

Brewster Fire Station - Sub bid

<u>Category:</u>	Fire and Police Stations	<u>Project ID #:</u>	1004114900
<u>Street Address:</u>	1657 Main St. Brewster MA 02631	<u>Confirmed Value</u>	\$10,000,000.00
<u>County:</u>	Barnstable	<u>Stage:</u>	SUBBIDS: ASAP
<u>Bid Date:</u>	10/19/2016 , 12:00PM		
<u>Architect:</u>	CDR Maguire - Boston		
<u>Documents Available:</u>	Plans, Specs available in Insight	Plans available from Pomroy Associates LLC	
<u>Last Update:</u>	10/7/2016	Project reviewed, Stage confirmed as SUBBIDS: ASAP	

Notes

Scope Site work and new construction of a fire / police facility in Brewster, Massachusetts. Completed plans call civil work for a fire station. ** Sub Bid Deadline 10/19/16 Time 12:00 P.M. Sub Bid Category Masonry; Misc. & Ornamental Iron; Waterproofing, Dampproofing & Caulking; Roofing & Flashing; Glass & Glazing; Tile; Acoustical Ceilings; Resilient Floors; Painting; Elevators; Fire Suppression; Plumbing; HVAC; Electrical Pre-qualification of General Contractors and Filed Sub-bidders has been completed by the Town of Brewster. A listing of Pre-qualified contractors is provided in the bid documents.

Notes Bid Date: 10/19/2016 12:00PM Town of Brewster, 2198 Main St. Brewster, MA 02631 Filed Sub-Bid: 10/19/2016 12:00PM Town of Brewster, 2198 Main St. Brewster, MA 02631 Pre-Bid Meeting: 10/05/2016 10:00AM at the existing Brewster Fire and Rescue Department Headquarters, 1657 Main St., Brewster. Development include(s): New Construction, Site Work

Details [Division 2]: Building Demolition, Dewatering, Shoring, Earthwork, Slope Protection & Erosion Control, Paving & Surfacing, Water Systems, Wells, Sewerage & Drainage, Landscaping. [Division 4]: Clay Unit Masonry, Granite. [Division 5]: Structural Steel, Metal Fabrications, Metal Stairs, Ornamental Metals. [Division 6]: Rough Carpentry, Finish Carpentry, Architectural Woodwork. [Division 7]: Waterproofing, Dampproofing, Insulation, Exterior Insulation & Finish Systems, Fireproofing, Shingles. [Division 8]: Metal Doors, Coiling Doors and Grilles, Entrances & Storefronts, Wood Windows, Hardware, Glass & Glazing. [Division 9]: Ceiling Suspension Systems, Lath & Plaster, Drywall/Gypsum, Tile, Acoustical Ceilings, Resilient Flooring, Carpet, Painting. [Division 10]: Visual Display Boards, Interior Signs, Lockers, Toilet & Bath Accessories. [Division 12]: Window Treatment. [Division 13]: Pre-Engineered Structures. [Division 14]: Elevators. [Division 15]: Mechanical Insulation, Fire Protection Systems, Plumbing Piping, Plumbing Fixtures, Boilers, Furnaces, Air Handling, Ductwork, Testing & Balancing. [Division 16]: Service/Distribution, Standby Power Generator Systems, Lightning Protection Systems, Alarm & Detection Systems.

Additional Details

<u>Listed On:</u>	7/22/2016	<u>Floor Area:</u>	
<u>Contract Type:</u>		<u>Work Type:</u>	New
<u>Stage Comments 1:</u>		<u>Floors Below Grade:</u>	
<u>Stage Comments 2:</u>		<u>Owner Type:</u>	City
<u>Bid Date:</u>	10/19/2016	<u>Mandatory Pre Bid Conference:</u>	
<u>Invitation #:</u>		<u>Commence Date:</u>	11/18/2016
<u>Structures:</u>		<u>Completion Date:</u>	
<u>Single Trade Project:</u>		<u>Site Area:</u>	
<u>Floors:</u>		<u>LEED Certification Intent:</u>	
<u>Parent Project ID:</u>	1003836109	<u>Units:</u>	
<u>Parking Spaces:</u>			

Project Participants

Company Role	Company Name	Contact Name	Address	Phone	Email	Fax
Architect	CDR Maguire - Boston		2 Granite Ave Ste 150, Boston, MA 02110	(617) 778-1440		(617) 348-2143
Owner	Town of Brewster	Donna Kalinick	2198 Main St., Brewster, MA 02631	(508) 896-3701	dkalinick@brewster-ma.gov	(508) 896-8089
Consultant	Pomroy Associates LLC	Taylor MacDonald	49 Bedford St, East Bridgewater, MA 02333	(508) 456-4232	tmacdonald@pomroyassociates.com	(508) 456-4227

Bidders









Company	Added	Address	Phone	Email	Bidding Role	Bid	Bid Value	Fax
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Name	Date				Rank	Number
Associated Elevator	8/16/2016	583 D Forest Road , South Yarmouth, MA 02664	(508) 760-3875	info@associatedelevator.com	Elevators and Escalators	(508) 760-2809
Costa Brothers Masonry, Inc	10/3/2016	2 Lambeth Park Dr. , Fairhaven, MA 02719	(508) 991-7634	cbm@costamaso-nrv.com	Masonry	(508) 991-7635

Planholders

Company Name	Address	Phone	Email	Fax
Chapman Waterproofing Company	395 Columbia Rd PO Box 255300, Boston, MA 02125	(617) 288-3000	info@chapmanwaterproofing.com	(617) 288-3005
R.W. Irvine & Sons Inc.	147 Blossom St. , Lynn, MA 01902	(781) 581-0464	info@irvineandsons.com	(781) 581-2860
M. O'Connor Contracting Inc	19 Ledge Hill Rd, P. O. Box 320277, West Roxbury, MA 02132	(617) 327-3070		(617) 327-9731
Annese Electrical Services	280 Libbey Industrial Pkwy. , Weymouth, MA 02189	(781) 337-6462		(781) 337-6559
Rockwell Roofing Inc.	44 Pond St , Leominster, MA 01453	(978) 537-7825		(978) 537-4132
Wayne J. Griffin Electric, Inc.	116 Hopping Brook Rd , Holliston, MA 01746	(508) 306-5278	imorton@wjgei.com	(508) 429-9251
RAC Builders Inc.	12 School Street P.O. Box 846, Agawam, MA 01001	(413) 786-8401		(413) 786-8988
John F. Shea Co. Inc.	41 Hollingsworth St. P.O. Box 365, Mattapan, MA 02126	(617) 298-0356	csears@johnfshea.com	(617) 296-8859
Enterprise Equipment Co. Inc.	276 Libbey Pkwy , Weymouth, MA 02189	(781) 331-0900	info@enterpriseequip.com	(781) 337-2940
PJ Spillane Company Inc	97 Tileston St , Everett, MA 02149	(617) 389-6200		(617) 389-4138
Cam HVAC & Construction Inc.	116 Lydia Ann Road , Smithfield, RI 02917	(401) 232-7230	info@camhvac.com	(401) 232-7290
Andrew T. Johnson Co.	15 Tremont Pl. , Boston, MA 02108	(617) 742-1610		(617) 523-0719
G&R Construction Inc.	253 Centre St. , Quincy, MA 02169	(781) 849-9093		(781) 849-9094
Capital Carpet & Flooring Specialists Inc.	12 Walnut Hill Park P.O. Box 2633, Woburn, MA 01801	(781) 935-9430		(781) 935-5737
Homer Contracting Inc.	195 Broadway , Arlington, MA 02474	(781) 648-3372	info@homercontracting.com	(781) 648-4915
West Floor Covering, Inc.	42 Winter St. Suite 11, Pembroke, MA 02359	(781) 826-9022	info@westfloorcovering.com	(781) 826-7073
Greenwood Industries Inc.	640 Lincoln Street, , Worcester, MA 01605	(508) 865-4040		(508) 865-1123
Eagle Elevator Co. Inc	176 Norfolk Avenue , Boston, MA 02119	(617) 238-0613		(617) 238-0625
CJM Services, Inc	50 Kerry Pl P.O. Box 424, Norwood, MA 02062	(781) 440-0000	info@cjmservicesinc.com	(781) 440-0046
Araujo Bros Plumbing & Heating Inc.	224 Nyles Lane P.O. Box 50225, Acushnet, MA 02743	(508) 998-7006	info@araujobrosplumbing.com	(508) 998-1727
Feeley McAnespie Inc.	PO Box 280 , Chelmsford, MA 01824	(978) 441-2300	imcanesDie@fmiroofino.com	(978) 441-9277
Fernandes Masonry Inc	1031 Phillips Road , New Bedford, MA 02745	(508) 998-2121		(508) 985-0003
Brennan Interior Contractors	127 Camelot Dr Suite 2, Plymouth, MA 02360	(508) 830-3830	estimating@brennancontractors.com	(508) 830-3833
M-V Electrical Contractors, Inc	10 Conduit St , Acushnet, MA 02743	(508) 995-3826		(508) 995-0151
Delphi Construction	130 Overland Road , Waltham, MA 02451	(781) 893-9900	info@delphiconstruction.net	(781) 893-9898
Harold Brothers Mechanical	44 Woodrock Rd , Weymouth, MA 02189	(781) 871-2111	info@haroldbros.com	(781) 871-2002
Delta Beckwith Elevator	115 Shawmut Road , Canton, MA 02021	(781) 332-3800		(781) 332-3803
CTA Construction Co. Inc.	1432 Main St. , Waltham, MA 02451	(781) 786-6600	info@ctaconstruction.com	(781) 786-6670
Pomroy Associates LLC	49 Bedford St , East Bridgewater, MA 02333	(508) 456-4232		(508) 456-4227

Buyer Activity Report

Status	Activity Level	Contact	Company Name	Source	Phone	Email	Business Type	Trades	Last Active
New	<div style="width: 100%; height: 15px; background-color: #003366;"></div>	William Jones	Momentive Performance Materials Inc.		(704) 992-4131	william.jones@momentive.com	Other	Thermal and Moisture Protection, Dampproofing and Waterproofing	10/7/2016
New	<div style="width: 100%; height: 15px; background-color: #003366;"></div>	Karen Beauregard	Laborers International Union		(617) 479-4275	karen@mldctrust.com	Other	General Requirements, Summary, Price and Payment Procedures, Administrative Requirements, Survey and...	10/5/2016
New	<div style="width: 100%; height: 15px; background-color: #003366;"></div>	John Borgna	Suburban Propane		(607) 343-9063	JBORGNA@SUBURBANPROPANE.COM	Supplier	General Requirements, Summary, Price and Payment Procedures, Administrative Requirements, Survey and...	10/4/2016
New	<div style="width: 100%; height: 15px; background-color: #003366;"></div>	Rita Oliveira	South Dartmouth Construction		(508) 984-3347	RITA@SDCDRYWALL.COM	Subcontractor	Cold-Formed Metal Framing, Exterior Insulation and Finish Systems	9/28/2016
New	<div style="width: 100%; height: 15px; background-color: #003366;"></div>	Carl Reiser	New England Glass & Mirror Co.		(860) 887-1649	estimating@neglassmirror.com	Subcontractor	Doors and Frames, Entrances, Storefronts, and Curtain Walls, Windows, Roof Windows and Skylights, Ha...	9/26/2016
New	<div style="width: 100%; height: 15px; background-color: #003366;"></div>	Gretchen Foht	GearGrid-161615821		(651) 464-4468	gfoht@msn.com	Other	Specialties, Chalkboards, Markerboards and Tackboards, Display Cases, Directories and Plaques, Traff...	9/23/2016
New	<div style="width: 100%; height: 15px; background-color: #003366;"></div>	Deb Makowsky	Williams Scotsman		(800) 782-1500	deb.makowsky@willscott.com	Supplier	Temporary Facilities and Controls, Special Structures	7/26/2016
New	<div style="width: 100%; height: 15px; background-color: #003366;"></div>	Terrence Taylor	Melton Classics Incorporated		800-963-3060	terrence@meltonclassics.com	Other	Concrete, Concrete Forming and Accessories, Concrete Reinforcing, Cast-in-Place Concrete, Concrete P...	10/7/2016
New	<div style="width: 100%; height: 15px; background-color: #003366;"></div>	Andrew	Safety		952448-	andrew@da	Engineer	General	10/7/2016



Miller Products Group



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kota-safety.com

Requirements, Summary, Price and Payment Procedures, Administrative Requirements, Survey and...

New		Lisa Haarstik	Soucy Wire & Iron		(603) 883-4500	documents@soucyindustries.com	Subcontractor	Metals, Metal Restoration and Cleaning, Structural Metal Framing, Metal Joists, Metal Decking, Cold...	10/4/2016
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New		Susan Jones	Albert J Tony & Co Inc		(617) 773-9200	bonds@tonry.com	Other	General Requirements, Summary, Price and Payment Procedures, Administrative Requirements, Survey and...	10/4/2016
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New		Tina Polley	Building Specialties/arch Hardware		(413) 788-9686	tpolley@bsahinc.com	Supplier	Openings, Doors and Frames, Specialty Doors and Frames, Access Doors and Panels, Pressure-Resistant ...	10/4/2016
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New		Kevin Nichols	Building Specialties/arch Hardware		(413) 788-9686	knichols@bsahinc.com	Supplier	Openings, Doors and Frames, Specialty Doors and Frames, Access Doors and Panels, Coiling Doors and G...	9/27/2016
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New		Dave L'Heureux	Kalwall Corp Kal-lite Div.		(603)-627-3861	dlheureux@kalwall.com	Other	Openings, Doors and Frames, Specialty Doors and Frames, Access Doors and Panels, Coiling Doors and G...	9/23/2016
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New		Kara Huckabay	Sweeper Metal Fabricators Corp.		(918) 352-9180	sales@sweepermetal.com	Subcontractor	Specialty Doors and Frames, Security, Detention, and Banking Equipment	8/15/2016
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New		Sean Mcgrath	Prescott Co., Inc.;e.j.		(508) 723-3788	sean.mcgrath@ejprescott.com	Supplier	Fire Suppression, Water-Based Fire-Suppression Systems, Fire-Extinguishing Systems, Fire Pumps, Fire...	8/5/2016
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New		Janice Burrill	North Shore Steel Co., Inc.		(617) 598-1645	JNCBURRELL@GMAIL.COM	Subcontractor	Metals, Metal Restoration and Cleanin.	8/4/2016
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									Structural Metal Framing, Metal Joists, Metal Decking, Cold-...	
New			Yamilett Tejada	Boston Concrete Forms, Inc.		(617) 748-3541	bostoncfi@gmail.com	Subcontractor	General Requirements, Summary, Price and Payment Procedures, Administrative Requirements, Survey and...	8/4/2016
New			Victor Conklin	Kne Corporation		(781) 762-8344	victor@knecorp.com	Subcontractor	Openings, Doors and Frames, Specialty Doors and Frames, Access Doors and Panels, Coiling Doors and G...	7/26/2016
New			Dave Perry	Union Fence		(401) 729-0011	dave.unionfence@aol.com	Subcontractor	Temporary Facilities and Controls	10/6/2016
New			Gregory Morris	GFM Enterprises Inc.		(508) 349-7300	gfm.enterprises@icloud.com	Subcontractor	Existing Conditions, Demolition and Structure Moving, Concrete, Concrete Forming and Accessories, Co...	10/3/2016
New			Franco Fresilli	Fresilli & Sons Masonry Contr		(401) 942-5193	fresilli.sons@cox.net	Subcontractor	Masonry, Unit Masonry, Stone Assemblies, Refractory Masonry, Corrosion-Resistant Masonry, Manufactur...	10/1/2016
New			Chris Proctor	MBO Precast		(508) 866-6900	cproctor@mbo-precast.com	Supplier	Precast Concrete	9/29/2016
New			Maudel Kirmon	K & M Fire Protection Service Inc			mkirmon@kandmfire.com	Subcontractor	Fire Suppression, Water-Based Fire-Suppression Systems, Fire-Extinguishing Systems, Fire Pumps, Fire...	9/28/2016
New			Jack O'Leary	O'Leary Plumbing & Heating		(781) 924-3114	olearyph@hotmail.com	Subcontractor	Plumbing, Plumbing Piping and Pumps, Plumbing Equipment, Plumbing Fixtures, Pool and Fountain Plumbi...	9/27/2016
New			Robert Eldridge	K & M Fire Protection Service Inc			robert.eldridge@kandmfire.com	Subcontractor	Fire Suppression, Water-Based Fire-Suppression Systems. Fire-	9/27/2016

									Extinguishing Systems, Fire Pumps, Fire...		
New	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Tim Byrne	United Association Local 51		(401) 943-3033	tbyrne@ualocal51.com	Subcontractor	General Requirements, Summary, Price and Payment Procedures, Administrative Requirements, Survey and...	9/26/2016
New	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Allen Penney	Ferguson Waterworks		(860) 666-5634	allen.penney@ferguson.com	Supplier	General Requirements, Summary, Product Requirements, Existing Conditions, Site Clearing, Utilities, ...	9/23/2016
New	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Ray Horan	Pittcon Industries		(301) 927-1000	rhoran@protechspec.com	Other	General Requirements, Summary, Price and Payment Procedures, Administrative Requirements, Survey and...	9/16/2016
New	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Nabin Bhattari	Riccelli Enterprises Inc		(315) 433-5115	nabinb@riccellienterprises.com	Service Provider	Contaminated Site Material Removal, Concrete	9/13/2016
New	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Pat McDowell	P.K.M. Contractors, Inc.		(508) 385-5993	pkmadmin@pkminc.net	Subcontractor	Existing Conditions, Subsurface Investigation, Demolition and Structure Moving, Site Remediation, Wa...	8/16/2016
New	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Wayne Rousseau	Noreaster Installations			wayner@noreaster-installations.com	Subcontractor	Wood, Plastics, and Composites, Rough Carpentry, Finish Carpentry, Architectural Woodwork, Structura...	8/16/2016
New	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Joe Abely	Viewpoint		(508) 904-3185	jabely@viewpointcrm.com	Other	General Requirements, Summary, Price and Payment Procedures, Administrative Requirements, Survey and...	8/15/2016
New	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	salmonarca	fmonarcasonry		(860) 883-6161	smonarca@fmonarcasonry.com	Subcontractor	Masonry, Unit Masonry, Stone Assemblies, Refractory Masonry, Corrosion-Resistant Masonry, Manufactur...	8/9/2016
New				kristin pennev	Cheviot Corp; The		(860) 645-	kpenney@cheviotcorp.c	Subcontractor	Existing Conditions.	8/4/2016

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Assessment,
Subsurface
Investigation,
Demolition
and Structure
Moving, Site
Rem...

New		Dan DeFreitas	Taylor Oil Company		(908) 725-7720	ddfрейtas@tayloroilco.com	Subcontractor	General Requirements	7/31/2016
New		Frank Fontana	Eagle Leasing		(508) 481-5941	ffontana@eagleleasing.com	Supplier	General Requirements, Summary, Price and Payment Procedures, Administrative Requirements, Survey and...	7/26/2016
New		Peter Gibbons	Sprinkler Fitters Local 550		(617) 323-0474	PETER@SPRINKLERFITTERS550.ORG	Subcontractor	Fire Suppression, Water-Based Fire-Suppression Systems, Fire-Extinguishing Systems, Fire Pumps, Fire...	7/26/2016
New		Dean Raftopoulos	Construction Representatives Group, Inc.		(603) 427-4262	deanr@crgh-nh.com	Subcontractor	General Requirements, Summary, Price and Payment Procedures, Administrative Requirements, Survey and...	7/25/2016
New		Aqil Unia	Visual Citi Inc		631-482-3030	aqil@visualciti.com	Subcontractor	Utilities, Water Utilities, Wells, Sanitary Sewerage Utilities, Storm Drainage Utilities, Ponds and ...	7/22/2016
New		Eric Chabot	Pj Keating		(978) 582-5223	echabot@pjkeating.com	Supplier	Earthwork, Earthwork Methods	7/21/2016

Contracts

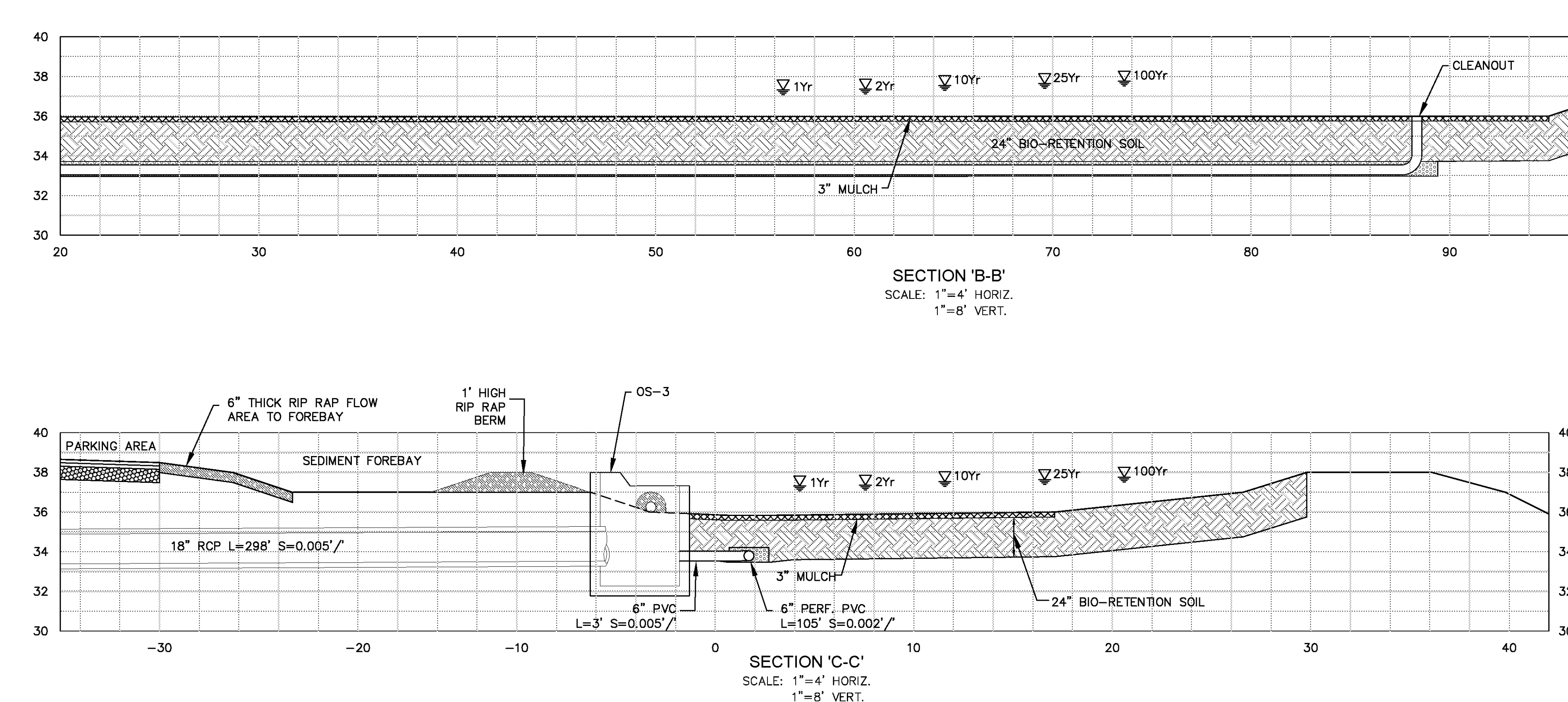
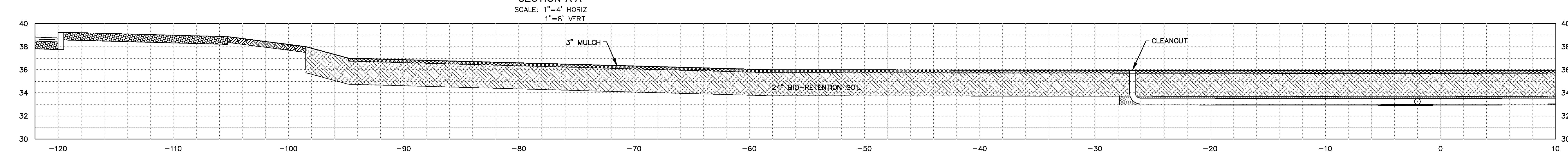
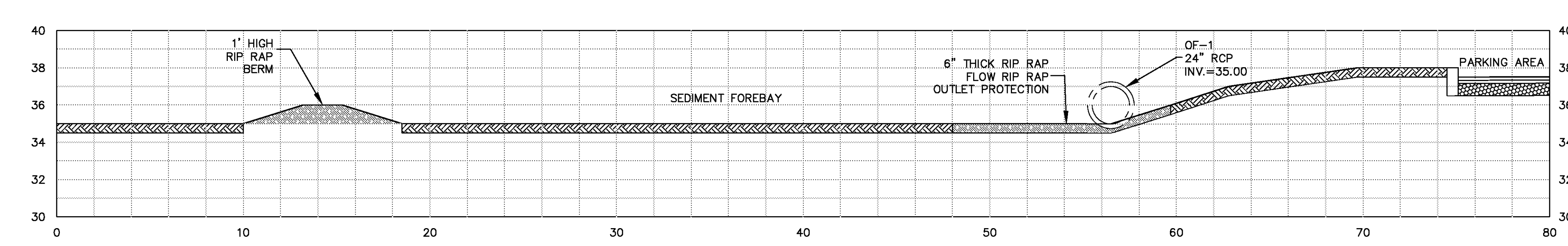
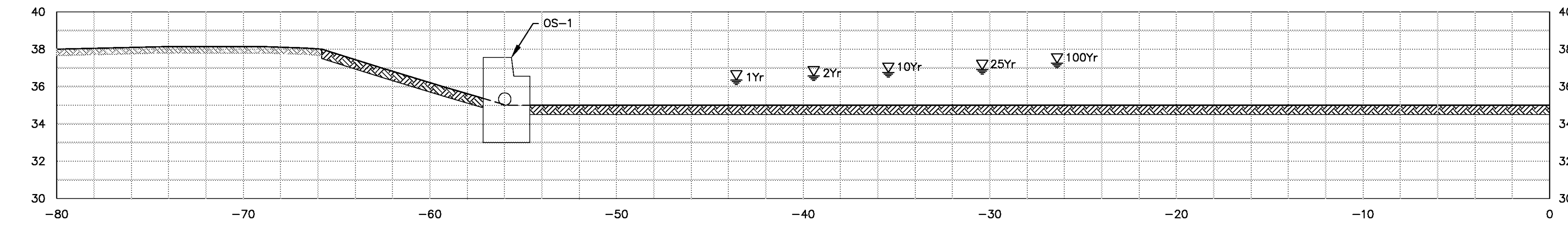
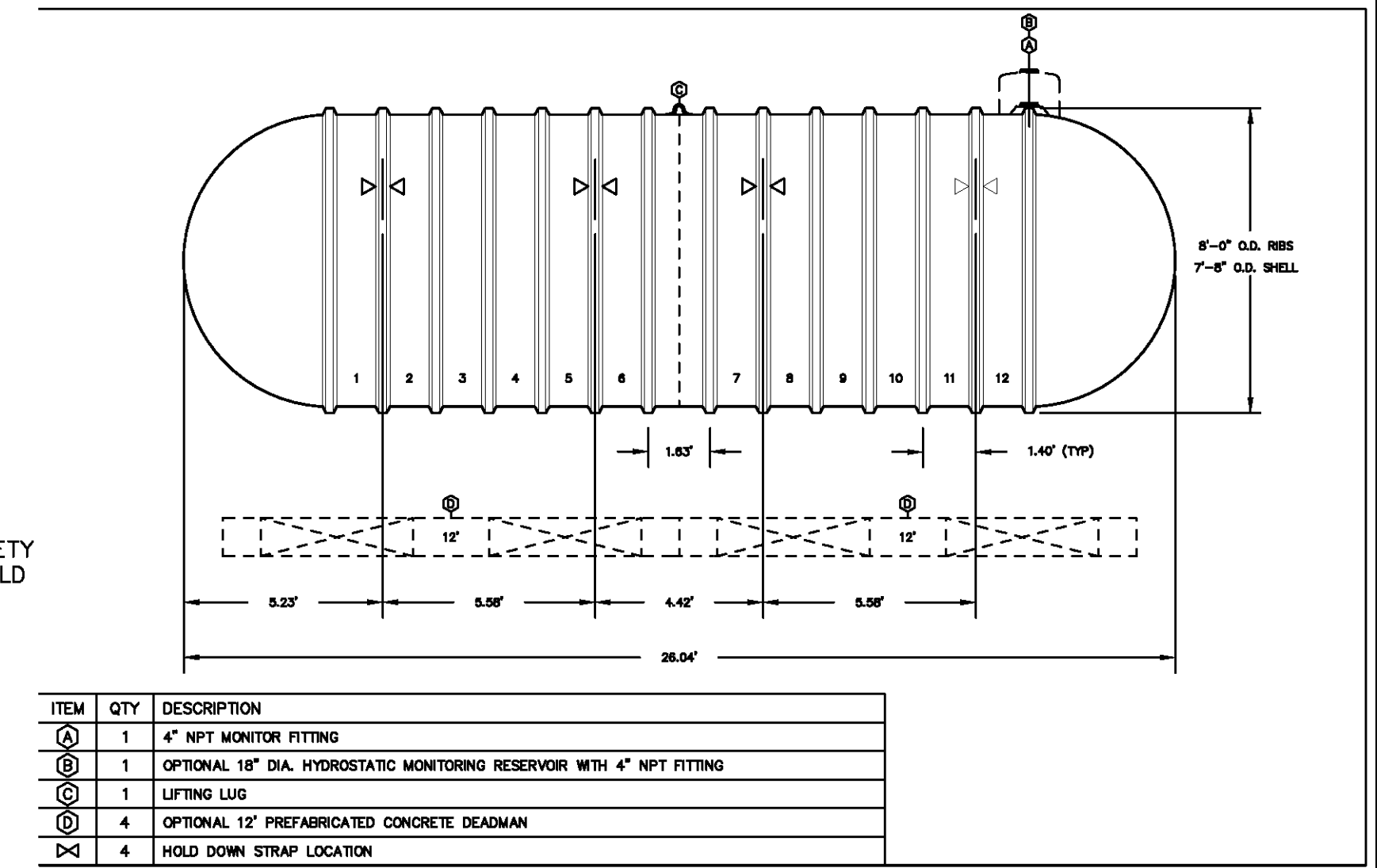
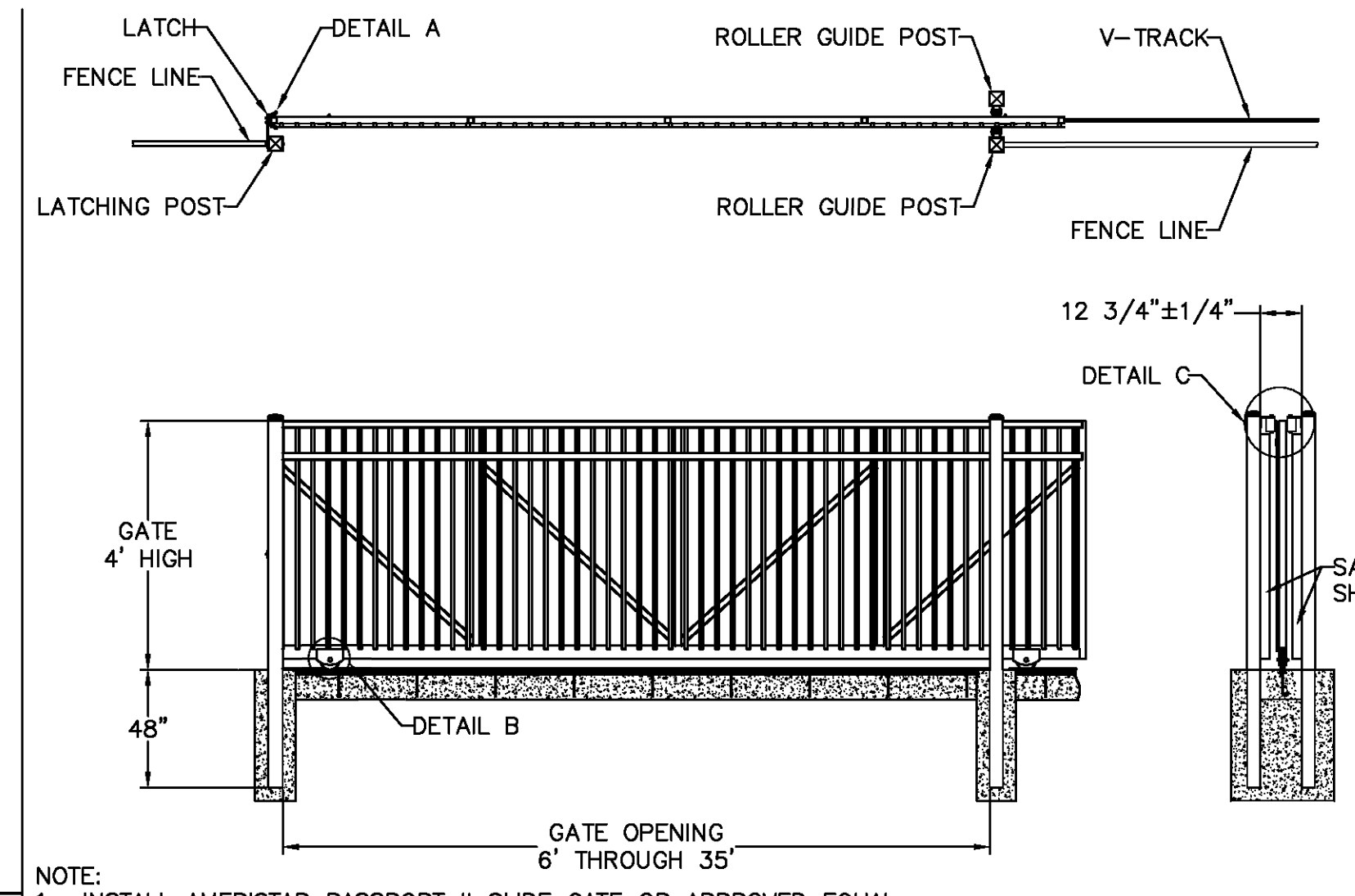
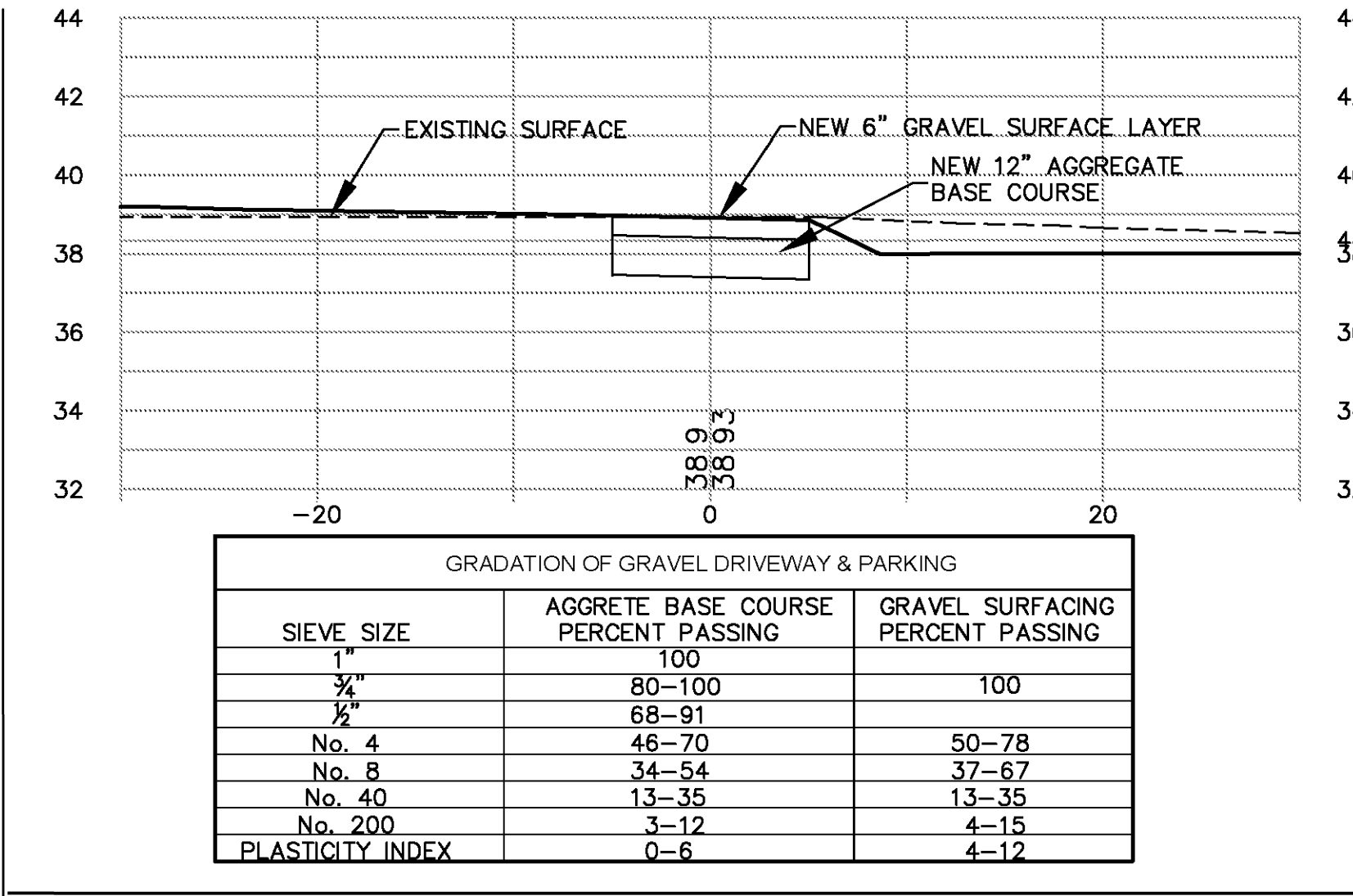
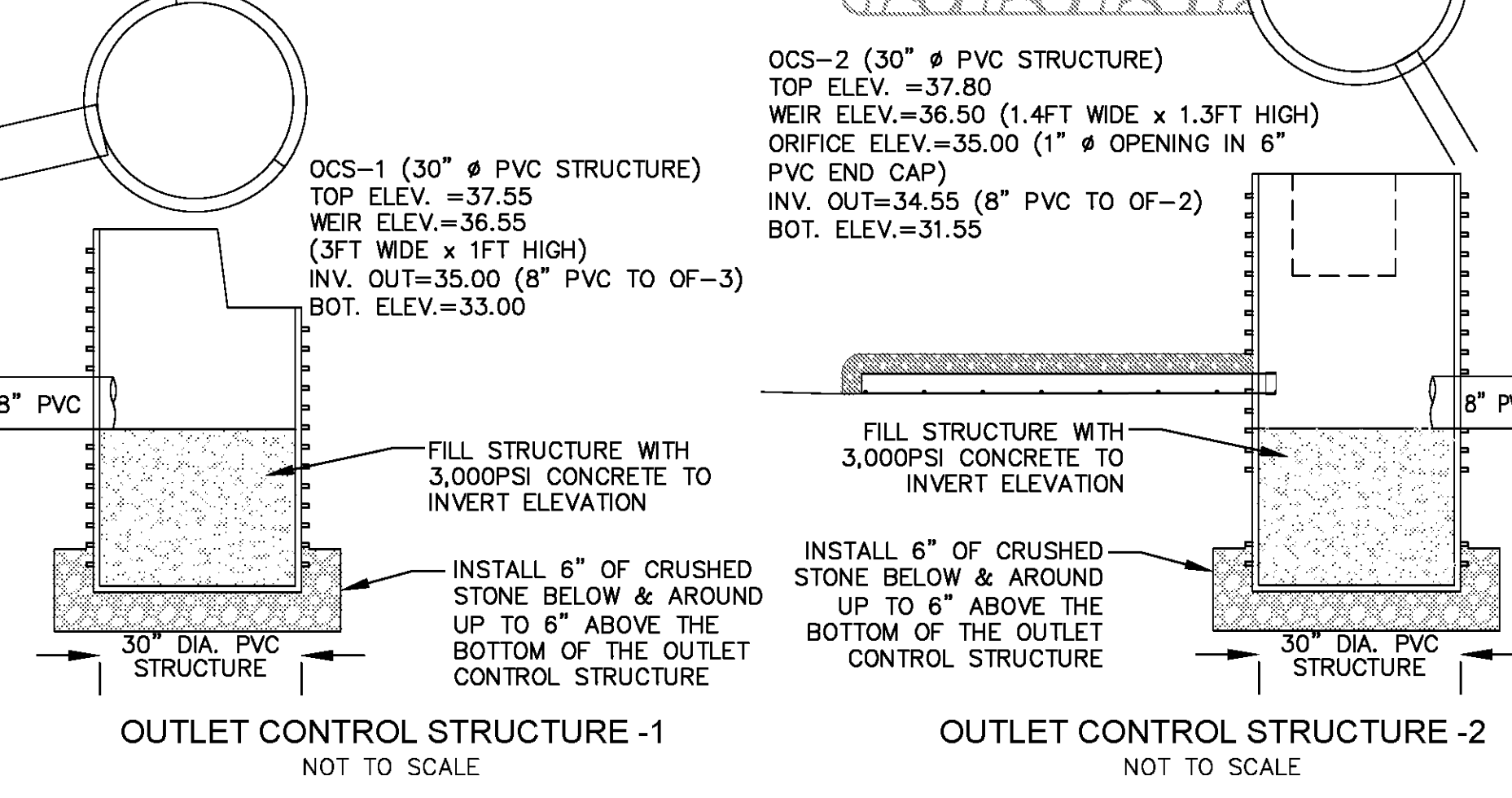
Classification	Conditions	Bonding	Bid Date	Bids To	Bid Type
General Contractor		Bid:5.00%,Perf:100.00%,Pay:100.00%	10/19/2016	Owner	Invited Bidders

History

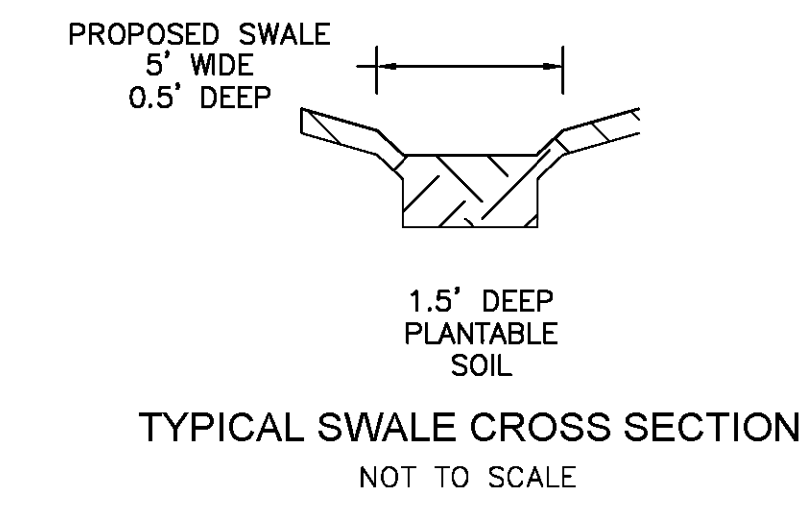
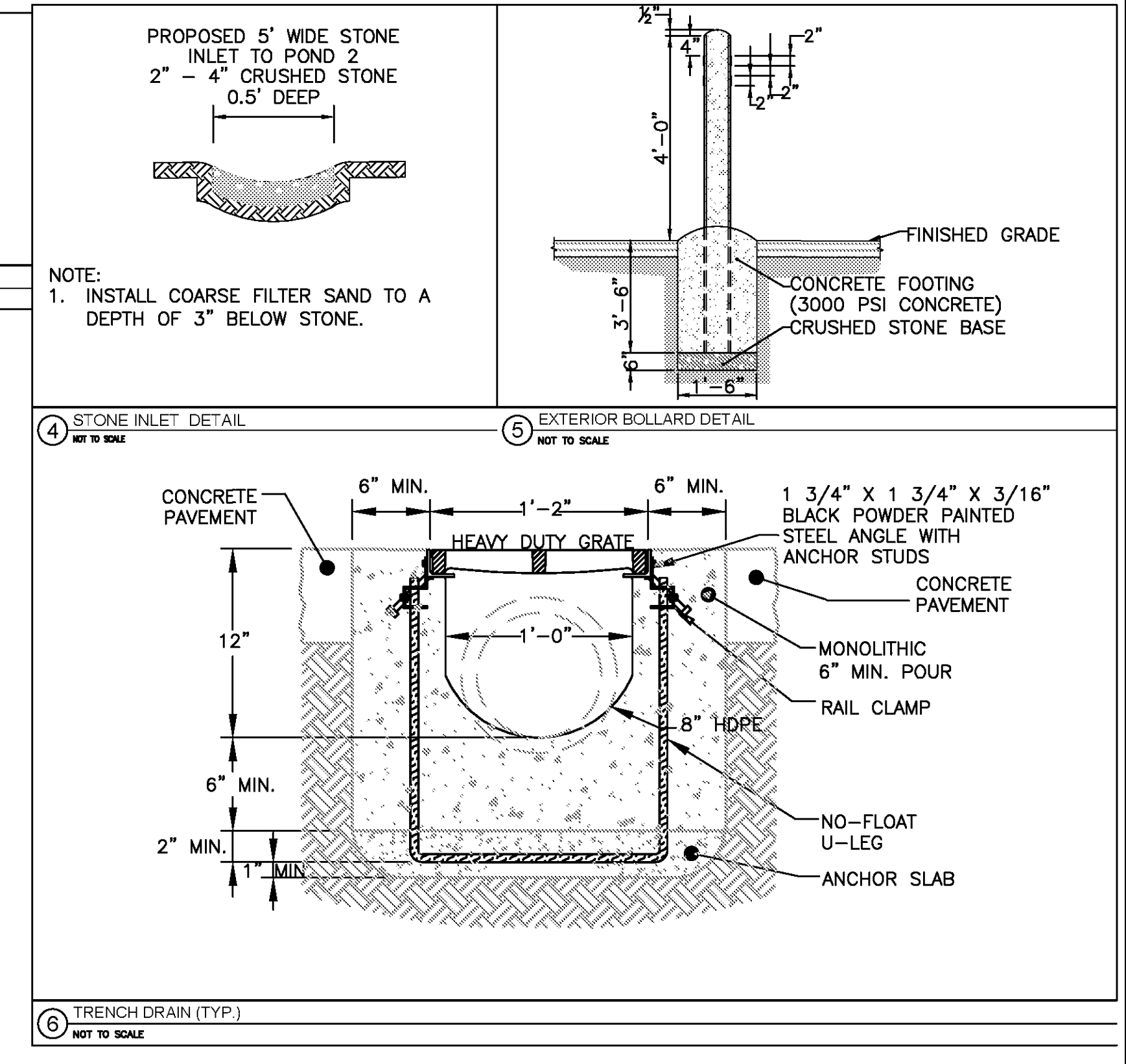
User	Viewed	First Viewed Date	Currently Tracked?	Date Tracked
Adam Sweet	True	10/7/2016	False	

REVISIONS: CIVIL, MECH, ELEC, PLUMB, FIRE, STRUCTURE, ARCH, INTERIORS, EXTERIORS, GENERAL CONTRACTOR

EXTENDED DETENTION POND (POND 1)	
BOT. ELEV.	35.00
TOP ELEV.	38.00
SPILLWAY ELEV.	37.50
1 YR STORM ELEV.	36.34
2 YR STORM ELEV.	36.56
10 YR STORM ELEV.	36.75
25 YR STORM ELEV.	36.90
100 YR STORM ELEV.	37.25



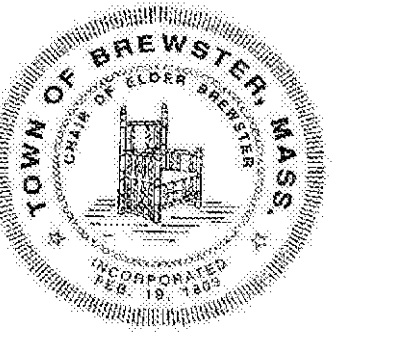
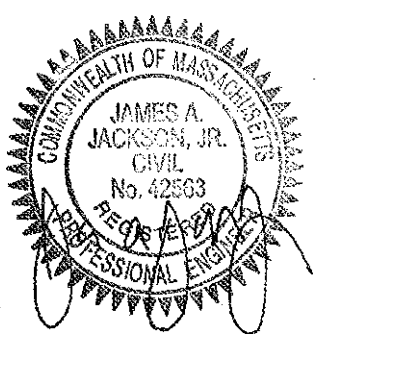
BIO-RETENTION AREA (POND 2)	
BOT. ELEV.	36.00
TOP ELEV.	38.00
BOT. OF BIO-RETENTION SOIL ELEV.	34.00
SPILLWAY ELEV.	37.80
1 YR STORM ELEV.	37.32
2 YR STORM ELEV.	37.36
10 YR STORM ELEV.	37.53
25 YR STORM ELEV.	37.63
100 YR STORM ELEV.	37.76



- BIO-RETENTION AREAS TO BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE MASSACHUSETTS STORMWATER HANDBOOK.
- THE PLANTABLE SOIL WITHIN THE BOTTOM OF THE BIO-RETENTION AREAS SHALL HAVE A SANDY LOAM, LOAMY SAND OR LOAM TEXTURE OR BE A LOAM/SAND MIX. IN ALL CASES IT SHALL CONFORM WITH THE FOLLOWING CHARACTERISTICS:

	COMPOST	2% TO 7%
TOP SOIL	8% TO 10%	
SAND	85% TO 88%	
- THE SOIL SHOULD BE FREE OF STONES, STUMPS, ROOTS, OTHER WOODY MATERIAL OVER 1 INCH IN DIAMETER, BRUSH/SEEDS FROM NOXIOUS WEEDS.
- SOIL TO BE PLACED IN 12" LIFTS, LOOSELY COMPACTED. THE SOIL MAY BE TAMPED LIGHTLY WITH THE BACKHOE.
- A MULCH LAYER SHALL BE INSTALLED WITHIN BIO-RETENTION AREAS CONSISTING OF AGED HARDWOOD, UNIFORM IN COLOR AND FREE OF OTHER MATERIALS, SUCH AS WEED SEEDS, SOIL, ROOTS, ETC. THE DEPTH SHALL NOT EXCEED 3 INCHES.
- GRASS WITHIN THE BIO-RETENTION AREAS SHALL BE MAINTAINED AT A HEIGHT OF 4" TO 6" WITH MANDATORY CUTTING BEING REQUIRED IF THE GRASS EXCEEDS 10".
- PEA GRAVEL SHALL HAVE A PARTICLE SIZE RANGING FROM 1/2" TO 3/4".
- PROVIDE CLEANOUTS AT THE ENDS OF THE 6" PERFORATED PIPE.

REVISIONS		
Number	Description	Date



BREWSTER FIRE & RESCUE DEPARTMENT - HEADQUARTERS

1671 MAIN ST
 BREWSTER, MA 02631

SITE DETAILS - 1

PROJECT NUMBER: 19502.00
 DESIGNED BY:
 DRAWN BY: RED
 CHECKED BY: JAJ
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SECTION 13 20 90 – TIGHT TANK

PART 1 - GENERAL

1.1 SUMMARY

- A. Related Documents: Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections apply to this Section.
- B. Contractor shall provide all labor, materials, equipment, hauling, and incidentals as shown, specified and necessary to furnish and install a fiberglass reinforced plastic (FRP) Wastewater Holding Tanks (referred to a Tight Tank) at the locations shown on the Drawings.
- C. Provide one – 8,000 gallon double-wall fiberglass holding tanks with hold down devices including fiberglass hold down straps and deadmen, containment sump enclosure, containment collar, manway, tank level sensors, interstitial leak sensor, control panel, tanks piping, vent piping with vent cap, manhole frames and covers, conduit, wiring and materials required to make a complete installation ready for use.
- D. Contractor shall notify Owner in advance the installation date of holding tanks so that the Owner and Owner's representative can arrange view pre-installation, installation, testing and back filling.
- E. Tight tank shall use concrete deadmen for non-floatation, unless conditions warrant otherwise.
- F. Provide tight tank monitoring and alarm system.
- G. Refer to details on the Drawings for additional requirements.
- H. Contractor shall coordinate with the plumbing and electrical subcontractors.

1.2 RELATED WORK

Section 31 20 00 Earth Moving.
Section 31 50 00 Excavation Support.

1.3 QUALITY ASSURANCE

- A. Tight tank shall be double wall fiberglass, UL labeled, constructed to meet governing standards with certification plate (UL Label) affixed and manufactured in the USA.
- B. Manufacturer's Qualifications: Contractor shall furnish and install underground FRP holding tanks from a manufacturer who has experience in the design and manufacturing of FRP holding tanks of the same or larger size to those specified. For a manufacturer to be determined acceptable for providing FRP holding tanks and appurtenances on this project, Contractor shall show evidence of five separate, substantially similar installations that have been in satisfactory operation for at least five years.
- C. The Contractor shall be a licensed UST installer in the State of Massachusetts during the entire duration of the project. The Contractor shall have the responsibility of notifying and coordinating with all local and state officials. The Contractor shall pay all inspection and registration fees. The Contractor shall provide a written site safety plan.
- D. Manufacturer's Quality Control:
The holding tanks shall be inspected for defects and tested for leaks by the manufacturer before shipping.
- E. Reference Standards: Comply with applicable provisions and recommendations of the following, except as otherwise shown or specified.

1. NFPA 30 and 31 Codes
2. UL-58
3. 314 CMR 18.00: Industrial Wastewater Holding Tanks and Container Construction, Operation, and Record Keeping Requirements.
4. Holding tanks and piping shall be properly installed in accordance with manufacture's instructions

1.4 WARRANTY

- A Tight tank manufacturer shall furnish a warranty stating as follows:
1. The tight tanks meets published specifications and will be free from defects in materials and workmanship for a period of one (1) year following date of original shipment
 2. The tight tank will not fail for a period of thirty (30) years from date of original shipment due to external corrosion.
 3. The tight tank will not fail for a period of thirty (30) years from date of original purchase due to internal corrosion, provided the holding tanks are used solely for recreational vehicle wastewater.
 4. The tight tank will not leak for a period of thirty (30) years from date of original purchase due to structural failure (defined as breaking or collapse) provided the installation is performed and validated by a qualified installation Contractor and the holding tanks are used as stated above.
 5. Tank monitoring and alarm system shall be free from defects in materials and workmanship for a period of one (1) year following acceptance.

1.5 SUBMITTALS

- A. The Contractor shall submit to the Owner for the tight tank, within 30 days of the effective date of the Contract:
1. The name of the tight tank supplier and a list of materials to be furnished.
 2. Layout and all critical dimensions, including thickness of walls, diameter, height and lengths of holding tank.
 3. Layout and all critical dimensions of accessories including containment sump, containment collar, containment lid, manway, tank level probe, interstitial leak sensor, control panel, tank piping, vent piping with vent cap, and manhole frames and covers.
 4. Tank installation including hold down devices (fiberglass hold down straps and deadmen).
 5. Materials of construction.
 6. Fittings locations and details
 7. Accessories.
 8. Manufacturer's literature, illustrations, calibration charts, specifications, engineering data, and shipping, handling and installation instructions.
 9. Monitoring and alarm system literature, wiring and engineering data.
- B. Approval of the fabricators drawings procedures and calculations shall not relieve the fabricator of the responsibility for the proper and efficient design of the equipment
- C. Test Reports: Submit copies of leakage test reports.
- D. Documentation that the manufacturer has produced, supplied, and placed into satisfactory service, equipment similar to that specified herein.

1.6 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. The tight tank delivered to the job site shall be inspected by the Contractor for damage, unloaded and stored with a minimum of handling. The Contractor shall comply with manufacturer's recommendations in handling and storing holding tanks. If storage at the job site is necessary prior to installation, the holding tanks shall remain on the original shipping cradles and tied down securely to prevent wind damage.

- B. Tight tank equipment and piping materials shall be physically inspected and air tested before being installed. Defects observed shall be immediately brought to the attention of the Owner. It shall be the sole responsibility of the Contractor to correct deficiencies, in strict accordance with the manufacturer's recommendations, at no additional cost to the Owner.
- C. Monitoring panel and accessories delivered to the job site shall be inspected by the Contractor for damage, unloaded and stored with a minimum of handling. The Contractor shall comply with manufacturer's recommendations in handling and storing. If storage at the job site is necessary prior to installation, the equipment shall remain on the original shipping cradles and tied down securely to prevent wind damage.

1.7 TANK MANUFACTURER

- A. Provide tight tank as manufactured by one of the following:
 - 1. Containment Solutions, Inc.
 - 2. Xerxes Corporation.
 - 3. Or approved equal.

PART 2 - PRODUCTS

2.1 SERVICE CONDITIONS

- A. General Design Conditions:
 - 1. Normal Temperature: Ambient at -20 to 110 degrees t, outdoor installation.
 - 2. Normal Internal Loads: Hydrostatic – Recreational Vehicle Wastewater.
 - 3. Tight tank Configuration: The Tight tank shall be supplied with the size and number of inlets, as specified on the design Drawings; one (1) monitor fitting; and two (2) manways.
 - 4. Manufactured and designed for underground installation.
- B. Materials of Construction:
 - 1. Tanks: Fiberglass Reinforced Plastic (FRP)
 - 2. Tanks supports: fiberglass hold down straps with concrete deadmen, as supplied by the tank manufacturer.

2.2 LOADING CONDITIONS

- A. The tight tank shall meet the following Design Criteria:
 - 1. External Hydrostatic Pressure: Buried in ground with a minimum of 3.0 feet of overburden over the top of the tight tank. The hole fully flooded and a safety factor of 5:1 against general buckling.
 - 2. Surface Loads: When installed according to manufacturer's installation instructions, tight tank shall withstand surface H-20 axle loads.
 - 3. Isolate containment sump enclosure from direct traffic loading.
 - 4. Internal Load: tight tank shall withstand 5 psi air pressure test with 5 to 1 safety factor. Contractor shall test prior to installation Maximum test pressure is 5 psi.
 - 5. Tight tank shall be designed to support accessory equipment as denoted on plans when installed according to manufacturer's recommendations and limitations.
 - 6. Vacuum test - to verify structural integrity, tight tank shall be vacuum tested by manufacturer at the factory to 11.5-inches of mercury.

2.3 TIGHT TANK

- A. Tight tank shall be manufactured with fiberglass reinforced plastic that is compatible with recreational vehicle wastewater.

- B. Certification Plaque - Underwriters' Laboratory label shall be permanently affixed to tight tank. In addition, tight tank shall have a sign on it entitled "Non-Hazardous Industrial Wastewater".
- C. Tight tank must be vented, as they are designed for operation at atmospheric pressure at all times, including during filling and emptying of the tight tank. The vent opening shall not be less than 4 inches in diameter, with a suitable carbon filter for odor control. Contractor shall provide UL approved stainless steel flexible connectors on connection to vent. See Drawings for size, material, and location.
- E. Tight tank shall be capable of storing liquids with specific gravity of up to 1.1
- F. Temperatures not to exceed 150 degrees F at the tight tank's interior face. Tight tank shall be made with Isophallic polyester resin; glass fiber reinforcement, silane treated silica or 100 percent resin or glass-fiber reinforcement. Interior surface shall be smooth without irregularities.
- G. Tight tank shall be chemically inert to anticipated discharges from the floor drains.
- H. Tight tank shall be warranted for 30 years against failure due to internal/external corrosion and, when properly installed, structural failure
- I. Provide fiberglass anchor straps for tight tank. Number and locations of straps shall be as specified by manufacturer. Each strap shall be capable of withstanding the buoyancy load for tank diameters. The tanks' manufacturer shall provide the buoyancy calculations, stamped by a Professional Engineer, to the Engineer. The buoyancy calculation shall be based on groundwater level at ground surface and the tight tank empty.
- J. Threaded fittings on UL labeled tanks shall be of a material of construction consistent with the requirements of the UL label. Fittings to be supplied with cast iron plugs. Standard threaded fittings are 4-inch diameter and shall be half couplings. Reducers are to be used for smaller sizes where specified and provided by Contractor. See Drawings for size and locations of fittings
- K. Tight tank shall have a space between the primary and secondary shell walls to allow for the free flow and containment of all leaked product from the primary tanks. This space allows the insertion of an interstitial leak sensor through a monitoring fitting.
- L. Tight tank shall be provided with access hatch and mounting brackets for installation of float sensors.

2.4 CONTAINMENT SUMP ENCLOSURE AND CONTAINMENT COLLAR

- A. Provide fiberglass reinforced plastic containment sump enclosures and secondary containment collars with fittings and accessories as denoted on the Drawings.
- B. The secondary containment collar shall be a minimum of 30 inches in diameter and will be factory installed and tested to be leak free. See Drawings for location.
- C. The containment sump shall be constructed of fiberglass reinforced plastic. The containment sump shall be an appropriate size and will attach to the secondary containment collar with the manufacturer's supplied adhesive.
- D. The containment sump enclosure top and lid assembly shall be watertight.
- E. The containment sump enclosure shall include four FEB 4-inch flexible entry boots for piping, installed by the Contractor.
- F. Containment sump shall be manufactured by one of the following:
 - 1. Containment Solutions, Inc.

2. Xerxes Corporation.
 3. Or approved equal.
- G. Supply one manway mount kit for each connection sump. Manway mount kit shall be manufactured by one of the following:
1. Containment Solutions, Inc.
 2. Xerxes Corporation.
 3. Or approved equal.
- H. Supply FRP manways as specified on the Drawings.

2.5 MONITORING AND ALARM SYSTEMS FOR TIGHT TANK

- A. General
1. All equipment, components and materials required shall be furnished by a single Supplier who shall assume the responsibility for adequacy and performance of all items.
 2. The Supplier shall identify those system components which are not of his manufacture.
- B. The monitoring and alarm system shall be in compliance with Massachusetts 314 CMR 18.08
- C. Provide liquid-level measuring devices (float switches). Measuring device shall be set to provide contact signal when the tank's level meets 75 and 90 percent of holding tank's capacity to the on-site control panel and to a remote manned station via cellular signal as directed by the Owner. Measuring device shall be suitable for stored recreational vehicle wastewater.
- D. Provide an interstitial leak sensor capable of detecting liquid in the annular space of the tight tank. Interstitial leak sensor shall be placed at bottom of tanks and provide contact closure upon detection of leak.
- E. The Monitoring and Alarm systems shall be solar powered with battery back-up.
- F. Interstitial Sensor shall be provided and shall send contact closure to the monitoring system panel.
- G. Level Sensors
1. Provide two (2) single point ball float level sensors for the tank at 75% full and for the tank 90% full.
 2. The sensors shall be compatible with the monitoring panel.
 3. The float level sensors shall be Model OWI-BF-1 by Omntec Mfg. Inc. or approved equal.
 4. The level sensors shall be suspended inside the tank per the manufacturer's recommendations and shall be located so as to be accessible from above.
 5. The level sensors and cables shall be designed for submergence in recreational vehicle wastewater and shall be sized for operations in and at the specific gravity of the liquid.
 6. The level sensors are to be intrinsically safe for the liquid and gases expected in the tanks.
 7. All cable, conduits and wire that pass through the wall of the tank shall be installed with adjustable, gas tight and explosion proof wall seals.
 8. All wiring shall be in a separate conduit and shall extend back to the monitoring panel. Explosion proof seals shall be provided on risers to monitoring panel. No junction boxes shall be permitted in the underground tank.
- H. Monitoring System Panel
1. The monitoring system panel shall be located, as shown on the drawings, and shall be enclosed in a UL Listed, NEMA 4X weatherproof, corrosion resistant, and lockable enclosure. Panel shall be sized to accommodate equipment to be housed within. The panel shall contain the following:
 - a. Data logger.
 - b. Batteries.
 - c. Charger/regulator.

- d. Celular Digital Modem.
 - e. Relays.
 - f. Alarm and indicating LED style lights.
 - g. System Monitoring Panel shall be Campbell Scientific, Inc. or approved equal.
2. The monitoring system panel shall:
- a. Accept signals from the float switches in the storage tanks.
 - b. Accept a signal from the interstitial leak detection unit.
 - c. Include an amber indicating light for the 75% tank full level.
 - d. Include a red indicating light for the 90% tank full light.
 - e. Include a red indicating light for the interstitial leak detection unit.
 - f. Include a green power-on light.
 - g. Dial predetermined number at selected set points.
- I. Solar Power/Battery Supply System
- 1. Solar panels shall be Campbell Scientific, Inc SP20R, 20 watt panel, or approved equal, and shall be mounted on pole with the monitoring unit mounted below. Panel wattage is minimum and shall be adjusted as required to the system supplied equipment.
 - 2. Battery shall be Campbell Scientific, Inc. BP24, or approved equal, and shall be compatible with the supplied data logger. Battery shall have a regulated power source, provided by a regulated solar panel through the CH100-SW charger provided with battery.
- J. Cellular Auto-Dialer Phone System
- 1. The monitoring panel shall be provided with a Cellular Auto Dialer which shall be capable of calling, via cellular phone service, a location designated by the Owner.
 - 2. The Auto Dialer shall be activated when any of the following Alarm conditions occur:
 - a. The tank level reaches 75% full.
 - b. The tank level reaches 90% full.
 - c. Liquid is detected by the interstitial leak detection unit.
 - 3. Cellular auto dialer shall be Raven 100 CDMA modem an Airlink product for use on Verizon cellular networks and shall be supplied by Campbell Scientific Inc. Unit shall be capable of supporting CDMA 2000 1X, IS-95B circuit switched CDMA and SMS communications modes allowing the data to be retrieved by the internet or phone system.
- K. Data logger shall be Campbell Scientific, Inc. Model CR800. Data logger shall be capable of storing 2 Mbytes of data in flash memory. It shall be capable of supporting 3 analog and 3 digital input signals.
- L. Software, system programming and start-up services shall be supplied by system Supplier.
- M. Conduit, wiring pole and miscellaneous.
- 1. Provide rigid steel conduit between tank sensors and the Monitoring panel.
 - 2. Provide wiring in conduit as required by system supplier.
 - 3. Provide mounting aluminum mounting pole for solar panel and Monitoring panel.
 - 4. Mount pole on concrete foundation.
- N. There shall be a visual red common alarm strobe light on top of the enclosure which is to be mounted in such a manner as to maintain the weatherproof integrity of the enclosure. The common visual alarm shall annunciate all of the monitoring system panel alarms.
- O. There shall be an audible alarm 110 dB alarm horn on top of top of the enclosure which is to be mounted in such a manner as to maintain the weatherproof integrity of the enclosure. The common audible alarm horn shall annunciate all of the monitoring system panel alarms.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install tight tank and equipment as shown on the Drawings, approved Shop Drawings and as directed by the manufacturers' representatives and installation instructions. This includes, but is not limited to, handling, temporary storage, lifting, and rotating the tight tank.
- B. Inspect tight tank prior to installation. If damaged, notify the Engineer and manufacturer promptly. Do not install damaged tight tank until repairs are made in accordance with manufacturer's written instructions and approval by the Engineer.
- C. Contractor shall test and install tight tank according to current installation instructions provided with tight tank. Contractor shall provide up to date installation training certification certificate for all personnel working on the installation.
- D. Double wall tanks cannot be unloaded from the truck manually. Capacity of lifting equipment must be checked before moving tanks. Equipment to lift the tanks shall be of adequate size to lift and lower the tight tank without dragging and dropping to ensure no damage to the tight tank or the coating. Tanks shall be carefully lifted and lowered by use of cables or chains of adequate length (not less than 45 including angle) attached to the lifting lugs provided. A spreader bar should be used where necessary. Under no circumstances, shall the Contractor use chains or slings around the tank shell.
- E. Excavations for the tight tank shall be free from material that may cause damage to exterior. Care shall be taken during installation to ensure that foreign matter is not introduced into excavation or backfill. The bottom of the excavation shall be covered with clean sand or gravel, to depths shown on Drawings, and suitably graded and leveled. Replace all excavated soil with approved backfill of proper size and gradation. Additional backfill specifications are provided in Section 02221, Trench Excavation Earth and Backfill.
- F. Contractor shall require a sieve analysis from backfill supplier to show that backfill supplied meets tanks' manufacturer specifications.
- G. Geotextile, as recommended by the manufacturer, must be installed if the following conditions exist:
 - 1. Unstable soil as defined in Section 02221, Trench Excavation Earth and Backfill.
 - 2. Water conditions with silty in situ soil.
 - 3. Areas subject to frequently changing ground water levels.
- H. Perform all pre-installation tests above ground prior to installation as required by manufacturer. This includes, but is not limited to, an outer wall test, visual air/soap test, and inner wall test. Pressurizing the primary tanks and annular space shall not exceed 5 psi.
- I. Tight tank shall be installed in a dry hole. Contractor shall adhere to manufacturer's installation procedures for dry hole installation. Contractor to keep water table down during installation, and if required, should provide pumps to accomplish this. Do not install tight tank on timber, blocks, or cradles. Place the first 12-inch lift of backfill evenly around the tight tank. The backfill must be pushed completely beneath tanks bottom, between ribs and under: end caps to provide necessary support. Place another 12-inch lift of backfill evenly around tight tank. After completion of second lift, backfill can be brought to top of tight tank without additional handwork.
- J. Contractor shall use concrete deadmen with fiberglass hold down straps as instructed by the manufacturer. The manufacturer of the tanks shall supply the appropriate concrete deadmen and hold down straps. The manufacturer shall provide calculations for the deadmen sizes, stamped by a professional Engineer, to the Engineer.

- K. Before placing the tight tank in the excavation, all dirt clods and similar foreign matter shall be cleaned from the tight tank, and areas of any coating damage shall be replaced with a compatible coating.
- L. Connect all piping and accessories as shown on the Drawings, in accordance with manufacturer recommendations. Plug all unused outlets with approved pipe plugs.
- M. The plugs at unused holding tank openings shall be removed, a pipe compound shall be added and the plugs shall be reinstalled in the unused openings. The dielectric bushings or flange isolation devices in ACT-100-U tanks shall not be removed from openings. The plugs in tanks openings, which are to be used, should not be over tightened as this may cause the bushings to unscrew with the plugs. Care should be taken not to cross-thread or damage the non-metallic bushings when replacing plugs or installing required tank piping.
- N. Do not fill tight tank until backfill is to the top of the tight tank.
- O. Contractor is to complete the installation checklist provided by the manufacturer. The Contractor shall give a copy of the installation checklist and installation manual to the Engineer and Owner. The Owner and installation Contractor, in order to validate a failure warranty claim, must retain a copy of the installation checklist and perform other measures as stated by the manufacturer.

3.2 START-UP AND FIELD TEST

- A. Contractor shall make all connections to the tight tank as required to place the tight tank in operation.
- B. The contractor, in the presence of Engineer and Owner, shall fill the tanks with water to 75 percent holding capacity to test the level probe, interstitial leak sensor, and monitor the control panel to verify that the equipment is functioning properly.
- C. The Contractor shall pay for a hauler to remove the water from the tanks upon completion of the field test.
- D. Any repeat testing, due to non-compliance, shall be conducted at the Contractor's expense.
- E. Make adjustments required to place equipment in proper operating condition.

3.3 CONTRACTOR FIELD SERVICES

- A. following installation, the Contractor shall provide for up to 4 hours of time for a manufacturer's representative, at a site designated by the Owner, to provide operation and maintenance personnel training services to the Engineer and Owner.
- B. The Contractor shall present "hands-on" demonstrations of operations and maintenance of the tight tank, equipment, and appurtenances.

END OF SECTION