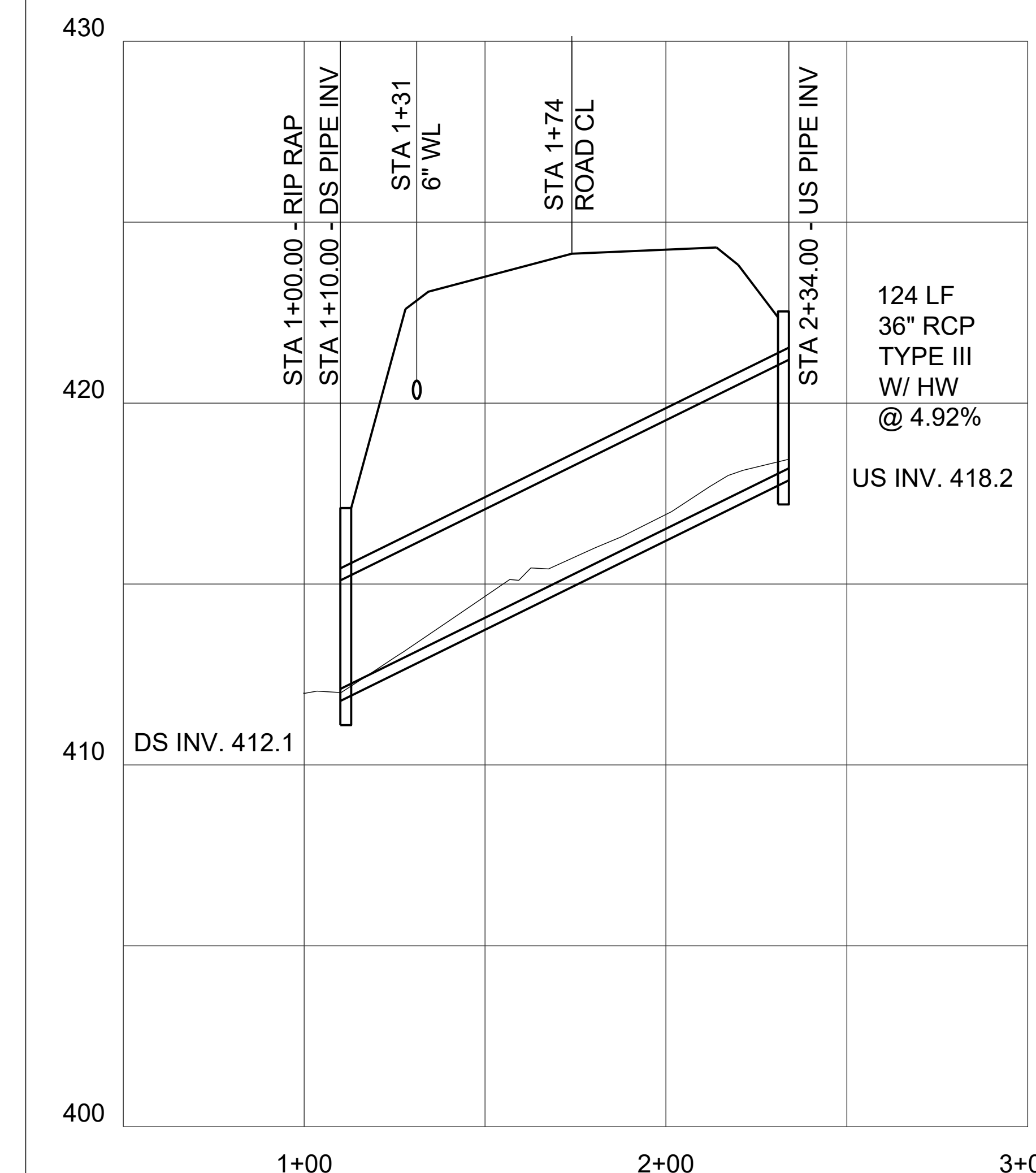
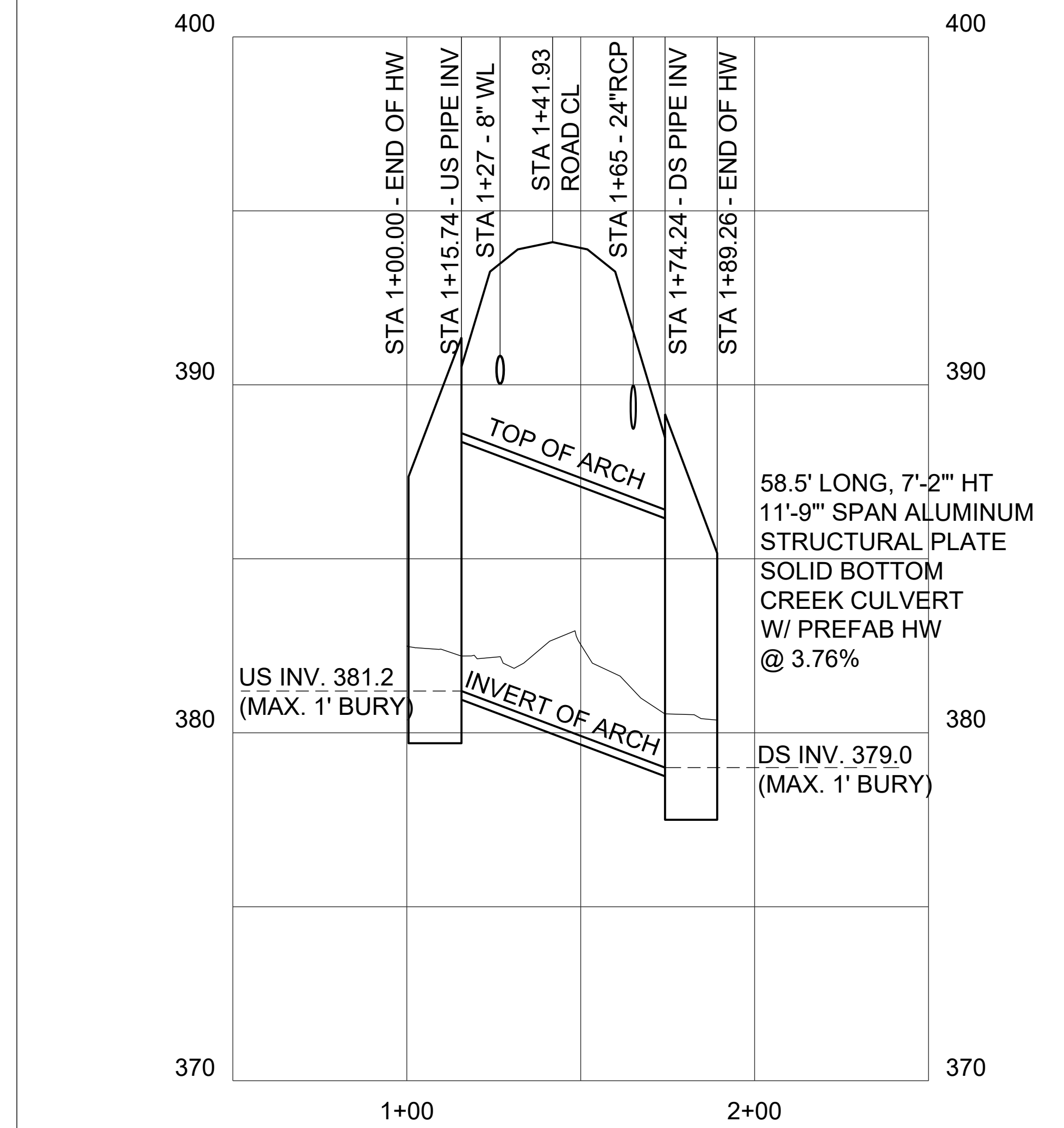
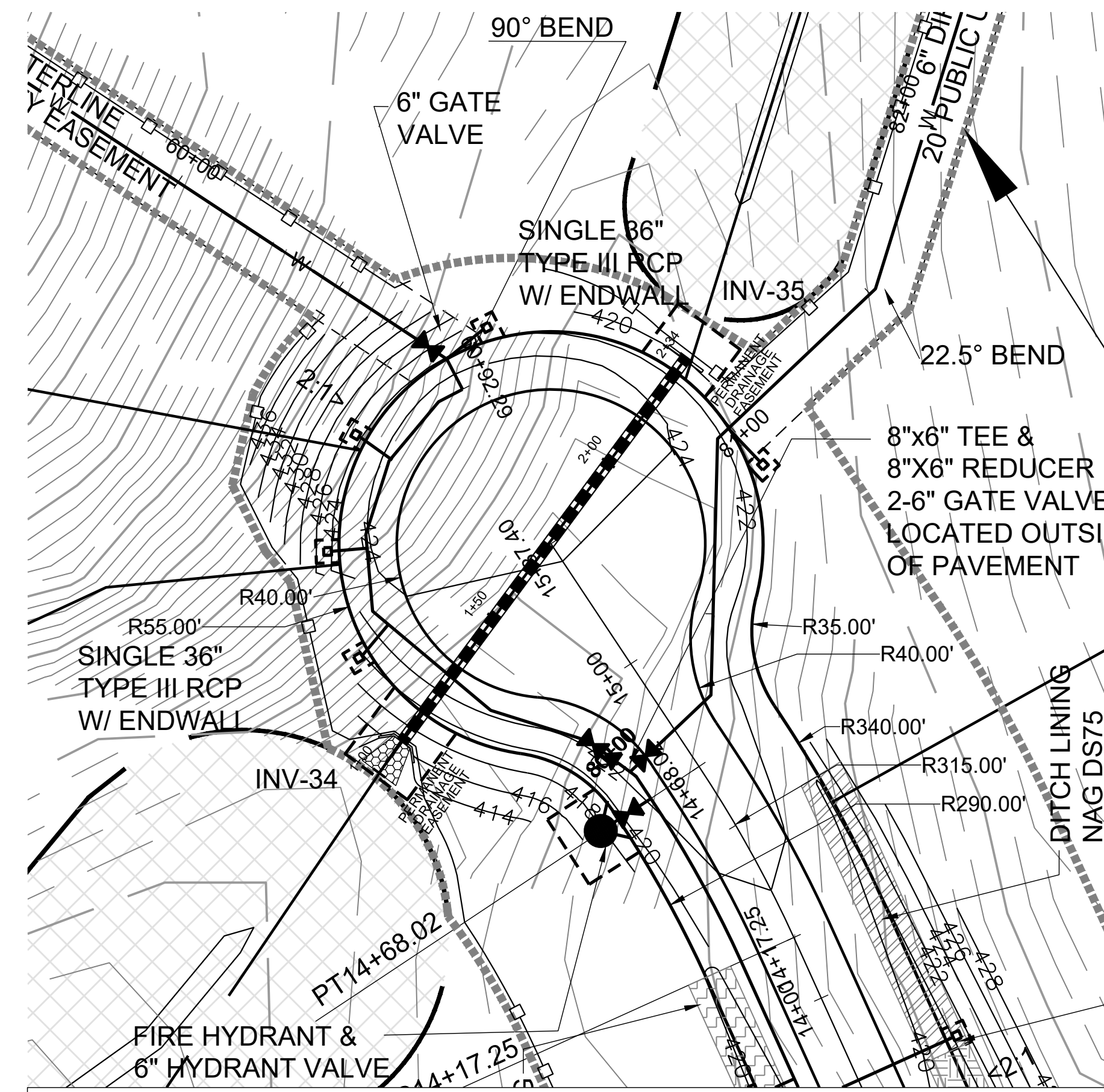
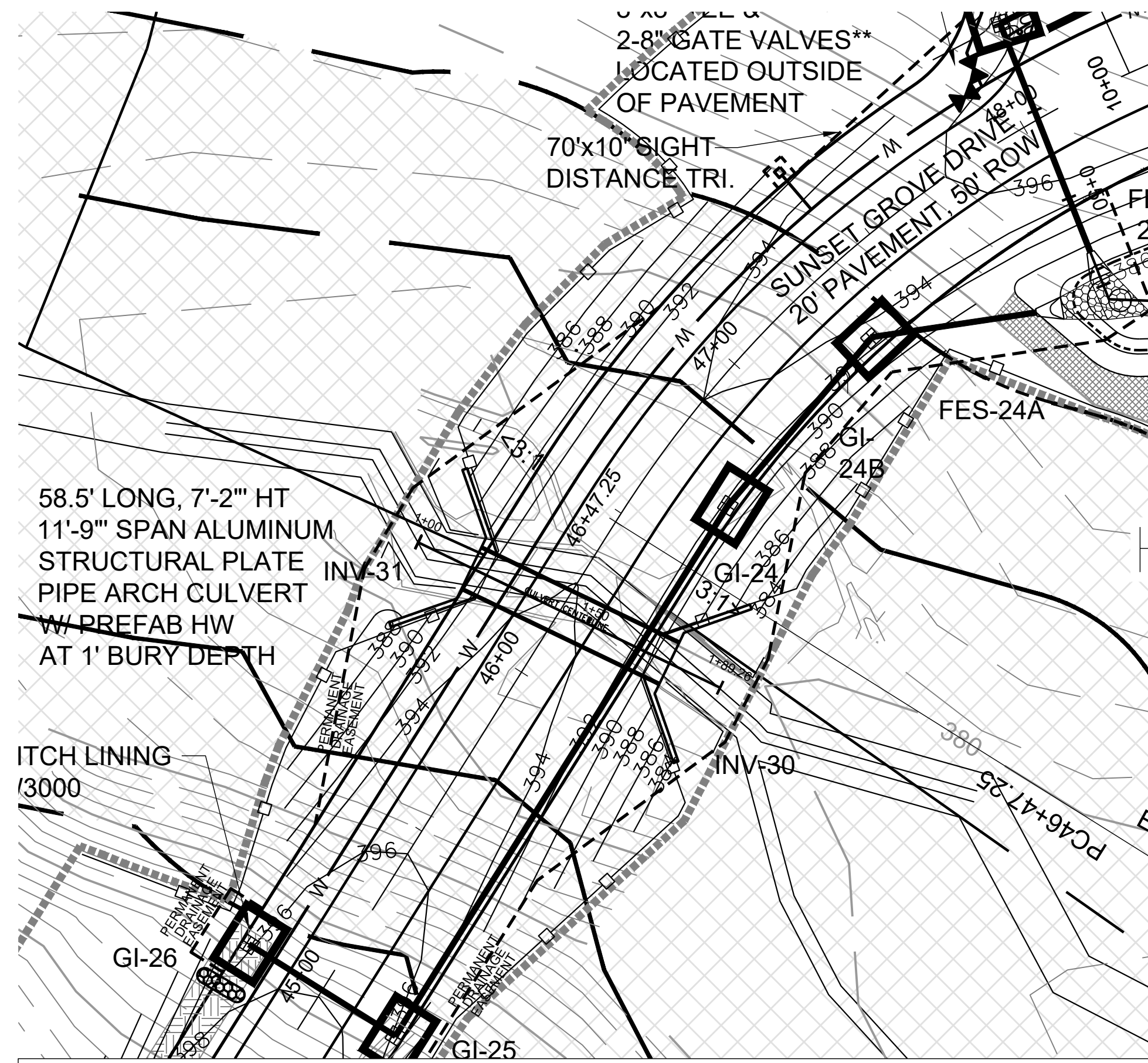
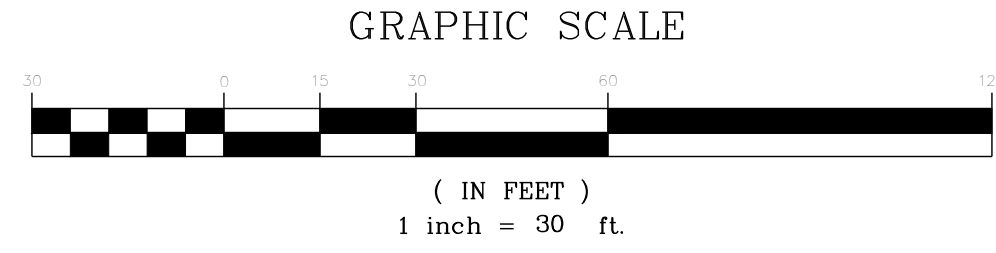


NOTES  
1. SEE PLAN SHEETS FOR APPLICABLE NOTES



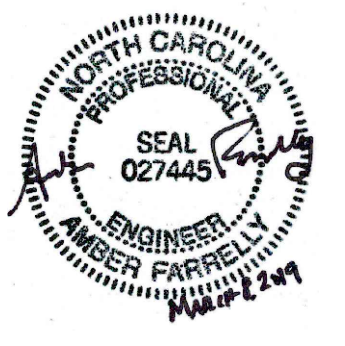
**EROSION CONTROL LEGEND**  
NOTE: NOT ALL ITEMS ARE SHOWN ON EACH PLAN

- LIMITS OF DISTURBANCE
- TEMPORARY DIVERSION DITCH, W/ NAG DS75
- TREE PROTECTION FENCING
- SILT FENCE
- TEMPORARY INLET PROTECTION
- TEMPORARY WATTLE DITCH PROTECTION
- TEMPORARY SEDIMENT BASIN
- RIP-RAP OUTLET PROTECTION
- CONSTRUCTION ENTRANCE & WASHOUT

**DITCH LINING KEY**

- NORTH AMERICAN GREEN DS75 (NAG DS75)
- NORTH AMERICAN GREEN DS150 (NAG DS150)
- NORTH AMERICAN GREEN C125 (NAG C125)
- NORTH AMERICAN GREEN C350 (NAG C350)
- NORTH AMERICAN GREEN W3000 (NAG W3000)

**B&F**  
CONSULTING  
2805 Tobermory Lane  
Raleigh, NC 27606  
Phone No. (919) 618-0180  
License No. C-2149



**REVISIONS**

NO.	DATE	DESCRIPTION

**PROJECT INFORMATION**

PROJECT MANAGER:	RJB
DRAWN BY:	AJF
APPROVED BY:	RJB
DRAWING NAME:	BASE-SUNSETGROV

**PROJECT NAME**

SUNSET GROVE SUBDIVISION PHASE 2  
CHATHAM COUNTY NORTH CAROLINA

**DEVELOPER**

CHATHAM CAPITAL LLC  
400 MARKET STREET  
CHAPEL HILL, NC 27516

**SHEET NAME**

PLAN & PROFILE ROAD CULVERTS

**DRAWING SCALE**

1"=30' (VERT. PROFILE: 1"=3')

**PLAN SET**

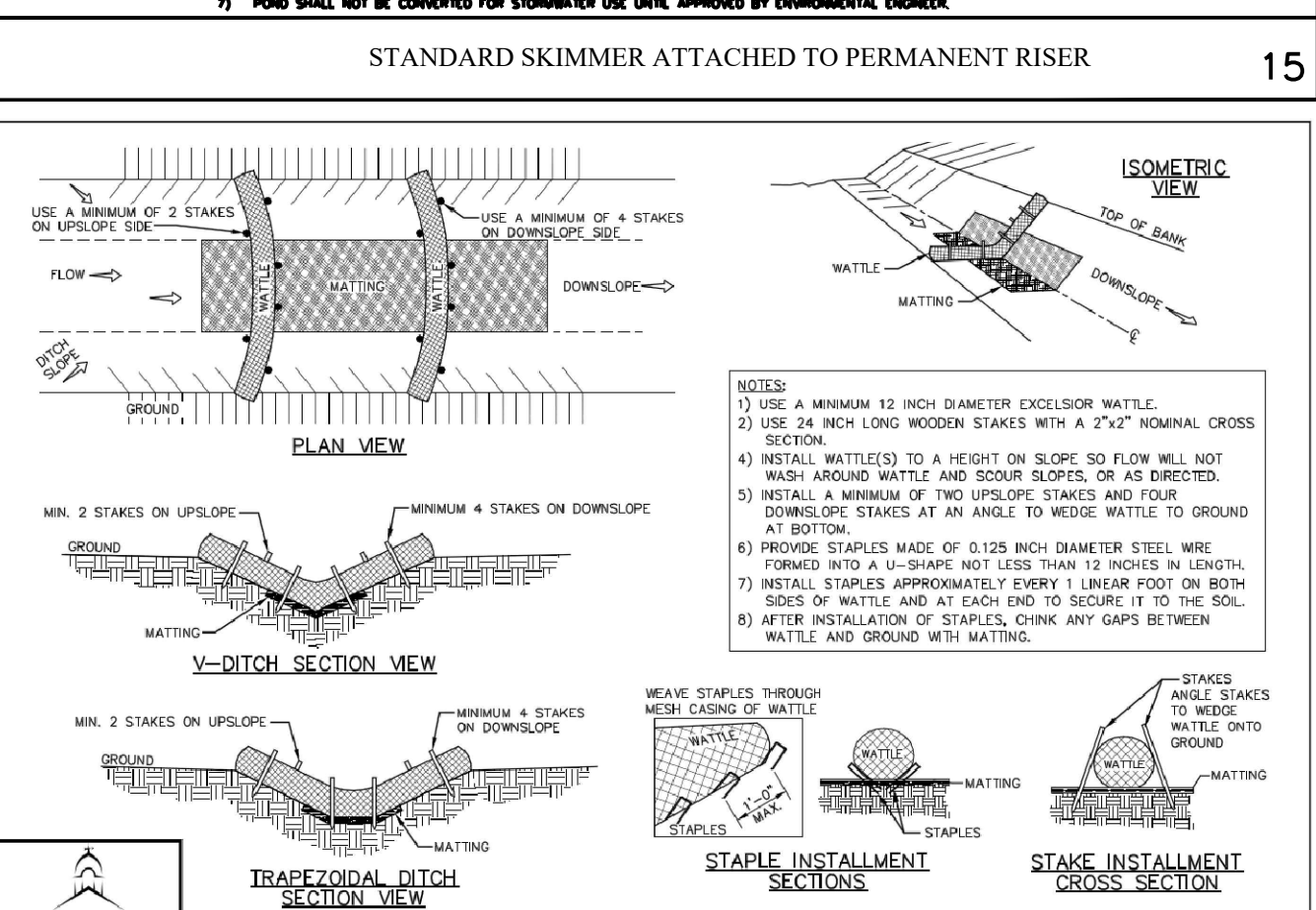
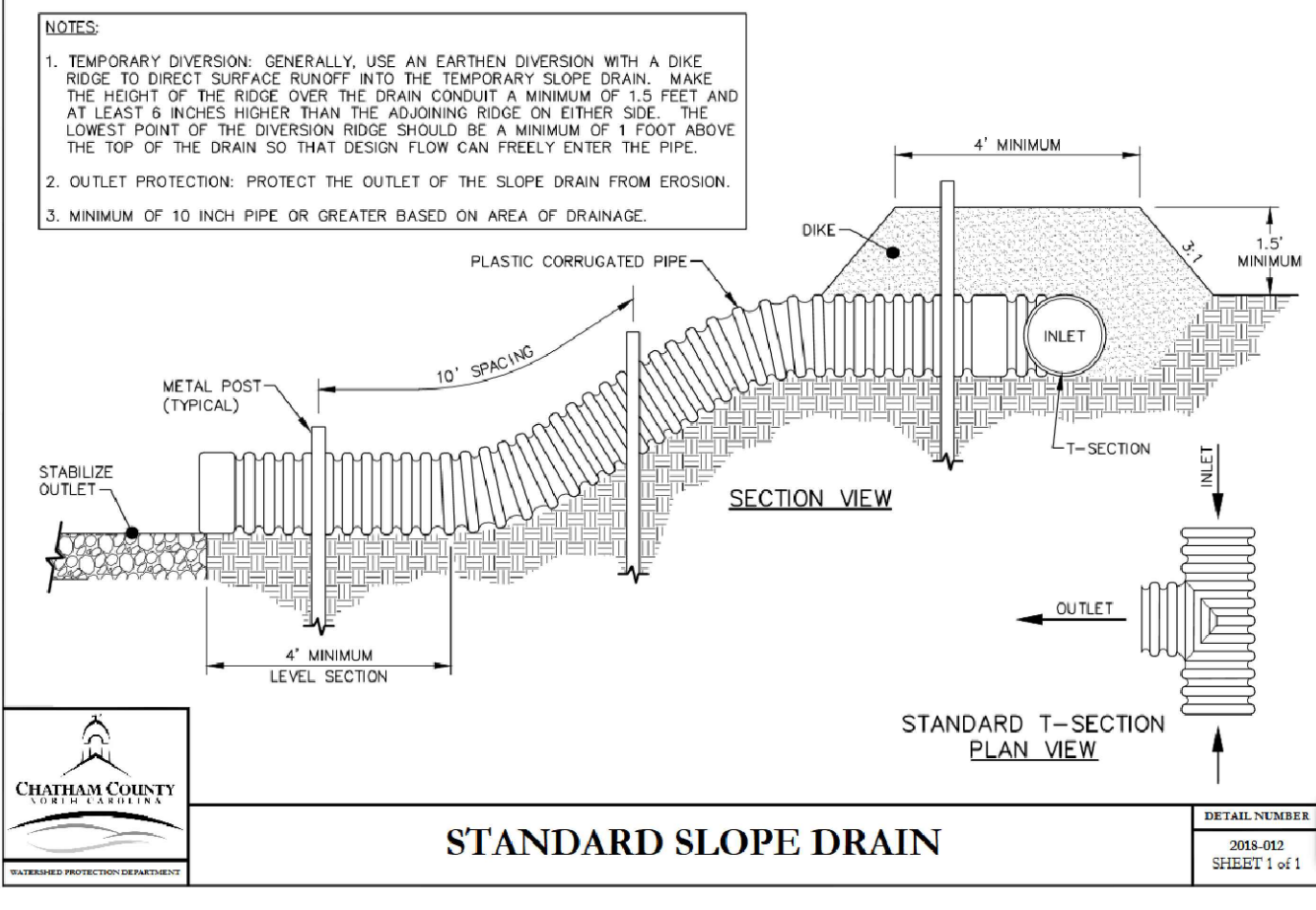
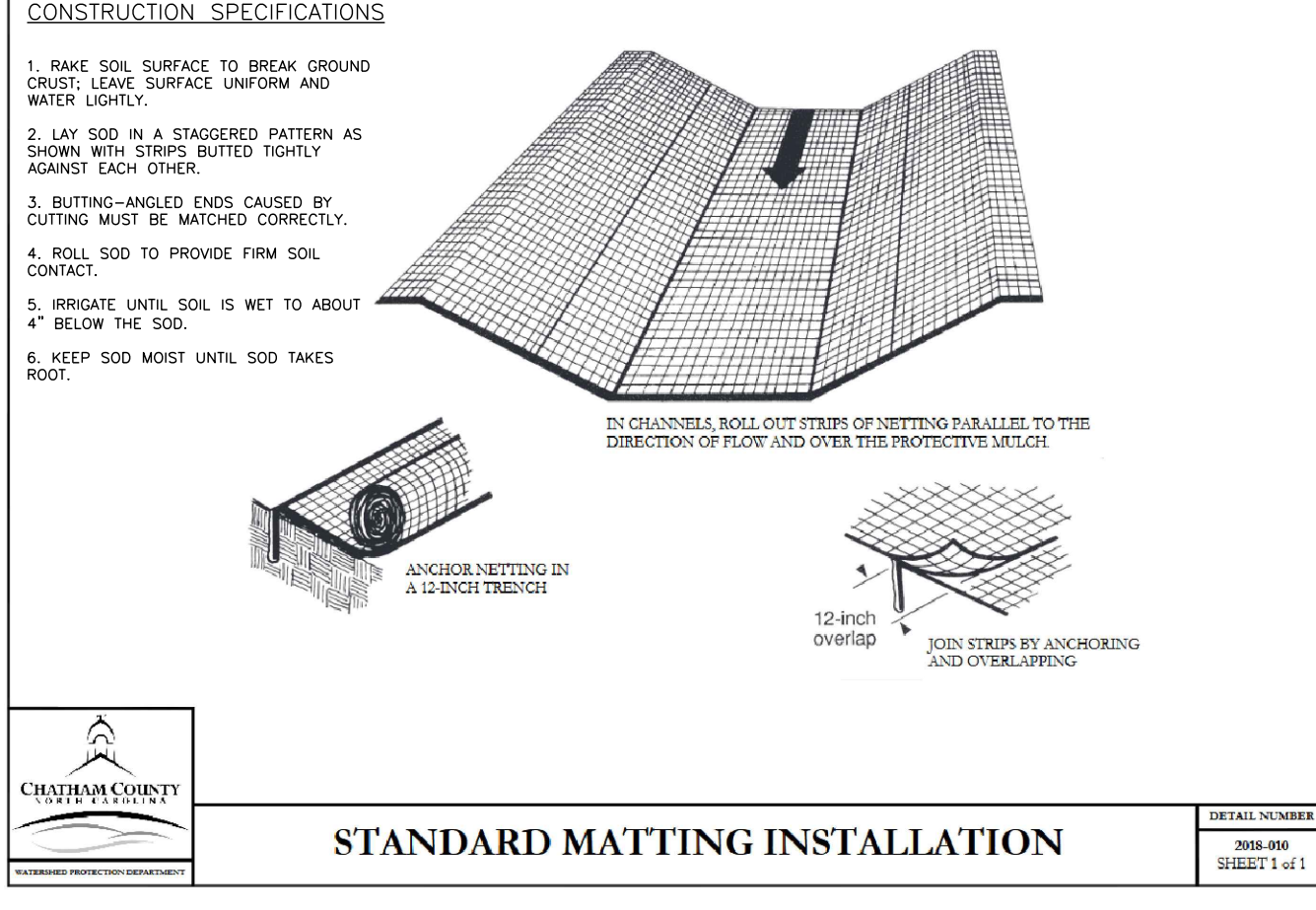
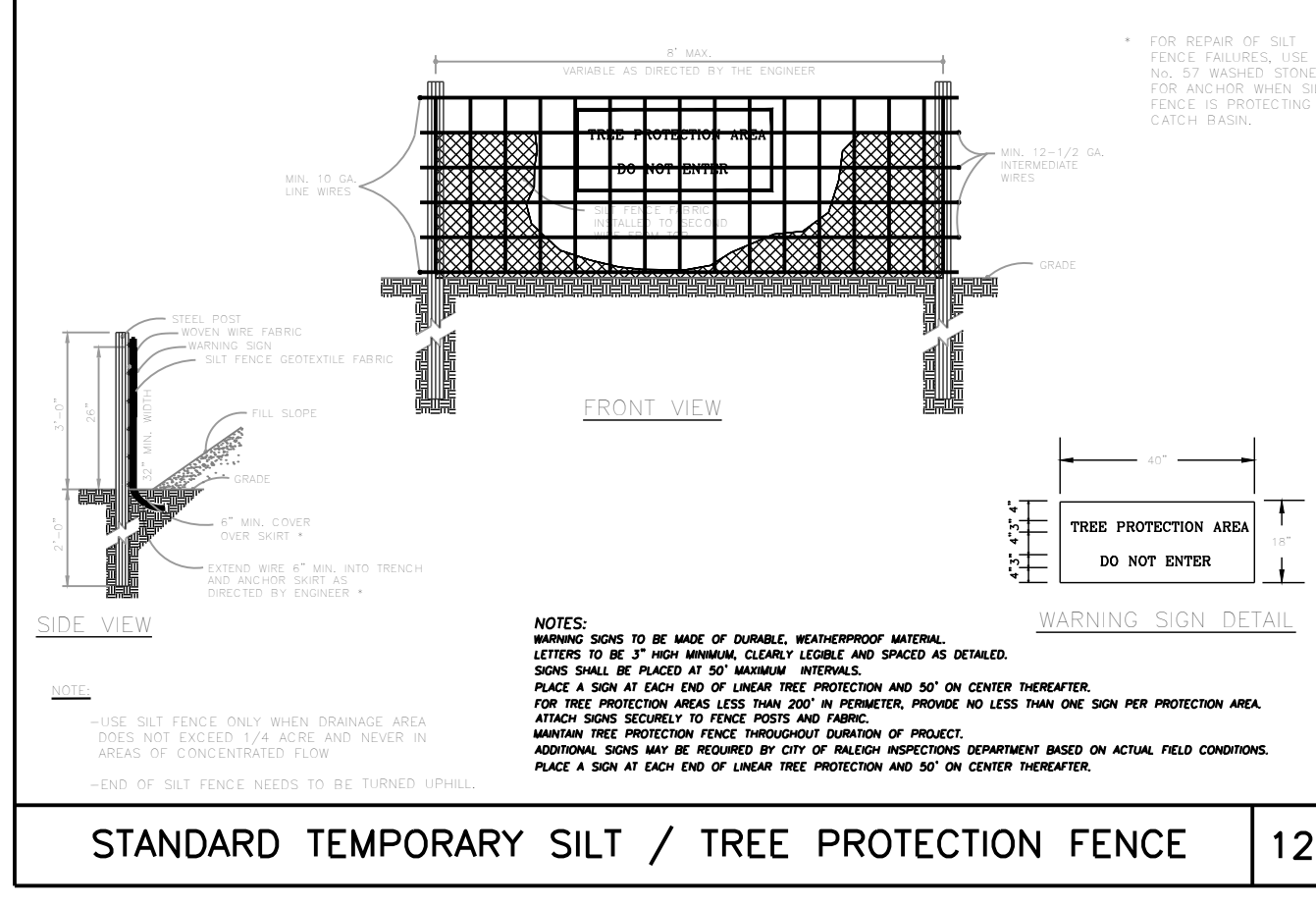
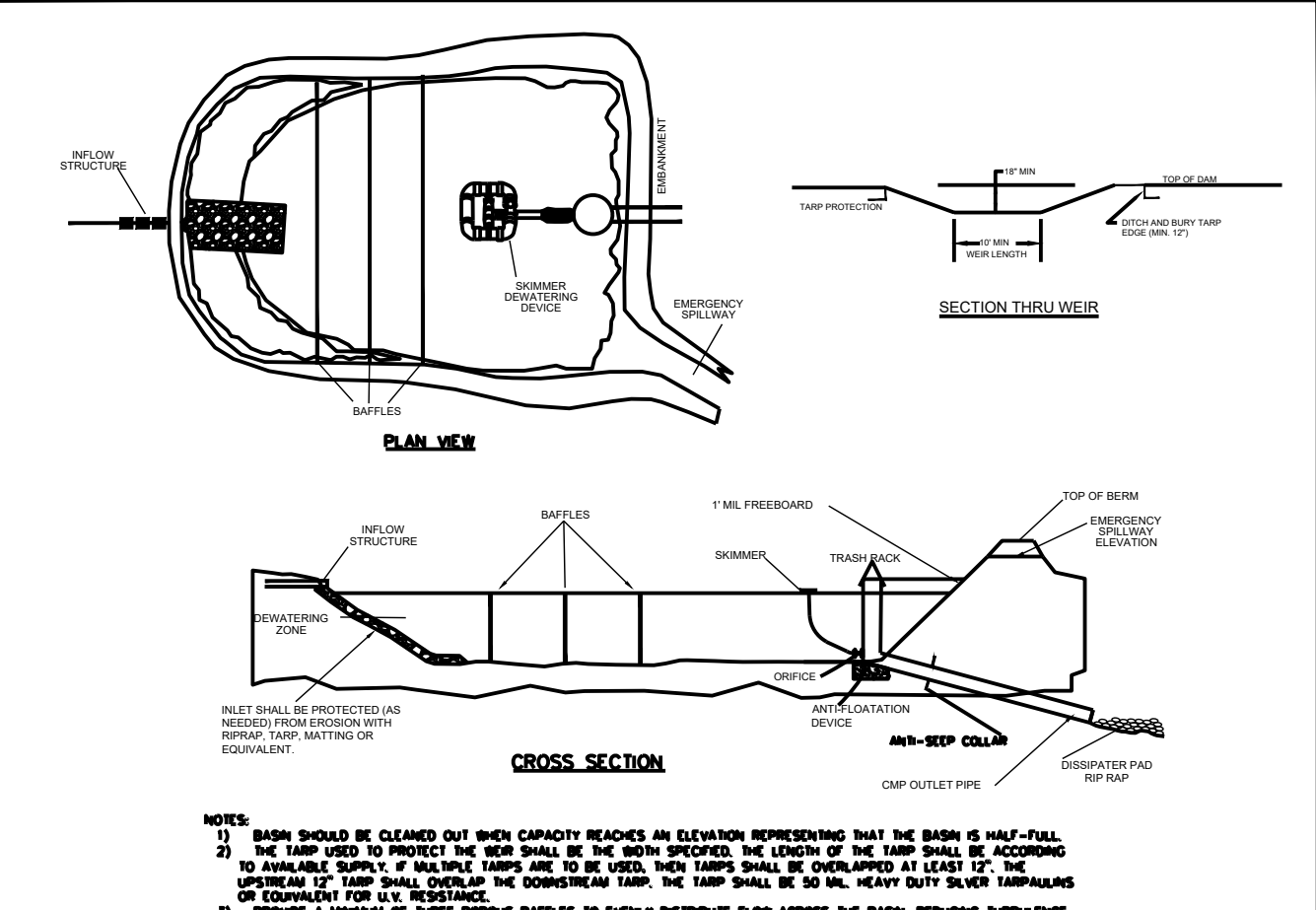
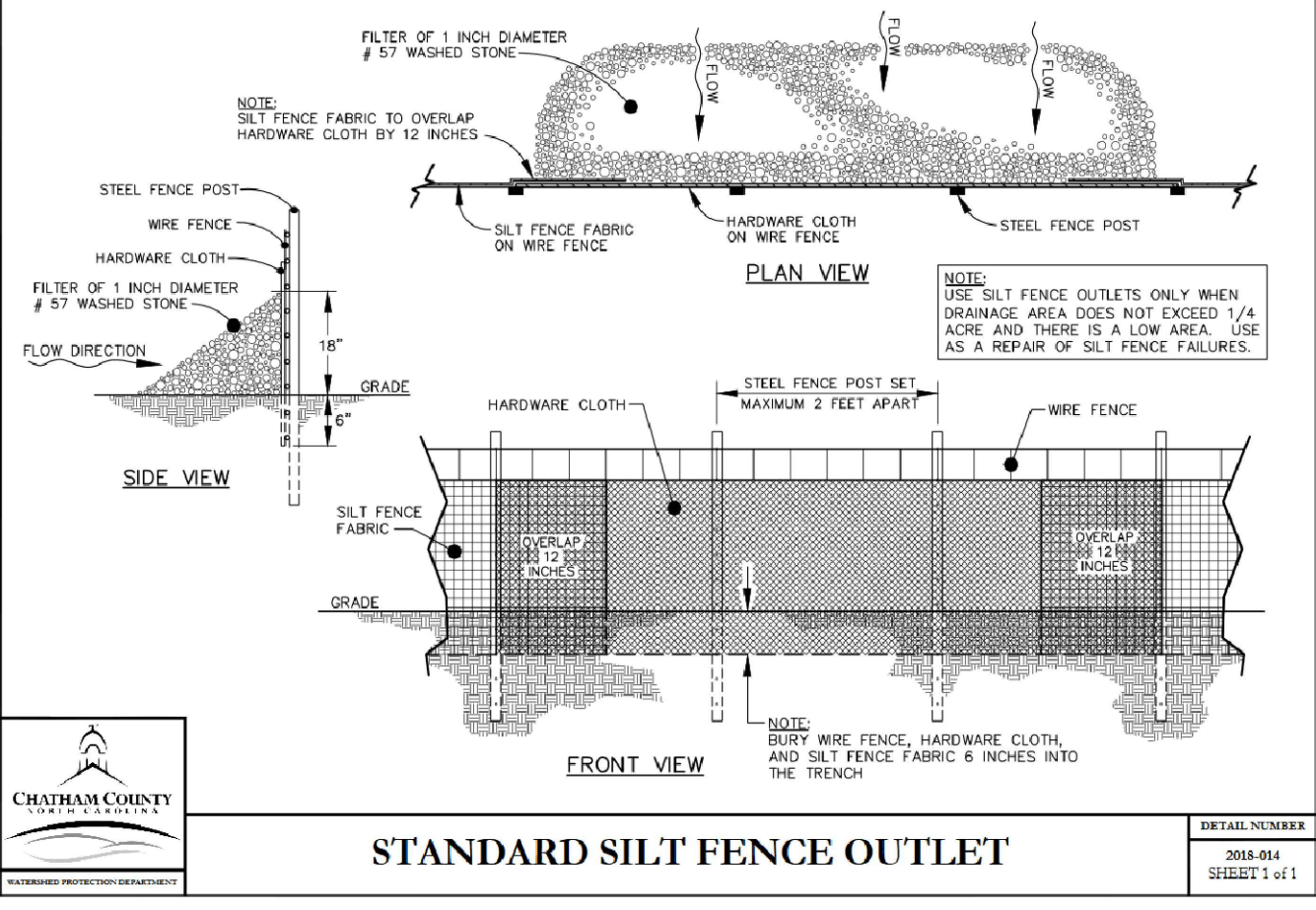
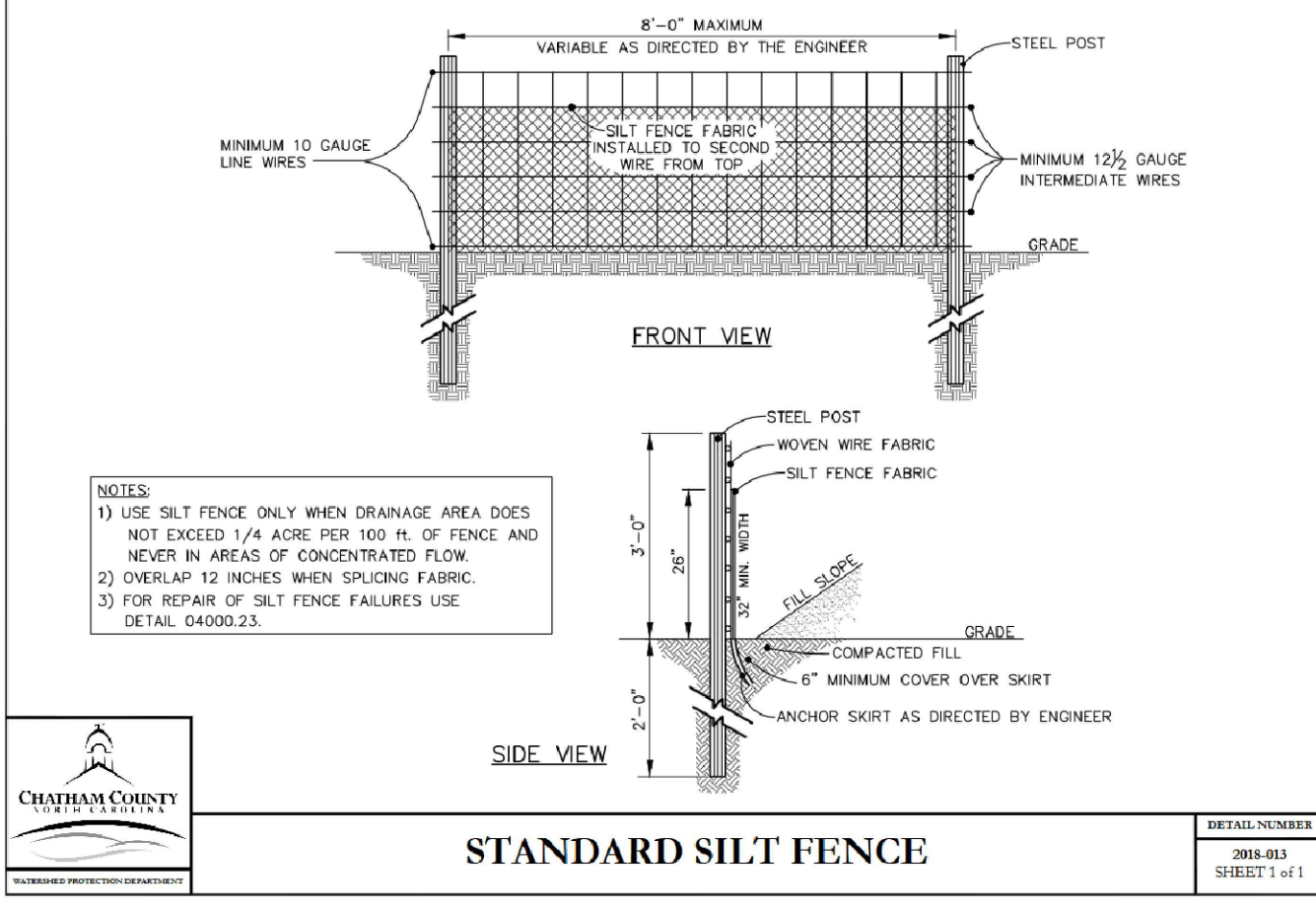
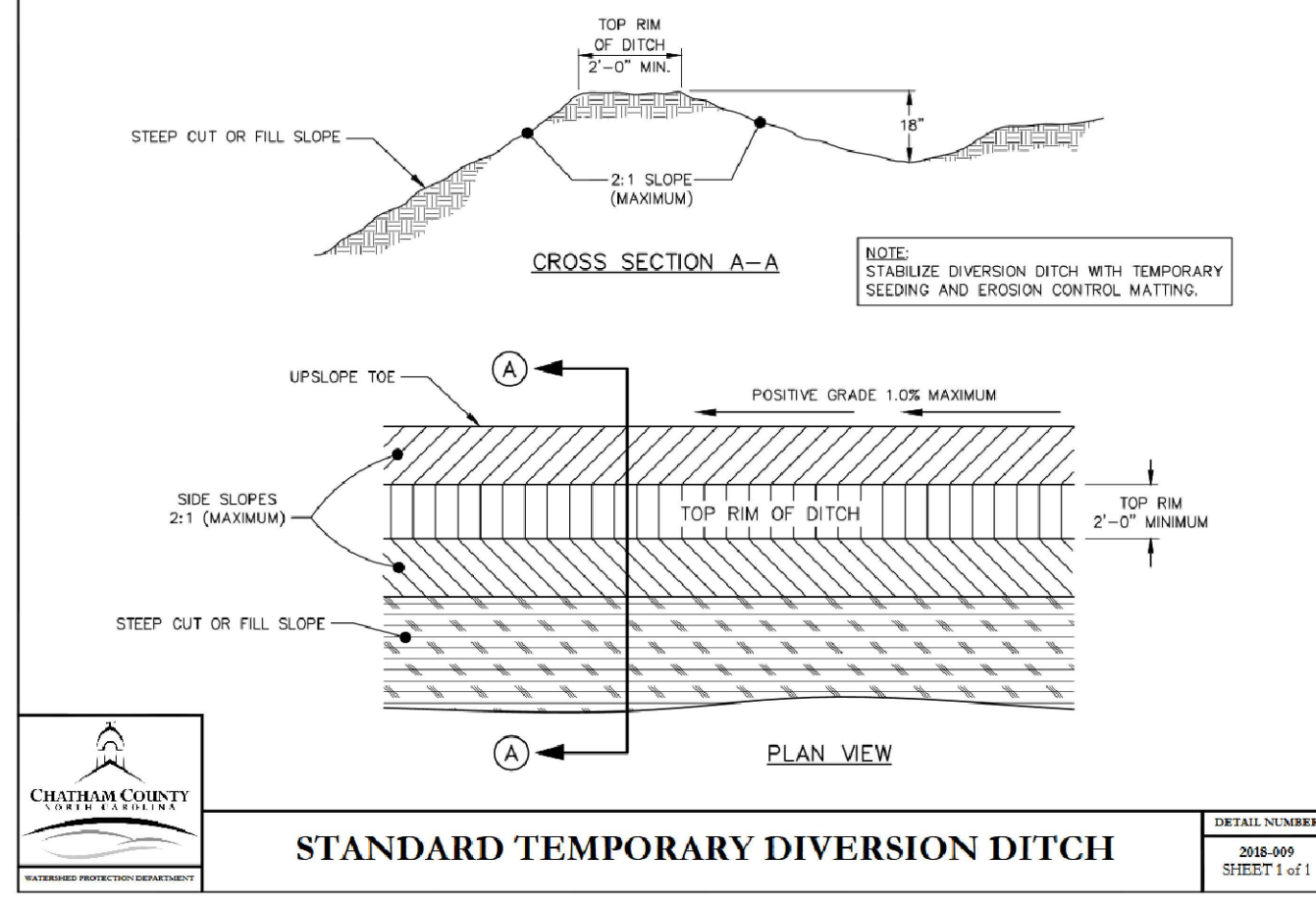
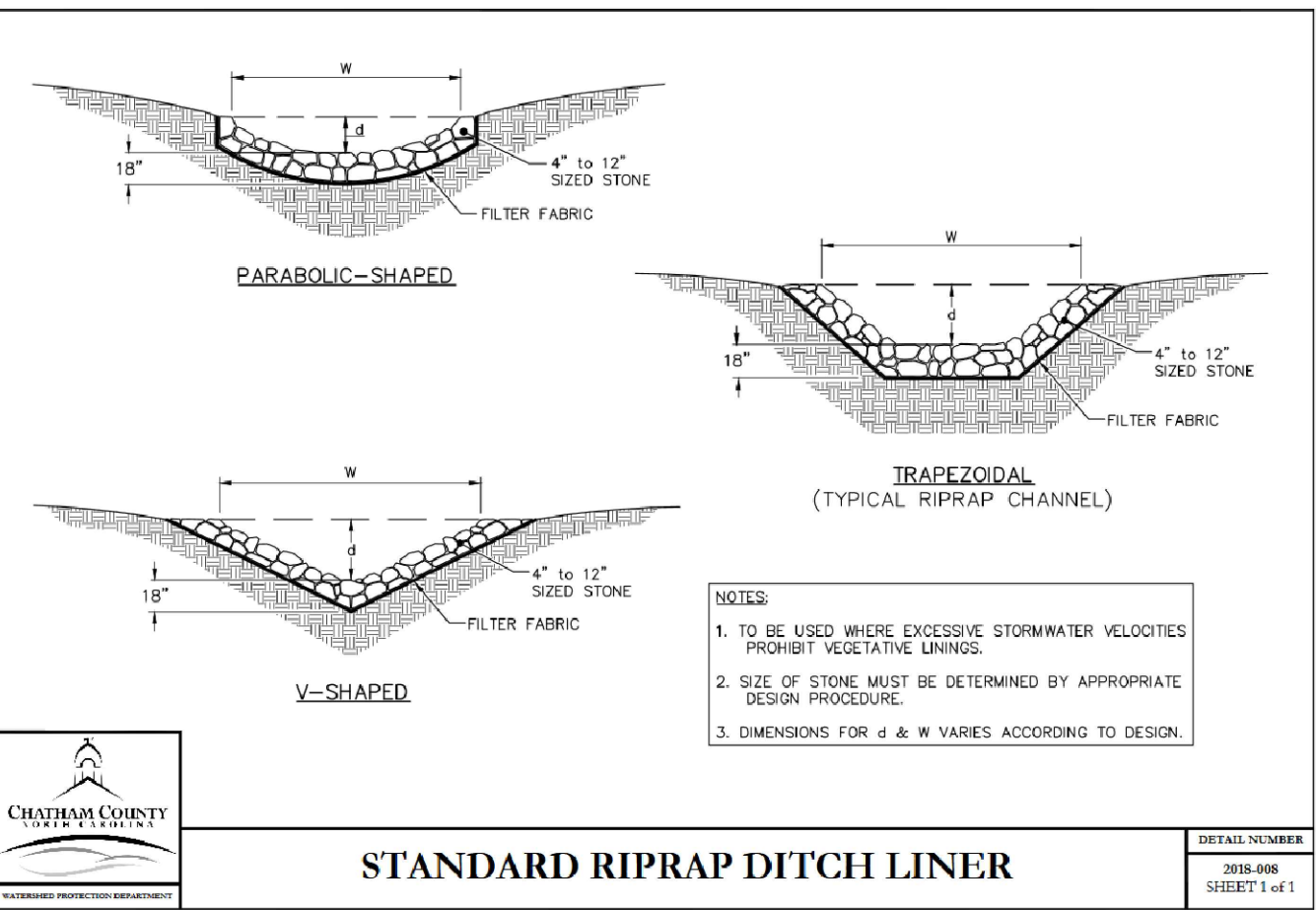
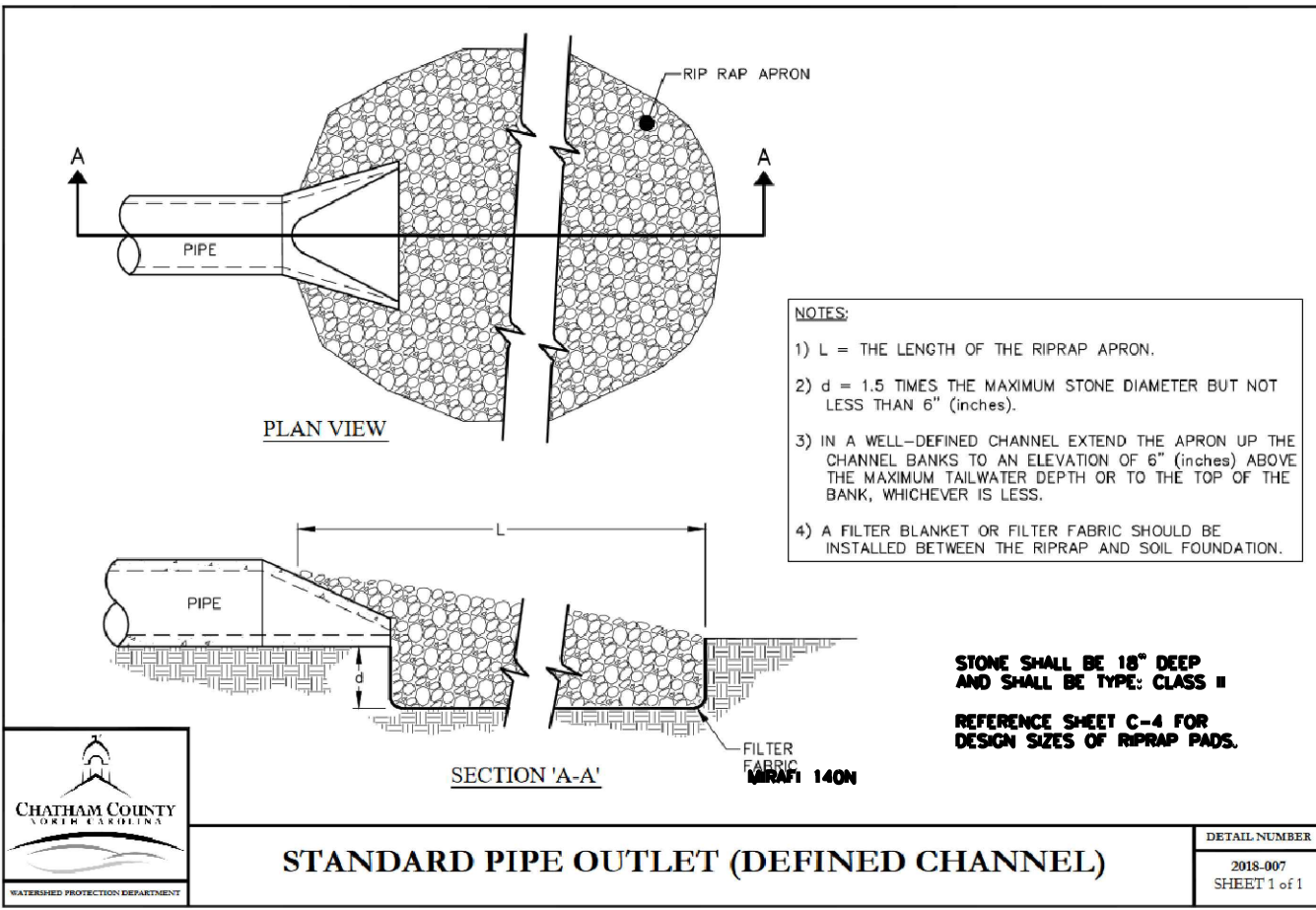
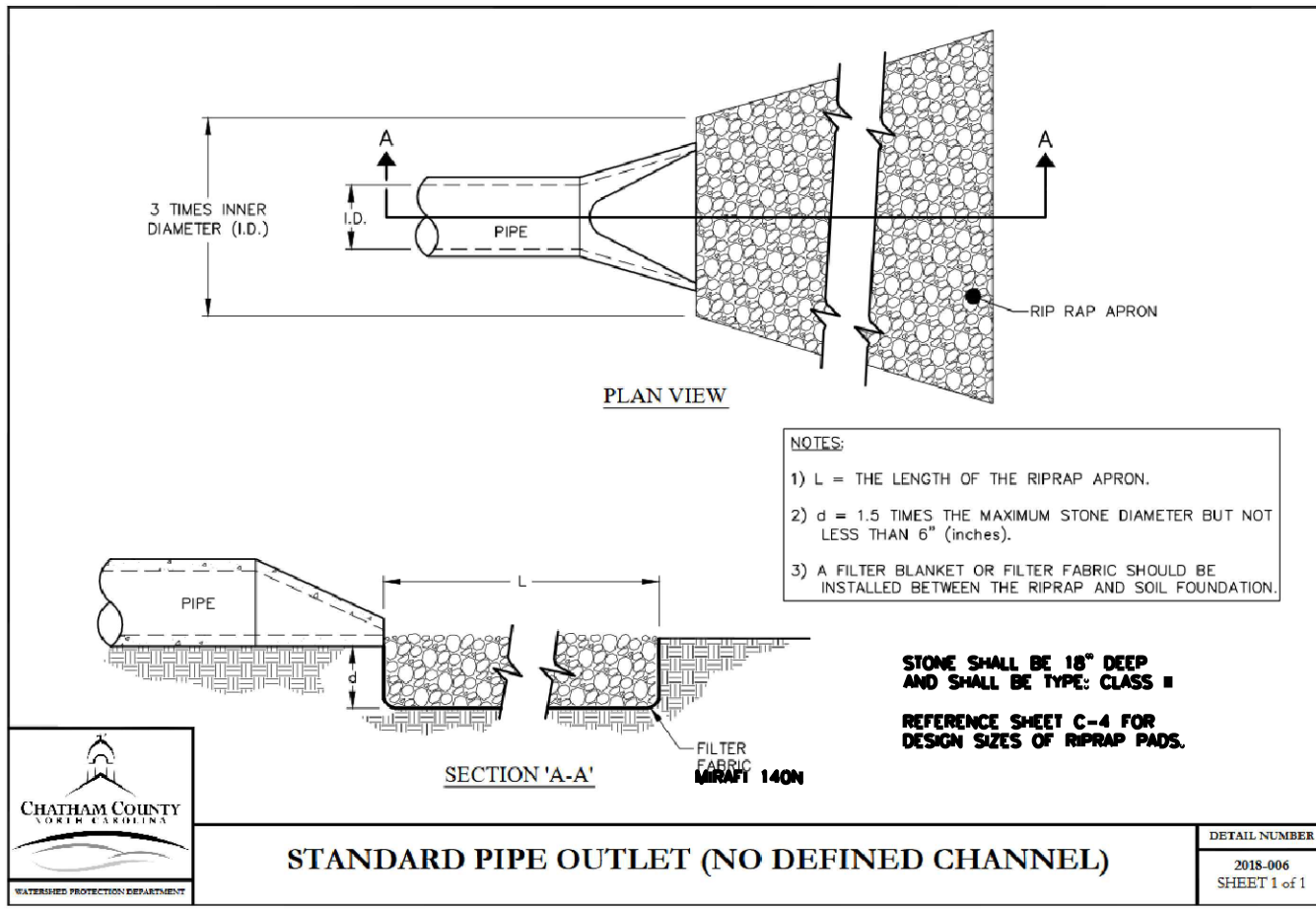
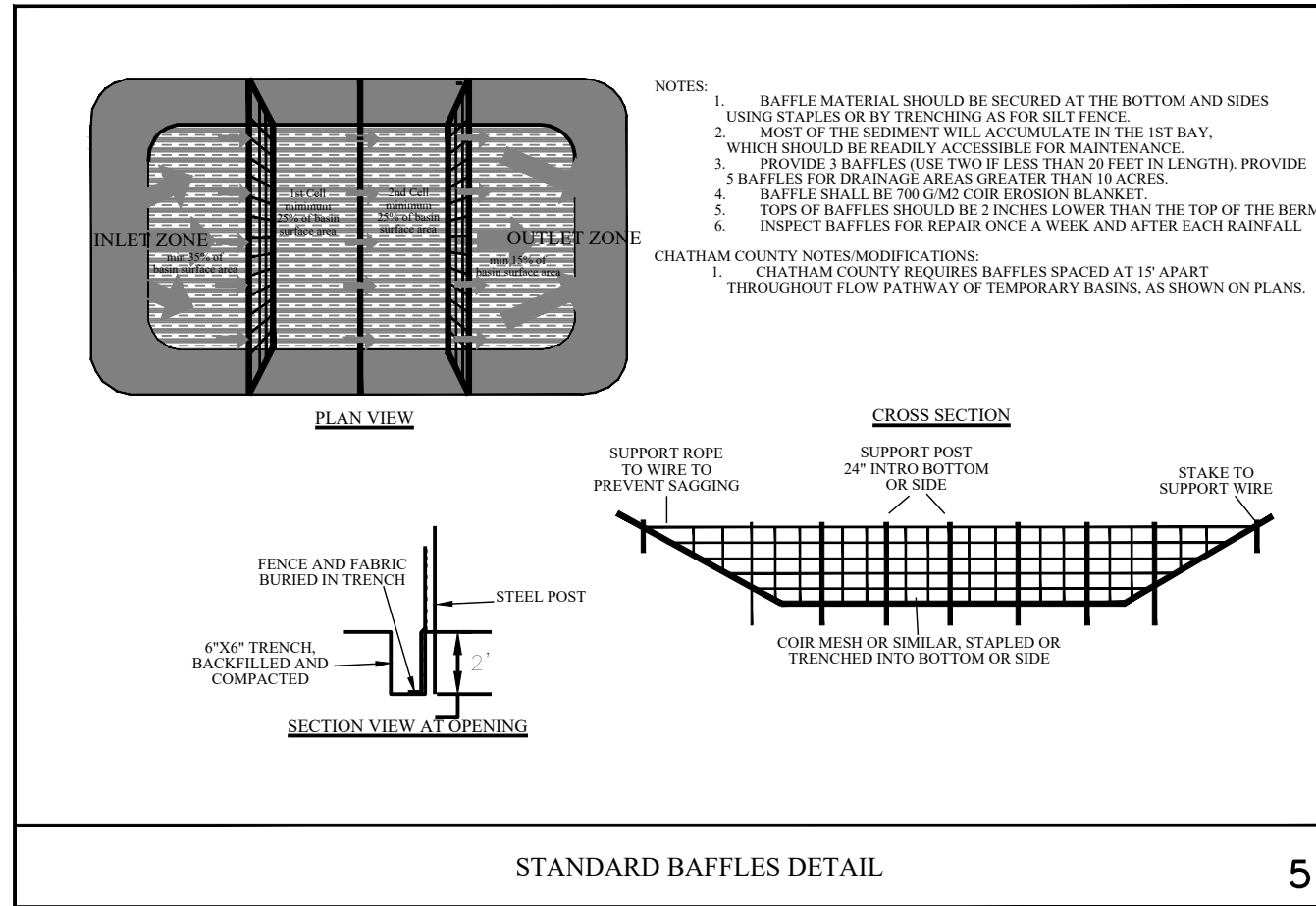
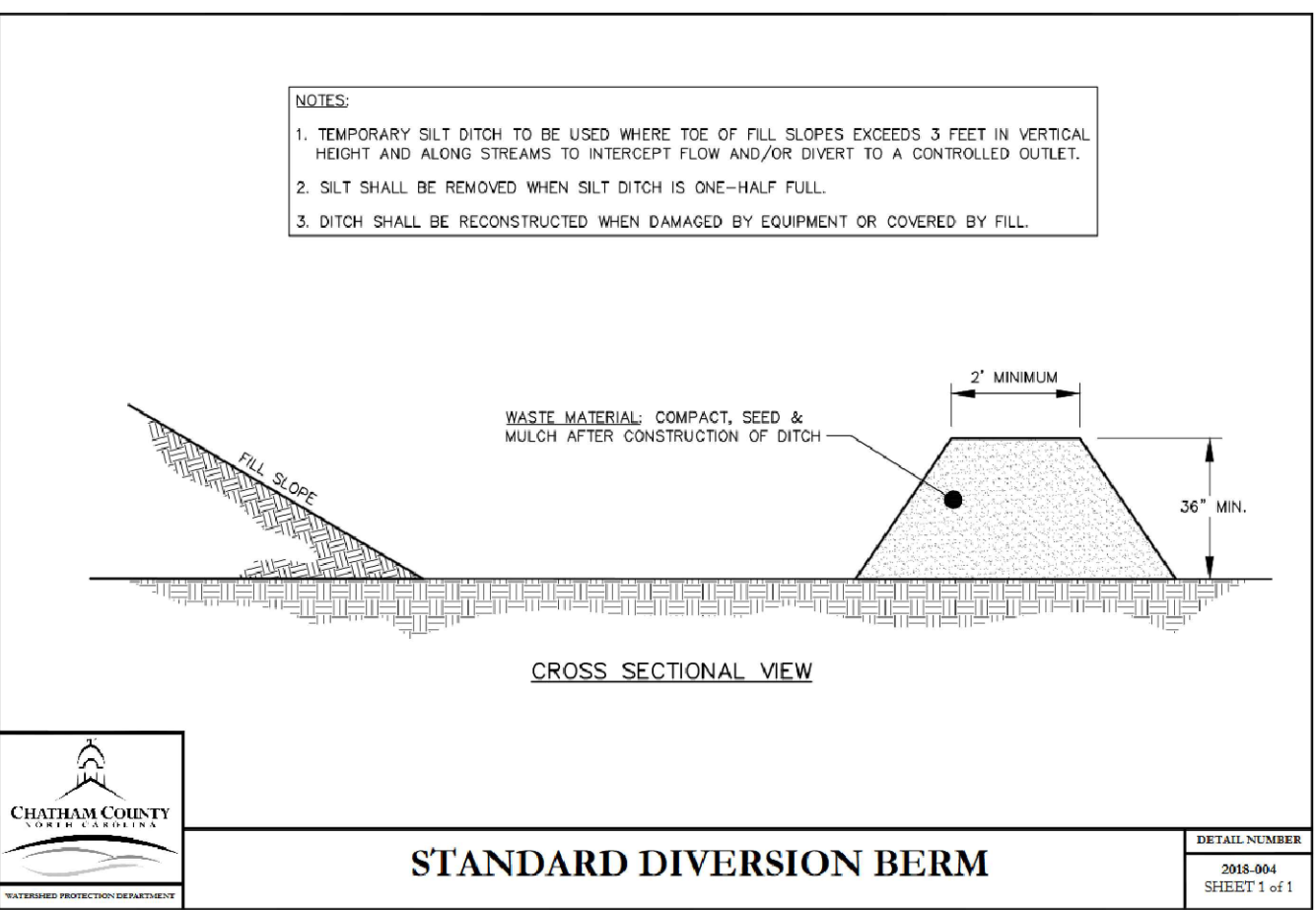
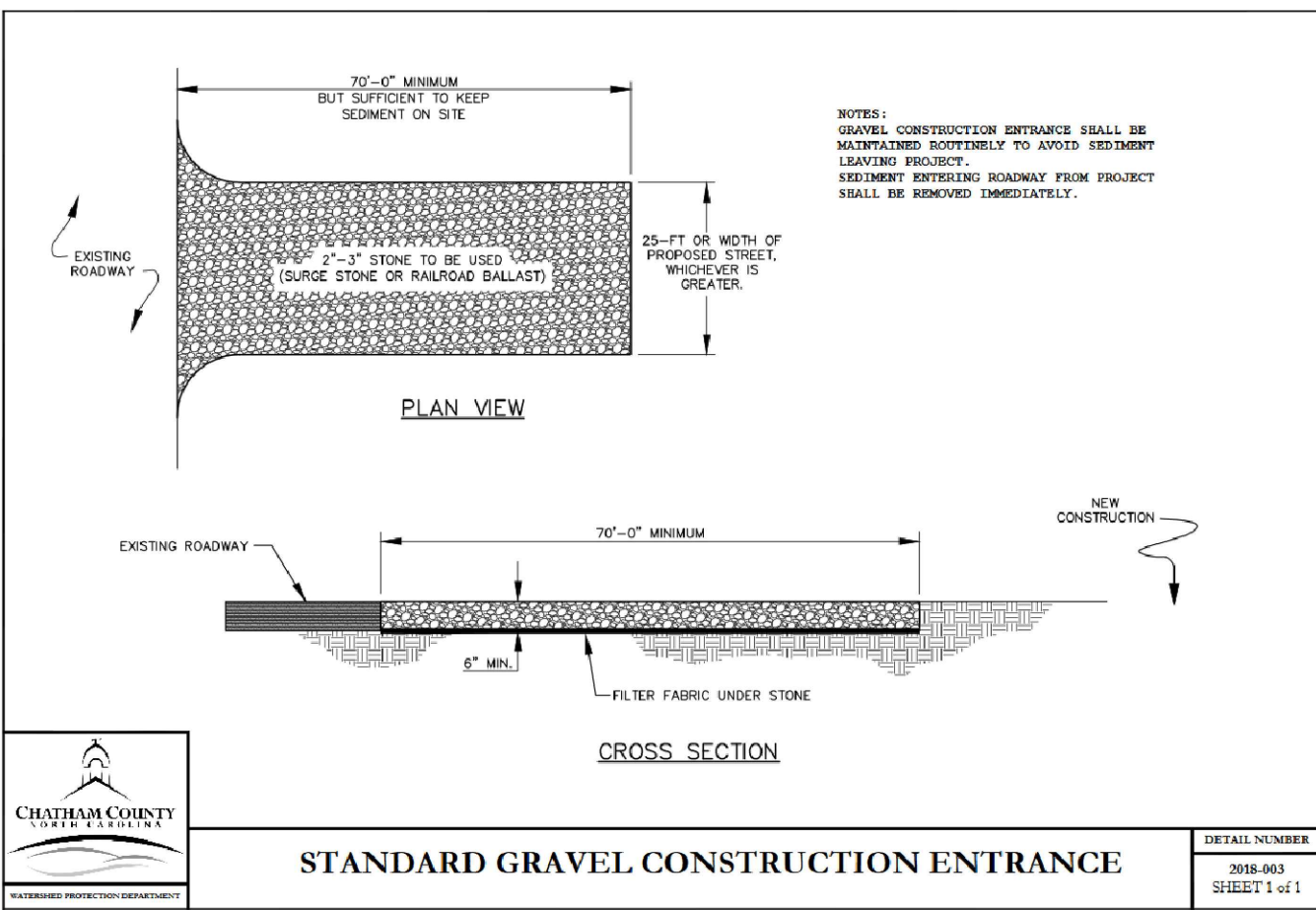
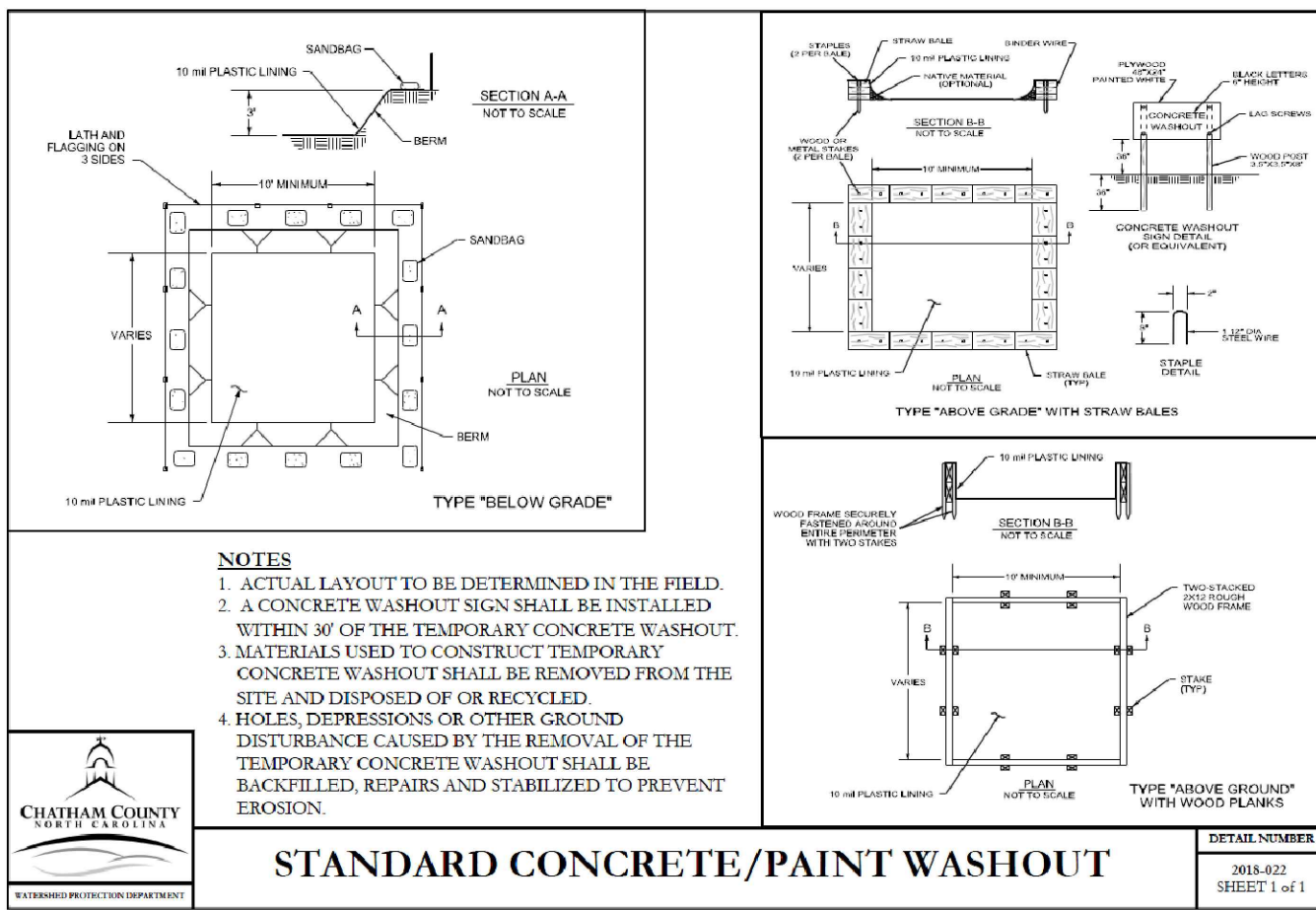
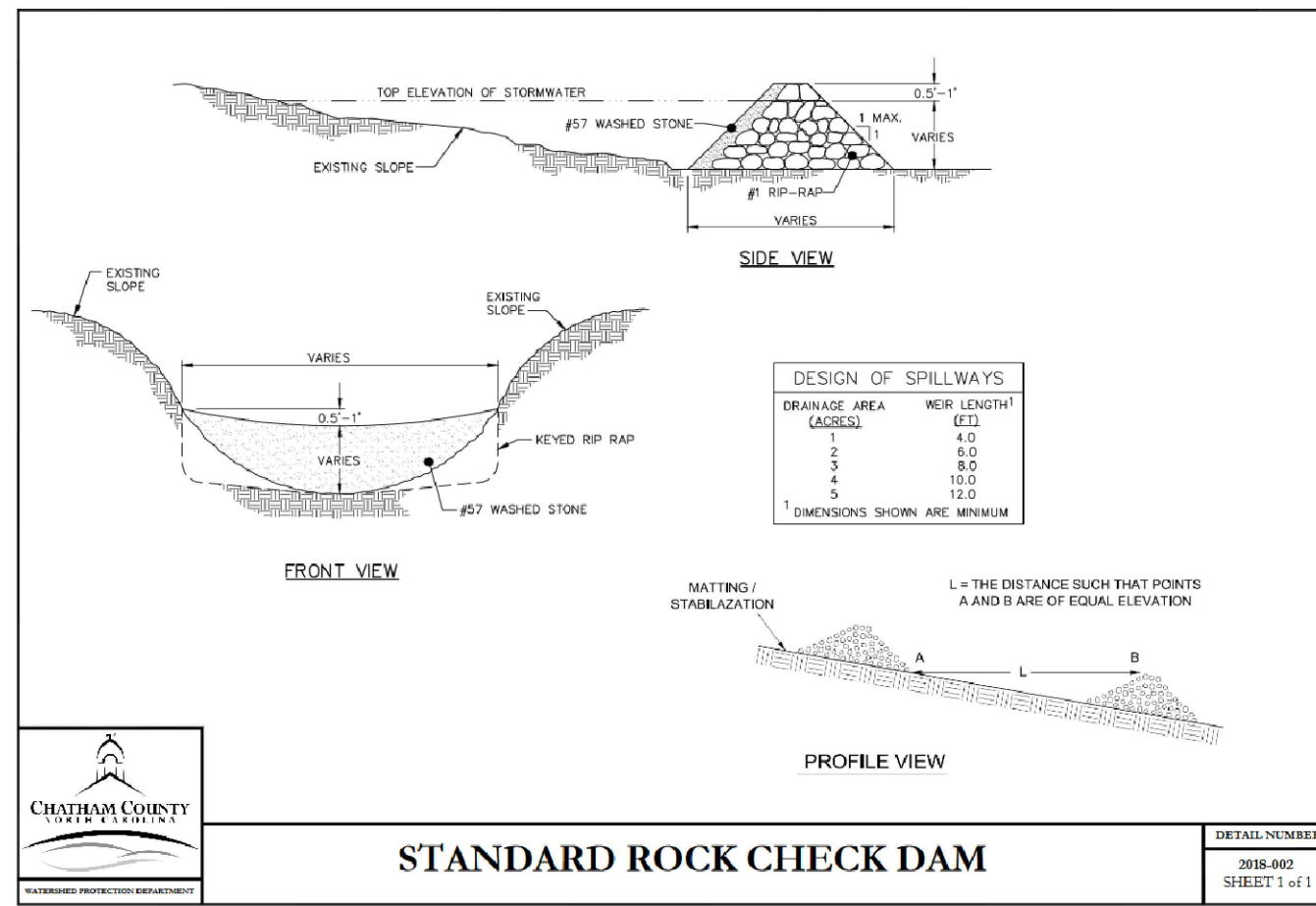
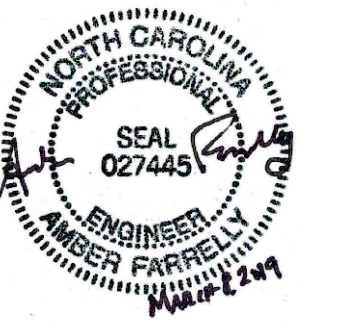
CONSTRUCTION DRAWINGS

**DATE**

3-8-2019

**SHEET NUMBER**

PP-6



**REVISIONS**

NO.	DATE	DESCRIPTION

**PROJECT INFORMATION**

PROJECT MANAGER:	RJB
DRAWN BY:	AJF
APPROVED BY:	RJB
DRAWING NAME:	BASE-SUNSETGROV

**PROJECT NAME**

**SUNSET GROVE SUBDIVISION PHASE 2**  
CHATHAM COUNTY NORTH CAROLINA

**DEVELOPER**

**CHATHAM CAPITAL LLC**

400 MARKET STREET  
CHAPEL HILL, NC 27516

**SHEET NAME**

**DETAILS**

**DRAWING SCALE**

AS SHOWN

**PLAN SET**

CONSTRUCTION DRAWINGS

**DATE**

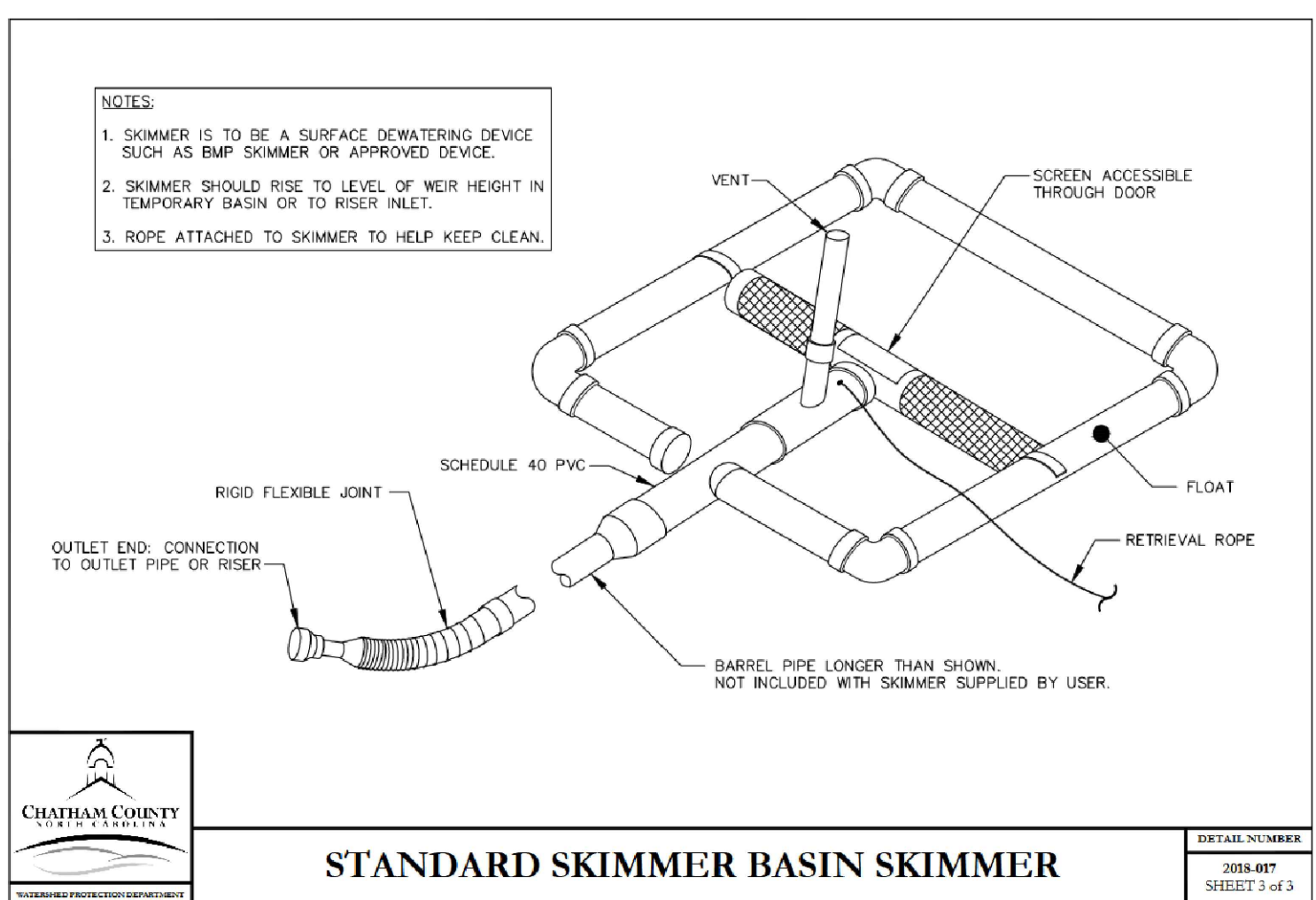
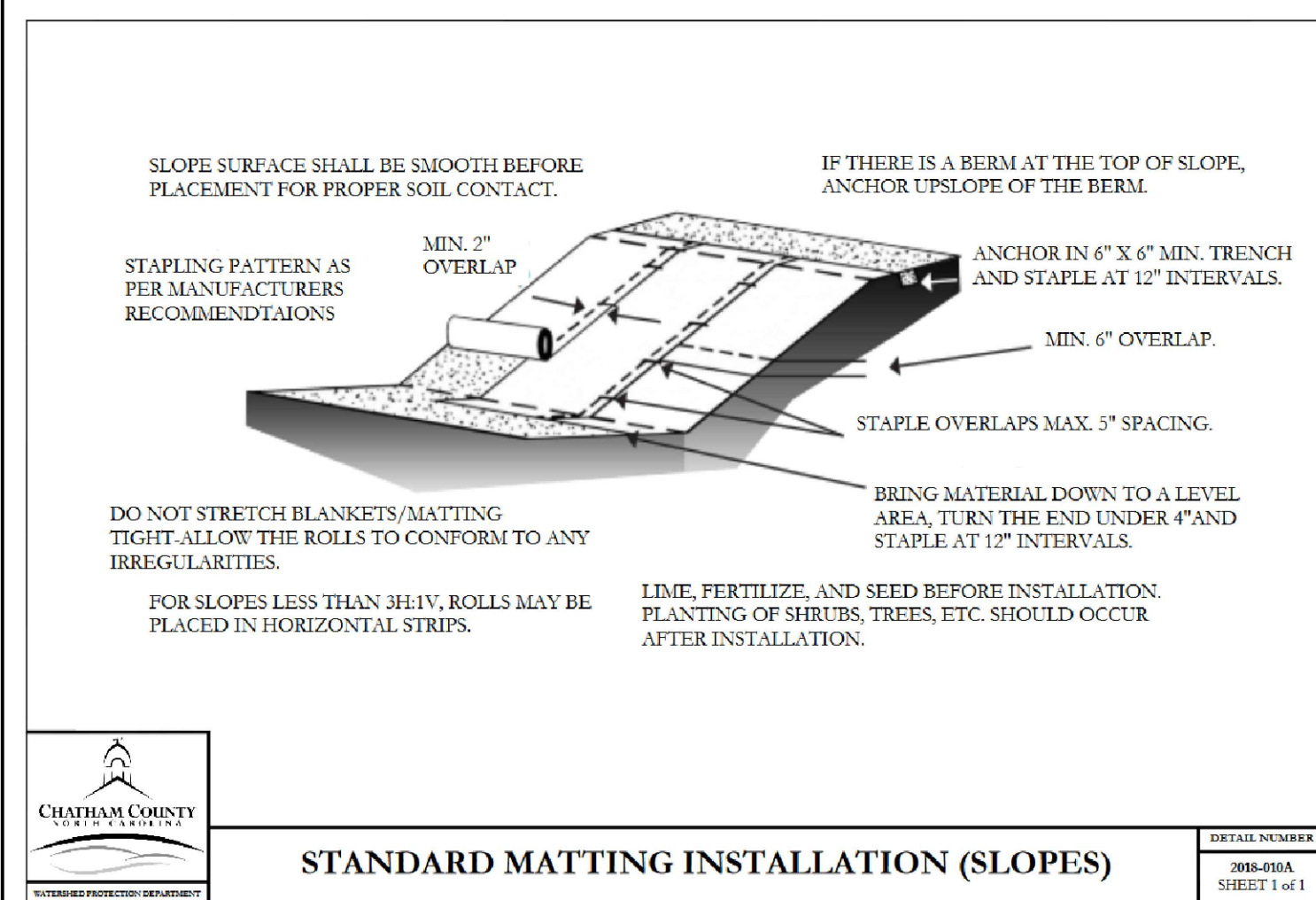
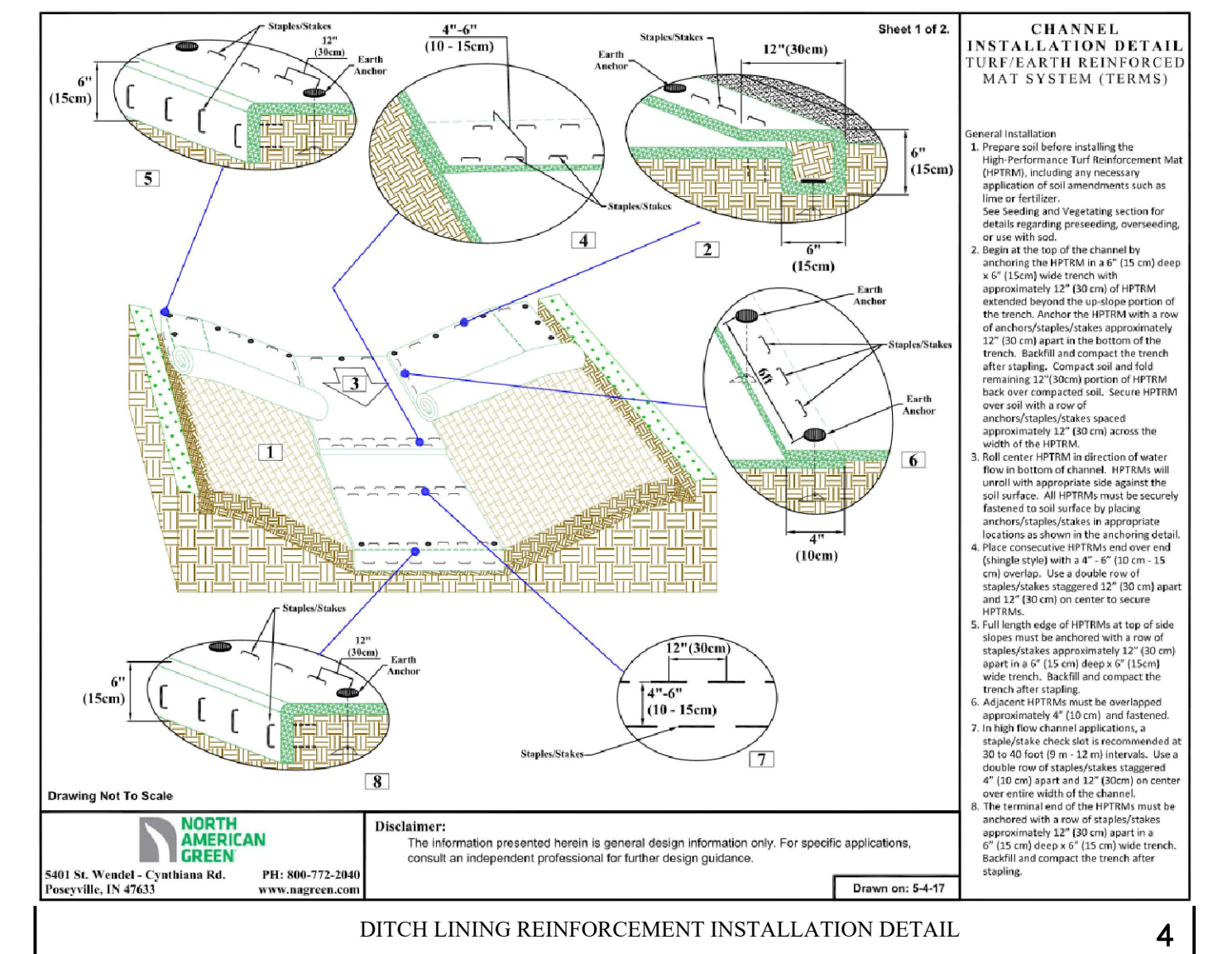
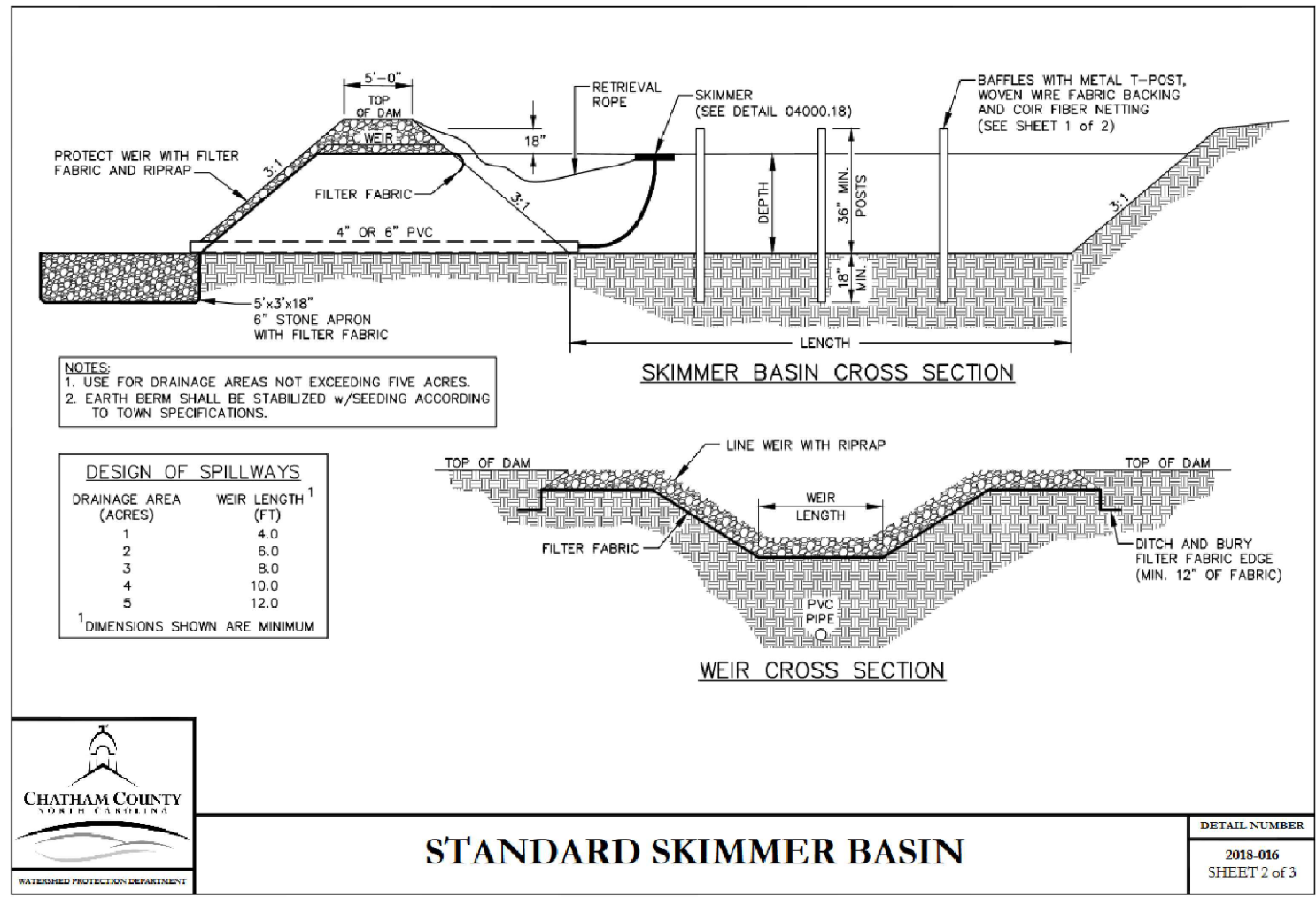
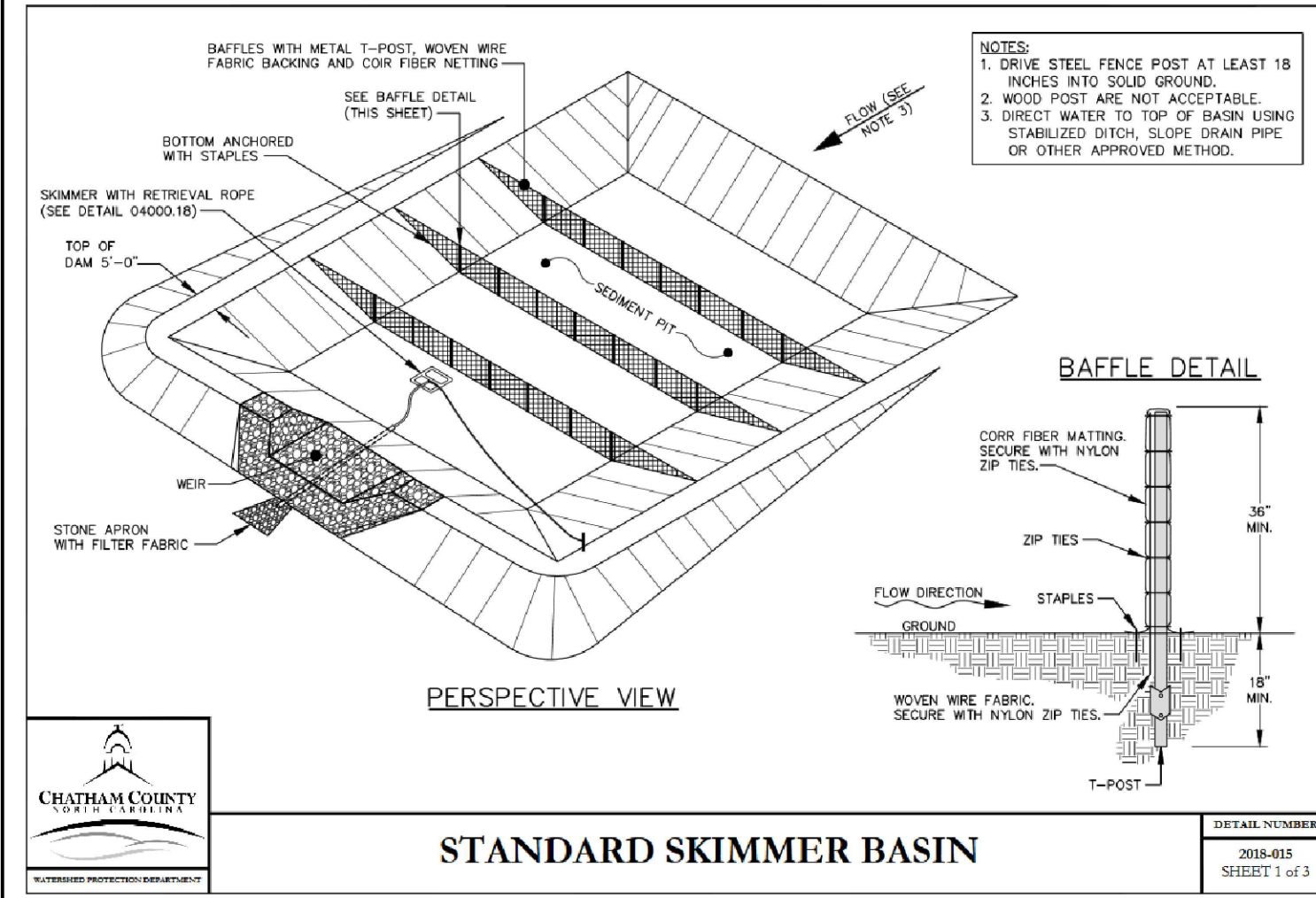
3-8-2019

**SHEET NUMBER**

**D-1**

**NOTES**

- ALL CONSTRUCTION TO BE IN STRICT ACCORDANCE WITH ALL CHATHAM COUNTY AND NCDOT STANDARDS AND SPECIFICATIONS.



PERMANENT SEEDING SCHEDULE AND PREPARATION

SEEDING SCHEDULE (REVISED: 1-1-86)

DATE	TYPE	PLANTING RATE
Aug 15 - Nov 1	Tall Fescue	300 lbs./acre
Nov 1 - Mar 1	Tall Fescue and Aruzzi Ryegrass	350 lbs./acre
Mar 1 - Apr 15	Tall Fescue and Hulled Common Bermudagrass	325 lbs./acre
Apr 15 - Jun 30	Hulled Common Bermudagrass	25 lbs./acre
Jul 1 - Aug 15	Tall Fescue and ***Browns Top Millet or Sorghum-Sudan Hybrids	125 lbs./acre

SEEDBED PREPARATION

- 1.) Ditch compacted areas and spread topsoil 3 inches deep over diverse soil conditions, if available.
- 2.) Rip the entire area to 6 inches deep.
- 3.) Remove all loose rocks, roots, and other obstructions leaving surface reasonably smooth and uniform.
- 4.) Apply agricultural lime, fertilizer and superphosphate uniformly and mix with soil (see below).
- 5.) Continue tillage until a well-pulverized, firm, reasonable uniform seedbed is prepared to 6 inches deep.
- 6.) Seed on a freshly prepared seedbed and cover seed lightly with seeding equipment or cultipack after seeding.
- 7.) Muck immediately after seeding and anchor muck.
- 8.) Inspect all seeding areas and make necessary repairs or reseedings within the planting season, if possible. If stand should be over 80% damaged, reestablish following original time, fertilizer and seeding rates.
- 9.) Consult conservation inspector on maintenance treatment and fertilization after permanent cover is established.

APPLY: Agricultural Limestone - 2 tons/acre (3 tons/acre in clay soils)  
Fertilizer - 1,000 lbs./acre - 10-10-10  
Superphosphate - 500 lbs./acre - 20% analysis  
Muck - 2 tons/acre - small grain straw  
Anchor - Asphalt Emulsion @ 300 gals/acre

TEMPORARY SEEDING

PURPOSE

- 1.) To stabilize disturbed areas before final grading or in a season not suitable for permanent seeding.

MINIMUM REQUIREMENTS

- 1.) Seedbed Preparation: lime and fertilizer incorporated 4-6 inches, where conditions allow, steep slopes roughened by tracking.
- 2.) Plant selection: temporary species appropriate for season and region.
- 3.) Seed quality: North Carolina certified seed, tested within the past 9 months.
- 4.) Muck: effective muck such as clean grain straw, loam and/or tied down with netting to protect seedbed and encourage plant growth.

INSTALLATION

- 1.) Seedbed preparation: Apply soil amendments evenly and incorporate to a depth of 4-6 inches, if possible. Follow recommendations of soil tests or apply 2000 lb/acre ground agricultural limestone and 700-1000 lb/acre 10-10-10 fertilizer. Loosen surface just before broadcasting seed.
- 2.) Select an appropriate temporary species based on the calendar in the next table, or other factors. Stands should be uniform and necessary to seed at those times. Use dry grain and a securely locked muck.
- 3.) Apply seed evenly using a custom seeder, rotary-spreader, drop-spreader, cultipacker, or other approved equipment. Seed should be applied as recommended because it is difficult to achieve a uniform stand.
- 4.) Cover broadcast seed by raking or by dragging a chain. Firm lightly with a roller or cultipacker, and encourage seedling growth.
- 5.) When drill-seeding, plant small grains no more than 1 inch deep, and grasses and legumes no more than 1/2 inch deep.
- 6.) Muck on seedings to reduce erosion and encourage seedling growth. Straw muck is commonly used on gently sloping areas. Spread evenly at a rate of 2 tons/acre and anchor securely with twine, rebar, or netting. Netting is the most effective method on steep slopes and in channels.

GROUND STABILIZATION\* DWQ CONSTRUCTION GENERAL PERMIT SCHEDULE

SITE AREA DESCRIPTION	STABILIZATION TIME FRAME	STABILIZATION TIME FRAME EXCEPTIONS
Perimeter dikes, swales, ditches and slopes	7 days	None
High Quality Water (HWQ) Zones	7 days	None
Slopes steeper than 3:1	7 days	If slopes are 10' or less in length and are not steeper than 2:1, then 14 days are allowed
Slopes 3:1 or flatter	14 days	7 days for slopes greater than 50 feet in length
All other areas with slopes flatter than 4:1	14 days	None (except for perimeters and HWQ Zones noted above)

\* Extensions of time may be approved by the permitting authority based on weather or other site-specific conditions that make compliance impractical.

NPDES GROUND STABILIZATION 8

Storm Drainage Summary - Sunset Grove Subdivision - Phase 2

Summary of Pipes - 2/20/2019

From	To	Rational C	Intensity (in/hr)	Area (ac)	Q <sub>10</sub> (cfs)	Q <sub>5</sub> (cfs)	Length (ft)	Diameter (inches)	Slope (%)	Invert (From)	Invert (To)	Structure	Type	Rational C	Area (ac)	Q <sub>10</sub> (cfs)	Elevation (TOP)	Depth (ft)		
Subdivision Pipes																				
FES-21	GI-22	0.60	5.92	0.10	0.4	3.6	89.5	15	RCP	9.8	3.00%	488.04	490.73	GI-22	GRATED INLET	0.60	0.10	0.4	495.50	4.8
GI-22	GI-23	0.50	5.92	1.09	3.2	57.6	15	RCP	8.2	6.20%	490.93	494.50	GI-23	GRATED INLET	0.50	1.09	3.2	499.50	5.0	
Cross Drainage Pipes																				
INV-30	INV-31			448			58.5	ARCH PIPE/ALUM	0.0	3.76%	379.00	381.20	INV-31	PREFAB HEADWALL	0.00	448.00	0.0	391.45	10.3	
INV-34	INV-35			26.3			124.0	RCP	0.0	4.92%	412.10	418.20	INV-35	PRECAST ENDWALL	0.00	26.30	0.0	424.13	5.9	
SCM-C Outlet																				
FES-36	RB-37	0.70	5.92	9.39	38.9	2.4	56.0	15	RCP	11.8	0.50%	382.72	383.00	RB-37	60" RCP RISER	0.70	9.39	38.9	389.60	6.6

All pipe is RCP Type III unless noted on plans. Pipes denoted with \* are RCP Type IV (min. 1' cover to subgrade)  
Aluminum Structural Plate Pipe Arch Culvert has a 11'-9" span and 7'-2" interior height, with bury depths per profile cross sections

Storm Drainage Summary

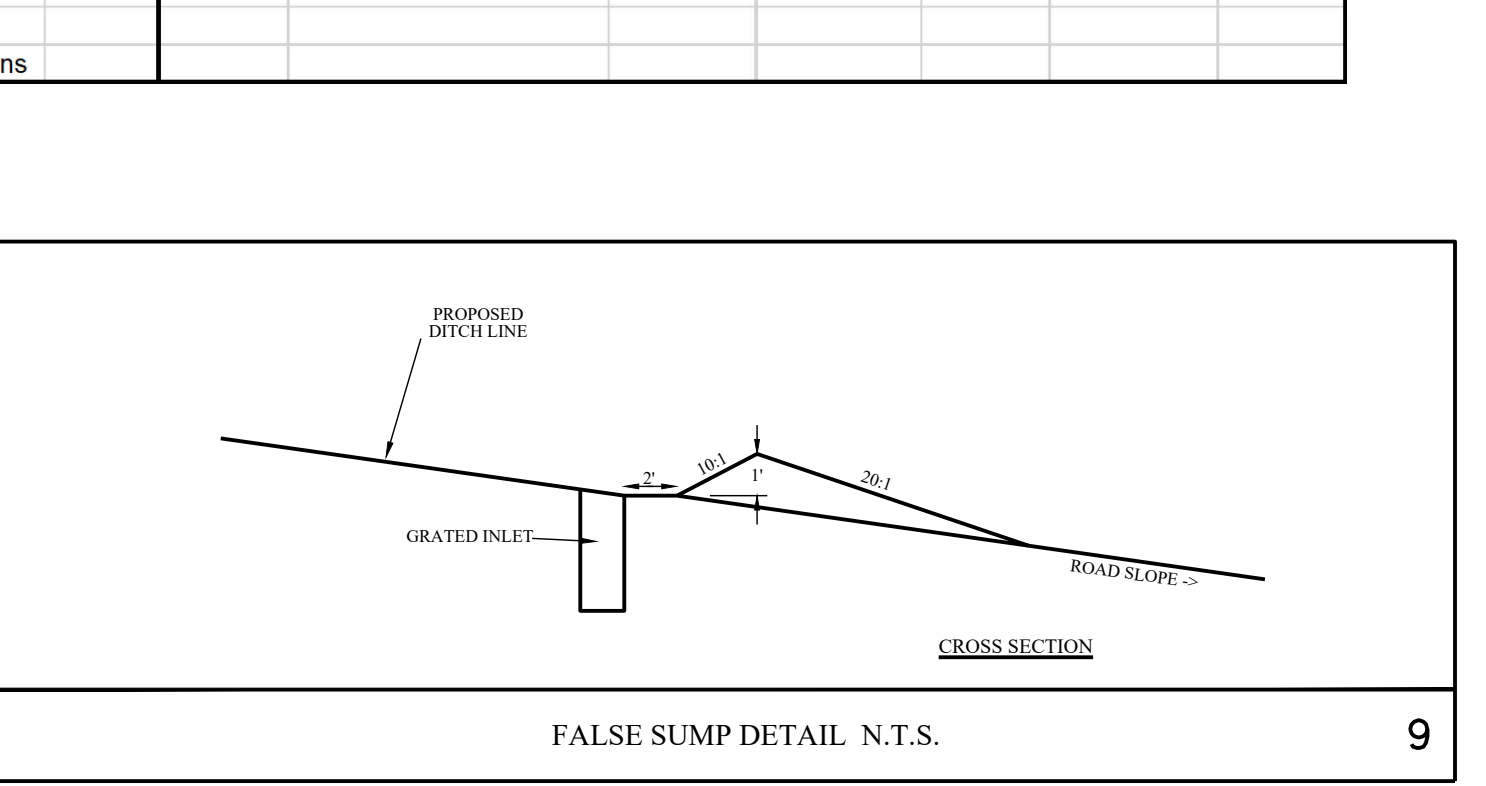
Summary of Structures

From	To	Rational C	Intensity (in/hr)	Area (ac)	Q <sub>10</sub> (cfs)	Q <sub>5</sub> (cfs)	Length (ft)	Diameter (inches)	Slope (%)	Invert (From)	Invert (To)	Structure	Type	Rational C	Area (ac)	Q <sub>10</sub> (cfs)	Elevation (TOP)	Depth (ft)		
Subdivision Pipes																				
FES-21	GI-22	0.60	5.92	0.10	0.4	3.6	89.5	15	RCP	9.8	3.00%	488.04	490.73	GI-22	GRATED INLET	0.60	0.10	0.4	495.50	4.8
GI-22	GI-23	0.50	5.92	1.09	3.2	57.6	15	RCP	8.2	6.20%	490.93	494.50	GI-23	GRATED INLET	0.50	1.09	3.2	499.50	5.0	
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SCM-C Outlet																				
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Storm Drainage Summary - Sunset Grove Subdivision - Phase 2

Rip-Rap Pad Calculations

Invert	Q (cfs)	Diameter (feet)	Area (sq. ft.)	V=Q/A (fps)	Type of Stone	Miraf 140N Required?	Length of Pad (ft.)	Width of Pad (ft.)	Thickness of Pad (in)
FES-21	3.6	1.25	1.2	2.9	Class B	Yes	10.0	5.0	27
FES-24A	13.3	2.00	3.1	4.2	Class B	Yes	16.0	8.0	27
FES-27	11.4	1.50	1.8	6.4	Class B	Yes	12.0	6.0	27
INV-34	93.4	3.00	7.1	13.2	Class 2	Yes	10.0	10.0	27
FES-36	2.4	1.25	1.2	2.0	Class B	Yes	10.0	5.0	27



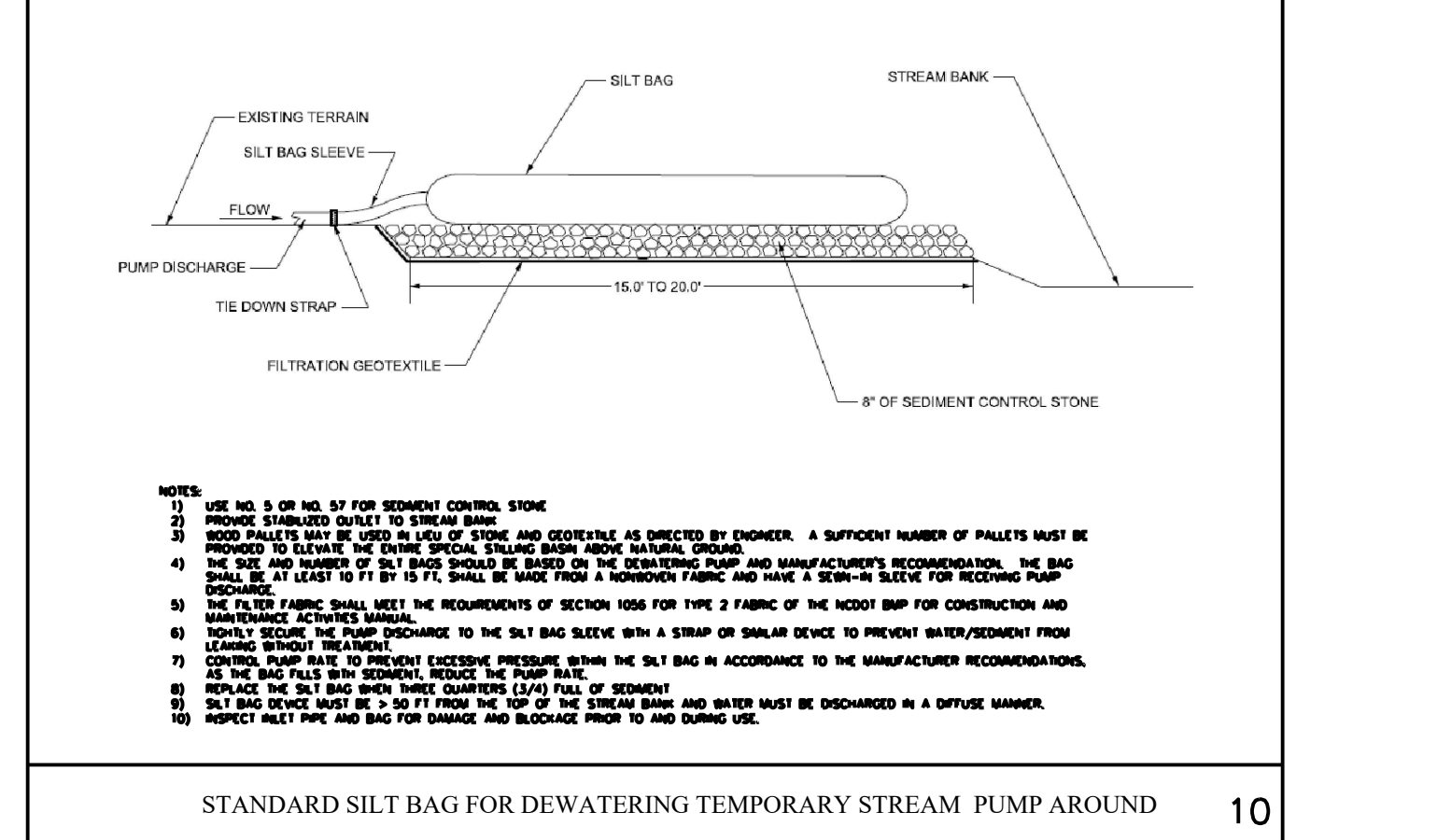
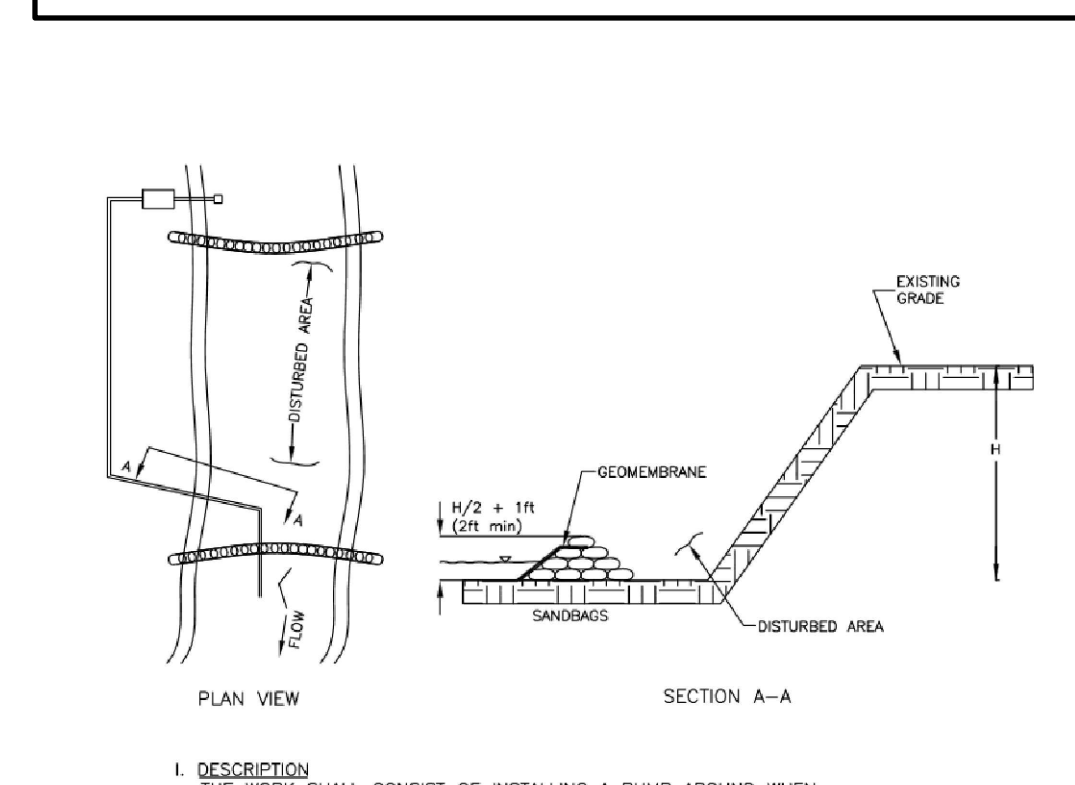
SEEDING INFORMATION

CALENDAR

Month	Planting
Jan	
Feb	
Mar	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
Apr	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
May	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
Jun	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
Jul	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
Aug	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
Sep	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
Oct	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
Nov	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
Dec	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12

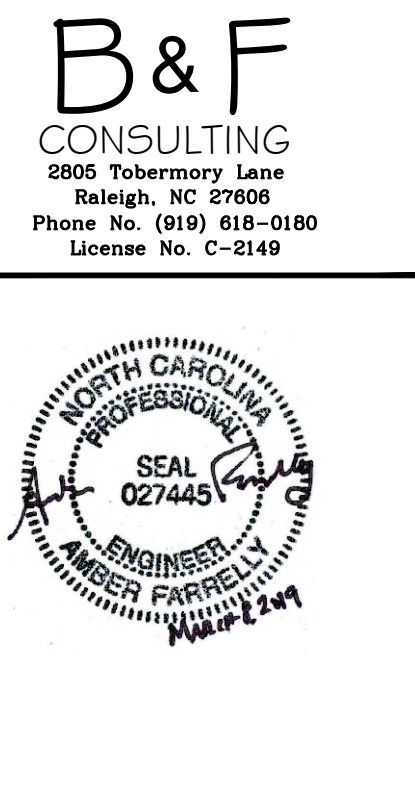
PLANTING LEGEND

1	Korean Lespedeza with Rye Grain	50 lb/acre
2	Kobe Lespedeza with Rye Grain	120 lb/acre
3	German Millet or Sudangrass	50 lb/acre
4	German Millet	40 lb/acre
5	Rye Grain	120 lb/acre



NOTES

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REVISIONS

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D-2