CITY OF ATLANTA

SUITE 1900
55 TRINITY AVENUE, SW
ATLANTA, GA 30303
(404) 330-6204 Fax: (404) 658-7705
Internet Home Page: www.atlantaga.gov

Kasim Reed
Mayor

DEPARTMENT OF PROCUREMENT
Adam L. Smith, Esq., CPPO, CPPB,CPPM, CPP,
CIPC, CISCC, CIGPM
Chief Procurement Officer
asmith@atlantaga.gov

December 10, 2015

Dear Potential Proponents:

Re: FC-8430, Design-Build Northside Drive Pedestrian Bridge

Attached is one (1) copy of **Addendum No. 8,** which is hereby made a part of the above-referenced project.

For additional information, please contact Lloyd A. Richardson, Contract Administrator, at (404) 864-8504, or by email at larichardson@atlantaga.gov.

Sincerely,

Adam L. Smith

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ADDENDUM NO. 8

This Addendum No. 8 forms a part of the Request for Proposals and modifies the original solicitation package and any prior Addenda as noted below and is issued to incorporate the following:

1. **Replacement of Exhibit B, Scope of Services**
   Exhibit B, Scope of Services is hereby removed and replaced with a revised Scope of Services dated 12/10/15 and attached hereto as Attachment No. 1.

2. **Addition of Exhibit B.3, Architectural Cladding Specification**
   Exhibit B.3, Architectural Cladding Specification dated 12/10/15 is hereby included as Attachment No. 2.

3. **Addition of Exhibit B.4, Handrail Specification**
   Exhibit B.4, Handrail Specification dated 12/10/15 is hereby included as Attachment No. 3.

4. **Addition of Exhibit B.5, Lighting Specification**
   Exhibit B.5, Lighting Specification dated 12/10/15 is hereby included as Attachment No. 4.

Addendum No. 8 for FC-8430, Design-Build Northside Drive Pedestrian Bridge is available for pick-up in the Plan Room: City Hall, 55 Trinity Avenue, Suite 1900.

The Proposal due date *HAS NOT* been modified and Proposals are due on Friday, January 15, 2015 and should be time stamped in no later than 2:00 P.M. EST and delivered to the address listed below:

Adam L. Smith, Esq., CPPO, CPPB, CPPM,
CPP, CIPC, CISCC, CIGPM
Chief Procurement Officer
Department of Procurement
55 Trinity Avenue, S. W.
City Hall South, Suite 1900
Atlanta, Georgia 30303

**** All other pertinent information is to remain unchanged****

Acknowledgment of Addendum No. 8

Proponents must sign below and return this form with your proposal to the Department of Procurement, 55 Trinity Avenue, City Hall South, Suite 1900, Atlanta, Georgia 30303, as acknowledgment of receipt of this Addendum.

This is to acknowledge receipt of **Addendum No. 8, FC-8430, Design-Build Northside Drive Pedestrian Bridge** on this the _____ day of _____, 201__.

_____
Legal Company Name of Proponent

_____
Signature of Authorized Representative

_____
Printed Name

_____
Title

_____
Date

Attachment No. 1

Revised Exhibit B,

Scope of Work

Scope of Work

FC-8430, Design-Build Service of Northside Drive Pedestrian Bridge

LLOYD A. RICHARDSON

Contents

I. GENERAL DESCRIPTION

A. Project Location

The proposed Project is located in the City of Atlanta, Fulton County, Georgia. The Project is on Northside Drive near the intersection with Carter Street NW.

B. Design-Build Concept

The Contractor and a design consultant (or design consultant team) shall work together to design and build the Project. The design consultant shall either be acting as a subconsultant to the Contractor or a joint-venture member with whom this agreement has been executed. In this document (Scope of Work), the words "design consultant" or "design consultant team" shall refer to the consultant firm or consultant team acting as a subcontractor or joint-venture team member to the Contractor.

The words "Engineer" (with a capital "E") shall refer to those personnel of the City which are or are acting in the capacity of an engineer for the City. When the word "engineer" is used it shall refer to those persons acting on behalf of the Contractor. The City will have oversight responsibilities only, which include performing official reviews and granting acceptance of the design work.

Proposals on this project shall reflect designing and constructing the project as shown in the Scope and Costing Plans. No exceptions shall be assumed by the Contractor. However, alternative proposals on portions of the work will be entertained once the project is awarded. Alternative proposals shall not conflict with the overall completion date of the project or intermediate completion dates unless otherwise approved by the City.

The Contractor shall use those entities prequalified in related disciplines (design, traffic analysis, geotechnical, etc.) as presented in their presented Statement of Qualifications. Revisions to the design and data-gathering elements of the team and/or the proposed assignments reflected in the Statement of Qualifications shall be approved by the Engineer. Approval of any replacements in the team shall occur prior to the letting of the project. All proposed changes to the team shall be received in writing prior to letting.

Additional disciplines needed to meet the requirements of this project not identified in the Statement of Qualifications shall meet GDOT prequalification as required and any applicable standards, policies or guidelines of the local, state or federal agencies or utility owners.

Any revisions to the team and/or the proposed assignments reflected in the Statement of Qualifications after award of the contract shall be approved by the City. The Contractor shall send all requests to the City's project manager for review and further handling for approval.

Where specifications differ, this Scope of Work, shall take precedence unless otherwise revised through the amendment process. Prescriptive provisions found in the Specifications shall be followed for this project.

The work covered under this Specification includes the furnishing of all materials, labor, tools, equipment, and other incidental items for the designing, detailing, and construction of the Project contained in the Project Scope. The Contractor shall make all the improvements for this Project within the right of way and easement limits.

Information related to "existing conditions", as reflected in the Costing Plans, is for information only. The Contractor shall be aware that existing conditions found in the Costing Plans may have

changed since the field survey work and associated design efforts were completed. The Costing Plans, along with the specifications, shall attempt to highlight areas of known changes in the existing conditions. These areas may or may not include all actual areas where existing conditions differ from those that currently exist in the field. The Contractor shall be responsible to verify all existing conditions. No claims will be considered due to decisions/assumptions made by the Contractor based on "existing conditions" reflected in the Costing Plans.

C. Project Scope

The Contractor will provide the design, permitting, utility relocation and utility coordination, construction, warranty phase service, and any other related services necessary to build the Project. A Special Encroachment Permit will be required from the Georgia Department of Transportation.

The Project consists of the design and construction of a pedestrian bridge over Northside Drive to provide pedestrians safe and unimpeded access to the Mercedes-Benz Stadium. The Project also includes the design of the ramps, retaining walls, lighting, storm drainage, landscaping and other features associated with the bridge and its construction.

The west end of the pedestrian pathway will begin near the intersection of Rhodes Street NW and Postell Street NW with ramps leading to the pedestrian bridge. The bridge will cross Northside Drive and ramps will tie the east end of the pedestrian pathway to the plaza adjacent to the Mercedes-Benz Stadium. The ramps will be supported on retaining walls.

Design and construct the Project in general conformance with the Costing Plans Package, including, but not limited to, architectural elements, bridge structure configuration, retaining wall locations and types, and landscape elements.

All borrow and waste sites for the Project shall be environmentally approved prior to construction activities. All common fill or excess material disposed outside the Project Right of Way shall be placed in either a permitted solid waste facility, a permitted inert waste landfill, or in an engineered fill.

1. Bridge, Ramps, Retaining Walls and other Structures

Design and construct all Bridges and other structures in accordance with AASHTO LRFD Bridge Design Specifications, Seventh Edition, 2014 with 2015 Interim Revisions and AASHTO LRFD Guide Specifications for the Design of Pedestrian Bridges, 2nd Edition with 2015 Interim Revisions.

The usable width of the bridge and approach ramps will be 15 feet. The bridge will provide a minimum of 17'-6" of clearance over Northside Drive to the lowest element of the bridge structure.

Provide a positive barrier along the bridge and ramp edges to protect pedestrian traffic, and provide an architectural fence along the bridge over Northside Drive to protect traffic, in accordance with guidelines established by Georgia DOT.

Should a closed box superstructure be used, the design consultant shall provide access for maintenance inspections. Access locations shall be located so that lane closures on Northside Drive are not necessary for inspection access.

Two plan reviews will be required by the City, preliminary plan submittal and final construction plan submittal. The bridge design and plans will be subject to review and

approval by both the City and the Georgia Department of Transportation. The portion of the Project located on MARTA property will be subject to review and approval of MARTA.

Locate bridge columns outside the clear zone for Northside Drive. In addition, the bridge column on the west side of Northside Drive shall be located a minimum of 25.5' off of the existing right-of-way line to allow for the potential for the roadway to be widened in the future.

The ramp slopes shall be in accordance with the Americans with Disabilities Act (ADA) requirements.

Conduct geotechnical investigations including Bridge Foundation Investigations and Wall Foundation Investigations.

2. Field Survey

The design-build team should perform all field survey necessary to support the design and construction of the project.

3. Roadway / Civil / Site

Two plan reviews will be required by the City, preliminary plan submittal and final construction plan submittal. The plans will be subject to review and approval by both the City and the Georgia Department of Transportation. The portion of the Project located on MARTA property will be subject to review and approval of MARTA.

Provide Portable Changeable Message Signs, traffic control signage and devices as necessary for temporary traffic control. Submit a traffic control plan for approval by the City and the Georgia Department of Transportation.

Erosion Control Plans will be reviewed and approved by the Georgia Environmental Protection Division (EPD) if the Project's disturbed area is greater than one (1) acre. Contractor is responsible for permit. The City will submit the Notice of Intent (NOI) package to EPD with plans provided by the Contractor.

4. Lighting

Design and provide all materials, labor, and incidentals for the permanent installation of lighting to illuminate the pedestrian areas, both on and off the bridge, and to enhance the architectural elements of the bridge.

The lighting shall meet the requirements of the Guideline for Security Lighting for People, Property and Public Spaces [G-1-03]. All luminaires shall be LED and use a Light Loss Factor (LLF) of 0.8 to compute maintained luminance values. All luminaries and electrical equipment shall be vandal proof.

Aesthetic lighting shall be designed so that it does not impair vehicular or pedestrian traffic.

Do not place any non-lighting related cables or conductors in the lighting conduit, ground boxes or junction boxes.

All lighting placed on the bridge should be located to minimize the need for lane closures on Northside Drive during maintenance.

Coordinate power service for all lights with the appropriate power company.

Two plan reviews will be required by the City, Preliminary (photometric) submittal and final construction plan submittal. The lighting plans will be subject to review and approval by both the City and the Georgia Department of Transportation. The portion of the Project located on MARTA property will be subject to review and approval of MARTA. Plans shall be prepared in accordance with Chapter 14 of the GDOT Design Policy Manual.

5. Landscaping

Design and provide all materials, labor, and incidentals for the permanent installation of landscape material to enhance the architectural elements of the bridge and ramps. The design cost shall be included in the price proposal for Design Complete. The landscape allowance shall be used to furnish, install, maintain, and warranty the landscape material per the approved landscape plans and GDOT Standard Specification Section 702.

Two plan reviews will be required by the City, preliminary submittal and final construction plan submittal. The lighting plans will be subject to review and approval by both the City and the Georgia Department of Transportation. The portion of the Project located on MARTA property will be subject to review and approval of MARTA.

6. Utilities

The actual utility relocation will be the responsibility of the Contractor and should be considered when submitting the proposal. The City will assist in utility coordination during design. Utility coordination will be required and the Contractor must develop a plan to maintain, protect, relocate, or reinstall any existing utilities. Any damage to existing utilities will be repaired at the Contractor's expense.

All known utility facilities are shown schematically on the plans, and are not necessarily accurate in location as to plan or elevation. Utilities such as service lines or unknown facilities not shown on the plans will not relieve the Contractor of their responsibility under this requirement. Following are a list of the Utility Owners as determined from Design Ticket Number 09145-260-005

<u>Gas</u>
Atlanta Gas Light Company (AGL)
G.I.S. Support Services, GIS & Data Assets-South
Mr. Martin Marek, Records Coordinator
10 Peachtree Place
Atlanta, GA 30309
Tel. No.: 404-584-4338
Note: Utility Owner was contacted and verified that there are facilities throughout.

<u>Power</u>
Georgia Power Company (GPC) Distribution
Mr. John Wisehart
829 Jefferson Street
Atlanta, GA 30318
Tel. No.: 404-938-0292
Note: Utility Owner was contacted and verified that there are facilities throughout.

<u>Telecommunications</u>

AT&T (ATT)
Mr. Jeremy Erwin, OSP Engineer
675 Peachtree Road
Atlanta, GA 30308
Tel. No.: 404-493-2616
Note: Utility Owner was contacted; however, the number has been disconnected. United Consulting designated two ATT cables at the Project Site. Mr. Jeremy Erwin has been our point of contact for previous projects in the City of Atlanta.

Comcast (CC)
Mr. Christopher Bates
1038 West Peachtree Street
Atlanta, GA 30309
Tel. No.: 404-449-0547
Note: Utility Owner responded that they did not maintain any underground facilities in the vicinity of the Project Site according to their GA811 Design Ticket Response. United Consulting did not encounter any Cable TV facilities at the Project Site.

Verizon Business (formerly MCI/Worldcom)
Note: Utility Owner did not respond to GA811 Design Ticket Request.

Zayo Fiber Solutions
Todd Swafford, Construction Manager
1175 Peachtree Street
100 Colony Square, Suite 1920
Tel. No.: 678-666-2482
Note: Utility Owner was not listed in the GA 811 Ticket Request; however, they have a proposed fiber line along the west ROW of Northside Drive crossing to the Falcons Stadium at Carter Street.

<u>Water/Sewer</u>
City of Atlanta, Department of Watershed Management
Mr. Steve Scarlett
651 14th Street
Atlanta, GA 30318
Tel. No.: 404-546-3264
Note: Utility Owner responded that they did not maintain any underground facilities in the vicinity of the Project Site according to their GA811 Design Ticket Response. Several water mains were designated at the Project Site. Mr. Steve Scarlett has been our point of contact for previous projects in the City of Atlanta.

7. MARTA Parking Lot

MARTA owns an existing parking lot on the west side of Northside Drive, east of the Vine City Station that will be impacted by the Project. During construction, the Contractor must provide an equal number parking spaces as the existing lot for use by MARTA within 100 yards of the Vine City Station.

The Contractor shall reconstruct a permanent parking lot and/or parking spaces of an equal number as the existing lot. The design plan for this is subject to the review and approval of MARTA.

Two plan reviews will be required by the City, preliminary submittal and final construction plan submittal. The plans will be subject to review and approval by both the City and the MARTA. Plans shall be prepared in accordance with Chapter 14, Parking and Terminals, of the Traffic Engineering Handbook.

Pavement design for the parking lot shall consist of:

165 LB/SY, Recycled Asph. Conc. 12.5 MM Superpave
220 LB/SY, Recycled Asph. Conc. 19 MM Superpave
6" Graded Aggregate Base

8. Traffic Control

Lane closures on Northside Drive shall be coordinated with and approved by the Georgia Department of Transportation.

Lane and/or road closures on Carter Street, Rhodes Street, and Postell Street shall be coordinated with and approved by the City of Atlanta Public Works Department.

Pedestrian traffic must be accommodated along Northside Drive and pedestrian access must be maintained to the MARTA Vine City Station. The Contractor may elect to provide pedestrian detour routes as needed to maintain the required access.

D. Right of Way

The City will acquire Right of Way and Easements required for the Project.

MARTA will require approval of final construction plans for all elements of the Project to be constructed on their property prior to approval of the required easement on their property. The Contractor shall plan accordingly to maintain the project schedule.

E. Stakeholder Coordination

1. MARTA

Several aspects of the proposed project must be coordinated with MARTA:

a. The minimum clear distance from the edge of the existing underground MARTA tunnel to the edge of deep foundation elements (piles, caissons, etc.) of the proposed pedestrian bridge and/or ramps is 5 feet.
b. The maximum load that can be placed on top of the tunnel, temporarily or permanently, is 600 pounds per square foot. If loads in excess of 600 pounds per square foot are proposed, submit plans and calculations to MARTA for review and approval. The calculations must include structural design checks of the existing tunnel for the proposed loads.
c. Crack surveys of the MARTA tunnel before and after construction are required.
d. If any pile driving is proposed, vibration monitoring of MARTA facilities will be required.
e. Any construction activities or equipment proposed above or within 10 feet either side of the MARTA tunnel must be approved by MARTA prior to beginning construction.

2. Mercedes-Benz Stadium

Construction activities must be coordinated with construction activities related to the Mercedes-Benz Stadium project, currently underway. The Contractor is responsible for establishing regular coordination meetings and communication protocols with the Contractor for the Stadium project.

The pedestrian bridge and ramp design must also be coordinated with the site plans and schedule for the Stadium project and the closing / demolition plans and schedule for the existing Georgia Dome.

II. PLANS

A. General

The Costing Plans Package prepared on behalf of the City includes multiple resources. The City, in making this information available to Contractors, assumes no responsibility for its accuracy. No claim will be considered if the Contractor relies on this data in its proposalding or in its construction operations and finds that it is inaccurate.

In addition, the Contractor shall be aware "existing conditions" found in the Costing Plans Package may have changed since the field survey work and associated design efforts were completed. Verify all existing conditions. No claims will be considered due to decisions/assumptions made by the Contractor based on "existing conditions" reflected in the Costing Plans Package.

III. DESIGN

A. General

1. Measuring Units

Ensure the Project is designed in **English** units of measurement.

2. Design Software

Design using MicroStation V8i and lnRoads. Existing Microstation V8i files from the costing plans will be made available to the Contractor, for information only.

3. Design Scope of Services

Prepare Plans in accordance with the Georgia Department of Transportation's requirements as to design criteria, procedures, and format as contained in this Special Provision and in accordance with, but not limited to the reference materials listed in Section III.B.1.b.

Current Department design manuals and guidelines may be found on GDOT's website.

Ensure Project designers consider all elements of the design, including but not limited to roadway geometry, drainage requirements, traffic control during construction, erosion control, structural design, utility conflicts, signing and marking, and future maintenance requirements.

4. Design Reviews

Prepare the design under the direct supervision of licensed design professionals. A Professional Engineer licensed to practice engineering in the State of Georgia on the design team must seal the final plans. The seal on the drawings represents certification the design

meets all applicable codes and is of good engineering practice and standards. Check and certify the design.

The City will establish dates and times for cursory reviews and will comment on design work, but will not require hold points on the design, review periods, or comment responses, except as noted otherwise. If at any time the City determines the design work is not in conformance with the City's standards, details, specifications, or good engineering practice, the City reserves the right to stop work, at the Contractor's expense until a resolution of the issue(s) has occurred.

Submit construction documents (plans and specifications) shown in Table 4-1and Table 4-2 to the City for review and acceptance. Acceptance, disapprovals, or comments made by the City will be provided in writing to the Contractor within the appropriate timeframes shown in Table 4-1and Table 4-2.

No construction is to begin on any phase of the Work prior to the City authorizing the various component(s) of the plans as Released for Construction. Other items shall be submitted to the City by the Contractor, if requested. After the City has accepted the plans and has authorized them as Released for Construction, requests for any subsequent plan/design changes and necessary documentation which supports the reasoning behind the change request must be submitted to the City. The City must approve the requested change with written notice prior to its implementation as a plan revision and subsequent construction activity.

Facilitate monthly progress meetings at a venue and time determined convenient to the City. The general purpose of these meetings are to update the City staff on the status of design, current activities, issues, activities that the City is currently performing, and other related matters that impact scope, schedule and budget. Provide the Engineer an agenda of items one week in advance of the meeting in order the Engineer may arrange for the various City reviewer(s) to attend, if necessary. Other attendees include the Contractor, design consultant, the City's Project Engineer and Project Manager. Provide a call in number and conferencing capabilities to allow others to participate at the City's discretion. Publish meeting notes of those discussions within two weeks of their occurrence and send to all attendees and others indicated by the City. Ensure the first of these monthly meetings occur at the conclusion of the Post Award Meeting.

ABBREVIATIONS FOR TABLE 4·1

AR	As Required
ANC	As necessary for submittal compliance with RFP package
FS	Full-size paper - meets GDOT Plan Presentation Guide
HC	Hard Copy—8 ½ x 11 unless otherwise noted
HS	Half-size paper - meets GDOT Plan Presentation Guide
MS	MicroStation File - Electronic
NTP	Notice to Proceed
PAS	Per Approved Schedule
PDF	Adobe PDF – One complete file and individual plan sheet files meets GDOT Electronic Plans Process

TABLE 4-1: REVIEWS

Submittal Description	Format	Quantity	Delivery Date	Review Period	Review Type	Comment
Basis of Design	HC, PDF	3, 1	NTP(1)+7	14	Accepted by Engineer	The Basis of Design narrative will constitute the Contractor's ownership of or modifications to the documents provided for information only", as well as a discussion of how this information will be utilized to develop the final design. Ensure submission of any proposed changes in the design including the justification for the changes. If the project is proposed to be designed and constructed in phases then the Basis of Design must include the plan for project phasing. Each phase of the project must include at a minimum Preliminary, Final, backcheck, and Released for Construction Plans.
Schedule of Values	HC,PDF	3, 1	NTP(1)+14	14	Accepted by Engineer	
Critical Path Method (CPM) Schedule	HC, PDF	3, 1	NTP(1)+14 for Baseline	14	Accepted by Engineer	

QC/QA Plan	HC, PDF	3, 1	NTP(1)+14	21	Accepted by Engineer	
Construction Plans (Non Structural) • Preliminary Plans • Final Plans • Backcheck	FS, HS, PDF	• 1, 6, 1 • 1, 6, 1 • 0, 1, 1	PAS	• 30 • 30 • 7	Accepted by Engineer	GDOT and MARTA to perform concurrent review. Submittal shall include features/plan sheets as described in GDOT's PPG and other resources. Include a cover letter with all phased plan submittals indicating which phase the submittals is for and whether the plans are preliminary, final, or RFC Plan submittals that do not meet the requirements of GDOT Guidelines and Manuals will be rejected.
Released for Construction Plans	FS, HS, PDF	3, 6, 1	PAS	NA	NA	City will then issue Released for Construction authorization when the backcheck plans are accepted or notify the Contractor that Final Construction Plan comments were not adequately addressed.

Notice of Intent (NOI) Package **(required only if disturbed area is greater than 1 acre)** • Completed and signed NOI • Progress schedule chart • Final/Signed ESPCP	• HG, PDF • HG, PDF • HS, PDF	• 1, 1 • 1, 1 • 3, 1	PAS	NA	EPD letter stating plans do not contain deficiencies.	The City will submit final/signed ESPCP to EPD for review prior to submittal of the NOI package to EPD. The Contractor will address any plan changes required by EPD. For phased NOI and ESPCP, submit complete plan sets for each phase. Each phase should be independent and should not identify erosion and sediment control measures from other phases.
Preliminary Structures • Bridge Plans • Retaining Wall Layouts	FS,HS,PDF	2, 3, 1	PAS	30	Accepted by Engineer	
100% Structures • Bridge Plans • Wall Plans	FS,HS, PDF	2, 3, 1	PAS	30 or 75	Accepted by Engineer	GDOT and MARTA to perform concurrent review. 30 day review will apply to individual bridge or wall submittals. 75 day review will apply to submittals of multiple structures.

Geotechnical Reports	HC, PDF	2, 1	PAS	30	Accepted by Engineer	
Worksite Utility Control Supervisor Qualifications	HG, PDF	3, 1	PAS	14	Accepted by Engineer	City must accept prior to Contractor performing land disturbing activities.
Worksite Erosion Control Supervisor Qualifications	HC, PDF	3, 1	PAS	14	Accepted by Engineer	City must accept prior to Contractor performing land disturbance activities.
Worksite Traffic Control Supervisor Qualifications	HC, PDF	3, 1	PAS	14	Accepted by Engineer	City must accept prior to Contractor performing land disturbance activities.
Construction Traffic Control Plan	FS,HS, PDF	3, 3, 1	PAS	21	See Specification 150	
Shop Drawings	FS,HS, PDF	2, 3, 1	PAS	30	Accepted by Engineer	
Plan Revisions (after issue of NTP)	FS, HS, PDF	2, 3, 1	Per occurrence	14	Accepted by Engineer	Contractor include clear and concise description of revision along with documentation justifying reason for proposed revision.

All days are "Calendar Days," as defined in section 101 of the GDOT Standard Specifications.

Transmit all submittals to the Engineer. The Engineer will provide submittals to the applicable Reviewer and/or other applicable entities unless otherwise noted or discussed with the Contractor. **Hand-deliver submittals.** In the event concurrent submittals are required, the "receipt" date shall be the date the last recipient receives the submittal and shall be the contractual begin date for the review. Unless a different review time is specified elsewhere in the contract, a period of **thirty (30) calendar days** from receipt to release of the submittal by the City shall be allowed for the City's review. Engineer's (City's) acceptance as to completeness is required for all reviews. All Contractors' schedules shall reflect the review times contained within the specifications and contract. Engineer's receipt of submittals will mark the beginning of the review period. Provide up to date half-size sets of plans with the most current design and construction plans at any time during the Project when requested by the Engineer. Errors and omissions are the responsibility of the Contractor to correct and shall be at the Contractor's expense.

Do not submit more than 10 submittals within a twenty-one (21) calendar day period.

All submittals shall include a cover letter describing the submittal, review period and the due date for any City response.

All submittals shall include the Contractor's QC/QA certification statement (in addition to the design consultant's QC/QA certification statement for all design related submittals). **The City will reject any submittal if the QC/QA certification statement is not included.**

Any submittal received by the Engineer after 12 PM (noon) will be considered as being received the following business day.

5. Field Surveys

Verify all provided survey data and update to current Electronic Data Guidelines (lnRoads). Provide terrain and drainage cross sections, pavement elevations, and drainage structure information for this Project. Provide all survey data noted in English units. All supplemental field survey information is to be completed in accordance to the GDOT *Automated Survey Manual.*

6. Quality Control/Quality Assurance for Design

The City, except where noted otherwise, will have oversight responsibilities only and will not perform detailed reviews and approvals of design work. The City will not take any approval or formal review actions on design issues except as noted herein or for deviations from the intended scope of the Project.

Employ only persons duly registered in Georgia in the appropriate category in responsible charge of supervision and design of the work; and further, employ only qualified, State of Georgia registered land surveyors in responsible charge of any survey work.

Should a member of the design consultant team need to be replaced, the City must approve of the change prior to the Project letting. Failure to secure approval of the replacements prior to letting may result in the disqualification of the Contractor's proposal.

Endorse all final reports, contract plans and survey data. These endorsements shall be made by a person(s) duly registered in the appropriate category by the Georgia State Board of Registration for Professional Engineers and Land Surveyors, being in the full employ of the Contractor and responsible for the work prescribed in the contract.

Authorized representatives of the City may review and inspect the Project activities and data collected at all times. All reports, drawings, studies, specifications, estimates, maps and computations prepared by or for the Contractor shall be available to authorized representatives of the City for inspection and review. The City's review comments are to be incorporated into the plans by the Contractor or as agreed. These changes shall not result in an increase in cost.

Before the start of the contracted design effort, develop and acquire the City's approval for a QC/QA Plan to ensure all design documents are prepared using good, prudent and generally accepted design and engineering practice.

Ensure the QC/QA Plan includes the following, which shall be considered minimum requirements:

a. Quality control and quality assurance procedures for design documents specify measures to be taken by the Contractor to (A) ensure appropriate quality standards are specified and included in the design documents and to control deviations from such standards, being understood and agreed no deviations from such standards be made unless they have been previously accepted by the City, and (B) for the selection of suitable materials and elements of the Work included in the Project.
b. Quality control and quality assurance procedures for preparing and checking all plans, calculations, drawings and other items submitted to ensure they are independently checked and back-checked in accordance with generally accepted engineering

practices, by experienced engineers. Identify the originator, checker and back-checker on the cover of all submittals. Ensure the Plans, reports and other documents are stamped, signed and dated by the responsible Georgia Registered Engineer where required under the contract documents, generally accepted engineering practices or by applicable laws. The Contractor will submit a certified statement to ensure all reviews have been made.

c. Procedures for coordinating work performed by different persons within the same area, in an adjacent area or in related tasks shall ensure that conflicts, omissions or misalignments do not occur between drawings or between the drawing and specifications. These procedures allow for the coordination of the review, approval, release, distribution and revision of documents involving such persons.
d. All the persons proposed to be responsible for Quality Control and Quality Assurance procedures are to be listed as follows: Discipline, Name, Qualifications, Duties, Responsibilities and Authorities.
e. Designate all key personnel performing Quality Control and Quality Assurance functions as such and will not be assigned to perform conflicting duties.

All plan related documents produced during the contract period are to be maintained by the Contractor for the duration of the Contract organized, indexed and delivered to the City (1) upon Final Acceptance of the Project or (2) even if incomplete, within seven (7) days of receipt of request from the City. These documents include, but not limited to, the following items: design criteria, reports and notes, calculations, drawings, schematics, supporting materials, statement regarding accomplishment of reviews and others.

7. Released for Construction

Upon the Contractor's satisfactory completion of the items listed in I.B, and upon written authorization from the City the plans are Released for Construction, stamp each plan sheet with "Released for Construction" and include the authorization date. The Released for Construction plans are the official plans used for construction of the Project.

8. As-Built Plans

Upon completion of the Project construction, provide a complete As-Built set of plans to the City in the following formats:

a. Two (2) CD-ROMs or DVDs containing:
    1. all electronic design files, electronic calculations, etc.
    2. .pdf of each plan sheet – one sheet per file
    3. .pdf containing the entire plan set
b. One (1) hard copy of the drainage calculations
c. Two (2) full-size set of bond prints
d. Two (2) half-size set of bond prints
e. Provide a revised estimated summary of quantities and detailed estimate in the final As-Built plans

Ensure all production and delivery of materials needed for City review. Both a member of the design team, who is a Professional Engineer, and a member who is a Registered Surveyor, licensed to practice engineering in the State of Georgia shall seal the As-Built plans.

9. Ownership of Documents

The Contractor agrees all reports, drawings, studies, specifications, survey notes, estimates, maps, computations, computer files and other data, prepared by or for the Project under the terms of this Agreement and delivered to the City become and remain the property of the City. The City will have the right to use this information without restriction or limitation and without compensation to the Contractor other than provided for in this agreement.

Any use of these documents by the City on any Project other than this one will be done without warranty by the Contractor/Design Consultant Team.

10. Publication and Publicity

Articles, papers, bulletins, reports or other materials reporting the plans, progress, analyses or results and findings of the work conducted under this Agreement shall not be presented publicly or published without prior approval in writing from the City. All releases of information, findings and recommendations shall include a disclaimer provision to be included in all published reports on the cover and title page in the following form:

"The opinions, findings and conclusions in the publication are those of the author(s) and not necessarily those of the City of Atlanta."

Any information concerning the Project, including conduct, results or data gathered or processed, released by the Contractor without prior approval from the City will constitute grounds for termination without indemnity to the Contractor. Information released by the City or by the Contractor with prior written approval is to be regarded as public information and no longer subject to the restrictions of this Agreement. Information required to be released by the City under the Georgia Open Records Act, Section 50-18-70, et seq., O.C.G.A., the restrictions and penalties mentioned set forth herein shall not apply. Any request for information directed to the Contractor, pursuant to the Georgia Open Records Act, is to be redirected to the City for further action.

11. Patent Rights

If patentable discoveries or inventions result from work described herein, all rights accruing from such discoveries or inventions are the sole property of the Contractor. However, the Contractor agrees to and does hereby grant to the City, an irrevocable, non-exclusive, non-transferable and royalty-free license to practice each invention in the manufacture, use and disposition according to law of any article or material and in use of any method that may be developed as a part of the work under this Agreement.

B. Roadway / Site

1. Preparation of Construction Plans

a. General Criteria: Ensure and use the most current design criteria at the time of advertisement, as determined by the City,

b. Design Specifications and Guidelines: Design for roadways and intersections shall be in accordance with the current edition of AASHTO Design Specifications; AASHTO Roadside Design Guide; and the Georgia Department of Transportation Standard Specifications for Construction of Roads and Bridges, 2013 Edition. Plan and specifications shall conform to the requirements of the Highway Capacity Manual.

Design for work to conform to AASHTO design standards for the appropriate classification and speed design.

Utilize the following references **(current at time of advertisement)** as a minimum in the development of this Project in addition to the references listed above.

1. Electronic Data Guidelines (EDG)
2. Plan Presentation Guide (PPG)
3. GDOT Design Policy Manual
4. Manual on Uniform Traffic Control Devices (MUTCD) by the U.S. Department of Transportation, Federal Highway Administration "FHWA"
5. Manual on Drainage Design for Highways by the Georgia Department of Transportation
6. AASHTO Geometric Design of Highway and Streets
7. AASHTO Roadside Design Manual
8. Municipal Separate Storm Sewer System (MS4) Permit, GAR041000
9. Guidelines for Processing Design Data in InRoads Design Guidelines
10. GDOT Construction Standards and Details
11. Pay Item Index by the GDOT State Transportation Office Engineer
12. Utility Accommodation Policy and Standards Manual
13. GDOT Signing and Marking Design Guidelines
14. GDOT Traffic Signal Design Guidelines
15. GDOT Driveway and Encroachment Manual
16. GDOT Bridge and Structural Design Manual
17. 2009 AASHTO Standard Specifications for Structural Support for Highway Signs, Luminaires and Traffic Signals Other manuals of guidance which are standard procedures of the City, (signal design, signing and markings, etc.).

The above list is not intended to be all-inclusive. Any current editions written in metric units ensure "soft converted" to U.S. Standards Units. Any rounding shall be to the dimension that shall increase safety.

c. Storm Drainage: Storm drainage within the project limits shall be designed in accordance with the GDOT Manual on Drainage Design for Highways, the City of Atlanta Stormwater Guidelines, and Georgia Stormwater Management Manual (Blue Book). Green Infrastructure is encouraged where possible to minimize the amount of post-construction runoff.

A drainage system shall be designed for the bridge and approach ramps so that concentrated flow spread width does not impede on a 10-foot wide clear walkway width. Sheet flow depth shall not exceed ¼ inch within this 10-foot wide clear walkway width. A 10-year storm event shall be used for the drainage system design.

d. Erosion and Sediment Control Sheets: No land disturbing activities until the Control of Soil Erosion and Sedimentation Plan has been accepted by the Engineer; and if disturbed area exceed 1 acres, the NOI has been successfully submitted to EPD by the City and EPD has issued a letter to the City indicating the plan "does meet" current NPDES requirements; and the required waiting period of 14 days is observed.

Prepare the Erosion Sedimentation and Pollution Control Plans (ESPCP) in accordance with current City practice, and in accordance with the requirements set forth in the NPDES General Permit No. GAR1000002 [August 2008]. NPDES General Permit Guidance may be found at: http://www.dot.state.qa.us/doingbusiness/PoliciesManuals/roads/Pages/DesignPolicies.aspx.

In addition, design the plans in accordance with the current version of Georgia Soil and Water Conservation Commission's Manual for Erosion and Sediment Control in Georgia (Green Book).

Erosion and Sediment Control Plans detail the erosion control devices to be used. These devices include, but are not limited to, sediment traps, floating silt retention barriers, check dams, silt fence (types A, B & C), bailed straw ditch checks, brush barriers and slope drains. Additional plan sheets are required for each stage of construction. Additional plan sheets are also required to illustrate phased installation of erosion measures. All required sediment and erosion control items, including but not limited to installation and maintenance, shall be paid for under CONSTRUCTION COMPLETE.

As contained within the City's standard ESPCP General Notes, remove all references to the following statement: "The Erosion Sedimentation and Pollution Control Plan (ESPCP) is provided by the City."

C. Bridges and Structures

1. Design Specifications and Guidelines

a. Design bridges in accordance with the AASHTO LRFD Bridge Design Specifications, Seventh Edition, 2014.
b. Design retaining walls in accordance with the AASHTO LRFD Bridge Design Specifications, Seventh Edition, 2014
c. Use MicroStation to prepare plans.

2. Foundation Investigations

The Contractor shall perform LRFD bridge and wall foundation investigations for all proposed walls and bridges to be constructed on this Project. The investigation and reporting shall be prepared in accordance with the following:

a. General:

1. Perform field and laboratory testing and analysis, and prepare a report with foundation recommendations for the bridges and walls. Work is to be performed by qualified and experienced firms.
2. Perform work in accordance with AASHTO LRFD Bridge Design Specifications, Seventh Edition, 2014. Comply with all applicable Federal and State requirements.

b. Field Investigation:
   1. Drill a minimum of one boring at each bent line and at each wall. Drill additional borings as necessary. Perform the following, as applicable:
      a. Notify property owners prior to accessing their properties.
      b. Obtain locations and clearance for all utilities within the area of the borings.
      c. Provide traffic control and lane closures in accordance with the City's Specifications.
      d. Clearing and preparation of the boring site.
      e. Obtaining and transporting water to the site.
      f. Foundation drilling and sampling of soil and rock.
      g. Obtaining accurate survey elevations.
      h. Site cleanup, erosion control, and restoration.
   2. Fill portions of all drill holes with drill cuttings after completion of drilling that are not subject to excavation for construction. Top off all drill holes through pavements with cold mix asphalt (unless subject to excavation) to the same depth as the existing pavement. Remove all drill cuttings, muddy water, slurry, and other debris deposited on pavements, paved shoulders, and other travel ways immediately when the areas shall be subject to traffic after the completion of drilling. Calculate elevations to an accuracy of one tenth (0.1) of a foot.
   3. Do not provide copies of boring logs, plans, or field test reports to property owners or other parties without the permission of the City.

c. Laboratory Testing:
   1. Perform laboratory testing on samples obtained from the field in accordance with applicable methods of AASHTO or ASTM test procedures. Use a laboratory that possesses current AASHTO certification.
   2. Furnish laboratory results as part of the Final Report.

d. Final Analysis and Report:
   1. Perform a geotechnical analysis for this Project and prepare geotechnical recommendations in the form of a final report to the City for review, prior to foundation construction. Base the final report on the information collected from the field investigation, the plans, specifications, results of laboratory tests, and the analysis of all other available information. Prepare and submit the Bridge and Wall Foundation Investigation Reports in a manner that is appropriate for the AASHTO LRFD Bridge Design Specifications, Seventh Edition, 2014 methodology.
   2. Stamp and sign the final reports by a Professional Engineer registered in the State of Georgia. Provide two copies of the final report to the City.
   3. Prepare the reports in conformance with good engineering practice. Incorporate the following recommendations and additional recommendations as applicable
      a. Foundation types including factored and service design loads.
      b. Spread Footing elevations.
      c. Pile minimum and estimated tip elevations and Driving Resistance

d. Driving Analysis.
e. Drilled caisson tip elevations.
f. Foundation installations in rock.
g. Embankment construction, settlement, and slope angles.
h. Treatment of groundwater conditions.
i. Treatment of poor soil conditions.
j. Construction effects on adjacent utility structures and remedies for any potential problems.
k. Locations of Utilities for the purpose of identifying conflicts with retaining walls.
l. Bottom of wall elevations.
m. Soil parameters for the design of proposed walls.

4. In the Final Report, include (as applicable) copies of boring logs, field notes, laboratory and field test results or summaries, photographs, special provisions, details and drawings, and other related information. Correct final reports with errors and omissions, as determined by the City. Resubmit the corrected report at no additional cost to the City.
5. Acceptance of the work by the City will not relieve the Contractor of the responsibility for subsequent correction of errors or for the costs associated with work caused by negligent errors or omissions from work performed by the Contractor.

3. Construction Plans Submittals and Reviews

Refer to Schedule of Deliverables (Table 4-1) for the format, quantity, review type and review period for each submittal scheduled.

a. Preliminary Plans: Preliminary Bridge Layout (if required, see Part C Section 4.a.3) and Preliminary Wall Plans
   1. Preliminary plans must be approved by the City prior to starting final design of the bridge.
b. Final Construction Plans: Submit complete bridge plans and complete wall plans. Plans will be reviewed and approved by the City.
c. Shop Drawings.
d. Approved for Construction Drawings: Issued once the City reviews are completed and all corrections have be made and approved.
e. Submit one (1) hardcopy and one (1) electronic (.PDF) of the final design calculations along with the Final Bridge and Wall Construction Plans.

4. Preliminary Bridge and Wall Plans

a. Preliminary Bridge Plans
   1. The Contractor shall verify all dimensions and elevations in the field prior to preparing plans, ordering materials or building forms.
   2. Design the substructure end bents and intermediate bents with concrete columns, caps, or walls with footings. Tops of footings shall be a minimum of two feet below existing grade and possible roadway grades.
   3. Provide a minimum vertical clearance of 17'-6" over all travel lanes and shoulders unless otherwise shown in the Costing Plans. Contractor shall field

survey the existing clearance over all travel lanes and submit the survey results to the City along with the Preliminary Layout.

4. Provide a typical section which indicates the following information:
    a. The center to center spacing of girders.
    b. Overhang or distance from outside edge of slab to center of exterior girder: This distance (overhang) shall meet AASHTO requirements. Overhangs shall be a minimum width of one-half top beam flange plus 6 inches.
    c. Cross slope of the deck.
    d. Deck thickness between girders and deck thickness at the centerline of girder measured from the top surface of deck to top of the flange.
    e. Barrier location, height and width.
    f. Gutter to gutter and out-to-out dimensions.
    g. Location of the profile grade.
5. In addition to the requirements above, provide the following:
    a. A plan view of the proposed structure indicating beginning and end bridge stations, construction centerline, profile grade line, bent skew angles, joint locations, station and skew of roadways crossing under the structure, width of roadways beneath the structure, gutter to gutter width of the bridge, out to out width of the bridge, distance from gutter to outside edge of deck, taper control stations, location of point of minimum vertical clearance, and location and magnitude of the horizontal clearances from edge of travel way beneath the structure to the face of intermediate bents.
    b. Stations and elevations along the centerline of construction at the intersection of the centerline of construction and the back face paving rest and centerline of bents. Provide profile grade elevations corresponding to the above stations.
    c. An elevation view of the proposed structure indicating the span length, location of fixed and expansion joints, profile of roadways beneath structures, vertical clearance from bottom of structure to roadway beneath, proposed bent locations, and existing ground profile.
    d. All horizontal and vertical curve data for the bridge and the roadway beneath the bridge.
    e. The location and elevation of the nearest bench mark. The nearest benchmark shall be within 300 feet of the bridge.
    f. A brief description of the proposed structure indicating span lengths, beam type(s), type of end bents, and type of intermediate bents, as applicable.
    g. Any drawing and/or narrative description of the construction scheme necessary to indicate how the bridge is to be built, including traffic handling sketches and temporary barrier locations.

b. Preliminary Wall Plans

Prepare Preliminary Wall Plans in accordance with the following guidelines:

1. The wall types are as follows:
    a. MSE (Mechanically Stabilized Earth)
    b. Cast in Place concrete
    c. Alternate wall types are permissible as approved by the City.
2. An elevation view or wall envelope of the proposed wall drawn to a horizontal and vertical scale of 1:10 and indicating the following data:

a. Beginning and end wall stations.
b. Elevations on top of wall parapet, coping, or traffic barrier at the beginning and end of wall, at profile break points, and at least every 50 feet along the wall.
c. Bottom of wall (top of footing) elevation necessary to maintain minimum berm requirements.
d. Original ground profile.
e. Proposed ground profile.
f. Stations and offsets to ends of walls and locations where wall changes direction
g. Stations and elevations along top and bottom of wall

3. All walls shall have a smooth plain concrete finish. All walls shall have a graffiti proof coating.
4. Roadway cross-sections in the vicinity of the wall that will indicate the existing and final slope behind the wall.
5. Typical sections for MSE walls shall include:
   a. Limit of special backfill (1'-0" beyond end of reinforcement)
   b. Reinforcement
   c. Facing
   d. Coping, parapet or barrier
   e. Back-slope and fore-slope
   f. Leveling Pad
   g. Bridge abutment
   h. Additional select backfill behind bridge abutment
   i. Concrete ditches
6. Project Plan and Profile sheets which indicate the following:
   a. Limits of right-of-way.
   b. Superelevation data.
   c. Horizontal and vertical alignment data.
   d. Horizontal offsets to face of retaining wall.
   e. Location and type of overhead signs which may be near retaining walls.
   f. Location of roadway lighting which may be near or attached to the retaining wall.
   g. Location and size of any drainage structures which will affect the retaining walls.
7. Any construction sequence requirements that will affect the construction of the walls and which will have to be accounted for in the preparation of retaining wall plans.

5. Final Bridge and Wall Plans

a. Additional Bridge Design Criteria
   1. Use ASTM A 615 Grade 60 reinforcement.
   2. Use Class D Concrete with a minimum 28-day concrete strength of 4,000 psi for superstructure concrete.
   3. Provide a slab designed in accordance with AASHTO LRFD Traditional Method Article 9.7.3 proportioned to provide 2.75 inches of concrete cover over the top

mat of reinforcing and 1 inch cover to the bottom mat of reinforcement (minimum deck thickness is 8.25 inches). Empirical design (LRFD 9.7.2) will not be allowed.

4. Use Class AA Concrete, with a minimum 28-day concrete strength of 3,500 psi, for substructure caps, columns, caissons, and footings.
5. If metal deck forms are used, include 16 pounds per square foot in the non--composite design loads.
6. Design and detail 1'-0" minimum wide edge beams where the deck is to be discontinuous.
7. Place slab transverse and longitudinal reinforcing steel 2 inches from the edge of the slab and place the top mat of edge beam bars below the top mat of the deck steel. Do not use truss shaped bars in the edge beam. Extend stirrups from the edge beam into the slab.
8. Use protective platforms in accordance with Section 510 of the GDOT Specifications. Maintain a minimum of 17 foot vertical clearance over all operational travel lanes and shoulders unless otherwise shown in the costing plans.
9. Use steel H-piles (for pile end bents), pile footings (steel H piles), spread footings or drilled caissons in the foundation design and construction. Selected foundation types shall be utilized in accordance with the approved Bridge Foundation Investigation (BFI). Previously approved reports provided by the City are for informational purposes only, since they were not designed in accordance with LRFD.
    a. For spread footings – provide allowable bearing and embedment in accordance with the approved BFI.
    b. For drilled caissons – provide allowable bearing and embedment in accordance with the approved BFI.
    c. For pile foundations - provide allowable bearing and embedment in accordance with the approved BFI.
10. All columns that have less than 30'-0" horizontal clearance from the edge of roadway shall be designed for the vehicular collision forces in accordance with LRFD 3.6.5. Protection by barrier or embankment will not negate this requirement.
11. For prestressed beams, meet the following criteria:
    a. Design prestressed concrete beams with conventional strength concrete up to a maximum 28 day compressive strength of 9,000 psi.
    b. Design prestressed concrete beams with high performance concrete (HPC) for a maximum 56 day compressive strength over 9,000 psi up to 10,000 psi. The maximum design compressive strengths shall not exceed 10,000 psi.
    c. Design prestressed beams as simple spans.
    d. In calculation of prestressed girder section properties, do not utilize transformed area of bonded reinforcement.
    e. Use neoprene bearing pads at each end of the prestressed beams. Design the pads to account for transverse and longitudinal expansion and contraction.
    f. Use anchorage beds set for horizontal and vertical strand patterns of two inches center to center. Detail all straight and draped strands utilizing two inch spacing.
    g. Provide the minimum amount of reinforcing steel at beam ends as required by AASHTO LRFD specifications, Article 5.10.10.

h. Detail beam lengths to 1/16 inch increments.
i. Provide prestressed beam sheets with all the applicable details.
j. Require the use of 10 inch wide concrete diaphragms.
k. Do not include elastic gains in calculating prestress losses.

12. For steel beams, meet the following criteria:
    a. Design steel superstructure using ASTM A709, GR 50 for main members and ASTM A709, GR 36 for other members. Grade 70 high performance steel (HPS) may be used with approval from the City prior to proceeding with design. The use of unpainted “weathering steel" is not permitted.
    b. For continuous steel beams, ignore reinforcement in the slab for negative moment strength contribution. Design steel beams as non-composite in negative moment region.
    c. Provide camber diagrams for continuous steel beams. The camber ordinate includes dead load deflection due to the beam, slab, coping, railing sidewalk, and media, and includes the vertical curve ordinate. Obtain deflections due to composite loadings from an analysis of the superstructure as fully composite in the negative moment areas. Provide deflections due to the slab and coping at each step in the pour sequence, as well as a total due to the pour sequence.
    d. Maintain a constant web thickness along the length of the bridge. The use of transverse stiffeners for web depths of 72" or less is discouraged. The use of longitudinal stiffeners is not permitted.
    e. All stiffeners shall be welded to the web. Bearing stiffeners shall be tight fit at the top and bottom. Gusset plates for diaphragms shall be welded to the top and bottom flanges in addition to the web.
    f. The maximum allowed flange plate thickness is 2". With prior approval from the City, thicknesses of up to 4" may be used.
    g. Shear connectors shall be 3/4" diameter end welded studs. Shear connectors shall penetrate at least 2" above the bottom of the slab, but the top of the stud shall be 3" below the top of the deck slab. Shear studs shall not be located on tension flanges.
    h. The beam details sheets should have the symbol (CVN) indicating which components require Charpy V-notch testing, and the following note shall be placed on the plans:

       "All components marked with (CVN) are main load carrying members subject to tensile stress and shall meet the Charpy V-notch test requirements as specified by Section 851 of the Georgia DOT Specifications.

    i. All field splices shall be welded with full-penetration butt welds. The use of bolted spliced is discouraged. Field splices shall be located at, or near dead- load points of contraflexure. All splices shall include stiffeners adjacent to the splice point, located 12" from the splice. Studs shall be located no nearer than 12" from the splice.
    j. Diaphragms of Cross Frames shall be welded before pouring the deck for bridges with skews between 75 and 90 degrees.

k. Groove welding for gusset plate connections should be avoided because of necessary back-up plates and special welding procedures. Instead, use a bent plate for the diaphragm or cross-frame attachment.
l. All backing strips shall be made continuous for the length of a weld. Any joints in backing strips shall be full penetration butt welds.
m. No intersecting welds are permitted. Based metal in the area of intersecting welds shall be coped 4 times the thickness of the web or 2 inches.
n. Electro-slag weldments are not permitted.
o. All new structural steel shall be painted with System VII.
p. Use disc bearings at each end of the steel beams. Design the bearings to account for transverse and longitudinal expansion and contraction.
q. Detail beam lengths to 1/16 inch increments.

b. Additional Wall Design Criteria
1. MSE Walls are to be constructed in accordance with Section 627 of the GDOT Specifications.
2. Concrete Retaining Walls are to be constructed in accordance with Section 500 of the GDOT Specifications.

c. Bridge and Wall Construction Plans

The Contractor shall arrange a meeting with the City to specifically discuss how the plans will be prepared prior to beginning plan preparation on the Project.

1. Prepare construction plans with all dimensions, notes and details necessary to construct the structure. As a minimum, include the following sheets:
   a. Plan and Elevation sheets that include:
      1. Plan view of the bridge,
      2. Elevation view of the bridge,
      3. Beginning and ending stations,
      4. North arrow,
      5. Location affixed and expansion bearings,
      6. Location of the minimum vertical clearance of critical travel lanes,
   b. General Notes sheets that include:
      1. Notes for the following; Specifications, Reinforcing Steel, Chamfer, Welding, Salvage Material, and others as necessary,
      2. Bridge Design Data.
      3. A summary of Bridge Consists Of.
      4. A summary of Quantities (for information only)
      5. A list of Proposed Utilities
   c. Deck Plan sheets,
   d. Deck Cross-Section sheets,
   e. Bearing assembly sheets,
   f. Beam sheets,
   g. Miscellaneous sheets,
   h. Framing Plan and Substructure Layout sheets,
   i. End Bent/Abutment sheets,
   j. Intermediate Bent sheets,

k. As Built Foundation sheets, and
l. Bar Reinforcing Detail sheets.

Additional sheets may be necessary to show the details required for construction. Provide additional sheets at no additional cost when deemed necessary by the City.

2. Provide the following details:
   a. On deck section sheets, provide one full-width section across the structure which indicates, at least, all the horizontal dimensions necessary to construct the bridge.
   b. Show as many sections as are necessary to detail the placement of reinforcing in the deck and barrier. Also, draw deck sections indicating edge beams, back walls, diaphragms, and end walls. Cut sections radially across the structure.
   c. Detail deck plan sheets with all longitudinal and transverse dimensions necessary to construct the bridge, including edge beam width, expansion joint widths, back wall or end wall locations, location of construction and expansion joints, and any other items that are necessary to construct the structure.
   d. All views, sections and details are to be drawn to scale. Draw deck cross-sections and intermediate bent sheets "Looking Ahead". If the end bents or abutments are drawn separately, draw bent/abutment one "Looking Back", and draw the other end bent/abutment "Looking Ahead".
   e. All details on the Plans shall be clear and legible. The City will have the final say as to how a Project is to be drawn and will have the right to require additional drawings at no increase in Contract cost. Fully check the plans for completeness of content and accuracy before submittal to the City for review.
3. Maintain and protect all utilities in the area of the bridge during construction. Consider the installation of utilities in staging the construction of the bridge.

6. Shop Drawings

Provide shop drawings in accordance with GDOT Specifications. The Contractor's engineer shall review and stamp approved all shop drawings as the Engineer of Record. After being stamped by the Contractor's design engineer, the City will review the shop drawings for conformance with the plans and specifications. Allow the City a **30 day review period** upon receipt of the shop drawings for each submittal. Within 30 days of receiving City approval of the plans, submit "stamped" Project plans to utilities.

7. Construction Engineering Activities

During the construction phase, ensure the structural design consultant reviews and approves all structural drawings and calculations including, but not limited to redesigns, shoring, erection drawings, falsework, and survey/geometry control. Ensure submittals requiring the City's review include documentation of the structural design consultant's review and approval.

D. Architectural Elements

1. Architectural Cladding (Exhibit B.3)

The bridge and ramp sections shall be cladded with a custom fabricated standoff structure and metal panels as demonstrated in the plans. Options for the metal panels include:

a. Product: Custom Aluminum Decorative Metal Panels
   Manufacturer: Arktura
b. Product: ALPOLIC Composite Metal Panels
   Manufacturer: Mitsubishi Plastics Composites America, Inc.
c. OR EQUAL

Options for the custom fabricated standoff structure include:

a. Product: Custom Steel Standoff Structure
   Manufacturer: Arktura
b. OR EQUAL

2. Handrail (Exhibit B.4)

A handrail shall be provided along both sides of the bridge and ramps as shown on the plans and required for pedestrian safety and ADA requirements. Options for the handrail include:

a. Product: ENCIA Stainless Steel Systems
   Manufacturer: Efficient-Tec International, LLC
b. OR EQUAL

E. Lighting (Exhibit B.5)

The lighting shall meet the requirements of the Guideline for Security Lighting for People, Property and Public Spaces [G-1-03]. All luminaires shall be LED and use a Light Loss Factor (LLF) of 0.8 to compute maintained luminance values. Options for the overhead safety lighting along the covered potion of the bridge include:

a. Product: 4441P
   Manufacturer: BEGA
b. OR EQUAL

Options for the overhead safety site shall be consistent with the lighting being used for the new Falcons Stadium site. Contractor shall submit proposed lighting to the Engineer for review and approval.

Options for the flex LED light along the bottom of the bridge include:

a. Product: VarioLED Flex PHOBOS IP67
   Manufacturer: LED Linear
b. OR EQUAL

F. Landscaping

The Project includes a landscape allowance. The Contractor shall have a landscape plan prepared by a design consultant who is a Landscape Architect licensed in the state of Georgia. The cost for the landscape plan and obtaining the necessary approvals shall be included in the proposal price for Design Complete. The landscape allowance shall be used to furnish, install, maintain, and warranty the landscape material per the approved landscape plans and GDOT Standard Specification Section 702.

G. Utilities

1. Coordination Responsibilities

The Contractor shall have the responsibility of coordinating the Project construction with all utilities that may be affected. Coordinating responsibilities shall include but not be limited to the following:

a. The Contractor shall initiate early coordination with all Utility Owners located within the Project limits.
b. The Contractor shall be responsible for the cost of Utility Coordination. Coordination shall include, but shall not be limited to, contacting each Utility Owner to advise of the proposed Project; supplemental verification of the locations of existing utility facilities; and determining requirements for the relocation or adjustment of facilities.
c. The Contractor shall endeavor to design the Project to avoid conflicts with utilities when feasible, and minimize impacts where conflicts cannot be avoided. The Contractor shall submit to the City a SUE Utility Impact Analysis (UIA) in the City's prescribed format as specified in TABLE 4-2: REVIEWS.

ABBREVIATIONS FOR TABLE 4-2

AR	As Required
FS	Full-size paper - meets GDOT Plan Presentation Guide
HC	Hard Copy – 8 *Y*, x 11 unless otherwise noted
HS	Half-size paper - meets GDOT Plan Presentation Guide
MS	MicroStation File - Electronic
NTP	Notice to Proceed
PAS	Per Approved Schedule
PDF	Adobe PDF – One complete file and individual plan sheet files meets GDOT Electronic Plans Process

TABLE 4-2: REVIEWS

Utility Submittal Description	Format	Quantity	Delivery Date•	Review Period*	Review Type	Comment
Supplemental verification of Overhead/Subsurface Utility Engineering (SUE) Investigations - QL-B • Electronic SUE files, mapping files and proposed design files • Certified half-size PDF	AR, MS, PDF	1	NTP + 30 Calendar Days	NA	Submitted to the Engineer for information	Only certify SUE work actually completed
SUE Utility Impact Analysis . "UIA" • Certified PDF of conflict matrix • PDF showing the conflict locations on the utility plans	AR, PDF	1	NTP + 45 Calendar Days	NA	Submitted to the Engineer for information	Only certify SUE work actually completed

Overhead/Subsurface Utility Engineering (SUE) Investigations - QL-A • Electronic SUE files, mapping files (if not already provided) and updated proposed design files • PDF of the certified test hole forms PDF of the certified SUE deliverables checklist	AR,MS, PDF	1	UIA + 30 Calendar Days	NA	Submitted to the Engineer for information	Only certify SUE work actually completed
Overhead/Subsurface Utilities Engineering (SUE) Information to Utilities for Review	FS,HS, PDF, MS	Plans: 2 for each Utility Owner +3 for City and MicroStation files	NTP + 5 Calendar Days	5 days for City + 30 days for each Utility Owner	Reviewed by Engineer SUE Verification by Utility Owner	

Relocated Utility Plans (Existing and Proposed))	FS,HS,PDF, MS	Plans: 2 for each Utility Owner +3 for Dept. and MicroStation files	Concurrently w/ Accepted SUE Verification by Utility Owner	5 days for City + 90 days for each Utility Owner	Reviewed by Engineer Proposed Relocation by Utility Owner	
Preliminary Utility Status Report (Notice to Proceed with Permit)	HG, PDF	3, 1	Concurrently w/ Accepted Relocated Utility Plans	10- days + 5 days	Reviewed by Engineer	
Utility Plans /Agreements (Utility NTP Letter)	HS,PDF, MS	Agreements: 3 hard copy, 1 electronic pdf Plans: 2 for each Utility Owner + 3 for City and MicroStation files		Agreements: 30 days for City + 60 days for each Utility Owner Plans: 30 days	Relocation Plans and Agreements reviewed by Engineer. Agreements also reviewed by Utility Owner.	

Utility As-Built Plans	FS, HS, PDF, MS	1, 3, 1, 1	Concurrently w/Accepted Construction As-Built Plans	Plans: 30 days City 30 days for Utility Owners	Reviewed and accepted by the Engineer. All utility relocations included in the contract must have the as-builts reviewed and approved by the utility owners.	Provide respective Utility Owners whose work was included in the contract a copy of their as-builts for review and acceptance.

*All days are "Calendar Days.", as defined in section 101, GDOT Standard Specifications

All Submittals shall be made directly to the Engineer. The Engineer shall provide submittals to the applicable GDOT Office Reviewer and/or other applicable entities as directed by the Engineer, unless otherwise noted or discussed with the Contractor. As accepted by the Engineer the Contractor may provide submittals to applicable offices for a concurrent review. Hand-deliver submittals, track and regularly update the Engineer on review status. In the event concurrent submittals are required, the "receipt" date shall be the date the last recipient receives the submittal and shall be the contractual begin date for the review. Unless a different review time is specified elsewhere in the contract, a period of thirty (30) calendar days from receipt to release of the submittal by the City shall be allowed for the City's review. Engineer's (City's) acceptance as to completeness is required for all reviews. All Contractors' schedules shall reflect the review times contained within the specifications and contract. Engineer's receipt of submittals will mark the beginning of the review period. All submittals by the Contractor shall be required to contain a statement certifying that no unapproved design-exceptions have been incorporated in the submittal. Errors and omissions are the responsibility of the Contractor to correct and shall be at the Contractor's expense.

Any submittal received by the Engineer after 12 PM (noon) shall be considered as being received the following business day.

Monthly utility coordination meetings will be held at a location as determined by the Contractor and the Engineer. Ensure participation from all affected utility owners.

d. The Contractor shall coordinate and conduct a preliminary review meeting with the Utility Owners to assess and explain the impact of the Project. The City's Project Manager shall be included in this meeting. The Contractor shall record the minutes for this meeting and distribute to all attendees for their review and concurrence.
e. The Contractor shall research the property interests of each Utility Owner's facilities. If there is a dispute over property interests with a Utility Owner, the Contractor shall be responsible for resolving the dispute. The Contractor shall meet with the City to present the property interests information gathered. This information must be sufficient for the City to certify the extent of the Utility Owner's property interests. The City shall have final approval authority as to the Contractor's determination of whether the Utility Owner has property interests.
f. The Contractor shall prepare and submit to the City a Preliminary Utility Status Report Concurrently with Accepted Relocated Utility Plans within 180 days after Notice to Proceed has been given for the contract (see TABLE 4-2: REVIEWS). This report shall include a listing of all Utility Owners located within the Project limits and a recommendation as to the extent of each Utility Owner's property interests. This report shall include copies of easements, plans, or other supporting documentation that substantiates any property interests of the Utility Owners. The report shall also include a preliminary assessment of the impact to each Utility Owner.

g. The Contractor shall provide Utility Owners with design plans and Preliminary Utility Plans as soon as the plans have reached a level of completeness adequate to allow them to fully understand the Project impacts. The Utility Owner will use the Contractor's design plan for preparing Utility Relocation Plans, cost estimates, and respective Utility Adjustment Schedules (UAS). If a party other than the Utility Owner prepares Utility Relocation Plans, there shall be a concurrence box on the plans where the Utility Owner signs and accepts the Utility Relocation Plans as shown.
h. The Contractor shall be responsible for determining if the City has agreed to pay for in-kind relocations. It is the Contractor's responsibility to assemble the necessary information including any Utility Agreements in a final and complete form and in such a manner that the City may approve the submittals with minimal review. Failure to submit such required Utility Agreements prior to the beginning of construction shall fully transfer the utility owner's obligations to the Contractor. Deductions to reimburse the City for such obligations may be made from any current partial payment of the Lump Sum price.
i. The Contractor shall review all Utility Relocation Plans and Utility Agreements, Utility Estimates and certificates of eligibility to ensure that relocations comply with GDOT's "Utility Accommodation Policy and Standards Manual". The Contractor shall review the utility plans to identify that there are no conflicts with the proposed improvements, and ensure that there are no conflicts between each of the Utility Owner's relocation plans. The Contractor shall show all existing and proposed utilities on the cross sections and drainage profiles.
j. The Contractor shall compile, and submit to the City all SUE deliverables, Utility Relocation Plans, SUE Utility Impact Analysis, Utility Adjustment Schedules, Utility

Agreements, Utility Estimates (if estimates are provided by the utility owners), and Letters of "no conflict," as set forth above for the Project. The Contractor is expected to assemble the information included in the Utility Agreements and Utility Relocation Plans in a final and complete form and in such a manner that the City may accept the submittals with minimal review. The Contractor shall meet with the City for a SUE Kick-Off meeting (concurrent with the first utility coordination meeting) within 15 days of the Notice to Proceed to gain a full understanding of what is required with each submittal. The Utility Owners shall not begin their Utility Relocation work until authorized in writing by the City.

k. Each Utility Agreement and Utility Relocation Plan submitted shall be accompanied by a certification from the Contractor stating that the proposed relocation will not conflict with the proposed Project and will not conflict with another Utility Owner's relocation plan.

l. The Contractor shall be responsible for coordinating the work of its subcontractors and the various Utility Owners. The resolution of any conflicts between Utilities and the construction of the Project shall be the responsibility of the Contractor. No additional compensation will be allowed for any delays, inconveniences, or damage sustained by the Contractor or its subcontractors due to interference from utilities or the operation of relocating utilities.

m. During the construction of the Project, the Contractor shall designate, prior to beginning any work, a Worksite Utility Coordination Supervisor (WUCS) who shall be responsible for initiating and conducting utility coordination meetings and accurately recording and reporting the progress of utility relocations and adjustment work. Also, the WUCS shall prepare an Emergency Response Plan for the purpose of planning, training, and communicating among the agencies responding to the emergency. The WUCS shall be the primary point of contact between all of the Utility companies, the Contractor and the City. The WUCS shall recommend the rate of reoccurrence for utility coordination meetings and the Engineer will have the final decision on the regularity for utility coordination meetings. In no case will utility coordination meetings occur less than monthly until controlling items of utility relocations and adjustment milestones are completed. The WUCS shall contact each of the utility companies for the purpose of obtaining information including, but not limited to, a Utility Adjustment Schedule for the controlling items of utility relocations and adjustments. The WUCS shall notify the appropriate utility company and/or utility subcontractors and the City of the status of controlling items of relocations and adjustment milestones as they are completed. The WUCS shall furnish the Engineer, for approval, a Progress Schedule Chart, prior to beginning Construction unless otherwise specified, which includes the utility companies controlling items of work and other information in accordance with Section 108.03 or elsewhere in the Contract documents. Duties and Responsibility of the Worksite Utility Coordination Supervisor, (WUCS):

    1. Qualifications: The WUCS shall be an employee of the Prime Contractor, shall have at least one year experience directly related to highway and utility construction in a supervisory capacity and have a complete understanding of the Georgia Utilities Protection Center operations, and shall be knowledgeable of the

High-voltage Safety Act and shall be trained on the Georgia Utility Facility Protection Act (GUFPA).

2. Ticket Status: During the utility coordination meetings the WUCS shall collect and maintain the Ticket Status information to determine the status of all locate requests within the Project limits. This information will be used to assure those planning to use mechanized equipment to excavate or to work within the Project limits are prepared to begin work when they have reported or estimated beginning work. At points where the Contractor's or utility company's operations are adjacent to or conflict with overhead or underground utility facilities, or are adjacent to other property, damage to which might result in considerable expense, loss, or inconvenience, work shall not commence until all arrangements necessary for the protection thereof have been made.
3. Notice: The names of known utility companies are included in this Scope of Work and the WUCS shall give 24-hour notice to such utility companies before commencing work adjacent to said utility facilities which may result in damage thereto. The WUCS shall further notify utility companies of any changes in the Contractor's work schedules affecting required action by the utility company to protect or adjust their facilities. T his 24-hour notice shall not satisfy or fulfill the requirements of the Contractor as stated in Chapter 9 of Title 25 of the Official Code of Georgia Annotated, known as the "Georgia Utility Facility Protection Act".
4. Agenda: The WUCS shall cooperate with the companies of any underground or overhead utility facilities in their removal and relocations or adjustment work in order that these operations may progress in a reasonable manner, that duplication of their removal and relocations or adjustment work may be reduced to a minimum, and services rendered by those parties will not be unnecessarily interrupted. To promote this effort the WUCS shall prepare an agenda for the utility coordination meetings and circulate same in advance of the meeting to encourage input and participation from all of the utility companies. The agenda will be prepared by an examination of the Project site and may include photographs of potential/actual utility conflicts.
5. At the time the Contractor notifies the City the Contractor deems the Project to have reached Final Completion, the Contractor shall certify to the City that all Utilities have been identified and that those Utility Owners with property interests or other claims related to relocation or coordination with the Project have been

IV. CONSTRUCTION

Ensure the Project is constructed as per the Project scope and as per the accepted Released for Construction plans in accordance with the Specifications. No construction will begin on any phase of the work prior to the City providing written authorization to the Contractor to begin land disturbing activities. Deliver two (2) full size and four (4) half size sets of the Released for Construction plans to the City at least 1 (one) week prior to the Contractor performing initial land disturbing activities. Deliver all subsequent Released for Construction plans at least 24 (twenty four) hours before commencing land disturbing activities. All plans submitted to the City for use on construction shall include all applicable Standards and Details required in the Work.

Construction includes, but is not limited to, the following:

A. All clearing and grubbing and grading required in accordance with Sections 201, 202, 205, 206, 208 and 209 of GDOT standard specification.
B. All necessary grading and drainage to construct the subgrades, including the removal and replacement of unsuitable material, shoulders and incidental work to include furnishing borrow pits, waste disposal areas and hauling borrow and waste materials as required. Ensure the removal and replacement of unsuitable material.
C. All necessary base construction, milling, leveling, asphalt paving and concrete paving to construct the pavement structure.
D. Ensure storing of any equipment and materials on the Project outside of the active clear zone.
E. Errors and omissions are the responsibility of the Contractor to correct and at the expense of the Contractor.
F. Coordinate the removal and disposal of all items with the City. All remaining material shall be disposed of properly by the Contractor in accordance with all Local, State and Federal laws.
G. Preparation of As-Built Construction Plans.

V. MEASUREMENT AND PAYMENT

The Work required under this Specification will not be measured separately for payment unless otherwise specified. Payment for the items listed below, complete and accepted, will be made at the Lump Sum price proposal. Payment shall be full compensation for furnishing all materials, labor, tools, equipment, superintendence, mailing charges, removal and replacement of unsuitable material and other incidentals. It shall also be made for performing all work specified, including but not limited to, designing, detailing, producing construction plans (preliminary and final, electronic and hard copy), meeting with the City, processing the NOI and complete construction.

Provide a detailed estimate with the Release for Construction plans. Partial payments of the Lump Sum price will be made on monthly statements based on an accepted schedule of values and detailed estimate. Develop a schedule of values with sufficient breakdown for each of the following items:

- DESIGN COMPLETE
- CONSTRUCTION COMPLETE

Include in the schedule for values a rational basis for partial payments of the Lump Sum proposal based on the completed portion of the item and definitive activities. Submit the schedule for values to the Engineer. No payments will be made until the schedule of values is accepted.

No payment for mobilization will be made until the City issues written authorization that plans are released for construction. Payment for mobilization shall not exceed 2.5% of the overall proposal price for Construction Complete. The Contractor shall submit a detailed breakdown of mobilization in the proposed schedule of values for acceptance.

Contractor shall work with the Engineer to establish estimated earthwork and concrete quantities, as this will determine the frequency of required testing by the City.

No later than the 25th day of each month, provide the City with a certification showing the percent complete for each item of work. Include a breakdown and supporting documentation, to include the Design Consultant's monthly invoice, in sufficient detail to substantiate the percent complete certified.

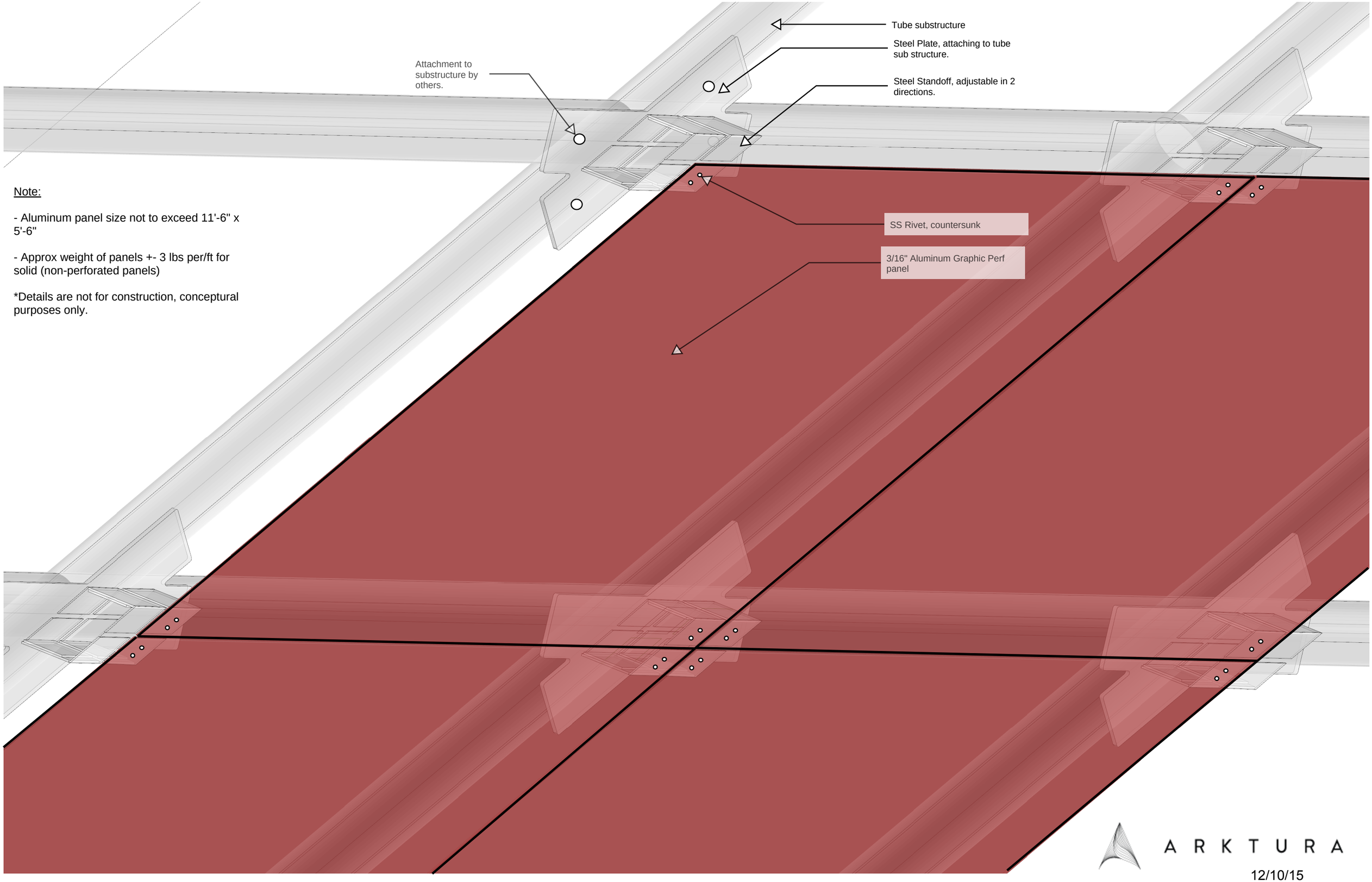
Payment shall be made under:

Item 999-2010 - DESIGN COMPLETE..... ..... per Lump Sum

Item 999-2015 - CONSTRUCTION C O M P L E T E ..... per Lump Sum

Attachment No. 2

Exhibit B.3, Architectural Cladding Specification



Note:

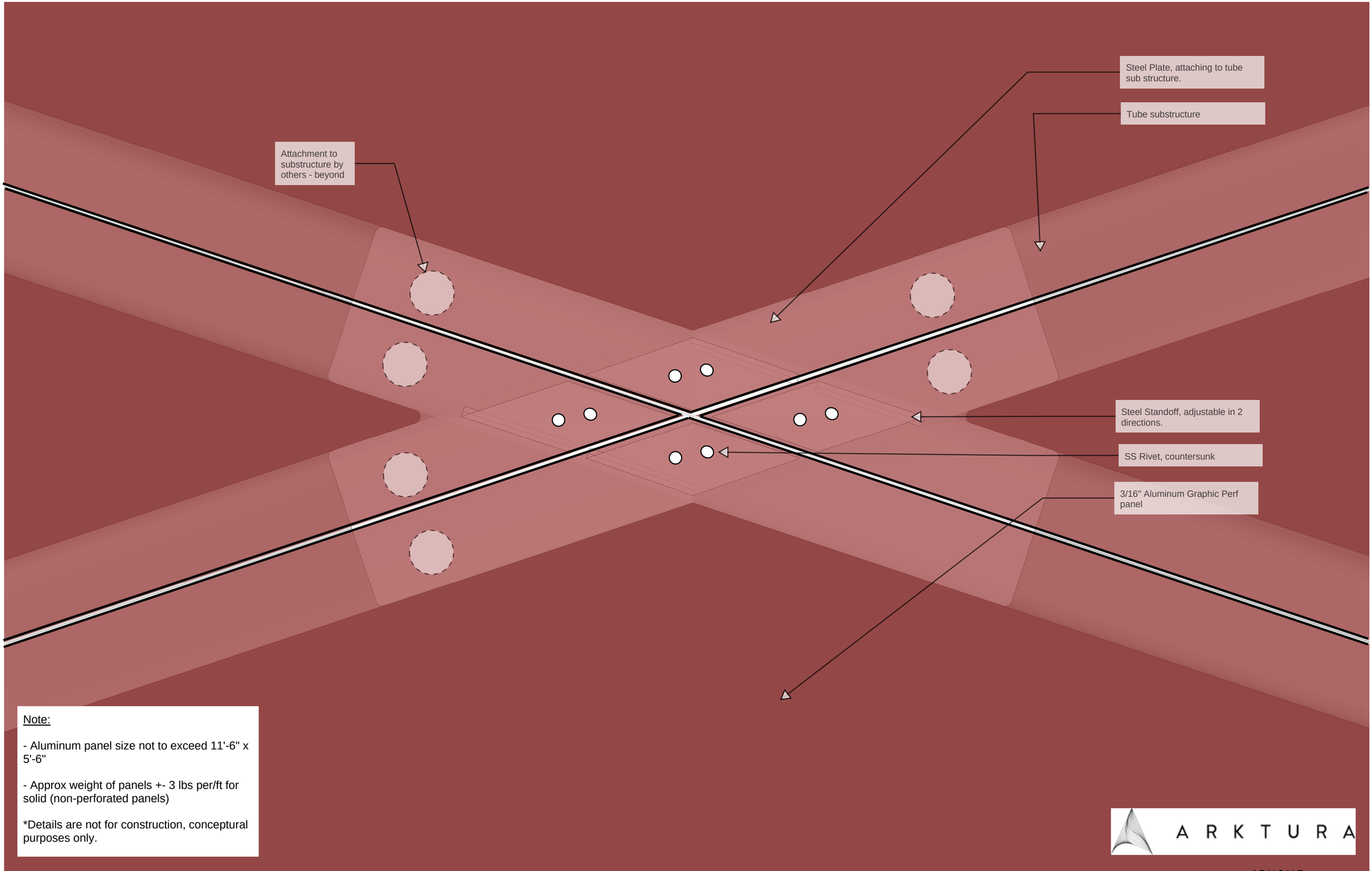
- Aluminum panel size not to exceed 11'-6" x 5'-6"

- Approx weight of panels +- 3 lbs per/ft for solid (non-perforated panels)

*Details are not for construction, conceptural purposes only.

ARKTURA

12/10/15



Note:

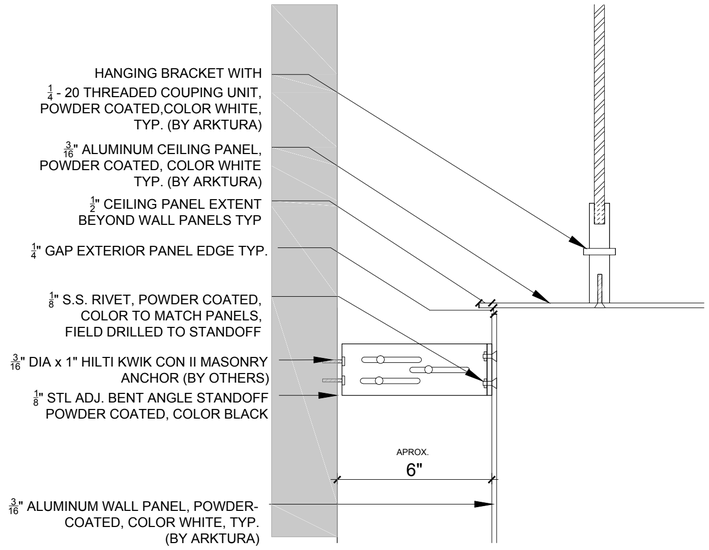
- Aluminum panel size not to exceed 11'-6" x 5'-6"

- Approx weight of panels +- 3 lbs per/ft for solid (non-perforated panels)

*Details are not for construction, conceptural purposes only.

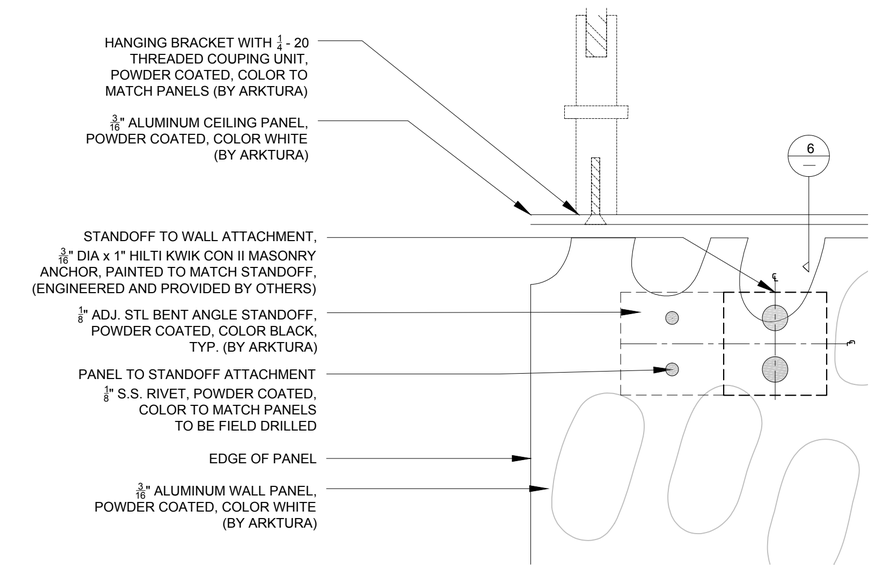
ARKTURA

12/10/15



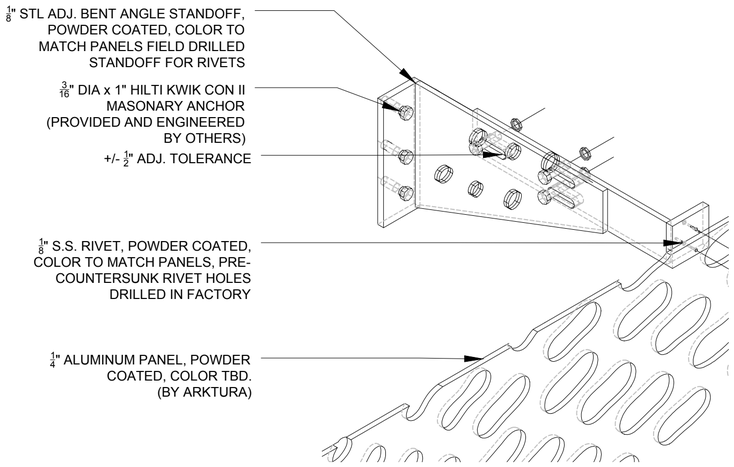
STANDOFF DETAIL / CEILING 6

SCALE:3" = 1'



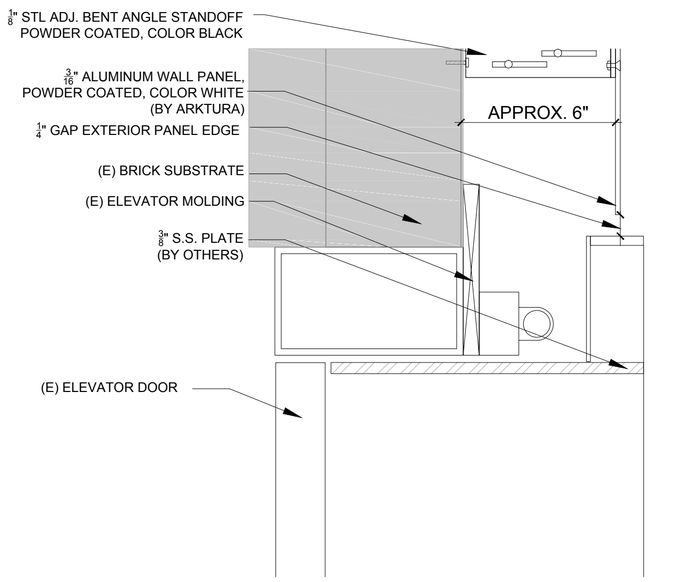
STANDOFF ELEVATION / CEILING EDGE 3

SCALE: 6" = 1'



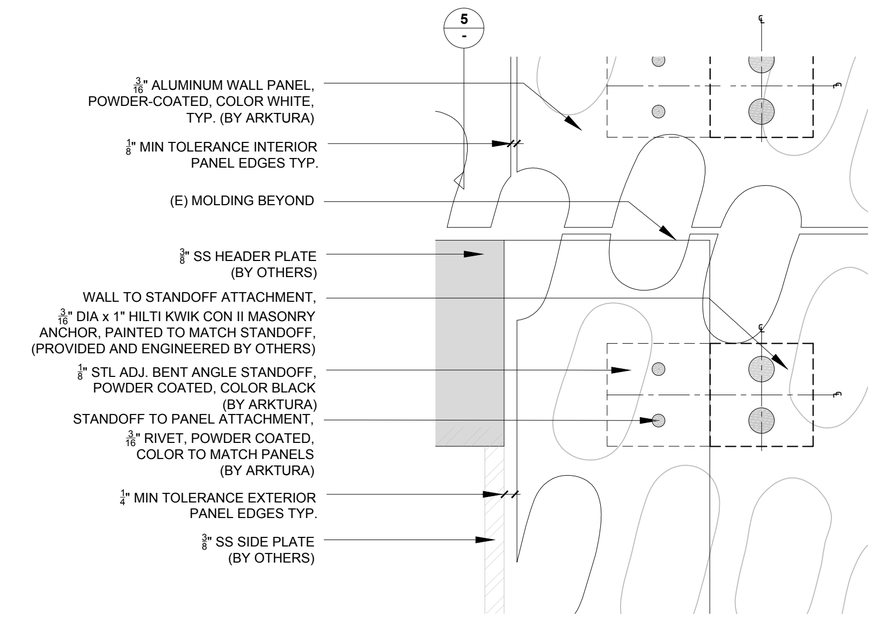
EXTENDED STANDOFF AXONOMETRIC 8

SCALE: 1-1/2" = 1'



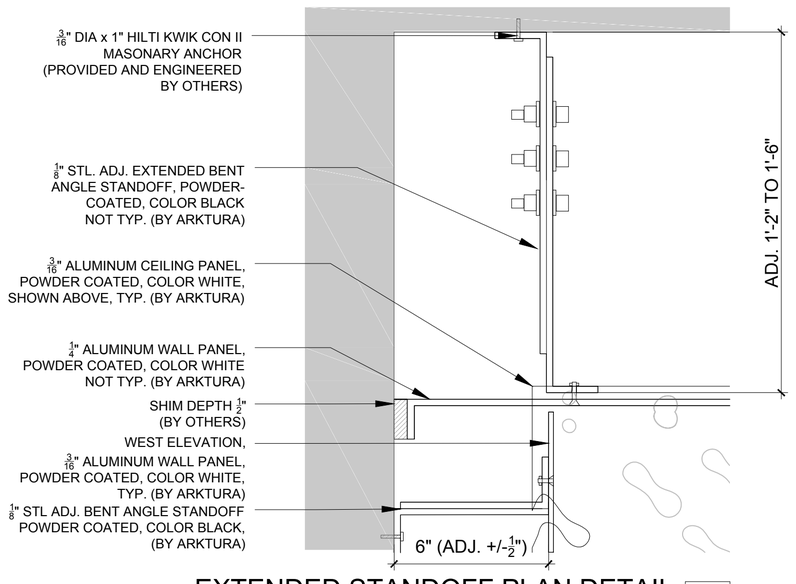
ELEVATOR OPENING HEADER DETAIL 5

SCALE: 3" = 1'



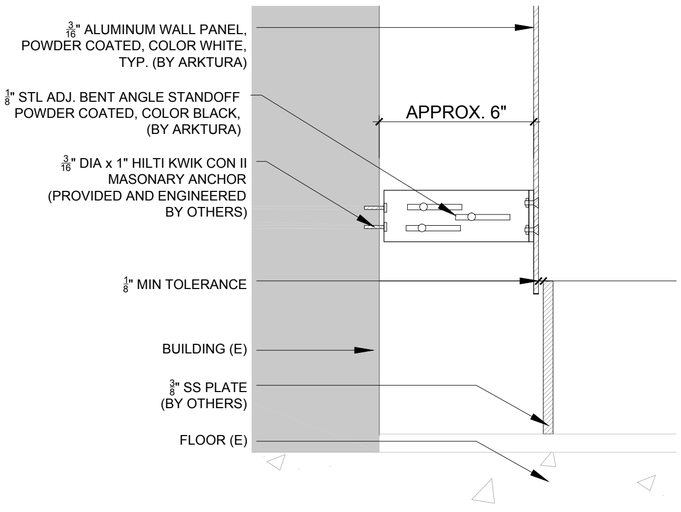
STANDOFF ELEVATION / ELEVATOR 2

SCALE: 6" = 1'



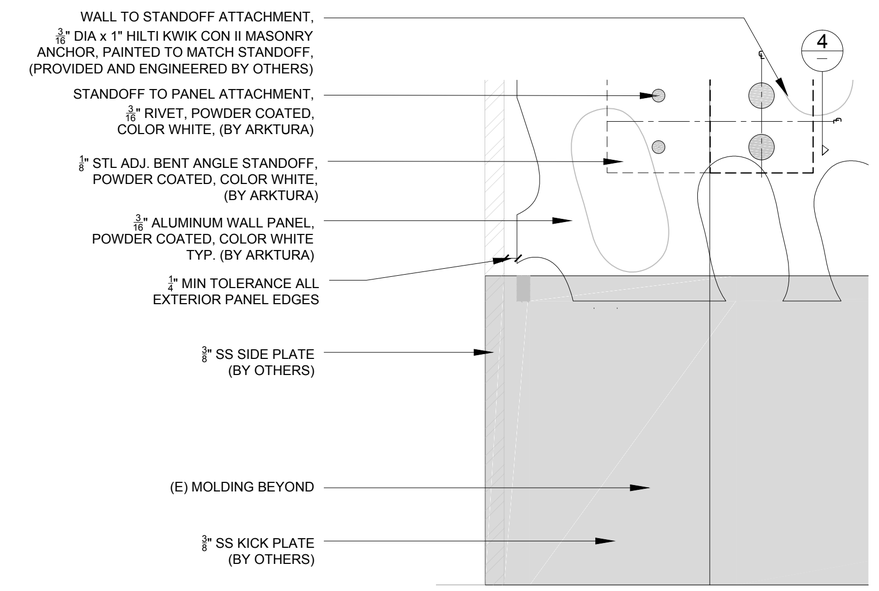
EXTENDED STANDOFF PLAN DETAIL 7

SCALE: 3" = 1'



STANDOFF DETAIL / KICKPLATE 4

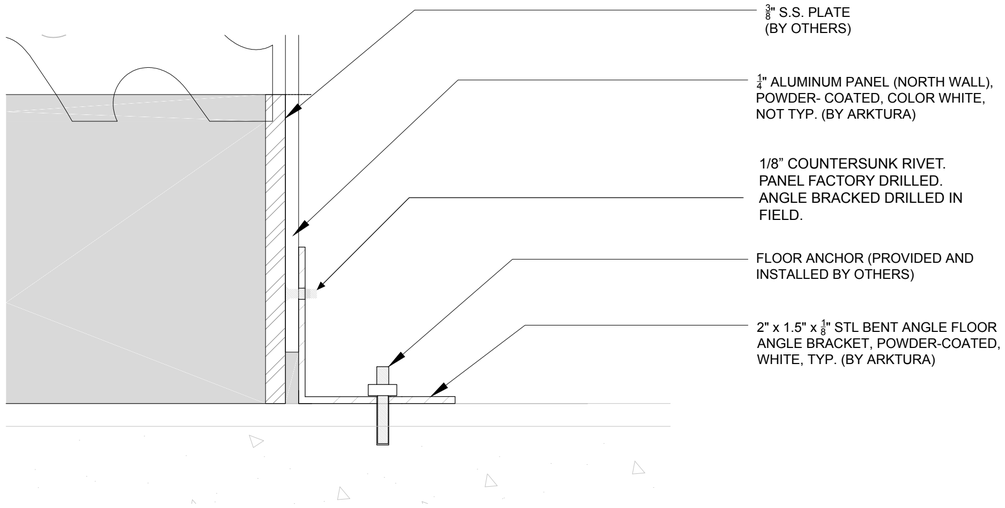
SCALE: 3" = 1'



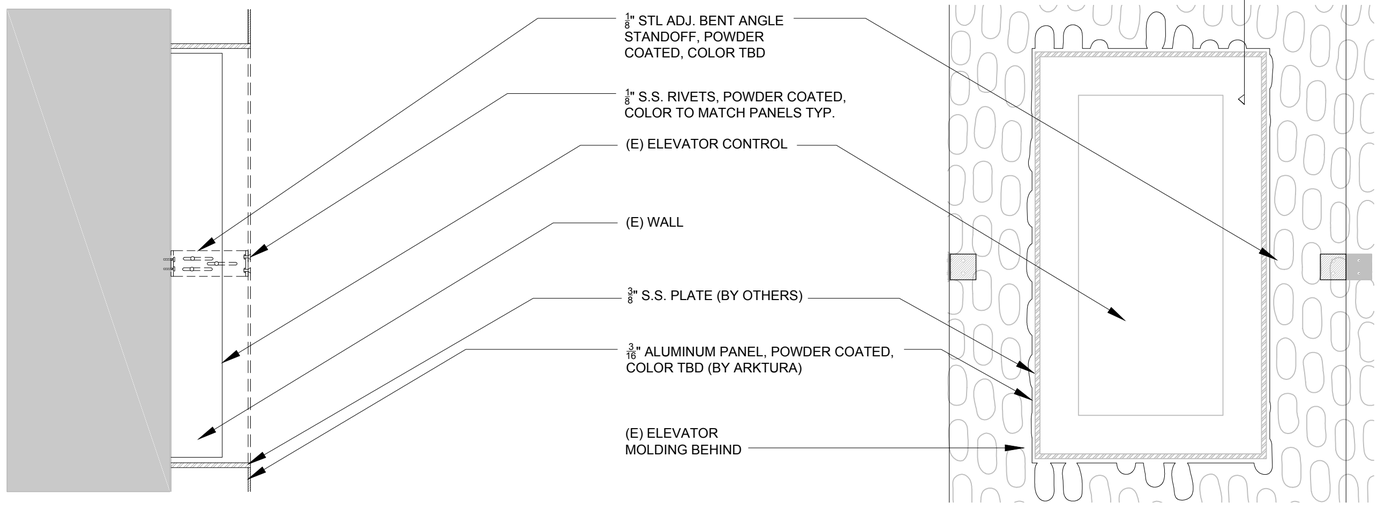
STANDOFF DETAIL / KICKPLATE 1

SCALE: 6" = 1'

12/10/15

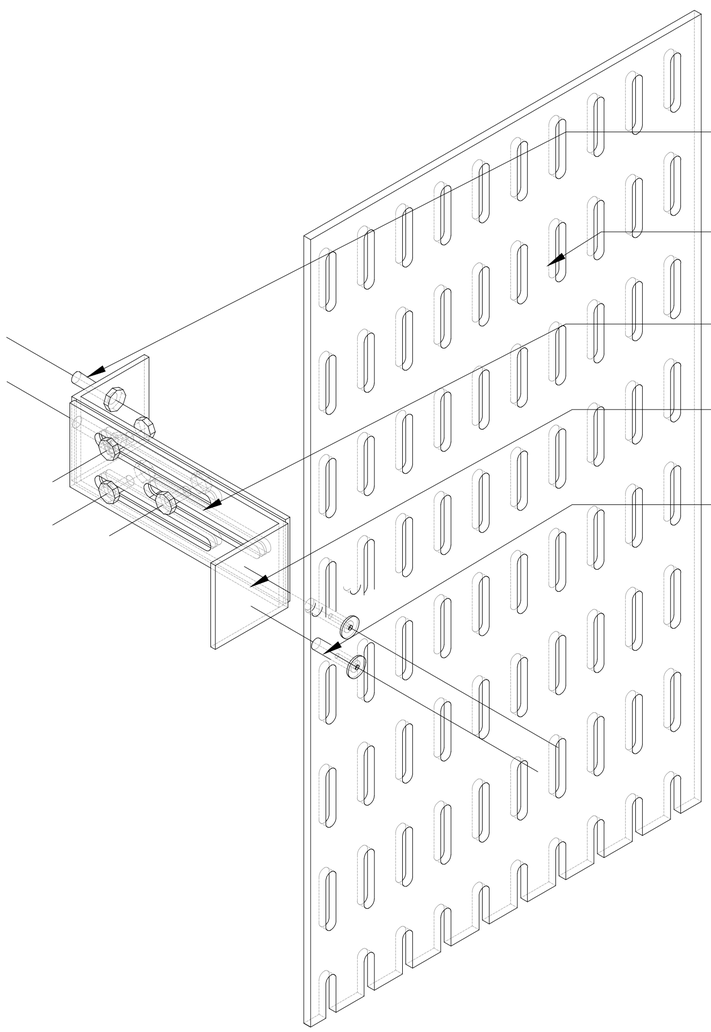


FLOOR CLAMP DETAIL 8
SCALE: 1 1/2" = 1'

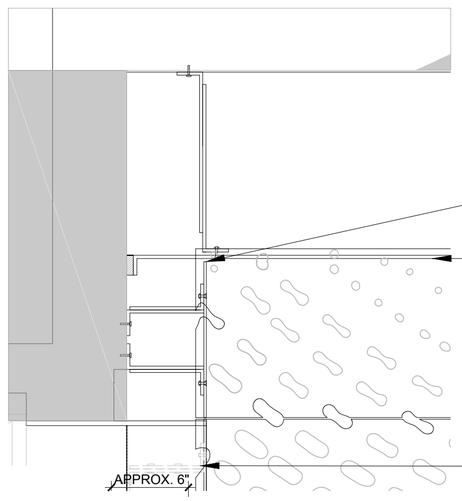


ELEVATOR CONTROL DETAIL 6
SCALE: 1 1/2" = 1'

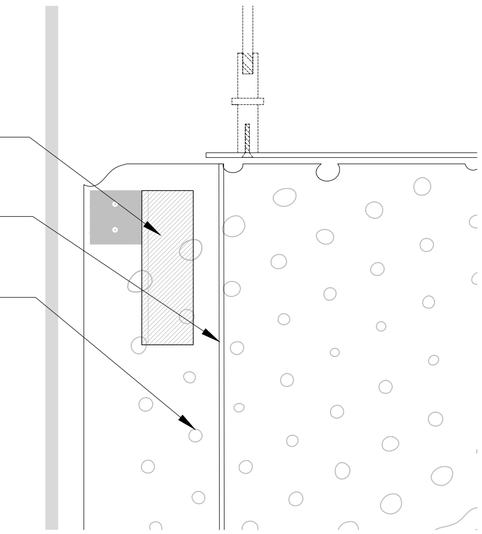
ELEVATOR CONTROL 3
SCALE: 1 1/2" = 1'



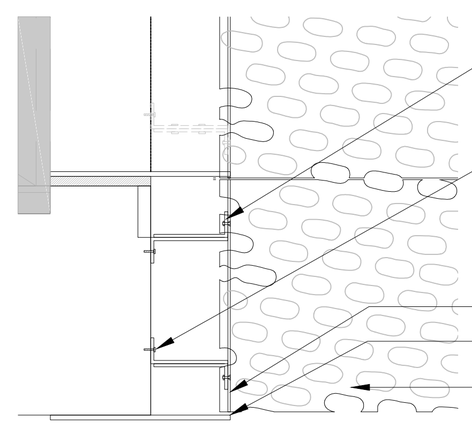
STANDOFF DETAIL / AXONOMETRIC 7
SCALE: 6" = 1'



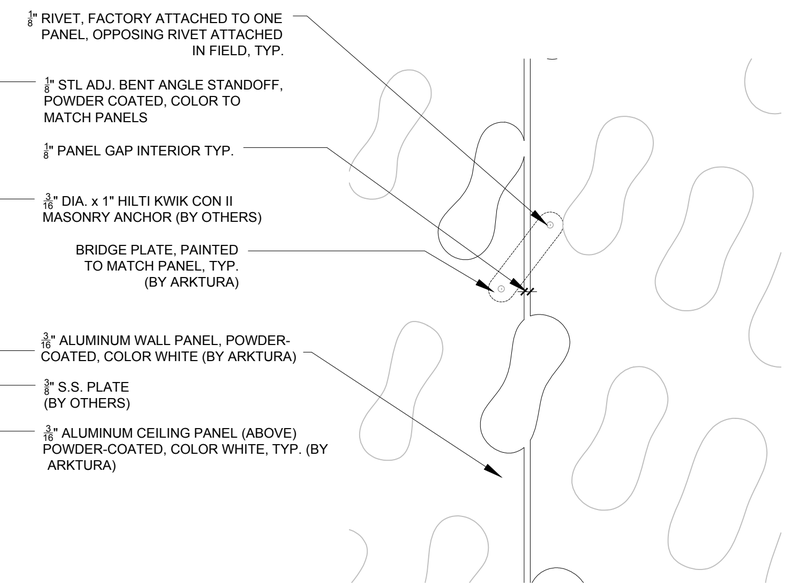
PLAN DETAIL / CORNER 5
SCALE: 1 1/2" = 1'



STANDOFF ELEVATION /CORNER 2
SCALE: 3" = 1'

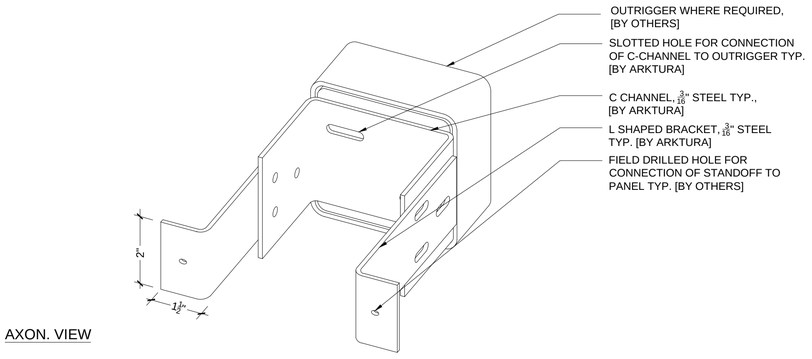


PLAN DETAIL / ENDCAP 4
SCALE: 1 1/2" = 1'

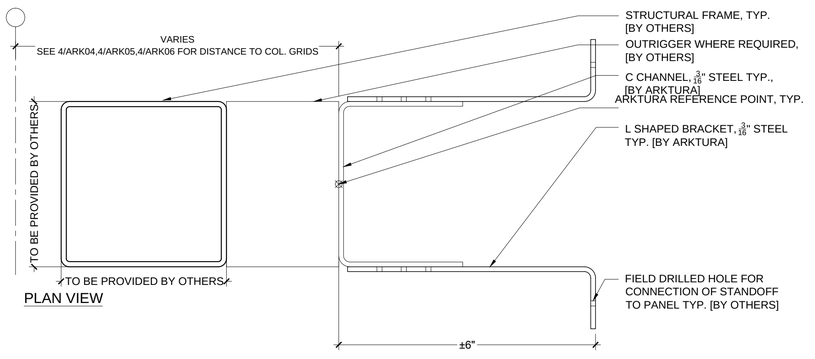


PANEL-TO-PANEL CONNECTION 1
SCALE: 6" = 1'

12/10/15



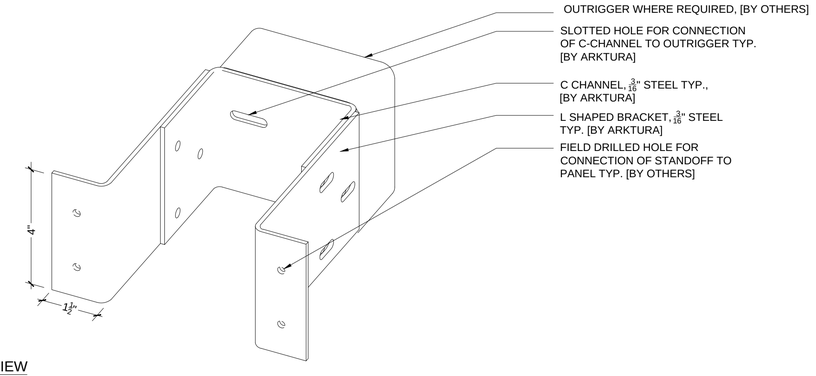
AXON. VIEW



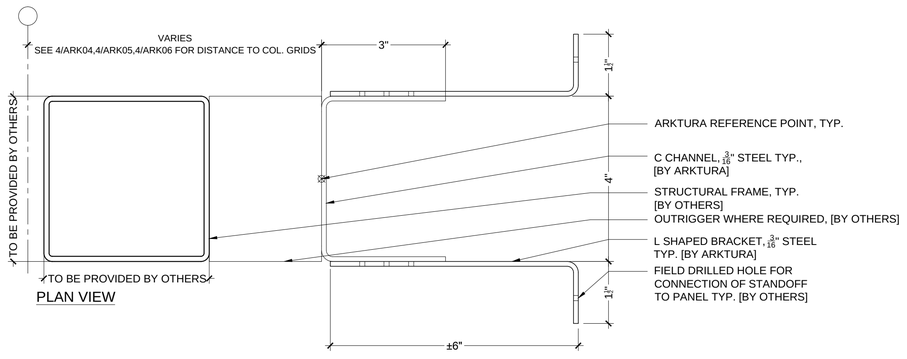
PLAN VIEW

STANDOFF DETAIL - SIZE TYPE 1

SCALE: 6" = 1'-0" 6



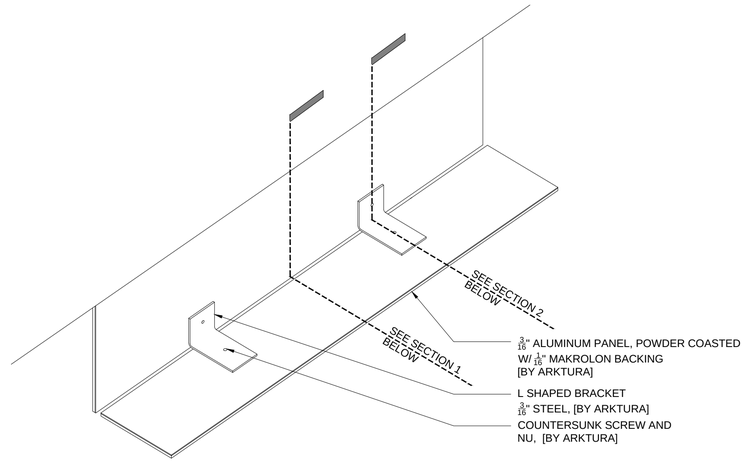
AXON. VIEW

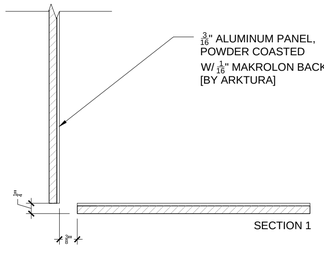


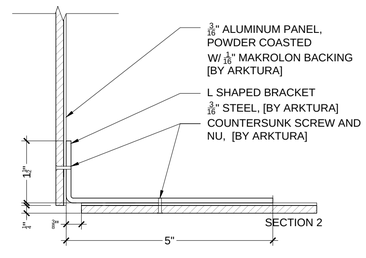
PLAN VIEW

STANDOFF DETAIL - SIZE TYPE 2

SCALE: 6" = 1'-0" 4

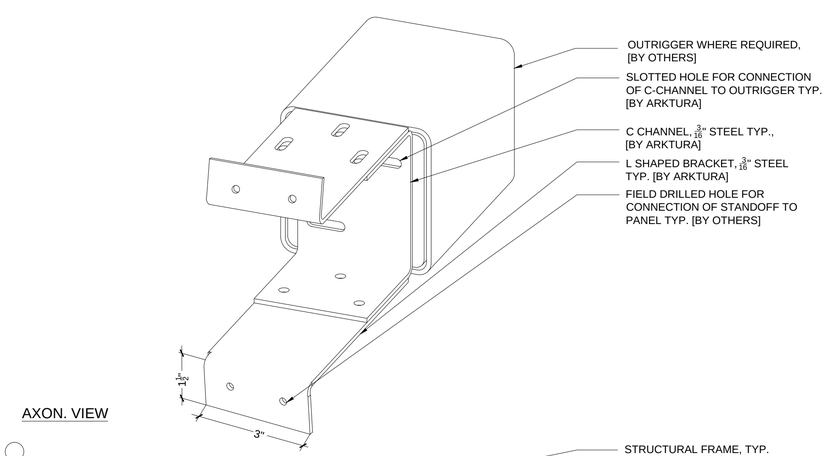




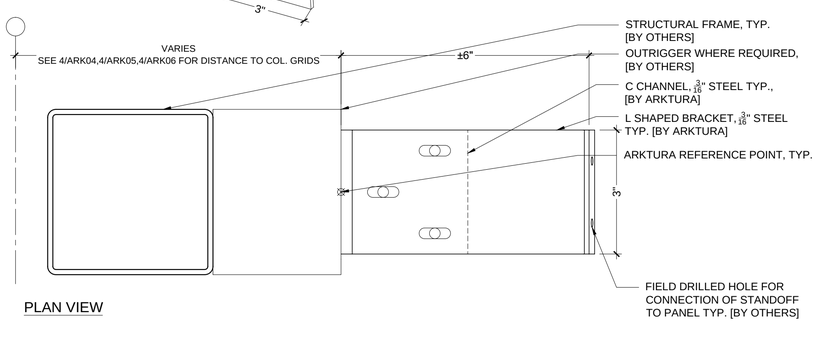


L SHAPED BRACKET DETAIL

SCALE: 6" = 1'-0" 2



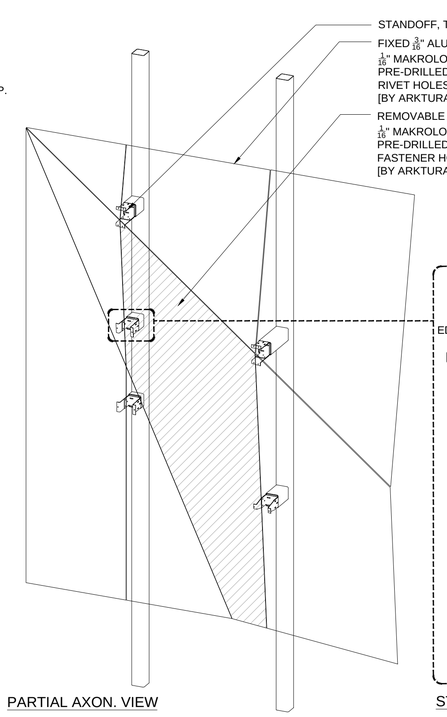
AXON. VIEW



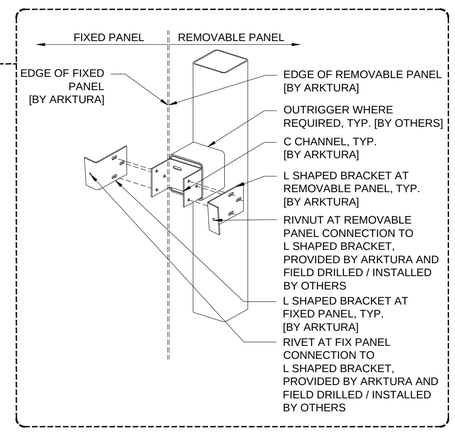
PLAN VIEW

STANDOFF DETAIL - SIZE TYPE 3

SCALE: 6" = 1'-0" 5



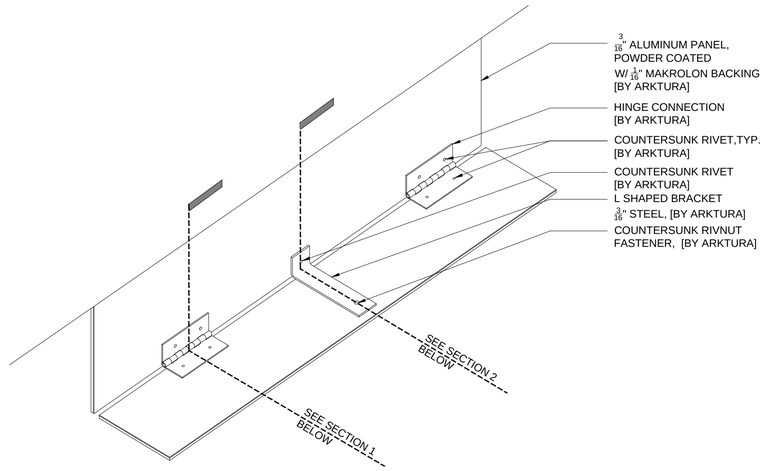
PARTIAL AXON. VIEW

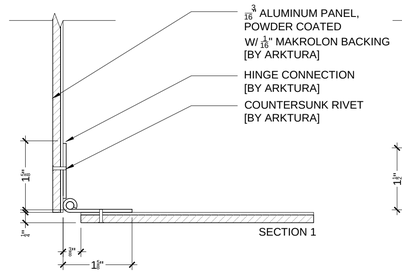


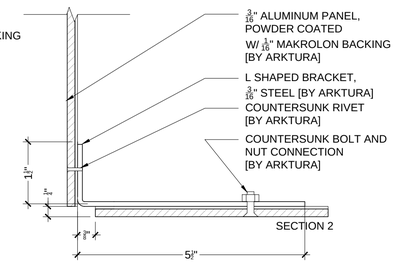
STANDOFF AT REMOVABLE LOCATIONS, TYP.

REMOVABLE PANELS DETAIL

SCALE: N.T.S. 3







HINGED PANEL DETAIL

SCALE: 6" = 1'-0" 1

SECTION 05 75 00

Custom Aluminum Decorative Metal Panels

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

Drawings and General Conditions of Contract, including General and Supplementary Conditions and Divisions-1 Specification sections apply to work of this section.

1.2 SUMMARY

A. Section Includes:
   1. Custom decorative metal wall panels
   2. Attachments and fasteners
B. Related Items:
   1. Wall Framing/Substrate

1.3 REFERENCES

A. American Society for Testing and Materials (ASTM):
   1. ASTM B209 - 07 Standard Specifications for Aluminum and Aluminum-Alloy Sheet and Plate
   2. ASTM E 84 Standard Test Method for Surface Burning Characteristics of Building Materials.

1.4 SUBMITTALS

A. Drawings: For exterior screen panel assemblies and accessories. Include plans, elevations; sections and details describing complete assembly, including support framing and standoffs. Reference 3D geometry model for complex surfacing. Full scale design for artwork and custom generated perforated pattern.

B. Samples for initial selections:

   1. Manufacturer’s color charts showing the full range of colors available for units with factory-applied color finishes.

   2. One 12” x 12” sample of custom algorithmically generated perforated metal panel of the same material, hole size, and finish representing final product.

1.5 QUALITY ASSURANCE

A. Single-Source Responsibility: Provide panels and method of attachment by a single manufacturer.

B. Coordination of Work: Coordinate work with installers of related work including, but not limited to building structure, light fixtures, mechanical systems, electrical systems, and other substrates.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Store the metal panels, attachment/structure in an interior location and keep in cartons/crates prior to installation to avoid damage.

B. Exercise care in moving and opening cartons/crates to prevent damage to the panel face.

C. Handle panels carefully with manufacturer's recommendations to avoid damaging parts in any way.

1.7 PROJECT CONDITIONS

A. Space Enclosure:
Building areas to receive panels shall be free of construction dust and debris. Products can be installed up to 100°F (38°C) with humidity not exceeding 90% RH. Cannot be used in exterior applications where standing water is present or where moisture will come in direct contact. Following installation, conditions must be maintained below 70% RH.

1.8 WARRANTY

A. Metal Panels: Submit a written warranty executed by the manufacturer, agreeing to repair or replace panels that fail within the warranty period. Failures include, but are not limited to:
   1. Panels: Manufacturing defects.
   2. Attachment devices: Rusting and manufacturing defects.

B. Warranty Period:
   1. Panels: One (1) year from date of substantial completion.
   2. Attachment devices: One (1) year from date of substantial completion.

C. Warranty Language:
Manufacturer's products are expressly warranted for a period of one (1) year from purchase to be free from defects in material and workmanship, when installed according to manufacturer's published installation procedures. During the warranty period manufacturer will repair or at its option replace the products that are proven to be defective. Manufacturer is NOT responsible for any intentional or accidental abuse, misuse, or neglect incurred on the original warranted product, and shall as determined by manufacturer, void the warranty.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

A. Custom Wall Panels:
   1. Arktura – Gardena, CA
      Phone: 310.532.1050
      Email: rob@arktura.com

B. Attachment Devices for Custom Wall Panels:
   1. Arktura – Gardena, CA
      Phone: 310.532.1050
      Email: rob@arktura.com

2.2 PANEL UNITS

A. Samples for initial selections:

   1. Surface Texture: Smooth [see Section 2.3]

   2. Composition: Aluminum Alloy: 5052

   3. Color: RAL powder coated finish

   4. Custom Algorithmically Generated Perforation Pattern: Constantly varying hole sizes in multiples of .01”. Holes/openings to vary from 200min to 500max unique diameters.

   5. Pattern Constraints: Custom modified perforation pattern at all panel edges to accommodate pattern transitions and necessary material borders for material integrity.

   6. All cuts/perforations 90Deg to surface face

   7. All metal bending and forming to be formed within a .03” bending tolerance

   8. No depressions or deformations at perforation edges

   9. Recycled Content: 25% [up to 75% recycled content upon request]

2.3 SURFACE FINISH

A. Application of surface finish to be applied in compliance with the following standard operating procedure:

   1. Inspect raw material for obvious defects. Finish to 180 grit.

   2. 7-stage anti-corrosion pretreatment.

   3. Electrostatically apply Triglycidyl Isocyanurate (TGIC) polyester powder (Akzo Nobel D2000 or equivalent) to entire surface of part at approximately 2.0-3.0 mils. Exterior Architectural grade powder coating.

4. Cure part per manufacturer's specifications.

B. Surface finish, when complete, must meet the reference standards as listed below:

American Society for Testing and Materials (ASTM):

1. ASTM D3359 Standard Test Methods for Measuring Adhesion, Method B
2. ASTM D3363 Standard Test Method for Film Hardness by Pencil Test
3. ASTM D2794 [modified] Standard Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact)
4. ASTM D522 [modified] Standard Test Methods for Mandrel Bend Test of Attached Organic Coatings
5. ASTM D4060 [modified] Standard Test Method for Abrasion Resistance

C. Durability of surface finish must meet the reference standards as listed below:

American Society for Testing and Materials (ASTM):

1. ASTM B117 - 09 Standard Practice for Operating Salt Spray (Fog) Apparatus
2. AAMA 2604 – 5 Year South Florida Exposure (American Architectural Manufacturers Association, AAMA)

2.4 ATTACHMENT SYSTEM

A. Installation:
The custom engineered, prefabricated panels will be designed with countersunk holes spaced to align aesthetically with support framing beyond. Stainless Steel fasteners will be provided to attach panel through countersunk holes to custom fabricated standoff structure beyond. Some attachments will be fabricated for operability and be coordinated with specific attachment standoffs. Fastener heads will be flush with face of metal panels and will be coated to match color and finish of panel.

PART 3 - EXECUTION

3.1 PREPARATION

A. Field verify each wall area and establish layout of panels. Coordinate setting drawings, diagrams, templates, instructions, and directions for installation. Panel substructure shall be level and plumb. Panel substructure shall be structurally sound as determined by that subcontractor's engineer. Panel substructure shall be free of defects detrimental to work and erected in accordance with established building tolerances.
B. Coordinate panel layout with mechanical, electrical and sprinkler fixtures as required.
C. Coordinate delivery of such items to project site.

3.2 INSTALLATION [by Others]

A. Install panels in accordance with the manufacturer's instructions and in compliance with the authorities having jurisdiction.
B. Erect panels' level and plumb, in proper alignment in relation to substructure framing and established lines.
C. Panel anchorage shall be structurally sound and per engineering recommendations.
D. Locate and place wall panels' level, plumb, and at indicated alignment with adjacent work.

3.3 ADJUSTING AND CLEANING

A. Replace damaged and broken panels.
B. Proper maintenance and regular servicing of the coated surfaces are both prerequisites for the claims of any guarantee and require regular cleaning at least once each year. For severe environmental pollution, for example in regions with increased salt contamination and/or chemical exhausts, meaning in a direct area of influence or within the vicinity of an industrial or chemical enterprise, or in the immediate vicinity of a sea coast or within a defined chemical/radioactive precipitation zone, the building must be cleaned more often. In this way possible damage can be made subject to timely recognition and remedied on time by suitable measures.
C. If a coated component is soiled during transport, through storage or assembly, the cleaning of this component must take place immediately with clear, cold or lukewarm water. Neutral or a weak alkaline detergent can be used against severe soiling.
D. Protect wall panel assemblies from damage during construction. Use temporary protective coverings where needed as approved by the wall panel manufacturer.

END OF SECTION

Mitsubishi Plastics Composites America, Inc.
401 Volvo Parkway
Chesapeake, VA 23320
Phone: (800) 422-7270
Fax: (757) 436-1896
E-mail: info@alpolic.com
www.alpolic-northamerica.com

This MANU-SPEC® utilizes the Construction Specifications Institute (CSI) *Project Resource Manual* (PRM), including *MasterFormat*™, *SectionFormat*™ and *PageFormat*™. A MANU-SPEC is a manufacturer-specific proprietary product specification using the proprietary method of specifying applicable to project specifications and master guide specifications. Optional text is indicated by brackets [ ]; delete optional text in final copy of specification. Specifier Notes typically precede specification text; delete notes in final copy of specification. Trade/brand names with appropriate symbols typically are used in Specifier Notes; symbols are not used in specification text. Metric conversion, where used, is soft metric conversion.

This MANU-SPEC specifies composite metal panels for exterior and interior applications marketed under the ALPOLIC® trade name by Mitsubishi Plastics Composites America, Inc. Revise MANU-SPEC section number and title below to suit project requirements, specification practices and section content. Refer to CSI *MasterFormat* for other section numbers and titles, including 07 40 00 Roofing & Siding Panels; 07 42 13 Metal Wall Panels; 07 42 43 Composite Wall Panels; and 07 46 63 Fabricated Panel Assemblies with Siding.

SECTION 07 42 13
METAL WALL PANELS

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes: Composite fire rated metal panels.

1. Applications of composite fire rated panels include:

a. Exterior installation of composite fire rated metal panels.

b. Interior installation of composite fire rated metal panels.

Specifier Note: Retain paragraph below to suit project requirements. Coordinate with Part 2 Products herein and other Contract Documents.

B. Alternates: Products and installation included in this section are specified by alternates. Refer to Division 01 Alternates Section for alternates description and alternate requirements.

Specifier Note: Revise Paragraph below to suit project requirements. Add section numbers and titles per CSI *MasterFormat* and specifier's practice.

C. Related Sections: Section(s) related to this section include:

1. Cold-Formed Metal Framing: Division 05 Metal Framing Sections.
2. Sheet Metal Flashing and Trim: Division 07 Flashing and Trim Section.
3. Joint Sealers: Division 07 Joint Treatment Section.
4. Aluminum Windows: Division 08 Aluminum Windows Section.
5. Glazing: Division 08 Glass and Glazing Section.
6. Metal Framed Curtain Wall: Division 08 Curtain Wall Sections.

Specifier Note: Article below may be omitted when specifying manufacturer's proprietary products and recommended installation. Retain Reference Article when specifying products and installation by an industry reference standard. If retained, list standard(s) referenced in this section. Indicate issuing authority name, acronym, standard designation and title. Establish policy for indicating edition date of standard referenced. Conditions of the Contract or Division 01 References Section may establish the edition date of standards. This article does not require compliance with standard, but is merely a listing of references used. Article below should list only those industry standards referenced in this section.

1.02 REFERENCES

A. General: Standards listed by reference, including revisions by issuing authority, form a part of this specification section to the extent indicated. Standards listed are identified by issuing authority, authority abbreviation, designation number, title or other designation established by issuing authority. Standards subsequently referenced herein are referred to by issuing authority abbreviation and standard designation.

B. ASTM International:

1. ASTM C297 Standard Test Method for Tensile Strength on Flat Sandwich Constructions in Flatwise Plane.
2. ASTM D1781 Standard Test Method for Climbing Drum Peel for Adhesives.
3. ASTM D1929 Standard Test Method for Determining Ignition Temperature of Plastics.
4. ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials.
5. ASTM E108 (Modified) Standard Test Methods for Fire Tests of Roof Coverings.
6. ASTM E119 Standard Test Methods for Fire Tests of Building Construction and Materials.
7. ASTM E283 Standard Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.
8. ASTM E330 Standard Test Method for Structural Performance of Exterior Windows, Curtain Walls, and Doors By Uniform Static Air Pressure Difference.
9. ASTM E331 Standard Test Method for Water Penetration of Exterior Windows, Curtain Wall, and Doors By Uniform Static Air Pressure Difference.

C. American Architectural Manufacturers Association (AAMA):
1. AAMA 2605 Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels.

D. International Organization for Standardization (ISO):
1. ISO 9001-2000 Quality Management Systems - Requirements.

1.03 SYSTEM DESCRIPTION

Specifier Note: Edit paragraph below to suit project requirements.

A. Performance Requirements: Provide composite metal panels that have been manufactured, fabricated and installed to withstand loads from deflection and thermal movement and to maintain performance criteria stated by manufacturer without defects, damage or failure.

Specifier Note: Three subparagraphs below generally applicable only to curtain wall systems and large wall areas. Delete this article altogether, or modify it as appropriate for simple composite panel installations. Alternatively, refer to system manufacturer's technical data for additional details. Edit text to suit project requirements; add text for performance criteria as applicable below.

B. Deflection and Thermal Movement: Provide systems that have been tested and certified to conform to the following criteria under wind loading of [specify loading psf (kPa)] inward and [specify loading psf (kPa)] outward:
1. Normal Deflection: Deflection of perimeter framing member not to exceed L/175 normal to plane of the wall; deflection of individual panels not to exceed L/60.
2. Anchor Deflection: At connection points of framing members to anchors, anchor deflection in any direction not to exceed 1/16 inch (1.6 mm).
3. Thermal Movements: Allow for free horizontal and vertical thermal movement due to expansion and contraction of components over a temperature range from [specify temperature range in degrees F (degrees C)].
    a. Buckling, opening of joints, undue stress on fasteners, failure of sealants, or any other detrimental effects of thermal movement will not be permitted.
    b. Fabrication, assembly and erection procedures shall take into account the ambient temperature range at the time of the respective operation.

C. Water and Air Leakage: Provide systems that have been tested and certified to conform to the following criteria:
1. Air Leakage, ASTM E283: Not more than 0.06 cfm per ft^2 of wall area (0.003 (L/s m^2) when tested at 1.57 psf (0.075 kPa).
2. Water Penetration: No water infiltration under static pressure when tested in accordance with ASTM E331 at a differential of 10% of inward acting design load, 6.24 psf (0.299 kPa) minimum, after 15 minutes.
    a. Water penetration is defined as the appearance of uncontrolled water in the wall.
    b. Wall design shall feature provisions to drain to the exterior face of the wall any leakage of water at joints and any condensation that may occur within the construction.

D. Structural: Provide systems that have been tested in accordance with ASTM E330 at a design pressure of [specify design pressure in psf (kPa)] and have been certified to be without permanent deformation or failures of structural members.

E. Fire Performance: Provide composite fire rated panels that have been evaluated and are in compliance with regulatory code agency requirements specified herein.

Specifier Note: Article below includes submittal of relevant data to be furnished by Contractor before, during or after construction. Coordinate this article with Architect's and Contractor's duties and responsibilities in Conditions of the Contract and Division 01 Submittal Procedures Section.

1.04 SUBMITTALS

A. General: Submit listed submittals in accordance with Conditions of the Contract and Division 01 Submittal Procedures Section.

B. Product Data: Submit product data, including manufacturer's SPEC-DATA® sheet, for specified products.

C. Shop Drawings: Submit shop drawings showing layout, profiles and product components, including anchorage, accessories, finish colors and textures.

1. Include details showing thickness and dimensions of the various system parts, fastening and anchoring methods, locations of joints and gaskets, and location and configuration of joints necessary to accommodate thermal movement.

D. Samples: Submit selection and verification samples for finishes, colors and textures.

1. Selected Samples: Manufacturer's color charts or chips illustrating full range of colors, finishes and patterns available for composite metal panels with factory applied finishes.

2. Verification Samples:

a. Structural: 12 inch × 12 inch (305 × 305 mm) sample composite panels in thickness specified from an available stock color, including clips, anchors, supports, fasteners, closures and other panel accessories, for assembly approval. Include panel assembly samples not less than 24 inches × 24 inches (610 × 610 mm) showing 4-way joint.

b. Include separate sets of drawdown samples on aluminum substrate, not less than 3 inches × 5 inches (76 × 127 mm), of each color and finish selected for color approval. Larger samples of standard colors are available with production-applied coatings.

E. Quality Assurance Submittals: Submit the following:

1. Test Reports: Certified test reports showing compliance with specified performance characteristics and physical properties, or a third party listing documenting compliance to a comparable code section.

2. Certificates: Product certificates signed by manufacturer certifying materials comply with specified performance characteristics and physical requirements.

3. Manufacturer's Instructions: Manufacturer's installation instructions.

Specifier Note: Coordinate paragraph below with Part 3 Field Quality Requirements Article. Retain or delete as applicable.

4. Manufacturer's Field Reports: Manufacturer's field reports.

F. Closeout Submittals: Submit the following:

1. Warranty: Warranty documents specified.

Specifier Note: Article below should include prerequisites, standards, limitations and criteria that establish an overall level of quality for products and workmanship for this section. Coordinate below article with Division 01 Quality Assurance Section.

1.05 QUALITY ASSURANCE

A. Qualifications:

1. Installer Qualifications: Installer experienced in performing work of this section who has specialized in the installation of work similar to that required for this project.

Specifier Note: Retain or delete paragraph below to suit project requirements.

a. Certificate: When requested, submit certificate indicating qualification.

2. Manufacturer Qualifications: Company with a minimum of 5 years of continuous experience manufacturing panel material of the type specified:

a. Able to provide specified warranty on finish.

b. Able to provide a list of 5 other projects of similar size, including approximate date of installation and name of Architect for each.

c. Able to produce the composite material without outsourcing of the coating or laminating process.

d. Able to provide a certificate of registration to ISO 9001-2000.

3. Fabricator Qualifications: Company with at least 3 years of experience on similar sized metal panel projects and qualified by panel material manufacturer. Capable of providing field service representation during construction.

Specifier Note: Select applicable building code.

B. Regulatory Code Agencies Requirements: Provide composite fire rated panels which have been evaluated and are in compliance with the following:

1. City of New York.

2. City of Los Angeles.
3. International Code Council (ICC).
4. State of Florida

Specifier Note: Retain paragraph below for erected assemblies, either onsite or offsite, required for review of construction, coordination of work of several sections, testing or observation of operation. Mock-ups establish standards by which work will be judged. Coordinate below with Division 01 Quality Control, Mock-Up Requirements Section.

C. Mock-Ups: Install at project site a job mock-up using acceptable products and manufacturer approved installation methods. Obtain Owner's and Architect's acceptance of finish color (drawdown samples to be used for color approval of nonstandard coil coated colors), texture and pattern and workmanship standard. Comply with Division 01 Quality Control, Mock-Up Requirements Section.

Specifier Note: Edit paragraph below to specifying mock-up size.

1. Mock-Up Size: [Specify mock-up size].
2. Maintenance: Maintain mock-up during construction for workmanship comparison; remove and legally dispose of mock-up when no longer required.
3. Incorporation: Mock-up may be incorporated into final construction upon Owner's approval.

Specifier Note: Coordinate paragraph below with Division 01 Project Management and Coordination, Project Meetings Section.

D. Preinstallation Meetings: Conduct preinstallation meeting to verify project requirements, substrate conditions, manufacturer's installation instructions and manufacturer's warranty requirements. Comply with Division 01 Project Management and Coordination, Project Meetings Section.

Specifier Note: Article below should include special and unique requirements. Coordinate below article with Division 01 Product Requirements Section.

1.06 DELIVERY, STORAGE & HANDLING

A. General: Comply with Division 01 Product Requirements Sections.
B. Ordering: Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.
C. Delivery: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
   1. Protection: Protect finish of panels by applying heavy-duty removable plastic film during production.
   2. Delivery: Package composite wall panels for protection against transportation damage. Provide markings to identify components consistently with drawings.
   3. Handling: Exercise care in unloading, storing and installing panels to prevent bending, warping, twisting and surface damage.
D. Storage and Protection: Store materials protected from exposure to harmful weather conditions and at temperatures recommended by manufacturer.
   1. Storage: Store panels in well-ventilated space out of direct sunlight.
      a. Protect panels from moisture and condensation with tarpaulins or other suitable weather tight covering installed to provide ventilation.
      b. Slope panels to ensure positive drainage of any accumulated water.
      c. Do not store panels in any enclosed space where ambient temperature can exceed 120 degrees F (49 degrees C).
   2. Damage: Avoid contact with any other materials that might cause staining, denting or other surface damage.

1.07 PROJECT CONDITIONS

A. Field Measurements: Verify actual measurements/openings by field measurements before fabrication; show recorded measurements on shop drawings. Coordinate field measurements, fabrication schedule with construction progress to avoid construction delays.

Specifier Note: Coordinate article below with Conditions of the Contract and with Division 01 Closeout Submittals, Warranty Section.

1.08 WARRANTY

A. Project Warranty: Refer to Conditions of the Contract for project warranty provisions.
B. Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to, and not a limitation of, other rights Owner may have under the Contract Documents.

Specifier Note: Coordinate paragraph below with manufacturer's warranty requirements.

1. Warranty Period:
    a. Panel Integrity: 10 years commencing on Date of Substantial Completion.
    b. Finish: [Specify number of years] commencing on Date of Substantial Completion.

PART 2 PRODUCTS

Specifier Note: Retain article below for proprietary method specification. Add product attributes, performance characteristics, material standards and descriptions as applicable. Use of such phrases as “or equal” or “or approved equal” or similar phrases may cause ambiguity in specifications. Such phrases require verification (procedural, legal and regulatory) and assignment of responsibility for determining “or equal” products.

2.01 COMPOSITE FIRE RATED METAL PANELS

A. Manufacturer: Mitsubishi Plastics Composites America, Inc.

Specifier Note: Paragraph (Contact) below is an addition to CSI *SectionFormat* and a supplement to MANU-SPEC. Retain or delete paragraph below per project requirements and specifier’s practice.

1. Contact: 401 Volvo Parkway, Chesapeake, VA 23320; Telephone: (800) 422-7270; Fax: (757) 436-1896; E-mail: info@alpolic.com; website: www.alpolic-northamerica.com.

B. Proprietary Product: ALPOLIC Composite Metal Panels, including:

1. ALPOLIC/fr composite fire rated metal panels.

Specifier Note: Edit article below to suit project requirements. If substitutions are permitted, edit text below. Add text to refer to Division 01 Project Requirements, Product Substitutions Procedures Section.

2.02 PRODUCT SUBSTITUTIONS

A. Substitutions: No substitutions permitted.

Specifier Note: Retain article below for alternates required for project; state wall panel work covered by alternate. Coordinate with Part 1 General Summary Article, applicable Division 01 Sections, and other Bid and Contract Documents. Consult Mitsubishi Plastics Composites America/ALPOLIC on the use of alternates. Delete article below if alternates are not required.

2.03 ALTERNATES

A. Contract Provisions and Division 01 Requirements: [Specify coordination with provisions and requirements].

B. Alternates:

1. Base Bid/Contract Manufacturer: [Specify base bid/contract manufacturer].
    a. Product: [Specify product base bid/contract brand/trade name with product attributes and characteristics].
2. Alternate No. [Specify #]: [Specify alternate manufacturer].
    a. Product: [Specify product alternate brand/trade name with product attributes and characteristics].
3. Alternate No. [Specify #]: [Specify alternate manufacturer].
    a. Product: [Specify product alternate brand/trade name with product attributes and characteristics].

2.04 COMPOSITE METAL PANEL MATERIALS

A. ALPOLIC/fr Composite Fire Rated Metal Panels:

1. Panel Thickness: 4 mm.
2. Core: Thermoplastic core material with inorganic fillers that meets performance characteristics specified when fabricated into composite assembly.
3. Face Sheets: Aluminum alloy 3105 H14 and as follows:

Specifier Note: Edit two paragraphs below (coil or spray coated) as applicable to quantity.

    a. Coil coated with a fluoropolymer paint finish that meets or exceeds values expressed in AAMA 2605 where relevant to coil coatings.

Specifier Note: Delete paragraph above and retain following paragraph for quantities less than 2000 ft^2 (186 m^2).

    b. Spray coated with specified finish (quantities less than 7500 ft^2 (700 m^2)).

4. Bond Integrity: Tested for resistance to delamination as follows:
    a. Bond Strength (ASTM C297): 427 psi (2.9 MPa) minimum.
    b. Peel Strength (ASTM D1781): 22.5 in-lb/in (100 N-m/m) minimum.
    c. No degradation in bond performance after 8 hours of submersion in boiling water and after 21 days of immersion

in water at 70 degrees F (21 degrees C).

d. Thermally bonded to the core material in a continuous process under tension.

5. Fire Performance:

a. Flamespread, ASTM E84: <25.

b. Smoke Developed, ASTM E84: <450.

c. Surface Flammability, Modified ASTM E108: Pass.

d. Ignition Temperature:

1) Flash, ASTM D1929: 716 degrees F (380 degrees C).

2) Ignition: 752 degrees F (400 degrees C).

e. UL 94 V-O Rating.

B. Production Tolerances:

1. Width: +/- 0.04 inch/3 feet (1 mm/m).

2. Length: +/- 0.04 inch/3 feet (1 mm/m).

3. Thickness (4 mm Panel): +/- 0.008 inch (0.2 mm).

4. Thickness (6 mm Panel): +/- 0.012 inch (0.3 mm).

5. Bow: Maximum 0.5% length or width.

6. Squareness: Maximum 0.2 inch (5.1 mm).

7. Edges of sheets shall be square and trimmed with no displacement of aluminum sheets or protrusion of core material.

2.05 ACCESSORIES

A. General: Provide fabricator's standard accessories, including fasteners, clips, anchorage devices and attachments for specific applications indicated on contract documents.

2.06 RELATED MATERIALS

A. General: Refer to other related sections in Related Sections paragraph specified herein for related materials, including cold-form metal framing, flashing and trim, joint sealers, aluminum windows, glass and glazing and curtain walls.

2.07 FABRICATION

A. General: Shop fabricate to sizes and joint configurations indicated on drawings.

1. Where final dimensions cannot be established by field measurements, provide allowance for field adjustment as recommended by the fabricator.

2. Form panel lines, breaks and angles to be sharp and true, with surfaces that are free from warp or buckle.

3. Fabricate with sharply cut edges and no displacement of aluminum sheet or protrusion of core.

2.08 FINISHES

Specifier Note: ALPOLIC/fr panels are available with fluorocarbon and polyester coatings. A pallet of bright, vibrant and vivid colors is available in a wide gloss range. A Class 1 anodized finish is also available.

A. Factory Finish: Lumiflon-based fluoropolymer resin coating that meets or exceeds values expressed in AAMA 2605 where relevant to coil coatings.

1. Color: [Specify color].

2.09 SOURCE QUALITY

A. Source Quality: Obtain composite panel products from a single manufacturer.

PART 3 EXECUTION

Specifier Note: Article below is an addition to the CSI *SectionFormat* and a supplement to MANU-SPEC. Revise article below to suit project requirements and specifier's practice.

3.01 MANUFACTURER'S INSTRUCTIONS

A. Compliance: Comply with manufacturer's product data, including product technical bulletins, product catalog installation instructions and product carton instructions.

3.02 EXAMINATION

A. Site Verification of Conditions: Verify that conditions of substrates previously installed under other sections are acceptable for product installation.

3.03 PREPARATION

A. Surface Preparation: [Specify applicable product preparation requirements for installation of composite metal panels].

Specifier Note: Coordinate article below with manufacturer's recommended installation details.

3.04 INSTALLATION

A. General:

1. Install panels plumb, level and true in compliance with fabricator's recommendations.
2. Anchor panels securely in place in accordance with fabricator's approved shop drawings.
3. Comply with fabricator's instructions for installation of concealed fasteners and with provisions of Section 07 90 00 for installation of joint sealers.
4. Installation Tolerances: Maximum deviation from horizontal and vertical alignment of installed panels: 0.25 inch in 20 feet (6.4 mm in 6.1 m), noncumulative.

B. Related Products Installation Requirements: Refer to other sections in Related Sections paragraph herein for installation of related products.

3.05 FIELD QUALITY REQUIREMENTS

A. Field Quality Control: Comply with panel system fabricator's recommendations and guidelines for field forming of panels.

Specifier Note: Edit paragraph below. Establish number and duration of periodic site visits with Owner and fabricator, and specify below. Consult fabricator for services required. Coordinate paragraph below with Division 01 Quality Assurance Section. Delete if fabricator's field service not required.

B. Fabricator's Field Services: Upon Owner's request, provide fabricator's field service consisting of product use recommendations and periodic site visit for inspection of product installation in accordance with fabricator's instructions.

1. Site Visits: [Specify number and duration of periodic site visits].

Specifier Note: Coordinate below article with Division 01 Execution Requirements, Starting and Adjusting, Cleaning, and Protecting Installed Construction Section.

3.06 ADJUSTING

A. Adjusting:

1. Repair panels with minor damage such that repairs are not discernible at a distance of 10 feet (3 m).
2. Remove and replace panels damaged beyond repair.
3. Remove protective film immediately after installation of joint sealers and immediately prior to completion of composite metal panel work.
4. Remove from project site damaged panels, protective film and other debris attributable to work of this section.

Specifier Note: Coordinate article below with Division 01 Execution Requirements (Cleaning) Section.

3.07 CLEANING

A. Cleaning: Remove temporary coverings and protection of adjacent work areas. Repair or replace damaged installed products. Clean installed products in accordance with manufacturer's instructions prior to owner's acceptance. Remove construction debris from project site and legally dispose of debris.

Specifier Note: Coordinate article below with Division 01 Execution Requirements Section.

3.08 PROTECTION

A. Protection: Protect installed product's finish surfaces from damage during construction.

1. Institute protective measures as required to ensure that installed panels will not be damaged.

END OF SECTION

Attachment No. 3

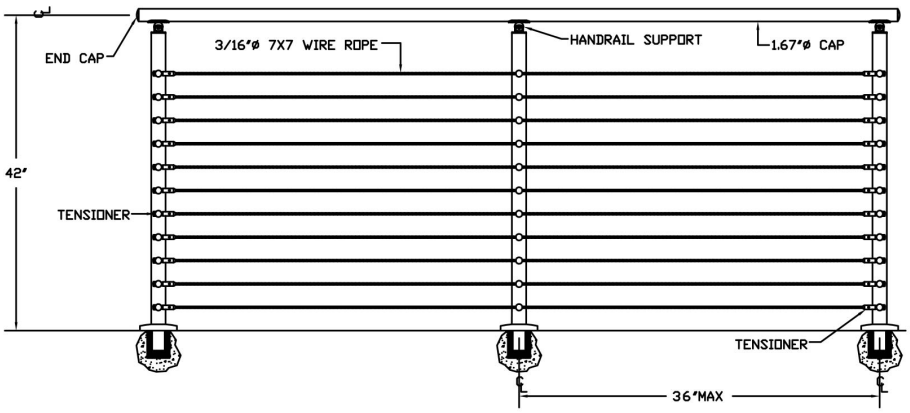
Exhibit B.4, Handrail Specification

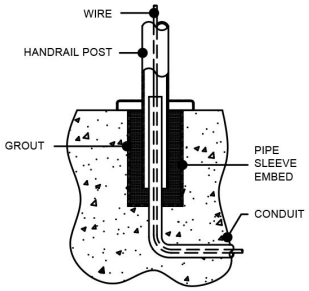
Cut Sheets:

Efficient-Tec International, LLC

Stainless Steel Systems S3

ENCIA





STANDARD POST MOUNTING @ WIRE FEED

S3	–		–		–		–		–		–		–		–		–		–		–	
		1		2		3		4		5		6		7		8		9		10		

1. MATERIAL / FINISH

SS – 316 Stainless Steel with a No. 6 (320 grit) Satin Finish
SP – 316 Stainless Steel with a No. 8 High Polish Finish
ALC - Clear Anodized 6063 Aluminum
ALB – Black Anodized 6063 Aluminum
ALBR – Bronze Anodized 6063 Aluminum
ALPC – 6063 Aluminum with a Powder Coat Finish (RAL Color Code Required)

2. RAIL SIZE

1 – 1.67" O.D. Stainless Steel 1 ¼" Pipe
2 – 1.90" O.D. Stainless Steel 1 ½" Pipe
3 – 1.50" Square Stainless Steel
4 – 1.66" O.D. Aluminum 1 ¼" Pipe
5 – 1.90" O.D. Aluminum 1 ½" Pipe
6 – 1.50" O.D. Brass
7 – 1.90" O.D. Bronze 1 ½" Pipe

3. MOUNTING

EM – Embed Mount
FL – Flange Mount
FM – Fascia Mount

4. INFILL OPTIONS

CB2 - Off-set stainless steel cable 3/16" 1X19

5. LIGHT DISTRIBUTION

ST – Standard Distribution
AS – Asymmetric
NI – No Illumination

6. LED OUTPUT

1 – Medium Output – 2.6 watts/ft. & 173 lumens /ft.
2 – High Output – 4.4 watts/ft. & 355 lumens /ft.

7. LENS

1 – Clear with prismatic diffusers
2 – Opal White with diffusers
3 – Clear with no diffusion (asymmetric)

8. ILLUMINATION COLOR

1 - Warm White – 2700K
2 - White – 4000K
3 - Red
4 - Green
5 - Blue
6 - Amber
7 – RGB

9. DRIVER

1 – Remote

10. LENGTH

– In Feet

Example Part Number: S3 SS 1 EM NR ST 2 1 1 1 8
Example Part Number stands for Illuminated Stainless Steel Freestanding Single Line Rail "Anda" with a No. 6 finish, High Output Warm White LED's, Standard Distribution, Clear Lens, Remote Driver and 8' in length.

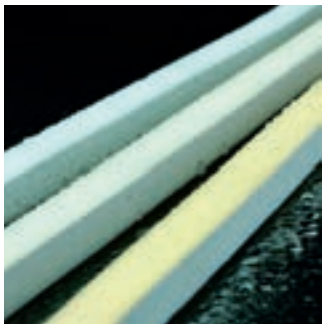
NOTE: All Illuminated Railing comes with a 24VDC 100W 120/277V LED Driver 1 LED Driver for 16' of Illuminated Railing (Class II power) Remote Distance – 50'

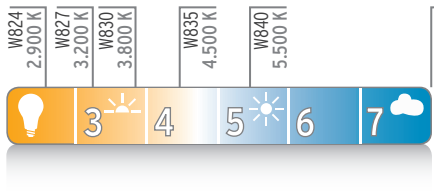
Product Images:

Attachment No. 4

Exhibit B.5, Lighting Specification

VarioLED™ Flex PHOBOS TV IP67





10 Watt/meter

567 lumen/meter (lm/m)

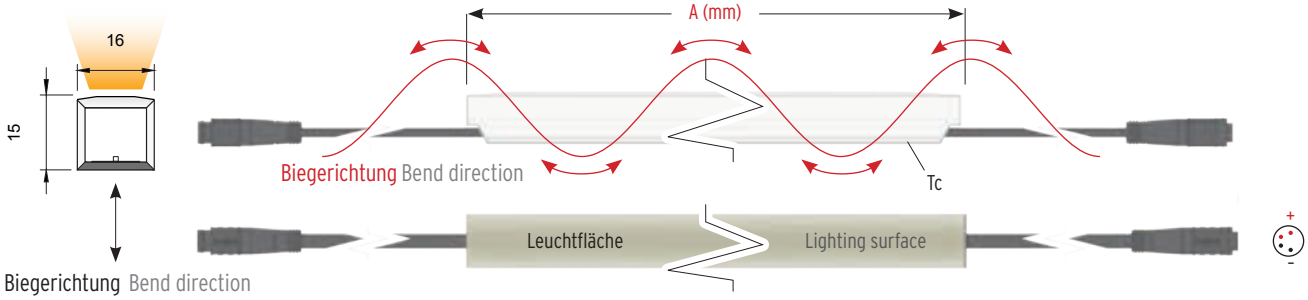
! Ra/CRI 85

IP67

Abmessungen & Längen Dimensions & available length

R_{min} = 15 cm
R_{min} = 5.9“

110 mm IP67 Steckverbinder (Buchse/Stecker) an den Enden
110 mm IP67 plug in connector (male/female) on both ends



Biegerichtung Bend direction

Toleranz +/- 5 mm Tolerance +/- 5 mm

Tc-Punkt: Rückseite des Moduls Tc-point: Rear side of module

$A = N \times 62{,}5 + 26$; $N = 1 \ldots 80$; $A_{min} = 1 \times 62{,}5 + 26 = 88{,}5$; $A_{max} = 80 \times 62{,}5 + 26 = 5.026$

Bestellnummer Order Code: VarioLED Flex PHOBOS Wxxx/A TV IP67

Elektrische & Optische Betriebsdaten Electrical & optical data

Abmessungen Dimensions	A x 16 mm x 15 mm
Leistung Power	10 W/meter
Spannung Voltage (V)	24 Volt (23 V_{min}, 25 V_{max})
Temperatur Temperature	tc_{min} = -25°C, tc_{max} = +60°C
Lagertemp. Storage temp.	t_{min} = -30°C, t_{max} = +85°C
Außentemperatur Ambient temp.	ta_{min} > -25°C, ta_{max} = +45°C

Lebensdauer
Lifetime

LM 79 konform
LM 79 compliant

LM 80 konform
LM 80 compliant

VarioLED™ Flex PHOBOS TV IP67	lumen/meter (lm/m)	Ra CRI	Farbtemperatur* Color temperature* (K)
W824	360	80	2.900
W827	480	85	3.200
W830	523	85	3.800
W835	553	85	4.500
W840	564	85	5.500
W850	567	85	9.000

Nähere Erläuterungen zu Änderungen, Grenzwerten und Schwankungen im Herstellungsprozess finden Sie im LED Linear™ Systemkatalog, Seite 532.

For more details regarding catalogue changes, min and max data sheet values and production tolerances see the LED Linear™ system catalogue, page 533.

* Bei IP67 Produkten können Toleranzen bei der Farbtemperatur auftreten. Nähere Erläuterung dazu finden Sie auf S. 584.
* In case of IP67 products, tolerances in the color temperature can occur. For further explanation, please see page 584.

Sicherheits- und Montagehinweise: LED Linear™ Systemkatalog, Seite 534 ff. Safety and assembly information: LED Linear™ system catalogue, page 536 ff.

Ausschreibungstext Specification text

Photo: Alex Haw

VarioLED™ Flex PHOBOS TV IP67

24 V, opal vergossene flexible LED Lichtlinie in IP67 für Architektur und Innenausbau. Mit selbstklebendem 3M Klebeband auf der Rückseite. Homogene lichtpunktfreie Ausleuchtung bei geringsten Bautiefen.

10 W/m, 567 lm/m. Querschnitt 16 mm x 15 mm. Länge bis zu 5 m. 110 mm IP67 Steckverbinder an beiden Enden. Bei maximaler Bestelllänge nur einseitig mit IP67-Stecker, keine Buchse. L80 von 53.000 h.

Einfache Installation und hohe Beständigkeit in rauen klimatischen Bedingungen. Salzwasser-, UV-, chlor- und lösungsmittelbeständig. Made in Germany.

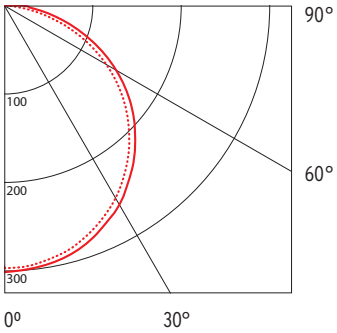
VarioLED™ Flex PHOBOS TV IP67

24 V, flexible fully opal encapsulated IP67 protected LED light line for architecture and interior design. 3M self adhesive tape on rear side. Homogeneous and dot free illumination in very low installation depths.

10 W/m, 567 lm/m. Cross section of 16 mm x 15 mm. Length up to 5 m. 110 mm IP67 plug in connectors on both ends. At maximum length order only one side with IP67 plug in connector female, no male connector. L80 of 53,000 hrs.

Easy installation and a rugged design for harsh environments (e. g. resistant to saltwater, UV, chlorine and solvents). Made In Germany.

VarioLED™ Flex PHOBOS TV IP67



cd/1.000 lumen

C0/C180 C90/C270

UV geschützt
UV protected

Lösungsmittel geschützt
Resistant to solvents

Salzwasser geschützt
Saltwater resistant

Schutz beim Eintauchen
Temporary immersion protection

VarioLED™ Flex PHOBOS TV basiert auf unserem Produkt VarioLED™ Flex HYDRA HD10.

Durch die verwendete Venustechnologie ergibt sich eine Farbabweichung zum LED Flex Band, die jedoch keinen Einfluss auf die Gesamthomogenität hat.

VarioLED™ Flex PHOBOS TV is based on our product VarioLED™ Flex HYDRA HD10.

The encapsulation technology causes a color temperature drift compared to the flex tape color temperature. There is no effect on homogeneity.

Zubehör Accessories

erforderlich required	optional optional
24 V DC Konverter Power supply unit	1...10 V DMX Remote DALI Steuerprotokoll Power control system; Profil VENUS TV Contour VENUS TV

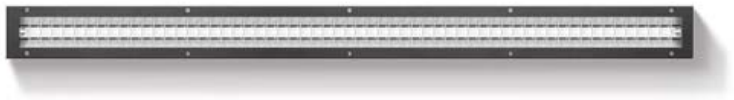
Details siehe Seite 456 ff. Details on page 456 ff.

Sicherheits- und Montagehinweise: LED Linear™ Systemkatalog, Seite 534 ff. Safety and assembly information: LED Linear™ system catalogue, page 536 ff.

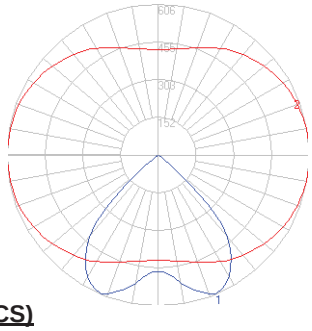
12/10/15

BEGA

Photometric Filename: 4441P.ies



TEST: BE2648
TEST LAB: BEGA
DATE: 3/19/2007
LUMINAIRE: 4441P
LAMP: (1) 24W FL T5 HO

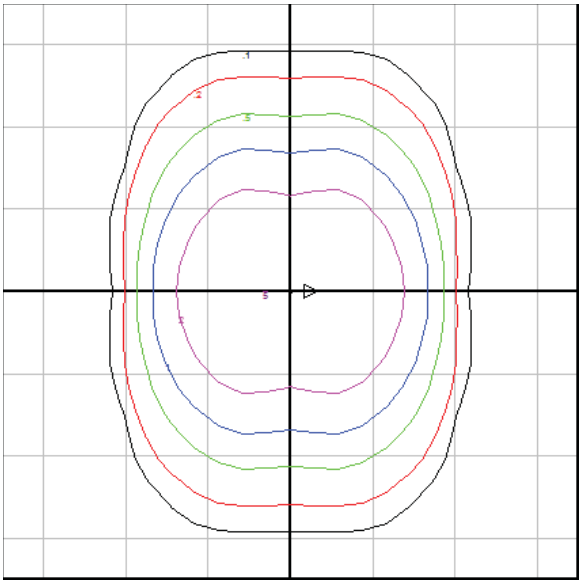


Characteristics

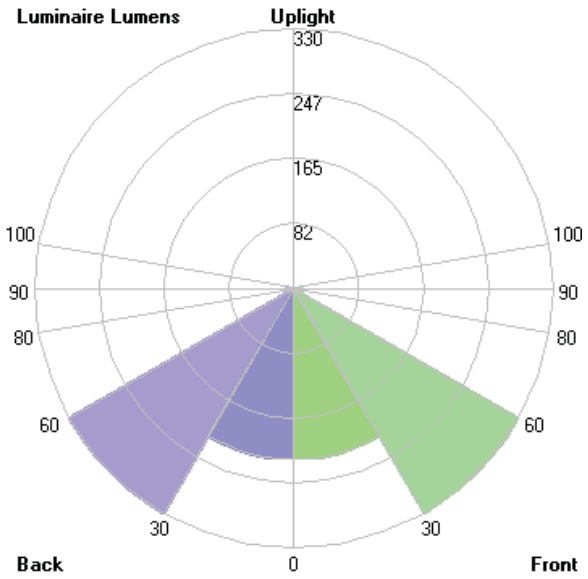
IES Classification	Type VS
Longitudinal Classification	Very Short
Lumens Per Lamp	2000 (1 lamp)
Total Lamp Lumens	2000
Luminaire Lumens	1117
Downward Total Efficiency	56 %
Total Luminaire Efficiency	56 %
Luminaire Efficacy Rating (LER)	41
Total Luminaire Watts	27
Ballast Factor	1.00
Upward Waste Light Ratio	0.00
Max. Cd.	606.4 (90H, 22.5V)
Max. Cd. (<90 Vert.)	606.4 (90H, 22.5V)
Max. Cd. (At 90 Deg. Vert.)	.116 (0.0%Lamp)
Max. Cd. (80 to <90 Deg. Vert.)	1.586 (0.1%Lamp)
Cutoff Classification (deprecated)	Cutoff

Lum. Classification System (LCS)

LCS Zone	Lumens	%Lamp	%Lum
FL (0-30)	217.0	10.8	19.4
FM (30-60)	329.6	16.5	29.5
FH (60-80)	11.5	0.6	1.0
FVH (80-90)	0.3	0.0	0.0
BL (0-30)	217.0	10.8	19.4
BM (30-60)	329.6	16.5	29.5
BH (60-80)	11.5	0.6	1.0
BVH (80-90)	0.3	0.0	0.0
UL (90-100)	< 0.05	0.0	0.0
UH (100-180)	0.0	0.0	0.0
Total	1116.8	55.8	100.0
BUG Rating	**B1-U1-G0**		



Mounting Height = 10 ft. Grid Spacing = 6 ft.



12/10/15

In the interest of product improvement, BEGA reserves the right to make technical changes without notice.

Surface-mounted ceiling downlights
with symmetrical light distribution

Housing: Die-cast aluminum end caps welded to an aluminum extrusion. The welds are continuous and ground flat to provide a watertight housing. Faceplate is constructed of die-cast and extruded pieces welded to form a single faceplate. The housing mounts directly to the ceiling over a single gang junction box. Die castings are marine grade, copper free (≤ 0.3% copper content) A360.0 aluminum alloy.

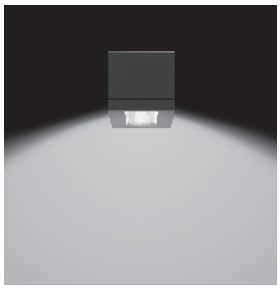
Enclosure: Faceplate is secured to the housing with captive stainless steel fasteners. Tempered clear glass, ¼" thick. Internal baffles provided to control brightness and distribution of the lamp. Reflector is pure anodized aluminum. Fully gasketed with a molded silicone gasket.

Electrical: Lampholders: Fluorescent T5 HO, G5 miniature bi-pin. Ballasts; integral electronic, universal voltage 120 V through 277 V, Class P, HPF, program start, minimum start temperature of 0° F. Ballasts have circuitry to reliably shut down the system at the end of lamp life. Standard T5 lamping available on request.

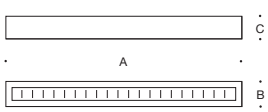
Finish: All BEGA standard finishes are polyester powder coat with minimum 3 mil thickness. Available in four standard BEGA colors: Black (BLK); White (WHT); Bronze (BRZ); Silver (SLV). To specify, add appropriate suffix to catalog number. Custom colors supplied on special order.

UL listed for US and Canadian Standards, suitable for wet locations.
Protection class IP65.

Type:
BEGA Product:
Project:
Voltage:
Color:
Options:
Modified:



These luminaires mount to a vertical single-gang wiring box (by others).



	Lamp*	Lumen	A	B	C
4441 P	1 24 W FL T5 HO	2000	24	4	3½

* Equivalent standard T5 lamping available

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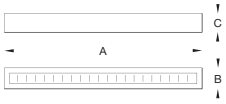
12/10/15

Tools Required:

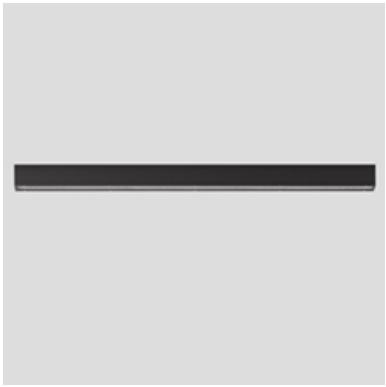
Phillips head medium screwdriver
4 mm Hex Key

UL listed, suitable for wet locations.



Dimensions

A: 24 "
B: 4 "
C: 3-1/2 "



Protection Class: IP 65

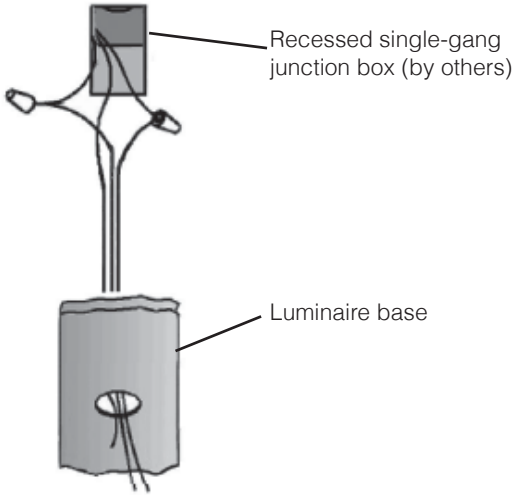
Weight: 9.5 lbs.

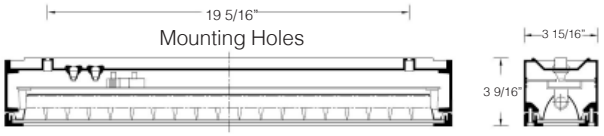
Notice to Installer for 4441P:

1. Mounts directly to ceiling over recessed single gang junction box (by others).
2. Ceiling applications only.

4441P - installation:

1. Loosen the (6) socket head screws on faceplate of luminaire and remove faceplate with glass.
2. Undo (2) hex screws and remove reflector and ballast plate.
3. Make supply wiring and luminaire wiring connections inside the single gang wiring box:
MAIN VOLTAGE SUPPLY WIRE TO BLACK LUMINAIRE WIRE
NEUTRAL (COMMON) SUPPLY WIRE TO WHITE LUMINAIRE WIRE
GREEN GROUND WIRE TO GREEN LUMINAIRE WIRE
4. Mount luminaire to ceiling or wall using hardware (by others). Minimum size: 8-32 screws.
5. Attach reflector and ballast plate and tighten (2) hex screws.
6. Insert fluorescent lamp (by others). Twist lamp ends until locked.
7. Replace faceplate and glass, making sure that gasket is seated properly. Tighten the (6) screws to secure.





Relamping/Maintenance

Loosen screws and remove faceplate with glass. Replace lamp. Clean luminaire and lens using solvent-free cleansers, and reassemble (making sure that gasket is seated properly).

Lamp: (1) 24W FL T5 HO

Philips :	F24T5/HO/ALTO
Osram/Sylvania :	FP24/HO/ECO
GE :	F24W/T5/ECO

Accessories

Please refer to the appropriate accessory installation sheet for further instruction when applicable.

Replacement Parts

Description	Part No
Lens	140679
Gasket	831119
Lampholder	74171
Ballast (120V-277V)	75650

In the interest of product improvement, BEGA reserves the right to make technical changes without notice.