

DELAWARE RIVER JOINT TOLL BRIDGE COMMISSION
ADMINISTRATION BUILDING
110 WOOD & GROVE STREETS
MORRISVILLE, PA19067

ADDENDUM NO. 4

This **Addendum No. 4**, dated February 22, 2018, gives additional information in connection with **Contract No. T-707A, Capital Project 1644A, Commission Administration Building at Scudder Falls and Adaptive Reuse of the 1799 Building**, and is hereby made a part of the Contract. This Addendum is to be signed by the Contractor below and this **Page AD4-1** is to be attached to the bid proposal.

This Addendum including pages **AD4-1** through **AD4-18** is hereby accepted and agreed that it shall become part of **Contract No. T-707A, Capital Project 1644A** Documents.

(DATE)

(CONTRACTOR'S NAME)

(SEAL)

BY: _____

ATTEST: _____

A. CONTRACTOR QUESTIONS AND RESPONSES:

Response to Inquiries Submitted as of February 19, 2018.

Item 01: **Inquiry:** Please clarify how the letters and logo shown on details 1 & 2 Drawing A1-702 are to be installed with the acoustical sound panels since these panels are fabric over a medium density core.

Response: This shall be coordinated with the sign company.

Item 02: **Inquiry:** Another interior contractor requesting information for Spec Section 054000 Cold-Formed Metal Framing - states that the steel track and studs are to have thickness of 0.0428 (18 ga). and the deflection track has a thickness of 0.0677 (14 ga). Is this correct? Please advise. Also, on the interior side of exterior walls (EA1, EA2, EA3, EB1, EB2, EC1, EC2, and EC3) to have 18 ga. or 14 ga. Clarification if need.

Response: Specification is correct with specified gages for the track and the deflection track for the exterior non-load bearing cold formed metal framing. The exterior studs are required to follow the cold formed metal framing spec and be designed for the required structural loads. Interior partitions walls do not need to comply with this requirement and should follow the limiting height tables and details for interior partitions.

Item 03: **Inquiry:** Is the ballast pad required vs. dead men?

Response: Ballast pad.

Item 04: **Inquiry:** I assume the dispenser sits flush on the concrete within the SS island form? Fuel Pump Dispenser Detail makes it look like it is elevated concrete curbing, but the dispenser sits down in it just slightly. Please clarify.

Response: The dispenser sits flush with the pad.

Item 05: **Inquiry:** Is the electrical and low voltage wiring by the fuel dispensing firm or the electrical contractor? Please clarify.

Response: Electrical and low voltage wiring is by the electrical contractor.

Item 06: **Inquiry:** When you do a spread footing shown on M503, you will have to put the dispenser sump in the canopy footing, will the footing design change by the structural engineer once they get the canopy reactions.

Response: The foundation of the canopy is delegated design by the installing contractor.

Item 07: **Inquiry:** On Detail 3/A1-181 it references Wall Type EB. There is no EB wall listed on the exterior wall legend. Please clarify.

Response: Wall Type EB is an exterior wall type; refer to the A-430 Series for system description.

Item 08: **Inquiry:** "Exterior Detail 5/A1-661 Wall Type A9 to underside of Steel Beam". There is no wall type A9. Please clarify

Response: Change the Wall Type in question to C9 in lieu of A9.

Item 09: **Inquiry:** "Please clarify spec 12.4814 Floor Mats & Frames, we need a model number for the basis of the bid. The spec has both recessed Mat frames with mats and roll-up mats. There are 3 models for recessed roll up mats and frames by Balco.

Response: The spec includes prescriptive requirements for the Recessed Mat Frames in paragraph 2.2.B, and the requirements for the Aluminum Linked-Tread Floor Mat in 2.2.C. Item number 4, referring to "Tapered Flexible Edges", shall be DELETED from paragraph 2.2.C.

Item 10: **Inquiry:** "According to spec 00700 page 36 14.4.2 says that the contractor will receive payment 60 days after submission of the monthly pay application. This length of time means that the General Contractor has to finance the project, especially with vendors and smaller subcontractors. Could the length of time be reduced to 30 days so the general contractor is not financing the project?

Response: The Commission will not change the specification to reduce the length of time for payment after submission of the monthly pay application. However, as a practice, the Commission endeavors to pay invoices within 30 days of receipt of an approved pay estimate from the construction manager.

Item 11: **Inquiry:** "Will there be Cad file available for our earthwork takeoff?"

Response: Upon execution of the construction contract agreement, CADD files will be provided by the design team upon request at no cost to the contractor.

Item 12: **Inquiry:** "Please confirm that the anticipated award date remains March 27, 2018."

Response: The anticipated award date remains March 27, 2018.

Item 13: **Inquiry:** "Please confirm that the anticipated Notice to Proceed remains May 1, 2018."

Response: The anticipated Notice to Proceed date remains May 1, 2018 and is dependent on the timely submission of acceptable required documentation by the contractor.

Item 14: Inquiry: "Please confirm that the Architect and Design Professionals will provide contractor with all the CAD files and backgrounds at no cost to the contractor."

Response: Upon execution of the construction contract agreement, CADD files will be provided by the Commission upon request at no cost to the contractor.

Item 15: Inquiry: "Please advise if the Commission is willing to entertain waiving the fees associated with Building Permits."

Response: No building permits are anticipated for this contract. Should a permit be required, the cost for such permit will be paid for by the Commission.

Item 16: Inquiry: "Please advise if the commission is willing to consider establishing an allowance for the Independent Testing and Inspecting of the Project."

Response: No, the Testing and Inspections shall remain as specified.

Item 17: Inquiry: "Please advise who is the authority having jurisdiction that will perform code compliance review and inspections.."

Response: The Commission is a self-certifying entity. Code compliance review of the plans was completed by Barry Isett & Associates, Inc. under contract to the Commission.

Item 18: Inquiry: "Please confirm that the authority having jurisdiction on the project have already reviewed plans and issuing permits is expected to happen within 21 days of receiving a Notice to Proceed."

Response: The NPDES Permit for Stormwater Discharges from the Bucks County Conservation District, PAC090109 is effective on 11/09/2017 and will expire on 11/09/2022.

Item 19: Inquiry: "Please confirm that the retainage of the project is 10% until 50% completion of the project and 0% after that completion has been achieved."

Response: General Conditions, section 14.4.3 states, "Until the Work is fifty percent (50%) completed, the COMMISSION will pay ninety percent (90%) of the amount due to the CONTRACTOR on account of the partial estimate. At the time the Work is fifty percent (50%) completed, if the completion of the Work and its progress are and remain satisfactory to the ENGINEER, and in the absence

of other good and sufficient reasons, the COMMISSION will then pay one-hundred percent (100%) of the amount to the CONTRACTOR on account of the remaining partial payment estimates. The full Contract retainage may be reinstated if the manner of completion of the Work and its progress do not remain satisfactory to the ENGINEER or for other good and sufficient reasons.”

Item 20: **Inquiry:** "In regards to the two (2) year maintenance bond, Bid documents specify a 100% rate. This is not usual as the typical percentage rate ranges from 5% to 10%. Please confirm/clarify or revise percentage."

Response: General Conditions, section 5.1.1 states, “Maintenance Bond- Upon completion of all required work and prior to final payment the Contractor shall provide a two (2) year Maintenance Bond to the Commission for 100% of the final Contract Price”.

Item 21: **Inquiry:** "Please confirm that the cost for the Maintenance bond is to be carried in the Schedule of Prices as per Bid form from Addendum #1."

Response: The cost for the Maintenance Bond should be included on Item No. 6 of the Schedule of Prices.

Item 22: **Inquiry:** "Please advise what are the license requirements for the Subcontractors. In other words, please clarify if the Plumber, Electrician, etc. are required to be licensed in NJ or PA."

Response: Anyone performing work on the Project that requires a license must have a current license at the time the work is performed. The license can be from PA or NJ.

Item 23: **Inquiry:** "Please advise if the Health and Safety Supervisor role can be assigned to the Site Superintendent or if a full onsite professional is required."

Response: General Conditions, Section 6.19.6 states, “The HSS will have no other duties other than Construction Safety and will be on site at all times work is ongoing. Section 015250, paragraph D states, “Designate an individual (or individuals) of the Prime Contractor exclusively as the Health and Safety Supervisor(s) (HSS) with the overall responsibility for the preparation, implementation and enforcement of the site-specific HASP. This individual will act solely as the Project’s HSS.

Item 24: **Inquiry:** "As per Addendum #1, the project is NOT subject to a Project Labor Agreement. Please confirm this is the case and the project is not to comply with other additional programs."

Response: Confirmed, the project does not include a Project Labor Agreement. The contractor is required to meet the Affirmative Action

Requirements (page 00810-1), the Duties of Contractor Under Pennsylvania and New Jersey Minimum Wages (starts on page 00850-1), the Contract Compliance Program (section 010150) and Payment/Payroll Reporting Requirements (section 010150).

Item 25: Inquiry: "Please confirm that there are no LEED goals for this project."

Response: Confirmed. There are no LEED Goals for this Project, however there are sustainable design components incorporated into various sections of the Specifications.

Item 26: Inquiry: "Specification Section 015000-Temporary Construction Facilities and controls indicates that electrical power usage costs are to be carried by the Contractor. Can this clause be waived and establish an allowance?"

Response: No, the requirements remains unchanged.

Item 27: Inquiry: "Please confirm that the owner is tax exempt and a tax exempt certificate for NJ and PA states will be provided to the contractor upon award and no sales tax should be accounted for during the bid."

Response: General Conditions, Section 6.15.1 states, "The COMMISSION will sign a sales tax exemption certificate for equipment and services provided under this contract, which are determined to be tax exempt. The CONTRACTOR is responsible to make any necessary inquiries and investigations with regulating state agencies to obtain a determination of equipment and services, which are tax exempt for this project and shall reflect any tax exemptions in its bid". Refer to Section 010100, paragraph 1.6 for additional information regarding taxes.

Item 28: Inquiry: "Please confirm that the Structural Steel Fabricator must be and AISC certified fabricator."

Response: Contractor to provide an AISC certified fabricator and erector.

Item 29: Inquiry: "Please confirm that the Structural Steel Erector must be and AISC certified erector."

Response: Contractor to provide an AISC certified fabricator and erector.

Item 30: Inquiry: "Please confirm that related to PA and NJ Prevailing Wage Rates, the intent of Div 00 - Procurement and Contracting Requirements, Section 00850

is to establish that any and all working person is to be paid the higher paying rate (either NJ or PA) for its specific trade.

For instance a Carpenter who is paid \$50.00 in NJ and \$45.00 in PA, will be paid the higher NJ rate at \$50.00 and in case of overtime, differential shifts, etc., the same analysis is to be done to assess the higher rate is being compensated to the worker. (The above rate and trade are only to exemplify the reasoning and not factual or accurate).

Response: Per paragraph 2 of the Duties of Contractor Under Pennsylvania and New Jersey Minimum Wages, "the Contractor shall pay to all working persons employed in the performance of this Contract the higher prevailing wage rate from the sets of wage rates included herein, for each Project site location and for each craft and classification involved".

Item 31: **Inquiry:** "Please provide the Substantial and Final completion dates for the Park and Ride Parking Lot and its related scope as per summary of work."

Response: Substantial & Final Completion dates for the Park and Ride Parking Lot is the same as for the Administration Building.

Item 32 **Inquiry:** "Division 01 - General Requirements (end of Section 012100) refers to Exhibit to PDA#1: Lobby Sculpture. This exhibit is not part of the Bid Documents. Please provide."

Response: The Exhibit for the Lobby Sculpture PDA was included in Addendum #1.

Item 33: **Inquiry:** "Please confirm Drawing S1-101, CL 9.3 foundation wall thickness is 1'-2".

Response: The foundation wall at this location is 1'-8" thick.

Item 34: **Inquiry:** "Please confirm Drawing A1-015, partition E8 is not fire rated."

Response: Partition E8 is not fire rated.

Item 35: **Inquiry:** "Please confirm that the requirement is one (1) original Bid Proposal is to be submitted."

Response: One original bid proposal package should be submitted.

Item 36: **Inquiry:** "Per ITB paragraph 10.2, IBE Required Forms are to be included with the Bid Proposal but a IBE Bid Form is not found within the Bid Documents. Please forward a copy of the IBE Form which is to be included in the Bid Proposal."

Response: The IBE Contract Compliance Plan forms are located on the Commission website at www.drjtbc.org. The forms can be found under Doing Business, select Contract Compliance and the forms are located on that page. Alternatively, go to www.drjtbc.org, on the home page, scroll down to the Quick Links and select Contract Compliance.

Item 37: Inquiry: "Please offer direction to what types of Documents are to be attached to the Certificate of Eligibility Form."

Response: The contractor should include documentation from either the Commonwealth of Pennsylvania or the State of New Jersey indicating that they are eligible to do business in either state.

Item 38: Inquiry: "Must the lot remain open at all times. The millings are needed for fill".

Response: The Contractor is required to maintain a minimum of 60 parking spaces, vehicle access and bus pickup/dropoff access within the Park & Ride lot throughout the duration of the construction project.

Lot must remain open at all times to allow a minimum of 60 parking spaces to be available and also allow for circulation of a bus to pull through the lot for dropoff/ pickup.

Item 39: Inquiry: "The soils report calls for a foundation drain. Is one needed? If so, please supply a detail.

Response: A foundation drain is not required.

Item 40: Inquiry: "The Equipment schedule calls for a snack and soda machine A1-803. Is this being provided by the Owner.

Response: Snack and soda machines are being provided by the Owner.

Item 41: Inquiry: "Details on A1-703, A1-704 & A1-803 calls out quartz countertops. Is there a specification on this material?"

Response: QT-1 and QT-2 are on finish legend under Miscellaneous Finishes.

Item 42: Inquiry: "Detail 9/A1-750 and A1-803 calls out the upholstery fabric for banquette seating. Is there a specification for the upholstery and foam padding or is this being provided by the Owner?"

Response: Upholstery is called out on miscellaneous Finish Legend and the high density foam is called out on the banquette Detail A1-750

Item 43: **Inquiry:** "On Drawing E1-302 key note 1 states to provide 3/4" x 8'-0" x 4'-0" fire retardant plywood for IDF Room 205. Does IDF Room 105 also require plywood?"

Response: All IDF Rooms require the plywood.

Item 44: **Inquiry:** "What is the purpose of the 3/4" baseboard for both IDF rooms? Kindly provide details.

Response: The finish schedule calls out B-3, 4" Rubber Base.

Item 45: **Inquiry:** "Drawing A2-800 room finish schedule has TZ for wall finish in Restroom, should that be T3?"

Response: It should be T-3.

Item 46: **Inquiry:** "Drawing A2-800 detail 1 Room 102 has no elevation shown, please clarify."

Response: Interior Elevation Symbol at this location shall be deleted.

Item 47: **Inquiry:** "Drawing A2-800 doesn't mention floor. Is this bare plywood?"

Response: The schedule calls out for FG-1, LVT-1.

Item 48: **Inquiry:** "Drawing A2-600, detail 6 shows galvanized steel framing, do all exterior receive this?"

Response: All window and Door openings in the stone walls are to be reinforced as indicated on the details.

Item 49: **Inquiry:** "Drawing A2-430, detail 3 appears to have CMU wall with stucco, is that the intent?"

Response: There is no stucco noted on this detail.

Item 50: **Inquiry:** "Drawing A2-200, detail 1 and 2 show access door. Is there two doors?"

Response: There is an access door noted at each level.

Item 51: **Inquiry:** "Demolition drawing A2-050 note 18 remove attic ceiling finish plan A2-800 notes paint ceiling, what is the intent?"

Response: There will be no ceiling in the attic

Item 52: **Inquiry:** "Drawing P2-100, Detail 1 notes SP-3 see Detail. Is this pump below F.F.?"

Response: Yes, see Equipment Schedule on Sheet P-001.

Item 53: **Inquiry:** "Drawing A2-800 room 101 and 102 are the walls tile? Room 100 mention wainscot, which walls get WP-1?"

Response: All walls in Room 100 get WP-1.

Item 54 **Inquiry:** "Attached is a request for substitution for the curtain wall from a Window Wall Glazing firm for a stick built system vs. a manufactured system meant for high rises do to the lead time and the project schedule."

Response: Substitutions will only be considered after award of the Contract for Construction as set forth in the General Conditions.

Item 55: **Inquiry:** "Please confirm that material the general contractor purchases for the project is included in the calculation for self-performed work. For example, concrete material obtained via a purchase order."

Response: Yes.

Item 56: **Inquiry:** "Drawing Detail A/A1-144 Roof Hatch It appears that there is metal stud framing (soffit) on the right side below the steel angle. Please advise or provide more detail.

Response: There is no ceiling in Ladder Access 206A. The GWB and metal stud framing are not required around the opening.

Item 57: **Inquiry:** "The geotechnical report from maser consulting, section 7.1 and 7.3 indicates the proposed foundations be undercut to strata "B". Do to the limited amount of test pit provided, we are unable to accurately quantify the volume of excavation. Will the Commission consider either a unit price of a fixed price allowance?

Response: Contractor shall use the provided test pit information to estimate the volume of excavation.

Item 58: **Inquiry:** "The details for the sculpture wall on A1-900 do not show any additional blocking or bracing in the 16 ga framing for the wall. Is any required?

Response: The studs for this wall shall be 16 ga. Cold-formed studs and shall be braced to the 2nd Floor and Roof Framing. Any additional required blocking will be provided by the Sculpture installer.

Item 59: **Inquiry:** "Will Building and/or MEP Systems Commissioning be required? If required please identify who will be providing and paying for the Commissioning Agent and also provide all Specifications relative to the Commissioning that is required for the Project."

Response: There is no third party commissioning required. All commissioning and testing requirements are indicated in each trades specifications.

Item 60: **Inquiry:** "Please provide "Common Work Results" Specifications for Divisions 21, 22 and 23 Fire Suppression, Plumbing and Mechanical"

Response: These sections are not part of this Project Specification Manual.

Item 61: **Inquiry:** "Ref. drawings A1-801, 1st Floor Finish Plan, Toilet Rooms 107, 109, 119, 120. We note the finish plan indicates T-1 wall tile finishes are required. However, we find no T-1 tile finishes noted in the wall tile finish legend on drawing A1-803. Please advise the tile manufacturer, series, size and color for T-1 wall tile finishes."

Response: T-1: Crossville Origins Glass OG 401 Blue Glacier 1" x 1" Mosaic.

Item 62: **Inquiry:** "Ref. drawing A1-802, 2nd Floor Finish Plan, Toilet Rooms 207 and 209. We note the finish plan indicates T-2 wall tile finishes are required as noted, however the assigned finish group FG-14 is calling for T-1 wall tile finishes. We find no T-1 tile finishes noted in the wall tile finish legend on Drawing A1-803. Please advise which wall finish is correct."

Response: T-1: Crossville Origins Glass OG 401 Blue Glacier 1" x 1" Mosaic.

Item 63: **Inquiry:** "In the cold formed metal framing spec, 054000, for non-load bearing walls, the track and studs are to have a thickness of 0.0428 (18 ga) but the deflection track has a thickness of 0.0677 (14ga). Please verify that this is correct."

Response: Specification is correct with the specified gages for the track and deflection track for the exterior non-load bearing cold formed metal framing.

Item 64: **Inquiry:** "The section views of the interior millwork show GWB bulkheads above the upper cabinets yet the reflected ceiling plans do not show them. Please clarify."

Response: Metal stud and GWB soffits shall be provided above all upper wall cabinets as indicated on the Sections.

Item 65: **Inquiry:** "Drawing A1-101, CL A, between CL's 6 & 7 refers to Elevation 5/A1-650. This elevation does not exist. Please, provide or clarify."

Response: Delete the referenced Elevation Callout 5/A1-650 from this location on the Drawing.

Item 66: **Inquiry:** "3/A1-300, CL6, elevation 0'-0". Provide plan & section details for rectangular structure shown. The referenced wall section 7/A1-439 shows the granite cap, but dimensionally this differs from the rectangular structure in question."

Response: Disregard the "Rectangular Structure" shown on Elevation 3/A1-300 to the left of CL-6 @ Elevation 0'-0". The Wall Section Mark 7/A1-439 correctly shows the wall construction at this location.

Item 67: **Inquiry:** "In the Kitchen, who is responsible for removal of the dishwasher & refrigerator. Does the Commission want to salvage these items?"

Response: The Contractor is responsible for removal and disposal of all items listed. The Commission does not want to salvage any items.

Item 68: **Inquiry:** "Please refer to drawing A1-101 for ST2-1 and ST3-1 Plan North corners are assumed to receive granite cap shape 2 around stairs. Please confirm as details provided for ST3-1 are inconclusive and for ST2-1 seem in conflict between Granite cap style 1 and 2."

Response: The granite cap at this location shall be Shape 2.

Item 69: **Inquiry:** " Please confirm Detail 5/A1-400.00 is a Granite cap shape 4 on right side of the detail, above finish floor. The element is represented as a granite cap as per detail 8 of A1-440.00, however the narrative describes "stainless steel pins, two per block...." Please confirm/clarify"

Response: The stainless steel pins are required to secure the granite cap to the adjacent construction.

Item 70: **Inquiry:** " Please confirm curtain walls for Vestibule 104 are supported by granite cap shape 4, similar to Vestibule 100."

Response: Confirmed, Shape 4 is correct.

Item 71: **Inquiry:** "Paragraphs in Spec Section 04 40 13/1.9/MOCK-UPS A/1 & 2 refer to mock-up drawings. Bid documents do not include mockup drawings. Please provide."

Response: "Provide two different visual mockup panels (and supporting structural steel/foundation) that are each at least 15'-0" Wide x 15'-0" Height x 5'-0" Deep that replicates and includes all typical conditions related to all exterior envelope systems/trades. Panel layouts will be provided which will incorporate the various material intersections and will include but not limited to, at least one of each of the following:

- A. Full scale unitized curtain wall panels using both vision and spandrel glazing;
- B. Granite base/sill starter condition for unitized curtain wall, stucco, rain screen assembly (vertical assembly), and stone veneer;
- C. Inside corner where glass meets glass, and glass meets stone veneer, glass meets rain screen assembly, rain screen assembly (horizontal assembly) meets stone veneer, rain screen meets rain screen (horizontal and vertical assembly), and stucco meets stone veneer;
- D. Outside corner where glass meets glass, rain screen meets rain screen (vertical assembly), and where stone veneer meets stone veneer;
- E. Parapet/roof condition for unitized curtain wall, rain screen assembly (vertical assembly), stone veneer piers, and stone veneer walls;
- F. SSG stack joint condition;
- G. Entry door w/ transom condition;
- H. Slab edge anchor condition.

Additionally refer to Drawing A1-900 - In Place Mock-up Drawing, attached herein, for location in plan where the in-place testing of the construction will take place.

Item 72: **Inquiry:** " According to Specification section 03 35 19 there is "Integrally colored concrete". We could not locate any specific area or notation on the drawings showing where this colored concrete is to be installed."

Response: The integrally colored concrete shall be used for all exterior stamped "patio" sidewalks which are indicated on Drawing C-102.2 as a "Basketweave Pattern". There are four areas, the two main entrances to the Administration Building, the patio adjacent to the Lunch Room, and the patio at the 1799 Building.

Item 73: **Inquiry:** "In addition to specification section 033000 Cast In Place Concrete, there is Specification Section 033053: "Miscellaneous cast-in-place concrete". Please clarify if there is a specific intent to Section 03 30 53 as most"

Response: This section is to be used for equipment pads.

Item 74: **Inquiry:** "Drawing A1-439, details 4,5, and 6 refer to trash enclosure, Civil drawings C-101.1 shows the location of this component. Structural drawings do not depict anything in regard to footings to this structure. Please, provide."

Response: The detail is shown on Sheet C-108.1.

Item 75: **Inquiry:** "Please advise to the location of the CMU type E8 & E11.

Response: E-8 walls are indicated on the Plans in Receiving\ Storage 140, E-11 walls are indicate in Boiler Room 124. It is the Contractor's responsibility to locate all instances of each wall type.

Item 76: **Inquiry:** "Spec says manual solar shades but then notes motorized. Finish schedule:

WS-1 Motorized blackout - not solar

WS-2 No description

On the finish plan in room 127 and 126 it calls out WS-3. WS-3 is not on the finish schedule."

Response: WS-1 is for the motorized shades in the Training Room. WS-2 shall be for all other shades indicated on the Finish Plans, including the two 1st Floor Conference Rooms 126 and 127. The spec sections for the shades are being reissued as part of this Addendum.

Item 77: **Inquiry:** "We need some clarification regarding the aggregates that are to be added to the Tru Polishable overlay. I need to know the size of aggregate and if it is recycled glass. The sizes are usually either 00, 0, 1, 2 or 3."

Response: Refer to spec section 03 53 00, Part 2, paragraph 2.4.

Item 78: **Inquiry:** "We also need to know the percentage of the area of the overlay that is to be seeded."

Response: Refer to Landscape Sheets C-104.1 and C-104.2 and also to the Erosion and Sediment Pollution Control Plans and the Post-Construction Stormwater Management Plans.

Item 79: **Inquiry:** "Spec Section 12 32 16 references LEED: "31. Construction Waste Management (LEED)" Is LEED certification being pursued for this project?"

Response: No.

Item 80: **Inquiry:** "Please provide the floor finish to be provided for the elevator".

Response: Floor finish is LVT-1.

Item 81: **Inquiry:** "Where are the wood stair treads and landings specified? Will there be finish carpentry specification issued? (example wood stair treads and landings)".

Response: The wood for the Feature Stair, treads and landings shall be walnut, stained and varnished to match Architect's sample. All stair treads shall have eased edges at the nosing and the edges. Additionally, provide continuous embedded aluminum abrasive strips at the stair tread nosing and the edges of the landings.

Item 82: **Inquiry:** "Will they accept a KEE PVC membrane system without a fleece-backing and adhered with bonding adhesive and 2 part insulation adhesive?"

Response: No, the specified built-up roof system set in hot asphalt shall be installed.

Item 83: **Inquiry:** "See attached request for Approval from Norton Industries for Substitution Request for Acoustical Panel and Specialty Ceilings."

Response: Substitutions will only be considered after award of the Contract for Construction as set forth in the General Conditions.

Item 84: **Inquiry:** "Please clarify if CPT-2 is tile or Broadloom."

FLOOR FINISH LEGEND						
FINISH CODE	MATERIAL	MANUFACTURER	PRODUCT	COLOR	SIZE	COMMENTS
CPT-1	CARPET TILE	ATLAS	SAYA	TIMBERLINE 15SS	24X24 TILE	MONOLITHIC LAYOUT OPEN OFFICE
CPT-2	CARPET TILE	ATLAS	YUZEN	TIMBERLINE YU15	12'-6" BROADLOOM	OFFICES
						1 LEATHER EDGE BINDING

Response: CPT-2 is Broadloom.

Item 85: **Inquiry:** "According to the Aluminum Window Specified manufacturer, we will need sizes, width and height for the A, B, C and D windows.

Response: The windows are indicated on the Building Elevations and the Window Types on Drawing A2-600. As the window openings are being modified and reinforced, it is the Contractor's responsibility to field verify all existing dimensions.

Item 86: **Inquiry:** "Please clarify the 1799 Building Shutters; we need the sizes (width & height) and type of material to be purchased since this is a historic building.

Response: The Building Shutters for the 1799 Building shall be Endurian Shutters as manufactured by the Timberlane, Inc., 150 Domorah Drive Montgomeryville, PA 18936. 1-800-250-2221 Shutter sizes, profiles, panel

layouts and color to match the existing shutters. Provide manufacturer's heavy duty pintle hinges, and shutter tiebacks to match existing.

Item 87: **Inquiry:** "Please advise if subcontractor need the have 5 mil umbrella coverage or does this only apply to the General Contractor. A lot of subcontractors due to their size will not be able to meet that value of the umbrella.

Response: The contract insurance requirements pertain to the Prime Contractor only.

Item 88: **Inquiry:** "Is there an existing septic system at the 1799 House?

Response: Location and type of septic system is unknown, but assumed to be a tank located in the vicinity of the 1799 house. Contractor to locate the tank, remove lid, pump it down and backfill with well drained material in accordance with all jurisdictional regulations.

B. NOTICE TO CONTRACTORS:

NONE

C. CHANGES TO PROCUREMENT AND CONTRACTING REQUIREMENTS (DIVISION 00):

NONE

D. CHANGES TO CONDITIONS OF THE CONTRACT:

NONE

E. CHANGES TO GENERAL REQUIREMENTS (DIVISION 01):

NONE

E. CHANGES TO SPECIFICATIONS:

Item 89: **DELETE** Section 10 14 00 - BUILDING SIGNAGE, in the Project Manual and **REPLACE with** SECTION 10 14 00.13 BUILDING SIGNAGE" attached herein.

Item 90: **ADD** Section 12 21 24 - MOTORIZED ROLLER SHADE SYSTEM, attached herein to the Project Manual.

Item 91: **DELETE** Section 12 24 13.2 - ROLLER SHADES, in the Project Manual and **REPLACE with** SECTION 12 24 13.2 - ROLLER SHADES " attached herein.

F. CHANGES TO DRAWINGS:

- Item 92:** On **Drawing C-104.1**, Overall Landscape Plan, **ADD** (1) one 10 foot diameter planting area and **ADD** (1) QP (*Quercus phellos*) tree installed in the middle of the 10 foot diameter planting area to the proposed concrete island adjacent to the handicap accessible parking spaces located at the SE corner of the remaining Park and Ride Lot.
- Item 93:** On **Drawing C-104.2**, Enlarged Landscape Plan and Details, in the Plant Schedule, **DELETE** the quantity "7" from the QP Row and **REPLACE** with the quantity "8".
- Item 94:** On **Drawing C-101.2**, Enlarged Site Layout Plan – North, all proposed full height curb to be installed at the existing park and ride shall match the height and width of the existing park and ride curb. Dimensions of existing curb are approximately 8" wide X 8" height.
- Item 95:** On **Drawing C-101.2**, Enlarged Site Layout Plan – North, **ADD** (1) one 30" diameter x 4" thick concrete pad with crushed stone beneath, installed flush with grade, to anchor the proposed trash receptacle to. Also, **ADD** a total of (6) six 28" long x 4" wide x 4" thick concrete pad with crushed stone beneath, installed flush with grade, to anchor the legs of the proposed benches to.
- Item 96:** **INSERT Drawing A1-900**, In-Place Mock Up" Drawing, attached herein, into the set of drawings.
- Item 97:** **INSERT Drawing A1-900**, In-Place Mock Up" Drawing, attached herein, into the set of drawings.
- Item 98:** **INSERT Drawing SK-1, Soffit Detail"**, attached herein, into Drawing A1-752. Soffit shall be installed above all upper wall cabinets and extend to structure above.
- Item 99:** On **Drawing A1-753 - Site Sign**, Details 1 thru 4, **INSERT** the following note: "It is the intent of the Commission to utilize stones from the existing Scudder Falls Bridge project and incorporate them into the base of this Site Sign where noted on the drawings and details as "Bridge Stones". The Contractor shall include all work required to transport the existing granite blocks from the river bank, modification of the blocks and setting of the stones in their final position in the Site Sign. Modifications shall include all transportation to and from a shop, and cutting and dressing of the stones."
- Item 100:** On **Drawing A1-753 - Site Sign**, Provide the following reinforcing in the base of the sign:

- In the base of the footing, provide #5 @ 12" O.C. Each way.
- From the base of the footing to 6" above the concrete, provide #4 dowels @ 12" O.C. to provide 6" projection for anchoring the Bridge Stones with epoxy.
- Provide 1/2" Rock Anchors with epoxy @ 24" O.C. to anchor the top stone row to the blocks below.
- Provide 1/2" diameter anchors @ 24" O.C. to anchor the steel plate sign to the stone base.

G. ATTACHMENTS:

SPECIFICATIONS:

1. SECTION 10 14 00.13 BUILDING SIGNAGE
2. Section 12 21 24 - MOTORIZED ROLLER SHADE SYSTEM
3. Section 12 24 13.2 - ROLLER SHADES

DRAWINGS:

1. Drawing SK-1, Soffit Detail
2. Drawing A1-900, In-Place Mock Up

END OF ADDENDUM NO. 4

SECTION 10 14 00.13 - BUILDING SIGNAGE

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 SUMMARY

- A. This Section includes the following types of signs:
 - 1. Cast letters and numbers.
 - 2. Cast metal plaques.
 - 3. Building Logo Graphic
- B. Related Sections include the following:
 - 1. Division 01 Section "Construction Waste Management"
 - 2. Division 10 Section, "Room Identification Panel Signage" for other signage.
 - 3. Division 10 Section, "Exterior Signage" for exterior signage.

1.3 SUBMITTALS

- A. General: Submit the following according to the Conditions of the Contract and Division 01 Specification Sections.
- B. Product data for each type of sign specified, including details of construction relative to materials, dimensions of individual components, profiles, and finishes.
- C. Shop drawings showing fabrication and erection of signs. Include plans, elevations, and large-scale sections of typical members and other components. Show anchors, grounds, layout, reinforcement, accessories, and installation details.

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- D. Samples: Provide the following samples of each sign component for initial selection of color, pattern and surface texture as required and for verification of compliance with requirements indicated.
1. Samples for selection of color, pattern, and texture selected and compliance with requirements indicated:
 - a. Aluminum: Samples of each finish type and color, on 6-inch-long sections of extrusions and not less than 4-inch squares of sheet or plate. Where finishes involve normal color and texture variations, include sample sets showing the full range of variations expected.
 - b. Dimensional Letters: Provide full-size representative samples of each dimensional letter type required, showing letter style, color, and material finish and method of attachment.

1.4 QUALITY ASSURANCE

- A. Sign Fabricator Qualifications: Firm experienced in producing signs similar to those indicated for this Project, with a record of successful in-service performance, and sufficient production capacity to produce sign units required without causing delay in the Work.
- B. Single-Source Responsibility: For each separate sign type required, obtain signs from one source of a single manufacturer.
- C. Design Concept: The Drawings indicate sizes, profiles, and dimensional requirements of signs and are based on the specific types and models indicated. Sign units by other manufacturers may be considered provided deviations in dimensions and profiles do not change the design concept as judged by the Architect. The burden of proof of equality is on the proposer.

1.5 PROJECT CONDITIONS

- A. Field Measurements: Take field measurements prior to preparation of shop drawings and fabrication to ensure proper fitting. Show recorded measurements on final shop drawings. Coordinate fabrication schedule with construction progress to avoid delay.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated in the Work include, but are not limited to, the following:
 1. Manufacturers of Panel Signs:
 - a. ASI Sign Systems, Inc.
 - b. Best Manufacturing Company.
 - c. Beyond Signs, Inc.
 - d. Clarke Systems.
 - e. Mohawk Sign Systems.

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- f. Vomar Products, Inc.
- 2. Manufacturers of Dimensional Letters and Graphics:
 - a. ASI Sign Systems, Inc.
 - b. Gemini Incorporated.
 - c. Metallic Arts, Inc.
 - d. The Southwell Company.
 - e. Vomar Products, Inc.
- 3. Manufacturers of Cast Plaques:
 - a. ASI Sign Systems, Inc.
 - b. Best Manufacturing Company.
 - c. Gemini Incorporated.
 - d. Metallic Arts, Inc.
 - e. The Southwell Company.
 - f. Vomar Products, Inc.

2.2 MATERIALS

- A. Cast Acrylic Sheet: Provide cast (not extruded or continuous cast) methyl methacrylate monomer plastic sheet, in sizes and 3/8" thickness, with a minimum flexural strength of 16,000 psi when tested according to ASTM D 790, with a minimum allowable continuous service temperature of 176 deg F (80 deg C), and of the following general types:
 - 1. Opaque Sheet: Provide colored opaque acrylic sheet in colors and finishes as selected from the manufacturer's standards.
- B. Aluminum Sheet: Provide aluminum sheet of alloy and temper recommended by the sign manufacturer for the type of use and finish indicated, and with not less than the strength and durability properties specified in ASTM B 209 for 5005-H15.
- C. Aluminum Extrusions: Provide aluminum extrusions of alloy and temper recommended by the sign manufacturer for the type of use and finish indicated, and with not less than the strength and durability properties specified in ASTM B 221 for 6063-T5.
- D. Aluminum Castings: Provide aluminum castings of alloy and temper recommended by the sign manufacturer for the casting process used and for the use and finish indicated.
- E. Fasteners: Use concealed fasteners fabricated from metals that are not corrosive to the sign material and mounting surface.
- F. Anchors and Inserts: Use nonferrous metal or hot-dipped galvanized anchors and inserts for exterior installations and elsewhere as required for corrosion resistance. Use toothed steel or lead expansion bolt devices for drilled-in-place anchors. Furnish inserts, as required, to be set into concrete or masonry work.

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2.3 PANEL SIGNS

- A. Panel Signs: Comply with requirements indicated for materials, thicknesses, finishes, colors, designs, shapes, sizes, and details of construction.
 - 1. Produce smooth, even, level sign panel surfaces, constructed to remain flat under installed conditions within a tolerance of plus or minus 1/16 inch measured diagonally.
- B. Unframed Panel Signs: Fabricate signs with edges mechanically and smoothly finished to conform with the following requirements:
 - 1. Edge Condition: Square cut.
 - 2. Edge Color for Plastic Laminate: Edge color same as background.
 - 3. Corner Condition: Corners rounded.
- C. Graphic Content and Style: Provide sign copy that complies with the requirements indicated for size, style, spacing, content, position, material, finishes, and colors of letters, numbers, and other graphic devices.
- D. Raised Copy: Machine-cut copy characters from matte-finished opaque acrylic sheet and chemically weld onto the acrylic sheet forming sign panel face. Produce precisely formed characters with square cut edges free from burrs and cut marks.
 - 1. Panel Material: Matte-finished opaque acrylic sheet.
 - 2. Raised Copy Thickness: Not less than 1/32 inch.
 - 3. Helvetica Medium - 1 inch high letters.
- E. Tactile and Braille Sign: Manufacturer's standard process for producing text and symbols complying with ADA-ABA Accessibility Guidelines and with ICC/ANSI A117.1. Text shall be accompanied by Grade 2 Braille. Produce precisely formed characters with square-cut edges free from burrs and cut marks; Braille dots with domed or rounded shape.
 - 1. Raised-Copy Thickness: Not less than 1/32 inch (0.8 mm).
- F. Provide signs for all auxiliary area signs not covered by Room Identification Signage, subject to Owner's final sign schedule. Omit corridors and vestibules.
- G. Barrier Free Accessibility Sign: Provide 6" x 6" signs at accessible rooms, including toilets and stalls, displaying international symbol of accessibility.
- H. Stair Level Identification Signs

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1. Provide stair level identification signs in tactile and Braille characters shall be located at each floor level landing in all enclosed stairways, adjacent to the door leading from the stairwell into the corridor to identify the floor level complying with ADA-ABA Accessibility Guidelines and with ICC/ANSI A117.1.
2. The door discharging to the outside or to the level of discharge shall have a tactile and Braille sign stating "EXIT."
3. The number designating the floor level shall be a minimum of 5" in height and located in the center of the sign. The letters designating the identification of the stair enclosure shall be a minimum of 1-1/2" in height. All other lettering and numbers shall be a minimum of 1" in height.
4. Signs shall be 12" wide x 18" high.

I. Area of Refuge / Rescue Assistance Signage

1. Each door providing access to an area of refuge from an adjacent floor area shall be identified by a sign stating: "AREA OF REFUGE."
 - a. Size shall be appropriate to include the relevant information.
2. Each door providing access to an exterior area for assisted rescue shall be identified by a sign stating: "EXTERIOR AREA FOR ASSISTED RESCUE"
 - a. Size shall be appropriate to include the relevant information.
3. Instructional Signage: In areas of refuge and exterior areas for assisted rescue, provide signage for instructions for use including:
 - a. Persons able to use the exit stairway do so as soon as possible, unless they are assisting others.
 - b. Information on planned availability of assistance in the use of stairs or supervised operation of elevators and how to summon such assistance.
 - c. Directions for use of two way communication system where provided.
 - d. Size shall be appropriate to include the relevant information.
4. Provide tactile and Braille signage complying with ADA-ABA Accessibility Guidelines and with ICC/ANSI A117.1, and include the International Symbol of Accessibility.

J. Occupancy Load Signage

1. All assembly areas shall have a maximum permitted occupant load sign conspicuously posted at the main entry/exit door within the space.
2. Signs shall be 6" wide x 9" high
3. Architect shall provide the maximum occupancy load for each area.
4. Provide tactile and Braille signage complying with ADA-ABA Accessibility Guidelines and with ICC/ANSI A117.1.

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K. Exit Signage

1. All exits shall have signs stating "EXIT" conspicuously posted at each exit door.
2. Signs shall be 6" wide x 6" high
3. Provide tactile and Braille signage complying with ADA-ABA Accessibility Guidelines and with ICC/ANSI A117.1.

L. Equipment Room Identification (IBC 914.2)

1. All rooms containing controls for air-conditioning systems, sprinkler risers and valves or other fire detection, suppression or control areas.
2. White reflective NFPA 170 symbols or text on red reflective background. Coordinate with local fire department and building official.
3. Permanently installed and readily visible.

2.4 DIMENSIONAL LETTERS AND NUMBERS

- A. Cast Letters and Numbers: Form individual letters and numbers by casting. Produce characters with smooth, flat faces, sharp corners, and precisely formed lines and profiles, free from pits, scale, sand holes, or other defects. Cast lugs into the back of characters and tap to receive threaded mounting studs. Comply with requirements indicated for finish, style, and size.

1. Metal: Aluminum.
2. Letter Height: As indicated.
3. Letter Style: As indicated.

2.5 ALUMINUM GRAPHICS

- A. Form individual graphics and symbols by water-cut method. Produce characters with smooth, flat faces, sharp corners, and precisely formed lines and profiles, free from pits, scale, sand holes, or other defects. Cast lugs into the back of units and tap to receive threaded mounting studs. Comply with requirements indicated for finish, style, and size.

1. Metal: Aluminum.
2. Graphics: As shown on the drawings.

2.6 CAST METAL PLAQUES

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- A. Plaques: Castings shall be free from pits, scale, sand holes, or other defects. Comply with requirements specified for metal, border style, background texture, and finish and with requirements shown for thickness, size, shape, and copy. Hand-tool and buff borders and raised copy to produce the manufacturer's standard satin polished finish. Refer to the "Finishes" Article for other finish requirements.
1. Metal: Bronze.
 2. Border Style: None (straight), polished edge.
 3. Background Texture: Manufacturer's standard pebble texture.
 4. Background Finish: Provide dark statuary finish to comply with the requirement specified for finishes, except provide background texture specified above in lieu of mechanical finish indicated.
- B. Provide plaque in size as indicated on the drawings, with raised letter copy as furnished by Architect.

2.7 WALL TYPE IDENTIFICATION ABOVE CEILINGS

- A. In accordance with IBC 703.6, Provide Permanent Marking and Identification as follows:
1. Fire Walls, Fire Barriers, Fire Partitions, Smoke Barriers, and Smoke Partitions, or any other walls required to have protected openings or penetrations shall be effectively and permanently identified with signs or stenciling. Signage shall:
 - a. Be located in accessible concealed floor, floor-ceiling or attic spaces;
 - b. Be repeated at intervals not exceeding 30 feet (914mm) measured horizontally along the wall or partition; and
 - c. Include lettering not less than 3 inches in height, in RED, incorporating the wording: "FIRE OR SMOKE BARRIER, 'X' HOUR RATING – PROTECT ALL OPENINGS." (The letter 'X' shall be replaced with the actual corresponding hour rating number.)

2.8 ALUMINUM GRAPHICS

- A. Form individual graphics and symbols by water-cut method. Produce characters with smooth, flat faces, sharp corners, and precisely formed lines and profiles, free from pits, scale, sand holes, or other defects. Cast lugs into the back of units and tap to receive threaded mounting studs. Comply with requirements indicated for finish, style, and size.
1. Metal: Aluminum.
 2. Graphics: As shown on the drawings.

2.9 FINISHES

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- A. Colors and Surface Textures: For exposed sign material that requires selection of materials with integral or applied colors, surface textures or other characteristics related to appearance, provide color matches indicated, or if not indicated, as selected by the Architect from the manufacturer's standards.
- B. Metal Finishes: Comply with NAAMM "Metal Finishes Manual" for finish designations and applications recommendations.
- C. Aluminum Finishes: Finish designations prefixed by "AA" conform to the system established by the Aluminum Association for designating aluminum finishes.
 - 1. Baked-Enamel Finish: AA-M4xC12C42R1x (Mechanical Finish: Manufacturer's standard, other nondirectional textured; Chemical Finish: Chemical conversion coating, acid chromate-fluoride-phosphate pretreatment; Organic Coating: as specified below). Apply baked enamel in compliance with paint manufacturer's specifications for cleaning, conversion coating, and painting.
 - a. Organic Coating: Thermosetting-modified acrylic enamel primer/topcoat system complying with AAMA 603.8 except with a minimum dry film thickness of 1.5 mils, medium gloss.
 - 1) Color: As selected by the Architect from the manufacturer's standard colors.
- D. Bronze Finishes: Finish designations prefixed by "CDA" conform to the system established by the Copper Development Association for designating finishes.
 - 1. Natural Satin Finish: CDA-M31O6x (Mechanical Finish: Fine satin directional textured; Clear Organic Coating: Manufacturer's standard air-dry clear organic coating as specified below).
 - 2. Statuary Finish: CDA-M31C55O6x (Mechanical Finish: Fine satin directional textured; Chemical Finish: Sulfide conversion coating; Clear Organic Coating: Manufacturer's standard air-dry clear organic coating as specified below).
 - a. Clear Organic Coating: Manufacturer's standard clear coating.

PART 3 - EXECUTION

3.1 CONSTRUCTION WASTE MANAGEMENT

- A. The contractor, subcontractors, and their personnel shall follow the procedures and practices for waste separation, collection and transport as defined in the contractor's "Waste Management Plan" as required by Division 01 Section "Construction Waste Management."

3.2 INSTALLATION

- A. General: Locate sign units and accessories where indicated, using mounting methods of the type described and in compliance with the manufacturer's instructions.

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1. Install signs level, plumb, and at the height indicated, with sign surfaces free from distortion or other defects in appearance.
- B. Dimensional Letters and Numbers: Mount letters and numbers using standard fastening methods recommended by the manufacturer for letter form, type of mounting, wall construction, and condition of exposure indicated. Provide heavy paper template to establish letter spacing and to locate holes for fasteners.
 1. Projected Mounting: Mount letters at the projection distance from the wall surface of 1-1/2 inches.
- C. Cast Metal Plaques: Mount plaques using the standard method recommended by the manufacturer for the type of wall surface indicated.
 1. Concealed Mounting: Mount the plaques by inserting threaded studs into tapped lugs on the back of the plaque. Set in predrilled holes filled with quick-setting cement.
- D. Wall Type Identification Above Ceilings: Install required signage as delineated in Part 2 Above.



3.3 CLEANING AND PROTECTION



- A. After installation, clean soiled sign surfaces according to the manufacturer's instructions. Protect units from damage until acceptance by the Owner.

3.4 DRJTBC LOGO TYPE GUIDELINES

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Delaware River Joint Toll Bridge Commission
General Logotype Guidelines and Color Assignments
Bravo Group, Harrisburg, Pennsylvania


	Pantone	CMYK	RGB	Black Values		Web Safe (approx)	Title Font
	301	100/0/45/18	8/72/135	100		0033CC	Adobe Garamond Semibold
	368	57/0/100/0	110/187/31	55		66CC00	
	130	0/30/100/0	255/179/0	25		FF9933	



Standard  Delaware River Joint Toll Bridge Commission	Standard Black Text  Delaware River Joint Toll Bridge Commission	Standard Black only  Delaware River Joint Toll Bridge Commission
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Equal Weight


**Delaware River
Joint Toll Bridge
Commission**

Horizontal


Delaware River Joint Toll Bridge Commission

Stacked (Full Pantone)  Delaware River Joint Toll Bridge Commission	Stacked (2 Pantone w/black)  Delaware River Joint Toll Bridge Commission	Stacked (overset out of black)  Delaware River Joint Toll Bridge Commission
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Simply stated, if you don't see it here, it should not be attempted. Depending on the use of the logotype or the medium involved, one of the choices shown here will be applicable. The background options shown on the top section can be applied to each of the configurations if necessary.

If you have doubts on the usage of any configuration shown here, contact Bravo Group, attention: Kristin Argento, argento@bravogroup.com, 717.214.2200

Prepared by Jerry King Musser, musser@musser.cc
3 April 2003

END OF SECTION 10 14 00.13

SECTION 12 21 24 MOTORIZED ROLLER SHADE SYSTEM

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 SUMMARY

- A. This section includes the following:
 - 1. Electrically operated roller shades.
 - a. Include local, group and master motor control systems for shade operation with quiet, addressable, encoded motors.
- B. Related Sections include the following:
 - 1. Division 09 Section "Gypsum Board Assemblies
 - 2. Division 09 Section "Acoustical Ceilings
 - 3. Division 26 Sections - Electrical: Electric service for motors, motor controls, internal communication, low voltage wiring and data transfer, and connection to Internet.

1.3 SUBMITTALS

- A. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Styles, material descriptions, dimensions of individual components, profiles, features, finishes and operating instructions.
 - 3. Storage and handling requirements and recommendations.
 - 4. Mounting details and installation methods.
 - 5. Typical wiring diagrams including integration of motor controllers with building management system, audiovisual and lighting control systems as applicable.
- B. Shop Drawings: Plans, elevations, sections, product details, installation details, operational clearances, power and control wiring diagrams, and relationship to adjacent work.
 - 1. Prepare shop drawings on AutoCAD or Microstation format using base sheets provided electronically by the Architect.
 - 2. Prepare control wiring diagrams based on zones, switching and operational requirements provided by the Architect in electronic format.
- C. Window Treatment Schedule: For all roller shades. Use same room designations as indicated on the Drawings and include opening sizes and key to typical mounting details.

- D. Selection Samples: For each finish product specified, one set of shade cloth options and aluminum finish color samples representing manufacturer's full range of available colors and patterns.
- E. Verification Samples: For each finish product specified, one complete set of shade components, unassembled, demonstrating compliance with specified requirements. Shadecloth sample and aluminum finish sample as selected. Mark face of material to indicate interior faces.
- F. Maintenance Data: Methods for maintaining roller shades, precautions regarding cleaning materials and methods, instructions for operating hardware and controls.

1.4 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Obtain roller shades system through one source from a single manufacturer with a minimum of ten years experience and minimum of five projects of similar scope and size in manufacturing products comparable to those specified in this section.
- B. Installer for Roller Shade System - Qualifications: Installer trained and certified by the manufacturer with a minimum of ten years experience in installing products comparable to those specified in this section.
- C. Fire-Test-Response Characteristics: Passes NFPA 701-99 small and large-scale vertical burn. Materials tested shall be identical to products proposed for use.
- D. Electrical Components: NFPA Article 100 listed and labeled by either UL or ETL or other testing agency acceptable to authorities having jurisdiction, marked for intended use, and tested as a system. Individual testing of components will not be acceptable in lieu of system testing.
- E. ShadeCloth Anti-Microbial Characteristics: 'No Growth' per ASTM G 21 results for fungi ATCC9642, ATCC 9644, and ATCC9645.
- F. Environmental Certification: Submit written certification from the manufacturer, including third party evaluation, recycling characteristics, and perpetual use certification as specified below. Initial submittals, which do not include the Environmental Certification, below will be rejected. Materials that are simply 'PVC free' without identifying their inputs shall not qualify as meeting the intent of this specification and shall be rejected.
- G. Third Party Evaluation: Provide documentation stating the shade cloth has undergone third party evaluation for all chemical inputs, down to a scale of 100 parts per million, that have been evaluated for human and environmental safety. Identify any and all inputs, which are known to be carcinogenic, mutagenic, teratogenic, reproductively toxic, or endocrine disrupting. Also identify items that are toxic to aquatic systems, contain heavy metals, or organohalogens. The material shall contain no inputs that are known problems to human or environmental health per the above major criteria, except for an input that is required to meet local fire codes.
- H. Recycling Characteristics: Provide documentation that the shade cloth can, and is part of a closed loop of perpetual use and not be required to be down cycled, incinerated or otherwise thrown away.

Scrap material can be sent back to the mill for reprocessing and recycling into the same quality yarn and woven into new material, without down cycling. Certify that this process is currently underway and will be utilized for this project.

- I. Perpetual Use Certification: Certify that at the end of the useful life of the shade cloth, that the material can be sent back to the manufacturer for recapture as part of a closed loop of perpetual use and that the material can and will be reconstituted into new yarn, for weaving into new shade cloth. Provide information on each shade band indicating that the shade band can be sent back to the manufacturer for this purpose.
- J. Requirements for Roller Shade Installer/Contractor:
 - 1. Roller Shade Hardware, shade fabric, motor, and all related controls shall be furnished and installed as a complete two-way communicating system and assembly.
 - 2. Roller Shade Installer/Contractor shall list all components and systems included in their bid, including but not limited to, the prime manufacturer of the motor control and automated equipment and shall be financially responsible for any change orders and/or back charges required by the BMS, AV, or Lighting Control Systems contractors to interface with the automatic solar tracking system and the motorized roller shade system.
- K. Mock-Up: Provide a mock-up, if Architect requires, of one roller shade assembly for evaluation of mounting, appearance and accessories.
 - 1. Locate mock-up in window designated by Architect.
 - 2. Do not proceed with remaining work until mock-up is accepted by Architect.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver shades in factory-labeled packages, marked with manufacturer and product name, fire-test-response characteristics, and location of installation using same room designations indicated on Drawings and in the Window Treatment Schedule.

1.6 PROJECT CONDITIONS

- A. Environmental Limitations: Install roller shades after finish work including painting is complete and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.
- B. Power and control wiring shall be complete and certified, fully operational with uninterrupted communication on the lines and minimal noise certified by a commissioning agent (by others).
 - 1. 485, ICON, Lonmark and Dry Contract Network: Noise on the line not to exceed shade manufacturer's limits.

1.7 WARRANTY

- A. Motorized Roller Shade Hardware and Shadecloth: Manufacturer's standard non-depreciating twenty-five year limited warranty.
- B. Roller Shade Motors and Motor Control Systems: Manufacturer's standard non-depreciating five-year warranty.
- C. Roller Shade Installation: One year from date of Substantial Completion, not including scaffolding, lifts or other means to reach inaccessible areas, which are deemed owners responsibility.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer for Roller Shade Systems and Controls: MechoShade Systems, Inc.; 42-03 35th Street, Long Island City, NY 11101. Tel: (732)991-1395; Mr. Jerry Feldman. Email: jerryf@mechoshade.com.

2.2 SCHEDULE

- A. Roller Shade Schedule: Refer to the Drawings for locations.
 - 1. **Shade Type WS-1:** Motorized interior independently operated solar and blackout double shades in rooms and spaces shown on Drawings, and related motor control systems. WS-1 type shades shall have capability of being controlled by AV or Lighting System via RS-232, RS-485 or dry contact closures. Include the following as scheduled and as indicated on the Drawings:
 - a. Shade pockets or aluminum facias as required.

2.3 INTELLIGENT ENCODED SHADE MOTOR DRIVE SYSTEM

- A. Shade Motors:
 - 1. Quiet [44 – 46 db] Intelligent Encoded Motor and Control System: Tubular, asynchronous (non-synchronous) motors, with built-in reversible capacitor operating at 110v AC (60hz), (230v/50 hz AC) single phase, temperature Class A, thermally protected, totally enclosed, maintenance free with line voltage power supply equipped with locking disconnect plug assembly furnished with each motor.
 - 2. Conceal motors inside shade roller tube.
 - 3. Maximum current draw for each shade motor of 2.3 amps @ 110 V (.9 amps @230 V AC).
 - 4. Use motors rated at the same nominal speed for all shades in the same room.
- B. Total hanging weight of shade band shall not exceed 80 percent of the rated lifting capacity of the shade motor and tube assembly. Spring assisted lift systems shall not be accepted.

- C. Quiet Intelligent Encoded Motor System (software, two-way communication): Specifications and design are based on the Intelligent Motor Control System / WhisperShade-IQ™ Motor System) as manufactured by MechoShade Systems, Inc. Other systems may be acceptable providing all of the following performance capabilities are provided. Motor control systems not in complete compliance with these performance criteria shall not be accepted as equal systems.
1. Quiet operation of up to 46dBA within 3' feet, open air.
 2. Upper and lower stopping points (operating limits) of shade bands shall be programmed into motors via a hand held removable program module / configurator.
 3. Intermediate stopping positions for shades shall allow for up to three (3) repeatable and precise aligned positions.
 4. Up to 103 available alignment points including 3-user programmable predefined intermediate positions, for a total of 5-defined and aligned positions. All shades on the same switch circuit with the same opening height shall align at each intermediate stopping position.
 5. Two inherent methods of control:
 - a. Cost effective, low voltage, hardwired dry-contact for local switch or 3rd party control operation.
 - b. Expandable to 2-way communication network with IQ/485-NI to support whole building low-voltage control and integration.
 6. Alternate: Mecho-RF™ via Zigby™ wireless mesh, network communication available to reduce low voltage wiring and field labor associated costs.
 7. Uniform or Regular Modes of Operation:
 - a. Uniform mode shall allow for shades to only move to intermediate stop positions.
 - b. Regular mode shall allow for shades to move to both intermediate stop positions, plus any position desired between the upper and lower limits as set by the installer.
 8. Wall Switches:
 - a. IQ-Switch: in 5 or 10 button, single gang, low voltage.
 9. Expandable IQ-485-NI: Available when addressability of each motor or group of motors are required to be on a two-way addressable communication network for whole building or overlapping multi-level control. System Features include:
 - a. 5 @ IQ, Local or Master ports
 - b. 1 @ Photocell input for automated control of shades
 - c. 1 @ IR Eye Input for wireless remote control of shades
 - d. Software Addressable IQ Ports support Multi-Level control with 8 addresses per port
 - e. IQ-485 MS Bus, 485 shall allow up to 65000 addresses controlling up to 500,000 motors per network
 - f. Shall allow for variety of switch and other user interface options including RF and Ethernet (IP)
 - g. Shall support 3rd party control integration via RS232 and Ethernet (IP)
 10. Provide wall switches:
 - a. Shades shall be operated by a 4 and 8 button low voltage standard switches or programmable intelligent switches [IS]. Standard switch shall be wired to a bus interface and the bus interface will be programmed to transmit an address for the local switch.

- b. Intelligent switches may be installed anywhere on the busline. Each IS shall be capable of storing one control level address to be broadcast along the busline.
- c. An address that is transmitted by either a switch or central controller shall be responded to by those motors with the same address in their control table.
- d. IS shall provide for interface with other low voltage input devices via a set of dry contact terminals located on the switch.
- e. Standard switch or IS may control an individual, sub-group or group of motors in accordance with the address in each motor.

2.4 SHADE BAND

- A. Shade Bands: Construction of shade band includes the fabric, the enclosed hem weight, shade roller tube, and the attachment of the shade band to the roller tube. Sewn hems and open hem pockets shall not be acceptable.
 - 1. Concealed Hembar: Shall be continuous extruded aluminum for entire width of shade band and with the following characteristics:
 - a. Hembar shall be heat sealed on all sides.
 - b. Open ends shall not be accepted.
 - 2. Shade band and Shade Roller Attachment:
 - a. Use extruded aluminum shade roller tube of a diameter and wall thickness required to support shade fabric without excessive deflection.
 - b. Provide for positive mechanical attachment of shade band to roller tube; shade band shall be made removable / replaceable with a "snap-on" snap-off" Spline mounting, without having to remove shade roller from shade brackets.
 - c. Mounting Spline shall not require use of adhesives, adhesive tapes, staples, and/or rivets.
 - d. Any method of attaching shade band to roller tube that requires the use of: adhesive, adhesive tapes, staples, and/or rivets, does not meet the performance requirements of this specification and shall not be accepted.

2.5 SHADE FABRICATION

- A. Fabricate shadecloth to hang flat without buckling or distortion. Fabricate with heat-sealed trimmed edges to hang straight without curling or raveling. Fabricate unguided shadecloth to roll true and straight without shifting sideways more than 1/8 inch (3.18 mm) in either direction per 8 feet (2438 mm) of shade height due to warp distortion or weave design. Fabricate hem as follows:
 - 1. Bottom hem weights.
 - 2. Exposed hemtube with guide track capability for sloped shades. Intermediate idler cables as required to minimize deflection of shade material
- B. Provide battens in standard shades as required to assure proper tracking and uniform rolling of the shadebands. Contractor shall be responsible for assuring the width-to-height (W:H) ratios shall not

exceed manufacturer's standards or, in absence of such standards, shall be responsible for establishing appropriate standards to assure proper tracking and rolling of the shade cloth within specified standards. Battens shall be roll-formed stainless steel or tempered steel, as required.

- C. For railroad shadebands, provide seams in railroad multi-width shadebands as required to meet size requirements and in accordance with seam alignment as acceptable to Architect. Seams shall be properly located. Furnish battens in place of plain seams when the width, height, or weight of the shade exceeds manufacturer's standards. In absence of such standards, assure proper use of seams or battens as required to, and assure the proper tracking of the railroad multi-width shadebands.
- D. Provide battens for railroad shades when width-to-height (W:H) ratios meet or exceed manufacturer's standards. In absence of manufacturer's standards, be responsible for proper use and placement of battens to assure proper tracking and roll of shadebands.
- E. Blackout shadebands, when used in side channels, shall have horizontally mounted, roll-formed stainless steel or tempered-steel battens not more than 3 feet (115 mm) on center extending fully into the side channels. Battens shall be concealed in an integrally colored fabric to match the inside and outside colors of the shadeband, in accordance with manufacturer's published standards for spacing and requirements.
 - 1. Battens shall be roll formed of stainless steel or tempered steel and concave to match the contour of the roller tube.

2.6 COMPONENTS

A. Access and Material Requirements:

- 1. Provide shade hardware allowing for the removal of shade roller tube from brackets without removing hardware from opening and without requiring end or center supports to be removed.
- 2. Provide shade hardware that allows for removal and re-mounting of the shade bands without having to remove the shade tube, drive or operating support brackets.
- 3. Use only Delran engineered plastics by DuPont for all plastic components of shade hardware. Styrene based plastics, and /or polyester, or reinforced polyester shall not be accepted.

B. Motorized Shade Hardware and Shade Brackets:

- 1. Provide shade hardware constructed of minimum 1/8-inch (3.18 mm) thick plated steel, or heavier, thicker, as required to support 150 percent of the full weight of each shade. Plastic components without use of steel angle construction do not meet the intent of this specification and shall not be accepted.
- 2. Provide shade hardware system that allows for field adjustment of motor or replacement of any operable hardware component without requiring removal of brackets, regardless of mounting position (inside, or outside mount).
- 3. Provide shade hardware system that allows for operation of multiple shade bands offset by a maximum of 8-45 degrees from the motor axis between shade bands (4-22.5 degrees) on each side of the radial line, by a single shade motor (multi-banded shade, subject to manufacturer's design criteria).

4. All bands within a single motor group shall be aligned within 1/4 inch.

2.7 SHADE CLOTH

- A. Visually Transparent Single-Fabric Shadecloth: MechoShade Systems, Inc., EuroVeil "5300" Series: 0.010 diameter (0.254 mm), Opaque, non-raveling vinyl/polyester yarn, fabric thickness 0.025 inches (0.635 mm).
 1. Dense Basket Weave "5300 series, 5 percent open VLT
 2. Color: Selected from Manufacturers standard colors.
- B. Vinyl Room Darkening Shadecloth (Single-Fabric): MechoShade Systems, Inc., "0700 series", blackout material, washable and colorfast laminated and embossed vinyl coated fabric, 0.012 inches thick (0.30 mm) blackout material and weighing 0.81 lbs. per square yard, with a minimum of 62 threads per square inch in colors selected from manufacturer's available range.
 1. Color: Selected from manufacturer's standard colors.

2.8 ACCESSORIES

- A. Roller Shade Pocket: For recessed mounting in acoustical tile or drywall ceilings as indicated on the Drawings.
 1. Either extruded aluminum and or formed steel shade pocket, sized to accommodate roller shades, with exposed extruded aluminum closure mount, tile support and removable closure panel to provide access to shades.
 2. Provide "Vented Pocket" such that there will be a minimum of four 1 inch (25.4 mm) diameter holes per foot allowing the solar gain to flow above the ceiling line.

PART 3 - EXECUTION

3.1 CONSTRUCTION WASTE MANAGEMENT (LEED)

- A. The contractor, subcontractors, and their personnel shall follow the procedures and practices for waste separation, collection and transport as defined in the contractor's "Waste Management Plan" as required by Division 01 Section "Construction Waste Management."

3.2 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.3 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.4 INSTALLATION

- A. Install roller shades level, plumb, square, and true according to manufacturer's written instructions, and located so shade band is not closer than 2 inches (50 mm) to interior face of glass. Allow proper clearances for window operation hardware.
- B. Adjust and balance roller shades to operate smoothly, easily, safely, and free from binding or malfunction throughout entire operational range.
- C. Clean roller shade surfaces after installation, according to manufacturer's written instructions.
- D. Test electrically operated shades for proper operation. Repair or replace units, which do not perform correctly.
- E. Test automated tracking control system for proper operation. Repair or replace units, which do not perform correctly.
- F. Engage Installer to train Owner's maintenance personnel to adjust, operate and maintain roller shade systems.

3.5 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION 12 21 24

SECTION 12 24 13.2 – ROLLER SHADES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SECTION INCLUDES

- A. Manually operated sunscreen roller shades.

1.3 RELATED SECTIONS

- A. Division 06 Section “Rough Carpentry” for wood blocking and grounds for mounting roller shades and accessories.
- B. Division 09 Section “Gypsum Board Assemblies”, Coordination with gypsum board assemblies for installation of shade pockets, closures and related accessories.
- C. Division 09 Section “Acoustical Panel Ceilings”, Coordination with acoustical ceiling systems for installation of shade pockets, closures and related accessories.

1.4 REFERENCES

- A. ASTM G 21 - Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi.
- B. NFPA 70 - National Electrical Code.
- C. NFPA 701-99 - Fire Tests for Flame-Resistant Textiles and Films.

1.5 SUBMITTALS

- A. Submit under provisions of Division 01 Submittals.
- B. Submit Environmental Certification and Third Party Evaluation per Section 1.5 Qualifications.
- C. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.

2. Styles, material descriptions, dimensions of individual components, profiles, features, finishes and operating instructions.
 3. Storage and handling requirements and recommendations.
 4. Mounting details and installation methods.
- D. Shop Drawings: Plans, elevations, sections, product details, installation details, operational clearances, wiring diagrams and relationship to adjacent work.
1. Prepare shop drawings on Autocad or Microstation format using base sheets provided electronically by the Architect.
- E. Window Treatment Schedule: For all roller shades. Use same room designations as indicated on the Drawings and include opening sizes and key to typical mounting details.
- F. Selection Samples: For each finish product specified, one set of shade cloth options and aluminum finish color samples representing manufacturer's full range of available colors and patterns.
- G. Verification Samples: For each finish product specified, one complete set of shade components, unassembled, demonstrating compliance with specified requirements. Shadecloth sample and aluminum finish sample as selected. Mark face of material to indicate interior faces.
- H. Maintenance Data: Methods for maintaining roller shades, precautions regarding cleaning materials and methods, instructions for operating hardware and controls.

1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Obtain roller shades through one source from a single manufacturer with a minimum of twenty years experience in manufacturing products comparable to those specified in this section.
- B. Installer Qualifications: Installer trained and certified by the manufacturer with a minimum of ten years experience in installing products comparable to those specified in this section.
- C. Fire-Test-Response Characteristics: Passes NFPA 701-99 small and large-scale vertical burn. Materials tested shall be identical to products proposed for use.
- D. Anti-Microbial Characteristics: 'No Growth' per ASTM G 21 results for fungi ATCC9642, ATCC 9644, ATCC9645.
- E. Environmental Certification: Submit written certification from the manufacturer, including third party evaluation, recycling characteristics, and perpetual use certification as specified below. Initial submittals, which do not include the Environmental Certification, below will be rejected. Materials that are simply 'PVC free' without identifying their inputs shall not qualify as meeting the intent of this specification and shall be rejected.
- F. Third Party Evaluation: Provide documentation stating the shade cloth has undergone third party evaluation for all chemical inputs, down to a scale of 100 parts per million, that have been

evaluated for human and environmental safety. Identify any and all inputs, which are known to be carcinogenic, mutagenic, teratogenic, reproductively toxic, or endocrine disrupting. Also identify items that are toxic to aquatic systems, contain heavy metals, or organohalogens. The material shall contain no inputs that are known problems to human or environmental health per the above major criteria, except for an input that is required to meet local fire codes.

- G. Recycling Characteristics: Provide documentation that the shade cloth can and is part of a closed loop of perpetual use and not be required to be down cycled, incinerated or otherwise thrown away. Scrap material can be sent back to the mill for reprocessing and recycling into the same quality yarn and woven into new material, without down cycling. Certify that this process is currently underway and will be utilized for this project.
- H. Perpetual Use Certification: Certify that at the end of the useful life of the shade cloth, that the material can be sent back to the manufacturer for recapture as part of a closed loop of perpetual use and that the material can and will be reconstituted into new yarn, for weaving into new shade cloth. Provide information on each shade band indicating that the shade band can be sent back to the manufacturer for this purpose.
- I. Deliver shades in factory-labeled packages, marked with manufacturer and product name, fire-test-response characteristics, and location of installation using same room designations indicated on Drawings and in the Window Treatment Schedule.

1.7 PROJECT CONDITIONS

- A. Environmental Limitations: Install roller shades after finish work including painting is complete and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.

1.8 WARRANTY

- A. Roller Shade Hardware, Chain and Shadecloth (except EcoVeil™): Manufacturer's standard non-depreciating twenty-five year limited warranty.
 - 1. EcoVeil standard non-depreciating 10-year limited warranty.
- B. Roller Shade Installation: One year from date of Substantial Completion, not including scaffolding, lifts or other means to reach inaccessible areas.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: MechoShade Systems, Inc., basis of design.

- B. Requests for substitutions will be considered in accordance with provisions of Section 01600.
- C. Alternates: The following products and manufacturers may be bid as an alternate product in accordance with Division 01 Alternates. Any pricing for alternate products shall be listed separately from the base bid specified product. Any alternate pricing must include line-by-line compliance or non-compliance with the specifications. If the alternate product is acceptable to the Architect, the specified manufacturer will be given the opportunity to provide an equivalent proposal.

- 1. Mecho 5 Shade System by MechoShade Systems, Inc.

2.2 SCHEDULE

- A. Roller Shade Schedule:
 - 1. WS-2 Manuel Roller solar shade in all office exterior windows per Drawings with all related hardware.
 - a. Shade pockets or aluminum facias as required.

2.3 SHADE CLOTH

- A. WS-2 Thermaveil Dense Basket Weave Series, composed of a technically advanced material woven in a 2x2 basket-wave pattern 1300 series (5%) openness. Content 75% PVC coating & polyester (yarn). NFPA 701-2004; pass.

2.4 SHADE BAND

- A. Shade Bands: Construction of shade band includes the fabric, the hem weight, hem-pocket, shade roller tube, and the attachment of the shade band to the roller tube. Sewn hems and open hem pockets are not acceptable.
 - 1. Hem Pockets and Hem Weights: Fabric hem pocket with RF-welded seams (including welded ends) and concealed hem weights. Hem weights shall be of appropriate size and weight for shade band. Hem weight shall be continuous inside a sealed hem pocket. Hem pocket construction and hem weights shall be similar, for all shades within one room.
 - 2. Shade band and Shade Roller Attachment:
 - a. Use extruded aluminum shade roller tube of a diameter and wall thickness required to support shade fabric without excessive deflection. Roller tubes less than 1.55 inch (39.37 mm) in diameter for manual shades, and less than 2.55 inches (64.77 mm) for motorize shades are not acceptable.
 - b. Provide for positive mechanical engagement with drive / brake mechanism.
 - c. Provide for positive mechanical attachment of shade band to roller tube; shade band shall be made removable / replaceable with a "snap-on" snap-off" spline mounting, without having to remove shade roller from shade brackets.

- d. Mounting spline shall not require use of adhesives, adhesive tapes, staples, and/or rivets.
- e. Any method of attaching shade band to roller tube that requires the use of: adhesive, adhesive tapes, staples, and/or rivets are not acceptable.

3. SHADE FASCIA

- a. Provide shade pockets and/or aluminum facias at all windows to accommodate the specified shade.

2.5 SHADE FABRICATION

- A. Fabricate units to completely fill existing openings from head to sill and jamb-to-jamb, unless specifically indicated otherwise.
- B. Fabricate shadecloth to hang flat without buckling or distortion. Fabricate with heat-sealed trimmed edges to hang straight without curling or raveling. Fabricate unguided shadecloth to roll true and straight without shifting sideways more than 1/8 inch (3.18 mm) in either direction per 8 feet (2438 mm) of shade height due to warp distortion or weave design. Fabricate hem as follows:
 - 1. Concealed hemtube.
- C. Provide battens in standard shades as required to assure proper tracking and uniform rolling of the shadebands. Contractor shall be responsible for assuring the width-to-height (W:H) ratios shall not exceed manufacturer's standards or, in absence of such standards, shall be responsible for establishing appropriate standards to assure proper tracking and rolling of the shadecloth within specified standards. Battens shall be roll-formed stainless steel or tempered steel, as required.
- D. For railroaded shadebands, provide seams in railroaded multi-width shadebands as required to meet size requirements and in accordance with seam alignment as acceptable to Architect. Seams shall be properly located. Furnish battens in place of plain seams when the width, height, or weight of the shade exceeds manufacturer's standards. In absence of such standards, assure proper use of seams or battens as required to, and assure the proper tracking of the railroaded multi-width shadebands.
- E. Provide battens for railroaded shades when width-to-height (W:H) ratios meet or exceed manufacturer's standards. In absence of manufacturer's standards, be responsible for proper use and placement of battens to assure proper tracking and roll of shadebands.

2.6 COMPONENTS

- A. Access and Material Requirements:
 - 1. Provide shade hardware allowing for the removal of shade roller tube from brackets without removing hardware from opening and without requiring end or center supports to be removed.

2. Provide shade hardware that allows for removal and re-mounting of the shade bands without having to remove the shade tube, drive or operating support brackets.
3. Use only Delrin engineered plastics by DuPont for all plastic components of shade hardware. Styrene based plastics, and /or polyester, or reinforced polyester will not be acceptable.

2.7 ACCESSORIES

- A. Fascia (for Mecho 5 - Series):
 1. Continuous removable extruded aluminum fascia that attaches to shade mounting brackets without the use of adhesives, magnetic strips, or exposed fasteners color to be selected by the Architect.
 2. Fascia shall be able to be installed across two or more shade bands in one piece.
 3. Fascia shall fully conceal brackets, shade roller and fabric on the tube.
 4. Provide bracket / fascia end caps where mounting conditions expose outside of roller shade brackets.
 5. Notching of Fascia for manual chain shall not be acceptable.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION

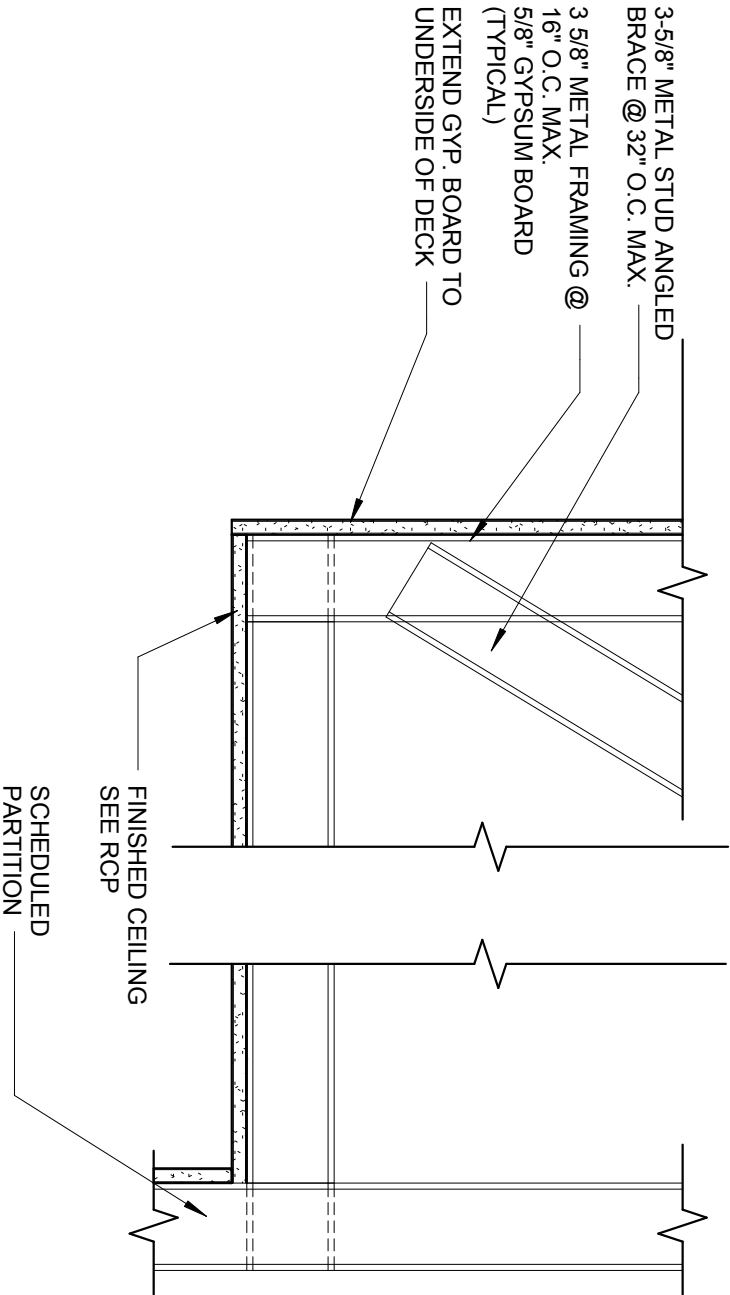
- A. Install roller shades level, plumb, square, and true according to manufacturer's written instructions, and located so shade band is not closer than 2 inches (50 mm) to interior face of glass. Allow proper clearances for window operation hardware.
- B. Adjust and balance roller shades to operate smoothly, easily, safely, and free from binding or malfunction throughout entire operational range.

- C. Clean roller shade surfaces after installation, according to manufacturer's written instructions.
- D. Engage Installer to train Owner's maintenance personnel to adjust, operate and maintain roller shade systems.

3.4 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION 12 24 13.2



1 SOFFIT DETAIL

SCALE: 1 1/2" = 1'-0"

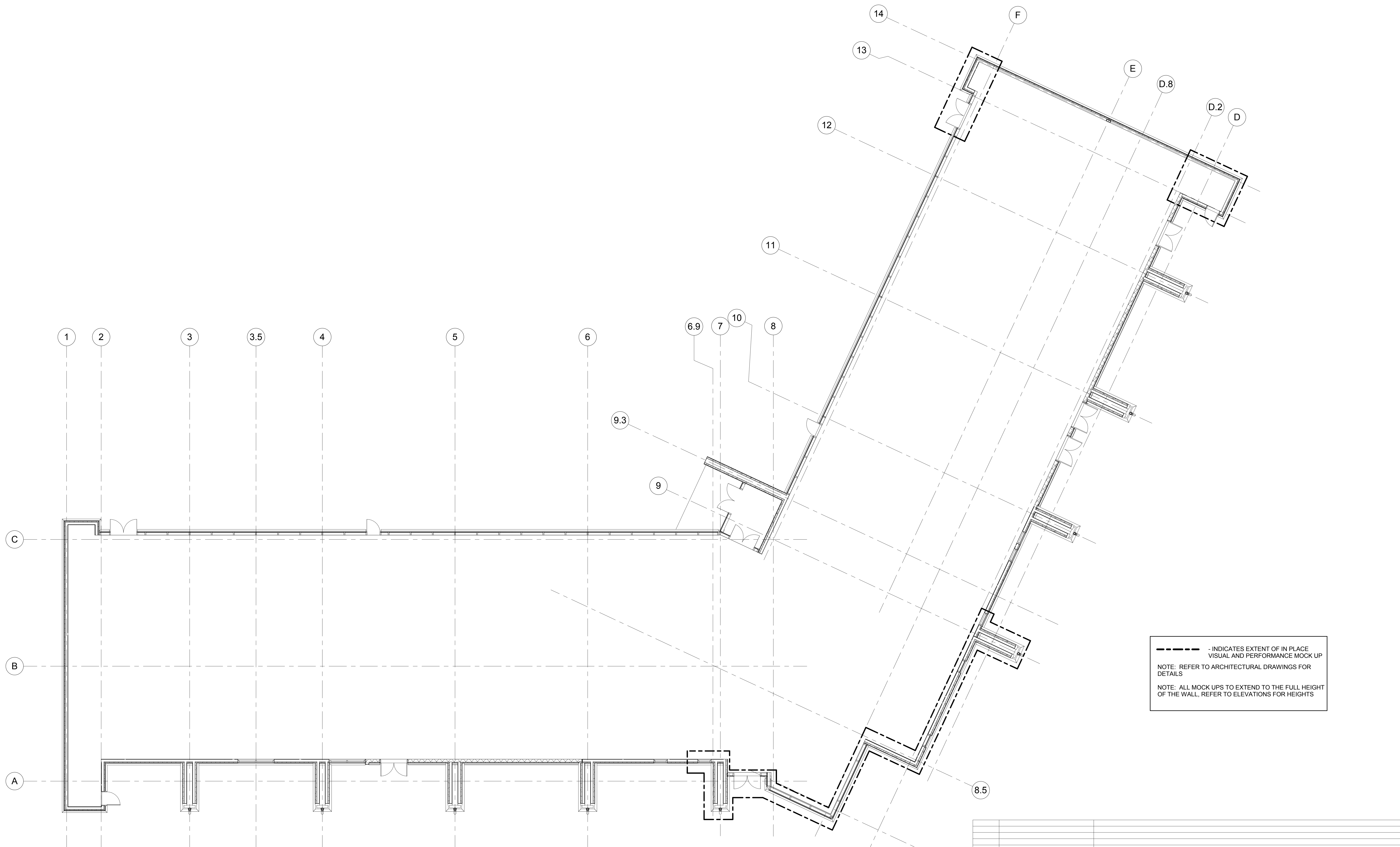


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COMMISSION ADMINISTRATION BUILDING AT SCUDDER FALLS
FOR THE
DELAWARE RIVER JOINT TOLL BRIDGE COMMISSION
CAPITAL PROJECT NO. 1644A
CONTRACT NO. T-707A
WOODSIDE ROAD
LOWER MAKEFIELD TOWNSHIP, BUCKS COUNTY, PA

Drawing Title: SOFFIT DETAIL	
Drawing No.: SK-1	
Reference RFI:	Reference Drawing:
USA Project No.: 2017-012	
Drawn By: RC	Checked By: JP
Date: 02/21/18	Page: 1 of 1



--- INDICATES EXTENT OF IN PLACE
VISUAL AND PERFORMANCE MOCK UP
NOTE: REFER TO ARCHITECTURAL DRAWINGS FOR
DETAILS
NOTE: ALL MOCK UPS TO EXTEND TO THE FULL HEIGHT
OF THE WALL, REFER TO ELEVATIONS FOR HEIGHTS

1 MOCK UP
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