



ARCHITECTURE  
ENGINEERING

## ADDENDUM TO CONTRACT DOCUMENTS

**Date:** September 18, 2015

**To:** Bidders

**From:** Becker Morgan Group, Inc.

**Project:** **Killens Pond Waterpark Renovations – Phase 1**  
Killens Pond State Park, Felton, DE

**Project Number:** BMG Project No. 2012006.04  
DNREC Project No. KP-24  
DNREC Contract No. 2015-KP-100

**Subject:** **ADDENDUM NO. 02**

**NOTICE:** Attention is called to the following item(s), effective as of the date above, which shall be added to, deleted from, or changed in the contract documents dated 08/20/2015, and any previously issued addenda, thereby incorporating these items into the contract.

Commonwealth Construction Co. RFI 1		
Item	Description	
1	Q: Please clarify the pattern and type of fieldstone. None of the fieldstone patterns provided by Pinnical appear to match the ashlar pattern on the existing Nature Ctr? A: .Freeport Pattern	
2	Q: please specify sub-base material required under sidewalks? A: Graded aggregate base course (GABC) has been specified under the sidewalks per detail sheet C-901. A modified stone such as CR-1 or Crusher run should be used	

### LIST OF ATTACHMENTS

Item	Description	Date
1	Drawing AD101-E – Demolition Plan Existing Bathhouse Alt # 3	08/20/15
2	Drawing AD102-E – Demolition Plan Existing Bathhouse Alt. # 1B	08/20/15
2	Drawing C202 – Site Improvements Alternates 1A, 2, 2A, 4 & 5	09/16/15
3	Drawing C301 – Site Utility Plan	09/16/15
4	Drawing C501 – Overall Construction Site Stormwater Management Plan	09/16/15
5	Drawing C502 – Pre-Construction Site Stormwater Management Plan	09/16/15
6	Drawing C503 - Pre-Construction Site Stormwater Management Plan	09/16/15
7	Drawing C504 - Post-Construction Stormwater Management Plan Filter Strip	09/16/15
8	Drawing C505 - Post-Construction Site Stormwater Management Plan Pond A Extended Detention / Infiltration Basin	09/16/15
9	Drawing C506 - Post-Construction Site Stormwater Management Plan Pond A Extended Detention / Infiltration Basin	09/16/15
10	Drawing C507 – Sediment and Stormwater Management Notes & Details	09/16/15
11	Drawing C508 - Sediment and Stormwater Management Notes & Details	09/16/15



**Addendum No. 02**

Killens Pond Waterpark Renovations - Phase 1  
Killens Pond State Park, Lewes, DE

September 18, 2015  
BMG Project No. 2012006.00  
Page 2

12	Drawing C508 - Sediment and Stormwater Management Notes & Details	09/16/15
----	---	----------

**PROJECT MANUAL CHANGES:**

Item	Description
1	Addendum No. 1: A. Project Number; Delete "DNREC Contract No. 2014-KP-100, Substitute 2015-KP-100.
2	Specification Section 001116 – Invitation to Bid: A. Delete the words "3:00 pm local time on Tuesday, September 22, 2015" from the first paragraph, Substitute <b>"2:00 pm local time on Friday, October 2, 2015"</b>
3	Specification Section 011000 – Summary: A. Delete the words "September 22, 2015 @ 3:00 pm" from 1.10.A.1.a, Substitute "October 2, 2015 @ 2:00 pm". B. Delete 1.10.A.1.e as written, Substitute the following: e. Substantial Completion: The scope of work for the "Base Bid" and Alternate 1, 1B, 2 & 3, not including the pool slide assemblies, shall be completed and all systems inspected and operations for opening to the public by May 27, 2016. The pool slide assembly in base bid and Alternate 1A delivery and assembly could be extend past the May 27 deadline and would not be subject to the liquidated damages until July 1, 2016. Alternates 2A, 2B, 4, 4A, 5 & 5A can be completed this the summer season, with coordination with the owner and the operating waterpark, and are not subject to liquidated damages. C. Delete 1.10.C.2 in its entirety. D. Delete Liquidated Damages Chart as indicated in 1.10.D, in its entirety, Substitute 1.10.D.1 & .2 as follows: E. Liquidated Damages shall be \$2,500 per weekday F. Liquidated Damages shall be \$5,000 per weekend day and holiday
4	Specification Section 131500 – Pool General Requirements: A. Page 4, 3 <sup>rd</sup> Para. Under "Deck Items": add sentence: "Other acceptable vendors of Lifeguard Stands include Recreation Supply (Model #HHLG51010), and Recreonics (Model # 42-636).". B. Page 4, 1 <sup>st</sup> Para. Under "Miscellaneous Equipment": Delete requirement for the Remote-Control vacuum. C. Page 4, 2 <sup>nd</sup> Para. Under "Miscellaneous Equipment": add sentence: "Other acceptable vendors of similar 20-amp maximum portable maintenance pump include Recreonics and Recreation Supply.". D. Page 4, 3 <sup>rd</sup> Para. Under "Miscellaneous Equipment": add sentence: "Other acceptable vendors of the Eyewash Station include Uline (Model # H-2387) and Honeywell Eyesaline (Model # 9786C).". E. Page 4, 4 <sup>th</sup> Para. Under "Miscellaneous Equipment": add sentence: "Other acceptable vendors of the NFPA Safety Signs include CompliantSigns and MySafetySign.".
5	Specification Section 131510 – Filter Equipment: A. Part 2, Para. "AIR VENTS": Revise the first sentence to read: "Supply both automatic and manual air relief systems, in parallel.".
6	Specification Section 312000 – Earth Moving: A. Add 3.22.B.2 to read: 2. Surplus satisfactory soil that is not needed shall be transported to an on-site within the Park, designated by Park personnel



**Addendum No. 02**

Killens Pond Waterpark Renovations - Phase 1  
Killens Pond State Park, Lewes, DE

September 18, 2015  
BMG Project No. 2012006.00  
Page 3

**DRAWING CHANGES:**

Item	Description
1	Drawing C202 – Site Improvements Alternates 1A, 2, 2A, 4 & 5: A. Delete Drawing C202 in its entirety, Substitute revised C202, dated 09/16/15.
2	Drawing C301 – Site Utility Plan: A. Delete Drawing C301 in its entirety, Substitute revised C301, dated 09/16/15.
3	Drawing C501 – Overall Construction Site Stormwater Management Plan: A. Delete Drawing C501 in its entirety, Substitute revised C501, dated 09/16/15.
4	Drawing C502 – Pre-Construction Site Stormwater Management Plan: A. Delete Drawing C502 in its entirety, Substitute revised C502, dated 09/16/15.
5	Drawing C503 - Pre-Construction Site Stormwater Management Plan: A. Delete Drawing C503 in its entirety, Substitute revised C503, dated 09/16/15.
6	Drawing C504 - Post-Construction Stormwater Management Plan Filter Strip: A. Add new Delete Drawing C504, dated 09/16/15.
7	Drawing C505 - Post-Construction Site Stormwater Management Plan Pond A Extended Detention / Infiltration Basin: A. Add new Delete Drawing C505, dated 09/16/15.
8	Drawing C506 - Post-Construction Site Stormwater Management Plan Pond A Extended Detention / Infiltration Basin: A. Add new Delete Drawing C506, dated 09/16/15.
9	Drawing C507 – Sediment and Stormwater Management Notes & Details: A. Delete Drawing C507 in its entirety, Substitute revised C507, dated 09/16/15.
10	Drawing C508 - Sediment and Stormwater Management Notes & Details: A. Delete Drawing C508 in its entirety, Substitute revised C508, dated 09/16/15.
11	Drawing C508 - Sediment and Stormwater Management Notes & Details: A. Delete Drawing C509 in its entirety, Substitute revised C509, dated 09/16/15.
12	Drawing AD101-E – Demolition Plan Existing Bathhouse Alt # 3: A. Add Drawing AD101-E, dated 08/20/15
13	Drawing AD102-E – Demolition Plan Existing Bathhouse Alt. # 1B A. Add Drawing AD102-E, dated 08/20/15

**END OF ADDENDUM NO. 02**

201200604\_Addendum02.doc





This role involves repairing slides, infrastructure, bathhouse, entrance gate, session on stand, maintenance building.

☐ illens Pond ☐ Pool Renovation ☐ 2015 ☐ P100



<p>Briggs Company, Inc. John A. Briggs Company 106 E. Laurel St. P.O. Box 90 Georgetown, DE 19947 Keith Long</p>	<p>30285617033 Phone 30285617085 Fax <a href="mailto:Jbriggs@verizon.net">Jbriggs@verizon.net</a></p>	5	\$25.00	09/08/15	Cash
<p>ADel Construction Inc. 351 Salem Church Rd. Newark, DE 19702 Danny Anna</p>	<p>30245318286 Phone <a href="mailto:estimates@adel.com">estimates@adel.com</a></p>	6	\$25.00	09/08/15	Cash
<p>W Ele Tri Inc. 668 Fork Landing Road Felton, DE 19943 Michael W. Bermire, Jr. Lisa A. Bermire</p>	<p>30233511059</p>	7	\$25.00	09/08/15	Check 7356
<p>Amakor Builders/Construction Management 72 Clinton Street P.O. Box 636 Delaware City, DE 19706 Ryan Jackson, P.</p>	<p>30283418664 Phone 30283418681 Fax</p>	8	\$25.00	09/08/15	Check 26762
<p>Nickle Electrical Companies 14 Mill Park Court Newark, DE 19713 James Anderslie, Estimator</p>	<p>30285611006 Phone 30285616119 Fax 302174716646 Cell <a href="mailto:vanderslie@nickleelectrical.com">vanderslie@nickleelectrical.com</a> <a href="http://www.nickleelectrical.com">www.nickleelectrical.com</a></p>	9	\$25.00	09/08/15	Check 2725



Delmarva Veteran Builders General Contractor Construction Mgmt. P.O. Box 621 Salisbury, MD 21803 Lee Deauham, PE	443 736 1587 <a href="http://www.delmarvaveteranbuilders.com">www.delmarvaveteranbuilders.com</a>	10	\$25.00	09/08/15	Cheque 383
Commonwealth Construction Co. P.O. Box 918 Wilmington, DE 19899 Michael Rosaio	302 654 6611 phone 302 740 4007 cell <a href="http://www.mrosoio.com">www.mrosoio.com</a> <a href="http://www.bbooth.com">www.bbooth.com</a>	11	\$25.00	09/08/15	Cash
Conventional Builders, Inc. P.O. Box 47 Houston, Delaware 19954 Gregory Thomson	302 422 12429 <a href="http://www.conventionalbuilders.com">www.conventionalbuilders.com</a>	12	\$25.00	09/08/15	Cash



STANDARD AND SPECIFICATIONS FOR PORTABLE DEWATERING PRACTICES

**Definition:** A portable device through which sediment-laden water is pumped to trap and retain the sediment.

**Purpose:** To trap and retain sediment prior to pumping the water to drainageways, adjoining properties, and rights-of-way below a project site.

**Conditions Where Practice Applies**  
A portable dewatering practice may be used on sites where space is limited, such as urban construction, where direct discharge of sediment-laden water to stream and storm drainage systems is to be avoided and where larger dewatering practices are impractical.

**Design Criteria**

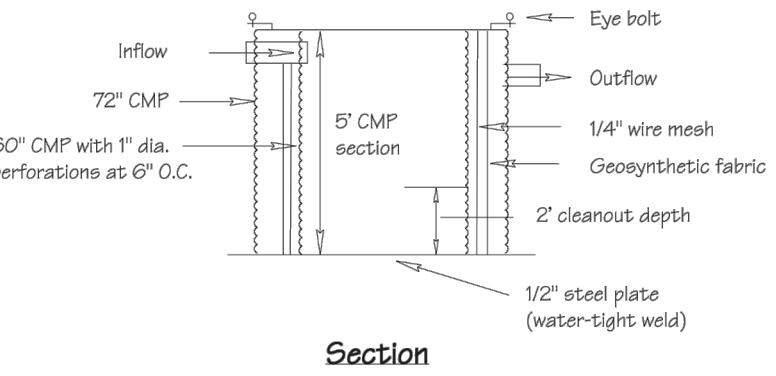
**Location**  
The portable dewatering practice shall be located for ease of clean-out and disposal of the trapped sediment, and to minimize the interference with construction activities and pedestrian traffic.

**Size**  
In the absence of other sizing criteria, the following formula should be used in determining the storage volume of the portable dewatering practice: Pump Discharge (G.P.M.) x 32 = Cubic Foot Storage.

Details for a portable sediment tank and a geotextile dewatering bag are included in the Handbook. Other container designs may be used if the storage volume is adequate and approval is obtained from the local approving agency.

3.2.1 - 1 12/03

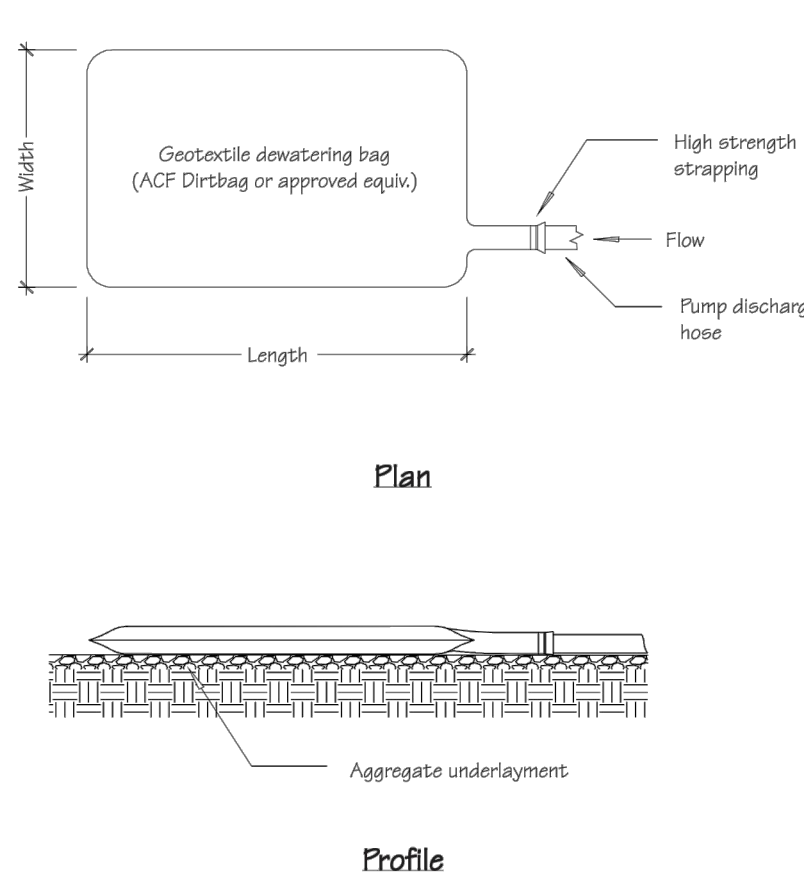
Standard Detail & Specifications Portable Sediment Tank



- Construction Notes:**
1. Required storage volume = 1 c.f. storage/1 gpm pump discharge.
  2. Tanks may be connected in series to provide required storage.

Source: Adapted from MD Sdks. & Specs. for ESC	Symbol: <div>ST</div>	Detail No. <b>DE-ESC-3.2.1.1</b> Sheet 1 of 1 Date: 12/03
--	--------------------------	--

Standard Detail & Specifications Geotextile Dewatering Bag



Source: Adapted from ACF Products, Inc.	Symbol: <div>GB</div>	Detail No. <b>DE-ESC-3.2.1.2</b> Sheet 1 of 2 Date: 12/03
---	--------------------------	--

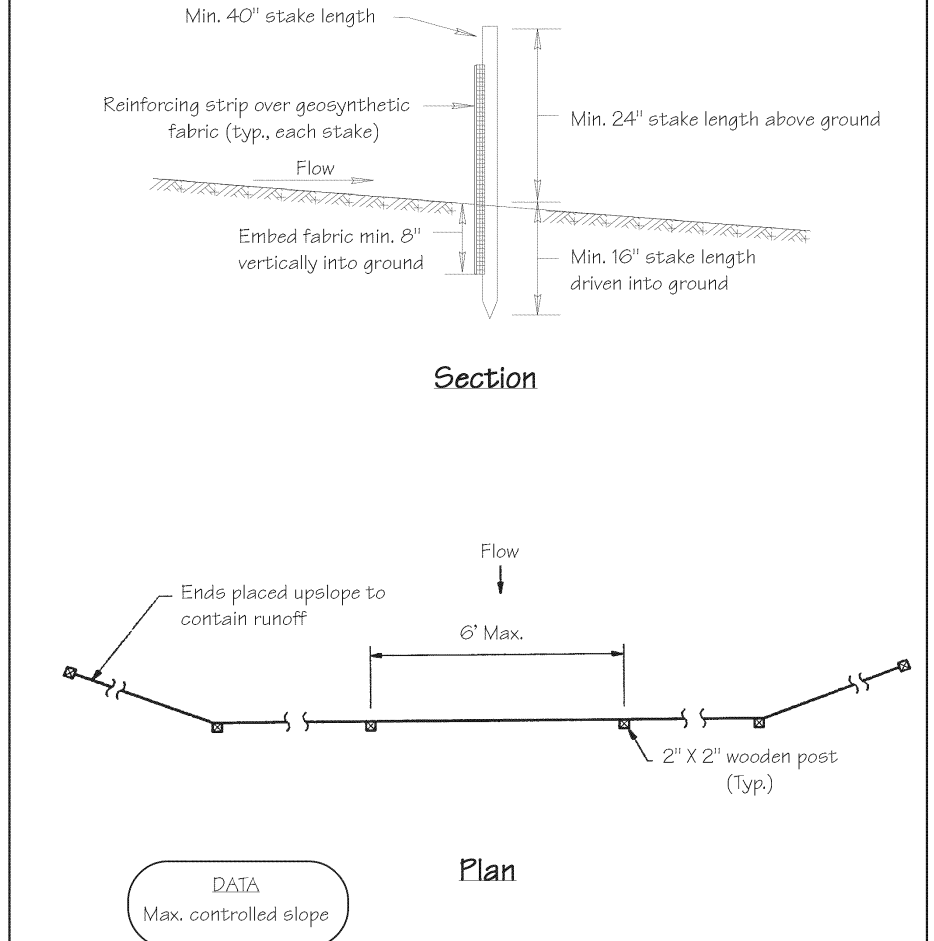
Standard Detail & Specifications Geotextile Dewatering Bag

- Construction Notes:**
1. The dewatering bag should be placed so the incoming water flows into and through the bag, and then flow off the site without creating more erosion. The neck should be tied off tightly to stop the water from flowing out of the bag without going through the walls. The dewatering bag should be placed on a gravel bed to allow water to flow in all directions.
  2. The dewatering bag is considered full and should be disposed when it is impractical for the bag to filter the sediment out at a reasonable flow rate. At this point, it should be replaced with a new bag.
  3. Disposal may be accomplished as directed by the construction reviewer. If the site allows, the bag may be buried on site and seeded, visible fabric removed and seeded or removed from site to a proper disposal area.

- Materials:**
1. The geotextile fabric shall be a Type GD-IV.
  2. The dewatering bag shall be sewn with a double needle machine using high strength thread. All structural seams will be sewn with high strength, double stitched "J" type. Seam strength test will have the following minimum average roll values:
  3. The dewatering bag shall have an opening large enough to accommodate a four (4) inch discharge hose with attached strap to tie off the hose to prevent the pumped water from escaping from the bag without being filtered.

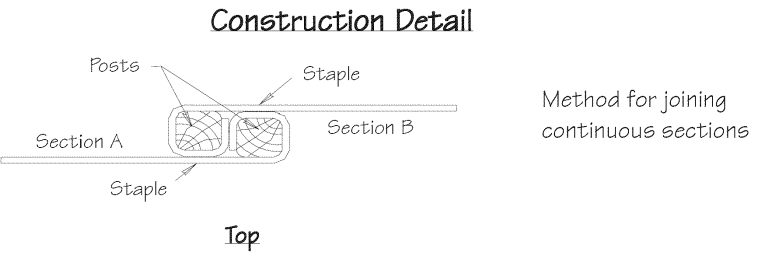
Source: Adapted from ACF Products, Inc.	Symbol: <div>GB</div>	Detail No. <b>DE-ESC-3.2.1.2</b> Sheet 2 of 2 Date: 12/03
---	--------------------------	--

Standard Detail & Specifications Silt Fence



Source: Adapted form MD Sdks. & Specs. for ESC	Symbol: <div>SF</div>	Detail No. <b>DE-ESC-3.1.2.1</b> Sheet 1 of 2 Date: 6/05
--	--------------------------	---

Standard Detail & Specifications Silt Fence



- Construction Notes:**
1. Geosynthetic fabric to be fastened securely to fence posts with wire ties or staples.
  2. When two sections of filter cloth adjoin each other they shall be overlapped by six inches and folded.
  3. Maintenance shall be performed as needed and material removed when "bulges" develop in the silt fence.
- Materials:**
1. Staples: Steel (either T or U) or 2 inch x 2 inch hardwood
  2. Geosynthetic Fabric: Type GD-I
  3. Reinforcing strip: Wooden lath, plastic strip or other approved equivalent
  4. Prefabricated Unit: Geotab, Envirofence, or approved equivalent

Source: Adapted from MD Sdks. & Specs. for ESC	Symbol: <div>SF</div>	Detail No. <b>DE-ESC-3.1.2.1</b> Sheet 2 of 2 Date: 6/05
--	--------------------------	---

PROJECT TITLE

KILLENS POND WATER PARK RENOVATIONS PHASE 1

5025 KILLENS POND ROAD  
FELTON  
KENT COUNTY, DE

SHEET TITLE

SEDIMENT AND STORMWATER NOTES & DETAILS

ISSUE BLOCK

MARK	DATE	DESCRIPTION
4	9/16/15	ADDENDUM NO. 2
3	8/25/15	ISSUED FOR BID
2	7-29-15	SUBMITTED TO PARKS FOR OWNER REVIEW
1	7-1-15	SUBMITTED TO DFM FOR FINAL DESIGN REVIEW

LAYER STATE: 0:500

PROJECT NO.: 2013157.00

DATE: 11/20/13

SCALE: N.T.S.

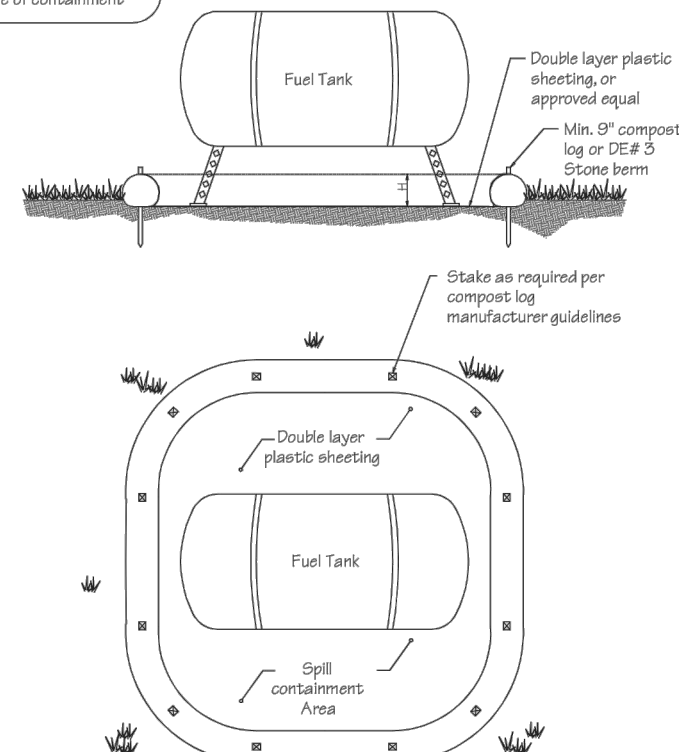
DRAWN BY: S.L.G. PROJ. MGR.: G.E.J.

SHEET  
**C-509**  
COPYRIGHT 2012



## Standard Detail & Specifications Construction Site Waste Mgt & Spill Control

DATA TO BE PROVIDED:  
Volume of Potential Pollution  
Height of containment  
Area of containment  
Volume of containment



Source: Delaware ESC Handbook  
Symbol: **DE-ESC-3.6.1**  
Detail No. Sheet 1 of 5  
Date: 03/13

## Standard Detail & Specifications Mulching

- Materials and Amounts**
  - Straw: Straw shall be untreated small grain straw applied at the rate of 1-1/2 to 2 tons per acre, or 70 to 90 pounds (two bales) per 1,000 square feet. Mulch materials shall be relatively free of weeds and shall be free of noxious weeds such as: thistles, Johnsongrass, and quackgrass. Spread mulch uniformly by hand or mechanically. For uniform distribution of hand spread mulch, divide area into approximately 1,000 square feet sections and place 70-90 pounds (two bales) of mulch in each section.
  - Wood chips: Apply at the rate of approximately 6 tons per acre or 275 pounds per 1,000 square feet when available and when feasible. These are particularly well suited for utility and road rights-of-way. If wood chips are used, increase the application rate of nitrogen fertilizer by 20 pounds of N per acre (200 pounds of 10-10-10 or 64 pounds of 50-50-0 per acre).
  - Hydraulically applied mulch: The following conditions apply to hydraulically applied mulch:
    - Definitions:
      - Wood fiber mulch shall consist of specially prepared wood that has been processed to a uniform state, is packaged for sale as a hydraulic mulch for use with hydraulic seeding equipment, and consists of a minimum of 70% virgin or recycled wood fiber combined with 30% paper fiber and additives.
      - Blended fiber mulch shall consist of any hydraulic mulch that contains greater than 30% paper fiber. The paper component must consist of specially prepared paper that has been processed to a uniform fibrous state and is packaged for sale as a hydraulic mulch for use with hydraulic seeding equipment.
      - A bonded fiber matrix (BFM) consists of long strand, specially prepared wood fibers that have been processed to a uniform state held together by a water resistant bonding agent. BFM's shall contain no paper (cellulose) mulch but may contain small percentages of synthetic fibers to enhance performance.
      - Refer to Figure 3.4.5a for conditions and limitations of use for each of the above categories of hydraulic mulch.
    - All components of the hydraulically applied mulches shall be pre-packaged by the manufacturer to assure material performance. Field mixing of the mulch components is acceptable, but must be done per manufacturers recommendations to ensure the proper results.
    - Hydraulic mulches shall be applied with a viable seed and at manufacturer's recommended rates. Increased rates may be necessary based on site conditions.
    - Hydraulically applied mulches and additives shall be mixed according to manufacturers recommendations.
  - Materials within this category shall only be used when hydraulically applied mulch has been specified for use on the approved Sediment and Stormwater Plan, or supplemental approval from the plan approval agency has been obtained in writing for a specific area.

Source: Delaware ESC Handbook & Filtraxx<sup>TM</sup> International  
Symbol: **DE-ESC-3.4.5**  
Detail No. Sheet 1 of 3  
Date: 03/13

## Standard Detail & Specifications Dust Control

- Temporary Methods:**
- Mulches - See **DE-ESC-3.4.5**, Standard Detail and Specifications for Mulching.
  - Vegetative cover - See **DE-ESC-3.4.3**, Skd. Detail and Specifications for Vegetative Stabilization.
  - Adhesives - Use on mineral soils only that effective on moist soils. Keep traffic off these areas. The following table may be used for general guidance.

Type of Emulsion	Water Dilution	Type of Nozzle	Apply Gal/sq. ft.
Latex emulsion	12.5:1	Fine spray	235
Resin-in-water emulsion	4:1	Fine spray	300
Acrylic emulsion (non-traffic)	7:1	Coarse spray	450
Acrylic emulsion (traffic)	3.5:1	Coarse spray	350

- Tillage - For emergency temporary treatment, scarify the soil surface to prevent or reduce the amount of blowing dust until a more appropriate solution can be implemented. Begin the tillage operation on the windward side of the site using a chisel-type plow for best results.
  - Sprinkling - Sprinkle site with water until the surface is moist. Repeat as needed.
  - Calcium Chloride - Apply as flakes or granular material with a spreader at a rate that will keep the soil surface moist. Re-apply as necessary.
  - Barriers - Place barriers such as soil board fences, snow fences, hay bales, etc. at right angles to the prevailing air currents at intervals of approx. 10X their height.
- Permanent Methods:**
- Vegetative cover - See **DE-ESC-3.4.3**, Skd. Detail and Specifications for Vegetative Stabilization.
  - Stone - Apply layer of crushed stone or coarse gravel to protect soil surface.

Source: Adapted from VA ESC Handbook  
Symbol: **DE-ESC-3.4.8**  
Detail No. Sheet 1 of 1  
Date: 12/03

## Standard Detail & Specifications Construction Site Waste Mgt & Spill Prevention

- Pollution Prevention - Spill Prevention**
- Fueling should only take place in signed designated areas, away from downstream drainage facilities and watercourses.
  - Fueling must be with nozzles equipped with automatic shut-off to control drips. Do not top off.
  - Protect the areas where equipment or vehicles are being repaired, maintained, fueled or parked from storm water run-on and runoff.
  - Use barriers such as berms to prevent storm water run-on and runoff, and to contain spills.
  - Place a "Fueling Area" sign next to each fueling area.
  - Place hazardous materials such as fuels, solvents, oil and chemicals in secondary containment.
  - Inspect vehicles and equipment for leaks on each day of use. Repair fuel and oil leaks immediately.
  - Absorbent spill clean-up materials and spill kits must be available in fueling areas and on fuel trucks.
  - If fueling is to take place at night, make sure the fueling area is sufficiently illuminated.
  - Properly dispose of used oil, fluids, lubricants and spill clean-up materials.

- CLEAN UP SPILLS**
- If it is safe to do so, immediately contain and clean up any chemical and/or hazardous material spills.
  - Properly dispose of used oil, fluids, lubricants and spill clean-up materials.
  - Do not bury spills or wash them down with water.
- LEAKS AND DRIPS**
- Use drip pans or absorbent pads at all times. Place under and around leaky equipment.
  - Do not allow oil, grease, fuel or chemicals to drip onto the ground.
  - Have spill kits and clean up material on-site.
  - Repair leaky equipment promptly or remove problem vehicles and equipment from the site. Clean up contaminated soil immediately.
  - Store contaminated waste in sealed containers constructed of suitable material. Label these containers properly.
  - Clean up all spills and leaks. Promptly dispose of waste and spent clean up materials.

Source: Delaware ESC Handbook  
Symbol: **DE-ESC-3.6.1**  
Detail No. Sheet 3 of 5  
Date: 03/13

## Standard Detail & Specifications Mulching

- Application:**
    - Apply product to geotechnically stable slopes that have been designed and constructed to divert runoff away from the face of the slope.
    - Do not apply to saturated soils, or if precipitation is anticipated within 24-48 hours.
    - During the spring (March 1 to May 31) and fall (September 1 to November 30) seasons, hydraulic mulches may be applied in a one-step process where all components are mixed together in single tank loads. It is recommended that the product be applied from opposing directions to achieve optimum soil coverage.
    - During the summer (June 1 to August 31) and winter (December 1 to February 28) seasons, the following two-step process is required:
      - Step One - Mix and apply seed and soil amendments with a small amount of mulch for visual meeting.
      - Step Two - Mix and apply mulch at manufacturer's recommended rates over freshly seeded surfaces. Apply from opposing directions to achieve optimum soil coverage.
    - Minimum curing temperature is 40°F (10°C). The best results and more rapid curing are achieved at temperatures exceeding 60°F (15°C). Curing times may be accelerated in high temperature, low humidity conditions on dry soils.
  - Recommended application rates are for informational purposes only. Conformance with this standard and specification shall be performance-based and requires **100% soil coverage**. Any areas with bare soil showing shall be top dressed until full coverage is achieved.
  - Compost blanket (CB) - Loosely applied with a pneumatic blower so that a 2" compost blanket uniformly covers the soil with **100% coverage**. This application can be used with seed to promote germination by applying the approved seed mix directly into the loosely blown compost. The compost blanket performs best on slopes less than 2:1 and requires no mulch anchoring.
- 2. Anchoring mulch:** Mulch must be anchored immediately to minimize loss by wind or water. This may be done by one of the following methods, depending upon size of area, erosion hazard, and cost:
- Crimping - A crimper is a tractor drawn implement designed to punch and anchor mulch into the top two (2) inches of soil. This practice affords maximum erosion control but is limited to flatter slopes where equipment can operate safely. On sloping land, crimping should be done on the contour whenever possible.
  - Tracking - Tracking is the process of cutting mulch (usually straw) into the soil using a bulldozer or other equipment that runs on doaded tracks. Tracking is used primarily on slopes 3:1 or steeper and should be done up and down the slope with clear marks running across the slope.
  - Liquid mulch binders - Applications of liquid mulch binders should be heavier at edges, in valleys, and at crests of banks and other areas where the mulch will be moved by wind or water. All other areas should have a uniform application of binder. The use of synthetic binders is the preferred method of mulch binding and should be applied at the rates recommended by the manufacturer.
  - Paper fiber - The fiber binder shall be applied at a net dry weight of 750 lbs./ac. The wood cellulose fiber shall be mixed with water, and the mixture shall contain a maximum of 50 lbs. of wood cellulose fiber per 100 gallons.
  - Nettings - Synthetic or organic nettings may be used to secure straw mulch. Install and secure according to the manufacturers recommendations.

Source: Delaware ESC Handbook & Filtraxx<sup>TM</sup> International  
Symbol: **DE-ESC-3.4.5**  
Detail No. Sheet 2 of 3  
Date: 03/13

## Standard Detail & Specifications Topsoiling

### Construction Notes:

- Site Preparation** (Where Topsoil is to be added)

Note: When topsoiling, maintain needed erosion and sediment control practices such as diversions, grade stabilization structures, berms, dikes, waterways and sediment basins.

  - Grading - Grades on the areas to be topsoiled which have been previously established shall be maintained.
  - Liming - Where the topsoil is either highly acid or composed of heavy clays, ground limestone shall be spread at the rate of 4-6 tons/acre (200-400 pounds per 1,000 square feet). Lime shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedures.
  - Tilling - After the areas to be topsoiled have been brought to grade, and immediately prior to dumping and spreading the topsoil, the subgrade shall be loosened by discing or by scarifying to a depth of at least 3 inches to permit blending of the topsoil to the subsoil. Pack by passing a bulldozer up and down over the entire surface area of the slope to create horizontal erosion check slots to prevent topsoil from sliding down the slope.

### 2. Topsoil Material and Application

Note: Topsoil salvaged from the existing site may often be used but it should meet the same standards as set forth in these specifications. The depth of topsoil to be salvaged shall be no more than the depth described as a representative profile for that particular soil type as described in the soil survey published by USDA-SCS in cooperation with Delaware Agricultural Experimental Station.

Source: USDA - NRCS  
Symbol: **DE-ESC-3.4.1**  
Detail No. Sheet 1 of 2  
Date: 03/13

## Standard Detail & Specifications Construction Site Waste Mgt & Spill Control

### Notes:

The Construction Site Pollution Prevention Plan should include the following elements:

#### 1. Material Inventory

Document the storage and use of the following materials:

- Concrete
  - Detergents
  - Paints (enamel and latex)
  - Cleaning solvents
  - Pesticides
  - Wood scraps
  - Fertilizers
  - Petroleum based products
- 2. Good housekeeping practices**
- Store only enough product required to do the job.
  - All materials shall be stored in a neat, orderly manner in their original labeled containers and covered.
  - Substances shall not be mixed.
  - When possible, all of a product shall be used up prior to disposal of the container.
  - Manufacturers' instructions for disposal shall be strictly adhered to.
  - The site foreman shall designate someone to inspect all BMPs daily.

#### 3. Waste management practices

- All waste materials shall be collected and stored in securely lidded dumpsters in a location that does not drain to a waterbody.
- Waste materials shall be salvaged and/or recycled whenever possible.
- The dumpsters shall be emptied a minimum of twice per week, or more if necessary. The licensed trash hauler is responsible for cleaning out dumpsters.

Source: Adapted from USEPA Pub. 840-B-92-002  
Symbol: **DE-ESC-3.6.1**  
Detail No. Sheet 3 of 5  
Date: 03/13

## Standard Detail & Specifications Mulching

MULCHING MATERIAL SELECTION GUIDE		Mulch to be applied by 10/1/2020											
Percent Slope	Type of Material	Rate	Dec. to Feb. 2020	March to May 2021	June to Aug. 2021	Sept. to Oct. 2021	Nov. to Dec. 2021	Jan. to Feb. 2022	March to May 2022	June to Aug. 2022	Sept. to Oct. 2022	Nov. to Dec. 2022	Jan. to Feb. 2023
0% to 2%	Straw (1000 lbs./acre)	1000	X	X	X	X	X	X	X	X	X	X	X
2% to 5%	Straw (1000 lbs./acre)	1000	X	X	X	X	X	X	X	X	X	X	X
5% to 10%	Straw (1000 lbs./acre)	1000	X	X	X	X	X	X	X	X	X	X	X
10% to 15%	Straw (1000 lbs./acre)	1000	X	X	X	X	X	X	X	X	X	X	X
15% to 20%	Straw (1000 lbs./acre)	1000	X	X	X	X	X	X	X	X	X	X	X
20% to 25%	Straw (1000 lbs./acre)	1000	X	X	X	X	X	X	X	X	X	X	X
25% to 30%	Straw (1000 lbs./acre)	1000	X	X	X	X	X	X	X	X	X	X	X
30% to 35%	Straw (1000 lbs./acre)	1000	X	X	X	X	X	X	X	X	X	X	X
35% to 40%	Straw (1000 lbs./acre)	1000	X	X	X	X	X	X	X	X	X	X	X
40% to 45%	Straw (1000 lbs./acre)	1000	X	X	X	X	X	X	X	X	X	X	X
45% to 50%	Straw (1000 lbs./acre)	1000	X	X	X	X	X	X	X	X	X	X	X
50% to 55%	Straw (1000 lbs./acre)	1000	X	X	X	X	X	X	X	X	X	X	X
55% to 60%	Straw (1000 lbs./acre)	1000	X	X	X	X	X	X	X	X	X	X	X
60% to 65%	Straw (1000 lbs./acre)	1000	X	X	X	X	X	X	X	X	X	X	X
65% to 70%	Straw (1000 lbs./acre)	1000	X	X	X	X	X	X	X	X	X	X	X
70% to 75%	Straw (1000 lbs./acre)	1000	X	X	X	X	X	X	X	X	X	X	X
75% to 80%	Straw (1000 lbs./acre)	1000	X	X	X	X	X	X	X	X	X	X	X
80% to 85%	Straw (1000 lbs./acre)	1000	X	X	X	X	X	X	X	X	X	X	X
85% to 90%	Straw (1000 lbs./acre)	1000	X	X	X	X	X	X	X	X	X	X	X
90% to 95%	Straw (1000 lbs./acre)	1000	X	X	X	X	X	X	X	X	X	X	X
95% to 100%	Straw (1000 lbs./acre)	1000	X	X	X	X	X	X	X	X	X	X	X

Source: Delaware ESC Handbook & Filtraxx<sup>TM</sup> International  
Symbol: **DE-ESC-3.4.5**  
Detail No. Sheet 3 of 3  
Date: 03/13

## Standard Detail & Specifications Topsoiling

### Construction Notes (cont.)

- Materials - Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand or other soil as approved by an agronomist or soil scientist. It shall not have a mixture of contrasting textured subsoil and contain no more than 5 percent by volume of cinders, stones, slag, coarse fragment, gravel, sticks, roots, trash or other extraneous materials larger than 1-1/2 inches in diameter. Topsoil must be free of plants or plant parts of bermudagrass, quackgrass, Johnsongrass, nutedge, poison ivy, thistles, or others as specified. All topsoil shall be tested by a reputable laboratory for organic matter content, pH and soluble salts. A pH of 6.0 to 7.5 and an organic content of not less than 1.5 percent by weight is required. If pH value is less than 6.0 lime shall be applied and incorporated with the topsoil to adjust the pH to 6.5 or higher. Topsoil containing soluble salts greater than 500 parts per million shall not be used.
- Grading - The topsoil shall be uniformly distributed and compacted to a minimum of four (4) inches. Spreading shall be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets. Topsoil shall not be placed while in a frozen or muddy condition, when the subgrade is excessively wet, or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.

Note: Topsoil substitutes or amendments as approved by a qualified agronomist or soil scientist, may be used in lieu of natural topsoil. Compost material used to improve the percentage of organic matter shall be provided by a certified supplier.

Compost amendments that are intended to meet specific post-construction stormwater management goals shall further meet the requirements of **Appendix 3.06.2 Post Construction Stormwater Management BMP Standards and Specifications, Section 14.0 Soil Amendments**.

Source: USDA - NRCS  
Symbol: **DE-ESC-3.4.1**  
Detail No. Sheet 2 of 2  
Date: 03/13

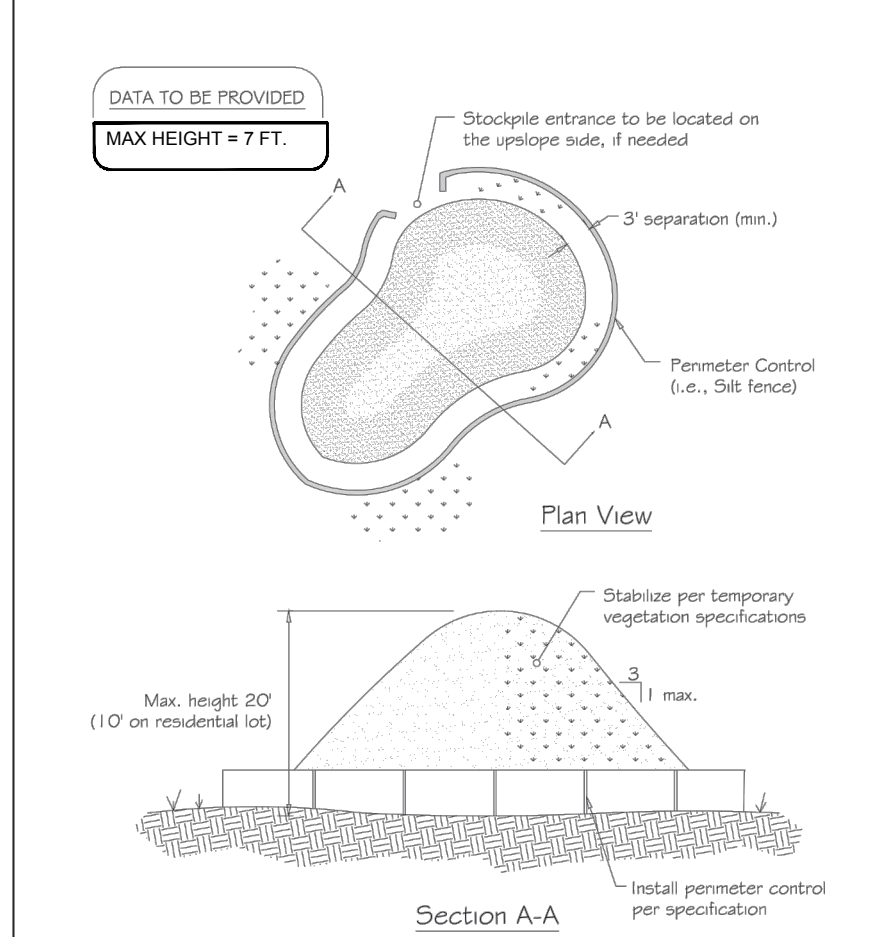
## Standard Detail & Specifications Construction Site Waste Mgt & Spill Control

### Notes (cont.)

- Trash shall be disposed of in accordance with all applicable Delaware laws.
  - Trash cans shall be placed at all lunch spots and littering is strictly prohibited. Recycle bins shall be placed near the construction trailer.
  - Filter/litter bags can not be stored in a weather-proof location, they shall be kept on a pallet and covered with plastic sheeting which is overlapped and anchored.
- 4. Equipment maintenance practices**
- If possible, equipment should be taken to off-site commercial facilities for washing and maintenance.
  - If performed on-site, vehicles shall be washed with high-pressure water spray without detergents in an area contained by an impervious berm.
  - Drip pans shall be used for all equipment maintenance.
  - Equipment shall be inspected for leaks on a daily basis.
  - Washout from concrete trucks shall be disposed of in a temporary pit for hardening and proper disposal.
  - Fuel nozzles shall be equipped with automatic shut-off valves.
  - All used products such as oil, antifreeze, solvents and tires shall be disposed of in accordance with manufacturers' recommendations and local, state and federal laws and regulations.
- 5. Spill prevention practices**
- Potential spill areas shall be identified and contained in covered areas with no connection to the storm drain system.
  - Warning signs shall be posted in hazardous material storage areas.
  - Preventive maintenance shall be performed on all tanks, valves, pumps, pipes and other equipment as necessary.
  - Low or non-toxic substances shall be prioritized for use.

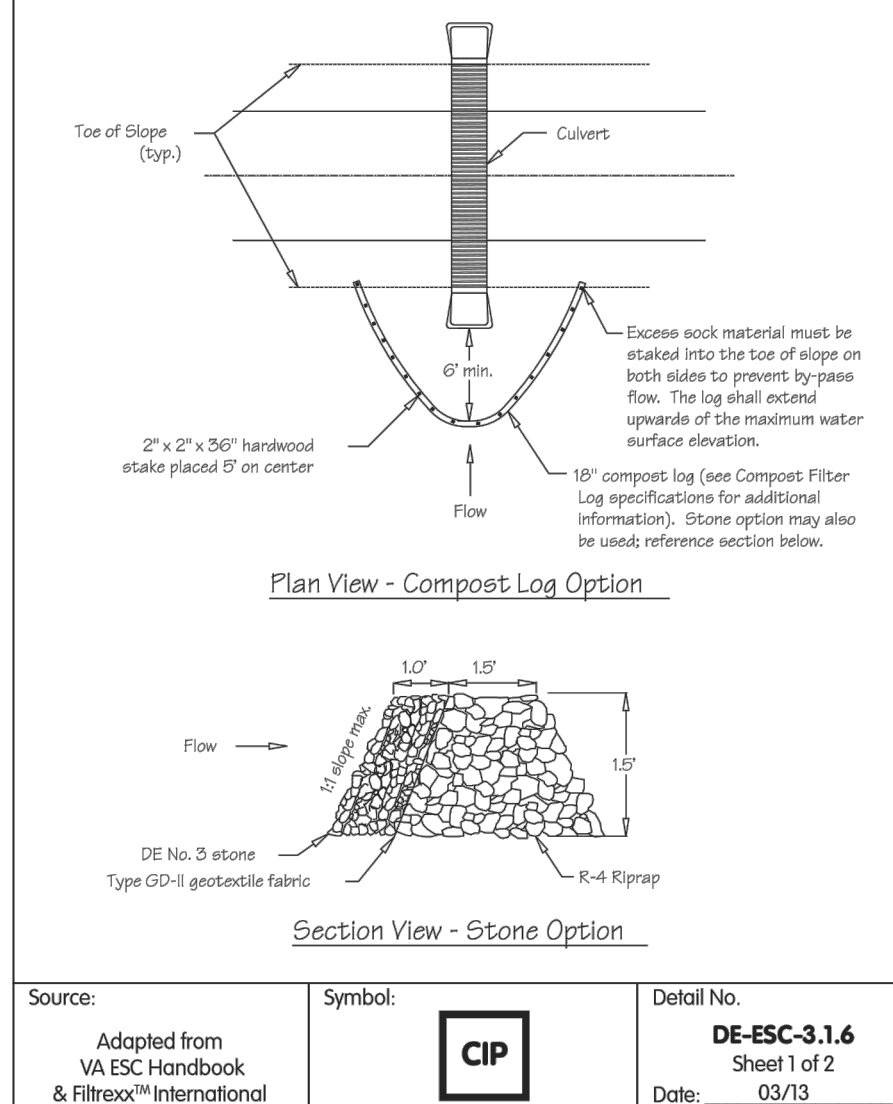
Source: Adapted from USEPA Pub. 840-B-92-002  
Symbol: **DE-ESC-3.6.1**  
Detail No. Sheet 4 of 5  
Date: 03/13

## Standard Detail & Specifications Soil Stockpile



Source: Adapted from Colorado Urban Storm Drainage Criteria Manual, Vol 3  
Symbol: **SP**  
Detail No. **DE-ESC-3.7.3**  
Sheet 1 of 2  
Date: 03/13

## Standard Detail & Specifications Culvert Inlet Protection



Source: Adapted from VA ESC Handbook & Filtraxx<sup>TM</sup> International  
Symbol: **CIP**  
Detail No. **DE-ESC-3.1.6**  
Sheet 1 of 2  
Date: 03/13

## Standard Detail & Specifications Construction Site Waste Mgt & Spill Control

### Notes (cont.)

- Contact information for reporting spills through the DNREC 24-Hour Toll Free Number shall be prominently posted.
- 6. Education**
- Best management practices for construction site pollution control shall be a part of regular progress meetings.
  - Information regarding waste management, equipment maintenance and spill prevention shall be prominently posted in the construction trailer.

**CONTACT INFORMATION**

**DNREC 24-Hour Toll Free Number** **800-662-8802**

**DNREC Solid & Hazardous Waste Branch** **302-739-9403**

Source: Adapted from USEPA Pub. 840-B-92-002  
Symbol: **DE-ESC-3.6.1**  
Detail No. Sheet 5 of 5  
Date: 03/13

## Standard Detail & Specifications Soil Stockpile

### Construction Notes:

- Locate stockpiles so that they are 50 feet from any storm drain inlet, open channel, wetland or waterbody. Redirect any concentrated flow around the stockpile using an approved erosion and sediment control measure.
- Secure the perimeter of the stockpile with an approved erosion and sediment control perimeter device.
- If stockpile is to remain inactive for more than 14 calendar days, the stockpile must be vegetated. Follow the temporary vegetation specifications. The vegetation chosen shall last the duration of the stockpile; the stockpile shall be restabilized if the temporary vegetation dies or erosion results.

Source: Adapted from Colorado Urban Storm Drainage Criteria Manual, Vol 3  
Symbol: **SP**  
Detail No. **DE-ESC-3.7.3**  
Sheet 2 of 2  
Date: 03/13

## Standard Detail & Specifications Culvert Inlet Protection

### Construction Notes

- Compost logs shall be designed and installed in accordance with the Standard Detail and Specifications for Compost Logs DE-ES-3.1.7.
- If compost logs can not be installed properly or flow conditions exceed the design capabilities of the compost logs, the stone option shall be employed. Additional filtration may be provided by using a Type GD-II geotextile incorporated into the design as an option.
- Placement of the compost log or stone barrier should be in a "horseshoe" shape and provide a minimum of 6 feet of clearance from the culvert inlet.

### Materials

- Slates: 2" x 2" x 36" hardwood.
- Compost media: See requirements in Standard Detail and Specifications for Compost Logs DE-ES-3.1.7.
- Filter sock: See requirements in Standard Detail and Specifications for Compost Logs DE-ES-3.1.7.
- Geotextile: Type GD-II for stone/riprap option.
- Stone: DE No. 3 for stone/riprap option.
- Riprap: R-6 for stone/riprap option.

Source: Adapted from VA ESC Handbook & Filtraxx<sup>TM</sup> International  
Symbol: **CIP**  
Detail No. **DE-ESC-3.1.6**  
Sheet 2 of 2  
Date: 03/13

**BECKER MORGAN GROUP**

ARCHITECTURE  
ENGINEERING

**Dover**  
309 S. Governors Ave.  
Dover, DE 19904  
Ph. 302.734.7950  
Fax 302.734.7965

**Salisbury**  
312 West Main St. Suite 300  
Salisbury, MD 21801  
Ph. 410.546.9100  
Fax 410.546.5824

**Wilmington**  
3205 Randall Parkway, Suite 211  
Wilmington, North Carolina 28403  
Ph. 910.341.7600  
Fax 910.341.7506

[www.beckermorgan.com](http://www.beckermorgan.com)

### PROJECT TITLE

**KILLENS POND WATER PARK RENOVATIONS PHASE 1**

**5025 KILLENS POND ROAD  
FELTON  
KENT COUNTY, DE**

### SHEET TITLE

**SEDIMENT AND STORMWATER NOTES & DETAILS**

### ISSUE BLOCK

NO.	DATE	DESCRIPTION
4	9/16/15	ADDENDUM NO. 2
3	8/25/15	ISSUED FOR BID
2	7-29-15	SUBMITTED TO PARKS FOR OWNER REVIEW
1	7-1-15	SUBMITTED TO DMF FOR FINAL DESIGN REVIEW
MARK	DATE	DESCRIPTION
LAYER STATE	0-588	

**PROJECT NO.:** 2013157.00

**DATE:** 11/20/13

**SCALE:** N.T.S.

**DRAWN BY:** S.L.G. PROJ. MGR.: G.E.J.

SHEET  
**C-508**  
COPYRIGHT: 2012



1. NOTIFY THE DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL, SEDIMENT AND STORMWATER PROGRAM FIVE (5) DAYS PRIOR TO COMMENCING WITH CONSTRUCTION AND HOLD A PRECONSTRUCTION MEETING. FAILURE TO DO SO CONSTITUTES A VIOLATION OF THE APPROVED SEDIMENT AND STORM WATER MANAGEMENT PLAN. CONTRACTOR MUST STRICTLY ADHERE TO SEQUENCE, ANY CHANGES MUST BE APPROVED BY KCD PRIOR TO IMPLEMENTATION.
2. OBTAIN ALL COUNTY AND STATE PERMITS PRIOR TO START OF CONSTRUCTION.
3. PRIOR TO ANY CLEARING, INSTALLATION OF SEDIMENT CONTROL MEASURES OR GRADING, A PRECONSTRUCTION MEETING MUST BE SCHEDULED AND CONDUCTED WITH THE AGENCY CONSTRUCTION SITE REVIEWER, THE LANDOWNER/DEVELOPER, CONTRACTOR, AND CERTIFIED CONSTRUCTION REVIEWER (CQARE REQUIRED TO ATTEND THE PRE-CONSTRUCTION MEETING. THE DESIGNER IS RECOMMENDED TO ATTEND.
4. INSTALL PERIMETER CONTROLS PER THE APPROVED SEDIMENT AND STORMWATER PLAN INCLUDING SILT FENCE, AND STABILIZED CONSTRUCTION ENTRANCE. ONCE PERIMETER CONTROLS ARE INSTALLED PER THE PLAN, THE CONTRACTOR IS TO CALL FOR A PERIMETER CONTROL INSPECTION. ALL PERIMETER CONTROLS ARE TO BE REVIEWED BY THE AGENCY CONSTRUCTION REVIEWER AND APPROVED PRIOR TO PROCEEDING WITH FURTHER SITE DISTURBANCE OR CONSTRUCTION.
5. THE CONTRACTOR SHALL AT ALL TIMES PROTECT AGAINST SEDIMENT OR DEBRIS LAID DOWN RUNOFF OR WIND FROM LEAVING THE SITE. PERIMETER CONTROLS SHOULD BE CHECKED DAILY AND ADJUSTED AND/OR REPAIRED TO FULL CONTAIN AND CONTROL SEDIMENTATION ON THE SITE. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT HAS REACHED HALF OF THE EFFECTIVE CAPACITY OF THE CONTROL. IN ADDITION, THE CONTRACTOR MAY NEED TO ADJUST OR REPAIR MEASURES IN TIMES OF ADVERSE WEATHER CONDITION, OR AS DIRECTED BY THE AGENCY CONSTRUCTION REVIEWER.
6. AREAS NOT ASSOCIATED WITH THE ACTIVE CONSTRUCTION SITE FOR MORE THAN 14 CALENDAR DAYS NEED TO BE TEMPORARILY STABILIZED.
7. PERFORM DEMOLITION / ABANDONMENT OF ALL ITEMS PERTAINING TO SITE CONSTRUCTION INCLUDING BUT NOT LIMITED TO: EXISTING STRUCTURES, SIDEWALKS AND WATER AND SEWER UTILITIES. THESE ITEMS SHALL BE REMOVED OR ABANDONED IN ACCORDANCE WITH THE EXISTING/DEMOLITION PLAN AND STATE OR LOCAL MUNICIPALITY REQUIREMENTS. IN ADDITION, CONTRACTOR IS TO CLEAR AND GRUB THE AREAS NECESSARY FOR CONSTRUCTION IN THE AREAS OF CONSTRUCTION. IF EXISTING PAVEMENT IN AND AROUND THE PARK IS DAMAGED DUE TO CONSTRUCTION TRAFFIC, DURING THE PROCESS OF SITE DEMOLITION AND CONSTRUCTION, THE AGENCY IS TO BE SAU CUT AND PATCH IN ACCORDANCE WITH THE PAVEMENT TIE-IN DETAIL.
8. INSTALL SITE UTILITIES INCLUDING SEWER, WATER AND STORM SEWER UPDATES PER THE APPROVED CONSTRUCTION PLANS.
9. BLADE GRASS SITE AREA AND BEGIN TO PREPARE BUILDING PADS AND POOL DECK. CONSTRUCTION OF THE FILTER STRIPS SHOULD BE COMPLETED PRIOR TO BEGINNING CONSTRUCTION OF THE BUILDING PADS.
10. NOTIFY THE PERSON RESPONSIBLE FOR STORMWATER SYSTEM CONSTRUCTION REVIEW AT LEAST THREE (3) DAYS PRIOR TO THE START OF THE STORMWATER SYSTEM CONSTRUCTION. STORMWATER FACILITIES MUST BE REVIEWED THROUGHOUT THEIR CONSTRUCTION. ONCE THE RESPONSIBLE PERSON IS NOTIFIED, BEGIN CONSTRUCTION OF THE FILTER STRIP AS SHOWN ON SHEET C-503 OF THESE CONSTRUCTION PLANS.
11. RESTORE PORTIONS OF THE SITE AREA UTILIZED FOR LAYDOWN AND PRODUCT STORAGE TO PRE-CONSTRUCTION CONDITIONS. SEEDING NOTIONS ON THIS SHEET. PROVIDE ADDITIONAL SEEDING AND STABILIZATION AS NECESSARY.
12. REMOVAL OF EROSION AND SEDIMENT CONTROL DEVICES SHOULD ONLY BE REMOVED AFTER WORK IN AN AREA HAS BEEN COMPLETED AND STABILIZED WITH WRITTEN APPROVAL FROM THE AGENCY CONSTRUCTION REVIEWER.
13. REMOVE ANY REMAINING PERIMETER CONTROLS ASSOCIATED WITH SITE CONSTRUCTION AFTER STABILIZATION IS COMPLETED AND APPROVAL FROM EROSION CONTROL DEVICES HAS BEEN OBTAINED.
14. TERMINATION OF THE CONSTRUCTION GENERAL PERMIT WILL REQUIRE SUBMISSION AND ACCEPTANCE OF THE POST CONSTRUCTION VERIFICATION OF DOCUMENTS, INCLUDING FINAL STABILIZATION THROUGHOUT THE SITE, ALL ELEMENT OF THE SEDIMENT AND STORMWATER MANAGEMENT PLAN IMPLEMENTED, AND ACCEPTANCE OF THE FINAL OPERATION AND MAINTENANCE PLAN.

1. PERMANENT SEEDING :
  - A. SHALL BE CONDUCTED YEAR AROUND.
  - B. SEED BED PREPARATION : SHALL BE IN ACCORDANCE WITH DE-ESC-3.4.3, SHEET 4 OF 4.
  - C. SOIL AMENDMENTS : FERTILIZER AND LIME APPLICATION SHALL BE IN ACCORDANCE WITH DE-ESC-3.4.3, SHEET 4 OF 4.
  - D. SEEDING :

APPLY ERNST'S #117 WARM SEASON SEED MIXTURE.

APPLY SEED UNIFORMLY WITH A BROADCAST SEEDER, DRILL, CULTIPACKER SEEDER OR HYDROSEEDER. ALL SEED WILL BE APPLIED AT THE RECOMMENDED RATE AND PLANTING DEPTH. REFER TO LANDSCAPE PLANS FOR ADDITIONAL SEEDING REQUIREMENTS.
  - E. MULCH :

IMMEDIATELY AFTER SEEDING, UNIFORMLY MULCH ENTIRE AREA WITH STRAW AT A RATE OF 2 TONS PER ACRE MINIMUM. ALL MULCHING SHALL BE DONE IN ACCORDANCE WITH DETAIL DE-ESC-3.4.5.
  - F. TOPSOIL : ALL AREAS TO BE PERMANENTLY SEEDED SHALL HAVE A MINIMUM OF 4" OF TOPSOIL.
2. TEMPORARY STABILIZATION :
  - A. PROVIDE SEED BED SAME AS 1-B ABOVE.
  - B. APPLY MIX NO. 5 (ANNUAL RYEGRASS) IN ACCORDANCE WITH DETAIL DE-ESC-3.4.3, SHEET 1 OF 4.
  - C. MULCH SAME AS 1-E ABOVE.
3. IF TEMPORARY STABILIZATION IS REQUIRED, PERMANENT SEEDING SHALL BE PERFORMED AS SOON AS POSSIBLE.
4. ALL FILL SLOPE AREAS SHOWN ON PLAN ARE TO BE STABILIZED AS PER STATEMENT 1 OR 2 ABOVE IMMEDIATELY AFTER COMPLETION OF GRADING OPERATIONS FOR THESE SLOPES.
5. EROSION CONTROL MATTING IS REQUIRED ON ALL SLOPES OF 3:1 OR GREATER AND IN AREAS OF CONCENTRATED FLOW.

1. TO PREVENT OR REDUCE THE MOVEMENT OF DUST FROM DISTURBED SOIL SURFACES THE SITE SHALL BE SPRINKLED WITH WATER UNTIL THE SURFACE IS MOIST AND REPEATED AS NECESSARY. ALTERNATIVE METHODS OF DUST CONTROL REQUIRE APPROVAL OF DNRSE.
2. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN AND REPAIR ALL EROSION AND SEDIMENT CONTROL, AND EROSION MANAGEMENT PRACTICES DURING UTILITY INSTALLATION.
3. APPROVAL OF THE SEDIMENT AND STORMWATER PLAN SHALL NOT GRANT OR IMPLY A RIGHT TO DISCHARGE STORM WATER RUNOFF. THE CAPITOL SCHOOL DISTRICTS RESPONSIBLE FOR ACQUIRING ANY AND ALL AGREEMENTS, EASEMENTS ETC. NECESSARY TO COMPLY WITH STATE DRAINAGE AND OTHER APPLICABLE CODES.
4. REVIEW AND APPROVAL OF THE SEDIMENT AND STORM WATER MANAGEMENT PLAN SHALL NOT RELIEVE THE CONTRACTOR FROM HIS OR HER RESPONSIBILITIES FOR COMPLIANCE WITH THE REQUIREMENTS OF THE SEDIMENT AND STORM WATER REGULATIONS, NOR SHALL IT RELIEVE THE CONTRACTOR FROM ERRORS OR OMISSIONS IN THE APPROVED PLAN.

**CONCRETE WASHOUT DATA**  
 LENGTH = 6 FT  
 WIDTH = 6 FT  
 DEPTH = 3 FT

**Plan View**  
 Berm required on all sides (excluding access drive location)  
 Concrete Washout Sign  
 Access drive to be paved or most material specifications of a SteelReinforced Construction Entrance (PE-ESC-3-A.7)  
 10' min.  
 6' min.  
 6' min.  
 2:1 typ.  
 Connect to paved or gravel surface

**Section A-A**  
 2% slope  
 10 mil polyethylene liner  
 30' min.  
 6' min.  
 2  
 1  
 3  
 4  
 5  
 6  
 7  
 8  
 9  
 10  
 11  
 12  
 13  
 14  
 15  
 16  
 17  
 18  
 19  
 20  
 21  
 22  
 23  
 24  
 25  
 26  
 27  
 28  
 29  
 30  
 31  
 32  
 33  
 34  
 35  
 36  
 37  
 38  
 39  
 40  
 41  
 42  
 43  
 44  
 45  
 46  
 47  
 48  
 49  
 50  
 51  
 52  
 53  
 54  
 55  
 56  
 57  
 58  
 59  
 60  
 61  
 62  
 63  
 64  
 65  
 66  
 67  
 68  
 69  
 70  
 71  
 72  
 73  
 74  
 75  
 76  
 77  
 78  
 79  
 80  
 81  
 82  
 83  
 84  
 85  
 86  
 87  
 88  
 89  
 90  
 91  
 92  
 93  
 94  
 95  
 96  
 97  
 98  
 99  
 100  
 101  
 102  
 103  
 104  
 105  
 106  
 107  
 108  
 109  
 110  
 111  
 112  
 113  
 114  
 115  
 116  
 117  
 118  
 119  
 120  
 121  
 122  
 123  
 124  
 125  
 126  
 127  
 128  
 129  
 130  
 131  
 132  
 133  
 134  
 135  
 136  
 137  
 138  
 139  
 140  
 141  
 142  
 143  
 144  
 145  
 146  
 147  
 148  
 149  
 150  
 151  
 152  
 153  
 154  
 155  
 156  
 157  
 158  
 159  
 160  
 161  
 162  
 163  
 164  
 165  
 166  
 167  
 168  
 169  
 170  
 171  
 172  
 173  
 174  
 175  
 176  
 177  
 178  
 179  
 180  
 181  
 182  
 183  
 184  
 185  
 186  
 187  
 188  
 189  
 190  
 191  
 192  
 193  
 194  
 195  
 196  
 197  
 198  
 199  
 200  
 201  
 202  
 203  
 204  
 205  
 206  
 207  
 208  
 209  
 210  
 211  
 212  
 213  
 214  
 215  
 216  
 217  
 218  
 219  
 220  
 221  
 222  
 223  
 224  
 225  
 226  
 227  
 228  
 229  
 230  
 231  
 232  
 233  
 234  
 235  
 236  
 237  
 238  
 239  
 240  
 241  
 242  
 243  
 244  
 245  
 246  
 247  
 248  
 249  
 250  
 251  
 252  
 253  
 254  
 255  
 256  
 257  
 258  
 259  
 260  
 261  
 262  
 263  
 264  
 265  
 266  
 267  
 268  
 269  
 270  
 271  
 272  
 273  
 274  
 275  
 276  
 277  
 278  
 279  
 280  
 281  
 282  
 283  
 284  
 285  
 286  
 287  
 288  
 289  
 290  
 291  
 292  
 293  
 294  
 295  
 296  
 297  
 298  
 299  
 300  
 301  
 302  
 303  
 304  
 305  
 306  
 307  
 308  
 309  
 310  
 311  
 312  
 313  
 314  
 315  
 316  
 317  
 318  
 319  
 320  
 321  
 322  
 323  
 324  
 325  
 326  
 327  
 328  
 329  
 330  
 331  
 332  
 333  
 334  
 335  
 336  
 337  
 338  
 339  
 340  
 341  
 342  
 343  
 344  
 345  
 346  
 347  
 348  
 349  
 350  
 351  
 352  
 353  
 354  
 355  
 356  
 357  
 358  
 359  
 360  
 361  
 362  
 363  
 364  
 365  
 366  
 367  
 368  
 369  
 370  
 371  
 372  
 373  
 374  
 375  
 376  
 377  
 378  
 379  
 380  
 381  
 382  
 383  
 384  
 385  
 386  
 387  
 388  
 389  
 390  
 391  
 392  
 393  
 394  
 395  
 396  
 397  
 398  
 399  
 400  
 401  
 402  
 403  
 404  
 405  
 406  
 407  
 408  
 409  
 410  
 411  
 412  
 413  
 414  
 415  
 416  
 417  
 418  
 419  
 420  
 421  
 422  
 423  
 424  
 425  
 426  
 427  
 428  
 429  
 430  
 431  
 432  
 433  
 434  
 435  
 436  
 437  
 438  
 439  
 440  
 441  
 442  
 443  
 444  
 445  
 446  
 447  
 448  
 449  
 450  
 451  
 452  
 453  
 454  
 455  
 456  
 457  
 458  
 459  
 460  
 461  
 462  
 463  
 464  
 465  
 466  
 467  
 468  
 469  
 470  
 471  
 472  
 473  
 474  
 475  
 476  
 477  
 478  
 479  
 480  
 481  
 482  
 483  
 484  
 485  
 486  
 487  
 488  
 489  
 490  
 491  
 492

TEMPORARY SEEDING BY RATE, DATES, AND DATES										
Mix #	Species <sup>a</sup>	Seeding Rate	Optimum Seeding Dates <sup>1</sup> D = 10-Percent Dormancy Period, A = Acceptable Seeding Period						Planting Depth <sup>3</sup>	
			Control Plots			Plymouth				
			All	All	All	All	All	All		
	<b>Certified Seed</b>	lb/a <sup>2</sup>	lb/1000 sq ft	2/5-4/6	3/5-5/6	3/5-5/6	3/5-5/6	3/5-5/6	3/5-5/6	
1	Barley	125	4	O	A	O	O	A	O	1-2 inches 2-3" sandy soils
2	Oats	125	4	O	A	A	O	A	O	1-2 inches 2-3" sandy soils
3	Rye	125	4	O	A	O	O	O	A	1-2 inches 2-3" sandy soils
4	Perennial Ryegrass	125	4	O	A	O	O	A	O	0.5 inches 1-2" sandy soils
5	Annual Ryegrass	125	4	O	A	O	O	O	A	0.5 inches 1-2" sandy soils
6	Winter Wheat	125	4	O	A	O	O	O	A	1-2 inches 2-3" sandy soils
7	Foxtail Millet	35 P.L3	0.7	O	O					0.5 inches 1-2" sandy soils
8	Panicum Millet	20 P.L3	0.5	O						0.5 inches 1-2" sandy soils

1. Winter seeding requires 3 tons per acre of straw mulch for proper stratification.  
2. May be planted throughout summer if soil moisture is adequate or seeded area can be irrigated.  
3. Applicable on slopes 3:1 or less.  
4. Fills ponds per acre of Annual Ryegrass may be added to 1/2 the seeding rate of any of the above species.  
5. Use varieties currently recommended for Delaware. Contact a County Extension Office for information.  
6. Warm season grasses such as Millet or Weeping Lovegrass may be used between 5/1 and 8/1 if desired. Seed at 3-5 lbs. per acre. Good on low fertility and acid soils. Seed after frost through summer at a depth of 0.5".

Source:	Symbol:	Detail No.
Delaware ESC Handbook		<b>DE-ESC-3.4.3</b> Sheet 1 of 4
		Date: _____

## Construction Notes:

1. Locate washout area a minimum of 50 feet from open channels, stormdrain inlets, wetlands or waterbodies.
2. Locate washout area so that it is accessible to concrete equipment (service with a minimum 10 foot wide gravel accessway), but so it is not in a highly active construction area causing accidental damage.
3. Minimum dimensions for precastributed units are 4 feet by 4 feet by 1 foot deep with a minimum 4-mil polyethylene plastic liner. Minimum dimensions for constructed concrete washout areas are 4 feet by 6 feet by 3 feet deep, with a minimum 10mil polyethylene liner, 2:1 side slopes, and a 1 foot high by 1 foot wide compacted fill berm.
4. The liner must be free of tears or holes and placed over smooth surfaces to prevent puncturing. For excavated washouts, anchor the liner underneath the berm or overlap with sandbags or concrete blocks to hold in place.
5. Provide a sign designating the washout area, and for large construction sites, provide signs throughout directing traffic to the location.
6. Allow washed out concrete mixture to harden through evaporation of the wastewater. Once the facility has reached 75 percent of its capacity, remove the hardened concrete by reusing the broken aggregate (cracks, recycling, or disposing of offsite. The hardened material can be buried on site with minimum of 1 foot of clean, compacted fill.
7. Apply a new liner before reusing the station for additional washouts after maintenance has occurred.

Source: Adopted from Colorado Urban Storm Drainage Criteria Manual, Vol 3	Symbol: <div style="border: 2px solid black; padding: 10px; width: 100px; text-align: center; margin: 10px auto;">CW</div>	Detail No. <b>DE-ESC-3.6.2</b> Sheet 2 of 2 Date: 03/13
--	---	--

[illegible]

50" min.

107 min.

10" min.

Wash rack (optional)

10" min.

10" min.

DE #3 Stone

Edge exist. pave

10" min.

Provide positive drainage to sediment trapping device

**Plan**

50" min.

3"

Mountable berm (as needed)

Exist. pave

6" min.

Culvert pipes (as needed)

Exist. grad

GS-1 geotextile

**Profile**

107 min.

3" min.

3" min.

Type GS-1 geotextile fabric

**Section A-A (Std.)**

Source: Adapted from VA ESC Handbook

Symbol: **SC**

Detail No. **DE-ESC-3.4.7**  
Sheet 1 of 2

Date: 12/03

PERMANENT SEEDING AND SEEDING DATES (cont.)									
Seeding Mixtures		Seeding Rate	Optimum Seeding Dates <sup>1</sup>						Remarks
No. No.	Certified Seed	lb/ac	4-Current Year's Dates						
			Guaranteed	Prudent					
	<b>Poorly Drained Soils</b>	lb/ac	10/20/01	9/11/01	8/14/01	8/17/01	7/21/01	10/21/01	
9	Creeping Brome Downy Brome Hoag Brome Hoag Ryegrass	35 35 35 40	1	1	1	1	1	1	Good establishment of disturbed sites and wetlands
10	Red Clover	10	2	2	2	2	2	2	Good erosion control, wildlife cover and wildlife regeneration
	<b>Residential Lawns</b>								
11	Tall Fescue Perennial Ryegrass Kentucky Bluegrass Blend	160 20 3	2	2	2	2	2	2	High value, high maintenance, high traffic, vigorous recovery
			0.69	0.69	0.69	0.69	0.69	0.69	Well drained soil, full sun.
12	Tall Fescue Perennial Ryegrass Downy Brome Downy Fescue	160 20 3	2	2	2	2	2	2	Moderate value, low maintenance, highly tolerant
			0.69	0.69	0.69	0.69	0.69	0.69	
13	Creeping Bent Fescue Hoag Brome Hoag Ryegrass	30 15 15	1	1	1	1	1	1	Moderate traffic tolerance, moderate maintenance
14	Creeping Bent Fescue Hoag Brome and Perennial Ryegrass	30 15 15	1	1	1	1	1	1	Stable traffic, moderate tolerance
			0.69	0.69	0.69	0.69	0.69	0.69	
15	Warm Season Grasses	160	3	3	3	3	3	3	Microclimate, but performs well in wet areas. Discouraged

1. Unless supplemented by the chosen method of application, the table rate of seed should be increased by 25%.  
 2. Winter seeding requires 2 to 3 times as much seed. Planting sites listed above are average for Delaware. These dates may require adjustment to reflect local conditions.  
 3. A seed shed must be the minimum type of minimum germination requirement recommended by the Delaware Department of Agriculture. The minimum is a closed access shed with an entrance within Section 1, Chapter 45, Title 14 of the Delaware Code.  
 4. Good erosion response may be paired throughout current fall if minimum is adequate and needed area can be irrigated.  
 5. All germination need not be provided.  
 6. Warm season grasses require at least Rhytelys Grass cannot be covered more than 4 times per year.  
 7. Warm season grasses require at least Rhytelys Grass cannot be covered more than 4 times per year, and will remain dormant until spring.

Source:
 Symbol:
 Detail No.

Delaware ESC Handbook
 DE-ESC-3.4.3
 Sheet 3 of 4

Date:
 12/03/04

Diagram illustrating the cross-section of a drainage system. The diagram shows a concrete base with a metal grate on top. Below the grate is a layer of gravel. A wheel track is shown on the concrete base. Labels indicate: 'Equipment wheel track + 2\"

Metal bars set in reinforced conc. (Traffic bearing grates, timber made or other approved eqpts. may be substituted)

Provide space for drainages

**Section A-A (Opt.)**

**Construction Notes:**

1. Stone size - Use DE #3 stone.
2. Length: As required, but not less than 50 feet (except on a single residence lot where a 30 foot minimum length would apply).
3. Thickness - Not less than size (6) inches.
4. Width - Ten (10) foot minimum, but not less than the full width at points where ingress or egress occurs.
5. Geotextile - Type G5-1 placed over the entire area prior to placing of stone.
6. Surface Water: All surface water flowing or diverted toward construction entrances shall be piped across the entrance. If piping is impractical, a mountable berm with 5:1 slopes will be permitted.
7. Maintenance: The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto public rights-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanup of any measures used to keep sediment. All sediment spilled, dropped, washed or tracked onto public rights-of-way must be removed immediately.
8. Washing - Vehicle wheels shall be cleaned to remove sediment prior to entrance onto public rights-of-way. When washing is required, it shall be done on an area stabilized with stone and which drains into an approved sediment trapping device.
9. Inspection - Periodic inspection and needed maintenance shall be provided after each rain.

Source:	Symbol:	Detail No.
Adapted from VA ESC Handbook		<b>DE-ESC-3.4.7</b> Sheet 2 of 2
		Date: 12/2/08

## Construction Notes:

1. Site Preparation
  - a. Prior to seeding, install needed erosion and sediment control practices such as diversions, grade stabilization structures, berms, dikes, grassed waterways, and sediment basins.
  - b. Final grading and shaping is not necessary for temporary seedings.
2. Seeded Broadcast Preparation
 

It is important to prepare a good seedbed to insure the success of establishing vegetation. The seedbed should be well prepared, loose, uniform, and free of large clods, rocks, and other objectionable material. The soil surface should not be compacted or crusted.
3. Soil Amendments
  - a. Lime - Apply liming materials based on the recommendations of a **soil test** in accordance with the approved nutrient management plan. If a nutrient management plan is not required, apply dolomitic limestone at the rate of 1 to 2 tons per acre. Apply limestone uniformly and incorporate into the top 4 to 6 inches of soil.
  - b. Fertilizer - Apply fertilizer based on the recommendations of a **soil test** in accordance with the approved nutrient management plan. If a nutrient management plan is not required, apply a formulation of 10-10-10 at the rate of 600 pounds per acre. Apply fertilizer uniformly and incorporate into the top 4 to 6 inches of soil.
4. Seeding
  - a. For **temporary stabilization**, select a mixture from **Sheet 1**. For a **permanent stabilization**, select a mixture from **Sheet 2** or **Sheet 3** depending on the conditions.
  - b. Apply seed uniformly with a broadcast seedler, drill, cultipacker seeder or hydrosower. All seed will be applied at the recommended rate and planting depth.
  - c. Seed that has been broadcast should be covered by raking or dragging and then lightly tamped into place using a roller or cultipacker. If hydrosowing is used the seed and fertilizer is mixed, they will be mixed on site and the seedling should be done immediately and without any interruption.
5. Mulching
 

All mulching shall be done in accordance with detail **DE-ESC-3.A.5**.

Source:	Symbol:	Detail No.
Delaware ESC Handbook		<b>DE-ESC-3.A.3</b> Sheet 4 of 4
		Date: 12/23

Drip line  
Protective device  
Limit of disturbance  
Proposed grading

5'

Min.

"5' min. setback applies to all sensitive areas covered by this specification."

**Location of Sensitive Area Protection**

Drip line  
Snow fence  
Board fence  
Cord fence  
Plastic fence

**Methods of Sensitive Area Protection**

Source: Adapted from VA ESC Handbook	Symbol:  <b>SAP</b>	Detail No. <b>DE-ESC-3.7.2</b> Sheet 1 of 3 Date: 03/13
--	---------------------------	--

## Construction Notes:

Fencing should be installed at the extents of all sensitive areas. For trees, the fencing shall be installed outside the drip line (normal canopy) and at no time within 5 feet of the trunk. Personnel must be instructed to honor protective devices. The devices described are suggested only, and are not intended to exclude the use of other devices which will protect the trees to be retained. If fall fence is to be used for demarcation purposes, appropriate signage shall be provided a minimum of every 20 feet denoting the area as a sensitive area protection zone.

## Materials:

- Snow Fence - Standard 40-inch high snow fence shall be placed at the limits of clearing or construction on standard steel posts set 6 feet apart.
- Board Fence - Board fencing consisting of 4-inch square posts set securely in the ground and protruding at least 4 feet above the ground shall be placed at the limits of clearing with a minimum of two horizontal boards between posts. For tree protection, if it is not practical to erect a fence at the drip line, construct a triangular posts near the trunk. The limits of clearing will still be located at the drip line, since the root zone within the drip line will still require protection.
- Plastic Fencing - 40-inch high "International orange" plastic (poly(ethylene) film) fencing secured to conventional metal "T" or "U" posts driven to a minimum depth of 18 inches on a 6-foot minimum centers shall be installed at the limits of clearing. The fence should have the following minimum physical qualities:
  - Tensile yield: Average 2,000 lbs. per 4-foot width (ASTM D638)
  - Ultimate tensile yield: Average 2,900 lbs. per 4-foot width (ASTM D638)
  - Elongation at break (%): Greater than 1000% (ASTM D638)
  - Chemical resistance: Inert to most chemicals and acids

Source: Adapted from VA ESC Handbook	Symbol:  <div style="text-align: center;"><b>SAP</b></div>	Detail No. <b>DE-ESC-3.7.2</b> Sheet 2 of 3 Date: _____
--	--	--


4. Cord Fence - Posts with a minimum size of 2 inches square or 2 inches in diameter set securely in the ground and protruding at least 4 feet above the ground shall be placed at the limits of clearing with two cords of rail 1/4-inch or thicker at least 2 feet apart running between posts with strips of colored surveyor's flagging laid securely to the string at intervals no greater than 3 feet.

5. Earth Berms - Temporary earth berms shall be constructed according to specifications for a Temporary Earth Dike with the base of the berm on the sensitive area side located along the limits of clearing. Earth berms may not be used for this purpose if their presence will conflict with drainage patterns.

6. Truck Armoring (Tree Protection Only) - As a lost resort, a tree trunk can be armored with burlap wrapping and 2-inch studs wired vertically no more than 2 inches apart to a height of 5 feet encircling the trunk. If this alternative is used, the root zone within the trunk line will still require protection. Nothing should ever be nailed to a tree.


## Maintenance:

Fencing and armoring devices shall be in place before any excavation or grading is begun, shall be kept in good repair for the duration of construction activities, and shall be the last items removed during the final cleanup after the completion of the project.

Source:	Symbol:	Detail No.
Adapted from VA ESC Handbook		<b>DE-ESC-3.7.2</b> Sheet 3 of 3
		Date: 02/15

## Construction Notes:

1. Locate concrete mixing and containment area a minimum of 50 feet from open channels, storm drain inlets, wetlands or waterbodies.
2. Locate concrete mixing and containment area so that it is accessible to telescopic lifts (service with a minimum 10 foot wide gravel or paved accessway), but so it is not in a highly active construction area causing accidental damage.
3. Minimum volume for installed containment areas are 3.5 cubic feet per cubic foot of mixing capacity. The installed containment area must encompass the storage silo and mixing unit, and be surrounded on three sides minimum by a 12" high stone berm (DE #57 or 18" compost log
4. The 10-mil poly liner must be free of tears or holes and placed over smooth surfaces to prevent puncturing. The liner shall cover the perimeter control and be secured on the backside using cement or sand bags, or tamped into the ground a minimum of 6".
5. Allow cementitious waste to harden through evaporation of the wastewater. Once the facility has reached 75 percent of its capacity, remove the hardened concrete by raising the broad aggregate onsite, recycling, or disposing of offices. The hardened material can be buried on site with minimum of 1 foot of clean, compacted fill.
6. Apply a new liner before reusing the station for additional mixing after maintenance has occurred.

Source: Adapted from MM/DDOT Concrete Manual, Chap. 4	Symbol: 	Detail No. <b>DE-ESC-3.6.3</b> Sheet 2 of 2 Date: 03/13
--	--	--

**Plan View**

Diagram illustrating the Plan View of the concrete mixing operation. The central component is the **Mixing Silo**, which is surrounded by a **10 mil polyethylene liner**. The silo is supported by a **stone berm** or **Compost Log** structure. The area around the silo is labeled as **Optional Excavated Area** and **Optional stone-pad**. A **Lined Stone Berm or Compost Log** structure is shown on the left. A **Flow** arrow indicates the direction of material movement. An **Optional gravel entrance** is shown at the bottom. A note specifies: **NOTE: Berms required on all sides except the gravel entrance location.**

**Section View**

Diagram illustrating the Section View of the concrete mixing operation. The central component is the **Mixing Silo**, which is surrounded by a **10 mil polyethylene liner**. The silo is supported by a **stone pad for mixing silo** (weight not to exceed perimeter height). The area around the silo is labeled as **Excavated area for additional storage (optional)** and **DE #57 stone berm option**. A **1.0' compost log option with liner layerd into ground min. 6"** is shown on the right. The silo is supported by a **Sandbag or concrete block anchor**. A note specifies: **NOTE: Berms required on all sides except the gravel entrance location.**

**CONCRETE MIXING OPERATION**

**TO BE DETERMINED BY CONTRACTOR IN FIELD.**

**Source:** Adapted from MN/DOT Concrete Manual, Chap. 4

**Symbol:**

**Detail No.** **DE-ESC-3.6.3**

**Sheet 1 of 2**

**Date:** 03/13



STABILIZATION AND SEEDING NOTES :

1. PERMANENT SEEDING :

A. SHALL BE CONDUCTED YEAR AROUND.

B. SEED BED PREPARATION : SHALL BE IN ACCORDANCE WITH DE-ESC-3.4.3, SHEET 4 OF 4.

C. SOIL AMENDMENTS : FERTILIZER AND LIME APPLICATION SHALL BE IN ACCORDANCE WITH DE-ESC-3.4.3, SHEET 4 OF 4.

D. SEEDING :

APPLY ERNST'S #117 WARM SEASON SEED MIXTURE.

APPLY SEED UNIFORMLY WITH A BROADCAST SEEDER, DRILL, CULTIPACKER SEEDER OR HYDROSEEDER. ALL SEED WILL BE APPLIED AT THE RECOMMENDED RATE AND PLANTING DEPTH. REFER TO LANDSCAPE PLANS FOR ADDITIONAL SEEDING REQUIREMENTS.

E. MULCH :

IMMEDIATELY AFTER SEEDING, UNIFORMLY MULCH ENTIRE AREA WITH STRAW AT A RATE OF 2 TONS PER ACRE MINIMUM. ALL MULCHING SHALL BE DONE IN ACCORDANCE WITH DETAIL DE-ESC-3.4.5.

F. TOPSOIL :

ALL AREAS TO BE PERMANENTLY SEEDED SHALL HAVE A MINIMUM OF 4" OF TOPSOIL.
2. TEMPORARY STABILIZATION :

A. PROVIDE SEED BED SAME AS 1-B ABOVE.

B. APPLY MIX NO. 5 (ANNUAL RYEGRASS) IN ACCORDANCE WITH DETAIL DE-ESC-3.4.3, SHEET 1 OF 4.

C. MULCH SAME AS 1-E ABOVE.
3. IF TEMPORARY STABILIZATION IS REQUIRED, PERMANENT SEEDING SHALL BE PERFORMED AS SOON AS POSSIBLE.
4. ALL FILL SLOPE AREAS SHOWN ON PLAN ARE TO BE STABILIZED AS PER STATEMENT 1 OR 2 ABOVE IMMEDIATELY AFTER COMPLETION OF GRADING OPERATIONS FOR THESE SLOPES.
5. EROSION CONTROL MATTING IS REQUIRED ON ALL SLOPES OF 3:1 OR GREATER AND IN AREAS OF CONCENTRATED FLOW.

SEQUENCE OF CONSTRUCTION: INFILTRATION BASIN / EXT. DETENTION

1. NOTIFY THE PERSON RESPONSIBLE FOR STORMWATER SYSTEM CONSTRUCTION REVIEW AT LEAST THREE (3) DAYS PRIOR TO THE START OF THE STORMWATER SYSTEM CONSTRUCTION; STORMWATER FACILITIES MUST BE REVIEWED THROUGHOUT THEIR CONSTRUCTION.
2. BEFORE SITE WORK BEGINS, INFILTRATION BASIN BOUNDARIES AND AREAS TO BE UTILIZED FOR EXTENDED DETENTION SHOULD BE CLEARLY MARKED.
3. VEHICULAR TRAFFIC SHOULD BE PROHIBITED FROM THE AREA OF THE INFILTRATION BASIN BOUNDARIES.
4. IF EXISTING TOPSOIL IS STRIPPED DURING INSTALLATION OF THE STONE GABIONS, SOIL SHALL BE STOCKPILED FOR LATER USE IN THE AREAS DESIGNATED.
5. CONSTRUCTION OF THE EXPANDED EXTENDED DETENTION AREA AND PROPOSED OUTFALL STRUCTURE FOR THE PROPOSED IMPROVEMENTS SHOULD TAKE PLACE ONCE AREA OF THE POOL DECK IS CONSIDERED STABILIZED. COORDINATE CONSTRUCTION WITH SITE CONSTRUCTION REVIEWER.
6. CONTRACTOR TO GRADE EXTENDED DETENTION BASIN AS SHOWN.
7. ONCE GRADING FOR THE BASIN REACHES ELEVATIONS MINUS THE 6" OF TOPSOIL, THE CONTRACTOR SHOULD BEGIN EXCAVATION OF THE STONE INFILTRATION TRENCH. ALL WORK WITHIN THE INFILTRATION BASIN SHOULD TAKE PLACE FROM THE PERIMETER OF THE BASIN AND UTILIZE WIDE TRACKED VEHICLES. THE CONTRACTOR SHOULD NOT USE EQUIPMENT WITHIN THE PERIMETER OF THE BASIN. IF FINAL CONSTRUCTION OF THE INFILTRATION BASIN IS SCHEDULED FOR THE NON GROWING SEASON AND THE AREA WILL NOT STABILIZE IN AN TIMELY MANOR, THE CONTRACTOR SHOULD MAKE PREPARATIONS TO SEED AND UTILIZE AN EROSION AND SEDIMENT CONTROL MATTING TO HELP STABILIZE THE SIDE SLOPES OF THE EXTENDED DETENTION AREA.
8. CONTRACTOR IS TO INSTALL SILT FENCE SURROUNDING THE INFILTRATION TRENCH DURING STABILIZATION OF THE SIDE SLOPES OF THE EXTENDED DETENTION BASIN WITH EAST COAST ESC-2 TURF REINFORCEMENT MATTING (TRM) OR APPROVED EQUIVALENT.
9. FINALIZE GRADING OF THE AREA UTILIZED FOR EXTENDED DETENTION WITH TOP SOIL. THE LAYDOWN AREA AND CONSTRUCTION SITE SURROUNDING THE INFILTRATION BASIN AND AREA OF EXTENDED DETENTION SHOULD BE RETURNED TO PRE-CONSTRUCTION CONDITIONS. PROVIDE ADDITIONAL SEEDING AND STABILIZATION AS NECESSARY.
10. REMOVAL OF EROSION AND SEDIMENT CONTROL DEVICES SHOULD ONLY BE REMOVED AFTER WORK IN AN AREA HAS BEEN COMPLETED AND STABILIZED WITH WRITTEN APPROVAL FROM THE AGENCY CONSTRUCTION REVIEWER.
11. POST CONSTRUCTION VERIFICATION OF DOCUMENTS, INCLUDING FINAL STABILIZATION THROUGHOUT THE SITE, ALL ELEMENT OF THE SEDIMENT AND STORMWATER MANAGEMENT PLAN IMPLEMENTED, AND ACCEPTANCE OF THE FINAL OPERATION AN MAINTENANCE PLAN WITHIN 60 DAYS OF STORMWATER MANAGEMENT COMPLETION.

OPERATION AND MAINTENANCE PLAN: INFILTRATION BASIN

TOTAL AREA OF INFILTRATION BASIN: 994 SQFT (0.02 ACRES)

FREQUENCY	MAINTENANCE ITEMS
DURING ESTABLISHMENT, AS NEEDED (FIRST YEAR)	<div><div>• INSPECT THE SITE AFTER EACH STORMEVENT THAT EXCEEDS 0.5 INCHES OF RAINFALL.</div><div>• STABILIZE ANY BARE OR ERODING AREAS IN THE CONTRIBUTING DRAINAGE AREA.</div><div>• VEGETATION PLANTED IN THE AREA OF INFILTRATION BASIN SHOULD BE WATERED EVERY THREE DAYS FOR THE FIRST MONTH AND WEEKLY DURING THE REMAINDER OF THE FIRST GROWING SEASON (APRIL - OCTOBER), DEPENDING ON RAINFALL.</div></div>
QUARTERLY OR AFTER MAJOR STORMS (> 1" OF RAINFALL)	<div><div>• REMOVE DEBRIS AND BLOCKAGES FROM STONE GABIONS.</div><div>• REPAIR UNDERCUT, ERODED AND BARE SOILS IN AREA OF THE INFILTRATION BASIN AND THE OUTFALL.</div></div>
TWICE A YEAR	<div><div>• CHECK CONDITION OF GABIONS. REPAIR AS NEEDED.</div><div>• MOWING OF VEGETATED PERIMETER.</div></div>
ANNUALLY	<div><div>• CLEAN TOP OF STONE WITHIN THE GABIONS UTILIZED FOR LEVEL SPREADER. REPLACE AS NEEDED.</div><div>• REPAIR AREAS OF GRASS WHICH APPEAR TO BE BARE OR IN NEED OF EROSION REPAIR.</div><div>• INSPECT TRM LINED SPILLWAY AND REPAIR AS NEEDED.</div></div>

OPERATION AND MAINTENANCE PLAN: EXTENDED DETENTION

TOTAL AREA OF EXTENDED DETENTION: 7123 SQFT (0.16 ACRES)

FREQUENCY	MAINTENANCE ITEMS
DURING ESTABLISHMENT, AS NEEDED (FIRST YEAR)	<div><div>• INSPECT THE SITE AFTER EACH STORMEVENT THAT EXCEEDS 0.5 INCHES OF RAINFALL.</div><div>• STABILIZE ANY BARE OR ERODING AREAS IN THE CONTRIBUTING DRAINAGE AREA.</div><div>• VEGETATION PLANTED IN THE AREA OF EXTENDED DETENTION SHOULD BE WATERED EVERY THREE DAYS FOR THE FIRST MONTH AND WEEKLY DURING THE REMAINDER OF THE FIRST GROWING SEASON (APRIL - OCTOBER), DEPENDING ON RAINFALL.</div></div>
QUARTERLY OR AFTER MAJOR STORMS (> 1" OF RAINFALL)	<div><div>• REPAIR UNDERCUT, ERODED AND BARE SOILS IN AREA OF THE INFILTRATION BASIN AND THE OUTFALL.</div><div>• ENSURE THAT THE CONTRIBUTING AREA REMAINS STABILIZED. SPOT RESEED AS NECESSARY.</div></div>
ANNUALLY	<div><div>• INSPECT THE SIDESLOPES OF THE AREA OF EXTENDED DETENTION FOR EVIDENCE OF SLOUGHING, ANIMALS BORROWING, BOGGY AREAS, WOODY GROWTH OR GULLY EROSION. REPAIR AS NEEDED.</div><div>• INSPECT THE OF POND OUTFALL FOR EROSION OF THE AREA OF DISCHARGE AND REPAIR AS NEEDED.</div><div>• INSPECT THE OUTFALL STRUCTURE, PIPE AND STRUCTURE JOINT AND TRASH RACKS. IF CRACKS EXIST IN THE JOINT, REPAIR AS NEEDED TO PROHIBIT FAILURE OF THE JOINT. CLEAR DEBRIS FROM TRASH RACKS AS NECESSARY. IF DAMAGE IS OBSERVED TO THE TWO TRASH RACKS, REPLACE AS NEEDED.</div><div>• REPAIR AREAS OF GRASS WHICH APPEAR TO BE BARE OR IN NEED OF EROSION REPAIR.</div><div>• MONITOR GROWTH OF TREES AND SHRUBS WHICH MAY GROW IN THE AREA OF EXTENDED DETENTION. REMOVE INVASIVE SPECIES BY CUTTING THE TREE AND LEAVING THE STUMP IF ONE EXISTS.</div></div>

OPERATION AND MAINTENANCE NOTES

1. THE DNREC SEDIMENT AND STORMWATER PROGRAM AND /OR THE RELEVANT DELEGATED AGENCY RESERVES THE RIGHT TO ENTER PRIVATE PROPERTY FOR PURPOSES OF PERIODIC SITE REVIEW.
2. THE DNREC SEDIMENT AND STORMWATER PROGRAM SHALL BE NOTIFIED WITHIN 30 BUSINESS DAYS IF THE PROPERTY OWNERSHIP IS TRANSFERRED TO A NEW PERSON OR ENTITY.
3. THE DNREC SEDIMENT AND STORMWATER PROGRAM MAY SEEK ENFORCEMENT ACTION AGAINST ANY OWNER DEEMED NEGLIGENT IN FULFILLING THE OPERATION AND MAINTENANCE REQUIREMENTS OF THE DELAWARE SEDIMENT AND STORMWATER REGULATIONS.
4. APPROVAL OF THE SEDIMENT AND STORMWATER PLAN SHALL NOT GRANT OR IMPLY A RIGHT TO DISCHARGE STORM WATER RUNOFF. THE INDIAN RIVER SCHOOL DISTRICTS RESPONSIBLE FOR ACQUIRING ANY AND ALL AGREEMENTS, EASEMENTS ETC. NECESSARY TO COMPLY WITH STATE DRAINAGE AND OTHER APPLICABLE CODES.
5. REVIEW AND OR APPROVAL OF THE SEDIMENT AND STORM WATER MANAGEMENT PLAN SHALL NOT RELIEVE THE CONTRACTOR FROM HIS OR HER RESPONSIBILITIES FOR COMPLIANCE WITH THE REQUIREMENTS OF THE SEDIMENT AND STORM WATER REGULATIONS, NOR SHALL IT RELIEVE THE CONTRACTOR FROM ERRORS OR OMISSIONS IN THE APPROVED PLAN.
6. THE DNREC SEDIMENT AND STORMWATER PROGRAM SHALL BE CONTACTED IF A CONCERN ARISES REGARDING A STORMWATER MANAGEMENT FACILITY, BEFORE ANY NON-ROUTINE MAINTENANCE, OR IF MODIFICATIONS TO THE FACILITY ARE DESIRED.
7. ANY DESIGN MODIFICATIONS MADE TO THE STORMWATER SYSTEM SHALL REQUIRE THE CREATION OF A NEW POST CONSTRUCTION STORMWATER MANAGEMENT PLAN AND/OR OPERATIONS AND MAINTENANCE PLAN, WITH APPROVAL OF THE PLANS BY THE DNREC SEDIMENT AND STORMWATER PROGRAM.
8. FOR ALL STORMWATER EASEMENT AREAS AND THE MINIMUM 10-FOOT WIDE ACCESSWAYS TO ALL STORMWATER FACILITIES AND THEIR STRUCTURAL COMPONENTS, REGULAR MOWING SHALL BE PERFORMED TO KEEP THE GRASS 6" OR LESS; NO TREES OR SHRUBS SHALL BE PLANTED, AND ANY FOUND GROWING SHALL BE REMOVED; AND NO PERMANENT STRUCTURES , SUCH AS FENCES OR SHED, SHALL BE LOCATED WITHIN THE EASEMENT OR ACCESS WAY.
9. PRIOR TO ANY EARTHWORK OR EXCAVATION TAKES PLACE, THE CONTRACTOR SHALL HIRE A PRIVATE UTILITY LOCATOR AT LEAST 48 HOURS PRIOR TO COMMENCING CONSTRUCTION.



ARCHITECTURE  
ENGINEERING

**Dover, DE**

309 S. Governors Ave.  
Dover, DE 19904  
Ph. 302.734.7950  
Fax 302.734.7965

**Salisbury, MD**

312 West Main St. Suite 300  
Salisbury, MD 21801  
Ph. 410.546.9100  
Fax 410.546.5824

**Wilmington, NC**

3205 Randall Parkway, Suite 211  
Wilmington, North Carolina 28403  
Ph. 910.341.7600  
Fax 910.341.7506

**www.beckermorgan.com**

PROJECT TITLE

KILLENS POND  
WATER PARK  
RENOVATIONS  
PHASE 1

5025 KILLENS POND ROAD  
FELTON  
KENT COUNTY, DELAWARE

SHEET TITLE

POST CONSTRUCTION  
SITE STORMWATER  
MANAGEMENT PLAN  
EXTENDED DETENTION /  
INFILTRATION BASIN

ISSUE BLOCK

4	9/16/15	ADDENDUM NO. 2
3	8/25/15	ISSUED FOR BID
2	7/29/2015	SUBMITTED TO PARKS FOR OWNER REVIEW
1	7/1/2015	SUBMITTED TO DFM FOR FINAL DESIGN REVIEW

MARK DATE DESCRIPTION

LAYER/STATE: C-506

PROJECT NO.: 2012006.04

DATE:

SCALE:

N/A

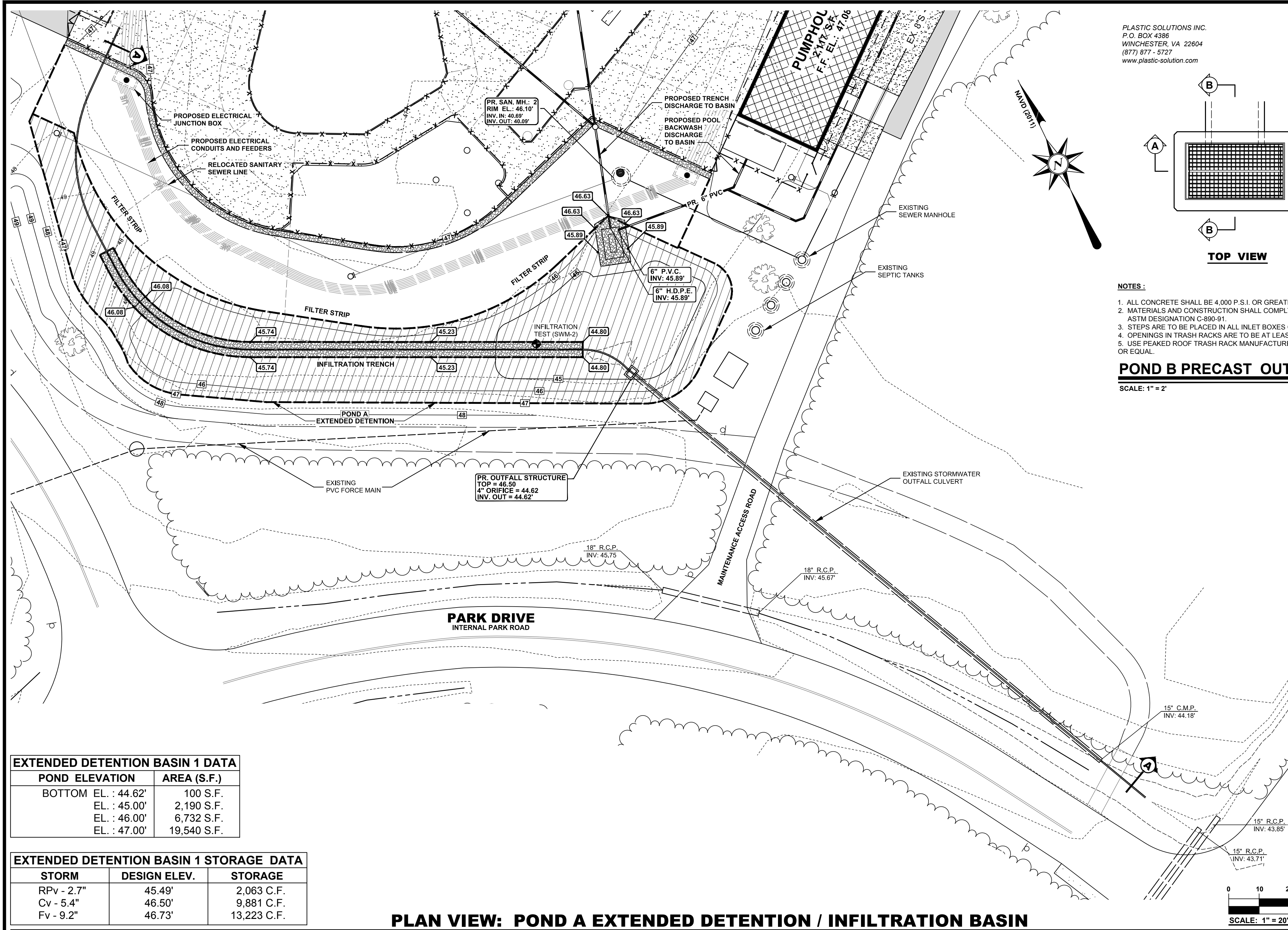
DRAWN BY: J.N.S. PROJ. MGR.: G.E.J.

SHEET

C-506

COPYRIGHT: 2015



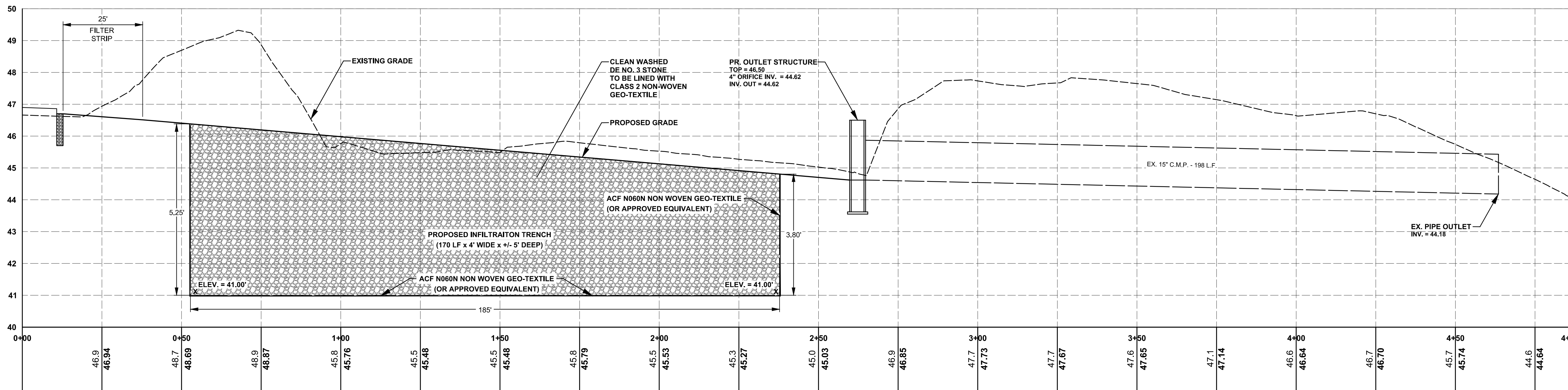


EXTENDED DETENTION BASIN 1 DATA		
POND ELEVATION	AREA (S.F.)	
BOTTOM EL. : 44.62'	100 S.F.	
EL. : 45.00'	2,190 S.F.	
EL. : 46.00'	6,732 S.F.	
EL. : 47.00'	19,540 S.F.	

EXTENDED DETENTION BASIN 1 STORAGE DATA		
STORM	DESIGN ELEV.	STORAGE
RPv - 2.7"	45.49'	2,063 C.F.
Cv - 5.4"	46.50'	9,881 C.F.
Fv - 9.2"	46.73'	13,223 C.F.

**PLAN VIEW: POND A EXTENDED DETENTION / INFILTRATION BASIN**

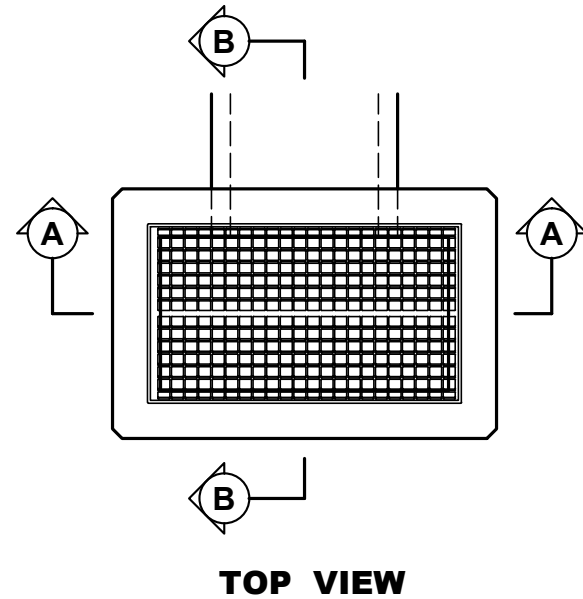
SCALE : 1" = 20'



**PROFILE VIEW: POND A EXTENDED DETENTION / INFILTRATION BASIN**

SCALE VERTICAL: 1" = 2'  
HORIZONTAL: 1" = 20'

PLASTIC SOLUTIONS INC.  
P.O. BOX 4386  
WINCHESTER, VA 22604  
(877) 877-5727  
www.plastic-solution.com



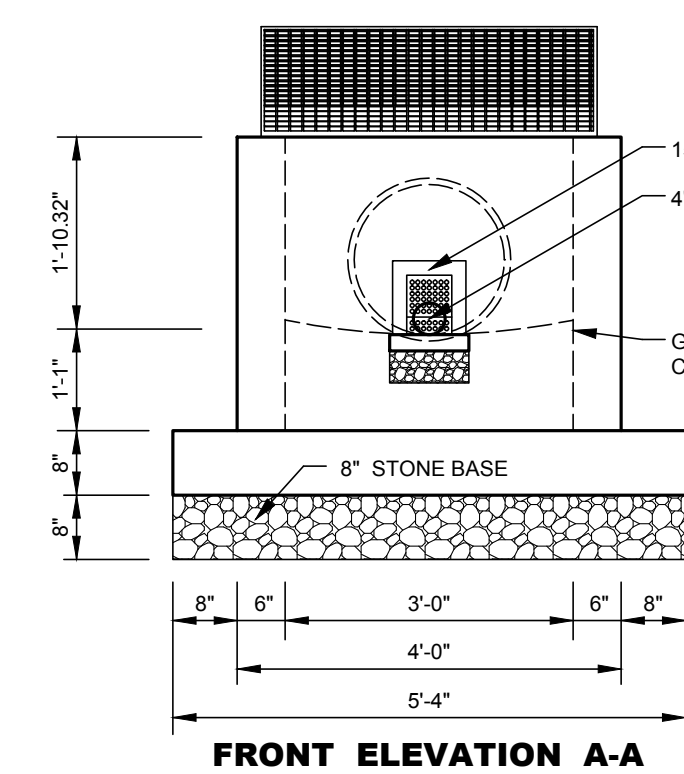
**TOP VIEW**

**NOTES :**

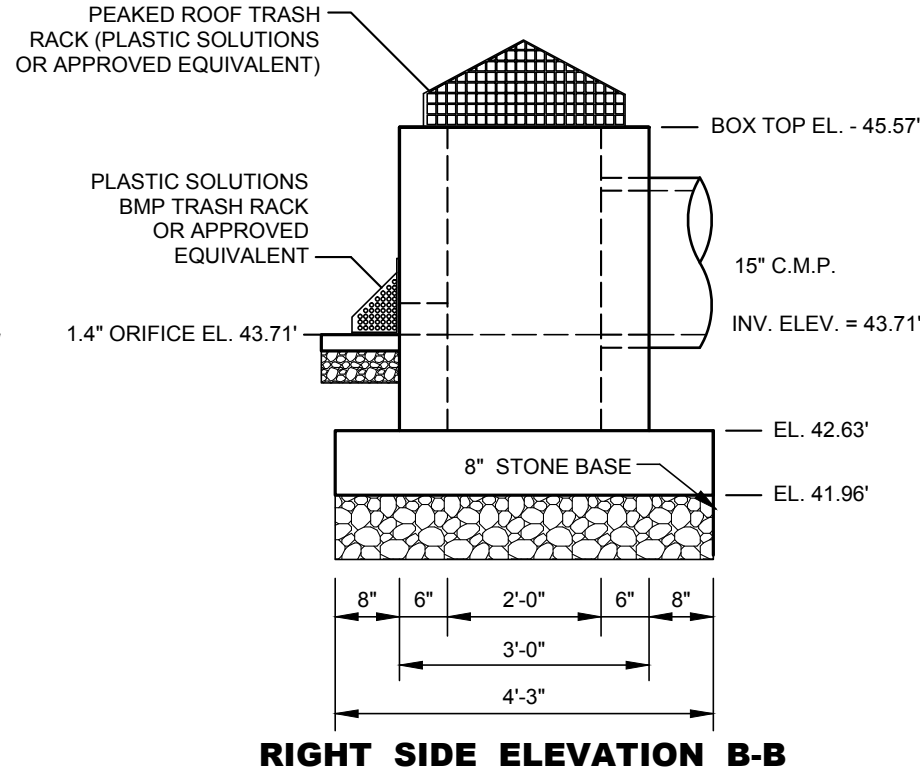
1. ALL CONCRETE SHALL BE 4,000 P.S.I. OR GREATER.
2. MATERIALS AND CONSTRUCTION SHALL COMPLY WITH ASTM DESIGNATION C-890-91.
3. STEPS ARE TO BE PLACED IN ALL INLET BOXES OVER 4' DEEP.
4. OPENINGS IN TRASH RACKS ARE TO BE AT LEAST 3 INCHES.
5. USE PEAKED ROOF TRASH RACK MANUFACTURED BY PLASTIC SOLUTIONS INC., OR EQUAL.

**POND B PRECAST OUTLET STRUCTURE**

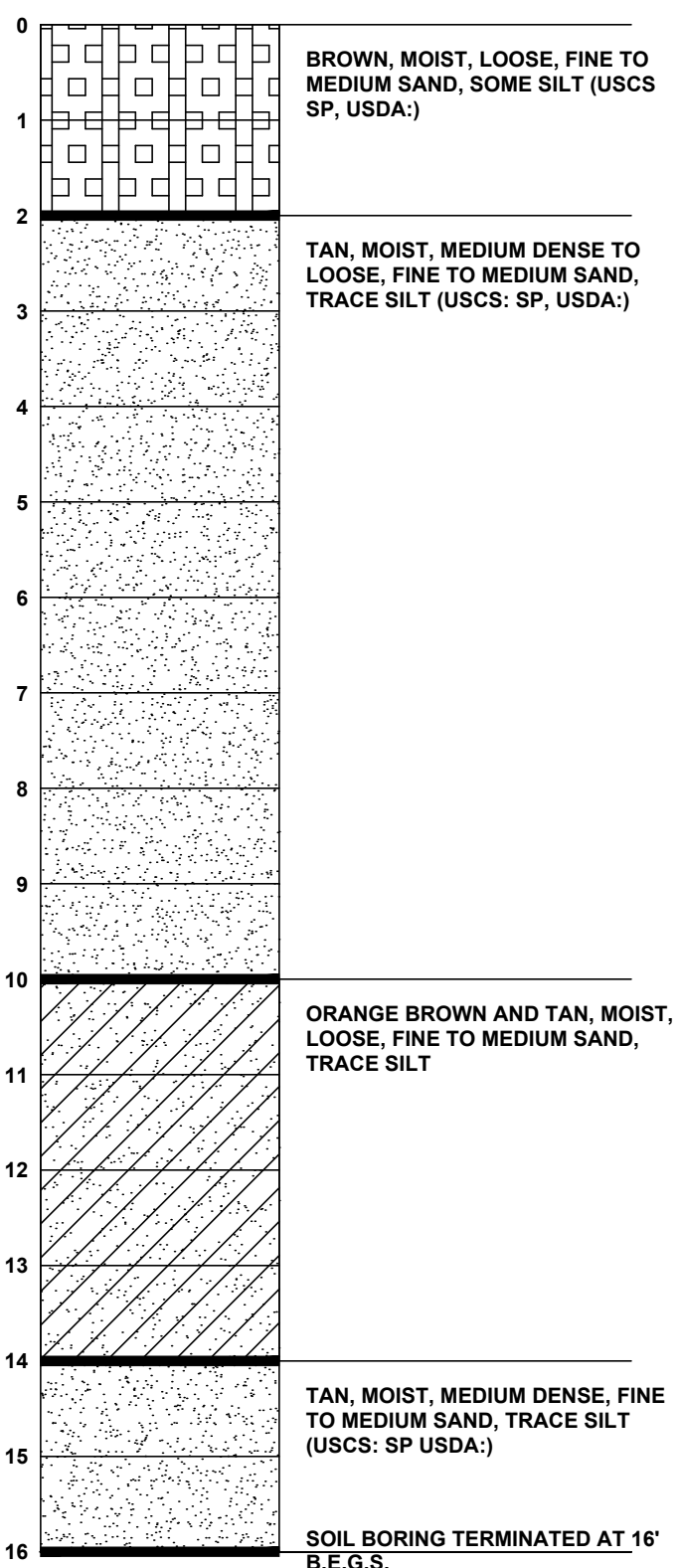
SCALE: 1" = 2'



**FRONT ELEVATION A-A**

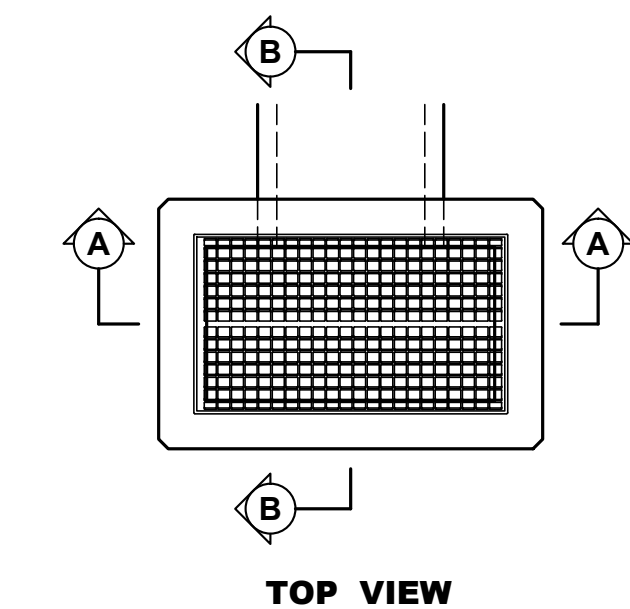


**RIGHT SIDE ELEVATION B-B**

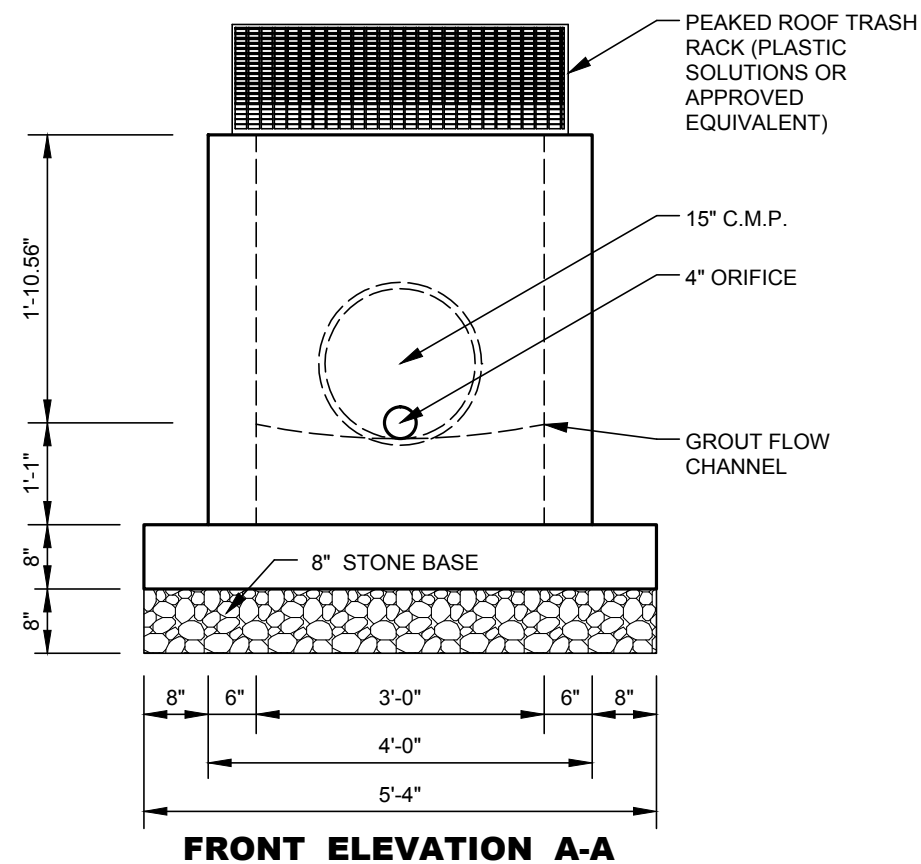


**SOIL BORING RECORD SWM-2**

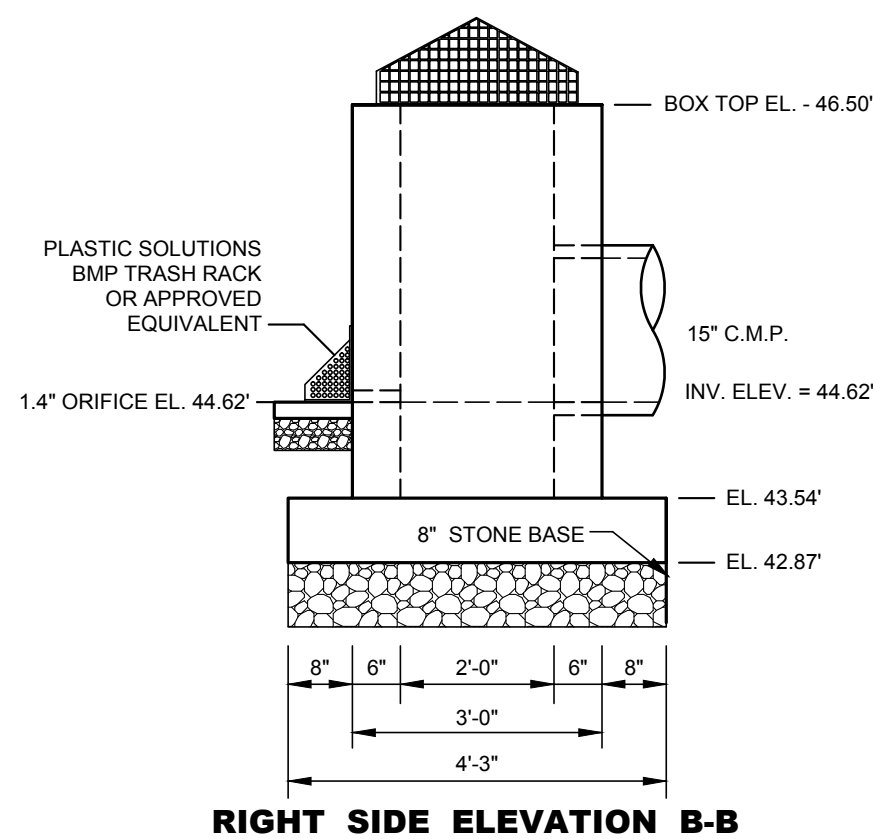
VERTICAL SCALE: 1" = 2'  
AS DETAILED IN THE REPORT PROVIDED BY HILLIS-CARNES AND ASSOCIATES DATED JUNE 30, 2015.



**TOP VIEW**



**FRONT ELEVATION A-A**



**RIGHT SIDE ELEVATION B-B**

**NOTES :**

1. ALL CONCRETE SHALL BE 4,000 P.S.I. OR GREATER.
2. MATERIALS AND CONSTRUCTION SHALL COMPLY WITH ASTM DESIGNATION C-890-91.
3. STEPS ARE TO BE PLACED IN ALL INLET BOXES OVER 4' DEEP.
4. OPENINGS IN TRASH RACKS ARE TO BE AT LEAST 3 INCHES.
5. USE PEAKED ROOF TRASH RACK MANUFACTURED BY PLASTIC SOLUTIONS INC., OR EQUAL.

PLASTIC SOLUTIONS INC.  
P.O. BOX 4386  
WINCHESTER, VA 22604  
(877) 877-5727  
www.plastic-solution.com

**POND A PRECAST OUTLET STRUCTURE**

SCALE: 1" = 2'

**BECKER  
MORGAN  
GROUP**

ARCHITECTURE  
ENGINEERING

**Dover, DE**

309 S. Governors Ave.  
Dover, DE 19904  
Ph. 302.734.7950  
Fax 302.734.7965

**Salisbury, MD**

312 West Main St. Suite 300  
Salisbury, MD 21801  
Ph. 410.546.9100  
Fax 410.546.5824

**Wilmington, NC**

3205 Randall Parkway, Suite 211  
Wilmington, North Carolina 28403  
Ph. 910.341.7600  
Fax 910.341.7506

www.beckermorgan.com

PROJECT TITLE

**KILLENS POND  
WATER PARK  
RENOVATIONS  
PHASE 1**

5025 KILLENS POND ROAD  
FELTON  
KENT COUNTY, DELAWARE

SHEET TITLE

**POST CONSTRUCTION  
SITE STORMWATER  
MANAGEMENT PLAN  
POND A EXTENDED  
DETENTION /  
INFILTRATION BASIN**

0 10 20 40  
**SCALE : 1" = 20'**

ISSUE BLOCK

MARK	DATE	DESCRIPTION
4	9/16/15	ADDENDUM NO. 2
3	8/25/15	ISSUED FOR BID
2	7/29/2015	SUBMITTED TO PARKS FOR OWNER REVIEW
1	7/1/2015	SUBMITTED TO DFM FOR FINAL DESIGN REVIEW

**PROJECT NO.:** 2012006.04

**DATE:** 07/29/2015

**SCALE:** 1" = 20'

**DRAWN BY:** J.N.S. **PROJ. MGR.:** G.E.J.

SHEET

**C-505**

COPYRIGHT 2015





NO SCALE BMG NO. :

NO SCALE

BMG NO.:

1. NOTIFY THE PERSON RESPONSIBLE FOR STORMWATER SYSTEM CONSTRUCTION REVIEW AT LEAST THREE (3) DAYS PRIOR TO THE START OF THE STORMWATER SYSTEM CONSTRUCTION; STORMWATER FACILITIES MUST BE REVIEWED THROUGHTOUT THEIR CONSTRUCTION BEGINS.
2. BEFORE SITE WORK BEGIN, FILTER STRIP BOUNDARIES SHOULD BE CLEARLY MARKED.
3. ONLY VEHICULAR TRAFFIC USED FOR FILTER STRIP CONSTRUCTION SHOULD BE ALLOWED WITHIN THE FILTER STRIP BOUNDARY.
4. CONSTRUCTION OF THE RIVER STONE LEVEL SPREADER SHALL NOT COMMENCE UNTIL THE CONTRIBUTING DRAINAGE AREAS HAVE BEEN STABILIZED AND PERIMETER EROSION AND SEDIMENT (E&S) CONTROL HAVE BEEN REMOVED AND CLEANED OUT.
5. CONTRACTOR IS TO BEGIN INSTALLATION OF THE RIVER STONE LEVEL SPREADERS IN SUCCESSION WITH THE POOL DECK BASE. THE STONE TRENCHES SHOULD BE DOUG AND INSTALLED FROM THE POOL DECK SIDE OF THE FILTER STRIP. IF EXISTING TOPSOIL IS STRIPPED DURING INSTALLATION OF THE LEVEL SPREADER, SOIL SHALL BE STOCKPILED FOR LATER USE OR USED IN THE CONSTRUCTION OF THE FILTER STRIP.
6. CONSTRUCT AND GRADE FILTER STRIP PER THIS PLAN AS SOON AS POSSIBLE IN ORDER TO PROMOTE TURF GROWTH. PERFORM LIGHT GRADING TO ACHIEVE THE DESIGNED ELEVATIONS AND SLOPES OF THE FILTER STRIP. GRADING SHOULD BE DONE WITH TRACKED VEHICLES IN ORDER TO PREVENT COMPACTION.
7. ONCE FILTER STRIP CONSTRUCTION HAS BEEN COMPLETED, SEED AND STABILIZED PER THE SEEDING NOTES FOUND ON THIS SHEET. FILTER STRIPS SHOULD BE SEEDED AND APPROPRIATELY MULCHED TO PROMOTE STABILIZATION.
8. THE CONSTRUCTION SITE OF THE FILTER STRIPS SHOULD BE RETURNED TO PRE-CONSTRUCTION CONDITIONS. PROVIDE ADDITIONAL SEEDING AND STABILIZATION AS NECESSARY.
9. REMOVAL OF EROSION AND SEDIMENT CONTROL DEVICES SHOULD ONLY OCCUR AFTER WORK IN AN AREA HAS BEEN COMPLETED AND STABILIZED WITH WRITTEN APPROVAL FROM THE AGENCY CONSTRUCTION REVIEWER.
10. POST CONSTRUCTION VERIFICATION OF DOCUMENTS, INCLUDING FINAL STABILIZATION THROUGHTOUT THE SITE, ALL COMPLETION OF THE SEDIMENT AND STORMWATER MANAGEMENT PLAN IMPLEMENTATION, AND ACCEPTANCE OF THE FINAL OPERATION AN MAINTENANCE PLAN WITHIN **60 DAYS** OF STORMWATER MANAGEMENT COMPLETION. PLEASE REFER TO SECTION 4.01.3 OF THE SEDIMENT AND STORMWATER TECHNICAL DOCUMENT FOR POST CONSTRUCTION VERIFICATION DOCUMENTATION.

TOTAL AREA OF FILTER STRIP: 6484 SQFT (0.15 ACRES)

FREQUENCY		MAINTENANCE ITEMS
DURING ESTABLISHMENT, AS NEEDED (FIRST YEAR)		<ul style="list-style-type: none"> <li>INSPECT THE SITE AFTER EACH STORMEVENT THAT EXCEEDS 0.5 INCHES OF RAINFALL.</li> <li>STABILIZE ANY BARE OR ERODING AREAS IN THE CONTRIBUTING DRAINAGE AREA.</li> <li>VEGETATION PLANTED IN THE AREA OF FILTER STRIP AND OPEN SPACE SHOULD BE WATERED EVERY THREE DAYS FOR THE FIRST MONTH AND WEEKLY DURING THE REMAINDER OF THE FIRST GROWING SEASON (APRIL - OCTOBER), DEPENDING ON RAINFALL.</li> </ul>
QUARTERLY OR AFTER MAJOR STORMS (> 1" OF RAINFALL)		<ul style="list-style-type: none"> <li>REMOVE DEBRIS AND BLOCKAGES FROM RIVER STONE.</li> <li>REPAIR UNDERCUT, ERODED AND BARE SOILS IN AREA OF FILTER STRIP.</li> </ul>
TWICE A YEAR		<ul style="list-style-type: none"> <li>CHECK CONDITION OF STONE AND REPAIR AS NEEDED.</li> </ul>
ANNUALLY		<ul style="list-style-type: none"> <li>CLEAN TOP OF STONE WITHIN THE TRENCH.</li> <li>REPAIR AREAS OF GRASS WHICH APPEAR TO BE BARE OR IN NEED OF EROSION REPAIR.</li> <li>CHECK STONE TRENCH UTILIZED FOR LEVEL SPREADER. REPLACE AS NEEDED.</li> </ul>

1. THE DNRCE SEDIMENT AND STORMWATER PROGRAM AND /OR THE RELEVANT DELEGATED AGENCY RESERVES THE RIGHT TO ENTER PRIVATE PROPERTY FOR PURPOSES OF PERIODIC SITE REVIEW.
2. THE DNRCE SEDIMENT AND STORMWATER PROGRAM SHALL BE NOTIFIED WITHIN 30 BUSINESS DAYS IF THE PROPERTY OWNERSHIP IS TRANSFERRED TO A NEW PERSON OR ENTITY.
3. THE DNRCE SEDIMENT AND STORMWATER PROGRAM MAY SEEK ENFORCEMENT ACTION AGAINST ANY OWNER DEEMED NEGLIGENT IN FULFILLING THE OPERATION AND MAINTENANCE REQUIREMENTS OF THE DELAWARE SEDIMENT AND STORMWATER REGULATIONS.
4. APPROVAL OF THE SEDIMENT AND STORMWATER PLAN SHALL NOT GRANT OR IMPLY A RIGHT TO DISCHARGE STORM WATER RUNOFF. THE STATE OF DELAWARE IS RESPONSIBLE FOR ACQUIRING ANY AND ALL AGREEMENTS, EASEMENTS ETC. NECESSARY TO COMPLY WITH STATE DRAINAGE AND OTHER APPLICABLE CODES.
5. REVIEW AND OR APPROVAL OF THE SEDIMENT AND STORM WATER MANAGEMENT PLAN SHALL NOT RELIEVE THE CONTRACTOR FROM HIS OR HER RESPONSIBILITIES FOR COMPLIANCE WITH THE REQUIREMENTS OF THE SEDIMENT AND STORM WATER REGULATIONS. NOR SHALL IT RELIEVE THE CONTRACTOR FROM ERRORS OR OMISSIONS IN THE APPROVED PLAN.
6. THE DNRCE SEDIMENT AND STORMWATER PROGRAM SHALL BE CONTACTED IF A CONCERN ARISES REGARDING A STORMWATER MANAGEMENT FACILITY, BEFORE ANY NON-ROUTINE MAINTENANCE, OR IF MODIFICATIONS TO THE FACILITY ARE DESIRED.
7. ANY DESIGN MODIFICATIONS MADE TO THE STORMWATER SYSTEM SHALL REQUIRE THE CREATION OF A NEW POST CONSTRUCTION STORMWATER MANAGEMENT PLAN AND/OR OPERATIONS AND MAINTENANCE PLAN, WITH APPROVAL OF THE PLANS BY THE DNRCE SEDIMENT AND STORMWATER PROGRAM.
8. FOR ALL STORMWATER EASEMENT AREAS AND THE MINIMUM 10-FOOT WIDE ACCESSWAYS TO ALL STORMWATER FACILITIES AND THE STRUCTURAL COMPONENTS, REGULAR MOWING SHALL BE PERFORMED TO KEEP THE GRASS 6" OR LESS. NO TREES OR SHRUBS SHALL BE PLANTED, AND ANY YOUNG GROWING SHALL BE REMOVED, AND NO PERMANENT STRUCTURES SUCH AS FENCES OR SHED, SHALL BE LOCATED WITHIN THE EASEMENT OR ACCESS WAY.
9. PRIOR TO ANY EARTHWORK OR EXCAVATION TAKES PLACE, THE CONTRACTOR SHALL HIRE A PRIVATE UTILITY LOCATOR AT LEAST 48 HOURS PRIOR TO COMMENCING CONSTRUCTION.



SHOWN ON THESE CONSTRUCTION DRAWINGS ARE THOSE UTILITIES WHICH HAVE BEEN IDENTIFIED. IT IS THE RESPONSIBILITY OF THE LANDOWNERS OR OPERATORS AND CONTRACTORS TO ASSURE THEMSELVES NO HAZARD EXISTS OR DAMAGE WILL OCCUR TO UTILITIES.

PROJECT TITLE

5025 KILLENS POND ROAD  
FELTON  
KENT COUNTY, DELAWARE

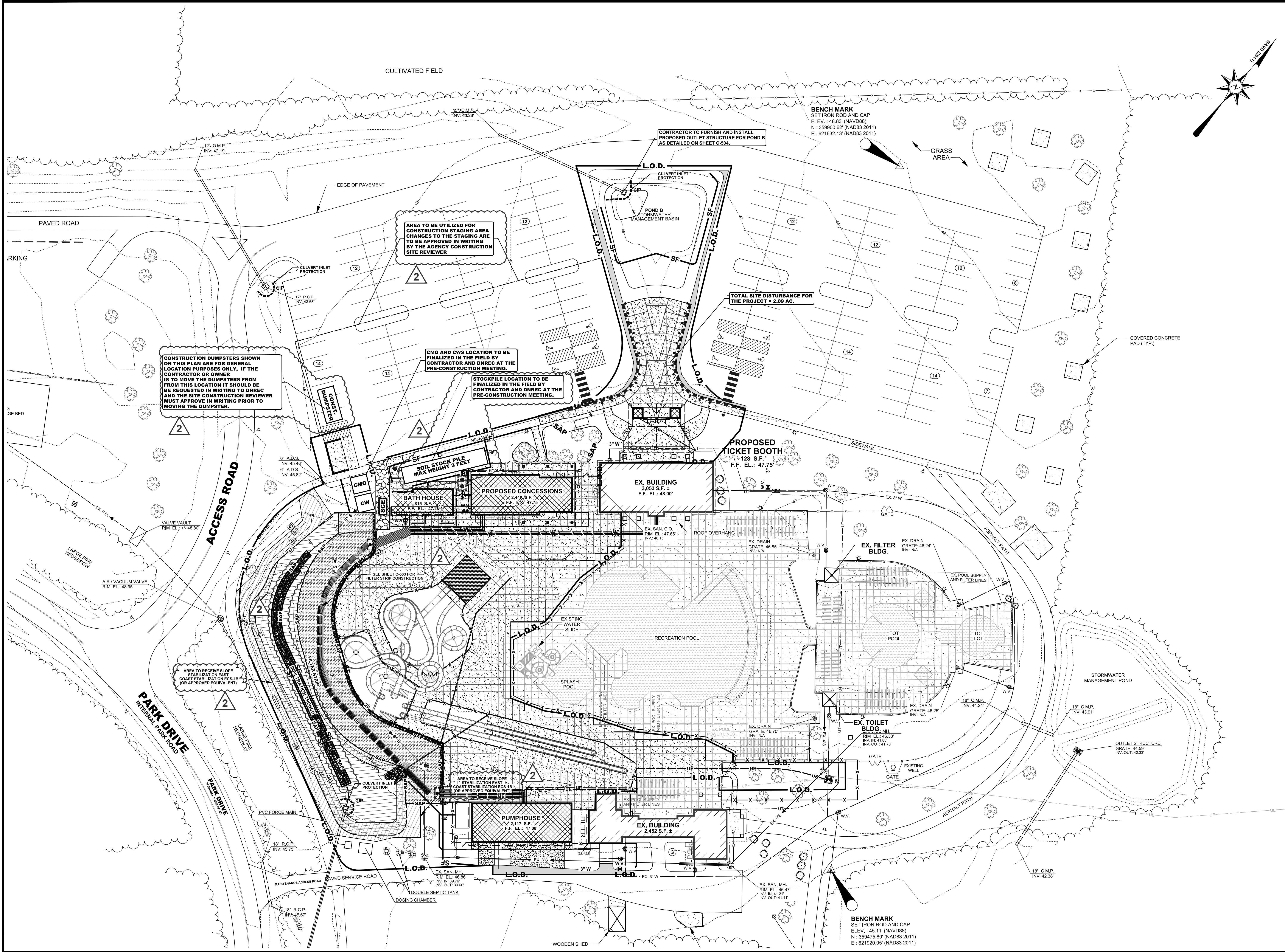
SHEET TITLE

**SCALE : 1" = 10'**

ISSUE BLOCK

4	9/16/15	ADDENDUM NO. 2	
3	8/25/15	ISSUED FOR BID	
2	7/29/15	SUBMITTED TO PARKS FOR OWNER REVIEW	
1	7/12/15	SUBMITTED TO DFM FOR FINAL DESIGN REVIEW	
MARK	DATE	DESCRIPTION	
ADDITIONAL COST			
<b>PROJECT NO.:</b>		<b>2012006.04</b>	
<b>DATE:</b>		<b>07/29/2015</b>	
<b>SCALE:</b>		<b>1" = 10'</b>	
<b>DRAWN BY:</b>		<b>J.N.S.</b>	<b>PROJ. MGR.: G.E.J.</b>
SHEET			
<b>C-504</b>			
COPYRIGHT 2015			





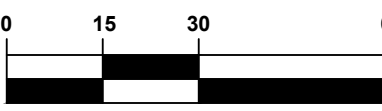
PROJECT TITLE

**KILLENS POND  
WATER PARK  
RENOVATIONS  
PHASE 1**

5025 KILLENS POND ROAD  
FELTON  
KENT COUNTY, DELAWARE

SHEET TITLE

**PRE CONSTRUCTION  
SITE STORMWATER  
MANAGEMENT PLAN**



SCALE : 1" = 30'

ISSUE BLOCK

NO.	DATE	DESCRIPTION
4	9/16/15	ADDENDUM NO. 2
3	8/25/15	ISSUED FOR BID
2	7/29/2015	SUBMITTED TO PARKS FOR OWNER REVIEW
1	7/1/2015	SUBMITTED TO DM FOR FINAL DESIGN REVIEW

MARK DATE DESCRIPTION

LAYER/STATE: C-503

PROJECT NO.: 2012006.04

DATE: 07/29/2015

SCALE: 1" = 30'

DRAWN BY: J.N.S. PROJ. MGR.: G.E.J.

SHEET

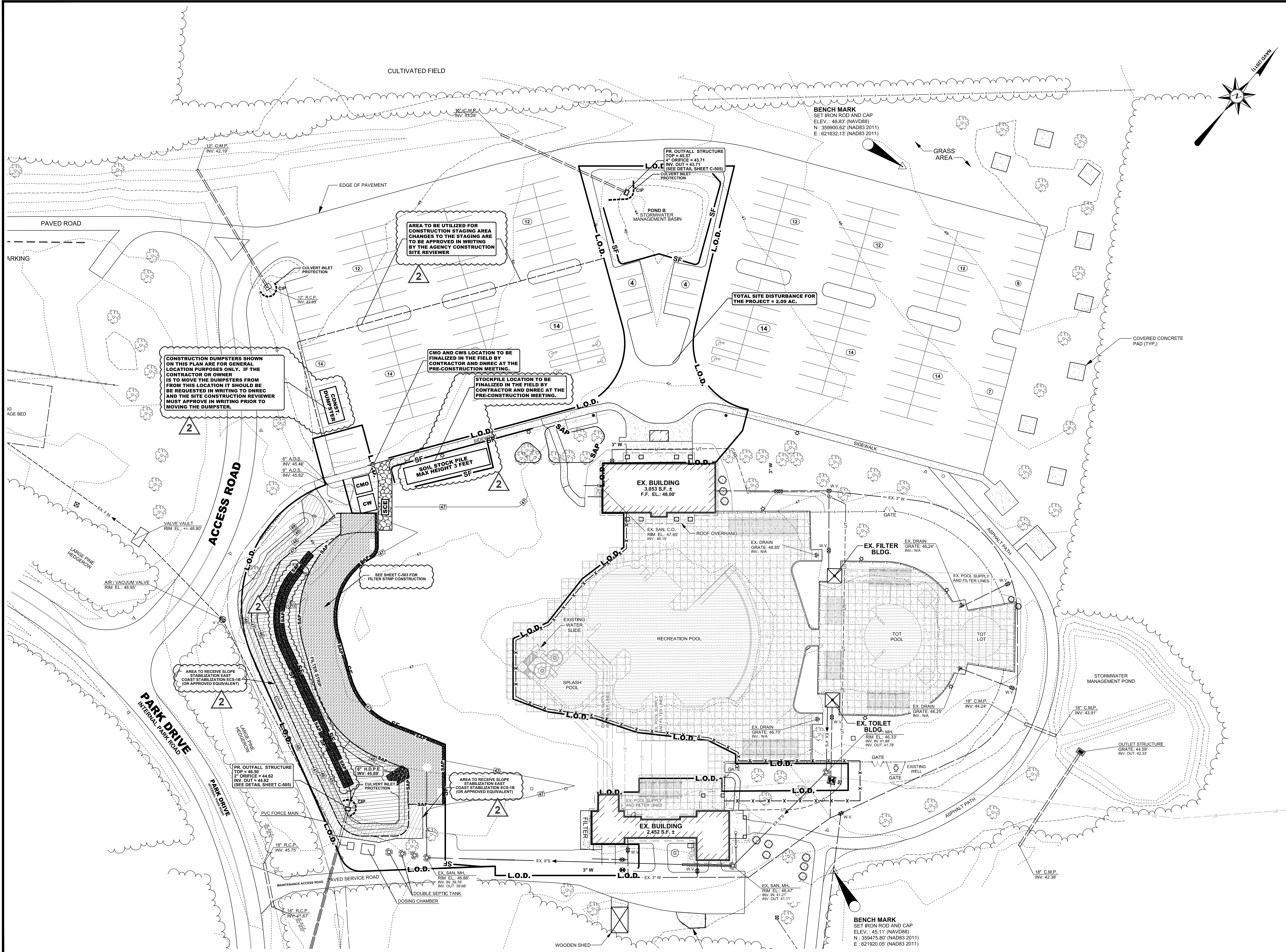
**C-503**

COPYRIGHT 2015









PROJECT TITLE

KILLENS POND  
WATER PARK  
RENOVATIONS  
PHASE 1

5025 KILLENS POND ROAD  
FELTON  
KENT COUNTY, DELAWARE

SHEET TITLE

OVERALL  
CONSTRUCTION SITE  
STORMWATER  
MANAGEMENT PLAN

0 15 30 60  
SCALE : 1" = 30'

ISSUE BLOCK

NO.	DATE	DESCRIPTION
4	9/16/15	ADDENDUM NO. 2
3	8/25/15	ISSUED FOR BID
2	7/29/2015	SUBMITTED TO PARKS FOR OWNER REVIEW
1	7/1/2015	SUBMITTED TO DM FOR FINAL DESIGN REVIEW

MARK DATE DESCRIPTION

PROJECT NO.: 2012006.04

DATE: 5/15/15

SCALE: 1" = 30'

DRAWN BY: J.N.S. PROJ. MGR.: G.E.J.

SHEET

C-501

COPYRIGHT 2015



PROJECT TITLE

# KILLENS POND WATER PARK RENOVATIONS PHASE 1

5025 KILLENS POND ROAD  
FELTON  
KENT COUNTY, DELAWARE

SHEET TITLE

## SITE UTILITY PLAN

ISSUE BLOCK

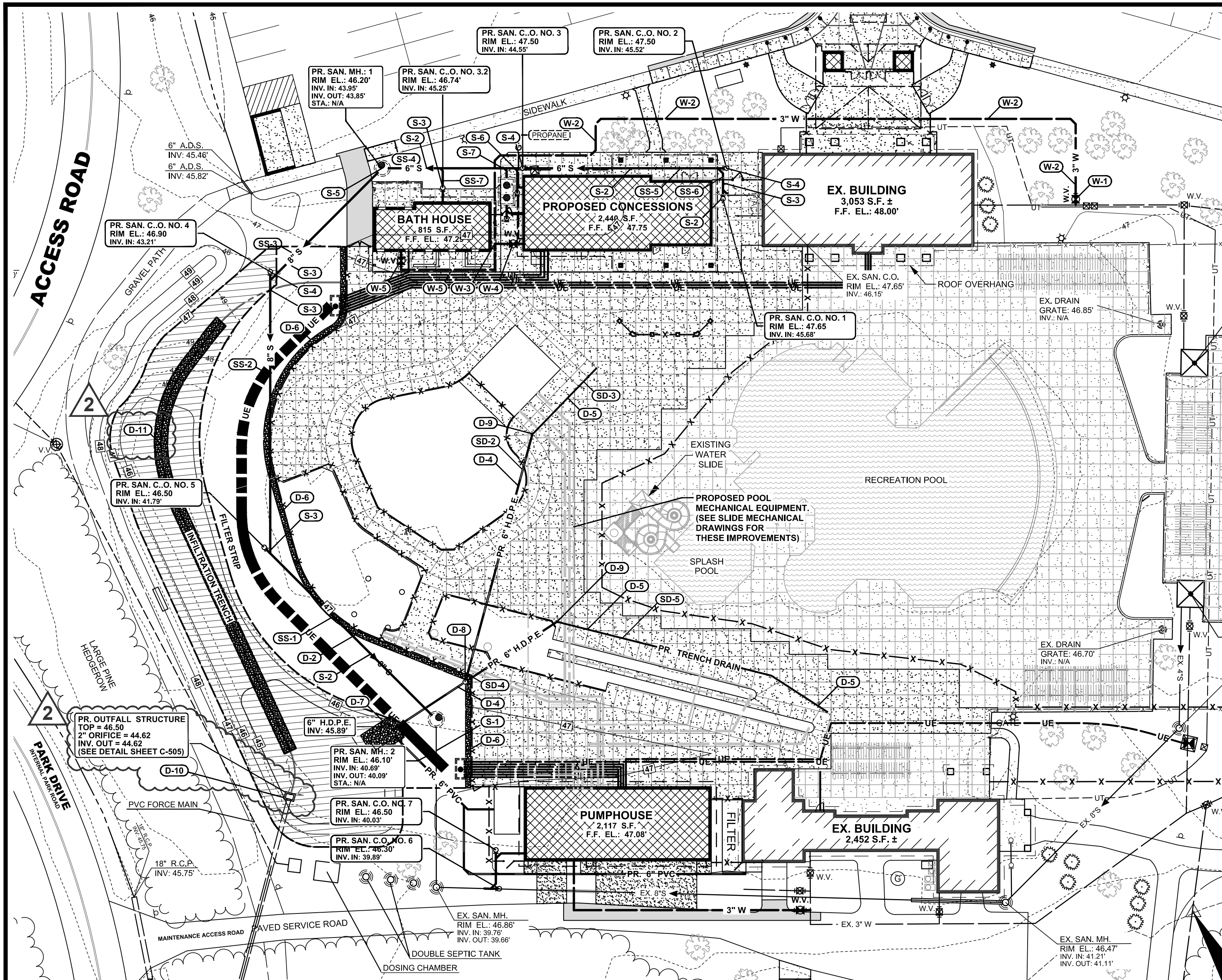
NO.	DATE	DESCRIPTION
4	9/16/15	ADDENDUM NO. 2
3	8/25/15	ISSUED FOR BID
2	7/29/2015	SUBMITTED TO PARKS FOR OWNER REVIEW
1	7/1/2015	SUBMITTED TO DM FOR FINAL DESIGN REVIEW

DRAWN BY: J.N.S. PROJ. MGR.: G.E.J.

SHEET

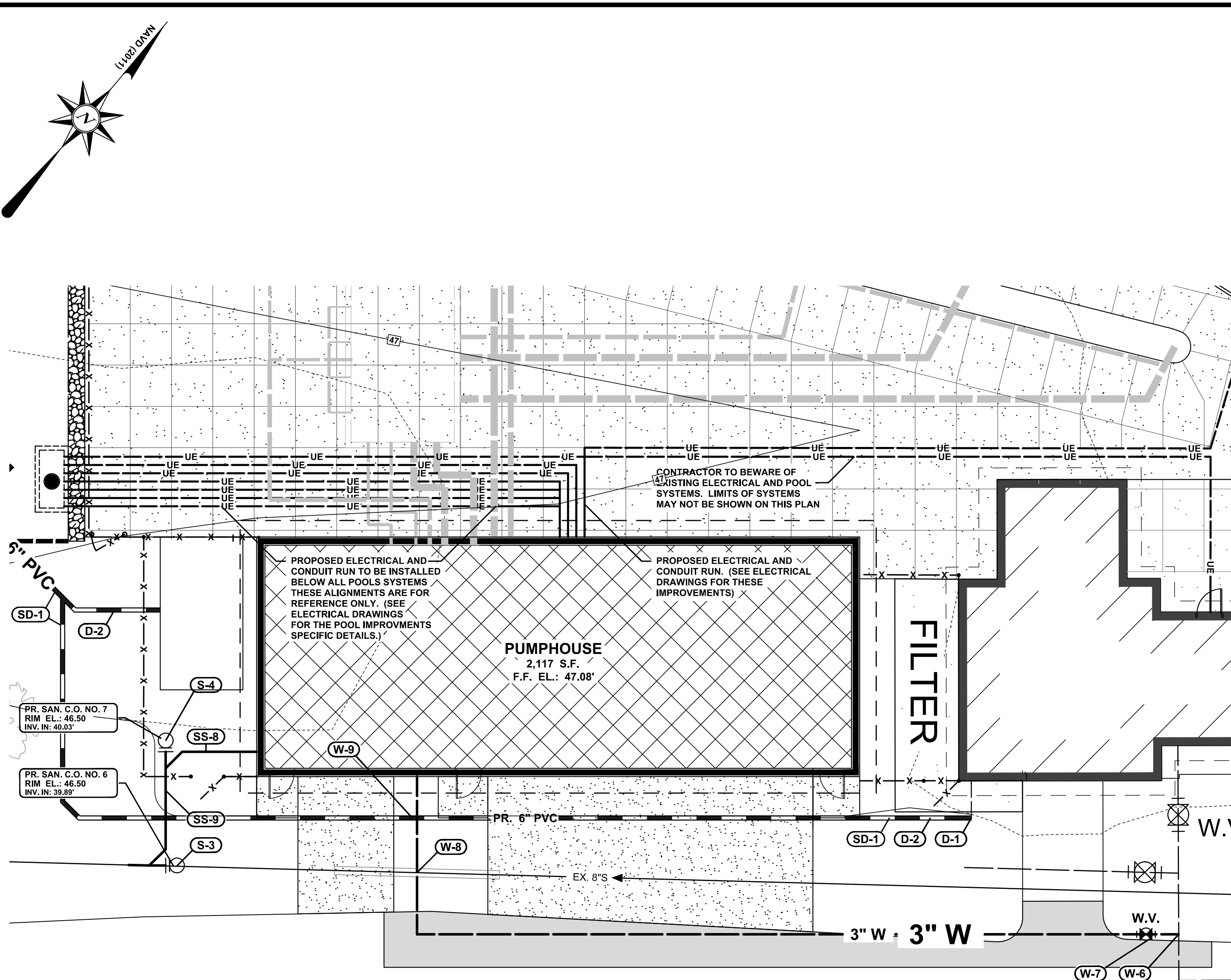
**C-301**

COPYRIGHT 2015



**OVERALL UTILITY LAYOUT**

SCALE: 1" = 30'



**PUMP HOUSE UTILITY LAYOUT**

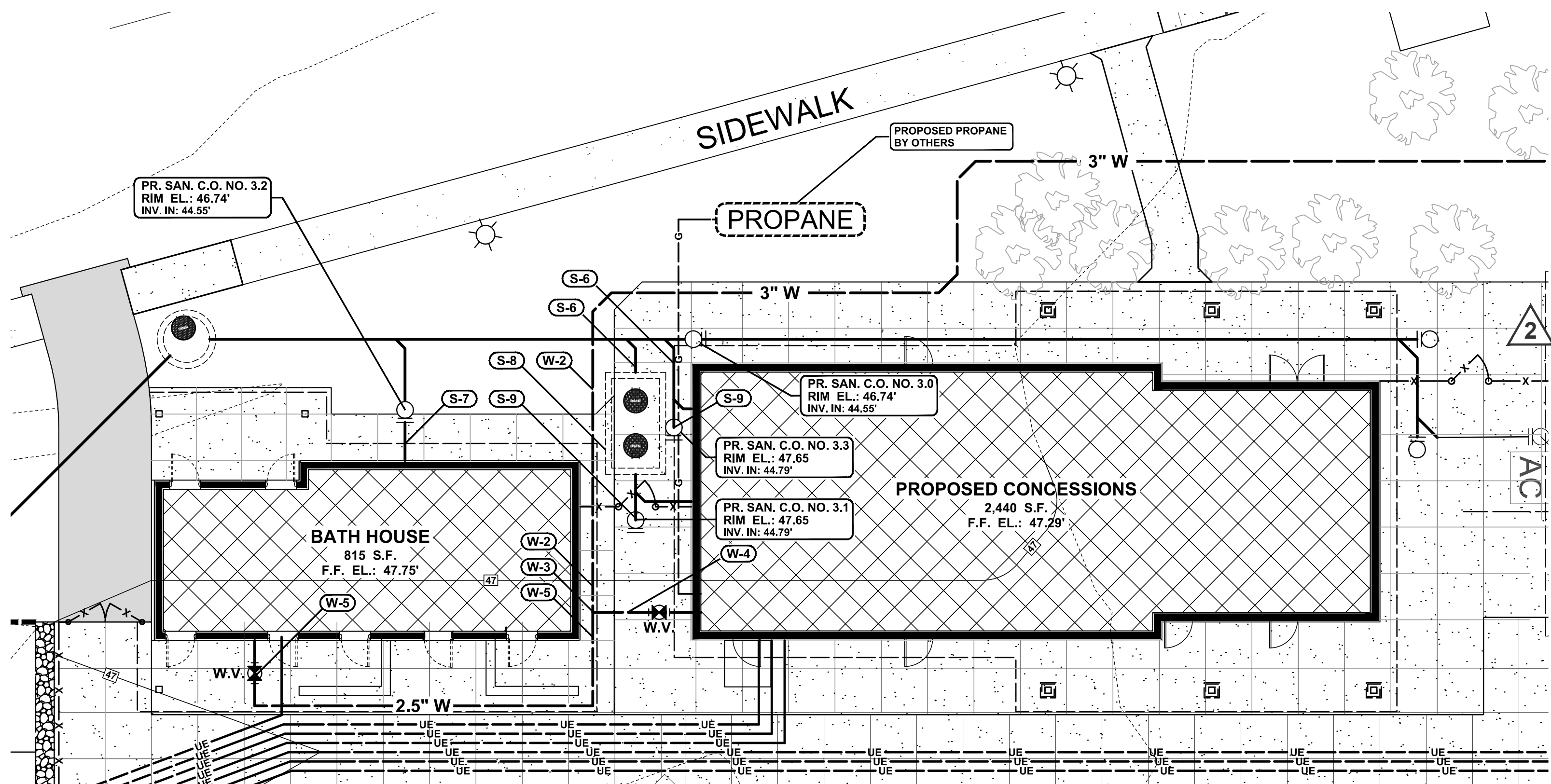
SCALE: 1" = 10'

MH NO.	RIM EL.	DIA.	DEPTH	INV. IN	INV. IN	INV. OUT
1	46.20'	48"	2.35'	43.95'		43.85'
2	46.10'	48"	5.20'	40.69'		40.09'

C.O. NO.	RIM EL.	SIZE	DEPTH	INV. IN	INV. IN	INV. OUT
1	47.85	1.97'	45.68			45.68
2	47.50	1.98'	45.52			45.52
3	47.50	2.95'	44.55			44.55
3.1	47.65	2.86'	44.79			44.79
3.2	46.74	1.49'	45.25			45.25
3.3	47.65	2.86'	44.79			44.79
4	46.90	3.69'	43.21			43.21
5	46.50	4.71'	41.79			41.79
6	46.30	6.41'	39.89			39.89
7	46.50	6.47'	40.03			40.03

PIPE No.	SIZE	PIPE TYPE	LENGTH	SLOPE	INV. IN	INV. OUT
SS-1	8"	PVC SDR 35	93'	1.20 %	41.79	40.69
SS-2	8"	PVC SDR 35	120'	1.18 %	43.21	41.79
SS-3	8"	PVC SDR 35	60'	1.06 %	43.85	43.21
SS-4	6"	PVC SDR 35	53'	1.13 %	44.55	43.95
SS-5	6"	PVC SDR 35	79'	1.23 %	45.52	44.55
SS-6	6"	PVC SDR 35	10'	1.60 %	45.68	45.52
SS-7	6"	PVC SDR 35	8'		45.25	
SS-8	4"	PVC SDR 35	11'		40.03	
SS-9	4"	PVC SDR 35	14'	1.00 %	40.03	39.89

PIPE No.	SIZE	PIPE TYPE	LENGTH	SLOPE	INVERT IN	INVERT OUT
SD-1	6"	PVC SDR 35	240'			
SD-2	6"	H.D.P.E.	100'	0.950 %	47.03	46.08
SD-3	4"	ACO TRENCH DRAIN	74'	0.500 %	47.20	47.03
SD-4	6"	H.D.P.E.	74'	0.500 %	46.30	45.89
SD-5	4"	ACO TRENCH DRAIN	112'	0.500 %	46.86	46.30



**BATH HOUSE AND CONCESSIONS UTILITY LAYOUT**

SCALE: 1" = 10'

**UTILITY NOTE:**  
ALL WORK PERFORMED ON THE SANITARY SEWER SYSTEM FOR THIS PROJECT MUST BE PERFORMED BY A UTILITY CONTRACTOR WHO HOLDS A CLASS E SEPTIC INSTALLER LICENCE PER DNREC REQUIREMENTS.

### STORM SEWER CONSTRUCTION NOTES

- D-1 CONTRACTOR TO EXPOSE THE EXISTING POOL BACKWASH SYSTEM PIPE AND CONNECT THE PROPOSED 6" PVC BACKWASH TO SERVE THE EXISTING AND PROPOSED POOL SYSTEMS.
- D-2 CONSTRUCT PVC POOL BACKWASH PIPING AS SHOWN.
- D-3 INSTALL BACK FLOW PREVENTER ON POOL BACKWASH SYSTEM.
- D-4 CONSTRUCT TRENCH DRAIN OUTFALL AT LENGTHS AND ELEVATIONS SHOWN ON THIS PLAN.
- D-5 INSTALL 4" ACO K100, OR APPROVED EQUIVALENT, TRENCH DRAIN WITH IRON LONGITUDINAL TYPE GRATE AT ELEVATIONS AND LENGTHS SHOWN ON THIS PLAN.
- D-6 INSTALL 2' WIDE BY 1' DEEP RIVER STONE TRENCH ASSOCIATED WITH THE PROPOSED FILTER STRIP TRENCH TO BE LINED WITH A CLASS 2 NON-WOVEN GEOTEXTILE.
- D-7 INSTALL 10' WIDE BY 14" LONG BY 2' DEEP R-4 RIPRAP OUTLET PROTECTION AT AREA SHOWN.
- D-8 CONTRACTOR TO EXCAVATE AND INSTALL INFILTRATION TRENCH AS SHOWN. TRENCH TO BE 185' LF x 5' WIDE, (DEPTH TO VARY) OF CLEAN WASHED NO. 3 STONE AND LINED WITH CLASS 2 NON-WOVEN GEOTEXTILE. (SEE DETAIL SHEET C-505)
- D-9 CONNECT TRENCH DRAINS WITH H.D.P.E. FITTINGS.
- D-10 CONTRACTOR TO INSTALL PROPOSED OUTFALL 24" x 36" OUTFALL STRUCTURE WITH PLASTIC SOLUTIONS OR APPROVED EQUIVALENT, PEAK ROOF TRASH RACK SYSTEM AT THE ELEVATIONS SHOWN. (SEE DETAIL SHEET C-505)
- D-11 CONTRACTOR TO EXCAVATE AND INSTALL INFILTRATION TRENCH AS SHOWN. TRENCH TO BE 185' LF x 5' WIDE, (DEPTH TO VARY) OF CLEAN WASHED NO. 3 STONE AND LINED WITH CLASS 2 NON-WOVEN GEOTEXTILE. (SEE DETAIL SHEET C-505)

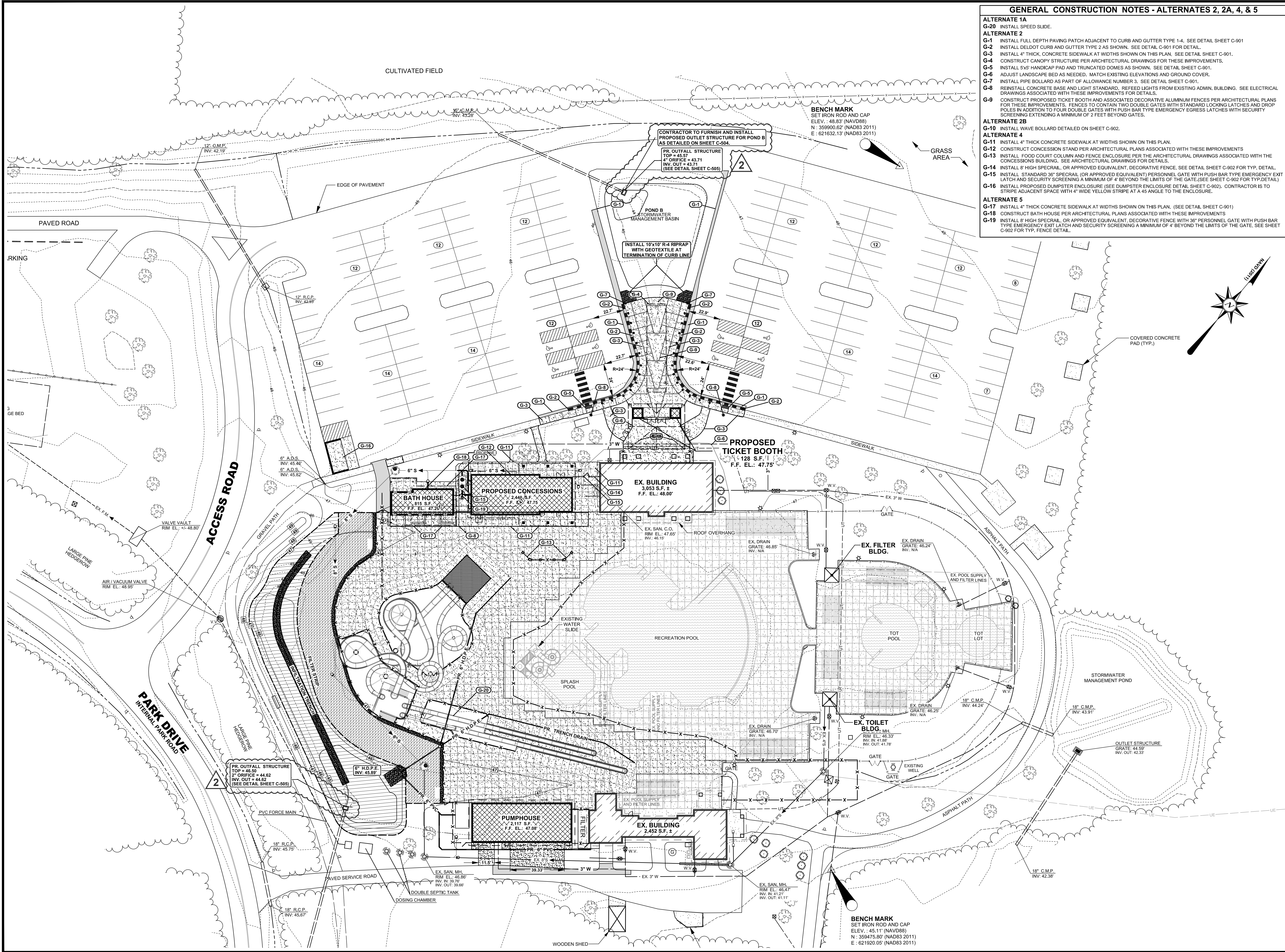
### SANITARY SEWER CONSTRUCTION NOTES

- S-1 CONTRACTOR TO INTERCEPT EXISTING SEWER LINE, CONFIRM INVERT ELEVATION AND INSTALL SANITARY SEWER MANHOLE WITH FRAME AND COVER AT THE INVERTS AND ELEVATIONS SHOWN HEREON (typ.). IF ELEVATION DIFFERS FROM WHAT IS SHOWN ON THE PLANS, THE CONTRACTOR IS TO CONTACT THE ENGINEER OF RECORD IMMEDIATELY.
- S-2 CONTRACTOR TO INTERCEPT EXISTING SEWER LINE, CONFIRM INVERT ELEVATION AND INSTALL SANITARY SEWER CLEANOUT AT THE INVERTS AND ELEVATIONS SHOWN HEREON (typ.). IF ELEVATION DIFFERS FROM WHAT IS SHOWN ON THE PLANS, THE CONTRACTOR IS TO CONTACT THE ENGINEER OF RECORD IMMEDIATELY.
- S-3 INSTALL SANITARY SEWER PIPE AT THE INVERTS AND ELEVATIONS SHOWN HEREON (typ.).
- S-4 INSTALL PROPOSED SANITARY SEWER CLEAN OUT AT THE SIZES AND ELEVATIONS SHOWN HEREON.
- S-5 INSTALL SANITARY SEWER MANHOLE, FRAME, AND COVER AT THE INVERTS AND ELEVATIONS SHOWN HEREON.
- S-6 INSTALL WYE AND CLEANOUT. CAP FOR FUTURE LATERAL CONNECTION.
- S-7 INSTALL WYE AND CLEANOUT. CAP FOR FUTURE GREASE TRAP CONNECTION.
- ALTERNATE NO. 4
- S-8 INSTALL PROPOSED GREASE TRAP IN THE LOCATION AND ELEVATIONS SHOWN HEREON. COORDINATE INVERTS AND FINAL ALIGNMENT WITH PLUMBING PLANS FOR THIS PROJECT.
- S-9 INSTALL PROPOSED SANITARY SEWER CLEAN OUT AT THE ELEVATIONS SHOWN HEREON AND CONNECT SEWER WITH THE PROPOSED CONCESSION STAND.
- ALTERNATE NO. 5
- S-10 INSTALL PROPOSED SANITARY SEWER PIPE AND CLEAN OUT AT THE ELEVATIONS SHOWN HEREON AND CONNECT WITH THE PROPOSED BATH HOUSE. COORDINATE INVERTS AND FINAL ALIGNMENT WITH PLUMBING PLANS FOR THIS PROJECT.

### DOMESTIC WATER SYSTEM CONSTRUCTION NOTES

- W-1 TAP EXISTING 3" WATER MAIN WITH A 3"x3" TAPPING SLEEVE AND VALVE.
- W-2 INSTALL 3" C-900 DOMESTIC WATER SERVICE WITH TRACER WIRE AT THE LOCATION SHOWN ON THIS PLAN.
- W-3 INSTALL 3"x3"x1 1/2" TEE.
- W-4 INSTALL 1 1/2" WATER SERVICE AND VALVE. CAP FOR FUTURE CONNECTION.
- W-5 INSTALL 3" C-900 DOMESTIC WATER SERVICE AND VALVE WITH TRACER WIRE TO BATH HOUSE CAP FOR FUTURE CONNECTION.
- W-6 TAP EXISTING 3" WATER LINE WITH A TAPPING SLEEVE AND VALVE.
- W-7 INSTALL 2" C-900 DOMESTIC WATER SERVICE WITH TRACER WIRE AT THE LOCATION SHOWN.
- W-8 CONFIRM CONFLICT WITH SEWER LINE SHOWN. IF CONFLICT EXISTS, ENCASE SEWER AND INSTALL WATERLINE ABOVE THE SEWER LINE. MAINTAIN 42" OF COVER. CONTACT ENGINEER IF 42" CANNOT BE MAINTAINED.
- W-9 CONFIRM CONFLICT WITH POOL BACKWASH SYSTEM. IF CONFLICT EXISTS, DEPRESS WATERLINE BELOW THE STORM LINE.





- GENERAL CONSTRUCTION NOTES - ALTERNATES 2, 2A, 4, & 5**
- ALTERNATE 1A**  
**G-20** INSTALL SPEED SLIDE.
- ALTERNATE 2**  
**G-1** INSTALL FULL DEPTH PAVING PATCH ADJACENT TO CURB AND GUTTER TYPE 1-4, SEE DETAIL SHEET C-901.  
**G-2** INSTALL DELDOT CURB AND GUTTER TYPE 2 AS SHOWN. SEE DETAIL C-901 FOR DETAIL.  
**G-3** INSTALL 4" THICK, CONCRETE SIDEWALK AT WIDTHS SHOWN ON THIS PLAN, SEE DETAIL SHEET C-901.  
**G-4** CONSTRUCT CANOPY STRUCTURE PER ARCHITECTURAL DRAWINGS FOR THESE IMPROVEMENTS.  
**G-5** INSTALL 5x5' HANDICAP PAD AND TRUNCATED DOMES AS SHOWN. SEE DETAIL SHEET C-901.  
**G-6** ADJUST LANDSCAPE BED AS NEEDED. MATCH EXISTING ELEVATIONS AND GROUND COVER.  
**G-7** INSTALL PIPE BOLLARD AS PART OF ALLOWANCE NUMBER 3. SEE DETAIL SHEET C-901.  
**G-8** REINSTALL CONCRETE BASE AND LIGHT STANDARD. REFEED LIGHTS FROM EXISTING ADMIN. BUILDING. SEE ELECTRICAL DRAWINGS ASSOCIATED WITH THESE IMPROVEMENTS FOR DETAILS.  
**G-9** CONSTRUCT PROPOSED TICKET BOOTH AND ASSOCIATED DECORATIVE ALUMINUM FENCES PER ARCHITECTURAL PLANS FOR THESE IMPROVEMENTS. FENCES TO CONTAIN TWO DOUBLE GATES WITH STANDARD LOCKING LATCHES AND DROP POLES IN ADDITION TO FOUR DOUBLE GATES WITH PUSH BAR TYPE EMERGENCY EGRESS LATCHES WITH SECURITY SCREENING EXTENDING A MINIMUM OF 2 FEET BEYOND GATES.
- ALTERNATE 2B**  
**G-10** INSTALL WAVE BOLLARD DETAILED ON SHEET C-902.
- ALTERNATE 4**  
**G-11** INSTALL 4" THICK CONCRETE SIDEWALK AT WIDTHS SHOWN ON THIS PLAN.  
**G-12** CONSTRUCT CONCESSION STAND PER ARCHITECTURAL PLANS ASSOCIATED WITH THESE IMPROVEMENTS.  
**G-13** INSTALL FOOD COURT COLUMN AND FENCE ENCLOSURE PER THE ARCHITECTURAL DRAWINGS ASSOCIATED WITH THE CONCESSIONS BUILDING. SEE ARCHITECTURAL DRAWINGS FOR DETAILS.  
**G-14** INSTALL 8" HIGH SPECRAIL, OR APPROVED EQUIVALENT, DECORATIVE FENCE. SEE DETAIL SHEET C-902 FOR TYP. DETAIL.  
**G-15** INSTALL STANDARD 36" SPECRAIL (OR APPROVED EQUIVALENT) PERSONNEL GATE WITH PUSH BAR TYPE EMERGENCY EXIT LATCH AND SECURITY SCREENING A MINIMUM OF 4' BEYOND THE LIMITS OF THE GATE. (SEE SHEET C-902 FOR TYP. DETAIL.)  
**G-16** INSTALL PROPOSED DUMPSTER ENCLOSURE (SEE DUMPSTER ENCLOSURE DETAIL SHEET C-902). CONTRACTOR IS TO STRIPE ADJACENT SPACE WITH 4" WIDE YELLOW STRIPE AT A 45 ANGLE TO THE ENCLOSURE.
- ALTERNATE 5**  
**G-17** INSTALL 4" THICK CONCRETE SIDEWALK AT WIDTHS SHOWN ON THIS PLAN. (SEE DETAIL SHEET C-901)  
**G-18** CONSTRUCT BATH HOUSE PER ARCHITECTURAL PLANS ASSOCIATED WITH THESE IMPROVEMENTS.  
**G-19** INSTALL 8" HIGH SPECRAIL, OR APPROVED EQUIVALENT, DECORATIVE FENCE WITH 36" PERSONNEL GATE WITH PUSH BAR TYPE EMERGENCY EXIT LATCH AND SECURITY SCREENING A MINIMUM OF 4' BEYOND THE LIMITS OF THE GATE. SEE SHEET C-902 FOR TYP. FENCE DETAIL.

**BECKER MORGAN GROUP**

ARCHITECTURE  
ENGINEERING

**Dover, DE**  
 309 S. Governors Ave.  
 Dover, DE 19904  
 Ph. 302.734.7950  
 Fax 302.734.7965

**Salisbury, MD**  
 312 West Main St. Suite 300  
 Salisbury, MD 21801  
 Ph. 410.546.9100  
 Fax 410.546.5824

**Wilmington, NC**  
 3205 Randall Parkway, Suite 211  
 Wilmington, North Carolina 28403  
 Ph. 910.341.7600  
 Fax 910.341.7506

[www.beckermorgan.com](http://www.beckermorgan.com)

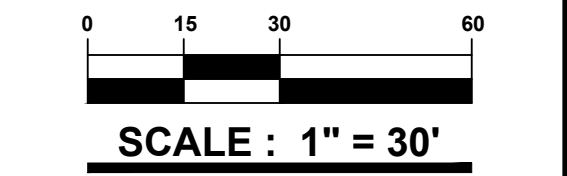
PROJECT TITLE

**KILLENS POND  
WATER PARK  
RENOVATIONS  
PHASE 1**

5025 KILLENS POND ROAD  
FELTON  
KENT COUNTY, DELAWARE

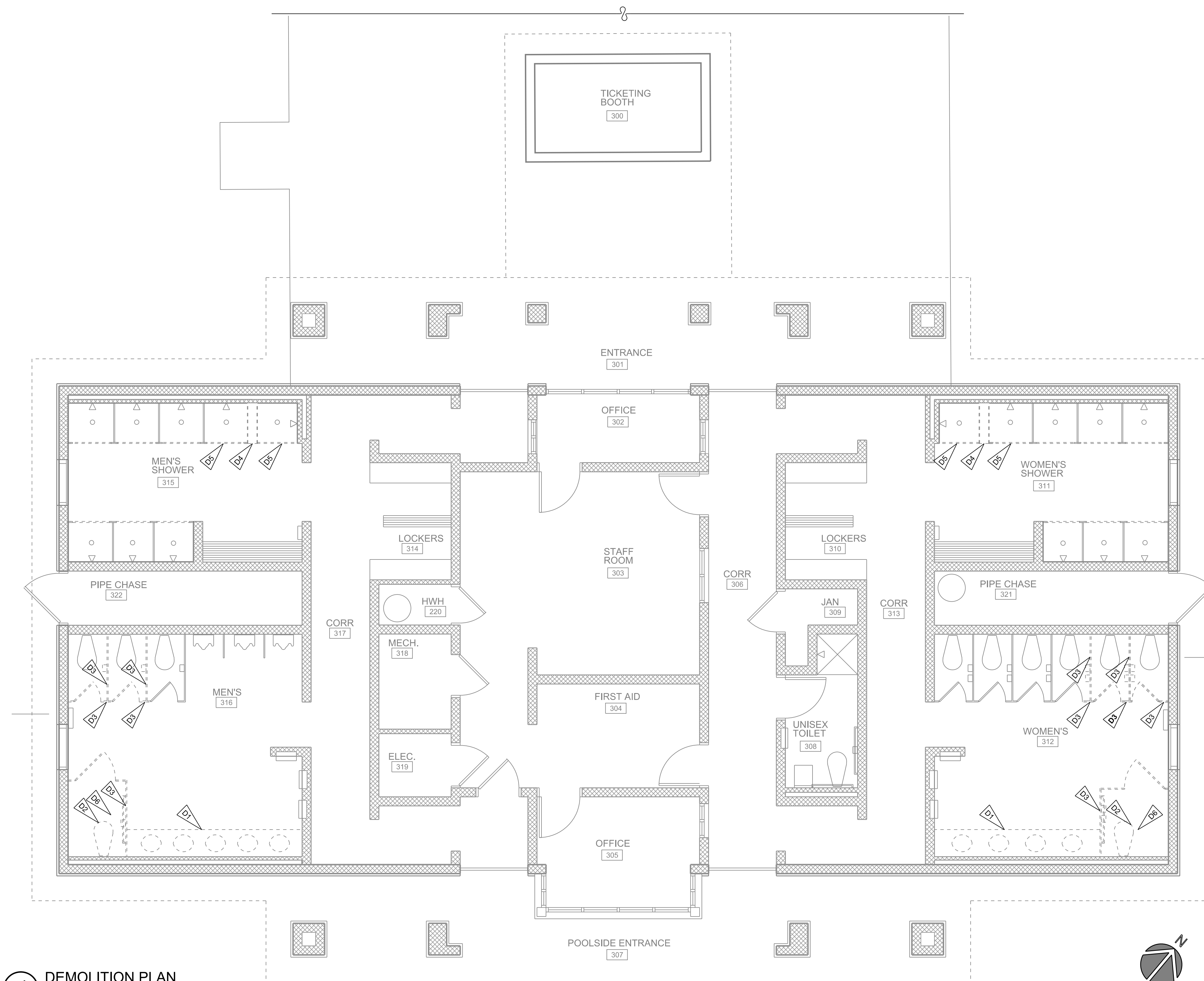
SHEET TITLE

**SITE IMPROVEMENTS  
ALTERNATES 1A, 2, 2A  
4 & 5.**



ISSUE BLOCK		
4	9/16/15	ADDENDUM NO. 2
3	8/25/15	ISSUED FOR BID
2	7/29/2015	SUBMITTED TO PARKS FOR OWNER REVIEW
1	7/1/2015	SUBMITTED TO DM FOR FINAL DESIGN REVIEW
MARK	DATE	DESCRIPTION
LAYER STATE:	C-202	
<b>PROJECT NO.:</b>		<b>2012006.04</b>
<b>DATE:</b>		<b>05/15/15</b>
<b>SCALE:</b>		<b>1" = 30'</b>
<b>DRAWN BY:</b>		<b>J.N.S. / PROJ. MGR.: G.E.J.</b>
		SHEET
		<b>C-202</b>
		COPYRIGHT 2015





1 DEMOLITION PLAN

SCALE: 1/4" = 1'0"

#### GENERAL DEMOLITION NOTES

- REMOVE EXISTING CEILING FINISHES IN CONTRACT AREA UNLESS NOTED OTHERWISE TO REMAIN.
- REMOVE EXISTING FLOOR FINISHES IN CONTRACT AREA UNLESS NOTES OTHERWISE TO REMAIN.
- REMOVE EXISTING CASEWORK, COUNTER TOPS, AND WALL MOUNTED CABINETS IN CONTRACT AREA. PATCH AND REPAIR SUBSTRATE ON WALLS TO REMAIN.
- COORDINATE REMOVAL OF ELECTRICAL EQUIPMENT WITH ELECTRICAL DEMOLITION PLAN.
- COORDINATE REMOVAL OF MECHANICAL EQUIPMENT WITH MECHANICAL DEMOLITION PLAN.
- COORDINATE REMOVAL OF PLUMBING EQUIPMENT WITH PLUMBING DEMOLITION PLAN.

#### SELECTIVE DEMO NOTES

- D1 REMOVE EXISTING COUNTER & SINKS
- D2 REMOVE EXISTING PLUMBING FIXTURES. EXISTING SANITARY & SUPPLY PIPING TO REMAIN. MODIFY EXIST. TO REMAIN PIPING FOR NEW PLUMBING FIXTURES AS REQUIRED.
- D3 REMOVE EXISTING TOILET PARTITION & ACCESSORIES
- D4 REMOVE EXISTING CMU PARTITION & CERAMIC TILE
- D5 REMOVE EXISTING TOILET PARTITION OVERHEAD BRACE
- D6 REMOVE EXISTING CONCRETE FLOOR TO ACCOMMODATE NEW TOILET LOCATION



ARCHITECTURE  
ENGINEERING

Dover, DE  
309 S Governors Ave  
Dover, DE 19904  
302.734.7950

Salisbury, MD  
312 West Main St. Suite 300  
Salisbury, MD 21801  
410.546.9100

Wilmington, NC  
3205 Randall Parkway, Suite 211  
Wilmington, NC 28403  
910.341.7600

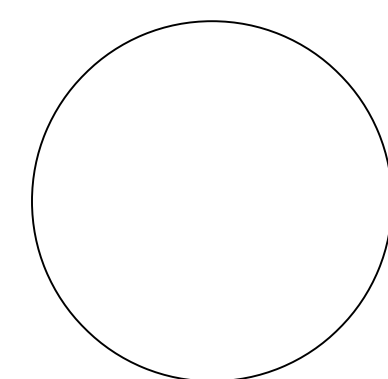
www.beckermorgan.com

ALLEN AND SHARIFF ENGINEERING, LLC  
MECHANICAL AND ELECTRICAL  
ENGINEERS

1102 SOUTH DUPONT HIGHWAY  
DOVER, DELAWARE 19901  
(302) 213-1000

NYIKOS ASSOCIATES, INC.  
FOODSERVICE AND LAUNDRY  
DESIGN/CONSULTING  
16205-A FLOWER HILL WAY  
GAITHERSBURG, MARYLAND 20879  
(301) 953-9500 FAX: (301) 953-9552

MARKEY AND ASSOCIATES, INC.  
PLANNING, DESIGN, AND ENGINEERING  
4503 FLOODWATER COURT NW  
KENNESAW, GEORGIA 30144  
(770) 424-1208 FAX: (770) 424-1071



PROJECT TITLE

KILLENS POND  
WATERPARK  
RENOVATIONS  
PHASE 1-  
EXISTING  
BATHHOUSE &  
TICKETING  
PAVILIONS  
(ALT # 1B, 2 & 3)

5025 KILLENS POND ROAD  
FELTON, DELAWARE



Delaware State Parks

SHEET TITLE

DEMOLITION PLAN  
EXISTING  
BATHHOUSE  
ALT.# 1B

ISSUE FOR

BID

NOT FOR CONSTRUCTION  
NOT FOR PERMIT  
20 AUGUST 2015

ISSUE BLOCK

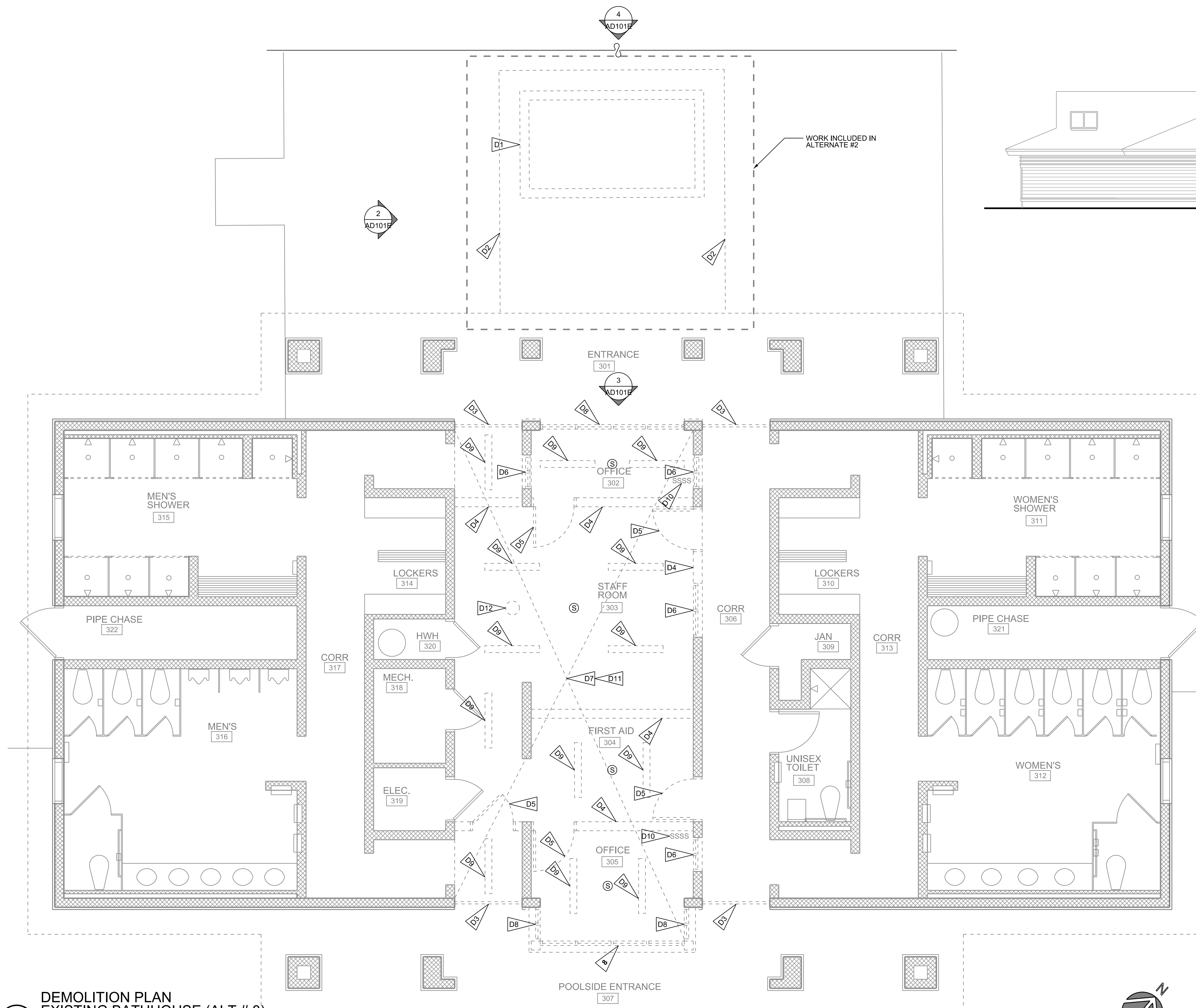
MARK	DATE	DESCRIPTION
2	08/20/15	ISSUE FOR BID
1	07/01/15	FINAL DESIGN REVIEW

PROJECT NO: 2012006.04  
DATE: 08/10/15  
SCALE: 1/8" = 1'0"  
DRAWN BY: WES PROJ MGR: WES

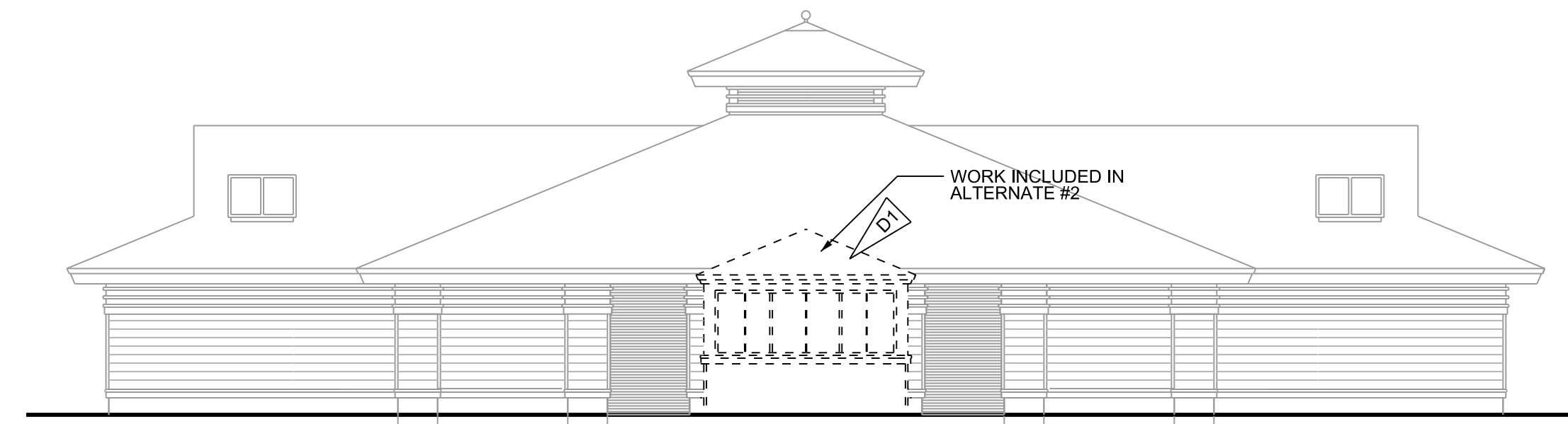
AD102-E

COPYRIGHT © 2010

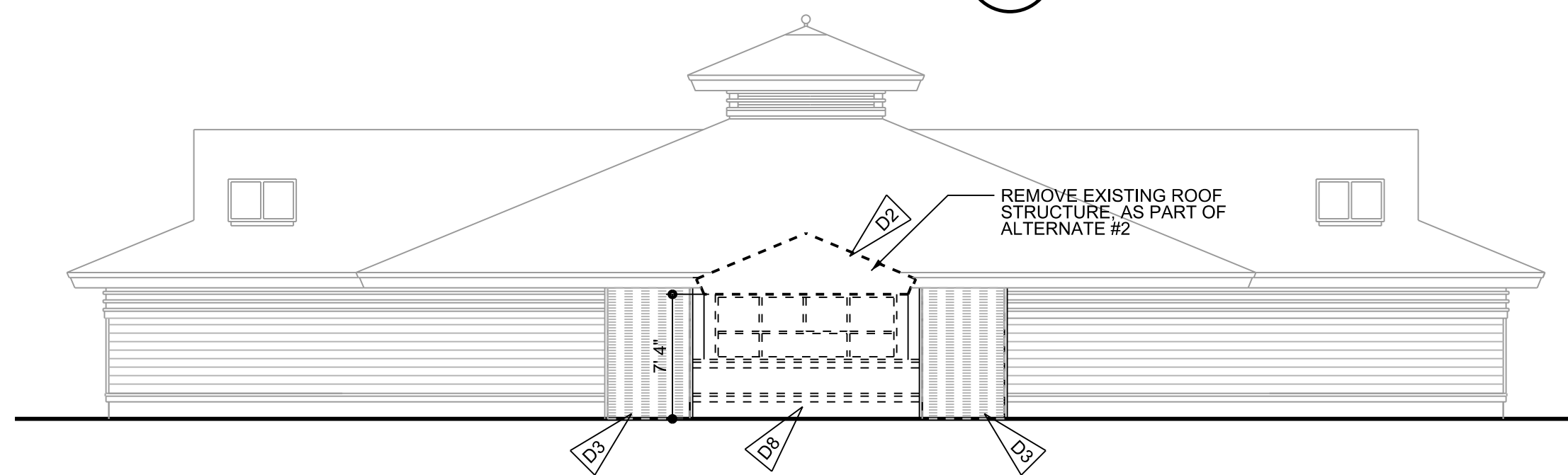




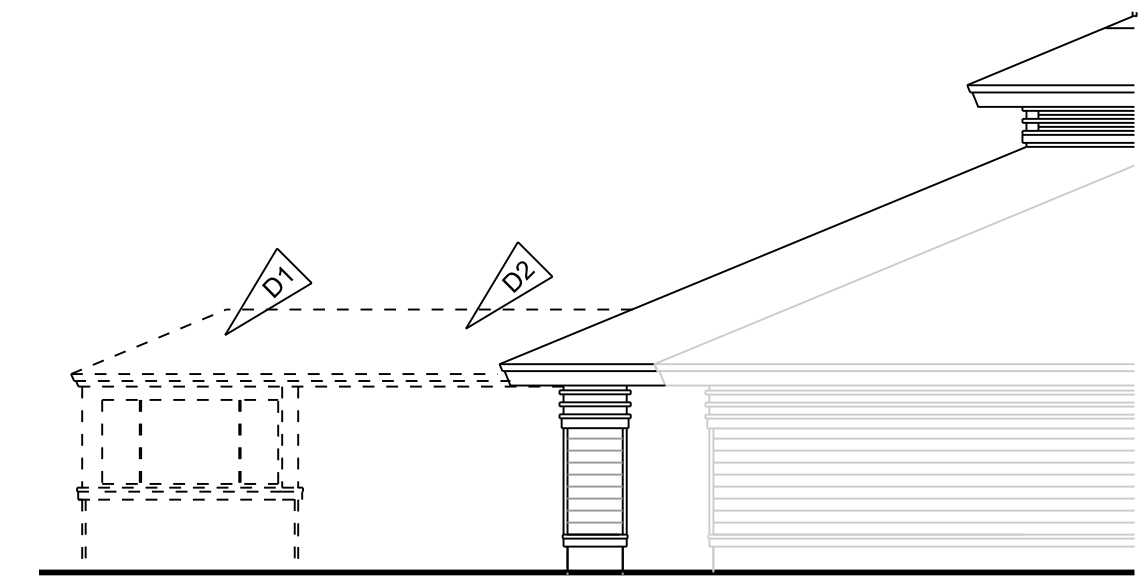
**1** DEMOLITION PLAN  
EXISTING BATHHOUSE (ALT # 3)  
SCALE: 1/4" = 1'0"



**4** NORTHWEST ELEVATION  
EXISTING BATHHOUSE (ALT # 2)  
SCALE: 1/4" = 1'0"



**3** NORTHWEST ELEVATION  
EXISTING BATHHOUSE (ALT # 3)  
SCALE: 1/4" = 1'0"



**2** SOUTHWEST ELEVATION  
EXISTING BATHHOUSE (ALT # 2)  
SCALE: 1/4" = 1'0"

**GENERAL DEMOLITION NOTES**

- A. REMOVE EXISTING CEILING FINISHES IN CONTRACT AREA UNLESS NOTED OTHERWISE TO REMAIN.
- B. REMOVE EXISTING FLOOR FINISHES IN CONTRACT AREA UNLESS NOTES OTHERWISE TO REMAIN.
- C. REMOVE EXISTING CASEWORK, COUNTER TOPS, AND WALL MOUNTED CABINETS IN CONTRACT AREA. PATCH AND REPAIR SUBSTRATE ON WALLS TO REMAIN.
- D. COORDINATE REMOVAL OF ELECTRICAL EQUIPMENT WITH ELECTRICAL DEMOLITION PLAN.
- E. COORDINATE REMOVAL OF MECHANICAL EQUIPMENT WITH MECHANICAL DEMOLITION PLAN.
- F. COORDINATE REMOVAL OF PLUMBING EQUIPMENT WITH PLUMBING DEMOLITION PLAN.

**SELECTIVE DEMO NOTES**

- ◀D1 REMOVE EXISTING TICKETING BLDG IN IT'S ENTIRETY, INCLUDING FOUNDATIONS
- ◀D2 REMOVE EXISTING ROOFING & ROOF STRUCTURE BETWEEN TICKET BOOTH & BATHHOUSE
- ◀D3 REMOVE OVERHEAD COILING DOOR.
- ◀D4 REMOVE EXISTING CMU WALL TO 8" BELOW FLOOR, REMOVE CONCRETE SLAB AS REQUIRED TO ACCOMODATE, SEE STRUCTURAL FOR ADDITIONAL INFO.
- ◀D5 REMOVE EXISTING DOOR AND FRAME
- ◀D6 REMOVE EXISTING WINDOWS & FRAME.
- ◀D7 REMOVE EXISTING DW CEILING, FRAMING TO REMAIN.
- ◀D8 REMOVE EXISTING WALLS & WINDOWS.
- ◀D9 REMOVE EXISTING LIGHTS, STORE FOR REINSTALLATION. SEE A101-E.
- ◀D10 REMOVE LIGHT SWITCHES AND REWIRE NEW LOCATION. SEE A101-E.
- ◀D11 REMOVE ALL ELECTRICAL & DATA OUTLETS IN WALLS TO BE REMOVED.
- ◀D12 REMOVE EXISTING EXHAUST FAN, STORE FOR REINSTALLATION. SEE A101-E.
- ◀D13 REMOVE EXISTING SPEAKERS, STORE FOR REINSTALLATION. SEE A101-E.



ARCHITECTURE  
ENGINEERING

Dover, DE  
309 S Governors Ave  
Dover, DE 19904  
302.734.7950

Salisbury, MD  
312 West Main St. Suite 300  
Salisbury, MD 21801  
410.546.9100

Wilmington, NC  
3205 Randall Parkway, Suite 211  
Wilmington, NC 28403  
910.341.7600

www.beckermorgan.com

ALLEN AND SHARIFF ENGINEERING, LLC  
MECHANICAL AND ELECTRICAL  
ENGINEERS

1102 SOUTH DUPONT HIGHWAY  
DOVER, DELAWARE 19901  
(302) 213-1000

NYIKOS ASSOCIATES, INC.  
FOODSERVICE AND LAUNDRY  
DESIGN/CONSULTING  
16205-A FLOWER HILL WAY  
GATHERSBURG, MARYLAND 20879  
(301) 953-8500 FAX: (301) 953-8552

MARKEY AND ASSOCIATES, INC.  
PLANNING, DESIGN, AND ENGINEERING

4553 FRODO WATER COURT NW  
KENNESAW, GEORGIA 30144  
(770) 424-1258 FAX: (770) 424-1071

**KILLENS POND  
WATERPARK  
RENOVATIONS  
PHASE 1-  
EXISTING  
BATHHOUSE &  
TICKETING  
PAVILIONS  
(ALT # 1B, 2 & 3)**

5025 KILLENS POND ROAD  
FELTON, DELAWARE



**DEMOLITION PLAN  
EXISTING  
BATHHOUSE  
ALT. # 3**

**ISSUE FOR  
BID  
NOT FOR CONSTRUCTION  
NOT FOR PERMIT  
20 AUGUST 2015**

ISSUE BLOCK		
MARK	DATE	DESCRIPTION
2	08/20/15	ISSUE FOR BID
1	07/01/15	FINAL DESIGN REVIEW

PROJECT NO:		2012006.04
DATE:		08/10/15
SCALE:		1/8" = 1'0"
DRAWN BY:		WES
PROJ MGR:		WES

**AD101-E**