HISTORIC AND DESIGN REVIEW COMMISSION

October 19, 2016

Agenda Item No: 4

HDRC CASE NO:	**2016-069**
COMMON NAME:	Alazan Creek
ZONING:	UZROW
CITY COUNCIL DIST.:	5
APPLICANT:	Amy Middleton/San Antonio River Authority
OWNER:	San Antonio River Authority
TYPE OF WORK:	River improvement

REQUEST:

The applicant is requesting a Certificate of Appropriateness for final approval to install a litter trap and trash boom in Alazan Creek at one location, downstream of S Colorado Street. The trash collection system will span from the east and west bank with a metal basket in the middle of the channel. As part of the operation and maintenance of this device, it will be cleaned out no later than 14 days after a rain event.

APPLICABLE CITATIONS:

Unified Development Code Sec. 35-645. - Signs and Billboards on Public Property or Right-of-Way.

(a) General Provisions. All non-regulatory signage on public property, on the public right-of-way, or overhanging the public right-of-way shall conform to all city codes and must be approved by the historic preservation officer prior to installation. Permits must be obtained following approval of the application. The historic preservation officer may submit an application under this section to the historic and design review commission for their recommendation prior to approving, denying, or approving with conditions the application. Memorials, markers, naming rights of public property, and recognition of charitable donations given to the City of San Antonio shall be additionally governed by existing policies for memorials and markers and/or any formal action passed by city council. (b) Sign Definitions. For signage definitions, refer to subsection 35-612(b) and chapter 28 of the City Code. (c) Proportion of Signs. Signage width and height must be in proportion to the facade, respecting the size, scale and mass of the facade, building height, and rhythms and sizes of window and door openings. The building facade shall be considered as part of an overall sign program but the sign shall be subordinate to the overall building composition. Additionally, signs should respect and respond to the character and/or period of the area in which they are being placed. (d) Standards for Sign Design and Placement. In considering whether to recommend approval or disapproval of an application for a certificate to construct or alter signage on a building, object, site, or structure, the historic and design review commission shall be guided by the following standards in addition to any specific design guidelines adopted by city council:

(1) Primary sign design considerations shall be identification and legibility. Size, scale, height, color and location of signs shall be harmonious with, and properly related to, the overall design of the building or structure and the surrounding area.

(2) The number of signs on each building shall be kept to a minimum to prevent unsightly clutter and confusion.

(3) Signs which describe, point, or direct the reader to a specific place or along a specific course, such as "entrance," "exit," and "handicap access" shall be reviewed.

(4) All graphic elements shall reinforce the architectural integrity of any building. Signs should not disfigure, damage, mar, alter, or conceal architectural features or details and should be limited to sizes which are in scale with the architecture and the streetscape. The historic and design review commission shall be guided by the building's proportion and scale when such elements are incorporated.

(5) Additionally, when reviewing applications for signage the historic preservation officer and the historic and design review commission shall consider the visual impact on nearby historic resources and established neighborhood character.

UDC Sec. 35-673. - Site Design Standards.

This section focuses on the design concepts for an individual site and helps create a cohesive design that recognizes the

unique opportunities of developing a site near the river. These include building placement, orientation and setbacks, and the design of the outdoor space.

(c) Topography and Drainage. The natural contours of occasional hillsides and riverbanks contribute to the distinct character of the San Antonio River and shall be considered in site designs for new development. Site plans shall minimize the need for cut and fill. It should be considered as an opportunity for positive enhancements through the creative use of terraces and retaining walls.

(1) Visual Impacts of Cut and Fill. Divide a grade change of more than ten (10) vertical feet into a series of benches and terraces. Terrace steep slopes following site contours. When creating site benches, using sloped "transitional areas" as part of the required landscaping is appropriate.

(2) Minimize the Potential for Erosion at the Riverbank. Grade slopes at a stable angle not to exceed four to one (4:1) and provide plant material that will stabilize the soil such as vigorous ground covers, vines or turf planting that are native and noninvasive species as found on the permissible plant list maintained by the parks and recreation department. Use of stabilizing materials such as geo-web or geo-grid is permitted as long as plant material is used to conceal the grid. Use of terraced walls is permitted when there is a slope of more than four to one (4:1).

(4) Enhance or Incorporate Acequias Into The Landscape Design and Drainage Scheme of the Site. Where archeological evidence indicates a site contains or has contained a Spanish colonial acequia, incorporate the original path of the acequia as a natural drainage way or a landscape feature of the site by including it as part of the open space plan, and a feature of the landscape design.

(5) Design of Storm water Management Facilities to be a Landscape Amenity. Where above ground storm water management facilities are required, such facilities shall be multi-purpose amenities. For example, water quality features can be included as part of the site landscaping and detention facilities can be included as part of a hardscape patio. Using an open concrete basin as a detention pond is prohibited. (see Figure 673-3)

FINDINGS:

a. This request received conceptual approval on March 2, 2016, from the HDRC with the stipulation that the applicant provide a signage mockup and site plan noting the location of the proposed signs. The applicant is no longer requesting signage.
b. The applicant has proposed to install a trash and floatables collection system in Alazan Creek at one location, downstream of S Colorado Street. The collection system will consist of an HDPE (high-density polyethylene) Boom anchored from west to east bank, and two aluminum lift out baskets. The installation of the boom as well as the collection baskets will prevent the spread of trash impacting Alazan Creek and the surrounding landscape. Neither the proposed HDPE Boom nor the proposed basket will extrude above grade. Staff finds this proposal appropriate.
c. To anchor the HDPE Boom, the applicant is proposing to install two concrete piers at the edge of the right-ofway, which will be drilled down into the bank. At the top of bank, there will be a piling that will allow the cable to travel from elevation 639 to 642.5, so the device can still remain floating during the 100 year storm event. The proposed locations of the anchors are appropriate; however, the applicant should provide details of the anchors and their locations prior to returning to the HDRC.
d. ARCHAEOLOGY- The development project shall comply with all federal, state, and local laws, rules, and regulations regarding archaeology.

RECOMMENDATION:

Staff recommends approval based on findings a through d with the stipulation that the development project shall comply with all federal, state, and local laws, rules, and regulations regarding archaeology..

CASE MANAGER:

Lauren Sage

N

Alazan Creek

River improvement

Printed:Feb 16, 2016

Alazan Creek Site Photos:

THE STRUCTURAL DOCUMENTS REPRESENT THE FINISHED STRUCTURE. TO PROVIDE FOR CONSTRUCTION METHODS, THE CONTRACTOR SHALL VERIFY ALL FIELD CONDITIONS WHICH WILL AFFECT THE FABRICATION OF COMPONENTS FOR NEW CONSTRUCTION PRIOR TO THE START OF CONSTRUCTION. UNLESS OTHERWISE INDICATED, THE DOCUMENTS DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL TAKE ALL MEASURES NECESSARY TO PROTECT THE SAFETY OF THE PUBLIC ALONG WITH THE SAFETY OF THE STRUCTURE DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE BUT NOT BE LIMITED TO BRACING AND SHORING OF DEAD LOADS, CONSTRUCTION LOADS AND WIND LOADS. THE CONTRACTOR WILL BE REQUIRED TO CORRECT AT HIS OWN EXPENSE ANY SUBSIDENCE, STRUCTURAL DAMAGE OR OTHER OBJECTIONAL CONDITIONS CAUSED BY HIS OPERATIONS.

Structural Design Criteria

1) The Building Code Requirements for 2015 International Building Code is the basic code document used in the preparation of these structural documents. Additional codes and references are as noted. All structural work shall be according to all local codes in addition to this basic code document.

2) The structural engineer-of-record prepared specifications for structural related portions of the project and has included these specifications on the structural drawings. Architectural specifications for non-structural portions of the project are included in the project manual.

3) O'Conner & Kezar investigated the subsurface soils and provided foundation design recommendations. (Report Number 326-16604) Beicker Consultants LLC based the foundation design upon this information.

4) The Contractor shall familiarize himself with the site and subsurface conditions. Ignorance of conditions is not a basis for a claim for additional compensation. Layout the building by a licensed surveyor.

6) Drawings of specific details on the drawings indicate the intent of the structural design and in most cases, are typical conditions or very similar to other details. Consider typical conditions not necessarily noted as typical as typical for other conditions.

7) Understanding the structural requirements shown on the structural documents requires cooperation among all parties involved. Design and construction are complex. Although Beicker Consultants LLC designed the project with due care and diligence, we do not guarantee perfection. Communication is necessary. Immediately report structural discrepancies for our interpretation. Consider unresolved discrepancies as the more costly interpretation of the discrepancy.

9) Structural design is based on the following:
Lateral load = 35,802 lbs.

Concrete

1) Construct formwork to maintain tolerances as outlined in ACI 347. Reuse formwork according to ACI 347. Extend formwork at least six (6) inches below the finish grade elevation on perimeter beams. Cut temporary port openings in order to drain exposed trenches during construction in case of inclement weather.

2) Reinforcing steel shall comply with the requirements of ASTM A-615, grade 60. Welded wire mesh shall comply with the requirements of ASTM A- 185, flat sheets only. Reinforcing steel shall be continuous with splices lapped at least 40 diameters. Stirrups and ties may be grade 40 for bars #3 and smaller. Tie wire shall be 18 gage annealed type.

3) Fabricate bent bars according to ACI 315. Install reinforcing with clearance for concrete coverage around reinforcing steel according to ACI 318.

4) Concrete shall develop a 28-day compressive stress (f'c) of at least 4,000 psi. Mix concrete according to ACI 301. Water cement ratio shall not exceed 0.44. Use a maximum aggregate size of 1 1/8" or according to ACI 318. Maximum aggregate size between bars shall also pertain to between the forms and bars.

5) The proportions of materials and use of admixtures influence the concrete strength along with the means and methods of construction. The contractor is responsible to determine that the concrete is suitable for its intended purpose. The engineer recommends the contractor consider the following in determining the concrete for this project: Cement shall be Type 1 (gray). Fly ash shall be Boral Materials, Class C. If fly ash is used, do not exceed 20% of the total fly ash and cement used by weight. Include a polymeric compound water-reducing admixture that complies with ASTM C494. Do not add an air entrainment additive. Mix shall result in a finished concrete product with moisture contents necessary to properly cure the concrete. Floor sealers, hardeners, finishes and coverings shall be compatible with concrete properties (ie, but not limited to, moisture and alkalinity properties).

6) Before placement of any concrete, submit concrete mix design(s) to be used on the project. Concrete shall be in strict accordance with the mix design.

7) Place and cure concrete according to ACI 302. 1R. Do not use concrete that has not been placed in the forms before 1.5 hours after the initial mixing water was added, regardless of temperature or slump - No Exceptions. Finish according to ACI 117 tolerances.

Structural Steel

1) Rolled steel angles, plates, and bars shall be structural quality complying with ASTM A-36 (fy=36 ksi). Rolled steel shapes shall be structural quality carbon steel complying with ASTM A-36/A50 dual grade complying with ASTM A992 grade 50.

2) Structural steel tubular products shall be cold formed structural quality carbon steel, welded or seamless, complying with ASTM A1085.

3) Cold-formed steel structural members shall be cold formed to shape from carbon or low-alloy, sheet or strip steels complying with ASTM A245 or ASTM A374.

4) Pipe columns shall conform to the requirements of ASTM A-53B (Type E or S).

5) Structural steel members framing the entry canopy shall be constructed as Architecturally Exposed Structural Steel and shall comply with Section 10, AISC 303-05: Code of Standard Practice for Steel Buildings and Bridges.

6) Prime paint all structural steel with 1.0 to 1.5 mil dry film thickness Alkyd Primer or equal, except for plates embedded in concrete.

7) Headed stud type concrete anchors (HCA) shall conform to the requirements of ASTM A 108-58T low carbon steel and shall be fastened according to manufacturer's recommendations. For beams supporting composite decks, shear studs shall be spaced at 20" maximum unless noted otherwise.

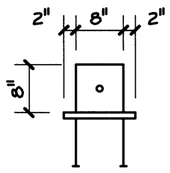
8) Weld according to the drawings requirements and as recommended by applicable AWS specifications. All welds are 1/4" single pass fillet welds unless noted otherwise.

Keynotes

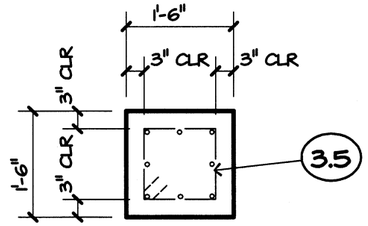
3.4) #7 bar at 8" on center each way.

3.5) 8 - #6 bar vertical and #3 closed ties at 3" on center.

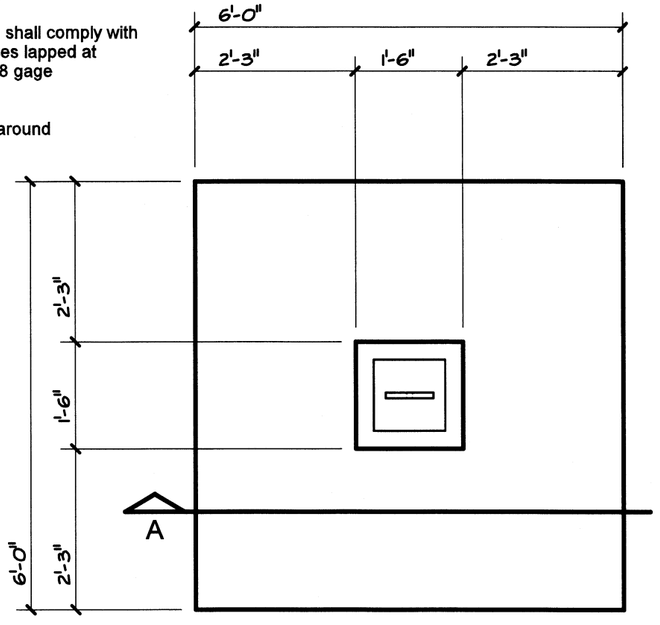
5.2) 12" x 12" x 1" base plate. Weld 8" x 8" x 1" plate with 1" hole to base plate.



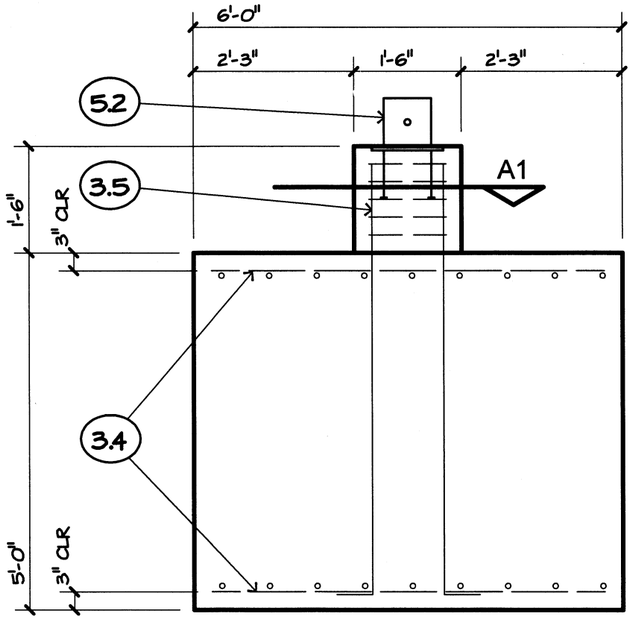
Anchor Plate



A1- Anchor Footing



Anchor Footing Plan



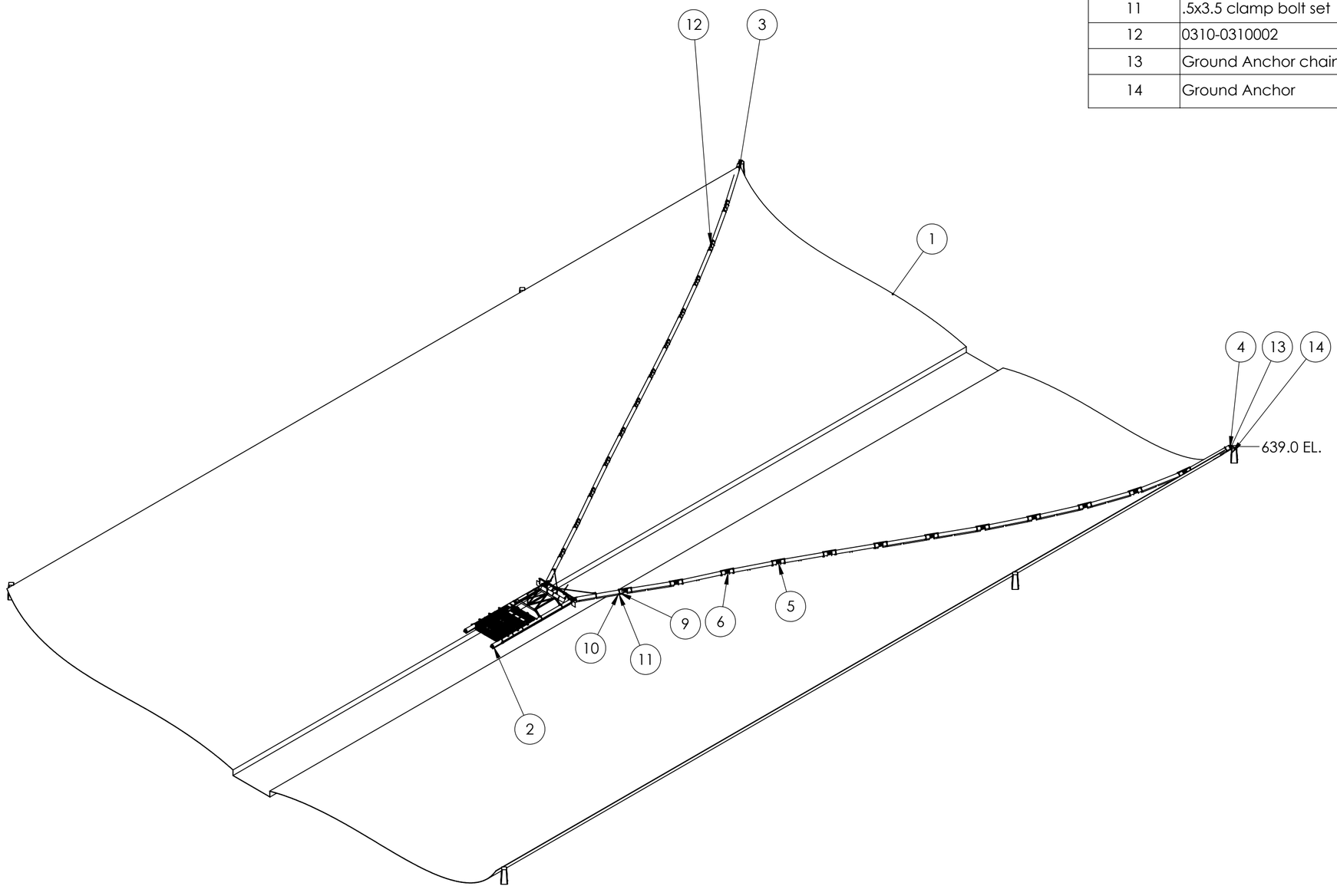
A- Anchor Footing

BEICKER CONSULTANTS, LLC F-17115 STRUCTURAL / CONSTRUCTION ENGINEERS

Vertex	PROJECT **Alazan Litter Boon**	JOB NO. 16343-0	DATE Aug 1, 2016
		SCALE NTS	SHEET S1.1

 Beicker Consultants, Structural / Construction Engineers ● 2702 N Loop 1604 E, Suite 201 ● San Antonio, Texas, 78232 ● Phone (210) 824-2908 ● Fax (210) 496-9330

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	Alazan Creek BLT Site	Creek Bed	1
2	0920-0001000	920 Bandalong Litter Trap	1
3	0310-0205000-LF	15' Collection Boom Assembly	12
4	0310-0205000-RT	15' Collection Boom Assembly	12
5	0310-0310000	UNIVERSAL JOINT	25
6	0310-0512000	LARGE TEE PIN	51
7	0310-0513000	3/8" D Shackle	51
8	95635A607	3/8-16 Pin In Head 7/32" Hex Security Screw	51
9	0310-0321000	Boom Cable Clamp	4
10	0310-0301901	12" STANDARD CLAMP	4
11	.5x3.5 clamp bolt set	1/2" x 3" 18-8 SS Bolts Set	8
12	0310-0310002	Boom Support Brace	24
13	Ground Anchor chain	5/8" Galv 40/43 chain	2
14	Ground Anchor	By others	6



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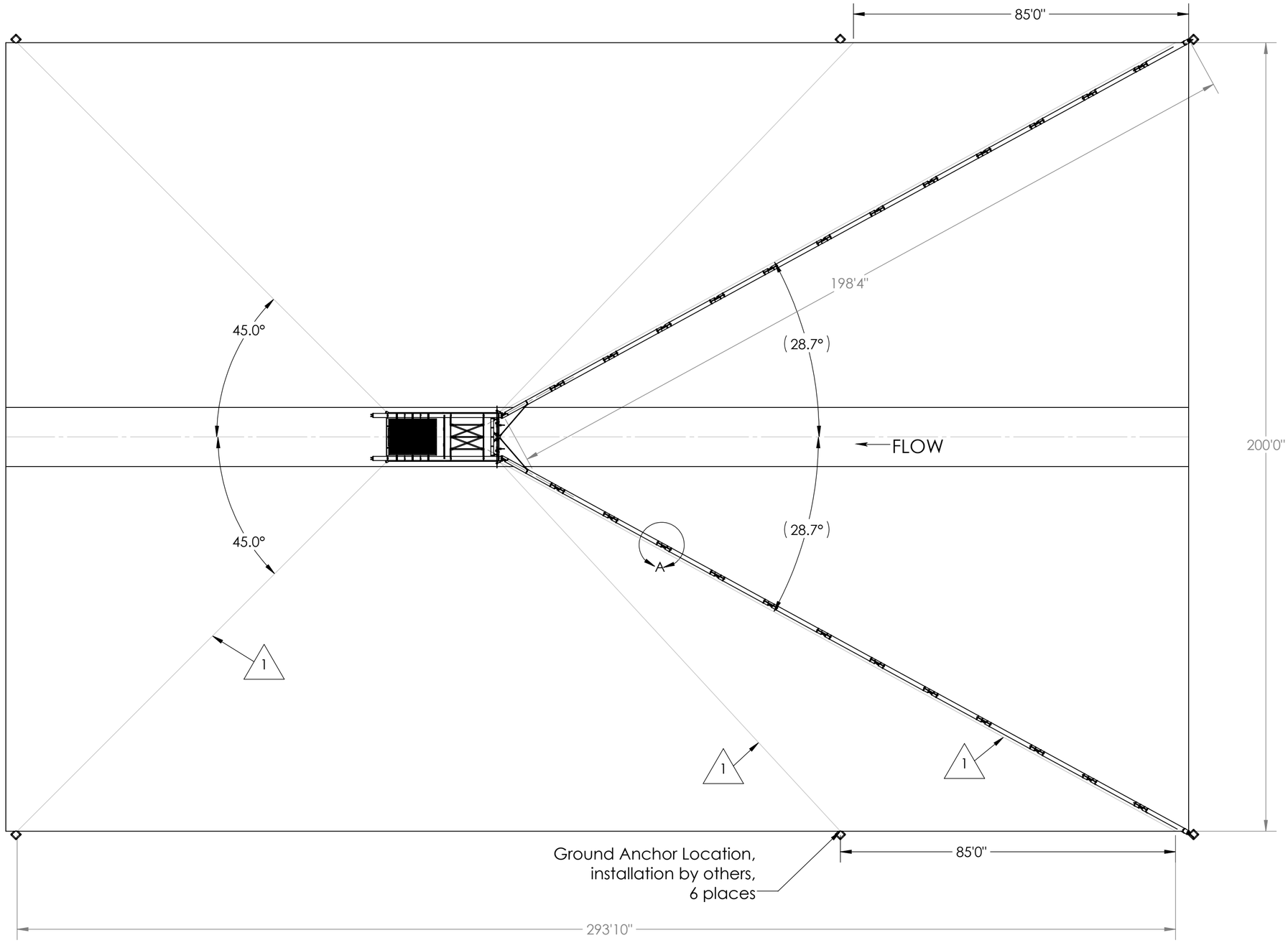
MATERIAL	CLIENT: Vertex Corporation 27888 Dos Cerros Circle Boerne, TX 78006 PO No. 060716		
UNIT OF MEASURE INCHES			

STORMWATER SYSTEMS, INC.
196 Industrial Blvd.
Cleveland, GA 30528
706-348-8201
www.stormwatersystems.com

TITLE:
920 Bandalong Litter Trap Site
Alazan Creek @ S San Marcos, San Antonio, Tx.

SIZE	DWG. NO.	REV
C	16053VE	1

SCALE: 1:312	WEIGHT:	SHEET 1 OF 3



Notes:

1. Stormwater Ssyems will supply Anchor cable is ∅1/2", 7x19, 316 Stainless Steel, 19,000 lbs breaking load.
2. Ground Anchor Top Elevation 639.0'

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MATERIAL	CLIENT: Vertex Corporation 27888 Dos Cerros Circle Boerne, TX 78006 PO No. 060716		
UNIT OF MEASURE INCHES			

STORMWATER SYSTEMS, INC.
196 Industrial Blvd.
Cleveland, GA 30528
706-348-8201
www.stormwatersystems.com

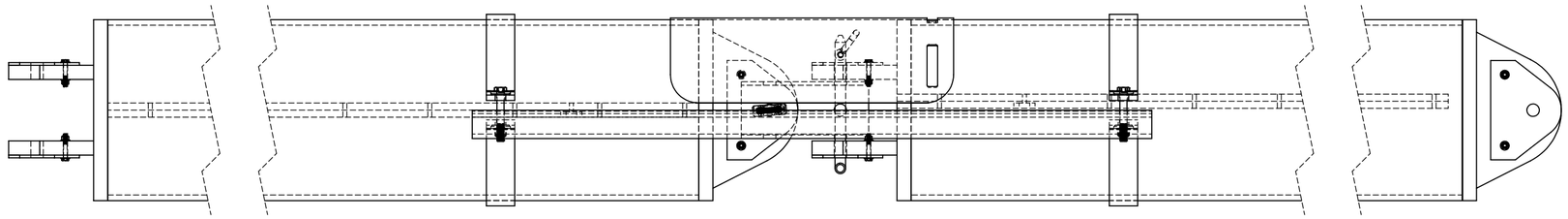
TITLE:

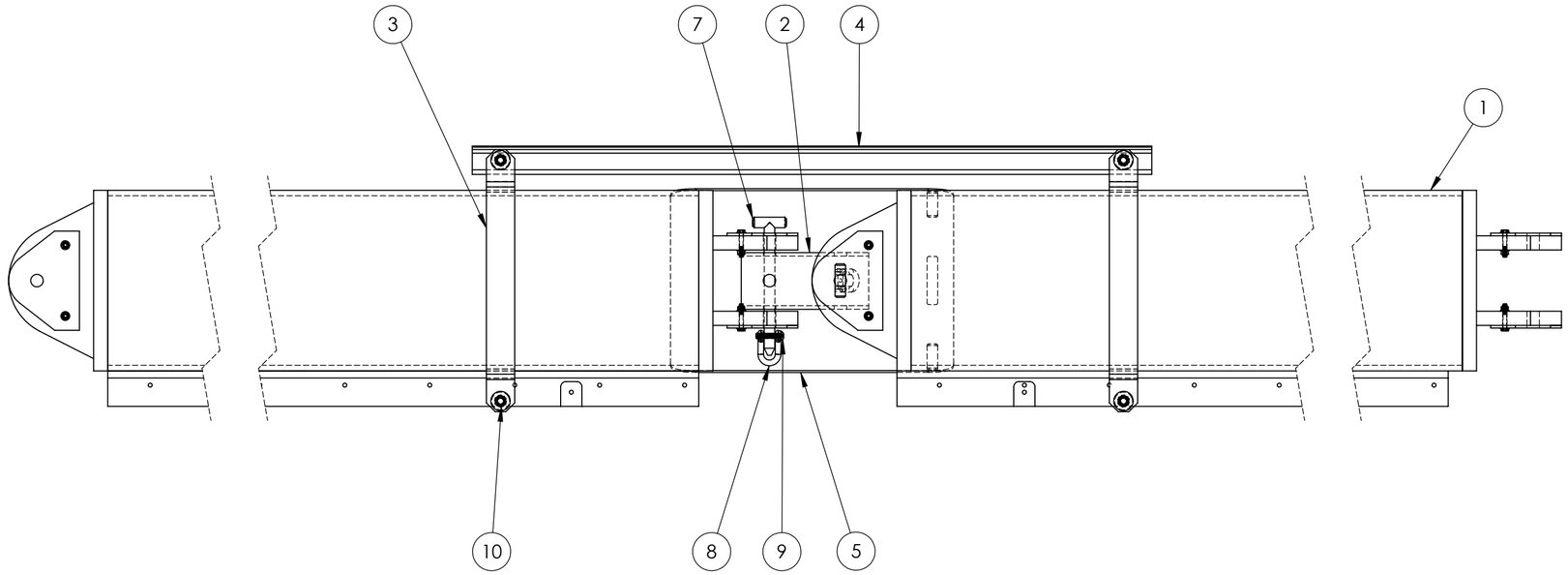
920 Bandalong Litter Trap Site Alazan Creek @ S San Marcos, San Antonio, Tx.

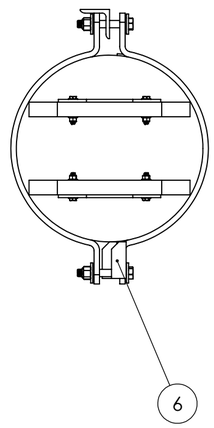
SIZE	DWG. NO.	REV
C	16053VE	1

SCALE: 1:256	WEIGHT:	SHEET 2 OF 3

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	0310-0204000	STANDARD COLLECTION BOOM ASSEMBLY	2
2	0310-0310000	UNIVERSAL JOINT	1
3	0310-0301901	12" STANDARD CLAMP	4
4	0310-0310002	Boom Support Brace	1
5	0310-0204002	Boom Debri Deflection Collar	1
6	0310-0204003	Boom Skirt	2
7	0310-0512000	LARGE TEE PIN	2
8	0310-0513000	3/8" D Shackle	2
9	95635A607	3/8-16 Pin In Head 7/32" Hex Security Screw	1
10	.5x3.5 clamp bolt set	1/2" x 3" 18-8 SS Bolts Set	4







Detail A

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MATERIAL	CLIENT: Vertex Corporation 27888 Dos Cerros Circle Boerne, TX 78006 PO No. 060716		
UNIT OF MEASURE INCHES			

STORMWATER SYSTEMS, INC.
196 Industrial Blvd.
Cleveland, GA 30528
706-348-8201
www.stormwatersystems.com

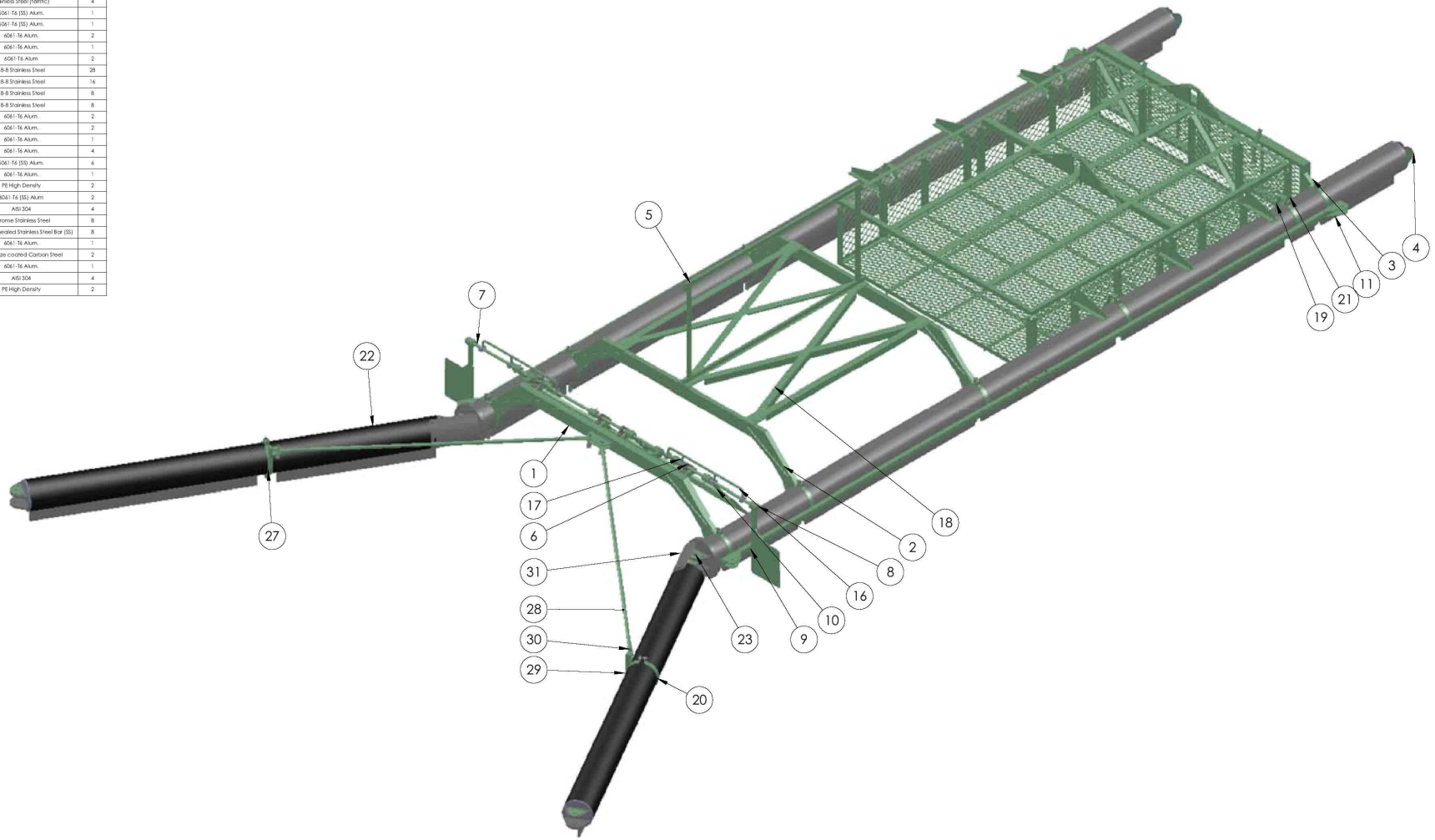
TITLE:

Boom/Skirt Support Detail, Connection Detail

SIZE	DWG. NO.	REV
C	16053VE	1

SCALE: 1:32	WEIGHT:	SHEET 3 OF 3

ITEM NO.	PART NUMBER	DESCRIPTION	MATERIAL	QTY.
1	0920-0301.500	Front Mounting Frame	6061-T6 Alum	1
2	0920-0302000	Center Frame Assembly	6061-T6 Alum.	2
3	0910-0303000	REAR GATE ASSEMBLY	6061-T6 Alum.	1
4	0920-0202000	Main Front Pontoon	PE High Density	2
5	0911-0305000	911 Sign Frame Assembly	6061-T6 Alum.	1
6	0920-0501.704	BEARING, UCSP206-20SS	Stainless Steel (Tornitic)	4
7	0920-0301.001	Left Axle	6061-T6 (SS) Alum.	1
8	0920-0301.002	Right Axle	6061-T6 (SS) Alum.	1
9	0920-0301.800	920 Paddle Assembly	6061-T6 Alum.	2
10	0920-0301.100	920 Front Gate Assembly	6061-T6 Alum.	1
11	0920-0304100	Holding Bar Assembly	6061-T6 Alum	2
12	.5x3.5 clamp bolt set	1/2" x 3" 18-8 SS Bolts Set	18-8 Stainless Steel	28
13	End Cap Bolt Set	3/8" x 2-3/4" 18-8 SS bolt set	18-8 Stainless Steel	16
14	Bearing Block Bolt Set	5/16-18 Bearing Block Bolt Set	18-8 Stainless Steel	8
15	.375 Gate Paddle Bolt Set	3/8"-16 Gate Paddle/Bolt Set	18-8 Stainless Steel	8
16	0920-0301.300	Shaft Support Bar Assembly	6061-T6 Alum.	2
17	0920-0501.000	Counterweight Assembly	6061-T6 Alum.	2
18	0920-0302.500	Cross Frame Assembly	6061-T6 Alum.	1
19	0311-0301.900	Pontoon Basket Clamp Guide	6061-T6 Alum.	4
20	0310-0301.901	12" STANDARD CLAMP	6061-T6 (SS) Alum.	6
21	0920-0313.000	9' x 12' Litter Basket	6061-T6 Alum.	1
22	0310-0205.000	15' Collection Boom Assembly	PE High Density	2
23	0310-0310.000	UNIVERSAL JOINT	6061-T6 (SS) Alum	2
24	0310-0512.000	LARGE TEE PIN	AISI 304	4
25	0310-0513.000	3/8" D Shackle	Chrome Stainless Steel	8
26	95635A607	3/8-16 x 1-1/2" Pin in Hex 18-8 SS	AISI 316 Annealed Stainless Steel Bar (SS)	8
27	0310-0319.001	Left "F" Clamp Bracket	6061-T6 Alum.	1
28	0920-0806.000	Boom Spreader Bar Assembly	Galvanize coated Carbon Steel	2
29	0310-0319.002	Right "F" Clamp Bracket	6061-T6 Alum.	1
30	0310-0511.000	SMALL TEE PIN	AISI 304	4
31	0310-0204.002	Boom Debri Deflection Collar	PE High Density	2



General Notes:

A. Fabricate Aluminum members in accordance with CBC andAluminum design manual "Specification for Aluminum Structures Building Load and Resistance Factor Design".

B. Metal Welders shall be qualified in accordance with AWS D1.2 for each process, position and joint configuration.

C. Maintain one copy of each referenced document on site.

Project Conditions

D. Verify dimensions on shop drawings in the field.

Materials

E. Rolled and extruded members: Alloy and temper (6061-T6) unless otherwise indicated on the drawings.

F. Aluminum tubing: Alloy and temper 6061-T6.

G. Bolts, Nuts and Washers:

Bolts and nuts in structural connections: Indicated on the shop drawings.

H. Welding Materials:

1. Filler Metals: AWS D1.2.

2. Electrodes and equipment settings: As recommend by the filler Manufacturer for the position, thickness and conditions of use.

3. Written verification of materials are appropriate to the welding process.

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DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± 1/2" ANGULAR: MACH ±.5° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005 DO NOT SCALE DRAWING	DRAWN	DG	06/08/16
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MATERIAL	COMMENTS:		
UNIT OF MEASURE Inches			

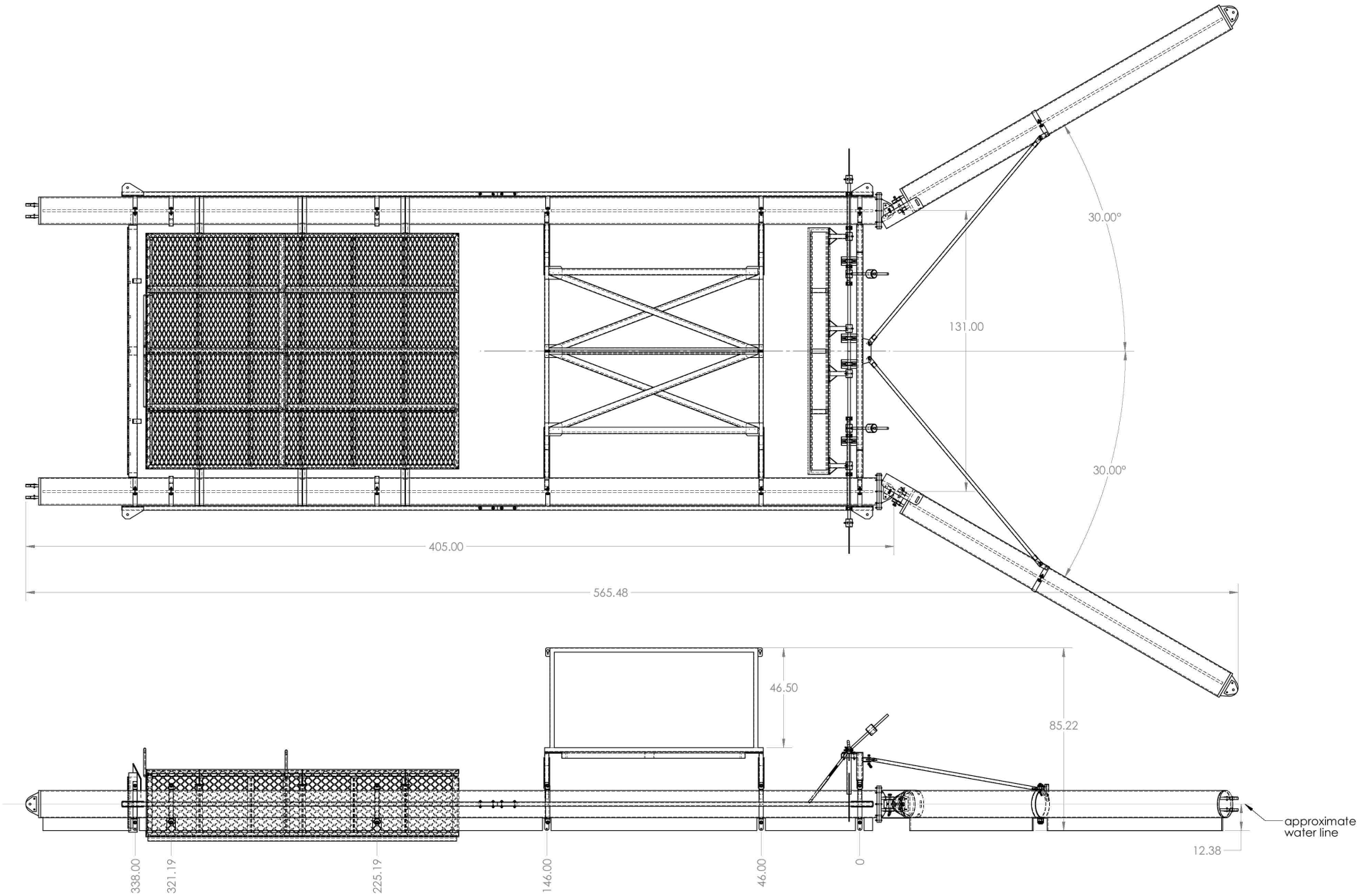
STORMWATER SYSEMS, INC.
196 Industrial Blvd.
Cleveland, GA 30528
706-348-8201
www.stormwatersystems.com

TITLE:

920 Bandalong Litter Trap

SIZE	DWG. NO.	REV
C	0920-0001000	0

SCALE: 1:32 WEIGHT: SHEET 1 OF 3



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MATERIAL	COMMENTS:		
UNIT OF MEASURE Inches			

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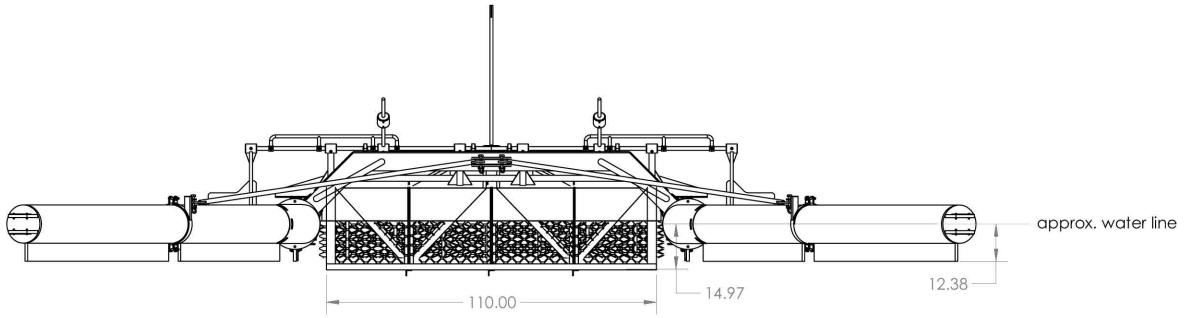
TITLE:

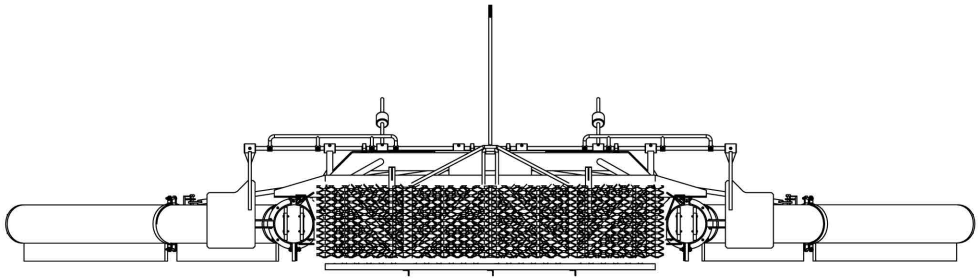
920 Bandalong Litter Trap

SIZE	DWG. NO.	REV
C	0920-0001000	0

SCALE: 1:64 WEIGHT: SHEET 2 OF 3



Front Elevation



Rear Elevation

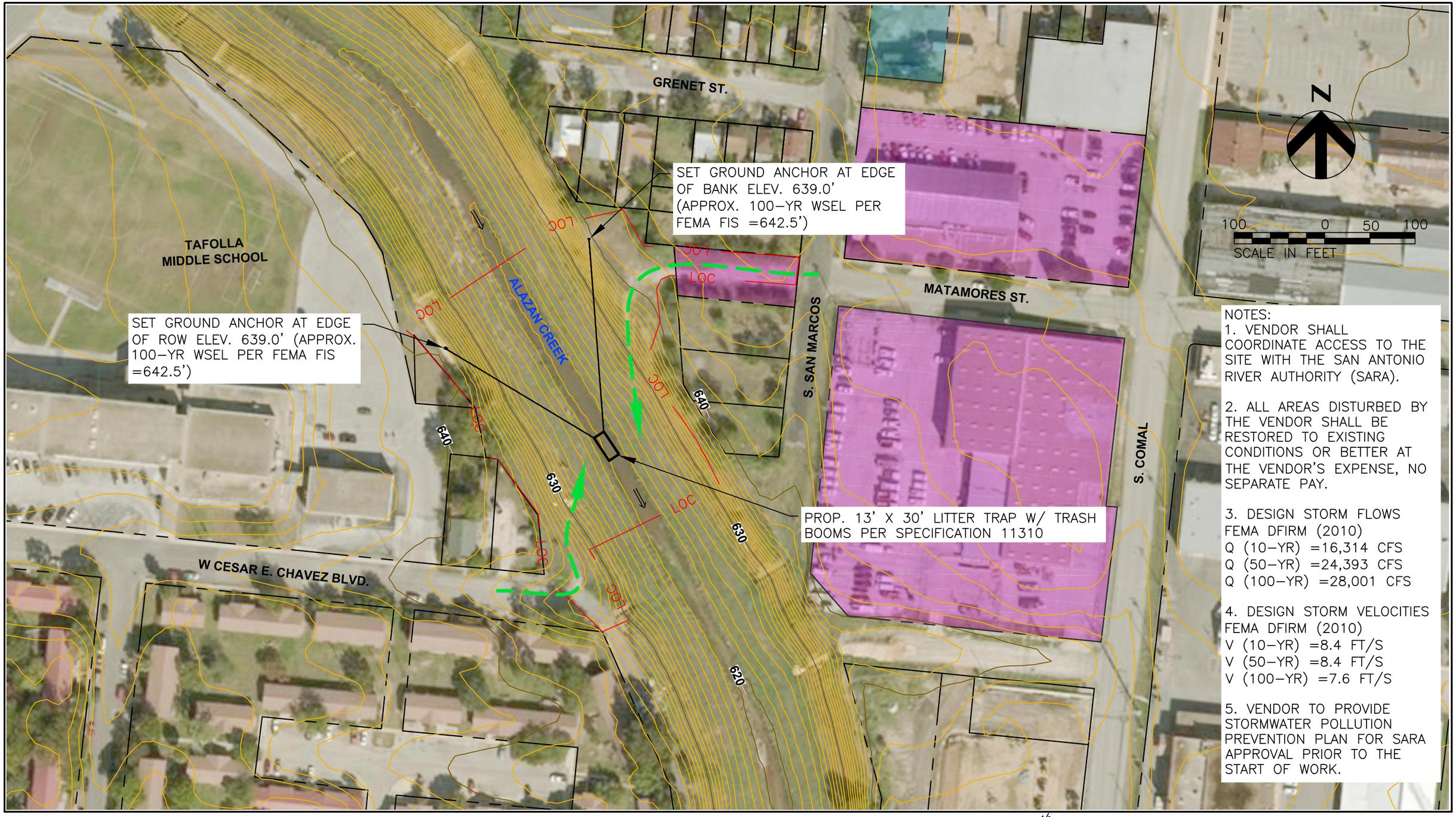
UNLESS OTHERWISE SPECIFIED:		NAME	DATE
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± 1/2" ANGULAR: MACH ±.5° BEND ±1° TWO PLACE DECIMAL ±.01 THREE PLACE DECIMAL ±.005 DO NOT SCALE DRAWING	DRAWN	DG	06/08/16
	CHECKED		
	ENG. APPR.		
	ENG. APPR.		
MATERIAL	COMMENTS:		
UNIT OF MEASURE Inches			

STORMWATER SYSEMS, INC.
196 Industrial Blvd.
Cleveland, GA 30528
706-348-8201
www.stormwatersystems.com

TITLE:
920 Bandalong Litter Trap

SIZE	DWG. NO.	REV
C	0920-0001000	0

SCALE: 1:32 WEIGHT: SHEET 3 OF 3



NOTES:

1. VENDOR SHALL COORDINATE ACCESS TO THE SITE WITH THE SAN ANTONIO RIVER AUTHORITY (SARA).

2. ALL AREAS DISTURBED BY THE VENDOR SHALL BE RESTORED TO EXISTING CONDITIONS OR BETTER AT THE VENDOR'S EXPENSE, NO SEPARATE PAY.

3. DESIGN STORM FLOWS
FEMA DFIRM (2010)
Q (10-YR) =16,314 CFS
Q (50-YR) =24,393 CFS
Q (100-YR) =28,001 CFS

4. DESIGN STORM VELOCITIES
FEMA DFIRM (2010)
V (10-YR) =8.4 FT/S
V (50-YR) =8.4 FT/S
V (100-YR) =7.6 FT/S

5. VENDOR TO PROVIDE STORMWATER POLLUTION PREVENTION PLAN FOR SARA APPROVAL PRIOR TO THE START OF WORK.

LEGEND

- MINOR CONTOUR
- MAJOR CONTOUR
- PROPERTY LINE

ELEVATION CONTOUR SOURCE: BEXAR COUNTY YEAR-2010 LiDAR

- PROP. ACCESS ROUTE
- LOC — LIMITS OF CONSTRUCTION
- CITY OF SAN ANTONIO PROPERTY

HDR

PROJECT TITLE TRASH AND FLOATABLES

SHEET TITLE

ALAZAN CREEK
LITTER TRAP AND TRASH BOOM

02/24/2016
STATE OF TEXAS
CRISTOPHER L. PARKER
88602
REGISTERED PROFESSIONAL ENGINEER

PROJECT NUMBER	000000000273190
PROJECT MANAGER	CRIS PARKER
DATE	02/24/2016
REFERENCE SHEET	-
REFERENCE DOCUMENT	-
EXHIBIT NUMBER	1 of 1

The San Antonio River Authority plans on installing a litter trap and trash boom on Alazan creek upstream of El Paso Street and downstream of S. Colorado Street. The collection system we intend on installing consists of two trash booms that extend up the stream banks and one large collection basket that sits in stream. There will also be 4 slack lines attached to the middle and back end of the basket that will be used as support for the trash basket. These slack lines will extend up the stream banks and will be anchored in the same manner as the trash booms. The exact dimensions of the device, the site plan, anchor locations, and anchor design are attached.

Figure 1 Alazan Creek looking upstream

Figure 2 Alazan Creek Looking Downstream

The litter trap and trash boom that will be installed will capture trash and floatables during rain events. As a part of the operations and maintenance, the device will be cleaned out no later than 14 days after a rain event. Below are some photos of what the device looks like empty and filled with trash and floatables. The materials the device will be manufactured out of is shown in figure 3. There will be no educational signage associated with this project.

Figure 3 Trash Boom and Litter Trap Materials

Figure 4 Litter Trap Empty

Figure 5 Litter Trap Full

SECTION 11310

LITTER TRAP AND TRASH BOOM SYSTEM

PART 1 GENERAL

1.1 DESCRIPTION

A. Scope
   1. Manufacturer and Vendor shall provide all labor, materials, equipment and incidentals as shown, specified or required to furnish and install a litter trap and trash boom system at the location shown or indicated on the Exhibit provided in Contract Documents.

B. Related Sections
   1. 03300 Concrete

1.2 REFERENCES

A. Standards referenced in this Section are listed below:
   1. American Society of Testing and Materials (ASTM)

      a) ASTM D3350 – Standard Specifications for Polyethylene Plastics Pipe and Fitting Materials
      b) ASTM D790 – Standard Test Method for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.
      c) ASTM D1248 – Standard Specification for Polyethylene Plastics Extrusion Materials for Wire and Cable
      d) ASTM D638 – Standard Test Method for Tensile Properties of Plastics
      e) ASTM D1693 – Standard Test Method for Environmental Stress-Cracking of Ethylene Plastics
      f) ASTM C1147 – Standard Practice for Determining the Short Term Tensile Weld Strength of Chemical-Resistant Thermoplastics
      g) ASTM B209 – Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate
      h) ASTM B313/B313M-02e1 – Standard Specification for Aluminum and Aluminum-Alloy Round Welded Tubes

   2. American Welding Society (AWS)

      a) AWS G-1.10M – Guide for the Evaluation of Hot Gas, Hot Gas Extrusion, and Heated Tool Butt Thermoplastic Welds
      b) AWS B2.4 – Specification for Welding Procedure and Performance Qualifications for Thermoplastics
      c) AWS D1.2M – Structural Welding Code for Aluminum

1.3 QUALIFICATIONS

A. Vendor shall have not less than five years of experience of producing materials and equipment substantially similar to that required, and at time of bid shall submit documentation of at least five similar installations in satisfactory operation for not less than five years each.

B. Vendor responsibilities include:

1. Reviewing litter trap, trash boom, and anchorage system performance and design criteria stated in Contract Documents.

2. Preparing written requests for clarifications or interpretations of performance or design criteria for submittal to ENGINEER or OWNER.

3. Preparing or supervising preparation of design calculations verifying compliance of litter trap, trash boom, and anchorage system with requirements of the Contract Documents.

4. Signing and sealing all calculations and shop drawings.

5. Certifying that:

a) Design of litter trap, trash boom, and anchorage system was performed in accordance with performance and design criteria stated in the Contract Documents, and design complies with laws and regulations and to prevailing standards of practice.

C. Component Supply and Compatibility

1. Obtain all products furnished under this section regardless of component manufacturer, from a single litter trap and trash boom system manufacturer.

2. Litter trap and trash boom system manufacturer shall prepare, or shall review and approve, all shop drawings and other submittals for all components furnished under this section.

3. Components shall be suitable for the specified service conditions and shall be integrated into overall assembly by litter trap and trash boom system manufacturer.

1.4 SUBMITTALS

A. Action Submittals; submit the following:

1. Shop Drawings:

a) Shop Drawings for the fabrication and installation of all litter trap and trash boom system work. Include plans, details of boom sections and connections, anchorage details, and any accessory items. Shop Drawings shall bear the seal and signature of professional engineer responsible for delegated design.

b) Vendor's custom details for litter trap and trash boom system.

c) Anchorage details including subbase design sealed by a professional engineer licensed in the State of Texas.

2. Product Data

a) Manufacturer's product literature, specifications, nominal tensile strength, and standard dimension diagrams.

3. Delegated Design Submittals

a) Design computations or complete analysis of trash boom sections, inter-boom connectors, litter trap device, and anchorage systems, signed and sealed by professional engineer.

Design shall include reaction loads at each end of the boom line and certification that the boom and connecting hardware meet or exceed the calculated design loads. Texas Professional Engineer's seal shall be clearly legible including jurisdiction of registration, registration number and name on seal.

b) Certifications by a professional engineer that the professional engineer has performed the design of the litter trap, trash boom, and anchorage systems in accordance with performance and design criteria stated in the Contract Documents, and that the design complies to laws and regulations, and with prevailing standards of practice.

4. Test Procedure

a) Submit detailed description of proposed field and manufacturer testing procedures. Do not perform field testing until ENGINEER approves test procedure. If testing occurs at manufacturing facility, then test results/certification of testing will be required to be submitted.

B. Informational Submittals; submit the following:

1. Certificates

   a) Vendor's standard guarantee for installation of the litter trap, trash boom, and anchorage systems.

2. Supplier Reports

   a) Submit a written report of results of each visit to site by suppliers' service technician, including purpose and time of visit, tasks performed and results obtained. Submit within two days of completion of visit to the site.

3. Supplier Instructions

   a) Instructions for handling, storing, and installing materials furnished.

4. Qualifications Statements

   a) Vendor, when requested by OWNER.

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Delivery

1. Deliver materials to the site to ensure uninterrupted progress of work.

2. Upon delivery, Vendor to inspect trash boom and appurtenances for cracking, gouging, chipping, denting, and other damage. Immediately remove from site and replace unacceptable material.

B. Storage

1. Vendor to provide storage of materials. Store materials to allow convenient access for inspection and identification. Store material off of the ground using pallets, platforms, and other supports.

2. Litter trap and trash boom system may be stored outdoors without cover.

3. Vendor and manufacturer are responsible for securing the equipment prior to installation and OWNER will not be responsible for any loss until the job is complete and accepted.

C. Handling

1. Handle litter trap and trash boom system and all appurtenances carefully in accordance with trash boom manufacturer's recommendations.

2. Avoid unnecessary handling of litter trap and trash boom system.

3. Protect exterior face of trash boom. Replace trash boom sections with damage regardless of cause of damage.

1.6 WARRANTY

A. General Warranty: Special warranty specified in this article shall not deprive OWNER of other rights or remedies OWNER may otherwise have under the Contract Documents and shall be in addition to and run concurrent with other warranties made by Vendor under the Contract Documents. Obligations of Vendor under the Contract Documents shall not be limited in any way by provisions of specified special warranty.

B. Special Warranty of Materials and Equipment:

1. Vendor to warrant that the manufactured and installed littler trap shall be free from defects in materials and workmanship for a period of one (1) year from date of installation. HDPE booms and floats shall be warranted for 20 (twenty) years.

PART 2 PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Stormwater Systems, Inc.

B. Approved Equal

2.2 GENERAL LITTER TRAP AND TRASH BOOM SYSTEM REQUIREMENTS

A. Litter trap and trash boom system and all appurtenances shall be new units not previously used for any other purpose.

B. Litter trap and trash boom system shall be effective at trapping and retaining debris at all stream velocities at or below 9.0 feet per second and flows at or below 30,000 cubic feet per second.

C. Design

1. The device shall be specifically designed to capture floating litter/trash/debris in rivers and streams.
2. The device shall incorporate a tidal/wind gate that contains the litter within the trap during a tidal change or wind event.

3. Booms shall contain no foam internal filler and utilize a unique universal connecting system and will display product labels.
4. The litter trap will be equipped with a lift out basket for cleaning. It can also be cleaned using vacuum truck, excavator, or manually.
5. The booms and baskets shall rise and fall with water levels.
6. The booms and baskets shall float on the water surface and shall also be capable of temporarily sitting in a dry stream bed.
7. The booms and baskets shall not have subsurface nets attached.
8. The device shall include a sign to inform and raise public awareness of owner's commitment to clean water. Content requires owner's approval.
9. The device shall be designed to contain trash and operate at stream flow conditions up to and including the 100-year flood event.

D. Acceptable materials for plastic materials include:

1. The resin used in the floats shall be all virgin PE 3408 or equal resin, as defined in ASTM D-3350.

2. All piping shall have a minimum of 2.3% carbon black UV stabilizer.

3. No fillers shall be added.

E. Acceptable materials for aluminum materials include:

1. All aluminum shall be 6061 and meet ASTM B209 Standard Specification.

2. Aluminum Mesh used in lift-out basket made from 6063-T5 aluminum, with mesh pattern of 3.125" X 2.875" opening for sides and 4.875" X 1.50" on bottom.

3. Aluminum mesh used in rear gate shall be made from same grade aluminum and shall be a 4.78" X 1.50" opening.

F. Acceptable materials for lift-out baskets include:

1. Two (2) optional lift-out baskets for mechanical removal using lifting device are offered.

2. Constructed using aluminum mesh and angle with lifting eye.

G. Acceptable materials for cable and chain materials include:

1. Boom Cable is 3/8" diameter galvanized zinc plated 7 x 19 strand core wire rope, and will have a 14,400 lbs. breaking strength.

2. 5/8" Chain is grade 40/43 NACM grade, hot dipped galvanized coating, work load limit is 13,000 lbs.

H. Dimensions and Tolerances:

1. General dimensions shall be shown on all shop drawings.
2. Thicknesses specified shall be +/-3% on all aluminum/stainless components.
3. Thicknesses specified shall be +/-10% on all plastic materials.

I. Workmanship:

1. The finished product shall be free from defect in workmanship.

2.4 ANCHOR REQUIREMENTS

A. Anchors shall be placed on both sides of the bank. No anchors will be permitted mid-span of the litter trap and trash boom system.

B. Anchors will be placed at the locations indicated on the Contract Documents.

C. Geotechnical survey shall be completed by Vendor to ensure that anchor subbase and design are appropriate for all existing conditions including, but not limited to soil type, groundwater, and weather. Design shall be signed and sealed by a professional engineer licensed in the State of Texas.

D. Anchor subbase and design shall be designed to withstand the 100-year flood.

E. If concrete anchors are needed, Vendor to provide concrete submittal adhering to Section 03300 Concrete.

2.5 SPARE PARTS

A. Spare parts shall be furnished as follows:

1. One (1) additional trash boom section.

2. One (1) additional inter boom connector.

3. Two (2) additional breakaway inter boom connectors

4. One (1) additional replacement basket for each basket in the design.

2.5 ADDITIONAL ITEMS

1. Operation and Maintenance Manual to include all approved shop drawings and submittals. Manual shall include recommended schedule of maintenance

activities. One (1) electronic copy and one (1) hardcopy to be provided to OWNER.

PART 3 EXECUTION

3.1 INSPECTION

A. Examine the conditions under which the work will be installed and notify ENGINEER in writing of conditions detrimental to the proper and timely completion of work. Do not proceed with the work until unsatisfactory conditions are corrected.

3.2 INSTALLATION

A. Install litter trap, boom system, and anchorage in accordance with the Contract Documents, laws and regulations, manufacturer's instructions, and recommendations of workers skilled in installation of trash booms.

B. Do not install litter trap and trash boom system until anchors, if concrete, have reached a minimum of 90% design strength.

C. Install litter trap and trash boom system anchors, if concrete, in accordance with concrete submittal adhering to Section 03300 Concrete.

D. Vendor to locate all utilities and pothole to verify locations. Vendor to stay 5 feet away from utilities.

3.3 FIELD QUALITY CONTROL

A. Site Tests: After installation, Vendor and qualified field service representative of manufacturer shall conduct an inspection of the litter trap system, in the presence of ENGINEER. During inspections, verify that materials and equipment and appurtenances are installed in accordance with the Contract Documents, manufacturer's instructions, and laws and regulations.

B. Manufacturer's Services: Provide a qualified, factory trained serviceman to perform the following:

1. Supervise unloading and installation of materials and equipment.
2. Instruct Vendor in installing materials and equipment.

3. Inspect and assist in testing the litter trap and trash boom system after installation and ensure proper operation.

4. Technician shall revisit the site as often as necessary until installation is acceptable.

5. All costs, including expenses for travel, lodging, meals, and incidentals, and cost of travel time, for visits to the site shall be included in the contract price.

END OF SECTION