

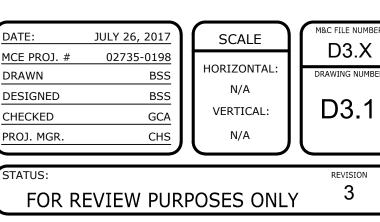






UT

ILITY	DETAILS	

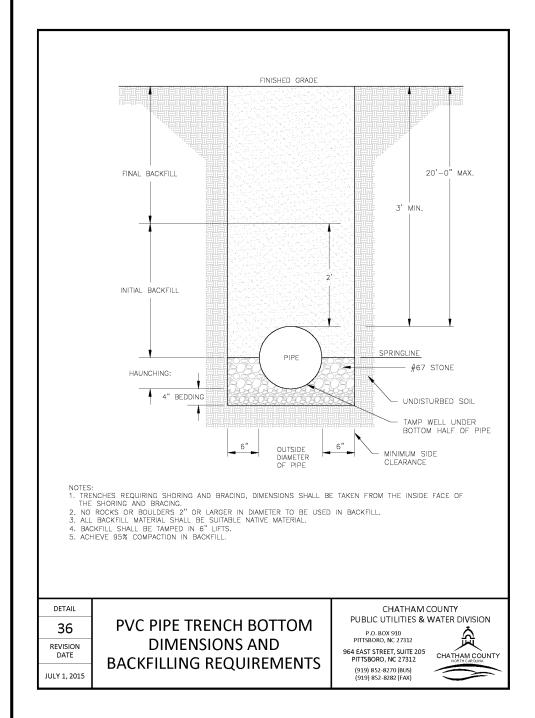


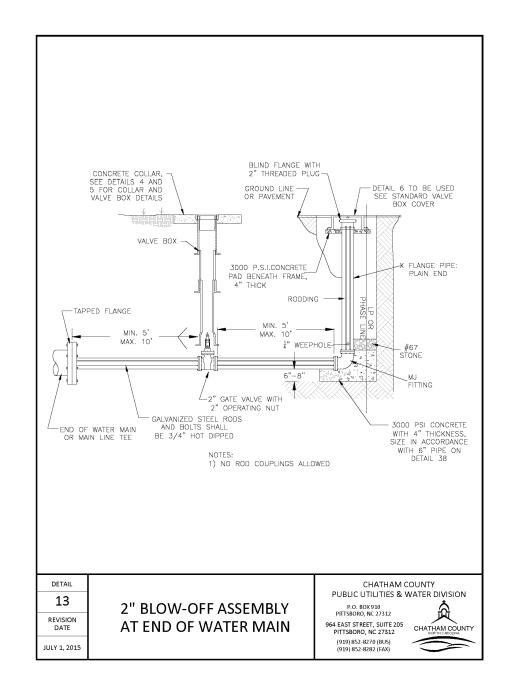
DETECTABLE WARNING TAPE NOTES:

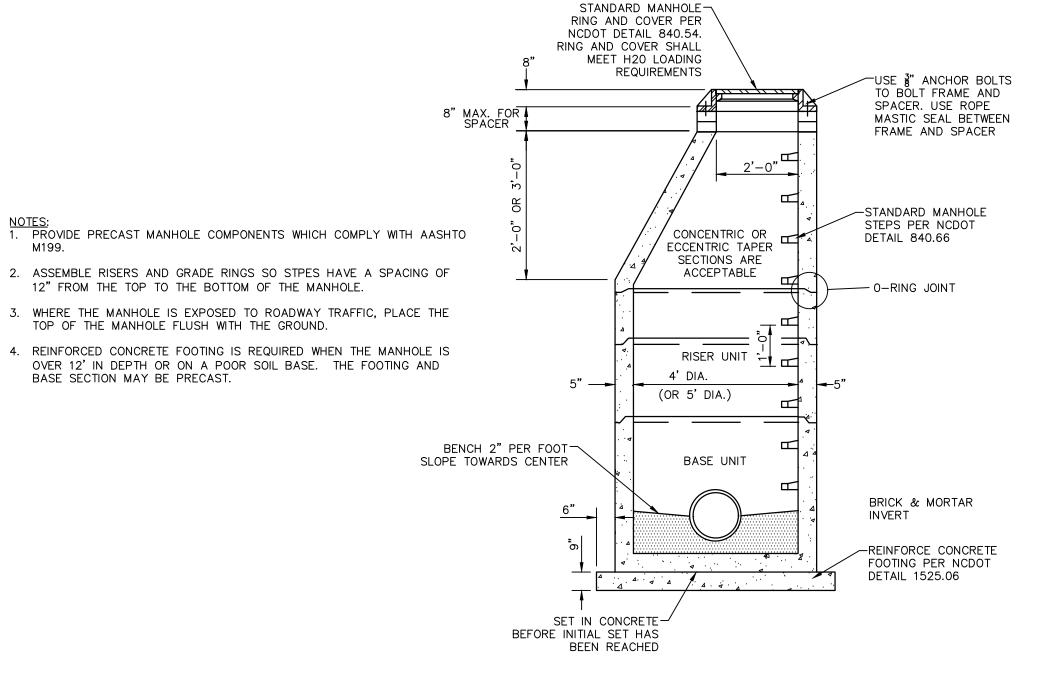
- 1. THE TAPE SHALL BE AN INERT, BONDED LAYER PLASTIC WITH A METALIZED FOIL CORE AND SHALL BE HIGHLY RESISTANT TO ALKALIS, ACID, OR OTHER DESTRUCTIVE CHEMICAL COMPONENTS LIKELY TO BE ENCOUNTERED IN SOILS.
- 2. THE TAPE SHALL BE BRIGHTLY COLORED TO CONTRAST WITH SOIL AND SHALL BEAR AN IMPRINT IDENTIFYING THE TYPE OF LINE BURIED BELOW. THE TAPE SHALL BE A MINIMUM OF 2" WIDE.
- 3. THE TAPE SHALL BE BURIED A MINIMUM OF 6" AND A MAXIMUM OF 12" BELOW THE GROUND SURFACE DIRECTLY ABOVE THE WATER LINE WITH PRINTED SIDE

TRACER WIRE NOTES:

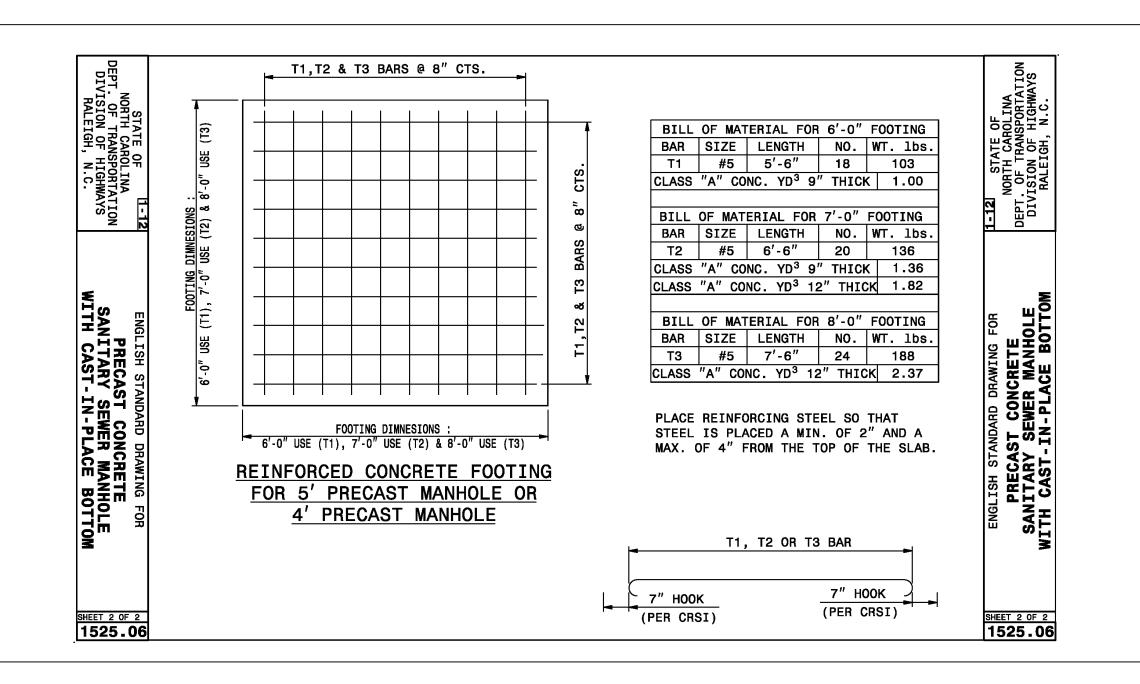
- 1. TRACER WIRE IS TO BE STANDARD NO. 12 GAUGE COATED COPPER WIRE.
- 2. LOCATION WIRE CONNECTIONS ARE TO BE A WATER TIGHT CONNECTION USING TWISTER DB PLUS WATERPROOF WIRE CONNECTORS OR AN APPROVED

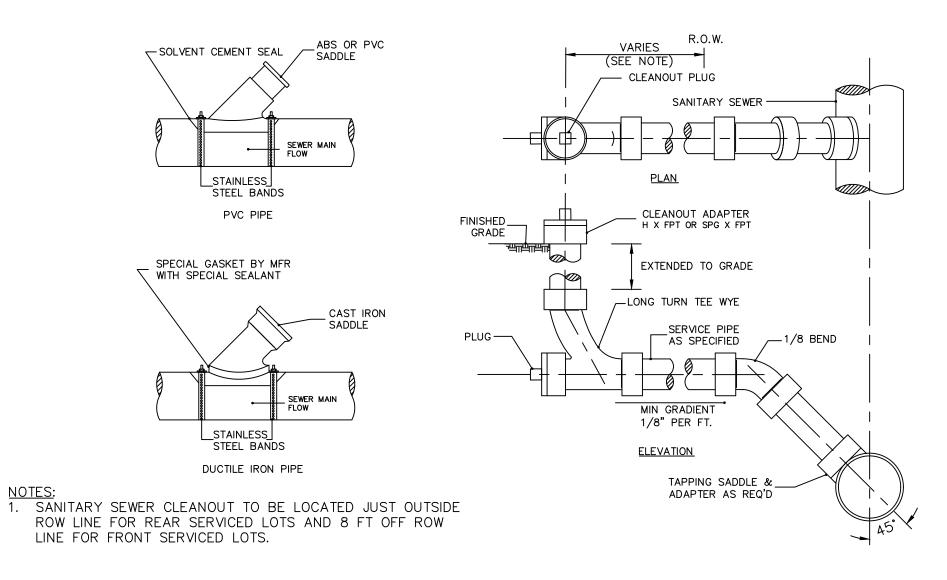




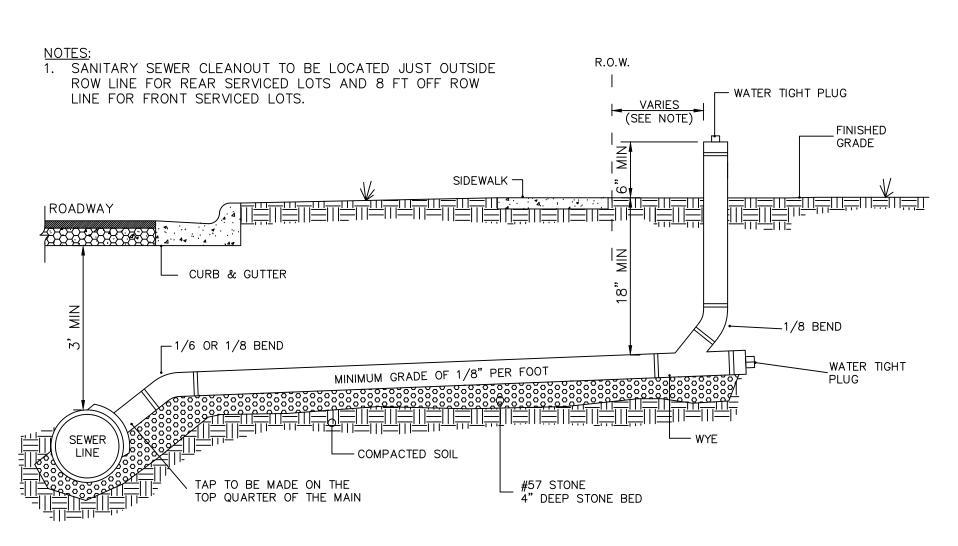




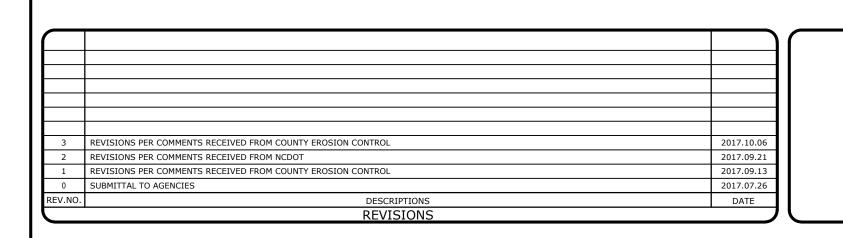


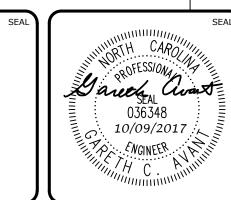


SANITARY SEWER SERVICE CONNECTIONS



STANDARD SANITARY SEWER TAP AND SERVICE







Raleigh, North Carolina 27606 Phone: (919)233-8091, Fax: (919)233-8031

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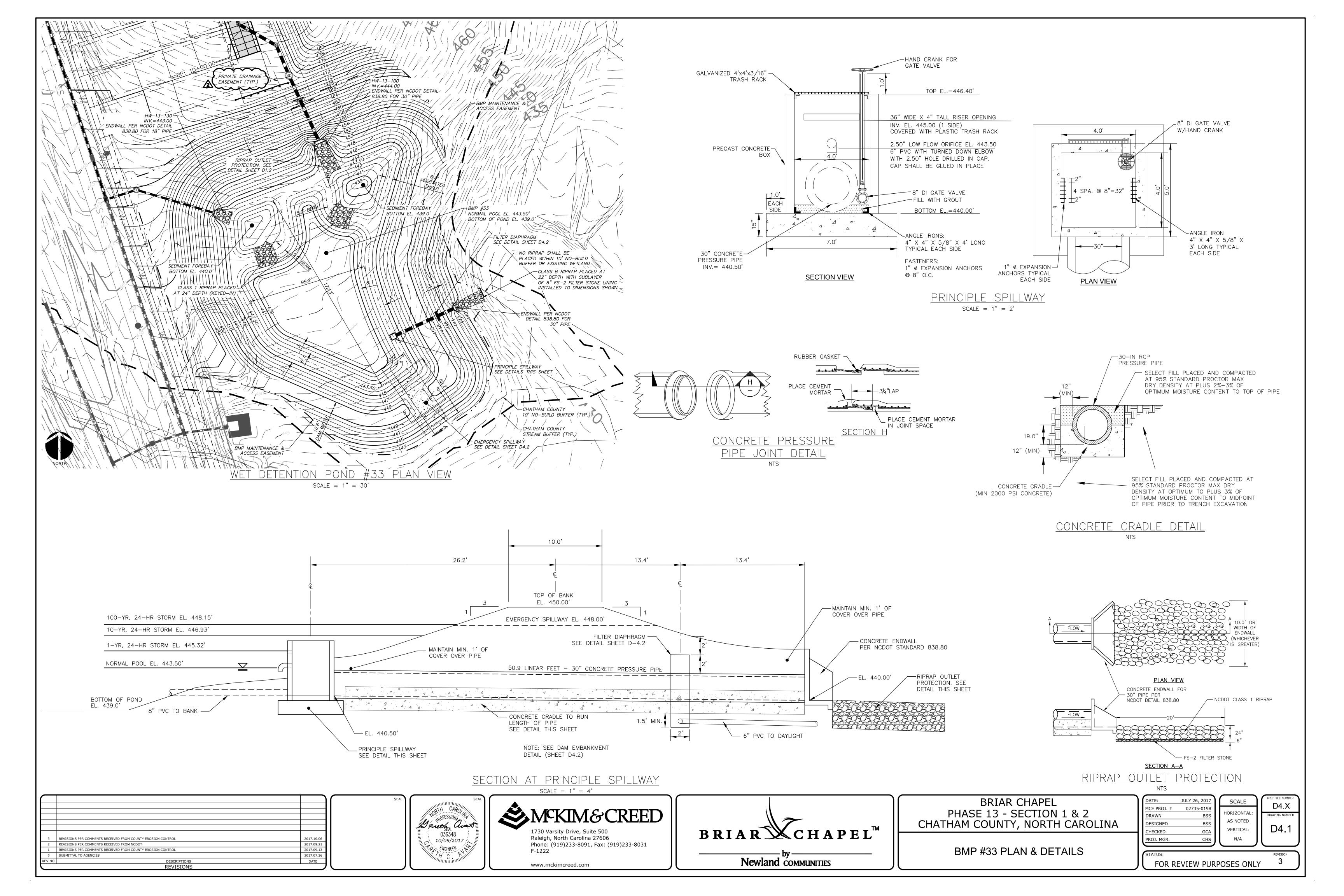


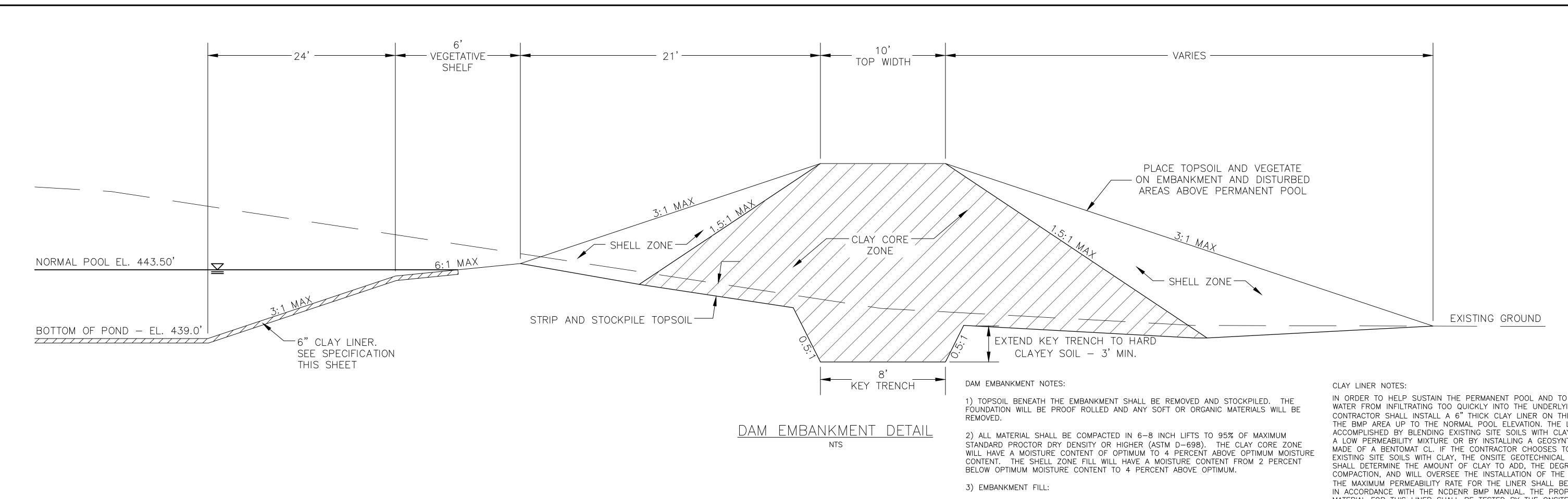
BRIAR CHAPEL PHASE 13 - SECTION 1 & 2 CHATHAM COUNTY, NORTH CAROLINA

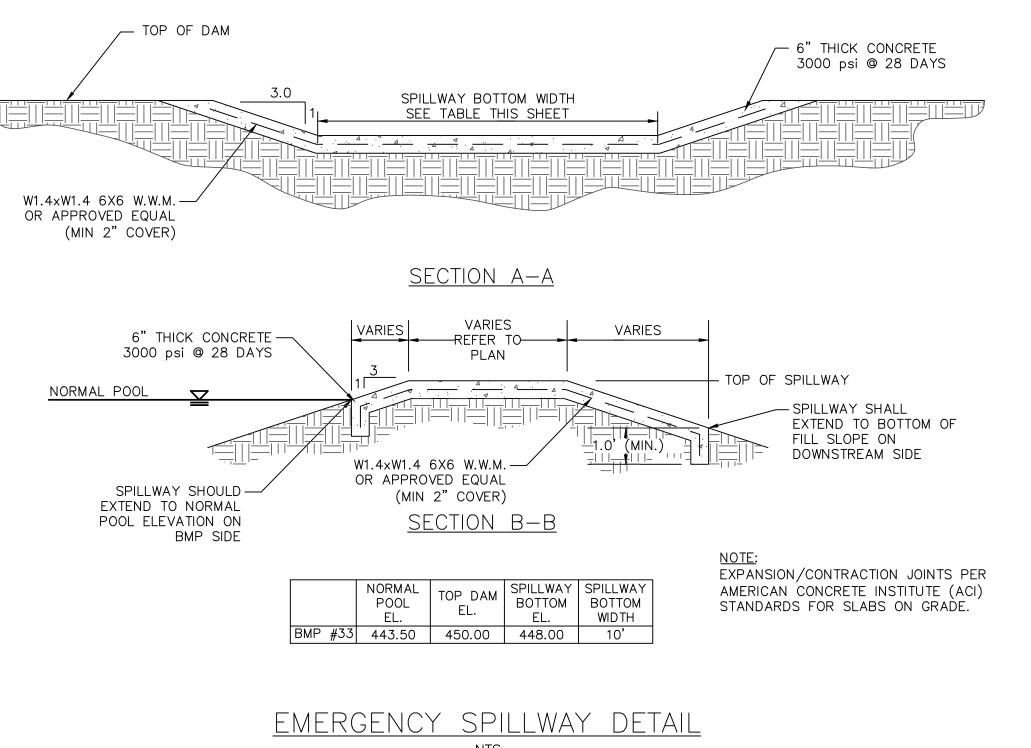
UTILITY DETAILS

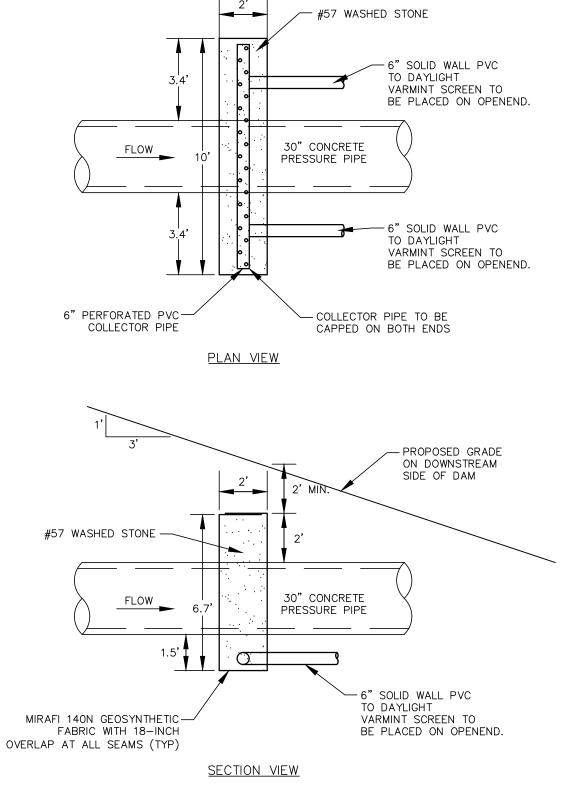
:	JULY 26, 2017	SCALE	M&C FILE NUMBER
PROJ. #	02735-0198		D3.X
VN	BSS	HORIZONTAL:	DRAWING NUMBER
GNED	BSS	N/A	
KED	GCA	VERTICAL:	D3.2
. MGR.	CHS	N/A	1
US:			REVISION

D3.2 FOR REVIEW PURPOSES ONLY



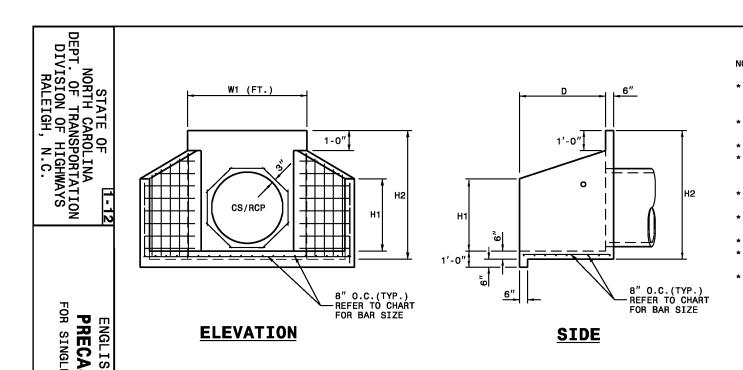






FILTER DIAPHRAGM DETAIL

IN ORDER TO HELP SUSTAIN THE PERMANENT POOL AND TO PREVENT WATER FROM INFILTRATING TOO QUICKLY INTO THE UNDERLYING SOIL, THE CONTRACTOR SHALL INSTALL A 6" THICK CLAY LINER ON THE BOTTOM OF THE BMP AREA UP TO THE NORMAL POOL ELEVATION. THE LINER CAN BE ACCOMPLISHED BY BLENDING EXISTING SITE SOILS WITH CLAY TO ACHIEVE A LOW PERMEABILITY MIXTURE OR BY INSTALLING A GEOSYNTHETIC LINER MADE OF A BENTOMAT CL. IF THE CONTRACTOR CHOOSES TO BLEND THE EXISTING SITE SOILS WITH CLAY, THE ONSITE GEOTECHNICAL ENGINEER SHALL DETERMINE THE AMOUNT OF CLAY TO ADD, THE DEGREE OF COMPACTION, AND WILL OVERSEE THE INSTALLATION OF THE CLAY LINER. THE MAXIMUM PERMEABILITY RATE FOR THE LINER SHALL BE 0.01 IN/HR IN ACCORDANCE WITH THE NCDENR BMP MANUAL. THE PROPOSED MATERIAL FOR THIS LINER SHALL BE TESTED BY THE ONSITE GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT. THE RESULTS OF THIS TESTING SHALL BE SUBMITTED TO THE DESIGN ENGINEER FOR REVIEW PRIOR TO PLACEMENT. UPON COMPLETION OF LINER INSTALLATION, A 4" MINIMIMUM LAYER OF TOPSOIL SHALL BE ADDED OVER THE LINER TO PROVIDE A HEALTHY MEDIA FOR VEGETATION GROWTH.



SHELL ZONE: SOILS WITH LESS THAN 30% PASSING THE NO. 200 SIEVE OR A PI OF

GREATER THAN 30 PERCENT. SOILS WHICH ARE CLASSIFIED AS CLAYS (CH OR CL)

SHOULD NOT BE USED AT THE FACE OF THE SHELL ZONES.

THE EMBANKMENT AND SUPERVISE CONSTRUCTION.

Meadow Mix ERNMX-182

LESS THAN 10 WHEN THE PERCENTAGE OF MATERIAL PASSING THE NO. 200 SIEVE IS

CLAY CORE ZONE: CH, CL OR SC MATERIAL WITH A PI RANGING BETWEEN 15 AND 60

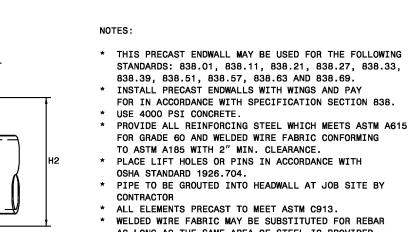
4) NO FILL SHALL CONTAIN ROCKS OR GRAVEL LARGER THAN 4 INCHES IN DIAMETER.

6) ALL DISTURBED AREAS ABOVE PERMANENT POOL SHALL BE SEEDED USING THE

<u>PLAN</u>

5) A PROFESSIONAL GEOTECHNICAL ENGINEER SHALL APPROVE ALL MATERIALS USED FOR

FÓLLOWING GRASS SEED MIX MANUFACTURED BY ERNST SEED COMPANY: Carolina FACW



WELDED WIRE FABRIC MAY BE SUBSTITUTED FOR REBAR AS LONG AS THE SAME AREA OF STEEL IS PROVIDED. CHAMFER ALL CORNERS 1" OR HAVE A R NOTE: THE MINIMUM BAR SIZE SHALL AT 8" CTS.THE CONTRACTOR WILL HA TO INCREASE THIS BAR SIZE AS NEE

ENDWALL DIMENSIONS						
FT.	MINIMUM	MIN./MAX.	MIN./MAX.	MIN./MAX.	MIN./MAX.	MIN./MAX.
PIPE DIA.	BAR SIZE	H1(FT.)	H2(FT.)	D (FT.)	W1	W2
1.0	#5 @ 8"	1.25/2.00	2.00/3.75	1.25/1.75	3.00/3.75	5.50/6.00
1.25	#5 @ 8"	1.25/2.00	3.00/3.75	1.25/2.00	3.50/3.75	6.50/6.75
1.50	#5 @ 8"	1.25/2.00	3.00/4.25	1.50/2.50	3.50/3.75	6.50/6.75
2.0	#5 @ 8"	1.50/2.50	4.00/4.75	1.75/2.50	4.00/4.25	7.50/8.25
2.5	#5 @ 8"	2.50/3.50	4.00/6.00	2.00/3.00	4.50/5.50	10.00/11.50
3.0	#5 @ 8"	3.00/3.50	5.00/6.00	2.75/3.50	5.25/5.75	11.50/11.75
3.5	#5 @ 8"	3.25/4.50	6.00/6.75	3.25/3.50	6.00/6.75	12.00/13.25
4.0	#5 @ 8"	3.50/4.50	6.50/7.00	3.25/3.50	6.50/6.75	13.00/13.25
4.5	#5 @ 8"	4.00/5.00	6.50/8.50	3.25/4.00	7.00/9.25	13.50/15.75
5.0	#5 @ 8"	4.50/5.00	7.00/8.50	3.25/4.00	7.25/9.25	13.75/15.75
5.5	#5 @ 8"	4.50/5.00	7.50/8.50	3.25/4.00	7.25/9.25	14.00/15.75
6.0	#5 @ 8"	4.50/5.00	7.50/8.50	3.25/4.00	7.75/9.25	14.75/16.75

RADIUS OF	1".			
./MAX. W2 0/6.00 0/6.75 0/8.25 0/11.50 0/13.25 0/13.25 0/15.75 5/15.75	RS	ENGLISH STANDARD DRAWING FOR	PRECAST CONCRETE ENDWALL FOR SINGLE 12" THRU 72" PIPE - 90° SKEW	
5/16.75				
		SHE	ET 1 OF 1	

REVISIONS PER COMMENTS RECEIVED FROM NCDOT DESCRIPTIONS REVISIONS





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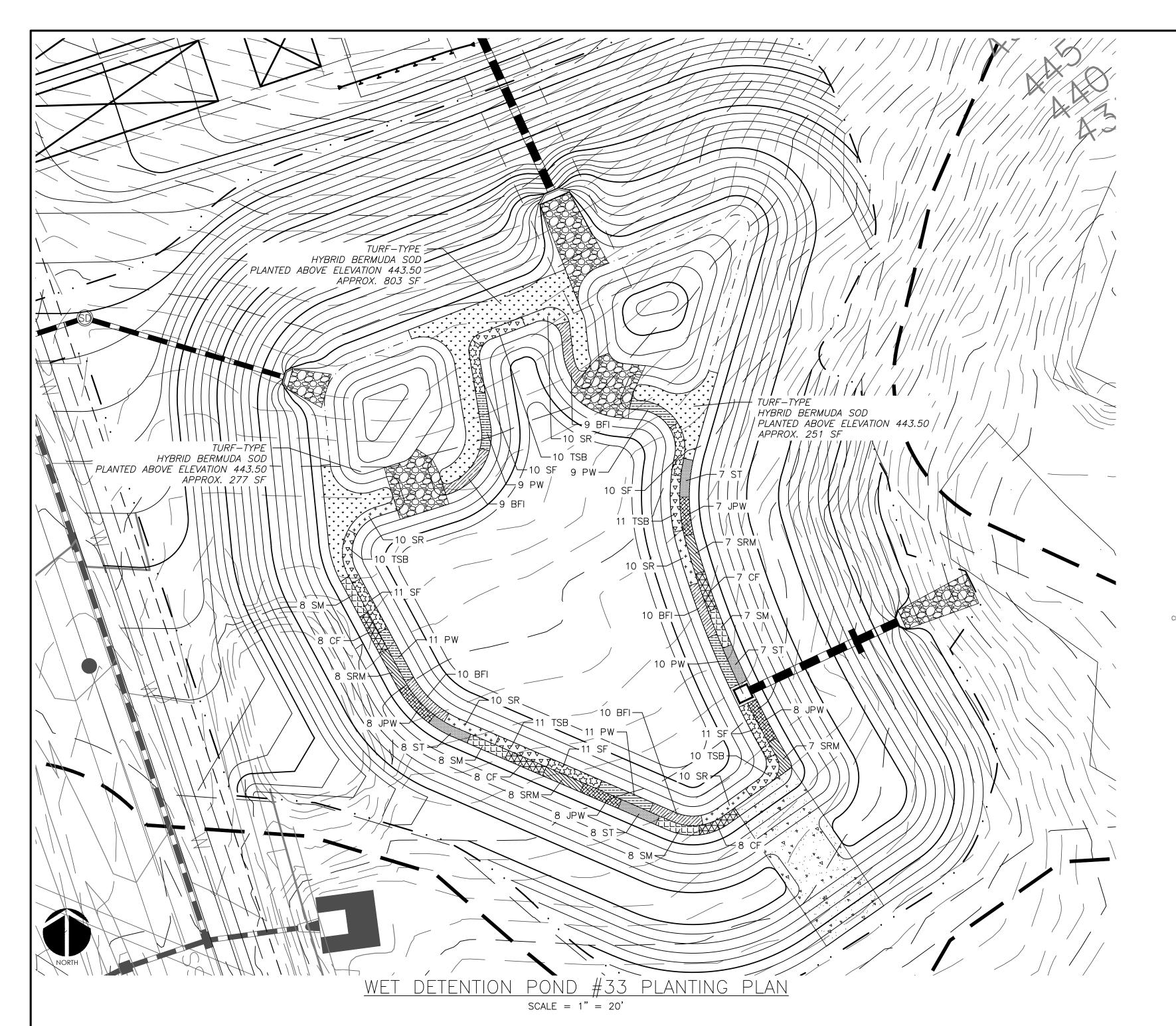
BRIAR CHAPEL PHASE 13 - SECTION 1 & 2 CHATHAM COUNTY, NORTH CAROLINA

BMP #33 PLAN & DETAILS

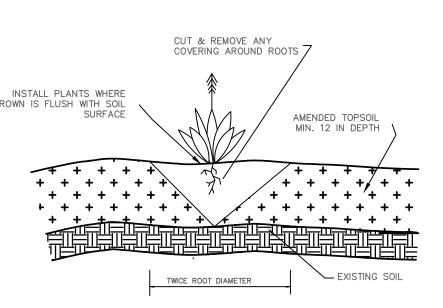
DATE:	JULY 26, 2017	1	
ICE PROJ. #	02735-0198		
DRAWN	BSS		-
DESIGNED	BSS		
CHECKED	GCA		
PROJ. MGR.	CHS		

SCALE HORIZONTAL AS NOTED VERTICAL: N/A

FOR REVIEW PURPOSES ONLY



			PLANTING SCI	HEDULE	_ - -	
SYM.	ABB.	COMMON NAME	BOTANICAL NAME	QUANTITY	SPACING	CONTAINER SIZE AT PLANTING
SHALL	_OW_WA	ATER PLANTINGS				
, , , , , , , , , , , , , , , , ,	SF	SWEETFLAG	Acorus subcordatum	53	24"-30" O.C.	1 QT.
	PW	PICKERELWEED	Pontederia cordata	50	24"-30" O.C.	1 QT.
	BFI	BLUE FLAG IRIS	Iris virginica	48	24"-30" O.C.	1 QT.
+ + +	SR	SOFT RUSH	Juncus effusus var. pylaei or solutus	50	24"-30" O.C.	1 QT.
7	TSB	THREE SQUARE BULRUSH	Schoenoplectus americanus	52	24"-30" O.C.	1 QT.
		ND PLANTINGS				
	SM	SWAMP MILKWEED	Asclepias incarnata	31	24"-30" O.C.	1 QT.
	CF	CARDINAL FLOWER	Lobelia cardinalis	31	24"-30" O.C.	1 QT.
	SRM	SCARLET ROSE MALLOW	Hibiscus coccineus	30	24"-30" O.C.	1 QT.
	JPW	DWARF JOE PYE WEED	Eupatoriadelphus dubius	31	24"-30" O.C.	1 QT.
	ST	SPOTTED TRUMPETWEED	Eupatoriadelphus maculatus	30	24"-30" O.C.	1 QT.



NORMAL POOL LEVEL

24" O.C. (TYP)

SHALLOW LAND
PLANT VARIETY 'B'

SHALLOW LAND

PLANT VARIETY 'A'

EACH VARIETY OF PLANT NOTED TO BE PLANTED SHALL BE IN GROUPS AS SHOWN ON THIS SHEET.

1. CONTINUE PLANTING SCHEME SHOWN FOR EACH OF THE 6 PLANT VARIETIES NOTED BELOW AROUND ENTIRE LENGTH OF THE <u>SHALLOW LAND</u> PLANTING

2. OTHER SPECIES WITH SIMILAR GROWTH HABITS AND MAY BE APPROVED AS LISTED IN THE "NCDEQ

STORMWATER DESIGN MANUAL" TABLE 3.

LIMITS OF 6:1 SHELF

SHALLOW LAND PLANT VARIETY 'B'

VEGETATED PLANTING SHELF DETAIL

GENERAL PLANTING DETAIL

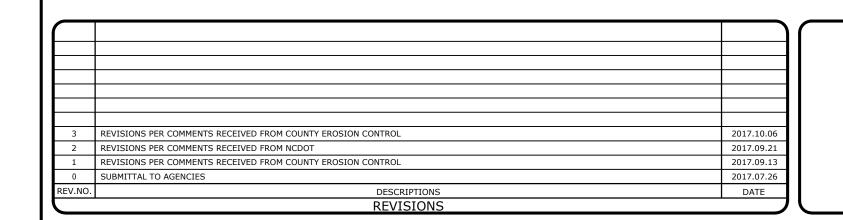
NTS

GENERAL PLANTING NOTES:

- 1. AVOID COMPACTING TOPSOIL TO PROMOTE HEALTHY ENVIRONMENTAL CONDITIONS FOR THE PLANTS.
- 2. ALL PLANTS SHOULD BE PLANTED IN THE INDICATED RANGE TO ENSURE SURVIVAL.
- 3. SHALLOW WATER AND SHALLOW LAND AREAS TO BE PLANTED WITH BARE ROOT, PLUGS, OR CONTAINER LIVE PLANTINGS AS SPECIFIED.
- 4. EXCAVATE A HOLE TWICE THE DIAMETER OF ROOT BALL AND EQUAL TO THE ROOT DEPTH OF THE INDIVIDUAL PLANT. PLACE PLANT IN HOLE WITH CROWN FLUSH WITH SOIL SURFACE. BACKFILL WITH TOPSOIL AND LIGHTLY PLANT.
- 5. BEGIN PLANTING DURING LOCAL GROWING SEASON IN ORDER TO ENSURE THAT PLANTS HAVE ADEQUATE TIME TO ESTABLISH BEFORE WINTER MONTHS.
- 6. OBTAIN PLANTS FROM: COASTAL PLAIN CONSERVATION NURSERY (252-482-5707), MELLOW MARSH FARMS (919-742-1200), CURE NURSERY (919-542-6186) OR ENGINEER APPROVED SUBSTITUTE.
- 7. REFER TO EROSION CONTROL DETAIL SHEET D1.2 FOR SEEDBED PREPARATION AND SEEDING SCHEDULES FOR AREAS NOT SPECIFIED IN THIS PLAN.

SHALLOW LAND PLANTING NOTES:

1. PLANTS IN THIS GROUP SHOULD NOT BE PLANTED IN AREAS THAT ARE INUNDATED FOR EXTENDED







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BRIAR CHAPEL PHASE 13 - SECTION 1 & 2 CHATHAM COUNTY, NORTH CAROLINA

BMP #33 PLAN & DETAILS

DATE:	JULY 26, 2017
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DRAWN	BSS
DESIGNED	BSS
CHECKED	GCA
PROJ. MGR.	CHS

SCALE

HORIZONTAL:
AS NOTED

VERTICAL:
N/A

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