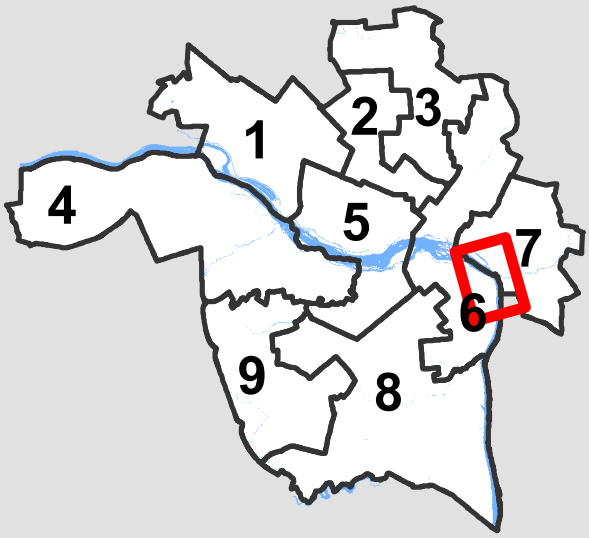
City of Richmond
Department of Planning & Development Review

Location, Character, and Extent

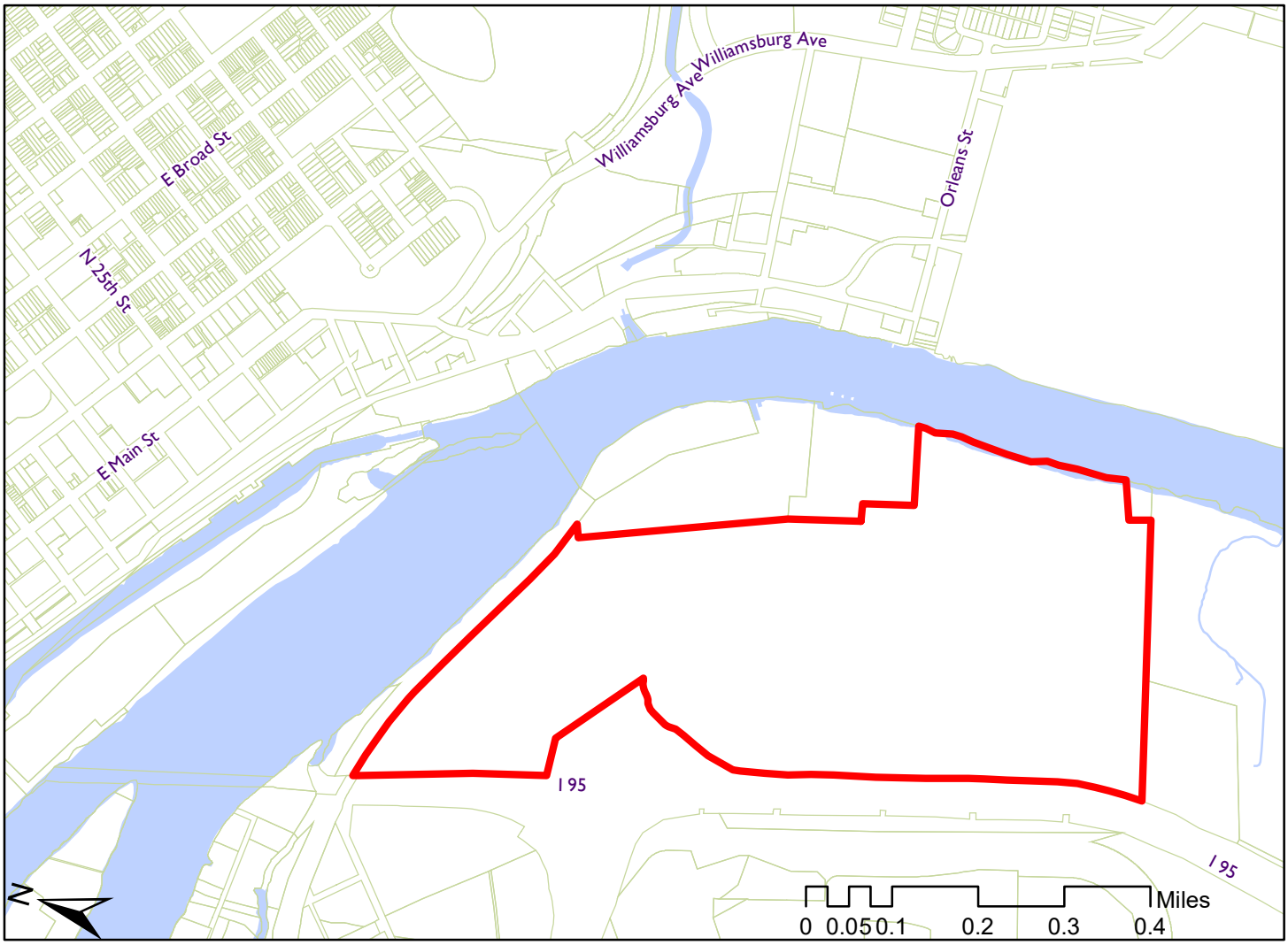
LOCATION: 1400 Brander Street

COUNCIL DISTRICT: 6

PROPOSAL: Review of Septage Hauling Unloading Station Improvements.



For questions, please contact Alex Dandridge at 646-6569 or Alex.Dandridge@richmondgov.com



City of Richmond

Wastewater Treatment Plant

Septage Hauling Unloading Station (SHUS) Improvements

UDC Final Review Submittal

September 2, 2020

For

October 8, 2020 UDC Meeting

Department of Public Utilities

Greeley and Hansen

Environ-Civil Engineering, Ltd.

Application for Urban Design Committee Review

Department of Planning and Development Review
Planning & Preservation Division
900 E. Broad Street, Room 510
Richmond, Virginia 23219 | (804) 646-6335
www.richmondgov.com/CommitteeUrbanDesign

RICHMOND PLANNING & DEVELOPMENT REVIEW
PDR

Application Type (select one)

- ☐ Location, Character, & Extent
- ☐ Section 17.05
- ☐ Other:
- ☐ Encroachment
- ☐ Design Overlay District

Review Type (select one)

- ☐ Conceptual
- ☑ Final

Project Information

Submission Date: 09/02/2020

Project Name: Septage Hauling Unloading Station (SHUS) Improvements Project

Project Address: 1400 Brander Street, Richmond VA, 23224-2399

Brief Project Description (this is not a replacement for the required detailed narrative):

Improvements to the existing septage hauling unloading station at the Richmond Wastewater Treatment Plant; which include adding equipment redundancy, maintenance accessibility, and a translucent canopy structure.

Applicant Information (a City representative must be the applicant, with an exception for encroachments)

Name: Barbara Jackson Email: barbara.jackson@richmondgov.com

City Agency: Department of Public Utilities Phone: 804-646-8662

Main Contact (if different from Applicant): George Guhse

Company: Greeley and Hansen Phone: (804) 204-2421

Email: gguhse@greeley-hansen.com

Submittal Deadlines

All applications and support materials must be filed no later than 21 days prior to the scheduled meeting of the Urban Design Committee (UDC). Please see the schedule on page 3 as actual deadlines are adjusted due to City holidays. **Late or incomplete submissions will be deferred to the next meeting.**

Filing

Applications can be mailed or delivered to the attention of "Urban Design Committee" at the address listed at the top of this page. **It is important that the applicant discuss the proposal with appropriate City agencies, Zoning Administration staff, and area civic associations and residents prior to filing the application with the UDC.**

Submittal Deadlines

The UDC is a ten member committee created by City Council in 1968 whose purpose is to advise the City Planning Commission (CPC) on the design of projects on City property or right-of-way. The UDC provides advice of an aesthetic nature in connection with the performance of the duties of the Commission under Sections 17.05, 17.06, and 17.07 of the City Charter. The UDC also advises the Department of Public Works in regards to private encroachments in the public right-of-way.

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Submssion Requirements

•An electronic copy (PDF preferred) of all application materials, which can be emailed, or delivered by FTP or USB.
•Three (3) copies of the application cover sheet and all support materials (see below).
•Plan sheets should be 11" x 17", folded to 8 1/2" x 11". If it is not possible to scale plans to these dimensions, please provide one set of larger, scaled plans.
•All applications must include the attached cover sheet and the following support materials, as applicable to the project, based on Review Type:

Conceptual Review:

•A detailed project narrative which includes the following: purpose of the project, project background, project budget and funding sources, description of construction program and estimated construction start date (description should also provide information on the surrounding area to provide context).
•A site plan for the project indicating site characteristics which include: building footprints, parking areas, pedestrian routes, recreation areas, open areas, and areas of future expansion.
•A set of floor plans and elevations, as detailed as possible.
•A landscaping plan which shows the general location and character of plant materials and notes any existing tree to be removed.

Final Review:

•A detailed project narrative which includes the following: purpose of the project, project background, project budget and funding sources, description of construction program, and estimated construction start date (description should also provide information on the surrounding area to provide context).
•A site plan for the project indicating site characteristics which include: building footprints, parking areas, pedestrian routes, recreation areas, open areas, and areas of future expansion.
•A set of floor plans and elevations, as detailed as possible.
•A landscaping plan that includes a complete plant schedule, the precise location of all plant materials, and a landscape maintenance analysis. The plant schedule must show number, size and type of each planting proposed. If existing trees are to be removed, their size, type, and location must be noted on the landscape plan.
•The location of all lighting units should be noted on a site plan, including wall-mounted, site, and parking lot lighting. Other site details such as benches, trash containers, and special paving materials should also be located. Include specification sheets for each item.
•Samples of all proposed exterior building materials, including but not limited to brick, mortar, shingles, siding, glass, paint, and stain colors. When an actual sample cannot be provided, a product information sheet that shows the item or a photo of an existing item may be substituted.

Review and Processing

•Once an application is received, it is reviewed by Staff, who compiles a report that is sent to the UDC.
•A copy of the report and the meeting agenda will be sent to the applicant prior to the meeting.
•At the UDC meeting, the applicant or a representative should be present or the application may be deferred to the next regularly scheduled meeting. It is also strongly suggested that a representative of the City Agency which will have final responsibility for the item be present at the meeting (if the applicant and the representative are not the same).
•Once the UDC recommends action on the application, it is automatically placed on the agenda for the next City Planning Commission (CPC) meeting. Exceptions to this are encroachment applications, recommendations for which are forwarded to the Department of Public Works.
•At the CPC meeting, the applicant or a representative should be present, or the application may be deferred to the next regularly scheduled meeting.

last revised 6/10/2019

Application for Urban Design Committee Review

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Regular meetings are scheduled on the Thursday after the first Monday of each month at **10:00 a.m. in the 5th floor conference room of City Hall, 900 E. Broad Street**. Special meetings are scheduled as needed.

Meeting Schedule 2020

UDC Meetings	UDC Submission Deadlines	Anticipated Date of Planning Commission Following the UDC Meeting
December 5, 2019	November 14, 2019	December 16, 2019
January 9, 2020	December 12, 2019	January 21, 2020 [1]
February 6, 2020	January 16, 2020	February 18, 2020 [2]
March 5, 2020	February 13, 2020	March 16, 2020
April 9, 2020	March 12, 2020	April 20, 2020
May 7, 2020	April 16, 2020	May 18, 2020
June 4, 2020	May 14, 2020	June 15, 2020
July 9, 2020	June 11, 2020	July 20, 2020
August 6, 2020	July 16, 2020	August 17, 2020 [3]
September 10, 2020	August 13, 2020	September 21, 2020
October 8, 2020	September 17, 2020	October 19, 2020
November 5, 2020	October 15, 2020	November 16, 2020
December 10, 2020	November 12, 2020	December 21, 2020 [4]

[1] Monday, January 20, 2020 is a City of Richmond Holiday.
[2] Monday, February 17, 2020 is a City of Richmond Holiday.
[3] This August CPC Meeting may be canceled. If so, Planning Commission hearing would be Tuesday, September 8, 2020.
[4] This December CPC Meeting may be canceled.

The Richmond Urban Design Committee is a ten member advisory committee created by City Council in 1968. Its purpose is to advise the City Planning Commission on the design of City projects. The Urban Design Committee reviews projects for appropriateness in "location, character, and extent" and for consistency with the City's Master Plan and forwards recommendations to the City Planning Commission. The Urban Design Committee also advises the Department of Public Works in regards to private encroachments in the public right-of-way.

For more information, please contact the Planning and Preservation Division staff at (804) 646-6335 or Alex Dandridge at (804) 646-6569 or at alex.dandridge@richmondgov.com.

CITY OF RICHMOND

GREELEY AND HANSEN

Environ-Civil Engineering, Ltd.
Engineers • Scientists • Construction Managers

DANIELS & ASSOCIATES, P.C.
Consulting Engineers

Department of Public Utilities Wastewater Treatment Plant Septage Hauling Unloading Station (SHUS) Improvements

Urban Design Committee
October 8, 2020 Meeting

Barbara Jackson, City of Richmond
Ed Edmondson, City of Richmond
George Guhse, Greeley and Hansen
Bernardo Vazquez-Bravo, Greeley and Hansen

Agenda

- Project Narrative
- Site Plan
- Floor Plan and Sections
- Canopy Cut Sheets and Brochure
- Canopy System Specification
- Opinion of Probable Cost
- Schedule

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Project Narrative

Project Narrative

The SHUS allows licensed septage haulers in the City to unload septage waste at the Wastewater Treatment Plant (WWTP). The transactions are recorded and haulers are billed based on the gallons unloaded. The motivation for this project was to increase redundancy for the system, and increase space around the equipment for maintenance. The City would like a larger skid, a larger rock trap, redundant grinders, and a canopy over the skid area.

The canopy will be designed as a shed style roof, with the ability to be removed as one piece as needed. The overall size will be approximately 20 feet by 20 feet. The canopy will be constructed of translucent fiberglass panels in an aluminum grid supported by structural columns set onto concrete bases. The existing light adjacent to the skid area will provide lighting over skid through the translucent panels. Additional bollards will be added to protect the canopy supports. The canopy design will provide cover for the equipment and controls, and the columns will be placed so no conflicts will occur with the operation of the SHUS. No landscaping or tree removal are part of this project.

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Site Plan

Wastewater Treatment Plant

RICHMOND-PETERSBURG TURNPIKE ROUTE I-95

GREELEY AND HANSEN

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Existing Station

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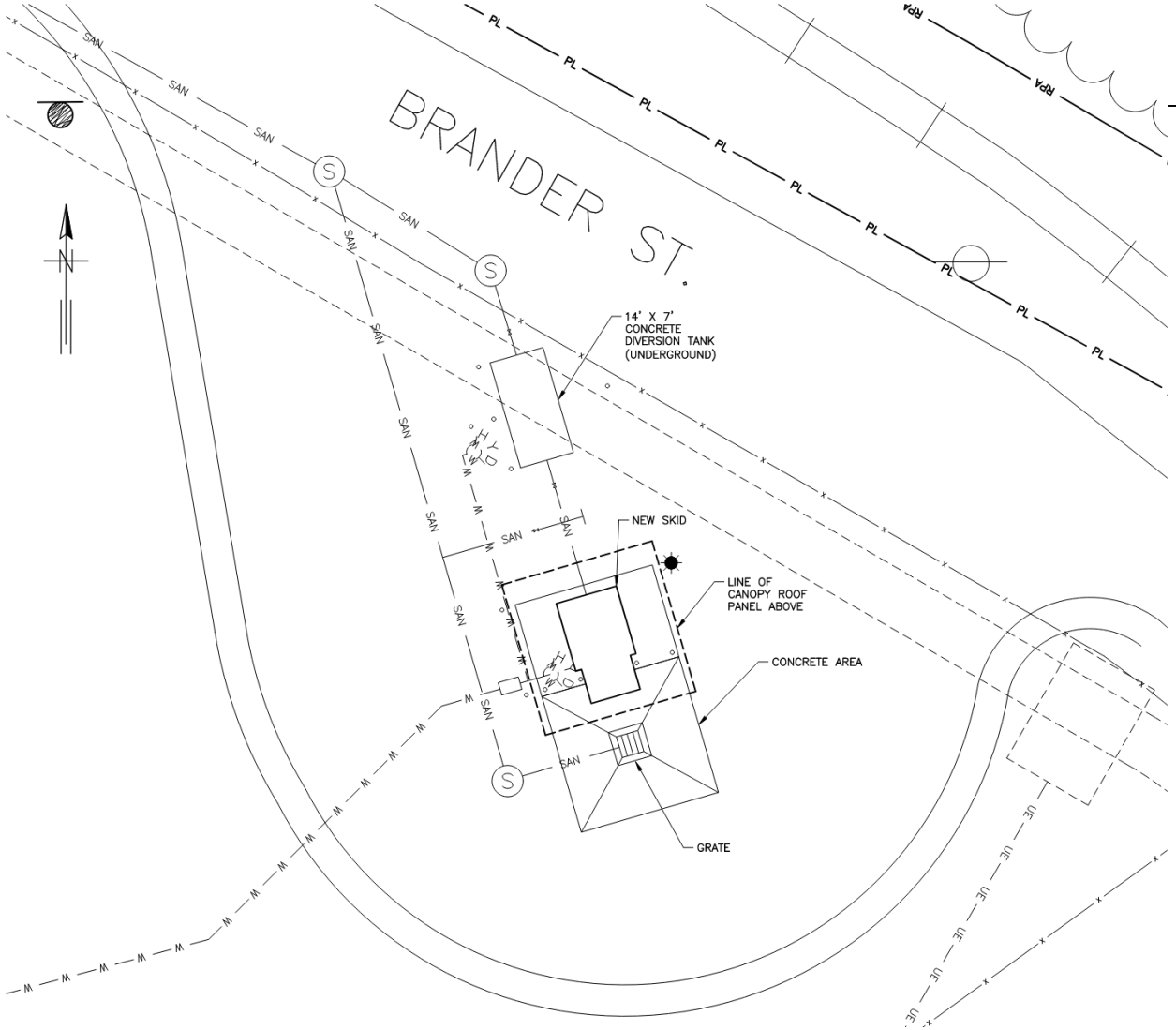
SHUS Site Plan



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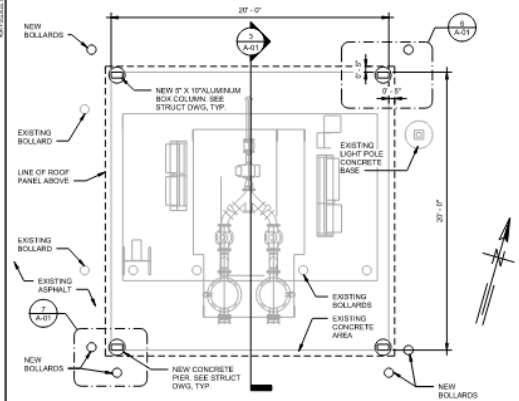
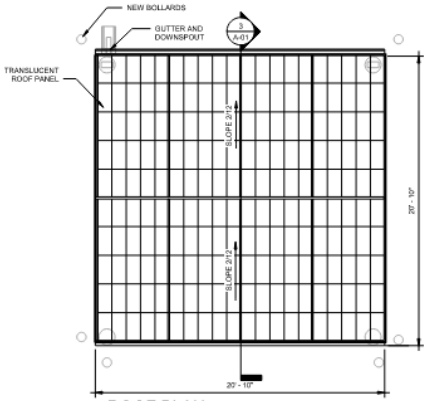
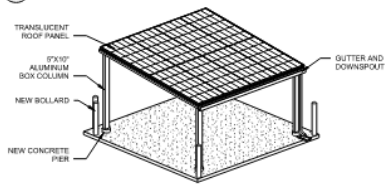
Floor Plan and Sections



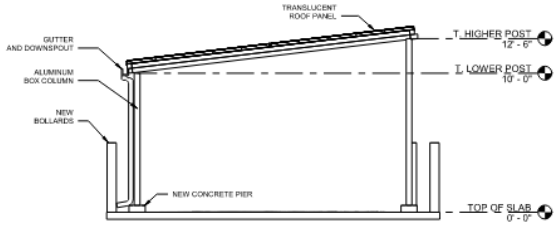
1 FLOOR PLAN
SCALE: 1/4" = 1'-0"



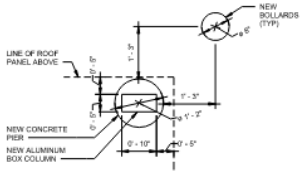
2 ROOF PLAN
SCALE: 1/4" = 1'-0"



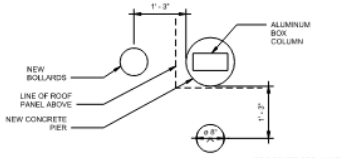
PERSPECTIVE
SCALE:



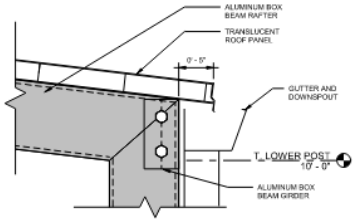
3 SECTION
SCALE: 1/4" = 1'-0"



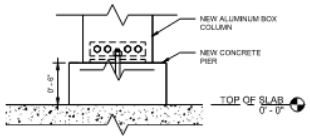
6 BOLLARDS PLAN AT NE CORNER
SCALE: 3/4" = 1'-0" (NW CORNER OPP. HAND)



7 BOLLARDS PLAN AT SW CORNER
SCALE: 3/4" = 1'-0"



4 DETAIL AT ROOF CONNECTION
SCALE: 1 1/2" = 1'-0"



5 DETAIL AT BASE CONNECTION
SCALE: 1 1/2" = 1'-0"

CODE SUMMARY

VIRGINIA 2012 BUILDING CODE

CONSTRUCTION TYPE	IIA	
OCCUPANCY GROUP	F2	
	ALLOWED	**ACTUAL**
MAX BUILDING HEIGHT	65 FT. (NOT LIMITED PER. 503.1.1 FOR SPECIAL INDUSTRIAL OCCUPANCIES)	13 FT
MAX BUILDING AREA	37500 SF	400 SF
MAX BUILDING STORIES	5	1
SNOW LOAD	ROOF SNOW REQUIREMENTS 20 PSF	20 PSF
WIND LOAD	WIND SPEED (V) 120 MPH	120 MPH
EGRESS INFORMATION	**ALLOWED**	**ACTUAL**
TOTAL OCCUPANTS	24997 SF/1000OC=245	0
EXIT ACCESS TRAVEL DISTANCE	300 FT	N/A
COMMON PATH OF EGRESS TRAVEL	75 FT	N/A

GENERAL NOTES

1. CONDITIONS AFFECTING THE WORK: BEFORE PROCEEDING WITH THE WORK THOROUGHLY EXAMINE CONDITIONS AT THE PROJECT SITE TO ENSURE THAT THE WORK CAN PROCEED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. REPORT CONDITIONS FOUND WHICH WILL ADVERSELY AFFECT THE WORK TO THE OWNER PRIOR TO PROCEEDING WITH THE WORK.

2. DIMENSIONAL VERIFICATION: BEFORE PROCEEDING WITH ANY WORK VERIFY ALL ASSOCIATED DIMENSIONS. REPORT ANY DIMENSIONAL VARIATIONS BETWEEN FIELD CONDITIONS AND PROPOSED WORK WHICH WILL ADVERSELY AFFECT THE WORK TO THE OWNER PRIOR TO PROCEEDING. DO NOT SCALE DRAWINGS. WRITTEN DIMENSIONS TAKE PRECEDENCE

3. NOTES: NOTES APPEAR ON VARIOUS DRAWINGS FOR DIFFERENT SYSTEMS AND MATERIALS. REVIEW ALL SHEETS AND APPLY NOTES TO RELATED BUILDING COMPONENTS. REFER TO COMPLETE SET OF ISSUED CONTRACT DOCUMENTS FOR OTHER APPLICABLE NOTES, ABBREVIATIONS, AND SYMBOLS.

4. GRAPHIC REPRESENTATION: ITEMS NOT NOTED ON DRAWINGS ARE TO BE CONSIDERED THE SAME AS NOTED ITEMS WHICH ARE GRAPHICALLY REPRESENTED IN THE SAME MANNER, UNLESS OTHERWISE NOTED.

5. DISSIMILAR MATERIALS: ISOLATE DISSIMILAR METALS TO PREVENT GALVANIC ACTION. PROTECT ALUMINUM FROM CORROSION WHEN IN CONTACT WITH CONCRETE.

6. ADJACENT WORK: WHERE MATERIALS ARE APPLIED TO, OR ARE IN DIRECT CONTACT WITH WORK INSTALLED BY ANOTHER SUBCONTRACTOR, COMMENCEMENT OF WORK IMPLIES ACCEPTANCE OF THE SUBSTRATES AS SUITABLE FOR THE APPLICATION INTENDED.

7. FALL PROTECTION: PROVIDE GUARDS AT ELEVATION CHANGES OF MORE THAN 30" UNLESS OTHERWISE NOTED.

8. GAPS ADJACENT TO EQUIPMENT: PROVIDE CLOSURE PLATES, ANGLES AND OTHER MATERIALS AS REQUIRED TO ENSURE THAT NO GAP BETWEEN ANY EQUIPMENT AND THE FLOOR OR ADJACENT WALKING SURFACE IS GREATER THAN 1-INCH

ABBREVIATIONS

AFF	ABOVE FINISH FLOOR
AL	ALUMINUM
B/	BOTTOM OF
CCCW	CAPILLARY CRYSTALLINE CEMENTITIOUS WATERPROOFING
COL	COLUMN
CONC	CONCRETE
CMU	CONCRETE MASONRY UNIT
CONT	CONTINUOUS
CRCT	CHEMICAL RESISTANT CONCRETE TOPPING
CTR	CENTER
CL	CENTER LINE
CTSK	COUNTERSUNK
CJ	CONTROL JOINT
CSU	CAST STONE UNIT
DIA	DIAMETER
DIM	DIMENSION
DN	DOWN
DPC	DUST PROOF COATING
DWG	DRAWING
EA	EACH
EL	ELEVATION
EQ	EQUAL
EPDM	ETHYLENE PROPYLENE DIENE MONOMER
EJ	EXPANSION JOINT
EXP	EXPOSED
EXT	EXTERIOR
FE	FIRE EXTINGUISHER
FD	FLOOR DRAIN
FDR	FABRIC DOOR
FLR	FLOOR
FLTR	FILTER
FP	FIREPROOFING
FR	FRAME
FRP	FIBER REINFORCED PLASTIC (FIBERGLASS)
GA	GAUGE
GLV	GALVANIZED
GR	GRADE
GT	GLAZING TYPE
HDCT	HEAVY DUTY CONCRETE TOPPING
HVAC	HEATING VENTILATION AND AIR CONDITIONING
HT	HEIGHT
HPT	HIGH POINT
HM	HOLLOW METAL
HORIZ	HORIZONTAL
HR	HOUR
INSUL	INSULATION
INT	INTERIOR
IPS	IRON PIPE SIZE
JT	JOINT
LPT	LOW POINT
MAT	MATERIAL
MAX	MAXIMUM
MECH	MECHANICAL
MIN	MINIMUM
MO	MASONRY OPENING
ML	MATCH LINE
NC	NON-COMBUSTIBLE
NOM	NOMINAL
NO	NUMBER
OC	ON CENTER
OCV	ON CENTER VERTICALLY
OCH	ON CENTER HORIZONTALLY
OCA	ODOR CONTROL AREA
OHCD	OVERHEAD COILING DOOR
OPNG	OPENING
PAC	PAINTED ARCHITECTURAL CONCRETE
PC	PRECAST
PFCMU	PRE-FACED CONCRETE MASONRY UNIT
PTD	PAINTED
PVC	POLYVINYL CHLORIDE
REINF	REINFORCEMENT
RF	RESINOUS FLOORING
RD	ROOF DRAIN
RM	ROOM
SATC	SUSPENDED ACOUSTICAL TILE CEILING
SBS	STYRENE BUTADIENE STYRENE
SF	STORE FRONT
SGU	STRUCTURAL GLAZED UNIT (STRUCTURAL GLAZED BRICK, (STRUCTURAL GLAZED TILE)
SIM	SIMILAR
SPECS	SPECIFICATIONS
S STL	STAINLESS STEEL
STD	STANDARD
STL	STEEL
T/	TOP OF
TWP	TRANSLUCENT WALL PANEL
TYP	TYPICAL
U.O.N	UNLESS OTHERWISE NOTED
VCT	VINYL COMPOSITION TILE
VERT	VERTICAL
VEST	VESTIBULE
VUA	VORTEX UNIT AREA
W/	WITH
W/O	WITHOUT

PRELIMINARY

GREELEY AND HANSEN
ARCHITECTS
100 S WACKER DR, SUITE 1400
CHICAGO, IL 60606

GREELEY AND HANSEN

DESIGNED	GHA	APPROVED
DRAWN	DR	
CHECKED	GHA	

NO.	DATE	APPD	DESCRIPTION

SCALE

Owner

SEPTAGE HAULING UNLOADING STATION IMPROVEMENTS

RICHMOND VIRGINIA

FLOOR, ROOF, ELEVATIONS AND DETAILS

PROJECT NO.: Project Number

DWG A-01

SHEET OF 234

DATE 7/2020 REV

GREELEY AND HANSEN

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CITY OF RICHMOND

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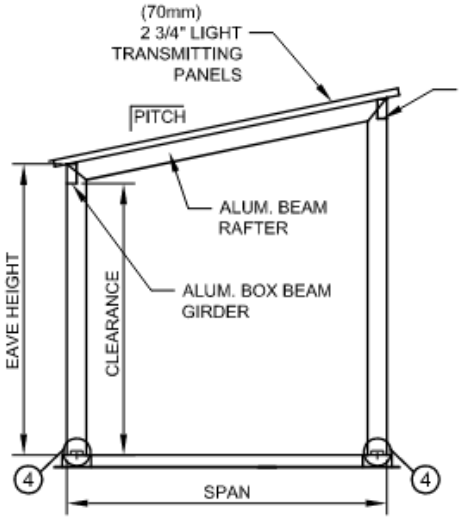
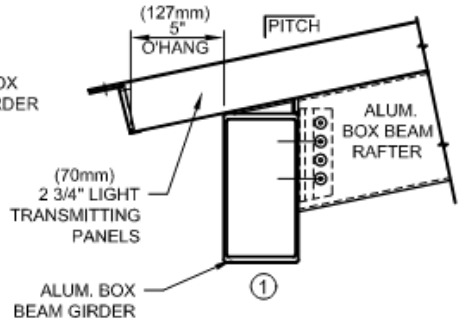
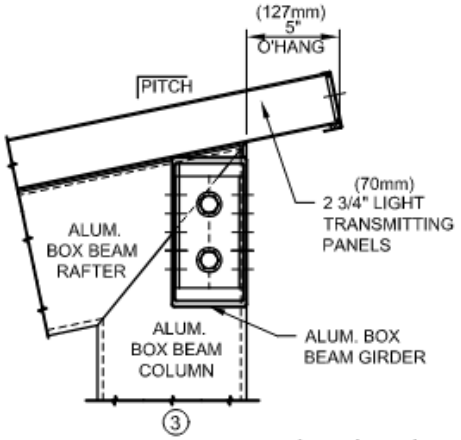
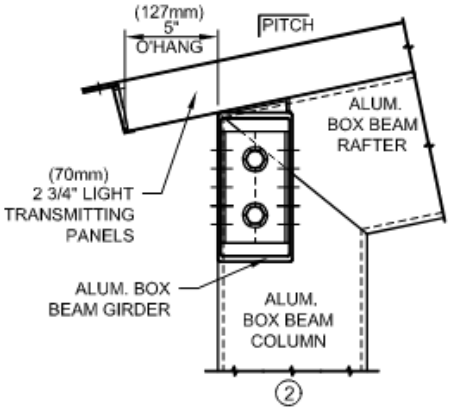
Canopy Cut Sheets and Brochure

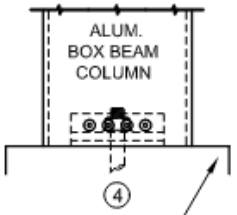


SECTION A-A









STRUCTURAL FOUNDATIONS,
PIERS AND CURBS TO BE
DESIGNED/SIZED BY OTHERS

FREESTANDING SHED CANOPY W/WIDE COLUMN SPACING

StructuresUnlimited
ENGINEERING DAYLIGHT

11/17

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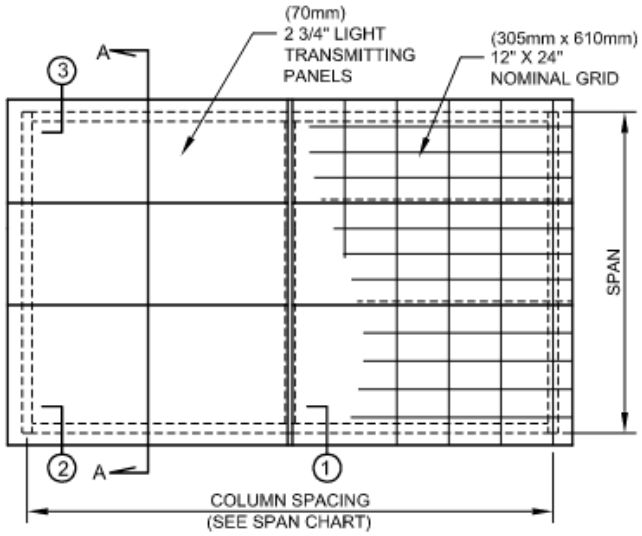
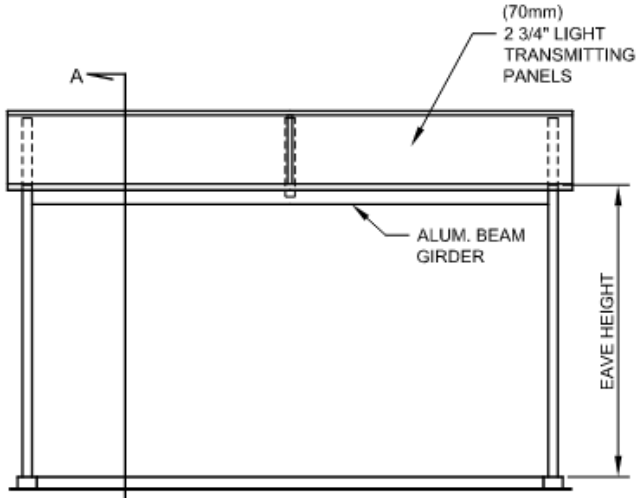
Consulting Engineers



ROOF PLAN



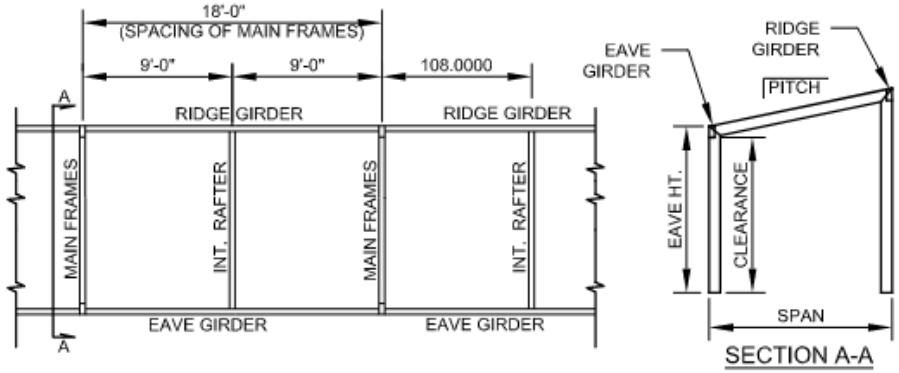
TYPICAL ELEVATION

FREESTANDING SHED CANOPY W/WIDE COLUMN SPACING

StructuresUnlimited
ENGINEERING DAYLIGHT

11/17

DL= 3 PSF
LL= 20 PSF (ROOF)
SL= 34 PSF (ROOF)
(Pg= 40 PSF, Ce= 1.0, Ct= 1.2, Is= 1.0)
WL= 25 PSF (FACTORED: IBC 2012/ASCE 7-10)
(V=115 MPH, EXPOSURE "C", RISK CATEGORY II)
RAFTER SPACING= 9'-0"
COLUMN SPACING= 18'-0"



CALL FACTORY FOR ADDITIONAL INFORMATION REQUIREMENTS

SHED CANOPY WITH WIDE COLUMN SPACING

StructuresUnlimited
ENGINEERING DAYLIGHT

8/16

Sample Canopy Structure

GREELEY AND HANSEN

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Consulting Engineers

KALWALL®

high performance translucent building systems

CANOPIES+WALKWAYS

Canopies

Walkways

Pre-engineered Structures

KALWALL.COM

Canopies + Walkways

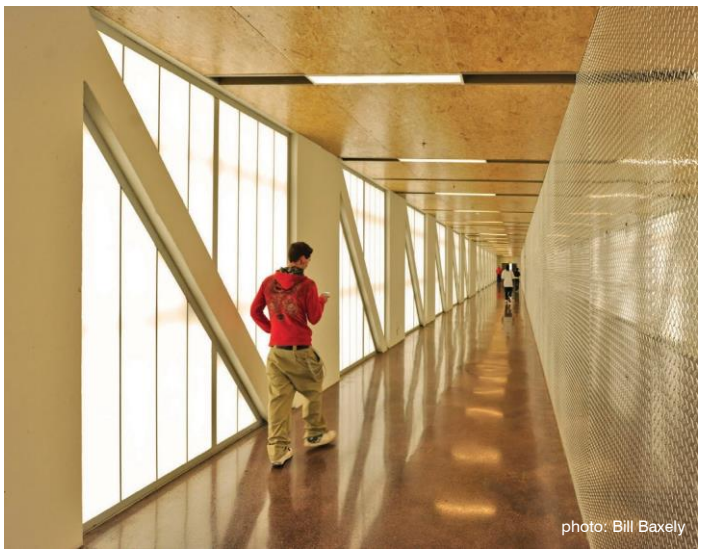
photo: Cesar Rubio

Joseph Steger Student Life Center | University of Cincinnati, OH (cover)

Moore Ruble Yudell Architects & Planners

Redwood Day School | Oakland, CA (above)

Studio Bondy Architecture

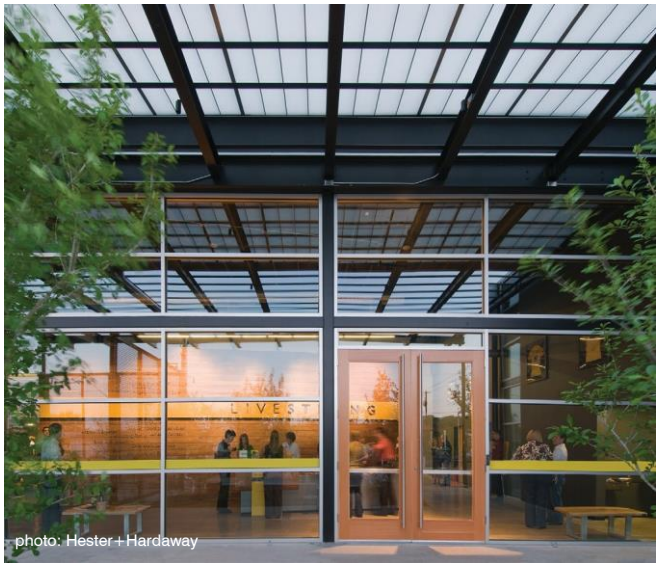


Dollar General Distribution Center | Bessemer, AL

Leo A. Daly Architects

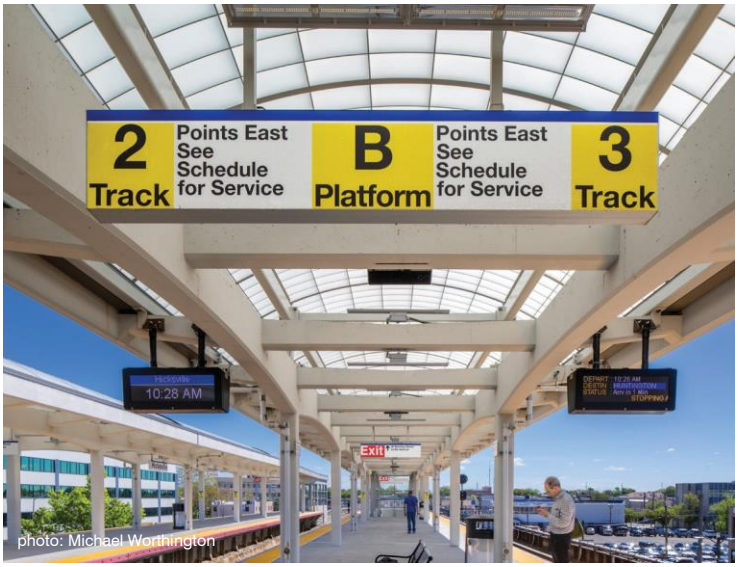
Nestle System Technology Centre | Orbe, Vaud, Switzerland

Concept Consult Architectes



Livestrong Foundation | Austin, TX

Lake|Flato Architects



LIRR Hicksville Station | Hicksville, NY

AECOM

West Croydon Bus Station | London, UK

Transport for London (TFL)

Canopies+Walkways

Make an architectural statement with Kalwall Canopies+Walkways, balancing performance, aesthetics and value. Whether for protection from the elements or as a backlit marquee to enhance a facade, we offer a full range of solutions.

Aids with visual transitions from interior to exterior by minimizing glare

Self-cleaning panel properties translate to lower maintenance requirements

Choose either flat Kalwall or curved Kalcurve® panels for design freedom

Meet life safety codes and acheive high design loads for snow, wind and drift

Offer windborne debris protection in coastal areas - up to large missile D

Specify Kalwall panels over supports by others or choose turn key solutions

GCRTA Buckeye Woodhill Station | Cleveland, OH (below)

Richard Fleischman + Partners Architects

Please visit KALWALL.COM for all Canopy+Walkway specifications, CAD details, BIM families & performance charts online

Pre-engineered Structures

Anna Jaques Hospital | Newburyport, MA (above)
Steffian Bradley Architects

Sargent Shriver Elementary School | Silver Spring, MD (below)
Architecture, Inc.

Pre-engineered structural aluminum canopy systems are available from our strategic partner, StructuresUnlimited, Inc.
Visit StructuresUnlimitedInc.com or call 800 225 3895 to learn more about turn key canopy solutions from the footing up.

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KALWALL®

high performance translucent building systems

Kalwall Corrosion Resistant Finish (KCRF™)

Standard System Finish

Description:

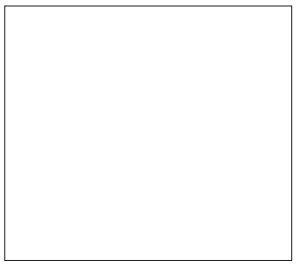
Kalwall Corrosion Resistant Finish is a high-performance architectural coating for aluminum components. The spray-applied, air-dried, two-part system, including the latest chemically curable fluoropolymer resins, permits large welded and mechanically assembled Kalwall components to be finished as a unit. Field touch-ups with the same coatings are easily performed. KCRF is formulated per AAMA 2605 criteria and exceeds the performance requirements of AAMA 2604. KCRF is available in standard and custom colors. A 10-year finish warranty is available.

Standard KCRF Colors:

Note:

These color swatches are approximations of the actual standard KCRF color palette. Physical samples on aluminum substrates are available for final selection. All Kalwall samples are best viewed under natural daylight. Please visit KALWALL.COM or call us to make a sample request or submit your specifications for custom color swatches.


aluminum #79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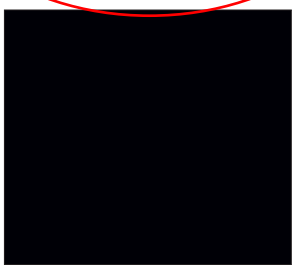
bone white #21B


gray #80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bronze #85


brick #88


banner red #90


minuette #03


blue #15


coro blue #48


mountain green #70


hartford green #75

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Consulting Engineers

Canopy System Specification

SECTION 10730

CANOPY SYSTEM

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes the removable structural canopy system as shown and specified. Work includes providing and installing:

1. Structural aluminum box beam superstructure with permanent lifting eyebolts
2. Factory prefabricated structural insulated translucent sandwich panels
3. Aluminum installation system

1.2 SUBMITTALS

A. Submit manufacturer's product data. Include construction details, material descriptions, profiles and finishes of components.

B. Submit shop drawings. Include plans, elevations and details.

C. Submit manufacturer's color charts showing the full range of colors available for factory finished aluminum.

1. When requested, submit samples for each exposed finish required, in same thickness and material indicated for the work and in size indicated below. If finishes involve normal color variations, include sample sets consisting of two or more units showing the full range of variations expected.

a. Sandwich panels: 14" x 28" units
b. Factory finished aluminum: 5" long sections

D. Submit Installer Certificate, signed by installer, certifying compliance with project qualification requirements.

E. Submit product reports from a qualified independent testing agency indicating each type and class of panel system complies with the project performance requirements, based on comprehensive testing of current products. Previously completed reports will be acceptable if for current manufacturer and indicative of products used on this project.

1. Reports required (if applicable) are:

a. International Building Code Evaluation Report (AC 177)
b. Flame Spread and Smoke Developed (UL 723) – Submit UL Card
c. Burn Extent (ASTM D 635)

d. Color Difference (ASTM D 2244)
e. Impact Strength (UL 972)
f. Bond Tensile Strength (ASTM C 297 after aging by ASTM D 1037)
g. Bond Shear Strength (ASTM D 1002)
h. Beam Bending Strength (ASTM E 72)
i. Insulation U-Factor (NFRC 100 or ASTM C-236)
j. 1200°F Fire Resistance (SWRI)
k. Fall Through Resistance (ASTM E 661)
l. Class A Roof Covering Burning Brand (ASTM E 108)

1.3 CLOSEOUT SUBMITTALS

A. Provide project maintenance manuals.

1.4 QUALITY ASSURANCE

A. Manufacturer's Qualifications:

1. Material and products shall be manufactured by a company continuously and regularly employed in the manufacture of specified materials for a period of at least ten consecutive years and which can show evidence of those materials being satisfactorily used on at least six projects of similar size, scope and location. At least three of the projects shall have been in successful use for ten years or longer.
2. Panel system must be listed by an ANSI accredited Evaluation Service, which requires quality control inspections and fire, structural and water infiltration testing of sandwich panel systems by an accredited agency.
3. Quality control inspections shall be conducted at least once each year and shall include manufacturing facilities, sandwich panel components and production sandwich panels for conformance with AC177 "Translucent Fiberglass Reinforced Plastic (FRP) Faced Panel Wall, Roof and Skylight Systems" as issued by the ICC-ES.

B. Installer's Qualifications: Installation shall be by an experienced installer, which has been in the business of installing specified panel systems for at least two consecutive years and can show evidence of satisfactory completion of projects of similar size, scope and type.

1.5 PERFORMANCE REQUIREMENTS

A. The manufacturer shall be responsible for the configuration and fabrication of the complete canopy system, including the aluminum box beam superstructure.

1. When requested, include structural analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

2. Skylight shall be removable as a complete unit by lifting eyebolts with a crane. Disassembling individual or small groups of panels does not meet the design intent and is not acceptable.

3. Structural Loads; Provide canopy system capable of handling the following loads:

   a. Roof Live Load, on horizontal projected surface, minimum: 20 PSF
   b. Roof Snow Load, on horizontal projected surface, minimum: 20 PSF
   c. Roof Snow Drift Load, on horizontal projected surface, minimum: __ PSF, Shed Profile.
   d. Base Wind Load 27 PSF factored per applicable Building Code

B. Deflection Limits:

1. Canopy Panels: Limited to L/60 of clear span.

1.6 DESIGN

A. Description: Freestanding Shed Canopy System

1. Nominal Size: see plans
2. Aluminum Box Beam Size: 4” x 8” and 5” x 10”
3. Eave Height: 10’-0” and 13’-4”
4. Roof Pitch: 2:12

1.7 DELIVERY, STORAGE AND HANDLING

A. Deliver canopy system, components and materials in manufacturer’s standard protective packaging.

B. Store canopy system panels on the long edge; several inches above the ground, blocked and under cover to prevent warping in accordance with manufacturer’s storage and handling instructions.

1.8 WARRANTY

A. Provide manufacturer's and installer's written warranty agreeing to repair or replace canopy system work, which fails in materials or workmanship within one year from the date of delivery. Failure of materials or workmanship shall include leakage, excessive deflection, deterioration of finish on metal in excess of normal weathering, defects in accessories, insulated translucent sandwich panels and other components of the work.

B. Extended Panel Warranty: (5) years from date of delivery.

C. Extended Manufacturer’s factory applied Finish Warranty: (5) years from date of delivery.

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. The basis for this specification is for products manufactured by Structures Unlimited, Inc. Other manufacturers may bid this project provided they comply with all of the performance requirements of this specification and submit evidence thereof. Listing other manufacturers' names in this specification does not constitute approval of their products or relieve them of compliance with all the performance requirements contained herein.

B. Structures Unlimited, Inc., Tel: (800) 225-3895 – Fax: (603) 627-0798 – Email: info@structuresunlimitedinc.com

2.2 PANEL COMPONENTS

A. Face Sheets:

1. Translucent faces: Manufactured from glass fiber reinforced thermoset resins, formulated specifically for architectural use.
   a. Thermoplastic (e.g. polycarbonate, acrylic) faces are not acceptable.
   b. Face sheets shall not deform, deflect, or drip when subjected to fire or flame.
2. Interior face sheets:
   a. Flame spread: Underwriters Laboratories (UL) listed, which requires periodic unannounced retesting, with flame spread rating no greater than 10 and smoke developed no greater than 350-400 when tested in accordance with UL 723.
   b. Burn extent by ASTM D 635 shall be no greater than 1".
3. Exterior face sheets:
   a. Color stability: Full thickness of the exterior face sheet shall not change color more than 3 CIE Units DELTA E by ASTM D 2244 after 3 years outdoor South Florida weathering at 5° facing south, determined by the average of at least three white samples with and without a protective film or coating to ensure long-term color stability. Color stability shall be unaffected by abrasion or scratching.
   b. Strength: Exterior face sheet shall be uniform in strength, impenetrable by hand held pencil and repel an impact minimum of 70 ft. lbs. without fracture or tear when impacted by a 3-1/4" diameter, 5 lb. free-falling ball per UL 972.
   c. Erosion Protection: Integral, embedded-glass erosion barrier.
4. Appearance:
   a. Exterior face sheet: Smooth, .070" thick and Crystal or White in color.
   b. Interior face sheet: Smooth, .045" thick and White in color.
   c. Face sheets shall not vary more than ± 10% in thickness and be uniform in color.

B. Grid Core:

1. Aluminum I-beam grid core shall be of 6063-T6 or 6005-T5 alloy and temper with provisions for mechanical interlocking of muntin-mullion and perimeter. Width of I-beam shall be no less than 7/16".

C. Laminate Adhesive:

1. Heat and pressure resin type adhesive engineered for structural sandwich panel use, with minimum 25-years field use. Adhesive shall pass testing requirements specified by the International Code Council "Acceptance Criteria for Sandwich Panel Adhesives".
2. Minimum tensile strength of 750 PSI when the panel assembly is tested by ASTM C 297 after two exposures to six cycles each of the aging conditions prescribed by ASTM D 1037.
3. Minimum shear strength of the panel adhesive by ASTM D 1002 after exposure to four separate conditions:

    a. 50% Relative Humidity at 68° F: 540 PSI
    b. 182° F: 100 PSI
    c. Accelerated Aging by ASTM D 1037 at room temperature: 800 PSI
    d. Accelerated Aging by ASTM D 1037 at 182° F: 250 PSI

2.3 PANEL CONSTRUCTION

A. Provide sandwich panels of flat fiberglass reinforced translucent face sheets laminated to a grid core of mechanically interlocking I-beams. The adhesive bonding line shall be straight, cover the entire width of the I-beam and have a neat, sharp edge.

1. Thickness: 2 ¾"
2. Light transmission: 23% to 37% per NFRC 202 (per selected face sheets)
3. Solar heat gain coefficient: 0.21 to 0.37 (per selected face sheets)
4. Panel U-factor: 0.53
5. Grid pattern: Nominal size 12" x 24" shoji

B. Standard panels shall deflect no more than 1.9" at 30 PSF in 10'-0" span without a supporting frame by ASTM E 72.

C. Standard panels shall withstand 1200° F fire for minimum one hour without collapse or exterior flaming.

D. Canopy System:

1. Canopy system shall pass Class A Roof Burning Brand Test by ASTM E 108.

E. Canopy System shall meet the fall through requirements of OSHA 1910.23 as demonstrated by testing in accordance with ASTM E 661, thereby not requiring supplemental screens or railings.

2.4 BATTENS AND PERIMETER CLOSURE SYSTEM

A. Closure system: Extruded aluminum 6063-T6 and 6063-T5 alloy and temper clamp-tite screw type closure system.

B. Sealing tape: Manufacturer's standard, pre-applied to closure system at the factory under controlled conditions.

C. Fasteners: Various series stainless steel screws for aluminum closures, excluding final fasteners to the building.

D. Finish: Manufacturer's factory applied finish, which meets the performance requirements of AAMA 2604. Color to be selected from manufacturer's standard colors

2.5 SUPERSTRUCTURE

A. The superstructure shall be pre-fabricated of extruded aluminum alloy 6005-T5, 6005A-T61 or 6061-T6 box beams. Ferrous metals shall not be allowed. All parts shall be pre-assembled at the factory and knocked down for shipment. System shall be a Rigid Frame design.

B. Finish: Manufacturer's factory applied finish, which meets the performance requirements of AAMA 2604. Color to be selected from manufacturer's standard colors

C. Aluminum structural system design and calculations must be furnished in accordance with the Aluminum Association "Specifications for Aluminum Structures" and the applicable building code. Design calculations must be prepared and stamped by a Licensed Professional Engineer.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Installer shall examine substrates, supporting structure and installation conditions.

B. Do not proceed with structural canopy installation until unsatisfactory conditions have been corrected by the general contractor.

3.2 PREPARATION

A. Metal Protection:

1. The general contractor shall prepare foundations, curbs, footings and/or lintels isolating dissimilar materials from aluminum system, which may cause electrolysis.

2. Where aluminum will contact dissimilar metals, protect against galvanic action by painting contact surfaces with primer or by applying sealant or tape recommended by manufacturer for this purpose.

3. Where aluminum will contact concrete, masonry or pressure treated wood, protect against corrosion by painting contact surfaces with bituminous paint or method recommended by manufacturer.

B. The general contractor shall install foundations, curbs, footings and/or lintels designed to withstand the thrust generated by the canopy.

C. Anchor Bolts shall be supplied and installed by the general contractor. Canopy anchoring system will be per manufacturer's requirements.

D. The general contractor shall provide temporary enclosures required.

3.3 INSTALLATION

A. Install the canopy system in accordance with the manufacturer's installation recommendations and approved shop drawings.

B. After other trades have completed work on adjacent material, carefully inspect translucent panel installation and make adjustments necessary to ensure proper installation.

3.4 CLEANING

A. Clean the canopy system immediately after installation.

B. Refer to manufacturer's written recommendations.

END OF SECTION

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Opinion of Probable Construction Cost

- **Estimated Construction Cost**
  - Canopy- $105,000
  - Equipment- $240,000
  - Total Estimated Construction Cost - $345,000

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Program Schedule

Program Schedule

- Septage Hauling Unloading Station Improvements
  - Currently Under Design
  - Design Complete by 10/1/2020
  - Construction Complete in Early 2021

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Department of Public Utilities Wastewater Treatment Plant Septage Hauling Unloading Station Improvements

Questions?

Urban Design Committee
October 8, 2020 Meeting