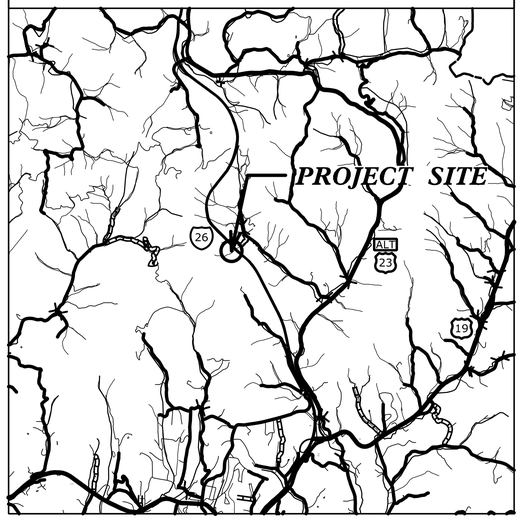
09/08/99

TIP PROJECT: R–4436MH

CONTRACT: 34625.2.62

See Sheet 1A For Index of Sheets

NORTH CAROLINA



VICINITY MAP

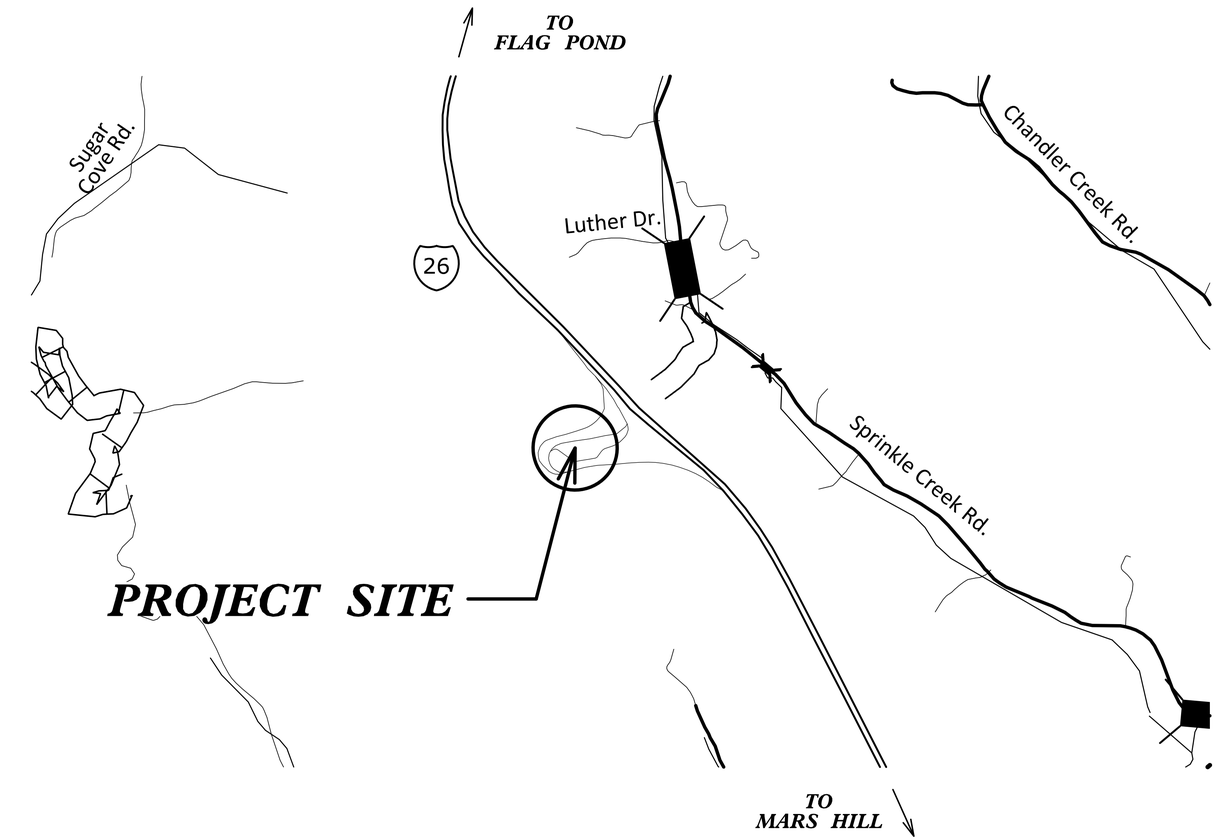
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

MADISON COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R–4436MH	1	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	
34625.2.62	STP–0026(012)	CONSTRUCTION	

LOCATION: WELCOME CENTER OFF I–26 EASTBOUND BETWEEN US–23 ALT & US–19

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



NAD 83/NA 2011

NORTH CAROLINA PROFESSIONAL SEAL 16600 ENGINEER RANDALL C. HENEGAR

DocuSigned by: randall henegar 3/1/2017

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES

SCALE VARIES
SEE PLANS

NCDOT Highway Stormwater PROGRAM

LETTING DATE:
MAY 3, 2017

Prepared by

TGS ENGINEERS
706 HILLSBOROUGH ST
RALEGH, NC 27603
PH (919) 773–8887
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

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

PROJECT ENGINEER

2/23/2017
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User:kgray

8/17/99

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

PROJECT ENGINEER

DocuSigned by: randall kemegar
3/1/2017

NORTH CAROLINA PROFESSIONAL SEAL 16600 ENGINEER RANDALL C. HEMEGAR

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INDEX OF SHEETS

SHEET NUMBER	SHEET DESCRIPTION
1	TITLE SHEET
1A	INDEX OF SHEETS, GENERAL NOTES, AND LIST OF STANDARD DRAWINGS
1B	CONVENTIONAL SYMBOLS
1C	SURVEY CONTROL
2D-1	BMP DETAILS 1
2D-2	BMP DETAILS 2
2D-3	DETAIL OF OUTLET CONTROL STRUCTURE
2D-4	TRASH RACK DETAILS
3B/3D	EARTHWORK, DRAINAGE & EROSION CONTROL SUMMARIES
4	PLAN SHEET
EC-1	EROSION CONTROL PLAN
TC-1	TRAFFIC CONTROL PLAN

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
876.01	RIP RAP IN CHANNELS
876.02	GUIDE FOR RIP RAP AT PIPE OUTLETS
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. PROVIDE SIGNAGE AT WELCOME CENTER EXIT AND TRUCK PARKING AREA 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 (IF NECESSARY).
2. INSTALL TEMPORARY EROSION CONTROL DEVICES AS SHOWN ON PLANS.
3. CONSTRUCT FILTRATION BASINS AND OTHER IMPROVEMENTS.
4. FOLLOW SEEDING/ MULCHING GUIDELINES ON THE PLANS TO STABILIZE ALL REMAINING DISTURBED SURFACES.
5. INSPECT ALL INLETS, PIPES, AND OUTLETS FOR SEDIMENT AND REMOVE SEDIMENT AS REQUIRED.
6. 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.
2. IF LARGE BOULDERS ARE ENCOUNTERED DURING CONTRUCTION OF BASIN, CONSULT DIVISION FOR REMOVAL METHOD.

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.

2/23/2017
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tshelton

12/2/2016

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

PROJECT ENGINEER

NORTH CAROLINA PROFESSIONAL SEAL 16600 ENGINEER RANDALL C. HENEGAR

DocuSigned by: randall henegar 3/1/2017

SURVEY CONTROL

NC GRID
NAD 83 NA 2011

POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
101	791561.572	950457.516	2918.17	GPS-1
102	791358.221	950140.310	2915.78	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

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY OTHERS FOR MONUMENT "GPS-2"
WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF
NORTHING: 791358.221(ft) EASTING: 950140.310(ft)
ELEVATION: 2915.78(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99979651
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

CONC. SIDEWALK
EOP
CAR PARKING AREA
TRUCK PARKING AREA
LANDSCAPE ISLAND
LANDSCAPED AREA
TREES
BST
W/LT
GPS-1 MAGNAIL
GPS-2 MAGNAIL
I-26 E
RAMP TO I-26 E
TOP=2915.53'
INV=2910.67'
CB
18" RCP
END NOT LOCATED
CONC DI
TOP=2911.60'
INV=2910.14'
TOP=2914.97'
15" RCP
INV=2909.44'
INV=2909.30'
TOP=2917.39'
INV=2914.12'
15" RCP
TOP=2873.23'
DI CONC
8" MAPLE
6" MAPLE
10" EVERGREEN
10" MAPLE
4" EVERGREEN
6" EVERGREEN
CONC HW
INV=2900.52'
24" RCP
INV=2903.63'
36" RCP
INV=2898.23'
INV=2905.86'
INV=2906.22'
INV=2906.49'
INV=2906.52'
TOP=2915.08'
TOP=2914.76'
INV=2903.88'
INV=2907.87'
INV=2907.54'
TOP=2915.34'

30 15 0 30 60
SCALE

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-4436MH	2D-1

PROJECT ENGINEER

DocuSigned by:
randall henegar
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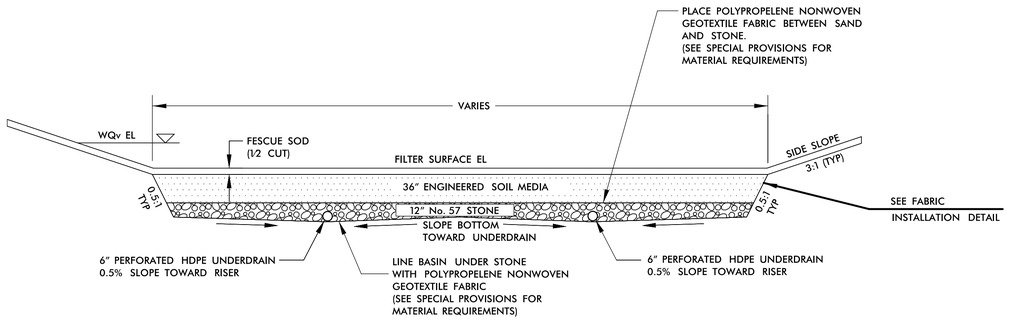
BMP DETAILS 1



TYPICAL SECTION – FILTER BASIN MEDIA

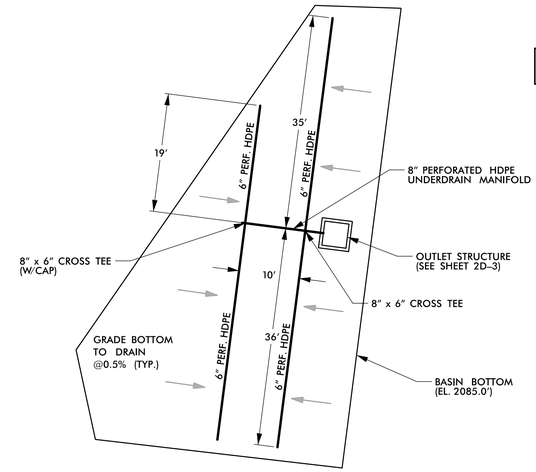
N.T.S.

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 DETAIL (THIS SHEET) FOR UNDERDRAIN CONFIGURATION.
4. FILTRATION BASIN MEDIA SHALL CONSIST OF THE FOLLOWING BLEND:

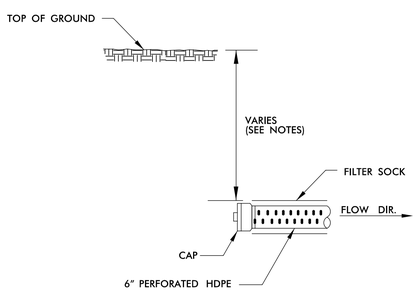
RECYCLED EXPANDED SLATE FINES	80%
APPROVED COMPOST ORGANIC COMPONENT	20%

SEE SPECIAL PROVISIONS FOR ENGINEERED SOIL MEDIA REQUIREMENTS.



UNDERDRAIN LAYOUT DETAIL

N.T.S

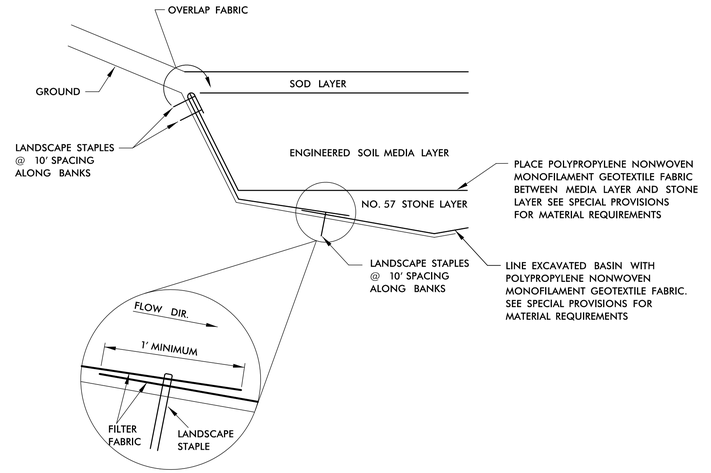


NOTES:

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

BMP DETAILS 2

PROJECT REFERENCE NO.	SHEET NO.
R-4436MH	2D-2

PROJECT ENGINEER

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

NORTH CAROLINA PROFESSIONAL SEAL 16600 ENGINEER RANDALL C. KENYON

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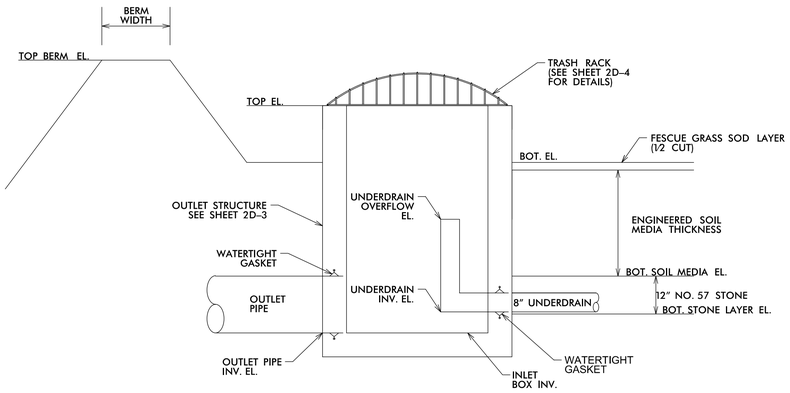


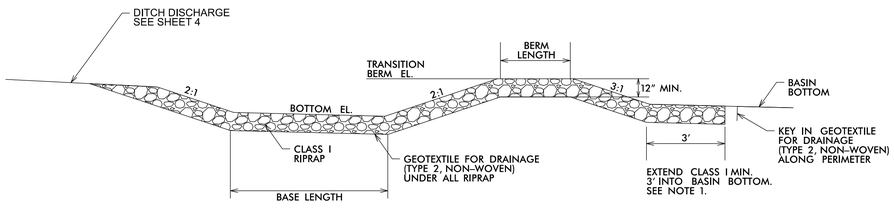
NOTES:

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	BOX / OUTLET PIPE INVERT	UNDERDRAIN OVERFLOW EL.
1	2888.0	2890.0	15.0′	2885.0	2882.0	36″	2881.0	2881.0	2880.0	2883.5



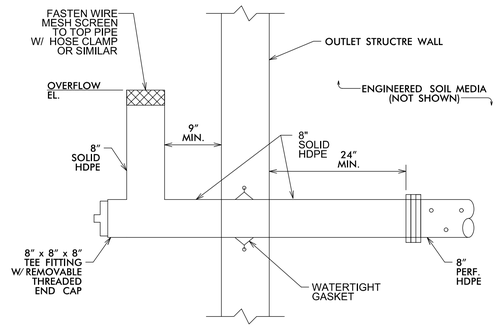
FILTRATION BASIN FOREBAY

N.T.S.

NOTES:

1. DO NOT PLACE ENGINEERED SOIL MEDIA UNDERNEATH RIPRAP.
2. ELEVATIONS INDICATE TOP OF RIPRAP.

BASIN REF.	TOP TRANSITION BERM	BERM LENGTH	BOTTOM EL.	BASE LENGTH	LINING
1	2887.0	5.00′	2884.0	23.0′	CLASS I RIPRAP



UNDERDRAIN UPTURNED ELBOW / OVERFLOW

N.T.S.

5/14/99

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

PROJECT ENGINEER

DocuSigned by: Randy Hinegar B5F228A4319F47D...

4/21/2017

NORTH CAROLINA PROFESSIONAL SEAL 16600 ENGINEER RANDALL C. HINEGAR

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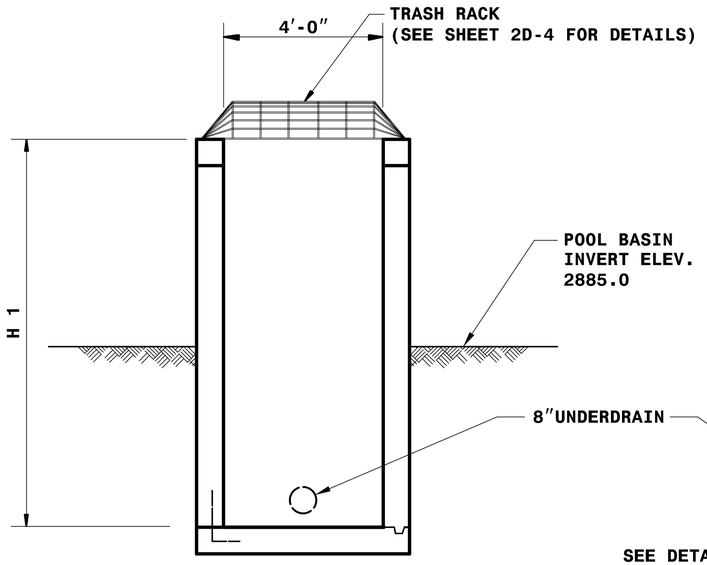
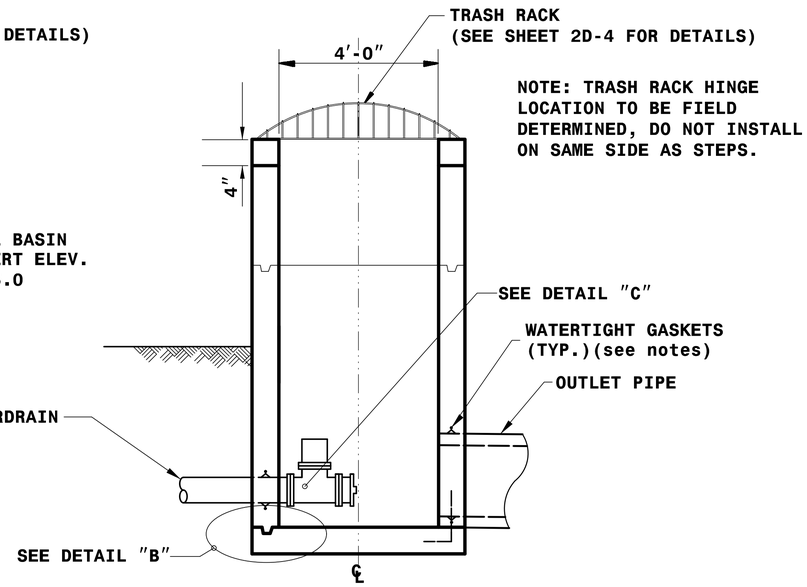
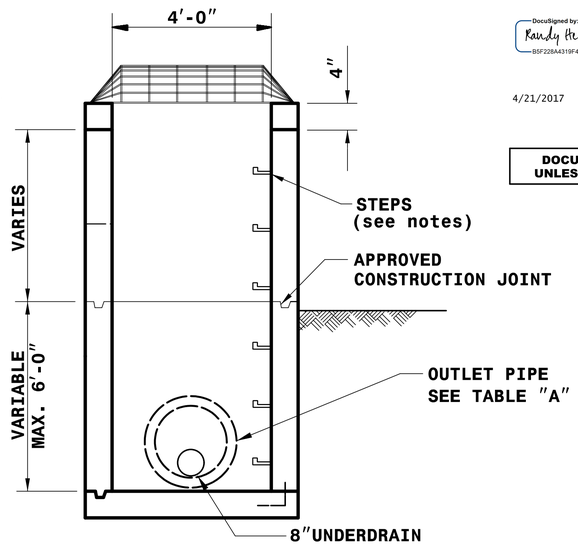


STRUCTURE SIDE 1



STRUCTURE SIDE 2



STRUCTURE SIDE 3

TABLE ″A″

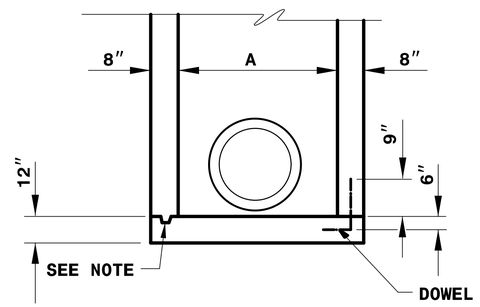
MINIMUM DIMENSIONS FOR OUTLET CONTROL STRUCTURE

BASIN	PIPE D	OUTLET PIPE INVERT	BOX HEIGHT H1	TOP OF BOX ELEV.	UNDER DRAIN INVERT		
1	36″	2880.0	8′-0″	2888.0′	2881.0′		

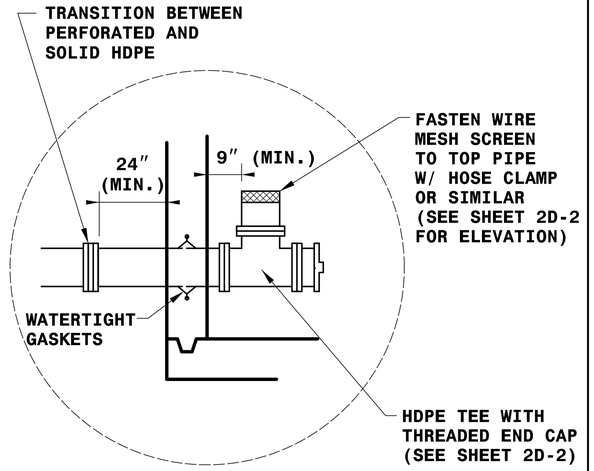
PIPE D	″A″	BARS-X		BARS-Y		″F″	TOTAL CONCRETE QUANTITIES
		QTY.	LENGTH	QTY.	LENGTH		
36″	4′-0″	6	5′-1″	6	5′-1″	5′-4″	4.8 CU.YDS.

GENERAL NOTES:

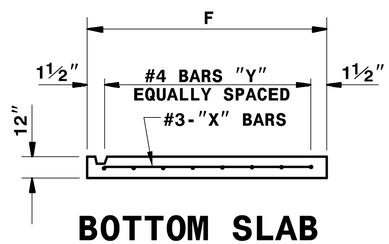
* CHANGES IN ELEVATIONS MUST BE APPROVED BY THE ENGINEER.
* CLASS 'B' CONCRETE TO BE USED THROUGHOUT. PRECAST CONCRETE STRUCTURES TO BE SUBMITTED FOR APPROVAL. USE STD 840.45.
* OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2 INCH KEYWAY, OR #4 BAR DOWELS AT 12 INCH CENTERS, AS DIRECTED BY THE ENGINEER.
* FORMS ARE TO BE USED FOR THE CONSTRUCTION OF THE BOTTOM SLAB.
* IF REINFORCED CONCRETE PIPE IS SET IN BASE SLAB OF BOX, ADD TO BASE AS SHOWN ON STANDARD 840.00.
* ALL DRAWDOWN STRUCTURES OVER 3 FEET IN DEPTH TO BE PROVIDED WITH STEPS 12 INCH ON CENTERS. STEPS SHALL BE INSTALLED IN ACCORDANCE WITH STANDARD 840.66.
* PROVIDE WATER TIGHT CONNECTIONS USING WATERSTOP OR COMPRESSION GASKET APPROVED BY ENGINEER ON ALL OUTLET STRUCTURE PENETRATIONS.



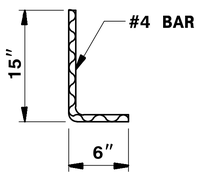
DETAIL 'B'



DETAIL 'C'



BOTTOM SLAB



DOWEL

DETAIL OF OUTLET CONTROL STRUCTURE

THIS DETAIL HAS BEEN MODIFIED FROM NCDOT PROJECT SERVICES UNIT-STANDARDS AND SPECIAL DESIGN 'DETAIL OF OUTLET CONTROL STRUCTURE' PROVIDED BY NCDOT HYDRAULICS UNIT, HSP.

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-4436MH	2D-4

PROJECT ENGINEER

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

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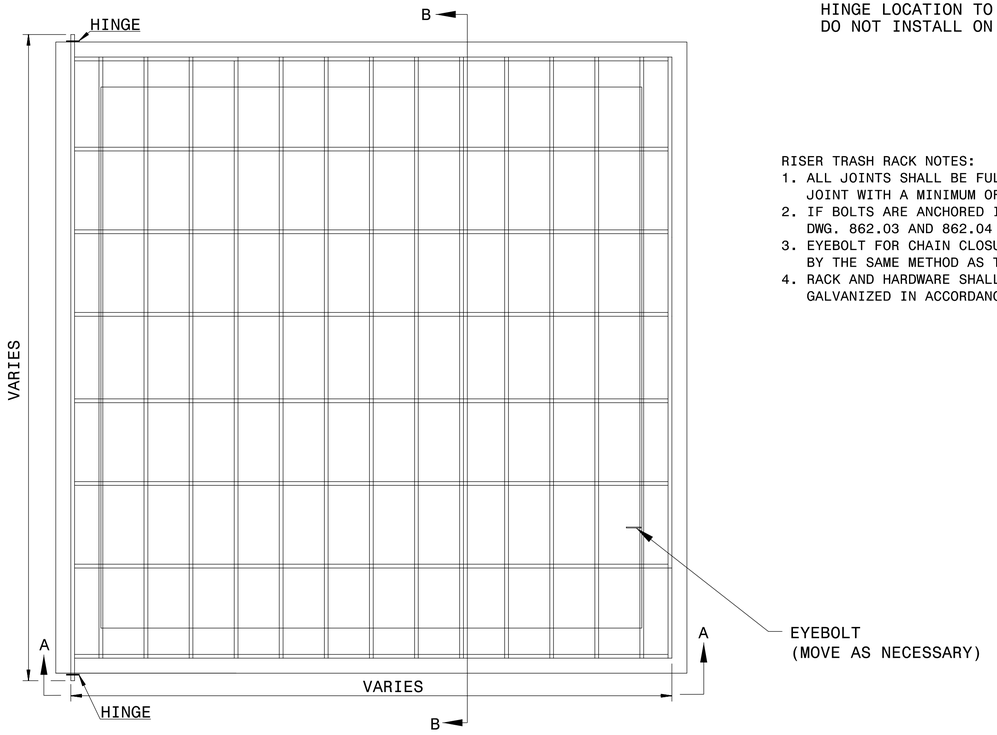
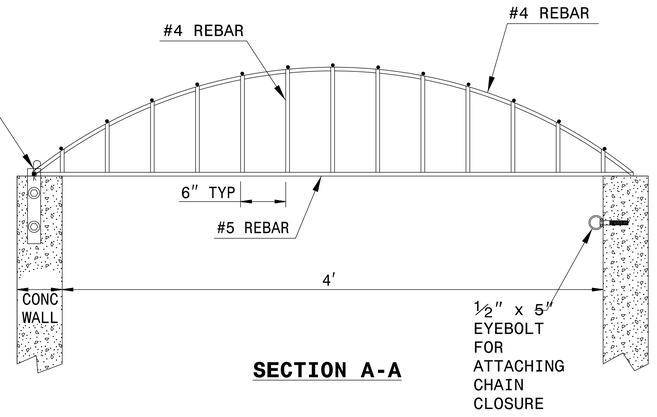
TRASH RACK DETAILS



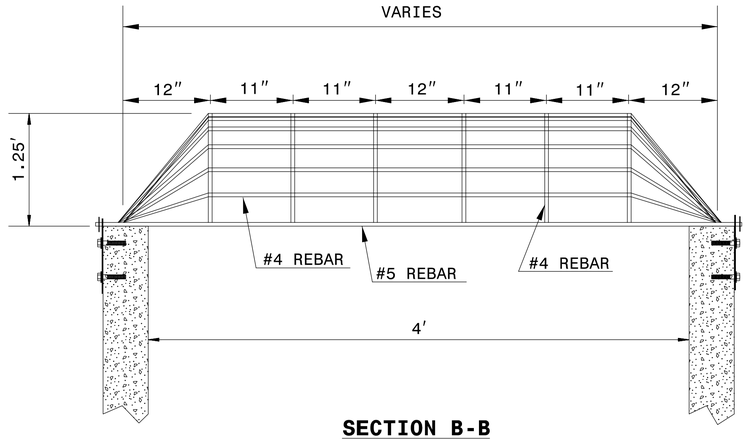
PLAN

HINGE LOCATION TO BE FIELD DETERMINED,
DO NOT INSTALL ON SAME SIDE AS STEPS

RISER TRASH RACK NOTES:
1. ALL JOINTS SHALL BE FULLY WELDED AROUND JOINT WITH A MINIMUM OF A ¼" BEAD.
2. IF BOLTS ARE ANCHORED IN CONCRETE, FOLLOW STD. DWG. 862.03 AND 862.04 FOR ANCHORING PROCEDURE.
3. EYEBOLT FOR CHAIN CLOSURE SHALL BE INSTALLED BY THE SAME METHOD AS THE HINGE PLATE BOLTS.
4. RACK AND HARDWARE SHALL BE ALUMINUM OR REBAR AND GALVANIZED IN ACCORDANCE WITH ASTM A-153.



SECTION A-A



SECTION B-B

REBAR TRASH RACK
NOT TO SCALE

8/17/99

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

PROJECT ENGINEER

DocuSigned by:
randall lenegar
85F228A4319F470...
3/1/2017

NORTH CAROLINA PROFESSIONAL SEAL 16600 ENGINEER RANDALL C. HENEGAR

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

SUMMARY OF EARTHWORK
(for Stormwater BMP's)

ITEM DESCRIPTION	UNIT	QUANTITY PROJECT TOTALS
UNCLASSIFIED EXCAVATION	CY	1900
EMBANKMENT	CY	550
ENGINEERED SOIL MEDIA	CY	274
WASHED NO. 57 STONE	TON	127
RIPRAP, CL I	TON	186

SUMMARY FOR EROSION CONTROL
(for Stormwater BMP's)

ITEM DESCRIPTION	UNIT	QUANTITY PROJECT TOTALS
SEDIMENT CONTROL STONE (NO. 5 OR 57)	TON	10
EROSION CONTROL STONE CL. A	TON	27
EROSION CONTROL STONE CL. B	TON	8
TEMP. SILT FENCE	LF	315
SEEDING & MULCHING	ACR	0.6
SODDING	SY	1834
WATER	MG	62
1/4" HARDWARE CLOTH	LF	40

DRAINAGE SUMMARY
(for Stormwater BMP's)

ITEM DESCRIPTION	UNIT	QUANTITY PROJECT TOTALS
DRAINAGE DITCH EXCAVATION	CY	120
UNDERDRAIN PIPE – 6" HDPE PERFORATED	LF	128
UNDERDRAIN PIPE – 8" HDPE PERFORATED	LF	16
UNDERDRAIN PIPE – 8" HDPE NONPERFORATED	LF	8
6" CAP (THREADED)	EA	4
36" HDPE	LF	72
8" HDPE TEE	EA	1
8" CAP (THREADED)	EA	2
8" X 6" HDPE CROSS TEE	EA	2
GEOTEXTILE FOR DRAINAGE (TYPE 2, NON–WOVEN)	SY	360
POLYPROPYLENE NONWOVEN GEOTEXTILE FABRIC	SY	548
OUTLET STRUCTURE BOX (SEE SHEET 2D–3)	EA	1
REBAR TRASH RACK (SEE SHEET 2D–4)	EA	1
CONCRETE ENDWALL (STD. 838.01)	CY	4
CONCRETE PIPE COLLAR (STD. 840.72)	CY	4

LIST OF PIPES

REFERENCE	HDPE PIPE 6" PERFORATED PIPE	HDPE PIPE 8" PERFORATED PIPE	HDPE PIPE 8" SOLID	HDPE PIPE 36"	REMARKS
BASIN 1	128	16	8	72	SEE DETAILS ON SHEETS 2D-1 AND 2D-2
TOTALS (FT)	128	16	8	72	

LIST OF STRUCTURES

STRUCTURE NO.	DESCRIPTION	TOP ELEVATION	INVERT IN ELEVATION	INVERT OUT ELEVATION	PRECAST DRN. STRUCTURE STD. 840.45	TRASH RACK	REMARKS
0401	BASIN OUTLET STRUCTURE	2888.0	2881.0	2880.0	1	1	SEE DETAILS ON SHEETS 2D-3 AND 2D-4 EXTRA DEPTH BOX: PER EACH (0' THRU 5.0') = 1, 5.0' THRU 10.0'= 3 LIN. FT. (FIELD VERIFY)
0402	CONCRETE ENDWALL	2882.4		2878.0			STD. 838.01
TOTALS (FT)					1	1	

2/23/2017
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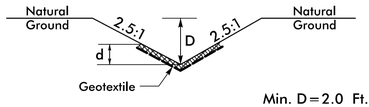
User:kgrou

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.

DETAIL A
STANDARD 'V' DITCH
(Not to Scale)



Min. D = 2.0 Ft.
Max. d = 2.0 Ft.
Type of Liner = Class I Rip–Rap

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

PROJECT ENGINEER

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

NORTH CAROLINA PROFESSIONAL SEAL 16600 ENGINEER RANDALL C. LENEGAR

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

I–26 WELCOME CENTER SITE

NC GRID
NAD 83 NA 2011

LIMIT OF TOPOGRAPHIC SURVEY (TYP.)

OUTLET STRUCTURE
(SEE SHEET 2D–2 & 2D–3)

HDPE UNDERDRAIN (TYP.)
(SEE SHEET 2D–1 FOR DETAILS)

PIPE COLLAR (TYP.)
(STD. 840.72)
(4 @ 15' SPACING)

FILTRATION BASIN 1
TOP BERM EL. = 2890.00'
BOTTOM EL. = 2885.00'

CLASS I RIP RAP AT PIPE OUTLET
NOTE: RETAIN PORTION OF RIP RAP LINED CHANNEL DOWNSTREAM OF OUTLET (OR REPLACE AS NEEDED)

TRANSITION BERM
EL. = 2887.00'
(SEE SH. 2D–2)

FOREBAY
(SEE SH. 2D–2)

BASIN INLET DITCH
(DETAIL A)

CONCRETE ENDWALL

36" HDPE

RETAIN RIP RAP CHANNEL LINING

EXISTING HAZARDOUS SPILL BASIN

LIMIT OF TOPOGRAPHIC SURVEY (TYP.)

RAMP TO I-26 E

CAR PARKING AREA
TRUCK PARKING AREA
LANDSCAPED AREA
LANDSCAPE ISLAND
CONC. SIDEWALK
TREES
EOP
BST
W/LT
GPS-1 MAGNAIL
GPS-2 MAGNAIL
END NOT LOCATED
10" EVERGREEN
8" MAPLE
6" MAPLE
4" EVERGREEN

SCALE: 30 15 0 30 60

REVISIONS 8/17/99

2/23/2017
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User:lgreen

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
1605.01	Temporary Silt Fence	
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.

4. UTILIZE PUMP AROUND OPERATIONS AS DIRECTED BY ENGINEER. CLOSE GATE VALVE IN HAZARDOUS SPILL BASIN AS NEEDED.

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

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

PROJECT ENGINEER

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

NORTH CAROLINA PROFESSIONAL SEAL 16600 ENGINEER RANDALL C. HENEGAR

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

I-26 WELCOME CENTER SITE

LIMIT OF DISTURBANCE

LIMIT OF TOPOGRAPHIC SURVEY (TYP.)

TRUCK PARKING AREA

LANDSCAPE ISLAND

LANDSCAPED AREA

SOD AREA

HDPE UNDERDRAIN (TYP.) (SEE SHEET 2D-1 FOR DETAILS)

OUTLET STRUCTURE (SEE SHEET 2D-2 & 2D-3)

PIPE COLLAR (TYP.) (STD. 840.72) (4 @ 15' SPACING)

FILTRATION BASIN 1
TOP BERM EL. = 2890.00'
BOTTOM EL. = 2885.00'

CLASS I RIP RAP AT PIPE OUTLET
NOTE: RETAIN PORTION OF RIP RAP LINED CHANNEL DOWNSTREAM OF OUTLET (OR REPLACE AS NEEDED)

TRANSITION BERM EL. = 2887.00' (SEE SH. 2D-2)

FOREBAY (SEE SH. 2D-2)

CONCRETE ENDWALL

BASIN INLET DITCH (DETAIL A)

36" HDPE

STAGING/ LAYDOWN AREA

EXISTING HAZARDOUS SPILL BASIN

RIP RAP DITCH (NOT HATCHED)

RIP RAP FOREBAY AREA (NOT HATCHED)

RETAIN RIP RAP CHANNEL LINING

LIMIT OF TOPOGRAPHIC SURVEY (TYP.)

DISTURBED AREA 0.97 AC (SEE NOTES)

GRAVEL CONSTRUCTION ENTRANCE

RAMP TO I-26 E

GATE VALVE IN HAZARDOUS SPILL BASIN TO BE UTILIZED FOR PUMP AROUND OPERATIONS AS NEEDED.

30 15 0 30 60
SCALE

2/23/2017
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5/14/99

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

TRAFFIC CONTROL PLAN

PROJECT ENGINEER

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

NORTH CAROLINA PROFESSIONAL SEAL 16600 ENGINEER RANDALL C. HENEGAR

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

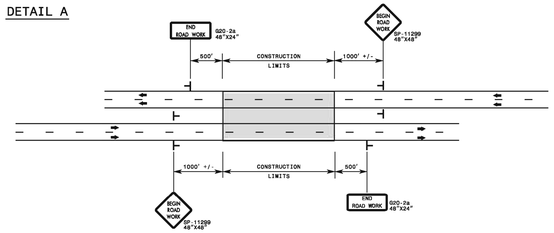
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. 1-12

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.

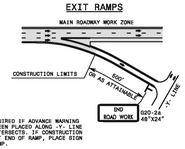
7- DO NOT BACK BRACE SIGN SUPPORTS.

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

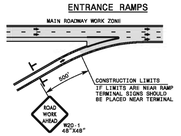
EXIT RAMPS



NOTE: SIGN NOT REQUIRED IF ADVANCE WARNING SIGNS HAVE BEEN PLACED ALONG -Y- LINE THAT RAMP INTERSECTS. IF CONSTRUCTION LIMITS ARE AT END OF RAMP, PLACE SIGN AT END OF RAMP.

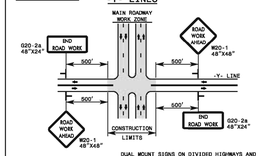
DETAIL C

ENTRANCE RAMPS



DETAIL D

-Y- LINES



DUAL MOUNT SIGNS ON DIVIDED HIGHWAYS AND INCREASE SIGN SPACING TO 1000'+/-.

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

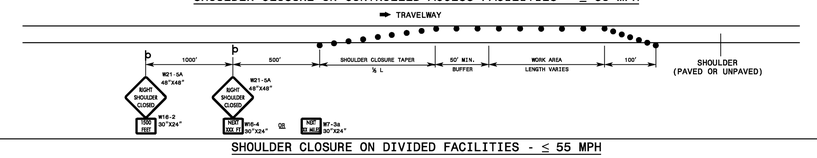
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. 1-12

ENGLISH STANDARD DRAWING FOR

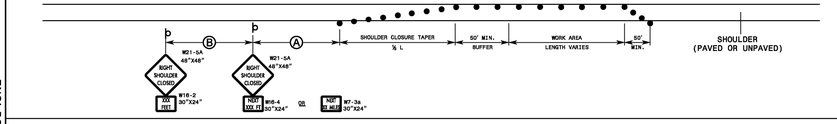
TEMPORARY SHOULDER CLOSURES

SHEET 1 OF 1
1101.04

SHOULDER CLOSURE ON CONTROLLED ACCESS FACILITIES - ≥ 60 MPH

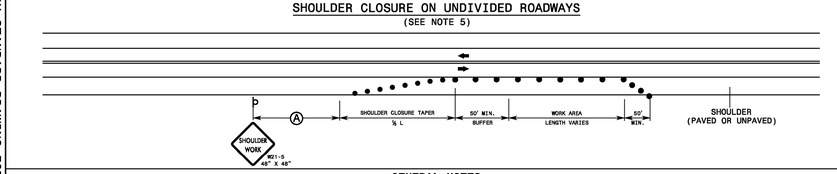


SHOULDER CLOSURE ON DIVIDED FACILITIES - ≤ 55 MPH



SHOULDER CLOSURE ON UNDIVIDED ROADWAYS

(SEE NOTE 5)



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.

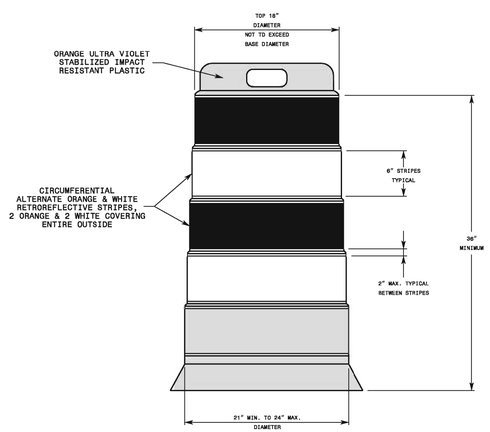
LEGEND
● DRUM
⊳ STATIONARY OR PORTABLE SIGN
➡ DIRECTION OF TRAFFIC FLOW

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. 1-12

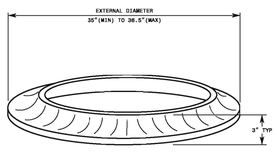
ENGLISH STANDARD DRAWING FOR

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

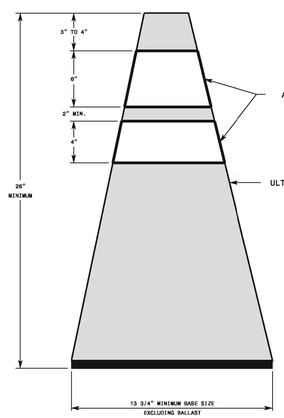
ENGLISH STANDARD DRAWING FOR

CONES

SHEET 1 OF 1
1135.01

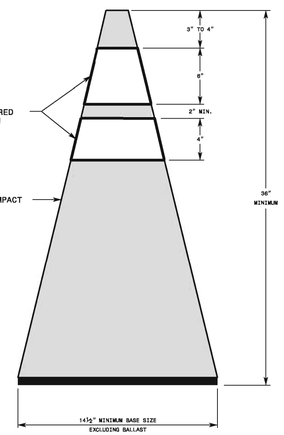
28 INCH CONE

(MINIMUM SIZE CONE FOR ALL CLASSES OF ROADS EXCEPT FREEWAYS AND INTERSTATES)



36 INCH CONE

(REQUIRED FOR FREEWAYS AND INTERSTATES)



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.

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