TIP PROJECT: R-4436MJ

CONTRACT: 34625.2.64

2/23/2017
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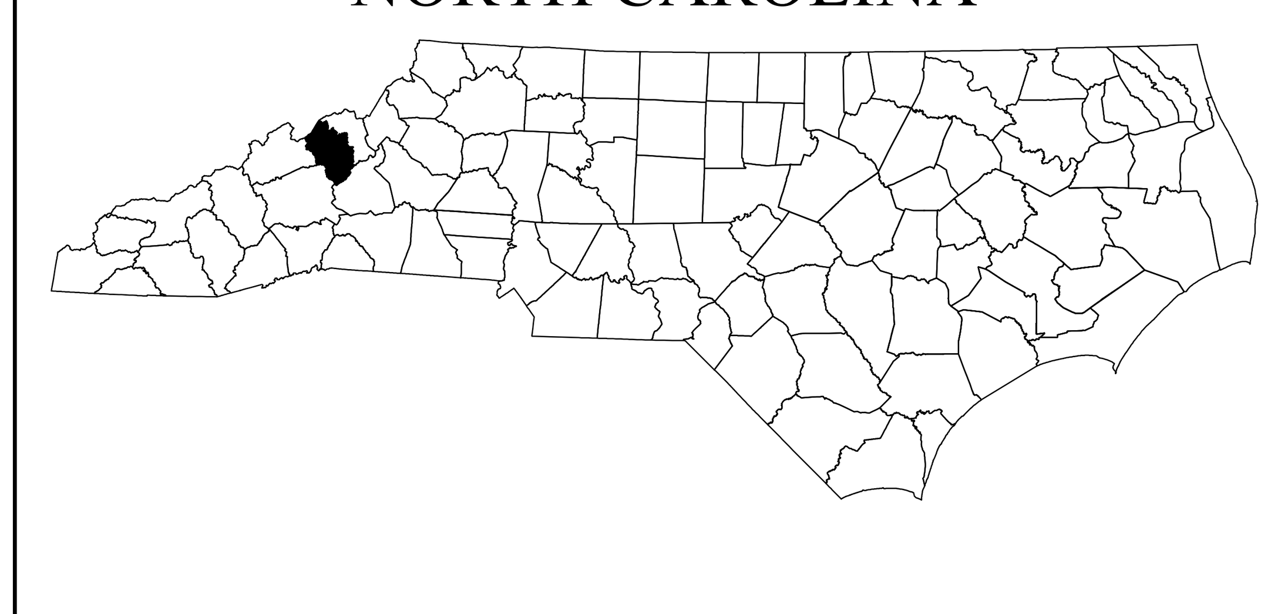
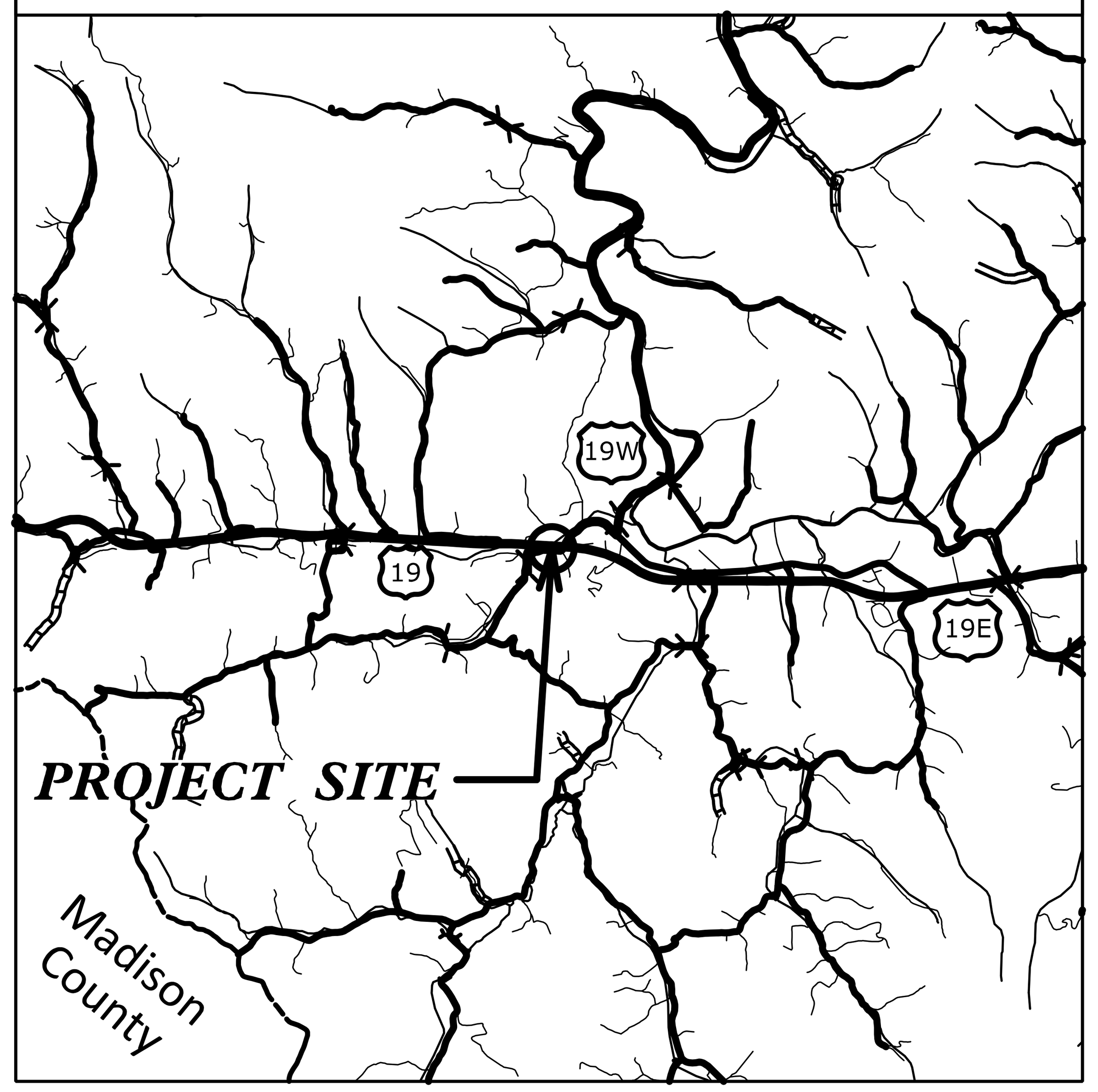
User:kgray

09/08/99

See Sheet 1A For Index of Sheets





VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

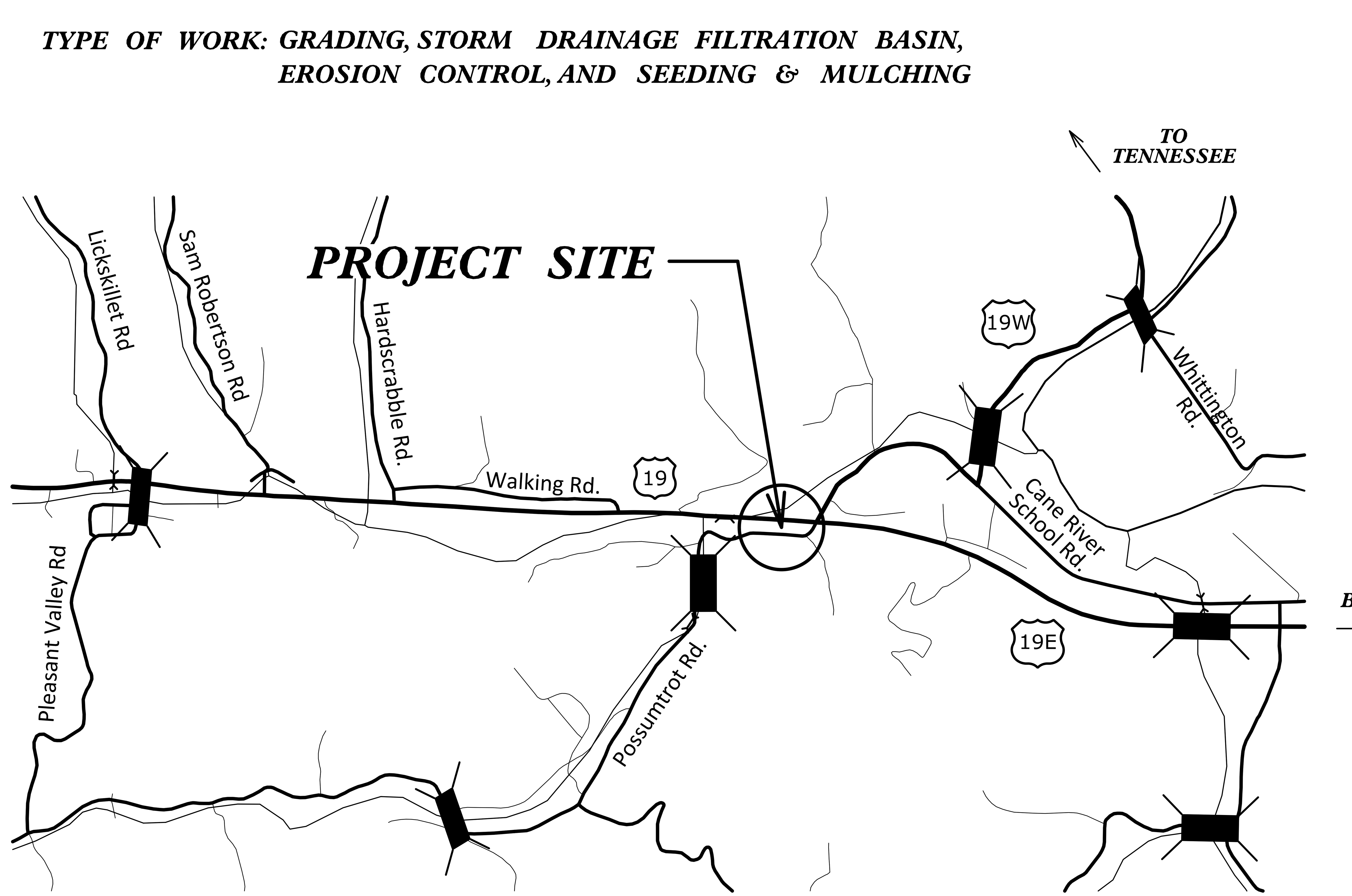
YANCEY COUNTY

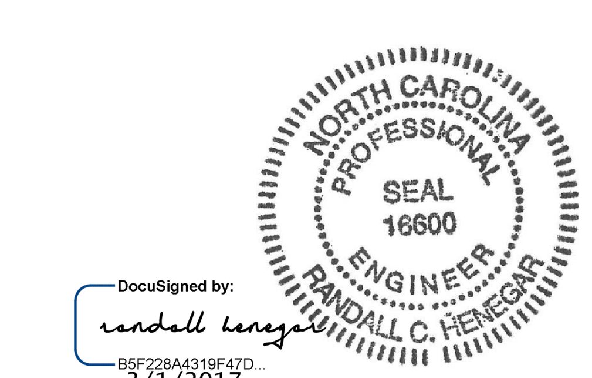
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-4436MJ	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
34625.2.64	STP-0019(054)	CONSTRUCTION

LOCATION: PARK AND RIDE LOT OFF POSSUMTROT RD BETWEEN PLEASANT VALLEY RD & US-19

TYPE OF WORK: GRADING, STORM DRAINAGE FILTRATION BASIN, EROSION CONTROL, AND SEEDING & MULCHING





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GRAPHIC SCALES

SCALE VARIES
SEE PLANS

NCDOT Highway Stormwater PROGRAM

LETTING DATE:
MAY 3, 2017

Prepared by

TGS ENGINEERS
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RALEGH, NC 27603
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CORP. LICENSE NO.: C-0275

RANDY HENEGAR, PE
PROJECT ENGINEER

Kathleen Gray, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: P.E.

NCDOT CONTACT

BRIAN LIPSCOMB, P.E.
HIGHWAY STORMWATER PROGRAM

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA HYDRAULICS UNIT STORMWATER GROUP

PROJECT ENGINEER

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-4436MJ	1A

PROJECT ENGINEER

DocuSigned by: randall tenger 85F228A4319F47D... 3/1/2017

NORTH CAROLINA PROFESSIONAL SEAL 16600 ENGINEER RANDALL C. TENGER

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INDEX OF SHEETS

GENERAL NOTES

GRADING:
THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED OR FUTURE SURFACING AT GRADE POINTS SHOWN ON THE PLANS. GRADE LINES MAY BE ADJUSTED AT THEIR BEGINNING AND ENDING AND AT STRUCTURES AS DIRECTED BY THE ENGINEER IN ORDER TO SECURE A PROPER TIE-IN.

CLEARING:
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.

TRAFFIC CONTROL:
USE APPROPRIATE STANDARDS PER DIVISION 11 AS REQUIRED TO COMPLETE WORK. COORDINATE TRAFFIC CONTROL WITH THE DIVISION.

2012 ROADWAY ENGLISH STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" HIGHWAY DESIGN BRANCH - N. C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N. C., DATED JANUARY, 2012 ARE APPLICABLE TO THIS PROJECTAND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD.NO.	TITLE
DIVISION 2 - EARTHWORK	
200.02	METHOD OF CLEARING - METHOD II
DIVISION 3 - PIPE CULVERTS	
300.01	METHOD OF PIPE INSTALLATION
DIVISION 8 - INCIDENTALS	
840.66	DRAINAGE STRUCTURE STEPS
846.01	CONCRETE CURB, GUTTER AND CURB & GUTTER
876.04	DRAINAGE DITCHES WITH CLASS 'B' RIP RAP
DIVISION 11 - WORK ZONE TRAFFIC CONTROL	
1101.01	WORK ZONE ADVANCE WARNING SIGNS FOR FACILITIES <= 55 MPH
1101.04	TEMPORARY SHOULDER CLOSURES
DIVISION 16 - EROSION CONTROL AND ROADSIDE DEVELOPMENT	
1605.01	TEMPORARY SILT FENCE
1607.01	GRAVEL CONSTRUCTION ENTRANCE
1632.03	ROCK INLET SEDIMENT TRAP TYPE C
1633.01	TEMPORARY ROCK SILT CHECK TYPE A

CONSTRUCTION SEQUENCE NOTES

PROJECT REQUIRES A PRE-CONSTRUCTION CONFERENCE PRIOR TO INITIATING ANY EARTH DISTURBANCE ACTIVITIES.

1. ESTABLISH SIGNAGE AT PARK AND RIDE SITE TO INFORM PUBLIC OF PARTIAL LOT CLOSURE A MINIMUM OF 2 WEEKS PRIOR TO START OF CONSTRUCTION. INDICATE ANTICIPATED DATES OF PARTIAL CLOSURE ON THE SIGNAGE.
2. PROVIDE SIGNAGE AT PARK AND RIDE SITE AND MAINTAIN SOFT BARRIERS, SUCH AS CONES OR DRUMS, TO CLOSE AND RESTRICT PUBLIC ACCESS TO THE CLOSED PORTION OF THE GROUNDS AND PARKING LOT.
3. INSTALL TEMPORARY EROSION CONTROL DEVICES AS SHOWN ON PLANS.
4. CONSTRUCT FILTRATION BASINS AND OTHER IMPROVEMENTS.
5. FOLLOW SEEDING/ MULCHING GUIDELINES ON THE PLANS TO STABILIZE ALL REMAINING DISTURBED SURFACES.
6. INSPECT ALL INLETS, PIPES, AND OUTLETS FOR SEDIMENT AND REMOVE SEDIMENT AS REQUIRED.
7. REMOVE ALL REMAINING TEMPORARY EROSION CONTROL MEASURES AFTER PERMANENT PERENNIAL VEGETATION IS ESTABLISHED.

EROSION CONTROL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST VERSION OF NCDOT STANDARDS, SPECIFICATIONS, AND DETAILS.
2. CONTRACTOR SHALL MAINTAIN ALL EROSION CONTROL MEASURES DURING THE LIFE OF THE PROJECT UNLESS OTHERWISE INDICATED ON THE PLANS OR DIRECTED BY NCDOT INSPECTOR.
3. CONTRACTOR SHALL CONSTRUCT DIVERSION DITCHES AS NECESSARY TO ENSURE THAT ALL SEDIMENT IS DIRECTED INTO EROSION CONTROL MEASURES.
4. CUT AND FILL SLOPES SHALL BE STABILIZED WITHIN 14 DAYS OF ANY PHASE OF GRADING. SLOPES 3:1 OR STEEPER SHALL BE STABILIZED WITHIN 7 DAYS.
5. PROVIDE TEMPORARY MEASURES AS NECESSARY TO PREVENT SEDIMENT FROM MIGRATING INTO FILTER MEDIA OR SODDED AREAS.
6. ALL STREETS ADJACENT TO THIS PROJECT SHALL REMAIN CLEAN AT ALL TIMES OR A WASH STATION MAY BE REQUIRED.
7. IF USED, SILT FENCE SHALL BE MAINTAINED ON THE SITE UNTIL ALL SITE WORK IS COMPLETED AND THE FINAL SITE INSPECTION IS SCHEDULED.
8. RESEED OF PERMANENT GROUND COVER WILL BE ESTABLISHED IN 15 WORKING DAYS OR 30 CALENDAR DAYS, WHICH EVER IS SHORTER.
9. EROSION CONTROL MATTING SHALL BE STRAW MATTING. USE STD. DWG. 1631.01 FOR MATTING INSTALLATION.
10. PROVIDE GRAVEL CONSTRUCTION ENTRANCE PER 1607.01 AS NEEDED TO PREVENT TRACKING OFFSITE.

SURVEY

LOCATIONS AND ELEVATIONS SHOULD BE FIELD VERIFIED. CONSULT WITH ENGINEER IF SIGNIFICANT DEVIATIONS FROM THE PLAN ARE REQUIRED.

UTILITIES

THE CONTRACTOR SHOULD MAKE HIS OWN INVESTIGATIONS AS TO THE LOCATION OF UTILITIES. EXISTING UTILITIES AND STRUCTURES (UNDERGROUND, SURFACE, OR OVERHEAD) ARE INDICATED ONLY TO THE EXTENT THAT SUCH INFORMATION WAS KNOWN, MADE AVAILABLE TO, OR DISCOVERED BY THE ENGINEER IN PREPARING THE DRAWINGS. THE LOCATIONS, CONFIGURATIONS, AND ELEVATIONS OF SUBSURFACE FACILITIES AND UTILITIES ARE APPROXIMATE, AND NOT ALL UTILITIES AND FACILITIES MAY BE INDICATED.

EARTHWORK

1. ALL EARTHWORK FOR BASIN CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST VERSION OF NCDOT STANDARD SPECIFICATIONS.

SEEDBED PREPERATION

1. PREPARE AND SEED ONLY DISTURBED AREAS. DO NOT SPREAD SEED ON AREAS TO RECEIVE SOD.
2. CHISEL COMPACTED AREAS AND SPREAD TOPSOIL 3 INCHES DEEP OVER ADVERSE SOIL CONDITIONS IF AVAILABLE.
3. RIP THE ENTIRE AREA TO 6 INCHES DEPTH.
4. REMOVE ALL LOOSE ROCK, ROOTS AND OTHER OBSTRUCTIONS LEAVING SURFACES REASONABLY SMOOTH AND UNIFORM.
5. APPLY AGRICULTURAL LIME, FERTILIZER, AND SUPERPHOSPHATE UNIFORMLY AND MIX WITH SOIL (SEE BELOW*).
6. CONTINUE TILLAGE UNTIL A WELL-PULVERIZED, FIRM, REASONABLY UNIFORM SEEDBED IS PREPARED 4 TO 6 INCHES DEEP.
7. SEED A FRESHLY PREPARED SEEDBED AND COVER SEED LIGHTLY WITH SEEDING EQUIPMENT OR CULTIPACK AFTER SEEDING.
8. MULCH IMMEDIATELY AFTER SEEDING AND ANCHOR MULCH.
9. INSPECT ALL SEEDED AREAS AND MAKE ALL NECESSARY REPAIRS OR RESEEDINGS WITHIN THE PLANTING SEASON, IF POSSIBLE. IF STAND SHOULD BE OVER 70% DAMAGED, REESTABLISH FOLLOWING ORIGINAL LIME, FERTILIZER AND SEEDING RATES.
10. CONSULT CONSERVATION INSPECTOR ON MAINTENANCE TREATMENT AND FERTILIZATION AFTER PERMANENT COVER IS ESTABLISHED.

*APPLY: AGRICULTURAL LIMESTONE - 2 TONS/ACRE (34 TONS/ACRE ON CLAY SOILS)
FERTILIZER - 1,000 LBS/ACRE - 10-10-10
SUPERPHOSPHATE - 500 LBS/ACRE - 20%
MULCH - 2 TONS/ACRE - SMALL GRAIN STRAW
ANCHOR - ASPHALT EMULSION @ 300 GAL. ACRE

MAINTENCE PLAN

1. ALL EROSION AND SEDIMENTATION CONTROL PRACTICES WILL BE CHECKED FOR STABILITY AND OPERATION FOLLOWING EVERY RUNOFF-PRODUCING RAINFALL BUT IN NO CASE LESS THAN ONCE A WEEK. ANY NEEDED REPAIRS WILL BE MADE IMMEDIATELY TO MAINTAIN ALL PRACTICES AS DESIGNED.
2. SEDIMENT WILL BE REMOVED FROM BEHIND THE SILT FENCE WHEN IT BECOMES ABOUT 6-INCHES DEEP AT THE FENCE. THE SILT FENCE WILL BE REPAIRED AS NECESSARY TO MAINTAIN A BARRIER.
3. INLET PROTECTION DEVICES SHALL BE INSPECTED AFTER EVERY RAINFALL EVENT. DAMAGED SILT FENCE SHALL BE REPLACED AND GRAVEL SHALL BE CLEANED OR REPLACED WHEN INLET NO LONGER DRAINS PROPERLY.

2/22/2017
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12/2/2016

PROJECT REFERENCE NO.	SHEET NO.
R-4436MJ	1B

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale **S.U.E. = Subsurface Utility Engineering*

BOUNDARIES AND PROPERTY:

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin — EIP
- Computed Property Corner
- Property Monument — ECM
- Parcel/Sequence Number — 123
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary — WLB
- Proposed Wetland Boundary — WLB
- Existing Endangered Animal Boundary — EAB
- Existing Endangered Plant Boundary — EPB
- Existing Historic Property Boundary — HPB
- Known Contamination Area: Soil — S
- Potential Contamination Area: Soil — S
- Known Contamination Area: Water — W
- Potential Contamination Area: Water — W
- Contaminated Site: Known or Potential

BUILDINGS AND OTHER CULTURE:

- Gas Pump Vent or U/G Tank Cap
- Sign — S
- Well — W
- Small Mine
- Foundation
- Area Outline
- Cemetery
- Building
- School
- Church
- Dam

HYDROLOGY:

- Stream or Body of Water
- Hydro, Pool or Reservoir
- Jurisdictional Stream — JS
- Buffer Zone 1 — BZ 1
- Buffer Zone 2 — BZ 2
- Flow Arrow
- Disappearing Stream
- Spring
- Wetland
- Proposed Lateral, Tail, Head Ditch — FLOW
- False Sump

RAILROADS:

- Standard Gauge — CSX TRANSPORTATION
- RR Signal Milepost — MILEPOST 35
- Switch — SWITCH
- RR Abandoned
- RR Dismantled

RIGHT OF WAY & PROJECT CONTROL:

- Secondary Horiz and Vert Control Point
- Primary Horiz Control Point
- Primary Horiz and Vert Control Point
- Exist Permanent Easement Pin and Cap
- New Permanent Easement Pin and Cap
- Vertical Benchmark
- Existing Right of Way Marker
- Existing Right of Way Line
- New Right of Way Line — RW
- New Right of Way Line with Pin and Cap — RW
- New Right of Way Line with Concrete or Granite R/W Marker — RW
- New Control of Access Line with Concrete C/A Marker — CA
- Existing Control of Access — CA
- New Control of Access — CA
- Existing Easement Line — E
- New Temporary Construction Easement — E
- New Temporary Drainage Easement — TDE
- New Permanent Drainage Easement — PDE
- New Permanent Drainage / Utility Easement — DUE
- New Permanent Utility Easement — PUE
- New Temporary Utility Easement — TUE
- New Aerial Utility Easement — AUE

ROADS AND RELATED FEATURES:

- Existing Edge of Pavement
- Existing Curb
- Proposed Slope Stakes Cut — C
- Proposed Slope Stakes Fill — F
- Proposed Curb Ramp — CR
- Existing Metal Guardrail
- Proposed Guardrail
- Existing Cable Guiderail
- Proposed Cable Guiderail
- Equality Symbol
- Pavement Removal

VEGETATION:

- Single Tree
- Single Shrub
- Hedge
- Woods Line
- Orchard
- Vineyard — Vineyard

EXISTING STRUCTURES:

MAJOR:

- Bridge, Tunnel or Box Culvert — CONC
- Bridge Wing Wall, Head Wall and End Wall — CONC WW

MINOR:

- Head and End Wall — CONC HW
- Pipe Culvert
- Footbridge
- Drainage Box: Catch Basin, DI or JB — CB
- Paved Ditch Gutter
- Storm Sewer Manhole — S
- Storm Sewer — S

UTILITIES:

POWER:

- Existing Power Pole
- Proposed Power Pole
- Existing Joint Use Pole
- Proposed Joint Use Pole
- Power Manhole — P
- Power Line Tower
- Power Transformer
- U/G Power Cable Hand Hole
- H-Frame Pole
- U/G Power Line LOS B (S.U.E.*) — P
- U/G Power Line LOS C (S.U.E.*) — P
- U/G Power Line LOS D (S.U.E.*) — P

TELEPHONE:

- Existing Telephone Pole
- Proposed Telephone Pole
- Telephone Manhole — T
- Telephone Pedestal — T
- Telephone Cell Tower
- U/G Telephone Cable Hand Hole — HH
- U/G Telephone Cable LOS B (S.U.E.*) — T
- U/G Telephone Cable LOS C (S.U.E.*) — T
- U/G Telephone Cable LOS D (S.U.E.*) — T
- U/G Telephone Conduit LOS B (S.U.E.*) — TC
- U/G Telephone Conduit LOS C (S.U.E.*) — TC
- U/G Telephone Conduit LOS D (S.U.E.*) — TC
- U/G Fiber Optics Cable LOS B (S.U.E.*) — T FO
- U/G Fiber Optics Cable LOS C (S.U.E.*) — T FO
- U/G Fiber Optics Cable LOS D (S.U.E.*) — T FO

WATER:

- Water Manhole — W
- Water Meter
- Water Valve
- Water Hydrant
- U/G Water Line LOS B (S.U.E*) — W
- U/G Water Line LOS C (S.U.E*) — W
- U/G Water Line LOS D (S.U.E*) — W
- Above Ground Water Line — A/G Water

TV:

- TV Pedestal — C
- TV Tower
- U/G TV Cable Hand Hole — HH
- U/G TV Cable LOS B (S.U.E.*) — TV
- U/G TV Cable LOS C (S.U.E.*) — TV
- U/G TV Cable LOS D (S.U.E.*) — TV
- U/G Fiber Optic Cable LOS B (S.U.E.*) — TV FO
- U/G Fiber Optic Cable LOS C (S.U.E.*) — TV FO
- U/G Fiber Optic Cable LOS D (S.U.E.*) — TV FO

GAS:

- Gas Valve
- Gas Meter
- U/G Gas Line LOS B (S.U.E.*) — G
- U/G Gas Line LOS C (S.U.E.*) — G
- U/G Gas Line LOS D (S.U.E.*) — G
- Above Ground Gas Line — A/G Gas

SANITARY SEWER:

- Sanitary Sewer Manhole
- Sanitary Sewer Cleanout
- U/G Sanitary Sewer Line — SS
- Above Ground Sanitary Sewer — A/G Sanitary Sewer
- SS Forced Main Line LOS B (S.U.E.*) — FSS
- SS Forced Main Line LOS C (S.U.E.*) — FSS
- SS Forced Main Line LOS D (S.U.E.*) — FSS

MISCELLANEOUS:

- Utility Pole
- Utility Pole with Base
- Utility Located Object
- Utility Traffic Signal Box — S
- Utility Unknown U/G Line LOS B (S.U.E.*) — ?UTL
- U/G Tank; Water, Gas, Oil
- Underground Storage Tank, Approx. Loc. — UST
- A/G Tank; Water, Gas, Oil
- Geoenvironmental Boring
- U/G Test Hole LOS A (S.U.E.*)
- Abandoned According to Utility Records — AATUR
- End of Information — E.O.I.

PROJECT REFERENCE NO.	SHEET NO.
R-4436MJ	1C

SURVEY CONTROL

PROJECT ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 16600 ENGINEER RANDALL C. HENEGAR

DocuSigned by: randall henegar B5F228A4319F47D...

3/1/2017

DATUM DESCRIPTION

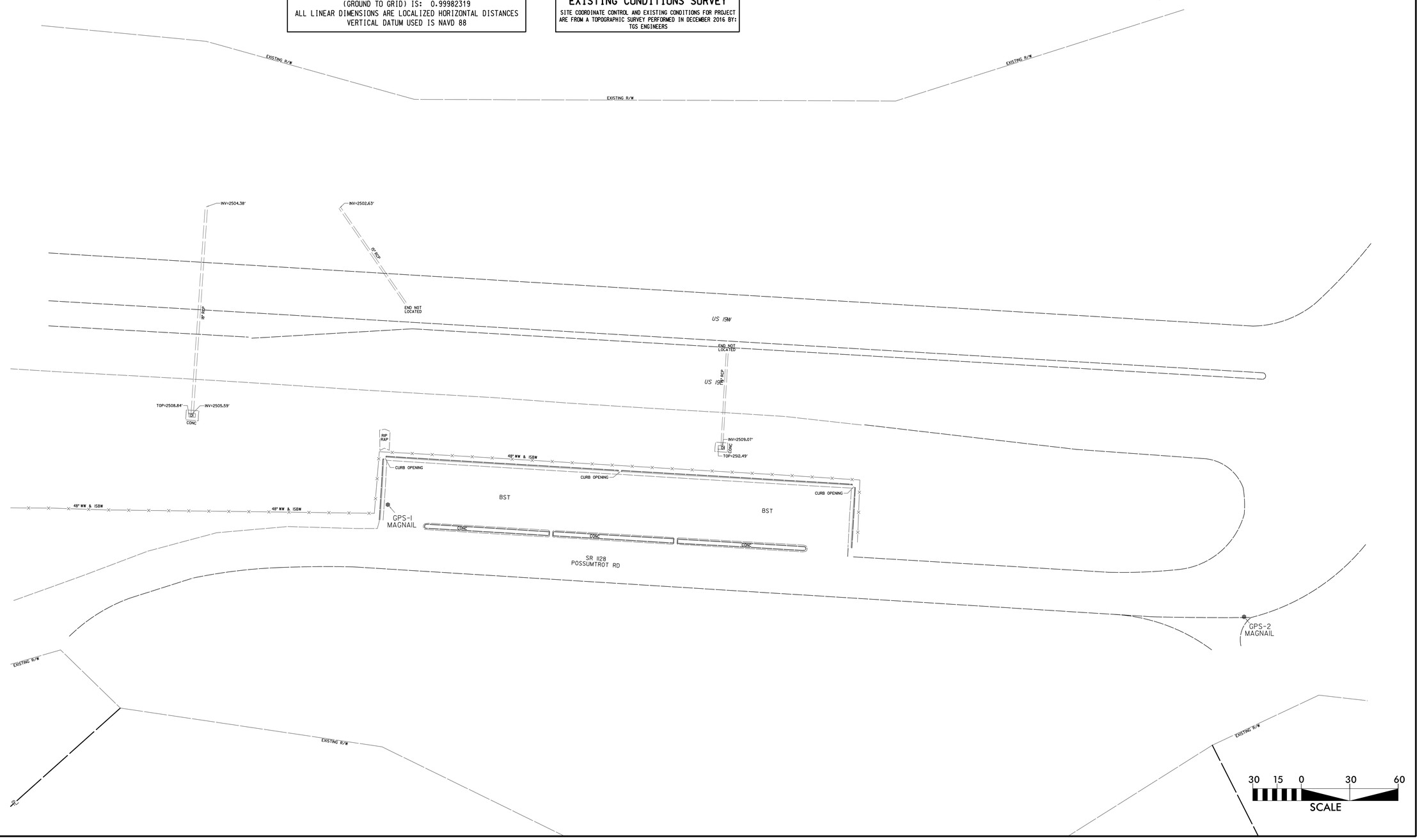
THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY OTHERS FOR MONUMENT "GPS-1"
WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF
NORTHING: 804480.310(ft) EASTING: 993608.290(ft)
ELEVATION: 2515.98(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99982319
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
101	804480.310	993608.290	2515.98	GPS-1
102	804410.837	994138.364	2527.76	GPS-2

EXISTING CONDITIONS SURVEY

SITE COORDINATE CONTROL AND EXISTING CONDITIONS FOR PROJECT ARE FROM A TOPOGRAPHIC SURVEY PERFORMED IN DECEMBER 2016 BY: TGS ENGINEERS

NC GRID
NAD 83 NA 2011



PROJECT ENGINEER

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3/1/2017

NORTH CAROLINA PROFESSIONAL SEAL 16600 ENGINEER RANDALL C. HENEGAR

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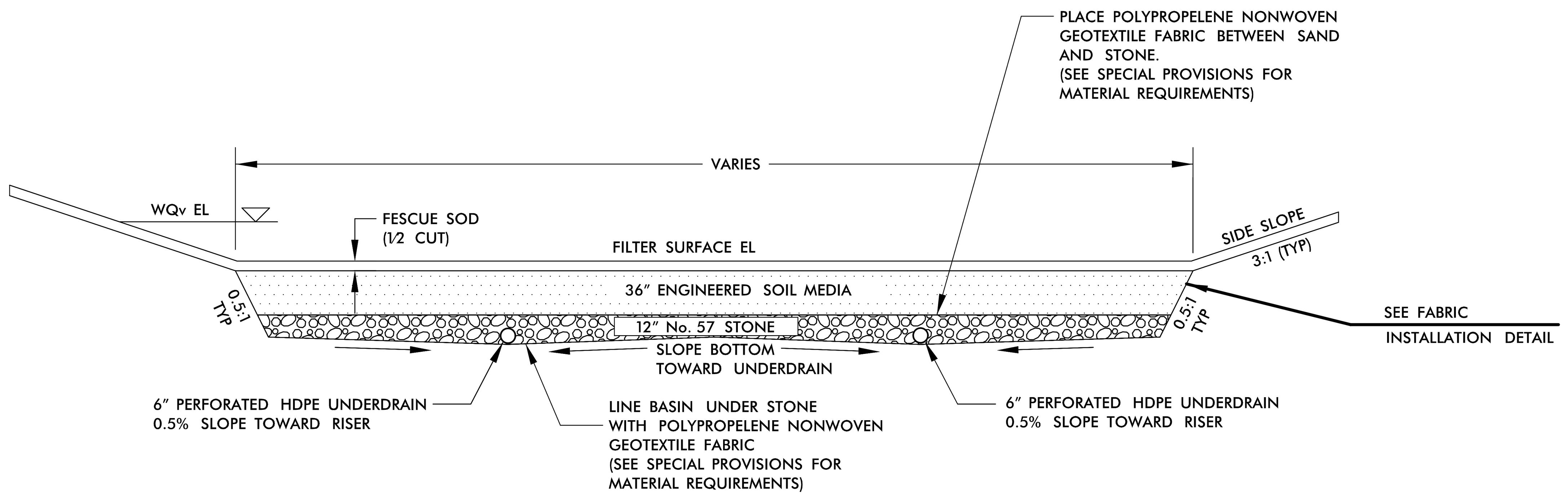
BMP DETAILS 1



TYPICAL SECTION – FILTER BASIN MEDIA

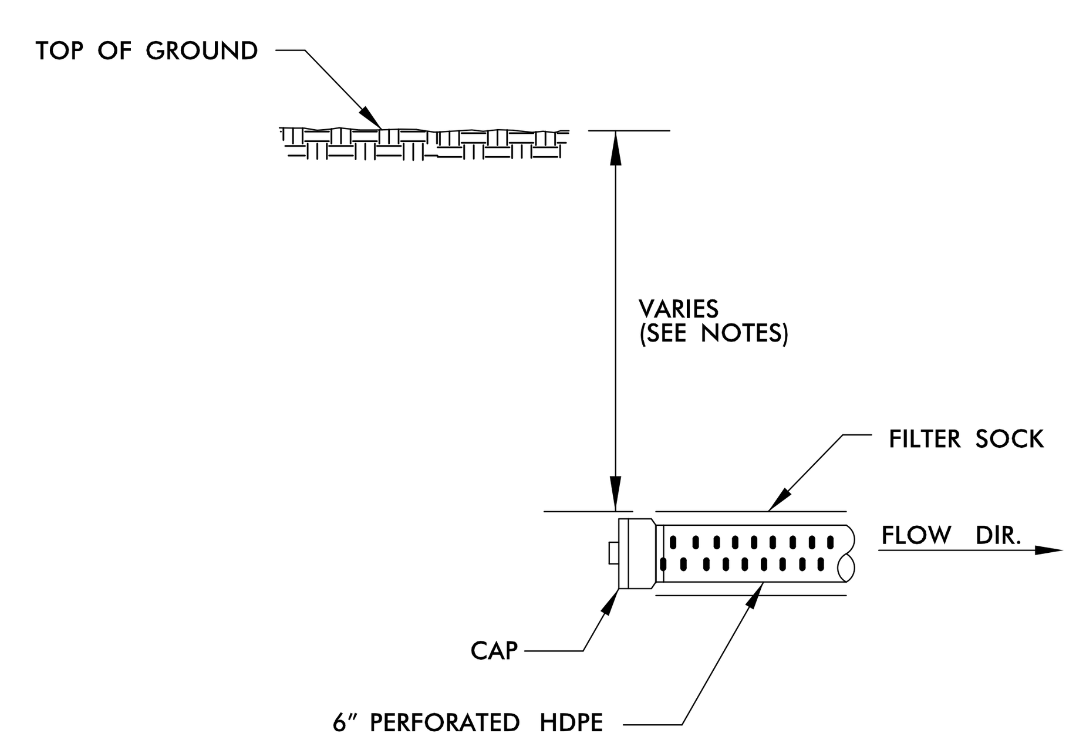
N.T.S.

NOTE:

1. STONE TO BE STD. SIZE #57 (DIVISION 10 SECTION 1005), WASHED.
2. PLACE FESCUE SOD ON BASIN BOTTOMS, BERMS, AND SIDE SLOPES.
3. SEE SHEET 4 FOR UNDERDRAIN CONFIGURATION.
4. FILTRATION BASIN MEDIA SHALL CONSIST OF THE FOLLOWING BLEND:

RECYCLED EXPANDED SLATE FINES	80%
APPROVED COMPOST ORGANIC COMPONENT	20%

SEE SPECIAL PROVISIONS FOR ENGINEERED SOIL MEDIA REQUIREMENTS.

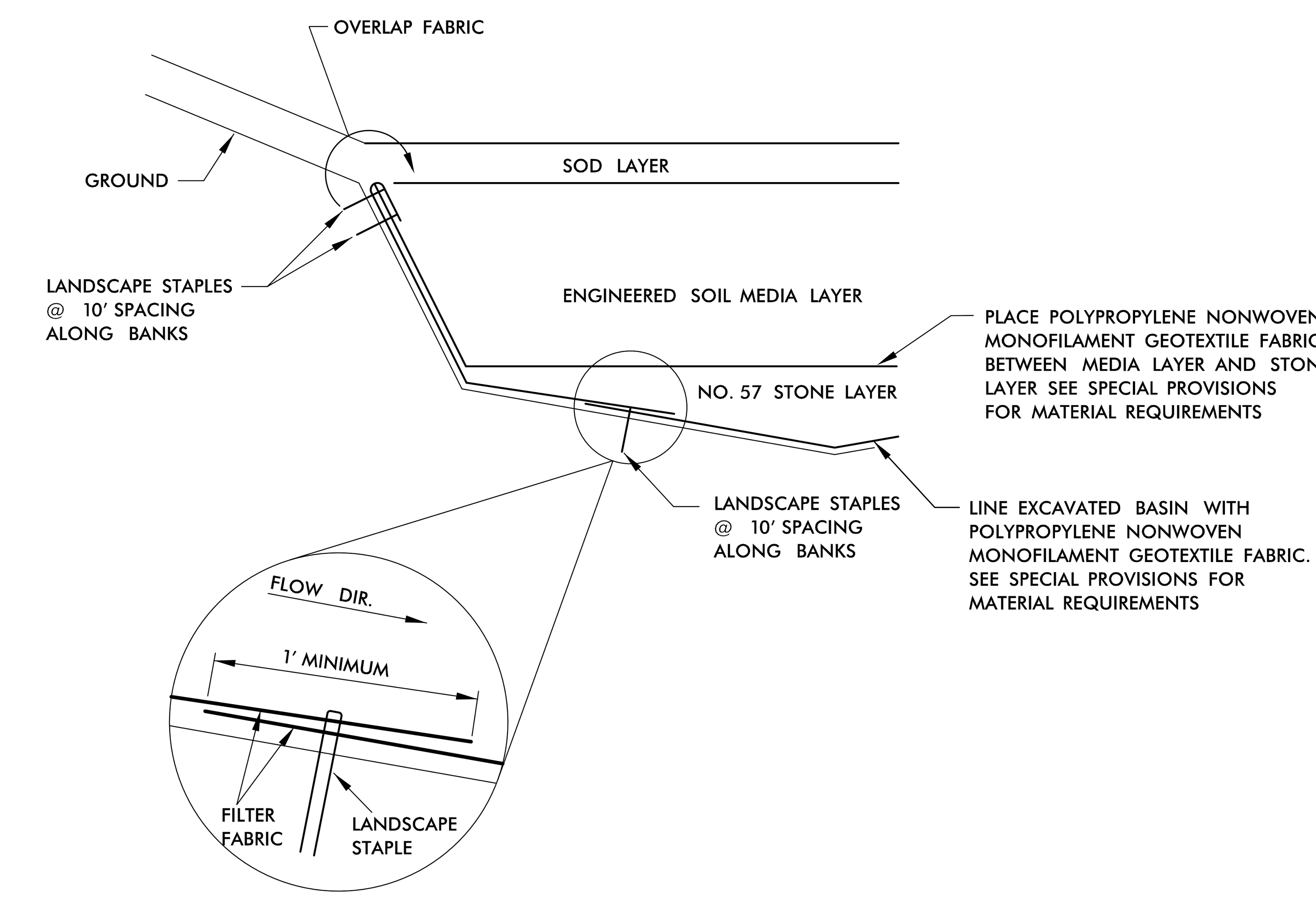


NOTES:

1. ONLY UNDERDRAIN PIPE (LOCATED BENEATH ENGINEERED SOIL MEDIA) SHOULD BE PERFORATED.
2. SEE "TYPICAL SECTION – FILTER BASIN MEDIA" (THIS SHEET) FOR PIPE DEPTH.

UNDERDRAIN DETAIL

N.T.S.



NOTES:

1. LINING FABRIC SHOULD BE FOLDED BACK TO OVERLAP DIVIDING FABRIC AND SECURED WITH LANDSCAPE STAPLES TO ENSURE SEALING THE STONE FROM SOIL.
2. FABRIC SHOULD BE LAYED IN A WAY TO PREVENT WATER FROM FLOWING BETWEEN OVERLAPPED PIECES. (SEE BLOWUP)
3. FABRIC SHOULD BE OVERLAPPED A MINIMUM OF 12 INCHES AND SECURED WITH STAPLES.
4. NO OVERLAPPING SHOULD OCCUR UNDER DRAIN PIPES.

FABRIC INSTALLATION DETAIL

N.T.S

5/14/99
2/22/2017
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PROJECT REFERENCE NO.	SHEET NO.
R-4436MJ	2D-2

PROJECT ENGINEER

DocuSigned by: Randy Henegar
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4/21/2017

NORTH CAROLINA PROFESSIONAL SEAL 16600 ENGINEER RANDALL C. HENEGAR

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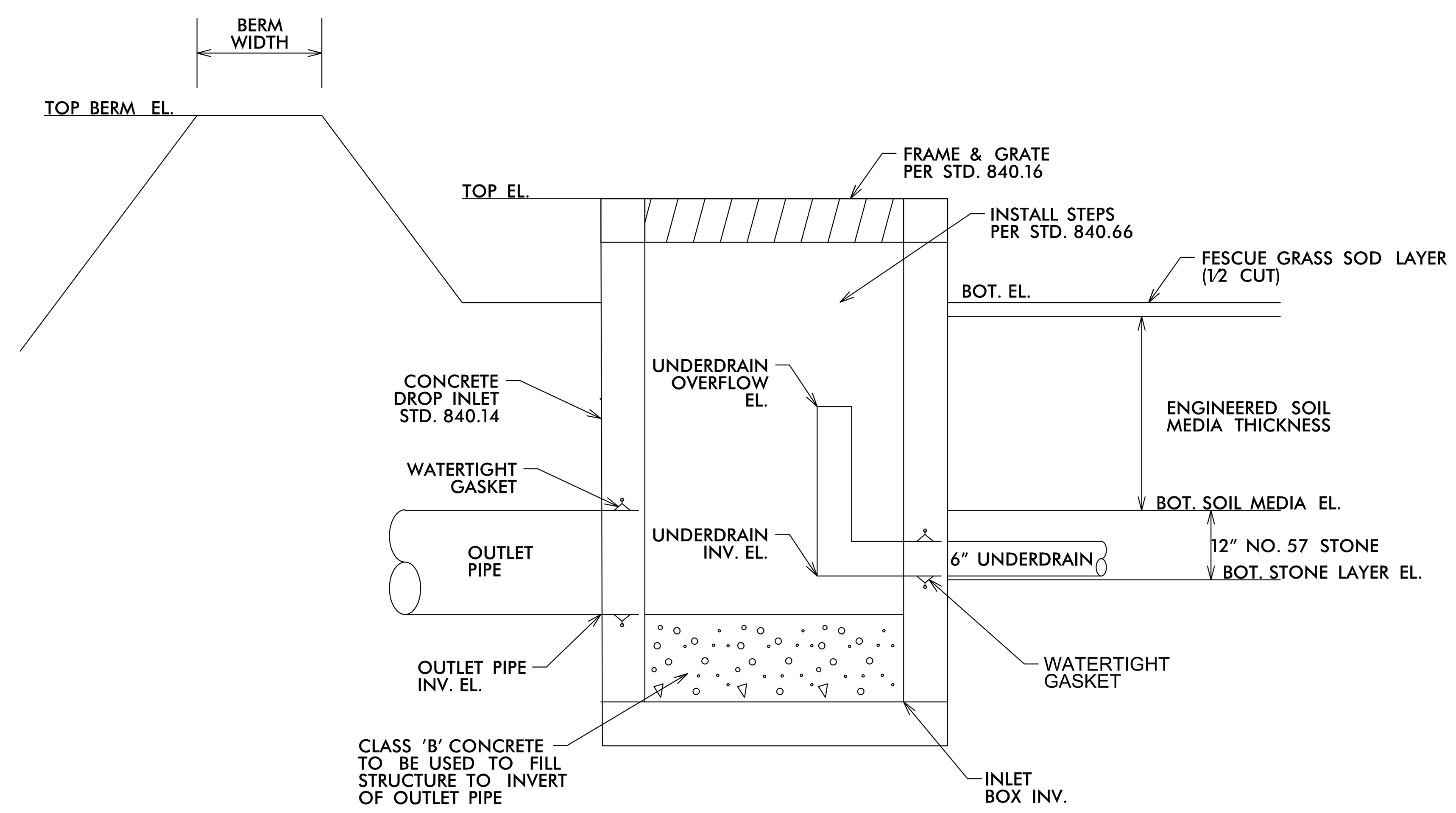
BMP DETAILS 2



NOTES:

1. PROVIDE WATER TIGHT CONNECTIONS USING WATERSTOP OR COMPRESSION GASKET APPROVED BY ENGINEER ON ALL OUTLET STRUCTURE PENETRATIONS.
2. INSTALL STEPS IN ACCORDANCE WITH STD. 840.66
3. FOR UNDERDRAIN, USE SOLID (NON-PERFORATED) PIPE OUTSIDE OF FILTER.
4. SEE ENGINEERED SOIL MEDIA DETAIL SHEET 2-D1.
5. SEE DETAIL THIS SHEET FOR UNDERDRAIN UPTURNED ELBOW / OVERFLOW.

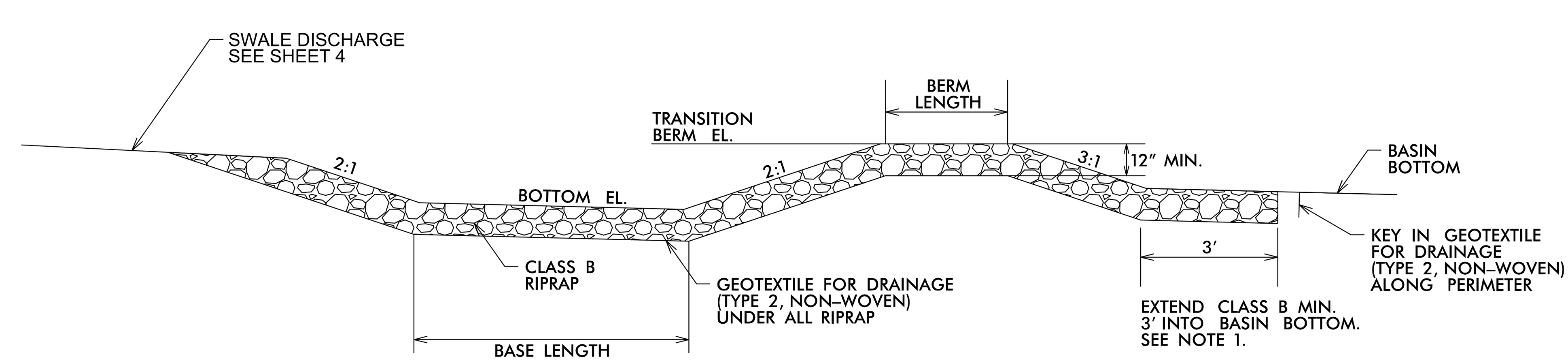
FILTRATION BASIN OUTLET STRUCTURE DETAIL

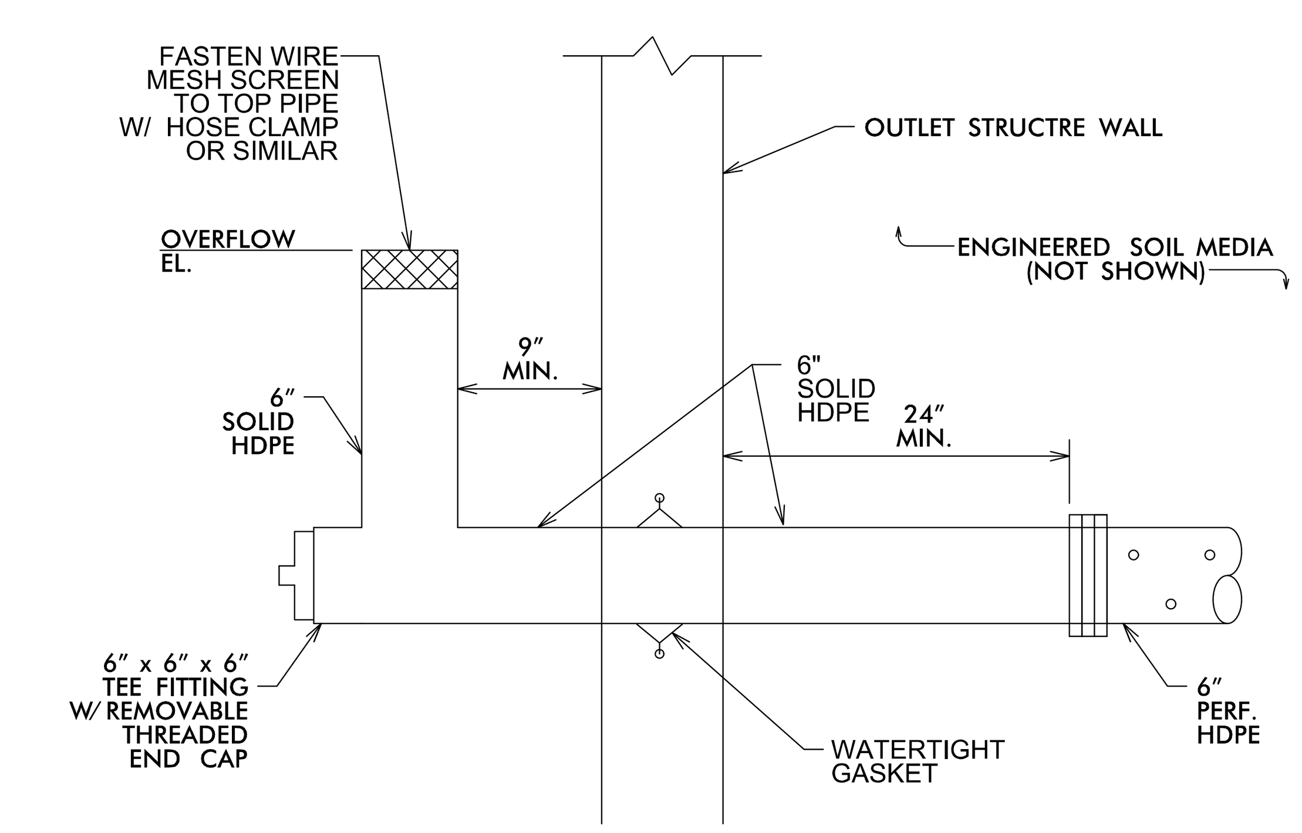
N.T.S.

BASIN REF.	TOP BOX EL.	TOP BERM EL.	TOP BERM WIDTH	BOTTOM EL.	BOTTOM SOIL MEDIA EL.	SOIL MEDIA THICKNESS	BOTTOM STONE EL.	UNDERDRAIN INVERT	OUTLET PIPE INVERT	BOX INVERT	UNDERDRAIN OVERFLOW EL.
1	2512.0	2513.2	8.0' (MIN.)*	2510.5	2507.5	36"	2506.5	2506.5	2506.0	2505.0	2509.0

*NOTE:

1. TOP BERM WIDTH IS MOST NARROW PORTION OF BERM CREATED FROM EXCAVATING BASIN (NOT FILL).





FILTRATION BASIN FOREBAY

N.T.S.

NOTES:

1. DO NOT PLACE ENGINEERED SOIL MEDIA UNDERNEATH RIPRAP.
2. ELEVATIONS INDICATE TOP OF RIPRAP.
3. BASE LENGTH REFLECTS LARGEST BOTTOM DIMENSION.

BASIN REF.	TOP TRANSITION BERM	BERM LENGTH	BOTTOM EL.	BASE LENGTH	LINING
1	2511.5	5.00'	2508.5	4.0' *	CLASS B RIPRAP

UNDERDRAIN UPTURNED ELBOW / OVERFLOW

N.T.S.

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PROJECT REFERENCE NO.	SHEET NO.
R-4436MJ	2D-3

PROJECT ENGINEER

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3/1/2017

NORTH CAROLINA PROFESSIONAL SEAL 16600 ENGINEER RANDALL C. HENEGAR

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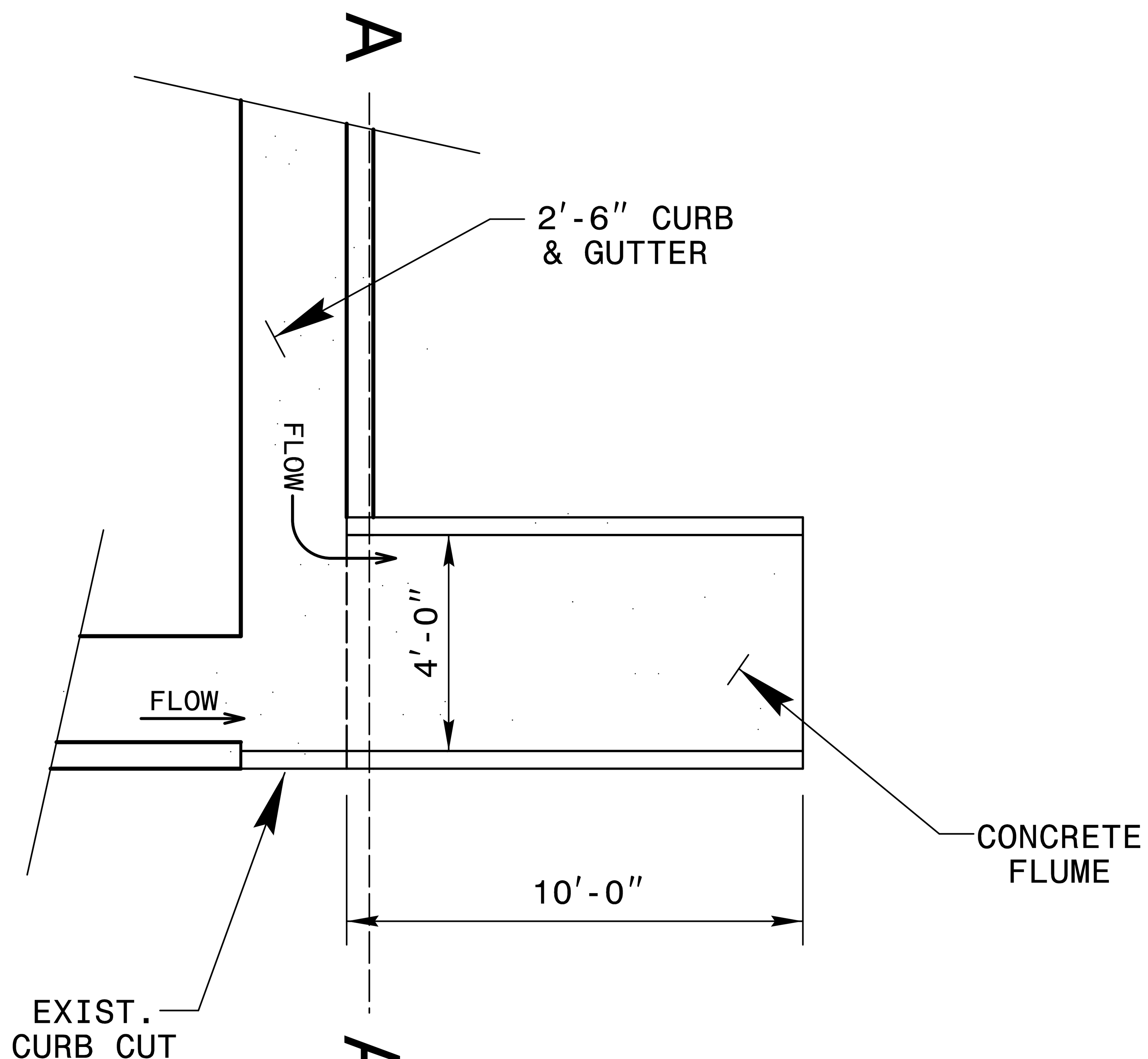
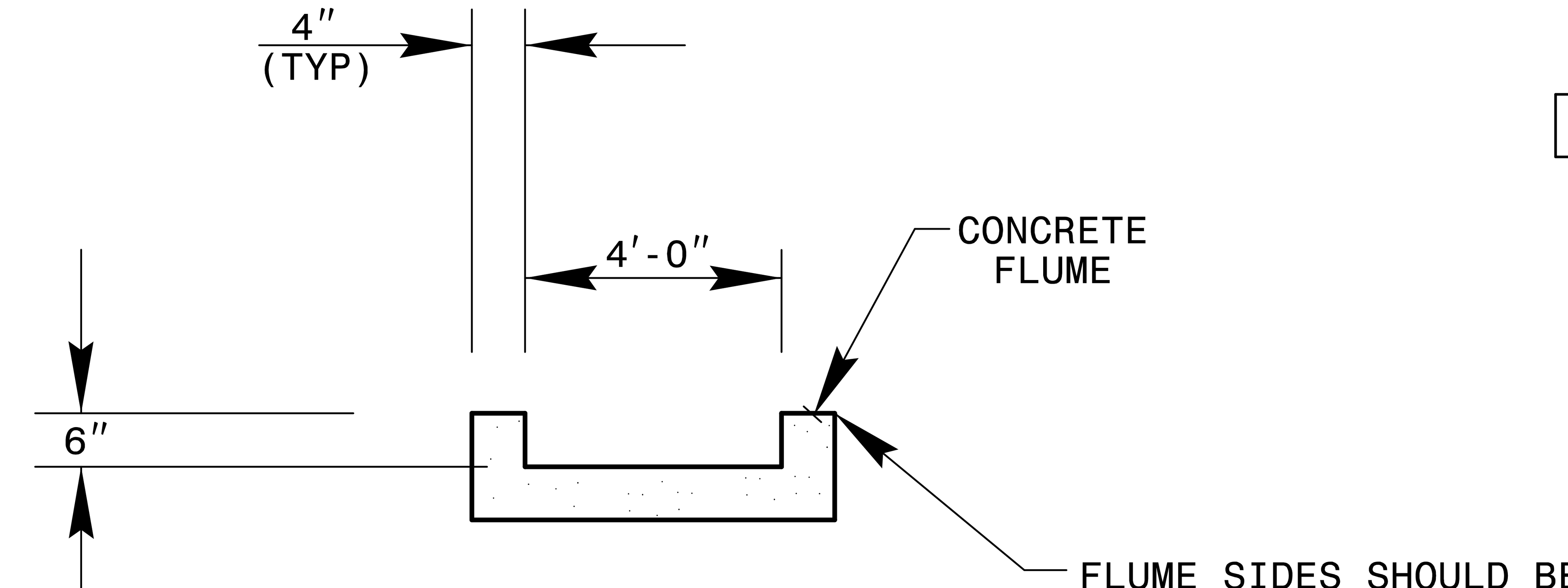
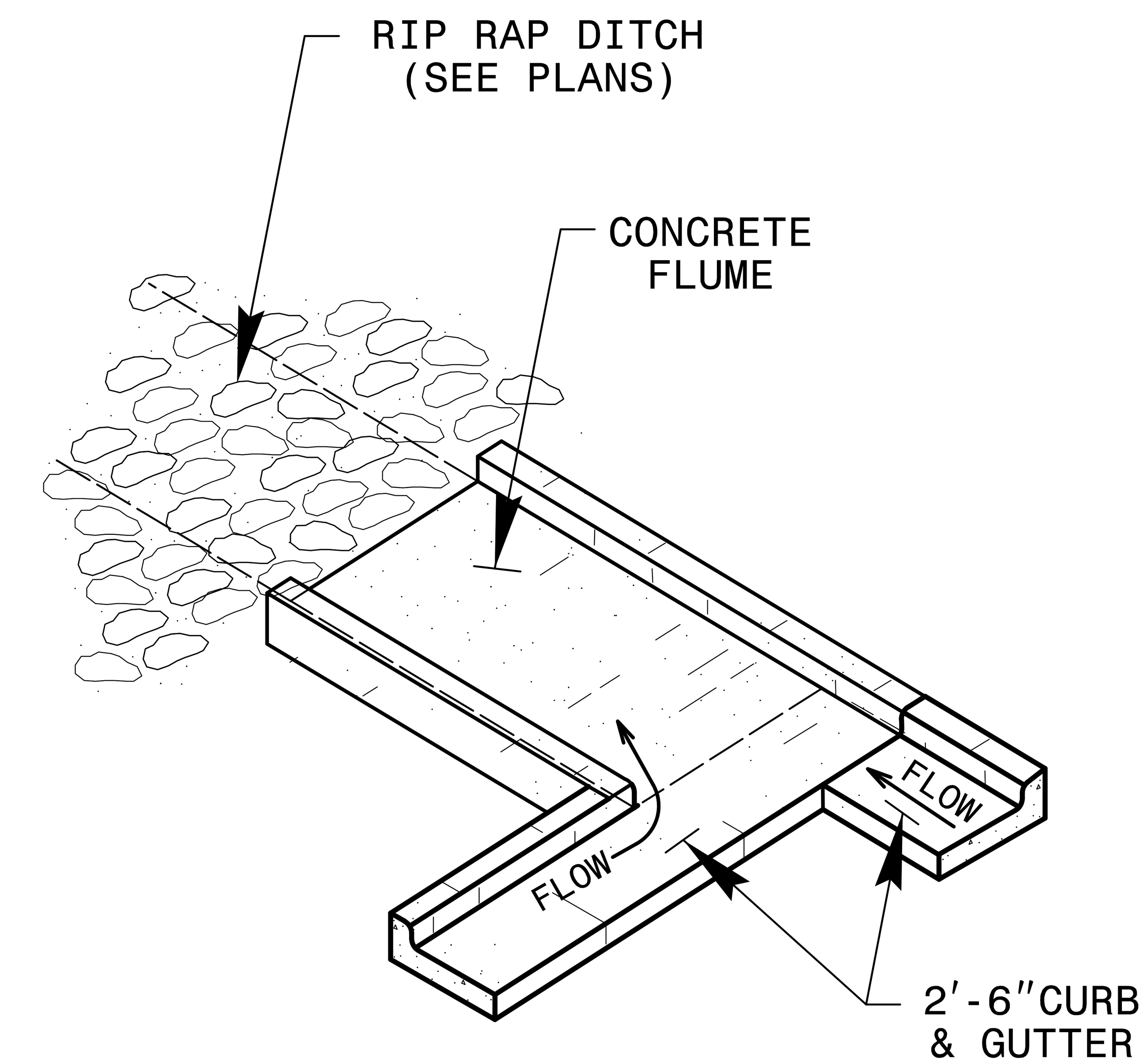
CONCRETE FLUME DETAILS



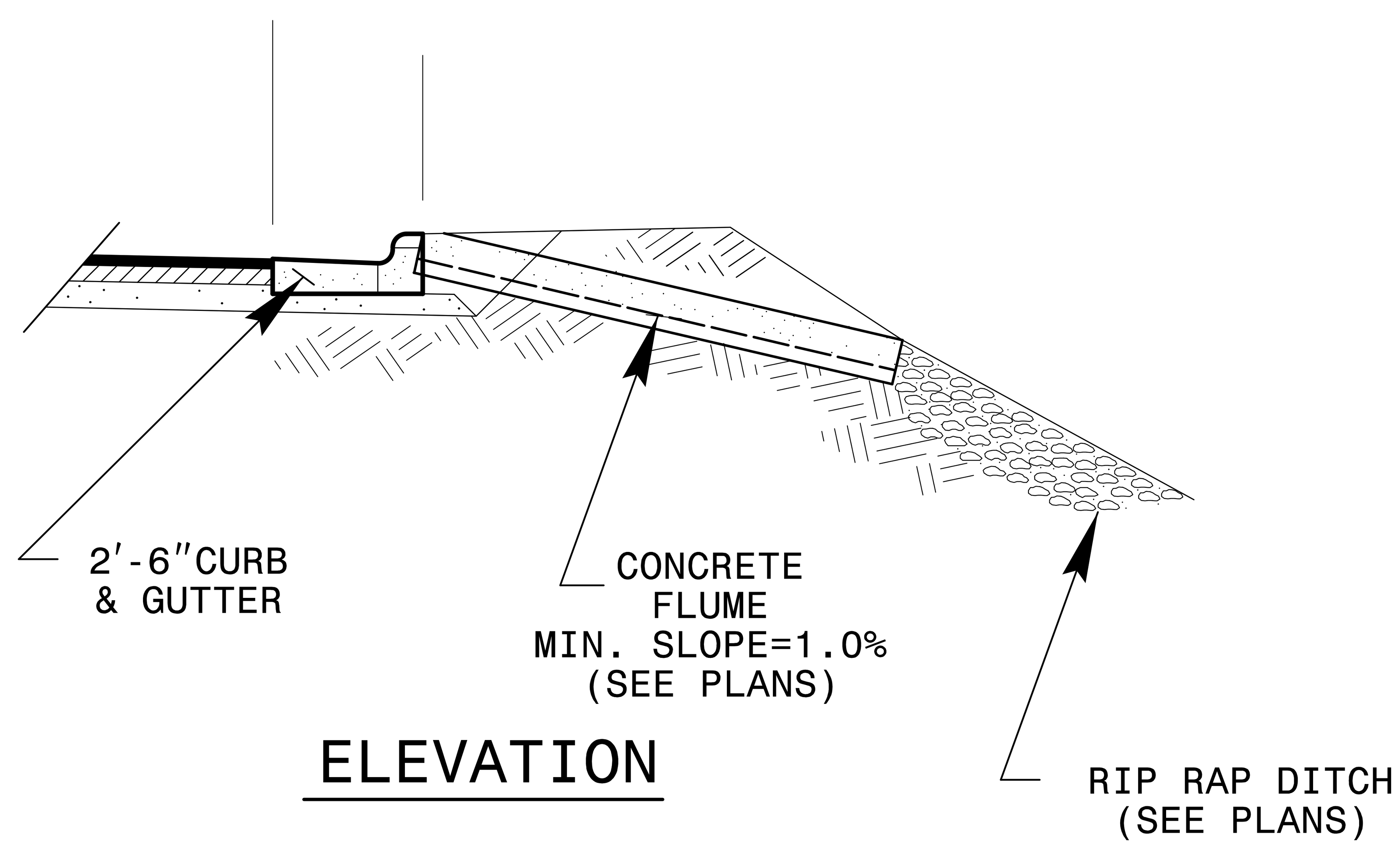
PLAN



SECTION A-A



PERSPECTIVE



ELEVATION

NOTES:

- CONSTRUCT CONCRETE FLUME IN ACCORDANCE WITH THIS DETAIL.
- RIP RAP LINED DITCH WILL BE THE TYPE AND LENGTH SPECIFIED ON PLANS.
- MODIFICATIONS MAY BE MADE AS DIRECTED BY THE ENGINEER.
- THE FOLLOWING SHALL BE CONSTRUCTED IN ACCORDANCE WITH N.C. ROADWAY SPECIFICATIONS, CONCRETE CURB AND GUTTER-SECTION 846, CONCRETE PAVED DITCH- SECTION 850.

5/14/99

2/23/2017
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User:kgray

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-4436MJ	3B/3D

PROJECT ENGINEER

DocuSigned by: Randy Hensgar B5F228A4319F47D...

4/21/2017

NORTH CAROLINA PROFESSIONAL SEAL 16600 ENGINEER RANDALL C. HENSGAR

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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF EARTHWORK
(for Stormwater BMP's)

ITEM DESCRIPTION	UNIT	QUANTITY PROJECT TOTALS
UNCLASSIFIED EXCAVATION	CY	415
ENGINEERED SOIL MEDIA	CY	74
WASHED NO. 57 STONE	TON	35
RIPRAP, CL B	TON	48

SUMMARY FOR EROSION CONTROL
(for Stormwater BMP's)

ITEM DESCRIPTION	UNIT	QUANTITY PROJECT TOTALS
SEDIMENT CONTROL STONE (NO. 5 OR 57)	TON	12
EROSION CONTROL STONE CL. A	TON	22
EROSION CONTROL STONE CL. B	TON	16
SEEDING & MULCHING	ACR	0.2
SODDING	SY	356
WATER	MG	12
1/4" HARDWARE CLOTH	LF	40

DRAINAGE SUMMARY
(for Stormwater BMP's)

ITEM DESCRIPTION	UNIT	QUANTITY PROJECT TOTALS
DRAINAGE DITCH EXCAVATION	CY	5
CONCRETE FLUME	LS	1
REMOVAL OF EXISTING CONCRETE PAVEMENT (CURB REMOVAL)	SY	1
2'-6" CONCRETE CURB AND GUTTER	LF	12
UNDERDRAIN PIPE – 6" HDPE PERFORATED	LF	60
UNDERDRAIN PIPE – 6" HDPE NONPERFORATED	LF	8
18" HDPE	LF	36
6" CAP (THREADED)	EA	2
6" x 6" x 6" HDPE TEE	EA	1
GEOTEXTILE FOR DRAINAGE (TYPE 2, NON-WOVEN)	SY	139
POLYPROPYLENE NONWOVEN GEOTEXTILE FABRIC	SY	149
OUTLET STRUCTURE BOX (840.14)	EA	1
FRAME & GRATE (840.16)	EA	1

LIST OF PIPES

REFERENCE	HDPE PIPE			REMARKS
	6" PERFORATED PIPE	6" SOLID	18"	
BASIN 1	60	8	36	SEE DETAILS ON SHEETS 2D-1 AND 2D-2
TOTALS (FT)	60	8	36	

LIST OF STRUCTURES

STRUCTURE NO.	DESCRIPTION	TOP ELEVATION	INVERT ELEVATION*	D.I. STD. 840.14	D.I. FRAME WITH TWO GRATES STD. 840.16	CONCRETE FLUME	REMARKS
0401	BASIN OUTLET STRUCTURE	2512.0	2505.0	1	1		EXTRA DEPTH BOX: PER EACH (0' THRU 5.0') = 1, 5.0' THRU 10.0'= 2 LIN. FT. (FIELD VERIFY).
							*SEE SHEET 2D-2 FOR PIPE INVERT ELEVS.
0402	FLUME OUTLET FROM PARKING LOT					1	SEE DETAIL ON SHEET 2D-3
TOTALS (FT)				1	1	1	

4/20/2017
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User:kgray

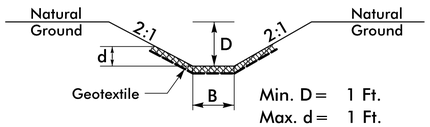
8/17/99

REVISIONS

NOTES:

1. EXISTING SITE FEATURES SHOWN OUTSIDE OF SURVEY LIMIT WERE DRAWN FROM AERIAL IMAGERY.
2. LIDAR CONTOURS SHOWN OUTSIDE OF SURVEY LIMIT WERE GENERATED FROM NCFMP LIDAR BARE EARTH DATA.
3. SURVEY DOES NOT INCLUDE ALL EXISTING DRAINAGE FEATURES FOR SITE. EXISTING DRAINAGE INFORMATION SHOWN IS PARTIAL.
4. SEE 2D SHEETS FOR BASIN DETAILS.
5. ADJUSTMENT OR REPLACMENT OF EXISTING DRAINAGE STRUCTURES TO BE FIELD DETERMINED BY ENGINEER.

DETAIL A
STANDARD BASE DITCH
(Not to Scale)



Min. D = 1 Ft.
Max. d = 1 Ft.
B = 4 Ft.

Type of Liner = Class B Rip–Rap

PROJECT REFERENCE NO.	SHEET NO.
R-4436MJ	4

PROJECT ENGINEER

DocuSigned by: randall kenyon B5F228A4319F47D...
3/1/2017

NORTH CAROLINA PROFESSIONAL SEAL 16600 ENGINEER RANDALL C. KENYON

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

SR 1128 PARK AND RIDE LOT SITE

NC GRID
NAD 83 NA 2011

EXISTING R/W
2500
2505
2510
2515
2520
2525
2530
2535
2540
2545
2550
2555
INV=2504.38'
INV=2502.63'
18" RCP
END NOT LOCATED
US 19W
US 19 E
15" RCP
INV=2509.07'
TOP=2512.49'
DI
CONC
EOP
LIMIT OF TOPOGRAPHIC SURVEY (TYP.)
DI TO BE ADJUSTED (SEE NOTES)
6" HDPE UNDERDRAIN (TYP.)
2'–6" C&G (STD. 846.01)
TOP=2508.84'
INV=2505.59'
18" HDPE
INV. 2514.5'
RIP RAP
CURB OPENING (TO BE CLOSED)
48" WW & ISBW
0401
0402
OUTLET STRUCTURE (SEE SHEET 2D–2)
CONCRETE FLUME (SEE SHEET 2D–3)
3:1 (TYP.)
6:1
DITCH (SEE DETAIL A)
GPS-I MAGNAIL
BST
PARK AND RIDE LOT
CONC
FILTRATION BASIN 1
TOP BERM EL. = 2513.20'
BOTTOM EL. = 2510.50'
TRANSITION BERM EL. = 2511.50' (SEE SH. 2D–2)
SR 1128 POSSUMTROT RD
FOREBAY (SEE SH. 2D–2)

20 10 0 20 40
SCALE

2/23/2017
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User:kgray

8/17/99

REVISIONS

SITE DESCRIPTION	STABILIZATION TIME	TIMEFRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) 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, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH.
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HQW ZONES.

EROSION AND SEDIMENT CONTROL MEASURES

Std. #	Description	Symbol
1633.01	Temporary Rock Silt Check Type-A	
	Rock Inlet Sediment Trap:	
1632.03	Type C	C

THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE AUGUST 3, 2011 AND ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES DIVISION OF WATER RESOURCES.

NOTES:
1. ANY DEVIATION FROM OPTIONS GIVEN WILL REQUIRE PRIOR APPROVAL BY ENGINEER.

2. ADDITIONAL EROSION CONTROL DEVICES MAY NEED TO BE INSTALLED AS DIRECTED BY ENGINEER.

3. ALL DISTURBED AREAS (OUTSIDE OF SOD AREA) ARE TO BE SEEDED/STABILIZED.

SEEDING SCHEDULE SHOULDERS, SIDE DITCHES, SLOPES (MAX. 3:1)

DATE	TYPE	PLANTING RATE
AUG 15-NOV 1	TALL FESCUE	300 LBS/ACRE
NOV 1-MAR 1	TALL FESCUE AND ABRUZZI RYE	300 LBS/ACRE
MAR 1-APR 15	TALL FESCUE	300 LBS/ACRE
APR 15-JUNE 20	HULLED COMMON BERMUDAGRASS	25 LBS/ACRE
JUNE 30-AUG 15	TALL FESCUE AND ***BROWNTOP MILLET ***OR SORGHUM-SUDAN HYBRIDS	35 LBS/ACRE

SLOPES (3:1 TO 2:1)

DATE	TYPE	PLANTING RATE
MAR 1-JUN 1	SERICEA LESPEDEZA (SCARIFIED) AND	50 LBS/ACRE
MAR 1-APR 15	ADD TALL FESCUE AND	120 LBS/ACRE
MAR 1-JUNE 30	ADD WEEPING LOVEGRASS OR	10 LBS/ACRE
MAR 1-JUNE 30	ADD HULLED COMMON BERMUDAGRASS	25 LBS/ACRE
JUNE 1-SEP 1	***TALL FESCUE AND ***BROWNTOP MILLET ***OR SORGHUM-SUDAN HYBRIDS	120 LBS/ACRE 35 LBS/ACRE 30 LBS/ACRE
SEP 1-MAR 1	SERICEA LESPEDEZA (UNHULLED-UNSCARIFIED) AND TALL FESCUE	70 LBS/ACRE 120 LBS/ACRE
NOV 1-MAR 1	ADD ABRUZZI RYE	25 LBS/ACRE

CONSULT EROSION CONTROL ENGINEER OR SOIL CONSERVATION SERVICE FOR ADDITIONAL INFORMATION CONCERNING OTHER ALTERNATIVES FOR VEGETATION OF DENUDED AREAS. THE ABOVE VEGETATION RATES ARE THOSE WHICH DO WELL UNDER LOCAL CONDITIONS; OTHER SEEDING RATES COMBINATIONS ARE POSSIBLE.

***TEMPORARY-RESEED ACCORDING TO OPTIMUM SEASON FOR DESIRED PERMANENT VEGETATION. DO NOT ALLOW TEMPORARY COVER TO GROW OVER 12 INCHES IN HEIGHT BEFORE MOWING, OTHERWISE FESCUE MAY BE SHADED OUT.

EROSION CONTROL PLAN

NAD 83

LIMIT OF DISTURBANCE

PROJECT REFERENCE NO.	SHEET NO.
R-4436MJ	EC-1

PROJECT ENGINEER

DocuSigned by: randall kenyon B5F228A4319F47D...
3/1/2017

NORTH CAROLINA PROFESSIONAL SEAL 16600 ENGINEER RANDALL C. KENYON

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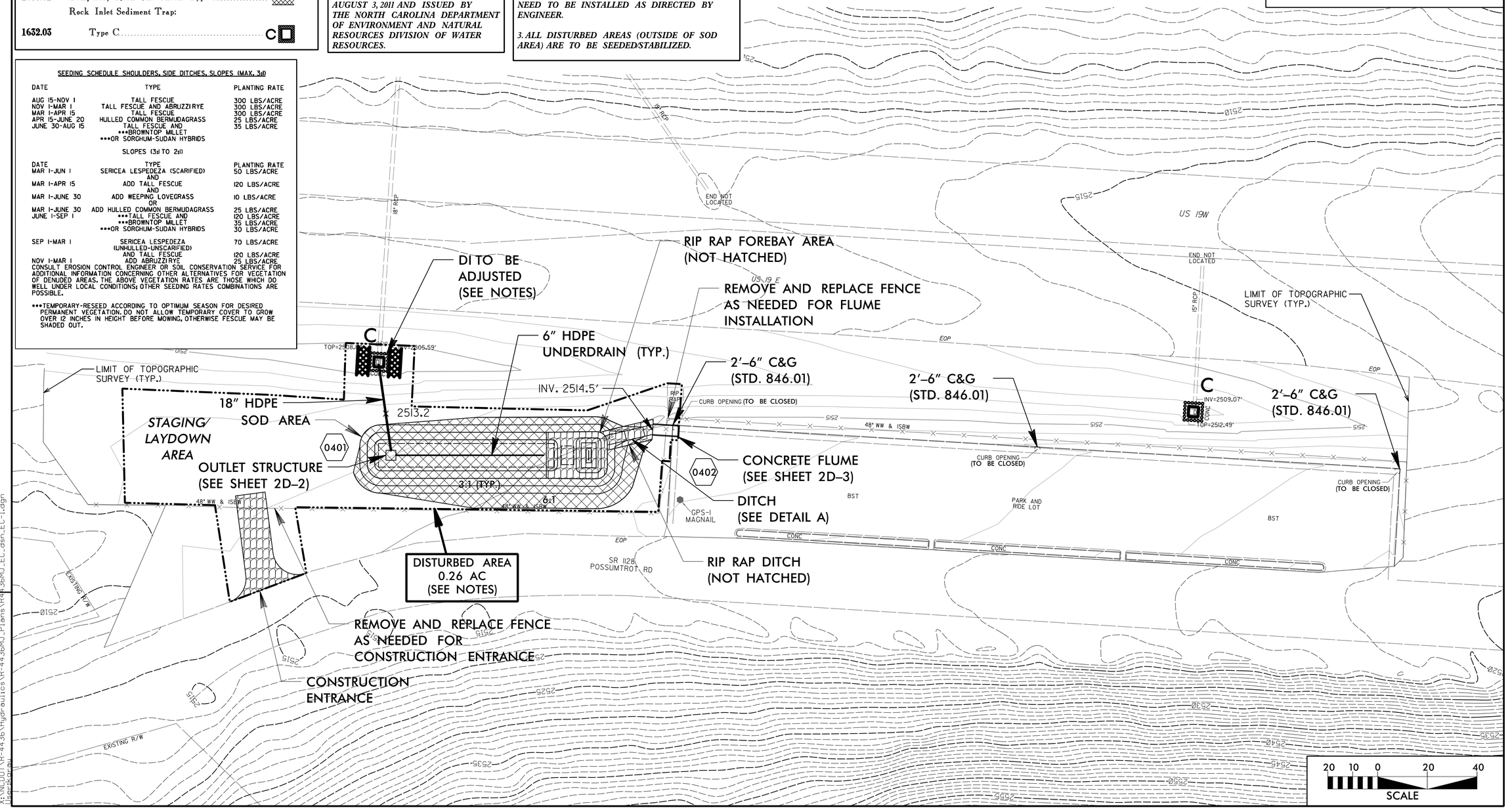
SR 1128 PARK AND RIDE LOT SITE



PROJECT REFERENCE NO.	SHEET NO.
R-4436MJ	TC-1

PROJECT ENGINEER

DocuSigned by: randall henegar
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3/1/2017

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 16600 RANDALL C. HENEGAR

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TRAFFIC CONTROL PLAN

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

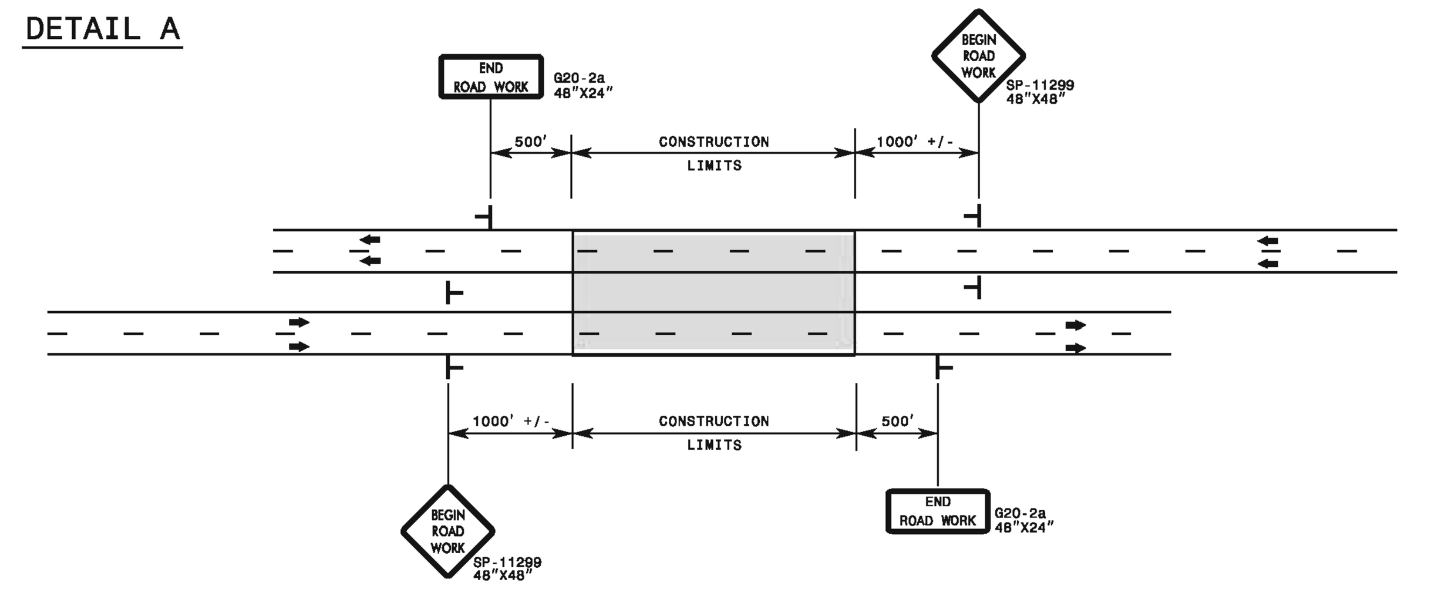
1-12

ENGLISH STANDARD DRAWING FOR **WORK ZONE ADVANCE WARNING SIGNS FOR FACILITIES ≤ 55 MPH**

SHEET 2 OF 3

1101.01

DETAIL A



GENERAL NOTES

1- USE FLUORESCENT ORANGE SHEETING (TYPE VII OR HIGHER) ON ALL ADVANCED WORK ZONE SIGNS.

2- DO NOT INSTALL ADVANCE WARNING SIGNS MORE THAN 3 DAYS PRIOR TO BEGINNING OF WORK UNLESS COVERED.

3- SIGNS SHOWN ARE REQUIRED FOR WORK ZONES THAT WILL REMAIN IN EFFECT OVERNIGHT. FOR SHORT-TERM DAILY MAINTENANCE TYPE OPERATIONS, THIS SIGNING APPLICATION IS OPTIONAL; MAY USE ONLY APPLICABLE ROADWAY STANDARD DRAWINGS INSTEAD. HOWEVER, IF THIS SIGNING APPLICATION IS USED, SIGNS MAY BE PORTABLE MOUNTED.

4- ALL SIGN SPACING DIMENSIONS ARE APPROXIMATE, FIELD ADJUST AS NECESSARY OR AS DIRECTED.

5- USE 3LB STEEL U-CHANNEL POST OR 4" X 4" WOOD POST FOR ALL WORK ZONE SIGNS. 3LB STEEL U-CHANNEL POSTS MUST MEET THE REQUIREMENTS OF STANDARD SPECIFICATION SECTION 1094-1(B), MAY BE GALVANIZED STEEL, OR MAY BE PAINTED GREEN BY THE POST MANUFACTURER. SQUARE STEEL TUBING POSTS HAVING EQUIVALENT STRENGTH OF THE 3 LB STEEL U-CHANNEL POST ARE ALSO ACCEPTABLE FOR USE. ERECT SIGNS PER ROADWAY STANDARD DRAWING 1110.01. PAYMENT FOR WOOD POSTS, 3LB STEEL U-CHANNEL AND SQUARE STEEL TUBING POSTS WITH SIGNS WILL BE MADE ACCORDING TO STANDARD SPECIFICATION "WORK ZONE SIGNS" SECTION 1110.

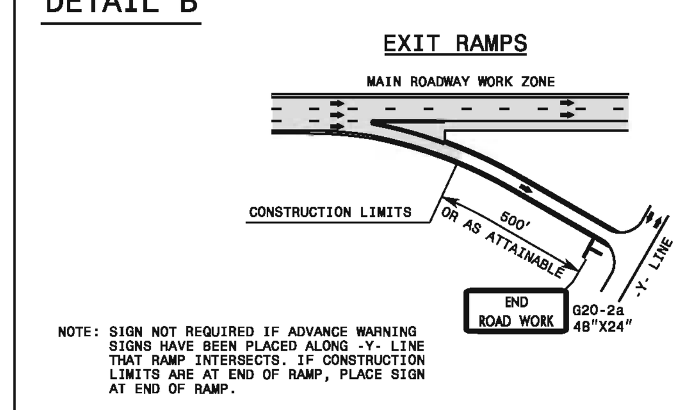
6- WHEN NECESSARY, USE SPLICING IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1110.01.

7- DO NOT BACK BRACE SIGN SUPPORTS.

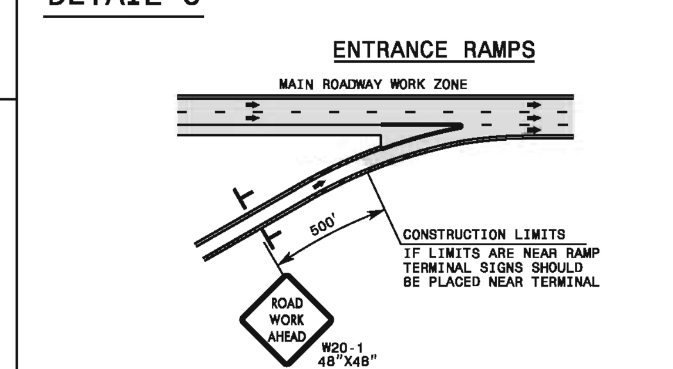
8- TWO-WAY UNDIVIDED ADVANCE WARNING SIGN CONFIGURATION MAY BE USED ON URBAN MULTI-LANE FACILITIES WHERE CONDITIONS LIMIT THE USE OF DUAL MOUNTED SIGNS AS DETERMINED BY THE ENGINEER.

LEGEND
- ⊢ STATIONARY SIGN
- ← DIRECTION OF TRAFFIC FLOW

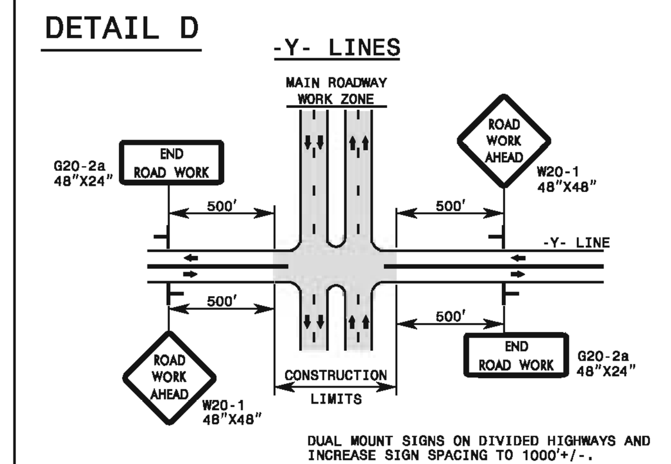
DETAIL B



DETAIL C



DETAIL D



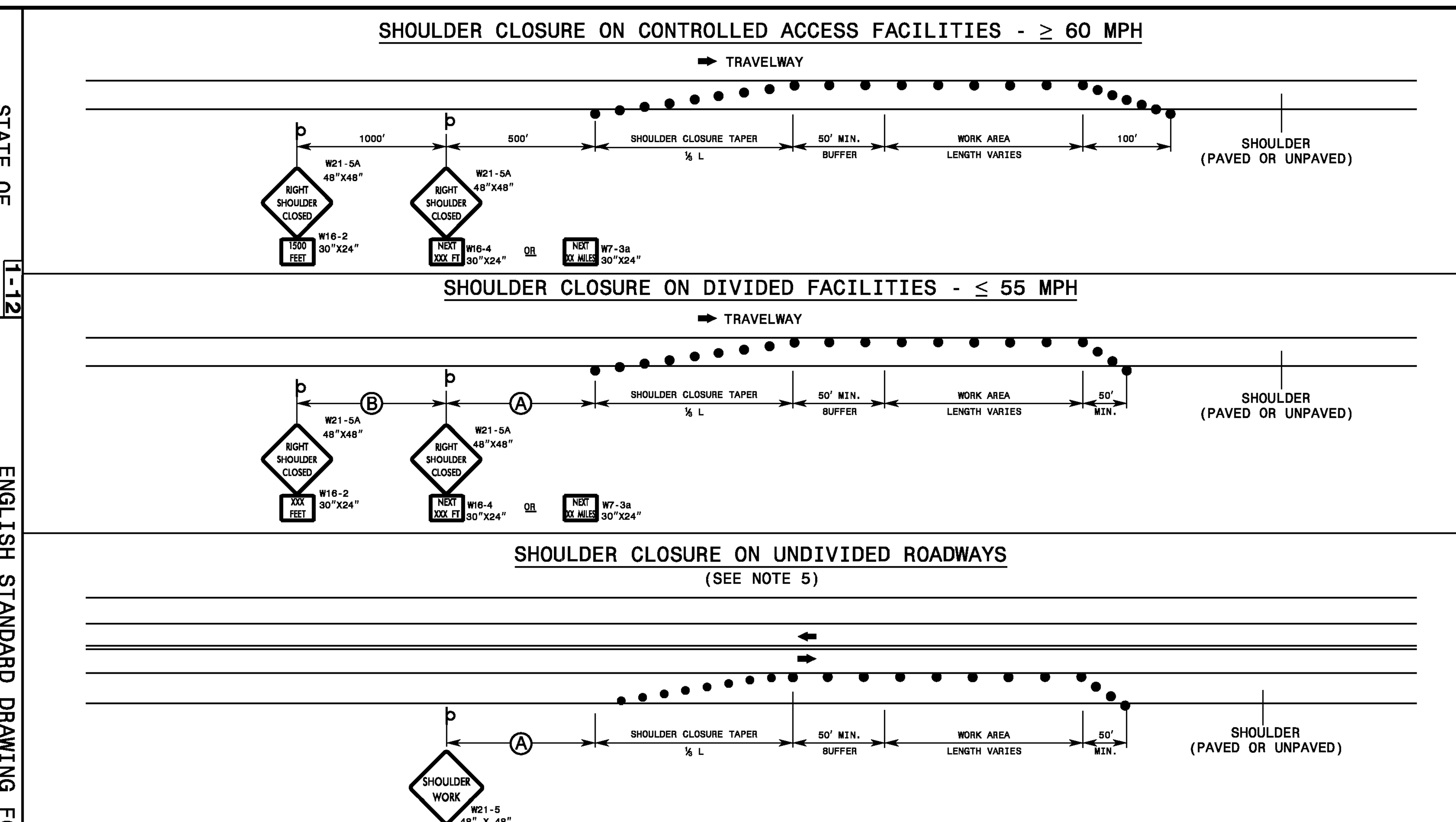
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-12

ENGLISH STANDARD DRAWING FOR **TEMPORARY SHOULDER CLOSURES**

SHEET 1 OF 1

1101.04



GENERAL NOTES

1- PLACE SHOULDER CLOSURE SIGNS ON THE SAME SIDE AS THE SHOULDER THAT IS CLOSED.

2- PLACE DRUMS IN THE SHOULDER TAPER AT THE MAXIMUM SPACING EQUAL IN FEET TO THE POSTED SPEED LIMIT. THE MAXIMUM SPACING OF DRUMS ALONG THE WORK AREA IS EQUAL IN FEET TO 2 TIMES THE POSTED SPEED LIMIT.

3- USE STATIONARY SIGNS FOR LONG TERM OPERATIONS (LONGER THAN 3 DAYS).

4- REFER TO STD. 1101.11 FOR "L" DISTANCE AND SIGN SPACING.

5- THE TWO-LANE, TWO-WAY DRAWING MAY BE APPLIED TO UNDIVIDED, MULTI-LANE FACILITIES.

LEGEND
- ● DRUM
- STATIONARY OR PORTABLE SIGN
- ➡ DIRECTION OF TRAFFIC FLOW

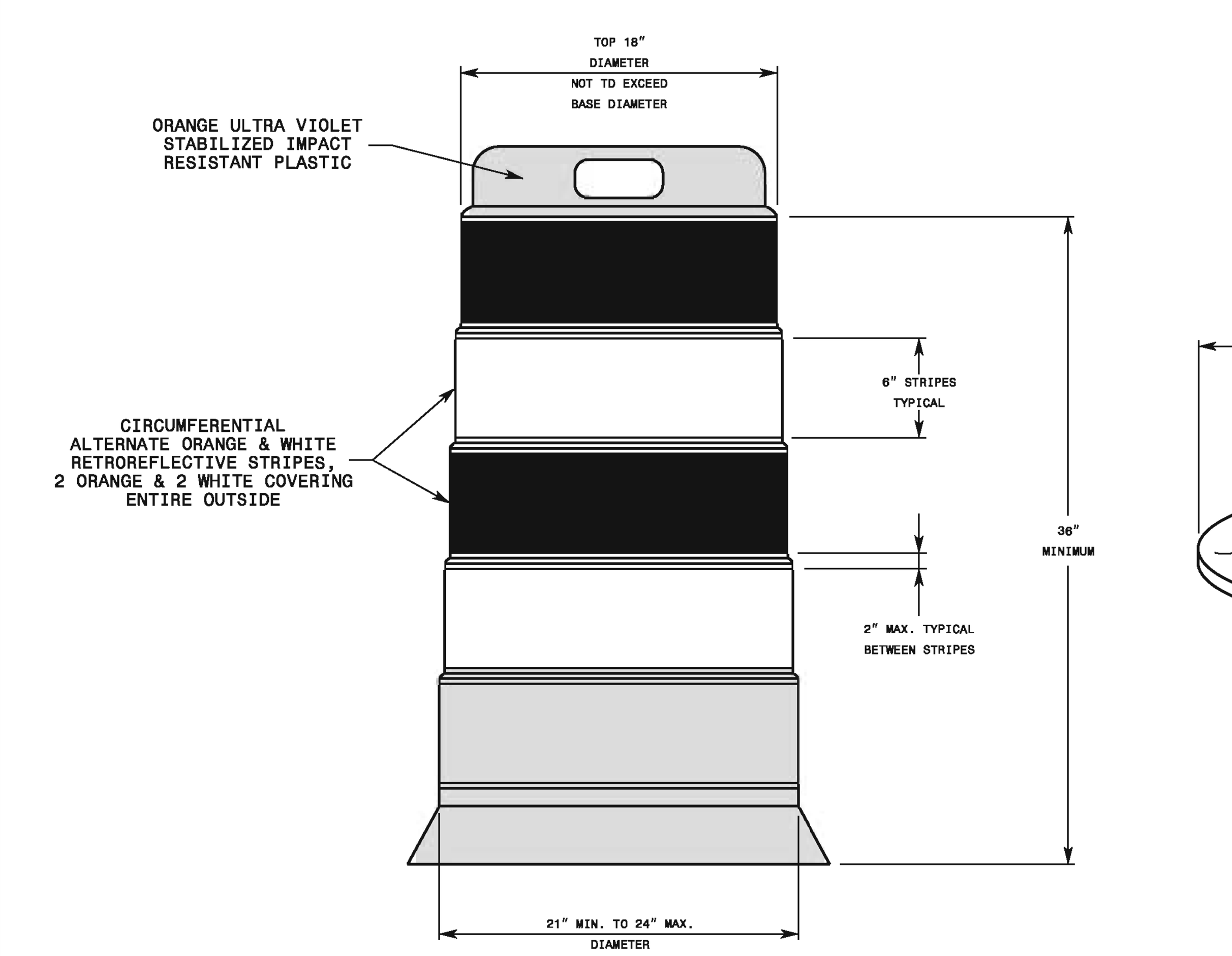
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-12

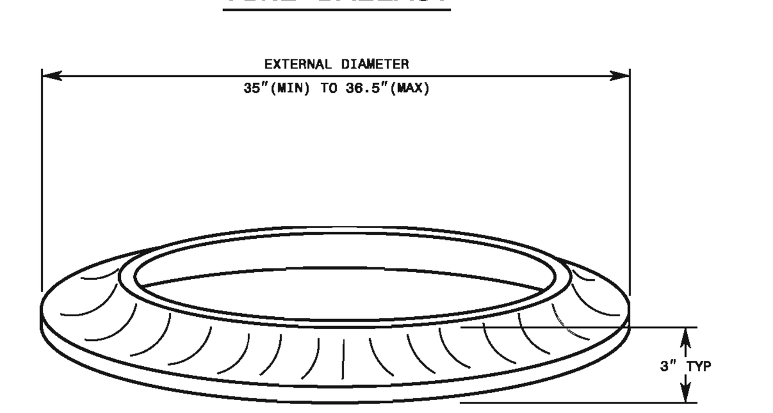
ENGLISH STANDARD DRAWING FOR **DRUM**

SHEET 1 OF 1

1130.01



TIRE BALLAST



ALL RUBBER COLLARS MUST BE BLACK IN COLOR AND FREE OF ANY COLORED PAINT

BALLAST COLLAR SHOULD HAVE GOOD CONTACT WITH THE BARREL FLANGE AND BALLAST OUTER EDGE MUST LAY FLAT WITH ROAD SURFACE

DRUMS THAT USE TIRE BALLASTS ARE MANUFACTURED SPECIFICALLY FOR THAT PURPOSE. DO NOT USE TIRE BALLASTS WITH OTHER DRUM DESIGNS.

GENERAL NOTES

1- BALLASTING SHALL BE ACHIEVED BY THE SAND BAG, TIRE-SIDEWALL, OR PREFORMED WEIGHTED BASE METHODS. USE THE TIRE BALLAST AS SPECIFIED BY THE MANUFACTURER. DO NOT PLACE BALLAST ON TOP OF THE DRUM.

2- IF NECESSARY PLACE THE NAME OF THE AGENCY, CONTRACTOR, OR SUPPLIER ON NON-RETROREFLECTIVE DRUM SURFACES. SHOW THE LETTERS AND NUMBERS USING A NON-RETROREFLECTIVE COLOR AND NOT OVER 2" IN HEIGHT.

3- USE TYPE 3 OR HIGHER HIGH INTENSITY PRISMATIC SHEETING.

4- SEE THE DEPARTMENT'S APPROVED PRODUCT LIST AT https://apps.dot.state.nc.us/vendor/approvedproducts.

5- REFER THE STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES FOR ADDITIONAL INFORMATION.

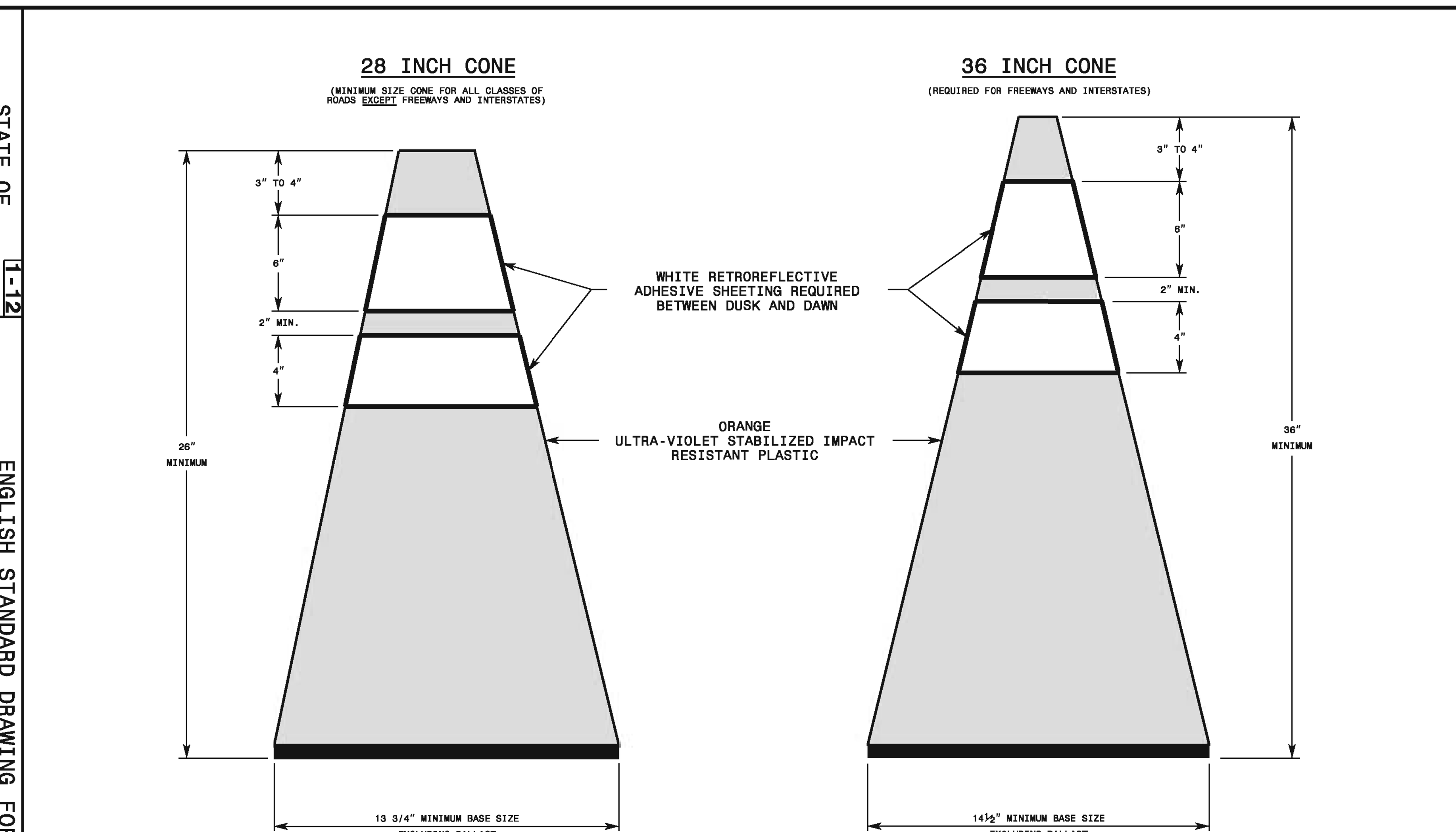
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

1-12

ENGLISH STANDARD DRAWING FOR **CONES**

SHEET 1 OF 1

1135.01



GENERAL NOTES

1- ACHIEVE BALLASTING BY USING SPECIAL WEIGHTED BASES SUCH AS SAND BAG RINGS, DOUBLING CONES, OR BASES THAT CAN BE FILLED WITH BALLAST. SEVENTY PERCENT OF THE WEIGHT OF THE CONE MUST BE IN THE BASE. USE BALLAST'S THAT DO NOT PRESENT A HAZARD WHEN STRUCK.

2-SEE THE DEPARTMENT'S APPROVED PRODUCTS LIST AT https://apps.dot.state.nc.us/vendor/approvedproducts.

3-USE TYPE IV OR HIGHER HIGH INTENSITY PRISMATIC SHEETING.

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