

**ADDITIONS AND RENOVATIONS TO CAMPUS
CONNECTICUT JUVENILE TRAINING SCHOOL
MIDDLETOWN, CONNECTICUT
PROJECT: BI-YS-170**

BID OPENING	1:00 P.M.	JANUARY 4, 2012
ADDENDUM NUMBER ONE	DATE OF ADDENDUM	DECEMBER 28, 2011

The following clarifications are applicable to drawings and specifications for the project referenced above.

Item 1

The bid opening will be changed from Wednesday January 04, 2012 at 1:00 PM to Wednesday January 11, 2012 at 1:00 PM.

Item 2

In Section 00 01 10, on Page 4 of 12, in Division 07, DELETE Section No. 07 41 13 in its entirety and ADD Section 07 61 13 - Standing Seam Sheet Metal Roofing consisting of 16 pages inclusive in lieu thereof.

Item 3

In Section 00 11 16, on Page 00 11 16-3, REVISE the Fax No. for Fletcher-Thompson, Inc. to 203-225-6800.

Item 4

DELETE Specification Section 00 41 00 Bid Proposal Form in its entirety from the Project Manual and ADD revised Section 00 41 00 consisting of 11 pages inclusive in lieu thereof (copy attached).

Item 5

In Section 01 11 00, Article 1.3, REVISE Paragraph A to read as follows:

- A. The Project shall be constructed in phases and shall be substantially complete, ready for occupancy within 475 days of commencement of the Work.

Item 6

In Section 01 11 00, Article 1.3, REVISE the first sentence in Paragraph B to read as follows:

- B. An approximate 16 month construction duration using a phased approach.

Item 7

In Section 07 27 26, Article 2.1, Paragraph A, Subparagraph 1.a, ADD BASF Wall Systems Enershield-HP as an acceptable product for this section subject to compliance with provisions of the specifications.

Item 8

DELETE Specification Section 07 41 13 in its entirety from the Project Manual.

Item 9

ADD new Specification Section 07 61 13 - Standing Seam Sheet Metal Roofing consisting of 16 pages inclusive to the Project Manual (copy attached).

Item 10

In Section 23 09 00, Article 2.16, REVISE Paragraph A to read as follows:

- A. Duct Airflow Station: Combination of air straightener and multi-port, self-averaging pitot tube station with an accuracy of $\pm 15\%$ of the design minimum outdoor air rate.

Item 11

In Section 23 09 93, Article 1.09, Paragraph K, ADD new Subparagraph 5 to read as follows:

5. When CO₂ levels vary by 10% or more from the design value, generate an alarm via building automation system alarm to the building operator.

Item 12

In Section 26 29 23, Article 1.10, REVISE Paragraph A to read as follows:

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of variable-frequency motor controllers and associated auxiliary components that fail in materials or workmanship within specified warranty period.

Item 13

DELETE Specification Section 31 23 23.13 in its entirety from the Project Manual and ADD revised Section 31 23 23.13 consisting of 6 pages inclusive in lieu thereof (copy attached).

Item 14

On Drawing No. C5.0, on the Grading, Soil Erosion and Sedimentation Control Plan, REVISE Drainage Swale and Retainage Pond as indicated on revised Drawing No. C5.0. **Mailed separately.**

Item 15

On Drawing No. C6.0, on the Site Utility Plan, REVISE Drainage Swale and Retainage Pond as indicated on revised Drawing No. C6.0. **Mailed separately.**

Item 16

On Drawing No. A101, on the Floor Plan, REVISE name of Room 167 from "Recycle/Stor." to "Recycling/Bicycle Storage".

Item 17

On Drawing No. A401, on the Door Schedule, REVISE name of Door No. 167 from "Recycle/Storage" to "Recycling/Bicycle Storage".

Item 18

On Drawing No. A701, on the Reflected Ceiling Plan, REVISE name of Room 167 from "Recycle/Stor." to "Recycling/Bicycle Storage".

Item 19

On Drawing No. A901, on the Floor Finish Plan, REVISE name of Room 167 from "Recycle/Stor." to "Recycling/Bicycle Storage".

Item 20

On Drawing No. A910, on the Room Finish Schedule, REVISE name of Room 167 from "Recycle/Storage" to "Recycling/Bicycle Storage".

Item 21

On Drawing No. A920, Detail 1/A920, REVISE Note on 48" dimension string to read as follows:

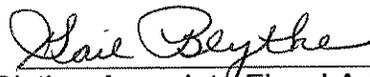
48" Minimum to Baseline of Lowest Braille Cells

Item 22

LIST OF BIDDING REQUESTS FOR INFORMATION AND RESPONSES: SEE ATTACHED

All questions must be in writing (not phone or e-mail) and must be forwarded to the consulting Architect/Engineer, Richard K. Voelker - Fax: (203) 225-6800, with copies sent to the DCS Project Manager, Ira Henowitz - Fax (860) 713-7261.

End of Addendum Number One



Gail Blythe, Associate Fiscal Administrative Officer
Department of Administrative Services for
Department of Construction Services

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ITEM 22 - LIST OF BIDDING REQUESTS FOR INFORMATION AND RESPONSES

1. Q. *Specification Section 09 84 00 is calling for acoustic panels in the fitness center and music/art room. The finish schedule on the drawings are calling for wall panels in the fitness center only. Please clarify.*
A. **The finish schedule on the drawings is correct, acoustic panels occur in the Fitness Center only.**
2. Q. *On Dwg No. A101.2, please verify what is meant by translucent fill over existing windows. On Dwg No. A301-4, please verify glass makeup of 4 new hollow metal frames with 1" insulated glass. On Dwg No. A401, Supplemental Bid 1, Door Type NV is calling for 1/4" clear tempered glass. In remarks column it is specifying a security door. Please clarify.*
A. **On Dwg No. A101.2, the translucent fill over existing windows is meant to provide a visual barrier between the interior and exterior of the rooms. For this application provide 3M "Mat Crystal 2" film applied to the exterior surface of the glass. On Dwg No. A301-4, the glass makeup should be Type 'B'. On Dwg No. A401, Supplemental Bid 1, Door Type NV, use glazing as called out in specification Section 08 88 53 - Security Glazing.**
3. Q. *At the pre-bid conference we were informed that an addendum is pending, extending the bid opening date to January 11th. Please confirm as we have notified all subcontractors of extended date.*
A. **The bid opening date has been extended to January 11th. See Addendum No. 1 for confirmation.**
4. Q. *With regard to window shades the specification calls for manually operated-PVC coated polyester fabric while the drawing finish schedule WT-1 calls for motorized with thermoplastic olefin fabric. Please clarify.*
A. **Window shades shall be manually operated as specified.**
5. Q. *On Drawing Nos. D0.0.2, D0.0.4, A101.2, A101.4: Demo & New Work Note #1 states to demo & install new CMU full height to underside of concrete deck above. What is the height of the deck in Building Nos. 2 & 4?*
A. **Height of deck in Building No. 2 equals 10'-0"; Building No. 4 equals 15'-4".**
6. Q. *Are there existing ceilings in the living units of Building No. 2 that need to be removed and repaired or are they exposed?*
A. **Ceilings in the living units of Building No. 2 are exposed concrete.**
7. Q. *Does the CMU at the typical living units as noted on Note #1 need to be toothed in?*
A. **All interfaces of new CMU to existing must be toothed in.**
8. Q. *Section 23 05 93 looks like it was cut and pasted from another project. Please issue a new spec that is specific to this project.*
A. **Section 23 05 93 has been edited for this project.**

ITEM 22 - LIST OF BIDDING REQUESTS FOR INFORMATION AND RESPONSES

9. Q. *Drawing No. A101.4 references Note 7 but there is no number 7 on the new work key. Please clarify.*
- A. **On Drawing No. A101.4, ADD Note No. 7 to read: "Patch, repair, and level existing floor surface after removal of existing CMU walls. Provide level surface for new floor finish."**
10. Q. *On Drawing Nos. P101.2 and A101.2 please verify that no concrete saw and patch is needed in the new toilet rooms.*
- A. **On Drawing Nos. P101.2 and A101.2, existing concrete slabs will need to be cut to accommodate new sanitary tie-in as shown on P101.2 and patch per General Note No. 7 on Drawing No. A101.2.**
11. Q. *Regarding Bldg #2:*
- a. *Drawing P101.2 plainly shows new 4" sanitary waste piping located under the slab. The work affects areas Multi-purpose room #1, a room off of Multi-purpose room# and both Dayrooms #2 and #3. Required coordination for this scope of work is not shown on any other drawings. It is not on D0.02 nor A101.2. Further there is no mention of the finishes on A910. Please state the full extent of work and responsibilities of the GC and clarify all the finish materials or please specify an allowance that all GCs must carry.*
- a. *Drawing A101.2 states "new gyp ceilg" for the typ. living unit. Is this just to patch at the locations of the removed CMU or the entire ceiling? If it is for the entire ceiling please clarify the extent of this work as it pertains to the mechanical systems and the fire prevention system (new drawings for those trades must be issued) and provide details of the cross section or please provide an allowance that all GCs must carry.*
- A. **Regarding Building No. 2:**
- a. **Extent of cutting and patching of floor shall be taken from Drawing P101.2 as shown by new sanitary pipe tie-in to existing. Drawing No. A101.2, General Note No. 7 instructs the G.C. to patch, repair and refinish all new and existing surfaces damaged by this work.**
- b. **On Drawing No. A101.2, change finish note on "Typ New Work at Living Unit" from "New Gyp. Ceiling" to "Painted Existing Concrete Ceiling." Also add new work Note No. 11 to read: "Patch existing holes in concrete ceiling and refinish area with cement plaster finish to match existing adjacent ceiling" at the same area that new work Note No. 3 covers.**
12. Q. *The new washers and dryers indicated on Drawing No. A101.2 will require specifications, none were provided.*
- A. **Washers and dryers are not in contract and will be provided by the Owner.**
13. Q. *Please confirm if there are any requirements where the existing ductwork passes thru the new CMU walls at each unit per Note No. 1 on Drawing Nos. D0.02 and A101.2*
- A. **All ducts occur above concrete plank ceiling.**

ITEM 22 - LIST OF BIDDING REQUESTS FOR INFORMATION AND RESPONSES

14. Q. *Are the contractors required to salvage the doors, frames, and hardware being removed on Drawing No. D0.0?*
- A. **For all demolition items not noted to be salvaged or reused, Contractor shall remove these items from the site.**
15. Q. *Please provide the total gross area of construction related to Building Number 2, and confirm the 1/8" scale provided with a reference dimension point within the building for verification of this scale.*
- A. **Drawing scale is 1/8" = 1'-0". Add the following numbers to the graphic scale at each division mark: 2', 4', 8', and 16'.**
16. Q. *Please clarify the requirements of Sections 01 45 23.13 and 01 57 40 with the work in Building No.2 indicated on Drawing No. M101.2; for example, will the ductwork require cleaning, equipment performance reports and will a baseline test report be provided prior to the submission of a plan.*
- A. **The requirements of Sections 01 45 23.13 and 01 5740 refer to the new building only.**
17. Q. *Please confirm that bid date remains January 4th, 2012.*
- A. **The bid date is changed to January 11th by Addendum No. 1.**

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ITEM 22 - LIST OF BIDDING REQUESTS FOR INFORMATION AND RESPONSES

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FOR PROJECTS ESTIMATED TO COST MORE THAN \$500,000.00

STATE OF CONNECTICUT
DEPARTMENT OF CONSTRUCTION SERVICES
BID PROPOSAL FORM

DATE: _____

PROPOSAL OF

BIDDER'S LEGAL COMPANY NAME

BIDDER'S ADDRESS

To the Commissioner, Department of Construction Services
State Office Building
Hartford, Connecticut

Dear Sir:

- 1.0 In accordance with Chapter 60 Part II of the Connecticut General Statutes, as amended, and pursuant to, and in compliance with your Invitation to Bid, the Notice to Bidders, the Contract, including the conditions thereto, the Bid Security, I (we) propose to furnish the labor and/or materials, installed as required for the project named and numbered on this Bid Proposal Form, submitted herein, furnishing all necessary equipment, machinery, tools, labor and other means of construction, and all materials specified in the manner and at the time prescribed strictly in accordance with the provisions of the Contract including, but not limited to, the specifications and/or drawings together with all addenda issued by your authority and received prior to the scheduled closing time for the receipt of the bids, and in conformity with requirements of the Awarding Authority and any laws or Departmental regulations of the State of Connecticut or of the United States which may affect the same, for and in consideration of the price(s) stated on the said Bid Proposal Form, hereof.
- 2.0 The **Lump Sum Base Bid** by me (us) on the Bid Proposal Form *includes all* work indicated on the drawings and/or described in the specifications, except:
- 2.1 Work covered by **Supplemental Bids** as may be listed on the Bid Proposal Form and General Requirements.
- 2.2 Contingent Work covered by the **Unit Prices** included within the **General Requirements**.
- 2.3 Contingent Work covered by the **Contractor Provided Unit Prices** as may be listed on the **Bid Proposal Form** in Section 00 41 00, Item 7.7.
- 3.0 I (we) *acknowledge and agree* to the following:
- 3.1 To use and accept the **Contractor Provided Unit Prices** on the **Bid Proposal Form**, Section 00 41 00, Item 7.7, as provided by the Contractor in evaluating either additions to or deductions from the Work.
- 3.2 To use and accept the **Unit Prices** in Section 01 20 00 "Contract Considerations "Division 01 as provided by the Owner in evaluating either additions to or deductions from the Work.
- 3.3 To use and accept the **Allowances** in Section 01 20 00 "Contract Considerations" Division 1, as part of the Total Contract Sum as listed in Section 7.3 of this Bid Proposal form.
- 3.4 To use and accept the **Supplemental Bids** in Section 01 23 13, Division 1, as provided by the Contractor, when authorized by the Owner as scheduled in Section 7.6 of this Bid proposal form.

- 3.5 To complete and submit a **Contractor/Consultant Certification** along with a **Resolution/Certificate of Authority** for contracts with a value of \$50,000 or more when requested in the **Letter of Intent**.
- CT DCS Website location <http://www.ct.gov/dpw/cwp/view.asp?a=1983&q=289926>
- This certification must be *updated annually* by the *successful* bidder. **Annually**, on or within two (2) weeks of the **anniversary** date of the execution of this contract, the Contractor shall submit a completed **Annual Certification** with authorizing resolution to CT DCS, 165 Capitol Ave., Room G-35, Hartford, CT 06106. For the purposes of this paragraph, the **execution date** of the contract will be the date the Commissioner of CT DCS signs the contract.
- 3.6 To hold the bid price for ninety (90) calendar days and any extensions caused by the Contractor's delays in required submissions. The Contractor and the State may mutually agree to extend this period. The agreement to extend the 90-day period may occur after the expiration of the original 90-day period.
- The apparent low bidder is required to submit key supporting documents as noted under the caption **Bid Submittal Time Line** at the end of this Section 00 41 00, within ten (10) calendar days of the bid opening, and to submit their Affirmative Action Plan to CHRO within fifteen (15) calendar days of bid opening. If there are any delays in the receipt of these materials then the Bid shall remain valid for the same additional number of days. For example, if the materials are submitted four (4) days later; then the bid shall remain valid for ninety-four (94) days.
- 3.7 With regard to a State contract as defined in P.A. 07-01 having a value in a calendar year of \$50,000 or more or a combination or series of such **agreements** or **contracts** having a value of \$100,000 or more, the **authorized signatory** to this **submission** in response to the State's solicitation expressly **acknowledges receipt** of the **State Election Enforcement Commission's notice** advising prospective state contractors of the state campaign contribution and solicitation prohibitions, and will inform its principals of the contents of the **notice**. See Attachment **SEEC Form 10 and 11**.
- 3.8 To comply with the Department of Correction's **Security Regulations For Contract Forces**, Section 00 73 63.
- 4.0 This Bid Proposal Form is submitted to and in compliance with the foregoing and following conditions and/or information:
- 4.1 **AWARD:**
- 4.1.1 All proposals shall be subject to provisions of **Article 1 of the Notice to Bidders** and for purpose of award, consideration shall be given only to Bid Proposals submitted by qualified and responsible bidders.
- 4.1.2 The award shall be made on the **lowest Lump Sum Bid** as stated in Section 7.3 of this Bid Proposal Form and any or all **Supplemental Bids** as stated in Section 7.6 of this **Bid Proposal Form**, taken sequentially, as applicable, provided funds are available.
- 4.1.3 In the event of any **discrepancy** between the amount written in words and the amount written in numerical figures, the amount written in words shall be controlling.
- 4.2 **COMMENCEMENT AND ACCEPTANCE (ARTICLE 4 GENERAL CONDITIONS):**
- 4.2.1 The General Contractor shall commence Work within **fourteen (14) calendar days** after receiving "Construction Start Date and Notice To Proceed" by the Commissioner or the authorized representative and continue for four hundred seventy five **(475)** calendar days for completion of the project.
- 4.3 **LIQUIDATED DAMAGES: (ARTICLE 8, GENERAL CONDITIONS):**
- 4.3.1 The General Contractor shall be assessed **\$2,828.00** per day for each calendar day *beyond* the Date established for Substantial Completion of the Contract according to the **Contract Time** as defined in Article 1.28 of the General Conditions, and not otherwise excused or

waived pursuant to the Contract Documents, as defined in Article 1.23 of the General Conditions.

- 4.3.2 The General Contractor shall be assessed **\$2,645.00** per day for each calendar day *beyond* ninety (90) days *after* the date of said Substantial Completion that the Contractor fails to achieve **Acceptance**, as defined in Article 1.1 of the General Conditions and not otherwise excused or waived as described above.

4.4 **CONTRACTOR'S INSURANCE REQUIRED: (ARTICLE 35, GENERAL CONDITIONS):**

- 4.4.1 The **limits of liability** for the Insurance required for this project shall be those listed in Article 35 of the General Conditions.

4.4.2 **SPECIAL HAZARDS INSURANCE REQUIRED:**

Type "X", "C", "U" – Explosion, Collapse, Underground in accordance with Article 35 of the General Conditions.

4.4.3 **BUILDERS RISK INSURANCE:**

The General Contractor shall maintain Builder's Risk insurance providing coverage for the entire Work at the project site, and shall also cover portions of the Work located away from the site but intended for use at the site, and shall also cover portions of the Work in transit. Coverage shall be written on an All-Risk, Replacement Cost, and completed Value Form basis in an amount at least equal to the projected completed value of the Work and the policy shall state that it is for the benefit of and payable to the state of Connecticut.

4.5 **NOT USED:**

- 4.6 The General Contractor on this project shall be required to award not less than **25%** of the total Contract Sum to contractors who are certified and eligible to participate under The State of Connecticut Set-Aside Program for **small** contractors, including **6.25%** to certified and eligible **Minority Business Enterprises**, in accordance with Connecticut General Statutes Section 4a-60g.

- 4.6.1 This requirement *must be met even if* the **General Contractor** is *certified and eligible* to participate in the **Small Business Set-Aside Program**. To facilitate compliance with this requirement for set-aside subcontractors, the three (3) **apparent low bidders** will have ten (10) calendar days from the date of bid opening within which to submit a **list of certified set-aside contractors** to be used on this project along with the **dollar amounts** to be paid to each, on the form provided, and a copy of their **current certification** must be attached. This information will be considered as part of your Bid Proposal Form and **failure** to comply with any portion of this requirement within the ten (10) days, including but not limited to **failure** to list or meet the necessary dollar amount or percentage of the bid price will be cause to **reject** your bid.

4.7 **BIDDER'S QUALIFICATION STATEMENT AND OBJECTIVE CRITERIA FOR EVALUATING QUALIFICATIONS OF BIDDERS:**

- 4.7.1 Information in regards to the General Contractor's and the Named Subcontractor's Bidder's Qualification is submitted and is made part of this Bid Proposal Form. **Note: Individual Specification Sections may contain General Contractor and/or Subcontractor Qualification requirements that exceed those in Section 00 45 15, "Objective Criteria Established for Evaluating Qualifications of Bidders."**

4.7.1.1 The **General Contractor** is required to complete the **General Contractor Bidder's Qualification Statement** in section 00 45 14.

4.7.1.2 Any **Named Subcontractor** as listed in schedule 7.5.1 of this Bid Proposal Form is required to complete the **Named Subcontractor Bidder's Qualification Statement** in section 00 45 17. To facilitate compliance with this requirement, the three (3)

apparent low bidders will have **ten (10)** calendar days, from the bid opening date, to submit the completed **Named Subcontractor Bidder's Qualification Statement** as required in section 00 45 17. This information will be considered as part of your Bid Proposal Form and failure to comply with any portion of this requirement will be **cause to reject your bid.**

- 4.7.2** The **Objective Criteria for Evaluating Bidders** that are included in Division 0, Section 00 45 15, of this Project Manual, is to assure that the State of Connecticut will secure the "lowest responsible and qualified bidder" who has the ability and capacity to successfully complete the Bid Proposal Form and the Work.

4.8 NONDISCRIMINATION AND LABOR RECRUITMENT:

- 4.8.1** The Contract is subject to the provisions of Executive Order No. Three of Governor Thomas J. Meskill, promulgated June 16, 1971, concerning labor employment practices, Executive Order No. Seventeen of Governor Thomas J. Meskill, promulgated February 15, 1973, concerning the listing of employment openings and Executive Order No. Sixteen of Governor John G. Rowland promulgated August 4, 1999, concerning violence in the workplace, all of which are incorporated into and are made a part of the Contract as if they had been fully set forth in it. At the Contractor's request, the Client Agency shall provide a copy of these orders to the Contractor. The Contract may also be subject to Executive Order No. 7C of Governor M. Jodi Rell, promulgated July 13, 2006, concerning contracting reforms and Executive Order No. 14 of Governor M. Jodi Rell, promulgated April 17, 2006, concerning procurement of cleaning products and services, in accordance with their respective terms and conditions.

4.9 FEDERAL & STATE WAGE DETERMINATIONS:

- 4.9.1** The U. S. Secretary of Labor's latest decision and the State of Connecticut Wage Schedule are all incorporated in the documents. The higher rate (Federal or State) for any given occupation shall prevail. At the time of bidding, the bidder agrees to accept the current prevailing wage scale, as well as the annual adjustment to the prevailing wage scale, as provided by the Connecticut Department of Labor.

4.10 CERTIFICATION OF BIDDER REGARDING EQUAL EMPLOYMENT OPPORTUNITY & NON-SEGREGATED FACILITIES:

- 4.10.1** The General Contractor and Subcontractors are hereby advised that upon acceptance of their bids they are obligated to fill out within seven (7) calendar days the certification required pursuant to Executive Order No. 11246, and agree to certify to the compliance of non-segregated facilities.

4.11 EQUALS AND SUBSTITUTION REQUESTS PROCEDURES:

- 4.11.1** All submissions requesting "Equals and/or Substitutions" shall be made by the **Contractor** in accordance with **Article 15** of the **General Conditions** and **Section 01 25 00** of the **General Requirements**. All submissions shall contain all the information necessary for the Department of Construction Services to evaluate the submission and the request. Failure to submit sufficient information to make a proper evaluation, including submittal of data for the first manufacturer listed as well as the data for the "Equals and/or Substitutions" proposed, shall result in a **rejection** of the submission and request. Upon receipt of the submission and request the Department of Construction Services shall notify the Contractor the request has been received and as soon as possible shall render a decision on such submission and request.
- 4.11.2 Pre-Bid Opening Substitution of Materials and Equipment:** The Owner will consider requests for equals or substitutions *if received fourteen (14) days prior to the Bid Opening*. The **Equal or Substitute Product Request Form 701** must be used to submit request. This form may be found in the CT DCS Website.

- 4.11.3 Request for Equal or Substitution shall be submitted to the CT DCS Project Manager and Architect or Engineer.
- 4.11.4 Any substitution request not complying with requirements will be denied. Substitution request sent *after* the **deadline** will be denied.
- 4.11.5 An **Addendum** shall be issued to inform all prospective bidder of any accepted substitution in accordance with our addenda procedures.
- 4.11.6 No extension of time will be allowed for the time period required for consideration of any Substitution or Equal.
- 4.11.7 **Post Contract Award Substitution Of Materials And Equipment:** All Requests For "Equals And Substitutions" *after* the Award of the Contract shall be made *only* by the **General Contractor** in accordance with Article 15, Materials: Standards, Section 00 72 00 General Conditions Of The Contract For Construction.

5.0 ACCOMPANYING THIS PROPOSAL IS:

5.1 **A CERTIFIED CHECK** drawn to the order of – Treasurer, State of Connecticut, in the which it is understood shall be cashed and the proceeds thereof used so far as may be necessary to reimburse the State of Connecticut for losses and damages arising by virtue of my (our) failure to file the required Bonds and execute the required contract if this proposal is accepted by the Awarding Authority.

OR

5.2 **A BID BOND** having as surety thereto a Surety Company or Companies authorized to transact business in the State of Connecticut and made out in the penal sum of 10% of the bid.

5.3 **GIFT AND CAMPAIGN CONTRIBUTION CERTIFICATE AT TIME OF CONTRACT EXECUTION:**

5.4 **A DEPARTMENT OF ADMINISTRATIVE SERVICES (DAS) CONTRACTOR PRE-QUALIFICATION CERTIFICATE:**
 The DAS Prequalification Certificate is required for projects estimated to exceed \$500,000.00 (C.G.S. 4b-91 as amended)

5.5 **A DEPARTMENT OF ADMINISTRATIVE SERVICES (DAS) UPDATE STATEMENT:**
 The DAS Update Statement is required for projects estimated to exceed \$500,000.00 (C.G.S. 4b-91 as amended)

5.6 **CHECKLIST OF INCLUDED ITEMS WITH BID PROPOSAL AT TIME OF BID PROPOSAL SUBMITTAL:**

IMPORTANT:		
Item	A. All forms below must be included when you submit your bid package. B. Failure to submit any of items marked below with an asterisk (*) shall cause rejection of the bid and shall not be considered a minor irregularity under CGS 4b-95.	Section
1 *	Bid Proposal Form*	00 41 00
2 *	Appropriate Resolution or Certificate (of authority*)	00 40 14
3 *	Ethics Affidavit (Regarding State Ethics) (New July 1, 2005)*	00 40 14
4 *	Department of Administrative Services Pre-qualification Certificate*	00 40 15
5 *	Department of Administrative Services Update Statement *	00 40 15
6 *	Standard Bid Bond or Certified Check*	00 43 16
7	General Contractor Bidder's Qualification Statement	00 45 14

6.0 I (we), the undersigned, hereby declare that I am (we are) the only person(s) interested in the Bid Proposal and that it is made without any connection with any other person making any Bid Proposal for the same work. No person acting for, or employed by, the State of Connecticut is directly or indirectly interested in this Bid Proposal, or in any Contract which may be made under it, or in expected profits to arise therefrom. This Bid Proposal is made without directly or indirectly influencing or attempting to influence any other person or corporation to bid or

refrain from bidding or to influence the amount of the Bid Proposal of any other person or corporation. This Bid Proposal is made in good faith without collusion or connection with any other person bidding for the same work and this proposal is made with distinct reference and relation to the plans and specifications prepared for this Contract. I (we) further declare that in regard to the conditions affecting the Work to be done and the labor and materials needed, this Bid Proposal is based solely on my (our) own investigation and research and not in reliance upon any representations of any employee, officer or agent of the State.

7.0 Each **class of Work** set forth in a separate section of the specifications pursuant to this Section shall be a **subtrade** designated in Schedule 7.5.1 of this Bid Proposal Form and shall be the matter of a **subcontract** made in accordance with the procedure set forth in this chapter.

7.1 The undersigned proposes to furnish all labor and materials required for

Project Number: BI-YS-170

Project Title: Additions and Renovations to Campus
Connecticut Juvenile Training School
1225 Silver Street
Middletown, Connecticut 06457

in accordance with the accompanying Plans and Specifications

Prepared by: Fletcher – Thompson, Inc.
3 Corporate Drive, Suite 500
Shelton, CT 06484
Engineer/Architect

for the Contract Sum specified in Section 7.3 subject to **additions** and **deductions** according to the terms of the specifications.

7.2 This Bid Proposal includes _____ number of **Addenda/Addendum**.

7.2.1 The **Contractor is to fill in item 7.2 above**, acknowledging the number of Addenda that the Contractor is including in the Bid Proposal Form. Failure to acknowledge all **addenda** in the space provided in the Bid Proposal Form shall be cause for **rejection** of the bid.

7.3 **THE PROPOSED CONTRACT PRICE IS AS FOLLOWS:**

\$, , .

(Place figures in appropriate boxes.)

DOLLARS

(Written Amount)

7.3.1 In Accordance With Section 4.6 Not Less Than **25%** Of This Total Must be Awarded to Certified **Set-Aside** Contractors, including **6.25% Minority Business Enterprises**. Failure to Meet This Requirement Will Be Cause To **Reject** Your Bid.

7.4. NOT USED

7.5 Subcontractors and their price must be listed for the trades identified in Schedule 7.5.1.

FAILURE TO PROPERLY COMPLETE THIS SECTION ACCORDING TO THE BELOW INSTRUCTIONS SHALL RESULT IN REJECTION OF THE BID.

The GC shall indicate the subcontractor name and contract value for the largest single subcontractor in each sub trade.

Description	Name of Subcontractor	Amount Dollars	Labor & Material Payment Bond	Performance Bond
1. Electrical	_____	\$ _____	_____ %	_____ %
2. Mechanical* * (except HVAC)	_____	\$ _____	_____ %	_____ %
3. HVAC	_____	\$ _____	_____ %	_____ %
4. Masonry	_____	\$ _____	_____ %	_____ %

On and after October 1, 2007, no person whose **subcontract** exceeds five hundred thousand dollars in value may perform work as a **subcontractor** on a project estimated to cost more than five hundred thousand dollars, *unless* the person is **prequalified** in accordance with section 4a-100, as amended by Public Act 06-134.

- 7.5.2 List the *name* and *price* of each **Named Subcontractor** that will perform the **work** of the trades *listed* in **Schedule 7.5.1**.
- 7.5.3 The **General Contractor** *may* list itself together with its **price (failure to provide both will be cause for rejection)**, if it customarily performs any of the trades specified. If the General Contractor leaves the spaces for a specific "Trade Description" *completely blank*, it will be *assumed* that the General Contractor will perform that Work.
- 7.5.4 If the General Contractor requires a **Performance and/or Labor and Material Payment Bond**, *then* the General Contractor must indicate in Schedule 7.5.1 which of the Named Subcontractors are subject to this requirement. The amount (%) shall not exceed the Named Subcontractor's price listed in Schedule 7.5.1.
- 7.5.5 The undersigned *agrees* that each of the **Named Subcontractors** listed in Schedule 7.5.1 of the Bid Proposal Form will be used for the **Work indicated at the amount stated**, *unless* a **substitution** is permitted by the awarding authority as provided for in section 00 21 19 Notice to Bidders.

7.6 Any Supplemental Bids listed in schedule 7.6.1, *if* accepted by the Owner, will be taken cumulatively and in numerical order as scheduled. No Supplemental Bid will be skipped or taken out of numerical

order as scheduled. Supplemental Bids: Division 1, Section 01 23 13 of the **General Requirements** identify and describe the Supplemental Bids as shown in Schedule 7.6.1.

SCHEDULE 7.6.1 – SUPPLEMENTAL BIDS			
Supplemental Bid No.: 1	Provide all labor, material and equipment to complete the Work in accordance with Division 1, Section 01 23 13.		
ADD:	(Written Amount)	Dollars	\$ _____ .
Supplemental Bid No.: 2	Provide all labor, material and equipment to complete the Work in accordance with Division 1, Section 01 23 13.		
ADD:	(Written Amount)	Dollars	\$ _____ .

7.7 **Contractor Provided Unit Prices** are not needed for this project.

7.8 The **undersigned** agrees that *if* selected as the General Contractor, I (we) shall, within **seven (7)** calendar days (legal State holidays excluded) *after* notification thereof by the awarding authority, **execute a Contract** in accordance with the terms of this Bid Proposal Form and Contract.

7.9 The undersigned agrees and warrants that they have made **good faith efforts** to employ **minority business enterprises** as **Subcontractors** and **suppliers** of materials under such Contract and shall provide the Commission on Human Rights and Opportunities with such information as is requested by the Commission concerning their **employment practices and procedures** as they relate to the current provisions of the Connecticut General Statutes governing Contract requirements.

7.10 This project is not a "Threshold Building."

8.0 CONFIDENTIALITY OF DOCUMENTS:

8.1 The **undersigned** agrees that if not selected as the General Contractor for this project, all plans and specifications in their possession for the project shall be destroyed.

8.2 The **undersigned** agrees that if selected as the General Contractor for this project:

8.2.1 The **plans and specifications** shall not be disseminated to anyone except for construction of this project.

8.2.2 The following **provision** shall be included in all of its contracts with subcontractors and sub-consultants:

"Any and all drawings, specifications, maps, reports, records or other documents associated with the contract shall only be utilized to the extent necessary for the performance of the work and duties under this contract. Said drawings, specifications, maps, reports, records and other documents may not be released to any other entity or person except for the sole purpose of the work described in this contract. No other disclosure shall be permitted without the prior written consent of the Department of Construction Services. When any such drawings, specifications, maps, reports, records or other documents are no longer needed, they shall be destroyed."

8.2.3 Upon completion of the construction and the issuance of a certificate of occupancy, the plans and specifications shall be returned to the Department of Construction Services, or destroyed, or retained in a secure location and not released to anyone without first obtaining the permission of the Department of Construction Services.

9.0 A duly authorized representative of the Bidder or Bidder's partnership, firm, corporation or business organization must sign all Bid Proposals Forms.

(NO FACSIMILE SIGNATURE IS PERMITTED).
ALL INFORMATION BELOW IS TO BE FILLED IN BY THE BIDDER.

Project Number BI-YS-170

Firm Name Complete BIDDER'S LEGAL COMPANY NAME

General Contractor's State of Connecticut, D.C.P. License/ Registration No. _____
(Applicable for Threshold Building projects only. Insert "N/A" if not applicable. Refer to Item 7.10)

Firm Federal Employer Identification Number _____

Firm CT Tax Registration Number _____

Firm Address _____
Street City State Zip Code

Telephone Number _____

FAX Number _____

E-mail Address _____

Type of Business (check one):

- Corporation
- Limited Liability Corporation (LLC)
- Partnership
- Sole Proprietor

Corporate Seal, if a Corporation



Doing Business As (d/b/a), if yes, provide complete name below:

Provide Exact Wording on Corporate Seal below:

This Bid Submission is **only** for Contractors who are **Certified** in the **DAS Prequalification Classification** noted in the **Invitation to Bid**.

A Resolution/Certificate of Authority must be submitted with your Bid Proposal.

Signed this _____ day of _____ 20 _____

Bidder's Signature _____
Duly Authorized _____ Title _____

_____ Date _____
Print Name _____

The apparent three low bidders are required to submit key supporting documents as noted on the following page within ten (10) calendar days of the bid opening, while the apparent low bidder is required to submit his Affirmative Action Plan to CHRO within fifteen (15) calendar days of bid opening. If there are any delays in the receipt of these materials then the Bids shall remain valid for the same additional number of days. For example, since, the apparent three low bidders are required to hold the bid price for ninety (90) calendar days and any extensions caused by the Contractor's delays in required submissions, if materials are submitted four (4) days later; then the bid shall remain valid for ninety-four (94) days.

Failure to meet the below stated deadlines may result in rejection of the bid at the sole discretion of the Commissioner of Construction Services.

Bid Submittal Time Line

SUBMITTALS DUE WITHIN 10 CALENDAR DAYS AFTER BID OPENING
(From the Apparent Three Low Bidders):

1. Section 00 73 27 CT DCS Set-Aside Schedule:
2. Listing of certified set aside contractors Subs with name, address, amount and whether a subcontractor or a supplier or both
3. DAS Set-Aside Subcontractor Certificate of Eligibility (SBEs & MBEs)
4. Section 00 45 17 Named Subcontractor Bidder's Qualification Statements
5. Named Subcontractor's DAS Prequalification Certificate, when applicable

SUBMITTALS DUE WITHIN 15 CALENDAR DAYS AFTER BID OPENING
(From the Apparent Low Bidder):

1. Affirmative Action Plan to CHRO
2. Affirmative Action Plan Transmittal Letter Copy to DAS Procurement
3. Section 00 73 53 Affidavit for Certified Subcontractors as MBEs
4. Section 00 73 44 Wage Certification to DOL
5. On your letterhead, list of all named subcontractors, address and contact person
6. Scope Review conducted

SUBMITTALS DUE WITHIN 10 BUSINESS DAYS AFTER BOND COMMISSION FUNDING APPROVAL VIA EXPRESS/OVERNIGHT MAIL (From The Apparent Low Bidder):

1. Section 00 52 73 Subcontractor Agreements (Named & Listed)

SUBMITTALS DUE WITHIN 10 BUSINESS DAYS AFTER THE LETTER OF INTENT

1. Section 00 62 16 Insurance Certificate Form
2. Section 00 92 10 Performance Bond
3. Section 00 92 10 Labor & Material Bond
4. Section 00 92 10 Surety Sheet
5. Power of Attorney from the Surety Company
6. Section 00 40 14 Certificate of Authority/Resolution - Certificate

7. Asbestos Abatement Liability Insurance (for asbestos abatement only)
8. Motor Vehicle Pollution Liability for Asbestos Abatement (for asbestos abatement only)
9. Section 00 92 10 Non-Residents Certificate - DRS — Guarantee Bond (form AU-766)
10. Section 00 92 10 Bidder's Certificate: Financial Position & Corporate Structure
11. Section 00 52 03 Contract
12. Section 00 40 14 Affidavit Regarding State Ethics – for each Named Subcontractor
13. Section 00 40 14 Gift And Campaign Contribution Certification
14. Section 00 40 14 Consulting Agreement Affidavit
15. Certificate of Legal Existence from Corporations

END OF SECTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 specification sections, apply to this section.

1.2 SECTION INCLUDES

- A. Standing-seam sheet metal roofing.
- B. Insulation.
- C. Underlayment.
- D. Substrate boards.
- E. Snow Guard.
- F. Trim and Accessories.

1.3 RELATED SECTIONS

- A. Section 01 81 13 - Sustainable Design Requirements: LEED Credit Submittals.
- B. Section 05 31 00 - Steel Decking: Steel roof deck supporting sheet metal roofing.
- C. Section 05 40 00 - Cold-Formed Metal Framing: Cold-formed metal framing supporting sheet metal roofing.
- D. Section 07 46 16.13 – Aluminum Soffit Panels: Factory-formed metal soffit panels.
- E. Section 07 62 00 - Sheet Metal Flashing and Trim: Field-formed flashings and other sheet metal work not part of metal roof panel assemblies.
- F. Section 07 71 00 - Roof Specialties: Manufactured fasciae, copings, roof drainage systems, expansion bellows and other roof specialties not part of metal roof panel assemblies.
- G. Section 07 92 00 - Joint Sealants: Field-applied sealants not otherwise specified in this section.

1.4 DEFINITIONS

- A. Metal Roof Panel Assembly: Sheet metal roofing, attachment system components, miscellaneous metal framing, thermal insulation, and accessories necessary for a complete weathertight roofing system.

1.5 PERFORMANCE REQUIREMENTS

- A. General Performance: Sheet metal roofing system including, but not limited to, sheet metal roofing, cleats, clips, anchors and fasteners, sheet metal flashing integral with sheet metal roofing, fascia panels, trim, underlayment, and accessories shall comply with requirements indicated without failure due to defective manufacture, fabrication, installation, or other defects in construction. Sheet metal roofing shall remain watertight.
- B. Thermal Movements: Provide sheet metal roofing that allows for thermal movements from ambient and surface temperature changes. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
 - 1. Temperature Change (Range): 120 degrees F, ambient; 180 degrees F, material surfaces.
- C. FMG Listing: Provide sheet metal roofing and component materials that comply with requirements in FMG 4471 as part of a panel roofing system and that are listed in FMG's "Approval Guide" for Class 1 or noncombustible construction, as applicable. Identify materials with FMG markings.
 - 1. Fire: Class A
 - 2. Windstorm Classification:
 - a. Field: Class 1-90.
 - 3. Prescriptive Enhancements per FM 1-31 Loss Prevention Data Sheet:
 - a. Perimeter: Class 1-120
 - b. Corner: Class 1-150
 - 4. Hail Resistance: SH.
 - 5. RoofNav Assembly Number corresponding to an FM Approved roof assembly.
- D. Solar Reflectance Index: Not less than 29 when calculated according to ASTM E1980 based on testing identical products by a qualified testing agency.

1.6 ACTION SUBMITTALS

- A. Submit under provisions of Section 01 33 00.

- B. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each type of roof panel and accessory.
- C. LEED Submittals:
 - 1. Product Test Reports for Credit SS 7.2: For roof panels, indicating that panels comply with solar reflectance index requirement.
 - 2. Product Data for Credit MR 4: Indicating percentages by weight of postconsumer and preconsumer recycled content for products having recycled content. Include statement indicating cost for each product having recycled content.
- D. Shop Drawings: Show fabrication and installation layouts of sheet metal roofing; details of edge conditions, side-seam and endlap joints, panel profiles, corners, anchorages, trim, flashings, closures, and accessories; and special details. Distinguish between factory- and field-assembled work.
 - 1. Accessories: Include details of the following items, at a scale of not less than 1-1/2 inches per 12 inches:
 - a. Snow guards.
- E. Samples for Verification: For each type of exposed finish required, prepared on samples of size indicated below:
 - 1. Sheet metal roofing: 12 inches long by actual panel width. Include fasteners, clips, closures, and other metal roof panel accessories.
 - 2. Trim and Closures: 12 inches long. Include fasteners and other exposed accessories.
 - 3. Accessories: 12-inch long samples for each type of accessory.
 - 4. Snow guard clamp and pipe stop: 12 inches long.
- F. Delegated-Design Submittal: For metal roof panel assembly indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.
 - 1. Snow Retention System Calculations: Include calculation of number and location of snow guards based on snow load, roof slope, panel length and finish, and seam type and spacing.
 - 2. Manufacturer's FMG RoofNav Assembly: Submit indicating manufacturer's compliance with performance criteria.

1.7 INFORMATIONAL SUBMITTALS

- A. Submit under provisions of Section 01 33 00.

- B. Coordination Drawings: Roof plans, drawn to scale, on which the following are shown and coordinated with each other, based on input from installers of the items involved:
 - 1. Roof panels and attachments.
 - 2. Purlins and rafters.
 - 3. Roof-mounted items including roof hatches, equipment supports, pipe supports and penetrations, lighting fixtures, snow guards, and items mounted on roof curbs.
- C. Qualification Data: For qualified installer.
- D. Field quality-control reports.
- E. Warranties: Samples of special warranties.

1.8 CLOSEOUT SUBMITTALS

- A. Submit under provisions of Section 01 33 00.
- B. Maintenance Data: For sheet metal roofing to include in maintenance manuals.

1.9 QUALITY ASSURANCE

- A. Installer Qualifications: An employer of workers trained and approved by manufacturer.
- B. Testing Agency Qualifications: Qualified according to ASTM E329 for testing indicated.
- C. Source Limitations: Obtain each type of sheet metal roofing from single source from single manufacturer.
- D. Mockups: Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for fabrication and installation.
 - 1. Build mockup of typical roof eave, including fascia, and soffit as shown on Drawings; approximately four (4) panels wide by full eave width, including insulation, underlayment, attachments, and accessories.
 - 2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
 - 3. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.
- E. Preinstallation Conference: Conduct conference at project site.

1. Meet with Owner, Architect, Owner's insurer if applicable, testing and inspecting agency representative, sheet metal roofing installer, sheet metal roofing manufacturer's representative, installer, and installers whose work interfaces with or affects sheet metal roofing including installers of roof accessories and roof-mounted equipment.
2. Review and finalize construction schedule and verify availability of materials, installer's personnel, equipment, and facilities needed to make progress and avoid delays.
3. Review methods and procedures related to sheet metal roofing installation, including manufacturer's written instructions.
4. Examine deck substrate conditions for compliance with requirements, including flatness and attachment to structural members.
5. Review structural loading limitations of deck during and after roofing.
6. Review flashings, special roof details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that will affect sheet metal roofing.
7. Review governing regulations and requirements for insurance, certificates, and testing and inspecting if applicable.
8. Review temporary protection requirements for sheet metal roofing assembly during and after installation.
9. Review roof observation and repair procedures after sheet metal roofing installation.
10. Document proceedings, including corrective measures and actions required, and furnish copy of record to each participant.

1.10 DELIVERY, STORAGE AND HANDLING

- A. Deliver components, sheet metal roofing, and other manufactured items so as not to be damaged or deformed. Package sheet metal for protection during transportation and handling.
- B. Unload, store, and erect sheet metal roofing in a manner to prevent bending, warping, twisting, and surface damage.
- C. Stack sheet metal roofing on platforms or pallets, covered with suitable weathertight and ventilated covering. Store sheet metal roofing to ensure dryness. Do not store sheet metal roofing in contact with other materials that might cause staining, denting, or other surface damage.
- D. Protect strippable protective covering on sheet metal roofing from exposure to sunlight and high humidity, except to extent necessary for period of sheet metal roofing installation.
- E. Protect insulation as follows:

1. Do not expose to sunlight, except to extent necessary for period of installation and concealment.
2. Protect against ignition at all times. Do not deliver foam-plastic insulation materials to project site before installation time.
3. Complete installation and concealment of plastic materials as rapidly as possible in each area of construction.

1.11 PROJECT CONDITIONS

- A. **Weather Limitations:** Proceed with installation only when existing and forecasted weather conditions permit sheet metal roofing work to be performed according to manufacturer's written instructions and warranty requirements.
- B. **Field Measurements:** Verify actual dimensions of construction contiguous with sheet metal roofing by field measurements before fabrication.

1.12 COORDINATION

- A. Coordinate sizes and locations of roof curbs, equipment supports, and roof penetrations with actual equipment provided.
- B. Coordinate sheet metal roofing with rain drainage work, flashing, trim, and construction of decks walls, and other adjoining work to provide a leakproof, secure, and noncorrosive installation.

1.13 WARRANTY

- A. **Special Warranty:** Manufacturer's standard form in which manufacturer agrees to repair or replace sheet metal roofing assemblies that fail in materials or workmanship within specified warranty period.
 1. Failures include, but are not limited to, the following:
 - a. Structural failures including rupturing, cracking, or puncturing.
 - b. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
 - c. Weathertightness.
 2. Warranty Period: 20 years from date of Substantial Completion.
- B. **Special Warranty on Panel Finishes:** Manufacturer's standard form in which manufacturer agrees to repair finish or replace sheet metal roofing that show evidence of deterioration of factory-applied finishes within specified warranty period.

1. Exposed Panel Finish: Deterioration includes, but is not limited to, the following:
 - a. Color fading more than five (5) Hunter units when tested according to ASTM D2244.
 - b. Chalking in excess of a No. 8 rating when tested according to ASTM D4214.
 - c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
2. Finish Warranty Period: 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PANEL MATERIALS

- A. Aluminum Sheet: Coil-coated sheet, ASTM B209, alloy as standard with manufacturer, with temper as required to suit forming operations and structural performance required.
 1. Surface: Smooth finish.
 2. Exposed Coil-Coated Finish:
 - a. 2-Coat Fluoropolymer: AAMA 620. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in color coat with a dry film thickness of 0.7 to .08 mil exclusive of the primer. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
 3. Concealed Finish: Apply pretreatment and manufacturer's standard white or light-colored acrylic or polyester backer finish, consisting of prime coat and wash coat with a minimum total dry film thickness of 0.5-mil.

2.2 FIELD-INSTALLED THERMAL INSULATION

- A. Unfaced, Polyisocyanurate Board Insulation: ASTM C591, Type II, compressive strength of 35 psi, with maximum flame-spread and smoke-developed indexes of 75 and 450, respectively, based on tests performed.

2.3 UNDERLAYMENT MATERIALS

- A. Felts: ASTM D226, Type II (No. 30), asphalt-saturated organic felts.
- B. Slip Sheet: Manufacturer's recommended slip sheet, of type required for application.

2.4 SUBSTRATE BOARDS

- A. Gypsum Board: Type X, of thickness indicated, with water-resistant-treated core and with water-repellent paper bonded to core's face, back, and long edges. ASTM C1396.
- B. Glass-Mat Gypsum Sheathing Board: ASTM C1177.
 - 1. Type and Thickness: Cover board; Regular, 1/2-inch.
 - 2. Type and Thickness: Thermal barrier; Type X, 5/8-inch.
 - 3. Product: Subject to compliance with requirements, provide DensDeck Roof Board by Georgia-Pacific Corporation.
- C. Substrate-Board Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FMG 4470, designed for fastening substrate board to substrate.

2.5 MISCELLANEOUS METAL FRAMING

- A. Miscellaneous Metal Framing, General: ASTM C645, cold-formed metallic-coated steel sheet, ASTM A653, G60 hot-dip galvanized or coating with equivalent corrosion resistance unless otherwise indicated.
- B. Fasteners for Miscellaneous Metal Framing: Of type, material, size, corrosion resistance, holding power and other properties required to fasten miscellaneous metal framing members to substrates.

2.6 MISCELLANEOUS MATERIALS

- A. Exposed Fasteners: Aluminum or stainless steel self-tapping screws, bolts, nuts, self-locking rivets and bolts, end-welded studs, and other suitable fasteners designed to withstand design loads. Provide exposed fasteners with heads matching color of sheet metal roofing by means of plastic caps or factory-applied coating. Provide EPDM, PVC, or neoprene sealing washers.
- B. Bituminous Coating: Cold-applied asphalt mastic, SSPC-Paint 12, compounded for 15-mil dry film thickness per coat. Provide inert-type noncorrosive compound free of asbestos fibers, sulfur components, and other deleterious impurities.

2.7 STANDING-SEAM SHEET METAL ROOFING

- A. General: Provide factory-formed sheet metal roofing designed to be installed by lapping and interconnecting raised side edges of adjacent panels with joint type indicated and mechanically attaching panels to supports using concealed clips in side

laps. Include clips, cleats, pressure plates, and accessories required for weathertight installation.

1. Aluminum Panel Systems: Unless more stringent requirements are indicated, comply with ASTM E1637.

B. Vertical-Rib, Mechanically Field Seamed-Joint, Structural Standing-Seam Sheet metal roofing: Formed with vertical ribs at panel edges and intermediate stiffening ribs symmetrically spaced between ribs; designed for sequential installation by mechanically attaching panels to supports using concealed clips located under one (1) side of panels and engaging opposite edge of adjacent panels, and mechanically seaming panels together.

1. Basis-of-Design Product: Subject to compliance with requirements, provide the product specified or a product of another manufacturer of equal or better quality and performance as approved by the Architect:
 - a. Basis of Design Product: Merchant & Evans: Zip-Rib
 - b. CENTRIA Architectural Systems: SRS-3
 - c. IMETCO: Series 300
2. Material: Aluminum sheet, 0.040-inch thick.
 - a. Exterior Finish: 2-coat fluoropolymer.
 - b. Color: As selected by Architect from manufacturer's full range.
3. Anchor Clips: To allow for thermal movement.
 - a. Material: Series 300 stainless steel or aluminum coated with nylon to minimize wear from thermal movement. Clips shall be designed to allow for expansion and contraction of the roof relative to the structure throughout the specified temperature range.
4. Fasteners for Anchor Clips: Into steel; stainless steel cadmium plated self tapping screws into predrilled holes.
5. Joint Type: Mechanically crimped panel seam.
6. Panel Coverage: 16 inches.
7. Panel Height: 2.5 inches.

2.8 ACCESSORIES

- A. Roof Panel Accessories: Provide components approved by roof panel manufacturer and as required for a complete metal roof panel assembly including trim, copings, fasciae, corner units, ridge closures, clips, flashings, sealants, gaskets, fillers, closure strips, and similar items. Match material and finish of sheet metal roofing unless otherwise indicated.

1. Closures: Provide closures at eaves and ridges, fabricated of same metal as sheet metal roofing.
 2. Closure Strips: Black, precut, closed-cell, expanded, cellular, rubber or crosslinked, polyolefin-foam or closed-cell laminated polyethylene in compliance with ASTM D1056; minimum 1-inch thick, flexible closure strips; cut or premolded to match metal roof panel profile. Provide closure strips where indicated or necessary to ensure weathertight construction.
 3. Backing Plates: Provide metal backing plates at panel end splices, fabricated from material recommended by manufacturer.
- B. Flashing and Trim: Formed from same material as roof panels, prepainted with coil coating, minimum thick similar to roof panel. Provide flashing and trim as required to seal against weather and to provide finished appearance. Locations include, but are not limited to, eaves, rakes, corners, bases, framed openings, ridges, fasciae, and fillers. Finish flashing and trim with same finish system as adjacent sheet metal roofing.

2.9 SNOW GUARDS

- A. Snow Guards: Prefabricated, noncorrosive units designed to be installed without penetrating sheet metal roofing, and complete with predrilled holes, clamps, or hooks for anchoring.
1. Seam-Mounted, Bar-Type Snow Guards: Cast-aluminum rods or bars held in place by clamps attached to vertical ribs of standing-seam metal roof panels with stainless steel set screws.
 - a. Products: Subject to compliance with requirements, provide the following:
 - 1) Alpine SnowGuards, Div. of Vermont Slate & Copper Services, Inc.;
 - a) Two Pipe Style Clamp to Seam Snow Guard #4000 Z2K for Zip Rib.
 - b) Finish: Powder coated to match roof finish.

2.10 FABRICATION

- A. Fabricate and finish sheet metal roofing and accessories at the factory to greatest extent possible, by manufacturer's standard procedures and processes and as necessary to fulfill indicated performance requirements. Comply with indicated profiles and with dimensional and structural requirements.
- B. Provide panel profile, including major ribs and intermediate stiffening ribs, if any, for full length of panel.

- C. Fabricate metal roof panel side laps with factory-installed captive gaskets or separator strips that provide a tight seal and prevent metal-to-metal contact, in a manner that will seal weathertight and minimize noise from movements within panel assembly.

- D. Sheet Metal Accessories: Fabricate flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to the design, dimensions, metal, and other characteristics of item indicated.
 - 1. Form exposed sheet metal accessories that are without excessive oil canning, buckling, and tool marks and that are true to line and levels indicated, with exposed edges folded back to form hems.
 - 2. End Seams for Aluminum: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with epoxy seam sealer. Rivet joints for additional strength.
 - 3. End Seams for Other Than Aluminum: Fabricate nonmoving seams with flat-lock seams. Tin edges to be seamed, form seams, and solder.
 - 4. Sealed Joints: Form non-expansion but movable joints in metal to accommodate elastomeric sealant to comply with SMACNA standards.
 - 5. Conceal fasteners and expansion provisions where possible. Exposed fasteners are not allowed on faces of accessories exposed to view.
 - 6. Fabricate cleats and attachment devices of size and metal thickness recommended by SMACNA's "Architectural Sheet Metal Manual" or by metal roof panel manufacturer for application, but not less than thickness of metal being secured.

2.11 FINISHES

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

- B. Protect mechanical and painted finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

- C. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with installer present, for compliance with requirements for installation tolerances, metal roof panel supports, and other conditions affecting performance of the Work.

- B. Examine primary and secondary roof framing to verify that rafters, purlins, angles, channels, and other structural panel support members and anchorages have been installed within alignment tolerances required by metal roof panel manufacturer.
- C. Examine solid roof sheathing to verify that sheathing joints are supported by framing or blocking and that installation is within flatness tolerances required by metal roof panel manufacturer.
- D. Examine roughing-in for components and systems penetrating sheet metal roofing to verify actual locations of penetrations relative to seam locations of sheet metal roofing before installation.
- E. For the record, prepare written report, endorsed by installer, listing conditions detrimental to performance of the Work.
- F. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Clean substrates of substances harmful to insulation, including removing projections capable of interfering with insulation attachment.
- B. Miscellaneous Framing: Install subpurlins, eave angles, furring, and other miscellaneous roof panel support members and anchorage according to metal roof panel manufacturer's written instructions.

3.3 UNDERLAYMENT INSTALLATION

- A. Felt Underlayment: Apply at locations indicated below, in shingle fashion to shed water, and with lapped joints of not less than two (2) inches.
 - 1. Apply over entire roof surface.
 - 2. Apply on roof not covered by self-adhering sheet underlayment. Lap over edges of self-adhering sheet underlayment not less than three (3) inches, in shingle fashion to shed water.
- B. Apply slip sheet over underlayment before installing sheet metal roofing.
- C. Install flashings to cover underlayment to comply with requirements specified in Section 07 62 00.

3.4 THERMAL INSULATION INSTALLATION

- A. Polyethylene Vapor Retarder: Extend vapor retarder to extremities of areas to be protected from vapor transmission. Repair tears or punctures immediately before concealment by other work.
- B. Board Insulation: Extend insulation in thickness indicated to cover entire roof.
 - 1. Erect insulation and hold in place with Z-shaped furring members spaced 24 inches o.c. Securely attach narrow flanges of furring members to roof deck with screws spaced 24 inches o.c.

3.5 METAL ROOF PANEL INSTALLATION, GENERAL

- A. Provide sheet metal roofing of full length from eave to ridge unless otherwise indicated or restricted by shipping limitations.
- B. Thermal Movement. Rigidly fasten sheet metal roofing to structure at one (1) and only one (1) location for each panel. Allow remainder of panel to move freely for thermal expansion and contraction. Pre-drill panels for fasteners.
 - 1. Avoid attaching accessories through roof panels in a manner that will inhibit thermal movement.
- C. Install sheet metal roofing as follows:
 - 1. Commence metal roof panel installation and install minimum of 300 sq ft in presence of factory-authorized representative.
 - 2. Field cutting of metal panels by torch is not permitted.
 - 3. Locate and space fastenings in uniform vertical and horizontal alignment.
 - 4. Flash and seal sheet metal roofing with weather closures at eaves, rakes, and perimeter of all openings.
 - 5. Install ridge caps as metal roof panel work proceeds.
 - 6. Install metal flashing to allow moisture to run over and off sheet metal roofing.
- D. Fasteners:
 - 1. Aluminum Roof Panels: Use aluminum or stainless steel fasteners for surfaces exposed to the exterior and aluminum or galvanized steel fasteners for surfaces exposed to the interior.
- E. Anchor Clips: Anchor sheet metal roofing and other components of the Work securely in place, using manufacturer's approved fasteners according to manufacturers' written instructions.
- F. Metal Protection: Where dissimilar metals will contact each other or corrosive substrates, protect against galvanic action by painting contact surfaces with bituminous

coating, by applying rubberized-asphalt underlayment to each contact surface, or by other permanent separation as recommended by metal roof panel manufacturer.

1. Coat back side of roof panels with bituminous coating where roof panels will contact wood, ferrous metal, or cementitious construction.
- G. Joint Sealers: Install gaskets, joint fillers, and sealants where indicated and where required for weatherproof performance of metal roof panel assemblies. Provide types of gaskets, fillers, and sealants indicated or, if not indicated, types recommended by metal roof panel manufacturer.
1. Seal metal roof panel end laps with double beads of tape or sealant, full width of panel. Seal side joints where recommended by metal roof panel manufacturer.
 2. Prepare joints and apply sealants to comply with requirements in Section 07 92 00.

3.6 METAL ROOF PANEL INSTALLATION

- A. Standing-Seam Sheet metal roofing: Fasten sheet metal roofing to supports with concealed clips at each standing-seam joint at location, spacing, and with fasteners recommended by manufacturer.
1. Install clips to supports with self-tapping fasteners.
 2. Install pressure plates at locations indicated in manufacturer's written installation instructions.
 3. Seamed Joint: Crimp standing seams with manufacturer-approved, motorized seamer tool so clip, metal roof panel, and factory-applied sealant are completely engaged.

3.7 ACCESSORY INSTALLATION

- A. General: Install accessories with positive anchorage to building and weathertight mounting and provide for thermal expansion. Coordinate installation with flashings and other components.
1. Install components required for a complete metal roof panel assembly including trim, copings, ridge closures, seam covers, flashings, sealants, gaskets, fillers, closure strips, and similar items.
- B. Flashing and Trim: Comply with performance requirements, manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible, and set units true to line and level as indicated. Install work with laps, joints, and seams that will be permanently watertight and weather resistant.

1. Install exposed flashing and trim that is without excessive oil canning, buckling, and tool marks and that is true to line and levels indicated, with exposed edges folded back to form hems. Install sheet metal flashing and trim to fit substrates and to result in waterproof and weather-resistant performance.
 2. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10 feet with no joints allowed within 24 inches of corner or intersection. Where lapped expansion provisions cannot be used or would not be sufficiently weather resistant and waterproof, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with mastic sealant (concealed within joints).
- C. Pipe Flashing: Form flashing around pipe penetration and sheet metal roofing. Fasten and seal to sheet metal roofing as recommended by manufacturer.

3.8 SNOW GUARD INSTALLATION

- A. Bar-Type Snow Guards: Attach bar supports to vertical ribs of standing-seam sheet metal roofing with clamps or set screws. Do not use fasteners that will penetrate sheet metal roofing.
1. Layout: Carefully lay out desired assembly locations true-to-line prior to installing clamps.
 2. Clamp Installation: Assemble set screws to clamp and clamp to seam following all manufacturers printed instructions. Both set screws are to be at the same side of clamp. When application relies upon tested load-to-failure values, manufacturer's minimum recommended set screw tension shall be randomly verified using calibrated torque wrench per manufacturer's instructions.
 3. System Installation: Install snow retention assemblies straight and true-to-line. Secure all material per manufacturer's instructions.

3.9 ERECTION TOLERANCES

- A. Installation Tolerances: Shim and align metal roof panel units within installed tolerance of 1/4-inch in 20 feet on slope and location lines as indicated and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.

3.10 FIELD QUALITY CONTROL

- A. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect metal roof installation, including accessories. Report results in writing.
- B. Remove and replace applications of sheet metal roofing where inspections indicate that they do not comply with specified requirements.

- C. Additional inspections, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

3.11 CLEANING

- A. Remove temporary protective coverings and strippable films, if any, as sheet metal roofing are installed unless otherwise indicated in manufacturer's written installation instructions. On completion of metal roof panel installation, clean finished surfaces as recommended by metal roof panel manufacturer. Maintain in a clean condition during construction.
- B. Replace sheet metal roofing that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. Processed Aggregate Base for Bituminous Concrete Pavement Base
2. Gravel Borrow
3. Granular Fill
4. Gravel/Sand Cushion for Pipe Bedding
5. Modified Rip Rap
6. Subbase
7. Crushed Stone for Pipe Bedding

1.2 REFERENCES

- A. ASTM C136 - Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates
- B. ASTM C117 - Standard Test Method for Materials Finer than 75 μm (No. 200) Sieve in Mineral Aggregates by Washing
- C. ASTM D1556 - Standard Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method
- D. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lb./ft³)
- E. ASTM D2434 - Standard Test Method for Permeability of Granular Soils (Constant Head)
- F. ASTM D2487 - Standard Classification of Soils for Engineering Purposes (Unified Soil Classification System)
- G. ASTM D6938 - Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)

- H. AASHTO – Standard Specification for Transportation Materials and Methods of Sampling and Testing, 1986 Edition as amended
- I. Connecticut Department of Transportation (CTDOT), Standard Specifications for Roads, Bridges, and Incidental Construction, 'Form 816', latest revision.

1.3 SUBMITTALS

- A. Representative Samples of borrow materials taken from the source. Tag, label, and package the Samples as requested by Engineer. Provide access to the borrow site for field evaluation and inspection.
- B. Provide sieve analysis (ASTM C136) and permeability analysis (ASTM D2434) from certified soils testing laboratory for all borrow materials. Take and test a sample, at no additional cost to the Owner for each 1,500 c.y. of borrow material placed.
- C. Provide modified proctor analysis (ASTM D1557) from certified soils testing laboratory for all borrow materials.
- D. The Engineer reserves the right to require more frequent testing than that which is specified above should the borrow characteristics change.

1.4 QUALITY ASSURANCE

- A. No borrow shall be placed prior to the approval of Samples by the Project Geotechnical Engineer.

1.5 PROJECT/SITE CONDITIONS

- A. Existing Conditions:
 - 1. Comply with any environmental requirements and restrictions.
 - 2. Keep all public and private roadway surfaces clean during hauling operations and promptly and thoroughly remove any borrow or other debris that may be brought upon the surface before it becomes compacted by traffic. Frequently clean and keep clean the wheels of all vehicles used for hauling to avoid bringing any dirt upon the paved surfaces.

PART 2 PRODUCTS

2.1 PROCESSED AGGREGATE BASE FOR BITUMINOUS CONCRETE PAVEMENT BASE

- A. Shall conform to the requirements of CTDOT Form 816, article M.05.01-1. Coarse aggregate shall conform to the requirements of article M.05.01-2(a) or M.05.01-

2(b). The reclaimed miscellaneous aggregate, article M.05.01-2(c) is not acceptable.

2.2 GRAVEL BORROW

- A. Gravel borrow shall consist of inert material that is hard, durable stone and coarse sand, free from loam and clay, surface coatings, and deleterious materials. The coarse aggregate shall have a percentage of wear, by the Los Angeles Abrasion Test, of not more than 50.

Gradation requirements for gravel shall be determined by AASHTO-T11 and T27 and shall conform to the following:

<u>Sieve Size</u>	<u>Percent Passing</u>
1/2 inch	50-85
No. 4	40-75
No. 50	8-28
No. 200	0-10

Maximum size of stone in gravel shall be 2 inches.

2.3 GRANULAR FILL

- A. Granular fill to be used as fill material to achieve gravel base grade beneath structures, pavement, or other areas requiring structural fill shall consist of inert material that is hard, durable stone and sand, free from loam and clay, surface coatings and deleterious materials. The coarse aggregate shall have a percentage of wear, by the Los Angeles Abrasion Test, of not more than 50.

- B. Gradation requirements for granular fill shall conform to the following:

Sieve Size	Percent by Weight Passing Through	
	Minimum	Maximum
2/3 rd s loose lift thickness	100	-
No. 10	30	95
No. 40	10	70
No. 200	0	15

2.4 GRAVEL/SAND CUSHION FOR PIPE BEDDING

- A. Sand borrow material shall be supplied from an off-site borrow area approved by the Engineer. Testing of the off-site sand borrow shall be at the Contractor's expense.
- B. Sand borrow shall consist of clean, inert, hard, durable grains of quartz or other hard, durable, rock, free from loam or clay, surface coatings and deleterious materials. The allowable amount of material passing a No. 200 sieve as determined by ASTM C117 shall not exceed 10% by weight.
- C. Material shall consist of a clean, non-plastic, granular material conforming to the requirements of a SW, SP or SM under the Unified Soil Classification System (USCS) (ASTM D2487).
- D. The material shall have the characteristics that when placed and compacted, the soil particles will bind together so as to form a solid, stable surface capable of supporting rubber-tired vehicular traffic during wet weather periods as well as extended dry weather periods. The borrow material shall not contain fines to the extent that the surface layer becomes "greasy" when wet.
- E. The material shall not contain stones larger than 3/8-inch in diameter.
- F. Material consisting of frozen clogs, ice and snow will be rejected.
- G. All sand borrow material to be used shall be subject to approval by Engineer, and Engineer reserves the right to reject any borrow material from the job that does not meet the above requirements.

2.5 MODIFIED RIP RAP

- A. Placed Modified Rip Rap:
 - 1. The material shall meet the requirements of CTDOT Form 816, article M.12.02-3 Modified Riprap.
 - 2. Each load of riprap shall be reasonably well graded from the smallest to the maximum size specified. Stones smaller than the specified 10% size and spall will not be permitted in an amount exceeding 10% by weight of each load.

2.6 SUBBASE

- A. All materials for this work shall conform to the requirements of Articles M.02.02-1 and M.02.06 Gradation "B" of CTDOT "Form 816".

2.7 CRUSHED STONE FOR PIPE BEDDING

- A. Shall conform to the requirements of CTDOT, "Form 816" Article M.01.01, No. 6 stone.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Prior to the placement of borrow material, site preparation shall be completed as required by the Contract Documents, and approved by the Engineer.
- B. Ensure that all materials are properly stockpiled on site to prevent contamination by other materials.
- C. Place borrow material over the entire area in uniform lifts and compact in accordance with Section 31 00 00.
- D. Utilize on-site soils prior to using off-site borrow provided on-site soils meet the requirements of the specifications.
- E. Utilize gravel borrow in all locations where a surface treatment has not been specified but requires a firm finish surface.
- F. Processed aggregate base for bituminous concrete pavement base is intended to provide a stable foundation for driveways, bituminous concrete sidewalk and roadway repair.
- G. Borrow materials shall be used as a replacement for unsuitable materials where poor soil conditions are encountered during the progress of the work, where approved by the Engineer. Borrow type will be determined by the Engineer. Borrow material used as a replacement for unsuitable soil is not intended to be an aid to dewatering.
- H. Shape borrow used for pipe foundation material so that it supports the pipe properly and will not damage the pipe, bells, collars, or the pipe fittings.
- I. Place all borrow to keep it free of other materials and to prevent segregation.
- J. Place gravel/sand cushion for water main pipe bedding. Gravel/sand cushion shall have an in-place permeability of 1×10^{-3} cm/sec or greater, and shall be compacted to 95% of maximum dry density.
- K. Carry out compaction testing in accordance with ASTM D1556 (sand cone), or D6938 (Nuclear Methods). Unless stated elsewhere in the contract documents, the

number of tests required shall be no less than 5 tests per acre or at random locations.

- L. Maintain and repair all eroded areas during the life of this contract at no additional cost to the Owner.

END OF SECTION