SECTION 071326-SELF ADHERING SHEET WATERPROOFING SYSTEM

PART 1 - GENERAL

1.1 SECTION INCLUDES:

Installation of sheet membrane waterproofing on surfaces indicated on drawings, consisting of preparation of existing and repaired concrete surfaces, sealing of cracks and joints, and application of CCW MiraDRI 860/861Sheet Membrane Waterproofing.

1.2 RELATED SECTIONS

A. Section 03 10 00 – Concrete Accessories/Expansion Joints
B. Section 03 30 00 – Cast-In-Place Concrete
C. Section 04 20 00 – Unit Masonry
D. Section 07 60 00 – Flashing and Sheet Metal
E. Section 07 90 00 - Caulking and Sealants
F. Section 07 95 00 – Expansion Control
G. Section 22 00 00 – Plumbing
H. Section 23 00 00 – Heating, Ventilating, and Air Conditioning (HVAC)
I. Section 26 00 00 – Electrical

1.3 REFERENCES

A. ASTM D 3767 Standard Practice for Rubber—Measurement of Dimensions
B. ASTM D 412 Standard Test Method for Rubber Properties in Tension
C. ASTM D 882 Standard Test Method for Tensile Properties of Thin Plastic Sheeting
D. ASTM E 96 Standard Test Methods for Water Vapor Transmission of Materials
E. ASTM D 1970 Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection
F. ASTM C 836 Standard Specification for High Solids, Cold Liquid-Applied Elastomeric Waterproofing Membrane for Use with Separate Wearing Course
G. ASTM D 903 Standard Test Method for Peel or Stripping Strength of Adhesive Bonds
H. ASTM D 1876 Standard Test Method for Peel Release of Adhesives (T-Peel)
I. ASTM E 154 Standard Test Methods for Water Vapor Retarders Used in Contact with Earth Under Concrete Slabs, on Walls, or as Ground Cover
J. ASTM D 570 Standard Test Method for Water Absorption of Plastics
K. ASTM D 5385 Standard Test Method for Hydrostatic Pressure Resistance of Waterproofing Membranes
L. GSA-PBS 07121 Test for Decay from Soil Burial
M. UL 790 Tests for Fire Resistance of Roof Covering Materials

1.4 SYSTEM DESCRIPTION

Product provided by this Section is a self-adhesive membrane of not less than 60

mils thickness, consisting of 56 mils of rubberized asphalt membrane laminated to a 4-mil cross-laminated polyethylene film.

1.5 SUBMITTALS

A. General: Submit in accordance with Section 01 30 00.

B. Product Data: Submit manufacturer's product literature and installation instructions. Subcontractor's approval by Manufacturer: Submit document stating manufacturer's acceptance of subcontractor as an Approved Applicator for the specified materials.

C. Warranty: Submit a sample warranty identifying the terms and conditions stated in Section 1.7.

1.6 QUALITY ASSURANCE

A. Applicator Qualifications: Applicator shall have 5 years of experience in applying the same or similar materials and shall be specifically approved in writing by the membrane manufacturer.

B. Regulatory Requirements: Comply with applicable codes, regulations, ordinances, and laws regarding use and application of products that contain volatile organic compounds (VOC).

C. Pre-Application Conference: Prior to beginning work, convene a conference to review conditions, installation procedures, schedules and coordination with other work.

1.7 WARRANTY

A. Upon completion and acceptance of the work required by this section, the manufacturer shall issue a warranty agreeing to promptly replace defective materials installed by an approved applicator for a period of 5 years.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to project site in original, factory-sealed, unopened containers bearing manufacturer's name and label intact and legible with following information.

1. Name of Material.
2. Manufacturer's stock number and date of manufacture.
3. Material safety data sheet.

B. Store materials in protected and well ventilated area. Protect from damage from sunlight, weather, excessive temperatures and construction operations. Remove damaged material from the site and dispose of in accordance with local applicable regulations.

1.9 PROJECT CONDITIONS

A. Do not apply membrane when surface temperature is below or inclement weather

conditions conflict with manufacturer's published requirements.

B. Coordinate waterproofing work with other trades. The applicator shall have sole right of access to the specified areas for the time needed to complete the installation.

C. Warn personnel against breathing of vapors and contact of material with skin or eyes. Wear applicable protective clothing and respiratory protection gear.

D. Keep flammable products away from spark or flame. Do not allow the use of spark producing equipment during application and until all vapors have dissipated. Post "NO SMOKING" signs.

E. Maintain work area in a neat and orderly condition, removing empty containers, rags, and rubbish daily from the site.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

Basis of Design: CCW MiraDRI 860/861 Sheet Membrane Waterproofing (Basis of Design) as manufactured by Carlisle Coatings and Waterproofing Incorporated, 900 Hensley Lane, Wylie, Texas 75098, Phone: (800) 527-7092 Fax: (972) 442-0076 or approved equal.

2.2 PRODUCTS

A. Self-Adhesive Sheet Membrane Waterproofing: Shall be CCW MiraDRI 860/861 or approved equal and consist of a 56 mil rubberized-asphalt membrane laminated to 4 mil cross-laminated polyethylene film, and shall meet or exceed the following requirements:

1. Thickness: 60 mils, ASTM D 3767
2. Tensile Strength (Membrane): 325 psi, ASTM D 412
3. Tensile Strength (Film): 5000 psi, ASTM D 882
4. Elongation: 350% minimum, ASTM D 412
5. Permeance: 0.05 Perm maximum, ASTM E 96
6. Flexibility, 180° bend over 1 in. mandrel at -45°F: Unaffected, ASTM D 1970
7. Crack Cycling at -25°F (100 cycles): Unaffected, ASTM C 836
8. Peel Strength: 10.0 lb/in, ASTM D 903
9. Lap Adhesion: 19.0 lb/in, ASTM D 1876
10. Puncture Resistance: 60 lb (min), ASTM E 154
11. Soil Burial 16 weeks: No Effect, GSA-PBS 07121
12. Water Absorption: 0.1% by wt., ASTM D 570

13. Hydrostatic Head: 230 ft., ASTM D 5385

B. For application temperatures between 15°F and 60°F, use CCW 861-ULT Sheet Membrane and CCW-702, CCW-702LV, or CCW-715. For application temperatures above 40°F use CCW MiraDRI 860/861sheet membrane and CCW-702, CCW-702LV, CCW-702WB, CCW-715, CCW-AWP, or Cav-Grip.

2.3 ACCESSORY PRODUCTS (Below products are Basis of Design, other products with similar performance characteristics will be considered per substitution requirements)

A. Surface Primer: Shall be CCW-702, CCW-702LV, CCW-715, CCW-702WB, CCW-AWP or Cav- Grip.
B. Mastic: Shall be CCW-704 Mastic.
C. Sealants: Shall be CCW-703 Vertical Grade Liquiseal Membrane, CCW-LM-800XL, CCW-201 two-component Polyurethane Sealant or approved sealant by CCW.
D. Backer Rod: Shall be closed-cell polyethylene foam rod.
E. Protection Course: Shall be CCW-Protection Board-H or HS, CCW-300HV for horizontal surfaces or CCW-Protection Board-V or CCW-200V for vertical surfaces.
F. Drainage Composite: Shall be CCW MiraDRAIN as recommended by the manufacturer for each condition.
G. Perimeter Drainage System: Shall be CCW MiraDRAIN HC.
H. Swellable Sealant: Shall be MiraSTOP SS for use in non-moving joints to create watertight concrete joints and as an adhesive for CCW MiraSTOP waterstop strips
I. Pre-formed Bentonite hydrophilic waterstop strip: Shall be CCW MiraSTOP BW for use in non-moving joints to create watertight concrete joints
J. Pre-formed non-Bentonite hydrophilic waterstop strip: Shall be CCW MiraSTOP NBW for use in non-moving joints to create watertight concrete joints
K. Injectable waterstop (grout tube): Shall be MiraSTOP IW for use as an injectable waterstop for use in non-moving joints to create watertight concrete joints
L. Chemical grout: Shall be MiraSTOP CG-F and for use with the MiraSTOP IW
M. Miscellaneous products: accessory products approved by Carlisle Coatings & Waterproofing Inc.

PART 3 – EXECUTION

3.1 INSPECTION

A. Before any waterproofing work is started the waterproofing applicator shall thoroughly examine all surfaces for any deficiencies or unsatisfactory conditions detrimental to the proper completion of the work. Should any deficiencies exist, the architect, owner, or general contractor shall be notified in writing. Do not proceed with work until all deficiencies or unsatisfactory conditions are corrected.

3.2 SURFACE PREPARATION

A. Refer to manufacturer's literature for requirements for preparation of substrates. Surfaces shall be structurally sound and free of voids, spalled areas, loose aggregate and sharp protrusions. Remove contaminants such as grease, oil and wax from exposed surfaces. Remove dust, dirt, loose stone and debris. Use repair materials and methods which are acceptable to manufacturer of sheet membrane waterproofing.

B. Cast-In-Place Concrete Substrates:
   1. Do not proceed with installation until concrete has properly cured and dried (minimum 7 days for normal structural concrete and minimum 14 days for lightweight structural concrete).
   2. Concrete shall be cured by water curing method. Any curing compounds must be of the pure sodium silicate type or clear resin-based materials without waxes, oils or pigments and be approved by the Carlisle representative.
   3. Form release agents must not transfer to the concrete. Remove forms as soon as possible from below horizontal slabs to prevent entrapment of excess moisture. Excess moisture may lead to blistering of the membrane.
   4. Concrete shall be sloped for proper drainage.
   5. Voids, rock pockets and excessively rough surfaces shall be repaired with approved non- shrink grout or ground to match the unrepaired areas. Fill form tie rod holes with concrete and finish flush with surrounding surface.
   6. Two-stage drains shall have a minimum 3 inch flange and be installed with the flange
      flush and level with the concrete surface.
   7. Surfaces at cold joints shall be on the same plane. Grind irregular construction joints to suitable flush surface.

C. Masonry Substrates: Apply CCW MiraDRI 860/861 waterproofing over concrete block with smooth trowel-cut mortar joints or rough surfaces prepared with a parge coat. Allow the parge coat to dry before priming and installing the CCW MiraDRI 860/861 waterproofing membrane.

D. Wood Substrates: Apply CCW MiraDRI 860/861 waterproofing membrane over securely fastened sound surface. All joints and fasteners shall be flush to create a smooth surface.

E. Related Materials: Treat joints and install flashing as recommended by waterproofing manufacturer.

3.3 APPLICATION

A. Refer to manufacturer's literature for recommendations on installation, including but not limited to, the following:

   1. Apply primer/contact adhesive at rate recommended by manufacturer. Recoat areas which were not waterproofed the same day or if contaminated by dust. Mask and protect adjoining exposed finish surfaces to protect those

surfaces from excessive application of primer.

2. Do not install membrane until primer/contact adhesive is completely dry. Dry time will vary with weather conditions.
3. Seal installation at the end of the day with troweled bead of CCW-LM-800XL or CCW- 703V Liquiseal.
4. Apply protection board and/or MiraDRAIN and other related materials in accordance with manufacturer's recommendations.

3.4 INTEGRITY TESTING

A. Test is required for all expanded warranties beyond the standard material warranty of horizontal applications.

B. The test can be done with Electronic Vector Mapping or flood testing. Flood testing requires 2" minimum head of water for a period of 24 hours minimum.

3.5 PROTECTION COURSE

A. VERTICAL APPLICATION:
Install CCW MiraDRAIN HC Drainage System as the first course of drainage composite immediately after membrane has been installed on vertical surfaces. Install CCW MiraDRAIN Drainage Composite (consult CCW for recommendation), CCW-Protection Board-V or CCW- 200V on remainder. Stop drainage composite 6" below final grade level.

B. HORIZONTAL APPLICATION:
Install CCW MiraDRAIN Drainage Composite (consult CCW for recommendation) or CCW- Protection Board-H or HS or CCW 300HV immediately after flood testing on horizontal surfaces. If flood testing is delayed, install a temporary covering to protect the CCW MiraDRI 860/861membrane from damage by other trades.

End of Section 071326

Addendum #5

Please consider the following questions for your review and comment.

1. ~~Please confirm that sales tax IS to be included in our proposal. Yes~~
2. ~~Will ODP apply to all material purchases or on selected major purchases only? All Direct Material Purchases shall follow the GCSC policy as outlined by the Purchasing Department.~~
3. Please describe to what extent the demolition contractor will leave the site after building demolition. Will the demolition contractor include foundation removal, u/g utilities, capping of existing utilities, the backfill and compaction footing trenches and utility trenches?
   (Refer to answer on the next page...)
4. ~~Reference Specification section 03 11 13 – Insulating Concrete Forming, paragraph 1.05 Submittals. Part A is stating that the Name of ICF Products being proposed and the credentials of~~

~~the subcontractor for the installation of the ICF system be provided at BID TIME. Please confirm that this information is NOT required to be submitted at Bid time.~~

5. ~~We feel that the disclosure of the ICF system is required at the time of the bid.~~

Answer to Question #3 for 10/17 Addendum:
Please describe to what extent the demolition contractor will leave the site after building demolition. Will the demolition contractor include foundation removal, u/g utilities, capping of existing utilities, the backfill and compaction footing trenches and utility trenches?

Response: Refer to revised Civil drawings attached. New work contractor to field verify all existing conditions, as the the existing sewer manhole north of NS-A will be left in place by the Demolition contractor to maintain uninterrupted operation. This will be replaced during construction.

See below RFI:

- Addendum 4 states there was an attached canopy spec provided however, it was not attached with the Addendum 4 document. Please provide the specs for the rod hung canopies on A5/A-311 AND spec for the custom fabricated engineered canopies on A2/A-312.

RESPONSE: Please refer to attached spec sections.

1. Can an "Instructions to Bidders" spec section be provided as is typical?
Response: Yes, See attached Specification Section 00 21 13 and AIA Document A701-2018.

2. In the absence of a section for Instructions to Bidders, can the various forms to be required with the bid proposal be specifically enumerated?
Response: The required forms are listed in Division 00 – Procurement and Contracting Requirements.

3. Also, in the absence of section for Instructions to Bidders, can the required percentage for the bid security be provided?
Response: Bid Bonds must be payable to the Owner in the amount of 5 Percent (5%) of the bidder's base bid price.

4. Could you please confirm the proper project name? There appears to be inconsistencies across the documents

   a) The cover of the specs shows the name as *The Nursing & Simulation Center.*
   b) The cover of the drawings shows the name as GCSC Nursing Sim. Center
   c) The bid form refers to it as *The Nursing Simulation Center Panama City Florida*
   d) Addendum No. 2 identifies it as *GCSC Nursing Simulation Center Demo Package*

   Clarification would be appreciated to ensure consistency in our bid submission. Response: **GCSC Nursing & Simulation Center.**

5. The Addendum Acknowledgement form (section 00 41 01) requires that we fill out the date of each addendum. Although Addendum 1 is numbered, it is not dated. Addendum 2 is neither numbered or dated. Can this be corrected for clarity?
Response: Provide the date that each Addendum is posted on Bidnet.

6. Section 00 43 36 of the specification states that a "Subcontractors Form" must be completed and submitted with the bid. However, item no. 9 on the Bid Form indicates the following:
   "List of subcontractors proposed for this project will not be required at the time of bidding. The ~~low bidder~~ (would change to "lowest qualified bidder") will be required to deliver to the architect's office within 48 hours after time of bid opening, a complete list of subcontractors and material suppliers for approval." Also, feel that a list of subcontractors should be required at the time of the bid.

   Additionally, Addendum 1 states that the form listing subcontractors is due at the time of bid, which is contrary to the statement on the actual bid form.

   Can the requirement for the list of subs be made clear? In providing clarity, can this submission of subcontractors be pushed to at least one or two hours after the time of bid submission?
   Response: A list of subcontractors must be provided at time of bid.

7. Since the completely filled out bid form (as well all attachments) are to be provided on a USB drive, can the requirement for multiple copies of the bid form submitted at the time of bid be eliminated? Response : One (1) Original and Eight (8) copies with a USB thumb drive shall be required at the time of bid.

1. . Fixture designation "D8" is on the lighting schedule, but not on the plans. Is this meant for fixture "DL8" **RESPONSE**: Please see prior RFI response in Addendum #4.
2. Fixture designation "D8E" is on the lighting schedule, but not on the plans. Is this meant for fixture "DLE8" **RESPONSE**: Please see prior RFI response in Addendum #4.
3. Fixture designation "N3.xxx" is on the lighting schedule, but not on the plans. Can this be voided or was a fixture missing? **RESPONSE**: Please see prior RFI response in Addendum #4.
4. Is there a basis of design for the cord reel(s)? **RESPONSE**: Please see prior RFI response in Addendum #4.
5. Arc Flash, Short Circuit, and Coordination Studies Required for this project? **RESPONSE**: Please see prior RFI response in Addendum #4.
6. Third Party Testing required for this project? **RESPONSE**: Please see prior RFI response in Addendum #4.
7. Are the transformers being utilized to feed the new building shown on the electrical site drawings owner owned/furnished? Please describe the EC's scope of work on the primary work to be done for this project. **RESPONSE**: Please see prior RFI response in Addendum #4.
8. Are there any areas that fall under NEC Article 517 on this project? If so, will HCF cable, redundant grounding, and isolated ground receptacles for these areas required? **RESPONSE**: Please see prior RFI response in Addendum #4.
9. Does this project receive any federal funds or grants? If so, please RFI if this project falls under Buy American for steel materials. **RESPONSE**: Please see prior RFI response in Addendum #4.
10. Are there any sole providers / owner selected vendors for the Fire Alarm, Communications, Nurse Call, Access Control, or Security Systems? **RESPONSE**: Please see prior RFI response in Addendum #4.
11. Specification Section 07-17-16 (Bentonite Waterproofing) references Tremco Paraseal GM/LG – 60 Mil, which is no longer available (only offered in 20 Mil). I wanted to flag

this and ask how you would like us to proceed? Whether that be using the 20 Mil version available or awaiting direction on an alternate product from the architect. **RESPONSE**: Delete Specification section 07 17 16 and replace with Specification section 07 13 26; see attached.

12. The specs section 211300 2.4 call for schedule 40 pipe. FP sheet FP001 General Note 12 calls for schedule 10 pipe. What schedule pipe should be used? **RESPONSE**: Please see prior RFI response in Addendum #4.
13. The fire pump specs call for using all OS&Y valves. FP002 shows some butterfly valves being used. Can butterfly valves be used in the fire pump design (other than the pump suction) to decrease costs? **RESPONSE**: Please see prior RFI response in Addendum #4.
14. Code allows for the full forward flow test header to be eliminated if there is a fire pump with a test header. Can the test header be omitted? **RESPONSE**: Please see prior RFI response in Addendum #4.
15. Will the fire pump exhaust exit through the exterior wall or the roof? **RESPONSE**: Please see prior RFI response in Addendum #4.
16. Should the fire pump exhaust be insulated? **RESPONSE**: Please see prior RFI response in Addendum #4
17. Should a wall or roof thimble be included for the exhaust? **RESPONSE**: Please see prior RFI response in Addendum #4
18. Will the bid get extended? **RESPONSE**: There has been no mention of an extension at this time.

Responses to bid questions are:

Floor Boxes:
Question – THE BASIS OF DESIGN FOR THE ELECTRICAL FLOOR BOXES (SPECIFICALLY "T" SHEETS) IS CALLING FOR AN 11 GANG WIREMOLD PRODUCT THAT HAS BEEN DISCONTINUED. REQUESTING APPROVAL TO GO WITH A HUBBELL 10 GANG ETERNAL SERIES CFB10G55CFE BODY AND 610GCCVRALU COVER PLATE. PLEASE ADVISE.
Response - APPROVED. SEE ATTACHED CATALOG PAGE - ARCHITECT SELECT COVER COLOR AND WHETHER COVER IS FOR SURFACE APPLICATION OR FLUSH. ALL REQUIRED FACTORY FITTINGS FOR POWER, COMM AND AV DEVICES SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.

Cord Reels:
Question - IS THERE A BASIS OF DESIGN FOR THE CORD REEL(S)?
Response - CATEGORY 6 CABLE REEL, HUBBELL ACA-CAT6-L-BL WITH HUBBELL HBLI340PB PIVOT BASE MOUNTING BRACKET, OR HUBBELL HBLI150CAT6 WITH HUBBELL HBLI340PB PIVOT BASE MOUNTING BRACKET.

Specialty Subcontractors:
Question - ARE THERE ANY SOLE PROVIDERS / OWNER SELECTED VENDORS FOR THE COMMUNICATIONS, NURSE CALL, ACCESS CONTROL, OR SECURITY SYSTEMS?
Response – COMMUNICATIONS. SEE SPECIFICATIONS SECTION 27 00 00 FOR MINIMUM QUALIFICATIONS FOR THE STRUCTURED CABLING SYSTEM CONTRACTOR (SCSC). ALL GENERAL CONTRACTORS SHALL LIST THE SCSC THEY INTEND TO USE AS A CONTRACTOR FOR THIS PROJECT WITH POINT OF CONTACT AND PROVIDE COMPLETE EVIDENCE OF SCSC QUALIFICATIONS WITH THEIR BIDS. BIDS THAT DO NOT INCLUDE A QUALIFIED STRUCTURED CABLING SYSTEM CONTRACTOR ARE SUBJECT TO REJECTION AT THE SOLE DISCRETION OF THE OWNER.
Response – THE ACCESS CONTROL SYSTEM SUBCONTRACTOR (ACS) SHALL BE ONE OF TWO IDENTIFIED BY THE OWNER AS LISTED ON SHEET ACS-301 "ACCESS CONTROL SYSTEM CONTRACTOR" NOTE. THE GC SHALL IDENTIFY THE SUBCONTRACTOR IN THE BID FORMS ALONG WITH PROOF OF QUALIFICATIONS. BIDS THAT DO NOT INCLUDE A QUALIFIED ACSC WILL BE REJECTED.

Subcontractor Responsibilities:
SUBCONTRACTORS SHALL PROVIDE THE WORK LISTED BELOW AND ALL OTHER WORK ASSOCIATED WITH THEIR SYSTEMS. THE GENERAL CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ASSIGNING WORK TO THE VARIOUS CONTRACTORS WHETHER CALLED OUT ON THE DRAWINGS OR NOT.

- ARE THE HUBBELL DATA CORD REELS TO BE FURNISHED AND INSTALLED BY THE EC OR SCSC SUBCONTRACTOR? **SCSC PROVIDE.**
- IS THE LADDER CABLING TRAY ORGANIZER TO BE FURNISHED AND INSTALLED BY THE EC OR THE SCSC SUBCONTRACTOR? **SCSC PROVIDE.**
- IS ACS WORK TO BE BID DIRECT TO OWNER? **NO, BID ACS WORK DIRECTLY TO GENERAL CONTRACTORS. ACS TO BE SUBCONTRACTOR TO GENERAL CONTRACTOR.**
- IS SCSC WORK TO BE BID DIRECT TO OWNER? **NO, BID SCSC WORK DIRECTLY TO GENERAL CONTRACTOR. SCSC TO BE SUBCONTRACTOR TO GENERAL CONTRACTOR.**