

**Updated Cost & Savings Estimates**  
**Consolidated Facility Plan**  
**Fishers Island Waste Management District**

*December 9, 2017*

*Prepared By:*



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December 9, 2017

Board of Commissioners  
Fishers Island Waste Management District  
P.O. Box 22  
Fishers Island, NY 06390

Subject: *Updated Cost & Savings Estimates; Consolidated Facility Plan*

Honorable Commissioners:

Attached is a brief report that provides updated estimate, prepared at your request and authorization. This report incorporates:

- An updated estimate of capital cost for the facility;
- An updated development of the estimated amount of material to be captured by the composting program and for beneficial use with corresponding reduction in handling and management costs; and,
- Estimated reduction in cost due to higher compaction density with recyclables sent off-Island for processing and corresponding reduction in truck trips.

We look forward to reviewing this with you in the near future and receiving your comments and suggestions.

Thank you for this continuing opportunity to be of assistance to the District.

Very truly yours,

A handwritten signature in blue ink, appearing to read 'D. Brown', is written over a faint, circular watermark or seal.

David S. Brown, P.E.  
President, PMA LLC

# Updated Cost & Savings Estimates Consolidated Facility Plan Fishers Island Waste Management District

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## Background and Purpose of Report

In 2014 the Fishers Island Waste Management District (“District”) began investigations into upgrading its waste management facilities to increase the amount of material composted and diverted from the disposal stream, to make its facilities safer to operate, and to provide needed personnel space and a maintenance building for its equipment. The results of this effort were initially summarized in a draft report in August, 2015 that was later updated in February 2016 to address factors requested by the NYS Department of Environmental Conservation (“NYSDEC”).

Initially, two primary options to serve its residents and other customers were evaluated: a.) making needed improvements at both of the two facilities now operated by the District; and, b.) consolidating operations at the larger site which is owned by the District and generally referred to as the “compost site”.

The result of those considerations was the selection by the District of the option that features consolidation of the waste and recycling activities to the compost site parcel. This would involve transferring the activities now taking place at a separate Town-owned site called the “transfer station site” to the compost site, and thereafter operating and maintaining just one location. The activities that would be relocated involve receipt and handling of municipal solid wastes (called “MSW”, which is ordinary household refuse) and recyclables such as old corrugated cardboard, mixed paper and bottles, cans, and plastic containers.

Readers are encouraged to refer to the earlier reports for a summary of the specific improvements to be incorporated in the consolidated facility and the evaluation that was performed at that time of the two options: consolidation vs. continued operation at two sites.

Since that time the District has applied for and received NYSDEC approval of a permit registration for the new proposed consolidated facility and also received FAA approval, with height restrictions, of the proposed new compost preparations building (which approval was required due to the proximity to the airport.) Additional detailed studies have been performed to satisfy the NYS “SEQRA” environmental review process. NYSDEC is in the process of implementing new regulations on Nov. 4, 2017, which will require filing a new registration form for the facility once the forms become available. The operation will not require an individual permit from the agency.

In light of the passage of time since the initial work was done, the District has now requested that this further effort be undertaken to update the preliminary estimated cost of implementing the proposed improvements to the compost site and to also more closely examine the potential operating cost benefits of the planned new composting program and other features from the planned improvements.

This work results from the combined services of representatives of the District, Project Management Associates, LLC (“PMA”), and Anchor Engineering Services, Inc. (“Anchor”).



## Summary and Conclusions

Following is a summary of the information considered and developed in the course of this effort;

1. The updated capital cost for the proposed project is estimated at approximately \$4.13 Million. The most current prior draft report regarding the project (Feb. 5, 2016) included an estimated cost of approximately \$4.35 Million. Please refer to the information provided below in this document for a brief summary of the changes incorporated.
2. NYSDEC has a grant program that could be sought to assist in the cost of the portion of the project related to the composting program. More information on the program is offered below and at DEC's website under Grants for Recycling Capital Projects, Municipal Waste Reduction and Recycling Program (MWR&R).
3. It is estimated that approximately 185 tons per year of additional material could be diverted from the disposal stream now sent off-Island and instead, processed and introduced into the composting program. If achieved, this is expected to provide an annual savings of approximately \$37,250 when considering reduced tipping fees and avoided hauling and ferry charges.
4. The proposed consolidated facility will also allow the District to launch other new programs to reduce the volume of the wastestreams disposed of and improve the efficiency of operations.
5. As an example of another feasible undertaking, the District could divert approximately 25 tons of glass now sent off-Island for processing as part of the "bottles & cans" stream. Much of the glass could be recovered and processed with the glass grinder the District already owns. The improved facility would allow this machine to be located in the planned mixing building, where glass could be processed. To accomplish this, residents would be asked to source-separate clean glass food containers that the District will then grind up and use as clean fill at the site. This can save another estimated \$5,600 in off-site tip fees, hauling and ferry charges.
6. Finally, it is estimated that approximately \$8,400 per year can be saved by handling mixed recyclables with a compactor-box rather than with uncompacted loads. There isn't sufficient space without significant improvements at the transfer station site to add another compactor unit however the additional compactor is included in the plans for the consolidated facility at the compost site.
7. The total estimated annual operating cost savings from the above opportunities is approximately \$51,000.
8. The above identified strategies could reduce the amount of material sent off-Island by approximately 208 tons/year, saving an estimated 34 ferry round-trips per year.
9. The District continues to focus on ways to improve revenues from fees and sales at its operations, with an estimated \$65-70,000 expected to be brought in during the current fiscal year.

## Improvements Considered & Conceptual Plans

Following is a discussion of improvements considered for the compost site, which have been selected to meet the District's operating goals and needs discussed above:

1. Installation of composting pads and compost heap enclosure with blower control system. For conceptual design and pricing purposes the technology offered by Sustainable Generation has been considered, which is considered well suited to this scale of operation

on the Island. Information about the company is located on the web at [www.sustainable-generation.com](http://www.sustainable-generation.com), and the recent quote they provided to the District is included in Appendix A. There are several advantages of using a system of this type, including (expanded upon somewhat from the company's information):

- a. Increased process productivity; The system can produce a stable compost in 4-6 weeks
  - b. Lower total cost of ownership; The system has modest capital costs and ongoing operational expenses as compared to other controlled composting approaches;
  - c. Manage environmental compliance; The system minimizes dust and odor production, which can be present in composting programs;
  - d. Reduce contaminants; Then company's technology (and similar) manages the composting activity within a membrane enclosure. This means that during extreme weather conditions, there isn't any leachate coming off the composting mass and moisture levels are kept constant. Also, the composting material is protected from high winds in the enclosure.
  - e. Produce consistent/reliable high quality, high value output; The system features a blower that introduces oxygen to the composting mass, keeping the biological process aerobic. Also, the membrane protects the mass from the potential impacts of extreme weather events that can interrupt the process.
  - f. There are 20+ Installations with +1M tons annual processing in North America
  - g. The system has a small footprint, and is modular. It can be expanded in the future if needed.
  - h. Low energy requirement; the only electrical item is the blower.
  - i. Flexible; the system can process a range of organic feedstocks
2. Replace/reinforce the concrete walls along the perimeter of the grade elevation between the upper level (resident area) and lower level (working area) and install OSHA-compliant improved fall protection at the upper elevation;
  3. Locate new chutes and electrical connections for four compactor boxes (MSW, cardboard, single-stream recyclables) and five open top boxes (scrap metal, bulky waste, etc.);
  4. Addition of a 40 by 60 foot Maintenance building. For planning purposes it has been assumed this structure would be a pre-engineered metal building;
  5. Addition of a 50 by 90 foot building to process and mix organics including corrugated, food waste and similar materials. Inside the building will be a grinder with hopper and stand to grind food waste, a shredder to process cardboard and other fibers, and reinforced concrete bin wall area to mix organics. For planning purposes it has also been assumed this structure would be a pre-engineered metal building;
  6. Purchase of eight small bins to receive source separated organics and clean glass containers and for processing in the mixing building. The bins are expected to be a mixture of covered and uncovered, and of the type that can be easily moved with forks (attached to a skid steer loader);
  7. Addition of a 40 foot scale to weigh single-unit trucks (not tractor-trailers) together with remote hookup and speaker system;
  8. Addition of a 20 by 30 foot building for "swap shop" to allow residents to place useable items in for selection and taking by other customers. It is assumed this structure will be a modular unit fabricated off-site;
  9. Relocation to the composting site of the existing modular building now located at the transfer station to receive e-waste and other items;

10. Rehabilitation of the current District building by converting the garage area to a meeting room and second floor employee area; and,
11. Associated site grading, fencing, paving, lights and site security and monitoring system.

### *Concept Plans – Combined Operations*

Conceptual level plans illustrating these proposed improvements are located in Appendix B. An overview of the major improvements included on the plans is as follows:

1. The existing entrance drive would be improved and widened. A scale would be located near the entrance for use in weighing either inbound or outbound vehicles;
2. Residents would enter the site, and proceed to the upper level to either of the two, new parking areas shown on the plan;
3. The attendant shed would be relocated so that it is adjacent to the parking areas. From the parking areas the residents could access any or all of the compactor area (trash, corrugated cardboard and single-stream recyclables), food/organic waste containers, and the containers for bulky oversized waste items.
4. Also accessible from those parking areas would be either the new swap shop modular building (where usable items can be left or taken by residents), or the relocated modular building for e-waste and similar materials can be left.
5. After depositing waste at the site, residents would continue to follow the access road around and past the maintenance building, to the site exit. This would create a one-direction flow of traffic at the site.
6. Collectors and private companies also delivering waste or recyclable material would follow the same inbound traffic pattern as residents.
7. The lower level of the compost station would continue to function as the working level for trucks removing waste and recyclable materials, and delivery of empty containers.
8. The plan and other sheets in Appendix B illustrate the other related improvements to the site, such as fencing, signage, gate, and drainage system with stormwater collection basin.
9. Collected stormwater and drainage from the composting system would be recirculated and used in the composting process.

Concurrent with construction of the new dedicated maintenance building, the existing garage area be converted as shown on the plan sheet to include:

- First Floor; a meeting/conference room, office and utility room;
- Second Floor; an employee break room, file room, and storage room.

Along with installation of new windows in the building, the existing windows would be replaced to match, since those in the building are not the right design for the building materials of construction.

### Updated Cost Estimate

An initial preliminary cost estimate for the proposed project was first prepared in mid-2015 and summarized in the earlier reports. In light of the passage of time, the estimated cost of the project has been updated to take into consideration:

- Adjustments to pricing of individual components from 0-10% to reflect both general inflation and current estimates for individual work components due to the passage of time from 2015;
- Minor adjustments to the scope of work (example: more bollards)
- An updated cost quote for the Sustainable Generation compost cover/aeration system;

- Note: the quote is contained in Appendix A and has been incorporated except the budget provides for purchase of a single heap cover at the start of operations, plus the remote heap cover winder;
- A reduction in the planned size of the organics processing/mixing building; and,
- Elimination of the depackaging system in light of more recent communication with the manufacturer.

### **Caution Regarding Estimated Cost**

As noted in our earlier reports, we remain cautious about the precision with which estimated costs can be developed for work of this nature on the Island. Most of the Island's residents are well aware of the challenges of completing major construction projects. Unfortunately, large publicly funded projects such as those considered in this review are even more challenging due to additional special requirements that the District must comply with:

- Due to size and the public nature of the work, contractors will be obligated to pay Suffolk County Prevailing Wages to the on-site workforce. Some contractors shy away from projects with prevailing wages since it results in pay scale differences within their pool of employees, some of whom are on the project and others that are not;
- Experience tells us the work most likely will be done by contractors from Connecticut who will need to not only pay but also maintain NYS documentation associated with the prevailing wages. While not overly complex, this requirement can be intimidating to those unfamiliar with the process.

These factors create a barrier to competition in the bidding process by discouraging parties from participating. The last significant publicly bid project on the Island we are aware of was the school addition that was bid almost fourteen years ago; PMA and Anchor assisted the School District in bidding that project. The school addition also involved prevailing wages and multiple bid packages. Every effort was made to generate interest in the bid packages (including direct contact and special mailing to Southeastern Connecticut contractors) however it was necessary to re-bid certain packages multiple times in order to obtain sufficient interest and a bid that could be awarded.

Obviously, contractors doing work on the Island must face the productivity impact of the ferry schedule and costs, which creates another element of uncertainty to contractors that have not previously managed a construction project through to completion on the Island.

These factors complicate the process of estimating the cost of construction under a public bid project, more so than what might otherwise be straightforward for a similar project at another site. To reduce the risk factor, an effort has been made to obtain preliminary quotes for certain items as part of this work. This has been possible for the supply of equipment, the modular buildings structures (swap shop and e-waste building), and the pre-engineered metal buildings.

For these reasons, we repeat our request that the District consider the estimated costs in this review to be our reasonable effort to provide good planning and "budget" level projections.

### **Est. Capital Cost; Improvements at the Compost Station**

Table 1, following, contains Anchor's updated preliminary estimate of costs for implementing the District's proposed scope of improvements and operations at the compost station site. Again, under this approach, the separate transfer station site would be discontinued from use.

As noted above, while an overall estimate of cost has been provided, the project would be bid in more than one package to comply with NYS law, and to allow the District to phase work and also take advantage of specialty and smaller contracting firms.

Table 1; Preliminary Estimate of Capital Costs-Combined Operations at Compost Station

FISHERS ISLAND WASTE MANAGEMENT DISTRICT				
PROPOSED SITE IMPROVEMENTS				
CONSOLIDATED FACILITIES AT COMPOST SITE				
PRELIMINARY ESTIMATE OF CONSTRUCTION COST				
NOTE: MORE THAN ONE CONTRACTOR WILL BE INVOLVED UNDER NYS BIDDING REQUIREMENTS				
CONSTRUCTION ITEM	QUANTITY	PAY UNIT	UNIT COST	TOTAL COST
<b>GENERAL ITEMS</b>				
MOBILIZATION (5%)	1	LS	\$ 157,088.63	\$ 157,089
CONSTRUCTION STAKEOUT (1.5%)	1	LS	\$ 47,126.59	\$ 47,127
<b>TOTAL GENERAL ITEMS</b>				<b>\$204,215</b>
<b>SITE ITEMS</b>				
CLEARING & GRUBBING (ACRES)	1	LS	\$ 6,000.00	\$6,000
SEDIMENTATION CONTROLS (SLT FENCE)	1380	LF	\$ 6.50	\$8,970
DEMO EXISTING STRUCTURES	1	LS	\$ 11,000.00	\$11,000
DEMO EXISTING UTILITY POLE AND OVERHEAD WIRES	1	LS	\$ 5,000.00	\$5,000
SAWCUT EXISTING BITUMINOUS CONCRETE	425	LF	\$ 5.00	\$2,125
FORMATION OF SUBGRADE	4950	SY	\$ 4.00	\$19,800
CRUSHING SERVICES, ON-SITE MATERIAL	1	LS	\$ 25,000.00	\$25,000
PROCESSED AGGREGATE SUBBASE (Road and Pads)	1500	CY	\$ 100.00	\$150,000
3/4" CRUSHED STONE (Behind wall)	130	CY	\$ 75.00	\$9,750
RIP RAP	5	TON	\$ 100.00	\$500
BITUMINOUS CONCRETE PAVING (Class 1)	890	TON	\$ 150.00	\$133,500
E&S MATTING	10000	SF	\$ 3.50	\$35,000
CATCH BASIN (TYPE MOD 'CL')	4	EA	\$ 4,000.00	\$16,000
15" HDPE DRAINAGE PIPE	165	LF	\$ 65.00	\$10,725
DRAINAGE PIPE FLARED ENDS	1	EA.	\$ 150.00	\$150
TOPSOIL GRADING AND DISTRIBUTION (MATERIAL SUPPLIED BY FIWMD)	6400	SY	\$ 3.50	\$22,400
TURF ESTABLISHMENT	6400	SY	\$ 1.25	\$8,000
METAL BEAM GUARD RAIL	450	LF	\$ 37.50	\$16,875
MASS EXCAVATION/GRADING	8500	CY	\$ 16.50	\$140,250
HOUR OF OPERATION SIGN	1	EA.	\$ 1,250.00	\$1,250
FACILITY SIGN	1	EA	\$ 250.00	\$250
DIRECTIONAL SIGNAGE	1	EA.	\$ 250.00	\$250
STOP SIGN	2	EA.	\$ 250.00	\$500
HANDICAP SIGN	1	EA	\$ 250.00	\$250
LINE STRIPING	1	LS	\$ 1,000.00	\$1,000
BOLLARD	17	EA.	\$ 1,000.00	\$17,000
CONCRETE BLOCK RETAINING WALL	3,506	SF	\$ 75.00	\$262,875
CHAIN LINK FENCING	1645	LF	\$ 37.50	\$61,688
CHAINLINK SWING GATE	2	LS	\$ 5,000.00	\$10,000
PEDESTRIAN GUARD RAIL	410	LF	\$ 110.00	\$45,100
ELECTRICAL IMPROVEMENTS (3 PHASE SERVICE, SITE LIGHTING, ETC.)	1	LS	\$ 80,000.00	\$80,000
2 NEW COMPACTORS & 4 NEW HOPPERS	1	LS	\$ 115,000.00	\$115,000
ROLL-OFFS	5	EA	\$ 10,000.00	\$50,000
TRUCK SCALE	1	LS	\$ 80,000.00	\$80,000
CONCRETE PADS FOR ROLLOFF CONTAINERS AND SCALE	65	CY	\$ 800.00	\$52,000
STEEL GALVANIZED RAILING	1	LS	\$ 50,000.00	\$50,000
FIRE PROTECTION STANDPIPE TO NEAR OCEAN	400	FT	\$ 20.00	\$8,000
<b>BUILDING ITEMS</b>				
MAINTENANCE BUILDING - 40'x60' PRE-ENGINEERED METAL BUILDING	2400	SF	\$ 135.00	\$324,000
MAINTENANCE BUILDING FOOTING/SLAB	80	CY	\$ 850.00	\$68,000
SWAP SHOP BUILDING - 20'x30' WOOD CONSTRUCTION	1	LS	\$ 21,000.00	\$21,000
SWAP SHOP CONCRETE FOOTING/SLAB	30	CY	\$ 900.00	\$27,000
E-WASTE STORAGE BUILDING (Cost of relocating existing building)	1	LS	\$ 1,500.00	\$1,500
MODIFICATIONS TO EXISTING BUILDING	1600	SF	\$ 75.00	\$120,000
SEPTIC SYSTEM MODIFICATIONS	1	LS	\$ -	\$0
<b>COMPOST SYSTEM ITEMS</b>				
MIXING BUILDING - 50'X90' PRE-ENGINEERED METAL BUILDING	4500	SF	\$ 125.00	\$562,500
MIXING BUILDING FOOTING/SLAB	125	CY	\$ 900.00	\$112,500
COMPOST HEAP SYSTEMS WITH COVER STORAGE WINDERS	1	LS	\$ 175,000.00	\$175,000
CONCRETE PADS FOR COMPOST HEAP SYSTEMS	50	CY	\$ 800.00	\$40,000
HEAP HEAT EXCHANGE SYSTEM AS SUPPLEMENTAL BUILDING HEATER	1	LS	\$ 25,000.00	\$25,000
ORGANICS/PAPER/OCC PROCESSING SHREDDER	1	LS	\$ 165,165.00	\$ 165,165
PORTABLE HOPPERS FOR ORGANICS & OTHER COMPOSTABLES	8	EA	\$ 800.00	\$6,400
MONSOON DUST SUPPRESSION SYSTEM FOR MOBILE SHREDDING	1	LS	\$ 25,000.00	\$25,000
PUMP & TANK FOR COMPOST HEAP	1	LS	\$ 10,000.00	\$10,000
PUMP FOR STORMWATER POND	1	LS	\$ 2,500.00	\$2,500
<b>SITE DEVELOPMENT ITEMS</b>				<b>\$3,141,773</b>
<b>SUB-TOTAL GENERAL ITEMS</b>				<b>\$ 204,215</b>
<b>SUB-TOTAL EQUIPMENT ITEMS</b>				<b>\$307,400</b>
<b>SUB-TOTAL SITE ITEMS (excludes equipment purchases)</b>				<b>\$2,834,373</b>
<b>15% CONTINGENCY AND INCIDENTAL ITEMS</b>				<b>\$ 455,788</b>
<b>7.5% CONTINGENCY ON EQUIPMENT ITEMS</b>				<b>\$ 23,055</b>
<b>10% ENGINEERING DESIGN, BIDDING, CONSTRUCTION PHASE SERVICES (excl. equipment)</b>				<b>\$ 303,859</b>
<b>BONDING AND REFERENDUM COSTS</b>				<b>TO BE DETERMINED</b>
<b>TOTAL OF ABOVE</b>				<b>\$ 4,128,690</b>

Prepared by Anchor Engineering Services Inc.

## **NYSDEC Grant Program**

NYSDEC maintains a grant program that the District could apply for to support implementation of the needed improvements. From NYSDEC's grant information materials:

“Eligible projects are expected to enhance municipal capacity to collect, aggregate, sort and process recyclable materials. Recycling equipment includes structures, machinery, or devices providing for the environmentally sound recovery of recyclables including source separation equipment and recyclables recovery equipment. Recycling education and coordination promotes and encourages participation in local recycling programs. Waste reduction capital or education can include the capital, planning and promotional costs of waste reduction projects undertaken to reduce the volume or toxicity of material entering the Municipal Solid Waste stream, by reducing the volume or toxicity of material at the point of generation.”

The District has applied for grants under this program in the past and this opportunity does appear well-suited to the organics/composting portion of the project. A grant, if approved and funded, is for 50% of the eligible costs not to exceed \$2 Million.

The process involves completion and submission of a pre-application form. Once DEC has determined the project is eligible, it would then be placed in the queue of applications now pending. The NY State Legislature funds the program on an annual basis and applications are processed on a first-come-first-granted basis using available funding. Once an eligible project in the queue comes up for funding, a more detailed grant application is then requested.

By way of example, the District's current pending pre-application is for one-half the cost of the compost screen, motors for the screen, and a skid steer. That submittal is dated April, 2015.

Given the uncertainty on when a new application would ultimately be funded, it would appear that the District should expect a project of this nature, if implemented soon, would involve funding the project with other resources and then use of grant proceeds that it receives in the future to pay down the relevant portion of the capital cost.

## **Opportunities To Reduce Waste & Increase Compost Production**

As summarized in our earlier report(s), the District's current waste management approach satisfies the need to safely manage municipal solid waste (“MSW”), recyclables, oversized bulky waste, and compostable wood and yard waste.

Much of the planned work is associated with safety and environmental compliance:

- Erection of new, structurally sound retaining walls in substitute for the 100-year old bunker walls. Elements of the historical structure are now failing.
- Installation of OSHA-compliant fall protection around the upper perimeter of the retaining walls.
- Installation of a fence and security camera system to reduce the potential for access to the site during hours the site is not open.
- Collection and treatment of stormwater runoff from the areas of the site where waste and recyclables are received and stored. [Note: stormwater is now leaving the site uncontrolled.]

- Reducing truck trips off-Island through improved handling of recyclables and diversion of compostable materials.

However, the proposed improvements will also expand the amount of waste diverted from disposal and thereby help reduce the cost of the program. Food and fiber-based composting will divert paper and fiber material that is currently disposed of as MSW. Examples include the following materials that are likely now part of the MSW disposed stream;

- Pizza boxes
- Paper egg cartons
- Coffee grounds and filters
- Paper bags
- Paper towels and rolls
- Paper cushion packaging
- Shredded documents
- Other similar uncontaminated organic wastes.

These streams are planned to be integrated into the Island's composting program with the proper approach to preparing and handling the material:

- a) Having separate bins at the compost station to receive food and organic waste from residents and businesses. The bins should have covers and be set up to be handled with existing equipment on-site at the compost station;
- b) Installation of a suitable size and capacity shredder to reduce the paper, cardboard and food waste to a size compatible with composting; and,
- c) Methods to mix the various materials being composted and manage the biological composting process by shortening the time associated with composting and produce a quality product.

### **Estimated Cost Savings From Improved Composting Program**

In order to estimate the potential cost savings that may be realized from an improved composting program, the following elements have been considered:

#### **Municipal Solid Waste**

An estimate of the amount of material that can be diverted from the disposal stream has been based upon a recent study of waste composition by the State of Connecticut<sup>1</sup>. In this study, the authors estimated the "compostable organics – which include food wastes, green wastes, and some compostable papers – are quite significant at 41.4 percent" as associated with curbside and site collected MSW. However the study also concluded some of these material may not be easily source-separated (in the home before disposal) or separated after disposal.

The District plans to rely upon source-separation of waste, and receive the separately delivered compostable organics in new bins at the compost site. For the purpose of this review it has been assumed that approximately 75% of the material is recovered for composting, at a rate of approximately 30% of the total MSW disposed of. The tip fee currently paid by the District for disposal of this material is \$58/ton, however it is also the case that this may increase significantly in the future since the current fee is subsidized by past reserve contributions by the Southeastern Connecticut Resources Recovery Authority. Additionally, the District incurs a cost of \$337.42

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<sup>1</sup> Connecticut Department Of Energy And Environmental Protection, 2015 Statewide Waste Characterization Study.



per trip a truck makes to travel by ferry to pick up a full container, travel back to Connecticut and then to the RRF facility in Preston. Finally, each such trip also includes payment of \$519 to the Ferry District. Based upon the District’s records, an average of 8.83 tons were in each container sent off-Island.

**Paper**

For this planned compostable item, the actual annual tons of paper sent off-island for processing and recycling was used. District records show each such trip contains an average of 3.5 tons of paper and costs \$289.23 in hauling charges, \$25/ton in processing fees, plus the above Ferry District charge.

**Corrugated Cardboard**

For this planned compostable item, 95% of the actual tons historically sent off-Island was used as the estimate of diverted material in the future. This allows for exclusion from the composting program of certain corrugated cardboard items that may be wax or plastic-coated and therefore not good candidates for composting. Further, District records show each such trip contains approximately 3.58 tons on average of cardboard and costs \$391.36 per truck trip plus the above indicated Ferry District charge. No tip fee is paid for corrugated cardboard.

**Clean Wood**

The District separately receives wood from residents and contractors, which is sent off-Island for processing and disposal/recycling. A reasonable portion of the wood is clean wood that, with sufficient planning could be integrated into the new composting program. The vast majority of the wood is kiln dried, which needs to be incorporated with other organic materials and water to achieve good composting conditions. This material is now shipped off-Island with the above Ferry District charge, a hauling fee of \$289.21/trip, and tip fee of \$81.33/ton.

**Summary of Estimated Savings from Diverted Compostable Material**

Table 2, following, summarizes the estimated savings from materials diverted from the disposal and off-Island processing streams to the planned composting program.

*Table 2: Estimated Savings From Capturing More Compostable Material*

Item	Current	% Captured	#Tons Diverted	Tipping Fees	#Truck Trips	Ferry Cost	Hauling Fees	Total Saved
	Tons/Year	For Compost		Saved	Saved	Saved	Saved	
Municipal Solid Waste	256	30%	76.8	\$ 4,454.40	9	\$ 4,671.00	\$ 3,036.78	\$12,162.18
Paper	35	100%	35.0	\$ 875.00	10	\$ 5,190.00	\$ 2,892.30	\$ 8,957.30
Wood	79	40%	31.6	\$ 2,570.03	4	\$ 2,283.60	\$ 1,272.61	\$ 6,126.24
Cardboard	43	95%	40.9	\$ -	11	\$ 5,709.00	\$ 4,304.96	\$10,013.96
			184.3	\$ 7,899.43	34	\$ 17,853.60	\$ 11,506.65	\$37,259.68

**Estimated Cost Savings from Glass Diverted for Beneficial Use**

The proposed facility improvements will provide a means for the District to locate its glass grinder in the mixing building and ask residents to start source-separating clean glass. Glass could then be ground up on a batch basis and used as beneficial fill on-site and at other locations. The glass that would be captured is otherwise sent off-Island for processing at a recycling plant. Table 3, following provides an estimate of the savings potential from this opportunity<sup>2</sup>.

<sup>2</sup> Glass composition derived from composition of recyclables from “Connecticut Department of Energy & Environmental Protection 2015 Statewide Waste Characterization Study.” Total single-stream composition adjusted

*Table 3: Estimated Savings From Capturing Glass for Beneficial Use*

Item	Current	Est. %	% Captured	# Tons	Tipping Fees	#Truck Trips	Ferry Cost	Hauling Fees	Total Saved
	Tons/Year	Glass	For Use	Diverted	Saved	Saved	Saved	Saved	
Bottles/Cans/Plastic	73	54%	60%	23.47	\$ 586.73	6	\$ 3,114.00	\$ 1,928.16	\$ 5,628.89

### Estimated Cost Savings from Improved Handling of Recyclables Sent Off-Island

As discussed in more detail in the earlier reports, the District does not now have the ability to add compactors to handle bottles and cans and other recyclables that must be sent off-Island for processing and recycling.

At present, this material is sent uncompacted by truck to recyclable processing facilities in Connecticut. The average net weight of material in each trip is only 2.517 tons, and the current cost for this stream includes a \$25/ton processing fee at the recycling facility, Ferry District charges, and a fee of \$321.36/truck trip hauling charge.

The planned facility improvements include a location for a new compactor that can accept and compress these materials for better load efficiency.

Table 3, following summarizes the expected savings that could be realized from this change in how these recyclables can be handled, after taking into consideration the potential for capturing glass as noted above:

*Table 4: Estimated Savings from Compacting Mixed Recyclables*

Compaction Density Savings Estimate		
Tons Bottles/Cans	50	
Tons Unrecovered Cardboard	<u>2.15</u>	
Total Tons Shipped	52	
Est. Compacted Density	4	tons/trip
Number Trips Needed	13	
Current Trips Used	23	Ex. Glass Diversion
Number Trips Saved	10	
Ferry Fee Saved	\$ 5,190.00	
Hauling Fee Saved	<u>\$ 3,213.60</u>	
Total Savings:	\$ 8,403.60	

### Total Estimated Cost from Diverted Organics, Glass & Improved Recycling Truck Loads

Based upon the above analysis, the following table summarizes the total estimated annual operating cost savings available to the District from the proposed project:

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to exclude recyclable paper now separately collected by the District. Also, slight adjustment in contaminant levels typically high in single-stream collection programs but not observed in the District's material.

*Table 5: Total Est. Savings, Organics & Glass Diversion, Higher Recyclable Truck Loads*

<u>Total Estimated Savings</u>	
From Diverted Organics to Composting	\$ 37,259.68
From Diverted Glass To Beneficial Use	\$ 5,628.89
From Better Compaction w/Recyclables	\$ 8,403.60
	\$ 51,292.17

Appendix A  
Sustainable Generation Company  
Updated Quote and Information



September 12, 2017

**David Brown**  
**Project Management Associates LLC**  
**P.O. Box 271777**  
**West Hartford, CT 06127**

**SUBJECT: Updated Quotation for Composting Project Solution**

Dear David,

**Sustainable Generation (“SG”)** is pleased to provide the updated Quotation for the Composting Project Solution for **Fishers Island Waste Management District (“Fishers Island”)** compost project using scalable technology to grow as your business grows. The SG Mobile™ System with GORE® Covers is a modular system that expands as your feedstock volume increases. It is a proven solution that is safe, simple, and scalable and will work in the **Fishers Island** environment. SG can customize this composting project solution to meet **Fishers Island’s** needs. Based on our experience and knowledge of your site, SG could have a system delivered to your site within 16 weeks from an agreement. This Quotation is valid for 60 Days.

Sustainable Generation proposes a SG Mobile™ System with GORE® Covers as the solution at **Fishers Island** to provide a low-cost entry point with the flexibility and scalability for future growth. This solution utilizes On-Floor aeration piping with an Option for In-Ground Trenching for increased process and leachate control. The system is scalable and can be expanded and upgraded as the feedstock volume increase and more capacity is needed. The SG Mobile™ System is configured to process 1200 total tons of feedstock per year using an 8-week modified process with one SG Mobile™ System and 2 GORE® Covers.

Item	Description		Price
<b>SG Mobile™ System with GORE® Covers</b>	1 SG Mobile System: Standard Heap Design 2 GORE® Covers – Master/Slave Configuration (50 ft. length x 20 ft. width x 9 ft. height) On-Floor Aeration		<b>Included</b>
<b>SG SmartStart™ Services</b>	System Installation Supervision Service		<b>Included</b>
	System Startup and Commissioning Service		<b>Included</b>
	Compost System Training Service		<b>Included</b>
	<b>TOTAL</b>		<b>\$121,000.00</b>
<b>In-Ground Trench System*</b>	In-ground trench with water trap* for 2 heaps 50 ft. x 20 ft. *requires concrete pad and leachate tank w/ pump to be supplied by other	<b>Optional</b>	<b>\$8,300.00*</b>
<b>Design &amp; Engineering</b>	SG Mobile™ System Construction Drawings Set	<b>Optional</b>	<b>Tbd</b>
<b>Cover Handling Machine</b>	Remote Controlled Winding Machine (RCWM)	<b>Optional</b>	<b>\$90,000.00</b>

- Prices include Duty and Shipping delivered to project site.
- State and Local Sales Tax payable by customer
- Subject to Terms and Conditions in the formal Quotation



Our Quotation provides information relevant to the scope of the supply of equipment and services provided by SG for the SG Mobile™ System. Customer is responsible for construction. The project requirements and scope of work will need to be further refined as part of the design process. Any equipment and services (such as mixing, screening, front end loader, etc.) not related to the composting system shall be provided by the owner's project team or supplied by others.

Brett Hoyt  
VP North American Sales  
Sustainable Generation  
110 South Poplar Street, Suite 400  
Wilmington, DE 19801  
Phone: 303.699.1585  
Email: [brett.hoyt@sustainable-generation.com](mailto:brett.hoyt@sustainable-generation.com)  
Website: [www.sustainable-generation.com](http://www.sustainable-generation.com)

## SG Mobile™ System with GORE® Covers Quotation For Fishers Island Waste Management District (“BUYER”)

Date: September 12, 2017

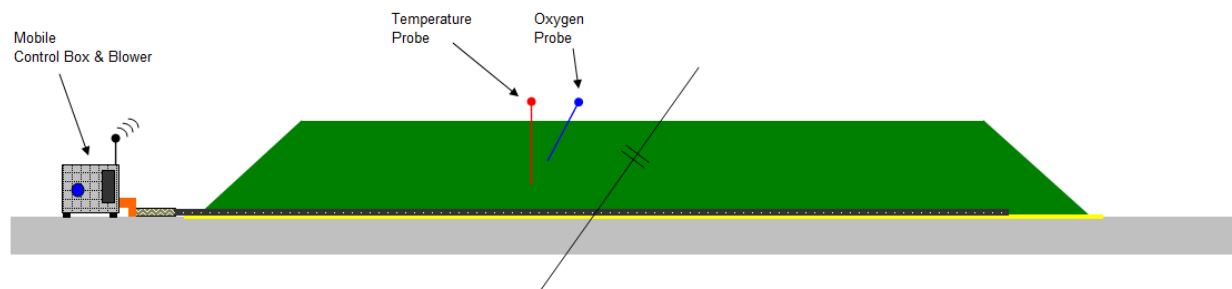
Prepared by Brett Hoyt- email: brett.hoyt@sustainable-generation.com phone: 303-699-1585  
Sustainable Generation, LLC in the following referred to as “SG”  
W.L. Gore & Associates in the following referred to as “Gore”

**David Brown**  
Project Management Associates LLC  
P.O. Box 271777  
West Hartford, CT 06127

## SG Mobile™ System - Standard Heap Design

### SG Mobile™ System with GORE® Covers

#### MOBILE HEAP DESIGN– On-Floor Aeration System



**1. General**

**1.1. Input Materials and Volumes:**

<b>Input Materials<sup>1</sup></b>	Green Waste/ Yard Waste
	Food Waste – pre/post Consumer
	Source Separated Organics

<b>Volume: US Units<sup>1</sup>:</b>	<b>8 Week Process</b>
Input ton/year:	1200
Input ton/month:	100
Input ton/week:	24
Specific Weight [lbs./yard <sup>3</sup> ]:	925

<sup>1</sup> Data provided to SG by CUSTOMER for the purpose of an agreed upon system sizing.

**1.2. Number of windrows**

Phase 1 –High Rate Composting	<b>1</b>	Covered
Phase 2 - Maturation	<b>1</b>	Covered
Phase 3 - Finishing	<b>0</b>	Uncovered
<b>Total</b>	<b>2</b>	Modified Process

**1.3. Heap Design and Windrow Dimensions**

<b>Standard Heap Design</b>	
<b>Length</b>	50 ft.
<b>Width</b>	20 ft.
<b>Height</b>	9 ft.
<b>Feedstock Mix Recipe Density</b>	925 lbs./ y <sup>2</sup>

**1.4. Compost Pad: Recommended Minimum Surface Area<sup>2</sup>**

<b>Configuration*</b>	<b>Total Windrows</b>	<b>Length (ft.) x Width (ft.)</b>
On Floor Aeration Design	1	130 ft. x 26 ft.
	2	130 ft. x 52 ft.
In-Ground Trenching Design	1	90 ft. x 26 ft.
	2	90 ft. x 52 ft.

\*Inclusive of Active Composting Pad, Driving Space and room to pull On Floor Pipe and using Cover Winder Machine to place and remove GORE® Covers.

<b>Distance Between Windrows</b>	6 ft.
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<sup>2</sup>Layout, configuration and driving space shall be confirmed by the CUSTOMER’S professional design engineer and according to local codes and regulations.

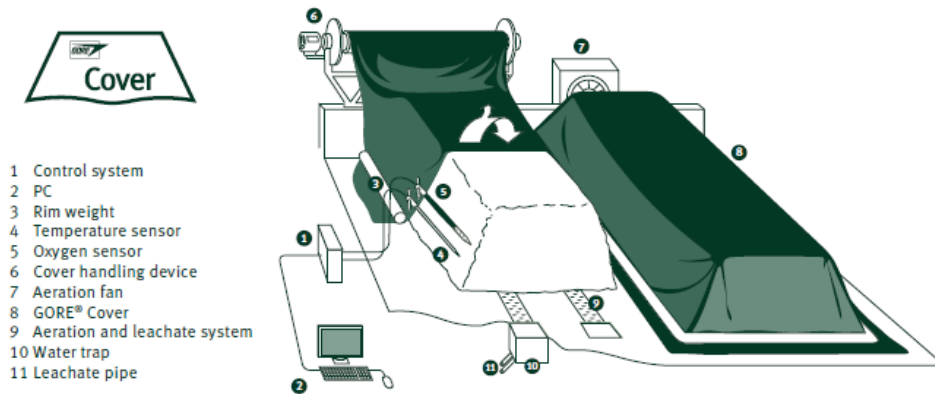


**1.5. Cover Handling Method: (Optional Equipment)**

<b>Item</b>	<b>Quantity</b>	<b>Description</b>
Remote Controlled Winding Machine (RCWM)	Tbd	Remote Controlled, Self-Propelled Cover Winder

**2. SG Mobile™ System with GORE® Covers Scope of Supply:**

SG Mobile™ System with Gore Covers includes the following:



**LEFT: SG Mobile™ System with optional In-Ground Trenching System.**

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**2.1 Installation Guide, which includes Specifications and Drawings for the Design Team:**

Layout and drawings provided by SG are for the purpose of guiding the design configuration and are not to be used for construction. Customer is responsible for construction. CUSTOMER agrees to consult with a professional engineer and design according to local code and regulations.

- Basic Site Layout for the Phase I, Phase II and Phase III areas of the composting pad including the push walls, bunker walls, and driving area
- Drawings and Specifications for the cover winding system provided.
- Drawings and Specifications for the Aeration System
- Basic wiring diagrams and power/electrical system drawing to be finalized according to local standards and regulations by a qualified and/or locally certified electrician.

**2.2 GORE® Covers**

Item	Quantity	Description
GORE® Cover	1	Batch Processing
Tie Down Straps	Included	
Cover Perimeter Weighting System	Included	

**2.3 Mobile System Units**

Item	Quantity	Description
Mobile Box Unit	1	Mobile unit on pallet feet for: <ul style="list-style-type: none"> <li>• Control System</li> <li>• Power System</li> <li>• Blower with Motor</li> </ul>

## 2.4 Aeration System

Item: On-Floor Aeration System	Per Heap	Total
Blower Unit with Motor: 240/480v, single or three phase	1	1
On-Floor Aeration Piping	1 set	2 sets
Cover Perimeter Weighting System	1 set	2 sets

In-Ground Trench System (Optional Equipment, Separately Quoted Line Item) *	Per Heap	Total
Trenching for 50 ft. heaps	1 Set	2 Sets
PVC Pipe and Angles	1 Set	2 Sets
Water Traps	1	2
Caulking/ Sealant	Included	Included

\*In-Ground Trench System requires concrete pad and leachate tank w/ pump to be supplied by customer

## 2.5 Control System

Component	Per Heap	Total
Process Control Unit (PCU)	1	1
Oxygen sensor (Phase 1)	1 (Phase 1)	1
Temperature Probes	1	1
Master Control Unit (MCU)	1 per site	1
Power System Junction Box	1	1
Cabling	Analog/ Digital/ Fiber Optic or RF	1
Computer	Laptop or Smart Device	1
Process Control Software	Installed	1
Service Platform Software	Installed	1

Process Control, Power System and cabling is a plug and play solution and will include the following features:

- A Process Control Unit (PCU) for each windrow
- Main power supply hook-up
- Lockable power switch
- Green control light for power on
- Red control light for blower fail
- Switch for blower manual ON/OFF/AUTO
- 24 Volt transformer
- NEMA 4x weather/ outdoor rated
- Master Control Unit – Internet Ready

## 2.6 Spare Parts

1 Repair Kits for GORE® Cover including laminate	1
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**3. SG SmartStart™ Service Package Scope of Supply includes:**

**3.1. Technical Meetings, Site Supervision, Installation Guidance, StartUp and Commissioning**

Meeting Description	
Pre-Design	Included
Pre-Construction	Included
Pre-Installation	Included
Operator Training (1, 2)	Included
Start Up and Commissioning	Included
Service Platform: Technical Support Training	Included

**3.2. Training**

Training for Operators	Reference Plant	Duration (Days)	Participants
Training Unit 1 <sup>1</sup>	Customer Site	3	na
Training Unit 2 <sup>2</sup>	Customer Site	2	na

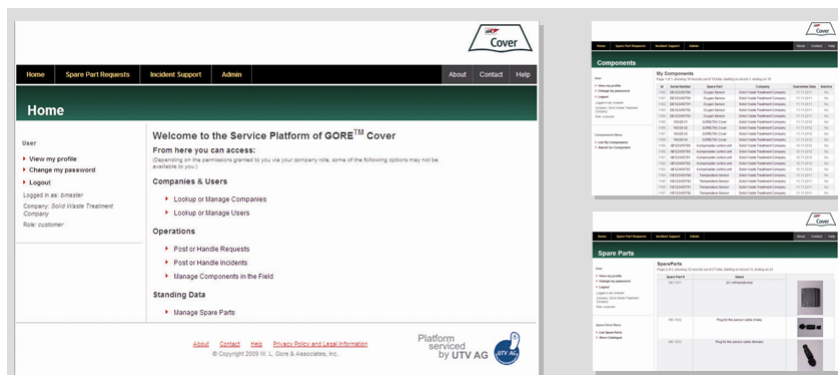
<sup>1</sup> Training 1 will be held during final installation of equipment and during start up/ commissioning.

<sup>2</sup> Training 2 will be held between two (2) months after start up and no later than six (6) months after start up.

**3.4. Service Platform**

Web based service platform unique to the BUYER with the following capabilities:

- Inventory all components and tracks the warranty
- Online ordering for technical support, component repairs and spare parts
- 24/7 technical support with 24-hour response time
- Tracking tool for technical support



**3.5. Technical Support**

<b>Remote Support Services</b>	5 day x 8 hr. phone and internet support – 4 hr. response time No Charge for first 12 months Included in Annual Support Contract after first 12 months
<b>Annual Service Contract</b>	<ul style="list-style-type: none"> <li>• 5 day x 8 hr. phone and internet support – 4 hr. response time</li> <li>• Remote Diagnostics</li> <li>• Annual On-site Service Check and Report</li> <li>• Software Updates</li> <li>• Remote Data Backup</li> <li>• \$3,000.00 per year</li> </ul>

**3.6. Consultancy**

<b>Consultancy</b>	<b>On-Site Support</b>
	No Charge for first 12 months
	\$1000.00 USD per day per person plus travel /expenses

BUYER will allow SG or SG Partner to access the plant after reasonable prior notice.

#### **4 Operations Manuals**

- Installation Manual for SG Mobile™ System
- Operation Manual on GORE® Cover including safe handling guidelines
- Operation Manual on the Control system (O<sub>2</sub> sensor, Temp probe, Process Control software, blowers, aeration piping)
- Standard operation manual on the Portable Winder machine
- All documents will be provided in English on paper

#### **5 SG Mobile™ System Design and Engineering - (Optional Service to be quoted separately, if needed. SG and CUSTOMER to define Scope of Work)**

The design and engineering services may include drawings associated with compost facility pad as follows:

- G001 Title Sheet, List of Drawings, Region & Vicinity Maps
- G002 General, Civil and Mechanical Legends, Symbols
- G003 Basis of Design & Process Flow Diagram
- C001 Standard Details I
- C002 Standard Details II
- C100 Site Plan
- C101 Grading and Paving Plan
- C102 Grading and Paving Details
- C103 Compost Heap Sections and Details
- C104 Drainage and Leachate Piping Plan
- C105 Drainage and Leachate Piping Details
- C106 Blower Plan, Anchoring and Piping Details
- C107 Blower Plan and Piping Details
- S001 Structural Abbreviations and Symbols
- S002 Structural Standard Details I
- S100 Structural Slab Sections & Details
- S101 Structural Push Wall Sections & Details
- E001 Electrical Legends, Symbols and Abbreviations
- E100 Electrical Site, Power and Signal Plan
- E101 Single Line Diagram
- E102 Electrical Details
- I001 P&ID Symbols and Abbreviations

The SG Mobile™ System Design and Engineering does NOT include:

- Ancillary elements outside the compost pad including Tipping Building, or other ancillary structures, storm water and treatment systems, leachate pump and storage system, odor control facilities and related.
- Also, does not include any adjacent equipment such as front-end loaders, grinders/mixers, and screens.
- Topographic and boundary surveying to be provided by other.
- Geotechnical recommendations to be provided by other.

**6 Cover Winding Machine: (Optional equipment, separately quoted line item)****REMOTE CONTROLLED WINDING MACHINE (RCWM)**

The RCWM is a remote-controlled winding machine designed to travel over a heap and wind-up and unwind the GORE® Cover. It is powered with hydraulics using a Honda Gas engine. Electric on/off controls are used to operate hydraulic functions using a hand-held wired and wireless controls. For the purpose of calculating operating costs, it has been the current operators experience that the RCWM can deploy a cover for heap construction and deconstruction within a 30 minute or less time period. The RCWM uses gasoline engine. Engine maintenance can be accomplished locally.

**BELOW: Remote Controlled Winding Machine (RCWM):**



## 7. Warranties and Guarantees

7.1. Sustainable Generation (SG) warrants that the system as specified in this quotation is designed to process a minimum amount of feedstock as specified in Section 1.1 for a period of 4 years, provided that SG Mobile™ System with GORE® Covers was operated in accordance with all Operation Manuals, Trainings and all other relevant instructions or information provided by SG. Warranty will start from date of commissioning or at the latest 6 months after shipment. In the event of claims to this warranty CUSTOMER shall provide access to all available process data.

### 7.2. GORE® Cover Manufacturer's Warranty

Each GORE® Cover will be delivered free from defects in materials and workmanship. This Warranty shall be valid for a period of 4 years from date of arrival on CUSTOMER's project site for each new GORE® Cover. For any claim under this Warranty arising within the first 24 months after the defect GORE® Cover of arrival on CUSTOMER's project site, Gore shall repair or replace the GORE® Cover, at Gore's option and expense. For any claim under this Warranty arising within months 25 through 48 of this Warranty, at CUSTOMER's request Gore shall sell to CUSTOMER a new GORE® Cover at the then current price with an allowance deducted from the price for the warranty period which has already passed according to the following formula: Price to be paid by CUSTOMER = Full Price multiplied by (months of warranty coverage passed divided by 48).

This Warranty does not apply for defects resulting of natural wear and tear, or if the GORE® Cover is punctured or torn by a sharp object, or otherwise damaged due to exterior influences, such as rodents, birds, mechanical impact such as inadmissible strong tie down, etc., or if the GORE® Cover was not operated in accordance relevant instructions or information provided by Gore. In the event of claims to this Warranty, CUSTOMER shall provide access to all available data related to the operation of the defect GORE® Cover and, if necessary, access to the site where the defect GORE® Cover has been operated.

The CUSTOMER has to inspect the GORE® Cover immediately following delivery for the absence of defects and for completeness and to notify any defects thus discovered to SG in writing within 14 calendar days. If the CUSTOMER fails to perform the inspection or to notify the defects in good time, the goods supplied are deemed to be approved, unless the defect could not be identified at the time of the inspection.

CUSTOMER remains entirely responsible for following the guidelines about handling of the GORE® Cover with the winding device and to provide proper training to its operators.

7.3. For other equipment supply of the SG Mobile™ System from Sustainable Generation (SG) the warranty period shall be valid for 12 months from the date of commissioning of the facility or six months after shipment, whichever date is earliest. This equipment supply is the aeration blowers, trenches systems with water traps, and the cover handling device. The Process Control System components of PCU, communications network, and software are subjects to a warranty period of 24 months. Sensors, sensor cables and connectors are subject to a warranty period of 6 months. The Warranty is limited to defects which cannot be attributed to natural wear or improper use or treatment. For all other parts, we only act as an intermediate dealer such as the Laptop or PC computer and printer, the warranty conditions of the manufacturer shall apply.





7.4. Any parts and equipment which are subject to claim shall be returned to SG free of freight and customs and excise duty, in so far as no other express agreement has been reached to the contrary. Claims must be sent in writing and by registered letter. If such claims are recognized by SG, we shall repair the relevant items as quickly as possible or replace them at our discretion. Freight and packaging costs shall be SG responsibility. Parts which are replaced shall remain SG property.

7.5. The warranty shall not apply if changes or repairs have been made to the SG equipment and systems by the customer or by third parties.

7.6. Any liability as set forth in this section is in each case limited to the value of the specific component product in connection with which the damaging event has occurred.

7.7. Under no circumstances shall SG or Gore be liable for indirect or consequential damages, loss of profits or loss of business opportunity

7.8. BUYER is responsible for operating the SG Mobile™ System with GORE® Covers in accordance with all Operation Manuals, Training, and all other relevant instructions or information provided by SG.

7.9. BUYER is solely responsible to operate SG Mobile™ System and GORE® Cover in compliance with applicable law.

## **8. BUYER Responsibilities:**

**8.1. BUYER is responsible for construction and installation. BUYER agrees to consult with a professional engineer and design according to local code and regulations.**

### **8.2. Installation Supply:**

- Provide a staging area for shipping containers and unloading the equipment into a secure and dry area (housing for the control system, space for the other parts).
- Provide workspace and lay-down area for the partner companies including communication (telephone, fax and internet).
- Provide access to standard hand tools (wrenches, hammers, screwdrivers, drill etc.) and temporary power
- Provide front-end loader, forklift, crane and trained equipment operators.
- Note: The Container holding the cover winder machine has to be unloaded to the ground without being opened or any parts removed. Container shall only be opened by SG or SG partner.

### **8.3. Site Construction, Installations, and Parts provided by BUYER:**

- Site preparation as per permit requirements adapted to local specifications.
- All concrete, mechanical, electrical work for construction and installation of compost pad, Mobiles, push walls, leachate collection from water traps, and electrical power.
- Installation of aeration system, including all relevant parts such as trenches, individual blowers and water traps, pipe, and fittings.
- Facility shall have adequate space for reception, storage, pre-treatment, mixing, screening and storage of the finished compost.
- Impervious Surface for Compost Pad. Concrete, asphalt, or other SG approved surface.

### **8.4. Electrical Installations provided by BUYER:**

- All electrical installations like electrical conduit, wiring, relays, starters, disconnects and final power hook-up to the Process Controller and Junction box and to the blowers to be provided and installed by BUYER by a qualified and/or locally certified electrician.
- Note: Installation of low voltage installations (control cable, data cable, probe cable) will be provided by SG or SG partner during Commissioning.

### **8.5. Process Supply by BUYER:**

- Feedstock as specified for the start-up and the process
- Provide machinery such as front-end loader, grinder, screen, turner and water supply.
- A site supervisor and a main contact person to be provided by BUYER, being knowledgeable about and held accountable for the operations being in compliance with all applicable safety and environmental regulations.

**9. Terms**

**9.1. Confidentiality**

The content of this quotation and all other information in conjunction with SG Mobile System with GORE® Covers and its system components, which has been disclosed or will be disclosed by SG, is confidential. BUYER may not communicate Confidential Information to third parties. BUYER confirms to disclose Confidential Information to no more than those employees and contractors to whom disclosure is reasonably necessary for the operation of the Facility or for the evaluation of this quotation. The signing of this contract does not affect any existing confidentiality agreement.

**9.2. Payment Terms**

Requirement	Rate	Action/ Deliverable	Invoiced
Payment #1	50%	Notice to Proceed/ Production/ Ship	Upon Agreement Signing
Payment #2	50%	Shipment/ Installation	Commissioning of System

All payments received past the payment due date will be charged a late payment fee of 1.5% per month.

**9.3. Time schedule:**

- SG and BUYER will set a specific time schedule for: when, what, in which way Action Items/ Deliverables will be received after this contract is signed.
- Delivery date to be determined. BUYER will issue to SG a Notice to Proceed/ Production; thereafter BUYER should allow 16-week lead-time for the shipment to arrive on-site after receiving Payment #1.

**9.4. General terms and conditions**

- The Terms and Conditions of Sustainable Generation (attached) shall apply. In the event of any inconsistency between the terms and conditions of this Quotation and the Terms and Conditions of SG, the Terms and Conditions of the Quotation will prevail.
- All other terms are expressly rejected.



### 9.5. Pricing

Item	Description		Price
<b>SG Mobile™ System with GORE® Covers</b>	1 SG Mobile System: Standard Heap Design 2 GORE® Covers – Master/Slave Configuration (50 ft. length x 20 ft. width x 9 ft. height) On-Floor Aeration		<b>Included</b>
<b>SG SmartStart™ Services</b>	System Installation Supervision Service		<b>Included</b>
	System Startup and Commissioning Service		<b>Included</b>
	Compost System Training Service		<b>Included</b>
	<b>TOTAL</b>		<b>\$121,000.00</b>
<b>In-Ground Trench System*</b>	In-ground trench with water trap* for 2 heaps 50 ft. x 20 ft. *requires concrete pad and leachate tank w/ pump to be supplied by other	<b>Optional</b>	<b>\$8,300.00*</b>
<b>Design &amp; Engineering</b>	SG Mobile™ System Construction Drawings Set	<b>Optional</b>	<b>Tbd</b>
<b>Cover Handling Machine</b>	Remote Controlled Winding Machine (RCWM)	<b>Optional</b>	<b>\$90,000.00</b>

- Prices include Duty and Shipping delivered to project site.
- All other Taxes not included
- State and Local Sales Tax payable by customer

### 9.6. Cancellation

- BUYER may terminate or cancel the Order by written notice to SG. Orders cancelled prior to the issuance of a Notice to Proceed for production and shipment and will be subject to a cancellation charge based on the percentage of work completed. The cancellation charge may not exceed an amount of \$50,000.00 (Fifty Thousand Dollars USD) in total.
- Orders terminated or cancelled by BUYER after the issuance of a Notice to Proceed for production and shipment will be subject to the Sustainable Generation LLC Terms and Conditions attached to this quote.

### 9.7. Applicable Law; Jurisdiction

- This Quotation is governed by the substantive law of the State of Delaware, USA without regard to its principles regarding the conflict of laws. The United Nations Convention for the international sale of goods shall not apply. The parties agree to the jurisdiction of the United States District Court for the District of Delaware and the courts of the State of Delaware for the resolution of any litigation relating to this Agreement.



**Contract partner and seller is Sustainable Generation, LLC of Wilmington, Delaware.**

**Validity of this Quotation is 60 Days from Date of Offer.**

**Quotation Acceptance subject to SG Confirmation.**

Please return approved quotation by:

- Scan/email to: [brett.hoyt@sustainable-generation.com](mailto:brett.hoyt@sustainable-generation.com)
- Mail two (2) originals to:  
Sustainable Generation, LLC  
110 South Poplar Street, Suite 400  
Wilmington, DE 19801

**Offered: September 12, 2017**

**Quotation Accepted:**

\_\_\_\_\_  
**Brett Hoyt**  
**VP Sales – North America**  
**Sustainable Generation LLC**  
**110 South Poplar St., Suite 400**  
**Wilmington, DE 19801**

**Signature:** \_\_\_\_\_

**Print Name:** \_\_\_\_\_

**Title:** \_\_\_\_\_

**Company:** \_\_\_\_\_

**Date:** \_\_\_\_\_



**APPENDIX:**  
**Sustainable Generation's Terms and Conditions**

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## TERMS AND CONDITIONS of Sustainable Generation, LLC

1. **AMOUNT AND TYPE OF GOODS.** Seller agrees to sell and Buyer agrees to buy the quantity and type of products and/or services (the "Products") which are described in this Agreement.
2. **ENTIRE AGREEMENT:** This Agreement represents the entire integrated agreement between Buyer and Seller and supersedes all prior negotiations, representations or agreements, either written or oral. These terms may be amended only by a written instrument signed by both Buyer and Seller.
3. **INSPECTION, CLAIMS FOR DEFECTS OR LATE DELIVERY:** Buyer shall have the right to inspect the Products after delivery. Buyer shall give Seller prompt written notice of any damaged, defective or non-conforming Products and shall make all rejected Products available to Seller for inspection. Failure of Buyer to give written notice or rejection to Seller within sixty (60) days from the date of delivery constitutes Buyer's irrevocable acceptance of the Products. Buyer is entitled to inspect the Products at any stage of manufacturing, but Seller reserves the right to restrict access to certain machinery, processes, and information that Seller deems proprietary. Seller shall have no obligation to replace or provide credit for Products claimed to be defective unless Seller receives representative samples of the Products and an opportunity to examine the Products at a place convenient to the Seller. In the event that Buyer elects to accept a part of a delivery, it is agreed that the portion of Products rejected shall be returned to Seller within thirty (30) days following Seller's authorization.
4. **DELIVERIES:** The delivery of the Products shall be made, in a single or in multiple lots, as specified in the Agreement, or within a reasonable time thereafter. The delivery schedule shall be considered extended by a period of time equal to the time lost due to any delay for causes beyond Seller's reasonable control. Seller's failure to make delivery of any item or to meet any delivery date shall not affect future deliveries or excuse Buyer from paying any installment when due. Buyer's failure to pay any installment when due shall excuse Seller from making further deliveries. Buyer shall confirm the suitability of Seller's standard manufacturing lead time prior to placing orders. Seller reserves the right to charge expediting fees for deliveries requested in advance of Seller's standard lead-time. With respect to each delivery obligation contained in this Agreement: (i) Tender of a shipment to any licensed carrier shall constitute delivery to Buyer; (ii) Seller shall use its best efforts to deliver in accord with the schedule specified in this Agreement. Any delivery not in dispute shall be paid for in accordance with that order's terms by Buyer, regardless of any dispute as to other delivered or undelivered goods. Seller is not obligated to package goods for outside storage. Deliveries of up to ten percent (10%) above or below quantities specified in the order shall be accepted by Buyer and the invoice price will be adjusted accordingly. Unless otherwise specified by Seller, delivery terms are to be Ex Works (Incoterms 2010) Seller's manufacturing site.
5. **TITLE; RISK OF LOSS:** Unless otherwise agreed by the parties, risk of loss or damage to the Products shall pass to the Buyer upon delivery. Buyer shall receive title to the Products upon Seller's receipt of payment in full for the Products delivered.
6. **PRICING OF BULK PURCHASE ORDERS:** Unless otherwise agreed by the parties, installment deliveries extending over six months from the original order date will be invoiced at Seller's then-prevailing unit price.
7. **WARRANTY:** Seller warrants that at the time of delivery, the Products are free from defects in materials and workmanship and conform to Seller's specifications, and, if applicable, acceptance criteria to which Seller has agreed in writing. Buyer retains sole responsibility for determining whether the Products are fit for the intended use, and for suitability of qualification and acceptance criteria. Claims for defects must be received by Seller within one (1) year from delivery of the Product on which the claim is based. Buyer's remedy will be limited to repair, replacement or refund for those Products which Seller verifies are defective. This warranty is conditioned upon (a) proper storage, installation, use, operation, and maintenance of the Products, (b) Buyer keeping accurate and complete records of operation and maintenance during the warranty period and providing Seller access to those records, and (c) modification or repair of the Projects only as authorized by Seller. Failure to meet any such conditions renders the warranty null and void. Seller is not responsible for normal wear and tear. THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES WHETHER EXPRESS OR IMPLIED INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.
8. **INDEMNITY AGAINST INFRINGEMENT:** Seller will, at its expense, defend Buyer against any claim by a third party that the products delivered hereunder infringe any intellectual property right and will pay all costs, damages, and attorney's fees that a court finally awards as a result of such claim. To qualify for such defense and payment, Buyer must give Seller prompt written notice of such claim and allow Seller to control, and fully cooperate with Seller in, the defense and all related settlement negotiations. Seller shall have no obligation with respect to any claim of direct or contributory infringement based upon modification of the products furnished by Seller or their combination, operation, or use. Buyer shall hold Seller harmless against any such claim arising out of compliance with specifications furnished by Buyer. This Article 8 states Seller's entire obligation to Buyer regarding claims of infringement, whether direct or contributory, involving intellectual property rights of third parties. Neither party shall have the obligations set forth in this Article 8 if an infringement claim is brought against a party protected from such a claim pursuant to government regulations.
9. **CHANGES:** Either party may at any time propose changes to the specification or scope of Products. All changes to the specification or delivery schedule will require a written agreement between the parties which will, at minimum, include the changes in the scope, delivery schedule and resulting change in price. Seller reserves the right to improve and make changes to Products



sold hereunder without notice or approval of Buyer, except for changes that materially modify the form, fit or function of the Product contained the specifications.

10. **CANCELLATION:** Except as otherwise provided in the Agreement, orders cancelled by Buyer other than for default of Seller will be subject to a cancellation charge based on the percentage of work completed as a percentage of the contract price or such other reasonable charge as Seller may apply. Buyer will be entitled to receive any Products for which Seller has received payment in full. Seller, in its sole discretion may waive its claim for the value of work in progress. Buyer's cancellation request(s) must be in writing.
11. **TECHNICAL DATA AND PROPRIETARY INFORMATION:** Seller has no obligation to provide technical data other than its standard finished Product inspection data. Seller has no obligation to perform, and this is not an Agreement for, research, developmental or experimental work. Seller has no obligation to disclose, convey rights or allow access to technical, financial, or other information protected by it as proprietary or to indemnify Buyer for such refusal to disclose.
12. **PAYMENT:** Buyer shall pay Seller for the Products by paying all invoiced amounts in U.S. Dollars, without set-off, reduction or adjustment within thirty (30) days from the invoice date. For each calendar month, or fraction thereof, that payment is late, Buyer shall pay interest computed at the rate of 1.5% per month, or the maximum rate permitted by law, on the overdue balance. If it is necessary for Seller to enforce any provision of this Agreement, Buyer agrees to reimburse Seller for all legal and other reasonable costs related thereto, including attorneys' fees, court costs, administrative time, and other collection costs, whether or not Seller initiates court proceedings. Buyer shall also pay all costs, attorney's fees, filing fees, and/or administrative fees in the event Buyer appeals any decision or order from a judicial proceeding against Seller. Seller reserves the right to alter Buyer's credit limit, if any, at any time, or to require payment in full for any order or prior order before delivery. If Buyer fails to pay any invoices when due, Seller may terminate this Agreement and cancel or delay all future deliveries without otherwise affecting Seller's rights hereunder. As partial payment of sums due hereunder, Seller may accept any check or other tender of payment without entering into an accord and satisfaction and without prejudice to the Seller's right to the remainder due or to become due hereunder notwithstanding any terms or conditions endorsed on or stated in any communication related to such check or other tender. Seller may apply any amounts tendered by Buyer as Seller determines, in its sole discretion, whether under this Agreement or otherwise. All prices quoted are exclusive of taxes.
13. **FORCE MAJEURE:** Seller shall not be liable for any delay in delivery or for non-delivery, in whole or in part caused by the occurrence of any contingency beyond the control either of Seller or suppliers to Seller, including but not limited to war (declared or not), sabotage, insurrection, rebellion, riot or other act of civil disobedience, act of public enemy, failure or delay in transportation, act of any government or any agency or subdivision thereof, judicial action, labor dispute, fire, accident, explosion, epidemic, quarantine restrictions, storm, flood, earthquake, shortage of labor, fuel, raw material or machinery or technical failure, where Seller has exercised ordinary care in the prevention thereof. If any contingency occurs, Seller may allocate production and deliveries among Seller's BUYERS.
14. **REPRESENTATIONS AND CERTIFICATIONS:** Seller makes no representations or certifications in connection with this Agreement except those which are expressly contained within these Terms of Sale and, if any, those provided separately which are signed and dated by the Seller and made exclusively applicable to this Agreement.
15. **CONFIDENTIALITY:** Buyer acknowledges that the content of this Agreement and all other information provided in conjunction with GORE® Cover and its system components, which has been disclosed or will be disclosed by Seller or Gore is Confidential Information. Buyer agrees to use the Confidential Information only in connection with the use of the Products and take reasonable measures to prevent disclosure of the Confidential Information to third parties. The Buyer also agrees that it will disclose Confidential Information only to those employees whom disclosure is necessary and will take the necessary steps to subject its employees to the terms of this provision. The Buyer's obligations hereunder shall not apply if Confidential Information is required to be disclosed by valid legal process, provided that the Buyer shall promptly notify Seller in advance of such disclosure and reasonably cooperate in Seller's attempts to maintain the confidentiality of the Confidential Information. The terms of this Paragraph shall survive termination of the Agreement for any reason.
16. **LIMITATION OF LIABILITY:** The total liability of Seller for call claims of any kind arising from or related to the formation, performance or breach of this Agreement, or any Products or Services, shall not exceed (i) the Agreement price, or (ii) if Buyer places multiple order(s) under this Agreement, the price of each particular order for all claims arising from or related to that order.
17. **SAVINGS CLAUSE:** If any provision of this Agreement is found to be void or unenforceable, the remainder of the Agreement shall not be affected. The parties will endeavor to replace any such void or unenforceable provision with a new provision that achieves substantially the same practical and economic effect and is valid and enforceable.
18. **COUNTERPARTS:** This Agreement may be executed in multiple counterparts that together shall constitute one Agreement.
19. **APPLICABLE LAW; JURISDICTION:** This Agreement is governed by the substantive law of the State of Delaware, without regard to its principles regarding the conflict of laws. The United Nations Convention for the international sale of goods shall not apply. The parties agree that the US District Court for the District of Delaware or the Courts of the State of Delaware have exclusive jurisdiction over the resolution of disputes arising under this Agreement. The parties hereby expressly agree to personal jurisdiction within the State of Delaware.

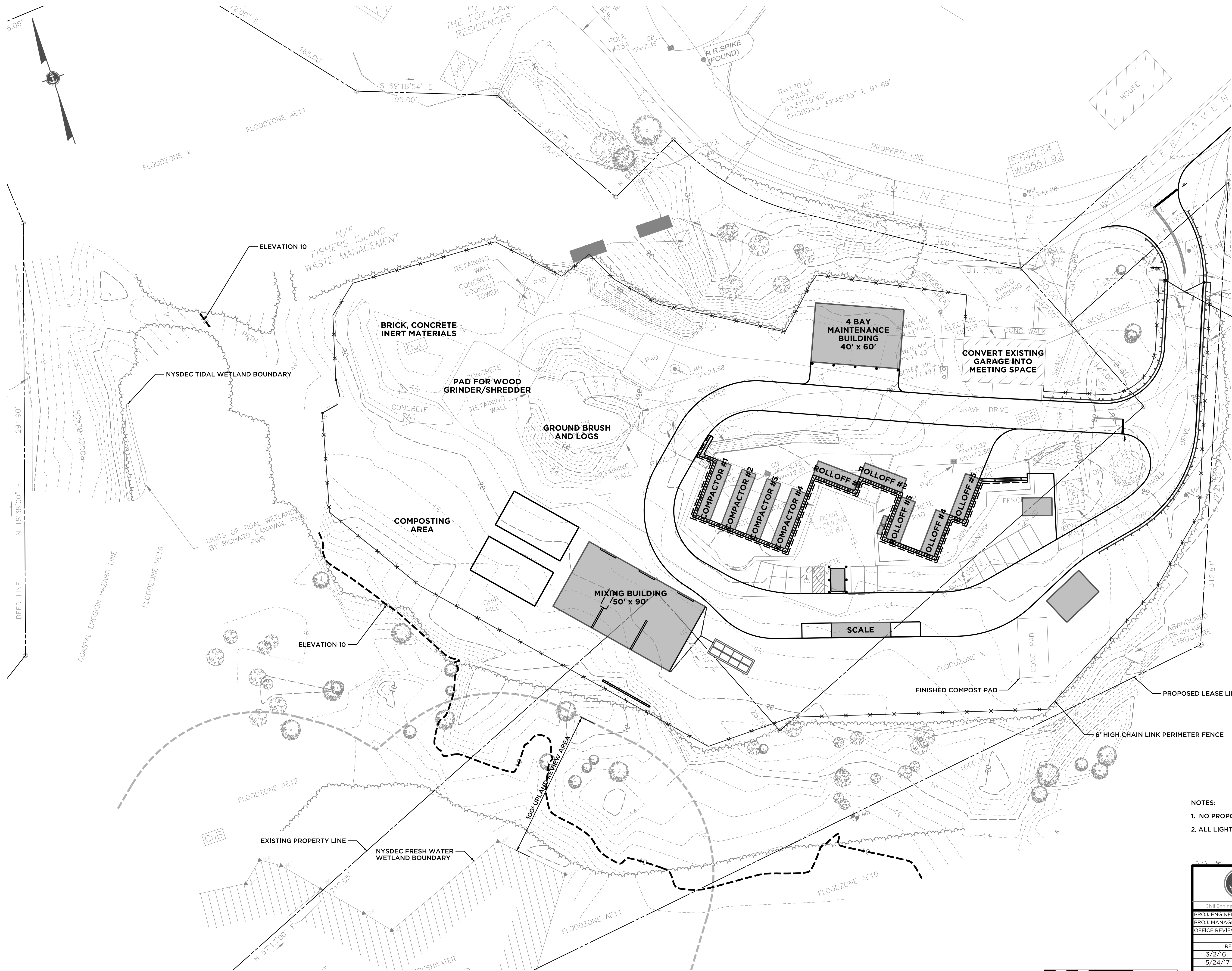
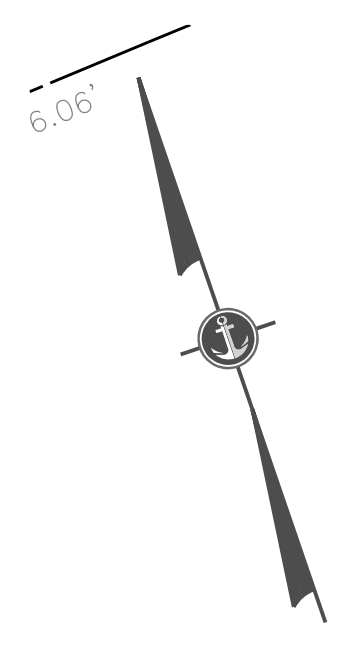


## Appendix B

### Consolidated Facility Plans at Compost Station

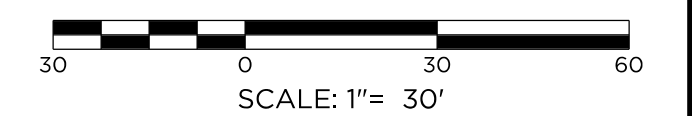






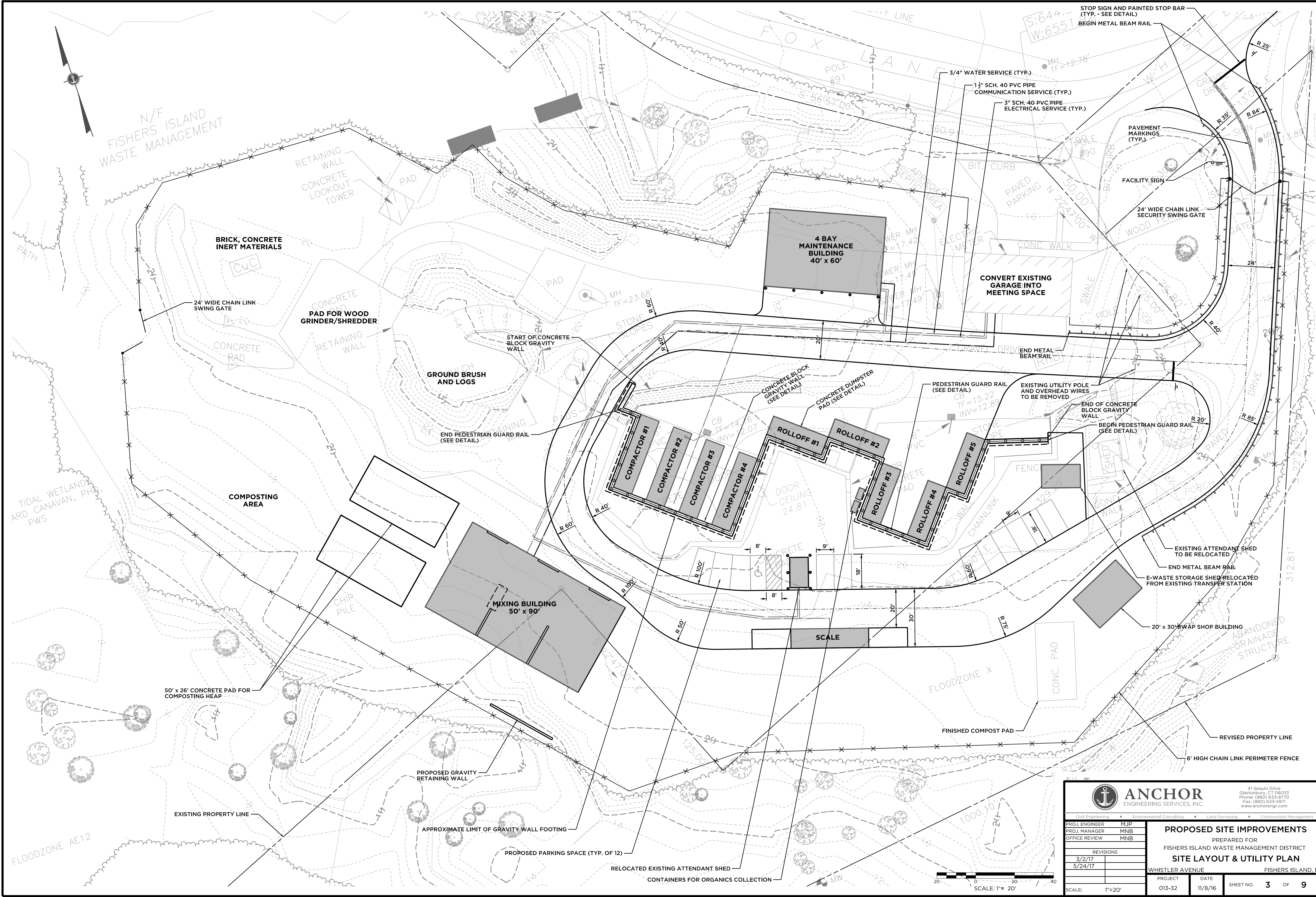
36' WIDE CHAIN LINK SECURITY SWING GATE

- NOTES:
1. NO PROPOSED WATER OR SANITARY CONNECTIONS TO PROPOSED BUILDINGS
  2. ALL LIGHTING TO BE DARK SKY COMPLIANT.



<p><b>ANCHOR</b> ENGINEERING SERVICES, INC.</p> <p>41 Sequin Drive Glastonbury, CT 06033 Phone: (860) 633-9770 Fax: (860) 633-5971 www.anchorengr.com</p>		<p>PROPOSED SITE IMPROVEMENTS PREPARED FOR FISHERS ISLAND WASTE MANAGEMENT DISTRICT <b>OVERALL LAYOUT PLAN</b></p>	
PROJ. ENGINEER	MJP	013-32	11/8/16
PROJ. MANAGER	MNB		
OFFICE REVIEW	MNB		
REVISIONS		SHEET NO.	2 OF 9
3/2/16			
5/24/17			





N/F FISHERS ISLAND WASTE MANAGEMENT

BRICK, CONCRETE INERT MATERIALS

4 BAY MAINTENANCE BUILDING  
40' x 60'

CONVERT EXISTING GARAGE INTO MEETING SPACE

MIXING BUILDING  
50' x 90'

COMPACTOR #1

COMPACTOR #2

COMPACTOR #3

COMPACTOR #4

ROLLOFF #1

ROLLOFF #2

ROLLOFF #3

ROLLOFF #4

ROLLOFF #5

SCALE

20' x 30' SWAP SHOP BUILDING

50' x 26' CONCRETE PAD FOR COMPOSTING HEAP

COMPOSTING AREA

FLOODZONE X

EXISTING PROPERTY LINE

PROPOSED GRAVITY RETAINING WALL

APPROXIMATE LIMIT OF GRAVITY WALL FOOTING

PROPOSED PARKING SPACE (TYP. OF 12)

RELOCATED EXISTING ATTENDANT SHED

CONTAINERS FOR ORGANICS COLLECTION

FINISHED COMPOST PAD

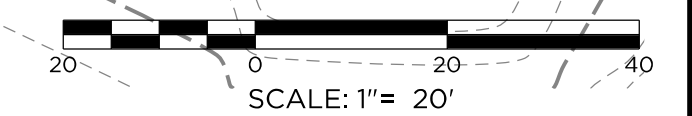
EXISTING ATTENDANT SHED TO BE RELOCATED

END METAL BEAM RAIL

E-WASTE STORAGE SHED RELOCATED FROM EXISTING TRANSFER STATION

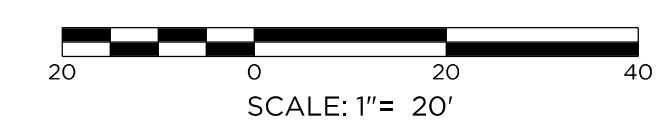
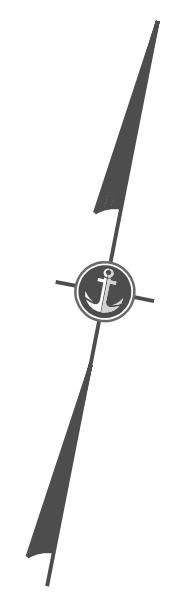
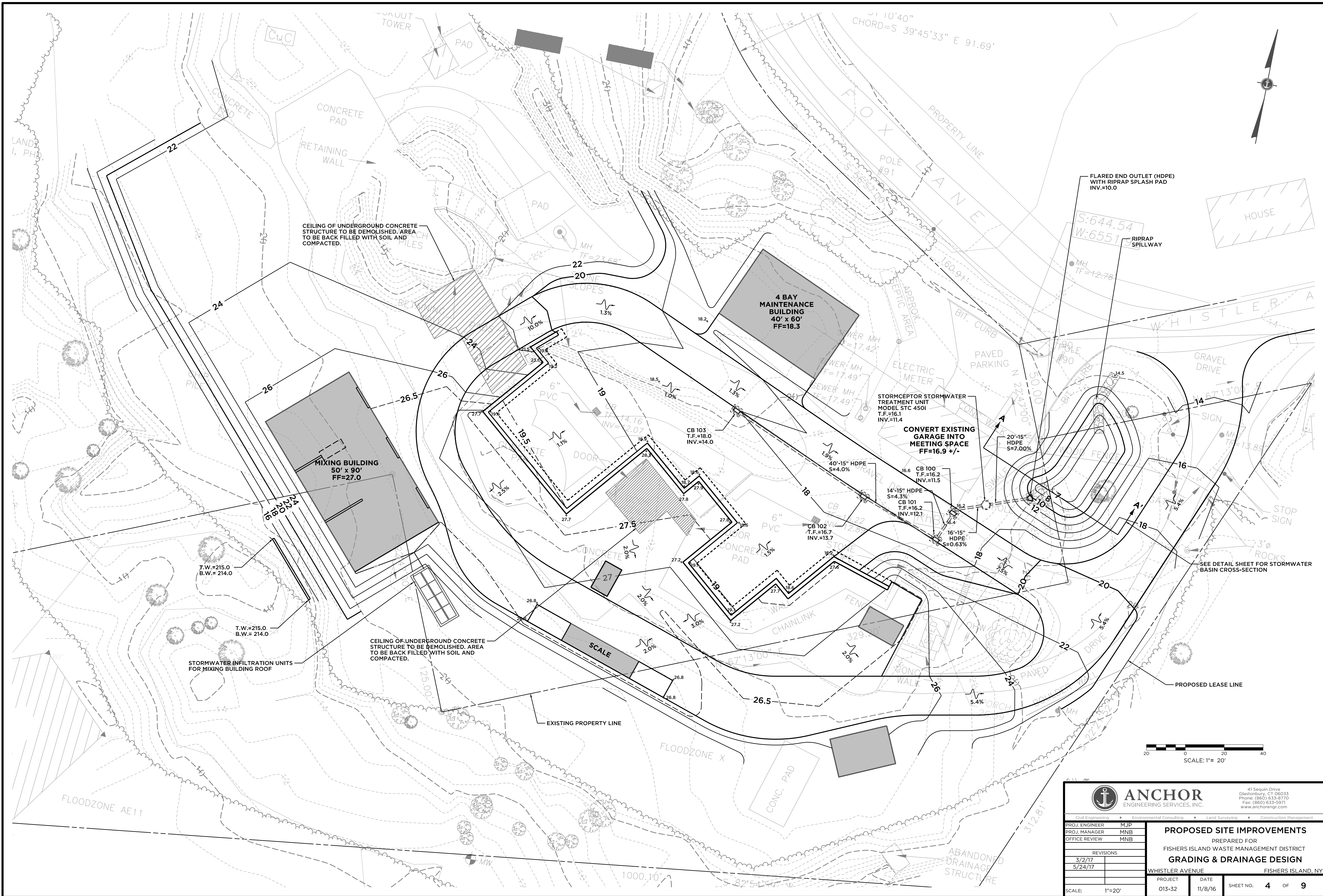
REVISED PROPERTY LINE

6' HIGH CHAIN LINK PERIMETER FENCE



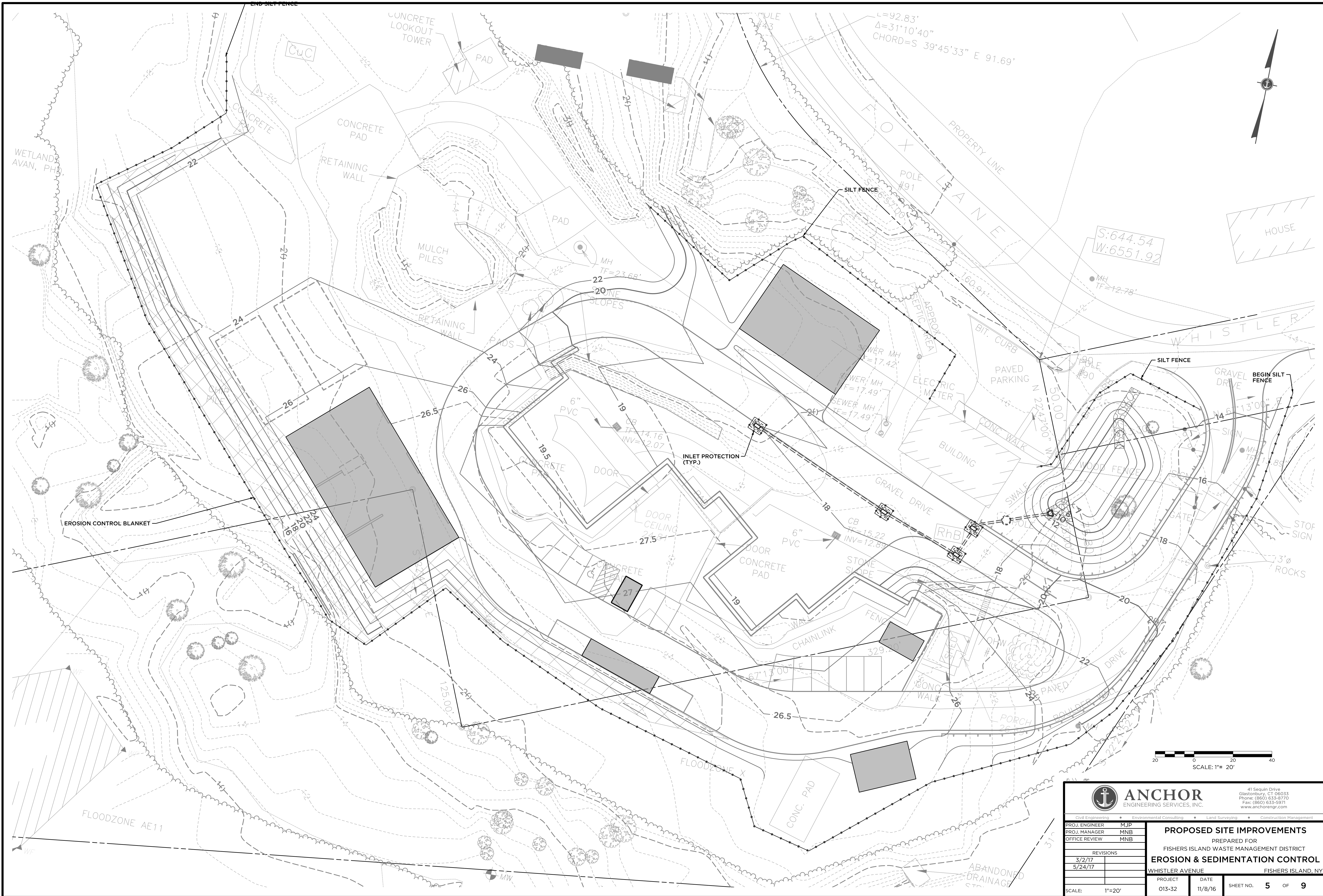
<p><b>ANCHOR</b> ENGINEERING SERVICES, INC.</p> <p><small>Civil Engineering • Environmental Consulting • Land Surveying • Construction Management</small></p> <p>41 Sequin Drive Glastonbury, CT 06033 Phone: (860) 633-9770 Fax: (860) 633-9971 www.anchorengr.com</p>		<p><b>PROPOSED SITE IMPROVEMENTS</b></p> <p>PREPARED FOR FISHERS ISLAND WASTE MANAGEMENT DISTRICT</p> <p><b>SITE LAYOUT &amp; UTILITY PLAN</b></p>					
		<p>PROJECT: 013-32</p> <p>DATE: 11/8/16</p> <p>SHEET NO. <b>3</b> OF <b>9</b></p>	<p>WHISTLER AVENUE FISHERS ISLAND, NY</p>				
<p>PROJ. ENGINEER: MJP</p> <p>PROJ. MANAGER: MNB</p> <p>OFFICE REVIEW: MNB</p>	<p>REVISIONS</p> <table border="1"> <tr> <td>3/2/17</td> <td></td> </tr> <tr> <td>5/24/17</td> <td></td> </tr> </table>			3/2/17		5/24/17	
3/2/17							
5/24/17							





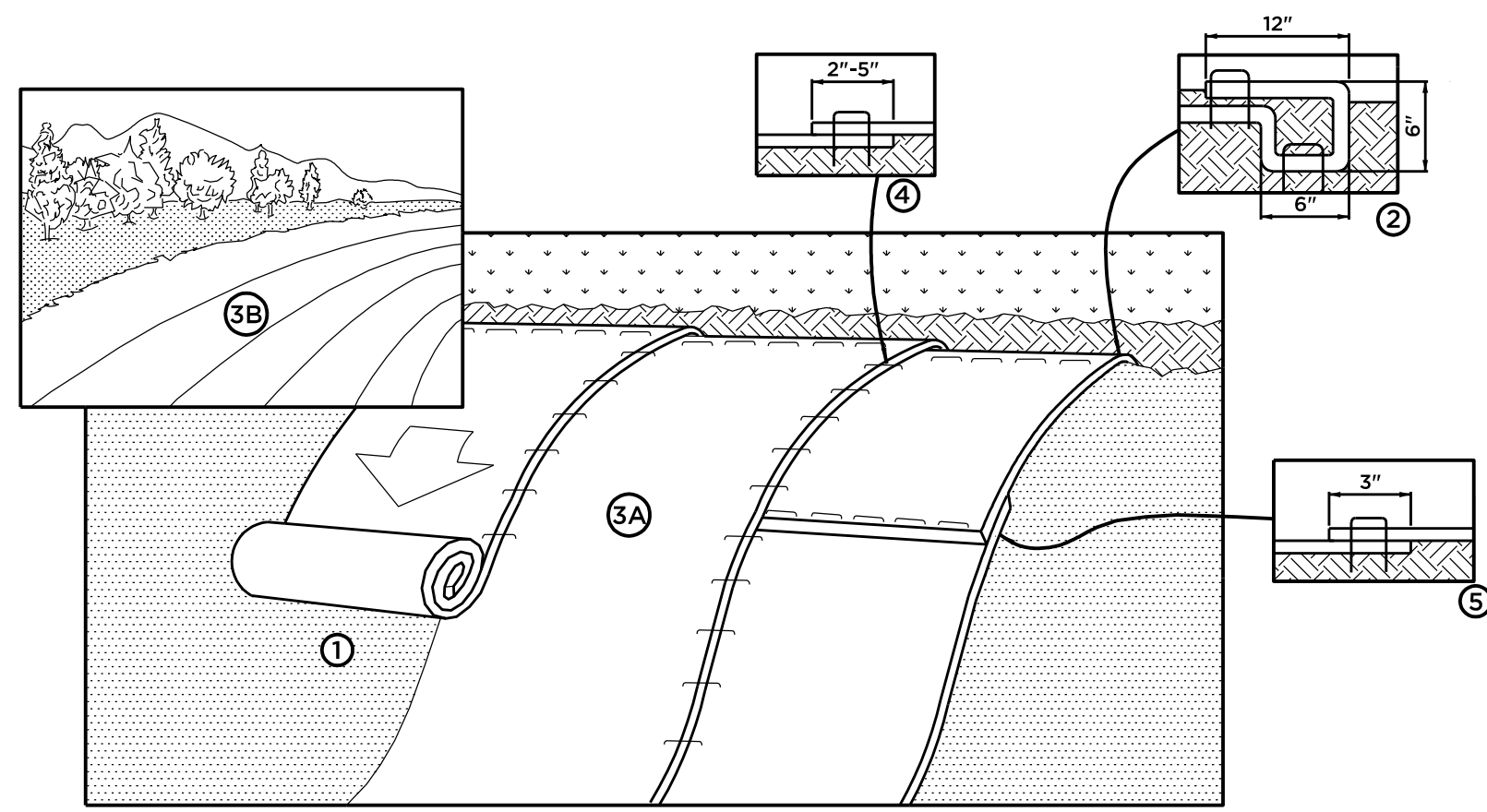
<b>ANCHOR</b> ENGINEERING SERVICES, INC.		41 Sequin Drive Glastonbury, CT 06033 Phone: (860) 633-9770 Fax: (860) 633-5971 www.anchorengr.com	
		Civil Engineering • Environmental Consulting • Land Surveying • Construction Management	
PROJ. ENGINEER: MJP PROJ. MANAGER: MNB OFFICE REVIEW: MNB	<b>PROPOSED SITE IMPROVEMENTS</b> PREPARED FOR FISHERS ISLAND WASTE MANAGEMENT DISTRICT <b>GRADING &amp; DRAINAGE DESIGN</b>		
REVISIONS 3/2/17 5/24/17	PROJECT: WHISTLER AVENUE DATE: 11/8/16		SHEET NO. <b>4</b> OF <b>9</b>
SCALE: 1"=20'	PROJECT: 013-32	DATE: 11/8/16	SHEET NO. <b>4</b> OF <b>9</b>





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		Civil Engineering • Environmental Consulting • Land Surveying • Construction Management	
PROJ. ENGINEER: MJP PROJ. MANAGER: MNB OFFICE REVIEW: MNB	<b>PROPOSED SITE IMPROVEMENTS</b> PREPARED FOR <b>FISHERS ISLAND WASTE MANAGEMENT DISTRICT</b> <b>EROSION &amp; SEDIMENTATION CONTROL</b>		
REVISIONS			
3/2/17			
5/24/17			
PROJECT: 013-32		DATE: 11/8/16	SHEET NO. 5 OF 9
SCALE: 1"=20'			

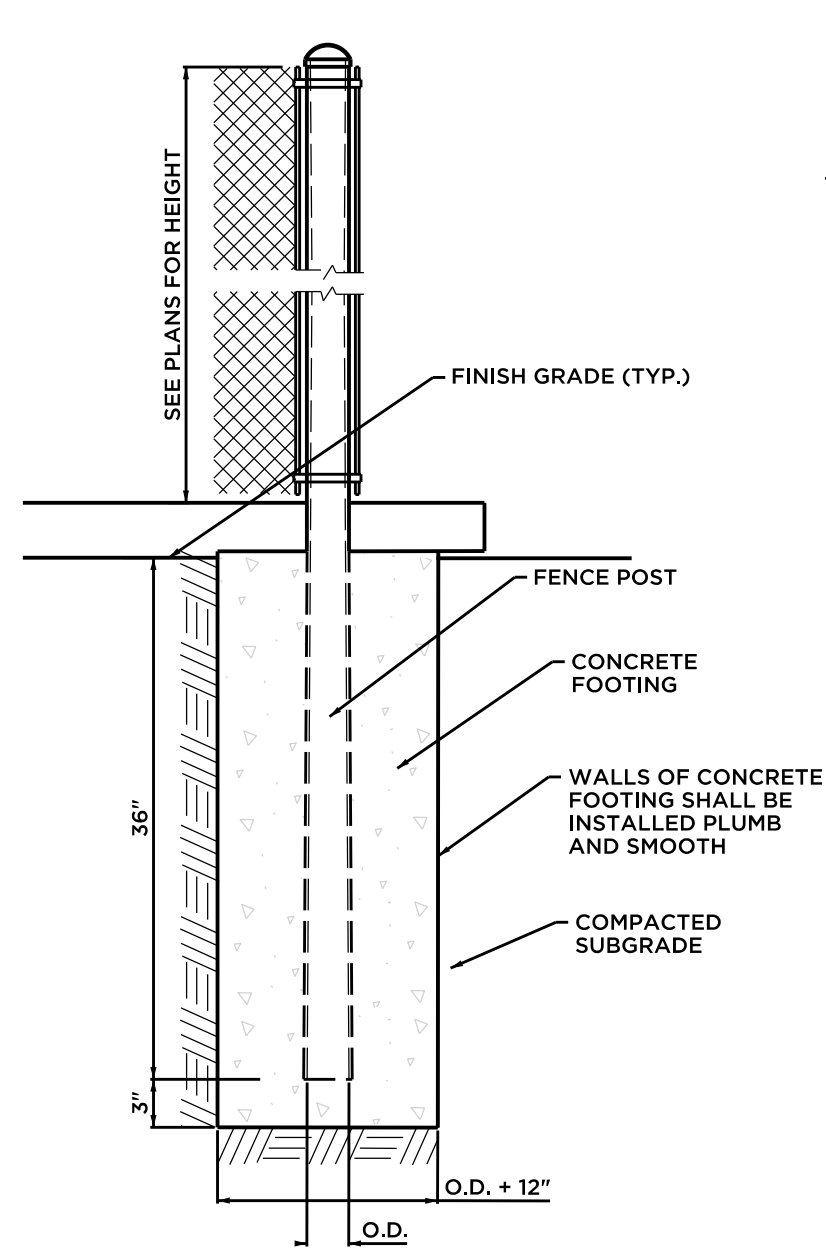




- NOTES:**
1. PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECP'S), INCLUDING AND NECESSARY APPLICATION OF LIME, FERTILIZER AND SEED.
  2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE RECP'S IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF RECP'S EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE RECP'S WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF RECP'S BACK OVER SEED AND COMPACTED SOIL. SECURE RECP'S OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE RECP'S.
  3. ROLL THE RECP'S (A) DOWN OR (B) HORIZONTALLY ACROSS THE SLOPE. RECP'S WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECP'S MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
  4. THE EDGES OF PARALLEL RECP'S MUST BE STAPLED WITH APPROXIMATELY 2'-5" OVERLAP DEPENDING ON RECP'S TYPE.
  5. CONSECUTIVE RECP'S SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROX. 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE RECP'S WIDTH.

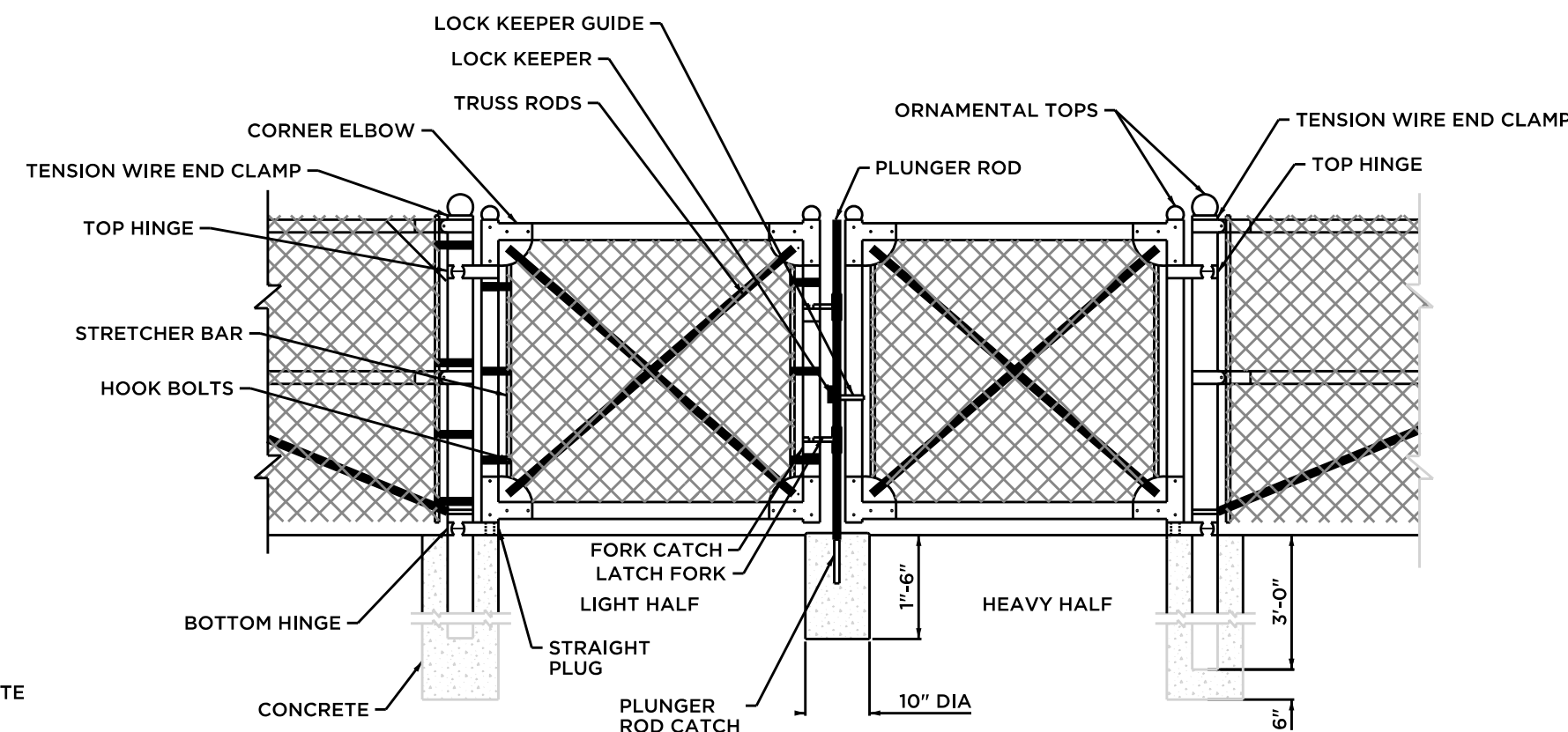
**EROSION CONTROL BLANKET SLOPE INSTALLATION**

NOT TO SCALE



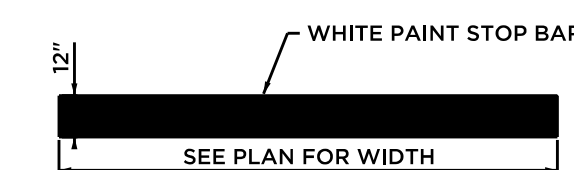
**CHAINLINK FENCE & POST DETAIL**

NOT TO SCALE



**CHAINLINK SWINGING GATE**

NOT TO SCALE



**STOP BAR**

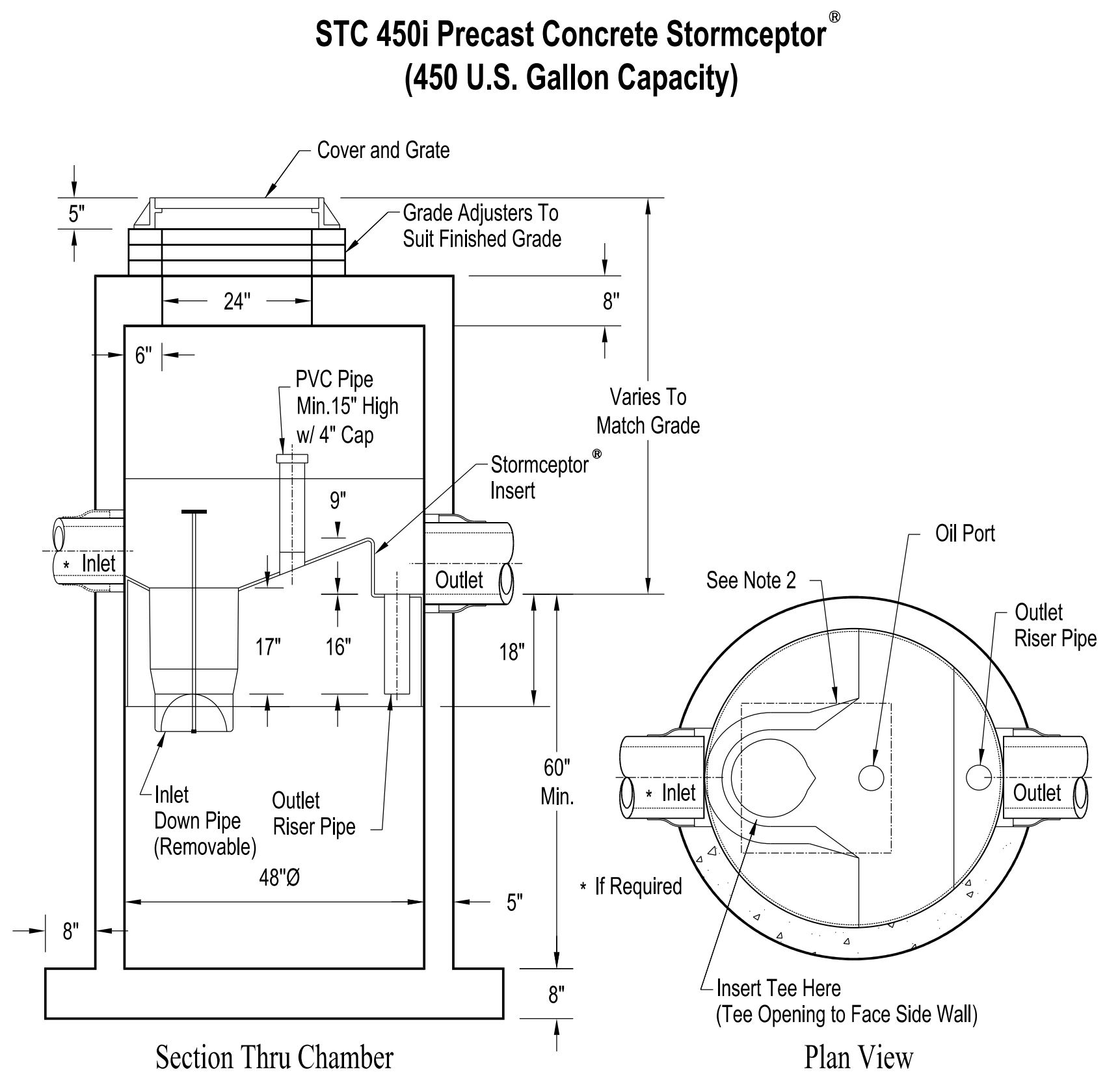
NOT TO SCALE



BACKGROUND: RED  
LEGEND: SILVER

**STOP SIGN**

NOT TO SCALE



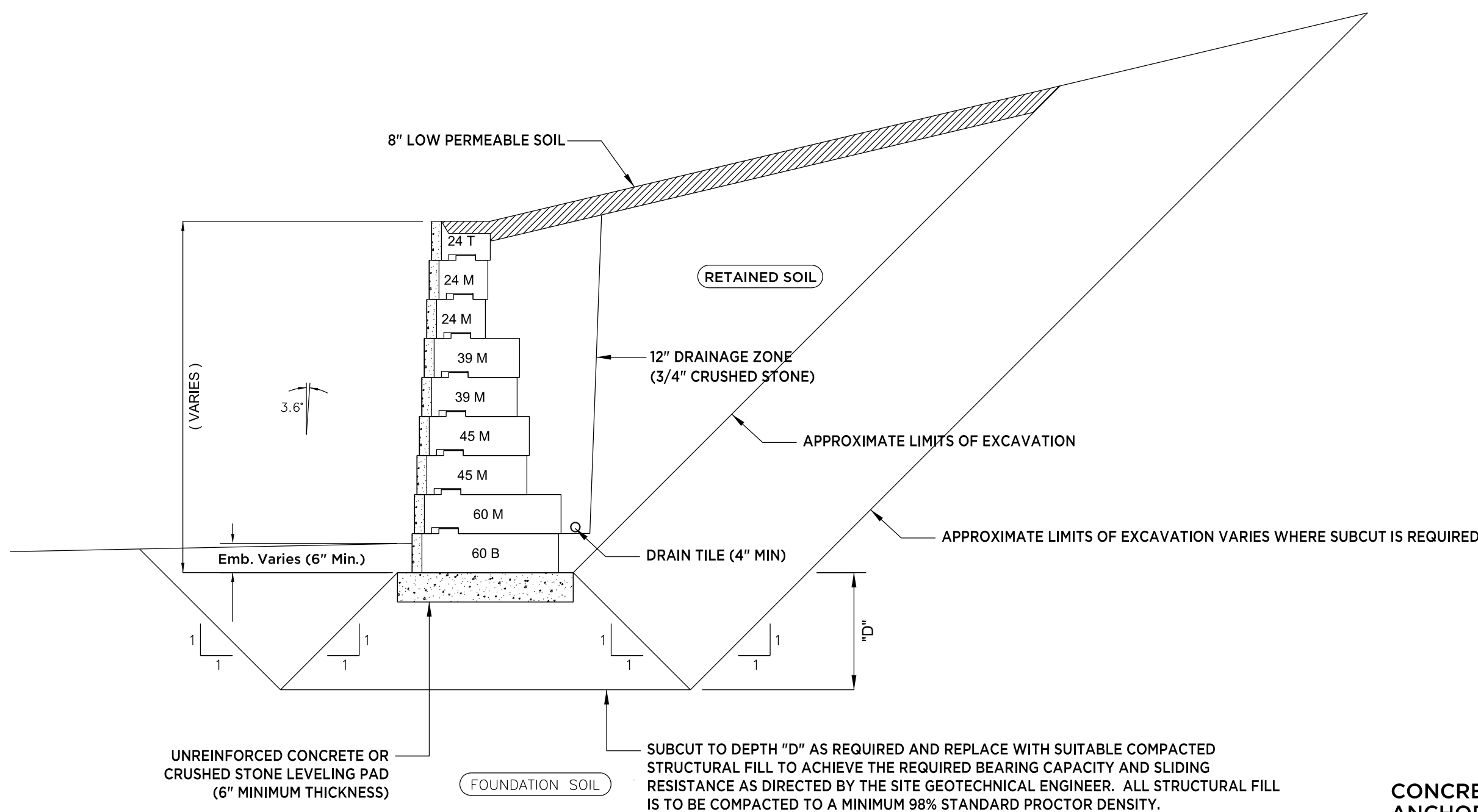
**STC 450i Precast Concrete Stormceptor®**  
(450 U.S. Gallon Capacity)

**Section Thru Chamber**

**Plan View**

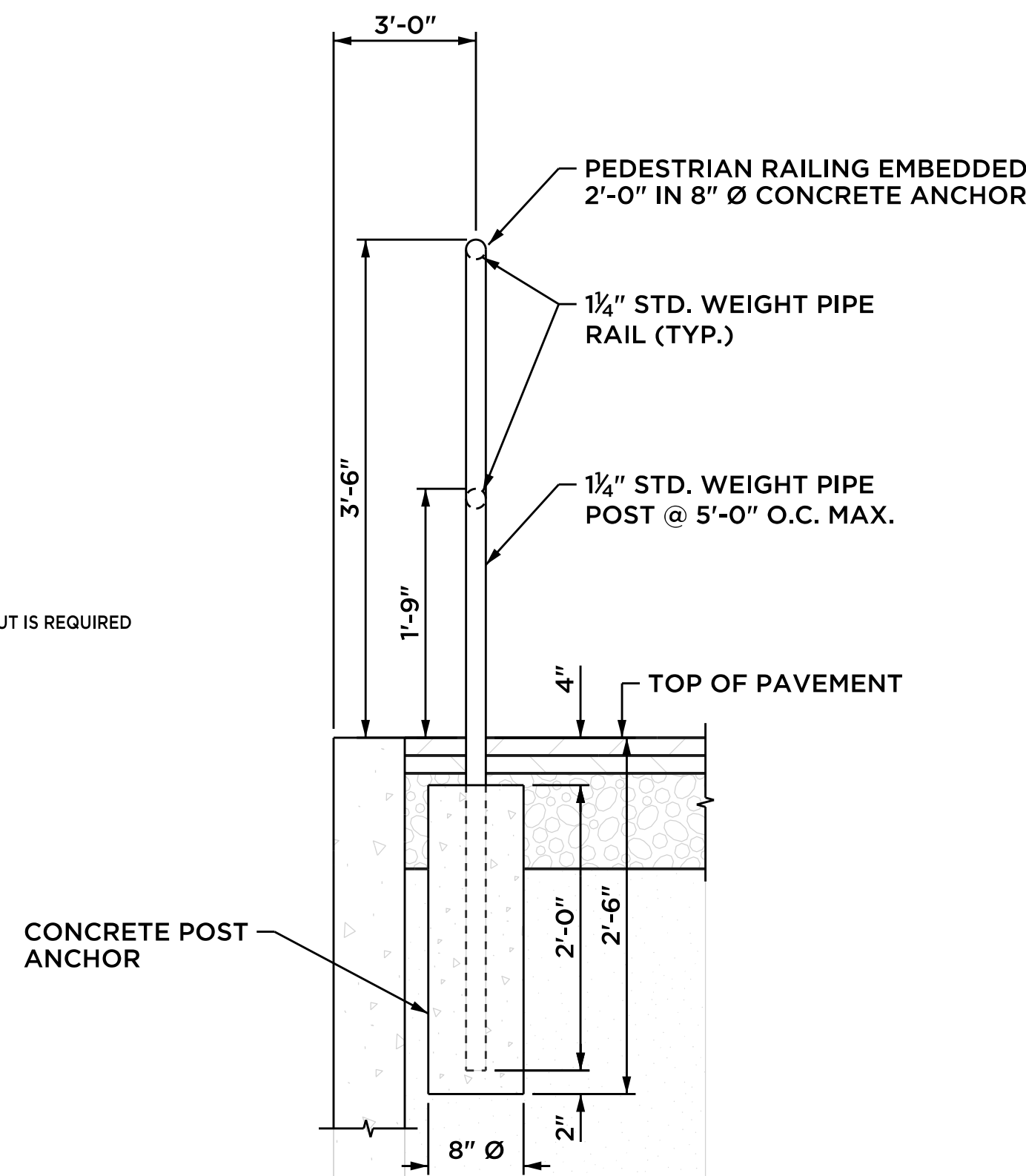
Notes:

1. The Use Of Flexible Connection is Recommended at The Inlet and Outlet Where Applicable.
2. The Cover Should be Positioned Over The Inlet Drop Pipe and The Oil Port.
3. The Stormceptor System is protected by one or more of the following U.S. Patents: #5753115, #5849181, #6068765, #6371690, #7582216, #7666303.
4. Contact a Concrete Pipe Division representative for further details not listed on this drawing.



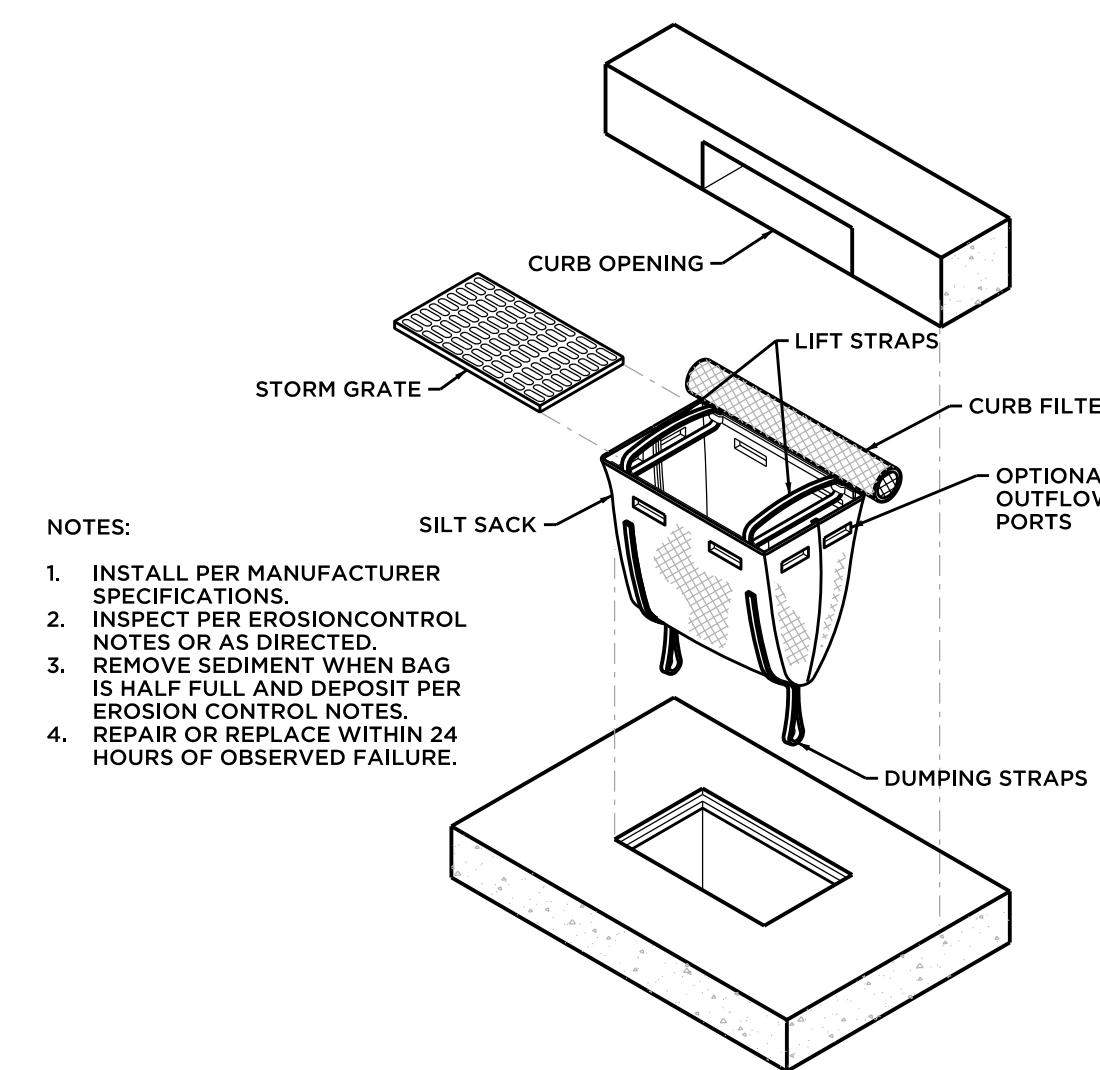
**CONCRETE BLOCK GRAVITY RETAINING WALL DETAIL**

NOT TO SCALE



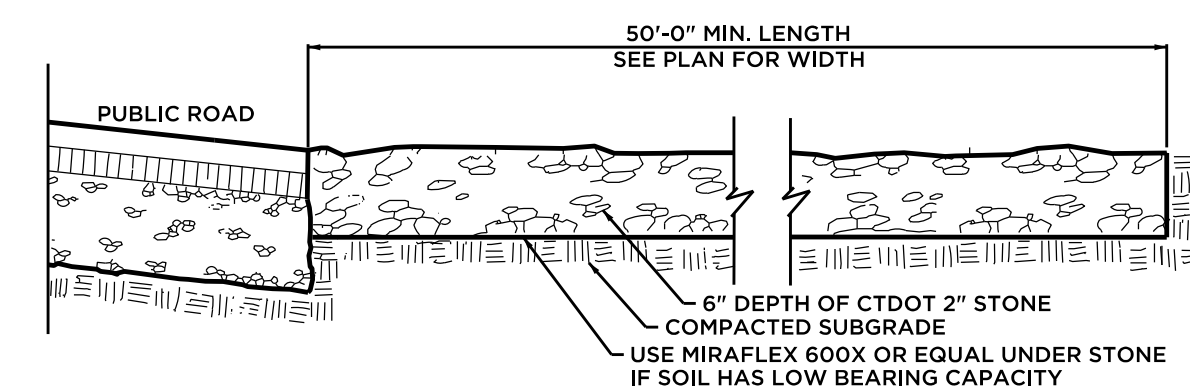
**PEDESTRIAN GUARD RAIL DETAIL**

SCALE: 1"=1'-0"



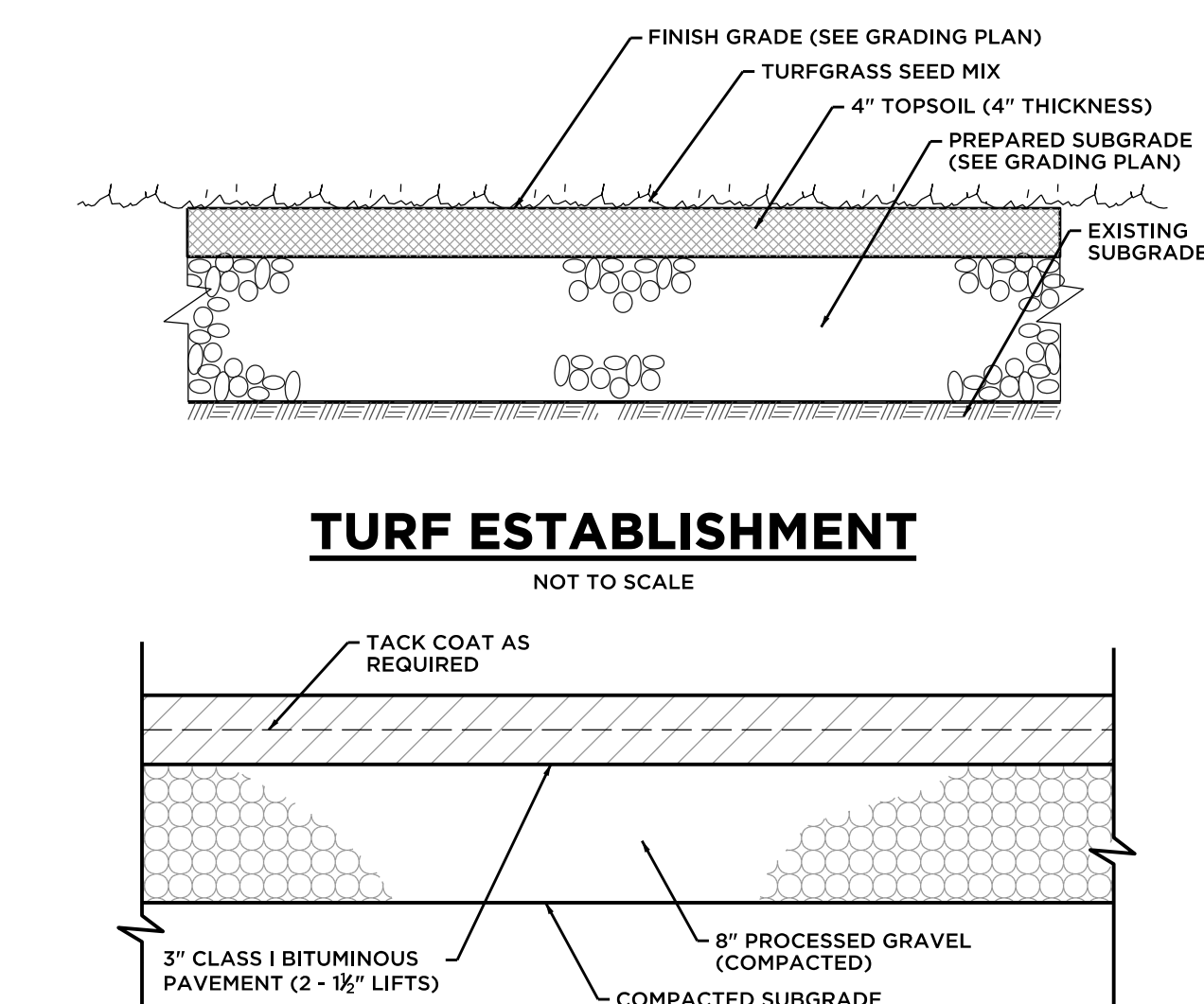
**INLET SEDIMENT CONTROL DEVICE**

NOT TO SCALE



**ANTI-TRACKING PAD DETAIL**

NOT TO SCALE

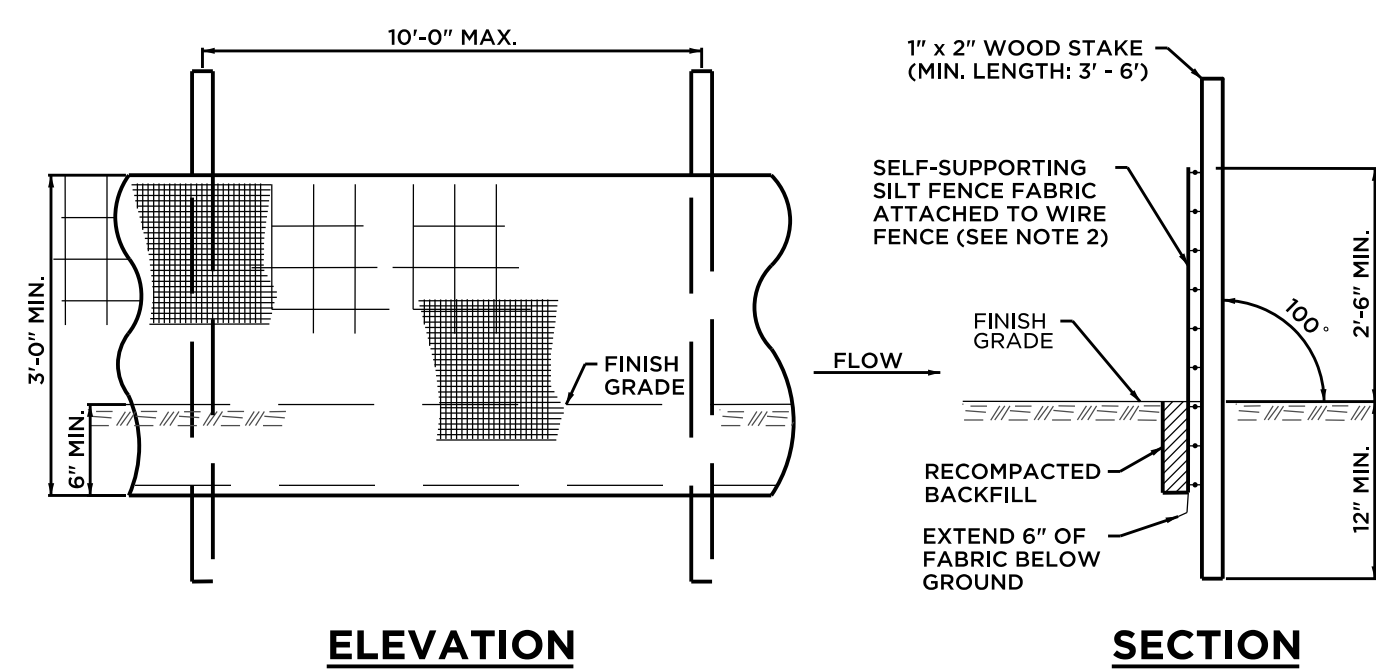


**TURF ESTABLISHMENT**

NOT TO SCALE

**BITUMINOUS PAVEMENT**

NOT TO SCALE



NOTES:

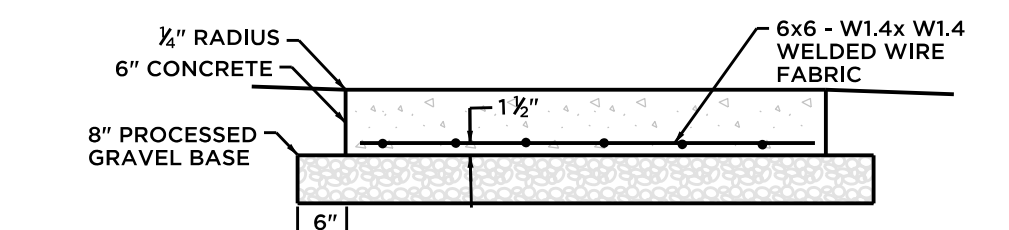
1. INSTALL SILT FENCE & WOOD STAKES AS RECOMMENDED BY MANUFACTURER.
2. SILT FENCE SUBJECT TO HEAVY LOADS SHALL BE REINFORCED WITH FARM FENCING & STEEL POSTS (0.5 # STEEL/L.F.). THE MINIMUM POST LENGTH SHALL BE 5'-0".
3. SILT FENCE FABRIC SHALL BE A PERVIOUS SHEET OF WOVEN PROPYLENE, NYLON, POLYESTER OR POLYETHYLENE FILAMENTS AND SHALL BE CERTIFIED BY THE MANUFACTURER OR SUPPLIER.

**ELEVATION**

**SECTION**

**SILT FENCE**

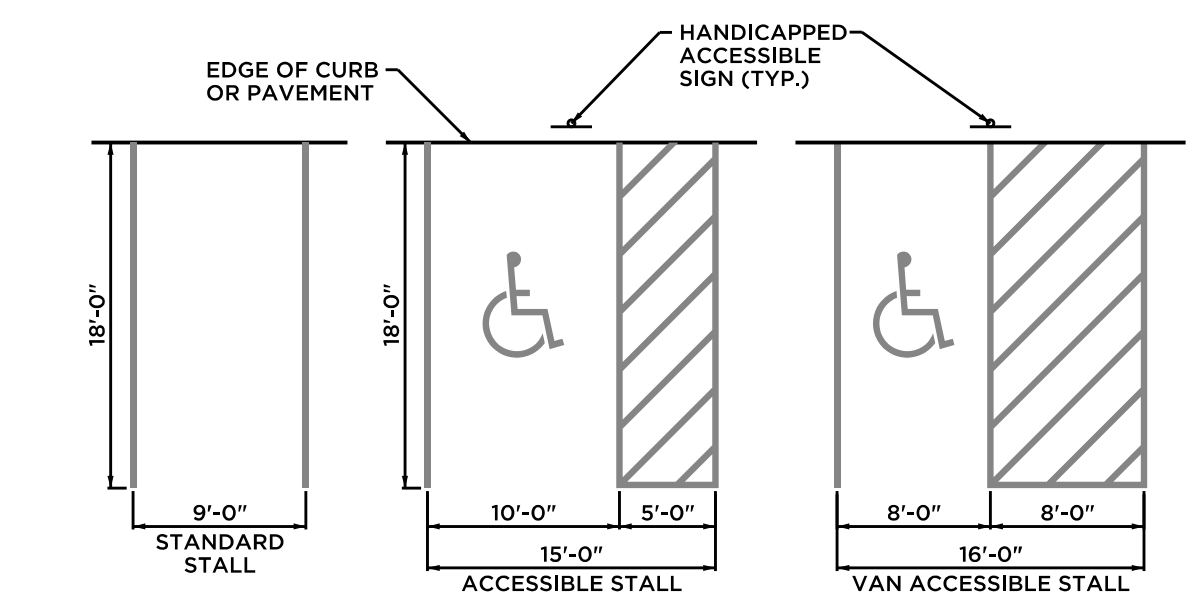
NOT TO SCALE



1. ALL CONCRETE DUMPSTER PADS SHALL BE CONSTRUCTED OF PORTLAND CEMENT CONCRETE.
2. ALL PADS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE DETAILS & SPECIFICATIONS PROVIDED.
3. CONCRETE SURFACE SHALL BE A COARSE BROOM FINISH, TRANSVERSE TO THE SLOPE OF THE PAD.
4. CARE SHALL BE TAKEN TO ASSURE UNIFORM GRADE, FREE OF SAGS AND ABRUPT GRADE CHANGES.

**CONCRETE PAD**

NOT TO SCALE

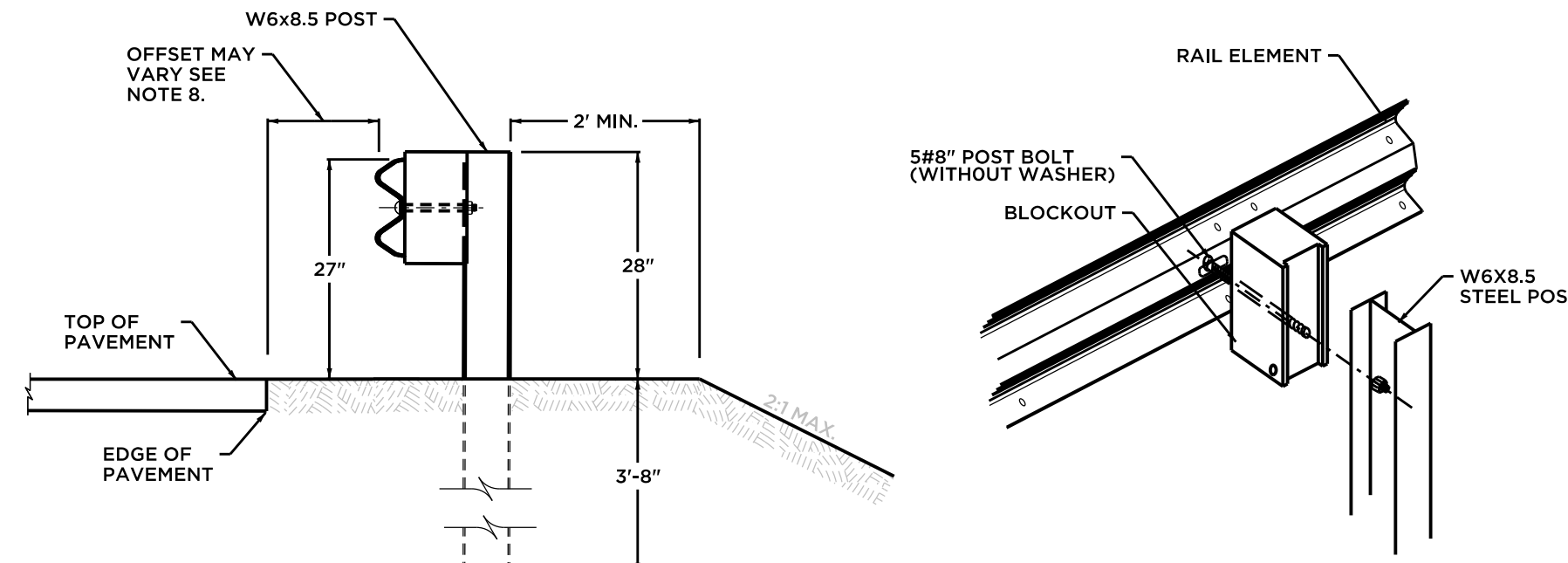


**PARKING STALL DETAILS**

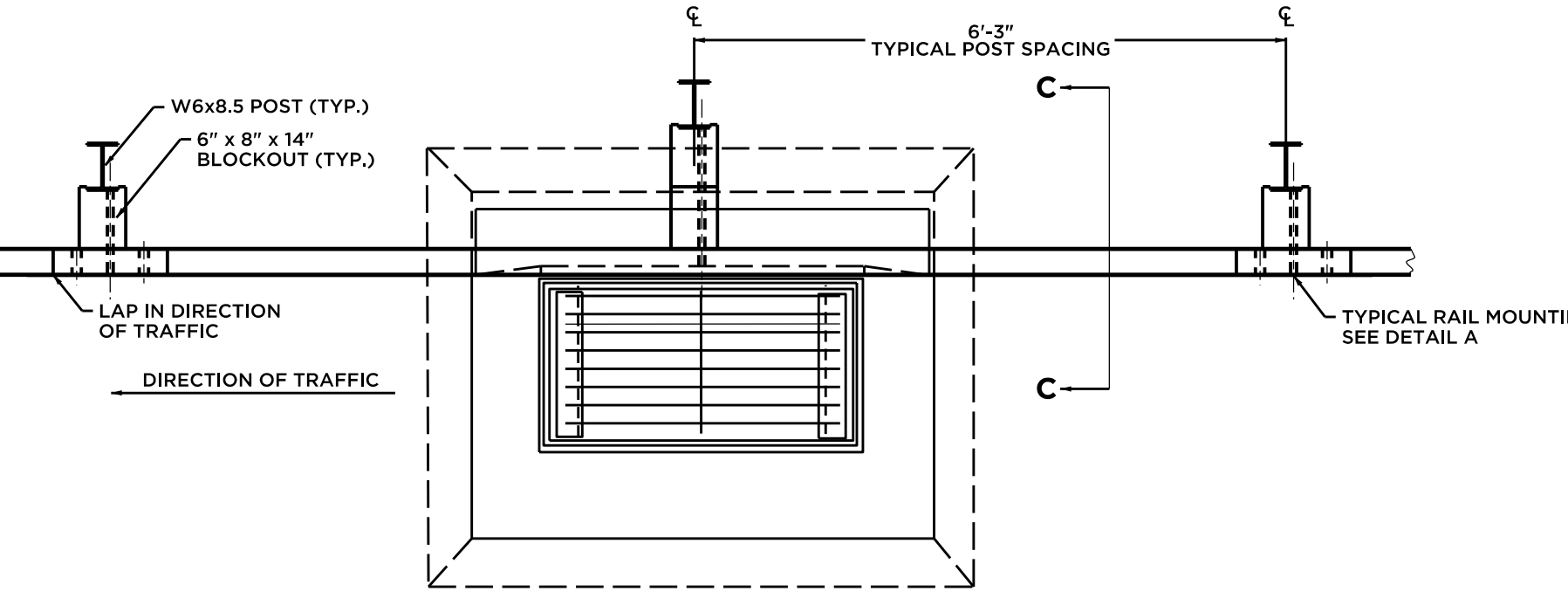
NOT TO SCALE

Anchor Engineering Services, Inc. logo and contact information: 41 Sequin Drive, Glastonbury, CT 06033, Phone: (860) 633-9370, Fax: (860) 633-5971, www.anchorengr.com.

PROJ. ENGINEER	MJP	PROPOSED SITE IMPROVEMENTS
PROJ. MANAGER	MNB	
OFFICE REVIEW	MNB	
PREPARED FOR FISHERS ISLAND WASTE MANAGEMENT DISTRICT		
DETAILS		
WHISTLER AVENUE, FISHERS ISLAND, NY		
PROJECT	DATE	SHEET NO. 6 OF 9
SCALE: NOT TO SCALE	013-32	11/8/16

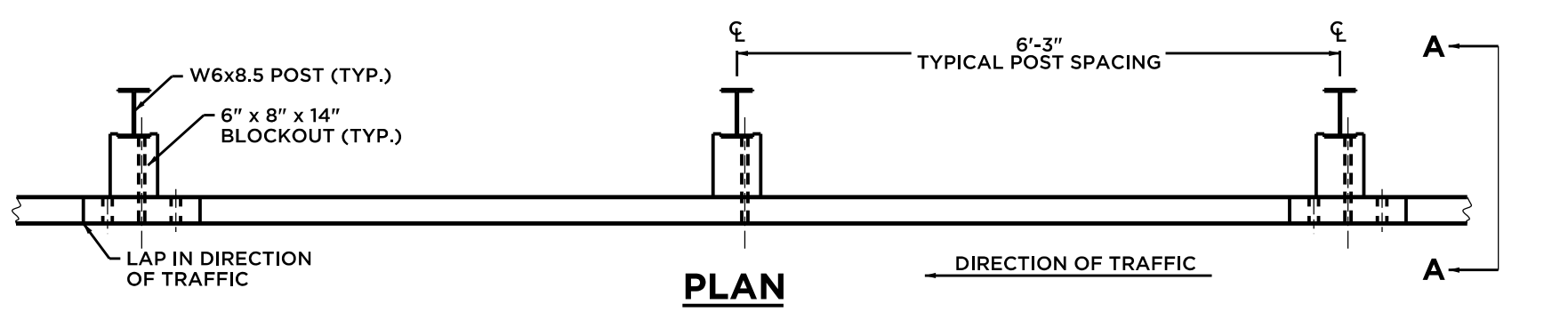


**SECTION A-A WITHOUT CURBING**  
**DETAIL A RAIL MOUNTING**

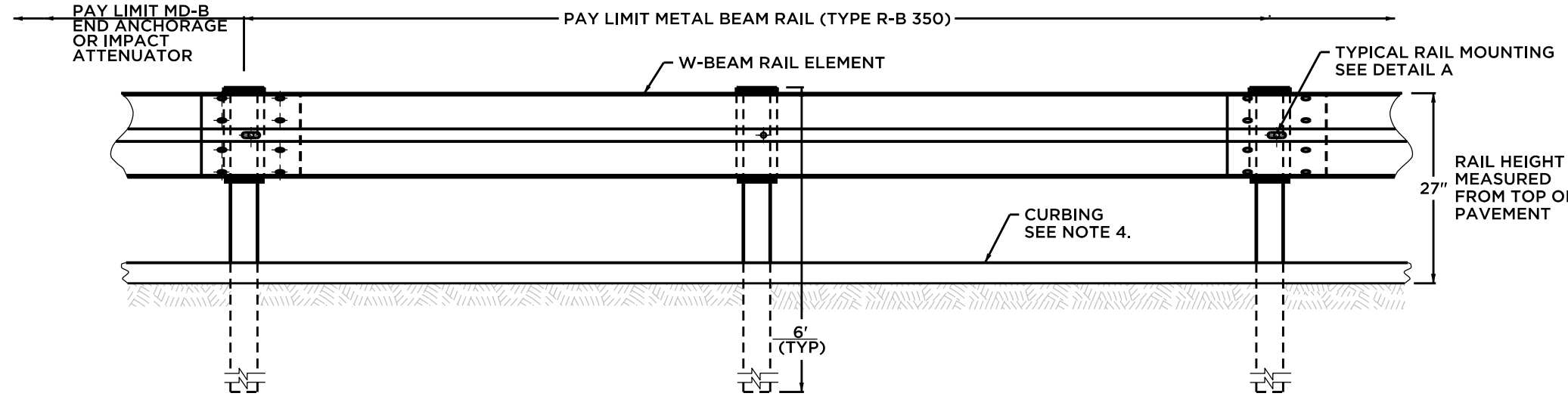


**PLAN**

**METAL BEAM RAIL WITH MULTIPLE BLOCKOUTS TO AVOID UNDERGROUND OR LOW PROFILE OBSTRUCTION**



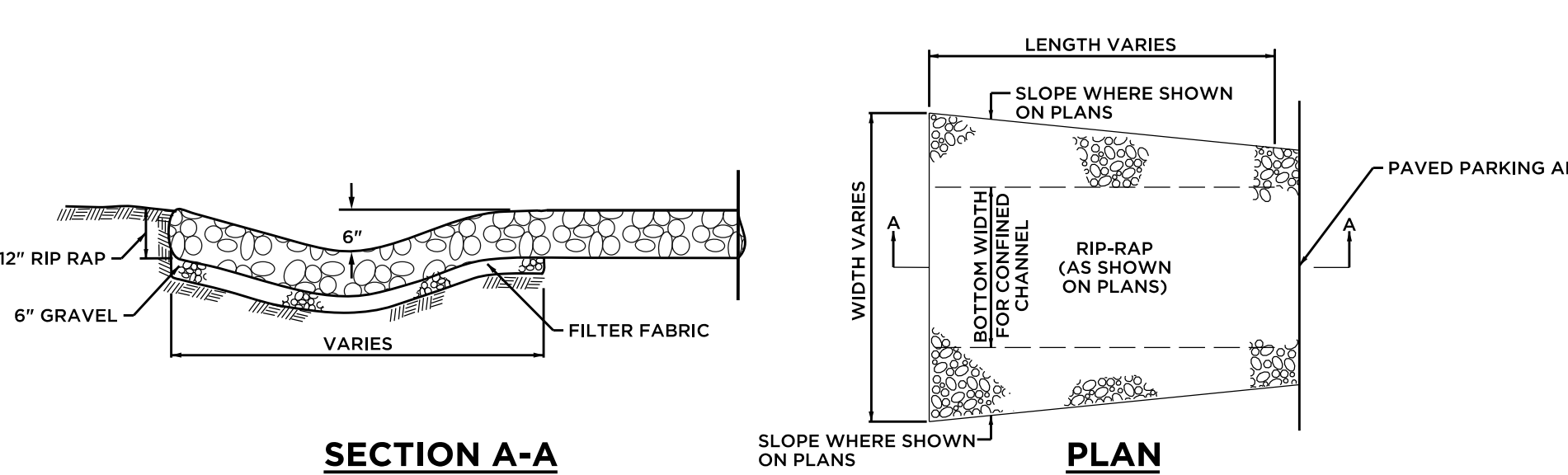
**ELEVATION**



**ELEVATION**

- GENERAL NOTES:**
1. MAXIMUM DESIGN DEFLECTION FOR R-B 350 AND MD-B 350 GUIDERAIL AT THE STANDARD POST SPACING OF 6'-3" IS 4'-3". DEFLECTION REQUIREMENT IS MEASURED FROM THE BACK OF POST TO THE FACE OF OBSTRUCTION.
  2. FOR CURVES WITH RADI OF 150' OR LESS, ALL RAIL MEMBERS SHALL BE SHOP FABRICATED TO THE PROPER RADIUS AND GALVANIZED AFTER FABRICATION.
  3. RAIL HEIGHT WITH CURBING SHALL BE MEASURED FROM THE TOP OF PAVEMENT. FACE OF RAIL ELEMENT SHALL BE PLACED FLUSH WITH THE FACE OF CURBING. ON HIGH SPEED ROADWAYS (> 50mph), 4" CURBING SHALL BE USED IN CONJUNCTION WITH GUIDERAIL. ON LOW SPEED ROADWAYS (< 50mph), 6" CURBING MAY BE USED IN CONJUNCTION WITH GUIDERAIL.
  4. THREE BLOCKOUTS MAY BE USED WITH DESIGN APPROVAL FOR ONE POST ONLY. TWO BLOCKOUTS MAY BE USED FOR A SERIES OF POSTS.
  5. COST OF ADDITIONAL BLOCKOUTS AND LONGER BOLT SHALL BE INCLUDED IN THE BID PRICE PER FOOT OF GUIDERAIL.
  6. WEATHERING STEEL POST WHEN SPECIFIED SHALL BE GALVANIZED A MINIMUM OF 4' TO ALLOW FOR 1" EXPOSED GALVANIZED COATING ABOVE THE GROUND.
  7. GUIDERAIL MAY BE PLACED 1 FOOT OR MORE FROM THE EDGE OF PAVEMENT ONLY ON SLOPES 10:1 OR FLATTER WITHOUT CURBING. IF THE RAIL IS INSTALLED WITHIN 2' OF THE EDGE OF PAVEMENT, THE RAIL HEIGHT IS MEASURED FROM THE SHOULDER SLOPE EXTENDED TO THE RAIL. IF THE RAIL IS INSTALLED BEYOND 2' FROM THE EDGE OF PAVEMENT, THE RAIL HEIGHT IS MEASURED FROM THE GROUND DIRECTLY BELOW THE RAIL.

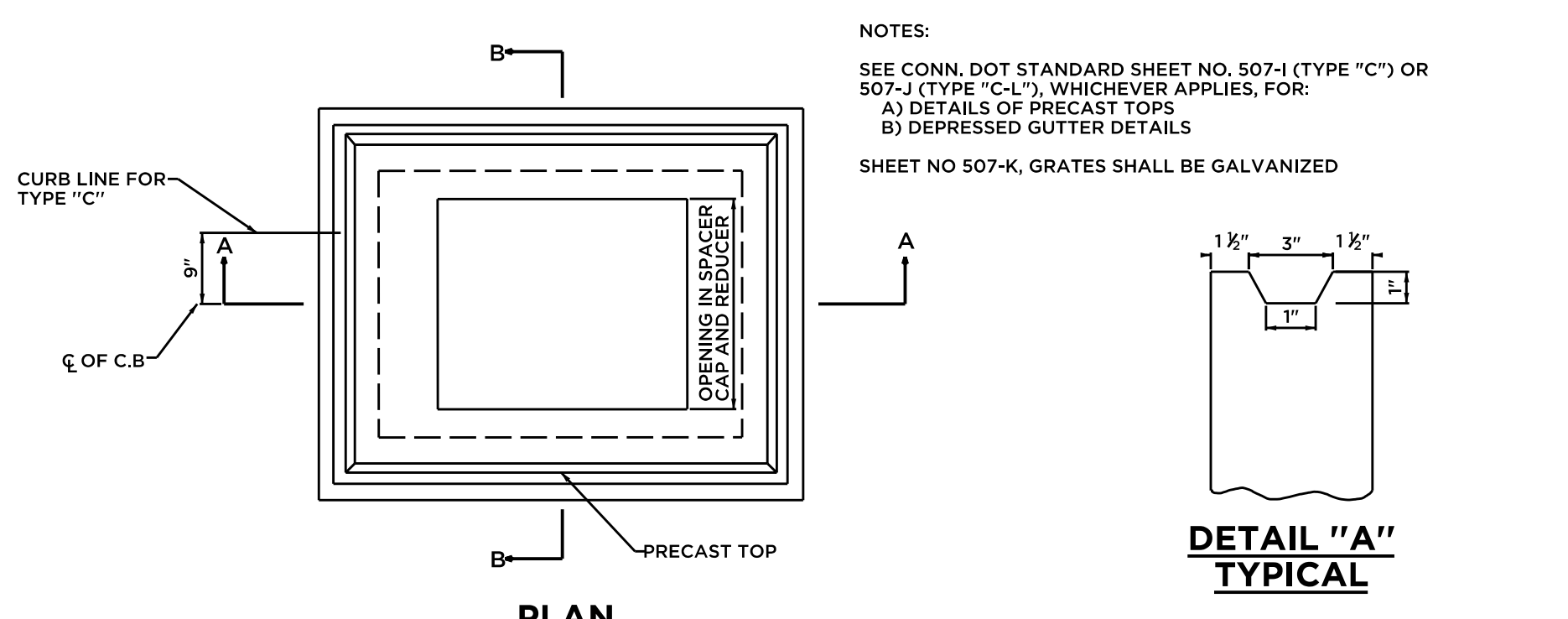
**METAL BEAM RAIL DETAIL (TYPE R-B 350)**



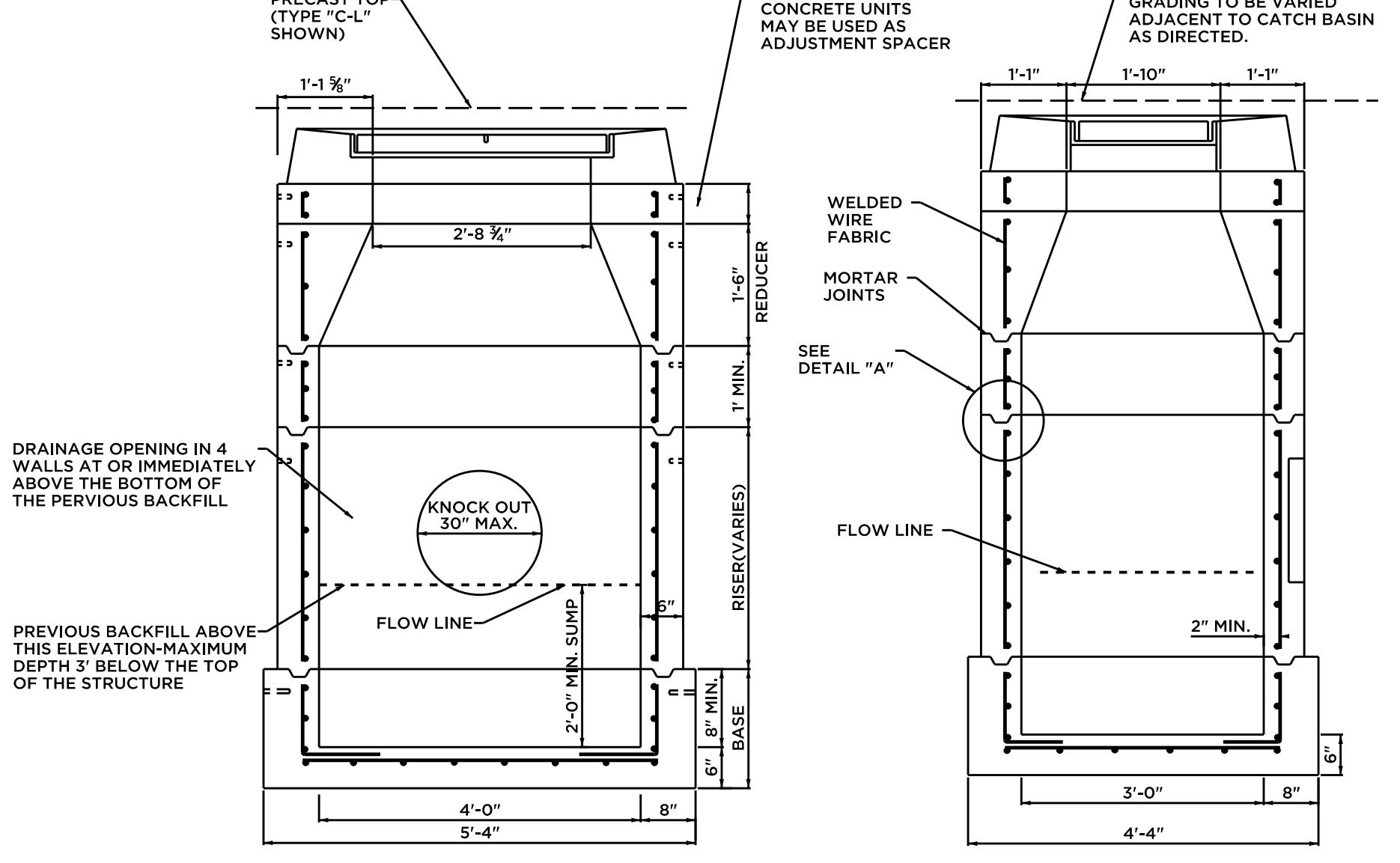
**SECTION A-A**  
**PLAN**

**RIPRAP SPLASH PAD**

NOT TO SCALE

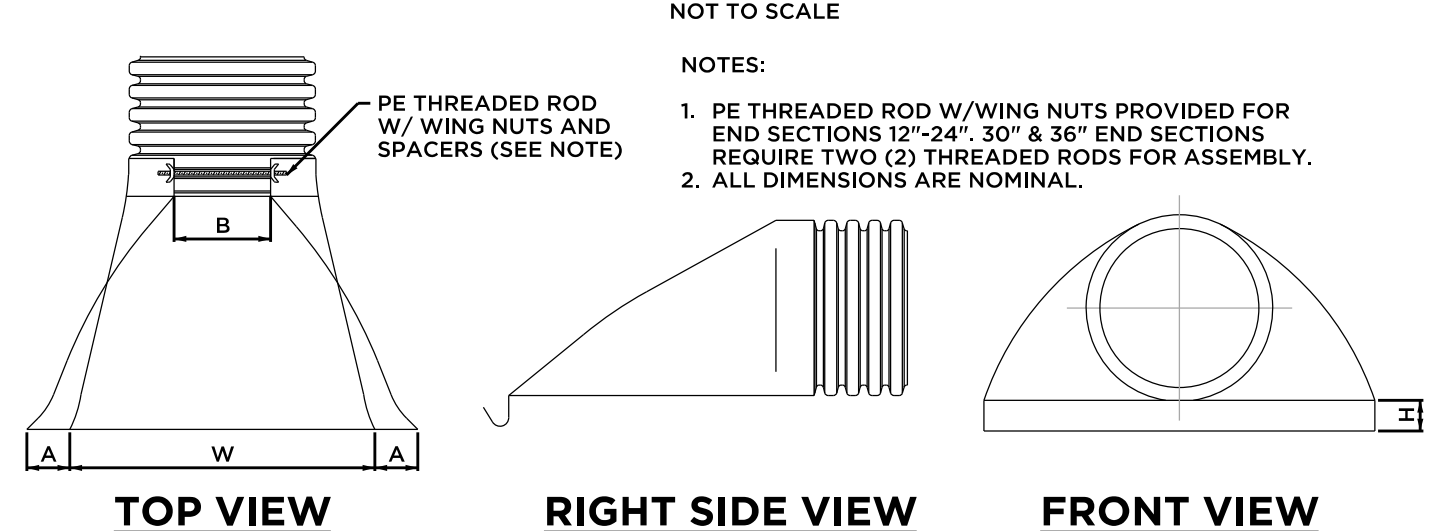


**PLAN**  
**DETAIL "A" TYPICAL**



**SECTION A-A**  
**SECTION B-B**

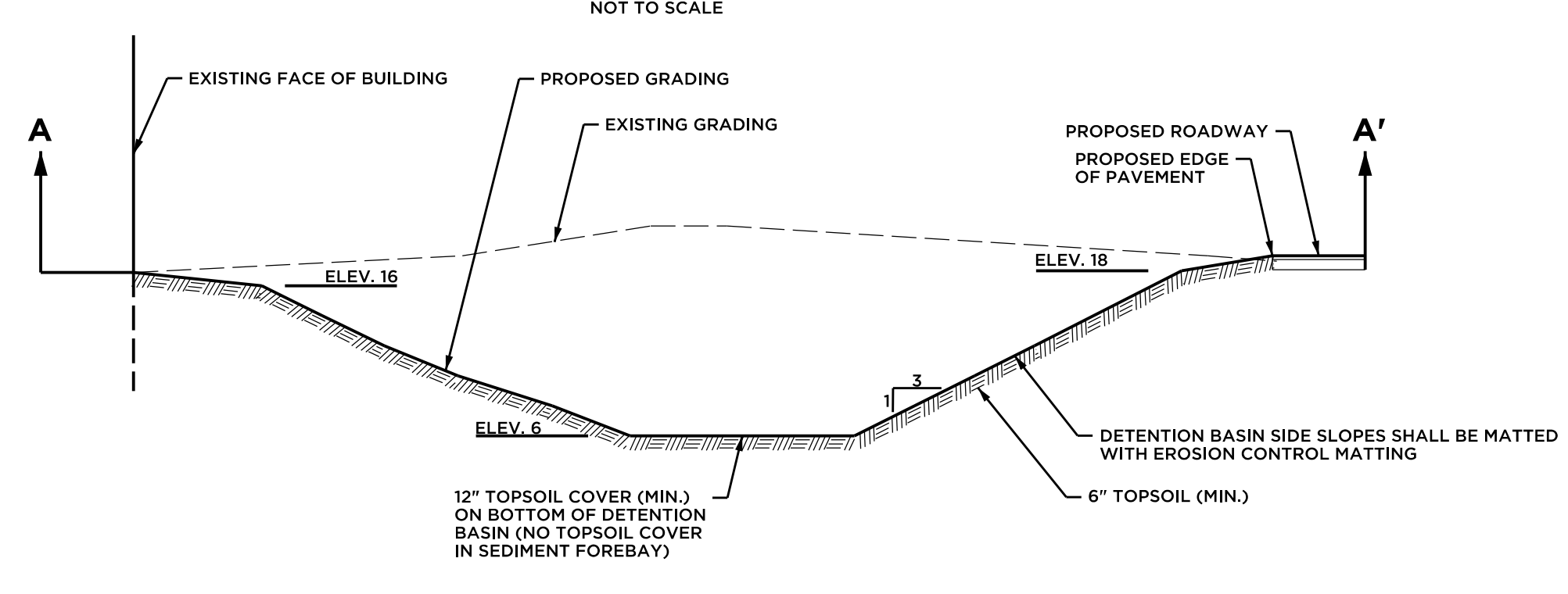
**TYPE "C-L" CATCH BASIN (PRIVATE)**



**TOP VIEW**  
**RIGHT SIDE VIEW**  
**FRONT VIEW**

PART #	PIPE SIZE	A	B (MAX.)	H	L	W
1210NP	12" (300 mm)	6.5" (165 mm)	10.00" (254 mm)	6.5" (165 mm)	25.00" (635 mm)	29.00" (737 mm)
1510NP	15" (375 mm)	6.5" (165 mm)	10.00" (254 mm)	6.5" (165 mm)	25.00" (635 mm)	29.00" (737 mm)
1810NP	18" (450 mm)	7.5" (191 mm)	15.00" (381 mm)	6.5" (165 mm)	32.00" (813 mm)	35.00" (889 mm)
2410NP	24" (600 mm)	7.5" (191 mm)	18.00" (450 mm)	6.5" (165 mm)	36.00" (914 mm)	45.00" (1143 mm)
3015NP	30" (750 mm)	7.5" (191 mm)	12.00" (305 mm)	8.6" (218 mm)	58.00" (1473 mm)	63.00" (1600 mm)
3615NP	36" (900 mm)	7.5" (191 mm)	25.00" (635 mm)	8.6" (218 mm)	58.00" (1473 mm)	63.00" (1600 mm)

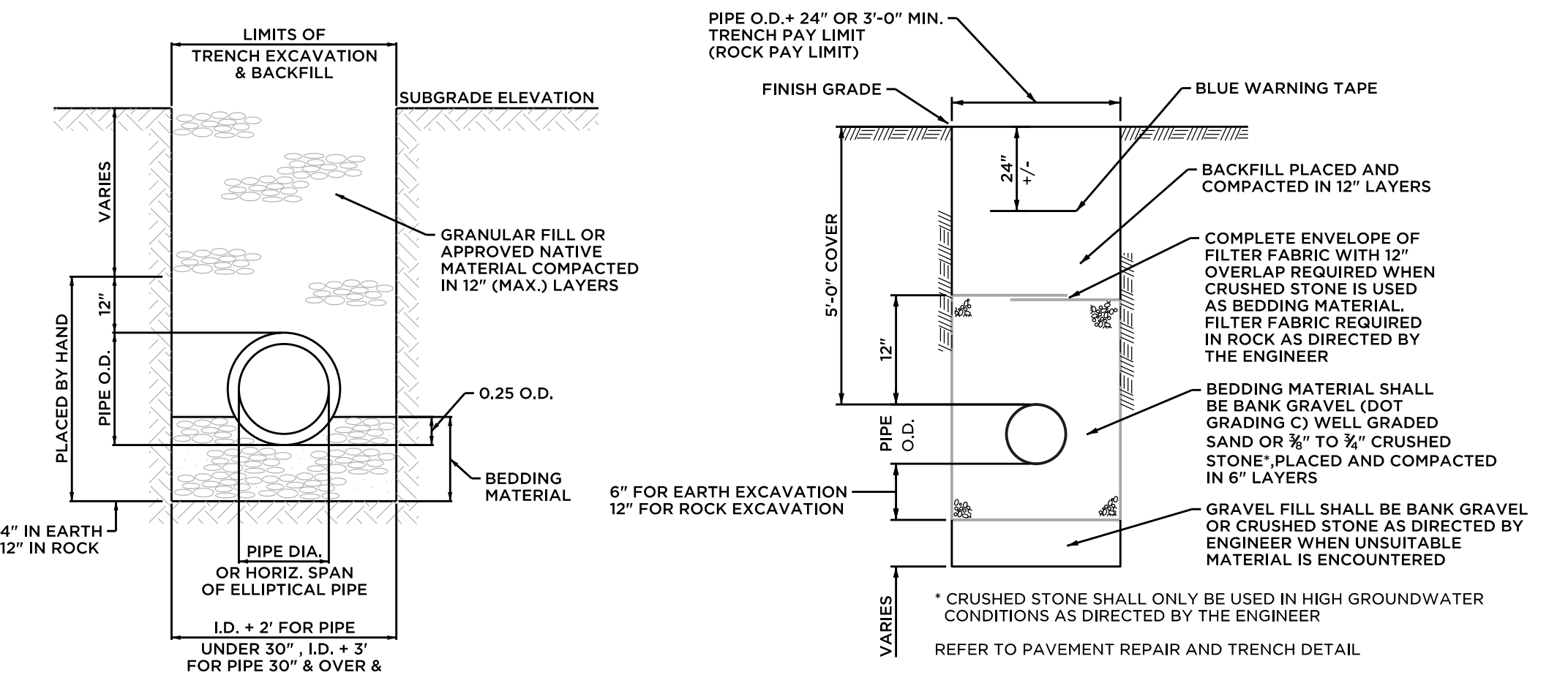
**HDPE - FLARED END DETAIL**



**PROPOSED STORMWATER BASIN CROSS-SECTION A-A'**

NOTE: SEE SHEET 3

1"=10'



**TYPICAL TRENCH DETAIL (WATER)**

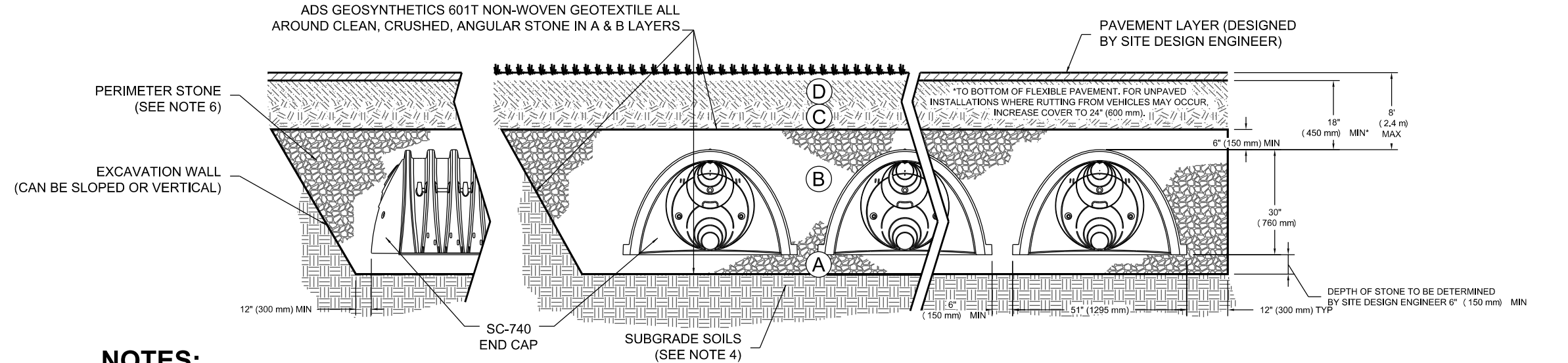
NOT TO SCALE

**TRENCHING & BACKFILLING**

**ACCEPTABLE FILL MATERIALS: STORMTECH SC-740 CHAMBER SYSTEMS**

MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	FINAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 18" (450 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	AASHTO M145 <sup>1</sup> A-1, A-2-4, A-3 OR AASHTO M43 <sup>1</sup> 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 90% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (55 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
B	EMBEDMENT STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	AASHTO M43 <sup>1</sup> 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SURGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	AASHTO M43 <sup>1</sup> 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. <sup>2, 3</sup>

- PLEASE NOTE:**
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
  2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) MAX LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
  3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.



- NOTES:**
1. SC-740 CHAMBERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F2418 "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS", OR ASTM F2822 "STANDARD SPECIFICATION FOR POLYETHYLENE (PE) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
  2. STORMTECH CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
  3. "ACCEPTABLE FILL MATERIALS" TABLE ABOVE PROVIDES MATERIAL LOCATIONS, DESCRIPTIONS, GRADATIONS, AND COMPACTION REQUIREMENTS FOR FOUNDATION, EMBEDMENT, AND FILL MATERIALS.
  4. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
  5. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
  6. ONCE LAYER 'C' IS PLACED, ANY SOIL MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL. REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.

**STORMTECH SC-740 DETAIL**

NOT TO SCALE

**ANCHOR ENGINEERING SERVICES, INC.**

41 Sequin Drive  
Glastonbury, CT 06033  
Phone: (860) 633-9370  
Fax: (860) 633-5971  
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PROJ. ENGINEER: MJP  
PROJ. MANAGER: MNB  
OFFICE REVIEW: MNB

**PROPOSED SITE IMPROVEMENTS**  
PREPARED FOR  
FISHERS ISLAND WASTE MANAGEMENT DISTRICT

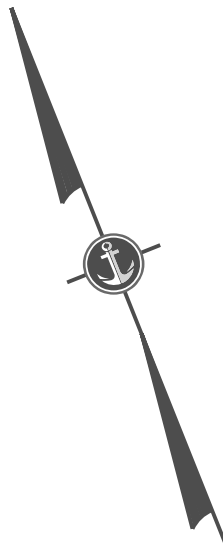
**DETAILS**

REVISIONS:  
3/2/17  
5/24/17

WHISTLER AVENUE  
FISHERS ISLAND, NY

PROJECT: 013-32  
DATE: 11/8/16  
SHEET NO. 7 OF 9

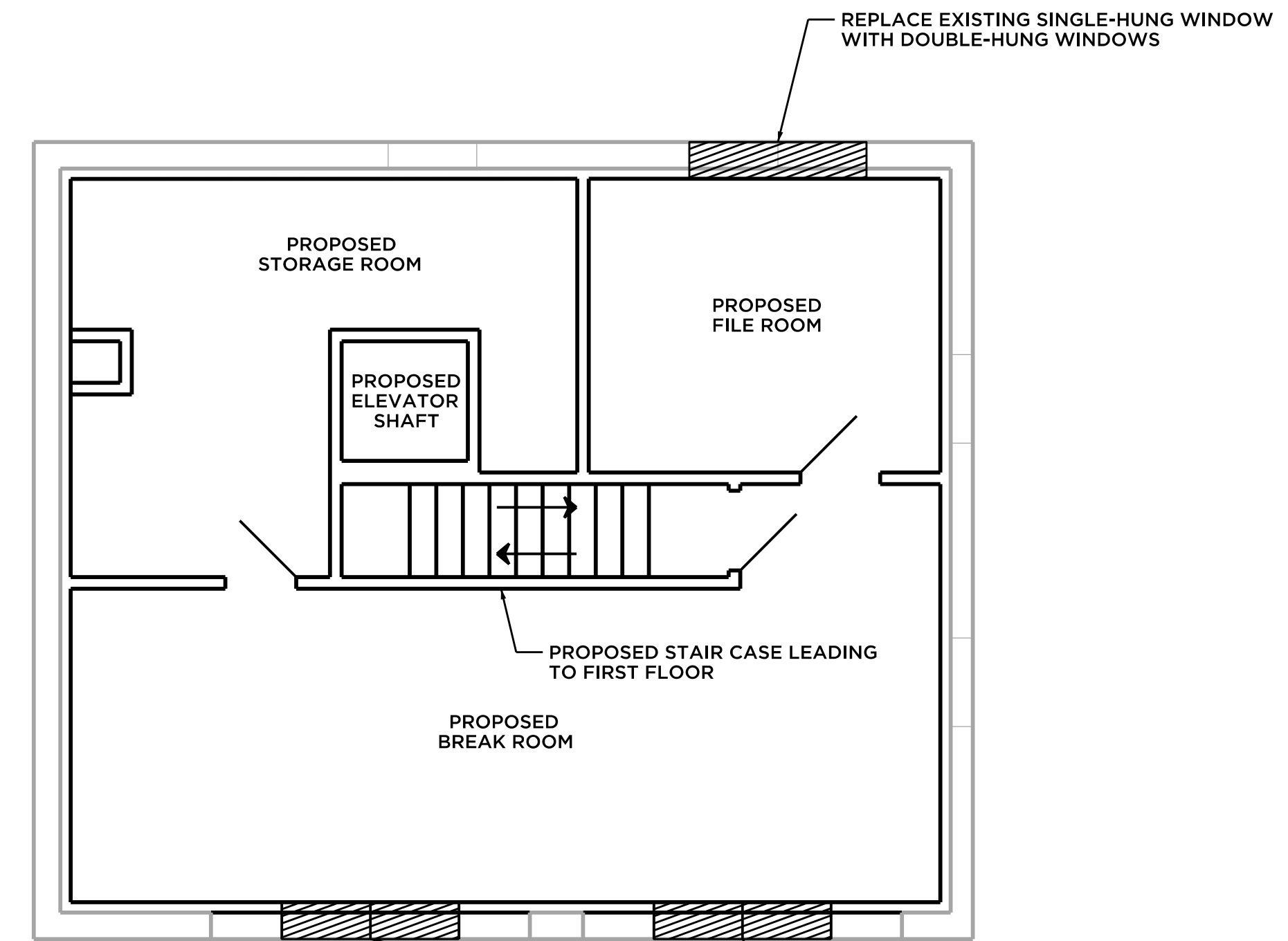




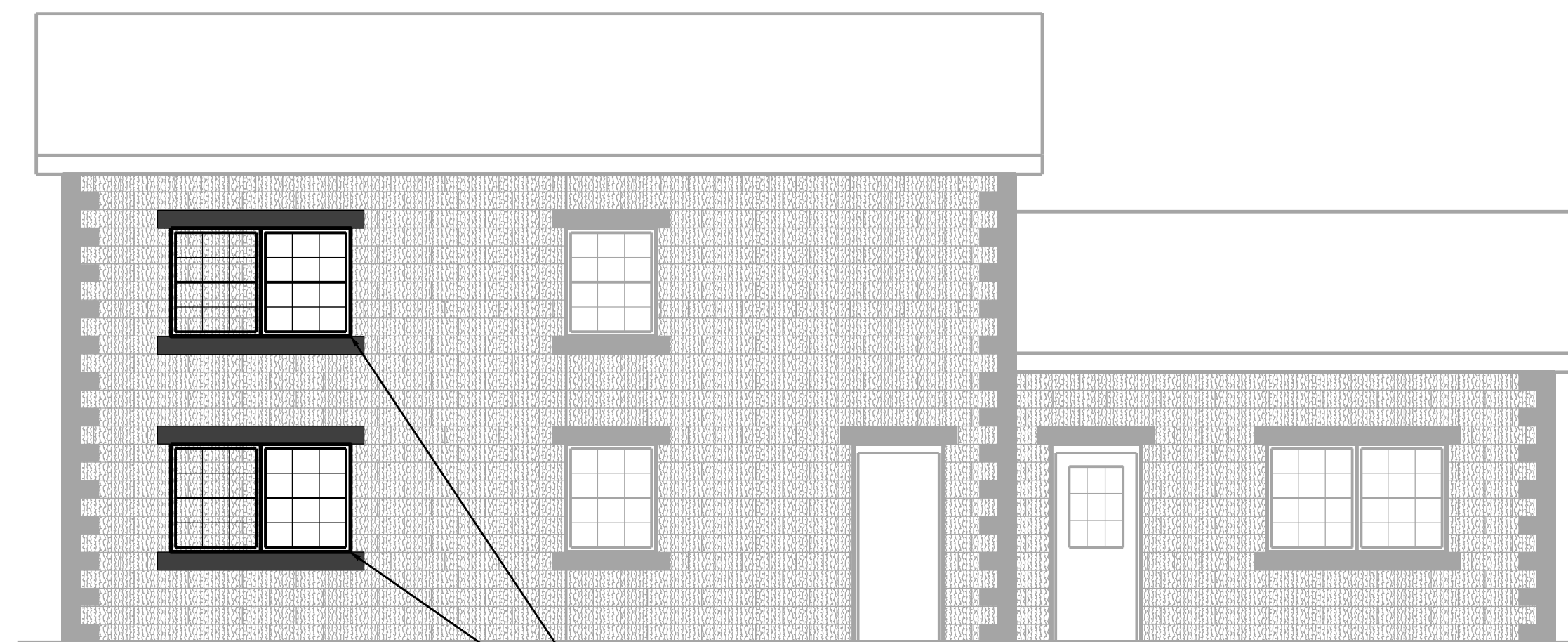
PROPOSED DOUBLE-HUNG WINDOWS  
(TYPICAL OF 4)

EXISTING BAY DOORS TO BE REMOVED. BUILDING FACE TO  
BE RECONSTRUCTED TO ACCEPT PROPOSED DOUBLE-HUNG  
WINDOWS. NEW EXTERIOR TO MATCH EXISTING

**SOUTH FACE OF BUILDING**

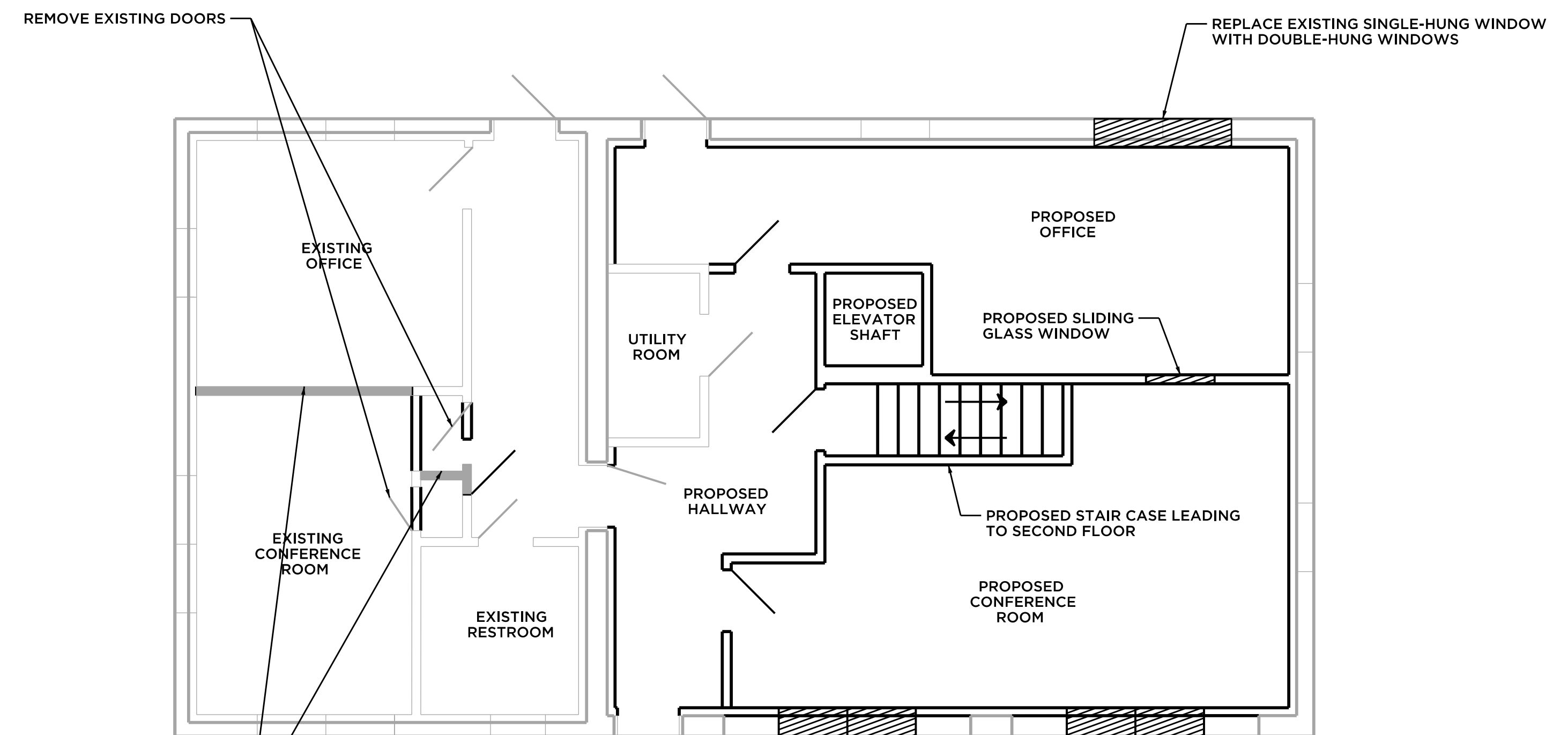


**SECOND FLOOR PLAN**



REPLACE EXISTING SINGLE-HUNG WINDOWS  
WITH DOUBLE-HUNG WINDOWS  
(TYPICAL OF 2)

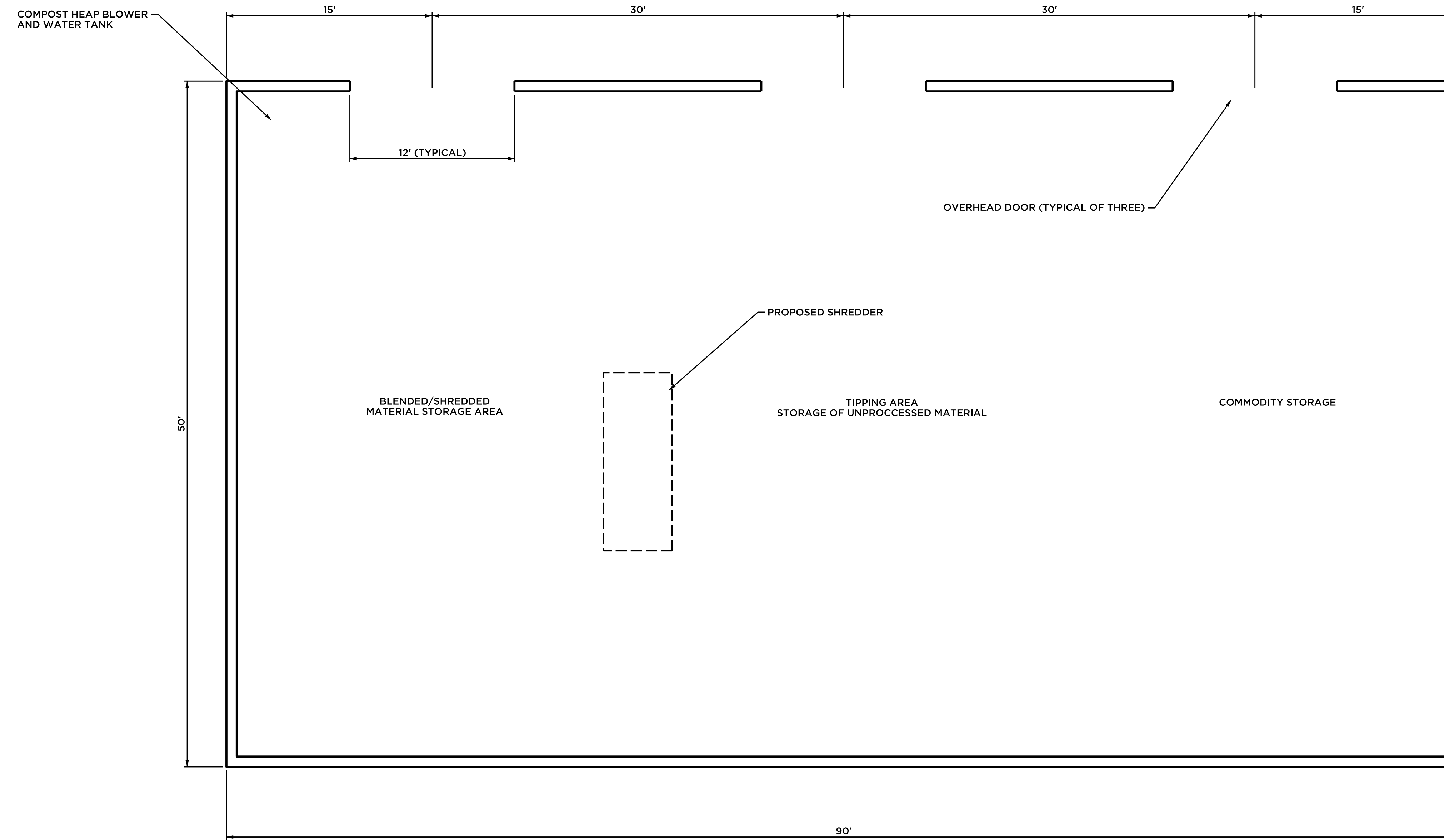
**NORTH FACE OF BUILDING**



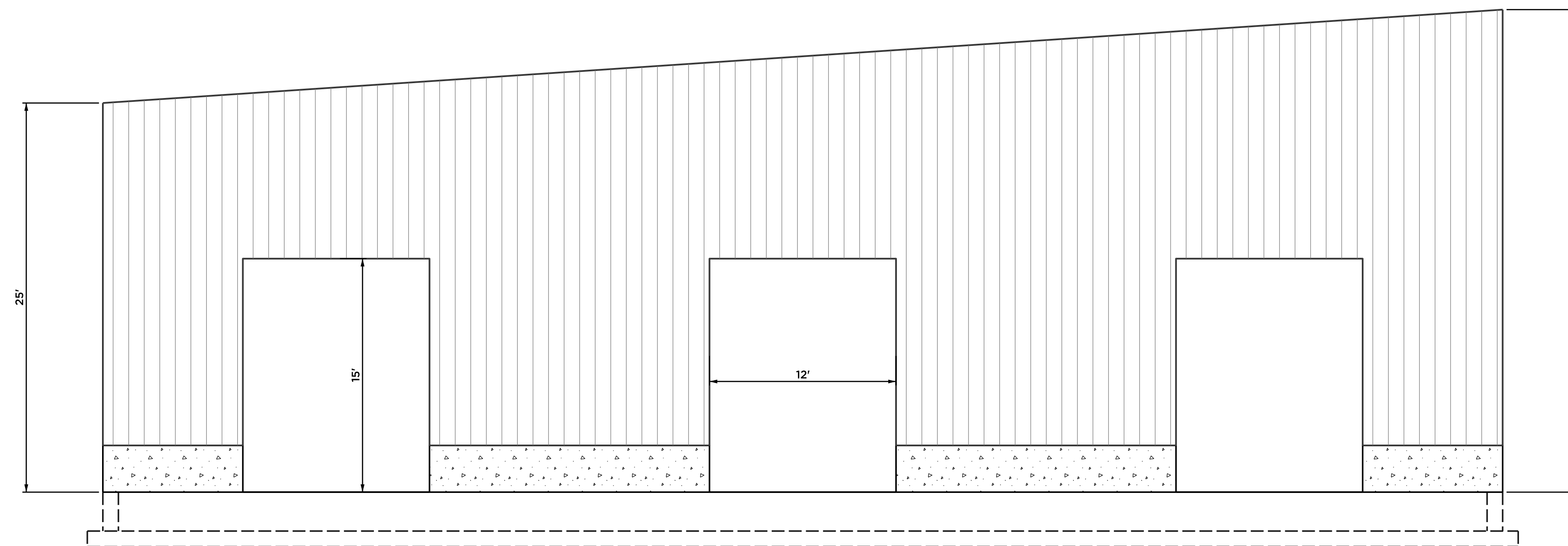
**FIRST FLOOR PLAN**




<b>ANCHOR</b> ENGINEERING SERVICES, INC.		41 Sequin Drive Glastonbury, CT 06033 Phone: (860) 633-9770 Fax: (860) 633-9971 www.anchorengr.com	
		Civil Engineering • Environmental Consulting • Land Surveying • Construction Management	
PROJ. ENGINEER	MJP	<b>PROPOSED SITE IMPROVEMENTS</b> PREPARED FOR <b>FISHERS ISLAND WASTE MANAGEMENT DISTRICT</b> <b>EXISTING BUILDING MODIFICATIONS</b> FISHERS ISLAND, NY	
PROJ. MANAGER	MNB		
OFFICE REVIEW	MNB		
REVISIONS		PROJECT	DATE
3/2/17		013-32	11/8/16
5/24/17		SHEET NO.	8 OF 9
SCALE:	1"=5'		



**PLAN**



**NORTH ELEVATION**

 <b>ANCHOR</b> ENGINEERING SERVICES, INC.		41 Sequin Drive Glastonbury, CT 06033 Phone: (860) 633-9770 Fax: (860) 633-9971 www.anchorengr.com	
		Civil Engineering • Environmental Consulting • Land Surveying • Construction Management	
PROJ. ENGINEER	MJP	<b>PROPOSED SITE IMPROVEMENTS</b> PREPARED FOR FISHERS ISLAND WASTE MANAGEMENT DISTRICT <b>PROPOSED MIXING BUILDING</b> FISHERS ISLAND, NY	
PROJ. MANAGER	MNB		
OFFICE REVIEW	MNB		
REVISIONS		PROJECT	DATE
3/2/17		013-32	11/8/16
5/24/17		SHEET NO.	9 OF 9
SCALE:	1"=5'		