendar days thereafter, substitute another bond and surety, both of which shall be subject to the minimum requirements noted above and Owner's approval.

C. In accordance with the requirements of Section 255.05(1)(a), Florida Statutes, Construction Contractor shall record within 5 days in the Public Records of Hillsborough County, Florida, a copy of the Performance and Payment Bonds. Construction Contractor shall deliver within 10 days to Owner evidence, reasonably acceptable to Owner, of the recording of said Bonds. The delivery of such evidence is a condition precedent to Owner's obligation to make any progress payments to Construction Contractor hereunder.

Section 6. Contract Time and Liquidated Damages

A. Time is of the essence in the performance of the Work under this Contract. Construction Contractor shall commence the Work within five (5) calendar days after the Commencement Date. The Commencement Date will be the date the Owner issues a Notice to Proceed to Construction Contractor. No portion of the Work, with respect to the Construction Services to be provided hereunder, shall be performed prior to the Commencement Date, unless expressly approved in advance by Owner in writing. The total period of time beginning with the Commencement Date and ending on the date of Substantial Completion of the Work is referred to hereafter as the "Contract Time". The Contract Time is set forth with more specificity in Paragraph B below.

B. The Work will be substantially completed in accordance with the Contract Documents within DAYS IN TEXT (NUMERICAL DAYS) calendar days following the Commencement Date. Provided the Owner issues a Notice to Proceed to Construction Contractor not later than NTP ISSUE DATE, the Work shall be substantially completed in accordance with the Contract Documents not later than SUBSTANTIAL COMPLETION DATE. Substantial Completion of the Work shall be achieved when the Work has been completed to the point where Owner can occupy or utilize the Work for its intended purpose, and the Design Professional shall

certify the date Substantial Completion of the Work is achieved. If Owner has designated portions of the Work to be turned over to Owner prior to Substantial Completion of the entire Work, Design Professional 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 Owner within DAYS IN TEXT (NUMERICAL DAYS) calendar days after the Substantial Completion date, or within DAYS IN TEXT (NUMERICAL DAYS) calendar days after Construction Contractor's receipt of the punch list, whichever date occurs last.

C. Owner and Construction Contractor recognize that, since time is of the essence for this Contract, Owner will suffer financial loss if the Work is not substantially completed or finally accepted within the times specified in Section 6 (B) above, as said time may be adjusted as provided for herein. In such event, the total amount of Owner'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 and enhance the delivery of valuable education to the public, in Hillsborough County, Florida. It is hereby agreed that it is appropriate and fair that Owner receive liquidated damages from Construction Contractor, if Construction Contractor fails to achieve Substantial Completion of the Work or portions thereof designated for earlier completion within the required time periods. Should Construction Contractor fail to substantially complete the Work or portions thereof designated for earlier completion within the required time periods, Owner shall be entitled to assess, as liquidated damages, but not as a penalty, TWO HUNDRED FIFTY dollars (\$250) for each calendar day thereafter until Substantial Completion of the work or designated portion is achieved. Additionally, should any classrooms be unsuitable for occupancy on a student day as established by the student calendars available on the Owner's website, Owner shall be entitled to assess, as liquidated damages, but not as a penalty, TWENTY FIVE Dollars (\$25) per classroom for each student day for which occupancy is precluded. Should Construction Contractor fail to satisfy all requirements for final acceptance of the Work as described in Paragraph 22.2 of Exhibit A herein within the required time period, Owner shall be entitled to assess, as liquidated damages, but not as a penalty, twenty five dollars (\$25) for each calendar day thereafter until the final acceptance requirements are met. Construction 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 Owner's actual damages at the time of contracting if Construction Contractor fails to substantially complete the Work in a timely manner.

D. 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 made a legal holiday by the laws of Florida, 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 Owner.

Section 7. Exhibits Incorporated

The following documents are expressly agreed to be incorporated by reference and made a part of this Agreement.

- Exhibit A: General Terms and Conditions
- Exhibit B: Supplemental Terms and Conditions
- Exhibit C: Insurance Requirements
- Exhibit D: List of Plans and Specifications Comprising the Work

Section 8. Notices

A. All notices required or made pursuant to this Contract by Construction Contractor to Owner shall be in writing and 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, (iii) by hand delivery to the appropriate address as herein provided, or (iv) by telecopy with confirmation copy to be mailed. Notices required hereunder shall be directed to the following address:

Hillsborough County Public Schools
ATTN: Chief Operating Officer
Operations Division
1202 E. Palm Avenue
Tampa, Florida 33605-3512

B. All notices required or made pursuant to this Contract by Owner to Construction Contractor shall be made in writing and 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, (iii) by hand delivery to the appropriate address as herein provided, or (iv) by telecopy with confirmation copy to be mailed. Notices required hereunder shall be directed to the following address:

CONTRACTOR
ADDRESS LINE 1
CITY, STATE, ZIP

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

Section 9. Modification

No modification or amendment to the Contract shall be valid or binding upon the parties unless in writing and executed by the party or parties intended to be bound by it.

Section 10. Successors and Assigns

Subject to other provisions hereof, the Contract shall be binding upon and shall inure to the benefit of the successors and assigns of the parties to the Contract.

Section 11. Governing Law

The Contract shall be interpreted under and its performance governed by the laws of the State of Florida.

Section 12. No Waiver

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

Section 13. Entire Agreement

Each of the parties hereto agrees and represents that the Contract 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 the Contract. This agreement shall also supersede and nullify all terms and conditions of purchase orders issued in conjunction with this agreement to facilitate OWNER processing of payments.

Section 14. Severability

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

Section 15. Construction

Unless the context of this Contract 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 Contract refer to this Contract as a whole and not to any particular provision of this Contract, unless stated

otherwise. Additionally, the parties hereto acknowledge that they have carefully reviewed this Contract and have been advised by counsel of their choosing with respect thereto, and that they understand its contents and agree that this Contract shall not be construed more strongly against any party hereto, regardless of who is responsible for its preparation.

IN WITNESS WHEREOF, the parties have executed this Agreement on the date(s) indicated below.

OWNER:

CONTRACTOR:

The School Board of HILLSBOROUGH
COUNTY, FLORIDA, a body corporate

CONTRACTOR

By:_____

Christopher Farkas

Chief Operating Officer

By:_____

Print Name:_____

Title: _____

EXHIBIT A
GENERAL TERMS AND CONDITIONS

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1. INTENT OF CONTRACT DOCUMENTS

1.1 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 date of this Agreement, Construction Contractor shall be entitled to a Change Order equitably adjusting the Contract Amount and/or Contract Time to the extent such change materially impacts the Contract Time and/or Contract Amount.

1.2 If during the performance of the Work Construction Contractor discovers a conflict, error or discrepancy in the Contract Documents, Construction Contractor immediately shall report same to Design Professional in writing, and before proceeding with the Work affected thereby, shall obtain a written interpretation or clarification from Design Professional. Prior to commencing each portion of the Work, Construction Contractor shall first take all necessary field measurements and verify the applicable field conditions. After taking such measurements and verifying such conditions, Construction Contractor shall carefully compare such measurements and conditions with the requirements of the Contract Documents, taking into consideration all other relevant information known to Construction Contractor, for the purpose of identifying and bringing to Owner's attention all conflicts or discrepancies with the Contract Documents.

1.3 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, Construction Contractor shall be required to comply with the provision which is the more restrictive or stringent requirement upon Construction Contractor, as determined by Owner. Unless otherwise specifically mentioned, all anchors, bolts, screws, fittings, fillers, hardware, accessories, trim and other parts required in connection with any portion of the Work to make a complete, serviceable, finished and first quality installation shall be furnished and installed as part of the Work, whether or not called for by the Contract Documents.

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2. INVESTIGATION AND UTILITIES

2.1 Construction Contractor shall have the sole responsibility of satisfying itself concerning the nature and location of the Work and the general and local conditions, and particularly, but without limitation, with respect to the following: those affecting transportation, access, legal disposal, handling and storage of materials; availability and quality of labor; water and electric power; availability and condition of roads; work area; living facilities; climatic conditions and seasons; physical conditions at the work-site and the Project area as a whole; topography and ground surface conditions; nature and quantity of the surface materials to be encountered; subsurface conditions; equipment and facilities needed preliminary to and during performance of the Work; and all other costs associated with such performance. The failure of Construction Contractor to acquaint itself with any applicable conditions shall not relieve Construction Contractor from any of its responsibilities to perform under the Contract Documents, nor shall it be considered the basis for any claim for additional time or compensation.

2.2 Construction Contractor shall locate all existing roadways, railways, drainage facilities and utility services above, upon, or under the Project site, said roadways, railways, drainage facilities and utilities being referred to in this Section 2 as the "Utilities". Construction Contractor shall contact the owners of all Utilities to determine the necessity for relocating or temporarily interrupting any Utilities during the construction of the Project. Construction Contractor shall schedule and coordinate its Work around any such relocation or temporary service interruption. Construction Contractor shall be responsible for properly shoring, supporting and protecting all Utilities at all times during the course of the Work.

2.3 If during the performance of the Work, Construction Contractor or any subcontractor, sub-subcontractor, agent, employee or anyone else for whom Construction Contractor is legally liable, causes a disruption to any Utilities service to other facilities or customers within the Project area, Construction Contractor shall take all actions necessary and required to immediately restore such Utilities service. If Construction Contractor fails to take such immediate actions Owner shall have the right to take whatever actions it deems necessary and required to immediately restore the disrupted services, and all costs incurred by Owner as a result thereof shall be reimbursed to Owner by Construction Contractor within five (5) business days of written demand for same from Owner.

3. SCHEDULE.

3.1 Construction Contractor shall prepare and provide the various schedules set forth in Exhibit B to the Agreement. Said schedules shall be updated by Construction Contractor monthly, or as often as is specified in Exhibit B to the Agreement. Construction Contractor's submittal of satisfactory schedules and updates thereto and Owner's acceptance of same shall be a condition precedent to Owner's obligation to pay Construction Contractor.

4. PROGRESS PAYMENTS.

4.1 Construction Contractor's monthly Applications for Payment shall be in such form and contain such detail and backup as Owner reasonably may require. Prior to submitting its first monthly Application for Payment, Construction Contractor shall submit to Owner and Design Professional, for their review and approval, a Schedule of Values based upon the lump sum compensation to be paid Construction Contractor hereunder. After its approval by Owner, that Schedule of Values shall be used as the basis for Construction Contractor's monthly Applications for Payment. This Schedule of Values shall be updated for the current month Change Orders and Construction Change Directives and submitted each month to Design Professional along with a completed and notarized copy of the [Application for Payment](#) form prescribed by the Owner on the Owner's Web Page as of the date of this agreement.

4.2 If payment is requested on the basis of materials and equipment not incorporated into the Project, but delivered and suitably stored at the site, the Application for Payment shall also be accompanied by a bill of sale, invoice or other documentation warranting that Owner has received the materials and equipment free and clear of all liens, charges, security interests and encumbrances, all of which shall be subject to Owner's satisfaction. Owner has the discretion whether or not to pay for such unincorporated materials.

4.3 Construction Contractor shall submit three (3) notarized original copies of its monthly Application for Payment to Design Professional each month for Work performed during the previous month, not less than five (5) business days prior to the deadline for submission identified in the Owner's published payment processing schedule. The form of Application for Payment shall be a notarized AIA Document G702, Application and Certification for Payment, supported by AIA Document G703, Continuation Sheet. Invoices received after each month's deadline shall be considered for payment as part of the next month's application. Within five (5) business days after receipt of each Application for Payment, Design Professional shall submit to Owner a Certificate for Payment in the amount recommended by Design Professional as being due and owing Construction Contractor. Owner shall pay Construction Contractor that portion of Design Professional's Certificate for Payment which Owner approves as being due and owing Construction Contractor in accordance with the Owner's published payment processing schedule.

4.4 Owner shall retain five percent (5%) of that portion of the gross amount of each monthly payment request certified by Design Professional and approved by Owner for payment, until fifty percent completion of the Work. Upon fifty percent completion of the Work, the amount of retainage thereafter withheld by Owner from subsequent payments shall be reduced to two and one-half percent (2.5%) of that portion of the gross amount of each monthly payment request certified by Design Professional and approved by Owner for payment unless Construction Contractor has elected to withhold a higher amount from subcontractors as allowed by law, in which case the higher amount shall be retained by Owner. Upon achieving fifty percent (50%) completion of the Work, and when requested by the Contractor, the Owner may release half of the amount previously retained. Owner reserves the right, at its sole discretion, to further reduce the amounts retained on any subsequent monthly payment request prior to final payment. Provided, however, nothing in this Section 4.5 shall preclude or limit the Owner's right

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to withhold payment as otherwise permitted by the terms of the Contract Documents or as permitted by law.

4.5 Contractor shall pay its Subcontractors for all work satisfactorily completed on this Project, regardless of any other debts, claims or back-charges that may be owed by Subcontractors to Contractor on other projects. Provided the Subcontractor has satisfactorily performed its work on this Project, Contractor shall not be entitled to use funds otherwise due the Subcontractor from this Project as a set off against claims, debts or back-charges that may be owed by Subcontractor to Contractor on other construction projects.

4.6 Monthly payments to Construction Contractor shall in no way imply approval or acceptance of Construction Contractor's work.

4.7 Each Application for Payment shall be accompanied by a [Release and Affidavit](#), in the form prescribed by the Owner on the Owner's Web Page as of the date of this agreement, showing that all materials, labor, equipment and other bills associated with that portion of the Work payment is being requested on have been paid in full through the previous month's Application for Payment. Owner shall not be required to make payment until and unless the affidavit is furnished by Construction Contractor. Further, if Construction Contractor is withholding any portion of a payment to any subcontractor for any labor, services, or materials for which Owner has paid Construction Contractor, Construction Contractor agrees to refund such money to Owner.

5. PAYMENTS WITHHELD

5.1 Design Professional shall review each Application for Payment submitted by Construction Contractor and shall make recommendations to Owner as to the proper amounts, if any, which may be owed Construction Contractor under the Application for Payment. Design Professional's payment recommendation shall be evidenced by a Certificate for Payment issued by Design Professional to Owner. All Certificates for Payment are subject to Owner's review and approval. Both Design Professional and Owner shall have the right to refuse to certify or approve for payment any amounts, or portions thereof, requested by Construction Contractor in an Application for Payment, or rescind any amount previously certified and approved in a Certificate for Payment, and Owner may withhold any payments otherwise due Construction Contractor under this Contract or any other agreement between Owner and Construction Contractor, to the extent it is reasonably necessary, to protect Owner 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 Owner attributable to the fault or neglect of Construction Contractor; (c) Construction 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 Amount balance; (e) reasonable evidence indicating that the remaining Work cannot be completed within the remaining Contract Time; (f) Construction 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 Construction Contractor. Owner shall have the right, but not the obligation, to

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take any corrective action Owner deems appropriate to cure any of the above noted items, at Construction Contractor's expense, if such items are not cured by Construction Contractor to Owner's reasonable satisfaction within five (5) days after Construction Contractor's receipt of written notice from Owner.

6. FINAL PAYMENT

6.1 Owner shall make final payment to Construction Contractor within sixty (60) calendar days after the Work is finally accepted by Owner in accordance with Paragraph 22.2 herein, provided that Construction Contractor first, and as an explicit condition precedent to the accrual of Construction Contractor's right to final payment, shall have furnished Owner with the following:

6.1.1 a properly executed and notarized final release (conditioned only upon receipt of final payment) in the form of the [Release and Affidavit](#) prescribed by the Owner on the Owner's Web Page as of the date of this agreement:

6.1.2 a duly executed copy of the surety's consent to final payment;

6.1.3 evidence of payment to all subcontractors and suppliers in a form and containing such detail as may be required by Owner;

6.1.4 such other documentation that may be required by the Contract Documents or Owner.

6.2 Construction Contractor's acceptance of final payment shall constitute a full waiver of any and all claims by Construction Contractor against Owner arising out of this Contract or otherwise relating to the Project, except those identified in writing by Construction Contractor as unsettled in the final Application for Payment. Neither the acceptance of the Work nor payment by Owner shall be deemed to be a waiver of Owner's right to enforce any obligations of Construction Contractor hereunder or to the recovery of damages for defective Work not discovered by Owner or Design Professional at the time of final inspection, and/or payment.

7. SUBMITTALS AND SUBSTITUTIONS

7.1 Construction Contractor shall carefully examine the Contract Documents for all requirements for approval of materials to be submitted such as shop drawings, data, test results, schedules and samples. Construction Contractor shall submit all such materials at its own expense and in such form and manner as required by the Contract Documents in sufficient time to prevent any delay in the delivery of such materials and the installation thereof. Construction Contractor shall also carefully review and certify for accuracy and completeness all shop drawings and other submittals and then forward the same to Design Professional for review and action. Design Professional will transmit them back to Construction Contractor who will then issue the submittals to the affected subcontractor for fabrication or revision. Construction Contractor shall maintain a suspense control system to promote the expeditious handling of shop drawings and all other submittals. Construction Contractor shall request Design Professional to

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make interpretations of the drawings or specifications requested of it by the subcontractors. Construction Contractor shall advise Design Professional in writing which submittals or requests for clarification have the greatest urgency; the purpose being to enable Design Professional to prioritize requests coming from Construction Contractor. Construction Contractor shall advise Owner and Design Professional in writing when timely response is not occurring on any of the above.

7.2 Whenever materials or equipment are specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular supplier, the naming of the item is intended to establish the type, function and quality required. Unless the name is followed by words indicating that no substitution is permitted, materials or equipment of other suppliers may be accepted by Owner and Design Professional if sufficient information is submitted by Construction Contractor to allow Owner and Design Professional to determine that the material or equipment proposed is equivalent or equal to that named. Requests for review of substitute items of material and equipment will not be accepted by Owner from anyone other than Construction Contractor. All such requests, to the extent possible, should be submitted by Construction Contractor to Design Professional within ninety (90) days of the Date of Commencement.

7.3 If Construction Contractor wishes to furnish or use a substitute item of material or equipment, Construction Contractor shall make application to Design Professional for acceptance thereof, certifying 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. The application shall state that the evaluation and acceptance of the proposed substitute will not prejudice Construction Contractor's achievement of substantial completion on 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. The application also shall contain 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 Design Professional in evaluating the proposed substitute. Design Professional may require Construction Contractor to furnish at Construction Contractor's expense additional data about the proposed substitute.

7.4 If a specific means, method, technique, sequence or procedure of construction is indicated in or required by Contract Documents, Construction Contractor may furnish or utilize a substitute means, method, technique, sequence or procedure of construction acceptable to Design Professional, if Construction Contractor submits sufficient information to allow Design Professional to determine that the substitute proposed is equivalent to that indicated or required by the Contract Documents. The procedures for submission to and review by Design Professional shall be the same as those provided herein for substitute materials and equipment.

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7.5 Design Professional shall be allowed a reasonable time within which to evaluate each proposed substitute. Design Professional and Owner shall be the sole judges of the acceptability of any substitute. No substitute shall be ordered, installed or utilized without Owner's and Design Professional's prior written acceptance which shall be evidenced by either a Change Order or an approved submittal. Owner may require Construction Contractor to furnish at Construction Contractor's expense a special performance guarantee or other surety with respect to any substitute. If Owner rejects the proposed substitute, at Owner's discretion, Owner may require Construction Contractor to reimburse Owner for the charges of Design Professional and Design Professional's consultants for evaluating the proposed substitute.

8. (Intentionally Deleted)

9. CONSTRUCTION SERVICES

Construction Contractor shall provide the following services in addition to any other Construction Services required by the terms of this Contract:

9.1 Construction Contractor shall arrange for all job-site facilities as required by Owner and necessary to enable Construction Contractor and Design Professional to perform their respective duties and to accommodate any representatives of Owner which Owner may choose to have present on the job.

9.1.1 For all such job-site facilities purchased, which may become the property of Owner at the conclusion of the Work, Construction Contractor shall maintain ownership responsibilities of such facilities until final acceptance of the Work. At that time, Construction Contractor shall provide Owner with a complete inventory for each unit of equipment. The inventory shall describe the equipment and identify the purchase price, serial number, model number and condition. Where said equipment has a title, said title shall be properly transferred to Owner or to its designee.

9.1.2 Construction Contractor is responsible for proper care and maintenance of all equipment while in its control. At the time of transfer to Owner, Owner may refuse acceptance of the equipment if Owner determines, in its sole discretion, that the equipment has not been properly cared for by Construction Contractor or that such acquisition would not otherwise be in the best interest of Owner.

9.2 Construction Contractor's administration of the Work shall include the following:

9.2.1 Maintain a log of daily activities, including manpower records, weather, delays, major decisions, etc.

9.2.2 Maintain a roster of companies on the Project with names and telephone numbers of key personnel.

9.2.3 Establish and enforce job rules governing parking, clean-up, use of facilities and worker discipline.

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9.2.4 Provide labor relations management for a harmonious, productive Project.

9.3 Construction Contractor also shall provide job site administration functions during construction to assure proper documentation, including but not limited to the following:

9.3.1 Job Meetings: Hold weekly progress and coordination meetings, or more frequently if required by Work progress, to provide for the timely completion of the Work. In addition, Construction Contractor shall arrange and conduct regular monthly Project status meetings with Design Professional and Owner. Construction Contractor shall use the job site meetings as a tool for the preplanning of Work and enforcing schedules, and for establishing procedures, responsibilities, and identification of authority for all parties to clearly understand. During these meetings, Construction Contractor shall identify the party or parties responsible for following up on any problems, delay items or questions, and Construction Contractor shall note the action to be taken by such party or parties. Construction Contractor shall revisit each pending item at each subsequent meeting until resolution is achieved.

9.3.2 Shop Drawing Submittals/Approvals: Provide staff to review and approve shop drawings and other submittals and to implement procedures for transmittal to Design Professional of such submittals for action, and closely monitor their review process.

9.3.3 Material and Equipment Expediting: Provide staff to closely monitor material and equipment deliveries, check and follow-up on supplier commitments for Construction Contractor and all subcontractors and maintain a material and equipment expediting log.

9.3.4 Payments to Subcontractors: Develop and implement a procedure for the review, processing and payment of applications by subcontractors for progress and final payments.

9.3.5 Document Interpretation: Refer all questions for interpretation of the Contract Documents to Design Professional in writing.

9.3.6 Reports and Project Site Documents: Record the progress of the Work. Submit written progress reports to Owner and Design Professional, including information on subcontractors' Work, and the percentage of completion. Keep a daily log available to Owner, Design Professional, and any permitting authority inspectors.

9.3.7 Subcontractors Progress: Prepare periodic punch lists for the Work, including work of subcontractors', identifying unsatisfactory or incomplete items and schedules for their completion.

9.3.8 Substantial Completion: Pursuant to the provisions of Paragraph 22.1 of these General Terms and Conditions, ascertain when the Work or designated portions thereof are ready for Design Professional's Substantial Completion inspections. From the punch lists of incomplete or unsatisfactory items prepared by Construction Contractor and reviewed and

supplemented by Design Professional, prepare a schedule for their completion indicating completion dates for Owner's review.

9.3.9 Final Completion: Monitor the completion of the Work by Construction Contractor's own forces and the subcontractors and provide notice to Owner and Design Professional when the Work is ready for final inspection. Secure, review and certify compliance with the Contract Documents, then transmit to Owner, through Design Professional, all required guarantees, warranties, affidavits, releases, bonds, waivers, manuals, record drawings, and maintenance books.

9.3.10 Start-Up: With Owner's personnel, direct the check-out of utilities, operations, systems and equipment for readiness and assist in their initial start-up and testing, to include work assigned to subcontractors.

9.3.11 Record Drawings: Pursuant to the terms of Paragraph 10.2 hereafter, Construction Contractor shall monitor the progress of its own forces and its subcontractors on marked up field prints which shall be developed by Construction Contractor into the final record drawings.

9.4 Construction Contractor shall maintain at the Project site, originals or copies of, on a current basis, all Project files and records. The Project files and records shall be available at all times to Owner and Design Professional or their designees for reference, review or copying.

9.5 Construction Contractor shall provide the following services with respect to the Work, to facilitate the smooth, successful and timely occupancy of the Project by Owner:

9.5.1 Construction Contractor shall provide consultation and Project management to facilitate Owner's occupancy of the Project and provide transitional services to place the Work "on line" in such conditions as will satisfy Owner's operations requirements. The services include Construction Contractor's coordination of the delivery of Owner supplied furniture, fixtures and equipment for the Project.

9.5.2 Construction Contractor shall catalog operational and maintenance requirements of equipment to be operated by maintenance personnel and convey these to Owner in such a manner as to promote their usability. Construction Contractor shall provide Owner's operations and maintenance personnel with operations and maintenance training with respect to the equipment and systems being provided as part of the Work. This training may be video taped by Owner for subsequent presentation to Owner's operations and maintenance personnel.

9.5.3 Construction Contractor shall secure required guarantees and warranties, and shall assemble and deliver same to Owner in the manner required by Owner.

10. DAILY REPORTS, RECORD CONTRACT DOCUMENTS AND MEETINGS

10.1 Construction Contractor shall prepare, maintain and submit to Design Professional and Owner, for their review and approval, the various logs, reports, and schedules set forth in Exhibit B to the Agreement. Construction Contractor's complete performance of its obligation to prepare, maintain and submit those logs, reports, and schedules is a condition precedent to Owner's obligation hereunder to make any payments to Construction Contractor. These logs, reports and schedules shall not constitute nor take the place of any notice required to be given by Construction Contractor to Owner or Design Professional pursuant to the Contract Documents.

10.2 Construction Contractor shall maintain in a safe place at the Project site one record copy and one permit set of the Contract Documents, including, but not limited to, all drawings, specifications, addenda, amendments, Change Orders, Construction Change Directive and Field Orders, as well as all written interpretations and clarifications issued by Design Professional, in good order and annotated to show all changes made during construction. The record Contract Documents shall be continuously updated by Construction Contractor throughout the prosecution of the Work to accurately reflect all field changes that are made to adapt the Work to field conditions, changes resulting from Change Orders, Construction Change Directive and Field Orders, and all concealed and buried installations of piping, conduit and utility services. Construction Contractor shall certify the accuracy of the updated record Contract Documents. As a condition precedent to Owner's obligation to pay Construction Contractor, Construction Contractor shall provide evidence, satisfactory to Owner and Design Professional, that Construction Contractor is fulfilling its obligation to continuously update the record Contract Documents. The record Contract Documents shall be clean and all changes, corrections and dimensions shall be given in a neat and legible manner in red. The record Contract Documents, together with all approved samples and a counterpart of all approved shop drawings shall be available to Owner and Design Professional for reference. Upon completion of the Work and as a condition precedent to Construction Contractor's entitlement to final payment, the record Contract Documents shall be delivered to Design Professional by Construction Contractor for Owner.

10.3 Construction Contractor shall advise Owner, its representatives and Design Professional of their requested or required participation in any meeting or inspection giving each written notice at least 48 hours prior to the meeting or inspection.

11. CONTRACT TIME AND TIME EXTENSIONS

11.1 Construction Contractor shall diligently pursue the completion of the Work and coordinate the Work being done on the Project by its subcontractors and materialmen, 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 Construction Contractor or anyone for whom Construction Contractor is liable. Unless expressly noted otherwise in the Contract Documents, Construction Contractor shall be solely responsible for all construction means, methods, techniques, sequences, and procedures, as well as coordination of

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all portions of the Work under the Contract Documents, and the coordination of Owner's suppliers and contractors as set forth in Section 14 of these General Conditions.

11.2 Should Construction Contractor be obstructed or delayed in the prosecution of or completion of the Work as a result of unforeseeable causes beyond the control of Construction 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 Hillsborough County, Florida, average not reasonably anticipatable, Construction Contractor shall notify Owner and Design Professional 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 Construction Contractor may have had to request a time extension.

11.2.1 Owner shall have the right, at any time, whether or not Construction Contractor is behind schedule, to order Construction Contractor to accelerate its Work. In the event that Owner orders Construction Contractor to accelerate its Work and Construction Contractor (i) is not behind schedule and (ii) believes that acceleration will increase the cost of performance, Construction Contractor, shall be required to submit a Claim for increase pursuant to Section 13 of these General Conditions. Any such claim shall be based exclusively and solely on actual and direct increased field costs associated with the acceleration.

11.3 If Construction Contractor encounters on the Project site any materials reasonably believed by Construction Contractor to be petroleum or petroleum related products or other hazardous or toxic substances which have not been rendered harmless, Construction Contractor immediately shall (i) stop Work in the area affected and (ii) report the condition to Owner 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 adjustment to the Contract Time as appropriate. 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 Construction Contractor or any of its employees, agents, subcontractors, or material suppliers, no Change Order will be required for an adjustment in the Contract Time and Construction Contractor shall indemnify Owner and hold Owner harmless for any costs incurred by Owner with respect to such hazardous material.

11.4 No interruption, interference, inefficiency, suspension or delay in the commencement or progress of the work from any cause whatsoever, including those for which Owner and Design Professional may be responsible, in whole or in part, shall relieve the Contractor of its duty to perform or give rise to any rights to damages or additional compensation from Owner unless specifically provided for in this paragraph. If the Contractor is delayed at any time in the progress of the work due to causes outside of its control, or the control of its subcontractors or suppliers, the Construction Contractor may submit a change order requesting an extension of the Contract Time in accordance with the procedure established in this agreement. The Construction Contractor warrants by execution of the Contract that the Construction Contractor has accounted for and anticipated foreseeable delays and that the work can be completed within the Contract Time. Any delay shall be deemed to be the fault of

Contractor, unless a change in the Contract Time for the delay has been approved through a Change Order. Any extension of the Contract Time shall be net of any foreseeable delays or other delays attributable to the Contractor. No extension of the Contract Time shall increase the Contract Sum unless and until the Construction Contractor demonstrates to the satisfaction of the Owner that the Substantial Completion will be delayed beyond a date selected for Substantial Completion in this Contract. For each day Substantial Completion is so delayed as a result of an approved extension of the Contract Time, on grounds other than adverse weather conditions, the Contract Sum shall be increased by \$200 on account of general conditions and overhead, but no more. Construction Contractor agrees and warrants that it waives all other damages or costs that it may incur as a result of delay to its performance other than specifically set forth in this paragraph. The Contract Sum shall not be increased as a result of extension of the Contract Time to the extent the extension of time results from adverse weather conditions or any other cause outside the control of the Owner.

12. CHANGES IN THE WORK

12.1 Owner shall have the right at any time during the progress of the Work to increase or decrease the Work. Promptly after being notified of a change, but in no event more than fourteen (14) days after its receipt of such notification (unless Owner has agreed in writing to a longer period of time), Construction 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, or for minor changes ordered by Design Professional that will not result in an increase in compensation or adjustment to the Contract Time, no addition or changes to the Work shall be made except upon written order of Owner, and Owner shall not be liable to Construction Contractor for any increased compensation or adjustment to the Contract Time without such written order. NO OFFICER, EMPLOYEE OR AGENT OF OWNER IS AUTHORIZED TO DIRECT ANY EXTRA OR CHANGED WORK ORALLY.

12.2 A [Change Order](#), in the form prescribed by the Owner on the Owner's Web Page as of the date of this agreement, shall be prepared by Construction Contractor, reviewed by Design Professional and Owner, and executed promptly by the parties after an agreement is reached between Construction Contractor and Owner concerning the requested changes. Construction Contractor shall promptly perform changes authorized by duly executed Change Orders. The Contract Amount and Contract Time shall be adjusted in the Change Order in the manner as Owner and Construction Contractor shall mutually agree.

12.3 If Owner and Construction Contractor are unable to agree on a Change Order for the requested change, Construction Contractor shall, nevertheless, promptly perform the change as directed by Owner in a written Construction Change Directive. In that event, the Contract Amount and Contract Time shall be adjusted as directed by Owner. If Construction Contractor disagrees with Owner's adjustment determination, Construction Contractor must make a claim pursuant to Section 13 of these General Conditions or else be deemed to have waived any claim it might otherwise have had on that matter.

12.4 In the event a requested change is approved by Owner which results in either an increase or decrease to the Contract Amount, a Change Order shall be issued which increases

or decreases the Contract Amount by the amount of Construction Contractor's actual and reasonable direct costs of performing the Work (including bond premiums for changes other than those associated with Owner Direct Purchase) as approved by Owner.

12.5 Notwithstanding any provision herein to the contrary, the amounts for combined overhead and profit for Change Orders and Construction Change Directives are as follows:

1. For the Contractor, for Work performed by the Contractor's own forces or increases in any bond premiums; ten percent (10%) of the cost.
2. For the Contractor, for Work performed by the Contractor's Subcontractor; five percent (5%) of the amount due the Subcontractor.
3. For each Subcontractor or Sub-subcontractors involved, the Work performed by that Subcontractor or Sub-subcontractor's own forces; ten percent (10%) of the cost.
4. For each Subcontractor, the Work performed by the Subcontractor's Sub-subcontractor's; five percent (5%) of the amount due the Sub-subcontractor.
5. No further tiering of the Sub-subcontractors will be allowed mark-up for overhead and profit.

12.6 In order to facilitate checking of quotations for extras or credits, all proposals, except those so minor that their propriety can be seen by inspection, shall be accomplished by a complete itemization of costs including labor, materials and Subcontracts. Labor and materials shall be itemized in the manner prescribed above. Where major cost items are Subcontracts, they shall be itemized also. In no case will a change involving over \$100.00 be approved without such itemization.

12.7 Owner shall have the right to conduct an audit of Construction Contractor's books and records, as well as those of its subcontractors and suppliers, to verify the accuracy of Construction Contractor's claim with respect to Construction Contractor's costs associated with any Change Order or Construction Change Directive.

12.8 Design Professional may direct Construction Contractor to make nonmaterial changes to the Work, so long as such changes do not require or result in any adjustment to the Contract Amount, Contract Time or Project quality, and are generally within the scope of the Work. All such changes must be evidenced by a written order from Design Professional to Construction Contractor, with a copy to Owner. Construction Contractor shall comply with all such orders.

12.9 When the Contract Amount includes an Owner's Contingency Allowance, changes in the Work may be authorized as a Contingency Adjustment. The procedures for Contingency Adjustments are the same as for Change Orders and Construction Change Directives, except that no increase or decrease to the Contract Amount results. Costs for Contingency Adjustments shall not include amounts for Contractor's overhead and profit or adjustments to the Contractor's fee. If Owner and Construction Contractor are unable to agree on a Contingency Adjustment for the requested change, Construction Contractor shall, nevertheless,

promptly perform the change as directed by Owner in a written Construction Change Directive. In that event, the Contract Amount and Contract Time shall be adjusted as directed by Owner. If Construction Contractor disagrees with Owner's adjustment determination, Construction Contractor must make a claim pursuant to Section 13 of these General Conditions or else be deemed to have waived any claim it might otherwise have had on that matter.

13. CLAIMS AND DISPUTES

13.1 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.

13.2 Initial notice of Claims by Construction Contractor shall be made in writing to Owner and Design Professional within fourteen (14) calendar days after the first day of the event giving rise to such Claim or else Construction Contractor shall be deemed to have waived the Claim. Written supporting data shall be submitted to Owner and Design Professional within thirty (30) calendar days after the occurrence of the event, unless Owner grants additional time in writing, or else Construction Contractor shall be deemed to have waived the Claim. All Claims shall be priced in accordance with the provisions of Paragraph 12.5 hereof.

13.3 Construction Contractor shall proceed diligently with its performance as directed by Owner, regardless of any pending Claim, unless otherwise agreed to by Owner in writing. Owner shall continue to make payments in accordance with the Contract Documents during the pendency of any Claim.

13.4 Prior to the initiation of any action or proceeding permitted by this Contract to resolve disputes between the parties, the parties shall make a good faith effort to resolve any such disputes by negotiation between representatives with decision-making power. 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.

13.5 Any litigation between Owner and Construction Contractor (which term for the purposes of this subparagraph shall include Construction Contractor's surety), whether arising out of any Claim or arising out of the Contract or any breach thereof, shall be brought, maintained and pursued only in the appropriate State courts of the State of Florida; and Owner and Construction 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 Owner and Construction Contractor shall lie and be only in the appropriate State courts of the State of Florida's Thirteenth Judicial Circuit in and for Hillsborough County, Florida. Construction Contractor consents and submits to the 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.

14. OTHER WORK

14.1 Owner may perform other work related to the Project at the site by Owner's own forces, have other work performed by utility owners or let other direct contracts. If the fact that such other work is to be performed is not noted in the Contract Documents, written notice thereof will be given to Construction Contractor prior to starting any such other work. If Construction Contractor believes that such performance will involve additional expense to Construction Contractor or require additional time, Construction Contractor shall send written notice of that fact to Owner and Design Professional within seven (7) calendar days of being notified of the other work. If Construction Contractor fails to send the above required seven (7) calendar days' notice, Construction 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 Amount.

14.2 Construction Contractor shall afford each utility owner and other contractor who is a party to such a direct contract (or Owner, if Owner is performing the additional work with Owner'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. Construction 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. Construction Contractor shall be responsible for all damage to the work of others caused by the performance of its Work. Further, Construction Contractor shall not in any way cut or alter the work of others without first receiving the written consent of that other person and Design Professional.

14.3 If any part of Construction Contractor's Work depends for proper execution or results upon the work of any other contractor or utility owner (or Owner), Construction Contractor shall inspect and promptly report to Design Professional 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 seven (7) calendar days of the time Construction Contractor first became aware of the delay, defect or deficiency or by the scheduled commencement of Construction Contractor's dependent Work, whichever occurs first. Construction Contractor's failure to report within the allotted time will constitute an acceptance of the other work as fit and proper for integration with Construction Contractor's Work.

15. INSURANCE

15.1 During the term of this Agreement Construction Contractor shall provide, pay for, and maintain, with companies satisfactory to Owner, the types of insurance described on Exhibit C and as described herein. All insurance shall be from responsible companies duly authorized to do business in the State of Florida. Simultaneously with the execution and delivery of this Agreement by Construction Contractor and prior to execution of the Work, Construction Contractor has delivered to Owner properly executed Certificates of Insurance, using the standard Accord form, evidencing the fact that Construction Contractor has acquired and put in place the insurance coverages and limits required hereunder. In addition, certified, true and exact copies of all insurance policies required shall be provided to Owner, on a timely basis, if

requested by Owner. These Certificates and policies shall contain provisions that thirty (30) days written notice by registered or certified mail shall be give Owner of any cancellation, intent not to renew, or reduction in the policies' coverages, except in the application of the Aggregate Limits Provisions. Construction Contractor shall also notify Owner, in a like manner, within twenty-four (24) hours after receipt, of any notices of expiration, cancellation, non-renewal or material change in coverages or limits received by Construction Contractor from its insurers, and nothing contained herein shall relieve Construction Contractor of this requirement to provide notice. In the event of a reduction in the aggregate limit below the minimum required of any policy to be provided by it hereunder, Construction Contractor shall immediately take steps to have the aggregate limit reinstated. All insurance coverages of Construction Contractor shall be primary to any insurance or self-insurance program carried by Owner applicable to this Project.

15.2 All insurance policies required by this Agreement shall include the following provisions and conditions by endorsement to the policies:

15.2.1 The term "The School Board of Hillsborough County, Florida", shall include The School Board of Hillsborough County, Florida, a body corporate; the Hillsborough County Public School System; and all authorities, Boards, Bureaus, Commissions, Divisions, Departments and offices thereof and individual members and employees thereof in their official capacity, and/or while acting on behalf of The School Board of Hillsborough County.

15.2.2 All insurance policies, other than the Workers Compensation policy, provided by Construction Contractor to meet the requirements of this Agreement shall name The School Board of Hillsborough County, Florida, as that name is defined in 15.2.1 above, as an additional insured as to the operations of Construction Contractor under the Contract Documents and shall contain a severability of interests provisions.

15.2.3 Companies issuing the insurance policy or policies shall have no recourse against Owner for payment of premiums or assessments for any deductibles which all are at the sole responsibility and risk of Construction Contractor.

15.2.4 All insurance coverages of Construction Contractor shall be primary to any insurance or self-insurance program carried by Owner applicable to this Project, and the "Other Insurance" provisions of any policies obtained by Construction Contractor shall not apply to any insurance or self-insurance program carried by Owner applicable to this Project.

15.2.5 Before construction begins Certificate(s) of Insurance confirming insurance requirements must be provided to Owner for Owner's insurance broker compliance review and acceptance. All Certificate(s) of Insurance must reference the project name. As applicable, Additional Insured Requirement, pursuant to 15.2.2 above, must be attached.

15.2.6 All insurance policies shall be fully performable in Hillsborough County, Florida, and shall be construed in accordance with the laws of the State of Florida.

15.2.7 Venue for any action concerning any matter under any policies provided pursuant to this agreement shall lie and be only in the appropriate State courts of the

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State of Florida's Thirteenth Judicial Circuit in and for Hillsborough County, Florida. Insurer must consent and submit to the 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.

15.3 The acceptance by Owner of any Certificate of Insurance for this Project evidencing the insurance coverages and limits required in this Agreement does not constitute approval or agreement by Owner 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.

15.4 Before starting and until completion of all services required hereunder, Construction Contractor shall procure and maintain insurance of the types and to the limits specified in Exhibit C, "Insurance Requirements", which is attached hereto and made a part hereof. Construction Contractor shall require each of its subcontractors to procure and maintain, until the completion of that subcontractor's services, insurance of the types and to the limits specified in Exhibit C, unless such insurance requirement for the subcontractor is expressly waived in writing by Owner. It is the Contractor's explicit responsibility to ensure all subconsultant(s) and/or subcontractor(s) comply with these insurance requirements.

15.5 If any insurance provided pursuant to this Agreement expires prior to the completion of the services required hereunder, renewal Certificates of Insurance and, if requested by Owner, certified, true copies of the renewal policies, shall be furnished to Owner thirty (30) days prior to the date of expiration.

15.6 Should at any time Construction Contractor not maintain the insurance coverages required in this Agreement, Owner may cancel the Agreement or at its sole discretion shall be authorized to purchase such coverages and charge Construction Contractor for such coverages purchased. If Construction Contractor fails to reimburse Owner for such costs within thirty (30) days after demand, Owner has the right to offset these costs from any amount due Construction Contractor under this Agreement. Owner 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 Owner to purchase such insurance coverages shall in no way be construed to be a waiver of its rights under this Agreement.

15.7 Construction Contractor, its subconsultants and Owner shall waive all rights against each other for damages covered by insurance to the extent insurance proceeds are paid and received by Owner, except such rights as they may have to the proceeds of such insurance held by any of them.

15.8 All insurance companies from whom Construction Contractor obtains the insurance policies required hereunder must meet the following minimum requirements:

15.8.1 The insurance company must be duly licensed and authorized by the Department of Insurance of the State of Florida to transact the appropriate insurance business in the State of Florida.

15.8.2 The insurance company must have an A.M. Best policyholder rating of either "A+", or "A".

15.8.3 The insurance company must have a current A.M. Best financial rating of "Class VI" or higher.

15.9 OWNER'S LIABILITY INSURANCE

15.9.1 Pursuant to Florida Statute 768.28

15.10 PROPERTY INSURANCE

15.10.1 Owner purchases Complete Value Builders Risk property coverage on a per project basis, excluding all contractor(s) and sub-contractor(s) property and equipment. At the time Construction Contractor provides Certificates of Insurance for the project, Construction Contractor shall also provide information needed for Owner to establish the Builders Risk coverage, using the [Builders Risk Enrollment Form](#) prescribed by the Owner on the Owner's Web Page as of the date of this agreement.

15.10.2 If the property insurance requires deductibles, the Owner shall pay costs not covered because of such deductibles, unless the covered loss is caused in whole or in part by the negligence or intentional actions of Construction Contractor and/or subcontractors. In such case, the deductibles shall be paid proportionally by the party(s) responsible for the loss.

15.10.3 This property insurance shall cover portions of the Work stored off the site, and also portions of the Work in transit.

15.10.4 A loss insured under Owner's property insurance shall be adjusted by the Owner and made payable to the Owner.

15.10.5 The Owner shall have power to adjust and settle a loss with insurers.

16. INDEMNIFICATION

16.1 To the maximum extent permitted by Florida law, Construction Contractor shall defend, indemnify and hold harmless Owner 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 Construction Contractor or from personal injury, property damage, direct or indirect damages, or economic loss, to the extent caused by the negligence, recklessness, or intentional wrongful misconduct of Construction Contractor or anyone employed or utilized by the Construction Contractor in the performance of this Agreement.

16.2 The duty to defend under this Article 16 is independent and separate from the duty to indemnify, and the duty to defend exists regardless of any ultimate liability of the

Construction Contractor, Owner and any indemnified party. The duty to defend arises immediately upon presentation of a claim by any party and written notice of such claim being provided to Construction Contractor. Construction Contractor's obligation to indemnify and defend under this Article 16 will survive the expiration or earlier termination of this Agreement until it is determined by final judgment that an action against the Owner or an indemnified party for the matter indemnified hereunder is fully and finally barred by the applicable statute of limitations.

17. CLEANUP AND PROTECTIONS

17.1 Construction Contractor agrees to keep the Project site clean at all times of debris, rubbish and waste materials arising out of the Work. If Construction Contractor fails to keep the Project site clean, Owner has the right, after providing a twenty-four (24) hour written notice, to perform any required clean up and to back-charge Construction Contractor for the costs of such clean up. At the completion of the Work, Construction Contractor shall remove all debris, rubbish and waste materials from and about the Project site, as well as all tools, appliances, construction equipment and machinery and surface materials, and shall leave the Project site clean and ready for occupancy by Owner.

17.2 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 Construction Contractor from damage during the prosecution of the Work. Any such improvements so damaged shall be restored by Construction Contractor to condition at least equal to that existing at the time of Construction Contractor's commencement of the Work.

18. ASSIGNMENT

18.1 Construction Contractor shall not assign this Contract or any part thereof, without the prior consent in writing of Owner. If Construction Contractor does, with approval, assign this Contract or any part thereof, it shall require that its assignee be bound to it and to assume toward Construction Contractor all of the obligations and responsibilities that Construction Contractor has assumed toward Owner.

19. PERMITS, LICENSES AND TAXES

19.1 All permits and licenses necessary for the prosecution of the Work shall be procured and paid for by Construction Contractor. Permits and licenses to be acquired by Construction Contractor with the assistance of Design Professional include, but are not limited to, building, site, Department of Education, and utility permits, as well as all Health Department (DER) permits required for the construction or relocation of Hillsborough County water and/or sanitary sewer lines and facilities, to the extent such water and/or sewer work is included in this Contract. If Construction Contractor performs any Work without obtaining, or contrary to, such permits or licenses, Construction Contractor shall bear all costs arising therefrom. All costs incurred by Construction Contractor with respect to performing its obligations under this

Paragraph 19.1 shall be paid by the Construction Contractor. Construction Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work.

19.2 Construction Contractor shall pay all sales, consumer, use and other similar taxes associated with the Work or portions thereof, which are applicable during the performance of the Work. Additionally, Construction Contractor shall comply with and fully implement the sales tax savings program with respect to the Work, as set forth below in Paragraph 19.3.

19.3 OWNER DIRECT PURCHASE

19.3.1 Notwithstanding anything herein to the contrary, because Owner is exempt from sales tax and wishes to generate sales tax savings for the Project, Owner reserves the right to make direct purchases of various construction materials and equipment included in the Work. Construction Contractor represents and warrants that it will use its best efforts to cooperate with Owner in implementing this sales tax savings program in order to maximize cost savings for the Project. Unless directed otherwise in writing by Owner, Construction Contractor shall prepare requisitions to vendors selected by Construction Contractor for all purchases of materials and equipment exceeding ten thousand dollars (\$10,000), for execution by Owner, on forms provided by Owner. Construction Contractor shall allow two weeks for execution of all such purchase orders by Owner, except that Owner is under no obligation to execute purchase orders unless and until Construction Contractor has processed deductive Change Orders in amounts equal to or exceeding the cumulative total of purchases executed or requested. Prior to its first application for payment and processing of any requisitions by Owner, Construction Contractor will process one (1) deductive Change Order under the Agreement for the entire estimated amount of Owner Direct Purchases, inclusive of sales taxes. Should at any time the cumulative amount of requisitions requested by Construction Contractor exceed the amount of deductive Change Orders previously processed, an additional deductive Change Order shall be required prior to the processing of additional requisitions. Prior to the final payment, a final reconciliation of the Owner Direct Purchases will be performed and such deductive Change Order will be prepared for the Owner's review and approval.

19.3.2 With respect to all direct purchases by Owner, Construction Contractor shall remain responsible for coordinating, ordering, inspecting, accepting delivery, storing, handling, installing, warranting and quality control for all direct purchases. Notwithstanding anything herein to the contrary, Construction Contractor expressly acknowledges and agrees that any materials or equipment directly purchased by Owner pursuant this section shall be included within and covered to the same extent as all other warranties provided by Construction Contractor pursuant to the terms of the Contract Documents. Owner shall assign to Construction Contractor any and all warranties and rights Owner may have from any manufacturer or supplier of any such direct purchases by Owner.

19.3.3 All Direct Purchase correspondence, including invoice submissions, shall be handled via email at "directpurchase@sdhc.us" or by US Mail only. Email requests from the Construction Contractor, requesting a direct purchase, shall be considered by the Owner as final authorization to proceed with the purchase. It is acknowledged that the Construction Contractor is responsible for compliance with Section 212.08(6), Florida Statutes

(F.S.) and Rule 12A-1.094, Florida Administrative Code (F.A.C.), (Public Works Contracts), which governs the taxability of transactions in which contractors and subcontractors purchase supplies and materials for use in public works contracts.

19.3.4 Failure of the Construction Contractor to implement the Direct Purchase program, without receiving prior permission to waive the requirement, will result in a reduction of the Construction Contractor's fee in an amount equal to the lost sales tax savings.

20. TERMINATION FOR DEFAULT

20.1 Construction Contractor shall be considered in material default of the Contract and such default shall be considered cause for Owner to terminate the Contract, in whole or in part, as further set forth in this Article, if Construction 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 provided for in the Contract Documents; 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 Contract; 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 obey any applicable codes, laws, ordinances, rules or regulations with respect to the Work; or (10) fails to promptly pay its subcontractors and suppliers; or (11) materially breaches any other provision of the Contract Documents.

20.2 If Owner determines that Construction Contractor is in default under this Contract, Owner shall notify Construction Contractor in writing of Construction Contractor's default(s). If Owner determines that Construction Contractor has not remedied and cured the default(s) or established a mutually agreeable plan with the Owner to cure the default(s) within seven (7) calendar days following receipt by Construction Contractor of said written notice, then Owner, at its option, without releasing or waiving its rights and remedies against Construction Contractor's sureties and without prejudice to any other right or remedy it may be entitled to hereunder or by law, may terminate Construction Contractor's right to proceed under the Contract, in whole or in part, and take possession of all or any portion of the Work and any materials, tools, equipment, and appliances of Construction Contractor, take assignments of any of Construction Contractor's subcontracts and purchase orders that Owner may designate, and complete all or any portion of Construction Contractor's Work by whatever means, method or agency which Owner, in its sole discretion, may choose. In making either the initial determination that Construction Contractor is in default under this Contract or the subsequent determination that Construction Contractor has failed to satisfactorily cure its default, Owner may rely solely upon Design Professional's certification to Owner that in Design Professional's opinion Construction Contractor is in default or has failed to satisfactorily cure its default.

20.3 If Owner deems any of the foregoing remedies necessary, Construction Contractor agrees that it shall not be entitled to receive any further payments hereunder until after the Work is completed. 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 Design Professional and attorneys' fees) or damages incurred by Owner incident to such completion, shall be deducted from the unpaid balance of the Contract Amount, and if such expenditures exceed the unpaid balance of the Contract Amount, Construction Contractor agrees to pay promptly to Owner on demand the full amount of such excess, including costs of collection, attorney's fees (including appeals) and interest thereon at the maximum legal rate of interest until paid. If the unpaid balance of the Contract Amount exceeds all such costs, expenditures and damages incurred by Owner to complete the Work, Construction Contractor shall not be entitled to any portion of such excess, except for the unpaid portion of the Cost of Work incurred prior to Construction Contractor's right to continue performance under this Contract being terminated. Any amounts to be paid to Owner by Construction Contractor pursuant to this Paragraph 20.3 shall be certified by Design Professional, upon application, and this obligation for payment shall survive termination of the Contract.

20.4 The liability of Construction Contractor hereunder shall extend to and include the full amount of any and all sums paid, expenses and losses incurred, damages sustained, and obligations assumed by Owner 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 therefore 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 Owner has exercised its right to terminate due to Construction Contractor's default, Construction Contractor shall be prohibited from bidding or otherwise seeking additional work from Owner in accordance with Owner's then current debarment policy.

20.5 If, after notice of termination of Construction Contractor's right to proceed pursuant to this Article, it is determined for any reason that Construction Contractor was not in default, or that its default was excusable, or that Owner is not entitled to the remedies against Construction Contractor provided herein, then such termination shall be deemed a termination for Owner's convenience and Construction Contractor's remedies against Owner shall be the same as and limited to those afforded Construction Contractor under Paragraph 21.1 below.

21. TERMINATION FOR CONVENIENCE AND RIGHT OF SUSPENSION

21.1 Owner shall have the right to terminate this Contract without cause upon seven (7) calendar days written notice to Construction Contractor. In the event of such termination for convenience, Construction Contractor's recovery against Owner shall be limited to that portion of the Contract Amount earned through the date of termination, together with any retainage withheld and reasonable termination expenses incurred, but Construction Contractor shall not be entitled to any other or further recovery against Owner, including, but not limited to, damages or any anticipated profit on portions of the Work not performed.

21.2 Owner shall have the right to suspend all or any portions of the Work upon giving Construction Contractor two (2) calendar days' prior written notice of such suspension. If all or any portion of the Work is so suspended, Construction Contractor's sole and exclusive

remedy shall be to seek an extension to the Contract Time in accordance with the procedures set forth in the Contract Documents. In no event shall Construction Contractor be entitled to any additional compensation or damages except as otherwise expressly provided for in the Contract Documents. Provided, however, if the ordered suspension exceeds ninety (90) calendar days, Construction Contractor shall have the right to terminate the Contract with respect to that portion of the Work which is subject to the ordered suspension.

22. COMPLETION

22.1 When the entire Work (or any portion thereof designated in writing by Owner) is ready for its intended use, Construction Contractor shall notify Owner and Design Professional in writing that the entire Work (or such designated portion) is substantially complete and request that Design Professional issue a Certificate of Substantial Completion (or Certificate of Partial Substantial Completion). Said written notice from Construction Contractor shall include a proposed punch list of all items of Work to be completed or corrected by Construction Contractor. Within a reasonable time thereafter, Owner, Construction Contractor and Design Professional shall make an inspection of the Work (or designated portion thereof) to determine the status of completion. If Owner and Design Professional do not consider the Work (or designated portion) substantially complete, Design Professional shall notify Construction Contractor in writing giving the reasons therefore. In such case, Construction Contractor shall pay the costs of all additional Substantial Completion inspections. If Owner and Design Professional consider the Work (or designated portion) substantially complete, Design Professional shall prepare and deliver to Construction Contractor a Certificate of Substantial Completion (or Certificate of Partial Substantial Completion) which shall fix the date Substantial Completion for the entire Work (or designated portion thereof) is actually achieved by Construction Contractor and include a final punch list of items to be completed or corrected by Construction Contractor before final payment. Such final punch list shall be in compliance with the Contract Documents and all applicable laws. Accordingly, Design Professional shall provide the final punch list to Construction Contractor within seven calendar days after Construction Contractor has achieved Substantial Completion. Construction 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 Construction Contractor to complete all the Work required under this Contract and does not waive Owner's right to demand completion of the item pursuant to the Contract Documents prior to or after final payment. Additionally, if this Agreement involves Work on more than one building or structure, or involves a multi-phased Project, a punch list shall be developed in accordance with the timelines set forth in this paragraph for each building, structure, or phase of the Project. Owner shall have the right to exclude Construction Contractor from the Work and Project site (or designated portion thereof) after the date of Substantial Completion (or Partial Substantial Completion), but Owner shall allow Construction Contractor reasonable access to complete or correct items on the final punch list.

22.2 When Construction Contractor believes it has fully performed all of the Work, including all punch list items, Construction Contractor shall deliver to Owner a written affidavit from Construction Contractor certifying that all Work has been completed in accordance with the requirements of the Contract Documents. That written affidavit shall be

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delivered to Owner by Construction Contractor at the same time it submits its final Application for Payment. After receipt of such affidavit, the final Application for Payment and all other documents required for Project close-out, Design Professional and Owner shall promptly inspect the Work to determine if all of the Work has been completed and is ready for final acceptance by Owner. If Owner and Design Professional determine Construction Contractor has completed the entire Work, Design Professional shall promptly issue a final Certificate for Payment, stating that, to the best of its knowledge, information and belief, and on the basis of its observations and inspections: (i) all of the Work has been completed in accordance with the requirements of the Contract Documents; (ii) the final balance due Construction Contractor, as noted in the final Certificate for Payment, is due and payable; and (iii) all conditions precedent to Construction Contractor's entitlement to final payment have been satisfied. Neither the final payment nor the retainage shall become due and payable until Construction Contractor submits: (1) the final Release and Affidavit in the form prescribed by Owner, (2) consent of surety to final payment, and (3) if required by Owner, other data establishing payment or satisfaction of all obligations, such as receipts, releases and waivers of liens, arising out of the Contract Documents, to the extent and in such form as may be designated by Owner. Owner reserves the right to inspect the Work and make an independent determination as to the Work's acceptability, even though Design Professional may have issued its recommendations. Unless and until Owner is completely satisfied that all requirements of the Contract Documents have been met, neither the final payment nor the retainage shall become due and payable.

23. WARRANTY

23.1 Construction Contractor shall obtain and assign to Owner all express warranties given to Construction Contractor by any subcontractors or by any materialmen supplying materials, equipment or fixtures to be incorporated into the Project. Construction Contractor expressly warrants to Owner that all materials and equipment to be incorporated into the Work shall be new unless otherwise specified. Further, Construction Contractor expressly warrants to Owner that all Work shall be of good quality, free from all defects and in conformance with the Contract Documents. Construction Contractor further warrants to Owner 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 Owner and shall not include any exclusions, exceptions or modifications except to the extent approved by Owner in its sole discretion. In addition to all other rights and remedies available to Owner at law or in equity, including any implied warranties Owner may be entitled to as a matter of law, Construction Contractor expressly warrants to Owner that it shall promptly correct, upon receipt of written notice from Owner, any portion of the Work which is found to be defective or otherwise not in conformance with the requirements of the Contract Documents. In the event that any defective or non-conforming work is deemed by Owner in its sole discretion to present an immediate threat to safety or security, Owner shall be entitled to correct and fix such defective or non-conforming portions of the Work, and Construction Contractor shall reimburse Owner for all costs and expenses incurred by Owner in performing such Work. This obligation to correct defective or nonconforming Work shall run for a period of one year (or such longer period of time as may otherwise be specified in the Contract

Documents) commencing from the date Substantial Completion is achieved. With respect to the correction of any defective or nonconforming Work, Construction 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 work. Construction Contractor shall conduct, jointly with Owner and Design Professional, a warranty inspection at six (6) months and eleven (11) months after the date Substantial Completion is achieved. Construction Contractor's warranty excludes remedy for damage or defect caused by Owner's abuse, modifications not performed by Construction Contractor, improper or insufficient maintenance by Owner (unless such maintenance was performed in accordance with the directions from Construction Contractor), improper operation by Owner (unless such operations were performed in accordance with the directions from Construction Contractor), or normal wear and tear under normal usage.

24. TESTS AND INSPECTIONS

24.1 Owner, Design Professional, 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. Construction Contractor shall provide proper, safe conditions for such access. Construction Contractor shall provide Design Professional, Owner's Uniform Building Construction Inspector or any other entity with responsibility for inspection of the work with timely prior written notice (at least 48 hours) of the readiness of the Work for all required inspections, tests or approvals.

24.2 If the Contract Documents or any codes, laws, ordinances, rules or regulations of any public authority having jurisdiction over the Project requires any portion of the Work to be specifically inspected, tested or approved, Construction Contractor shall assume full responsibility therefore, pay all costs in connection therewith and furnish Design Professional the required certificates of inspection, testing or approval. All inspections, tests or approvals shall be performed in a manner and by organizations acceptable to Owner and Design Professional.

24.3 If any Work that is to be inspected, tested or approved pursuant to the Contract Documents is covered without such inspection, testing or approval having been satisfactorily obtained by Construction Contractor and without obtaining the written concurrence from Design Professional or other applicable entity with responsibility for inspection of the work, such Work must, if requested by Design Professional or inspection entity, be uncovered for observation. Such uncovering shall be at Construction Contractor's expense unless Construction Contractor has given Design Professional and the applicable inspection entity 48 hour's written notice of Construction Contractor's intention to cover the same and has requested written concurrence by Design Professional and the inspection entity and Design Professional or the inspection entity has not acted with reasonable promptness to respond to such notice and request. If any Work is covered contrary to written directions from Design Professional or the inspection entity, such Work must, if requested by Design Professional or the inspection entity, be uncovered for Design Professional's or the inspection entities observation and be replaced at Construction Contractor's sole expense.

24.4 Owner shall charge to Construction Contractor and may deduct from any payments due Construction Contractor all engineering and inspection expenses incurred by Owner in connection with any overtime work unless such overtime work was expressly requested by Owner and Construction Contractor was on schedule. Such overtime work consists of any work during the construction period beyond the regular eight (8) hour day and for any work performed on Saturday, Sunday or holidays.

24.5 Neither observations by Design Professional or Owner, nor inspections, tests or approvals by others shall relieve Construction Contractor from Construction Contractor's obligations to perform the Work in accordance with the Contract Documents.

24.6 Construction Contractor is responsible, without reimbursement from Owner, for re-inspection fees and costs, to the extent such re-inspections are due to the fault or neglect of Construction Contractor.

24.7 Construction Contractor shall only use a certified independent testing and balancing services contractor to perform "Test and Balance" (T&B) services as they may be required for this project. The T&B contractor shall be completely independent of the Construction Contractor's mechanical and ventilating subcontractor(s). Construction Contractor shall be responsible for coordinating mechanical/ventilating (HVAC) work, including HVAC control systems and T&B work.

24.8 T&B Submittal Requirement:

Completed T&B reports required by the Contract Documents shall be delivered by Construction Contractor to Owner at Substantial Completion.

25. DEFECTIVE WORK

25.1 Work not conforming to the requirements of the Contract Documents shall be deemed defective Work. If required by Owner or Design Professional, Construction Contractor shall as directed, either correct all defective Work, whether or not fabricated, installed or completed, or, if the defective Work has been rejected by Owner or Design Professional, remove it from the site and replace it with non-defective Work. Construction Contractor shall bear all direct and indirect costs of such correction or removal (including, but not limited to fees and charges of engineers, architects, attorneys and other professionals) made necessary thereby, and shall hold Owner and Design Professional harmless for same.

25.2 If Owner or Design Professional consider it necessary or advisable that covered Work be observed by Design Professional or inspected or tested by others, Construction Contractor, at Design Professional's or Owner's request, shall uncover, expose or otherwise make available for observation, inspection or tests as Owner or Design Professional may require, that portion of the Work in question, furnishing all necessary labor, material and equipment. If it is found that such Work is defective, Construction Contractor shall bear all direct, indirect and consequential costs of such uncovering, exposure, observation, inspection and testing and of satisfactory reconstruction (including, but not limited to, fees and charges of engineers, architects, attorneys and other professionals), and Owner shall be entitled to an appropriate

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decrease in the Contract Amount. If, however, such Work is not found to be defective, Construction Contractor shall be allowed an increase in the Contract Amount and/or an extension to the Contract Time, directly attributable to such uncovering, exposure, observation, inspection, testing and reconstruction.

25.3 Owner shall have the right to order Construction Contractor to stop all or any portion of the Work if at any time Owner reasonably determines that Construction Contractor's performance of the Work is not in compliance with the requirements of the Contract Documents. Such noncompliance shall include, but is not limited to, Construction Contractor's failure to provide adequate labor, materials or equipment to satisfactorily maintain the various Project schedules. This right to stop the Work shall be exercised, if at all, solely for Owner's benefit and nothing herein shall be construed as obligating Owner to exercise this right for the benefit of Construction Contractor or any other person.

25.4 Should Owner determine, at its sole opinion, it is in Owner's best interest to accept defective Work, Owner may do so. Construction Contractor shall bear all direct and indirect costs attributable to Owner's evaluation of and determination to accept defective Work. If such determination is rendered prior to final payment, a Change Order 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 Amount. If Owner accepts such defective Work after final payment, Construction Contractor shall promptly pay Owner an appropriate amount determined by Owner to adequately compensate Owner for its acceptance of the defective Work.

25.5 If Construction Contractor fails, within a reasonable time after the written notice from Owner or Design Professional, to correct defective Work or to remove and replace rejected defective Work as required by Owner or Design Professional, or if Construction Contractor fails to perform the Work in accordance with the Contract Documents, or if Construction Contractor fails to comply with any of the provisions of the Contract Documents, Owner may, after seven (7) days' written notice to Construction Contractor, correct and remedy any such deficiency. To the extent necessary to complete corrective and remedial action, Owner may exclude Construction Contractor from any or all of the Project site, take possession of all or any part of the Work, and suspend Construction Contractor's services related thereto, take possession of Construction 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 Owner has paid Construction Contractor but which are stored elsewhere. Construction Contractor shall allow Owner, Design Professional and their respective representatives, agents, and employees such access to the Project site as may be necessary to enable Owner to exercise the rights and remedies under this Paragraph. All direct and indirect costs of Owner in exercising such rights and remedies shall be charged against Construction Contractor, 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 Amount. Such direct and indirect costs shall include, but not be limited to, fees and charges of engineers, architects, attorneys and other professionals, all court and arbitration costs and all costs of repair and replacement of work of others destroyed or damaged by correction, removal or replacement of Construction Contractor's defective Work.

Construction 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 Owner of Owner's rights and remedies hereunder.

26. SUPERVISION AND CONSTRUCTION CONTRACTOR'S REPRESENTATIVE

26.1 Construction Contractor is responsible for supervising, coordinating and performing the Work with such care and skill as would be provided by a contractor with extensive and special expertise in the type of work required under the Contract Documents. Construction Contractor is responsible for completing the Work so that it complies accurately and completely with the requirements of the Contract Documents. Unless otherwise authorized in writing by the Owner, Construction Contractor shall keep on the Work at all times during its progress a competent resident representative who shall not be replaced without prior written notice to Owner and Design Professional except under extraordinary circumstances. The representative shall have authority to act on behalf of Construction Contractor. All communications given to the representative shall be as binding as if given to Construction Contractor. Owner shall have the right to direct Construction Contractor to remove and replace its Project representative or any other employee of Construction Contractor or any employee of any subcontractor from this Project, with or without cause.

26.2 Construction Contractor shall maintain sufficient off-site support staff, and competent full time staff at the Project site authorized to act on behalf of Construction Contractor to coordinate, inspect and provide general direction of the Work and progress of the subcontractors.

26.3 Construction Contractor shall establish and maintain lines of authority for its personnel, and shall provide this information to Owner and all other affected parties, such as the code inspectors of any permitting authority, the subcontractors, and Design Professional. Owner and Design Professional may attend meetings between Construction Contractor and its subcontractors; however, such attendance is optional and shall not diminish either the authority or responsibility of Construction Contractor to administer the subcontracts.

26.4 Construction Contractor shall be responsible to Owner for the acts and omissions of its employees and agents and its subcontractors, their agents and employees, and all other persons performing any of the Work or supplying materials under a contract to Construction Contractor. Construction Contractor shall develop and maintain a program, acceptable to Owner and Design Professional, to assure quality control of the Work. Construction Contractor shall supervise the Work of all subcontractors, providing instructions to each when their portion of the Work does not conform to the requirements of the Contract Documents and Construction Contractor shall continue to exert its influence and control over each subcontractor to ensure that corrections are made in a timely manner so as to not affect the efficient progress of the Work. Should a disagreement occur between Construction Contractor and Design Professional over the acceptability of the Work, Owner, in its discretion, shall have the right to determine the acceptability.

26.5 Construction Contractor shall not employ on this Project any person who has been convicted of a felony or misdemeanor-level criminal charge regarding sexual abuse or misconduct, nor permit any subcontractor to assign any employee of it to this Project who has been convicted of a felony or misdemeanor-level criminal charge regarding sexual abuse or misconduct.

27. PROTECTION OF WORK

27.1 Construction Contractor shall fully protect the Work and adjacent property from loss or damage and shall bear the cost of any such loss or damage until Substantial Completion is achieved. If Construction Contractor or anyone for whom Construction Contractor is legally liable is responsible for any loss or damage to the Work, or other work or materials of Owner or Owner's separate contractors, Construction Contractor shall be charged with the same, and any monies necessary to replace such loss or damage shall be deducted from any amounts due Construction Contractor.

27.2 Construction Contractor shall ascertain what temporary enclosures, if any, of building areas, including existing facilities, should be provided for and may be provided as a practical matter, in order to assure orderly progress of the Work and to protect and secure the Work and existing facilities, in periods when extreme weather conditions are likely to be experienced.

27.3 Construction Contractor shall not permit any unsafe loading of any structure at the Project site, nor shall Construction Contractor subject any part of the Work or adjacent property to any forces that will endanger it.

27.4 Construction Contractor shall not disturb any benchmark established by Owner with respect to the Project. If Construction Contractor, or its subcontractors, agents or anyone for whom Construction Contractor is legally liable, disturbs Owner's benchmarks, Construction Contractor shall immediately notify Owner and Design Professional. Owner shall have the benchmarks reestablished and Construction Contractor shall be liable for all costs incurred by Owner associated therewith.

28. EMERGENCIES

28.1 Construction Contractor shall take immediate action to prevent injury to any person or damage to any property (including the Work and any adjacent property) which otherwise might arise from an emergency event at the Project site. Construction Contractor shall give Design Professional written notice within forty-eight (48) hours after the occurrence of the emergency, if Construction Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby. If Design Professional determines that a change in the Contract Documents is required because of the action taken in response to an emergency, a Change Order shall be issued to document the consequences of the changes or variations. If Construction Contractor fails to provide the forty-eight (48) hour written notice noted above, Construction Contractor shall be deemed to have waived any right it otherwise may have had to seek an adjustment to the Contract Amount or an extension to the

Contract Time. Construction Contractor is obligated to promptly report in writing to Owner all accidents relating to the Work that result in any personal injury or property damage.

29. USE OF PREMISES

29.1 At all times during the performance of the Work, Construction Contractor shall keep all of its operations, (including, but not limited to, the use and storage of all equipment and materials), within the Project site or such other areas as may be permitted by the Contract Documents. Construction Contractor shall not use the Project site in any manner that is unreasonably burdensome or otherwise inconsistent with Owner's interest. Construction Contractor is responsible for any damage to any such area, or to the owner or occupant thereof, or any areas contiguous thereto, resulting from the performance of the Work.

29.2 Except as required by the Contract Documents or otherwise required in order for Construction Contractor to satisfy its safety and security obligations under the Contract Documents, Construction Contractor shall not erect or install, nor shall it permit any of its subcontractors, suppliers, subconsultants or any other party for whom it is legally responsible to erect or install, any signage upon the Project site or any other property of Owner, unless such signage has been expressly approved in writing by Owner, which approval may be withheld by Owner in its sole discretion.

29.3 Construction Contractor acknowledges that Work may be performed at a particular Project site where Owner simultaneously is conducting and continuing its operations upon the same site. In such event, Construction Contractor shall coordinate its Work so as to cause no unreasonable interference with or disruption to Owner's operations.

29.4 Owner may take early occupancy of all or any portions of the Work, at Owner's election, by designating in writing to Construction 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 at the time the Work began and such early occupancy negatively impacts Construction Contractor's cost or time of performance, Construction Contractor shall be entitled to an equitable adjustment to the Contract Amount and the Contract Time, all in accordance with the other terms and conditions of the Contract Documents.

29.5 If, in order to complete the project, Construction Contractor requires access to the interior of any building secured but not vacated by the Owner during hours other than 7:00AM to 5:30PM, Monday through Friday during the months of June, July or August when school is not in session; during hours other than 7:00AM to 8:00PM Monday through Friday when school is in session; or during holidays published on the Owner's calendar for 12-month personnel, a custodian will be made available to provide the required access. The cost for the custodian will be deducted from the Contract by Change Order at the rate of \$50.00/hour for each hour of access required. The calendar of holidays for 12-month personnel is available online at <http://www.sdhc.k12.fl.us/info/calendars/>.

30. SAFETY

30.1 Construction 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. Further, it is Construction Contractor's responsibility to protect from damage or loss all material and equipment to be incorporated into the Work which may be stored off the Project site. Construction Contractor shall develop and implement, in accordance with the requirements of the Contract Documents, a safety plan for the Work.

30.2 Construction Contractor shall comply with all applicable codes, laws, ordinances, rules and regulations of Owner and any public body having jurisdiction over the Work, including all of their safety codes, laws, ordinances, rules and regulations. Construction 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. Construction 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 Owner has occurred.

30.3 At all times during the performance of the Work at the Project site, Construction 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 Construction Contractor's safety program at the Project site. Construction Contractor hereby designates its superintendent as that safety representative. Construction Contractor may designate by written notice to Owner another individual, reasonably acceptable to Owner, who shall be Construction Contractor's safety representative at the Project site.

30.4 Alcohol, drugs and all illegal substances are strictly prohibited on any Owner property. All employees of Construction Contractor, as well as those of all subcontractors and those of any other person or entity for whom Construction Contractor is legally liable (collectively referred to herein as "Employees"), shall not possess or be under the influence of any such substances while on any Owner property. Further, Employees shall not bring on to any Owner property any gun, rifle or other firearm, or explosives of any kind.

30.5 Construction Contractor acknowledges that the Work may be progressing on a Project site which is located upon or adjacent to an existing Owner facility. In such event, Construction Contractor shall comply with the following:

30.5.1 All Owner facilities are smoke free. Smoking is strictly prohibited;

30.5.2 Construction Contractor shall strictly limit its operations to the designated work areas and shall not permit any Employees to enter any other portions of Owner's property without Owner's expressed prior written consent;

30.5.3 All Employees are prohibited from distributing any papers or other materials upon Owner's property, and are strictly prohibited from using any of Owner's telephones or other office equipment;

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30.5.4 All Employees shall at all times comply with OSHA regulations with respect to dress and conduct at the Project site. Further, all Employees shall comply with the dress, conduct and facility regulations issued by Owner's officials onsite, as said regulations may be changed from time to time;

30.5.5 All Employees shall enter and leave Owner's facilities only through the ingress and egress points identified in the site utilization plan approved by Owner or as otherwise designated, from time to time, by Owner in writing;

30.5.6 When requested, Construction Contractor shall cooperate with any ongoing Owner investigation involving personal injury, economic loss or damage to Owner's facilities or personal property therein;

30.5.7 Owner is committed to the education and safety of its students, faculty and employees. To that end, Construction Contractor is required to ensure that all Employees do not possess criminal records that would violate Owner's standard for employment as set forth by the Florida Department of Education. Construction Contractor shall ensure at all times that the Employees are in compliance with such standards;

30.5.8 Interaction between the Employees and the teacher and student population is strictly prohibited;

30.5.9 The Employees may not solicit, distribute or sell products while on Owner's property. Friends, family members or other visitors of the Employees are not permitted on Owner's property; and

30.5.10 At all times Construction Contractor shall adhere to Owner's safety and security regulations, and shall comply with all security requirements at Owner's facilities, as said regulations and requirements may be modified or changed by Owner from time to time.

31. PROJECT MEETINGS

31.1 Prior to the commencement of Work, Construction Contractor shall attend a preconstruction conference with Owner and Design Professional and others as appropriate to discuss the Construction Contractor's schedules, procedures for handling shop drawings and other submittals, and for processing Applications for Payment, and to establish a working understanding among the parties as to the Work. During the prosecution of the Work, Construction Contractor shall attend any and all meetings convened by Owner or Design Professional with respect to the Project, when directed to do so by Owner or Design Professional. Construction Contractor shall have its subcontractors and suppliers attend all such meetings (including the preconstruction conference) as may be directed by Owner or Design Professional.

32. MATERIAL SAFETY DATA SHEET

32.1 If any chemicals, materials, or products containing toxic substances, as defined by Chapter 442, Florida Statutes or any local, state or federal statutes or regulations, are contained in the products used on site or incorporated into the construction by Construction Contractor or any of its subcontractors, Construction Contractor shall provide to Design Professional and Owner a Material Safety Data Sheet at the time of each delivery or prior to each new use of such product.

33. AUDITING RIGHTS

33.1 Construction 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 Contract or the date the Project is completed, whichever is later or such longer period of time as may be required by law. Construction Contractor shall require all of its subcontractors to likewise retain all of their Project records and supporting documentation regarding any work performed under a Change Order, Construction Change Directive, or Unit Prices. Owner, and any duly authorized agents or representatives of Owner, shall be provided access to all such records and supporting documentation at any and all times during normal business hours upon request by Owner. Further, Owner, and any duly authorized agents or representatives of Owner, shall have the right to audit, inspect and copy all of Construction Contractor's and any subcontractor's Project records and documentation as often as they deem necessary and Construction 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 Contract.

33.2 If at any time, Owner conducts such an audit of Construction Contractor's records and documentation and finds that Construction Contractor overcharged Owner for any work performed under a Change Order, Construction Change Directive, or Unit Prices, Construction Contractor shall pay to Owner the Overcharged Amount which is defined as the total aggregate overcharged amount together with interest thereon (such interest to be established at the rate of 6% annum). If the Overcharged Amount is equal to or greater than \$10,000.00, Construction Contractor shall pay to Owner the Overcharged Amount and the Audit Amount which is defined as the total aggregate of Owner's reasonable audit costs incurred as a result of its audit of Construction Contractor. Owner may recover the Overcharged Amount and the Audit Amount, as applicable, from any amount due or owing Construction Contractor with regard to the Project or under any other agreement between Construction Contractor and Owner. If such amounts owed Construction Contractor are insufficient to cover the Overcharged Amount and Audit Amount, as applicable, then Construction Contractor hereby acknowledges and agrees that it shall pay such remaining amounts to Owner within seven (7) business days of its receipt of Owner's invoice for such remaining amounts. In no event shall the Overcharged Amount or the Audit Amount be deemed a reimbursable Cost of the Work.

33.3 This Article 33, including all access, inspection, copying, auditing, reimbursement and repayment rights shall survive the termination of this Contract.

34. COMPLIANCE WITH LAWS

34.1 Construction 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). If Construction Contractor observes that the Contract Documents are at variance therewith, it shall promptly notify Owner and Design Professional in writing.

34.2 For federally funded projects, Construction Contractor must comply with all federal rules and regulations including but not limited to those defined in the Davis Bacon Wage Rate Act, the federal Education Department General Administrative Regulations (EDGAR), and those acts referred to by EDGAR, such as the Copeland Anti-Kickback Act (29 C.F.R. Part 3) and the Contract Work Hours and Safety Standards Act (28 C.F.R. Part 5).

35. SUBCONTRACTS

35.1 A subcontractor is any person or entity who is performing, furnishing, supplying or providing any portion of the Work pursuant to a contract with Construction Contractor. Construction Contractor shall be solely responsible for and have control over the subcontractors. Construction Contractor shall negotiate all Change Orders, Construction Change Directives, Field Orders and Request for Proposals, with all affected subcontractors and shall review the costs of those proposals and advise Owner and Design Professional of their validity and reasonableness, acting in Owner's best interest, prior to requesting approval of each Change Order from Owner.

35.2 At the time Construction Contractor submits this executed agreement, Construction Contractor shall also submit to Owner a complete list of the names, addresses, licensing information and phone numbers of all subcontractors Construction Contractor intends to use for each portion of the Work, including any subcontractors that Construction Contractor was required to identify as part of his bid submittal. The list of subcontractors cannot be modified, changed, or amended without prior written approval from Owner, whose approval shall not be unreasonably withheld. Construction Contractor shall continuously update that subcontractor list, so that it remains current and accurate throughout the entire performance of the Work. Construction Contractor shall not enter into a subcontract with any subcontractor, if Owner reasonably objects to that subcontractor. Construction Contractor shall not be required to contract with anyone it reasonably objects to. As part of the Project document file to be maintained by Construction Contractor at the Project site, Construction Contractor shall keep on file a copy of the license for every subcontractor and sub-subcontractor performing any portion of the Work, as well as maintain a log of all such licenses. All subcontracts between Construction Contractor and its subcontractors shall be in writing and are subject to Owner's approval. Further, all subcontracts shall (1) require each subcontractor to be bound to Construction Contractor to the same extent Construction Contractor is bound to Owner 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 Construction Contractor to Owner at the election of Owner upon termination of Construction

Contractor, (3) provide that Owner will be an additional indemnified party of the subcontract, (4) provide that Owner 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 Owner, (6) identify Owner as an intended third-party beneficiary of the subcontract, and (7) incorporate Exhibit C into all of its subcontracts. Construction 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 by this Paragraph 35.2 and identify to the subcontractor any terms and conditions of the proposed subcontract which may be at variance with the Contract Documents. Each subcontractor shall similarly make copies of such documents available to its sub-subcontractors.

35.3 The subcontractor must agree to provide field (on-site) supervision through a named superintendent for each trade (e.g., general concrete forming and placement, masonry, mechanical, plumbing, electrical and roofing) included in the subcontract. The supervisory employees of the subcontractor (including field superintendent, foreman and schedulers at all levels) must have been employed in a supervisory (leadership) capacity of substantially equivalent level on a similar project for at least two years within the last five years.

35.4 Unless otherwise expressly agreed to by Owner in writing, all subcontracts shall provide:

35.4.1 LIMITATION OF REMEDIES - NO DAMAGES FOR DELAY

That the subcontractor's exclusive remedy for delays in the performance of the contract caused by events beyond its control, including delays claimed to be caused by Owner or Design Professional or attributable to Owner or Design Professional and including claims based on breach of contract or negligence, shall be an extension of its contract time.

In the event of a change in the work, the subcontractor's claim for adjustments in the contract sum are limited exclusively to its actual costs for such changes plus no more than 10% for overhead and profit.

35.4.2 The subcontract shall require the subcontractor expressly agree that the foregoing subsection 35.5.1 constitutes its sole and exclusive remedies for delays and changes in the Work and thus eliminates any other remedies or claim for increase in the subcontract price, damages, losses or additional compensation. Further, Construction Contractor shall incorporate terms of the above paragraph in all of its subcontracts and require all subcontractors to similarly incorporate such terms into their sub-subcontracts.

35.4.3 Each subcontract shall require that any claims by subcontractor for delay or additional cost must be submitted to Construction Contractor within the time and in the manner in which Construction Contractor must submit such claims to Owner, and that failure to comply with such conditions for giving notice and submitting claims shall result in the waiver of such claims.

36. (Intentionally Deleted)

37. SECURING AGREEMENT

37.1 Construction Contractor warrants that Construction Contractor has not employed or retained any company or person, other than a bona fide employee working solely for Construction Contractor, to solicit or secure this Contract and that Construction Contractor has not paid or agreed to pay any person, company, corporation, individual or firm, other than a bona fide employee working solely for Construction Contractor, any fee, commission, percentage, gift or any other consideration contingent upon or resulting from the award or making of this Contract. Construction Contractor's compensation shall be adjusted to exclude any sums by which Owner determines the compensation was increased due to inaccurate, incomplete, or non-current wage rates or other factual unit costs.

38. PUBLIC ENTITY CRIMES

38.1 By its execution of this Agreement, Construction Contractor acknowledges that it has been informed by OWNER 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."

39. NON-DISCRIMINATION/SBE PROGRAM

39.1 In performing all services to be provided hereunder, Construction Contractor shall not discriminate against any employee or applicant for employment because of race, color, religion, sex or national origin. Construction Contractor shall take affirmative action to ensure that applicants for employment are employed, and that employees are treated during employment, without regard to their race, color, religion, sex or national origin. Such actions shall include, but not be limited to, the following: (i) employment, upgrading, demotion or transfer; (ii) recruitment or recruitment advertising; (iii) layoff or termination; (iv) rates of pay or other forms of compensation; and (v) selection for training, including apprenticeship. Construction Contractor shall post in conspicuous places, available to all employees and applicants for employment notices setting forth the terms of this Equal Employment Opportunity Non-Discrimination Clause and stating that all qualified candidates will receive consideration for employment without regard to race, color, religion, sex or national origin. Construction Contractor shall comply with Owner's current small business encouragement program requirements.

40. CHANGED CONDITIONS

40.1 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 Construction Contractor as part of its scope of site investigative services required pursuant to the terms of the Contract Documents, then Construction Contractor shall provide Owner 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. Owner and Design Professional shall promptly investigate such conditions and, if they differ materially and cause an increase or decrease in Construction Contractor's cost of, or time required for, performance of any part of the Work, Owner will acknowledge and agree to an equitable adjustment to the Contract Amount or Contract Time, or both, for such Work. If Owner determines that the conditions at the site are not materially different from those indicated in the Contract Document or not of an unusual nature or should have been discovered by Construction Contractor as part of its investigative services, and that no change in the terms of the Contract is justified, Owner shall so notify Construction Contractor in writing, stating its reasons. Claims by Construction Contractor in opposition to such determination by Owner must be made within seven (7) calendar days after Construction Contractor's receipt of Owner's written determination notice. If Owner and Construction Contractor cannot agree on an adjustment to the Contract Amount or Contract Time, the dispute resolution procedure set forth in the Contract Documents shall be complied with by the parties.

41. EMPLOYMENT OF SCHOOL-AGE WORKERS

41.1 In supporting the philosophy of the Owner's drop-out prevention program, contractors and subcontractors shall not employ school-age workers unless one of the following criteria is met: 1) completed 12th grade level education, 2) enrolled in a technical, career, or adult program, or 3) completed or enrolled in a recognized apprenticeship or trainee program.

END OF GENERAL TERMS AND CONDITIONS

EXHIBIT B
SUPPLEMENTAL TERMS AND CONDITIONS

1. **Construction Schedule:** Construction Contractor shall prepare and submit to Owner and Design Professional, for their review and approval, a Construction Schedule. This schedule shall conform to the format outlined in Paragraph 1.3 below. The approved Construction Schedule shall be submitted prior to the start of construction of the Work.

1.1 Following development and approval of the Construction Schedule as aforesaid, Construction Contractor shall, at the end of each calendar month occurring thereafter during the period of time required to finally complete the Project, or at such earlier intervals as circumstances may require, update and/or revise the Construction Schedule which shall be submitted to Owner in duplicate. No additional compensation will be due Construction Contractor for making such updates. Failure of Construction Contractor to update, revise, and submit the Construction Schedule as aforesaid shall be sufficient grounds for Owner to find Construction Contractor in substantial default hereunder and that sufficient cause exists to terminate the Contract or to withhold payment to Construction Contractor until a schedule or schedule update acceptable to Owner is submitted.

1.2 **Occupancy Schedule:** Construction Contractor shall jointly develop with Design Professional and Owner a detailed plan, inclusive of punch lists, final inspections, maintenance training and turn-over procedures, to be used for ensuring accomplishment of a smooth and phased transition from construction to Owner occupancy. The Construction Schedule shall include the occupancy schedule items listed herein.

1.3 **Schedule Format:** When the time for performance of the Work set forth in Section 6 of the Agreement is less than or equal to 180 calendar days, a bar chart schedule showing the duration and relationship of major activities is required. When the time for performance of the Work exceeds 180 calendar days, the Construction Schedule shall be planned and recorded with a Critical Path Method (CPM) schedule in the form of an activity-on-node diagram. All activity-on-node diagrams shall include the Activity Identification, Activity Description, and the type of relationship between activities, including any lead or lag time.

1.4 The construction time for the Work, or any milestone, shall not exceed the specified Contract Time. Logic or activity durations shall be revised in the event that any milestone or Contract completion date is exceeded in the schedule.

1.5 Float is defined as the amount of time between when an activity "can start" (the early start) and when an activity "must start" (the late start). It is understood by Owner and Construction Contractor that float is a shared commodity, not for the exclusive use or financial benefit of either party. Either party has the full use of the float until it is depleted.

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1.6 Schedule Update Requirements: Construction Contractor shall update the schedules monthly to show actual, current progress. The updates shall include:

1.6.1 Dates of activities' actual starts and completions.

1.6.2 Percent of Work remaining for activities started but not completed as of the update date.

1.6.3 At Owner's request, a bar chart comparison of the updated schedule to the initial schedule. This diagram shall show actual and planned performance dates for all completed activities.

1.6.4 All update information shall be an accurate representation of the actual Work progress.

2. Recovery Schedule: If the initial schedule or any current updates fail to reflect the Work's actual plan or method of operation, or a contractual milestone date is more than fifteen (15) days behind, Owner may require that a recovery schedule for completion of the remaining Work be submitted. The Recovery Schedule must be submitted within seven (7) calendar days of Owner's request. The Recovery Schedule shall describe in detail Construction Contractor's plan to complete the remaining Work by the required Contract milestone date. The Recovery Schedule submitted shall meet the same requirements as the original Construction Schedule. The narrative submitted with the Recovery Schedule should describe in detail all changes that have been made to meet the Contract milestone dates.

3. Change Orders: When a Change Order is proposed, Construction Contractor must identify all logic changes as a result of the Change Order. Construction Contractor shall include, as part of each Change Order proposal, a sketch showing all schedule logic revisions, duration changes, and the relationships to other activities in the approved Construction Schedule. This sketch shall be known as the fragnet for the change. Upon acceptance of the fragnet, Construction Contractor will revise the Construction Schedule or current update. The logic changes required by the Change Order will be considered incidental to Construction Contractor's work. No separate payment will be made.

END OF SUPPLEMENTAL TERMS AND CONDITIONS

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EXHIBIT C
INSURANCE REQUIREMENTS

CONSTRUCTION CONTRACTOR'S LIABILITY INSURANCE

The Construction Contractor shall purchase from and maintain in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located such insurance as will protect the Construction Contractor and Owner from claims set forth below which may arise out of or result from the Construction Contractor's operations under the Contract and for which the Contractor may be legally liable, such operations by the Construction Contractor or by a Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

1. claims under workers' compensation, disability benefit and other similar employee benefit acts which are applicable to the Work to be performed including private entities performing Work at the site and exempt from coverage on account of number of employees or occupation, which entities shall maintain voluntary compensation coverage at the same limits specified for mandatory coverage for the duration of the Project.
2. Construction Contractor's employees or persons or entities excluded by statute from the requirements of Clause but required by the Contract Documents to provide the insurance required by the Clause.
3. claims for damages because of bodily injury, sickness or disease, or death of any person other than the Contractor's employees;
4. claims for damages insured by usual personal injury liability coverage;
5. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting there from;
6. claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle;
7. claims for bodily injury or property damage arising out of completed operations; and
8. claims involving contractual liability insurance applicable to the Contractor's obligations under the indemnification provisions herein.

The Construction Contractor (unless otherwise agreed to in writing by the Owner) shall purchase and maintain the following insurance for the life of the Contract:

Commercial General Liability Insurance, written on an "occurrence" basis, with Defense Costs outside the policy limits shall be maintained by Construction Contractor. Coverage, as provided by 1986 (or later) ISO commercial general liability form, shall include, but not be limited to, Bodily Injury, Contractual for this Agreement, Independent Contractors, Broad Form Property Damage, Personal Injury and Fire Legal Liability Coverages. Coverage must also include Products & Completed Operations Coverage, with the Completed Operations Coverage maintained for this Project for not less than five (5) years following completion and acceptance by OWNER. Limits of coverage shall not be less than the following for Bodily Injury, including Death, Property Damage and Personal Injury Combined Single Limits:

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| | <u>Contractor</u> | <u>Subcontractor</u> |
|--|---|----------------------|
| COMMERCIAL GENERAL LIABILITY | | |
| Limits of Liability: | | |
| General Aggregate - Annual | \$2,000,000 | \$1,000,000 |
| Products/Completed Operations Aggregate - Annual | Greater of \$2,000,000 or 100% of Construction Cost | \$1,000,000 |
| Contractual Liability | Included | Included |
| Each Occurrence | \$1,000,000 | \$1,000,000 |
| Personal and Advertising Injury | \$1,000,000 | \$1,000,000 |
| Fire Legal Liability | \$50,000 | \$50,000 |
| Medical Payments | \$5,000 | \$5,000 |
| Max. Self-Insured Retention / Deductible | \$50,000 | \$50,000 |

Commercial General Liability Form to be used is CG00 01 04 13

Form includes X, C & U and Contractual Liability.

Aggregate Products/Completed Operations requirements may be provided by either primary placement or a combination of primary and umbrella liability coverage.

| COMMERCIAL UMBRELLA / EXCESS LIABILITY | <u>Contractor</u> |
|--|-------------------|
| Limits of Liability: | |
| General Aggregate | \$10,000,000 |
| Each Occurrence | \$10,000,000 |
| Max. Self-Insured Retention / Deductible | \$50,000 |

Coverage shall be excess of the Employers Liability, Commercial General Liability and Automobile Liability coverages required herein and shall include all coverages on a “following form” basis. Coverage shall drop down as primary on the exhaustion of any aggregate limit. The aggregate limits shall apply separately to this Project, and the specific project aggregate limits shall be evidenced by the use of an endorsement approved by OWNER.

| AUTOMOBILE LIABILITY | <u>Contractor</u> | <u>Subcontractor</u> |
|---------------------------------------|-------------------|----------------------|
| Limits of Liability: | | |
| Bodily Injury or Property Damage | \$1,000,000 | \$1,000,000 |
| Combined Single Limit | | |
| Personal Injury Protection (No Fault) | Statutory | Statutory |
| Hired – Non-Owned Liability | \$1,000,000 | \$1,000,000 |

| | <u>Contractor</u> | <u>Subcontractor</u> |
|---|-------------------|----------------------|
| WORKERS COMPENSATION | | |
| *If sole proprietor, copy of exemption form required with bid response [Fl § 440.05(2)] | | |
| | | |
| Limits of Liability: | | |
| | | |
| Workers Compensation | Statutory | Statutory |
| Employer's Liability – Each Accident | \$100,000 | \$100,000 |
| Employer's Liability – Policy Limit by Disease | \$500,000 | \$500,000 |
| Employer's Liability – Each Employee by Disease | \$100,000 | \$100,000 |

| | |
|---|--|
| BUILDERS RISK | |
| | |
| Owner purchases complete value coverage on a per project basis excluding ALL contractors/sub-contractors property and equipment | |

| | |
|--|--|
| POLLUTION LIABILITY | |
| | |
| Limits to be determined on a per project basis | |

Annual Aggregate Declining Balance: When claims paid under policy(ies) provided hereunder reduce the annual aggregate limit below required limits, the Construction Contractor shall immediately take steps to have the aggregate limit reinstated, at their own expense.

The insurance required by this Section shall be written for not less than limits of liability specified in the Contract Documents or required by law, whichever coverage is greater. Coverages shall be written on an "occurrence" basis with Defense Costs outside the limit, and shall be maintained without interruption from date of commencement of the work, until Final Completion of the work.

Before construction begins, Certificate(s) of Insurance confirming insurance requirements must be provided to Owner for Owner's insurance broker compliance review and acceptance. All Certificate(s) of Insurance must reference the project name. These certificates and the insurance policies required by this Section shall contain a provision that coverages afforded under the policies will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner. If any of the foregoing 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. Information concerning reduction of coverage below limits established herein on account of revised limits or claims paid under the General Aggregate, or both, shall be furnished by the Construction Contractor with reasonable promptness in accordance with the Construction Contractor's information and belief. All written notices to be given to Owner shall be given by registered mail, return receipt requested. The Construction Contractor shall furnish to the Owner or Owner's Representative copies of any endorsements that are subsequently issued amending

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coverage or limits. Failure of the Construction Contractor to obtain and maintain required insurance shall be grounds for termination of the Contract by the Owner. The Owner shall be listed as an additional insured by appropriate endorsements concerning all insurance coverages furnished by Construction Contractor.

The Construction Contractor shall carry sufficient comprehensive insurance on Construction Contractor's equipment at the site and in transit to and from the site. It is expressly understood that the Owner and Design Professional shall have no liability for damage to Construction Contractor's equipment.

The Construction Contractor shall remain fully liable and responsible for all obligations under the Contract Documents, whether or not the insurance provided by him is approved by the Owner or Design Professional and whether or not it is sufficient in amount, quality and coverage to protect him against such liability, and shall pay and make good all such obligations to the full extent such insurance does not cover them.

END OF INSURANCE REQUIREMENTS

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EXHIBIT D

LIST OF PLANS AND SPECIFICATIONS COMPRISING THE WORK

| <u>Document</u> | <u>Title</u> | <u>Author</u> | <u>Date</u> |
|-----------------|--------------|---------------|-------------|
| Specifications | | | |
| Drawings | | | |
| Addendum | | | |

END OF LIST OF PLANS AND SPECIFICATIONS COMPRISING THE WORK

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DIVISION I - GENERAL REQUIREMENTS

SECTION 01 11 00

SUMMARY OF THE WORK

PART 1 - GENERAL

- 1.01 General Provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification sections, apply to work of this Section.
- 1.02 SECTION INCLUDES
 - A. Description of The Work
 - B. Occupancy of Premises During Construction
 - C. Coordination with Beginning and/or Continuing School Operations
 - D. Contractor Use of Premises
 - E. Supervision and Construction Procedures
 - F. Demolition
 - G. Asbestos Containing Roofing Materials
 - H. Protection of Persons and Property
 - I. Worker Conduct and Appearance - Work Rules
 - J. Existing Conditions
 - K. Site Investigation and Inspection
 - L. Continuing Contract Performance
 - M. Extended Contract Administration
 - N. Non-Compliance Observations of Work in Progress
 - O. Decision of Architect
 - P. Cleaning up

1.03 DESCRIPTION OF THE WORK

- A. Base Bid: Lump Sum
- B. Allowances: Refer to Owner's Contingency requirements.
- C. Unit Prices: Refer to Section 01 22 00 and as stated in Bid Proposal Form.
- D. Alternates: Refer to Section 01 23 00 and as stated in Bid Proposal Form.
- E. Contract Time/Schedule: As stated in Bid Proposal Form.
- F. School Hours:
 - 1. School hours when classes are in session are as follows:
 - a. Monday-Friday. TBD
- G. **Work Restrictions:**
 - 1. Starting *[School Start Date]* and ending *[School End Date]*:
 - a. Work hours are restricted to non-holiday weekdays between 3:30PM and 6:30AM, Monday- Friday. Work may be performed on weekends and holidays on the roof and site without time restrictions.
 - b. Access to buildings interiors for plumbing, electrical, mechanical and/or structural work will be allowed between 3:00PM and 8:30PM, Monday–Friday. Workers inside of buildings are to be directly and constantly supervised by the construction superintendent. The Contractor shall not be responsible for reported missing and/or damaged items outside of the supervised construction area.
 - c. Workers are to display Jessica Lunsford badges while students are on campus.
 - d. All disturbed areas of the campus are to be restored for use by students prior to 6:30AM on the next school day.
 - e. Work may be performed on weekends and holidays inside the building with 72 hour advance notice and requires custodial coordination and compensation for time.
 - 2. Starting *[Summer Start Date]* and ending *[Summer End Date]*:
 - a. Work may be performed on weekdays, weekends, and holidays on the roof and site without restrictions.
 - b. Access to building interiors for plumbing, electrical, mechanical and/or structural work will be provided from 7:00AM until 5:00PM, Monday–Friday. Workers inside of buildings are to be directly and constantly supervised by the construction superintendent. Contractor shall not be responsible for reported missing and/or damaged items outside of the supervised construction area.
 - d. The school will not be closed to students during this time. Workers are to display Jessica Lunsford badges while students are on campus.
 - e. All plumbing, electrical, and/or mechanical work shall be substantially complete during this time period.
 - 3. The cost for custodian access on weekends and/or holidays will be deducted from the Contract by Change Order at the rate of \$50.00/hour for each hour of access required.
 - 4. School holidays are published under the Calendar link on the School District web page at www.sdhc.k12.fl.us

5. Work may not be performed, nor may materials be delivered, except during times when the construction superintendent is on site.
 6. NOTE: The cap sheet and base flashing installation must be performed during daylight hours between 10:00AM to 8:00PM. Torching of roofing materials shall not be performed over occupied space.
 7. The Bidders, by submitting a bid, agree to restrict their work as noted above. The work hours may not be altered without prior written approval from the Owner. Work hours will not be altered for the Contractor's convenience.
 8. Contractor to submit proposed interior work schedule to Owner for approval and coordination.
- H. EXTENT OF WORK: The Extent of Work is indicated on the drawings, details and by the provisions of each Technical Section.
1. **Selective Demolition** - Refer to Section 02 41 20:
 - a. Patch all deteriorated, rusted, or damaged deck components.
 - b. Remove the existing materials in preparation for a new roofing system.
 - c. Provide physical protection to all interior spaces during demolition and construction. Contractor shall also provide nightly cleaning to return spaces to use the following morning.
 - d. Flashing, sheet metal and accessories: Remove all existing flashing and counter flashing as indicated on the Drawings, etc. - scrap. Remove all existing accessories on roof to be reused - clean thoroughly and save for reuse. Disconnect/remove all items indicated for disposal.
 - e. Remove abandoned roof accessories and repair all abandoned deck openings.
 - f. Cut existing parapet walls to enlarge existing secondary scupper openings.
 - g. Dispose of scrap legally.
 - h. Store and protect reusable materials, specialties and accessories intended to be reinstalled.
 2. **Landscaping:**
 - a. Photographically document all landscaping around perimeter of building;
 - b. Unless otherwise indicated, pruning and/or trimming of existing trees shall be by Contractor. Contractor to notify Owner where trees and shrubs conflict with the work, prior to any pruning and/or trimming.
 - c. Contractor shall test irrigation system prior to the start of construction, and provide written documentation of all deficiencies. Contractor shall be responsible for protection of the existing irrigation systems. Contractor shall replace all damaged components as required to bring system back to original condition after completion of the work. Verify system before the start and after completion of work;
 - d. Install new sod to replace that which was destroyed during the Work.
 3. **Cementitious Deck Repairs** - Refer to Section 03 51 00:
 - a. Verify condition of existing light weight concrete deck and repair/replace all deteriorated, fractured, and loose concrete. Provide photographic documentation of deteriorated concrete before and after repairs at each location and mark all repair locations on roof plans. Unit costs for cementitious repairs will not be authorized without proper documentation.

4. **Metal Deck Repairs** - Refer to Section 05 31 40:
 - a. Verify condition of existing metal deck and repair/replace all deteriorated decking components (to match). Provide photographic documentation of deteriorated roof deck before and after repairs at each location and mark all repair locations on roof plans. Unit costs for deck repairs will not be authorized without proper documentation.
5. **Rough Carpentry** - Refer to Section 06 10 00:
 - a. Verify condition of existing wood blocking/nailers. Contractor to repair or replace all deteriorated decking components (to match). Re-anchor all perimeter wood nailers/blocking.
 - b. Verify existing and provide new preservative treated lumber and plywood to match and replace all deteriorated parts, pieces and shapes.
 - c. Provide new preservative treated plywood, nailers, blocking, shims, plates and curbs as required to complete and/or correct the work and to conform to requirements of all new exterior details.
 - d. Backup required. Provide photographic documentation of deteriorated wood components before and after repairs at each location and mark all repair locations on roof plans. Unit costs work to replace wood will not be authorized without proper documentation.
6. **Roof and Deck Insulation** - Refer to Section 07 22 00:
 - a. Furnish and install new rigid and tapered insulation.
 - b. Provide new specified fire barrier (cover) boards.
 - c. Provide new tapered crickets, sumps, cants and/or edge strips.
 - d. Provide new specified non-corrosive fasteners.
7. **Modified Bitumen Roofing Membrane** - Refer to Section 07 52 16.2:
 - a. Furnish and install new multiple ply modified bitumen roofing system with 2-ply base flashings at designated roof areas.
 - b. Contractor shall employ only NRCA PRO-Certified Installers and/or CERTA-Certified applicators to operate torches when an open flame will contact any part of a roof.
 - c. Provide new foil-faced aluminum base flashing at locations indicated
 - d. Provide all necessary accessory components to ensure a weathertight installation.
 - e. If the Contractor's proposed roofing manufacturer does not have testing for the specified roof decks, then site specific testing (including pull tests), and engineering shall be required.
 - f. Provide five (5) year Contractor warranty, included in these documents.
 - g. Provide twenty (20) year Manufacturer's NDL weathertightness warranty, included in these documents.
8. **Flashing, Sheet Metal and Accessories** - Refer to Section 07 60 00:
 - a. Provide new metal flashings and counter flashings, and parapet copings, and sealants per typical details. Field template and shop fabricate metal flashings as much as possible.
 - b. Provide new reinforced liquid flashing system to transition details, where indicated. Embed matching granules in top coat of all liquid flashing details.

- c. Ventilation units support curbs: Install new EF curbs as indicated with new PT wood framing or pre-manufactured nailers to 12-in. above top of finished roofing (typical). Extend electrical, and mechanical ducts as required. Install new skirt flashing, per typical detail.
 - d. Accessories: Install new VTR flashings (with pipe extensions, where required), roof-to-roof ladders, edge protection guard rails, through-wall secondary scuppers, metal copings, metal fascia, surface-mounted counter flashings, skirt metal flashings, condensate/electrical pipe supports, etc., per specifications and typical details.
 - e. Provide new aluminum equipment supports (Precision Aluminum Products, Aluma-Stand, FL16921-R3), where indicated.
 - f. ~~Unless otherwise indicated, the existing roof drains are to remain. Clean existing drain body/bowl and provide new cast iron strainer, clamping ring, adjustable extensions and stainless steel hardware (i.e. bolt, washer and lock washer). Paint all clamping rings and strainers.~~
 - g. Inspect horizontal pipe leaders below all roof drains ensuring braced hanger installation has been provided within 2-feet of each drain. Verify presence of asphalt and/or pitch inside existing pipe leaders. Provide report indicating the location where existing leaders are clogged with pitch or have restricted flow.
 - h. Flood test all new and existing roof drains and drain connections.
 - i. Provide new specified non-corrosive fasteners, where removed or replaced. Unless otherwise indicated, provided only stainless steel fasteners. Galvanized anchors and/or fasteners are not acceptable.
9. **Miscellaneous:**
- a. Repair all existing sidewalks damaged during course of Work. The burden shall be on the Contractor to demonstrate if the sidewalks were damaged prior to start of Work.
 - b. Provide temporary scaffolding stair towers for roof access by Owner at approved and/or designated locations. Stair towers shall be comprised of scaffold components and which contains internal stairway units and rest platforms. Stair towers shall be constructed with minimum 1/2-in. CDX plywood secured around the base of stair with a lockable gate to limit ground access. All scaffolds shall be erected, modified and dismantled only under the supervision of a Competent Person. Erection, use, maintenance and disassembly must conform to current manufacturer's instructions as well as all Federal, State and local regulations.
 - c. Provide visual survey of existing conditions prior to start of the work. Document where fireproofing is missing from underside of roof deck. Upon completion of each roof section, survey underside of roof deck and replace existing fireproofing displaced from mechanical attachment of insulation, per unit cost basis.
10. **Asbestos Containing Material (ACM) Abatement:** Laboratory results indicate that no asbestos containing materials were detected. Refer to Appendix A for Summary of Findings.
11. **Lead-Based Paint Abatement:** No lead-based paint materials were detected. Refer to Appendix A for Summary of Findings.

12. **Post Installation Audit:** Upon substantial completion of each roof area, Architect will perform an audit to certify that no moisture is present within the new roof system. The audit report shall include infrared scans and thermographic images (or nuclear scans and photographic images) of all areas of the roof surface, together with close-ups of roof penetrations and anomalies. Contractor to assist Architect with roof access after hours, perform roof cuts to verify roof conditions identified during the survey and repair roof upon completion.
13. **Special Conditions:**
 - a. Additional Contract Time shall be allotted for "rain, temperature or wind days" when properly documented. Requests for additional Contract Time shall be requested monthly.
 - b. Wireless Weather Station: For purposes of verification and documentation of the weather conditions at the project site, Contractor shall provide a new portable wireless weather monitoring station - Refer to Section 01 45 00. Deliver to Owner upon completion of Work.
 - c. On-Site Office Facilities: Not Required.
 - d. Project Photographs: Required.
 - (1) Digital Photographs: Provide digital photographs per Section 01 32 33.
 - (2) Aerial Photographs: Contractor shall provide aerial photographs of the construction site. Photographs shall be taken on a monthly basis and shall consist of (3) different views. Provide (3) minimum 8-in. x 10-in. gloss prints of final aerial images upon final completion, including a CD with digital copy of original (high resolution) print images with copyright release. Refer to Section 01 32 33.
 - e. Provide five (5) year Contractor's Guarantee for All Work. Warranties of longer durations are included in other sections.
14. Provide appropriate fall protection, warning lines, covers, platforms, guardrails, and other protection equipment as necessary to access and perform the work per OSHA requirements.
15. Protect public and private property from consequential damage from the Work of this Contract.
16. Clean up and restore all areas affected by construction. This includes repairing pavement, installing sod in lawn areas that are affected by construction, replacing damaged landscaping, touch up damaged painted surfaces, and sweeping all paved areas with a magnetized sweeper.

1.04 OCCUPANCY OF PREMISES DURING CONSTRUCTION

- A. School board facilities, or portions of facilities, shall not be occupied during construction unless exits, fire detection and early warning systems, fire protection, and safety barriers are continuously maintained and clearly marked at all times.
- B. Construction areas shall be separated from students and staff by secure barriers.

- C. New construction, remodeling or renovations in existing facilities shall not reduce the means of egress below the requirements for new buildings; safe means of egress from a student-occupied space may be accomplished as authorized by NFPA 101, Florida edition, as adopted by the Florida Fire Prevention Code. New construction (additions) shall not block or reduce safe means of egress.
- D. Prior to issuance of the Notice to Proceed, the Contractor shall provide a safety plan which clearly delineates areas for construction, safety barriers, exits, construction traffic during the various phases of the project and when conditions change.
- E. Where heavy machinery, as is used for earth moving or scraping, is required to work on a school board's occupied site, the Work shall be separated from occupants by secure double barriers with a distance of 10 feet in between.

1.05 COORDINATION WITH BEGINNING AND/OR CONTINUING SCHOOL OPERATIONS

- A. Continuing operation of school is essential to all Work under this Contract. The Contractor's right to work and his obligations under this Contract shall be subservient to the Owner's right to operate the school in a safe and reasonable manner. The Contractor shall expect and shall be required to do all things necessary and to schedule and reschedule tasks as necessary without additional costs to the Owner.
- B. In existing schools or centers, no demolition work which will significantly affect the educational process shall commence or be done until the Contractor has in his possession all replacement materials, equipment, and parts necessary to quickly rebuild, reinstall or repair the work. Except where areas are phased to be vacated, as indicated on the plans or as otherwise agreed between the Contractor and the Owner, no portion of a building which is in functional operation before demolition shall have demolition work commenced upon it which will prohibit or seriously inhibit safe and functional occupancy by the School's faculty, staff and students for a single period of longer than (5) consecutive scheduled school days. Such days shall be continuous days and shall be scheduled as approved in writing by the Owner.
- C. Demolition under these terms shall mean: (a.) general demolition such as; the removal of roofing components, windows, walls, partitions, ceilings, light fixtures, doors, electric panels, wiring, piping, HVAC equipment or, (b.); the interruption of electric service or electric distribution; the interruption of air conditioning, heating or ventilation; the interruption of adequate plumbing service; or the interruption of fire alarm systems.
- D. Upon arrangement with the Owner, the Contractor shall have access to work in the pertinent portions of the school plant to do whatever work is necessary outside of the scheduled school day hours. During scheduled school day hours, the Contractor shall do only such work as arranged with the Owner which work shall phase into the continuing operation of school in a safe and practical manner.
- E. For continuing operation of school in a safe and practical manner, the following is prohibited during school day hours (unless the particular area is phased out of occupancy) by terms of the Contract and/or with agreement with the School Principal and Project Coordinator.

1. Interruption of alarm systems, intercoms, emergency or exit lighting, of automatic operation of fire doors or smoke compartmentalization doors, or the blocking or inhibiting access to any exit way except with prior approval by Owner.
 2. Application of hot asphalt above or adjacent to occupied areas, or demolition and removing of roofing materials above or adjacent to occupied areas.
 3. Firing or discharge of power activated fastener guns or similar devices anywhere on the school premises during occupancy by students or teachers.
 4. Open electric junction boxes, pull boxes or outlet boxes below or accessible wiring below an 8'-0" level above the finished floor.
 5. Hanging electric wires.
 6. Incompletely secured light fixtures, lenses or lens covers.
 7. Working on scaffolding or ladders or otherwise working over the heads of faculty, staff or students. (Ladders, etc. must be removed from occupied areas during scheduled school day hours. Scaffolding, if not an obstruction to access and exiting, and if approved by the Architect, may remain temporarily in place—no longer than (5) school days except when the area is properly barricaded from faculty, staff, and students.)
 8. Storage or use of material or tools which interfere with or inhibit practical and safe operation of school. Unattended tools are prohibited.
 9. Removal of unsafe in-place materials such as friable asbestos, glazing, skylights or other materials which removal itself constitutes a hazard.
 10. Use of hazardous chemicals.
 11. Moving of motor vehicles in areas to which students have reasonable or proper access without adequate barricades and scheduled student control.
 12. Open excavations not shielded and barricaded from faculty, staff, or students in a thoroughly safe manner.
 13. Any other activity or condition judged dangerous by the Project Architect, Project Coordinator and/or School Principal.
- F. Should the Contractor by demolition, discontinuing of electrical, plumbing, heating, ventilation, air conditioning or by failure to remove debris, failure to keep the facility clean and useable, or failure to remove stored material, equipment, tools or scaffolding, or for any reason, prohibit or seriously inhibit this school being able to function as scheduled, the Owner shall have the right to one or more or all of the following recourse(s):
1. Declare the Contractor in default of the Contract and proceed to terminate the Contract in keeping with terms set forth elsewhere in these Contract Documents.
 2. Withhold all or portions of payments to the Contractor until these deficiencies are suitably resolved and school may operate in a safe and reasonable manner.
 3. Refuse to agree to any time extensions.
 4. To levy liquidated damages in accord with the terms of the Contract.
 5. To supplement the Contractor's work as to any cleaning or other tasks necessary to make the school safely and practically operable with appropriate costs being back charged to the Contractor.
- G. If the Contractor, in preparing his bid, does not understand the scheduling of areas in which he may work and the phasing therein to provide the continuing safe operations of school, he shall seek timely clarification from the Architect who shall respond by pointing out in the documents where such scheduling and phasing is displayed, or shall issue a written addendum to all bidders.

1.06 CONTRACTOR USE OF PREMISES

- A. General: The Contractor shall limit his use of the premises to the work indicated so as to allow for Owner occupancy.
- B. Site Usage
 - 1. Confine operations at the site to the areas permitted under the Contract. Portions of the site beyond areas on which work is indicated are not to be disturbed.
 - 2. Existing driveways and parking areas cannot be obstructed at any time. Do not use these areas for parking or storage of materials.
 - 3. Keep public areas such as walkways free from accumulation of waste material, rubbish or construction debris. Protect all areas from soiling, bitumen stains, overspray or other airborne particles, tracking or other damage. Provide plywood or other bridging material where haul roads cross public areas to prevent damage from construction vehicles of any kind.
 - 4. Do not unreasonably encumber the site with materials or equipment. Confine stockpiling of materials and location of storage sheds to the areas indicated. If additional storage is necessary, obtain and pay for such storage off site.

1.07 SUPERVISION AND CONSTRUCTION PROCEDURES

- A. The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract, including coordination of all trades, unless the Contract Documents give other specific instructions concerning these matters.
- B. The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and any other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.
- C. The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.
- D. Upon written request from the Owner, the Contractor agrees to meet with the Owner or his representative and to provide a report of the status of the work or any other appropriate information pertaining to the work of the Contractor or any of his Subcontractors as may be requested or required.

1.08 DEMOLITION

- A. The Contractor shall be responsible for compliance with all applicable elements of the National Emission Standard for Hazardous Air Pollutants (NESHAP) regulations as they appear in 40CFR Part 61 Subpart M.

1.09 ASBESTOS CONTAINING ROOFING MATERIALS

- A. A Florida Licensed Asbestos Contractor must perform all activities involving the removal or handling of ACM and RACM.
- B. Licensure as an asbestos contractor is not required for the moving, removal, or disposal of asbestos-containing roofing material by a roofing contractor certified or registered under Part I of Chapter 489, if all such activities are performed under the direction of an onsite roofing supervisor trained as provided in §469.012.
 - 1. Supervisors and/or workers must be trained in accordance with Florida Department of Business and Professional Regulation (DBPR) requirements. All employers of workers who require employees to handle asbestos must comply with OSHA asbestos regulations (29 CFR Part 1910.1001 and 29 CFR Part 1926.1101).
- C. The abatement / roofing contractor must provide Owner with an asbestos disposal manifest indicating which landfill has received the asbestos. Payment may be delayed if this is not provided. Please note that roofing material may be friable or non-friable. Friable material must go to a Class-1 landfill. Non-friable material may be accepted by a C&D landfill if they choose to accept it.
- D. Asbestos survey must be onsite at all times.

1.10 PROTECTION OF PERSONS AND PROPERTY

- A. The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the contract. Contractor shall cooperate with site management which will need to restrict occupants at certain times when hazardous conditions exist. In an emergency affecting safety of person(s) or property the Contractor shall act, at the Contractor's discretion, to prevent threatened damage or injury or loss.
- B. Protect site, furniture, equipment, grounds, landscaping and all vehicles which are parked at the site, from damage caused by work of this contract. Protect Owner's property from damage of any kind, including damage from other sub-contractor's or vender's equipment or property. It shall be the burden of the Contractor to demonstrate that any/all property damage was not a result of the Work and is not the responsibility of the Contractor.
- C. Take all precautions necessary to protect the building, its equipment, furnishings, grounds, and its occupants from damage do to any cause arising from this contract including, but not limited to, wind and rain, hail, water infiltration, airborne particles, fumes and odors during the construction period. It shall be the responsibility of the Contractor to move and protect building furnishings and/or contents required to gain access to the Work.
- D. The Contractor shall be fully and solely responsible for all matters of safety of person and property arising from this contract, including the liabilities and responsibilities of all subcontractors. Neither the Architect nor the Owner or any of their representatives or employees are to be assumed to have any role of responsibility of matters of safety except they (including the Architect) shall have the authority to order stopping of a portion of the

Work which they notice may endanger occupants, employees of the Owner, or the public, or employees of the Contractor or subcontractors.

- E. Leave building and property secure each night (or when work is not in progress and/or Contractor is not present). Do not leave job site until property and all existing material, including insulation or other material that is to remain, is completely cleaned, secure and protected from rain or moisture. The Contractor will be held responsible for all interior damage, including contents, in the event there is any moisture, water or rain infiltration into the building.
- F. Except as otherwise prearranged, the Contractor shall provide his own equipment for raising and lowering material and equipment to the work area. Access areas shall be protected by tarpaulins and any soiling or damage restored to original condition. Provide blocking, "stand-offs," or other means to protect the property from any denting, scratching or other damage from ladders, hoisting or other equipment.
- G. Construct all necessary chutes, platforms or edge devices to protect property and equipment from damage. Provide special protection for all existing work not being removed. All necessary precautions shall be taken to prevent any object from falling off the roof or side of building. Contractor shall verify that all building drains of any type are in good working order and report all non-functional drains to Architect prior to commencement of Work. Contractor shall protect all drains during construction and repair to working condition if damaged or obstructed.
- H. The Contractor shall take all necessary steps to protect the building occupants and general public from injury due to construction. Unsafe conditions, equipment, or work practices shall not exist at any time. Fences, signs and barricades shall be provided at Contractor's expense to keep the general public away from the construction site.

1.11 WORKER CONDUCT AND APPEARANCE - WORK RULES

- A. General: The conduct and appearance of each worker at the jobsite is of paramount importance. The Owner reserves the right to require any worker to be reassigned to work outside the Owner's property.
 - 1. Privacy: Where applicable, conduct work of the Contract with the maximum effort to maintain the privacy of the Owner's operations, staff, and clientele. Do not permit workers to peer into other areas of the building visible from the work area. Invasion of privacy is a major infraction of the work rules.
 - 2. Conduct and Demeanor: Construction workers shall treat other construction workers, Owner's staff, clientele, and visitors (as applicable) professionally with respect and courtesy.
 - 3. Physical Appearance: Require each worker to dress appropriately in a clean, neat, and professional manner.
 - 4. Radios and Television: The use of entertainment devices including personal devices with headphones or earphones is prohibited at all times. Control the volume of communication radios and loudspeakers to avoid creating a nuisance.
 - 5. Tobacco Products: The use of tobacco products is prohibited.
 - 6. Language: The use of foul language is prohibited.
 - 7. Loud Conduct: Screaming, yelling, and unnecessary loud conduct is prohibited.

8. Physical Actions: Running, horseplay, fighting, and other unprofessional conduct is prohibited. Fighting is a major infraction of the work rules.
 9. Stealing: Stealing of any material, objects, furnishings, equipment, fixtures, supplies, clothing, or other items is prohibited and a major infraction.
 10. Sexual Harassment: All forms of physical and verbal sexual harassment including, without limitation: touching; whistling; sexually explicit stories, jokes, drawings, photos, and representations; exhibitionism; and all other sexually oriented offensive behavior is prohibited.
 11. Roaming: Construction personnel shall not be allowed to roam, or wander about, the existing facilities.
 12. Eating: Construction personnel shall not use the existing Dining Area.
 13. Parking: Construction personnel shall only park in designated areas reserved for construction parking.
 14. Penalties: First infraction of the work rules shall result in a verbal warning from the Owner. Second infractions shall result in being requested to leave the Owner's property. Owner's decision in such matters shall be final with no exceptions.
- B. Warnings and Dismissal: For minor infraction of the rules, the Owner may issue a warning. Only one warning will be allowed per worker, and a second infraction shall result in immediate dismissal of the worker from the Owner's property. For major infractions such as invasion of privacy, the worker shall be dismissed immediately without warning and possibly subject to criminal prosecution.
- C. Notification of Workers: Clearly notify and educate each worker about these Work Rules and the requirements for worker conduct and appearance.
- D. The Architect shall have the authority to cause the immediate and permanent removal from the project of any employee of the Contractor (or of his subcontractors) who shall be found, in the opinion of the Architect, to be incompetent or in any way detrimental to the best interest of the Work, the operation of the facility, or to the School Board.

1.12 EXISTING CONDITIONS

- A. The Owner warrants that the grounds, paving and parking areas, exterior lighting, buildings, equipment and interiors are in an acceptable and well maintained condition prior to the start of this work, and that all equipment is functioning properly. Contractor shall inspect all surfaces and grounds before start of any work. Report prior damage of any kind to Owner and record by photos and written description. Failure to so report and document any unacceptable condition will cause the Contractor to be back charged for any remedial work required to bring the property to Owner's acceptance.
- B. If Contractor elects to move, lift, store, and reinstall any of the Owner's property, he will become responsible for the safeguard, reinstallation and restoration to its condition before moving it.
- C. Unacceptable conditions shall be corrected or accepted in writing before work proceeds. Execution of work shall be construed as an acceptance of existing conditions by the Contractor.

- D. Before commencement of Work, the Contractor shall photographically document all existing adverse conditions, including existing interior and exterior damage, contamination and stains, that might possibly be construed as being caused by the Contractor. In the absence of such documentation, it will be assumed that all existing conditions are without damage and are fully functional prior to the start of the Work.
- E. Protect existing carpet(s) from damage. Replace with new to match if destroyed or damaged during the Work.
- F. Existing Fire Alarms, Emergency Lighting, Intercom, Security and Electrical Systems: For purposes of this Contract the assumption during bidding is that all fire alarm, intercom, security, emergency lighting, and electrical systems are complete and operating properly.

1.13 SITE INVESTIGATION AND INSPECTION

- A. The Contractor acknowledges that he has satisfied himself as to the nature and location of the Work, the general and local conditions, particularly those bearing upon transportation, disposal, handling and storage of materials, availability of labor, water, electric power, roads and uncertainties of weather, or similar physical condition at the ground, the character of equipment and facilities needed preliminary to and during the execution of the work, and all other matters upon which information is reasonably obtainable and which can in any way affect the work or cost thereof under this Contract. The Contractor further acknowledges that he has satisfied himself as to the character, quality and quantity of information regarding the above that is reasonably ascertainable from an inspection of the site, including all exploratory work done by the Architect/Engineers, as well as information contained in Drawings and Specifications forming a part of this Contract. Any failure of the Contractor to acquaint himself with all the available information will not relieve him from the responsibility for estimating properly the difficulty or cost to successfully perform the work.

1.14 CONTINUING CONTRACT PERFORMANCE

- A. Pending final resolution of any Claim, unless otherwise agreed in writing the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents.

1.15 EXTENDED CONTRACT ADMINISTRATION

- A. In the event that the Architect continues to provide Contract Administration because of the failure of the Contractor to complete the Project within 120% of the calendar days allotted for construction in the Contract for construction and in subsequent change orders, after the original construction Contract completion date and extensions have been approved and the cause of the delay is the Contractor's and is not attributable to the Architect, the Architect may request the Owner withhold from the Contractor's partial or final payment sufficient sums in order to compensate the Architect for extended Contract Administration.
- B. If the Architect certifies that he has provided such extended Contract Administration, and the delay in construction is the fault of the Contractor and is not attributable to the Architect, the additional Contract Administration shall be regarded as Additional Services for which the

Architect shall be entitled to negotiate additional compensation based on the Architect's published hourly rate.

1.16 NON-COMPLIANCE OBSERVATIONS OF WORK IN PROGRESS

- A. The Architect will observe the Work in-progress on a regular basis in order to ascertain the extent to which the materials and procedures conform to the requirements of the Contract Documents. If during the course of the Work the Contractor is found to be in violation of the Contract Documents, the Architect will bring these items to his attention in writing, and if deemed serious enough, or if the instructions are ignored, a Non-Conformance Notice will be issued to the Contractor with copies to the Owner identifying the infraction(s) and/or violation(s).
- B. If after the first Notice there are ANY additional warnings of the same infraction, or if any other significant infraction(s) and/or violation(s) of the Contract Documents occur, the Contractor shall be liable to a penalty of \$950.00 (per day) for full time observations from the Architect to ensure that the Contract is being executed in conformance with the Contract Documents. The cost of the penalties will be deducted from final payment and the Owner's representative will make payment direct to the Architect for his quality assurance observations out of the Contract Price.
- C. Unless otherwise indicated, the quality assurance observations will begin at the date of infraction, and continue each additional day of the Contract until the date of Substantial Completion. Unless otherwise indicated or agreed, it shall be the responsibility of the Contractor to notify the Architect each day prior to work being performed on the Project.

1.17 DECISION OF ARCHITECT

- A. Claims, including those alleging an error or omission by the Architect, shall be referred initially to the Architect for action. A written decision by the Architect shall be required as a condition precedent to litigation of a Claim between the Contractor and Owner as to all such matters arising prior to the date final payment is due, regardless of (1) whether such matters relate to execution and progress of the Work or (2) the extent to which the Work has been completed. The decisions by the Architect in response to a Claim shall not be a condition precedent to litigation in the event (1) the Contract has been completed and the position of Architect is vacant, (2) the Architect has not received evidence or has failed to render a decision within agreed time limits, (3) the Architect has failed to take action within thirty (30) days after the Claim is made.
- B. When a written decision of the Architect states, (1) that the decision is final but subject to appeal, and (2) that any demand for litigation of a claim, dispute or other matter covered by such decision must be made within (30) days after the date on which the party making the demand received the written decision, failure to demand litigation within said thirty (30) day period will result in the Architect's decision becoming final and binding upon the Owner and the Contractor. If the Architect renders a decision after legal proceedings have been initiated, such decisions must be entered as evidence but will not supersede any legal proceedings unless the decision is acceptable to all parties concerned.

1.18 CLEANING UP

- A. The Contractor shall keep the premises and surrounding area free of accumulation of waste materials or rubbish caused by this Work.
- B. The Contractor shall completely remove the waste material and rubbish in a legal manner no less frequently than once a week, and if indicated in the Contract Documents or instructed by the Architect, more frequently.

PART 2 - PRODUCTS Not Used.

PART 3 - EXECUTION Not Used.

END OF SECTION

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SECTION 01 20 00

MEASUREMENT AND PAYMENT

PART 1 - GENERAL

1.01 General Provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification sections, apply to work of this Section.

1.02 SECTION INCLUDES

- A. Measurement.
- B. Unit Quantities Specified.
- C. Measurement of Quantities.
- D. Job Log - Daily Construction Report.
- E. Schedule of Values
- F. Applications for Payment
- G. Retainage.
- H. Construction Schedule.
- I. Defect Assessment
- J. Non-payment for Rejected Products

1.03 MEASUREMENT

- A. Before ordering any material or doing any work, the Contractor for each division of the Work, and for any portion of the Work let under separate contract, shall verify all measurements at the job. Any difference found between dimensions on the Drawings and actual measurements shall be brought to the Architect's attention for consideration before proceeding with the work. No extra compensation will be allowed on account of any difference between actual measurements and the dimensions indicated on the Drawings. Contractor shall assume full responsibility for the accuracy of the measurements he obtains at the building site.
- B. Measurement methods delineated in the individual specification sections are intended to complement the criteria of this section. In the event of conflict, the requirements of the individual specification section shall govern.

- C. Surveys and Measurements: Base all measurements, both horizontal and vertical from established bench marks. All work shall agree with these established lines and levels. Verify all measurements at site and check the correctness of same as related to the work. All material take-offs for the site shall be field measured prior to bids.
- D. Take all measurements and compute quantities. The Architect or Owner's Representative will verify measurements and quantities.

1.04. UNIT QUANTITIES SPECIFIED

- A. Unit quantities and measurements where indicated in the Bid Form are for future cost estimating and bidding purposes only. Quantities and measurements supplied or placed in the Work and verified by the Architect shall determine payment. Where unit quantities are not shown, fill in the unit costs/unit of measure as shown. Where unit quantities are given, the extension to the unit cost shall be added to the Base Bid.
- B. If the actual Work requires more or fewer quantities than those quantities indicated, provide the required quantities at the unit sum/prices contracted. The difference in the Contract Price will be modified via a change order.

1.05 MEASUREMENT OF QUANTITIES

- A. Measurement Devices:
 - 1. Weigh Scales: Inspected, tested and certified by the applicable State Weights and Measures department within the past year.
 - 2. Platform Scales: Of sufficient size and capacity to accommodate the conveying vehicle.
 - 3. Metering Devices: Inspected, tested and certified by the applicable State department within the past year.
 - 4. Measurement by Weight: Concrete reinforcing steel, rolled or formed steel or other metal shapes will be measured by handbook weights. Welded assemblies will be measured by handbook or scale weight.
 - 5. Measurement by Volume: Measured by cubic dimension using mean length, width and height or thickness.
 - 6. Measurement by Area: Measured by square dimension using mean length and width or radius.
 - 7. Linear Measurement: Measured by linear dimension, at the item centerline or mean chord.
 - 8. Stipulated Sum/Price Measurement: Items measured by weight, volume, area, or linear means or combination, as appropriate, as a completed item or unit of the Work.

1.06 JOB LOG - DAILY CONSTRUCTION REPORT

- A. A daily construction report (job log) shall be maintained on site by the Contractor to record significant events such as, but not limited to, employees by name, hours worked, weather conditions, meetings, work interruptions by accidents and unforeseen circumstances, and significant events relevant to the execution of the Work.

- B. A copy of the daily logs shall be submitted with each pay request along with the request for rain, temperature or wind days (if required by the Agreement). All days identified as a rain, temperature or wind day shall be indicated as such on the daily log.
- C. Daily logs shall be completed daily, regardless of whether work is performed on the project. Non-performance days (days on which no work is performed) shall be indicated in the log as a "NON-PERFORMANCE DAY." Contractor shall not receive consideration for extra time for days of non-performance unless such a day meets the specified criteria for a rain, temperature or wind day as indicated in these Contract Documents.

1.07 SCHEDULE OF VALUES

- A. Coordination: Coordinate preparation of the Schedule of Values with preparation of Contractor's Construction Schedule.
 - 1. Correlate line items in the Schedule of Values with other required administrative forms and schedules, including the following:
 - a. Application for Payment forms with Continuation Sheets.
 - b. Submittals Schedule.
 - 2. Submit the Schedule of Values to Architect at earliest possible date but no later than seven days before the date scheduled for submittal of initial Applications for Payment.
 - 3. If there are discrepancies in the Schedule of Values submitted by the Contractor in the initial Application for Payment the Architect reserves the right to withhold approval of the Application for Payment until the Schedule of Values are agreed upon.
- B. Format and Content: Use the Project Manual table of contents as a guide to establish line items for the Schedule of Values. Provide at least one line item for each Specification Section.
 - 1. Identification: Include the following Project identification on the Schedule of Values:
 - a. Project name and location.
 - b. Name of Architect.
 - c. Architect's project number.
 - d. Contractor's name and address.
 - e. Date of submittal.
 - 2. Arrange the Schedule of Values in tabular form with separate columns to indicate the following for each item listed:
 - a. Related Specification Section or Division.
 - b. Description of the Work.
 - c. Change Orders (numbers) that affect value.
 - d. Dollar value.
 - 1) Percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100-percent.
 - 3. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the Project Manual table of contents. Provide several line items for principal subcontract amounts, where appropriate.
 - 4. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
 - 5. Provide separate line items in the Schedule of Values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.

6. Each item in the Schedule of Values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.
 - a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the Schedule of Values or distributed as general overhead expense, at Contractor's option.
7. Schedule Updating: Update and resubmit the Schedule of Values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.08 APPLICATIONS FOR PAYMENT

- A. Delivered and/or stored materials not incorporated in the work-in-place, WILL NOT be certified for payment. Each application for payment shall be only for the cost of the work completed and approved by Architect since the time of the last previous application for payment.
- B. Each Application for Payment shall be consistent with previous applications and payments as certified by Architect and paid for by Owner.
 1. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.
- C. Payment Application Times: The date for each progress payment is indicated in the Agreement between Owner and Contractor. The period of construction Work covered by each Application for Payment is the period indicated in the Agreement.
- D. Payment Application Forms: Use only HCPS District Standard Applications for Payment and Continuation Sheets.
- E. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Architect will return incomplete applications without action.
 1. Entries shall match data on the Schedule of Values and Contractor's Construction Schedule. Use updated schedules if revisions were made.
 2. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
- F. Transmittal: Submit (1) signed and notarized original and (1) copy of each Application for Payment to Architect by a method ensuring receipt within (24) hours. Original copy shall include waivers of lien and similar attachments if required.
 1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.
- G. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's lien from every entity who is lawfully entitled to file a mechanic's lien arising out of the Contract and related to the Work covered by the payment.
 1. Submit partial waivers on each item for amount requested, before deduction for retainage, on each item.
 2. When an application shows completion of an item, submit final or full waivers.

3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
- H. Photographs
1. Contractor shall provide digital copies of all construction photos and aerial photographs of the construction site on a monthly basis and submitted with each Request for Payment. Refer to Section 01 23 33 - Construction Photographs.
- I. Requests for Additional Time:
1. Request for additional time due to delays in weather, unforeseeable conditions, or other excusable or authorized delays in the Work shall be submitted with each Application for Payment for review by Architect and Owner. Requests for additional time at the end of the project, will not be accepted.
- J. Weather Data:
1. Provide digital copy of the recorded weather data downloaded from the weather station located on site from the previous month, if applicable.
- K. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:
1. List of subcontractors.
 2. Schedule of Values.
 3. Contractor's Construction Schedule (preliminary if not final).
 4. Submittals Schedule (preliminary if not final).
 5. List of Contractor's staff assignments.
 6. Copies of building permits (non-public work).
 7. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
 8. Initial progress report.
 9. Report of pre-construction conference.
 10. Certificates of insurance and insurance policies.
 11. Performance and payment bonds.
 12. Data needed to acquire Owner's insurance.
 13. Initial settlement survey and damage report if required.
- L. Application for Payment at Substantial Completion: After issuing the Certificate of Substantial Completion, submit an Application for Payment showing 100-percent completion for portion of the Work claimed as substantially complete.
1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
 2. This application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.
 3. Retainage amounts shall apply.
- M. Final Payment Application: Submit final Application for Payment with releases and supporting documentation not previously submitted and accepted (refer to Section 01 70 00), including, but not limited, to the following:
1. Evidence of completion of Project closeout requirements.

2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
 3. Updated final statement, accounting for final changes to the Contract Sum.
 4. HCPS Standard Form, Release and Affidavit
 5. AIA Document G707, "Consent of Surety to Final Payment."
 6. Evidence that claims have been settled.
 7. Final, liquidated damages settlement statement.
- N. The Architect and Owner shall have the right to re-evaluate the Schedule of Values and adjust the individual line items as required.

1.09 RETAINAGE

- A. Unless otherwise indicated in the Agreement, (10%) of the total amount of each monthly progress payment for approved "work-in-place" certified by the Architect shall be retained by the Owner until the project is fully completed, formally accepted by the Owner, and final payment is made.

1.10 CONSTRUCTION SCHEDULE

- A. Submit revised schedules with each Application for Payment, identifying changes since previous version. NO application for payment will be approved until the initial or revised schedule has been received and accepted by the Architect.
- B. The time required for the Architect to approve payment shall not start until the revised Construction Schedule is received.
- C. Refer to Section 01 32 16.

1.11 DEFECT ASSESSMENT

- A. Replace the Work, or portions of the Work, not conforming to specified requirements.
- B. If, in the opinion of the Architect, it is not practical to remove and/or replace the Work at the time of application for payment, the Architect will direct one of the following remedies:
1. The defective Work may remain, but the unit sum/price will be reduced (50%) or an amount at the discretion of the Architect.
 2. The defective Work will be partially repaired to the instructions of the Architect, and the unit sum/price will be adjusted to a new sum/price at the discretion of the Architect.
- C. The authority of the Architect to assess the defect and identify payment adjustment, is final.
- D. Reduction of the amount requested in the "application for payment" does not constitute Owner's acceptance of the Work or release the Contractor from his obligation to complete and/or correct the work before the next application for payment unless specifically agreed by the Architect and processed via a Change Order.

1.12 NON-PAYMENT FOR REJECTED PRODUCTS

- A. Payment will not be made for any of the following:
 - 1. Products wasted or disposed of in a manner that is not acceptable.
 - 2. Products determined as unacceptable before or after placement.
 - 3. Products placed beyond the lines and levels of the required Work.
 - 4. Products remaining on hand after completion of the Work.
 - 5. Loading, hauling and disposing of rejected Products.
- B. Products as used in the above section is defined as including labor and materials, including all services and equipment for the product whether in place or not.

PART 2 - PRODUCTS Not Used.

PART 3 - EXECUTION Not Used.

END OF SECTION

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SECTION 01 21 00

ALLOWANCES

PART 1 - GENERAL

1.01 General Provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification sections, apply to work of this Section.

1.02 SECTION INCLUDES

- A. Cash/Contingency Allowances.
- B. Inspecting and Testing Allowance.
- C. Allowance Schedule.

1.03 RELATED SECTIONS

- A. Section 10 20 00 - Measurement and Payment

1.04 DEFINITIONS AND EXPLANATION

- A. Certain requirements of the Work called for in the Contract Documents are hereby required to be deleted from competitive bidding for the work outlined in this Section. The dollar amount of the allowances stated in this Section shall be included in the lump sum bid amount. It shall be the responsibility of the Contractor to confirm with suppliers and subcontractors that the work involved in this section can be fully executed for the maximum stated in the allowance.

1.05 CASH/CONTINGENCY ALLOWANCES

- A. Costs Included in Contingency Allowances: Cost of Product to Contractor or Subcontractor, less applicable trade discounts and applicable taxes.
- B. Costs Not Included in Contingency Allowances: Product delivery to the site; handling at the site, including unloading, uncrating, and storage; protection of Products from elements and from damage; and labor for installation and finishing.
- C. Contractor Responsibilities:
 - 1. Assist Architect in selection of Products.
 - 2. Obtain proposals from suppliers and installers. Include in change order proposal all necessary items of cost and description to fully document the basis for the change order. Include all of Contractor's out-of-pocket expenses, labor, burden, overhead and profit on the form included in these specifications.
 - 3. On notification of selection by Architect, execute purchase agreement with designated supplier and/or installer.
 - 4. Submit shop drawings, product data, and samples. Arrange for delivery.

5. Promptly inspect Products upon delivery for completeness, damage, and defects. Submit claims for transportation damage.
- D. Architect Responsibility:
 1. Consult with Contractor for consideration and selection of Products.
 2. Select Products in consultation with Owner and transmit decision to Contractor.
 3. Prepare Change Order or Construction Change Directive.
- E. Differences in costs will be adjusted by Change Order.
- F. At closeout of Contract, funds remaining in Owner Allowance will be credited to Owner by Change Order.

1.06 INSPECTING AND TESTING ALLOWANCES

- A. Costs included in Inspecting and Testing Allowances: Cost of engaging an inspecting or testing agency; execution of inspecting and tests; and reporting results.
- B. Costs not included in Inspecting and Testing Allowances:
 1. Costs of incidental labor required to assist inspecting or testing agency.
 2. Costs of testing services used by Contractor separate from Contract Document requirements.
 3. Costs of retesting upon failure of previous tests as determined by Architect.
- C. Payment Procedures:
 1. Submit (1) original and (2) copies of the inspecting or testing firm's invoice with next application for payment.
 2. Pay invoice on approval by Architect.
- D. Differences in cost will be adjusted by Change Order.

PART 2 - PRODUCTS Not Used.

PART 3 - EXECUTION

3.01 ALLOWANCE SCHEDULE

- A. **Cash/Contingency Allowance:**
 1. Include the stipulated sum of eightY thousand (\$80,000.00) dollars for unforeseen conditions and other repairs required by the Work.
- B. **Inspecting and Testing Allowance:** Not Used.

END OF SECTION

SECTION 01 22 00

UNIT PRICES

PART 1 - GENERAL

1.01 General Provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification sections, apply to work of this Section.

1.02 SECTION INCLUDES

- A. Summary.
- B. Definitions.
- C. Procedures.
- D. Schedule of Unit Prices

1.03 SUMMARY

- A. This Section specifies administrative and procedural requirements for unit prices.
- B. Related Requirements:
 - 1. Refer to Section 01 20 00 - Measurement and Payment for general testing, measuring and inspecting requirements.
 - 2. Refer to Section 01 26 00 - Contract Modification Procedures for procedures for submitting and handling Change Orders.

1.04 DEFINITIONS

- A. Unit price is an amount incorporated in the Agreement, applicable during the duration of the Work as a price per unit of measurement for materials, equipment, or services, or a portion of the Work, added to or deducted from the Contract Sum by appropriate modification, if the scope of Work or estimated quantities of Work required by the Contract Documents are either increased or decreased.

1.05 PROCEDURES

- A. Unit prices include all necessary material, plus cost for delivery, installation, insurance, overhead, and profit. Material scrap due to minimum quantities shall be factored into each unit price.
- B. Measurement and Payment: Refer to individual Specification Sections for work that requires establishment of unit prices. Methods of measurement and payment for unit prices are specified in those Sections.

- C. Owner reserves the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and to have this work measured, at Owner's expense, by an independent surveyor acceptable to Contractor.
- D. List of Unit Prices: A schedule of unit prices is included in Part 3. Specification Sections referenced in the schedule contain requirements for materials described under each unit price.
- E. Minimum Unit Quantities: For those unit prices scheduled with a minimum unit quantity, Contractor shall be entitled to the minimum number of units specified.
- F. Customary lengths or quantity of materials shall not factor into unit cost pricing.
- G. Keep accurate records. Indicate on drawings the extent and location of unit cost work. Photograph all repair work and key photos to drawings.

PART 2 - PRODUCTS Not Used.

PART 3 - EXECUTION

3.01 SCHEDULE OF UNIT PRICES

- A. Unit prices are for complete work. All unit prices shall include overhead and profit and all incidental costs necessary to perform the work. No work described on the drawings or specifications is to be bid as a unit price. Unit price costs will be used only for additional work the Owner may want to include in the work by change order.
 - 1. **Unit Price No. 1 - Steel Deck Replacement**
 - a. Description: Replace deteriorated metal decking components to match existing.
 - b. Reference Section: 05 31 40 - Steel Deck Repair
 - c. Unit of Measurement: Square Feet
 - 2. **Unit Price No. 2 - Steel Deck Surface Corrosion Repairs**
 - a. Description: Repair surface corrosion of metal deck components with specified coating materials.
 - b. Reference Section: 05 31 40 - Steel Deck Repair
 - c. Unit of Measurement: Square Feet
 - 3. **Unit Price No. 3 - 3/4-inch CDX plywood:**
 - a. Description: Provide new 3/4-inch (nominal) CDX plywood to match existing.
 - b. Reference Section: 06 10 00 - Rough Carpentry.
 - c. Unit of Measurement: Square Feet
 - d. Estimated Quantity: **480** lin. ft.

4. **Unit Price No. 4 - Treated wood blocking/nailers (2x4):**
 - a. Description: Provide new preservative treated (PT) 2x4 wood blocking/nailers, not shown on the Drawings.
 - b. Reference Section: 06 10 00 - Rough Carpentry.
 - c. Unit of Measurement: Lineal Feet
 - d. Estimated Quantity: **480** lin. ft.
5. **Unit Price No. 5 - Treated wood blocking/nailers (2x6):**
 - a. Description: Provide new preservative treated (PT) 2x6 wood blocking/nailers, not shown on the Drawings.
 - b. Reference Section: 06 10 00 - Rough Carpentry.
 - c. Unit of Measurement: Lineal Feet
 - d. Estimated Quantity: **480** lin. ft.
6. **Unit Price No. 6 - Treated wood blocking/nailers (2x8):**
 - a. Description: Provide new preservative treated (PT) 2x8 wood blocking/nailers, not shown on the Drawings.
 - b. Reference Section: 06 10 00 - Rough Carpentry.
 - c. Unit of Measurement: Lineal Feet
 - d. Estimated Quantity: **480** lin. ft.
7. **Unit Price No. 7 - New Cast Iron Roof Drain Assembly**
 - a. Description: Provide new 4-in. or 5-in. (diameter to match existing)cast iron roof drain, with 4-in. static extension, cast iron dome, heavy duty no hub coupling, top-set deck plate, roof sump receiver, and underdeck clamp manufactured by Zurn (**ZC100-NH-DP-C-4E-R**). Provide stainless steel hardware (i.e. bolt, washer and lock washer). Provide 2-ft. of compatible pipe with elbow, if required. Connect to existing pipe leader and provide new braced hanger within 2-ft of drain. Paint clamping ring and strainer per specifications.
 - b. Reference Section 07 60 00 - Flashing, Sheet Metal & Accessories.
 - c. Unit of Measurement: Each
 - d. Estimated Units: 4 roof drains
8. **Unit Price No. 8 - Flush Mounted Ceiling Access Panel**
 - a. Description: Provide new flush mounted ceiling access panel by Acudor Products, Inc., UF-5500, 24 x 24 ACPC, concealed hinges and welds with locking hardware. Install access doors with new stainless fasteners of type and spacing as recommended by the manufacturer's specifications and product data.
 - b. Reference Section 07 60 00 - Flashing, Sheet Metal & Accessories.
 - c. Unit of Measurement: Each
 - d. Estimated Units: 2 access panels

9. **Unit Price No. 9 - Replacement Fireproofing**
- a. Description: Provide new 2'X4' rigid mineral wool fireproofing board (unfaced CAFCO-BOARD), 2" thickness, secured to steel deck with approved CAFCLIPS and self tapping screws, per manufacturer's instructions.
 - b. Reference Section 07 60 00 - Flashing, Sheet Metal & Accessories.
 - c. Unit of Measurement: Each
 - d. Estimated Units: 100 boards

END OF SECTION

SECTION 01 23 00**ALTERNATES****PART 1 - GENERAL**

- 1.01 General Provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification sections, apply to work of this Section.
- 1.02 SECTION INCLUDES
- A. Description of Requirements.
 - B. Schedule of Alternates.
- 1.03 DESCRIPTION OF REQUIREMENTS
- A. Definition: An Alternate is an amount proposed by Bidders and stated on the Bid Form for certain construction activities defined in the Bidding Requirements that may be added to or deducted from Base Bid amount if the Owner decides to accept a corresponding change in either the amount of construction to be completed, or in the products, materials, equipment, systems or installation methods described in Contract Documents.
 - B. Coordination: Coordinate related work and modify or adjust adjacent work as required to ensure that work affected by each accepted alternate is complete and fully integrated into project.
 - C. Notification: Immediately following award of Contract, prepare and distribute to each party involved, notification of the status of each alternate. Indicate whether alternates have been accepted, rejected or deferred for consideration at a later date. Include a complete description of negotiated modifications to alternates, if any.
 - D. Schedule: A "Schedule of Alternates" is included in Part 3 of this Section. Specifications sections referenced in the Schedule contain requirements for materials and methods necessary to achieve the work described under each alternate.
 - 1. Bid prices for each Alternate shall include all labor, materials, administration, tools, both consumable or not, equipment, rentals, rolling stock, transportation, freight, taxes, licenses, fees, miscellaneous devices, appurtenances and similar items, and all other expenses incidental to or required for a complete installation whether or not mentioned as part of the alternate.
 - 2. The Contractor and Subcontractors shall be responsible for examining the scope of each Alternate generally defined herein and for recognizing modifications to the Work caused by the Alternates and including the cost thereof in the bid price.
 - 3. All alternates are to be bid with the understanding that all provisions of the Bid Documents become a part of any Alternate accepted by the Owner.

- E. Alternate Bid: In the space shown on the "Bid Proposal Form," this Bidder shall provide a bid to do all of the work contained in this Section.
1. Failure of Contractor to indicate whether the Alternate Price is to ADD or DEDUCT on the Bid Proposal Form shall be interpreted by Owner to be a DEDUCT from the Contract Price by default.
 2. The Base Bid and the Alternates are exclusive in their scope of work. There is no overlap between or among the Base Bid and Alternates. The cost of any item of work shall be included only once, in the Base Bid or in the Alternates.
 3. The Owner reserves the right to award none, any one or more selected in any order, or all of the Alternates in combination with the work covered by the Lump Sum Base Bid. Alternates will not be awarded without awarding the Lump Sum Base Bid.
 4. The Owner reserves the right to determine the low bid as the Lump Sum Base Bid alone or the sum of the Lump Sum Base Bid and any combination of Alternates it chooses to award.
 5. Except as otherwise specifically provided, the Work described in Alternates shall be completed with no increase in Contract Time.

PART 2 - PRODUCTS Not Used.

PART 3 - EXECUTION

3.01 SCHEDULE OF ALTERNATES

Alternate No. 1: CONTRACTOR shall ADD to or DEDUCT from the Base Bid, the dollar amount to substitute the specified two-ply SBS-modified bitumen roofing membranes with new APP-modified bituminous roofing membranes (both plies torch-applied), over the specified insulation system and cover board. Refer to Section 07 52 16.2.

END OF SECTION

SECTION 01 26 00

CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.01 General Provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification sections, apply to work of this Section.

1.02 SECTION INCLUDES

- A. Summary
- B. Minor Changes in the Work
- C. Proposal Requests
- D. Owner Contingency Adjustments
- E. Change Order Procedures
- F. Construction Change Directive
- G. Weather Related Delays

1.03 SUMMARY

- A. This Section specifies administrative and procedural requirements for handling and processing Contract modifications.
- B. Related Sections include the following:
 - 1. Division 1 Section "Allowances" for procedural requirements for handling and processing allowances.
 - 2. Division 1 Section "Product Requirements" for administrative procedures for handling requests for substitutions made after Contract award.

1.04 MINOR CHANGES IN THE WORK

- A. Architect will issue Supplemental Instructions authorizing minor changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, on AIA Document G710, "Architect's Supplemental Instructions."

1.05 PROPOSAL REQUESTS

- A. Owner-Initiated Proposal Requests: Architect will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.

1. Proposal Requests issued by Architect are for information only. Do not consider them instructions either to stop work in progress or to execute the proposed change.
 2. Within time specified in Proposal Request after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.
 - a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
 - b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 - c. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
- B. Contractor-Initiated Proposals: If latent or unforeseen conditions require modifications to the Contract, Contractor may propose changes by submitting a request for a change.
1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
 2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
 3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 4. Include costs of labor and supervision directly attributable to the change.
 5. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
- C. Proposal Request Form: Use AIA Document G709 for Proposal Requests, or other form approved by Architect.

1.06 OWNER CONTINGENCY ADJUSTMENTS

- A. Owner's Contingency shall be reserved for the Owner's sole discretionary use, and shall not be used without the written consent of the Owner.
- B. Owner Contingency Adjustments (OCA) are used to implement changes that will be funded from the Owner's Contingency account and are managed separately from other project funds. Any unspent balance of the Owner's Contingency shall be credited to the Owner at the end of the project.
- C. OCAs may be issued on either a Lump Sum or not-to-exceed cost basis.
 1. For OCAs issued on a lump sum basis, back up is to be provided as described under the Change Order section above.

2. For OCAs issued on a not-to-exceed basis, evidence of actual cost and schedule impact, if applicable, is to be provided upon completion of the work.
 3. Documentation of actual cost may include material receipts, daily site logs and evidence of actual labor rates paid.
 4. When an OCA is issued on a not-to-exceed basis, the starting balance of subsequent OCAs is to account for the not-to-exceed amount, the same as if it were a lump sum cost. Upon completion of the work and approval of the final cost, another sequential OCA will be issued to adjust the owner contingency balance.
- D. Contingency adjustment costs shall not include mark-up amounts for Contractor's overhead, profit, bond increases or other adjustments to the Contractor's fee. The original fee/bond includes mark-up on the total Contract Sum, which includes the Owner Contingency Account.
- E. OCAs which include a time extension require approval by the General Manager of Construction.
- F. OCAs are not effective until fully executed.

1.07 CHANGE ORDER PROCEDURES

- A. General: The Architect will prepare and submit Change Orders as needed, using back up provided by the Contractor.
1. Change Orders are used to change the scope of work, Contract Time, and/or Contract Sum.
 2. Change Orders are not effective until fully executed.
- B. The following back up is required for all Change Orders except for Direct Purchase adjustments:
1. A summary sheet listing each item with a brief description and the associated cost. This is required for change orders containing more than one item.
 2. Subcontractor pricing with complete breakdown, marked with the item number to which it pertains.
 3. If applicable, copies of OCAs and CCDs previously issued to implement the changes on the Change Order.
- C. Change Orders for Direct Purchase adjustments are to be separate from other change orders. Refer to Direct Purchase Procedures (HCSB Document Number 00910).
- D. Where time extensions are included on a Change Order, they are to be associated and cross referenced to a specific item on the Summary Sheet and documentation of the delay is to be provided as back-up.
- E. At project completion a final Change Order is required to reconcile the project costs.

1.08 CONSTRUCTION CHANGE DIRECTIVE

- A. A Construction Change Directive (CCD) will be issued when the following conditions apply:
 - 1. A Lump Sum cost cannot be established due to time constraints, disputed cost, or unknown scope; and
 - 2. The estimated not-to-exceed value exceeds the balance in the Owner Contingency Account
- B. The Construction Change Directive will instruct Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
- C. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.
 - 1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

1.09 WEATHER RELATED DELAYS

- A. General:
 - 1. The Contractor acknowledges that the specified construction duration is sufficient to accommodate normal weather conditions.
 - 2. Normal conditions are defined as those shown on the Summary of Monthly Normals from 1981 – 2010 as published by the National Oceanic and Atmospheric Administration (NOAA). Refer to Section 01 26 00.1
- B. Weather Related Delays
 - 1. During the construction period the Contractor may be entitled to a time extension for days when weather conditions are abnormal, defined as follows:
 - a. Daily rainfall exceeds 0.1-inch.
 - b. Daily average wind speed exceeds 25 mph.
 - c. Morning temperature is 50 degrees and falling.
 - 2. The requested time extension will be granted provided that:
 - a. Weather conditions delay a critical path activity; and
 - b. The project is on schedule when the delay is incurred.
 - 3. The Request for Time extension is to be accompanied by data obtained from a Contractor-provided wireless weather station.
 - a. The station is to be located at the job site field office or ballast-mounted on the roof of the building. Equipment is not to be fastened to the building, either temporarily or permanently.
 - b. All monitoring equipment, software and equipment manuals shall be returned to Owner, after completion of project, or may be offered to the school for educational purposes.
 - 4. If the Contractor elects not to provide a weather station, he hereby acknowledges that NOAA weather data collected at Tampa International Airport will be used as the basis for evaluating weather related delay claims, regardless of the site location.

- C. Wireless Weather Station
1. The following equipment or similar is suggested.
 2. Manufacturer: Scientific Sales, Inc., P.O. Box 6725, Lawrenceville, NJ 08648.
Phone: (800) 788-5666, Web site link: <http://www.scientificsales.com/>
 - a. [Model 6152 - Wireless Vantage Pro 2](#); \$445.94
 - b. [Model 7716 - Mounting Tripod](#); \$78.23
 - c. [Model 7717 - Mounting Pole Kit](#); \$32.95 (Optional)
 - d. [Model 6510USB - WeatherLink Computer Interface, USB](#); \$115.48
 2. Costs for equipment were obtained online September 13, 2020.

PART 2 - PRODUCTS Not Used.

PART 3 - EXECUTION Not Used.

END OF SECTION

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Summary of
Monthly Normals
1981-2010

Generated on 08/04/2015

| Precipitation (in.) | | | | | | | | |
|---------------------|--------|---------------------|---------|---------|---------|--|-------|-------|
| | Totals | Mean Number of Days | | | | Precipitation Probabilities Probability that precipitation will be equal to or less than the indicated amount | | |
| | Means | Daily Precipitation | | | | Monthly Precipitation vs. Probability Levels | | |
| Month | Mean | >= 0.01 | >= 0.10 | >= 0.50 | >= 1.00 | .25 | .50 | .75 |
| 1 | 2.23 | 6.8 | 4.0 | 1.8 | 0.5 | 1.26 | 2.22 | 3.30 |
| 2 | 2.81 | 6.6 | 3.8 | 1.7 | 0.8 | 1.18 | 2.05 | 3.67 |
| 3 | 3.03 | 6.6 | 4.1 | 1.9 | 1.0 | 0.98 | 1.91 | 4.27 |
| 4 | 2.03 | 4.9 | 3.1 | 1.2 | 0.6 | 0.95 | 1.68 | 2.64 |
| 5 | 2.10 | 5.5 | 3.4 | 1.4 | 0.6 | 0.74 | 1.68 | 2.50 |
| 6 | 6.68 | 12.7 | 9.2 | 4.2 | 2.2 | 4.64 | 6.62 | 8.93 |
| 7 | 7.07 | 15.9 | 10.6 | 4.8 | 2.1 | 3.67 | 6.95 | 9.93 |
| 8 | 7.77 | 16.0 | 11.0 | 5.3 | 2.5 | 5.46 | 7.81 | 8.82 |
| 9 | 6.30 | 12.2 | 7.7 | 3.8 | 2.0 | 3.87 | 5.66 | 8.42 |
| 10 | 2.26 | 6.5 | 3.9 | 1.4 | 0.7 | 0.87 | 2.14 | 3.30 |
| 11 | 1.55 | 5.1 | 2.7 | 0.9 | 0.4 | 0.66 | 1.11 | 2.06 |
| 12 | 2.47 | 5.8 | 3.5 | 1.5 | 0.8 | 0.99 | 1.30 | 2.11 |
| Summary | 46.30 | 104.6 | 67.0 | 29.9 | 14.2 | 25.27 | 41.13 | 59.95 |

@ Denotes mean number of days greater than 0 but less than 0.05.
-7777: a non-zero value that would round to zero
Empty or blank cells indicate data is missing or insufficient occurrences to compute value.

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SECTION 01 31 13

PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.01 General Provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification sections, apply to work of this Section.

1.02 SECTION INCLUDES

- A. Definitions.
- B. Format.
- C. Project Communications Documents
- D. Administration And Supervision.
- E. Coordination
- F. Separate Contracts/additional Trades.
- G. Cooperation of Trades.
- H. Acceleration of Work.
- I. Occupancy/Cooperation.
- J. Construction Mobilization.
- K. Preparation for Construction

1.03 DEFINITIONS

- A. Project communications documents shall be defined as the following:
 - 1. Letters.
 - 2. Memoranda.
 - 3. E-Mail Communications/Internet Communications/Project Management Software Communications.
 - 4. RFI (Request for Information - Contractor).
 - 5. RFI-A (Request for Information - Architect).

1.04 FORMAT

- A. Letters and Memoranda: Submit in formats acceptable to the Architect.

- B. E-Mail Communications/Internet Communications/Project Management Software Communications: Submit in forms and formats acceptable to and as approved by the Architect.
- C. RFI: Submit on forms furnished by the Architect, or on other forms as approved by the Architect. Unless otherwise approved use Architect's Form, "Request for Information".

1.05 PROJECT COMMUNICATIONS DOCUMENTS

- A. Letters and Memoranda documents shall be submitted in a timely manner so as to facilitate project delivery and coordination. Routing of communications shall be as established in the Contract, the Contract Documents and the Pre-Construction Conference. Communications documents shall be transmitted or forwarded in a manner consistent with the schedule and progress of the work.
- B. E-Mail Communications, Internet Communications, and Project Management Software programs must be compatible with the Architect's and Owner's computer systems and equipment. The responsibility for all costs for management of these systems, including, but not limited to, licensing, onsite training or other training necessary for the proper operation of such systems, shall be by the Contractor. The Contractor shall keep written records and hard file copies of all electronic communications. Failure of the Contractor to keep such records shall waive the Contractor's right to rely on such communications and such communications shall be deemed to have not taken place.
- C. RFI shall be defined and limited to a request from the Contractor seeking interpretation or clarification of the requirements of the Contract Documents. Such requests shall comply with the following requirements:
 - 1. RFI requests shall be submitted in a timely manner, well in advance of related work, and allow sufficient time for the resolution of issues relating to the request for interpretation or clarification. Contractor shall schedule the submission of RFI's so as to moderate and manage the flow of RFI requests. RFI's shall be submitted in a manner consistent with the schedule and progress of the work, and shall not be submitted in a sporadic and/or excessive manner.
 - 2. RFI requests shall be numbered in a sequential manner and contain a detailed description of the areas of work requiring interpretation or clarification. Include drawing and specification references, sketches, technical data, brochures, or other supporting data as deemed necessary by the Architect, for the Architect to provide the interpretations and clarifications requested.
 - a. The Contractor shall include a "Proposed Solution" to the issue requiring interpretation or clarification.
 - 3. RFI's submitted to the Contractor by Sub-Contractors, vendors, suppliers, or other parties to the work shall be reviewed by the Contractor prior to submission to the Architect. If the Architect deems that such RFI requests have not been adequately reviewed by the Contractor, such requests will be returned to the Contractor for further action. Sub-Contractor's RFI shall contain a "Proposed Solution".
 - 4. RFI requests shall not contain submittals, substitutions requests, routine communications, correspondence, memos, claims, or any information required by other areas of the Contract Documents. RFI requests containing such information will be returned to the Contractor without action by the Architect.

5. RFI requests are limited to a request for interpretation or clarification of the requirements of the Contract Documents. Interpretations provided by the Architect shall not change the requirements of the Contract or the Contract Documents. If the Contractor determines that the Architect's response to an RFI gives cause for a change in the Contract or the Contract Documents, the Contractor shall promptly, within 5 working days, give written notice to the Architect of request for adjustments. Requests for adjustments to the Contract shall be submitted in a manner consistent with the terms and conditions of the Contract Documents.
 6. If the Architect, after review, determines that any RFI has been submitted in an incomplete manner, is unnecessary, or does not otherwise comply with the requirements of this Section, the RFI will be returned without action to the Contractor. The Contractor shall delete the original submittal date from the RFI log and enter a new submittal date at the time of re-submittal.
 7. RFI Log: Contract to prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log weekly, with not less than the following:
 - a. Project name.
 - b. Name and address of Contractor.
 - c. Name and address of Architect.
 - d. RFI number including RFIs that were returned without action or withdrawn.
 - e. RFI description.
 - f. Date the RFI was submitted.
 - g. Date Architect's response was received.
 8. On receipt of Architect's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Architect within seven days if Contractor disagrees with response.
 - a. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.
- D. Revisions to Construction Documents: Responses to requests for information (RFI) shall not serve as construction documents; and the Contractor shall not incorporate RFI responses into construction of the Project, unless such answers bear the seal and signature of a licensed design professional.

1.06 ADMINISTRATION AND SUPERVISION

- A. Coordinate various elements of the work and entities engaged to perform the work. Coordinate work by separate Contractors (if any) with and by the Owner.
- B. Contractor shall have a full-time "non-working" superintendent on site who is fully qualified for the type of work involved and who shall have had a minimum of (5) years experience in that type of work. This person shall be approved by the Architect prior to commencement of work, and this person shall not be changed during the term of the Contract or until the issuing of the certificate of substantial completion without authorization by the Architect.
- C. The Contractor's Superintendent shall not be removed from the project before the issuance of the Certificate of Substantial Completion without the written consent of the Owner.

- D. Staff Names: Within (15) days of starting construction operations, submit a list of principal staff assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home and office telephone numbers. Provide names, addresses, and telephone numbers of individuals assigned as standbys in the absence of individuals assigned to Project.
 - 1. Post copies of list in Project meeting room, in temporary field office, and by each temporary telephone.

1.07 COORDINATION

- A. Coordination: Coordinate construction operations included in various Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections, that depend on each other for proper installation, connection, and operation.
 - 1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
 - 2. Coordinate installation of different components with other contractors to ensure maximum accessibility for required maintenance, service, and repair.
 - 3. Make adequate provisions to accommodate items scheduled for later installation.
- B. If necessary, prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.
 - 1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.
- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
 - 1. Preparation of Contractor's Construction Schedule.
 - 2. Preparation of the Schedule of Values.
 - 3. Installation and removal of temporary facilities and controls.
 - 4. Delivery and processing of submittals.
 - 5. Progress meetings.
 - 6. Pre-installation conferences.
 - 7. Project closeout activities.

1.08 SEPARATE CONTRACTS/ADDITIONAL TRADES

- A. The Owner may, at his option, elect to have concurrent work done during this Work. The Contractor shall cooperate with other Contractors and coordinate his work with the other Contractors for optimum execution and timing of both contracts.

1.09 COOPERATION OF TRADES

- A. It is the intention of the Contract Documents that the various trades engaged in the Work shall cooperate in the execution of the Work.
- B. Each trade shall cooperate fully with other trades for optimum sequencing of work to prevent damage to the work of other trades.

1.10 ACCELERATION OF WORK

- A. If, in the judgment of the Architect, it becomes necessary at any time to accelerate the Work, the Contractor, when ordered and directed by the Architect, shall cease work at any particular point and transfer his men to such point or points, and execute such portion of his work as may be required to enable others to hasten and properly engage and carry on their work; all as directed by the Architect.

1.11 OCCUPANCY/COOPERATION

- A. The Work described by this Project Manual will be observed by and under the control of the Architect, as the Owner's representative.
- B. The Contractor, and any of the Contractor's subcontractors, or sub-subcontractors shall cooperate with the Architect, his representatives and approved testing agencies, and provide assistance as required at no additional cost to the Owner.
- C. Cooperate fully with the Owner or his representative during construction operations to minimize noise and conflicts and to facilitate Owner usage. Perform the work so as not to interfere with the Owner's operations.
- D. The Bidder shall prepare his Bid with the understanding that the work to be performed is to a currently open, occupied and operating facility. The Bidder shall use his best efforts to insure that the work is performed with a minimum of disruption or disturbance to, and interference with, the occupants and the conduct of the various activities within the subject property, including the surrounding grounds.
- E. If necessary, work may be performed after hours or on weekends, as long as such activities are coordinated with the Owner. If the overtime is for the convenience of the Contractor, it shall be charged to the Contractor at a rate equal to the employee's hourly overtime rate and the amount shall be deducted by a Change Order from the Contract Price. When overtime is requested of Owner employees, the request shall be made to the Owner at least (2) working days in advance.

1.12 CONSTRUCTION MOBILIZATION

- A. Cooperate with the Architect and Owner in allocation of mobilization areas of site; for field offices and sheds, access, traffic, and parking facilities.

- B. Comply with Architect's procedures for project communications; submittals, reports and records, schedules, coordination drawings, and recommendations; and resolution of ambiguities and conflicts.
- C. Comply with instructions of the Architect and Owner for use of temporary utilities and construction facilities.

1.10 PREPARATION FOR CONSTRUCTION

- A. Preconstruction Conference: Prior to starting work, a mandatory preconstruction conference shall be held and attended by representatives of the Owner, Architect and Contractor and principal suppliers or subcontractors. Presence of the Contractor's superintendent is mandatory. (Refer to Section 01 31 19 for additional requirements.)

PART 2 - PRODUCTS Not Used.

PART 3 - EXECUTION Not Used.

END OF SECTION

SECTION 01 31 19**PROJECT MEETINGS****PART 1 - GENERAL**

1.01 General Provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification sections, apply to work of this Section.

1.02 SECTION INCLUDES

- A. Pre-construction Conference.
- B. Project Meetings.
- C. Compliance.

1.03 PROJECT MEETINGS

- A. General: Schedule and conduct meetings and conferences at Project site, unless otherwise indicated.
 - 1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times.
 - 2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
 - 3. Minutes: Record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Architect, within (3) days of the meeting.
- B. Pre-construction Conference: Schedule a pre-construction conference before starting construction, at a time convenient to Owner and Architect, but no later than (15) days after execution of the Agreement. Hold the conference at Project site or another convenient location. Conduct the meeting to review responsibilities and personnel assignments.
 - 1. Attendees: Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major subcontractors; manufacturers; suppliers; and other concerned parties shall attend the conference. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 - 2. Agenda: Discuss items of significance that could affect progress, including the following:
 - a. Tentative construction schedule.
 - b. Phasing.
 - c. Critical work sequencing.
 - d. Designation of responsible personnel.
 - e. Procedures for processing field decisions and Change Orders.
 - f. Procedures for processing Applications for Payment.
 - g. Distribution of the Contract Documents.
 - h. Submittal procedures.
 - i. Preparation of Record Documents.

- j. Use of the premises.
 - k. Responsibility for temporary facilities and controls.
 - l. Parking availability.
 - m. Office, work, and storage areas.
 - n. Equipment deliveries and priorities.
 - o. Security.
 - p. Progress cleaning.
 - q. Working hours.
- C. Pre-installation Conferences: Conduct a pre-installation conference at Project site before each construction activity that requires coordination with other construction.
- 1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Architect of scheduled meeting dates.
 - 2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
 - a. Contract Documents.
 - b. Options.
 - c. Related Change Orders.
 - d. Purchases.
 - e. Deliveries.
 - f. Submittals.
 - g. Review of mockups.
 - h. Possible conflicts.
 - i. Compatibility problems.
 - j. Time schedules.
 - k. Weather limitations.
 - l. Manufacturer's written recommendations.
 - m. Warranty requirements.
 - n. Compatibility of materials.
 - o. Acceptability of substrates.
 - p. Temporary facilities and controls.
 - q. Space and access limitations.
 - r. Regulations of authorities having jurisdiction.
 - s. Testing and inspecting requirements.
 - t. Required performance results.
 - u. Protection of construction and personnel.
 - 3. Record significant conference discussions, agreements, and disagreements.
 - 4. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.
- D. Progress Meetings: Conduct progress meetings at weekly intervals. Coordinate dates of meetings with preparation of payment requests.
- 1. Attendees: In addition to representatives of Owner and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these

meetings. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.

2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
 - a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's Construction Schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
 - b. Review present and future needs of each entity present, including the following:
 - 1) Interface requirements.
 - 2) Sequence of operations.
 - 3) Status of submittals.
 - 4) Deliveries.
 - 5) Off-site fabrication.
 - 6) Access.
 - 7) Site utilization.
 - 8) Temporary facilities and controls.
 - 9) Work hours.
 - 10) Hazards and risks.
 - 11) Progress cleaning.
 - 12) Quality and work standards.
 - 13) Change Orders.
 - 14) Documentation of information for payment requests.
3. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present. Include a brief summary, in narrative form, of progress since the previous meeting and report.
 - a. Schedule Updating: Revise Contractor's Construction Schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

E. Notifications:

1. The Contractor shall inform Architect in writing, (5) working days before any Work commences. Unless stated at the Preconstruction Conference, or unless otherwise notified, the Contractor shall not undertake or perform any Work unless observed by a quality control representative of the Architect.
2. The Contractor shall be responsible to inform all occupants (5) working days before any shut down or testing of mechanical equipment. Coordinate length of shut down so occupants can provide alternate procedures.

F. Both the Contractor and the subcontractors shall provide the Architect and Owner with twenty-four (24) hour telephone numbers for the following personnel from his firm:

1. The principal officer and/or Owner;
2. The project manager;
3. The project superintendent.

PART 2 - PRODUCTS Not Used.

PART 3 - EXECUTION

3.01 COMPLIANCE

- A. Contractor shall comply with all provisions of this Section regardless of the fact all issues in this Section were not covered in a meeting, or in a meeting that was held.
- B. It is the responsibility of this Contractor to notify the Architect before the start of the Work if there are any issues that are not resolved.

END OF SECTION

SECTION 01 32 16

PROGRESS SCHEDULES

PART 1 - GENERAL

- 1.01 General Provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification sections, apply to work of this Section.
- 1.02 SECTION INCLUDES
 - A. Quality Assurance.
 - B. Format.
 - C. Content.
 - D. Revisions to Schedules.
 - E. Submittals.
 - F. Distribution
 - G. Ownership of Schedule Float
- 1.03 QUALITY ASSURANCE
 - A. Designate an authorized representative to be responsible for the preparation of the schedule and all required updating (activity status) and preparation of reports. The authorized representative shall be experienced in scheduling projects similar in nature and complexity to this project and shall be proficient in the use of the scheduling software required.
- 1.04 FORMAT
 - A. Prepare network analysis system using the critical path method, as outlined in The Associated General Contractors of America (AGC) publication "The Use of CPM in Construction - A Manual for General Contractors".
 - B. Sequence of Listings: The chronological order of the start of each item of Work.
 - C. Scale and Spacing: To provide space for notations and revisions.
 - D. Sheet Size: Minimum 18-in. by 24-in. (Arch C), or as otherwise acceptable to Architect.

1.05 CONTENT

- A. Show complete sequence of construction by activity, with dates for beginning and completion of each element of construction.
- B. Identify each item by specification Section number, or activity.
- C. Identify work of separate stages and other logically grouped activities.
- D. Provide sub-schedules for each stage of Work, as required.
- E. Provide sub-schedules to define critical portions of the entire Schedule.
- F. Show accumulated percentage of completion of each item, and total percentage of Work completed, as of the first day of each month.
- G. Provide separate schedule of submittal dates for shop drawings, product data, and samples.
- H. Coordinate content with Schedule of Values.

1.05 REVISIONS TO SCHEDULES

- A. Indicate progress of each activity to date, and projected completion date of each activity.
- B. Identify activities modified since previous submittal, major changes in scope, and other identifiable changes.
- C. Provide narrative report to define problem areas, anticipated delays, and impact on Schedule. Report corrective action taken, or proposed, and its effect, including the effect of changes on schedules of separate contractors.

1.06 SUBMITTALS

- A. Submit preliminary outline Schedules within (10) days after date of Notice to Award Contract. After initial review, submit detailed Schedules within (10) days, modified to accommodate revisions recommended by Architect and/or Owner.
- B. Submit revised Progress Schedules with each Application for Payment.
 - 1. Alternate Formats: Approved Schedules may be submitted to Architect using the following computer file formats:
 - a. PDF file format (Adobe Acrobat);
 - b. Original file format, using a file type compatible with Microsoft Project 2000, or later;

1.07 DISTRIBUTION

- A. Distribute copies of reviewed Schedules to project site file, Subcontractors, suppliers, and other concerned parties.

- B. Instruct recipients to promptly report, in writing, problems anticipated by projections indicated in Schedules.

1.08 OWNERSHIP OF SCHEDULE FLOAT

- A. Float or slack is defined as the amount of time between the early start date and the late start date, or the early finish date and the late finish date, of any of the activities in the schedule. Float or slack is not for the exclusive use of or benefit of either the Owner or Contractor. Extensions of time for performance required under the contract will be granted only to the extent the equitable time adjustment for the activity or activities affected exceeds the total float or slack along the work sequences involved at the time notice to proceed was issued for the change.

PART 2 - PRODUCTS Not Used.

PART 3 - EXECUTION Not Used.

END OF SECTION

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SECTION 01 32 33

CONSTRUCTION PHOTOGRAPHS

PART 1 - GENERAL

1.01 General Provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification sections, apply to work of this Section.

1.02 SECTION INCLUDES

- A. Photography.
- B. Digital Camera Requirements
- C. Technique.
- D. Views.
- E. File Transfer
- F. Aerial photographs.

1.02 PHOTOGRAPHY

- A. Provide digital photographs of site and construction throughout progress of Work.
- B. Take periodic digital photographs during the course of the Work for the following stages of the Project.
 - 1. Existing interior and exterior conditions prior to start of work;
 - 2. Selective demolition;
 - 3. Repair of deteriorated decking;
 - 4. Each phase of roof-top work;
 - 5. Any/all conditions that will become inaccessible after completion of Work.

1.03 DIGITAL CAMERA REQUIREMENTS

- A. General: Provide digital photography from a camera with the following minimum requirements.
 - 1. Image Size: Approx. 2560 x 1920 capture resolution.
 - 2. Minimum Image Resolution: Approx. 5.0 megapixels.
 - 3. File Format: JPEG.

1.04 TECHNIQUE

- A. Provide correct exposure and focus, high resolution and sharpness, maximum depth of field, and minimum distortion.

- B. Do not “wash-out” photographs with camera flash. Utilize automatic exposure control.
 - 1. Note: Auto flash does not always produce the best photography. Most digital cameras with auto exposure control can produce quality photographs with the flash setting “off.”
- C. Provide factual presentation of Work.

1.05 VIEWS

- A. Consult with Architect/Engineer for instructions on views required.

1.06 FILE TRANSFER

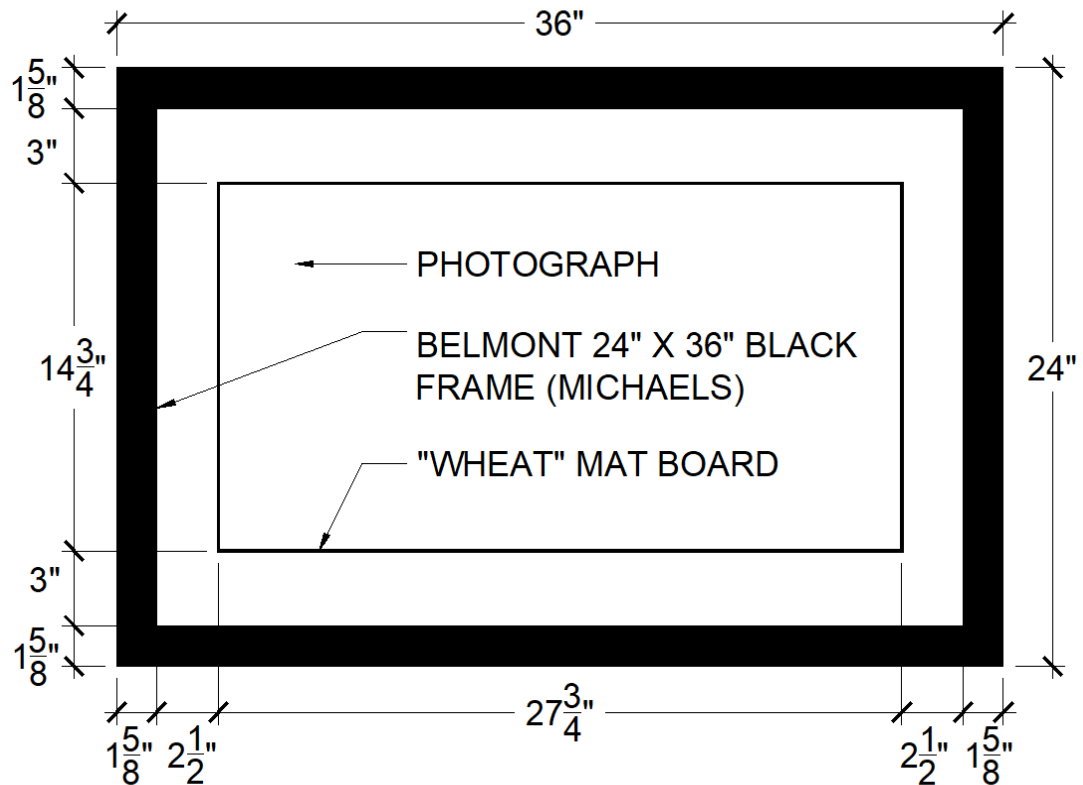
- A. General: Printing of digital photographs is not required. Contractor shall submit copies of the photograph files to Architect in JPEG format either:
 - 1. on CD, 700 MB recordable media;
 - 2. via the Internet sent to a designated e-mail address; or
 - 3. by delivering flash card or thumb drive media to Architect’s office for direct download.
- B. Submittal of Construction Photographs:
 - 1. Submit digital copies of construction and aerial photographs with each pay request.

1.07 AERIAL PHOTOGRAPHS

- A. Provide digital aerial photos each month concurrently with the pay application. Photo files are to be submitted via e-mail, download link or on CD media.
- B. Monthly aerial photos are to display the name of the facility, the date the photo was shot and the name of the aerial photograph company.
- C. Composition of building shall be located on center of the prints and taken from an altitude that will maximize the coverage of the entire building.
- D. All photographs shall be in proper focus. Shadows of the plane or helicopter on which the photos are taken shall be avoided.
- E. Final Completion Photographs:
 - 1. Provide a digital set of aerial photos of the completed work to include with the final close-out documents.
 - 2. Photos shall be taken after the substantial completion walkthrough.
 - 3. Final completion photos are to display only the name of the facility and the date the photo was shot. No other labeling is to be provided on the front.
 - 4. Provide high resolution image files of final aerial photos on CD media with a copyright release.
 - 5. Owner or Architect will select one aerial photograph to be printed and mounted in a new Belmont 24"x36" black frame, from Michaels. Refer to frame diagram below.

1.08 FRAME DIAGRAM

A. The selected aerial photograph shall be printed and mounted to fit in the below frame:



PART 2 - PRODUCTS Not Used.

PART 3 - EXECUTION Not Used.

END OF SECTION

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SECTION 01 33 00

SUBMITTALS

PART 1 - GENERAL

1.01 General Provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification sections, apply to work of this Section.

1.02 SECTION INCLUDES

- A. Definitions.
- B. Submittal Administrative Requirements.
- C. Review and Approval.
- D. Action Submittals.
- E. Informational Submittals.
- F. Delegated-Engineering Services
- G. Construction Progress Schedules.
- H. Contractor's Submittal Review and Stamp of Approval.
- I. Architect's Action.

1.03 DEFINITIONS

- A. Action Submittals: Written and graphic information and physical samples that require Architect's review. Architect's responsive action is required.
- B. Digital Signature: A digital signature or digital signature scheme is a mathematical scheme for demonstrating the authenticity of a digital message or document.
- C. Electronic Signature: An electronic signature is any legally recognized electronic means that indicates that a person adopts the contents of an electronic message.
- D. Informational Submittals: Written and graphic information other than action submittals that require Architect's review. Architect's responsive action is required on informational submittals that do not comply with the information given and design concept expressed in the Drawings and Specifications.

- E. Portable Document Format (PDF): An open standard file format licensed by Adobe Systems used for representing documents in a device-independent and display resolution-independent fixed-layout document format.

1.04 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

- A. Architect's Digital Data Files: Electronic digital data files of the Contract Drawings will not be provided by Architect for Contractor's use in preparing submittals.
- B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
 - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
 - 2. Submit all submittal items required for each Specification Section concurrently.
 - 3. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
 - a. Architect reserves the right to withhold action on incomplete submittals and submittals requiring coordination with other submittals until related submittals are received.
- C. Processing Time: Allow enough time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal.
 - 1. Initial Review: Allow (10) working days for initial review of each submittal. Allow additional time if processing must be delayed to permit coordination with subsequent submittals. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
 - 2. Concurrent Review: Where concurrent review of submittals by Architect's consultants, Owner, or other parties is required, allow (15) days for initial review of each submittal.
 - 3. Direct Transmittal to Consultant: Where the Contract Documents indicate that submittals may be transmitted directly to Architect's consultants, provide duplicate copy of transmittal to Architect. Submittal will be returned to Architect before being returned to Contractor.
 - 4. If intermediate submittal is necessary, process it in same manner as initial submittal.
 - 5. Allow (10) working days for processing each resubmittal.
 - 6. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
- D. Electronic Submittals: Identify and incorporate information in each electronic submittal file as follows:
 - 1. Assemble complete submittal package into a single indexed file incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.
 - 2. Name files with submittal number, including revision identifier.
 - a. File Naming Convention (separate by dashes - or underscores _):
 - 1) Specification Number / Revision Number / Submittal Sequence (A, B, C, etc.).pdf

3. Provide means for insertion to permanently record Contractor's review and approval markings and action taken by Architect.
 4. Metadata: Include the following information as keywords in the electronic submittal file metadata:
 - a. CBGA Job Number
 - b. Project name.
 - c. Number and title of appropriate Specification Section.
 - d. Manufacturer name.
 - e. Product name.
 - f. Submittal revision number.
- E. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Architect will discard submittals received from sources other than Contractor.
1. Transmittal Form: Unless otherwise indicated, transmit each submittal with the enclosed CBG&A Form.
 2. Submittals sent without a transmittal describing the exact materials / documents sent will be returned without review.
 3. Sequentially number the transmittal forms. Resubmittals to have original number with an alphabetic suffix.
 4. On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Architect on previous submittals, and deviations from requirements of the Contract Documents, including minor variations and limitations. Include the same label information as the related submittal.
 5. Apply Contractor's stamp, signature or initial certifying that review and/or verification of Products required, field dimensions, adjacent construction work, and coordination of information, is in accordance with the requirements of the Work and Contract Documents on all submittal documents.
- F. Deviations:
1. **Contractor shall identify (with written notice) all variations/deviations from the Specifications with each Submittal.** In the absence of a written notice by the Contractor with the submittal, describing the specific variations from the Specifications, any/all non-conforming submittal items reviewed by the Architect or Owner shall not relieve the Contractor from complying with the Specifications.
 2. Identify variations from Contract Documents and product or system limitations which may be detrimental to successful performance of the completed Work.
- G. Resubmittals: Make resubmittals in same form as initial submittal.
1. Note date and content of previous submittal.
 2. Note date and content of revision in file name and clearly indicate extent of revision.
 3. Resubmit submittals until they are marked with notation from Architect's action stamp not requiring additional submittals.
 4. Resubmittals, changes and/or corrections to submittals shall not be considered as an order for extra work or cause for Contract Time extension.

- H. Distribution: Furnish electronic copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- I. Use for Construction:
 - 1. Retain complete copies of submittals on Project site.
 - 2. No portion of the Work requiring a shop drawing, product data or samples submission shall be commenced until the submission has been received and reviewed by Architect.
 - 3. Use only final action submittals that are marked with appropriate notation from Architect's action stamp indicating for construction.
 - 4. Retain a separate copy for Owner to be delivered to Owner with Project Closeout documents.
 - 5. If any materials or equipment are installed or incorporated into the project prior to such required review, the Contractor shall be liable for removal and replacement at no cost to the Owner if it is the Architect's opinion that such materials or equipment do not satisfy the intent of the drawings and specifications.

1.05 REVIEW AND APPROVAL

- A. The Contractor shall review, thoroughly check and **APPROVE** all submittals prior to transmitting them to the Architect for review. Submittals not bearing Contractor's mark of "approval" may be returned without review or comment.
 - 1. Remarks from the Contractor or Subcontractor stating the submittal was only reviewed for design conformance, general compliance with contract documents, or other similar language is not acceptable and subject to rejection.
- B. Architect's review of submittals shall not relieve the Contractor of responsibility for any deviation from the requirements of the Contract Documents unless the Architect gives written acceptance of the specific deviation in the form of a letter, Field Order or Change Order.
- C. Architect's review of resubmittals shall apply only to his correction marks and/or notes indicated on the previous submittal.

PART 2 - PRODUCTS

2.01 ACTION SUBMITTALS

- A. Submittal Procedures: Prepare and submit Action Submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.
 - 1. Submit electronic submittals as PDF electronic files directly to Architect.
 - a. Architect will annotated the PDF file and return to Contractor. Retain one copy of the annotated file as an electronic Project record document file.
 - b. Provide PDF electronic files from scanned paper originals at 300 dpi, minimum.
 - 2. Certificates and Certifications Submittals: Provide a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
 - a. Provide a digital signature with digital certificate on electronically submitted certificates and certifications where indicated.

- b. When one or more individual Specification Sections includes requirements for notarized signature on certificates and certifications, provide a notarized statement on original paper copy certificates and certifications where indicated.
- B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
 - 1. If information must be specially prepared for submittal because standard published data are not suitable for use, submit as Shop Drawings, not as Product Data.
 - 2. Mark each copy of each submittal to show which products and options are applicable.
 - 3. Include the following information, as applicable:
 - a. Manufacturer's written recommendations.
 - b. Manufacturer's installation instructions.
 - c. Mill reports.
 - d. Standard product operating and maintenance manuals.
 - e. Certification that products are appropriate for installation indicated.
 - f. Manufacturer's catalog cuts.
 - g. Manufacturer's product specifications.
 - h. Standard color charts.
 - i. Statement of compliance with specified referenced standards.
 - j. Testing by recognized testing agency.
 - k. Application of testing agency labels and seals.
 - l. Notation of coordination requirements.
 - m. Availability and delivery time information.
 - 4. For equipment, include the following in addition to the above, as applicable:
 - a. Wiring diagrams showing factory-installed wiring.
 - b. Printed performance curves.
 - c. Operational range diagrams.
 - d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.
 - 5. Submit Product Data before or concurrent with Samples.
 - 6. Submit Product Data in the following format:
 - a. PDF electronic file.
- C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.
 - 1. Shop drawings shall be prepared accurately and to a conventional architectural scale sufficient to show all requisite information pertinent to the submitted item or assembly. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.
 - 2. Number shop drawings consecutively and indicate the following:
 - a. Working erection dimensions and/or field dimensions;
 - b. Arrangements, sectional views, fasteners and necessary details, including complete information for making connections with other work;
 - c. Kinds of materials and finishes;
 - d. Date project name, descriptive names of equipment, classified item numbers, locations at which materials or equipment are to be installed in work.

3. Engineering: Submit shop drawings or erection drawings signed and sealed by a professional engineer licensed in the state of Florida, whose discipline is structural engineering for:
 - a. All assemblies of a structural nature not included in the original Scope of Work;
 - b. All assemblies of a structural nature which supplement the Contract Documents; and
 - c. All specified assemblies requiring an engineers seal.
 4. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
 - a. Identification of products.
 - b. Dimensions.
 - c. Fabrication and installation drawings.
 - d. Design calculations.
 - e. Schedules.
 - f. Compliance with specified standards.
 - g. Notation of coordination requirements.
 - h. Notation of dimensions established by field measurement.
 - i. Relationship and attachment to adjoining construction clearly indicated.
 - j. Seal and signature of professional engineer.
 5. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches (letter-size, ANSI-A), but no larger than 30 by 42 inches (ARCH-E1).
 6. Submit Shop Drawings in the following format:
 - a. PDF electronic file.
- D. Samples: Prepare physical units of materials or products, including the following:
1. Comply with Section 01 45 00 - Quality Control for mock-ups.
 2. Submit samples to illustrate functional and aesthetic characteristics of the Product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work. Samples required to establish quality of workmanship and finish shall be furnished as required by other Sections of these specifications.
 3. Include identification on each sample, with full Project information.
 4. Submit the number or samples specified in individual specification Sections; one of which will be retained by Architect.
 5. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
 6. Preparation: Mount, display, or package Samples in manner specified to facilitate review of qualities indicated. Prepare Samples to match Architect's sample where so indicated. Attach label on unexposed side that includes the following:
 - a. Generic description of Sample.
 - b. Product name or name of manufacturer.
 - c. Sample source.
 7. Additional Information: On an attached separate sheet, prepared on Contractor's letterhead, provide the following:
 - a. Size limitations.
 - b. Compliance with recognized standards.
 - c. Availability.
 - d. Delivery time.

8. Submit Samples for review of kind, color, pattern, and texture for a final check of these characteristics with other elements and for a comparison of these characteristics between final submittal and actual component as delivered and installed.
 - a. If variation in color, pattern, texture, or other characteristic is inherent in the product represented by a Sample, submit at least three sets of paired units that show approximate limits of the variations.
 - b. Refer to individual Specification Sections for requirements for Samples that illustrate workmanship, fabrication techniques, details of assembly, connections, operation, and similar construction characteristics.
9. Number of Samples for Initial Selection: Submit one full set of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected. Provide additional sets of samples if requested by Architect.
10. Disposition: Maintain sets of Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
 - a. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.

2.02 INFORMATIONAL SUBMITTALS

- A. General: Prepare and submit Informational Submittals required by other Specification Sections.
 1. Number of Copies: Submit an original and two copies of each submittal, unless otherwise indicated. Architect will not return copies.
 2. Certificates and Certifications: Provide a notarized statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
 3. Test and Inspection Reports: Comply with requirements in Section 01 45 00.
- B. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.
- C. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
- D. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
- E. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.

- F. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
- G. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
- H. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
- I. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
- J. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:
 - 1. Name of evaluation organization.
 - 2. Date of evaluation.
 - 3. Time period when report is in effect.
 - 4. Product and manufacturers' names.
 - 5. Description of product.
 - 6. Test procedures and results.
 - 7. Limitations of use.
- K. Maintenance Data: Prepare written and graphic instructions and procedures for operation and normal maintenance of products and equipment. Comply with requirements in Section 01 70 00 - Contract Closeout.
- L. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on AWS forms. Include names of firms and personnel certified.
- M. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
- N. Design Data: Prepare and submit written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

- O. Insurance Certificates and Bonds: Prepare written information indicating current status of insurance or bonding coverage. Include name of entity covered by insurance or bond, limits of coverage, amounts of deductibles, if any, and term of the coverage.
- P. Manufacturer's Instructions: Prepare written or published information that documents manufacturer's recommendations, guidelines, and procedures for installing or operating a product or equipment. Include name of product and name, address, and telephone number of manufacturer. Include the following, as applicable:
 - 1. Preparation of substrates.
 - 2. Required substrate tolerances.
 - 3. Sequence of installation or erection.
 - 4. Required installation tolerances.
 - 5. Required adjustments.
 - 6. Recommendations for cleaning and protection.
- P. Material Safety Data Sheets: Submit information directly to Owner. If submitted to Architect, Architect will not review this information but will return it with no action taken.
- Q. Product Schedule or List: Prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:
 - 1. Type of product. Include unique identifier for each product.
 - 2. Number and name of room or space.
 - 3. Location within room or space.
- R. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:
 - 1. Name, address, and telephone number of entity performing subcontract or supplying products.
 - 2. Number and title of related Specification Section(s) covered by subcontract.
 - 3. Drawing number and detail references, as appropriate, covered by subcontract.

2.03 DELEGATED-ENGINEERING SERVICES

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
 - 1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.
- B. Delegated-Engineering Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit digitally signed PDF electronic file and three paper copies of certificate, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.
 - 1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

2.04 CONSTRUCTION PROGRESS SCHEDULES

- A. Refer to Section 01 32 16 - Progress Schedules.
- B. Revise and resubmit as requested by the Architect, at no additional cost to Owner.
- C. Changes in Scope of Work may require adjustments in the Progress Schedule or Critical Path. Contractor shall make all the necessary changes to bring the schedule/path up to date, at no additional cost.
- D. Submit horizontal bar chart with separate line for each major section of the Work, identifying first work day of each week.
- E. Show complete sequence of construction activity, identifying Work of separate stages and other logically grouped activities. Indicate the early and late start, early and late finish, float dates, substantial completion date, and duration.
- F. Indicate estimated percentage of completion for each item of Work at each submission.

PART 3 - EXECUTION

3.01 CONTRACTOR'S SUBMITTAL REVIEW AND STAMP OF APPROVAL

- A. Action and Informational Submittals:
 - 1. Review each submittal and check for coordination with other Work of the Contract, check for suitability to field conditions and dimensions, and check for compliance with information given in the Contract Documents.
 - 2. The Contractor is not responsible for ascertaining conformity with the design concept or the intent of the documents.
 - 3. Mark with approval stamp before submitting to Architect.
- B. The Contractor, subcontractor, and/or suppliers shall not use the submittal and shop drawing process as a means of suggesting substitutions from the contract requirements. Should it become advisable to recommend changes, the Contractor shall make specific requests of the Architect, explaining the reason for the proposed change. If it is necessary to deviate from the contract requirements in the submittals or shop drawings, then the Contractor must point out the deviations at the time of submittal.
- C. **Approval Stamp:** Contractor shall stamp each submittal with a uniform, approval stamp. Stamp is to include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.
- D. Architect will not review submittals that do not bear Contractor's approval stamp and will reject them without action.

3.02 ARCHITECT'S ACTION

- A. Architect will not review submittals that do not bear Contractor's approval stamp and will return them without action.
- B. Action Submittals: Architect will review each submittal, make marks to indicate corrections or modifications required, and return it. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken, as follows:
 - 1. Final Unrestricted Release: When the Architect marks a submittal "No Exceptions Taken," the Work covered by the submittal may proceed provided it complies with requirements of the Contract Documents. Final payment depends on that compliance.
 - 2. Final-But-Restricted Release: When the Architect marks a submittal "Exceptions Taken as Noted," the Work covered by the submittal may proceed provided it complies with notations or corrections on the submittal and requirements of the Contract Documents. Final payment depends on that compliance.
 - 3. Returned for Resubmittal: When the Architect marks a submittal "Revise and Resubmit," do not proceed with Work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise or prepare a new submittal according to the notations; resubmit without delay. Repeat if necessary to obtain different action mark.
 - a. Do not use, or allow others to use, submittals marked "Revise and Resubmit" at the Project Site or elsewhere where Work is in progress.
 - 4. Other Action: Where a submittal is for information or record purposes or special processing or other activity, the Architect will return the submittal marked "For Information."
- C. Architect's acceptance of Shop Drawings, Samples or Product Data which deviates from the Contract Documents does not authorize changes to the Contract Sum. Submit in writing at the time of submission any changes to the Contract Sum affected by such Shop Drawings, Samples or Product Data, otherwise, claim for extras will not be considered.
- D. Informational Submittals: Architect will review each submittal and will not return it, or will reject and return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.
- E. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Architect. Review shall not be final until complete submittal has been reviewed by Architect.
- F. Incomplete submittals are unacceptable, will be considered non-responsive, and will be returned for resubmittal without review.
- G. Submittals not required by the Contract Documents may be returned by the Architect without action.

END OF SECTION

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SECTION 01 42 00

CUTTING AND PATCHING

PART 1 - GENERAL

1.01 General Provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification sections, apply to work of this Section.

1.02 SECTION INCLUDES

- A. Definition.
- B. Submittals.
- C. Limitation on Approvals
- D. Quality Assurance
- E. Warranty
- F. Materials
- G. Examination
- H. Preparation
- I. Performance

1.03 DEFINITION

- A. Cutting: Removal of existing construction necessary to permit installation or performance of other Work.
- B. Patching: Fitting and repair work required to restore surfaces to original conditions after installation of other Work
- C. Refer to other Sections of these specifications for specific cutting and patching requirements and limitations applicable to individual units of work.

1.04 SUBMITTALS

- A. Submit written request in advance of cutting or alteration which affects:
 - 1. Structural integrity of any element of Project.
 - 2. Integrity of weather-exposed or moisture-resistant element.
 - 3. Efficiency, maintenance, or safety of any operational element.
 - 4. Work of Owner or separate Contractor.

- B. Cutting and Patching Proposal: Submit a proposal describing procedures at least (10) days before the time cutting and patching will be performed, requesting approval to proceed. Include the following information:
1. Extent: Describe cutting and patching, show how they will be performed, and indicate why they cannot be avoided.
 2. Changes to Existing Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building's appearance and other significant visual elements.
 3. Products: List products to be used and firms or entities that will perform the Work.
 4. Dates: Indicate when cutting and patching will be performed.
 5. Utilities: List utilities that cutting and patching procedures will disturb or affect. List utilities that will be relocated and those that will be temporarily out of service. Indicate how long service will be disrupted.
 6. Architect's Approval: Obtain approval of cutting and patching proposal before cutting and patching. Approval does not waive right to later require removal and replacement of unsatisfactory work.

1.05 LIMITATION ON APPROVALS

- A. Architect's approval to proceed with cutting and patching does not waive right to later require removal/replacement of work found to be cut and patched in an unsatisfactory manner as judged by Architect.

1.06 QUALITY ASSURANCE

- A. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio. Submit proposal and request and obtain Architect approval before proceeding with cut and patch of structural work.
- B. Operational Elements: Do not cut and patch the following operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.
1. Primary operational systems and equipment.
 2. Air or smoke barriers.
 3. Fire-protection systems.
 4. Control systems.
 5. Communication systems.
 6. Conveying systems.
 7. Electrical wiring systems.
- C. Miscellaneous Elements: Do not cut and patch the following elements or related components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety.
1. Water, moisture, or vapor barriers.
 2. Membranes and flashings.
 3. Exterior curtain-wall construction.
 4. Equipment supports.

5. Piping, ductwork, vessels, and equipment.
 6. Noise- and vibration-control elements and systems.
- D. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.
1. If possible, retain original Installer or fabricator to cut and patch exposed Work. If it is impossible to engage original Installer or fabricator, engage another recognized, experienced, and specialized firm.

1.07 WARRANTY

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials so as not to void existing warranties.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. General: Comply with requirements specified in other Sections of these Specifications.
- B. Existing Materials: Use materials identical to existing materials. For exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.
1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of existing materials.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.
1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
 2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

3.02 PREPARATION

- A. Temporary Support: Provide temporary support of Work to be cut.
- B. Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

- C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- D. Existing Services: Where existing services are required to be removed, relocated, or abandoned, bypass such services before cutting to minimize interruption of services to occupied areas.

3.03 PERFORMANCE

- A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
 - 1. Cut existing construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Cutting: Cut existing construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
 - 1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 - 2. Existing Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
 - 3. Concrete: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
 - 4. Excavating and Backfilling: Comply with requirements in applicable Sections where required by cutting and patching operations.
 - 5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
 - 6. Proceed with patching after construction operations requiring cutting are complete.
- C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections of these Specifications.
 - 1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
 - 2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
 - 3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove existing floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.

- a. Where patching occurs in a painted surface, apply primer and intermediate paint coats over the patch and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
4. Ceilings: Patch, repair, or rehang existing ceilings as necessary to provide an even-plane surface of uniform appearance.
5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition.

END OF SECTION

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SECTION 01 42 16**DEFINITIONS AND STANDARDS****PART 1 - GENERAL**

1.01 General Provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification sections, apply to work of this Section.

1.02 SECTION INCLUDES

- A. Definitions.
- B. Specification Format and Content Explanation
- C. Standards And Regulations.
- D. Specification Standards.
- E. Document Standards.

1.03 DEFINITIONS

A. Unless otherwise stated in the Contract Documents, words which have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings. In the event that there are other words or terms that need clarification within Contract Documents, reference and authority will be "Glossary of Construction Industry Terms," latest edition, published by The American Institute of Architects. If and to the extent that any part of the Contract Documents conflict, the documents shall be interpreted by the Architect who shall assign priority based on the intent of the Contract Documents.

B. GENERAL:

- 1. **A BID:** A complete and properly signed proposal to do the Work or designated portion thereof for the sums stipulated therein supported by data called for by the Bidding documents.
- 2. **ABBREVIATIONS, PLURAL WORDS:** Abbreviations, where not defined in the Contract Documents, will be interpreted to mean the normal construction industry terminology, determined by recognized grammatical rules, by the Architect. Plural words will be interpreted as singular and singular words will be interpreted as plural where applicable for context of Contract Documents.
- 3. **ADDENDA:** Written or graphic instruments issued by the Architect prior to execution of the contract which modify or interpret the Bidding Documents by addition, deletions, clarifications or corrections.
- 4. **APPROVED BY ARCHITECT:** In no case releases Contractor from responsibility to fulfill requirements of the Contract Documents. The term "approved," when used in conjunction with the Architect's action on the Contractor's submittals, applications, and

requests, is limited to the Architect's duties and responsibilities as stated in the Conditions of the Contract.

5. **ALTERNATE BID** (or Alternate): An amount stated in the Bid to be added to or deducted from the amount of the Base Bid if the corresponding change in the Work, as described in the Bidding Documents is accepted.
6. **AS-BUILT DRAWINGS** depict the final installed configuration (whether physical or functional). They indicate any construction deviations and show all features of the project as actually built. These drawings provide a permanent record of as-built conditions and aid as key references for future maintenance processes.
7. **BASE BID**: The sum stated in the Bid for which the Bidder offers to perform the Work described in the Bidding Documents as the base, to which work may be added or from which work may be deleted for sums stated in Alternate Bids.
8. **BIDDER**: A person or entity who submits a Bid to the Owner for the entire Work.
9. **BIDDING DOCUMENTS**: The Bidding Documents for the Work include the Invitation to Bid, Instructions to Bidders, the Bid Form, other sample Bidding Forms, Bond Forms, Certifications, the Conditions of the Contract (General, Supplementary and other Conditions), the Drawings, the Specifications, and all Addenda issued prior to and all modifications issued after execution of the Contract.
10. **CONTRACT DOCUMENTS**: The Contract Documents for the Work include the Bidder's Proposal as accepted by the Owner, the Purchase Order Agreement, Bond Forms, Certifications, the Conditions of the Contract (General, Supplementary and other Conditions), the Drawings, the Specifications, all Addenda issued prior to and all Modifications issued after execution of the Contract.
11. **COST OF THE WORK**: Cost of the Work (for the Contractor) shall include:
 - a. All "Out of Pocket" cost of labor;
 - b. All net, fully discounted, cost of materials, equipment, rentals of any kind that will be used or incorporated into the specific portion of the Work;
 - c. Net Cost of any subcontract required for a specific portion of the Work;
 - d. Net Cost of any project equipment rental charges used for a specific portion of the Work; and
 - e. General Conditions costs, costs of all non full-time working project supervision and other non-direct field personnel, including those specifically and directly involved in and participating in the active construction trade work of this project. Net Cost shall include the benefit of any trade discounts, rebates, refunds, or sales of surplus materials, except for discounts for cash or prompt payment.
12. **DIRECTED, REQUESTED, APPROVED, ACCEPTED, ETC.**: These terms imply "by Architect," unless otherwise indicated.
13. **FEE** (also called Overhead and Profit in the General Conditions): A Fee is that amount of compensation, in either percent (%) of dollars, or dollars (\$), that the Bidder will charge for that portion of work, service, product or materials requested in the Bid Form. The Fee shall not include the Cost of the Work.
14. **FLOAT or SLACK**: The amount of time between the early start date in the late start date, or the early finish date in the late finish date, of any of the activities in the schedule. Float or slack is not for the exclusive use of or benefit of either the Owner or Contractor. Extensions of time for performance required under the contract will be granted only to the extent the equitable time adjustment for the activity or activities affected exceeds the total float or slack along the work sequences involved at the time notice to proceed with issued for the change.

15. **FURNISH:** Supply and deliver to project site, ready for unloading, unpacking, assembly, installation and similar subsequent requirements.
16. **GENERAL REQUIREMENTS:** The provisions of Division 1 sections, General Requirements, apply to the entire work of the Contract.
17. **INDICATED:** The term "indicated" refers to graphic representations, notes, or schedules on the Drawings, or other paragraphs or Schedules in the Specifications, and similar requirements in the Contract Documents. Terms such as "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated," and are used to assist the reader locate the reference. Location is not limited.
18. **INSTALL:** Operations at project site, including unloading, unpacking, assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning and similar requirements.
19. **INSTALLER:** An installer is the Contractor or another entity engaged by the Contractor, either as an employee, subcontractor, or contractor of lower tier, to perform a particular construction activity, including installation, erection, application, or similar operations. Installers are required to be experienced in the operations they are engaged to perform.
 1. The term "experienced," when used with the term "installer," means having a minimum of (5) previous projects similar in size and scope to this Project, being familiar with the special requirements indicated, and having complied with requirements of authorities having jurisdiction.
 2. Trades: Using terms such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to tradespersons of the corresponding generic name.
 3. Assigning Specialists: Certain Sections of the Specifications require that specific construction activities shall be performed by specialists who are recognized experts in those operations. The specialists must be engaged for those activities, and their assignments are requirements over which the Contractor has no option. However, the ultimate responsibility for fulfilling contract requirements remains with the Contractor.
 - a. This requirement shall not be interpreted to conflict with enforcing building codes and similar regulations governing the Work. It is also not intended to interfere with local trade-union jurisdictional settlements and similar conventions.
20. **LABOR BURDEN:** "Labor burden" is that cost to the Bidder for any and all costs to be added to the actual gross dollar salary or wages costs of labor, including but not limited to, employer's F.I.C.A., F.U.D.A., federal, state or other unemployment, old age, health, dental, disability or other medical insurance, Workers' Compensation, retirement pension or dues to any union or other organization and any and all fringe benefits.
21. **MINIMUM REQUIREMENTS:** Indicated requirements are for a specific minimum acceptable level of quality/quantity as recognized in the industry. Actual work must comply (within specified tolerances) or may exceed minimums within reasonable limits. Refer uncertainties to Architect before proceeding.
22. **MOBILIZATION:** The costs incurred by the Contractor to put into place all equipment, materials, protection devices, temporary field offices, and storage facilities required for a particular project in a location designated by the Owner.

23. **OUT-OF-POCKET:** "Out-of-pocket" cost of labor is the gross dollar salary or wages incurred by the Contractor and paid to any employee for actual work "on the job site" and shall include any or all of the costs defined as "labor burden". NOTE: When determining Direct "Out-of-Pocket" Labor for Unit Cost pricing, the total for such Labor costs shall include all the Contractor's Fees.
24. **OVERLAPPING/CONFLICTING REQUIREMENTS:** Most stringent (generally) language written directly into the Contract Documents is intended and will be enforced. Refer uncertainties to Architect for a decision before proceeding.
25. **PRODUCT DATA:** Illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.
26. **PROJECT SITE:** Space available to Contractor at location of project, either exclusively or to be shared with separate contractors, for performance of the work.
27. **PROVIDE:** Provide and variants thereof, as used herein shall mean furnishing and installation of all labor, materials, equipment, transportation, and services rendered ready for intended use
28. **PUNCH LIST:** A list prepared at the inspection scheduled to establish substantial completion which shall have each page signed by a designee of the Contractor, of the Architect, of the Representative of the Owner listing items of work identified as being still incomplete or requiring correction. The Architect shall have the authority to determine whether an item shall be included on the punch list. Copies of the signed punch list shall be distributed immediately after signatures to all those signing with the original and one copy transmitted to the designee of the Owner's Representative.
29. **REGULATIONS:** The term "regulations" includes laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, as well as rules, conventions, and agreements within the construction industry that control performance of the Work.
30. **SAMPLES:** Physical examples which illustrate materials, equipment or workmanship and established standards by which the Work will be judged.
31. **SHOP DRAWINGS:** Drawings, diagrams, schedules and other data specially prepared for the Work by the Contractor or a subcontractor, sub-subcontractor, manufacturer, supplier or distributor to illustrate some portion of the Work.
32. **SPECIFICATION TEXT FORMAT:** Underscoring facilitates scan reading, no other meaning. Imperative language is directed at Contractor, unless otherwise noted.
33. **SUB-BIDDER:** A person or entity who submits a Bid to a Bidder for materials or labor for a portion of the Work.
34. **SUBSTANTIAL COMPLETION:** The Date of substantial completion of the Work or designated portion thereof (under this contract) is the date certified by the Architect, on Document G704, that the Work is sufficiently complete, in accordance with the Contract Documents, so the Owner can occupy or utilize the Work thereof for the use for which it was intended.
35. **TESTING AGENCIES:** A testing agency is an independent entity engaged to perform specific inspections or tests, either at the Project Site or elsewhere, and to report on and, if required, to interpret results of those inspections or tests. A testing agency shall not have any relation with the Contractor, either by Ownership or share.
36. **UNIT PRICE:** An amount stated in the Bid as a price per unit of measurement for materials or services as described in the Bidding Documents or in the proposed Contract Documents.

37. **UNFORESEEN ADVERSE CONDITION:** An existing adverse condition that could not be reasonably expected or that could be foreseen to exist.
38. **WARRANTY/GUARANTEE:** The words Warranty or Guarantee as used in these Project Documents shall be synonymous and interchangeable.
39. **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. Contractor acknowledges and agrees that the Contract Documents are adequate and sufficient to provide for the completion of the Work, and include all work, whether or not shown or described, which reasonably may be inferred to be required or useful for the completion of the Work in accordance with all applicable laws, codes and/or standards.

1.04 SPECIFICATION FORMAT AND CONTENT EXPLANATION

- A. Specification Format: These Specifications are organized into Divisions and Sections based on the Construction Specification Institute's (CSI) 48-Division format and MASTERFORMAT numbering system, 2014 Edition.
 1. Title: The Specifications are divided into division and section for the convenience of writing and using. The titles of these are not intended to imply a particular meaning or to fully describe the work of each division, subdivision, or section and are not an integral part of the text that specifies the requirements.
 2. 3-Part Section: Each section of Specifications has been subdivided into 3 'parts' for uniformity and convenience (Part 1 - General, Part 2 - Products, and Part 3 - Execution). These do not imply a particular meaning and are not an integral part of the text that specifies requirements. Where text for one of the parts is lacking due to project requirements, the part title is included followed by the words, 'Not Used', or "Not Applicable to This Section."

1.05 STANDARDS AND REGULATIONS

- A. **INDUSTRY STANDARDS:** Applicable standards of construction industry have same force and effect on performance of the work as if copied directly into the Contract Documents or bound and published therewith. Standards referenced in the Contract Documents or in governing regulations have precedence over non-referenced standard insofar as different standards may contain overlapping of conflicting requirements. Comply with standards in effect as of the date of the Contract Documents.
- B. **Conflicting Requirements:** Where compliance with two or more standards is specified and where the standards may establish, different or conflicting requirements for minimum quantities or quality levels, refer requirements that are different but apparently equal and uncertainties to the Architect for a decision before proceeding.
 1. **Minimum Quantity or Quality Levels:** The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of the requirements.

- C. Copies of Standards: Each entity engaged in construction on Project must be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.
 - 1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from the publication source and make them available on request.
- D. ABBREVIATIONS: Abbreviations and acronyms are frequently used in the Specifications and other Contract Documents to represent the name of a trade association, standards-developing organization, authorities having jurisdiction, or other entity in the context of referencing a standard or publication. Where abbreviations and acronyms are used in the Specifications or other Contract Documents, they mean the recognized name of these entities. Refer to Gale Research's "Encyclopedia of Associations" or Columbia Books' "National Trade & Professional Associations of the U.S.," which are available in most libraries.
- E. TRADE UNION JURISDICTIONS: Maintain current information on jurisdictional matters, regulations, actions, and pending actions, and administer/supervise performance of work in a manner which will minimize possibility of disputes, conflicts, delays, claims or losses.

1.06 SPECIFICATION STANDARDS

- A. The intent of the specifications is to outline or indicate items of work, or both, which cannot be readily shown on the drawings and, further, to indicate types and qualities of products. Drawings and specifications shall be considered as being complimentary and items of work indicated in one and not the other shall be included as if mentioned in both except items noted "Not in Contract" or "N.I.C."
- B. Publication Dates: Comply with standards in effect as of the date of the Contract Documents, unless otherwise indicated.
- C. Conflicting Requirements: Where compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to Architect for a decision before proceeding.
 - 1. If and to the extent any part of the Contract Documents conflict, the documents shall be interpreted by the Architect who shall assign priority based on the intent of the Contract Documents.
 - 2. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of the requirements. Refer uncertainties to Architect for a decision before proceeding.
- D. Contractor shall notify Architect of any condition he finds where, in his judgement, it would be desirable to modify requirements to produce best results. If Contractor fails to so notify Architect, or if his recommendations for modifications are accepted, Contractor assumes sole responsibility for satisfactory results.

- E. The Drawings are not intended to be scaled for roughing in measurements, or to serve as Shop Drawings.
- F. It is recognized that locations of the work indicated on the drawings is diagrammatic, except for figures and dimensions, and that field conditions may arise that will prevent their being installed, as noted on drawings, within limits established by figures on drawings. Therefore, it shall be duty of Contractor and each Subcontractor to consult with each other, verifying existing conditions or location of work, etc., to submit workable solution to Architect for approval before installing any work which is questionable.
- G. Where a typical or representative detail is shown on the Drawings, this detail shall constitute the standard in workmanship and materials throughout corresponding parts of the work. Where necessary, the Contractor shall adopt such detail for use in such corresponding portions of the Work in a manner that is satisfactory to the Architect.
- H. Apparent silence of specifications as to any detail or apparent omission from item of detailed description concerning any work to be done and materials to be furnished shall be regarded as meaning that only best general practice is to prevail and that only material and workmanship of first quality is to be used in this connection, and all interpretations of these specifications shall be made upon this basis.
- I. Where "as directed," "as required," "as permitted," "as approved," "as accepted," "as submitted to," "as inspected by," "as satisfactory to," or similar phrases are used in these specifications they shall mean that material, work or item referred to shall be "as directed," "as required," "as permitted," "as approved," "as accepted," "as submitted to," "as inspected by," "as satisfactory to," to Architect.
- J. Portions of the Specifications are of the abbreviation or "stream-line" type and include incomplete sentences. Omissions of words or phrases such as "Contractor shall," "in conformity therewith," "shall be," "as noted on drawings," "according to plans," "a," "an," "the," and "all" are intentional. Omitted words or phrases shall be supplied by inference in the same manner as they are when a "note" occurs on drawings.
- K. Notwithstanding the appearance of such language in the various sections of the specifications as "The Plumbing Contractor," "The Electrical Contractor," "The General Contractor," etc., the Contractor is responsible for the entire contract and the execution of all work referred to in the Contract Documents.
- L. The use of a word in the singular shall not be considered as limiting where other indications denote that more than one item is referred to. The determining of correct quantities shall be the sole responsibility of the Contractor.
- M. Attention is directed to the fact that the detailed specifications and separate sections may be written in short or abridged form. In regard to every Section of the specifications and all parts thereof mentioned therein or indicated on the drawings of articles, products, operations or methods require that the Contractor:
 - 1. Provide each item mentioned and indicated of quality noted;
 - 2. Perform, according to conditions stated, each operation prescribed;

3. Provide therefore all necessary labor, equipment and incidentals.

- N. Manufacturer's Specifications: Where the name of a concern or manufacturer is mentioned on the drawings or in the specifications in reference to his required service or product, and no qualifications or specification of such is included, then the material gauges, details of manufacture, finish, etc., shall be in accordance with his standard practice, directions or specifications. The Contractor shall be responsible for any infringement of patents, royalties or copyrights which may be incurred thereby.
- O. Reference to Standard Specifications: Where reference is made to the standard specifications of the American Society for Testing and Materials (ASTM), United States Government Federal Specifications, or to other standard specifications of manufacturer's organizations or trades in connection with the required quality of material, methods, installation, etc., then the applicable provisions shall be of the latest revised edition unless otherwise specifically stated and apply as if fully written therein.
- P. Miscellaneous: Where required hereunder to effectuate the intent of the Contract Documents, masculine shall mean neuter or feminine and the singular shall mean the plural.

1.06 DOCUMENT STANDARDS

- A. The documents are intended to show the general arrangements, design and extent of the work and are partly diagrammatic. They are not intended to be scaled for roughing-in measurements or to serve as shop drawings. Where a typical or representative detail is shown (whether indicated "typical" or not) this detail shall constitute the standard in workmanship and materials throughout corresponding parts of the work. Adaptation, however, shall be subject to the approval of the Architect.
- B. If directed by the Architect, the Contractor shall, without extra charge, make reasonable modifications in the layout as needed to prevent conflict with work of other trades or for proper execution of the work.

PART 2 - PRODUCTS Not Used.

PART 3 - EXECUTION Not Used.

END OF SECTION

SECTION 01 41 19

REFERENCE STANDARDS

PART 1 - GENERAL

1.01 General Provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification sections, apply to work of this Section.

1.02 SECTION INCLUDES

- A. Quality assurance.
- B. References
- C. Schedule of references.

1.03 QUALITY ASSURANCE

- A. For products or workmanship specified by association, trade, or Federal Standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. Conform to reference standard by date of issue current on date for receiving bids, unless otherwise specified in product sections.
- C. Obtain copies of standards when required by Contract Documents.
- D. Maintain copy at jobsite during submittals, planning, and progress of the specific work, until Substantial Completion.
- E. Should specified reference standards conflict with Contract Documents, request clarification from Architect before proceeding.
- F. The contractual relationship of the parties to the Contract shall not be altered from the Contract Documents by mention or inference otherwise in any reference document.

1.04 REFERENCES

- A. Various publications are referenced in other sections of the specifications to establish requirements for the work. These references are identified in each section by document number and title.
- B. Ordering Information: Documents listed in the specifications with numbers which were not assigned by the standards producing organization should be ordered from the source by title rather than by number.

1.05 SCHEDULE OF REFERENCES

ACI INTERNATIONAL (ACI)
38800 Country Club Drive
Farmington Hills, MI 48331
Ph: 248-848-3700
Internet: <http://www.concrete.org>

ALUMINUM ASSOCIATION (AA)
National Headquarters
1525 Wilson Boulevard, Suite 600
Arlington, VA 22209
Ph: 703-358-2960
Internet: <http://www.aluminum.org>

AMERICAN ARCHITECTURAL MANUFACTURERS
ASSOCIATION (AAMA)
1827 Walden Ofc. Sq., Suite 550
Schaumburg, IL 60173-4268
Ph: 847-303-5664
Internet: <http://www.aamanet.org>

AMERICAN FOREST & PAPER ASSOCIATION
(AF&PA)
American Wood Council
ATTN: Publications Department
1111 Nineteenth Street NW, Suite 800
Washington, DC 20036
Ph: 800-890-7732 or 202-463-2766
Internet: <http://www.awc.org/>

AMERICAN INSTITUTE OF STEEL CONSTRUCTION
(AISC)
One East Wacker Drive, Suite 700
Chicago, IL 60601-1802
Ph: 312-670-2400
Fax: 312-670-5403
Publications: 800-644-2400
Internet: <http://www.aisc.org>

AMERICAN IRON AND STEEL INSTITUTE (AISI)
1140 Connecticut Avenue, NW, Suite 705
Washington, DC 20036
Ph: 202-452-7100
Internet: <http://www.steel.org>

AMERICAN NATIONAL STANDARDS INSTITUTE
(ANSI)
1819 L Street, NW, 6th Floor
Washington, DC 20036
Ph: 202-293-8020
Internet: <http://www.ansi.org/>

AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE)
1801 Alexander Bell Drive
Reston, VA 20191-4400
Ph: 703-295-6300 - 800-548-2723
Internet: <http://www.asce.org>

ASTM INTERNATIONAL (ASTM)
100 Barr Harbor Drive, P.O. Box C700
West Conshohocken, PA 19428-2959
Ph: 610-832-9585
E-mail: service@astm.org
Internet: <http://www.astm.org>

AMERICAN SOCIETY OF HEATING, REFRIGERATING
AND AIR-CONDITIONING
ENGINEERS (ASHRAE)
1791 Tullie Circle, NE
Atlanta, GA 30329
Ph: 800-527-4723 or 404-636-8400
Internet: <http://www.ashrae.org>

AMERICAN WELDING SOCIETY (AWS)
550 N.W. LeJeune Road
Miami, FL 33126
Ph: 800-443-9353 - 305-443-9353
E-mail: info@aws.org or
customerservice@awspubs.com
Internet: <http://www.aws.org>

AMERICAN WOOD PROTECTION ASSOCIATION
(AWPA)
P.O. Box 361784
Birmingham, AL 35236-1784
Ph: 205-733-4077
Internet: <http://www.awpa.com>

APA - THE ENGINEERED WOOD ASSOCIATION
(APA)
7011 South 19th St.
Tacoma, WA 98466-5333
Ph: 253-565-6600
E-mail: help@apawood.org
Internet: <http://www.apawood.org>

ASPHALT ROOFING MANUFACTURER'S
ASSOCIATION (ARMA)
529 14th Street, NW
Washington D.C. 20045
Ph: 202-207-0917
Internet: <http://www.asphaltroofing.org>

COPPER DEVELOPMENT ASSOCIATION (CDA)
260 Madison Avenue
New York, NY 10016
Ph: 212-251-7200
Internet: <http://www.copper.org>

FM GLOBAL (FM)
270 Central Avenue
P.O. Box 7500
Johnston, RI 02919
Ph: 401-275-3000 ext. 1945
Internet: <http://www.fmglobal.com>

GYPSUM ASSOCIATION (GA)
6525 Belcrest Road, Suite 480
Hyattsville, MD 20782
Ph: 301-277-8686
E-mail: info@gyplsum.org
Internet: <http://www.gypsum.org>

ICC EVALUATION SERVICE, INC. (ICC-ES)
5360 Workman Mill Road
Whittier, CA 90601
Ph: 562-699-0543
Internet: <http://www.icc-es.org>

INDUSTRIAL FASTENERS INSTITUTE (IFI)
6363 Oak Tree Boulevard
Independence, OH 44131
Ph: 216-241-1482
Internet: <http://www.industrial-fasteners.org>

INTERNATIONAL CODE COUNCIL (ICC)
5360 Workman Mill Road
Whittier, CA 90601
Ph: 1-888-422-7233
Internet: www.iccsafe.org

INTERNATIONAL CONCRETE REPAIR INSTITUTE
(ICRI)
3166 South River Road, Suite 132
Des Plaines, IL 60018
Ph: 847-827-0830
Internet: <http://www.icri.org>

INTERNATIONAL ORGANIZATION FOR
STANDARDIZATION (ISO)
1, ch. de la Voie-Creuse
Case Postale 56
CH-1211 Geneve 20 Switzerland
Ph: 41-22-749-01-11
Internet: <http://www.iso.org>

METAL BUILDING MANUFACTURERS ASSOCIATION
(MBMA)
1300 Sumner Avenue
Cleveland, OH 44115-2851
Ph: 216-241-7333
Internet: <http://www.mbma.com>

NATIONAL ASSOCIATION OF ARCHITECTURAL
METAL MANUFACTURERS (NAAMM)
800 Roosevelt Road, Bldg C, Suite 312
Glen Ellyn, IL 60137
Ph: 630-942-6591
Internet: <http://www.naamm.org>

NATIONAL CONCRETE MASONRY ASSOCIATION
(NCMA)
13750 Sunrise Valley Drive
Herndon, VA 20171-4662
Ph: 703-713-1900
Internet: <http://www.ncma.org/Pages/default.aspx>

NATIONAL ELECTRICAL MANUFACTURERS
ASSOCIATION (NEMA)
1300 North 17th Street, Suite 1752
Rosslyn, VA 22209
Ph: 703-841-3200
Internet: <http://www.nema.org/>

NATIONAL FENESTRATION RATING COUNCIL
(NFRC)

6305 Ivy Lane, Suite 140

Greenbelt, MD 20770

Ph: 301-589-1776

Internet: <http://www.nfrc.org>

NATIONAL FIRE PROTECTION ASSOCIATION
(NFPA)

1 Batterymarch Park

Quincy, MA 02169-7471

Ph: 617-770-3000 or 800-344-3555

Internet: <http://www.nfpa.org>

NATIONAL INSTITUTE OF STANDARDS AND
TECHNOLOGY (NIST)

100 Bureau Drive

Stop 1070

Gaithersburg, MD 20899-1070

Ph: 301-975-6478

Internet: <http://www.nist.gov>

NATIONAL READY MIXED CONCRETE
ASSOCIATION (NRMCA)

900 Spring Street

Silver Spring, MD 20910

Ph: 240-485-1165

Internet: <http://www.nrmca.org>

NATIONAL ROOFING CONTRACTORS
ASSOCIATION (NRCA)

10255 West Higgins Road, Suite 600

Rosemont, IL 60018-5607

Ph: 847-299-9070

Internet: <http://www.nrca.net>

PRECAST/PRESTRESSED CONCRETE INSTITUTE
(PCI)

209 West Jackson Blvd. #500

Chicago, IL 60606

Ph: 312-786-0300

Internet: <http://www.pci.org>

SHEET METAL AND AIR CONDITIONING
CONTRACTORS' NATIONAL ASSOCIATION
(SMACNA)

4201 Lafayette Center Drive

Chantilly, VA 20151-1219

Ph: 703-803-2980

Internet: <http://www.smacna.org>

SINGLE PLY ROOFING INDUSTRY (SPRI)

411 Waverley Oaks Road, Suite 331B

Waltham, MA 02452

Ph: 781-647-7026

Internet: <http://www.spri.org>

SPRAY POLYURETHANE FOAM ALLIANCE (SPFA)

4400 Fair Lakes Court, Suite 105

Fairfax, VA 22033

Ph: 800-523-6154

Internet: <http://www.sprayfoam.org>

SOLAR RATING AND CERTIFICATION CORPORATION
(SRCC)

1679 Clearlake Road

Cocoa, FL 32922-5703

Ph: 321-638-1537

Internet: <http://www.solar-rating.org>

SOUTHERN PINE INSPECTION BUREAU (SPIB)

P.O. Box 10915

Pensacola, FL 32504-0915

Ph: 850-434-2611

Internet: <http://www.spib.org>

STEEL DECK INSTITUTE (SDI)

P.O. Box 25

Fox River Grove, IL 60021

Ph: 847-458-4647

Internet: <http://www.sdi.org>

STEEL DOOR INSTITUTE (SDI/DOOR)

c/o Steel Door Institute

30200 Detroit Road

Cleveland, OH 44145-1967

Ph: 440-899-0010

Internet: <http://www.steeldoor.org>

STEEL JOIST INSTITUTE (SJI)

1173B London Links Drive

Forest, VA 24551

Ph: 434-525-7377

Internet: <http://www.steeljoist.org>

STEEL WINDOW INSTITUTE (SWI)
1300 Sumner Avenue
Cleveland, OH 44115-2851
Ph: 216-241-7333
Internet: <http://www.steelwindows.com>

THE SOCIETY FOR PROTECTIVE COATINGS (SSPC)
40 24th Street, 6th Floor
Pittsburgh, PA 15222-4656
Ph: 412-281-2331
Internet: <http://www.sspc.org>

TILE COUNCIL OF NORTH AMERICA (TCNA)
100 Clemson Research Boulevard
Anderson, SC 29625
Ph: 864-646-8453
Internet: <http://www.tileusa.com>

TRUSS PLATE INSTITUTE (TPI)
218 N. Lee Street, Suite 312
Alexandria, VA 22314
Ph: 703-683-1010
Internet: <http://www.tpinst.org>

UNDERWRITERS LABORATORIES (UL)
2600 N.W. Lake Road
Camas, WA 98607-8542
Ph: 877-854-3577
Internet: <http://www.ul.com/>
UL Directories available through IHS at
<http://www.ihs.com>

U.S. DEPARTMENT OF TRANSPORTATION (DOT)
1200 New Jersey Ave. SE
Washington, DC 20590
Ph: 202-366-4000
Internet: <http://www.dot.gov>

U.S. ENVIRONMENTAL PROTECTION AGENCY
(EPA)
Ariel Rios Building
1200 Pennsylvania Avenue, N.W.
Washington, DC 20004
Ph: 202-272-0167
Internet: <http://www.epa.gov>

--- Some EPA documents are available only from:
National Technical Information Service (NTIS)
5301 Shawnee Road
Alexandria, VA 22312
Ph: 703-605-6050 or 1-688-584-8332
Internet: <http://www.ntis.gov>

WEST COAST LUMBER INSPECTION BUREAU
(WCLIB)
P.O. Box 23145
Tigard, OR 97281
Ph: 503-639-0651
Internet: <http://www.wclib.org>

WESTERN WOOD PRESERVERS INSTITUTE (WWPI)
7017 N.E. Highway 99 Suite 108
Vancouver, WA 98665
Ph: 360-693-9958
Internet: <http://www.wwpinstitute.org>

WESTERN WOOD PRODUCTS ASSOCIATION
(WWPA)
Yeon Building
522 SW 5th Avenue
Suite 500
Portland, OR 97204-2122
Ph: 503-224-3930
Internet: <http://www.wwpa.org>

WINDOW AND DOOR MANUFACTURERS
ASSOCIATION (WDMA)
401 N. Michigan Ave., Suite 2200
Chicago, IL 60611
Ph: 312-321-6802
Internet: <http://www.wdma.com>

PART 2 - PRODUCTS Not Used.

PART 3 - EXECUTION Not Used.

END OF SECTION

SECTION 01 45 00

QUALITY CONTROL

PART 1 - GENERAL

1.01 General Provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification sections, apply to work of this Section.

1.02 SECTION INCLUDES

- A. Summary.
- B. Definitions.
- C. Standard Requirements.
- D. Identification of Employees.
- E. Quality Assurance/control of Installation.
- F. Delegated Design.
- G. Authorization For Tests.
- H. Authority of Testing Agency.
- I. Submittals.
- J. Quality Assurance.
- K. Quality Control.
- L. Repair and Protection.
- M. Mock-up.

1.03 SUMMARY

- A. This Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.

1. Specific quality-control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
 2. Specified tests, inspections, and related actions do not limit Contractor's quality-control procedures that facilitate compliance with the Contract Document requirements.
 3. Requirements for Contractor to provide quality-control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.
- C. General requirements for tests and inspections which may be required by code authorities, the Architect, or by the Contract Documents. Specific test types and requirements are specified in other Sections of these specifications. Where a date of any specific test designation, specification, or test method is not indicated, provide all information in accordance with the latest published edition of that document.

1.04 DEFINITIONS

- A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and ensure that proposed construction complies with requirements.
- B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that completed construction complies with requirements. Services do not include contract enforcement activities performed by Architect.
- C. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.

1.05 STANDARD REQUIREMENTS

- A. Maintain the existing building and site in a safe condition throughout the construction period. Repair damage caused by construction operations.
- B. Smoking or open fires will not be permitted within the building enclosure or on the premises, except as otherwise prearranged.
- C. The Contractor shall maintain an orderly work place and conduct themselves in a proper professional manner. Use of radios, hi-fi equipment or other disturbing noises will not be tolerated.
- D. Work may be executed on Saturdays, and non-religious holidays with written approval by the Owner's representative. The Owner shall be notified at least (7) days in advance of planned weekend work.
- E. Lock automotive type vehicles, such as passenger cars, trucks and other mechanized or motorized construction equipment, when parked and unattended in order to prevent unauthorized use. Do not leave such vehicles or equipment unattended with the motor running or the ignition key in place. Protect against "attractive nuisance," injury to equipment, and/or people.

- F. There shall be no interruption of alarm systems, intercoms, emergency or exit lighting, or automatic operation of fire doors or smoke compartmentalization doors, or the blocking or inhibiting access to any exit way without prior approval by Owner.

1.06 IDENTIFICATION OF EMPLOYEES

- A. Contractor's personnel shall be easily identified by official company badges (or other approved identification method by Owner). Contractor shall log each name on the back of the Daily Construction Report or as otherwise acceptable to Architect.
- B. Compliance with Jessica Lunsford Act is required. Refer to the School Board's website, <http://www.sdhc.k12.fl.us/doc/164/>

1.07 QUALITY ASSURANCE / CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, Products, services, site conditions, and workmanship, to produce Work of specified quality.
- B. Provide measuring devices, film thickness gauges, multi-purpose moisture meters, or any other device necessary to produce the results specified in this Project Manual.
- C. Comply fully with manufacturers' instructions, including each step in sequence.
- D. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect before proceeding.
- E. Comply with specified standards as a minimum quality for the Work except when more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- F. Perform work by persons qualified to produce workmanship of specified quality.
- G. Secure Products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion or disfigurement.
- H. Provide complete protection of any warranted construction or equipment on the construction covered by this Work. Examine the site before the start of work and report any undesirable condition and report to Architect immediately.

1.08 DELEGATED DESIGN

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated in Contract drawings and specifications.
 - 1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.

1.09 AUTHORIZATION FOR TESTS

- A. The Owner and/or Architect may order independent tests or may conduct their own.
- B. The Owner employed testing agency shall be directed by the Architect as to the type, quantity and location of testing. The Contractor shall not obligate the Owner for tests without the Architect's approval. Unless specified otherwise, the Contractor shall notify the Architect when work is ready for specification required tests a minimum of (48) hours in advance.
- C. Contractor shall employ an independent testing agency to check soil density, concrete strength and unit weights.

1.10 AUTHORITY OF TESTING AGENCY

- A. The testing agency shall gather samples and test the various materials as specified to be tested and shall report to the Architect the quality thereof. Also, when it appears that the materials furnished and work performed by the Contractor fails to fulfill specification requirements, the testing agency shall direct the attention of the Contractor to such failure or infringement and shall inform the Architect of the occurrence in writing.
- B. Representatives of the testing agency are not authorized to revoke, alter, relax, enlarge or release any requirement of the specifications, not to approve, accept or reject any portion of the work.
- C. Representatives of the testing agency shall not act as foreman or perform other duties for the Contractor.

1.11 SUBMITTALS

- A. Qualification Data: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.
- B. Delegated-Design Submittal: In addition to Shop Drawings, Product Data, and other required submittals, submit a statement, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional, indicating that the products and systems are in compliance with performance and design criteria indicated in Contract drawings and specifications. Include list of codes, loads, and other factors used in performing these services.
- C. Schedule of Tests and Inspections: Prepare in tabular form and include the following:
 - 1. Specification Section number and title.
 - 2. Description of test and inspection.
 - 3. Identification of applicable standards.
 - 4. Identification of test and inspection methods.
 - 5. Number of tests and inspections required.
 - 6. Time schedule or time span for tests and inspections.
 - 7. Entity responsible for performing tests and inspections.

8. Requirements for obtaining samples.
- D. Reports: Prepare and submit certified written reports that include the following:
1. Date of issue.
 2. Project title and number.
 3. Name, address, and telephone number of testing agency.
 4. Dates and locations of samples and tests or inspections.
 5. Description of the Work and test and inspection method.
 6. Identification of product and Specification Section.
 7. Complete test or inspection data.
 8. Test and inspection results and an interpretation of test results.
 9. Ambient conditions at time of sample taking and testing and inspecting.
 10. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
 11. Recommendations on retesting and reinspecting.
- E. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.12 QUALITY ASSURANCE

- A. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- B. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- C. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
- D. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance.
- E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar to those indicated for this Project in material, design, and extent.

- F. Specialists: Certain sections of the Specifications require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated. Requirement for specialists shall not supersede building codes and similar regulations governing the Work, nor interfere with local trade-union jurisdictional settlements and similar conventions.
- G. Testing Agency Qualifications: An agency with the experience and capability to conduct testing and inspecting indicated, as documented by ASTM E 548, and that specializes in types of tests and inspections to be performed.

1.13 QUALITY CONTROL

- A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.
 - 1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of the types of testing and inspecting they are engaged to perform.
 - 2. Payment for these services will be made from testing and inspecting allowances, as authorized by Change Orders.
 - 3. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor, and the Contract Sum will be adjusted by Change Order.
 - 4. When the initial tests indicate non-compliance with the Contract Documents, the initial testing and any subsequent retesting occasioned by non-compliance shall be performed by the same agency and the cost thereof borne by the Contractor.
 - 5. Inspections or tests required by codes or ordinances, or by a plan approval authority, and made by a legally constituted authority, shall be the responsibility of the Contractor.
 - 6. Inspections or testing performed exclusively for the Contractor's convenience shall be the sole responsibility of the Contractor.
- B. Contractor Responsibilities: Unless otherwise indicated, provide quality-control services specified and required by authorities having jurisdiction.
 - 1. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
 - a. Contractor shall not employ the same entity engaged by Owner, unless agreed to in writing by Owner.
 - 2. Notify testing agencies at least (24) hours in advance of time when Work that requires testing or inspecting will be performed.
 - 3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
 - 4. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
 - 5. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.

- C. Special Tests and Inspections: Owner will engage a testing agency to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner.
 - 1. Testing agency will notify Architect and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
 - 2. Testing agency will submit a certified written report of each test, inspection, and similar quality-control service to Architect with copy to Contractor and to authorities having jurisdiction.
 - 3. Testing agency will submit a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
 - 4. Testing agency will interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.
 - 5. Testing agency will retest and reinspect corrected work.
- D. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing.
- E. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that revised or replaced Work that failed to comply with requirements established by the Contract Documents.
- F. Testing Agency Responsibilities: Cooperate with Architect and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
 - 1. Notify Architect and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
 - 2. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
 - 3. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
 - 4. Do not release, revoke, alter, or increase requirements of the Contract Documents or approve or accept any portion of the Work.
 - 5. Do not perform any duties of Contractor.
- G. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
 - 1. Access to the Work.
 - 2. Incidental labor and facilities necessary to facilitate tests and inspections.
 - 3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
 - 4. Facilities for storage and field-curing of test samples.
 - 5. Preliminary design mix proposed for use for material mixes that require control by testing agency.
 - 6. Security and protection for samples and for testing and inspecting equipment at Project site.

- H. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and quality-control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
 - 1. Schedule times for tests, inspections, obtaining samples, and similar activities.
 - 2. Coordinate and schedule on-site testing with the Owner's or Contractor's testing agency and provide access at all times work is in progress.
 - 3. Deliver to the laboratory, without cost, adequate quantities of representative samples of the materials he proposes to use and which are required to be tested.
 - 4. Provide adequate facilities for safe storage and proper curing of test samples on the project site for the first (24) hours and also for subsequent field curing as required by ASTM specifications.
 - 5. Furnish such labor as is necessary to obtain and handle samples at the project site.
 - 6. Furnish such labor and material as is necessary to patch, repair or otherwise return the test area to its original condition before the test.

PART 2 - PRODUCTS Not Used.

PART 3 - EXECUTION

3.01 REPAIR AND PROTECTION

- A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
 - 1. Comply with the Contract Document requirements for Division 1 Section "Cutting and Patching."
- B. Protect construction exposed by or for quality-control service activities.
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

3.02 MOCK-UP

- A. Tests will be performed under provisions identified in this section.
- B. Assemble and erect specified items, with specified attachment and anchorage devices, flashings, seals, and finishes.
- C. Where mock-up is specified in individual Sections to be removed, clear area after mock-up has been accepted by Architect unless "mock-up" is to remain as a specification standard. This "mock-up" shall remain in place until the project is completed and shall constitute the job standard for each surface and/or set of finishes.

END OF SECTION

SECTION 01 50 00

TEMPORARY FACILITIES AND UTILITIES

PART 1 - GENERAL

1.01 General Provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification sections, apply to work of this Section.

1.02 SECTION INCLUDES

- A. Scope.
- B. Ownership And Liability.
- C. Temporary Sanitary Facilities.
- D. Sewage Connections
- E. Temporary Utilities.
- F. Signs.
- G. Barriers.
- H. Fencing.
- I. Protection of Installed Work.
- J. Progress Cleaning

1.03 SCOPE

- A. Provide and maintain temporary facilities and utilities as long as may be required for the safe and proper completion of the work and as required to perform work indicated in Contract Documents as specified herein. At the conclusion of the work, or at such other time as directed by the Architect, remove all such temporary facilities and utilities from the site and restore existing grounds and building to original conditions.

1.04 OWNERSHIP AND LIABILITY

- A. During the entire time of the work, temporary facilities and utilities shall remain the property of the Contractor whose responsibility it shall be to ensure such facilities and their premises against loss or liability consistent with the provisions of the General Conditions.

1.05 TEMPORARY SANITARY FACILITIES

- A. The use of existing toilet rooms by the Contractor's personnel will not be permitted. Contractor shall, at the beginning of work, provide on premises suitable temporary toilets and enclosures for use of the workmen on the job and maintain them in sanitary condition. Temporary toilets shall be located as directed by the Owner.
- B. The Contractor shall provide and maintain in a neat and sanitary condition such as portable accommodations for the use of his employees as may be necessary to comply with regulations of the State Board of Health. Contractor shall not allow any sanitary nuisances to be committed in or about the work. He shall enforce sanitary regulations of local and state health authorities.

1.06 SEWAGE CONNECTIONS

- A. The Contractor may, at his own expense, tie into existing sanitary sewer lines for temporary construction site restroom facilities. Upon removal of such at the Projects completion, such sewers shall be restored. All sewage connections shall be installed in accordance with Code, and shall have a reasonable number of cleanouts.

1.07 TEMPORARY UTILITIES

- A. Electricity:
 - 1. Contractor may utilize the present electrical and lighting system for which the Owner will pay the monthly electrical charges.
 - 2. The use of Owner's 110-120V (and 220V, if available) electrical service will be permitted as prearranged, however, Contractor shall provide his own connectors and cords. Owner shall pay for water and electricity used, when available. At the completion of the project, the Contractor shall disconnect temporary connections and return to original condition. Temporary connections and disconnections shall be made at no cost to the Owner.
 - 3. The Contractor shall provide an adequate number of outlets and each outlet shall be properly and clearly labeled with the maximum voltage and fuse protection.
 - 4. Where temporary exterior lighting or outlets are used, the outlet shall consist of weatherproof socket properly insulated and provided with a locking type wire guard.
 - 5. All devices and outlets shall be properly grounded.
 - 6. Temporary wiring for the Work under this contract shall be provided by the Contractor and shall meet all safety requirements of the National Electric Code, Bureau of Workmen's Compensation, OSHA and local requirements. In addition, all such wire shall be so sized that such is not overloaded according to the National Electric Code, and any wire used shall be protected by fuse or circuit breaker and, if used to provide electric power to tools, shall be protected by ground-fault disconnecting device to adequately protect the wire, tools, equipment, and workmen according to Code.
 - 7. Where applicable, Contractor shall obtain written authorization from any/all building tenants prior to use of their electric service. A copy of said authorization shall be forwarded to Architect.
 - 8. Power consumption shall not disrupt Owner's need for continuous service. Exercise measures to conserve energy.

9. Use of power generators may be required if there is insufficient electrical service to perform the Work. In such case, power generators and fuel shall be at the Contractors expense.

B. Water:

1. Contractor may, at his own expense, connect into the Owner's domestic water system, for construction purposes. Comply with all pertinent code requirements and sound practices. The Owner will pay for routine quantities of water typical for construction work. For projects requiring large quantities of water the Contractor shall provide and install a water meter for the Owner's internal accounting purposes.
2. Contractor shall make arrangements with the Owner to make temporary connections to existing water service for use during construction. Protect site from puddling or running water.
3. The Architect, conferring with the Head Plant Operator, will approve a location for tying into the Owner's water supply. In no event shall such connection be made to either the treated water system for the boiler or chiller system; nor connected to any piping serving or part of the irrigation system (some of the Owner's irrigation systems are served by treated waste effluent).

- C. Phones: Owner's phone service will not be available to Contractor's personnel unless otherwise prearranged.

1.08 SIGNS

- A. No individual signs or advertisements of any nature will be allowed to be displayed at the site.

1.09 BARRIERS

- A. Provide barriers to prevent unauthorized entry to construction areas to allow for Owner's use of site, and to protect existing facilities and adjacent properties from damage from construction operations and demolition.
- B. Provide protection for plant life designated to remain. Replace damaged plant life to match.
- C. Protect non-owned vehicular traffic, stored materials, site and structures from damage.

1.10 FENCING

- A. Construction: Commercial grade chain link fence.

1.11 PROTECTION OF INSTALLED WORK

- A. Protect installed Work and provide special protection where specified in individual specification Sections.
- B. Provide temporary and removable protection for installed Products. Control activity in immediate work area to minimize damage.

- C. Protect finished walls, drives, parking areas, floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
- D. Prohibit traffic or storage at non-designated areas.
- E. Prohibit traffic from landscaped areas and provide protection and or protective covering for all landscape material that might be effected by the Work.
- F. Provide access through and/or around all temporary barriers or protective devices to allow complete use of the premises and so as not to disrupt the activities of the occupants. Remove and replace any barriers or protective devices when required.

1.12 PROGRESS CLEANING

- A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.
- B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.
- C. Remove waste materials, debris, and rubbish from site periodically and dispose off-site.

PART 2 - PRODUCTS Not Used.

PART 3 - EXECUTION Not Used.

END OF SECTION

SECTION 01 60 00

MATERIAL AND EQUIPMENT

PART 1 - GENERAL

1.01 General Provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification sections, apply to work of this Section.

1.02 SECTION INCLUDES

- A. Products.
- B. Substitutions to Specifications.
- C. Certification.
- D. Manufacturer's Requirements.
- E. Coordination of Measurements And Dimension.
- F. Packaging.
- G. Transportation And Handling.
- H. Storage And Protection.
- I. Substrate Acceptance.
- J. Repair.

1.03 PRODUCTS

- A. Products: Means new material, machinery, components, equipment, fixtures, and systems forming the Work. Does not include machinery and equipment used for preparation, fabrication, conveying and erection of the Work. Products may also include existing materials or components required for reuse.
- B. Do not use products and equipment removed from existing premises, except as specifically permitted by the Contract Documents.
- C. Provide interchangeable components of the same manufacturer, for similar components.
- D. Ordering of Products: Order all products so as not to delay any work.

1.04 SUBSTITUTIONS TO SPECIFICATIONS

- A. Wherever an item or class of material or product is specified exclusively by trade name or by name of the maker or by catalog reference along with the words "or approved substitution," it is done to identify the kind and quality of material and such item forms the basis of the Contract. Material of proven quality of other manufacturers may be bid but only after the Architect's approval is secured in writing.
- B. Proposals for substitute materials shall show how the substitute compares as equal and where it differs. Substitutions shall be submitted to the Architect's office for consideration in the following manner;
 - 1. All substitutes shall be submitted either by sample, description, manufacturer's catalog, or photo, together with the specified item side-by-side.
 - 2. Each item shall be accompanied with a comparison chart covering all points of equality, difference, and improvements of size; test data showing physical properties, thickness, finish, mechanical action, thermal or other appropriate properties. The proposal for substitutes and acceptance of same, will be held to include any and all changes and adjustments of the work under the subject contract and other contracts made necessary by the use of such substitutions.
 - 3. Presentation shall include comparison of list prices of specified and proposed items and state the difference in any price of the various items proposed as compared to the prices of the goods specified.
 - 4. Requests for consideration for substitutes shall be submitted in triplicate, during the bidding period, and in sufficient time for the Architect to consider the submission and render a decision. All submissions must be in the Architect's office (10) calendar days prior to the date of opening of the Bids.
- C. After the specified date and time for submissions and after due consideration, the Architect shall notify all Bidders of the approved substitution by Addendum after which time no additional substitutions shall be considered. The decision of the Architect as to acceptance of a request for approval will be final.
- D. Under no other circumstances will substitutions, alternates or "approved substitutions" be considered after the Bidding Period except by "Change Orders" signed by the Architect, Owner and Contractor. All requests must originate with the Contractor and shall be accompanied with submittals and comparisons as stated above. It shall be the sole responsibility of the Bidding Contractor to request for approval any and all substitutions. No requests will be considered from subcontractors, distributors, suppliers and/or manufacturers.
- E. Each Bidder, in addition to the submission of his lump sum Base Bid, shall submit Bids for any requested alternate Bid and unit price called for; if there is no change in the Base Bid, enter "No Change." Failure to submit said Bids and unit prices shall be sufficient cause for the Owner to reject the Bid in its entirety. The Owner may, at his discretion, consider any required alternate Bid in the awarding of a Bid, if it is in his best interest without regard to the base bid.
 - 1. Voluntary alternates to the Specifications will not be accepted and the Bid may be rejected in its entirety.

2. The Owner retains the right to include or exclude Work required by alternates for the sums established, exercisable within (90) calendar days from and including the date of signing the Contract.
-
- F. If the required submittal data is not received within the specified date and time and approved by the Architect, then the Contractor, shall furnish all items of materials and equipment and execute all processes exactly as specified.
 - G. The Owner reserves the right to base a Contract upon a proposed substitute, or substitutes, or to reject any and all substitutes as being in the best interest of the Owner.

1.05 CERTIFICATION

- A. The Architect may require, and the Contractor shall furnish if required to do so, certificates or test reports from manufacturers to the effect that the products or materials furnished by them for use in the work comply with applicable specified requirements for the products being furnished.

1.06 MANUFACTURER'S REQUIREMENTS

- A. Comply in all regards with all manufacturer's requirements, recommendations and specifications regarding material use, handling, storage, protection, installation, repair and cleaning.
- B. Manufacturer's requirements shall take precedence over any requirements of the specifications which are in conflict with manufacturer's requirements. This shall not relieve the Contractor from complying with any additional or more stringent requirements of the specifications.
- C. Contractor shall notify the Architect in writing, prior to performance of work, of any conflicts between the specifications and the manufacturer's requirements.

1.07 COORDINATION OF MEASUREMENTS AND DIMENSION

- A. Any discrepancies between the drawings and/or the specifications and the existing conditions shall be referred to the Architect for adjustment before proceeding with the work.
- B. Before ordering products and equipment, or doing work which is dependent for proper size or installation upon coordination with building conditions, the Contractor shall verify all dimensions by taking measurements at the building(s) and shall be responsible for the correctness of these measurements. No consideration will be given any claim based on the difference between the actual dimensions and those indicated on the drawings.

1.08 PACKAGING

- A. Products shall be delivered to the site in manufacturer's unopened containers, bundles or packages, fully identified with the manufacturer's name, brand, type and grade. Containers not bearing the manufacturer's identifying labels shall be removed from the site.

1.09 TRANSPORTATION AND HANDLING

- A. Transport and handle products in accordance with manufacturer's instructions. Promptly inspect shipments to assure that products comply with requirements, quantities are correct, and products are undamaged.
- B. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage. Select and utilize handling equipment to avoid damage to new or existing property.
- C. Products shall be handled, transported and stored in a manner enabling only undamaged material to be installed and which will safeguard against possibility of moisture pick-up. Products shall be transported and stored in dry, well ventilated, weathertight vehicles and places. Open bed trucks and tarpaulins shall not be considered as dry.
- D. Products shall be bundled or packaged so that they can be easily removed from the truck and transported to an approved storage trailer and/or container without removing contents. If required, manufacturer shall provide skids under containers for fork lift removal.
- E. Delivery of Products: Deliver products in sufficient quantity to assure continuity of work. All products delivered to the jobsite are to be new, in original sealed and unopened containers and with manufacturer's labels intact and legible. No products other than those approved may be delivered to the jobsite. Labels or shipping tickets are to indicate all lot numbers and quantities of the materials as specified. Repackaging or otherwise changing containers will not be permitted.

1.10 STORAGE AND PROTECTION

- A. Owner will not provide indoor storage facilities or be responsible for loss or damage of products.
- B. Protect products from pilferage and vandalism. Fence in or protect all hot equipment and/or portable machinery. Protect from "attractive nuisance."
- C. Because only the manufacturer determines his distributors (or suppliers) and directly or indirectly has responsibility for selecting the method of transport and of storage, therefore the manufacturer must be considered fully responsible for products until such are delivered into the hands and control of this Contractor, unless Contractor picks up material at distribution site.
- D. Coordinate delivery with installation to minimize storage period at the project site.
- E. Stock, separate, support and contain stored products in a manner required to prevent damage to products, persons or other property.
- F. Exterior storage of Products shall be stored off the ground, place on supports under cover and protected from the weather and other construction operations. Slope products to drain.

- G. Keep interior of building free of stored or unattended combustible products.
- H. Remove wet products from the site. Comply with fire and safety regulations as to storage and handling. Store emulsions only in temperatures above 40 degrees F.
- I. Store and protect products in accordance with manufacturer's instructions, with seals and labels intact and legible. Store sensitive products in weather-tight, climate controlled enclosures.
- J. Provide off-site storage and protection when site does not permit on-site storage or protection.
- K. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to avoid condensation.
- L. Store loose or granular products on solid flat surfaces in a well-drained area. Prohibit mixing with foreign matter.
- M. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
- N. Arrange storage of products to permit access for inspection. Periodically inspect to assure products are undamaged and are maintained under specified conditions.
- O. Particular care shall be observed in the storage of flammable liquids (red label). Coordinate with the safety and insurance requirements of the Owner. All soiled or used rags, waste and trash must be removed from this storage place each night and every precaution taken to avoid the danger of fire.
- P. Storage area, if available, will be designated by the Owner at the pre-bid conference. All bids shall be based on the Contractor's providing his own closed storage.
- Q. All on-site products will be stored and protected before leaving the site each day.

1.11 SUBSTRATE ACCEPTANCE

- A. Each applicator and installer shall examine areas and conditions under which his work is to be applied. The Contractor shall notify the Architect in writing during the bidding period of conditions detrimental to proper and timely completion of work. Do not proceed with work until unsatisfactory conditions have been corrected in a manner acceptable to the Owner.
- B. Starting of work shall be construed as acceptance of the substrate, surfaces and conditions of any particular area, and subsequent removal and re-application of work required to correct substrate conditions shall not be considered as cause for additional compensation or time extension.

1.12 REPAIR

- A. Rust, corrosion, blemishes, scratches or other damage to new or existing products, and their final or shop finishes, shall be repaired to the Architect's satisfaction prior to their use on this project.

PART 2 - PRODUCTS Not Used.

PART 3 - EXECUTION Not Used.

END OF SECTION

SECTION 01 70 00

CONTRACT CLOSEOUT

PART 1 - GENERAL

1.01 General Provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification sections, apply to work of this Section.

1.02 SECTION INCLUDES

- A. Substantial Completion Procedures.
- B. Procedures at Final Inspection.
- C. Reinspection Fees.
- D. Replacement Materials.
- E. Guarantees/warranties (See Definitions, Section 01 42 16).
- F. Reconciliation Change Order
- G. Post Installation Audit.
- H. Application For Final Payment.
- I. Project Close-Out Documents
- J. Final Clean-up
- K. Close-Out Checklist

1.03 SUBSTANTIAL COMPLETION PROCEDURES

- A. Preliminary Procedures: Before requesting inspection for determining Date of Substantial Completion, complete the following. List items below that are incomplete in request.
 - 1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
 - 2. Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.
 - 3. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.
 - 4. All flashing and sheet metal, lightning protection (if provided), and base flashing work shall be completed prior to Substantial Completion request.

- B. Inspection: Submit a written request for inspection for Substantial Completion. A minimum of 7 days advance notice is required. Owner will schedule the inspection upon notification from the Architect that the project is ready. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.
 - 1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
 - 2. Results of completed inspection will form the basis of requirements for Final Completion.

1.04 PROCEDURES AT FINAL INSPECTION

- A. Preliminary Procedures: Before requesting final inspection, submit copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list). Certify all items on punch list have been completed or otherwise resolved for acceptance.
- B. Inspection: Submit a written request for final inspection for acceptance. A minimum of 7 days advance notice is required. Owner will schedule the inspection upon notification from the Architect that the project is ready. Architect will notify Contractor of construction that must be completed or corrected before a final certificate will be issued.
 - 1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.05 REINSPECTION FEES

- A. Should it become necessary for the Architect to perform inspections in addition to those listed above as a result of failure of the work to comply with the claimed status of completion made by the Contractor:
 - 1. The Owner will compensate the Architect for such additional services;
 - 2. The Owner will deduct the amount of such compensation from the final payment to the Contractor;
 - 3. Billing rate shall be the published hourly rate paid to Architect, plus expenses.

1.06 REPLACEMENT MATERIALS

- A. As a condition precedent to final payment, the Contractor shall store at the project site, in a location directed by the Architect, all replacement or maintenance materials which may be required by other Sections of these specifications.

1.07 GUARANTEES/WARRANTIES (See Definitions, Section 01 42 16)

- A. If, within any guarantee or warrantee period, repairs or changes are required in connection with the Work which, in the opinion of the Architect, is rendered necessary as the result of the use of materials, equipment or workmanship which are defective, inferior or not in accordance with the terms of the Contract, the Contractor shall, upon receipt of notice from the Owner and without expense to the Owner, proceed within (7) calendar days to:
 - 1. Place in satisfactory condition in every particular all of such guaranteed work, correct all defects therein and make good all damages to the structure or site;

2. Make good any work, materials, equipment and contents of structures or site disturbed in fulfilling any such guarantee.
- B. If the Contractor, after notice, fails to comply with the terms of the guarantee, the Owner may have the defects corrected and the Contractor and his surety shall be liable for all expenses incurred in connection therewith, including the Architect's fees.

1.08 RECONCILIATION CHANGE ORDER

- A. Prior to application to final payment, submit to Architect a spreadsheet of all cost items necessary to reconcile unused funds (e.g. Owner contingency, direct purchase balances, and unit cost extensions).
1. Provide backup documentation for all items included in spreadsheet.
 2. Include documentation for reconciling all unit cost items, included photographs and marked-up drawings indicating location where work was performed.

1.09 POST-INSTALLATION AUDIT

- A. Upon completion, the Architect will perform an audit certifying that no moisture is present within the roof system. The audit report shall include infrared scans and thermographic images (or nuclear scans and photographic images) of all areas of the roof surface, together with close-ups of roof penetrations and anomalies. The scans shall be performed by a certified operator.
- B. If the audit indicates moisture is suspected, the installing contractor shall, at his expense, confirm or dismiss the finding by sampling the area, making whatever corrections are required, and having the area re-scanned until moisture is no longer detected.
- C. A copy of the final certified audit report, including any intermediate scans, shall be submitted with the closeout documents.

1.10 APPLICATION FOR FINAL PAYMENT

- A. Upon satisfactory completion of all work required by the Contract Documents, and compliance with Contract Closeout requirements of this Section, the Contractor shall make application for final payment in the same format as progress payments. Submit final application for payment with close-out documents.

1.11 PROJECT CLOSE-OUT DOCUMENTS

- A. The Contractor is to submit Contractor Close Out documents in separate binder packages to the Architect. Binders are to be labeled with the project name and description of contents on the binder edge and are to include a table of contents and index tabs.
1. The Contractor is required to submit the listed Contractor Close Out Documents in order to achieve final completion status.
 2. Incomplete submittals or submittals not properly transmitted will be returned. See attached checklist.
 3. Scan all documents in each binder package to Adobe PDF format.

- B. Within 3 weeks after Substantial Completion, Contractor is to submit the following to the Architect:
 - 1. Red-marked set of field drawings indicating any changes to the Work, with as-built stamp from Contractor. Marked-up field drawings are for Architect's use in preparing Record Drawings.
- C. Prior to the end of the Punch List Period, Contractor is to submit the following documents to the Design Professional:
 - 1. **Planning and Construction Package**
 - a. Transmittal form, signed by Principal, listing quantities of the extra stock materials previously delivered.
 - b. Printed aerial photographs of the completed work in clear sleeves with a CD of high resolution digital files with a valid copyright release.
 - c. Absence of friable material certification.
 - 2. **General Maintenance Package**
 - a. List of subcontractors including telephone numbers and contact names.
 - b. Specified Manufacturer's Warranty with building numbers, dated to commence on the date of Substantial Completion.
 - c. 5-year Installer's Roof Warranty (HCSB Form), dated to commence on the date of Substantial Completion.
 - d. Copies of all specified extended warranties, dated to commence at Substantial Completion.
 - e. Framed aerial photograph.
 - 3. **Accounting Package**
 - a. Explanation or evidence of resolution for all Notices of Non-Payment, if any
 - b. Original Consent of Surety to final payment
 - c. Final Unconditional Waiver from every subcontractor in format available on HCPS Standards webpage
 - d. Original Release and Affidavit in format available on HCPS Standards webpage
- D. Digital Copy
 - 1. Scan all contents of the Contractor's Close-Out Documents in Adobe PDF format and save to CD or DVD media for archive storage, minimum 300 dpi resolution (full color).
 - 2. Include copy of the aerial photo image files and all project photo image files taken during construction.
 - 3. Provide scanned copies of all Contractor's Daily Reports.
 - 4. Label CD with project information and date.
- E. Architect's Close Out Documents (to be submitted separately by Architect):
 - 1. Two (2) printed copies of the Certificate of Final Inspection, signed/sealed
 - 2. CD-ROM (#1)
 - a. Record drawings and specifications in Adobe PDF format;
 - b. Scanned copy of all reviewed project submittals;
 - c. Recommendation letter for acceptance of the project;
 - d. Scanned copies of Contractor Transmittal form(s) for Close-Out documents;
 - e. Post-installation audit.
 - 3. CD-ROM (#2)
 - a. Record Drawings in AutoCAD® DWG format

PART 2 - PRODUCTS Not Used

PART 3 - EXECUTION

3.01 FINAL CLEAN-UP

- A. Upon completion of the Contract or portions thereof and prior to or shortly after the Date of Substantial Completion, the Contractor shall remove from the site all excess materials and debris caused by construction operations.
- B. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- C. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
 - 1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:
 - a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
 - b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
 - c. Remove tools, construction equipment, machinery, and surplus material from Project site.
 - d. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Leave Project clean and ready for occupancy.
- D. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

[THIS PART LEFT INTENTIONALLY BLANK]

CLOSE-OUT CHECKLIST

The Contractor is to submit Contractor Close Out documents in separate binder packages to the Architect. Binders are to be labeled with the project name and description of contents on the binder edge and are to include a table of contents and index tabs.

Planning and Construction Package

- ☐ Transmittal form, signed by Principal, listing quantities of the extra stock materials previously delivered, if required
- ☐ Printed aerial photographs of the completed work in clear sleeves with a CD of high resolution digital files with copyright release
- ☐ Absence of friable material certification

General Maintenance Package

- ☐ List of subcontractors including telephone numbers and contact names
- ☐ Specified Manufacturer's Warranty with building numbers, dated to commence on the date of Substantial Completion
- ☐ 5-year Installer's Roof Warranty (HCPS Form), dated to commence on the date of Substantial Completion
- ☐ Copies of all specified extended warranties, dated to commence at Substantial Completion
- ☐ Framed aerial photograph

Accounting Package

- ☐ Explanation or evidence of resolution for all Notices of Non-Payment, if any
- ☐ Original Consent of Surety to final payment
- ☐ Final Unconditional Waiver from every subcontractor in format available on HCPS Standards webpage
- ☐ Original Release and Affidavit in format available on HCPS Standards webpage

For Architect's Use

- ☐ Digital copy of Contractor's Close-Out Documents in Adobe PDF format on CD or DVD media, including image files of aerial photos, project photos and daily reports
- ☐ Marked-up field drawings

Architect's Close Out Documents

- ☐ Roof Post-Installation Audit



**CONTRACTOR'S
FIVE (5) YEAR**

**WORKMANSHIP GUARANTEE AND
WARRANTY FOR ALL WORK**

OWNER FILLS IN THIS BOX

| | |
|--------------------------|------------------------|
| Name _____ | Guarantee Starts _____ |
| Address _____ | Guarantee Ends _____ |
| _____ | |
| Phone No. _____ | P. O. Number _____ |
| Building(s) No(s). _____ | P. O. Date _____ |
| _____ | P. O. Amount _____ |
| _____ | Task Order No. _____ |

DATE OF SUBSTANTIAL COMPLETION

AS CERTIFIED BY PROJECT ARCHITECT/ENGINEER: _____

FROM: _____

Phone for Claim or response:

(____) _____

Local

(____) _____

National

(Contractor's Name & Address)

TO: Hillsborough County Public Schools (Owner)

cc: Construction Operations Division
1202 East Palm Avenue
Tampa, Florida 33605-3512

cc: Facilities Maintenance Support Department
Maintenance Operations Center
4805 East Dr. Martin Luther King Jr. Blvd.
Tampa, Florida 33605

AND, TO

(Subcontractor, Name & Address)

Main Office Phone (____)_____

Local Phone (____)_____

PROJECT:

Building(s) No(s): _____

1. The above named Contractor guarantees to the Owner, subject to the limits stated herein, that the labor, materials and workmanship provided in the above named project are in accordance with the Contract Documents and with the recognized standards of the industry (as referenced in the Contract Documents) and such are free from defects in material or workmanship.
2. The above named Contractor guarantees all specified roofing, flashing and sheet metal work will be and remain watertight and serviceable, under normal conditions, free of evidence of major deterioration and failure (or pending failure). Decomposing materials, repeated leaks and other obvious failures or defects shall be evidence of major deterioration. Normal aging of the specified materials and normal wear and tear are not considered major deterioration.
3. This Guarantee shall require the above named Contractor to pay for materials and labor required to repair the specified Work to return it to a watertight condition if the exposed canopy leaks occur due to: (a) ordinary wear and tear of any or all of the component materials of the flashing and sheet metal work, (b) sealant failure; (c) obvious failures or defects in the work; or (d) workmanship deficiencies at the time of application, all without additional cost to the Owner. Such replacement or repair work shall be equal to the existing system furnished under this Contract, and shall conform with the recognized standards of the industry, or as otherwise mutually agreed.
4. The above named Contractor agrees to effect emergency temporary repairs or permanent corrective work as quickly as is necessary to fully protect the Owner's best interests or, to otherwise allow the Owner to effect such corrective work with its own crews without adversely affecting the terms of this Guarantee and Warranty. The above named Contractor agrees to reimburse the Owner for any documented fair and reasonable cost expended by the Owner to make such emergency repairs and agrees to effect permanent repairs within a reasonable period of time.
5. The time period covered by the requirements of this Guarantee above shall be as follows:
 - (a) During construction, and
 - (b) From Date of Substantial Completion as set forth above extending for a time period of five (5) years.

6. This Guarantee does not obligate the Contractor to repair the specified Work, or any part of the specified Work, for leaks, water infiltration, or damage resulting from: (a) Damage to the Work due to mechanical abrasion or abuse not caused by the Contractor or his Subcontractors'; (b) deterioration or failure of building components, including but not limited to framing systems, roof decks, substrates, flashings, or other existing material used as the substrate over which the Work is applied, except where the substrate material was installed or applied by the Contractor; (c) damage from uncontrolled building movement and/or design defects; (d) Installation of equipment on or through the roof or walls by others; (e) acts of negligence, accidents, misuse or abuse, including but not limited to vandalism, civil disobedience, or acts of war; and (f) Natural disasters, including but not limited to lightning, hurricanes, tornadoes, and earthquakes.
7. Repair work required because of the above listed exclusions, will be paid for by the Owner promptly after completion of the required repair work in each instance.
8. In case Owner or his agent has notified the Contractor and confirmed in writing that repairs are required, and such repairs are not covered by this Guarantee (including repairs required by Owner's alteration, extension or addition to the roof), Contractor, after having obtained Owner's consent thereto, in writing, shall make or cause to be made such repairs at Owner's expense in accordance with the Specifications and procedures as established by Contractor, and this Guarantee shall thereupon remain in effect for the unexpired portion of its original term. If Owner fails to so consent or if repairs are made by one other than the Contractor or Contractor's designee, this Guarantee with respect to only such area, shall be automatically terminated.
9. In the event that, (1) Owner notifies Contractor and has confirmed in writing the need for repair of Work, and (2) Contractor is unable to promptly inspect and repair same, and/or (3) an emergency condition exists which requires prompt repair in order to avoid or minimize physical damage, the Owner shall have the right to make such temporary repairs as may be necessary or essential to correct a warranted problem, without consequence or breach of the provisions of this Guarantee. In such case, the above named Contractor agrees to reimburse the Owner for any documented fair and reasonable costs expended by the Owner to make such temporary repairs and agrees to effect permanent repairs within a reasonable period of time.
10. Repair work at the Owner's cost shall be paid for by the Owner at prevailing labor rates, upon receipt by Owner of Contractor's itemized invoice of quantities and "out-of-pocket" costs for labor burden, and material, including not more than 25% percent markup for office and shop overhead and profit.
11. The terms of the Contract Documents (drawings and specifications), which were bid upon and contracted for, are reflected in the terms of this Guarantee, therefore no exculpatory words nor other terms lessening the requirements of this Guarantee shall apply. No lesser warranty or guarantee, expressed or implied, shall apply. Conversely, liability shall be as exclusively set forth in this document.
12. Inspection Service: Contractor agrees to reinspect the completed work with a representative of the Owner once a year from the date of Substantial Completion until the Guarantee Period has expired. If it is determined that there are defects in the Work, then Contractor shall make, or cause to be made at its own expense, such repairs as are necessary to remedy said defects within the scope of its responsibility under the terms of this Guarantee.

CERTIFICATIONS

13. The Contractor certifies, to the very best of his knowledge, no asbestos containing materials were installed under the provisions of this Contract.
14. The Contractor certifies that no hazardous waste materials were disposed of on or adjacent to the Project Site and that any hazardous materials identified and removed during the Work were disposed of elsewhere in a lawful manner.

| | |
|---|--|
| STATE OF FLORIDA COUNTY OF _____ | _____ (Contractor's firm name - typed) |
| The foregoing instrument was acknowledged before me this ____ day of _____, 20____, | |
| by _____ (Name of person acknowledging). | _____ (Signature of Corporate Officer or Principal) |
| <input type="checkbox"/> PERSONALLY KNOWN <input type="checkbox"/> OR PRODUCED IDENTIFICATION (Attach copy of identification) | _____ (Typed name of person signing) |
| _____ (Signature of Notary Public - State of Florida) <i>Print, Type or Stamp Commissioned Name of Notary Public</i> | _____ (Title) |

Execute in triplicate:

Copy to: Owner
Architect
Contractor

Contractor's Five (5) Year Guarantee for All Work

SECTION 02 41 20**SELECTIVE DEMOLITION****PART 1 - GENERAL****1.01 RELATED DOCUMENTS**

Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to Work of this Section. The Contractor and Installer of the Work shall examine the specifications and shall thoroughly familiarize himself with all provisions regarding the Work of this Section.

1.02 DESCRIPTION OF THE WORK

- A. Extent of Work: The Extent of Work of this Section is indicated on the drawings, details and by the provisions of this Section.
- B. Scope of Work: The Scope is defined to include the removal of, and disposal or temporary storage of items to be reused and related materials in preparation for the Work of subsequent sections, but is not limited to the following which are listed as a guide and are not intended to be all inclusive:
 - 1. Identify and demolish all items indicated for removal;
 - 2. Remove items required to permit subsequent work;
 - 3. Remove debris and leave area and substrate clean, dry and uniform, and in a condition suitable for subsequent work;
 - 4. Dispose of scrap legally.
- C. Related Sections: Related work is specified in other Sections of these Specifications. The Contractor shall consult and become familiar with all other Sections to determine that part of the work which will come into contact with his Work.

1.03 REFERENCES

- A. The publications listed below form a part of this specification to the extent referenced.
- B. Unless otherwise indicated, the date of the publication or standard is that in effect as of the date of the project documents.
- C. Reference Documents:
 - 1. Manufacturer's product literature and instructions.
 - 2. ANSI/ASSE A10.6 - Safety Requirements for Demolition Operations;
 - 3. 29 CFR 1926.62 - OSHA Lead in Construction Standard;
 - 4. 29 CFR 1910.1025- OSHA General Industry Lead Standard;

1.04 SYSTEM DESCRIPTION

- A. The Work described herein involves the selective demolition of existing building components as required in related Sections of the Contract Documents.
- B. The performance of the Work of this Section requires the timely removal, timed staging, storage, recycling and/or disposal of all materials required for the completion of the Work of other Sections.
- C. Materials Ownership: Unless otherwise indicated, demolition waste becomes property of Contractor.

1.05 DEFINITIONS

- A. General: Refer to Section 01 42 16 - Definitions.
- B. Remove: Detach items from existing construction and legally dispose of them off-site, unless indicated to be removed and salvaged, removed and reinstalled, or removed and recycled.
- C. Remove and Salvage: Detach items from existing construction and deliver them to Owner, as specified.
- D. Remove and Reinstall: Detach items from existing construction, prepare them for reuse, and reinstall them where indicated.
- E. Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.
- F. Remove and Recycle: Detach items from existing construction, isolate materials in separate dumpsters dedicated for recycling.
- G. Work of this Section: When reference is made to the "Work of this Section" it shall mean the work specified and described under the CSI Narrow Scope Section 02 41 20.

1.06 SUBMITTAL

- A. General: Refer to Section 01 33 00 - Submittal Procedures. Transmit submittals using the specified form and itemize each item proposed.
- B. Provide digital copy of all submittals. Scan contents of each submittal at full scale in Adobe PDF format for archive storage and distribution, minimum 300 dpi resolution (full color).
- C. Submittals shall clearly show annotations and drawing mark up tools or similar technique to add comments those selections that apply, including clouds, circles, boxes, lines, arrows, stamps, text boxes and text callouts—do not highlight. Itemize products submitted with reference to specification section and/or applicable drawing.

- D. Submittals shall be reviewed by the Architect prior to commencement of any work of this section. A copy of the submittals shall be present at the job site during the Work.
- E. Qualification Data:
 - 1. All electrical and plumbing disconnections shall be carried out by licensed trades.
 - 2. All demolition workers shall complete safety and fall protection training prior to commencement of work. A safety and fall protection plan shall be submitted at the pre-roofing conference.
 - 3. All machinery operators shall be licensed and trained on the equipment intended to assist in demolition.
 - 4. All personnel handling any hazardous work shall be licensed and trained for that removal.
 - 5. Rooftop equipment used in the demolition process shall not exceed the weight limits of the roof deck.
- F. Proposed Protection Measures:
 - 1. Submit informational report, including drawings, that indicates the measures proposed for protecting individuals and property, for environmental protection, and for noise control during the demolition process. Indicate proposed locations for chutes and construction of barriers.
 - 2. Adjacent Buildings: Detail special measures proposed to protect adjacent buildings or adjacent areas.
- G. Schedule of Building Demolition Activities: Indicate the following:
 - 1. Detailed sequence of demolition work, with starting and ending dates for each activity.
 - 2. Temporary interruption of utility services.
 - 3. Areas of parking or roadway that may be temporarily closed to carry out the work.
- H. Building Demolition Plans: Drawings indicating the following:
 - 1. Locations of temporary protection and means of egress for adjacent occupied buildings.
 - 2. Staging areas for containers.
 - 3. Scheduled progress of the demolition.
- I. Inventory: Submit a list of items to be removed, salvaged and delivered to Owner prior to start of demolition.
- J. Pre-demolition Photographs: Show existing conditions of adjoining construction and site improvements, including finish surfaces that might be misconstrued as damage caused by building demolition operations. Submit two copies and one CD of photographs before the Work begins.
- K. Landfill Records: Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.
- L. When required by the Owner or Architect, submit details and documentation of any open or closed chutes or other disposal equipment together with any safety or structural requirements.

1.07 QUALITY ASSURANCE

- A. General: Refer to Section 01 45 00 - Quality Control.
- B. Removal of existing material and disposal of scrap shall comply with all legal requirements by authorities having jurisdiction.
- C. Work shall provide a suitable substrate for subsequent work and shall be left in a clean, dry, sound condition.
- D. Coordinate with Work of other Sections.

1.08 DELIVERY, STORAGE AND HANDLING

- A. General: Refer to Section 01 60 00 - Material and Equipment.
- B. Protect products and equipment from pilferage and vandalism. Protect all materials, equipment, storage areas, completed or work in progress, from becoming an "attractive" nuisance.
- C. Materials of demolition shall not be stored on the ground nor on any adjacent property without written consent of the Owner.
- D. Handling: Handling of materials and equipment shall be done with a minimum of dust, debris and noise and shall not disrupt normal activities of the premises. All materials of the demolition shall be stored in proper size containers. Provide covered chutes for all debris not hand carried to the ground. All material designated or required to be scrapped or discarded shall be removed from the property and legally disposed of. Have all scrapped or discarded material to legal dumps in appropriate covered trucks.

1.09 PROJECT/SITE CONDITIONS

- A. Coordinate all work with the Owner. Coordinate all demolition with contractors that may be working in and around the building during the period of demolition.
 - 1. Provide not less than 72 hours' notice of activities that will affect operations of adjacent occupied spaces and ensure any changes to the construction/ demolition schedule are relayed in a timely manner to facilitate coordination.
 - 2. Maintain access to existing walkways, exits, and other facilities used by occupants of adjacent buildings.
 - a. Do not close or obstruct walkways, exits, or other facilities used by occupants of adjacent buildings without written permission from authorities having jurisdiction.
- B. Existing Conditions: The Owner maintains that all existing conditions are in good repair. Before starting any Work required in this section, notify the Owner of any existing damage to building or grounds.

- C. Dust: Wet down areas (as required) before proceeding to prevent excess dust and debris from disturbing the occupants and reaching adjoining property or parked vehicles. Prevent any debris from accumulating on grounds.

1.10 SCHEDULING

- A. Coordinate with trades for other Sections so their work can be done in a timely manner. Schedule personnel and equipment to ensure continuity of Work.
- B. Arrange demolition schedule so as not to interfere with activities that might be scheduled during construction period.

1.11 GUARANTEE

- A. The Guarantee contained under other provisions of these Contract Documents will be held to have been part of this Section. The Contractor shall do all of his work in conformance with the provisions of the Drawings and Specifications in such a manner that will allow all other trades to perform their work and submit their required guarantees.

1.12 SAFETY

- A. The Contractor shall be fully and solely responsible for all matters of safety of person and property arising from this contract, including the liabilities and responsibilities of all subcontractors. Neither the Architect nor the Owner or any of their representatives or employees are to be assumed to have any role of responsibility of matters of safety except they (including the Architect) shall have the authority to order stopping of a portion of the Work which they notice may endanger occupants, employees of the Owner, or the public, or employees of the Contractor or subcontractors.
- B. The Work of this section shall include all steps necessary to protect the workmen and the general public from injury due to construction work of this Contract. Unsafe conditions, equipment, or work practices shall not be permitted at anytime.
- C. Barricades: Provide fences, ropes, signs and barricades to keep the public away from the construction area. Areas to be barricaded include: (a) where tear-offs occur near the edge of the roof; (b) active work areas; (c) where debris disposal shoots are located; (d) ladders are located; (e) on-ground construction materials storage areas; and (f) hoisting areas.
- D. Cooperate with site management which will need to restrict occupants at certain times when hazardous conditions exist. In an emergency affecting safety of person(s) or property the Contractor shall act, at the Contractor's discretion, to prevent threatened damage or injury or loss.

PART 2 - PRODUCTS Not Used.

PART 3 - EXECUTION**3.01 EXAMINATION**

- A. Verification of Conditions: The Contractor shall examine the work area to make certain that conditions are acceptable for the work of this Section and to determine the location for storage, handling and access. Review conditions with all parties involved and obtain all necessary approvals for storage locations, scheduling and methods of operation. Any unacceptable conditions shall be reported immediately to the Architect and confirmed in writing.
- B. Unforeseen Conditions: The specifications and drawings were prepared with the understanding that there are no hidden conditions that would necessitate unforeseen extra work. If such conditions require extra work, the work shall be executed under the provisions of Change Orders or Architect's Supplemental Instructions.
- C. Before Commencement of Work, photographically document all existing adverse conditions, including existing interior and exterior damage, contamination and stains, that might possibly be construed as being caused by the work of this and all other related Sections. In the absence of such documentation, it will be assumed that all existing conditions are without damage and are fully functional prior to the start of the Work.

3.02 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

- A. Existing Services/Systems: Maintain services/systems indicated to remain and protect them against damage during selective demolition operations.
- B. Service/System Requirements: Locate, identify, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished.
 - 1. Owner will arrange to shut off indicated services/systems when requested by Contractor.
 - 2. Arrange to shut off indicated utilities with utility companies.
 - 3. If services/systems are required to be removed, relocated, or abandoned, before proceeding with selective demolition provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
 - 4. Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit after bypassing.

3.03 PROTECTION

- A. Existing Facilities: Protect adjacent walkways, loading docks, building entries, and other building facilities during demolition operations. Protect all glazing and cladding. Maintain exits from existing buildings.
- B. Existing Utilities: Maintain utility services to remain and protect from damage during demolition operations.
 - 1. Do not interrupt existing utilities serving adjacent occupied or operating facilities unless authorized in writing by Owner and authorities having jurisdiction.

2. Provide temporary services during interruptions to existing utilities, as acceptable to Owner and authorities having jurisdiction.
 3. Provide at least 72 hours' notice to occupants of affected buildings if shutdown of service is required during changeover.
- C. Temporary Protection: Erect temporary protection, such as walks, fences, railings, canopies, and covered passageways, where required by authorities having jurisdiction and as indicated.
1. Protect adjacent buildings and facilities from damage due to demolition activities.
 2. Protect existing site improvements, appurtenances, and landscaping to remain.
 3. Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
 4. Provide protection to ensure safe passage of people around building demolition area and to and from occupied portions of adjacent buildings and structures.
 5. Protect walls, windows, roofs, and other adjacent exterior construction that are to remain and that are exposed to building demolition operations.
 6. Protect against fumes, dust and debris from entering air intake ducts and openings.
 7. Provide complete protection for all interior spaces. Do not remove more material than can be protected in the event of sudden wind, rain or inclement weather. Provide sufficient covering material to insure the occupants against rain, water or moisture infiltration.
- D. Remove temporary barriers and protections where hazards no longer exist. Where open excavations or other hazardous conditions remain, leave temporary barriers and protections in place.
- E. All damage shall be restored to original condition as acceptable to parties having jurisdiction.

3.04 SELECTIVE DEMOLITION AND REMOVAL

- A. General:
1. Set up equipment in approved location. Provide all necessary chutes or conveyances to perform and complete the Work of this Section.
 2. Collect, remove and dispose of waste material from property daily and in full compliance with authorities having jurisdiction.
 3. Except as otherwise prearranged or as specified above as saved and stored, all materials of the demolition shall be handled directly from work area to appropriate covered trucks or approved receptacles by chute. Discarding of any materials by throwing or dropping to the ground will not be permitted.
 4. No burning of trash will be permitted. Use of explosives is not permitted
- B. Demolition Work: Include any necessary demolition not specifically stated in the Scope of Work.
- C. Precautions: No cutting by torch or welding shall be permitted without a protective system that will prevent any damage to the existing building and/or interior. If any damage occurs to said areas from the work of this section, it shall be repaired immediately at Contractor's expense to satisfaction of the Owner and/or Architect's representative.

- D. Removed and Reinstalled Items:
 - 1. Clean and repair items to functional condition adequate for intended reuse. Paint equipment to match new equipment.
 - 2. Pack or crate items after cleaning and repairing. Identify contents of containers.
 - 3. Protect items from damage during transport and storage.
 - 4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.
- E. Existing Items to Remain: Protect construction indicated to remain against rain, damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.

3.05 DISPOSAL OF DEMOLISHED MATERIALS

- A. Remove demolition waste materials from Project site in compliance with state, federal and local requirements for recycling and disposal of demolition waste in a timely manner.
- B. Remove demolition waste materials from Project site and legally dispose of them in a local authority, State of Florida, and EPA-approved landfill acceptable to authorities having jurisdiction. Certificate confirming proper and legal disposal shall be required indicating the volume or weight of materials removed from site.
 - 1. Do not allow demolished materials to accumulate on-site; either on the roof or in approved containers.
 - 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

3.06 CLEANING

- A. Remove all loose debris from work area each day. Remove all hand tools, shovels, brooms and loose equipment. Leave entire area clean, dry and broom clean surfaces for work of this or other trade sections.
- B. Repair any damage and remove contamination caused by work of this Section to Owner's satisfaction.
- C. Keep the premises and surrounding area free of accumulation of waste materials or rubbish caused by this Work. Remove the waste material and rubbish in a legal manner no less frequently than once a week, and if indicated in the Contract Documents or instructed by the Architect, more frequently.

END OF SECTION

SECTION 05 31 40**STEEL DECK REPAIR****PART 1 - GENERAL****1.01 RELATED DOCUMENTS**

Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to Work of this Section. The Contractor and Installer of the Work shall examine the specifications and shall thoroughly familiarize himself with all provisions regarding the Work of this Section.

1.02 DESCRIPTION OF THE WORK

- A. Extent of Work: The Extent of Work of this Section is indicated on the drawings, details and by the provisions of this Section.
- B. The Scope is defined to include the removal of, and disposal or temporary storage of items to be reused and related materials in preparation for the Work of subsequent sections, but is not limited to the following which are listed as a guide and are not intended to be all inclusive:
 - 1. Verify condition of metal deck and repair/replace decking components (to match) that shown signs of deterioration;
 - 2. Provide new specified non-corrosive fasteners where removed or replaced.
 - 3. Store and protect reusable materials, specialties and accessories intended to be reinstalled; and
 - 4. Provide items not previously mentioned but required to permit subsequent work.
 - 5. Cleanup;
- C. Related Sections: Related work is specified in other Sections of these Specifications. The Contractor shall consult and become familiar with all other Sections to determine that part of the work which will come into contact with his Work.

1.03 REFERENCES

- A. The publications listed below form a part of this specification to the extent referenced.
- B. Unless otherwise indicated, the date of the publication or standard is that in effect as of the date of the project documents.
- C. Reference Documents:
 - 1. AISC-360 - Specification for Structural Steel Buildings;
 - 2. AISI-D100 - Cold-Formed Steel Design Manual;
 - 3. AISI-S100 - North American Specification for the Design of Cold-Formed Steel Structural Members;
 - 4. AISI-S310 - North American Standard for the Design of Profiled Steel Diaphragm Panels;
 - 5. AISI-S905 - Test Methods for Mechanically Fastened Cold-Formed Steel Connections;

6. AISI/AISC, Standard Definitions for Use in the Design of Steel Structures;
7. AWS D1.1 - Structural Welding Code - Steel;
8. AWS D1.3 - Structural Welding Code - Sheet Steel;
9. ASTM A1008 - Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable;
10. ASTM A108 - Standard Specification for Steel Bar, Carbon and Alloy, Cold-Finished;
11. ASTM A653 - Specification for Steel Sheet, Zinc-Coated Galvanized or Zinc-Iron Alloy-Coated Galvannealed by the Hot-Dip Process;
12. ASTM A780 - Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings;
13. ASTM A792 - Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process;
14. ANSI/SDI-RD1.0 - Standard for Steel Roof Deck;
15. SDI-DDP - Deck Damage and Penetrations, White Paper;
16. SDI-MOC3 - Manual of Construction with Steel Deck
17. SDI-SPD2 - Standard Practice Details;
18. SDI-COSP17 - Code of Standard Practice;
19. SDI-RDDM - Roof Deck Design Manual;
20. SSPC Paint 20 - Specification for Zinc-Rich Primers, (Type I, Inorganic, and Type II, Organic);
21. UL 580 - Tests for Uplift Resistance of Roof Assemblies;
22. Manufacturer's instructions;

1.04 DEFINITIONS

- A. General: Refer to Section 01 42 16 - Definitions.
- B. Contractor: Refer to General Conditions.
- C. Work of this Section: When reference is made to the "Work of this Section" it shall mean the work specified and described under the CSI Narrow Scope Section 05 31 40.

1.05 SUBMITTAL

- A. General: Refer to Section 01 33 00 - Submittal Procedures. Transmit submittals using the specified form and itemize each item proposed.
- B. Provide digital copy of all submittals. Scan contents of each submittal at full scale in Adobe PDF format for archive storage and distribution, minimum 300 dpi resolution (full color).
- C. Submittals shall clearly show annotations and drawing mark up tools or similar technique to add comments those selections that apply, including clouds, circles, boxes, lines, arrows, stamps, text boxes and text callouts—do not highlight. Itemize products submitted with reference to specification section and/or applicable drawing.
- D. Submittals shall be reviewed by the Architect prior to commencement of any work of this section. A copy of the submittals shall be present at the job site during the Work.

- E. The following submittals shall be presented to Architect for approval:
 - 1. Time and sequence schedule.
 - 2. Location of equipment and method of storage of products at the site.
 - 3. Product Literature: Provide copies of the Manufacturer's and supplier's product information, specifications, installation instructions, and Material Safety Data Sheets for building components and accessories. Copies of all MSDS data sheets shall be kept on the project site at all times.
 - 4. Shop Drawings: Provide shop drawings for details differing from those indicated on drawings. Certify compliance with requirements of these Specifications for those details not submitted.

1.06 QUALITY ASSURANCE

- A. Qualifications:
 - 1. Work of this Section shall be performed by a duly licensed contractor approved for the type of work involved and shall have been successfully engaged in this type of work for not less than (5) years prior to bid date and shall be capable of showing successful installation similar to work required for this project.
 - 2. Supervision: The Work of this Section shall be performed under the direction of a qualified supervisor or foreman with a minimum of (5) years experience in the type of work involved herein.
- B. Pre-Installation Meeting: Approximately (1) week prior to commencement of all Work, Contractor and/or Installer of the Work of this Section shall attend a pre-construction conference with all parties involved to answer questions and resolve various aspects of the work, such as, but not limited to, location of equipment, sequencing, coordination, and scheduling. Work out schedules, location of setup areas, and traffic patterns and protection methods.
- C. Regulatory Agencies: Contractor shall comply with all applicable codes and regulations by authorities having jurisdiction.

1.07 DELIVERY, STORAGE AND HANDLING

- A. General: Refer to Section 01 60 00 - Material and Equipment.
- B. Owner will not provide closed storage facilities or be responsible for loss or damage of products and equipment.
- C. Materials shall be handled, transported and stored in a manner enabling only undamaged material to be installed and which will safeguard against possibility of twisting, bending or excessive moisture. Materials shall be transported and stored in dry, well ventilated places.
- D. Deliver materials in sufficient quantity to assure continuity of work. Select and utilize handling equipment so as to avoid damage to materials handled, damage to applied roofing or damage to other construction.

- E. Contractor shall examine shipment for damage and completeness (acceptance of delivery constitutes that the order has been inventoried prior to unloading and all product is present).
- F. Protect products and equipment from pilferage and vandalism. Owner will not provide closed storage facilities or be responsible for loss or damage of products and equipment. The Work of this section may require closed storage without any additional cost to the Owner.
- G. Do not use decking for storage or as working platform until units have been fastened into position. Exercise care not to damage material or overload decking during construction. The maximum uniform distributed storage load shall not exceed the design live load. Stack decking on platforms or pallets and cover with weathertight ventilated covering. Elevate one end during storage to provide drainage. Maintain deck finish at all times to prevent formation of rust. Repair deck finish using touch-up paint. Replace damaged material.
- H. Protect all materials, equipment, storage areas, completed or work in progress, from becoming an "attractive" nuisance.

1.08 PROJECT/SITE CONDITIONS

- A. General: General requirements and specific recommendations of the materials' manufacturers are included as part of these specifications.
 - 1. Report any unforeseen adverse conditions to Architect immediately during the course of Work.
 - 2. Contractor shall maintain the roof in a 100% watertight condition throughout the work. He shall repair any roof leak(s) that may occur during this time at no additional cost to the Owner.
- B. Environmental Requirements: Proceed with the Work only when actual or predicted weather will not adversely affect installation or performance. Weather includes wind as well as precipitation. Provide all temporary protection to keep building contents and personnel from experiencing any water infiltration or damage.
- C. Protection:
 - 1. General: The Work of this section shall include all steps necessary to protect the workmen, occupants and general public from injury due to construction work of this Contract. Unsafe conditions, equipment, or work practices shall not be permitted at anytime.
 - 2. Provide all necessary protection to property, people and premises as required to prevent damage or contamination and to prevent injury. Remove and repair damage or contamination immediately at no additional cost to the Owner. Provide barricades to restrict access to work area by unauthorized people. Remove protection when no longer required.
 - 3. Consequential Damage: The Work of this Section involves work on an existing roof over occupied areas. Any consequential damage caused by the Work of this Section shall be fully covered by the Contractor or Subcontractor's insurance which shall pay for such damage. All other consequential damages not covered by insurance shall be paid for directly by the Contractor or Subcontractor.

4. Barricades: Fences, ropes, signs and barricades shall be provided without additional cost to keep the public and/or students away from the construction area. Areas to be barricaded include: (a) where tear-offs occur near the edge of the roof; (b) active work areas; (c) where debris disposal shoots are located; (d) ladders are located; (e) on-ground construction materials storage areas; and (f) hoisting areas.

1.09 SCHEDULING

- A. Coordination/Cooperation: Coordinate and schedule work in cooperation with Owner and other trades. Comply with Owner's requirements related to security. Remove debris on a daily basis. Minimize noise and dust to the fullest extent possible.

1.10 GUARANTEE

- A. The Guarantee contained under other provisions of these Contract Documents will be held to have been part of this Section. The Contractor shall do all of his work in conformance with the provisions of the Drawings and Specifications in such a manner that will allow all other trades to perform their work and submit their required guarantees.

1.11 SAFETY

- A. The Contractor shall be fully and solely responsible for all matters of safety of persons and property arising from this contract, including the liabilities and responsibilities of all subcontractors. Neither the Architect nor the Owner or any of their representatives or employees are to be assumed to have any role of responsibility of matters of safety except they (including the Architect) shall have the authority to order stopping of a portion of the Work which they notice may endanger occupants, employees of the Owner, or the public, or employees of the Contractor or subcontractors.

PART 2 - PRODUCTS

2.01 GENERAL

- A. The following products and manufacturers are approved subject to the provisions of these specifications and are not intended to exclude other manufacturers with equivalent materials, systems and warranties. Where "approved substitutions" is indicated, other acceptable manufacturers may be utilized, provided their systems and warranties are equivalent in all respects and submitted for approval in accordance with these Contract Documents.
- B. It is intended that materials or products specified by name of manufacturer, brand, trade name or by catalog reference shall be the basis of the bid and furnished under the contract, unless changed by mutual agreement. Where two or more materials are named, the choice of these shall be optional with the contractor.

2.02 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Steel Deck:
 - a. United Steel Deck, Inc.
 - b. Wheeling Corrugating Company; Div. of Wheeling-Pittsburgh Steel Corporation.
 - c. Or approved substitution.

2.03 STEEL ROOF DECK

- A. A manufacturer offering deck products to be incorporated into the work must be a member of the Steel Deck Institute.
- B. Materials:
 1. Sheet steel for deck and accessories shall conform to AISI-S100, Section A3.
 2. Steel deck and accessories shall be galvanized to G60 (minimum) in accordance with ASTM A653.
 3. The deck type and thickness shall be to match existing.
 4. Unless otherwise indicated, the deck shall be with a minimum metal thickness of 22 gauge in accordance with AISI-S100.
 5. The deck shall be selected to provide the load capacities shown on the drawings and as determined using the ANSI/SDI-RD1.0 construction loading criteria.
 6. Whenever possible, the deck shall be multi-span.
 7. The deck type provided shall be capable of supporting the superimposed live loads as shown on the plans.
 8. Ridge and valley plates, flat plates at changes of deck direction, sump pans and side closures shall be the standard type provided by the deck manufacturer unless indicated otherwise on the plans.

2.04 ACCESSORIES

- A. General: Provide manufacturer's standard accessory materials for deck that comply with requirements indicated.
- B. Mechanical Fasteners: Corrosion-resistant, hexagonal washer head; self-drilling, carbon-steel screws, No. 12 minimum diameter. Threaded portion of fastener shall project through supporting metal a minimum of 1/4-in. and a maximum of 3/4-in..
- C. Side-Lap Fasteners: Corrosion-resistant, hexagonal washer head; self-drilling, carbon-steel screws, No. 12 minimum diameter. Threaded portion of fastener shall project through supporting metal a minimum of 1/4-in. and a maximum of 3/4-in.
- D. Miscellaneous Sheet Metal Deck Accessories: Steel sheet, minimum yield strength of 33,000-psi, not less than 0.0359-in. design uncoated thickness, of same material and finish as deck; of profile indicated or required for application.
- E. Pour Stops and Girder Fillers: Steel sheet, minimum yield strength of 33,000-psi, of same material and finish as deck, and of thickness and profile recommended by ANSI/SDI-RD1.0 for overhang and slab depth.

- F. Column Closures, End Closures, Z-Closures, and Cover Plates: Steel sheet, of same material, finish, and thickness as deck, unless otherwise indicated.
- G. Adjusting Plates: Provide adjusting plates, or segments of deck units, of same thickness and configuration as deck units in locations too narrow to accommodate full size units. Provide factory cut plates of predetermined size where possible.
- H. Piercing Hanger Tabs: Piercing steel sheet hanger attachment devices for use with floor deck.
- I. Recessed Sump Pans: Single-piece steel sheet, 0.0747-in. thick, of same material and finish as deck, with 3-in. wide flanges and level recessed pans of 1-1/2-in. minimum depth. For drains, cut holes in the field.
- J. Partition Closures: Provide closures for closing voids above interior walls and partitions that are perpendicular to the direction of the configurations. Provide sheet steel closures above fire-resistant interior walls and partitions located on both sides of wall or partition.
- K. Sheet Metal Collar: Where deck is cut for passage of pipes, ducts, columns, etc., and deck is to remain exposed, provide a neatly cut sheet metal collar to cover edges of deck. Do not cut deck until after installation of supplemental supports.
- L. Access Hole Covers: Sheet metal, minimum 0.0474-in. thick.
- M. High Performance Rust-preventive Coating (Repair Paint): POR-15
- N. Galvanizing Repair Paint (Unit Cost Basis): Touch-up paint for zinc-coated units shall be an approved galvanizing repair paint with a high-zinc dust content. Welds shall be touched-up with paint conforming to SSPC Paint 20 or DOD-P-21035 in accordance with ASTM A 780 with dry film containing a minimum of 94 percent zinc dust by weight, or approved equal. Finish of deck units and accessories shall be maintained by using touch-up paint whenever necessary to prevent the formation of rust.

2.05 FABRICATION

- A Deck Units:
 - 1. Deck units shall conform to ANSI/SDI-RD1.0. Form decking and accessories shall conform to ASTM A 653/A 653M, SQ, Grade 230, Grade 33; ASTM A 1008/A 1008M Coated Carbon Steel Sheets, Grade C, 33, 000 psi minimum yield strength; or ASTM A 792/A 792M Coated Steel Sheets, Grade 33.
 - 2. Panels of maximum possible lengths shall be used to minimize end laps. Deck units shall be fabricated in lengths to span 3 or more supports with flush, telescoped, or nested 2-in. laps at ends, and interlocking, or nested side laps, unless otherwise indicated.
 - 3. Deck with cross-sectional configuration differing from the units indicated may be used, provided that the properties of the proposed units, determined in accordance with AISI SG-973, are equal to or greater than the properties of the units indicated and that the material will fit the space provided without requiring revisions to adjacent materials or systems.

PART 3 - EXECUTION**3.01 EXAMINATION**

- A. This Contractor shall examine support framing and field conditions for compliance with requirements for installation tolerances and other conditions affecting performance of work of this Section. Report unsatisfactory conditions to the Architect immediately and confirm in writing. Do not proceed until unsatisfactory conditions are corrected. The execution of work shall be construed as an acceptance of conditions.
- B. Verify condition of metal deck and repair/replace decking components that shown signs of deterioration.

3.02 REMOVAL

- A. Cordon off the area of scheduled roof removal on the interior of the building. Post supervisory and tradesmen must be within the building interior and must be in constant contact with the roof deck removal crew during the roof deck removal and replacement processes. The interior crew shall adequately protect the interior finishes and equipment from damage and shall immediately capture and remove any dust and debris that falls during the removal and replacement process.
- B. Remove all abandoned items scheduled for removal down to the structural members.

3.03 INSTALLATION

- A. General:
 - 1. Install deck panels and accessories according to ANSI/SDI-RD1.0 and in accordance with approved installation drawings and requirements of this Section.
 - 2. Install temporary shoring before placing deck panels, if required to meet deflection limitations.
 - 3. Place deck panels on structural supports and adjust to final position with ends aligned. Secure deck to the supports immediately after placement in order to form a safe working platform. Do not stretch or contract side-lap interlocks.
 - 4. Cut and neatly fit deck units and accessories around openings and other work projecting through or adjacent to the decking.
 - 5. Trades that subsequently cut unscheduled openings through the deck are responsible for reinforcing the openings.
 - 6. Damaged deck and accessories including material which is permanently stained or contaminated, deformed, or with burned holes shall not be installed.
 - 7. Extend deck units over three or more supports unless absolutely impractical. Locate deck ends over supports only.
 - 8. Report inaccuracies in alignment or leveling to the Architect and make necessary corrections before permanently anchoring deck units.
 - 9. Do not use unanchored deck units as a work or storage platform.
 - 10. Permanently anchor units placed by the end of each working day.
 - 11. Do not support suspended ceilings, light fixtures, ducts, utilities, or other loads by steel deck unless indicated.

B. Attachment:

1. Immediately after placement and alignment, and after correcting inaccuracies, permanently fasten steel deck units to structural supports and to adjacent deck units by welding with normal 5/8-in. diameter puddle welds or fastened with screws, powder-actuated fasteners, or pneumatically driven fasteners in accordance with manufacturer's recommended procedure and ANSI/SDI-RD1.0.
2. Clamp or weight deck units to provide firm contact between deck units and structural supports while performing welding or fastening. Anchoring the deck to structural supports with powder-actuated fasteners or pneumatically driven fasteners is prohibited. Attachment of adjacent deck units by button-punching is prohibited.
3. End Bearing: Install deck ends over supports with a minimum end bearing of 2-inches unless otherwise shown on approved installation drawings or manufacturers literature. All partial or segments of deck units shall be attached to structural supports in accordance with SDI-RDDM.
3. Welding Attachment (where specified):
 - a. Perform welding in accordance with AWS D1.3 using methods and electrodes recommended by the manufacturers of the base metal alloys being used. Ensure only operators previously qualified by tests prescribed in AWS D1.1 and AWS D1.3 make welds. Immediately re-certify, or replace with qualified welders, welders that have passed qualification tests but are producing unsatisfactory welding.
 - b. Location, size, and spacing of fastening shall conform to the recommendations of the Steel Deck Institute and the steel deck manufacturer.
 - c. Welding washers shall be used at the connections of the deck to supports. Welding washers shall not be used at side laps. Holes and similar defects will not be acceptable.
 - d. Immediately clean welds by chipping and wire brushing. Heavily coat welds, cut edges and damaged portions of coated finish with zinc-dust paint conforming to ASTM A 780.
4. Mechanical Fastening:
 - a. Mechanically fasten deck and accessories in accordance with requirements of ANSI/SDI-RD1.0.
 - b. Powder-actuated fasteners shall be driven with a low-velocity piston tool by an operator authorized by the manufacturer of the piston tool. Pneumatically driven fasteners shall be driven with a low-velocity fastening tool and shall comply with the manufacturer's recommendations.

C. Openings:

1. All holes and openings required shall be cut to match existing conditions.
2. Frame and reinforce openings through the deck in conformance with SDI DDP, as required.
 - a. Holes and openings 6- to 12-in. across shall be reinforced by 0.0474-in. thick steel sheet at least 12-in. wider and longer than the opening and be fastened to the steel deck at each corner of the sheet and at a maximum of 6-in. on center.
 - b. Holes and openings larger than 12-in. shall be reinforced by steel channels or angles installed perpendicular to the steel joists and supported by the adjacent steel joists. Steel channels or angles shall be installed perpendicular to the deck ribs and shall be fastened to the channels or angles perpendicular to the steel joists.

- D. Deck Damage: Refer to SDI MOC1, for repair of deck damage.
- E. Accessory Installation:
 - 1. Adjusting Plates: Install as shown on shop drawings.
 - 2. End Closures: Provide end closure to close open ends of cells at columns, walls, and openings in deck.
 - 3. Closures Above Partitions: Provide for closing voids between cells over partitions that are perpendicular to direction of cells. Provide a one-piece closure strip for partitions 4-in. nominal or less in thickness and two-piece closure strips for wider partitions. Provide sheet metal closures above fire-rated partitions at both sides of partition with space between filled with fiberglass insulation.
 - 4. Column Closures: Provide for spaces between floor decking and columns which penetrate the deck. Field cut closure plate to fit column in the field and tack weld to decking and columns.
 - 5. Access Hole Covers: Provide to seal holes cut in decking to facilitate welding of decking to structural supports.
- F. Repairs: Before placement of roof insulation and roof covering, the deck shall be inspected for tears, dents or other damage that may prevent the deck from acting as a structural roof base. The need for repair of damaged deck shall be determined by the Architect or Engineer of Record based on structural performance, unless aesthetics have been specifically addressed in the contract documents.
- G. Surface Repair of Metal Decking
 - 1. If the deck has superficially corroded (i.e., the deck finish is still largely intact, but rust stains are present), the deck should not need to be repainting. No remediation work is necessary.
 - 2. If the corrosion is more advanced, but the structural integrity is judged to be adequate, remediate the metal decking by removing all loose and scaly rust from the deck flange and flute surfaces using power rotary equipment with contoured brushes that conform to the existing deck configuration. Vacuum all dust and debris from the deck. Using a Graco 5000 (or equivalent) airless pump, spray apply Sherwin-Williams DTM Acrylic primer B66W1 to the deck to a dry film thickness of 5 mils (wet film thickness of 10 mils). Then install 30# asphalt coated, organic base felt to the dry acrylic primer.
 - 3. If the deck or portions thereof has been judged to be structurally impaired, deck replacement in the affected area shall be required.

3.04 FIELD QUALITY CONTROL

- A. Decks Not Receiving Concrete:
 - 1. Inspect the decking top surface for distortion after installation. For roof decks not receiving concrete, verify distortion by placing a straight edge across three adjacent top flanges.
 - 2. The maximum allowable gap between the straight edge and the top flanges is 1/16-in.; when gap is more than 1/16-in., provide corrective measures or replacement. Reinspect decking after performing corrective measures or replacement.

3.05 CLEANING

- A. This Contractor shall periodically remove and dispose of all debris and residual products and clean all contamination from architectural surfaces visible to the public and from mechanical equipment installed on the roof at no additional cost to the Owner.
- B. All roof drains, scuppers and downspouts shall be cleaned of debris and drainage system shall be checked for proper, unobstructed or hindered functionality.

3.06 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 top surface of prime-painted deck immediately after installation, and apply repair paint.
 - 1. Apply repair paint, POR 15, of same color as adjacent shop-primed deck, to bottom surfaces of deck exposed to view.
 - 2. Wire brushing, cleaning, and repair painting of bottom deck surfaces
- C. Provide final protection and maintain conditions to ensure that steel deck is without damage or deterioration until the application of finished roofing.

END OF SECTION

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SECTION 06 10 00**ROUGH CARPENTRY****PART 1 - GENERAL****1.01 RELATED DOCUMENTS**

Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to Work of this Section. The Contractor and Installer of the Work shall examine the specifications and shall thoroughly familiarize himself with all provisions regarding the Work of this Section.

1.02 DESCRIPTION OF THE WORK

- A. Extent of Work: The Extent of Work of this Section is indicated on the drawings, details and by the provisions of this Section.
- B. The Scope is defined to include the removal of, and disposal or temporary storage of items to be reused and related materials in preparation for the Work of subsequent sections, but is not limited to the following which are listed as a guide and are not intended to be all inclusive:
 - 1. Provide preservative treated lumber and plywood to match and replace all deteriorated parts, pieces and shapes;
 - 2. Provide preservative treated plywood, nailers, blocking, shims, plates and curbs as required to complete and/or correct the Work and to conform to requirements of all new exterior details;
 - 3. All work of a carpentry nature;
 - 4. Store and protect reusable materials, specialties and accessories intended to be reinstalled; and
 - 5. Provide items not previously mentioned but required to permit subsequent work.
 - 6. Clean-up.
- C. Related Sections: Related work is specified in other Sections of these Specifications. The Contractor shall consult and become familiar with all other Sections to determine that part of the work which will come into contact with his Work.

1.03 REFERENCES

- A. The publications listed below form a part of this specification to the extent referenced.
- B. Unless otherwise indicated, the date of the publication or standard is that in effect as of the date of the project documents.
- C. Reference Documents:
 - 1. Manufacturer's instructions.
 - 2. APA PDS - Panel Design Specification;
 - 3. APA L870 - Voluntary Product Standard, PS 1-09, Structural Plywood;

4. APA S350 - PS 2-10, Performance Standard for Wood-Based Structural-Use Panels;
5. ASTM D1972 - Standard Practice for Generic Marking of Plastic Products;
6. ASTM D3498 - Adhesives for Field-Gluing Plywood to Lumber Framing for Floor Systems;
7. ASTM D6007 - Standard Test Method for Determining Formaldehyde Concentration in Air from Wood Products Using a Small Scale Chamber;
8. ASTM D6330 - Standard Practice for Determination of Volatile Organic Compounds (Excluding Formaldehyde) Emissions from Wood-Based Panels Using Small Environmental Chambers Under Defined Test Conditions;
9. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials;
10. ASTM E1333 - Determining Formaldehyde Concentrations in Air and Emission Rates from Wood Products Using a Large Chamber;
11. AWC NDS - National Design Specification (NDS) for Wood Construction;
12. AWPA BOOK - AWPA Book of Standards;
13. AWPA M2 - Standard for Inspection of Treated Wood Products;
14. AWPA M4 - Standard for the Care of Preservative Treated Wood Products; American Wood-Preservers' Association;
15. AWPA P18 - Nonpressure Preservatives;
16. AWPA P5 - Standard for Waterborne Preservatives
17. AWPA T1 - Use Category System: Processing and Treatment Standard
18. AWPA U1 - Use Category System: User Specification for Treated Wood;
19. NFPA 255 - Standard Method of Test of Surface Burning Characteristics of Building Materials; National Fire Protection Association;
20. SPIB 1003 - Standard Grading Rules for Southern Pine Lumber;
21. UL (FRD) - Fire Resistance Directory; Underwriters Laboratories Inc.;

1.04 SYSTEM DESCRIPTION

- A. The Work described herein involves various installations of wood components and accessory items for use in these Construction Documents. Unless otherwise indicated, all wood components used in conjunction with exterior details, such as framing, blocking, shims, nailers, and plywood shall be treated for decay and insect resistance.

1.05 DEFINITIONS

- A. General: Refer to Section 01 42 16 - Definitions.
- B. Grade Marks:
1. SPA - Southern Pine Association
 2. SPIB - Southern Pine Inspection Bureau
 3. WWPA - Western Wood Products Association
 4. APA - American Plywood Association

1.06 SUBMITTAL

- A. General: Refer to Section 01 33 00 - Submittal Procedures. Transmit submittals using the specified form and itemize each item proposed.

- B. Provide digital copy of all submittals. Scan contents of each submittal at full scale in Adobe PDF format for archive storage and distribution, minimum 300 dpi resolution (full color).
- C. Submittals shall clearly show annotations and drawing mark up tools or similar technique to add comments those selections that apply, including clouds, circles, boxes, lines, arrows, stamps, text boxes and text callouts—do not highlight. Itemize products submitted with reference to specification section and/or applicable drawing.
- D. Submittals shall be reviewed by the Architect prior to commencement of any work of this section. A copy of the submittals shall be present at the job site during the Work.
- E. The following submittals shall be presented to Architect for approval:
 - 1. Time and sequence schedule.
 - 2. Location of equipment and method of storage of products at the site.
 - 3. Submit two samples of each type of nail and fastener of each size and length, and identify usage. Provide manufacturer's product description for each.
 - 4. Product Literature: Provide copies of the Manufacturer's and supplier's product information, specifications, installation instructions, and material safety data sheets (where applicable). Copies of all MSDS data sheets shall be kept on the project site at all times.
 - 5. Product Data: Treating plant's instructions for use, including requirements for storage, cutting, and finishing.
 - 6. Preservative Treatment Certification: Treating plant's certification of compliance with specified standards, process employed, and preservative retention values.
 - 7. Shop Drawings: Provide shop drawings for details differing from those indicated on drawings.
 - 8. Unit Cost Pricing: Contractor shall provide unit cost prices for the replacement of existing deteriorated wood components not incorporated in the Work, unless otherwise indicated in the Bid Proposal Form. Provide installed lineal foot unit costs for the following schedule of specified wood components: Blocking/Nailers (1x2, 1x4, 1x6, 2x4, 2x6, and 2x8); and Plywood (1/2-in., 5/8-in. and 3/4-in.) - nominal dimensions.

1.07 DELIVERY, STORAGE AND HANDLING

- A. Owner will not provide closed storage facilities or be responsible for loss or damage of products and equipment.
- B. Deliver materials to the site in an undamaged condition.
- C. Store, protect, handle, and install prefabricated structural elements in accordance with manufacturer's instructions and as specified. Store materials off the ground to provide proper ventilation, with drainage to avoid standing water, and protection against ground moisture and dampness. Store materials with a moisture barrier at both the ground level and as a cover forming a well ventilated enclosure. Adhere to requirements for stacking, lifting, bracing, cutting, notching, and special fastening requirements. Remove defective and damaged materials and provide new materials. Store separated reusable wood waste convenient to cutting station and area of work.

1.08 GRADING AND MARKING

- A. Lumber: Mark each piece of framing and board lumber or each bundle of small pieces of lumber with the grade mark of a recognized association or independent inspection agency. Surfaces that are to be exposed to view shall not bear grademarks, stamps, or any type of identifying mark. Hammer marking will be permitted on timbers when all surfaces will be exposed to view.
- B. Plywood: Mark each sheet with the mark of a recognized association or independent inspection agency that maintains continuing control over the quality of the plywood. The mark shall identify the plywood by species group or span rating, exposure durability classification, grade, and compliance with APA L870. Surfaces that are to be exposed to view shall not bear grademarks or other types of identifying marks.
- C. Preservative-Treated Lumber and Plywood: The Contractor shall be responsible for the quality of treated wood products. Each treated piece shall be inspected in accordance with AWWA M2 and permanently marked or branded, by the producer, in accordance with AWWA M6. The appropriate Quality Mark on each piece will be accepted, in lieu of inspection reports, as evidence of compliance with applicable AWWA treatment standards.

1.09 SIZES AND SURFACING

- A. ALSC PS 20 for dressed sizes of yard and structural lumber. Lumber shall be surfaced four sides. Size references, unless otherwise specified, are nominal sizes, and actual sizes shall be within manufacturing tolerances allowed by the standard under which the product is produced. Other measurements are IP or SI standard.

1.10 MOISTURE CONTENT

- A. Air-dry or kiln-dry lumber. Kiln-dry treated lumber after treatment. Maximum moisture content of wood products shall be as follows at the time of delivery to the job site:
 - 1. Framing lumber and boards - 19 percent maximum
 - 2. Timbers 5-inches and thicker - 25 percent maximum
 - 3. Roof planking - 15 percent maximum
 - 4. Materials other than lumber - Moisture content shall be in accordance with standard under which the product is produced.

1.11 PRESERVATIVE TREATMENT

- A. Treat wood products with waterborne wood preservatives conforming to AWWA P5. Pressure treatment of wood products must conform to the requirements of AWWA BOOK Use Category System Standards U1 and T1. Pressure-treated wood products must not contain arsenic, chromium, or other agents classified as carcinogenic, probably carcinogenic, or possibly carcinogenic to humans (compounds in Groups 1, 2A, or 2B) by the International Agency for Research on Cancer (IARC), Lyon, France. Pressure-treated wood products must not exceed the limits of the U.S. EPA's Toxic Characteristic Leaching Procedure (TCLP), and must not be classified as hazardous waste.

- B. Submit certification from treating plant stating chemicals and process used and net amount of preservatives retained are in conformance with specified standards. In accordance with AWP A U1 provide non-copper preservative treatment such as EL2, PT1 or SBX, DOT for products in direct contact with sheet metal.
 - 1. 0.25 pcf intended for above ground use.
 - 2. 0.40 pcf intended for ground contact and fresh water use.
 - 3. 0.60 pcf intended for Ammoniacal Copper Quaternary Compound (ACQ)-treated foundations.
 - 4. 0.80 to 1.00 pcf intended for ACQ-treated pilings.
- C. All wood must be air or kiln dried after treatment. Specific treatments must be verified by the report of an approved independent inspection agency, or the AWP A Quality Mark on each piece. Do not incise surfaces of lumber that will be exposed. Minimize cutting and avoid breathing sawdust. Brush coat areas that are cut or drilled after treatment with either the same preservative used in the treatment or with a 2 percent copper naphthenate solution.
- D. Plastic lumber must not be preservative treated.
- E. The following items must be preservative treated:
 - 1. Wood framing, woodwork, and plywood up to and including the subflooring at the first-floor level of structures having crawl spaces when the bottoms of such items are 24-in. or less from the earth underneath.
 - 2. Wood members that are in contact with water.
 - 3. Exterior wood steps, platforms, and railings; and all wood framing of open, roofed structures.
 - 4. Wood sills, soles, plates, furring, and sleepers that are less than 24-in. from the ground, furring and nailers that are set into or in contact with concrete or masonry.
 - 5. Nailers, edge strips, crickets, curbs, and cants for roof decks.
- F. New Construction
 - 1. Use a boron-based preservative conforming to AWP A P18, sodium silicate wood mineralization process, or Ammoniacal Copper Quaternary Compound to treat wood. Use boron-based preservatives for above-ground applications only. *Note: Boron-based preservative is not recommended for use of wood in direct contact with ground because of the potential for leaching out of the preservative. Boron-based preservative has nonrestrictive handling requirements and low mammalian toxicity.*
- G. Existing Structures:
 - 1. Use borate, permethrin, or a sodium silicate wood mineralization process to treat wood. Use borate for interior applications only.

Note: Permethrin is manufactured from water-based pyrethrum, degrades in sunlight, and affects air quality less than petroleum-based insecticides.

1.12 QUALITY ASSURANCE

- A. Qualifications:
 - 1. Installation shall be by a duly licensed contractor approved for the type of work involved and shall have been successfully engaged in this type of work for not less than (5) years prior to bid date and shall be capable of showing successful installation similar to work required for this project.
 - 2. Supervision: The Work of this Section shall be performed under the direction of a qualified supervisor or foreman with a minimum of (5) years experience in the type of work involved herein.
- B. Regulatory Requirements: Comply with all applicable codes and regulations by authorities having jurisdiction.
- C. Allowable Tolerances: All replaced wood components shall conform exactly to the original details, except as otherwise indicated. All surfaces shall be flat and true, and corners mitered (butt corners will not be allowed).

1.13 PROJECT/SITE CONDITIONS

- A. Do not leave equipment on premises unattended or unlocked overnight without authority, and provide protection against theft, malicious mischief and acts of vandalism.
- B. Existing Conditions: The Owner maintains that all existing conditions are in good repair. Before starting any Work required in this section, notify the Owner of any existing damage to building or grounds.
- C. Protection: Provide all necessary protection to prevent injury, soiling and damage to Owner's and adjacent property, and to prevent damage to existing improvements to remain. All damage shall be restored to original condition as acceptable to parties having jurisdiction.

1.14 SCHEDULING

- A. General: Refer to Section 01 31 13 - Project Coordination.
- B. Coordination/Cooperation: Coordinate and schedule work in cooperation with Owner and other trades. Comply with Owner's requirements related to security.

1.15 GUARANTEE

- A. The Guarantee contained under other provisions of these Contract Documents will be held to have been part of this Section. The Contractor shall do all of his work in conformance with the provisions of the Drawings and Specifications in such a manner that will allow all other trades to perform their work and submit their required guarantees.
- B. Provide manufacturer's standard lifetime warranty for pressure treated wood.

1.16 SAFETY

- A. The Contractor shall be fully and solely responsible for all matters of safety of person and property arising from this contract, including the liabilities and responsibilities of all subcontractors. Neither the Architect nor the Owner or any of their representatives or employees are to be assumed to have any role of responsibility of matters of safety except they (including the Architect) shall have the authority to order stopping of a portion of the Work which they notice may endanger occupants, employees of the Owner, or the public, or employees of the Contractor or subcontractors.
- B. The Work of this Section shall include all steps necessary to protect the workmen and general public from injury due to construction work of this Contract. Unsafe conditions, equipment, or work practices shall not be permitted at anytime.

PART 2 - PRODUCTS**2.01 GENERAL**

- A. The following products and manufacturers are approved subject to the provisions of these specifications and are not intended to exclude other manufacturers with equivalent materials, systems and warranties. Other acceptable manufacturers may be utilized, provided their systems and warranties are equivalent in all respects and submitted for approval in accordance with these Contract Documents.

2.02 MANUFACTURERS

- A. Lumber and Plywood:
 - 1. Local Supply.

2.03 LUMBER

- A. Pressure treated framing lumber, blocking, nailers and shims:
 - 1. Materials:
 - a. For 2-in. to 4-in. thick x 2-in. to 4-in. wide, use Standard Douglas Fir or #2 grade Southern Yellow Pine;
 - b. For 2-in. to 4-in. thick x 5-in. wide or wider, use #2 Douglas Fir or #2 grade Southern Yellow Pine;
 - 2. Lumber shall comply with ALSC National Grading Rule (NGR) provisions of inspection agency applicable to species.
 - 3. Species and grades must meet or exceed the following values, unless indicated otherwise on Contract documents.
 - a. Fb (extreme fiber stress in bending): Minimum 850 psi.
 - b. E (modulus of elasticity): Minimum 1,300,000 psi.
 - 4. Compliance/Product Standard:
 - a. Douglas Fir: WWPA Grade Stamp
 - b. Southern Pine: SPIB Grade Stamp
 - c. Pressure Treated Wood: ALSC Accredited Agency Stamp

2.04 CDX PLYWOOD

- A. Comply with APA Product Standard PS 1.
- B. Bear the mark of a recognized association or independent inspection agency that maintains continuing control over quality of plywood which identifies compliance by veneer grade, group number, span rating where applicable, and glue type.
- C. Roof Sheathing:
 - 1. APA Rated: Exposure 1, Structural 1
 - 2. Panel grade: C-D or better.
 - 3. Span Rating:
 - a. 19/32-inch thick: Not less than 24/16.
 - b. 23/32-inch thick: Not less than 48/24 for supports 24 inches on center.
- D. Provide preservative treated (PT) plywood, where required. Replace deteriorated plywood with new PT plywood, to match existing.

2.05 FASTENERS

- A. Nails: Provide size and type best suited for purpose, unless noted otherwise. Use only annular threaded, ring shank, flat head, diamond point, hot-dipped galvanized or stainless steel nails for all exterior carpentry work.
 - 1. In general, 8-penny or larger nails must be used for nailing through 1 inch thick lumber and for toe nailing 2 inch thick lumber; 16-penny or larger nails must be used for nailing through 2 inch thick lumber.
 - 2. Nails used with treated lumber and sheathing must be hot-dipped galvanized in accordance with ASTM A153/A153M.
 - 3. Where detailed nailing requirements are not specified, nail size and spacing must be sufficient to develop an adequate strength for the connection. The connection's strength must be verified against the nail capacity tables in AWC NDS. Reasonable judgment backed by experience must ensure that the designed connection will not cause the wood to split. If a load situation exceeds a reasonable limit for nails, a specialized connector must be used.
- B. Provide fasteners, anchors and hardware components that are compatible with preservative-treated wood products. Use only hot-dipped galvanized or stainless steel products, compatible and suitable for intended usage and expected loads.
 - 1. Attachment of wood-to-masonry and wood-to-concrete shall be a single unit, vibration-resistant, anchor bolt assembly with a finished hex head - 1/4-in. and 1-1/2-in. minimum embedment.

PART 3 - EXECUTION**3.01 EXAMINATION**

- A. Examine the areas and conditions under which work of this Section will be performed.

- B. Correct conditions detrimental to the proper and timely completion of the Work.
- C. Do not install building construction materials that show visual evidence of biological growth.
- D. Do not proceed until unsatisfactory conditions have been corrected.
- E. Report in writing to the Architect or Owner all unsatisfactory conditions.
- F. Commencement of work of this Section shall be construed as an acceptance of conditions by the Contractor.

3.02 PREPARATION

- A. Prepare all surfaces to receive replaced curbs, plywood, wood blocking, etc., as required.
- B. Prepare surfaces to provide level, even work which meets all existing and new levels or heights of blocking within 1/8-in. (maximum).

3.03 INSTALLATION

- A. General:
 - 1. Select lumber sizes to minimize waste.
 - 2. Fit framing lumber and other rough carpentry, set accurately to the required lines and levels, and secure in place in a rigid manner.
 - 3. Do not splice framing members between bearing points.
 - 4. All rough carpentry shall produce joints true, tight and well-nailed with all members assembled in accordance with original installation, the Drawings, and with all pertinent codes and regulations.
- B. Selection of Lumber Pieces:
 - 1. Carefully select all members. Select individual pieces so that knots and obvious defects will not interfere with proper nailing or making connections. Do not install any lumber with moisture content in excess of that specified.
 - 2. Cut out and discard all defects which will render a piece unable to serve its intended function. Lumber or plywood may be rejected by the Architect, whether or not it has been installed, for excessive warp, twist, bow, crook, mildew, fungus, or mold, as well as for improper cutting and fitting.
- C. Where new wood members are doubled, ends shall be lapped and thoroughly spiked to each other and to bearing members.
- D. Wood Curbs, Nailers and Blocking:
 - 1. Fabrication and installation shall be as detailed or required, and shall be firmly anchored to the structure with approved nails and/or fasteners.
 - a. Install to the proper dimension on straight lines and to correct elevations.
 - b. Set fasteners (flush if necessary) to clear abutting work..
 - c. Round or chamfer corners of wood plates where flashing occurs.

2. Installation of the blocking shall be such that all material is level in relation to surrounding areas and all joints are butted tightly with no voids.
 3. After removal of existing membrane and/or other material as required, install new pressure treated wood blocking of the size required at equipment curbs where directed.
- E. Fastening:
1. Unless otherwise detailed, blocking shall be secured in accordance with FM 1-49 details and joints in the members shall be staggered.
 2. Nails.
 - a. Nail in accordance with the Recommended Nailing Schedule as specified in AFPA Manual for House Framing where detailed nailing requirements are not specified in nailing schedule. Select nail size and nail spacing sufficient to develop adequate strength for the connection without splitting the members.
 - b. Use special nails with framing connectors.
 - c. For sheathing, select length of nails sufficient to extend 1-in. into supports.
 - d. Use eight penny or larger nails for nailing through 1-in. thick lumber and for toe nailing 2-in. thick lumber.
 - e. Use 16 penny or larger nails for nailing through 2-in. thick lumber.
 - f. Select the size and number of nails in accordance with the Nailing Schedule, except for special nails with framing anchors.
 - g. Secure plywood or structural use panel to each stud or joist face nail 8d, at supported edges 6-in. on center and at intermediate supports 6-in. on center.
 3. Bolts:
 - a. Fit bolt heads and nuts bearing on wood with washers.
 - b. Countersink bolt heads flush with the surface of nailers.
 - c. Embed in concrete and solid masonry or use expansion bolts. Special bolts or screws designed for anchor to solid masonry or concrete in drilled holes may be used.
 - d. Use toggle bolts to hollow masonry or sheet metal.
 - e. Use bolts to steel over 0.112-in., 11 gage in thickness. Secure wood nailers to vertical structural steel members with bolts, placed one at ends of nailer and 24-in. intervals between end bolts. Use clips to beam flanges.
 4. Drill Screws to steel less than 0.112-in. thick.
 - a. ASTM C1002 for steel less than 0.033-in. thick.
 - b. ASTM C 954 for steel over 0.033-in. thick.
 5. Power actuated drive pins may be used where practical to anchor to solid masonry, concrete, or steel.
 6. Do not anchor to wood plugs or nailing blocks in masonry or concrete. Use metal plugs, inserts or similar fastening.
 7. Screws to Join Wood:
 - a. Where shown or option to nails.
 - b. ASTM C1002, sized to provide not less than 1-in. penetration into anchorage member.
 - c. Spaced same as nails.
 8. Installation of Timber Connectors:
 - a. Conform to applicable requirements of the NFPA National Design Specification for Wood Construction.
 - b. Fit wood to connectors and drill holes for fasteners so wood is not split.

- F. Blocking Nailers, and Furring:
 - 1. Install furring, blocking, nailers, and grounds where shown.
 - 2. Use longest lengths practicable.
 - 3. Layers of Blocking or Plates:
 - a. Stagger end joints between upper and lower pieces.
 - b. Nail at ends and not over 24-in. between ends.
 - c. Stagger nails from side to side of wood member over 5-in. in width.
 - 4. Unless otherwise shown, use wall furring 1- by 3-in. continuous wood strips installed plumb on walls, using wood shims where necessary so face of furring forms a true, even plane. Space furring not over 16-in. on centers, butt joints over bearings and rigidly secure in place. Anchor furring on 16-in. centers.
- G. Sheathing:
 - 1. Use plywood or structural-use panels for sheathing.
 - 2. Lay panels with joints staggered, with edge and ends 1/8-in. apart and nailed over bearings as specified.
 - 3. Set nails not less than 3/8-in. from edges.
 - 4. Install 2- by 4-in. blocking spiked between joists, rafters and studs to support edge or end joints of panels.
 - 5. Match and align sheathing which is an extension of work in place to existing.
- H. Field Cutting: Limit field cutting of treated wood. RETREAT FIELD CUT SECTIONS.
- I. Replacement of Deteriorated Wood:
 - 1. Replace all deteriorated plywood, blocking, and/or nailers with the same size material in accordance with industry standards of workmanship and specifications as defined herein and herewith.
 - 2. Keep accurate records for pricing on a unit price basis. These records shall be made available to the Architect or Owner on request.

3.04 FIELD QUALITY CONTROL

- A. Report any unforeseen adverse conditions immediately during the course of Work.
- B. Maintain the building in a 100% watertight condition throughout the Work. Coordinate repair any roof leak(s) that may occur at no additional cost to the Owner.

3.05 CLEANING

- A. Remove all debris associated with the work of this Section and leave the work clean, dry and ready for work of subsequent Sections of these Specifications. Dispose of scrap legally.

END OF SECTION

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SECTION 07 01 50.19**PREPARATION FOR RE-ROOFING****PART 1 - GENERAL****1.01 RELATED DOCUMENTS**

Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to Work of this Section. The Contractor and Installer of the Work shall examine the specifications and shall thoroughly familiarize himself with all provisions regarding the Work of this Section.

1.02 DESCRIPTION OF THE WORK

- A. Extent of Work: The Extent of Work of this Section is indicated on the drawings, details and by the provisions of this Section.
- B. The Scope is defined to include the removal of, and disposal or temporary storage of items to be reused and related materials in preparation for the Work of subsequent sections, but is not limited to the following which are listed as a guide and are not intended to be all inclusive:
 - 1. Removal of the existing roofing system in preparation for a new roof membrane system.
 - 2. Installation of the new roofing membrane system over an existing roof deck.
- C. Related Sections: Related work is specified in other Sections of these Specifications. The Contractor shall consult and become familiar with all other Sections to determine that part of the work which will come into contact with his Work.

1.03 REFERENCES

- A. The publications listed below form a part of this specification to the extent referenced.
- B. Unless otherwise indicated, the date of the publication or standard is that in effect as of the date of the project documents.
- C. Reference Documents:
 - 1. ANSI/SPRI/FM 4435/ES-1 - Test Standard for Edge Systems Used with Low Slope Roofing Systems;
 - 2. ANSI/SPRI FX-1 - Standard Field Test Procedure for Determining the Withdrawal Resistance of Roofing Fasteners;
 - 3. ANSI/SPRI IA-1 – Standard Field Test Procedure for Determining the Uplift Resistance of Insulation and Insulation Adhesive Combinations over Various Substrates;
 - 4. ASTM E1745 - Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs;
 - 5. NRCA Roofing Manual, National Roofing Contractors Association;
 - 6. SDI COSP17 - Code of Standard Practice;
 - 7. SDI RDDM - Roof Deck Design Manual;

8. Manufacturer's instructions.

1.04 SYSTEM DESCRIPTION

- A. Roof Areas, as Indicated: Remove existing roofing gravel, perimeter flashings, base flashings, counter flashings, vent stack flashings, roofing membrane, insulation and all other items necessary to provide access for the Work.
- B. Remove roof-mounted mechanical equipment and/or electrical equipment to provide access for the Work.

1.05 DEFINITIONS

- A. General: Refer to Section 01 42 16 - Definitions.
- B. Contractor: Refer to General Conditions.
- C. Roofing Terminology: Refer to ASTM D 1079 and glossary in NRCA's "The NRCA Roofing and Waterproofing Manual" for definition of terms related to roofing work in this Section.
- D. Roof Tear-Off: Removal of existing membrane roofing system from deck.
- E. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and reinstalled.
- F. Existing to Remain: Existing items of construction that are not indicated to be removed.
- G. Work of this Section: When reference is made to the "Work of this Section" it shall mean the work specified and described under the CSI Narrow Scope Section 07 01 50.19.

1.06 MATERIALS OWNERSHIP

- A. Except for items or materials indicated to be reused, reinstalled, or otherwise indicated are to remain Owner's property, demolished materials shall become Contractor's property and shall be removed from Project site.

1.07 SUBMITTAL

- A. General: Refer to Section 01 33 00 - Submittal Procedures. Transmit submittals using the specified form and itemize each item proposed.
- B. Provide digital copy of all submittals. Scan contents of each submittal at full scale in Adobe PDF format for archive storage and distribution, minimum 300 dpi resolution (full color).
- C. Submittals shall clearly show annotations and drawing mark up tools or similar technique to add comments those selections that apply, including clouds, circles, boxes, lines, arrows, stamps, text boxes and text callouts—do not highlight. Itemize products submitted with reference to specification section and/or applicable drawing.

- D. Submittals shall be reviewed by the Architect prior to commencement of any work of this section. A copy of the submittals shall be present at the job site during the Work.
- E. The following submittals shall be presented to Architect for approval:
 - 1. Time and sequence schedule.
 - 2. Location of equipment and method of storage of products at the site.
 - 3. Product Literature: Provide copies of the Manufacturer's and supplier's product information, specifications, installation instructions, and Material Safety Data Sheets for building components and accessories. Copies of all MSDS data sheets shall be kept on the project site at all times.
 - 4. Shop Drawings: Provide shop drawings for details differing from those indicated on drawings. Certify compliance with requirements of these Specifications for those details not submitted.
 - 5. Fastener pull-out test report, if not provided by Architect.
- F. Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, including exterior and interior finish surfaces, that might be misconstrued as having been damaged by reroofing operations. Submit before Work begins.

1.08 QUALITY ASSURANCE

- A. Qualifications:
 - 1. Work of this Section shall be performed by a duly licensed contractor approved for the type of work involved and shall have been successfully engaged in this type of work for not less than (5) years prior to bid date and shall be capable of showing successful installation similar to work required for this project.
 - 2. Supervision: The Work of this Section shall be performed under the direction of a qualified supervisor or foreman with a minimum of (5) years experience in the type of work involved herein.
- B. Regulatory Requirements: Comply with governing EPA notification regulations before beginning membrane roofing removal. Comply with hauling and disposal regulations of authorities having jurisdiction.
- C. Preroofing Conference: Conduct conference at Project site.
 - 1. Meet with Owner; Architect; roofing system manufacturer's representative; deck Installer; roofing Installer including project manager, superintendent, and foreman; and installers whose work interfaces with or affects reroofing including installers of roof accessories and roof-mounted equipment.
 - 2. Review methods and procedures related to roofing system tear-off and replacement including, but not limited to, the following:
 - a. Reroofing preparation, including membrane roofing system manufacturer's written instructions.
 - b. Temporary protection requirements for existing roofing system that is to remain during and after installation.
 - c. Existing roof drains and roof drainage during each stage of reroofing, and roof drain plugging, plug removal and replacement requirements.

- d. Construction schedule and availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
- e. Existing deck removal procedures and Owner notifications.
- f. Condition and acceptance of existing roof deck and base flashing substrate for reuse.
- g. Structural loading limitations of deck during reroofing.
- h. Base flashings, special roofing details, drainage, penetrations, equipment curbs, and condition of other construction that will affect reroofing.
- i. HVAC shutdown and sealing of air intakes.
- j. Shutdown of fire-suppression, -protection, and -alarm and -detection systems.
- k. Governing regulations and requirements for insurance and certificates, if applicable.
- l. Existing conditions that may require notification of Architect before proceeding.

1.09 DELIVERY, STORAGE AND HANDLING

- A. General: Refer to Section 01 60 00 - Material and Equipment.
- B. Owner will not provide closed storage facilities or be responsible for loss or damage of products and equipment.
- C. Select and utilize handling equipment so as to avoid damage to materials handled, damage to applied roofing or damage to other construction.
- D. Protect products and equipment from pilferage and vandalism. Owner will not provide closed storage facilities or be responsible for loss or damage of products and equipment.
- E. Protect all materials, equipment, storage areas, completed or work in progress, from becoming an "attractive" nuisance.

1.10 PROJECT CONDITIONS

- A. General: General requirements and specific recommendations of the materials' manufacturers are included as part of these specifications.
 - 1. Contractor shall maintain the roof in a 100-percent watertight condition throughout the work. He shall repair any roof leak(s) that may occur during this time at no additional cost to the Owner.
 - 2. Maintain continuous temporary protection during and prior to installation of new roofing system.
 - 3. Report unforeseen adverse conditions to Architect immediately.
- B. Owner will occupy portions of building immediately below reroofing area. Conduct re-roofing so Owner's operations will not be disrupted. Provide Owner with not less than 72 hours' notice of activities that may affect Owner's operations.
 - 1. Coordinate work activities daily with Owner so Owner can place protective dust or water leakage covers over sensitive equipment or furnishings, shut down HVAC and fire-alarm or -detection equipment if needed, and evacuate occupants from below the work area.
 - 2. Before working over structurally impaired areas of deck, notify Owner to evacuate occupants from below the affected area. Verify that occupants below the work area have been evacuated before proceeding with work over the impaired deck area.

- C. Protect building to be reroofed, adjacent buildings, walkways, site improvements, exterior plantings, and landscaping from damage or soiling from reroofing operations.
- D. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities.
- E. Conditions existing at time of inspection for bidding will be maintained by Owner as far as practical.
- F. Limit construction loads on roof to 100 PSF rooftop equipment wheel loads and 30 PSF for uniformly distributed loads.
- G. Weather Limitations: Proceed with reroofing preparation only when existing and forecasted weather conditions permit Work to proceed without water entering existing roofing system or building.
- H. Hazardous Materials: It is not expected that hazardous materials such as asbestos-containing materials will be encountered in the Work.
 - 1. Hazardous materials will be removed by Owner before start of the Work. Existing roof will be left no less watertight than before removal.
 - 2. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.

1.11 SCHEDULING

- A. Coordination/Cooperation: Coordinate and schedule work in cooperation with Owner and other trades. Comply with Owner's requirements related to security. Remove debris on a daily basis. Minimize noise and dust to the fullest extent possible.

1.12 WARRANTY

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during reroofing, by methods and with materials so as not to void existing roofing system warranty. Notify warrantor before proceeding.
 - 1. Notify warrantor of existing roofing system on completion of reroofing, and obtain documentation verifying that existing roofing system has been inspected and warranty remains in effect. Submit documentation at Project closeout.

1.13 SAFETY

- A. The Contractor shall be fully and solely responsible for all matters of safety of persons and property arising from this contract, including the liabilities and responsibilities of all subcontractors. Neither the Architect nor the Owner or any of their representatives or employees are to be assumed to have any role of responsibility of matters of safety except they (including the Architect) shall have the authority to order stopping of a portion of the Work which they notice may endanger occupants, employees of the Owner, or the public, or employees of the Contractor or subcontractors.

PART 2 - PRODUCTS**2.01 TEMPORARY ROOFING MATERIALS**

- A. Design of temporary roofing and selection of materials are responsibilities of Contractor.

2.02 MATERIALS

- A. Plastic Sheet Protection:
 - 1. ASTM E 1745, Class A or B, Polyethylene Film (e.g. visqueen), 10 mils thick (minimum).
- B. EPS Fanfold Protection Board:
 - 1. Description: Rigid film-faced expanded polystyrene (EPS) insulation.
 - 2. Thickness: 1/2-in.
 - 3. Panel density: 1.25 pcf (available range: 1-2 pcf)
 - 4. Bundle size: 4-ft. x 50-ft. (200 ft.²)
 - 3. Compliance: ASTM C578, Type II
 - 4. Tradename: R-Tech® Fanfold Recover Board
 - 5. Manufacturer: Carlisle, 800-479-6832 • <https://www.carlislesyntec.com/>

2.03 INFILL MATERIALS

- A. Use infill materials matching existing membrane roofing system materials, unless otherwise indicated.

2.04 AUXILIARY REROOFING MATERIALS

- A. General: Auxiliary reroofing preparation materials recommended by roofing system manufacturer for intended use and compatible with components of new membrane roofing system.
- B. Metal Flashing Sheet: Metal flashing sheet is specified in Section 07 60 00.

PART 3 - EXECUTION**3.01 EXAMINATION**

- A. This Contractor shall examine the area of work to determine that conditions are acceptable for the work of this and subsequent Sections. Report unsatisfactory conditions to the Architect immediately and confirm in writing. Do not proceed until unsatisfactory conditions are corrected. The execution of work shall be construed as an acceptance of conditions by the Contractor.
- B. Contractor shall examine deck surfaces for inadequate anchorage, foreign material, moisture, and unevenness, any condition which would prevent the execution and quality of application of underlayment or roof insulation system as specified shall be corrected before beginning work. Work shall not proceed with underlayment or insulation application until defects are corrected.

- C. Starting work designates acceptance of the surfaces by the Contractor. Underlayment or insulation material shall be cut and fit as necessary to fully insulate small areas and to accommodate piping, scuttles, skylights, vents, and other construction penetrating the insulation material.
- D. Verify that all roof drains and drain leaders are clear prior to start of Work. Report unsatisfactory conditions to the Architect immediately and confirm in writing.

3.02 PREPARATION

- A. Protect existing membrane roofing system that is indicated not to be re-roofed.
 - 1. Loosely lay fanfold EPS sheet insulation or similar protective material over the roofing membrane in areas indicated or where traffic over existing roofing membranes is anticipated. Loosely lay 15/32-in. plywood or OSB panels over EPS. Extend EPS past edges of plywood or OSB panels a minimum of 1-in.
 - 2. Limit traffic and material storage to areas of existing roofing membrane that have been protected.
 - 3. Maintain temporary protection and leave in place until replacement roofing has been completed. Remove temporary protection on completion of reroofing.
 - 4. Existing roofing (not incorporated in the Work) damaged from the Work of this contract shall be repaired or replaced at no additional cost to Owner.
- B. During removal operations, have sufficient and suitable materials on-site to facilitate rapid installation of temporary protection in the event of unexpected rain.
- C. Maintain roof drains in functioning condition to ensure roof drainage at end of each workday. Prevent debris from entering or blocking roof drains and conductors. Use roof-drain plugs specifically designed for this purpose. Remove roof-drain plugs at end of each workday, when no work is taking place, or when rain is forecast.
 - 1. If roof drains are temporarily blocked or unserviceable due to roofing system removal or partial installation of new membrane roofing system, provide alternative drainage method to remove water and eliminate ponding.
 - 2. Do not permit water to enter into or under existing membrane roofing system components that are to remain.
- D. Verify that rooftop utilities and service piping have been shut off before beginning the Work.

3.04 ROOF TEAR-OFF

- A. General: Notify Owner each day of extent of roof tear-off proposed for that day and obtain authorization to proceed.
- B. Roof Tear-Off: Remove existing roofing membrane and other membrane roofing system components down to bare concrete where indicated on drawings.
 - 1. Dry bitumen and felts that are firmly bonded to concrete decks may remain. Remove wet or unadhered bitumen and felts.
 - 2. Remove cover boards, roof insulation, cant strips and substrate boards.
 - 3. Remove (or cut off) all fasteners and framing from deck.

4. Remove excess asphalt and/or coal tar from roof deck.

3.05 DECK PREPARATION

- A. Inspect deck after tear-off of membrane roofing system and framing for deterioration, spalling, indications of rust, stress and other cracking. Immediately notify architect.
- B. If broken or loose fasteners that secure deck panels to one another or to structure are observed or if deck appears or feels inadequately attached, immediately notify Architect. Do not proceed with installation until directed by Architect.
- C. If deck surface is not suitable for receiving new roofing or if structural integrity of deck is suspect, immediately notify Architect. Do not proceed with installation until directed by Architect.

3.06 INFILL MATERIALS INSTALLATION

- A. Immediately after removal of selected portions of existing membrane roofing system, and inspection and repair, if needed, of deck, fill in the tear-off areas to match existing membrane roofing system construction.
 1. Install new roofing membrane patch over roof infill area. If new roofing membrane is installed the same day tear-off is made, roofing membrane patch is not required.

3.07 FASTENER PULL-OUT TESTING

- A. Retain independent testing and inspecting agency, approved by Owner and Architect, to conduct fastener pull-out tests according to SPRI-FX-1, and submit test report to Architect before installing new membrane roofing system.
 1. Obtain Architect's approval to proceed with specified fastening pattern. Architect may furnish revised fastening pattern commensurate with pull-out test results.
- B. Insulation Adhesive Testing:
 1. Retain independent testing and inspecting agency, approved by Architect, to conduct insulation adhesive tests according to SPRI-IA-1, and submit test report to Architect before installing new membrane roofing system.
 2. Obtain Architect's approval to proceed with specified adhesive application pattern. Architect may furnish a revised application/spacing pattern commensurate with mechanical uplift test results.

3.08 EXISTING BASE FLASHINGS

- A. Remove existing base flashings around parapets, curbs, walls, and penetrations.
 1. Clean substrates of contaminants such as asphalt, sheet materials, dirt, and debris.
- B. Do not damage metal counter flashings that are to remain. Replace metal counter flashings damaged during removal with new specified counter flashings. Refer to Section 07 60 00.

3.09 DISPOSAL

- A. Collect demolished materials and place in containers. Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site.
 - 1. Storage or sale of demolished items or materials on-site is not permitted.
- B. Transport and legally dispose of demolished materials off Owner's property.

3.10 CLEANING

- A. This Contractor shall periodically remove and dispose of all debris and residual products and clean all contamination from architectural surfaces visible to the public and from mechanical equipment installed on the roof at no additional cost to the Owner.
- B. All roof drains, scuppers and downspouts shall be cleaned of debris and drainage system shall be checked for proper, unobstructed or hindered functionality.

END OF SECTION

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SECTION 07 22 00**ROOF AND DECK INSULATION****PART 1 - GENERAL****1.01 RELATED DOCUMENTS**

Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to Work of this Section. The Contractor and Installer of the Work shall examine the specifications and shall thoroughly familiarize himself with all provisions regarding the Work of this Section.

1.02 DESCRIPTION OF THE WORK

- A. Extent of Work: The Extent of Work of this Section is indicated on the drawings, details and by the provisions of this Section.
- B. The Scope is defined to include the removal of, and disposal or temporary storage of items to be reused and related materials in preparation for the Work of subsequent sections, but is not limited to the following which are listed as a guide and are not intended to be all inclusive:
 - 1. Install new tapered insulation system;
 - 2. Provide new gypsum cover boards;
 - 3. Provide new specified non-corrosive fasteners;
 - 4. Store and protect reusable materials, specialties and accessories intended to be reinstalled; and
 - 5. Provide items not previously mentioned but required to permit subsequent work.
 - 6. Cleanup;
- C. Related Sections: Related work is specified in other Sections of these Specifications. The Contractor shall consult and become familiar with all other Sections to determine that part of the work which will come into contact with his Work.

1.03 REFERENCES

- A. The publications listed below form a part of this specification to the extent referenced.
- B. Unless otherwise indicated, the date of the publication or standard is that in effect as of the date of the project documents.
- C. Reference Documents:
 - 1. ASTM C165 - Measuring Compressive Properties of Thermal Insulations;
 - 2. ASTM C203 - Breaking Load and Flexural Properties of Block-Type Thermal Insulation;
 - 3. ASTM C208 - Cellulosic Fiber Insulating Board;
 - 4. ASTM C272 - Water Absorption of Core Materials for Structural Sandwich Constructions;
 - 5. ASTM C552 - Standard Specification for Cellular Glass Thermal Insulation;
 - 6. ASTM C578 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation;

7. ASTM C591 - Unfaced Preformed Rigid Cellular Polyisocyanurate Insulation;
8. ASTM C726 - Mineral Fiber Roof Insulation Board;
9. ASTM C728 - Perlite Thermal Insulation Board;
10. ASTM C930 - Potential Health and Safety Concerns Associated with Thermal Insulation Materials and Accessories;
11. ASTM C1177 - Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing
12. ASTM C1289 - Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board;
13. ASTM D41 - Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing;
14. ASTM D 226 - Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing;
15. ASTM D312 - Standard Specification for Asphalt Used in Roofing
16. ASTM D2178 - Asphalt Glass Felt Used in Roofing and Waterproofing;
17. ASTM D4586 - Asphalt Roof Cement, Asbestos-Free;
18. ASTM D4601 - Asphalt-Coated Glass Fiber Base Sheet Used in Roofing;
19. ASTM D4897 - Standard Specification for Asphalt-Coated Glass-Fiber Venting Base Sheet Used in Roofing;
20. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials;
21. ASTM E96 - Water Vapor Transmission of Materials;
22. FM 4450 - Approval Standard for Class 1 Insulated Steel Deck Roofs;
23. NRCA Roofing Manual, National Roofing Contractors Association;
24. UL 1256 - Fire Test of Roof Deck Constructions;
25. Manufacturer's instructions;

1.04 SYSTEM DESCRIPTION

- A. The Work described herein involves the installation of continuous thermal insulation and fire barrier (cover board) above the roof deck to meet specified performance requirements, including all accessory items indicated in the Construction Documents.

1.05 DEFINITIONS

- A. General: Refer to Section 01 42 16 - Definitions.
- B. Contractor: Refer to General Conditions.
- C. LTTR (Long Term Thermal Resistance) is defined as using techniques from ASTM C1303, the predicted R-Value that has been shown to be equivalent to the average performance of a permeably faced foam insulation product over 15 years. LTTR applies to ALL foam insulation products with blowing agents other than air, such as polyiso, extruded polystyrene and polyurethane. The new method is based on consensus standards in the US and Canada.
- D. Work of this Section: When reference is made to the "Work of this Section" it shall mean the work specified and described under the CSI Narrow Scope Section 07 22 00.

1.06 SUBMITTAL

- A. General: Refer to Section 01 33 00 - Submittal Procedures. Transmit submittals using the specified form and itemize each item proposed.
- B. Provide digital copy of all submittals. Scan contents of each submittal at full scale in Adobe PDF format for archive storage and distribution, minimum 300 dpi resolution (full color).
- C. Submittals shall clearly show annotations and drawing mark up tools or similar technique to add comments those selections that apply, including clouds, circles, boxes, lines, arrows, stamps, text boxes and text callouts—do not highlight. Itemize products submitted with reference to specification section and/or applicable drawing.
- D. Submittals shall be reviewed by the Architect prior to commencement of any work of this section. A copy of the submittals shall be present at the job site during the Work.
- E. Qualification Data:
 - 1. Time and sequence schedule.
 - 2. Location of equipment and method of storage of products at the site.
 - 3. Product Literature: Provide copies of the Manufacturer's and supplier's product information, specifications, installation instructions, and Material Safety Data Sheets for building components and accessories. Copies of all MSDS data sheets shall be kept on the project site at all times.
 - 4. Shop Drawings: Submit insulation board layout and attachment indicating methods of attachment and spacing, transitions, tapered components, thicknesses of materials, and closure and termination conditions. Show locations of ridges, valleys, crickets, interface with, and slope to, roof drains. Base shop drawings on verified field measurements and include verification of existing conditions.
 - 5. Guarantees and Warranties: Submit (1) sample copy of the Contractor's Guarantees and warranties, as provided in these Specifications.

1.07 QUALITY ASSURANCE

- A. Qualifications:
 - 1. Work of this Section shall be performed by a duly licensed contractor approved for the type of work involved and shall have been successfully engaged in this type of work for not less than (5) years prior to bid date and shall be capable of showing successful installation similar to work required for this project.
 - 2. Supervision: The Work of this Section shall be performed under the direction of a qualified supervisor or foreman with a minimum of (5) years experience in the type of work involved herein.
- B. Pre-Installation Meeting: Approximately (1) week prior to commencement of all Work, Contractor and/or Installer of the Work of this Section shall attend a pre-construction conference with all parties involved to answer questions and resolve various aspects of the work, such as, but not limited to, location of equipment, sequencing, coordination, and scheduling. Work out schedules, location of setup areas, and traffic patterns and protection methods.

- C. Performance Criteria: The work shall provide a uniform, watertight condition, and be in accordance with the best workmanship as recognized by standards of the industry. The work shall be guaranteed by this Contractor for a minimum of (5) years against defects in workmanship and water entry.
- D. Regulatory Agencies: Contractor shall comply with all applicable codes and regulations by authorities having jurisdiction.

1.08 DELIVERY, STORAGE AND HANDLING

- A. General: Refer to Section 01 60 00 - Material and Equipment.
- B. Materials shall be handled, transported and stored in a manner enabling only undamaged material to be installed and which will safeguard against possibility of twisting, bending or excessive moisture. Materials shall be transported and stored in dry, well ventilated places.
- C. Deliver materials in sufficient quantity to assure continuity of work. Select and utilize handling equipment so as to avoid damage to materials handled, damage to applied roofing or damage to other construction.
- D. Protect products and equipment from pilferage and vandalism. Owner will not provide closed storage facilities or be responsible for loss or damage of products and equipment. The Work of this section may require closed storage without any additional cost to the Owner.
- E. Protect all materials, equipment, storage areas, completed or work in progress, from becoming an "attractive" nuisance.

1.09 PROJECT/SITE CONDITIONS

- A. General: General requirements and specific recommendations of the materials' manufacturers are included as part of these specifications.
 - 1. Report any unforeseen adverse conditions to Architect immediately during the course of Work.
 - 2. Contractor shall maintain the roof in a 100-percent watertight condition throughout the work. He shall repair any roof leak(s) that may occur during this time at no additional cost to the Owner.
- B. Environmental Requirements:
 - 1. Weather: Proceed with the Work only when actual or predicted weather will not adversely affect installation or performance. Weather includes wind as well as precipitation. Provide all temporary protection to keep building contents and personnel from experiencing any water infiltration or damage.
- C. Protection:
 - 1. General: The Work of this section shall include all steps necessary to protect the workmen, occupants and general public from injury due to construction work of this Contract. Unsafe conditions, equipment, or work practices shall not be permitted at anytime.

2. Provide all necessary protection to property, people and premises as required to prevent damage or contamination and to prevent injury. Remove and repair damage or contamination immediately at no additional cost to the Owner. Provide barricades to restrict access to work area by unauthorized people. Remove protection when no longer required.
3. Flame-Heated Equipment: Locate and use flame-heated equipment so as not to endanger the structure or other materials on the site or adjacent property. Do not place flame-heated equipment on the roof. Provide and maintain a fire extinguisher near each item of flame-heated equipment.
4. Protective Coverings: Install protective coverings at paving and building walls adjacent to hoist and kettles prior to starting the work. Lap protective coverings at least 6-in., secure them against wind, and vent them to prevent collection of moisture on the covered surfaces. Keep protective coverings in place for the duration of the work with asphalt products.

1.10 SCHEDULING

- A. Coordination/Cooperation: Coordinate and schedule work in cooperation with Owner and other trades. Comply with Owner's requirements related to security.

1.11 GUARANTEE

- A. The Guarantee contained under other provisions of these Contract Documents will be held to have been part of this Section. The Contractor shall do all of his work in conformance with the provisions of the Drawings and Specifications in such a manner that will allow all other trades to perform their work and submit their required guarantees.

PART 2 - PRODUCTS

2.01 GENERAL

- A. The following products and manufacturers are approved subject to the provisions of these specifications and are not intended to exclude other manufacturers with equivalent materials, systems and warranties. Where "approved substitutions" is indicated, other acceptable manufacturers may be utilized, provided their systems and warranties are equivalent in all respects and submitted for approval in accordance with these Contract Documents.
- B. It is intended that materials or products specified by name of manufacturer, brand, trade name or by catalog reference shall be the basis of the bid and furnished under the contract, unless changed by mutual agreement. Where two or more materials are named, the choice of these shall be optional with the contractor.

2.02 INSULATION MATERIALS

- A. Rigid Insulation Board, Flat and Tapered
 1. Description: ASTM C 1289, Type II, Grade 2, rigid roof insulation board composed of a closed cell polyisocyanurate foam core bonded in the manufacturing process to universal fiber glass reinforced facers.

2. Size: **4-ft. x 4-ft. panels;**
 3. Thickness: Refer to Drawings. Add additional boards to match existing insulation thickness, and where required. Rigid insulation boards may be flat or tapered.
 4. Taper Slope: **1/8-in. Typical.**
 5. Dimensional Stability: (Length and Width) ASTM D 2126; < 2 %
 6. Compressive Strength: (10% Deformation) ASTM D 1621; 20 psi
 7. Water Absorption: ASTM C 209; 1.5 % (max)
 8. Moisture Vapor Transmission: ASTM E 96; < 1.5 perm
 9. Product Density: ASTM D 1622; Nominal 2.0 pcf
 10. Tensile Strength: ASTM C 209; >= 500 psf
 11. Service Temperature: -100 to 200 degrees F
 12. Tradename: **EnergyGuard™** and **EnergyGuard™ Tapered Polyiso Foam Roof Insulation** (Basis of Design).
 13. Manufacturer: GAF Materials Corp.
 14. Other Approved Manufacturers: ENRGY 3 by Johns Mannville, SOPRA-ISO+ by Soprema, ISO 95+™ GL by Firestone, or approved substitution.
- B. Preformed Cant Strips and Tapered Edge Strips
1. Description: ASTM C 728, Type 2, high density, laminated board made of high-strength fibers and expanded perlite used for smooth transition from horizontal to vertical surfaces. *Wood fiber cant strips are not acceptable.*
 2. Cants: Size: 4-in. (1-1/2" x 4" x 48")
 3. Taper Edge Strips: Provide sizes as indicated. Refer to Details.
- C. Insulation Thickness:
1. As necessary to provide minimum continuous insulation with an R-value of R-25ci, per Table C402.1.3, 2017 FBC-Energy Conservation for Climate Zone 2. Base calculation on the R-value for aged insulation.

2.03 FIRE BARRIER MATERIALS

- A. General: A roof cover (fire barrier) board, 1/2-in. thickness and 4' x 4' (max.) size, meeting Factory Mutual (FM) Class 1 and Underwriters Laboratories (UL) Class A fire ratings for unlimited slope in fire barrier applications, per UL 790. A fire barrier is required by the Owner whenever roofing or flashing materials are to be torch-applied over combustible decks, wood parapet framing and blocking, or plastic foam insulation. The roof cover board shall be manufactured or approved in writing by the roof system manufacturer to ensure the specified roof manufacturer's warranty is received. Cover board shall be a material type which does not contribute toward blistering of roof membrane. Owner's requirement for a fire barrier is independent from, but may be incorporated into, any code-required fire rating for a roof or roof-ceiling assembly.
- B. Fiberglass-Mat Faced Gypsum Roof Board
1. Description: ASTM C 1177/C 1177M, UL Class A, non combustible fiberglass reinforced gypsum roof board primed or unprimed for use in roofing applications
 2. Size/Thickness: 1/2-in. thick (min), 4-ft. by 4-ft. board size (max).
 3. Flexural Strength (parallel): 110 lbf. min., per ASTM C 473.
 4. Water Absorption: 10% max., per ASTM C 473.

5. Flame Spread, Smoke Developed (ASTM E 84): 0/0.
 6. Compressive Strength: 1800 psi (nominal), per ASTM C 473.
 7. Permeance: 26 perms, per ASTM E 96.
 8. R-Value: 0.5, per ASTM C 518
 9. Tradename: **Securock® Gypsum-Fiber Roof Board** by U.S. Gypsum Company.
- C. Asphaltic Core Board (As required to meet Florida Product Approval):
1. Description: A mineral-fortified asphaltic core laminated between two asphalt-saturated fiberglass liners. Acceptable products include:
 2. Approved Manufacturers/Products:
 - a. Soprema, Inc.: Sopraboard,
 - b. Siplast: Asphaltic Roof Board
 - c. IKO Industries, Inc.: Protectoboard
 3. Other manufacturer's product, meeting the following performance criteria:
 - a. Moisture Content (DSM #9.90.60): 5 (max)
 - b. Moisture Absorption (ASTM D 146): 5 (max)
 - c. Dimensional Stability (ASTM D 1204): 1.0 (max)

2.04 FASTENERS

- A. Insulation Board Fasteners to Steel Decks and LWC Over Steel Decks:
1. Description: Corrosion resistant, deep threaded insulation board fastener designed for attachment to steel decks.
 2. Physical Data: Min. 0.275-in. thread dia., 0.202-in. shank dia., 0.435-in. head dia., #3 Phillips truss head. Length sufficient to penetrate thru roof deck a min. of 3/4-in.
 3. Corrosion Resistance: CR-10 or FM Approval Standard 4470
 4. Tradename: **Extra Heavy Duty Roofing Fastener (#15)** by OMG Roofing Products, or approved substitution.
- B. Metal Pressure Plates:
1. Flat corrosion-resistant (Galvalume) square or round pressure plates as recommended by the roofing material manufacturer's printed instructions or product testing requirements; not less than 2-in. diameter for anchor sheet application and 3-in. diameter for insulation attachment. Plates shall be ribbed or recessed to prevent dishing or cupping.

2.05 POLYURETHANE FOAM INSULATION ADHESIVE

- A. Roof Board and Insulation Adhesive to Gypsum and Lightweight Insulating Concrete Decks:
1. Description: A two-component elastomeric polyurethane froth adhesive specifically designed to adhere a variety of insulation board stock to various substrates in both new and recover applications.
 2. Tradename: **OlyBond500** Adhesive Fastener by OMG Roofing Products
 3. Other Approved Manufacturer: 3M™ Polyurethane Foam Insulation Adhesive CR-20, or approved substitution.

2.06 BITUMINOUS MATERIALS

- A. Asphalt Primer: ASTM D41, or other primer compatible with the application and as approved in writing by the modified bitumen membrane manufacturer.
- B. Asphalt Roofing Cement: Provide in accordance with ASTM D4586/D4586M, Type I, for horizontal surfaces and surfaces sloped from 0 to 3 inches per foot. Type II for vertical and surfaces sloped more than 3 inches per foot.

2.07 ACCESSORIES

- A. Wood Blocking / Nailers: All nailers and blocking material shall be free of wane, shake, decay or checks, and pressure treated with water-borne preservatives for above ground use. Refer to Section 06 10 00 - Rough Carpentry.
- B. Fabric, Cotton, Bitumen Saturated: ASTM D-173, Local Supply.

PART 3 - EXECUTION**3.01 EXAMINATION**

- A. Examine the area of work, including surfaces sloped to roof drains and outlets, to determine that conditions are acceptable for the work of this and subsequent Sections.
- B. Examine deck surfaces for inadequate anchorage, foreign material, moisture, and unevenness, any condition which would prevent the execution and quality of application of underlayment or roof insulation system as specified shall be corrected before beginning work.
- C. Report unsatisfactory conditions to the Architect immediately and confirm in writing.
- D. Work shall not proceed with underlayment or insulation application until defects are corrected.
- E. Starting work designates acceptance of the surfaces by the Contractor. insulation material shall be cut and fit as necessary to fully insulate small areas and to accommodate piping, scuttles, skylights, vents, and other construction penetrating the insulation material.
- F. Verify condition of existing steel deck and repair/replace decking components that shown signs of deterioration, per Section 05 31 40. Examine steel decks to ensure that panels are properly secured to structural members and to each other and that surfaces of top flanges are flat or slightly convex.

3.02 PREPARATION

- A. Preparation of Surfaces:
 - 1. Surfaces on which thermal insulation materials are to be applied shall be clean, smooth, dry, and free from projections. Condition of surfaces shall be inspected and approved prior to the start of roof insulation work. Correct defects and inaccuracies in roof deck surface to eliminate poor drainage and hollow or low spots .

2. Install wood nailers the same thickness as insulation at eaves, edges, curbs, walls, and roof openings for securing cant strips, gravel stops, gutters, and/or flashing flanges. On decks with slopes of one inch per foot (1:12 slope) or more, install wood nailers perpendicular to slope for securing insulation and for back-nailing of roofing felts. Space nailers in accordance with approved shop drawings.
3. Verify existing conditions and provide additional PT wood nailers as needed to meet height requirement.

3.03 INSTALLATION OF INSULATION

A. General:

1. Insulation shall be installed in accordance with the manufacturer's requirements and as specified herein.
2. Insulation shall be installed only after building construction has progressed to the point that inclement weather will not damage or wet the insulation material.
3. Insulation installation shall be continuous, with all operations proceeding together. Before cessation of work on each working day or when work is interrupted due to rainfall or other causes, the roof shall be sealed against intrusion of water. Insulation shall not be left exposed during rainfall or overnight.
4. Insulation shall be applied so that all roof insulation applied each day is waterproofed the same day. Phased construction will not be permitted.
5. Traffic over partially or completely finished insulation shall be only on planks, or on plywood not less than 5/8-inch thick and 2-feet wide.
6. Ample bases shall be provided under equipment to distribute the weight to conform to the load limits.
7. Apply insulation in 2 layers with staggered joints over steel roof decks, or where indicated.
8. Lay insulation so that continuous longitudinal joints are perpendicular to direction of roof membranes, and end joints of each course are staggered with those of adjoining courses. All insulation joints shall be snug fit.
9. When using multiple layers of insulation, joints of each succeeding layer shall be parallel and offset in both directions with respect to layer below.
10. Keep insulation 1/2-in. clear of vertical surfaces penetrating and projecting from roof surface.
11. Temporary water cutoffs shall be installed at the completion of each day's work and removed upon resumption of work.
12. Insulation which can be readily lifted after installation is not considered to be adequately secured.

B. Installation Using Foam Adhesive:

1. Specified foam adhesive shall be installed in accordance with the manufacturer's requirements and as specified herein.
2. All surfaces to be bonded must be clean, dry and free from dirt, dust, oil, loose paint, wax or grease, etc.
3. The temperature of the adhesive should be between 70-95 degrees F and the surfaces being bonded should be at 40 degrees F, or above.
4. Use only approved application equipment.

5. Dispense foam adhesive at 12-in. on center bands (Approximate coverage rate is 1 gallon per square, depending on the substrate.), or as approved by manufacturer to meet design pressures. Increase pattern density at the enhanced wind areas, per Drawings and Details.
 6. After allowing foam to rise 3/4-in. to 1-in., lay insulation board into position and walk into place. Continue walking on boards until adhesive sets (5-7 minutes). Approved ballast materials may also be used to set boards.
- C. Installation over Concrete Roof Decks:
1. Prepare surfaces and secure rigid and tapered insulation board(s) to deck with specified insulation adhesive.
 2. Install specified crickets on the high side of all curbs, and where shown on the Drawings.
 3. Install specified gypsum roof (cover) board over new rigid insulation, set in insulation adhesive. Place boards to offset insulation in both directions .
 4. Provide adequate ballast to ensure positive attachment of foam to insulation.
- D. Installation over Steel Roof Decks:
1. Secure rigid insulation board(s) to deck with enough fasteners to adequately hold board(s) into place.
 2. Install specified crickets on the high side of all curbs, and where shown on the Drawings.
 3. Install specified gypsum roof (cover) board over new rigid insulation. Place boards to offset insulation in both directions . Secure all insulation layers and cover board with specified fasteners per typical detail.
 4. Engage fasteners by driving them through insulation into top flange of steel deck. Use driving method prescribed by fastener manufacturer.
 5. Increase the number of fasteners at the perimeter and corner zones as necessary to comply with wind load design pressure requirements.
 6. Insulation joints parallel to ribs of deck shall occur on solid bearing surfaces only, not over open ribs.
- E. Cant Strips: Where indicated, install cant strips at intersections of roof with walls, parapets, and curbs extending above roof. Fit cant strips flush against vertical surfaces. Apply cant strips over roof insulation or base sheet in a continuous troweling of specified roof cement - miter all corners. Seal gaps between cants and vertical surfaces with roof cement to prevent bitumen drippage.

3.04 PROTECTION

- A. Protection of Applied Insulation:
1. Completely cover each day's installation of insulation with specified roof membranes on same day.
 2. Protect open spaces between insulation and parapets or other walls and spaces at curbs, scuttles, and expansion joints, until permanent roofing and flashing are applied.
 3. Do not permit storing, walking, wheeling, or trucking directly on insulation or on roofed surfaces.
 4. Provide smooth, clean board or plank walkways, runways, and platforms near supports, as necessary, to distribute weight to conform to live load limit.
 5. Exposed edges of the insulation shall be protected by cutoffs at the end of each work day or whenever precipitation is imminent.

6. Cutoffs shall be 2 layers of bituminous-saturated felt set in plastic bituminous cement.
 7. Fill all profile voids in cut-offs to prevent entrapping of moisture into the area below the membrane. Cutoffs shall be removed when work is resumed.
- B. Damaged Work and Materials: Restore work and materials that become damaged during construction to original condition or replace with new materials.

3.05 CLEANING

- A. This Contractor shall periodically remove and dispose of all debris and residual products and clean all contamination from architectural surfaces visible to the public and from mechanical equipment installed on the roof at no additional cost to the Owner.
- B. All roof drains, scuppers and downspouts shall be cleaned of debris and drainage system shall be checked for proper, unobstructed or hindered functionality daily.

END OF SECTION

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PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. This Section includes the following:
1. A two-ply SBS-modified bituminous roofing assembly (both plies torch-applied), over insulation and/or an anchor sheet.
 2. **Alternate No. 1:** Provide a two-ply APP-modified bituminous roofing assembly (both plies torch-applied), over insulation and/or an anchor sheet, in lieu of the specified SBS-modified roof assembly.
- B. Related Sections include the following:
1. Refer to the Table of Contents for Sections related to roofing system.
 2. Refer to Division 1, Section 012200 - Unit Prices for Work in this Section affected by unit prices.
 3. Refer to Division 6, Section 061000 - Rough Carpentry for wood blocking and nailers.
 4. Refer to Division 7, Section 072200 - Roof and Deck Insulation for roof board insulation.
 5. Refer to Division 7, Section 076000 - Flashing, Sheet Metal and Accessories for sheet metal flashing, joint sealants, fixed vertical ladders, and related work.
 6. Refer to Division 7, Section 075216.21 "Roofing Installer's Five (5) Year Warranty"
 7. Refer to Division 7, Section 075216.22 "Manufacturer's Twenty (20) Year NDL Warranty"

1.03 DEFINITIONS

- A. **ANCHOR SHEET** – A fiberglass roofing felt, mechanically attached to a nailable deck with approved fasteners, on top of which either insulation or a multi-ply roofing membrane is then installed. The anchor sheet is not considered one of the plies in a multi-ply roof membrane, and is used to facilitate anchoring of roofing membrane to the deck.
- B. **BASIC WIND SPEED** – Three-second gust wind speed in miles per hour at 33 feet (10 m) above ground in Exposure C as defined in the latest edition of ASCE/SEI 7, "Minimum Design Loads for Buildings and Other Structures".
- C. **CAP SHEET** – A granule-surfaced sheet, used as the top ply (exposed) field and flashing membrane on polymer-modified bitumen and/or hybrid BUR roof systems.
- D. **DESIGN UPLIFT PRESSURE** – The uplift pressure, calculated according to procedures in ASCE 7-10 and as required by the Florida Building Code (current edition).

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- E. **FIRE BARRIER** – A roof cover board required by the Owner whenever roofing or flashing materials are to be torch-applied over combustible decks, wood parapet framing and blocking, or plastic foam insulation. The roof cover board shall be manufactured or approved in writing by the roof system manufacturer to ensure the specified roof manufacturer's warranty is received. Cover board shall be a material type which provides a UL Class A combustible deck fire barrier without contributing toward blistering of any roof membrane. Owner's requirement for a fire barrier is independent from, but may be incorporated into, any code-required fire rating for a roof or roof-ceiling assembly.
- F. **INTERPLY** – An SBS modified smooth-faced asphalt sheet located below the cap sheet. Serves as one of the plies in a multi-ply roof membrane.
- G. **POSITIVE DRAINAGE** – The drainage condition in which consideration has been made during design for all loading deflections of the deck and additional roof slope has been provided to ensure drainage of the roof area within 48 hours of rain during conditions conducive to drying.
- H. **RISK CATEGORY** – A categorization of buildings and other structures for determination of flood, wind, snow, ice, and earthquake loads based on the risk associated with unacceptable performance.
- I. **ROOF LIVE LOAD** – A load on a roof produced (1) during maintenance by workers, equipment, and materials and (2) during the life of the structure by movable objects, such as planters or other similar small decorative appurtenances that are not occupancy related.
- J. **OTHER ROOFING TERMINOLOGY:** Refer to ASTM D 1079 and glossary of NRCA's "The NRCA Roofing and Waterproofing Manual" for definition of terms related to roofing work in this Section.

1.04 PERFORMANCE REQUIREMENTS

- A. General: Installed roofing membrane and base flashings shall remain watertight, shall not permit the passage of water, and shall resist specified uplift pressures, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction.
- B. Uniform Wind Uplift Load Capacity: Installed roof system shall withstand negative (uplift) design wind loading pressures complying with the following criteria:
 - 1. Design Code: ASCE/SEI 7-10
 - 2. Building Category: III
 - 3. Wind Speed: 151 mph.
 - 4. Exposure Category: B
 - 5. Topographic Factor: 1.0

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- C. FM Approvals Listing: Provide membrane roofing, base flashings, and component materials that comply with requirements in FM Approvals 4450 and FM Approvals 4470 as part of a membrane roofing system, and that are listed in FM Approvals' "RoofNav" for Class 1 or noncombustible construction, as applicable. Identify materials with FM Approvals markings.
- D. Florida Product Approvals Listing: Provide membrane roofing, base flashings, and component materials that are approved for use in Florida and which are listed in Florida's Product Approval System Website [<http://www.floridabuilding.org/pr/>].
- E. Fire Classification: UL Class A, complying with ASTM E 108.
 - 1. Where the existing structure prohibits a Class A rating, provide the same materials and installation methods that would produce a Class "A" roof assembly, were it possible to achieve such a rating.

1.05 ROOF SYSTEM DESIGN

- A. Roof Assembly over Steel Decks
 - 1. Deck Type: **Steel**
 - 2. Thermal Barrier: Rigid and tapered polyisocyanurate insulation, temporarily fastened. Minimum continuous insulation R-value to be R-25ci, per Table C402.1.3, 2017 FBC-Energy Conservation for Climate Zone 2.
 - 3. Fire Barrier: A gypsum roof cover board, 1/2-inch (min.) thickness and 4' x 4' (max.) size, meeting Factory Mutual (FM) Class 1 and Underwriters Laboratories (UL) Class A fire ratings for unlimited slope in fire barrier applications, per UL 790, mechanically fastened through all layers to deck.
 - 5. Interply: SBS-or APP-modified asphalt sheet, smooth surfaced, torch applied to fire barrier.
 - 6. Cap Sheet: SBS- or APP-modified asphalt sheet, granule surfaced, torch applied to interply.
 - 7. Base Flashing: 2-ply SBS- or APP-modified asphalt system, with torch-applied backer and flashing sheet.
- B. Roof Assembly Over Lightweight Concrete Decks
 - 1. Deck Type: **LWC over steel form deck**
 - 2. Thermal Barrier: Rigid and tapered polyisocyanurate insulation, secured with insulation adhesive. Minimum continuous insulation R-value to be R-25ci, per Table C402.1.3, 2017 FBC-Energy Conservation for Climate Zone 2.
 - 3. Fire Barrier: A roof cover board, 1/2-inch (min.) thickness and 4' x 4' (max.) size, meeting Factory Mutual (FM) Class 1 and Underwriters Laboratories (UL) Class A fire ratings for unlimited slope in fire barrier applications, per UL 790, secured with insulation adhesive and mechanically fastened through all layers to steel form deck (1 screw/plate at each corner and 1 in center of board).
 - 4. Interply: SBS- or APP-modified asphalt sheet, smooth surfaced, torch applied to fire barrier.

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5. Cap Sheet: SBS- or APP-modified asphalt sheet, granule surfaced, torch applied to interply.
 6. Base Flashing: 2-ply SBS- or APP-modified asphalt system, with torch-applied backer and flashing sheet.
- C. Roof Assembly Over Gypsum Decks and Concrete
1. Deck Type: **Gypsum and Concrete**
 2. Thermal Barrier: Rigid and tapered polyisocyanurate insulation, secured with insulation adhesive. Minimum continuous insulation R-value to be R-25ci, per Table C402.1.3, 2017 FBC-Energy Conservation for Climate Zone 2.
 3. Fire Barrier: A roof cover board, 1/2-inch (min.) thickness and 4' x 4' (max.) size, meeting Factory Mutual (FM) Class 1 and Underwriters Laboratories (UL) Class A fire ratings for unlimited slope in fire barrier applications, per UL 790, secured with insulation adhesive.
 4. Interply: SBS or APP modified asphalt sheet, smooth surfaced, torch applied to fire barrier.
 5. Cap Sheet: SBS or APP modified asphalt sheet, granule surfaced, torch applied to interply.
 6. Base Flashing: 2-ply SBS or APP modified asphalt system, with torch-applied backer and flashing sheet.
- D. Anchoring and Attachment
1. Attach insulation as follows:
 - a. To Lightweight Concrete Deck:
 - 1) Secure rigid and tapered insulation to LWC deck using insulation adhesive. At locations where boards are not also fastened, ballast each layer until adhesive has fully cured.
 - 2) To ensure positive attachment, mechanically fastened all layers of insulation to steel form deck (1 screw/plate at each corner and 1 in center of board).
 - b. To Gypsum Deck and Concrete:
 - 1) Secure rigid and tapered insulation to gypsum deck using insulation adhesive. Ballast each layer until adhesive has fully cured.
 - c. To Steel Deck:
 - 1) Mechanically attach all layers of insulation and cover board using specified fasteners.
 2. Sheet Metal Flashing and Trim:
 - a. All metal work, including new or existing wood blocking, shall be fastened in compliance with applicable requirements of FBC Test Protocols:
 - 1) Roofing Application Standard (RAS) No. 111 – Standard Requirements for Attachment of Perimeter Woodblocking and Metal Flashing;
 - 2) SPRI, Inc. Single Ply Roofing Institute: ANSI/SPRI WD-1 - Wind Design Standard Practice for Roofing Assemblies; and
 - 3) SPRI, Inc., Single Ply Roofing Institute: ANSI/SPRI/FM 4435/ES-1 - Test Standard for Edge Systems Used with Low Slope Roofing Systems.

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1.06 SUBMITTALS

- A. Procedure: Provide submittals in accordance with Division 1 requirements, and as follows:
1. Submittals specified herein shall be submitted at one time directly to the Design Professional for review and approval in electronic format.
 - a. Scan contents of each submittal and shop drawing at full scale in portable document format (PDF) for archive storage and distribution, minimum 300 dpi resolution (full color).
 - b. Submittals shall clearly show annotations and drawing mark-up tools or similar technique to add comments those selections that apply, including clouds, circles, boxes, lines, arrows, stamps, text boxes and text callouts—do not highlight. Itemize products submitted with reference to specification section and/or applicable drawing.
 - c. Product data, sample warranties, fastener pull testing reports or other information shall be submitted in portable document format (PDF) files.
 - d. Submittals shall be reviewed by the Architect prior to commencement of any work of this section. A copy of the submittals shall be present at the job site during the Work.
 - e. Allow fourteen (14) calendar days for submittal review.
 2. All submittals shall be reviewed/approved in writing by the roof manufacturer and include a letter from the roof system manufacturer stating the roof design has been reviewed and approved by the manufacturer with zero exceptions.
 3. Provide written evidence from the roofing manufacturer indicating the roofing installer is certified as receiving the manufacturer's highest level of certification status.
 4. Where submission of samples, shop drawings, or other items are required from suppliers or subcontractors, it shall be the Contractor's responsibility to see that such submittal items are complete, properly submitted and, if required, corrected and resubmitted so as not to delay the progress of the Work. All submittals shall be made by the Contractor. Submittals received from sources other than through Contractor will be returned "without action," (not reviewed and not approved).
 5. Contractor shall not submit for review the products of manufacturers not listed as approved in the Contract Documents, including any addenda. Submittals for products that are not approved shall be rejected and will delay the review process. The Contractor shall assume full responsibility for any delays caused by unapproved manufacturer submittals.
 6. Maximum Review of the Same Submittal: The same submittal will only be reviewed a maximum of two (2) times. If the same submittal is not correct within the two (2) submittal limit for the same item, Contractor shall assume full responsibility for any delays caused by subsequent reviews.
- B. Content: Submittals shall contain the following minimum information:
1. **Product Data:** Manufacturer's latest edition of technical product data for each type of insulation and roofing product specified, including but not limited to insulation, membrane, flashing, asphaltic cements and mastics, primer, and fasteners. Include substantiating data that the materials comply with requirements, including

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- certification of modified bitumen sheet minimum polymer content. Mark proposed products clearly by circling, underlining or highlighting with a highlighter color that will reproduce when copied.
2. **Material Safety Data Sheets:** MSDS for each product shall be included immediately following its specific product data.
 3. **Manufacturer's Instructions:** Detailed application instructions for the roof system being installed, to include general and specific recommendations, product storage and handling, weather restrictions and parameters, and application requirements.
 4. **Florida Product Approvals:** Provide documentation substantiating that all products submitted are approved for use in Florida.
 5. **Shop Drawings:** Include plans, elevations, sections, details, and attachments to other work for the following:
 - a. Base flashings and membrane terminations.
 - b. Typical roof insulation layout, including slopes.
 - c. Crickets, saddles, and tapered edge strips, including slopes.
 - d. Insulation fastening patterns for corner, perimeter, and field-of-roof locations.
 6. **Samples for Verification:** For the following products:
 - a. Three of each fastener type.
 - b. Three 6-inch strips of full roll width samples of each sheet material.
 - c. Three 6-inch strips of full roll width samples of rigid and/or flexible flashing, including side/end-lap seam.
 - d. Three 6x6-inch or larger samples of each type of insulation board.
 7. **Roof Assembly and Anchorage Submittal:** A form required and authored by the Owner, which follows PART 3 of this Specification Section. Provide supporting test results from approved testing facilities demonstrating that the proposed fastening pattern(s) will meet or exceed the required wind loads.
 8. **Qualification Data:** Submit evidence satisfactory to Owner that the proposed installer is currently approved by the roofing materials manufacturer. Substantiation may include a "Certificate of License" issued to roofing installer by manufacturer.
 9. **Certificate of Analysis:** Manufacturer shall submit a Certificate of Analysis of the primary roofing materials prior to the application of cap sheet confirming the physical and mechanical properties.
 10. **Manufacturer's Certificates:** Signed by roofing manufacturer, certifying that compliance with requirements specified in "Performance Requirements" Article has been achieved for:
 - a. Corrosion resistance of proposed mechanical fasteners.
 - b. Class A fire rating of proposed components.
 11. **Maintenance Data:** For roofing system to include in maintenance manuals.
 12. **Manufacturer's Notice of Intent to Issue Roof Warranty:** From roofing Manufacturer (on form which follows PART 3 of this Specification Section), acknowledging the manufacturer has reviewed and accepts the specified warranty requirements with no exceptions.

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13. **Roofing Installer's Written Statement:** From roofing installer (on roof installer's letterhead), acknowledging installer has reviewed and accepts the specified warranty requirements with no exceptions. Reference warranty form which appears in a separate Specification Section.
 14. **Roofing System Manufacturer's Final Warranty:** Submit a sample copy of the Manufacturer's twenty (20) year, no dollar limit warranty on the form which appears in a separate Specification Section, and an executed original copy at project closeout. Building numbers are to be PRINTED on the form.
 15. **Roofing Installer's Final Warranty:** Submit a sample copy of the Roofing Contractor's (Installer) five (5) year warranty on the form which appears in a separate Specification Section, and an executed original copy at project closeout.
- C. The following information shall be submitted to manufacturer for review before warranty consideration, material shipment or acceptance can be confirmed:
1. Complete copy of project architectural specifications outlining design parameters.
 2. Complete list of accessories or materials not manufactured or expressly authorized for use in manufacturer's literature.
 3. Dimensioned roof drawing indicating which details will be employed in the project.
 4. Details which do not conform to Manufacturers Standard Details, must be shown as to their anticipated construction.

1.07 QUALITY ASSURANCE

- A. **Coordinated Installation:** Except as otherwise indicated, perform roofing and flashing work as a single integrated unit of work, without division of responsibility between separate installers. Single installer responsibility required.
- B. **Manufacturer Qualifications:** Provide primary products, including insulation (where indicated), each type of roofing sheet (felt), bitumen, and composition flashings produced by a single manufacturer, which has produced that type product successfully for not less than five (5) years. Provide secondary products only as recommended by manufacturer of primary products for use with roofing system specified.
- C. **Roofing Installer Qualifications:** A single installer ("roofer") must perform the work of this Section and related sections and have not less than five (5) years of successful experience in installation of roofing systems similar to those specified for this project, and which be acceptable to and approved and/or licensed by manufacturer of primary roofing materials.
1. Obtain written certification from manufacturer of roofing system certifying that installer is approved by manufacturer for installation of specified roofing system and approved at the manufacturer's highest level of certification status, e.g. Johns Manville "Peak Advantage Pinnacle Contractor."
 2. Installer shall maintain full-time, non-working supervisor/foreman on job site during times that roofing is in progress. Installer's supervisor/foreman shall have minimum of five (5) years of experience in roofing work of similar nature and scope in specified roofing system.

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3. Installer shall have an office located within a 100 mile radius of the Owner's Maintenance Operations Center, located at 4805 E. Dr. Martin Luther King Jr. Blvd., Tampa, Florida 33605.
 4. NRCA Certified Applicators: Contractor shall employ only PRO-Certified Installers and/or CERTA-Certified applicators to operate torches when an open flame will contact any part of a roof.
- D. Qualification of Torch Operator.
1. Torch applicators must be CERTA certified to operate torch equipment and must maintain and carry a valid Certified Roofing Torch Applicator (CERTA) card.
- E. Manufacturer's Inspections: Manufacturer's authorized representative shall conduct periodic inspections to identify deficiencies in workmanship or materials as described in PART 3 of this specification.
- F. Product Quality Assurance:
1. Manufacturer shall submit a Certificate of Analysis of the primary roofing materials prior to the application of cap sheet confirming the physical and mechanical properties of the roofing membrane components.
 2. Roofing membranes shall be tested per the following ASTM standards:
 - a. Smooth-surface interply membranes; ASTM D6222, D6163 or ASTM D6164, Grade S.
 - b. Granule-surfaces cap sheet membranes; ASTM D6222, D6163 or ASTM D6164, Grade G.
 - c. Testing of aluminum clad base flashing membranes is not required.
 3. The Certificate of Analysis shall contain the following (minimum) information:
 - a. Product Identification.
 - (1) Test date.
 - (2) Material type (trade name).
 - (3) Lot number.
 - b. Dimensions and Mass.
 - (1) Minimum accepted specification (as published in technical data sheets for: Length (ft.); Width (in.); Thickness at selvage (mils); Total thickness (mils); Weight (lbs/roll); and Selvage width (in.).
 - (2) Average tested values \pm standard deviation.
 - (3) Actual minimum values.
 - c. Physical and Mechanical Properties.
 - (1) Minimum accepted specification per the applicable ASTM standard, including: Tear strength, min. (lbf); Low temperature flexibility, max. (°F); Granule embedment, max. (average grams loss/sample) (Grade G only); Elongation @ 0°F, min (%); and Tensile strength @ 0°F, min. (lbf/in.);
 - (2) Average tested values \pm standard deviation.

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5. Third Party Testing: During construction and prior to the cap sheet installation, Architect may choose to select (2) roll samples at random to be tested. The sample roofing materials shall be delivered by Contractor to an approved testing laboratory for testing, in accordance with the above requirements.
 6. Cost of material testing shall be by Owner.
 7. Samples reported to be NOT in compliance with minimum standard specifications shall be removed from Project Site and replaced with new materials.
 - a. Manufacturer shall test the replacement material(s) at their own expense.
 8. The cap sheet membrane shall not be installed until all material samples have been tested and approved.
- G. Reference Standards: In addition to applicable regulations of Authorities Having Jurisdiction (AHJ), comply with the following:
1. 2020 Florida Building Codes (FBC) – 7th Edition;
 2. ASCE 7-16 (2017; Errata 2018; Supp 1 2018) Minimum Design Loads and Associated Criteria for Buildings and Other Structures;
 3. American Society of Safety Professionals, ASSP A10.24 (2014) Roofing - Safety Requirements of Low-Sloped Roofs;
 4. Factory Mutual Global (FM) – Insulation fastener type and spacing requirements;
 5. FM Global Data Sheet 1-30 (2020) – Repair of Wind Damaged Roof Areas;
 6. FM Global Data Sheet 1-33 (2017) – Safeguarding Torch-Applied Roof Installations;
 7. ANSI/SPRI/FM 4435 ES-1 (2017) – Wind Design Standard for Edge Systems Used in Low Slope Roofing Systems;
 8. ASTM C 728-15 – Standard Specification for Perlite Thermal Insulation;
 9. ASTM D 41/D 41M-11 – Asphalt Primer Used in Roofing and Waterproofing;
 10. ASTM D 146/D 146M-04(2020) – Standard Test Methods For Sampling And Testing Bitumen-Saturated Felts And Wove Fabrics For Roofing And Waterproofing;
 11. ASTM D 312/D 312M-16a – Standard Specification for Asphalt Used In Roofing;
 12. ASTM D 1970/D 1970M-15a – Self Adhering Polymer-Modified Bituminous Sheet Material used as Underlayment;
 13. ASTM D 2178/D 2178-15 – Standard Specification for Asphalt Glass Felt Used In Roofing And Waterproofing;
 14. ASTM D 3019-08 – Specification for lap cement used with asphalt roll roofing, non-fibered, asbestos fibered, asbestos free. Asbestos containing materials are prohibited from use on this project;
 15. ASTM D 4586/D 4586-07(2012)E1 – Asphalt or Modified Bitumen Roof Cement, Asbestos-Free;
 16. ASTM D 4601/D 4601-04(2012)E1 – Standard Specification for Asphalt-Coated Glass Base Fiber Base Sheet Used In Roofing;
 17. ASTM D 5147 / D5147M-18 – Test Method for Sampling and Testing Modified Bituminous Sheet Materials;
 18. ASTM D 6163/D 6163-00(2015)E1 – Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Glass Fiber Reinforcements;
 19. ASTM D 6164/D 6164M-11 – Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Polyester Reinforcements;

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20. ASTM D 6298-13 – Standard Specification For Fiberglass Reinforced Styrene-Butadiene-Styrene (SBS) Modified Bituminous Sheets With An Applied Metal Face;
 21. ASTM E 108-16 – Standard Test Methods for Fire Tests of Roof Coverings;
 22. NFPA 58 (2020) – Standard for the Storage and Handling of Liquefied Petroleum Gases;
 23. NFPA 241 (2022) – Standard for Safeguarding Construction, Alteration and Demolition Operations;
 24. The NRCA Roofing Manual: Membrane Roof Systems (2019); National Roofing Contractors Association;
 25. NRCA/MRCA Certified Roofing Torch Applicator Program (CERTA), 2007;
 26. OSHA Regulation 29 CFR 1926 - Occupational Safety and Health Administration, Safety and Health Regulations for Construction, latest edition.
 27. SMACNA Architectural Sheet Metal Manual, 7th Edition (2012);
 28. UL FRD—Underwriters’ Laboratory, Fire Resistance Directory, 2014;
 29. UL RMSD—Underwriters’ Laboratory, Roofing Materials and Systems Directory;
 30. UL 263—Standard for Fire Tests of Building Construction and Materials, 2011;
 31. UL 580—Standard Tests For Uplift Resistance Of Roof Assemblies, 2006;
 32. UL 790—Tests For Fire Resistance Of Roof Covering Materials, 2004;
 33. UL 1256—Fire Test of Roof Deck Constructions, 2002;
 34. UL 2218—Impact Resistance of Prepared Roof Covering Materials, 2010;
 35. UL 2218A—Impact Resistance of Roofing Systems, 2019;
- H. Pre-installation Roofing Conference
1. Approximately two (2) weeks prior to scheduled commencement of roofing installation and associated work, Contractor shall conduct a meeting at project site with the Owner’s designated Building Inspector, the design professional, roofing system manufacturer’s authorized representative, and subcontractors, including installers of each component of work specified in this Section, installers of other work in the vicinity of the roof (i.e., mechanical, electrical, etc.) and any other representatives directly concerned with performance of the Work. The pre-installation roofing conference shall be conducted after all submittals have been provided and reviewed/approved by the Architect.
 2. Record discussions of conference, including decisions, agreements reached, and unresolved disagreements. Furnish a copy of record to each all attendees.
 3. Review methods and procedures related to roofing work, including, but not limited to, the following:
 - a. Tour representative areas of roofing substrates (decks) to inspect and discuss condition of substrate, roof drains, curbs, penetrations, and other preparatory work performed by other trades.
 - b. Review roofing system requirements (Drawings, Specifications, and other Contract Documents) for possible conflicts and resolutions.
 - c. Review required submittals, including those returned by the Architect as “Approved as Noted” or “Furnish as Corrected” as of the date of the conference.

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- d. Review and finalize construction schedule related to roofing work and verify availability of materials, installer's personnel, equipment, and facilities needed to make progress and avoid delays.
- e. Review required inspections, testing, certifying, and materials usage accounting procedures.
- f. Review weather and forecasted weather conditions and procedures for coping with unfavorable conditions, including possibility of temporary roofing (if not a mandatory requirement).
- g. Review work safety requirements.
- h. Review step-by-step installation methods of all components specified in this Section and include a written description thereof in the discussion record.

1.08 DELIVERY, STORAGE, AND HANDLING

- A. Deliver roofing materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, and directions for storage. Deliver materials in sufficient quantity to allow work to proceed without interruption.
- B. Protect materials against moisture absorption and contamination or other damage. Avoid crushing or crinkling of roll materials. Store roll materials on end on clean raised platforms or pallets one level high in dry locations with adequate ventilation, such as an enclosed building or closed trailer. Maintain roll materials at temperatures above 50 degrees F for 24 hours immediately before application. Tie covering securely to pallets to make completely weatherproof. Provide sufficient ventilation to prevent condensation. Distribute materials temporarily stored on roof to stay within live load limits of the roof construction. Maintain a minimum distance of 35 foot for all stored flammable materials, including materials covered with shrink wraps, craft paper or tarps from all torch/welding applications. Immediately remove wet, contaminated or otherwise damaged or unsuitable materials from the site. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer. Protect stored liquid material from direct sunlight.
 - 1. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.
- C. Protect roof insulation materials, roof cover board and roofing membranes including felt plies from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with insulation manufacturer's written instructions for handling, storing, and protecting during installation. Roof insulation, cover board and membrane materials shall be covered and protected from moisture within a well-ventilated storage area at all times without exception. Do not use polyethylene sheet as a covering. **Factory shrink-wrapped plastic sheeting alone is not an acceptable means of protection for roof insulation, cover board and membrane materials.**
- D. Handle and store roofing materials and place equipment in a manner to avoid permanent deflection of deck.

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TORCH APPLIED

1.09 PROJECT CONDITIONS

- A. Existing Construction
 - 1. Prior to commencement of installation, Contractor shall verify condition of existing conditions, including:
 - a. Roof deck and/or substrate condition as being acceptable for Work specified in this Section.
 - b. Varying deck and wall thickness for length of required anchoring devices.
- B. Environmental Limitations
 - 1. Do not install roofing during rain or start roofing if rain is probable during installation.
 - 2. Do not install roofing when there is ice, frost, surface moisture, dampness visible on the surface to which roofing is to be applied, and when morning temperature is 50 degrees and falling.
- C. Delays related to Owner-Required Work Stoppages
 - 1. Work may not result in undue noise, vibration or other hindrance to Owner's full use of building. Such work must be performed during non-school hours and 48 hour advance notice to the Owner is required.
 - 2. In the event that noise, vibration or other impacts of construction disturb Owner's educational activities, as determined solely by Owner, Contractor shall immediately cease the particular operation causing such disturbance upon request by the Owner. Operation shall resume only when the building, or affected portions thereof, are no longer occupied, or when the Contractor has taken steps to mitigate or eliminate the disturbance associated with the operation.
 - 3. The Owner may, at its sole discretion, curtail or suspend roofing operations to avoid disruption. In the event of such a suspension of the Work, Contractor shall be entitled to an extension of Contract Time to the extent that such suspension delays the project completion.

1.10 WARRANTIES

- A. Roofing System Manufacturer's Warranty: Submit Manufacturer's warranty, on warranty form which appears in a separate Specification Section, without monetary limitation, in which manufacturer agrees to repair or replace all components of membrane roofing system that fail in materials or workmanship within specified warranty period with the following provisions.
 - 1. The Roofing System Manufacturer's warranty includes membrane roofing, base flashings, wall flashing (over 12-inches high), roof insulation, fasteners, cover boards, roofing accessories, and other components of roofing system, including materials not produced by the roofing manufacturer but required.
 - 2. Metal flashings installed per manufacturer's installation instructions and per SMACNA standards shall also be covered for duration of the warranty.

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3. The Roofing System Manufacturer's warranty includes all cost associated with replacement of defective roofing system materials resultant of manufacturing or the contractor's installation. Subject warranty shall also guaranty 100% watertight construction throughout the duration of the warranty.
 4. The Roofing System Manufacturer's warranty shall guarantee the roof will perform in a watertight manner without damage resultant of wind speeds up to 73-mph as recorded by the data collection point that reports to the National Weather Service (whether official or unofficial) located nearest to the project site. Exclusion references to windstorms or gale force winds are not acceptable. The appropriate Wind Rider(s) shall be included with the manufacturer's warranty documents.
 5. A "leak" shall be defined as the admission of water into the roof system or building through an opening, separation or other similar defect in the roof.
 6. Warranty Period: Twenty (20) years from date of Substantial Completion, as certified by the Architect.
- B. Roofing Installer's Warranty: Submit roofing Installer's warranty, on warranty form which appears in a separate Specification Section, signed by Installer, covering the Work of this Section, including all components of membrane roofing system such as membrane roofing, base flashing, roof insulation, fasteners, cover boards, substrate boards, sheet metal, vapor retarders, sealants, pourable sealers and walkway products, for the defined warranty period. The roofing installer's warranty shall guaranty aspects of performance and watertightness for each of the aforementioned roof system components including sheet metal flashing, sealants and pourable sealers.
1. Roofing Installer's Warranty shall include a requirement for the roofing installer to conduct one (1) roof inspection per year on each roof section throughout the duration of the contractor's five (5) year warranty. The roofing installer shall be required to produce a roof inspection report for each inspection which identifies all items in need of attention, any repair work performed, etc., which shall be furnished to Owner within five (5) working days of the inspection.
 2. Warranty Period: Five (5) years from date of Substantial Completion.

PART 2 - PRODUCTS

- 2.01 GENERAL: Subject to compliance with requirements, provide only those products specified herein.
- A. Refer to Schedule 1 – Recommended Roofing Materials (By Manufacturer), which follows PART 3 of this Section.
- 2.02 ANCHOR SHEET MATERIALS
- A. Anchor Sheet: ASTM D 4601, Type II, non-perforated, asphalt-impregnated and -coated, heavyweight glass-fiber sheet, 36-in. wide, dusted with fine mineral surfacing on both sides.

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2.03 FIRE BARRIER MATERIALS

A. Fire Barrier:

1. A roof cover board, 1/2-in. (min.) thickness and 4' x 4' (max.) size, meeting Factory Mutual (FM) Class 1 and Underwriters Laboratories (UL) Class A fire ratings for unlimited slope in fire barrier applications, per UL 790.
2. A fire barrier is required by the Owner whenever roofing or flashing materials are to be torch-applied over combustible decks, wood parapet framing and blocking, or plastic foam insulation.
3. The roof cover board shall be manufactured or approved in writing by the roof system manufacturer to ensure the specified roof manufacturer's warranty is received.
4. Cover board shall be a material type which does not contribute toward blistering of roof membrane.
5. Owner's requirement for a fire barrier is independent from, but may be incorporated into, any code-required fire rating for a roof or roof-ceiling assembly. Refer to Section 07 22 00.

2.04 SBS-MODIFIED ASPHALT-SHEET MATERIALS (BASE BID)

- A. Smooth-Surfaced Interply Sheet: ASTM D 6163, Grade S, Type I, SBS-modified asphalt sheet (reinforced with glass fibers), or ASTM D 6164, Grade S, Type I, SBS-modified asphalt sheet (reinforced with polyester fabric); smooth surfaced; **120** mil (minimum) thickness, suitable for torch (heat weld) applications.
- B. Granule-Surfaced Cap Sheet: Subject to compliance with requirements of Part 3, provide the following:
1. Torch-Applied: ASTM D 6163, Grade S, Type II, SBS-modified asphalt sheet (reinforced with glass fibers), or ASTM D 6164, Grade G, Type I, SBS-modified asphalt sheet (reinforced with polyester fabric); granule surfaced; **160** mil (minimum) thickness, suitable for torch (heat weld) applications.
 2. Granule Color: White

2.05 TWO-PLY BASE FLASHING SHEET MATERIALS (BASE BID)

- A. Flashing Backer Sheet: ASTM D 6163, Grade S, Type I, SBS-modified asphalt sheet (reinforced with glass fibers), or ASTM D 6164, Grade S, Type I, SBS-modified asphalt sheet (reinforced with polyester fabric); smooth surfaced; **120** mil (minimum) thickness; suitable for torch (heat weld) applications.
- B. Flashing Cap Sheet: ASTM D 6163, Grade S, Type II, SBS-modified asphalt sheet (reinforced with glass fibers), or ASTM D 6164, Grade G, Type I, SBS-modified asphalt sheet (reinforced with polyester fabric); granular surfaced; **150** mil (minimum) thickness, suitable for torch (heat weld) applications.
1. Granule Color: White

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- C. Glass-Fiber Fabric: Woven glass-fiber cloth, treated with asphalt, complying with ASTM D 1668, Type I, suitable for use with roofing mastics in low slope roofing systems.

2.06 APP-MODIFIED ASPHALT-SHEET MATERIALS (ALTERNATE NO. 1)

- A. Smooth-Surfaced Interply Sheet: ASTM D 6222, Grade S, Type I, APP-modified asphalt sheet (reinforced with polyester fabric); smooth surfaced; **120** mil (minimum) thickness, suitable for torch (heat weld) applications.
- B. Fire Retardant, Granule-Surfaced Cap Sheet: Subject to compliance with requirements of Part 3, provide the following:
 - 1. Torch-Applied: ASTM D 6222, Grade G, Type I, APP-modified asphalt sheet (reinforced with polyester fabric); granule surfaced; **160** mil (minimum) thickness, suitable for torch (heat weld) applications.
 - 2. Granule Color: White

2.07 TWO-PLY APP BASE FLASHING SHEET MATERIALS (ALTERNATE NO. 1)

- A. Flashing Backer Sheet: ASTM D 6222, Grade S, Type I, APP-modified asphalt sheet (reinforced with polyester fabric); smooth surfaced; **120** mil (minimum) thickness; suitable for torch (heat weld) applications.
- B. Flashing Cap Sheet: ASTM D 6222, Grade G, Type I, APP-modified asphalt sheet (reinforced with polyester fabric); granular surfaced; **150** mil (minimum) thickness, suitable for torch (heat weld) applications.
 - 1. Granule Color: White
- C. Glass-Fiber Fabric: Woven glass-fiber cloth, treated with asphalt, complying with ASTM D 1668, Type I, suitable for use with roofing mastics in low slope roofing systems.

2.08 AUXILIARY ROOFING MEMBRANE MATERIALS

- A. General: Auxiliary materials shall be compatible with roofing membrane and recommended or approved and warranted by the roofing system manufacturer for specified use.
- B. Asphalt Primer: ASTM D 41, used to prepare compatible substrates prior to the application of hot asphalt or cold adhesives in BUR, SBS and APP modified bitumen roofing systems.
- C. Modified Asphalt Roofing Cement: ASTM D 4586, reinforced with non-asbestos fibers and special mineral stabilizers, for use as a utility adhesive with SBS modified bitumen roofing systems. Product must be produced or sold by the roofing system manufacturer.

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D. Mechanical Fasteners

1. General

- a. Provide factory-coated steel fasteners and metal plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening specified roofing components to roof deck.
- b. Provide mechanical fasteners specifically approved by Factory Mutual for use on roofs of specified class with specified wind uplift, and as appropriate for type of roof deck material.

2. Anchor Sheet Fasteners

- a. For asphalt-impregnated glass-fiber base sheet over wood decks: Minimum requirements for anchor sheet fasteners shall be minimum 1-in. long ring shank cap nail with 1-in. dia. head.
- b. For asphalt-impregnated glass-fiber base sheet over cementitious (poured gypsum or Lightweight insulating concrete) roof deck: Subject to compliance with loading requirements, provide one of the following (Basis of Design):
 - 1) FM-90-1700 Base Sheet Fastener, by Trufast; or
 - 2) Twin Loc-Nail Base Sheet Fastener, by Trufast (verify length).
- c. For asphalt-impregnated glass-fiber base sheet over structural wood fiber decks: Subject to compliance with loading requirements, provide the following (Basis of Design):
 - 1) Twin Loc-Nail Base Sheet Fastener, by Trufast (verify length).

3. Provide coated corrosion-resistant fasteners as recommended by the roofing material manufacturer's printed instructions and meeting the requirements of FM A/S4470 and FM P/7825c for Class I roof deck construction, and for the wind uplift resistance specified.

4. For securing modified bitumen sheets, metal items, and accessories to masonry or concrete walls and vertical surfaces, provide hardened steel screws with flat heads, diamond shaped points, and mechanically deformed shanks not less than 1-1/4 inch long.

5. Metal Plates: Round, flat, corrosion-resistant stress plates as recommended by the roofing material manufacturer's printed instructions and meeting the requirements of FM A/S4470; not less than 2 inches in diameter for anchor sheet application and 3-inch in diameter for insulation attachment. Discs shall be formed to prevent dishing or cupping.

F. Cant Strip:

1. Provide preformed cant, 4-inch (nominal), unless indicated otherwise, with 45-degree face. Cants shall be asphalt-impregnated perlite, 1-1/2 inch (min.) thick. Wood fiber cant strips are not acceptable.

G. Pitch Pan: **Use of pitch pans or pitch pockets is not permitted**, unless specifically indicated on Drawings or otherwise approved in writing by Design Professional or Owner. When permitted, include the following:

1. Fill: Provide two-part polyurethane or polyether based flexible pourable sealer applied over 2-inch base of cured non-shrink grout.

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2. Cover: Provide stainless steel (24 ga.) sheet metal or 4-lb. sheet lead umbrella, as indicated on the Drawings which shall include hemmed edges and an approximate 20-degree bend along the top to form a sealant tray to receive elastomeric sealant.
 3. Provide elastomeric sealant along top of sealant tray onto clean substrates 100% free of asphalt residue or other contaminants and tool sealant to shed water.
- H. Rooftop Walkway Pads
1. Description: Pre-manufactured rooftop walkpad composed of homogenous core of asphalt, plasticizers and inert fillers, bonded by heat and pressure between (2) saturated sheets of organic felt. The top surface shall be weather coated with embedded ceramic granules, grey or white in color. The bottoms shall be plain. Provide standard sizes. Minimum 1/2" thick.
 2. The following products are approved, subject to compliance with these Specifications:
 - a. W.R. Meadows, Inc.; White Walk® Roof Traffic Pads
 - b. Gardner-Gibson; APOC® 5040 Dek-Top® Walkway Pads
 - c. Tremco; Trem-Tred®
 - d. Approved Substitution.

PART 3 - EXECUTION

3.01 MINIMUM CONSTRUCTION SAFETY PRECAUTIONS

- A. The contractor shall take every precaution to maintain a safe campus for students, faculty, facility staff, workmen and visitors. It is the contractor's sole responsibility to maintain a safe work site. All materials and work required to create and maintain a safe work site shall be included in the Cost of the Work. Any conditions deemed unsafe by the Owner's inspectors shall be immediately addressed by the Contractor. Minimum requirements include the following:
1. Barricades: Contractor shall restrict access to work site by placing rigid barricades around kettles, tank trucks, ladders and roof access points and other work areas, including, but not limited to, staging areas for hoisting, debris removal, and materials storage. Rigid barricades may include flexible safety fence (snow fence) or any other fence-like barricade that can be easily relocated but which cannot be easily crossed by pedestrians.
 2. Work on Occupied Buildings
 - a. The following Work is strictly **prohibited** over occupied buildings:
 - 1) Demolition or removal of any existing roofing materials;
 - 2) Construction, repair, or replacement of structural framing, including roof deck, parapet walls or roof edges;
 - 3) Installation or replacement of roofing insulation, fire barrier boards, or anchor sheets (if required);
 - 4) Loading of roof deck with roofing materials or heavy equipment at any time prior to final completion;

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- b. After the installation of the fire barrier and interply dry-in sheet has been completed and accepted by the Architect and roofing material manufacturer, torch application of cap sheet and base flashing membranes may be **allowed** during school hours provided the spaces/rooms directly below the Work are not occupied.
 - c. After the installation of the specified cap sheet and base flashings, the following Work is **allowed** on occupied buildings, provided it is not a disturbance to educational activities:
 - 1) Installation of sheet metal flashing and trim.
 - d. When operations are scheduled that may cause undue noise, vibration or other hindrance to Owner's full use of building, coordinate method and time of operations with the Owner a minimum of three (3) days in advance so as not to interfere with Owner's operations.
 - e. If noise, vibration or other impacts of construction disturb Owner's educational activities, as determined solely by Owner, Contractor shall immediately cease the particular operation causing such disturbance. Operation shall resume only when the building, or affected portions thereof, are no longer occupied, or when the Contractor has taken steps to mitigate or eliminate the disturbance associated with the operation.
 - f. The Owner may, at its sole discretion, curtail or suspend roofing operations to avoid disrupting student testing. In the event of such a suspension of the Work, Contractor shall be entitled to an extension of Contract Time to the extent that such suspension actually causes a delay in the project completion.
3. Fire Extinguishers: Required on each roof where work is performed. A minimum of three (3) 20-lb fire extinguishers (20A-120BC) in proper working order shall be on the roof, located within 30 feet of the area where torching operations are being performed.
4. Torch Safety Rules:
- a. Only NRCA/MRCA CERTA certified torch applicators shall operate torches when an open flame will come in contact with any part of a roof.
 - b. Using an open flame for roof drying over combustible roof surfaces shall not be permitted.
 - c. Never torch directly in an area where you cannot see the path of the open flame (including but not limited to flashings, corners, curbs, voids, expansion joints and small roof penetrations). Use alternative application methods, such as torch-and-flop indirect torching, cold-applied adhesives or mop-applied with hot bitumen in these areas.
 - d. Air conditioning units and ventilating fans should be shut down before torch work is done in surrounding areas. When working close enough to an air conditioning unit that dust, dirt, fumes etc. may enter the building, damage the finish of the equipment, or damage the equipment, the units shall be covered.
 - e. Protect materials that may burn when in contact with an open flame. Never torch directly to any combustible material. The Owner requires an approved fire barrier for separation of combustible decks, combustible parapet framing

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and plastic foam insulation from torch-application of roofing membranes or base flashing.

- f. Install targets or metal collars around penetrations in combustible deck to prevent flames from reaching the deck or under the decks.
- g. All torches shall be self igniting or pilot-only torches. No full-time torches are permitted on the project site.
- h. In the attics of roofs having combustible decks, install temporary smoke detectors prior to commencement of torching application and remove the smoke detectors one week after all torching operations on that building have been completed.
- i. The Contractor shall provide a competent individual "watchman" who will remain on site for a minimum of one hour after torching work is completed to monitor the areas where the torches were used, including at the end of each work shift. The individual shall have heat detection equipment such as infra-red cameras or digital thermometers. The individual shall also have a cellular/mobile phone with the telephone number of the closest fire department programmed into the phone.
- j. Foremen and the "watchman" shall have successfully completed fire safety training provided by the local fire department, or other acceptable source for fire safety training, prior to commencement of the Work.
- k. Flammable liquids shall not be stored on the roof. 20-lb liquid propane (LP) gas tanks and 5-gallon metal gas cans may be kept on the roof while the Work is in progress, provided they are removed and stored on the ground at the completion of each day's work shift.

B. Safety Equipment

- 1. The Contractor shall provide equipment or verify workmen provide equipment or work-wear for the project that is approved for use by OSHA. This includes:
 - a. Work shoes
 - b. Hard hats
 - c. Gloves
 - d. Long sleeve shirts and long pants
 - e. Power tools
 - f. Scaffolding

C. Ladder Safety

- 1. Comply with all OSHA requirements, and the following:
 - a. Place ladders on solid surfaces and at proper angles to the roof.
 - b. Tie ladders off at the roof and place barricades around ladders.
 - c. Do not place ladders in from of doors or entrances unless those are closed and blocked to use while the ladder is in place.
 - d. Use only ladders that are in good condition and not damaged.

D. Vehicle Safety

- 1. Park vehicles belonging to the contracting firm or workmen only in locations approved by Owner.

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2. Contractor's parking area, if near a building, shall be clearly delineated with warning lines for pedestrians. Dump trucks parked on the work site shall be surrounded with barricades.
 3. Provide observers on the ground any time vehicles near the school are backing up.
 4. Maintain a safe speed when moving vehicles on school property.
- E. Materials Hoisting Safety
1. Hoisting operations shall be performed only on unoccupied buildings and only in areas barricaded to entry.
 2. All equipment shall be in good working order and designed for hoisting operation for which is being used.
 3. Workmen shall be on the ground and the roof during hoisting and shall maintain a safe operation.
- F. Securing of Site
1. Immediately following each day's work, the site shall be secured by the following minimum means:
 - a. Remove ladders from the site or lock ladders with chains and padlocks on the ground to prevent movement.
 - b. Remove tools from the site and roof unless locked in proper tool boxes such as "job boxes."
 - c. Remove flammable liquids from the roof and site.

3.02 SCHEDULE

- A. Weather Related Delays: The Contractor acknowledges that the specified construction duration is sufficient to accommodate normal weather conditions. Normal conditions are defined as those shown on the Summary of Monthly Normals from 1981–2010 as published by the National Oceanic and Atmospheric Administration (NOAA). The following link is provided for convenience: <http://www.ncdc.noaa.gov/cdo-web/datatools/normals>
1. During the construction period the Contractor may be entitled to a time extension for days when weather conditions are abnormal, defined as follows:
 - a. Daily rainfall exceeds 0.10"
 - b. Daily average wind speed exceeds 25 mph
 - c. Morning temperature is 50 degrees and falling.
 2. The requested time extension will be granted provided that:
 - a. Weather conditions delay a critical path activity; and
 - b. The affected critical path activity is occurring on or before the scheduled start date when the delay is incurred.

3.03 EXAMINATION

- A. Asbestos in Existing Roofs
1. Prior to any work being performed on existing roofing assemblies, the Owner's environmental consultant will conduct testing on existing roofing materials in accordance with requirements of the Asbestos Hazard Emergency Response Act

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(AHERA), as outlined in the Code of Federal Regulations, Chapter 40, Part 763, Subpart E, in order to determine whether Asbestos-Containing Material (ACM) exists within the roof. All existing roofing materials shall be presumed to be ACM, unless test results published by the Owner's environmental consultant indicate otherwise.

2. For existing roofing materials either presumed or positively confirmed as ACM, removal and disposal shall comply with applicable EPA regulations, and the following minimum requirements:
 - a. 29 CFR 1926.1101: OSHA's Asbestos Standard for the Construction Industry
 - b. 40 CFR Part 61, Subpart M: National Emission Standards for Hazardous Air Pollutants – Asbestos
 - c. Where conflicts exist among applicable requirements, the most stringent shall apply.
3. Contractor's supervisory personnel overseeing roofing demolition activities shall be trained and certified in the removal of roofing material containing asbestos.
4. All presumed or positively confirmed ACM shall be deposited as soon as is practical at an EPA-approved waste disposal or conversion site. A copy of the waste shipment records shall be sent to the Owner's representative for transmittal to the District Safety Office.
5. Contractor may disregard the asbestos-related requirements outlined above only if test results published by the Owner's environmental consultant clearly indicate ACM is not present within existing roofing materials.

B. Contractor's Inspection

1. Examine substrates and conditions under which roofing work is to be performed and shall notify Design Professional in writing of unsatisfactory conditions.
2. Do not proceed with roofing work until unsatisfactory conditions have been corrected in a manner acceptable to Design Professional.
3. Examine surfaces over which roofing and flashing are to be applied. Do not install roofing over any surfaces until they are clean, dry, and free of all dirt and debris, and in an acceptable condition to receive new roofing materials. Voids greater than ¼ inch are not permitted in surfaces to receive roofing membrane and flashing.

C. Code and Contract Inspections

1. The Contractor shall request code inspections in accordance with requirements published with the Building Permit. Minimum code inspections include the following:
 - a. Upon commencement of installation of new roofing materials
 - b. Prior to installation of the cap sheet
2. See Owner's website, <http://www.sdhc.k12.fl.us/departments/21/building-code/>, for inspection request procedure.
3. The Contractor shall request other specified inspections by submitting a request to the Design Professional a minimum of 24 hours in advance.
4. Substantial and final completion inspections are to be requested in accordance with the terms of the Construction Contract.

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- D. Manufacturer's Inspections: Manufacturer's authorized representative shall conduct periodic inspections to identify deficiencies in workmanship or materials, or damage resulting from the work of other trades. Inspections shall include but are not limited to the following periods:
1. Within two (2) days following commencement;
 2. During installation as determined by size of roof(s). Include at least one visit per 10,000 SF (100 squares) of installed roofing; and
 3. Immediately upon completion of roofing installation, including but not limited to the following:
 - a. At least one (1) inspection per week throughout the course of the roof system installation for each roof area.
 - b. Upon commencement of roof insulation installation.
 - c. Upon commencement of all anchor sheets, felt-ply sheets, inter-ply membrane(s) and cap sheet.
 - d. The roof system manufacturer shall be required to furnish a written report for each site visit which clearly indicates all areas of corrective action needed and/or all roof construction was observed to be installed with zero defects. The roof system manufacturer's reports shall be provided to the Architect and Owner within 5 working days of each visit.
 4. Within two (2) days prior to Substantial Completion.

3.04 PREPARATION

- A. Cleaning: Before installation of roofing or insulation materials, all deck surfaces must be sound, clean, smooth, dry and free of debris, loose material or defects which would have an adverse effect on the roofing or insulation or their performance. Remove all foreign matter that would interfere with proper installation of the specified roofing system, flashing and accessories.
- B. Substrate Preparation: The Contractor shall be responsible for the suitability of the substrate surface to accept the specified membrane(s). All noticeably damp, wet or deteriorated materials must be removed. In all cases, prior to the start of work, the substrate shall be smooth and free of debris, sharp edges, and other surface irregularities that will be detrimental to the installation. Any unevenness or joint gaps greater than 1/4-inch in the membrane substrate can cause inconsistent membrane welds and must be avoided.
- C. Sequencing: Coordinate work with all Sections so that work in this Section and the other Sections will be completely protected at the end of each day and before inclement weather.
- D. Protection
1. The work specified herein shall not preclude the use of procedures that will maintain a watertight building envelope. Therefore, while conforming to requirements of the Contract Documents, the Contractor shall also utilize skill and

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all necessary procedures to keep unwanted water out of the building while construction is in progress.

2. Surfaces not intended to receive roofing materials (i.e., adjacent paving, building walls, surfaces to receive sealants, paint, coatings, etc.) shall be protected from spillage, dripping, spotting and damage during application of the roofing, using the following minimum methods:
 - a. Lap protective materials at least 6 inches
 - b. Vent plastic sheets, if used, to keep moisture from condensing and collecting on covered surfaces.
 - c. Secure protective coverings against wind.
 - d. Leave protective coverings in place until roofing work has been completed.
3. Should protection be absent, inadequate, or otherwise ineffective, Contractor shall be responsible for restoring the respective surfaces to their original or like-new condition by cleaning, repairing, or replacing, as applicable for the circumstances and as directed by the Architect, without additional cost to the Owner.
4. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing installation according to roofing system manufacturer's written instructions. Remove sharp projections.
5. Prevent materials from entering and clogging roof drains and conductors and from spilling or migrating onto surfaces of other construction. Remove roof-drain plugs when no work is taking place or when rain is forecast.

E. Protrusions

1. Install and secure items which pass through roof prior to application of roofing. Extend all protrusions and penetrations as required to accommodate thickness of insulation.
2. Ensure that all mechanical curbs, roof dividers, expansion joint curbs, and pipes extend no less than eight inches (8") above the finished surface of the roof. For Enhanced Hurricane Protected Area (EHPA) roofs, curbs and pipes shall extend no less than twelve inches (12") above the finished roof surface.
3. Anchoring for curbs and curb extensions shall be designed and installed to meet applicable wind load criteria.

3.05 ROOFING INSULATION INSTALLATION, GENERAL

- A. Comply with roofing system manufacturer's written instructions for installing roof insulation and all other requirements specified herein. Refer to Section 07 22 00.
- B. Roof insulation, cover board and membrane materials shall be covered and protected from moisture at all times, without exception. Roof insulation, cover board and membrane materials protected by factory shrink wrapped plastic sheeting alone shall not be acceptable.
 1. Any roof insulation, cover board or membrane materials that are not properly protected and are exposed to moisture (rain, dew, condensation, etc.) at any time shall be promptly removed from the project site and under no circumstances shall wet materials be installed within the roof system

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- C. Install new insulation strips in ribs of acoustical roof decks according to acoustical roof deck manufacturer's written instructions.
- D. Install minimum 4' x 4' sumps, at each roof drain, with 1-1/2" in 12" slope (minimum) to roof drain. The sump size may be increased up to 8' x 8' (maximum), if required to prevent voids or buckles in the roof plies. Trim or taper surface of adjoining insulation so completed surface is flush and does not restrict flow of water.
- E. Install approved insulation with long joints in continuous straight lines with end joints staggered between rows. Multiple layers of roof insulation as well as cover boards shall have offset joints a minimum of 6-in. and gaps between abutting insulation board joints or at roof penetrations shall not exceed 1/4-inch in width. Tape joints if required by roofing system manufacturer.
- F. Mechanically fasten insulation over substrate as per manufacturer's installation instructions.
- G. Adhered Insulation: Install each layer of insulation and adhere to substrate as follows:
 - 1. Set each layer of insulation in ribbons of bead-applied insulation adhesive, firmly pressing and maintaining insulation in place.
 - 2. Set each layer of insulation in a uniform coverage of full-spread adhesive, firmly pressing maintaining insulation in place.
- H. Where roofing membranes are to be torch-applied over combustible substrates or plastic foam insulation, install approved fire barrier boards with long joints in continuous straight lines with end joints staggered between rows. Offset joints a minimum of 6 inches each direction from joints of insulation below. Multiple layers of roof insulation as well as fire barrier cover boards shall also have offset joints and gaps between abutting insulation board joints, fire barrier cover board joints or at roof penetrations shall not exceed 1/4-inch in width. Butt fire barrier board edges together and fasten to roof deck and/or vertical walls as required. Tape joints if required by roofing system manufacturer.

3.06 FIRE BARRIER (COVER BOARD) INSTALLATION

- A. Install specified fire barrier/roof cover board in strict accordance with the manufacturer's recommended instructions. Install only dry materials. When working at night, install specified interply membrane over the exposed fire barrier/roof cover board within 60 minutes.

3.07 ROOFING MEMBRANE INSTALLATION, GENERAL

- A. Total Installation Concept
 - 1. A complete new roofing system has been specified. Partial replacement, patching, or splicing new roofing into existing are not acceptable under any circumstances.
 - 2. If a section of existing roof warrants excessive reworking and/or patching, the entire area or section of roofing shall be replaced. This shall mean from edge and/or

2-PLY MODIFIED BITUMINOUS MEMBRANE ROOFING
TORCH APPLIED

expansion joint to edge and/or expansion joint, in both directions. At the discretion of the Architect and the roof system manufacturer, the roof area in question may be cleaned, primed and overlaid with an additional layer of cap sheet or repaired as deemed acceptable.

- B. Install roofing membrane system according to roofing system manufacturer's written instructions and applicable recommendations in NRCA publication "Quality Control Guidelines for the Application of Polymer-modified Bitumen Roofing," and as specified herein.
 - 1. Only CERTA-certified applicators shall operate torches when an open flame will contact any part of a roof.
- C. Start installation of roofing membrane in presence of roofing system manufacturer's technical personnel.
- D. Cooperate with testing agencies engaged or required to perform services for installing roofing system.
- E. Coordinate installation of roofing system so insulation and other components of the roofing membrane system not permanently exposed are not subjected to precipitation or left uncovered at the end of the workday or when rain is forecast.
- F. The entire roof system including all penetrations should be left in a watertight manner at the end of each workday. Any installed roof insulation or cover board materials that are not properly protected and are exposed to moisture (rain, dew, condensation, etc.) during roof membrane installation shall be promptly removed and replaced. The contractor shall be responsible for removal of all wet materials and under no circumstances shall wet insulation or cover board materials from the project site be left in place and allowed to "dry out".
- G. Substrate-Joint Penetrations: Prevent roofing cements, mastics and/or adhesives from penetrating substrate joints, entering building, or damaging roofing system components or adjacent building construction.

3.08 MODIFIED BITUMINOUS MEMBRANE INSTALLATION

- A. Install modified bituminous roofing membrane interply and cap sheet according to roofing manufacturer's written instructions, starting at low point of roofing system. Extend roofing membrane sheets and terminate interply 4-inches above cant strip and cap sheet 2-inches above the edge of each previously installed roofing ply, installing as follows:
 - 1. Unroll modified bitumen membrane sheets and allow to relax minimum of 30 minutes prior to installing sheets. Ensure sheet is dry prior to installation.
 - 2. Provide minimum 3 inch side laps and minimum 6 inch end laps and as otherwise required by membrane manufacturer.
 - a. Stagger end laps minimum 36 inches.

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- b. Offset laps between anchor sheet, interply and cap sheets a minimum of 12 inches.
3. Fully adhere the modified asphalt interply sheet to the fire barrier or anchor sheet by torch application.
4. Fully adhere the modified asphalt cap sheet to the interply sheet by torch application. Cap sheet membranes shall be installed during daylight hours only.
 - a. Ensure substrate and membrane surfaces are warmed either naturally or by torch during the installation.
 - b. Apply heat evenly to underside of roll membrane being installed and exposed side lap area of previously installed sheet. Provide for slight, uniform flow of bitumen in front of roll and full width of roll as the material is being unrolled or set into place. Heat sheets until hot asphalt flows out approximately 1/4-inch along the side laps and is fully adhered to the sheet below without voids and air pockets. Avoid overheating the membrane or burning through to membrane reinforcement.
 - c. Apply uniform positive pressure to ensure membrane is fully adhered and all laps are sealed. Press laps and ends of rolls with a roller to assure proper adhesion. Ensure that a minimum of 1/4-inch of asphalt is exposed at each lap. Apply granules while bitumen bleed-out is still hot.
 - d. Prior to forming lap over granulated surfaces, embed granules of the receiving sheet by heating and troweling-in the granules to form a uniform black compound surface.
 - e. Re-inspect and re-work, if necessary, until all laps are fully sealed.
5. Provide tight smooth laminations of each membrane layer without wrinkles, ridges, buckles, kinks, fish mouths, or voids.
6. Any delay in interply or cap sheet installation may result in thorough cleaning of the previously installed sheet surface and priming with asphalt primer prior to interply or cap sheet installation. Final decision shall be at the direction of the Design Professional or as required by the roofing manufacturer with the most stringent requirement prevailing.

3.09 BASE FLASHING AND STRIPPING INSTALLATION

- A. Install a 2-ply base flashing system over cant strips and other sloped and vertical surfaces, at roof edges, and at penetrations through roof; secure to substrates according to roofing system manufacturer's written instructions, and as follows:
 1. Backer Sheet Application:
 - a. Prime substrates with asphalt primer if required by roofing system manufacturer.
 - b. Adhere backer sheet to substrate using torch application.
 2. Flashing Sheet Application:
 - a. Torch apply flashing sheet to backer sheet. Heat cap sheet granules and press them down to bring the asphalt to the surface. Avoid overheating the membrane or burning through to membrane reinforcement.
 - b. Apply uniform positive pressure to ensure membrane is fully adhered and all laps are sealed. Press laps and ends with a roller to assure proper adhesion.

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TORCH APPLIED

- c. At locations where bitumen bleed-out occurs, apply granules while bitumen is still hot.
- B. After the cap sheet is installed, install the base flashing system to a minimum height of 8-inches above the finished surface of the roofing system. (Exception: On EHPA facilities, base flashing shall extend 12-inches above finished roof surface.) Use a chalk line to maintain a straight bottom edge of the base flashing.
- C. Where the flashing is applied on a parapet wall, the flashing shall extend up and over the top of the wall and down the face so that all wood blocking is covered by the base flashing a minimum of 1-inch and secure the membrane to the wood blocking with fasteners no greater than 12-inches apart.
- D. Mechanically fasten top edge of modified bituminous flashing maximum 6-inches on center through 1 inch (min.) diameter tin caps with fasteners of sufficient length to embed 1-inch (min.) into substrate.
- E. Apply membrane liner over top of exposed nailers and blocking and to overlap top edge of base flashing installation at curbs, and as indicated elsewhere, to serve as a waterproof lining under sheet metal flashing components. At perimeter, liner shall extend 1-inch below the bottom edge of the lowest nailer. Cover all exposed wood and protect from rain during construction.

3.10 AUXILIARY MATERIALS INSTALLATION

- A. General: Coordinate installation of auxiliary materials so as to be integral with the roofing assembly.
- B. Conform to NRCA Roofing and Waterproofing Manual unless otherwise specified or recommended by the roofing material manufacturer.
- C. Do not use any type of cutback asphalt mastic (petroleum asphalt blended with mineral solvents) under any modified bitumen products.
- D. Roof Drains:
 - 1. New roof drains: Prime and set 30-inch-by-30-inch square 4-lb. lead flashing in bed of modified asphalt roofing cement on completed roofing membrane. Cover metal flashing with roofing membrane cap-sheet stripping and extend a minimum of 6 inches beyond edge of metal flashing onto field of roofing membrane. Clamp roofing membrane, metal flashing, and stripping into roof-drain clamping ring. Install stripping according to roofing system manufacturer's written instructions.
 - 2. Existing roof drains to remain: Install new roofing interply sheet up to drain bowl. Install roof cement and fiberglass fabric at the junction of the base ply and drain bowl. Install lead in a bed of roof cement and press into place. Prime lead and apply one ply of base sheet in adhesive over the sheet. Apply modified asphalt cap sheet over base sheet, lap onto lead sheet and under clamping ring. Clamp roofing

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membrane, metal flashing, and stripping into roof-drain clamping ring. Install stripping according to roofing system manufacturer's written instructions.

- E. Set-On Accessories: Where pipe or conduit blocking and similar roof accessories, including lightning protection supports, are set on the membrane, adhere an additional layer of cap sheet material or walk pad material to bottom of pre-manufactured pipe/conduit stands or other set-on accessories prior to setting on roofing membrane. Specific method of installing set-on accessories must permit normal movement due to expansion, contraction, vibration, and similar occurrences without damaging roofing membrane. Do not mechanically secure set-on accessories through roofing membrane into roof deck substrate.
- F. Penetration Flashing:
1. For small, single element penetrations, install metal flashings and metal counter flashings, as applicable.
 - a. Clean and prime both sides of metal to be embedded in roof membrane system.
 2. Set metal base flashings in a uniform and continuous bed of modified asphalt roofing cement and secure to roof deck or wood nailers as applicable.
 3. At lead vent pipe flashings, fold/roll lead flashing down into pipe a minimum of 1-inch.
 4. Strip-in multiple plies of flexible base flashing sheets as recommended by roofing materials manufacturer, consistent with warranty requirements.
 5. At juncture of metal base flashings and flexible base flashing sheets, apply a continuous bead of flashing cement.
 6. Prime with asphalt primer all metal surfaces to which roofing membrane will be applied.
 7. Secure metal counter flashing to penetrating element and seal with non-bituminous sealant over clean substrates 100% free of asphalt bitumen or other contaminant which would adversely affect sealant adhesion.
 8. Use of pitch pans or pitch pockets is not permitted unless specifically indicated on Drawings or otherwise approved in writing by Design Professional or Owner. When permitted, include a 24-gauge stainless steel sheet metal umbrella or lead cap wrapped around the penetrating conduit, pipe, etc., extended up and flared out at the top, filled with sealant and held in place with a stainless steel draw band. Provide hemmed edges on all exposed edges of sheet metal.
- G. Walk Pads
1. Roof walkway materials are to be applied as shown on the drawings or around each roof hatch, mechanical exhaust fan and roof-top air conditioning unit. Any mechanical equipment on the roof that requires maintenance shall have walk pad material applied around the unit.
 2. Walk pad material shall be minimum 36-in. wide and sheets no more than 6-feet long before a break. Provide a nominal 2-in. gap between walkway pads to promote roof surface drainage.

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- a. As an option, Contractor may install an extra layer of cap sheet material around the perimeter of curb-mounted exhaust fans.
 3. Adhere the membrane to the surface of the cap sheet by torch application. Prepare cap sheet first by heating the surface and pressing the granules into the asphalt to achieve an asphalt-to-asphalt bond between the cap sheet and walk pad material.
- H. Sheet Metal Flashing
 1. Contractor shall coordinate installation of sheet metal flashing with the Work of other trades and requirements of the Contract Documents.
 2. Install metal flashing in accordance with Division 7 Specifications, and as follows:
 - a. Set primed metal flashings in a full bed of compatible modified asphalt roofing cement and securely fasten to roof deck or wood nailers. Prime flanges of metal flashing on the roof surface and strip-in with trowelings of cement and flexible flashing strips so that strip extends not less than 8-inches beyond outer edge of flange.
 - b. For all metalwork to be stripped in to the roofing system, primer shall be applied by brush and not roller or spray, unless followed by brushing. Primer shall be applied to both sides of horizontal metal flanges.

3.11 TEMPORARY ROOFING

- A. At the end of each day's roofing installation and prior to the onset of inclement weather, provide temporary roofing and flashing as necessary to maintain building in a watertight condition at all times during course of work. Temporarily seal projections through the roof, and surrounding intersections so that no moisture enters roofing membrane or building structure before work resumes.
- B. Water Cut-Offs: Roofing insulation line shall be straightened using loose-laid cut insulation sheets and the terminated edge of the roofing system shall be sealed watertight.
- C. Provide temporary flashing at drains, curbs, walls and other penetrations and terminations of roofing membrane until the roofing system installation is complete and the permanent flashings are applied.
- D. Close drains with permanent or temporary strainers at the end of each work day.
- E. Temporary work shall be removed before continuing with application of the permanent roof system.

3.12 PROTECTING AND CLEANING

- A. Immediately protect completed portions of roofing from damage by subsequent construction activities, in accordance with contract requirements. Do not permit storage, unnecessary walking, wheeling and trucking directly on applied roofing materials.

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- B. Provide temporary walkways, runways and platforms of smooth clean insulation boards or planks as necessary to avoid damage to applied roofing materials and to distribute weight uniformly in order to avoid overloading the roof structure.
- C. Use clean rubber-tired equipment for roofing work.
- D. When remaining construction will not affect or endanger roofing, inspect roofing for deterioration and damage, describing the nature and extent of any such damage in a written report, with copies to Architect and Owner. Correct deficiencies in or remove roofing system that does not comply with requirements, repair substrates, and repair or reinstall roofing system to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.
- E. For the entire duration of construction, Contractor shall repair, replace, or otherwise remedy any roofing material damaged as a result of subsequent construction activities or moisture intrusion, without additional cost to Owner.

3.13 FIELD QUALITY CONTROL

- A. During the of the work of this Section, Contractor shall make visual inspections as necessary, verifying that:
 - 1. All materials of this Section comply with the specified requirements.
 - 2. All materials are properly stored and handled.
 - 3. Membrane heating is provided uniformly for full melt and even flow of bitumen on underside of roll.
 - 4. The proper number and types of plies are installed, with the specified overlaps.
 - 5. The proper number, type, and spacing of fasteners are installed.
 - 6. Associated flashings and sheet metal are installed in a timely manner, in accordance with specified requirements.
 - 7. All laps in interply and cap sheet are fully adhered without voids, skips, fishmouths, or open "T" joints.
 - 8. Insulation is properly secured to the substrate and nailers are provided where and as needed.
 - 9. Nightly tie-offs are properly made and effective.
 - 10. "Washboard" wrinkles in the cap sheet membrane shall be avoided. Prevalence of wrinkles in the cap sheet may be grounds for rejection and replacement.

3.14 POST-INSTALLATION AUDIT

- A. Upon Substantial Completion, Architect will perform an infrared scan to identify whether thermal anomalies indicate potential moisture is present within the roofing system. Should thermal anomalies identify areas of suspect entrapped moisture, the contractor shall be required to provide roof cores at suspect conditions which shall be evaluated by an independent test laboratory utilizing gravimetric analysis test procedures with test results submitted to the Architect and the roof system manufacturer for mandatory review and recommendations. Should the laboratory testing indicate there is no

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detrimental presence of entrapped moisture within the system, the contractor shall be compensated for the removal/repair of each roof core based on a pre-established unit cost for the work. Conversely, percentages of entrapped moisture deemed detrimental to the roofing system shall result in cost associated with roof core sampling and repairs solely at contractor's expense.

- B. When practicable, infrared scanning of the roof membrane should be conducted prior to the installation of the roof membrane cap sheet rather than upon Substantial Completion, so as to avoid patching the finished roof surface.
- C. The Post Installation Audit Report is to include photographs of each roof area. At a minimum, provide the following photographs of each roof area:
 - 1. One overall photo taken from one corner, angled so as to capture the largest area.
 - 2. A second overall photo from the opposite corner.
 - 3. Individual photos of each special condition, including but not limited to curbs, flashing, scuppers, roof drains, expansion joints, changes in elevation and the like.
 - 4. Each photograph is to be labeled with the date, building number, direction of photograph and other descriptive information as needed for clarity.

3.15 PROJECT CLOSEOUT

- A. As soon as possible following Substantial Completion, Contractor shall submit the following documents to Architect:
 - 1. Manufacturer's certification that the finished roofing system complies with the Contract Documents.
 - 2. Warranties and bonds: Submit all warranties specified herein, and include a graphical image depicting roof area(s) covered by Manufacturer's Warranty; identified using Owner's building numbers.
 - 3. Other closeout documents as specified.
- B. Roof Warranty Inspections
 - 1. Within 1 year of the warranty commencement, each year thereafter, and again within two months of the expiration of the Installer's 5-year warranty, the Contractor shall schedule a visual examination of the warranted roofing system with the manufacturer and the Owner. This shall include one (1) roof inspection per year on each roof section.
 - 2. The Contractor shall correct and restore to a warrantable condition any deficiencies discovered in warranted work or materials, at no additional cost the Owner.
 - 3. A Warranty Inspection Report shall be submitted to the Owner, listing the date of the visit, warranty number, participants, facility name, and a description of any deficiencies found and corrections made. The report shall also include any deficiencies found that were not a part of the original project, but which require the Owner's attention.

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SCHEDULE 1 - RECOMMENDED ROOFING MATERIALS (BY MANUFACTURER) – SBS SYSTEMS

The materials and products listed establish a standard of required function, dimension, appearance and quality. Requests for substitution may be considered at the discretion of the Architect and the Owner. Each such request shall include the name of the material for which it is to be substituted with evidence the proposed substitution material meets or exceeds all specified requirements and satisfies all aspects of the stipulated warranties. Additionally, a complete description of the proposed substitution including drawings, cuts, performance and test data and any other information necessary for an evaluation shall be provided to the Architect for review. A statement setting forth any changes in other materials, equipment or other Work that incorporation of the substitute would require shall be included. The burden of proof of the merit of the proposed substitution is on the proposer. The Architect's decision of approval or disapproval of a proposed substitution shall be final.

- A. FIRESTONE®
 - 1. Anchor Sheet (when required for nailable decks): **ASTM D4601, Type II (MB Base)**
 - 2. 2-Ply SBS Modified Asphalt Membrane
 - a. Temporary roof membrane (torch ply), if required: **SBS Poly Torch Base**
 - b. Interply (torch ply): **SBS Poly Torch Base**
 - c. Cap Sheet: **SBS Premium FR Torch (White)**
 - 3. SBS Modified Asphalt Base Flashing
 - a. Backer Sheet: **SBS Glass Torch Base**
 - b. Cap Sheet: **SBS Torch (White)**
- B. GAF®
 - 1. Anchor Sheet (when required for nailable decks): **ASTM D4601, Type II (GAFLAS #75)**
 - 2. Roofing Membrane
 - a. Temporary roof membrane (torch ply), if required: **Ruberoid SBS HW Smooth**
 - b. Interply (torch ply): **Ruberoid SBS HW Smooth**
 - c. Cap Sheet: **Ruberoid SBS HW Plus Granule FR (White)**
 - 3. Base Flashing
 - a. Backer Sheet: **Ruberoid SBS HW Smooth**
 - b. Cap Sheet: **Ruberoid SBS HW Plus Granule (White)**
- C. JOHNS MANVILLE®
 - 1. Anchor Sheet (when required for nailable decks): **ASTM D4601, Type II (PermaPly 28)**
 - 2. Roofing Membrane
 - a. Temporary roof membrane (torch ply), if required: **DynaWeld 180 S**
 - b. Interply (torch ply): **DynaWeld 180 S**
 - c. Cap Sheet: **DynaWeld Cap 250 FR (White)**
 - 3. Base Flashing
 - a. Backer Sheet: **DynaWeld Base**
 - b. Cap Sheet: **DynaWeld Cap (White)**

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- D. POLYGLASS®
1. Anchor Sheet (when required for nailable decks): **ASTM D4601, Type II (Elastobase)**
 2. Roofing Membrane
 - a. Temporary roof membrane (torch ply), if required: **Elastoflex S6**
 - b. Interply (torch ply): **Elastoflex S6**
 - c. Cap Sheet: **Elastoflex S6 G (White)**
 3. Base Flashing
 - a. Backer Sheet: **Elastoflex S6**
 - b. Cap Sheet: **Elastoflex S6 G (White)**
- E. SIPLAST®
1. Anchor Sheet (when required for nailable decks): **ASTM D4601, Type II (Parabase)**
 2. Roofing Membrane
 - a. Temporary roof membrane (torch ply), if required: **Paradiene 20 TG**
 - b. Interply (torch ply): **Paradiene 20 TG**
 - c. Cap Sheet: **Paradiene 30 FR TG**
 3. Base Flashing
 - a. Backer Sheet: **Paradiene 20 TG**
 - b. Cap Sheet: **Paradiene 40 FR TG**
- F. SOPREMA®
1. Anchor Sheet (when required for nailable decks): **ASTM D4601, Type II (Sopra-G)**
 2. Roofing Membrane
 - a. Temporary roof membrane (torch ply), if required: **Sopralene Flam 180**
 - b. Interply (torch ply): **Sopralene Flam 180**
 - c. Cap Sheet: **Sopralene Flam 250 FR Granules (White)**
 3. Base Flashing
 - a. Backer Sheet: **Sopralene Flam 180**
 - b. Cap Sheet: **Sopralene Flam 180 Granules (White)**

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ALTERNATE 1 - RECOMMENDED ROOFING MATERIALS (BY MANUFACTURER) – APP SYSTEMS

The materials and products listed establish a standard of required function, dimension, appearance and quality. Requests for substitution may be considered at the discretion of the Architect and the Owner. Each such request shall include the name of the material for which it is to be substituted with evidence the proposed substitution material meets or exceeds all specified requirements and satisfies all aspects of the stipulated warranties. Additionally, a complete description of the proposed substitution including drawings, cuts, performance and test data and any other information necessary for an evaluation shall be provided to the Architect for review. A statement setting forth any changes in other materials, equipment or other Work that incorporation of the substitute would require shall be included. The burden of proof of the merit of the proposed substitution is on the proposer. The Architect's decision of approval or disapproval of a proposed substitution shall be final.

- A. DERBIGUM®
 - 1. Anchor Sheet (when required for nailable decks): **ASTM D4601, Type II (Sopra-G)**
 - 2. Roofing Membrane
 - a. Temporary roof membrane (torch ply), if required: **Derbigum P**
 - b. Interply (torch ply): **Derbigum P**
 - c. Cap Sheet: **DerbiColor P FR (White)**
 - 3. Base Flashing
 - a. Backer Sheet: **Derbigum P**
 - b. Cap Sheet: **DerbiColor P (White)**
- B. FIRESTONE®
 - 1. Anchor Sheet (when required for nailable decks): **ASTM D4601, Type II (MB Base)**
 - 2. 2-Ply SBS Modified Asphalt Membrane
 - a. Temporary roof membrane (torch ply), if required: **APP 160**
 - b. Interply (torch ply): **APP 160**
 - c. Cap Sheet: **APP 180 FR (White)**
 - 3. SBS Modified Asphalt Base Flashing
 - a. Backer Sheet: **APP 160**
 - b. Cap Sheet: **APP 180 (White)**
- C. GAF®
 - 1. Anchor Sheet (when required for nailable decks): **ASTM D4601, Type II (GAFLAS #75)**
 - 2. Roofing Membrane
 - a. Temporary roof membrane (torch ply), if required: **Ruberoid Torch Smooth**
 - b. Interply (torch ply): **Ruberoid Torch Smooth**
 - c. Cap Sheet: **Ruberoid Torch Plus Granule FR (White)**
 - 3. Base Flashing
 - a. Backer Sheet: **Ruberoid Torch Smooth**
 - b. Cap Sheet: **Ruberoid Torch Granule (White)**

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- D. JOHNS MANVILLE®
1. Anchor Sheet (when required for nailable decks): **ASTM D4601, Type II (PermaPly 28)**
 2. Roofing Membrane
 - a. Temporary roof membrane (torch ply), if required: **JM APP Base**
 - b. Interply (torch ply): **JM APPEX 4S**
 - c. Cap Sheet: **JM APPEX 4.5M FR (White)**
 3. Base Flashing
 - a. Backer Sheet: **JM APPEX 4S**
 - b. Cap Sheet: **JM APPEX 4.5M (White)**
- E. POLYGLASS®
1. Anchor Sheet (when required for nailable decks): **ASTM D4601, Type II (Elastobase)**
 2. Roofing Membrane
 - a. Temporary roof membrane (torch ply), if required: **Polyflex**
 - b. Interply (torch ply): **Polyflex**
 - c. Cap Sheet: **Polyflex G FR (White)**
 3. Base Flashing
 - a. Backer Sheet: **Polyflex**
 - b. Cap Sheet: **Polyflex G FR (White)**

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Roof Assembly and Anchorage Submittal
To Be Completed by Contractor and Manufacturer

Project Name: _____
Project Address: _____
Applicable roof area(s): _____

(Use separate forms for different roof/deck assemblies and roofing systems.)

Contractor Name, contact person, address, phone, email: _____
Name of Person Preparing Form: _____

Parapet Height: _____ Roof Height: _____
Exposure Category: _____ Basic Wind Speed: _____

(Insert component and cladding wind loads (PSF) from Drawings: Effective wind area= 10sq. ft)

| Zone 1 Field: | Zone 2 Perimeter: | Zone 3 Corner: |
|---------------|-------------------|----------------|
| | | |

Roofing System Manufacturer: _____
Authority for determining compliance: (check one below)
☐ Florida Product Approval No.: _____
☐ Dade County Notice of Acceptance No.: _____
☐ FM Global No.: _____
☐ Underwriters Laboratories No.: _____
☐ Independent Laboratory No.: _____

Deck Information:

Deck: Type: _____ Gauge/Thickness: _____ Existing Slope: _____ in 12" (Deck or structure only, not insulation)

Anchor sheet: (Where Applicable for Nailable Decks)

Anchor Sheet Fastener Type: _____

Insulation:

Top cover board layer type: _____ Size and thickness: _____
Top insulation fastener/bonding material: _____
Bottom and intermediate layer(s) of insulation _____ Size and thickness: _____
Bottom and intermediate layer(s) of insulation fastener/bonding material: _____

Number of fasteners per insulation board, per RAS 117:

| Zone 1 Field: | Zone 2 Perimeter: | Zone 3 Corner: |
|---------------|-------------------|----------------|
| | | |

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Roof Membrane:

Top Ply or Cap Sheet type: _____

Interply Sheet type: _____

Felt-ply Sheet type: (where applicable) _____

Anchor/Interply Sheet:

Fastener spacing for anchor/interply sheet attachment, per RAS 117:

Zone 1 Field: _____" o.c. @ Lap, # Rows: _____ @ _____" o.c. in Center of Sheet

Zone 2 Perimeter: _____" o.c. @ Lap, # Rows: _____ @ _____" o.c. in Center of Sheet

Zone 3 Corner: _____" o.c. @ Lap, # Rows: _____ @ _____" o.c. in Center of Sheet

Form Prepared by: _____ Date: _____

Testing Firm: _____

[SKETCH OF ROOF SYSTEM]

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[Architect: INSERT SUPPLEMENTAL INFORMATION HERE]
[System Test Data, Fastener Pullout Test Report, etc.]

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SUPPLEMENT - HCPS ROOFING SUBMITTAL CHECKLIST

Submittal Format

- ☐ Scanned Copy of all submittal documents, 300 dpi minimum – full color

General

- ☐ Roof Assembly System Letter from Manufacturer
- ☐ Letter from manufacturer that the roofing installer/contractor is an authorized applicator.
- ☐ Letter from manufacturer acknowledging the field inspection requirements.
- ☐ Florida Product Approvals with reference to specific system numbers.
- ☐ Manufacturer's Notice of Intent to issue the specified roof warranty.
- ☐ Sample copy of Manufacturer's 20 year NDL Warranty form. Refer to Section 07 52 16.22
- ☐ Roofing installer's written statement accepting the specified warranty requirements.
- ☐ Sample copy of Roofing Installer's 5 year Warranty. Refer to Section 07 52 16.21
- ☐ Roof Assembly and Anchorage Submittal Form for each Roof Area.
- ☐ Certificate of Analysis of the primary roofing materials, provided with delivery of Product.

Product Data (Clearly mark all proposed products)

- ☐ Technical product data sheets for all roofing membranes and flashings.
- ☐ Technical product data sheets for all insulation boards, taper, crickets and cants.
- ☐ Technical product data sheets for all roof accessories, cements and mastics.
- ☐ Safety Data Sheets (a.k.a. MSDS sheets) of each Product

Shop Drawings / Details

- ☐ Detailed application instructions for the roof system being installed.
- ☐ Section diagram of each roof assembly, including all component materials.
- ☐ Roof taper plan with reference to minimum R-values (not average R-values).
- ☐ Roof section details of all conditions required, but not included in the Documents.
- ☐ Insulation fastening patterns required for each wind zone.

Product Samples

- ☐ (3) samples of each fastener type
- ☐ (3) 6-in. wide strips of full roll width samples of each sheet material
- ☐ (3) 6-in. wide strips of full roll width samples of rigid and/or flexible flashing
- ☐ (3) 6x6-in. or larger samples of each type of insulation and cover board

2-PLY MODIFIED BITUMINOUS MEMBRANE ROOFING
TORCH APPLIED

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MANUFACTURER'S NOTICE OF INTENT TO ISSUE ROOF WARRANTY

Whereas _____

Herein called "the "Roofing System Manufacturer" hereby gives notice to:

Owner: _____

Address: _____

Project: _____

Address: _____

Incorporating the Manufacturer's _____
roofing system or product is installed in accordance with the Contract Documents. Further, the
manufacturer acknowledges that the applicator:

Approved Contractor Name: _____

Contact: _____

Address: (City, State, Zip) _____

Phone: _____

Has been approved to install this roof system since _____, _____ and
meets the criteria for an approved applicator listed in the Project Manual.

- A. Manufacturer's Notice of Intent to Issue Roof Warranty in conformance with the Contract Documents shall be executed by the Manufacturer and included with the project submittals.
- B. The following information shall be included with the Manufacturer's Notice of Intent to Issue Roof Warranty:
 - 1. Roofing System Manufacturer's Written Statement: From roofing manufacturer (on roof manufacturer's letterhead), acknowledging the manufacturer has reviewed and accepts the specified warranty requirements with no exceptions. The manufacturer's written statement shall clearly indicate their intent to provide the specified warranty upon the successful installation of the roofing system and upon their receipt of full payment for all roofing system materials.
 - 2. A detailed description of the components of the Manufacturer's system proposed and a list of any other component and accessories, proposed for use in the system that is provided by other manufacturers or suppliers.

2-PLY MODIFIED BITUMINOUS MEMBRANE ROOFING
TORCH APPLIED

- C. Roofing System Manufacturer's Warranty: A twenty (20) year labor and material roof system warranty, without monetary limitation, inclusive of roofing materials, products and accessories, including all metal flashings from roof deck to finish membrane, whether supplied by the membrane manufacture or by others. Provide a "No Dollar Limit", single source responsibility, non-deductible roofing warranty inclusive of all material and labor in full compliance with all the requirements of the project specifications.
1. The Manufacturer shall include a warranty rider to include total labor coverage for the warranty period and to cover damage to roof materials and insulation down to the roof deck resulting from water penetration.
 2. The Manufacturer shall include a warranty rider to state that the Owner has the right to make emergency repairs without voiding the warranty if the manufacturer or applicator does not respond within 24 hours to notification by the Owner of a defect or leak.
 3. The Manufacturer shall include a warranty rider to state that annual inspections with written reports by the Owner, and resulting maintenance, are sufficient to fulfill the periodic inspection requirements of the Owner's warranty.
- D. The Manufacturer's Representative shall conduct a Post-Construction field inspection no earlier than **eleven (11) months**, and not later than **twelve (12) months** after the Date of Substantial Completion.
- E. Submit a written report within seven (7) days of this visit to the Owner's Maintenance Department listing observations, conditions, and any recommended repairs or remedial action.
- F. The Manufacturer will, during the second (2nd) and fifth (5th), year of this warranty, inspect the roof system and provide a written Executive Summary of the Roof Condition to the Owner.

By signing the above, the Authorized Representative of said Manufacturer, certified and represents the Roofing System Manufacturer with the authority to contract and make the above representations to the Owner.

BY: _____ Date: _____

Name: _____ Title: _____

Witness: _____ Date: _____

SECTION 07 60 00**FLASHING, SHEET METAL AND ACCESSORIES****PART 1 - GENERAL****1.01 RELATED DOCUMENTS**

Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division-1 Specification Sections, apply to Work of this Section. The Contractor and Installer of the Work shall examine the specifications and shall thoroughly familiarize himself with all provisions regarding the Work of this Section.

1.02 DESCRIPTION OF THE WORK

- A. Extent of Work: The Extent of Work of this Section is indicated on the drawings, details and by the provisions of this Section.
- B. The Scope is defined to include the removal of, and disposal or temporary storage of items to be reused and related materials in preparation for the Work of subsequent sections, but is not limited to the following which are listed as a guide and are not intended to be all inclusive:
 - 1. Flashings and counter flashings per typical details. Field template and shop fabricate metal flashings as much as possible.
 - 2. Surface mounted counter flashings;
 - 3. Liquid flashings;
 - 4. Roof drain replacement components;
 - 5. Roof-to-roof ladders;
 - 6. Copings;
 - 7. Vent through roof (VTR) pipes and flashing
 - 8. Skirt flashings;
 - 9. Pitch pans;
 - 10. Roof curbs;
 - 11. Through wall scuppers;
 - 12. Equipment curbs;
 - 13. Pipe supports;
 - 14. Gutters and downspouts;
 - 15. Sealants;
 - 16. Service Guard Rail / Fall Protection
 - 17. Provide new specified non-corrosive fasteners where removed or replaced.
 - 18. Store and protect reusable materials, specialties and accessories intended to be reinstalled; and
 - 19. Provide items not previously mentioned but required to permit subsequent work.
 - 20. Cleanup;
- C. Related Sections: Related work is specified in other Sections of these Specifications. The Contractor shall consult and become familiar with all other Sections to determine that part of the work which will come into contact with his Work.

1.03 REFERENCES

- A. The publications listed below form a part of this specification to the extent referenced.
- B. Unless otherwise indicated, the date of the publication or standard is that in effect as of the date of the project documents.
- C. Reference Documents:
1. AWS D1.2/D1.2M - Structural Welding Code - Aluminum;
 2. ASTM A36 - Specification for Carbon Structural Steel;
 3. ASTM A167- Stainless and Heat-Resisting Chromium Nickel Steel Plate, Sheet, and Strip;
 4. ASTM A308/A308M - Standard Specification for Steel Sheet, Terne (Lead-Tin Alloy) Coated by the Hot Dip Process;
 5. ASTM A480/A480M - Standard Specification for General Requirements for Flat-Rolled Stainless and Heat-Resisting Steel Plate, Sheet, and Strip;
 6. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process;
 7. ASTM B101 - Standard Specification for Lead-Coated Copper Sheet and Strip for Building Construction;
 8. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate;
 9. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes;
 10. ASTM B248 - Standard Specification for General Requirements for Wrought Copper and Copper-Alloy Plate, Sheet, Strip, and Rolled Bar;
 11. ASTM B32 - Standard Specification for Solder Metal;
 12. ASTM B370 - Standard Specification for Copper Sheet and Strip for Building Construction;
 13. ASTM B69 - Standard Specification for Rolled Zinc;
 14. ASTM C 920 - Standard Specification for Elastomeric Joint Sealants;
 15. ASTM C1549 - Standard Test Method for Determination of Solar Reflectance Near Ambient Temperature Using a Portable Solar Reflectometer;
 16. ASTM D1784 - Standard Specification for Rigid Poly(Vinyl Chloride) (PVC) Compounds and Chlorinated Poly(Vinyl Chloride) (CPVC) Compounds;
 17. ASTM D226/D226M - Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing;
 18. ASTM D41/D41M - Standard Specification for Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing;
 19. ASTM D4586/D4586M - Asphalt Roof Cement, Asbestos-Free;
 20. ASTM E1918 - Standard Test Method for Measuring Solar Reflectance of Horizontal and Low-Sloped Surfaces in the Field;
 21. AWS D1.1 - Structural Welding Code - Steel;
 22. AWS D1.3 - Structural Welding Code - Sheet Steel;
 23. AWS D9.1 - Sheet Metal Welding Code;
 24. CDA 401/OR - Sheet Copper Applications;
 25. CDA 4115-1929 - Copper in Architecture - Handbook;
 26. CDA 401/OR - Sheet Copper Applications;
 27. SMACNA Architectural Sheet Metal Manual, 7th Edition (2012);
 28. SWRI Sealants: The Professionals' Guide, Sealant, Waterproofing and Restoration Institute;

1.04 SYSTEM DESCRIPTION

- A. The Work described herein involves various installations of flashing, sheet metal and accessory items indicated in the Construction Documents. Provide all install all specified components free of leaks or water infiltration for the terms of the warranties as a minimum.

1.05 DEFINITIONS

- A. General: Refer to Section 01 42 16 - Definitions.
- B. Contractor: Refer to General Conditions.
- C. Work of this Section: When reference is made to the "Work of this Section" it shall mean the work specified and described under the CSI Narrow Scope Section 07 60 00.

1.06 SUBMITTAL

- A. General: Refer to Section 01 33 00 - Submittal Procedures. Transmit submittals using the specified form and itemize each item proposed.
- B. Provide digital copy of all submittals. Scan contents of each submittal at full scale in Adobe PDF format for archive storage and distribution, minimum 300 dpi resolution (full color).
- C. Submittals shall clearly show annotations and drawing mark up tools or similar technique to add comments those selections that apply, including clouds, circles, boxes, lines, arrows, stamps, text boxes and text callouts—do not highlight. Itemize products submitted with reference to specification section and/or applicable drawing.
- D. Submittals shall be reviewed by the Architect prior to commencement of any work of this section. A copy of the submittals shall be present at the job site during the Work.
- E. Qualification Data:
 - 1. Time and sequence schedule.
 - 2. Location of equipment and method of storage of products at the site.
 - 3. Product Literature: Provide copies of the Manufacturer's and supplier's product information, specifications, installation instructions, and Material Safety Data Sheets for building components and accessories. Copies of all MSDS data sheets shall be kept on the project site at all times.
 - 4. Shop Drawings: Provide shop drawings for custom roof curbs and for all details differing from those indicated on drawings. Certify compliance with requirements of these Specifications for those details not submitted.
 - 5. Guarantees and Warranties: Submit (1) sample copy of the manufacturer's product guarantees and warranties.

1.07 QUALITY ASSURANCE

- A. Qualifications:
1. Work of this Section shall be performed by a duly licensed contractor approved for the type of work involved and shall have been successfully engaged in this type of work for not less than (10) years prior to bid date and shall be capable of showing successful installation similar to work required for this project.
 2. Supervision: The Work of this Section shall be performed under the direction of a qualified supervisor or foreman with a minimum of (5) years experience in the type of work involved herein.
- B. Pre-Installation Meeting: Approximately (1) week prior to commencement of all Work, Contractor and/or Installer of the Work of this Section shall attend a pre-construction conference with all parties involved to answer questions and resolve various aspects of the work, such as, but not limited to, location of equipment, sequencing, coordination, and scheduling. Work out schedules, location of setup areas, and traffic patterns and protection methods.
- C. Performance Criteria: The work shall provide a uniform, watertight condition, and be in accordance with the best workmanship as recognized by standards of the industry. The work shall be guaranteed by this Contractor for a minimum of (5) years against defects in workmanship and water entry.
- D. Regulatory Agencies: Contractor shall comply with all applicable codes and regulations by authorities having jurisdiction.
- E. Mock-ups: Prior to installing sheet metal flashing and trim, construct mock-ups indicated to verify selections made under Sample submittals and to demonstrate aesthetic effects as well as qualities of material and execution. Build mock-ups to comply with the following requirements, using materials indicated for final unit of Work.
1. Locate mock-ups on-site in the location and of the size indicated or, if not indicated, as directed by Architect.
 2. Notify Architect on week in advance of the dates and times when mock-ups will be constructed.
 3. Construct mock-ups for the following type of sheet metal flashing and trim:
 - a. Coping metal;
 - b. Through-wall scupper;
 - c. Surface-mounted counter flashing;
 - d. Expansion joints;
 - e. Edge metal fascia;
 4. Obtain Architect's approval of mock-ups before start of final unit of Work;
 5. Retain and maintain mock-ups during construction in an undisturbed condition as a standard of judging the completed work. Only approved mock-ups in an undisturbed condition at the time of Substantial Completion may become part of the completed Work.

1.08 DELIVERY, STORAGE AND HANDLING

- A. General: Refer to Section 01 60 00 - Material and Equipment.

- B. Owner will not provide closed storage facilities or be responsible for loss or damage of products and equipment.
- C. Materials shall be handled, transported and stored in a manner enabling only undamaged material to be installed and which will safeguard against possibility of twisting, bending, abrasion or excessive moisture. Materials shall be transported and stored in dry, well ventilated places. Slope to drain. Do not allow sheet metals and fasteners to become wet until after installation.
- D. Deliver materials in sufficient quantity to assure continuity of work. Select and utilize handling equipment so as to avoid damage. Avoid damage to metal and its finish at all times. If damaged, repair or replace at no additional cost to Owner. Prevent contact with materials during storage which may cause discoloration, staining or damage.
- E. Protect products and equipment from pilferage and vandalism. Owner will not provide closed storage facilities or be responsible for loss or damage of products and equipment. The Work of this section may require closed storage without any additional cost to the Owner.
- F. Protect all materials, equipment, storage areas, completed or work in progress, from becoming an "attractive" nuisance.

1.09 PROJECT/SITE CONDITIONS

- A. General: General requirements and specific recommendations of the materials' manufacturers are included as part of these specifications.
 - 1. Report any unforeseen adverse conditions to Architect immediately during the course of Work.
- B. Environmental Requirements:
 - 1. Weather: Proceed with the Work only when actual or predicted weather will not adversely affect installation or performance. Weather includes wind as well as precipitation.
 - 2. Provide all temporary protection to keep building contents and personnel from experiencing any water infiltration or damage.
 - 3. Do not proceed with sealant work when ambient and substrate temperature conditions are outside the limits permitted by the manufacturers or when the joints and substrates are wet due to rain, frost, condensation or other causes.
- C. Protection:
 - 1. General: The Work of this section shall include all steps necessary to protect the workmen, students, faculty and general public from injury due to construction work of this Contract. Unsafe conditions, equipment, or work practices shall not be permitted at anytime.
 - 2. Provide all necessary protection to property, people and premises as required to prevent damage or contamination and to prevent injury. Remove and repair damage or contamination immediately at no additional cost to the Owner. Provide barricades to restrict access to work area by unauthorized people. Remove protection when no longer required.

3. Barricades: Fences, ropes, signs and barricades shall be provided without additional cost to keep the public and/or students away from the construction area. Areas to be barricaded include: (a) where tear-offs occur near the edge of the roof; (b) active work areas; (c) where debris disposal shoots are located; (d) ladders are located; (e) on-ground construction materials storage areas; and (f) hoisting areas.

1.10 SCHEDULING

- A. Coordination/Cooperation: Coordinate and schedule work in cooperation with Owner and other trades. Comply with Owner's requirements related to security. Remove debris on a daily basis. Minimize noise and dust to the fullest extent possible.

1.11 GUARANTEE

- A. The Guarantee contained under other provisions of these Contract Documents will be held to have been part of this Section. The Contractor shall do all of his work in conformance with the provisions of the Drawings and Specifications in such a manner that will allow all other trades to perform their work and submit their required guarantees.

1.12 SAFETY

- A. The Contractor shall be fully and solely responsible for all matters of safety of persons and property arising from this contract, including the liabilities and responsibilities of all subcontractors. Neither the Architect nor the Owner or any of their representatives or employees are to be assumed to have any role of responsibility of matters of safety except they (including the Architect) shall have the authority to order stopping of a portion of the Work which they notice may endanger occupants, employees of the Owner, or the public, or employees of the Contractor or subcontractors.

PART 2 - PRODUCTS

2.01 GENERAL

- A. The following products and manufacturers are approved subject to the provisions of these specifications and are not intended to exclude other manufacturers with equivalent materials, systems and warranties. Where "approved substitutions" is indicated, other acceptable manufacturers may be utilized, provided their systems and warranties are equivalent in all respects and submitted for approval in accordance with these Contract Documents.
- B. It is intended that materials or products specified by name of manufacturer, brand, trade name or by catalog reference shall be the basis of the bid and furnished under the contract, unless changed by mutual agreement. Where two or more materials are named, the choice of these shall be optional with the contractor.

2.02 MATERIALS

- A. Sheet Aluminum:
 - 1. Description: Aluminum sheet suitable for custom fabrication.
 - 2. Compliance: ASTM B-209, alloy 3003 or 3004, temper H14.
 - 3. Finish: Mill finish.
 - 4. Thickness: : 0.050-in., unless otherwise specified.
 - 5. Approved Manufacturers: Alcoa, Reynolds Aluminum, or approved substitution.
- B. Stainless Steel Sheet Metal:
 - 1. Description: Bright reflective, annealed, non-mirror, slightly smokey sheet suitable for fabrication and soldering.
 - 2. Type: AISI Type 304.
 - 3. Compliance: ASTM A 167; ASTM A 240; ASTM A 480. F.S. #QQS-00766 (66B), amendment #1;
 - 4. Finish: 2B.
 - 5. Thickness: 24 gauge or (0.021-0.025-in.), unless otherwise indicated.
 - 6. Approved Manufacturers: Lukens Steel, Allegnany, Abesta-Sheffield, or approved substitution.
- C. Bar Solder Solder for Galvanized and Stainless Steel Sheet Metal:
 - 1. Description: 60% tin / 40% lead - Chloride Free
 - 2. Compliance: ASTM B32-95 specification for solder metal, Fed. Spec. QQS-571.
 - 3. Chloride Free Flux: Provide only phosphoric acid type flux.
 - 4. Manufacturer: The Oatey Company, 4700-West 160th Street, Cleveland, OH 44135
- D. Sheet Lead at Roof Drains:
 - 1. Description: 4.0 lb. desilverized sheet lead.
 - 2. Approved Manufacturer: Local Supply.
- E. Aluminum Angle
 - 1. Description: Extruded architectural/structural aluminum angle for use over surface mounted counter flashing.
 - 2. Type: 1-in. x 1-in. x 1/8-in., aluminum extruded angle with sharp corners.
 - 3. Holes: 1/4-in. x 3/8-in. slotted at 8-in. o.c. - Contractor shall predrill all holes prior to installation.
 - 4. Tradename: **6063-T52 Angles**
 - 5. Approved Manufacturer: Monarch Metal Fabrication; Ryerson; Alro Steel, or approved substitution.

2.03 MANUFACTURED UNITS

- A. Fasteners for Sheet Metal to Concrete/Masonry Substrate (Option 1):
 - 1. Description: Removable concrete screw anchor for attachment to concrete, block, brick, or stone.
 - 2. Size/Type: 1/4-14 x 1-1/2-in., 304 S.S., hex head, with S.S./EPDM washer (sold separately). For termination or hold-down angles, fastener length shall be 1-3/4-in.
 - 3. Tradename: **304 Stainless Steel Tapper™**

4. Drill Bits: 3/16-in. dia. carbide drill bit for Type 304 S.S. Tapper™
 5. Approved Manufacturer: Powers Fasteners, or approved substitution.
- B. Fasteners for Sheet Metal to Concrete/Masonry Substrate (Option 2)
1. Description: FM approved, nail drive anchor formed from corrosion resistant Zamac alloy for use in concrete, block, brick, or stone.
 2. Size/Type: Minimum 1/4-in. x 1-1/2-in., mushroom head, stainless steel drive nail.
 3. Tradename: **Zamac Nailin™**.
 4. Approved Manufacturer: Powers Fasteners, or approved substitution.
- C. Fasteners for Sheet Metal to Sheet Metal
1. Description: Corrosion resistant, hex washer head self drilling screw (SAE J78) with cap/flange head and EPDM sealing washers.
 2. Size/Type: 1/4" -14 X 7/8" DP1/LAP w/VRT
 3. Material: 304 Stainless
 4. Tradename: **BLAZER® Stainless Cap Head w/Sealing Washer**
 5. Approved Manufacturer: Triangle Fastener Corp., or approved substitution.
- D. Fasteners for Sheet Metal Screw to Wood Substrate (For Exposed Applications)
1. Description: All stainless steel wood screw with cupped head and EPDM washer for attachment of sheet metal to treated wood/lumber.
 2. Materials: 304 stainless steel
 3. Size/Type: #10-16 x 2-in., 1/4-in. CHWH, Sharp Point T-A, 1/2-in dia. washer face dia.
 4. Tradename: **304 SS™ WoodBinder®** by ST Fastening Systems (800-352-4864), or approved substitution.
- E. Fasteners for Sheet Metal Screw to Wood Substrate (For Concealed Applications)
1. Description: All stainless steel ultra low profile wood screw for attachment of sheet metal to treated wood/lumber.
 2. Materials: 410 stainless steel (passivated)
 3. Size/Type: #10-9 x 1.125-in. gimlet point, ultra low pancake head w/ taper
 4. Tradename: **Concealor #10-9 GP Stainless** by Triangle Fastener Corp. (800-486-1832), or approved substitution.
- F. Fasteners for Sheet Metal Nail to Wood Substrate (For Concealed Applications)
1. Description: Compatible 304 stainless steel, ring barb, roofing nail for attachment of stainless steel sheet metal to wood where head is concealed.
 2. Size/Type: 12 gauge x 1-1/2-in. with 3/8-in. diameter head.
- G. Spike Fastener for Wood to Masonry or Concrete
1. Description: One piece stainless steel spike anchor for attachment of wood blocking to masonry or concrete.
 2. Material: Type 316L stainless steel.
 3. Size/Type: 1/4-in. x (1-in. minimum penetration into substrate), mushroom head
 4. Tradename: **Mushroom Head Spike®**
 5. Approved Manufacturer: Powers Fasteners, or approved substitution.

- H. EPDM Membrane:
1. Description: A cured single-ply, non-reinforced, synthetic EPDM membrane.
 2. Size/Type: 45-mil thickness in continuous lengths (Black)
 3. Approved Manufacturer: Firestone Building Products Co.
 4. Tradename: **RubberGard® EPDM Membrane**
 5. Lap Adhesive: Firestone Splice Adhesive (Splice Tape is also acceptable).
- I. Pourable Sealer for Pitch Pans, where approved:
1. Description: 2-component (100% solid rubber), RTV, solvent free urethane pourable sealant designed for use in horizontal self-leveling, sealing and waterproofing applications.
 2. Tradename: **Pro-Pack Urethane Pourable Sealant**
 3. Manufacturer: Chem Link, Inc. (616) 344-3330, or approved substitution.
- J. Preformed Pitch Pan
1. Description: Lightweight, polymer modified cement preformed pitch pan rind and two-component urethane pourable sealant for use at all penetrations unless where penetrations are otherwise too large to accommodate.
 2. Size/Type: Standard sizes (7-in. i.d. and 4-1/2-in. i.d). Use 12-in. straight sections, as needed.
 3. Tradename: **ChemCurb System™ Preformed Pitch Pan**
 4. Manufacturer: Chem Link, Inc. (616) 344-3330
- K. Foam Backer Tape:
1. Description: Closed cell polyvinyl chloride waterproof foam tape with one-sided self adhesive.
 2. Size/Type: 3/16-in. thick x 1-1/2-in. wide x 30-ft. Length; Color: Gray.
 3. Properties: 10 lbs/cu. ft.; 45% polyvinyl chloride; 45% Phthalate Plasticizer.
 4. Tradename: **Camper Seal Foam Tape** (Mfr. No. 02352).
 5. Manufacturer: M-D Building Products, Inc. (GE Silicones).
 6. Distributed By: The Home Depot, Store SKU #725277.
- L. Condensate / EMT Pipe Supports:
1. Description: Pre-manufactured, adjustable, PVC pipe stand for condensate, electrical and communication lines.
 2. Bases: ASA plastic.
 3. Base Dimensions: 8-in. diameter x 3-in. tall.
 4. Saddles:
 - a. APS-1: For applications using up to 1.5-in. pipe.
 - b. APS-2: For applications using up to 2.5-in. pipe.
 - c. USPP-6: Stainless steel Unistrut channel, 6-in. length.
 5. Accessories:
 - a. MDAPP-12: 3/4-in. Schedule 40 PVC pipe post.
 - b. SSPP-14: Stainless steel strap.
 - c. MDA-1000, Adhesive
 - d. Paver: 12x12x2-in. (Nominal) concrete paver
 - e. Unistrut hardware to be stainless steel.
 6. Tradename: **Pipe Prop**

7. Manufacturer: JMB Industries, LLC

M. Pipe Extension for PVC Plumbing Vents:

1. Description: Manufactured pipe extension for PVC plumbing vents for use at locations where the existing pipe height above the level of the finished roof system surface does not comply with applicable building code minimum requirements.
2. Dimensions: 28-in. overall length; 6-in. joint splice sleeve insert lengths (1 at each end; 2 total each unit).
3. Diameters:

| Nominal Dimension Existing Vent Pipe | Pipe Extension Diameter O.D. | Splice Sleeve Insert Diameter O.D. |
|---|---------------------------------|---------------------------------------|
| 2-inch | 2-1/4 inch | 1-3/4 inch |
| 3-inch | 3-1/4 inch | 2-3/4 inch |
| 4-inch | 4-1/4 inch | 3-3/4 inch |

4. Accessory Products:
 - a. Sealant: STP-M1
 - b. PVC cleaners and adhesives
5. Tradename: **TUBOS® Plumbing Vent Pipe Extensions** by Tubos, Inc.

N. Equipment Supports:

1. Prefabricated roof-top equipment supports: Fabricated of 14 gauge (minimum) galvanized steel, all seams welded, with continuously welded corner seams and plate, with welding flange horizontal on all (4) sides at bottom, complete with base plate, 2x PT wood nailer at top, 18 gauge removable counter-flashing cover, water tight screws and neoprene washers, approximately 5-1/2-in. wide by 18-in. high (minimum), by length as required (12-in. longer than equipment supported).
2. Minimum load carrying capacity shall be within 10-percent of the specified maximum load carrying capacities specified as follows:

| Max. Allowable Concentrated Load | Max. Allowable Uniform Load |
|----------------------------------|-----------------------------|
| 3,700 lbs. | 1,250 lbs. |

3. Following products approved, subject to compliance with these Specifications and the specified sizes:
 - a. Thybar Corporation, Model TEMS-3
 - b. The Pate Company, Model ES-2

O. Liquid Flashing System (Basis of Design)

1. Description: A polyurethane/bitumen resin, single-component, and moisture-cured flashing compound and polyester reinforcing mesh.
2. Reinforcing Fabric:
 - a. Color: White
 - b. Fiber Content: 100% polyester
 - c. Physical State: Solid
 - d. Construction: Stitch bond
 - e. Weight: 2.4 oz. / sq. yd.
 - f. Width: 4/6/8-in. widths x 50-ft. length (also comes in 39-in. width)

- g. Nominal Thickness: 30 mils
 - 3. Quantity: 1 or 5 gallons
 - 4. Shelf Life: 6 months in original unopened containers.
 - 5. Coverage Thickness: 32 wet mils (2.0 gal/100 sq. ft.).
 - 6. Water vapor transmission (ASTM D1653): 11.0 perms
 - 7. Elongation (ASTM D412): 672 percent
 - 8. Tensile Strength @ Break (ASTM D412): 368 psi
 - 9. Tear Resistance (ASTM D903): 23.0 lbf.
 - 10. Tear Resistance (ASTM D41547, Sec. 7): 57.27 lbf.
 - 11. Impact Resistance (ASTM D2240): Shore A 74
 - 12. Low Temperature Flexibility (ASTM D 5147 Sec. 11): - 26 (°C)
 - 13. Usage Time: > 2 hours
 - 14. Rainproof After: 2 - 12 hours
 - 15. Fully Cured: 3 days
 - 16. Flashing System Application:
 - a. Base layer @ 2.0 gal./100 sq.ft.
 - b. Alsan PolyFleece reinforcement
 - c. Reinforcement embedment layer @ 2.0 gal./100 sq.ft.
 - d. Top layer @ 2.0 gal./100 sq.ft.
 - e. As an option, after initial tack to the top-surface, apply matching color ceramic granules pressing them into the Finish Coat.
 - 17. Tradename: **Alsan Flashing + Alsan PolyFleece**
 - 18. Manufacturer: Soprema, Inc.
 - 19. Other approved manufacturers:
 - a. PermaFlash System, as manufactured by Johns Manville, Inc.
 - b. UltraFlash System, as manufactured by Firestone Building Products Company
- P. General Use Sealant (Designation PE-50):
- 1. One component, 100% solids, solvent-free, gun grade, silyl-terminated polyether sealant, ASTM C920, Type S, Grade NS. Fed. Spec. TT-C-0230C, Type II, Class A.
 - 2. Class: 50. Joint movement range without cohesive/adhesive failure: Plus 50 percent to minus 50 percent of joint width.
 - 3. Uses: T1, NT, M, A, G, and O.
 - 4. Color: Selected by Architect from manufacturer's full color range.
 - 5. Applications: General purpose sealant for exterior joints, including all inside corner metal-to-masonry, metal-to-concrete or metal-to-stucco joints at counter flashing "sealant trays", and metal-to-metal sheet metal lap joints.
 - 6. Products: Provide one of the following:
 - a. **DuraLink 50**; CHEM LINK Products.
 - b. SoudaSeal 50LM; Soudal
 - c. Pro-MS50™; Bostik, Inc.
 - d. Quad Max; OSI, Division of Henkel Corporation
 - e. Approved substitution.
- Q. Edge Sealant (Designation STP-25):
- 1. One component, 100% solids, solvent-free, gun grade, silyl-terminated polyether sealant, ASTM C 920, Type S, Grade NS.
 - 2. Class: 25. Joint movement range without cohesive/adhesive failure: Plus 25 percent to

minus 25 percent of joint width.

3. Uses: NT, M, A, G, and O.
4. Color: Black, unless otherwise specified.
5. Applications: Exposed sealing applications on low-slope commercial roofing used to permanently bond structural assemblies such as coping, metal edge, skylights and pitch pans.
6. Products: Provide one of the following:
 - a. **M-1 Structural Sealant**; Chem Link, Inc.

R. Aluminum Roof Access Ladders

1. Description: Custom fabricated, heavy duty tubular rail aluminum roof ladders with serrated square rungs for low parapet access.
2. Field Measurements: Verify dimensions by field measurement before fabrication.
3. Finish: Mill finish.
4. Materials:
 - a. Aluminum Sheet: Alloy 5005 H34 to comply with ASTM B209.
 - b. Aluminum Extrusions: Alloy 6063 T6 to comply with ASTM B221.
5. For roof level changes between 5-ft. and 10-ft:
 - a. **Model 504** - Tubular rail low parapet with walk-through rail extensions and off floor mounting brackets.
6. For roof level changes above 10-ft.:
 - a. **Model 502** - Tubular rail low parapet access ladder with roof over rail extensions
7. Manufacturer: O'Keefe's, Inc., or approved substitution.
8. Fabrication:
 - a. Rungs: Not less than 1-1/4 inches in section and 18-3/8 inches long, formed from tubular aluminum extrusions. Squared and deeply serrated on all sides.
 1. Rungs shall withstand a 1,500 pound (454 kg) load without deformation or failure.
 - b. Channel Side Rails: Not less than 1/8 inch wall thickness by 3 inches wide.
 - c. Heavy Duty Tubular Side Rails: Assembled from two interlocking aluminum extrusions no less than 1/8 inch wall thickness by 3 inches wide. Construction shall be self locking stainless steel fasteners, full penetration TIG welds and clean, smooth and burr free surfaces.
 - d. Walk Through Rail and Roof Rail Extension: Not less than 3 feet 6 inches above the landing and shall be fitted with deeply serrated, square, tubular grab rails.
 - e. Landing Platform: 1-1/2 inches (38 mm) or greater diameter, tubular aluminum guardrails and decks of serrated aluminum treads.
9. Warranty: Five (5) years against defects in materials and workmanship.

S. Permanent Ledge Mount Guardrail - Service Guard/Fall Protection (If Required)

1. Description: Permanent roof edge railing system with bracket installs under the drip edge, coping cap, gravel stop or gutter system without penetrating the roofing system.
2. Field Measurements: Verify dimensions by field measurement before fabrication.
3. Material:
 - a. Post: 1.25" ID (1.66") x 0.140" Schedule 40 pipe (ASTM A53) welded to 2" x 3" x 3.5" steel block (ASTM A36) and 3/16" steel plate (ASTM A36) bracket with pre-punched holes and slots for permanent structural attachment.
 - b. Horizontal Fixed Rail: 1.625" x .065" (ASTM C1008/1010) steel tube rails.

- c. Horizontal Adjustable Rail: 1.625" x .065" and 1.375" x .065" (ASTM C1008/1010) steel tube adjustable slide rails.
4. Finish: Powder Coat (Color by Owner).
5. Hardware: 3/8"-16 x 1" zinc plated steel rail fasteners.
6. Standards: OSHA 29 CFR 1910.23 and 1926.502
7. Wood Fasteners: RSS Structural Screw
8. Warranty: 5 years.
9. Tradename: **Permanent Ledge Mount Guardrail**
10. Manufacturer: Nystrom Building Products, 9300 73rd Avenue North, Minneapolis, MN 55428, Phone: (800) 547-2635

2.04 ACCESSORIES

- A. PT wood nailers and APA rated exterior grade plywood, as indicated;
- B. Provide only aluminum pop rivets for use in the fabrication of aluminum sheet metal assemblies. Both mandrel and pin shall be same material;
 1. Size/Type: 0.25-in. Head dia., 0.125-in. Rivet dia., Button head. Size rivet length according to grip range.
- C. Pop Rivets for Stainless Steel Fabrications:
 1. Description: Stainless steel body/ stainless steel mandrel rivets for use to secure stainless steel flashing components.
 2. Size/Type: 0.25-in. Head dia., 0.125-in. Rivet dia., Button head. Size rivet length according to grip range.
 3. Properties: 520 lbs. (Min) Shear Strength; 500 lbs. (Min) Tensile Strength
 4. Manufacturer: Local Supply.
- D. Flush Mounted Ceiling Access Panel:
 1. Description: New flush mounted ceiling access panel with concealed hinges and welds with locking hardware.
 2. Tradename: **UF-5500, 24 x 24 ACPC**
 3. Manufacturer: Acudor Products, Inc.
- E. Miscellaneous items not previously mentioned herein but shown on drawings or required to perform the Work.

2.05 FABRICATION

- A. Edge Metal Fascia (Refer to Typical Details):
 1. Raised Edge Fascia: Specified 0.050-in. mill finish aluminum - shop fabricate gutter edges with 1/2-in. high angled stop. Provide 1-1/2-in. high angled stop at all other locations.
 2. Continuous Cleat: Specified 0.062-in. mill finish aluminum - shop fabricate.
 3. Shop fabricated inside and outside corners: Corner sections and bends shall be prefabricated at 24-in. outside of corners. Do not field splice at any 90 degree corner or bend. Fabricate end plates with 3-in. flanges where required. Pop rivet and solder solid.
 4. Bottom Joint Plates: Specified 0.040-in. mill finish aluminum - shop fabricate.
 5. Nailers: Provide new PT 2x6 nailers to match height of new insulation.

6. Fasteners: Provide all fasteners required for the substrate involved and as indicated.
 7. Joint Sealant: PE-50.
 8. Gravel Stop Edge Sealant: Liquid Flashing.
- B. Vent Through Roof (VTR):
1. Flashing/Strip-in: Approved liquid flashing system.
 2. Pitch Dams (where required): Provide new 26 GA, stainless steel sheet metal - shop fabricate to fit around pipe penetration. Solder solid all joints.
 3. Pipe Extensions (Cast Iron Pipe): Provide new 22 GA, stainless steel sheet metal - shop fabricate to taper and fit snug inside pipe penetration and bring VTR to eight 8-in. minimum above top of new roofing. Solder solid.
 4. Pipe Extension (PVC Pipe): TUBOS[®] Plumbing Vent Pipe Extensions, size to fit.
- C. Surface-Mounted Counter Flashing
1. Counter flashing: Specified 0.050-in. mill-finish aluminum sheet metal unless noted otherwise (pre-finished where adjacent to corrugated steel canopies) - shop fabricate. Flare and hem bottom edges 45 degree x 1/2-in. (min). Weld all corners and joints solid.
 2. Shop fabricated inside and outside corners: Corner sections and bends shall be pre-fabricated at 24-in. outside of corners (refer to typical detail). Weld joints solid. Do not field splice 90 degree corners. Provide 3-in. end plates at all end conditions.
 3. Foam Backer Tape: Specified 3/16-in. x1-1/2-in. foam backer tape.
 4. Hold-Down Angle: Provide aluminum 1x1x1/8-in. angle, pre-drilled at 12-in. on center. Use pre-finished aluminum where adjacent to corrugated steel canopies.
 5. Caulk-Tray Sealant: PE-50. Color to match wall.
 6. Anchors: Provide specified fasteners as required for the substrate involved.
- D. Curb Mounted Exhaust Fans (Vents):
1. Skirt flashing: Provide specified 0.050-in. mill-finish aluminum - shop fabricate. Flare bottom edges 45 degree x 1/2-in. (min). Weld all corners and joints.
 2. Wood: Provide wood components to increase sizes of curbs to match vents.
 3. Fasteners: Provide specified fasteners as required for the substrate involved.
 4. Lap Joint Sealant: PE-50.
- E. Cast Iron Roof Drains:
1. Where required provide new roof drain components: Threaded outlet drain stem, strainer dome, clamping ring with gravel stop, extension sleeve, under deck clamps, top set deck plate (on steel decks), sump receiver and accompanying hardware as manufactured by J. R. Smith, or equal by Josam or Zurn. Size roof drains to match existing. Drain components shall be cast iron.
 2. Provide new static or adjustable extensions to all roof drains installed on roofs with base layer (rigid) insulation greater than 1-1/2-inch.
 3. Where required, damaged or clogged with pitch, provide new schedule 40 PVC drain leader components to match.
 4. Ensure each roof drain leader is supported within 2'-0" of drain. Provide new support hanger, where missing or required (unit cost basis). New pipe leaders to be supported with a hanger every 5 ft. (or closer), as required. Slope leader to drain.

5. Pipe Hanger Support Assembly (Unit Cost Basis): Provide new galvanized beam clamp (C-clamp), 3/8-inch threaded rod, adjustable clevis hanger and 12-inch pipe insulation shield, where required or to support new pipe @ 5'-0" o.c. max.
 6. If new leaders are installed, provide access holes in roof decks, concrete masonry walls and metal soffits to provide access. Install new leaders to provide minimum 1/8" slope to drain. Cut thru construction with minimum destruction and with only approved power cutting devices.
 7. All new or existing roof drains shall be fitted with new stainless steel bolts to match thread in sump. Provide new stainless steel washers and lock washers to match bolt size and thread.
 8. Provide new 30-in. x 30-in. square 4 lb. lead sheet flashing.
 9. Remove all dirt, debris, asphalt or contaminants; prime surfaces; and paint all new strainer domes.
 10. New drains shall be connected to drain leaders using stainless steel, heavy-duty "No-Hub" couplings with neoprene gaskets and surface bearing stainless steel sealing clamps, equal to Husky Series 4000, as manufactured by Anaco No-Hub Couplings.
- F. Roof-to-Roof Expansion joint:
1. Expansion Joint Cover: Specified 0.050-in. mill-finish aluminum - shop fabricate to configuration indicated. Hem edges.
 2. Expansion Cleat: Specified 0.050-in. mill-finish aluminum - shop fabricate to configuration indicated. Hem bottom edge.
 3. Inside and outside corner sections, end conditions and bends shall be prefabricated at 24-in outside of corners. Weld joints solid. Connect pieces with 1-in. standing seams.
 4. Wood: Provide new PT wood nailers and blocking as indicated. Verify heights. Match height of insulation.
 5. Compressible insulation: Fiberglass Batt Insulation in felt fold.
 6. Joint Sealant: PE-50.
 7. Fasteners: Provide all fasteners required for the substrate involved or as indicated.
- G. Coping Caps (Refer to Typical Details):
1. Copings: Specified 0.050-in. mill finish aluminum sheet metal. Shop fabricate. Hem all edges.
 2. Wind Cleats: Specified 0.062-in. mill finish aluminum sheet metal.
 3. Joint Underplate: Specified 0.040-in. mill finish aluminum sheet metal.
 4. Drive Cleats: Specified 0.040-in. mill finish aluminum sheet metal.
 5. Shop fabricated inside and outside corners: Corner sections and bends shall be prefabricated at 24-in. outside of corners (refer to typical detail). Weld joints solid. Do not field splice at any 90-degree corner.
 6. Joint Sealant: PE-50.
 7. Fasteners: Provide all fasteners required for the substrate involved and as indicated.
- H. Curb Mounted Exhaust Fans (Vents):
1. Skirt flashing: Specified 0.050-in. mill-finish aluminum - shop fabricate. Flare bottom edges 45 degree x 1/2-in. (min). Weld all corners and joints solid.
 2. Wood: Provide new wood components to increase sizes of curbs to match vents.
 3. Fasteners: Provide all fasteners required for the substrate involved and as indicated.
 4. Joint Sealant: PE-50.

- I. Thru-Wall Scuppers:
 - 1. Outlet Tube: 24 gauge stainless steel. Shop fabricate per typical detail. Pop rivet and solder solid joints. Scupper height must be 4-inch minimum.
 - 2. Escutcheon Plate: 22 gauge stainless steel. Shop fabricate to match perimeter of scupper outlet tube. Provide 1/2-in. X 30 deg. minimum caulk trays with hem.
 - 3. V-Groove Angle: 1x1-inch, 20 gauge stainless steel. Fabricate with equally spaced v-groove cuts. Solder solid inside outlet tube.
 - 4. Fasteners: Provide all fasteners required for the substrate involved and as indicated.
 - 5. Caulk Tray Joint Sealant: PE-50.

- J. Gutters and Downspouts (Refer to Typical Details):
 - 1. Materials:
 - a. Fasteners: Refer to detail and fastener schedule.
 - b. Brackets: 1/4-in. x 1-1/4-in. aluminum bar.
 - c. Gutter: 0.050-in. aluminum (SMACNA Style D).
 - d. Spacers: 0.050-in. aluminum.
 - e. Outlet Tube: 0.050-in. aluminum.
 - f. Downspout: 0.050-in. aluminum.
 - g. Downspout Straps: 1/4-in. x 1-1/4-in. aluminum bar.
 - h. Accessories: Provide sheet metal clips, anchoring devices and similar accessory units as required for installation of work, matching or compatible with material being installed, non-corrosive, size and gage required for performance.
 - 2. Finishes (Exposed Surfaces): Base metal shall be mill finish.
 - 3. Components:
 - a. End Caps, Downspout Outlets, Downspouts, Downspout Boots, Joint Fasteners, Downspout Strainers, Downspout Header: Profile to correspond with gutter and downspouts.
 - b. Support Brackets: Fabricate bracket to match profile. Drill one slotted hole at top of bracket and one clearance hole at bottom so that final adjustments can be made to ensure proper slope in gutter.
 - c. Gutter and Downspout Profile Sizes: Refer to typical Details
 - 4. Typical Accessories:
 - a. Provide only 3/16-in. aluminum pop rivets (pull mandrel) for gutter assemblies - both mandrel and pin shall be aluminum.
 - 5. Fabrication:
 - a. Shop fabricate work. WELD ALL JOINTS.
 - b. Fabricate work as shown and, where not otherwise shown, fabricate to comply with SMACNA "Architectural Sheet Metal Manual".
 - c. Except as otherwise indicated, shown or specified, comply with recommendations and instructions of the manufacturer of the sheet metal being fabricated.
 - d. Slope gutters to have positive drainage to downspouts.
 - e. Outlet tubes shall be welded solid to gutters.
 - f. Fabricate work with lines and corners of exposed units true and accurate. Form exposed faces flat and free of buckles, excessive waves and avoidable tool marks, considering temper and reflectivity to metal. Provide uniform seams with minimum exposure of solder, welds and sealant. Except as otherwise shown, fold back metal to form hem on concealed side of exposed edges. Hem exposed edges of metal.

- g. Fabricate downspout to be 6-in. from top of grade if concrete splashblock is used or 3-in from top of sidewalk.
- h. Support and Anchorage: Gutters shall be supported with specified brackets at 30-in. on center - anchor securely to wall or blocking with specified fasteners. Gutter spacers shall be pop-riveted at each end and spaced alternately between brackets.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. This Contractor shall examine the area of work to determine that conditions are acceptable for the work of this and subsequent Sections. Report unsatisfactory conditions to the Architect immediately and confirm in writing. Do not proceed until unsatisfactory conditions are corrected. The execution of work shall be construed as an acceptance of conditions by the Contractor.
- B. The work of prior Sections shall be ascertained to be complete and the substrate ready for the work of this Section.

3.02 PREPARATION

- A. Cleaning: Before installation of sheet metal materials, all surfaces must be sound, clean, smooth, dry and free of debris, loose material or defects which would have an adverse effect on the performance. Remove all foreign matter that would interfere with proper installation of the flashings and accessories.
- B. Priming: Where metal flanges of accessories and specialties are set on roofing membrane and are to receive a mopping of asphalt, prime top and bottom of metal flange surfaces with specified primer and set in a bed of roof cement. Allow the primer adequate time to dry.
- C. Contractor shall install all necessary construction to ensure that all curbs are a minimum of 8-in. from top of finished roofing system, unless taller curb heights are required.
- D. Replace deteriorated wood components with new to match.

3.03 ERECTION / FABRICATION

- A. General: Shop fabricate to greatest extent possible except as otherwise specified. Comply with details as shown and with applicable recommendations of SMACNA Manual (latest edition) cited in Part 1 of this Section, and other cited standards. Fabricate for waterproof and weather-resistant performance with expansion provisions for running work, sufficient to permanently prevent leakage, damage or deterioration of work. Form work to fit substrates. Form exposed sheet metal work without excessive oil-canning, buckling and tool marks, true to line and levels indicated, with exposed edges folded back to form hems.
- B. Transitions: Provide shop fabricated inside and outside corners, "L's," "T" and end sections. Install these first. Lap sections at 24-in. from 90-degree interface. Do not field splice at any 90-degree corner. Solder, weld or heliarc all 90-degree splices.

- C. Expansion Provisions: Where lapped or bayonet-type expansion provisions in work cannot be used, or would not be sufficiently water/weatherproof, form expansion joints of intermeshing hooked flanges, not less than 1-inch deep, filled with sealant (concealed within joints).
- D. End Plates and Terminations:
 - 1. Where flashings terminate into another plane or abut a wall, field template around existing conditions and shop fabricate new metal end plates.
 - 2. Fabricate end plates with 4-in. minimum flanges, with hemmed edges and 1/2-in. sealant trays around perimeter of flange.
 - 3. Apply specified foam backer tape to back of flange and secure end plates to wall with specified fasteners.
 - 4. Apply specified sealant around sealant tray and tool as necessary to provide a uniform, sloping, fully adhered sealant bead (typical).
- E. Sealant Joints: Where movable, non-expansion type joints are indicated or required for proper performance of work, form metal to provide for proper installation of specified sealant in compliance with SMACNA standards.
- F. Heliarc all aluminum transitions/joints solid.
- G. Soldered Joints (stainless steel):
 - 1. Where the Specifications and/or Drawings indicate a soldered joint (solder solid), form joint with 1-in. (min.) flanges and fasten with specified pop-rivets (pull mandrel) first, then solder joint using the appropriate method. Neutralize flux immediately after soldering. Field soldering is not recommended, but may be utilized for custom transitions.
 - 2. Soldering work should be done in the shop, whenever possible.
 - 3. Soldered joints shall always be pop riveted, unless otherwise indicated.
 - 4. NOTE: Use only stainless steel bristles to clean soldered joints on stainless steel (steel bristles leave deposits which causes discoloration).
- H. Separations: Provide for separation of metal from non-compatible metal or corrosive substrates by coating concealed surfaces at locations of contact with bituminous coating, applying specified "peel-n-stick" membrane, or other permanent separation as recommended by manufacturer/fabricator.

3.04 INSTALLATION

- A. General:
 - 1. The work of this Section includes all of the flashing, sheet metal and accessories not specified in other Sections.
 - 2. The location and extent of work is shown on the drawings. Install as indicated in accordance with manufacturer's instructions or applicable SMACNA, NRCA standards, and in compliance with FM 1-7, 1-21 and 1-49. No part of the sheet metal work shall leak.
 - 3. Where the Specifications and/or Drawings indicate "field verify all existing conditions," it shall be the Contractor's responsibility to notify Architect of any conflicting conditions with the specified details and to submit drawings (or sketches) of existing conditions to Architect for evaluation.

4. Prime surfaces and install flashing flanges in a bed of roofing cement or other setting compound which is compatible with adjoining work and substrate.
5. On vertical overlaps, lap sheet metal a minimum of 3-inches.
6. Support and anchor each unit of work in a manner recognized to be adequate for thermal expansion stresses and normal loading of water, wind and similar loadings.
7. Clean exposed metal surfaces of substances which might cause corrosion of which might interfere with a uniform weathering to finish.

B. Workmanship

1. General: Use materials of size and thickness indicated or, if not indicated, as required to produce strength and durability in finished product for intended use. Work to dimensions shown or accepted on shop drawings, using proven details of fabrication and support. Use type of materials shown or specified for various components of work.
2. Soldering: Soldering of any metals shall be employed only for filling or sealing of joints, and shall not be relied upon for mechanical strength. Immediately after welding or soldering, all fluxes shall be removed by washing with a strong neutralizing solution followed by a clear-water rinse and drying.
3. Cleaning: After being ground and/or polished, or where subjected to severe forming operation, metal surfaces shall be cleaned of all extraneous material, thoroughly rinsed with clean water, and dried. All lubricants used in the fabrication of metal components shall be removed before the work leaves the shop.

C. Edge Metal Fascia:

1. Remove existing metal gravel stops - scrap. Field verify existing condition of wood blocking, decking or other wood components and replace with new if deteriorated. Provide new PT wood to match height of specified insulation system, where required.
2. Install specified insulation and new roofing system. Do not cut roofing membranes prior to installation to new edge metal.
3. Install continuous cleats. Anchor securely with specified fasteners at 6-in. o.c.
4. Install specified end plates and corners, where indicated and as shown. Field template and shop fabricate to match edge conditions. Pop rivet and solder solid.
5. Install specified joint underplates - prime metal and set in specified roof cement. Anchor securely with specified fasteners, per typical detail.
6. Install specified edge fascia over cleats (as shown). Prime both side of metal and set in continuous troweling of specified plastic roof cement. Ensure that flared edges are securely engaged to continuous cleat - failure to engage cleat shall be cause for rejection. Lap metal 4-in. Ensure cement is installed between metal at laps to ensure all voids are filled. Let roof cement seep out of joint. Anchor securely with specified fasteners 3-in. on center staggered - typical.
7. Install (2) continuous beads of sealant between metal at vertical lap (i.e. outside face).
8. Strip-in per specifications.
9. Apply liquid flashing between membrane and gravel stop edge. Refer to typical detail.

D. Roof Drains (New):

1. General: Installation, testing and supports for roof drain system shall be in accordance with the Florida Building Code, Plumbing, and manufacturer's written instructions.
2. Coordinate flashing work with work of roofing, waterproofing and adjoining substrate work.

3. Install drain flashing collar or flange so that no leakage occurs between drain and adjoining roofing. Maintain integrity of waterproof membrane where penetrated.
 4. Service Connection: (by Licensed Plumber).
 - a. Locate new piping to include as few bends as possible. Do not overload any existing pipe and drain, ensure balanced disposal of all water. Make adequate provisions for thermal movement of all piping.
 - b. Where new work joins old, provide all necessary materials, repairs, changes, and associated work as needed for proper connections.
 - c. Make all connections watertight.
 - d. Remove seal/plug.
 5. Paint all cast iron domes with new aliphatic polyurethane enamel. Color shall match Sherwin Williams SW6965 – Hyper Blue.
 6. Water test all roof drain connections.
- E. Roof Drain Flashing:
1. Cut lead to size indicated.
 2. Apply new specified primer on both sides of lead flashings. Allow to dry thoroughly per manufacturer's recommendations. Verify location of bolt holes and pre-punch lead flashing - do not cut lead around bolts. Apply 2-ply of fiberglass fabric and three courses of modified asphalt roof cement.
 3. Verify sump dimensions and cut membrane flashing into (4) mitered pieces, per typical detail. Apply first layer cap flashing membrane to alternate sides of drain. Apply second layer cap flashing membranes to lap side of first layers by approximately 5-6-inches. Apply new liquid flashing at all miter joints. Apply new matching granules to wet liquid flashing. Typical.
 4. Ensure that all threads in the drain sump are clean of all debris and/or asphalt prior to installing clamping ring. Ensure each layer of roofing material is secure under clamping ring - tighten all bolts periodically.
 5. After completion of roof system and prior to substantial completion, Contractor shall plug each individual roof drain with a plumber's air ball and flood the surrounding area with water. All leaks in the drain system shall be corrected immediately. A Notice of Substantial Completion will NOT be issued until all drains have been tested and approved by the Architect.
- F. Vent-Through-Roof (VTR) Flashing:
1. Seal around penetration with oakum or insulation and asphalt-based roof cement.
 2. Install new pipe extenders to plumbing vent stacks (or repair existing as required) to provide height of 8-in. (minimum) above finished roofing.
 3. Install new cap sheet membrane and flash around all VTR pipes with specified liquid flashing system. Unless noted otherwise, after initial tack to the top-surface, apply matching color ceramic granules pressing them into the Finish Coat.
- G. Curb Mounted Exhaust Fans (Vents):
1. Remove existing curb-mounted vents and thoroughly clean - save for reuse.
 2. Extend existing electrical lines, as needed.
 3. Replace damaged and/or deteriorated components. Replace missing insulation with new to match

4. Provide an additional PT wood nailer to top of curb, as required, to raise a minimum of 12-in. above top of new roofing, or as otherwise indicated. Fasten securely with specified fasteners.
 5. Install specified roofing and base flashing system.
 6. Install new metal skirt flashing per typical detail - secure with specified fasteners 12-in. o.c. (Equally spaced). Apply (2) continuous beads of specified sealant between metal at laps.
 7. Reinstall existing curb-mounted vents.
- H. Self Flashing Metal Vents, Ducts and Curbs
1. Remove all existing self-flashing units - thoroughly clean to bare metal prior to reinstallation and repair as required.
 2. When units are installed on wood curbs, replace deteriorated wood curbs - unit price basis.
 3. If curb is present, after installing base flashing, reposition units on curb. Fasten at vertical section to wood curb as shown with specified fasteners. If no curb is present, prime metal and set flange in specified roof cement.
 4. Strip-in per specifications.
 5. Install continuous bead of specified sealant around edge of vent flashing.
- I. Preformed Pitch Pan
1. Remove existing pitch pan (if present) and thoroughly clean all penetrations.
 2. If existing, provide new galvanized metal conduit where lines penetrate roof deck - extend 12-in. above roof and anchor securely to joist below. Provide new "weather tight" flexible conduit with new grommets and connectors to match. Employ a licensed tradesman to disconnect electrical lines, reconnect and test system.
 3. Seal opening around deck penetration with Oakum or insulation material.
 4. Space all penetrations a minimum of 1-in. apart prior to application of pourable sealant - typical.
 5. Install lead flashing over pitch pan, secured with stainless steel draw bands, where applicable.
 6. Contractor shall follow the printed manufacturer's application instructions. Field verify existing penetrations and select proper size (include straight sections as required).
 7. NOTE: Pourable sealant will not properly seal around silicone sealants. Clean all sealant from penetrations to be sealed prior to pouring sealant. Silicone sealant is only to be used to secure the preformed rinds to the roof membrane.
- J. Gutter and Downspouts
1. Comply with SMACNA "Architectural Sheet Metal Manual" recommendations for the installation of gutters and downspouts, as shown.
 2. Conceal fasteners and expansion provisions where possible in exposed work and locate so as to minimize possibility of leakage. Cover and seal work as required for watertight installation.
 3. Provide concealed cleat-type anchorages where practical or exposed strap-type anchors where shown, arranged to relieve stresses in gutter work resulting from building movement and thermal expansion.
 4. On vertical overlaps, lap sheet metal a minimum of 3-inches, unless otherwise indicated.

5. Support and anchor each unit of work in a manner recognized to be adequate for thermal expansion stresses and normal loading of water, wind and similar loadings.
 6. Clean exposed metal surfaces of substances which might cause corrosion of which might interfere with a uniform weathering to finish.
- K. Miscellaneous: Install miscellaneous items not specifically mentioned elsewhere and in accordance with manufacturer's instructions, SMACNA, and as indicated.

3.05 CONSTRUCTION

A. Shop Fabrication and Assembly

1. Fabricate and assemble structural assemblies in shop to greatest extent possible. Fabricate items of structural steel in accordance with AISC Specifications and as indicated on final shop drawings. Comply with details as shown.
2. Properly mark and match-mark materials for field assembly. Fabricate for delivery sequence which will expedite erection and minimize field handling of materials.
3. Where finishing is required, complete assembly, including welding of units, before start of finishing operations. Provide finish surfaces of members exposed in final structure free of markings, burrs, and other defects.
4. Form exposed work true to line and level with accurate angles and surfaces and straight sharp edges. Ease exposed connections to a radius of approximately 1/32-in. unless otherwise shown. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.
5. Provide for anchorage of type shown, coordinate with supporting structure. Fabricate and space anchoring devices to provide adequate support for intended use.
6. Cut, reinforce, drill and tap miscellaneous metal work as indicated to receive finish hardware and similar items.
7. Fabricate joints which will be exposed to weather in a manner to exclude water or provide weep holes where water may accumulate.

B. Welded construction

1. Comply with AWS Code for procedures, appearance and quality of welds, and methods used in correcting welding work.
2. Assemble and weld built-up sections by methods which will produce true alignment of axis without warp.
3. Weld corners and seams continuously, complying with AWS recommendations. At exposed connections, grind exposed welds smooth and flush to match and blend with adjoining surfaces.

C. Field Welding: Certify welds and conduct inspections and tests as required. Record types and locations of defects found in work. Record work required and performed to correct deficiencies. Perform visual inspection of all welds.

D. Connections

1. Weld or bolt shop connections, as indicated.
2. Bolt field connections, except where welded connections or other connections are indicated.

- a. Provide only non-corrosive high-strength threaded fasteners for principal bolted connections, except where unfinished bolts are indicated.
 - b. Provide only non-corrosive threaded fasteners for bolted connections of secondary framing members to primary members (including purlins, girts, and other framing members taking only nominal stresses) and for temporary bracing to facilitate erection.
- E. High-Strength Bolted Construction
 1. Install non-corrosive, high-strength threaded fasteners in accordance with AISC "Specifications for Structural Joints using ASTM A-325 or A-490 Bolts" (RCRBSJ).
 2. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners wherever possible. Use exposed fasteners of type shown or, if not shown, Phillips flat-head (countersunk) screws or bolts.
- F. Holes for Other Work
 1. Provide holes required for securing other work to structural steel framing, and for passage of other work through steel framing members, as shown on final shop drawings.
 2. Provide threaded nuts welded to framing and other specialty items as indicated to receive other work.
 3. Cut, drill, or punch holes perpendicular to metal surfaces. Do not flame cut holes or enlarge holes by burning. Drill holes in bearing plates.
- G. Supplemental Parts: Include supplementary parts necessary to complete miscellaneous metalwork though not definitely shown or specified.
- H. Measurement and Dimensions: Field verify all measurements and dimensions prior to fabrication and assembly.
- I. Galvanizing: Provide a zinc coating for those items shown or specified to be galvanized, as follows:
 1. ASTM A153 for galvanizing iron and steel hardware.
 2. ASTM A123 for galvanizing rolled, pressed and forged steel shapes, plates, bars and strip 1/8-in. thick or heavier.
 3. ASTM A384 for galvanizing assembled steel products, warpage/distortion during galvanizing, practice.
 4. ASTM A780 for repairing damaged coatings, practice.

3.06 FIELD QUALITY CONTROL

- A. Testing: The Work of this Section will be observed by the Owner's representative, and shall comply with all provisions of this Specification. The Owner may, at his option, require testing to confirm any issue of non-compliance.
- B. Authorization for Tests:
 1. The Owner or Architect may order independent tests or may conduct their own.
 2. The Owner employed testing agency shall be directed by the Architect as to the type, quantity and location of testing. The Contractor shall not obligate the Owner for tests without the Architect's approval.

C. Testing Costs:

1. If inspections and tests are required to establish compliance with the Contract Documents, except as otherwise provided in the Contract Documents, will be made by the Architect and a pre-qualified, independent testing agency selected by the Owner. The cost of the initial services of such testing will be paid by the Contractor. When the initial tests indicate non-compliance with the Contract Documents, the initial testing and any subsequent re-testing occasioned by non-compliance shall be performed by the same agency and the cost thereof borne by the Contractor.
2. Inspections or testing performed exclusively for the Contractor's convenience shall be the sole responsibility of the Contractor.

D. Quality Assurance/Control of Installation:

1. Monitor quality control over suppliers, manufacturers, Products, services, site conditions, and workmanship, to produce Work of specified quality.
2. Perform work by persons qualified to produce workmanship of specified quality.
3. Secure Products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion or disfigurement.

E. Mock-up:

1. Assemble and erect specified items, with specified attachment and anchorage devices, flashings, seals, and finishes.
2. Where mock-up is specified in individual Sections to be removed, clear area after mock-up has been accepted by Architect unless "mock-up" is to remain as a specification standard. This "mock-up" shall remain in place until the project is completed and shall constitute the job standard for each surface.

3.06 CLEANING

- A. This Contractor shall periodically remove and dispose of all debris and residual products and clean all contamination from architectural surfaces visible to the public at no additional cost to the Owner.

3.07 PROTECTION

- A. The Work of this Section shall be protected after installation and until final acceptance by the Owner. Take special precautions to protect all metal work after installation.

END OF SECTION