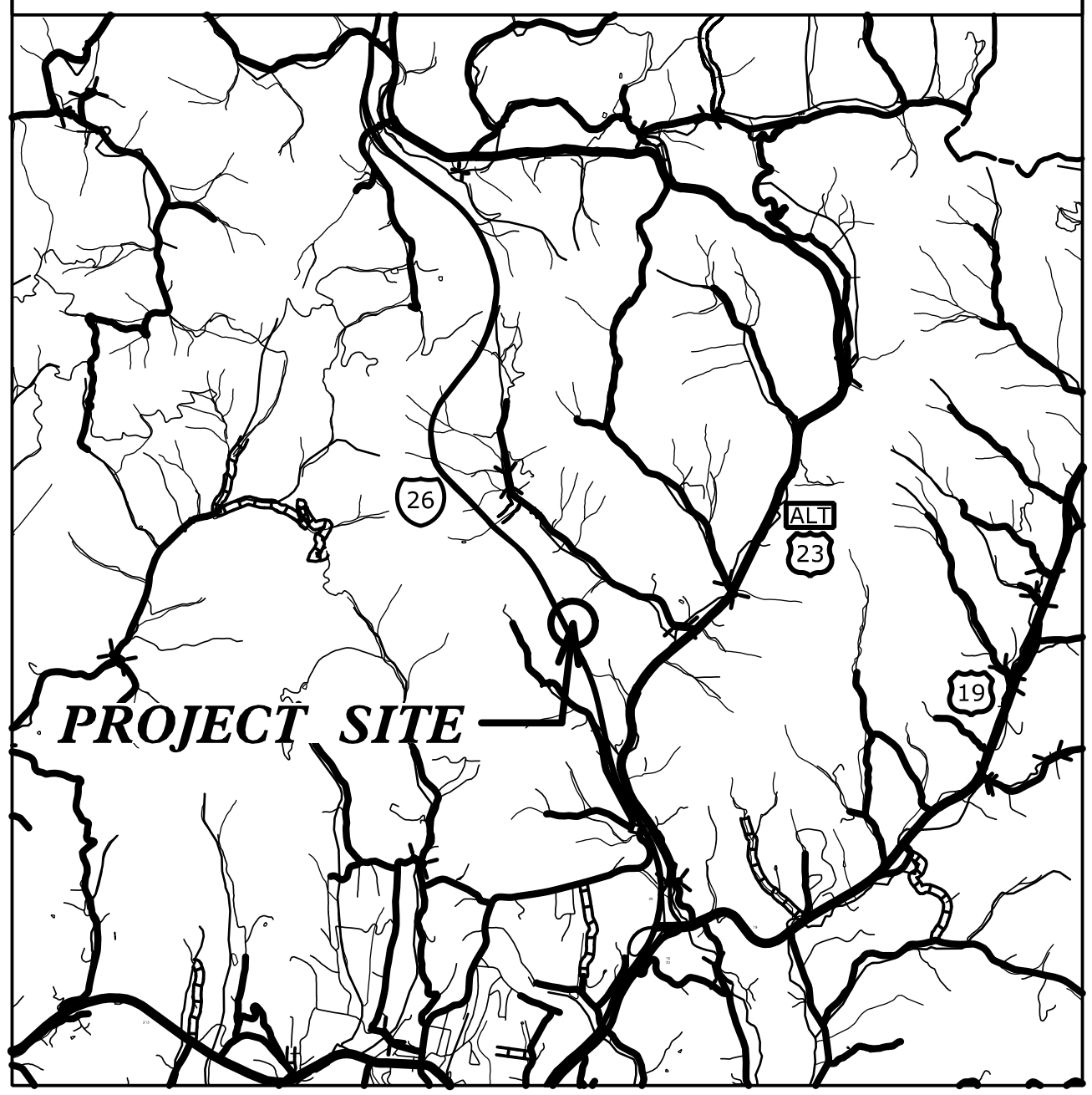
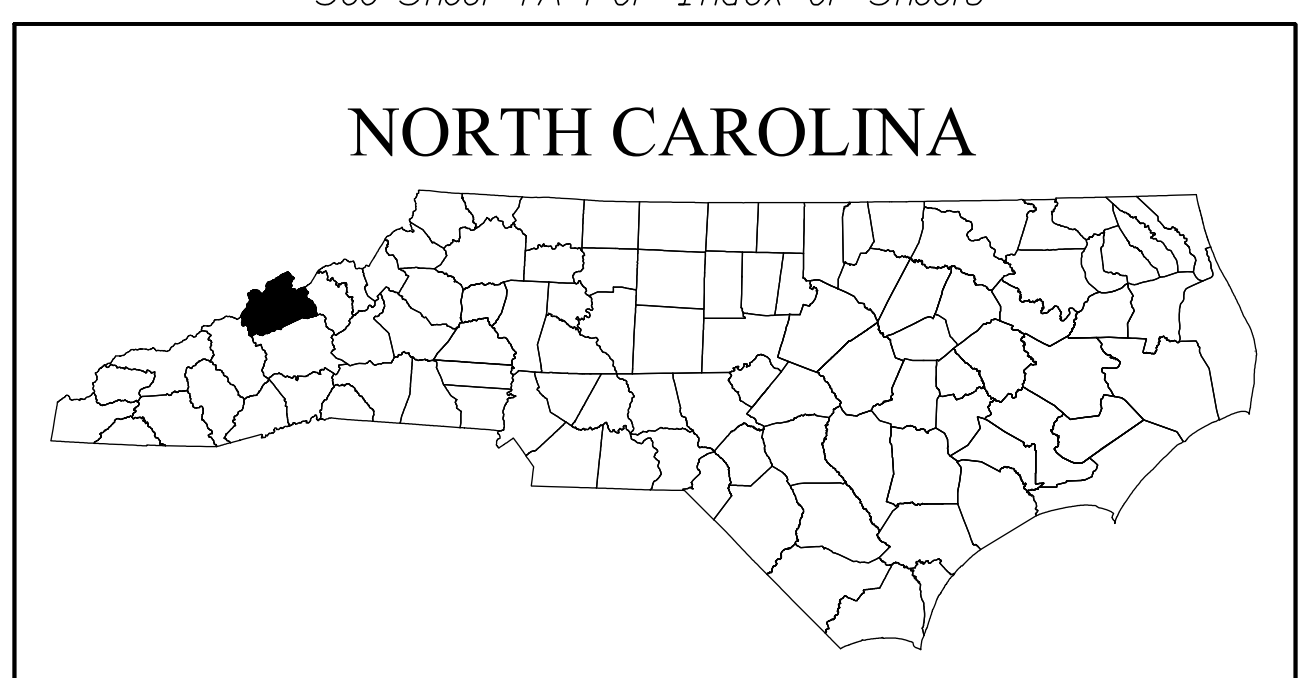


09/08/2017

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User:Kgrady

TIP PROJECT: R-4436MI
CONTRACT: 34625.2.63

See Sheet 1A For Index of Sheets

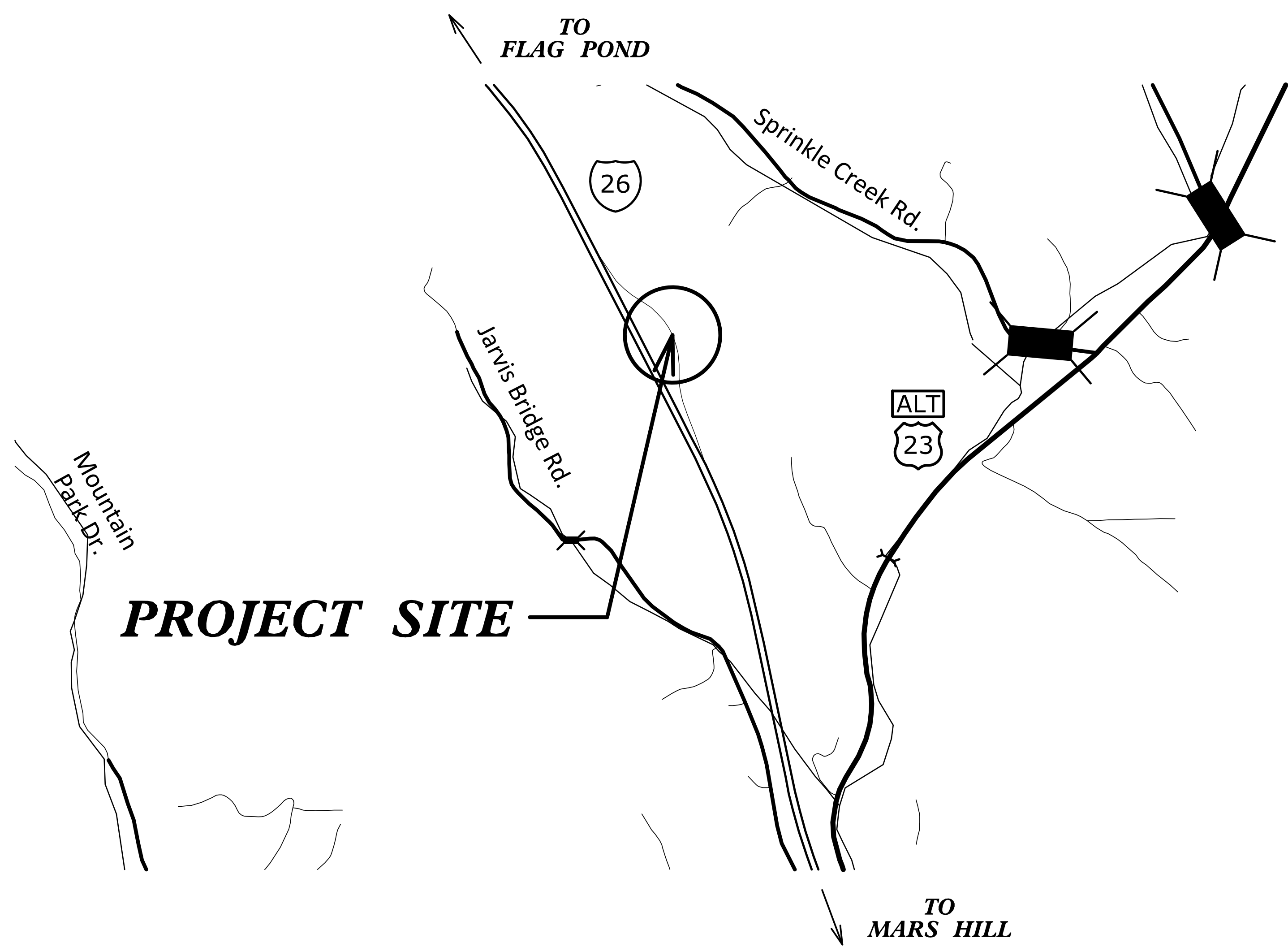


VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
MADISON COUNTY

**LOCATION: SCENIC OVERLOOK OFF I-26 WESTBOUND BETWEEN
US-23 ALT & US-19**

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



STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-4436MI	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34625.2.63	STP-0026(013)	CONSTRUCTION	



DocuSigned by:
randall henegar
85F228A4319F47D
3/1/2017

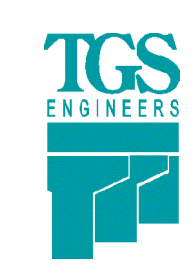
**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**

GRAPHIC SCALES

SCALE VARIES
SEE PLANS



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

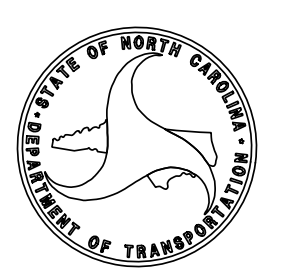
PROJECT DESIGN ENGINEER

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

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.

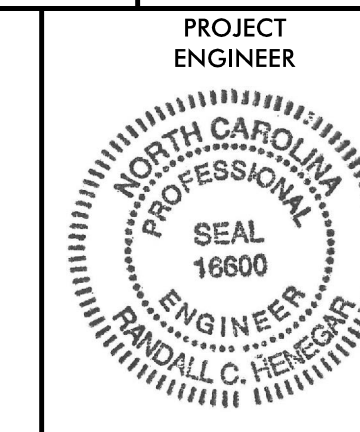
TRAFFIC CONTROL:
USE APPROPRIATE STANDARDS PER DIVISION 11 AS REQUIRED TO COMPLETE WORK. COORDINATE TRAFFIC CONTROL WITH THE DIVISION.

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 PROJECT AND 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	
840.31	CONCRETE JUNCTION BOX - 12" THRU 66" PIPE
840.54	MANHOLE FRAME AND COVER
840.66	DRAINAGE STRUCTURE STEPS
DIVISION 11 - WORK ZONE TRAFFIC CONTROL	
1101.01	WORK ZONE ADVANCE WARNING SIGNS FOR FACILITIES <= 55 MPH
1101.02	TEMPORARY LANE 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

DocuSigned by:
Randall C. Heeger
3/1/2017



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CONSTRUCTION SEQUENCE NOTES

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

- ESTABLISH SIGNAGE AT OVERLOOK 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.
- PROVIDE SIGNAGE AT OVERLOOK SITE ENTRANCE AND 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.
- INSTALL TEMPORARY EROSION CONTROL DEVICES AS SHOWN ON PLANS.
- CONSTRUCT FILTRATION BASINS AND OTHER IMPROVEMENTS.
- FOLLOW SEEDING/ MULCHING GUIDELINES ON THE PLANS TO STABILIZE ALL REMAINING DISTURBED SURFACES.
- INSPECT ALL INLETS, PIPES, AND OUTLETS FOR SEDIMENT AND REMOVE SEDIMENT AS REQUIRED.
- REMOVE ALL REMAINING TEMPORARY EROSION CONTROL MEASURES AFTER PERMANENT PERENNIAL VEGETATION IS ESTABLISHED.

EROSION CONTROL NOTES

- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST VERSION OF NCDOT STANDARDS, SPECIFICATIONS, AND DETAILS.
- CONTRACTOR SHALL MAINTAIN ALL EROSION CONTROL MEASURES DURING THE LIFE OF THE PROJECT UNLESS OTHERWISE INDICATED ON THE PLANS OR DIRECTED BY NCDOT INSPECTOR.
- CONTRACTOR SHALL CONSTRUCT DIVERSION DITCHES AS NECESSARY TO ENSURE THAT ALL SEDIMENT IS DIRECTED INTO EROSION CONTROL MEASURES.
- 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.
- PROVIDE TEMPORARY MEASURES AS NECESSARY TO PREVENT SEDIMENT FROM MIGRATING INTO FILTER MEDIA OR SODDED AREAS.
- ALL STREETS ADJACENT TO THIS PROJECT SHALL REMAIN CLEAN AT ALL TIMES OR A WASH STATION MAY BE REQUIRED.
- IF USED, SILT FENCE SHALL BE MAINTAINED ON THE SITE UNTIL ALL SITE WORK IS COMPLETED AND THE FINAL SITE INSPECTION IS SCHEDULED.
- RESEED OF PERMANENT GROUND COVER WILL BE ESTABLISHED IN 15 WORKING DAYS OR 30 CALENDAR DAYS, WHICH EVER IS SHORTER.
- EROSION CONTROL MATTING SHALL BE STRAW MATTING. USE STD. DWG. 1631.01 FOR MATTING INSTALLATION.
- 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

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

SEEDBED PREPERATION

- PREPARE AND SEED ONLY DISTURBED AREAS. DO NOT SPREAD SEED ON AREAS TO RECEIVE SOD.
- CHISEL COMPACTED AREAS AND SPREAD TOPSOIL 3 INCHES DEEP OVER ADVERSE SOIL CONDITIONS IF AVAILABLE.
- RIP THE ENTIRE AREA TO 6 INCHES DEPTH.
- REMOVE ALL LOOSE ROCK, ROOTS AND OTHER OBSTRUCTIONS LEAVING SURFACES REASONABLY SMOOTH AND UNIFORM.
- APPLY AGRICULTURAL LIME, FERTILIZER, AND SUPERPHOSPHATE UNIFORMLY AND MIX WITH SOIL (SEE BELOW*).
- CONTINUE TILLAGE UNTIL A WELL-PULVERIZED, FIRM, REASONABLY UNIFORM SEEDBED IS PREPARED 4 TO 6 INCHES DEEP.
- SEED A FRESHLY PREPARED SEEDBED AND COVER SEED LIGHTLY WITH SEEDING EQUIPMENT OR CULTIPACK AFTER SEEDING.
- MULCH IMMEDIATELY AFTER SEEDING AND ANCHOR MULCH.
- 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.
- 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

- 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.
- 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.
- 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.

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

State Line	_____
County Line	_____
Township Line	_____
City Line	_____
Reservation Line	_____
Property Line	_____
Existing Iron Pin	○ EIP
Computed Property Corner	_____ X
Property Monument	□ ECM
Parcel/Sequence Number	①23
Existing Fence Line	-X-X-X-
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	→
False Sump	▽

RAILROADS:

Standard Gauge	_____
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	_____ (R/W)
New Right of Way Line with Pin and Cap	_____ (R/W) ▲
New Right of Way Line with Concrete or Granite R/W Marker	_____ (R/W) ●
New Control of Access Line with Concrete C/A Marker	_____ (C/A) ●
Existing Control of Access	_____ (C/A)
New Control of Access	_____ (C/A)
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	— T — T — T —
Proposed Guardrail	— T — T — T —
Existing Cable Guiderail	— □ — □ — □ —
Proposed Cable Guiderail	— □ — □ — □ —
Equality Symbol	⊕
Pavement Removal	▨

VEGETATION:

Single Tree	☀
Single Shrub	☁

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

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	⊙
Storm Sewer	— S —

UTILITIES:

POWER:	
Existing Power Pole	●
Proposed Power Pole	○
Existing Joint Use Pole	●
Proposed Joint Use Pole	○
Power Manhole	⊙
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	⊙
Telephone Pedestal	□
Telephone Cell Tower	⊕
U/G Telephone Cable Hand Hole	_____ (FH)
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	⊙
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	□
TV Tower	⊗
U/G TV Cable Hand Hole	_____ (FH)
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 ---

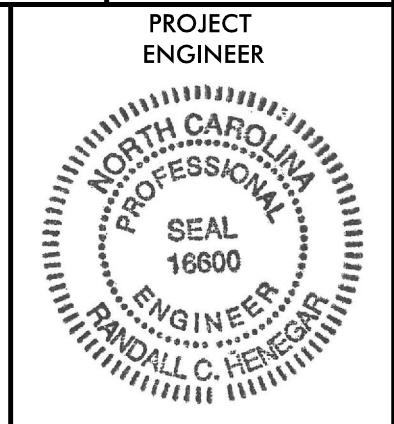
SANITARY SEWER:

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 ---

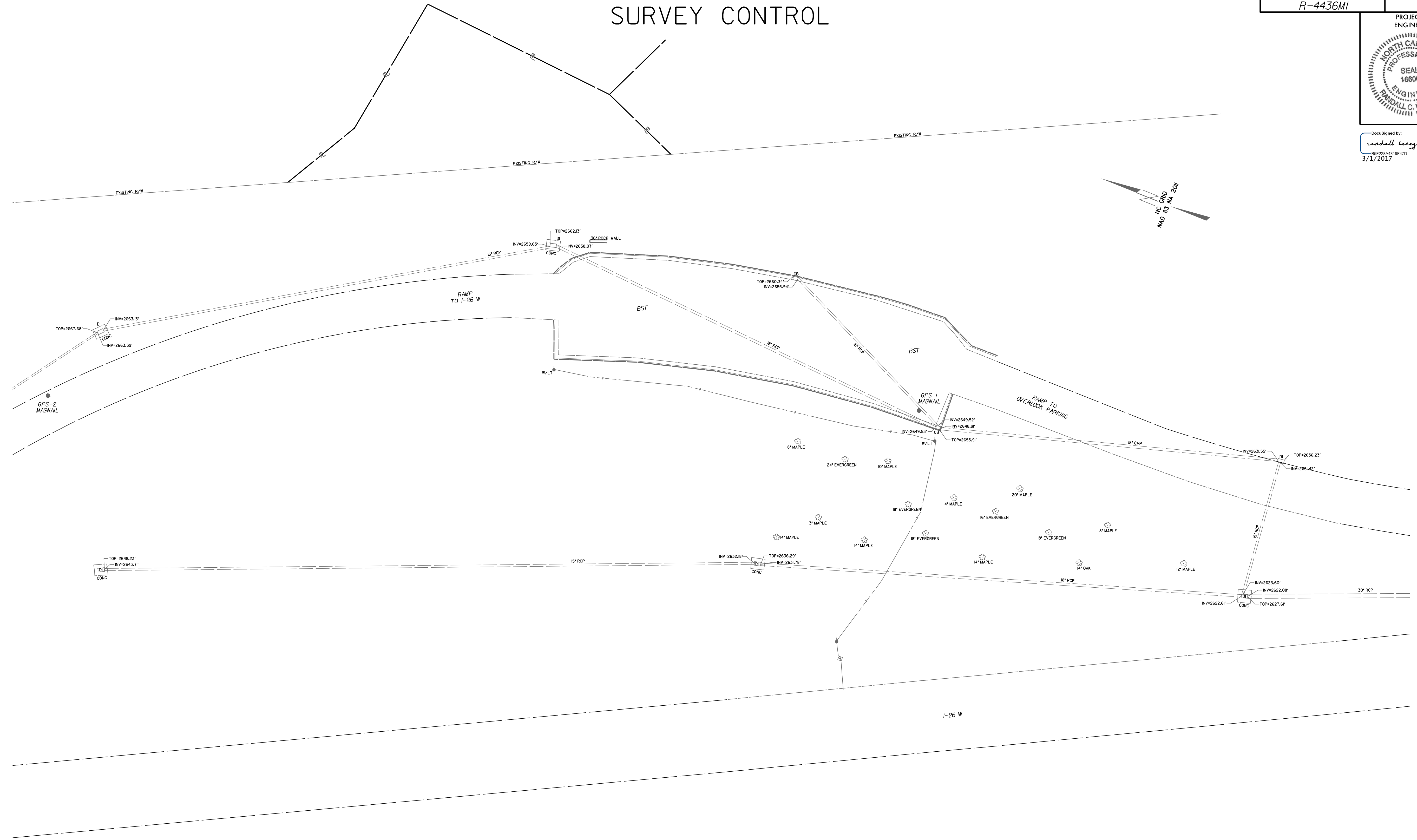
MISCELLANEOUS:

Utility Pole	●
Utility Pole with Base	□
Utility Located Object	○
Utility Traffic Signal Box	⊠
Utility Unknown U/G Line LOS B (S.U.E.*)	--- 2UTL ---
U/G Tank; Water, Gas, Oil	□
Underground Storage Tank, Approx. Loc.	⊕
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.

SURVEY CONTROL



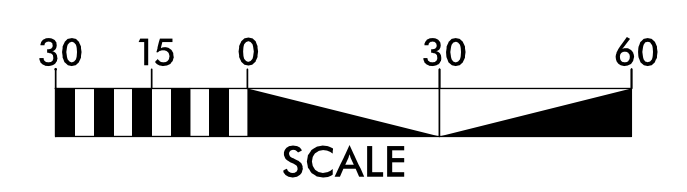
DocuSigned by:
Randall Heinegar
3/1/2017




DATUM DESCRIPTION
 THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY TGS ENGINEERS FOR MONUMENT "GPS-1" WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF NORTHING: 788462.269(ft) EASTING: 953258.275(ft) ELEVATION: 2655.29(ft)
 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99980723
 ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
I01	788462.269	953258.275	2655.29	GPS-1
I02	788951.738	953072.055	2672.76	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



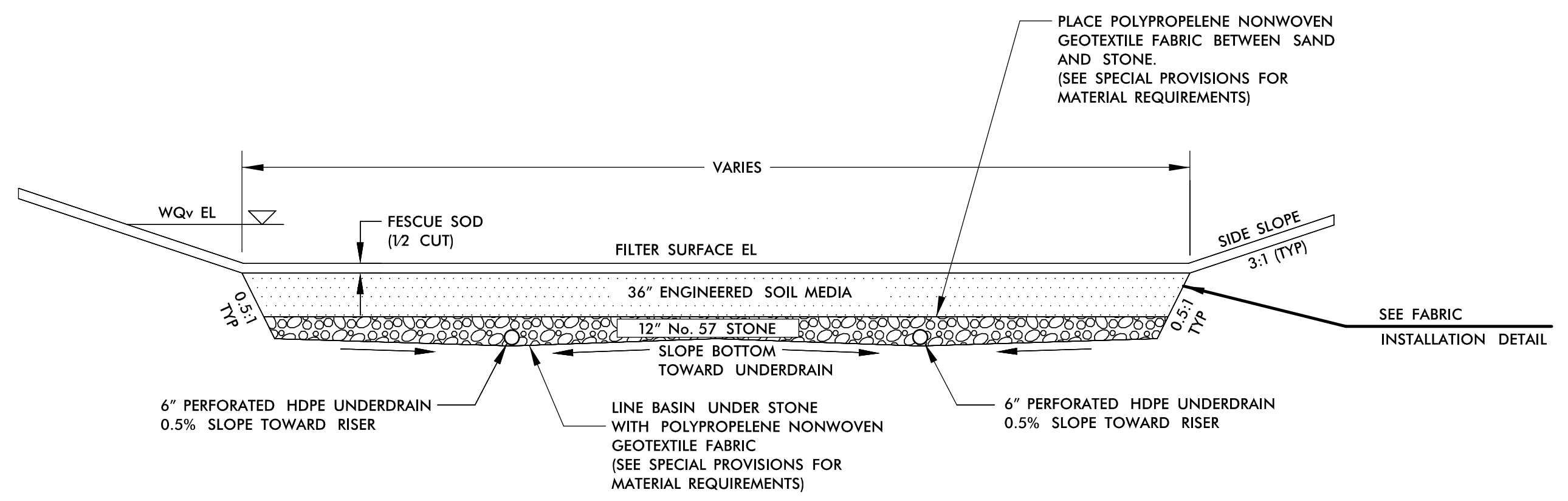
5/14/99

PROJECT REFERENCE NO. <i>R-4436MI</i>	SHEET NO. <i>2D-1</i>
PROJECT ENGINEER	
	

DocuSigned by:
Randall Hengeman
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3/1/2017

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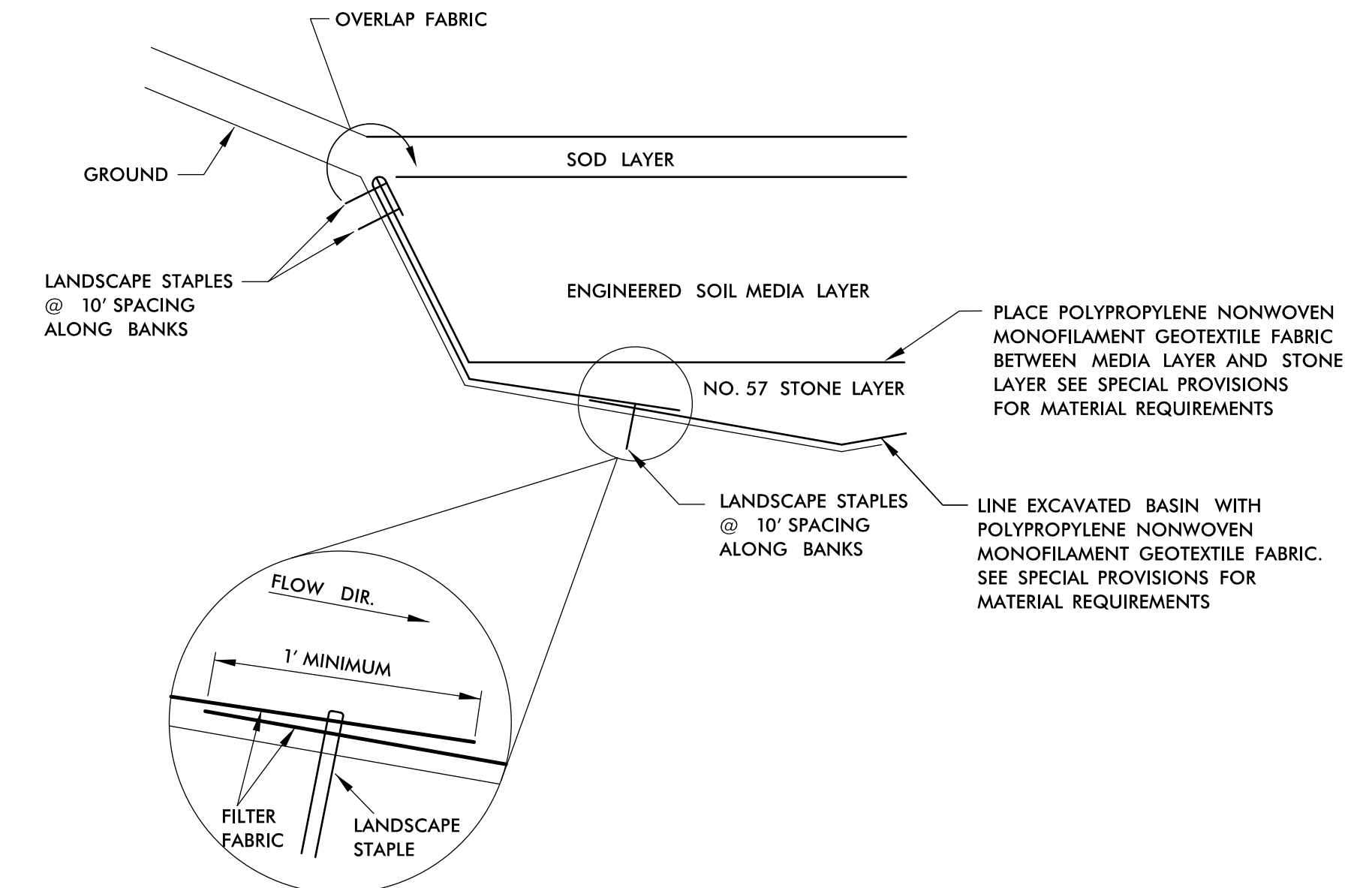
BMP DETAILS 1



TYPICAL SECTION – FILTER BASIN MEDIA
N.T.S.

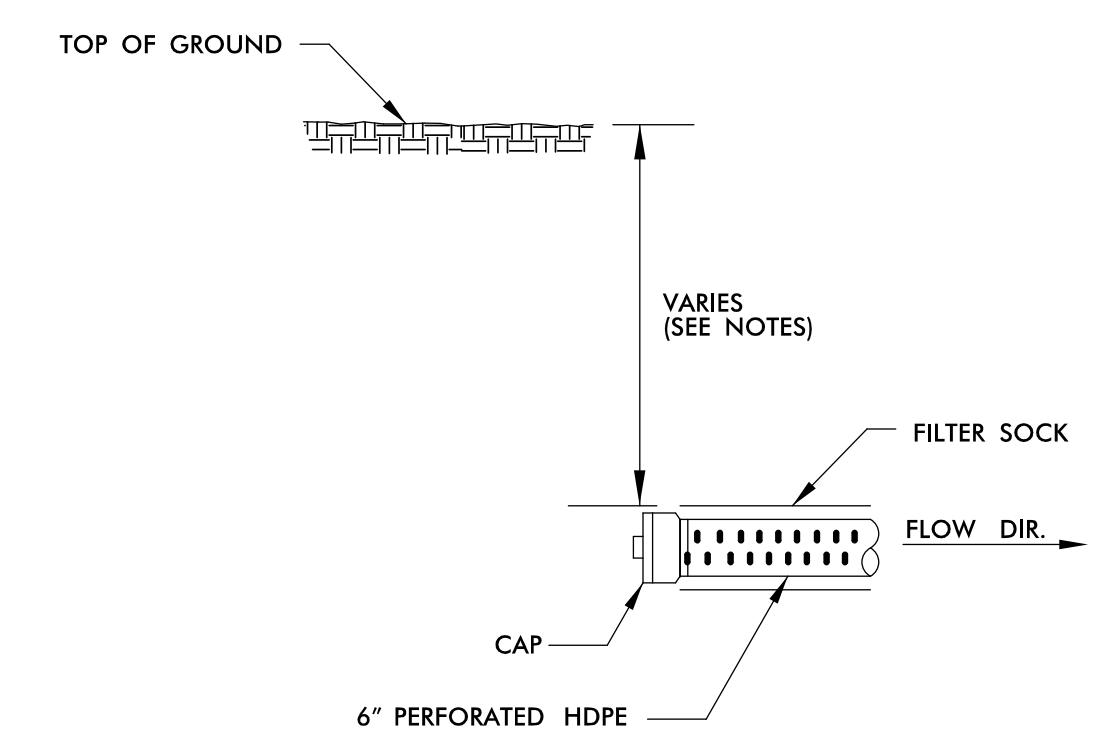
- NOTE:
- STONE TO BE STD. SIZE #57 (DIVISION 10 SECTION 1005), WASHED.
 - PLACE FESCUE SOD ON BASIN BOTTOMS, BERMS, AND SIDE SLOPES.
 - SEE SHEET 4 FOR UNDERDRAIN CONFIGURATION.
 - FILTRATION BASIN MEDIA SHALL CONSIST OF THE FOLLOWING BLEND:

RECYCLED EXPANDED SLATE FINES	80%
APPROVED COMPOST ORGANIC COMPONENT	20%
- SEE SPECIAL PROVISIONS FOR ENGINEERED SOIL MEDIA REQUIREMENTS.



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

FABRIC INSTALLATION DETAIL
N.T.S.



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

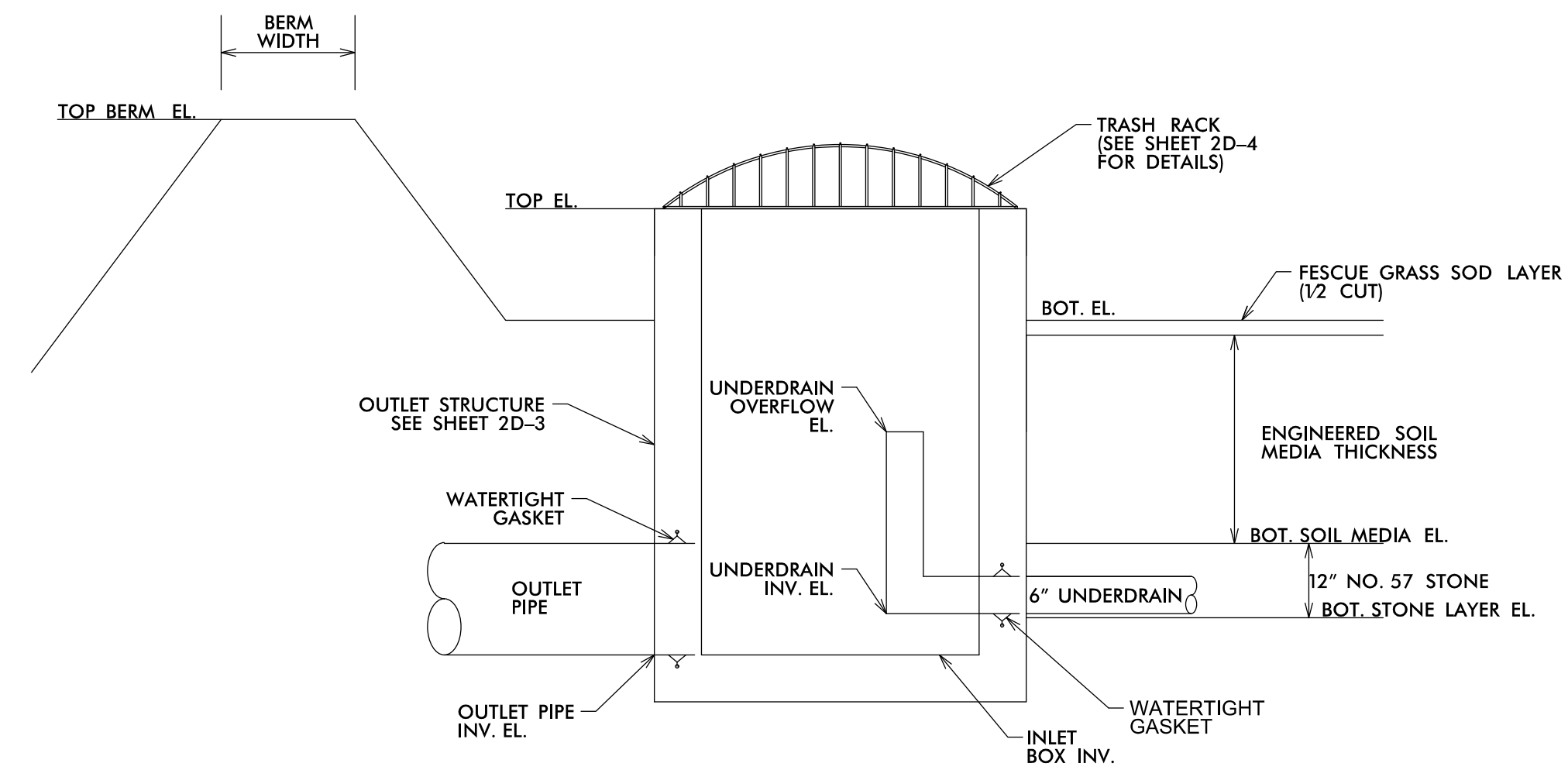
UNDERDRAIN DETAIL
N.T.S.

2/22/2017 10:43:36 AM Plans\4436MI_Hyd.dwg - 2D-1-170223.dgn
 User: rchou

BMP DETAILS 2

PROJECT REFERENCE NO. <i>R-4436M1</i>	SHEET NO. <i>2D-2</i>
PROJECT ENGINEER	

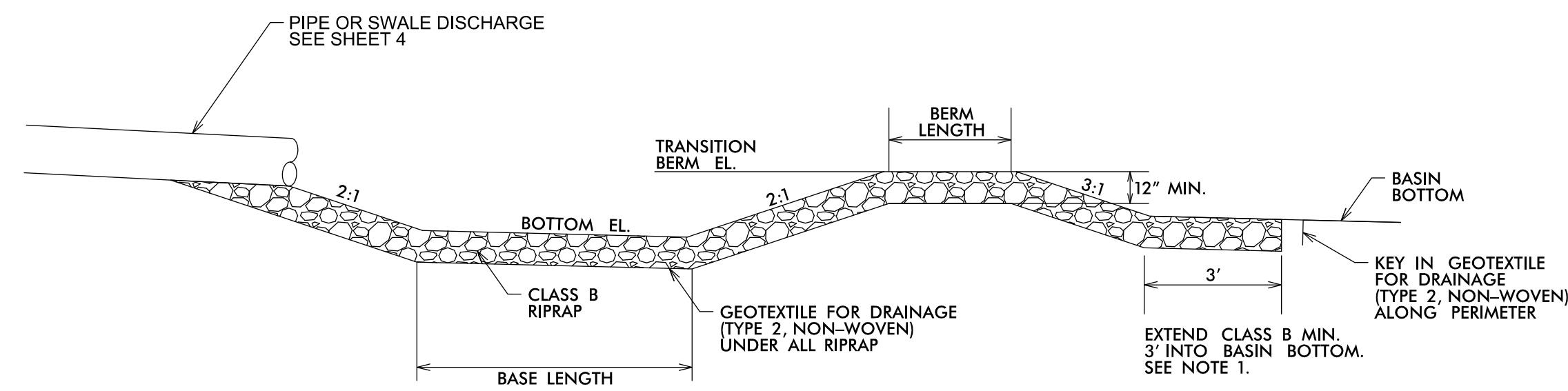
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UNLESS ALL SIGNATURES COMPLETED**



- 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.

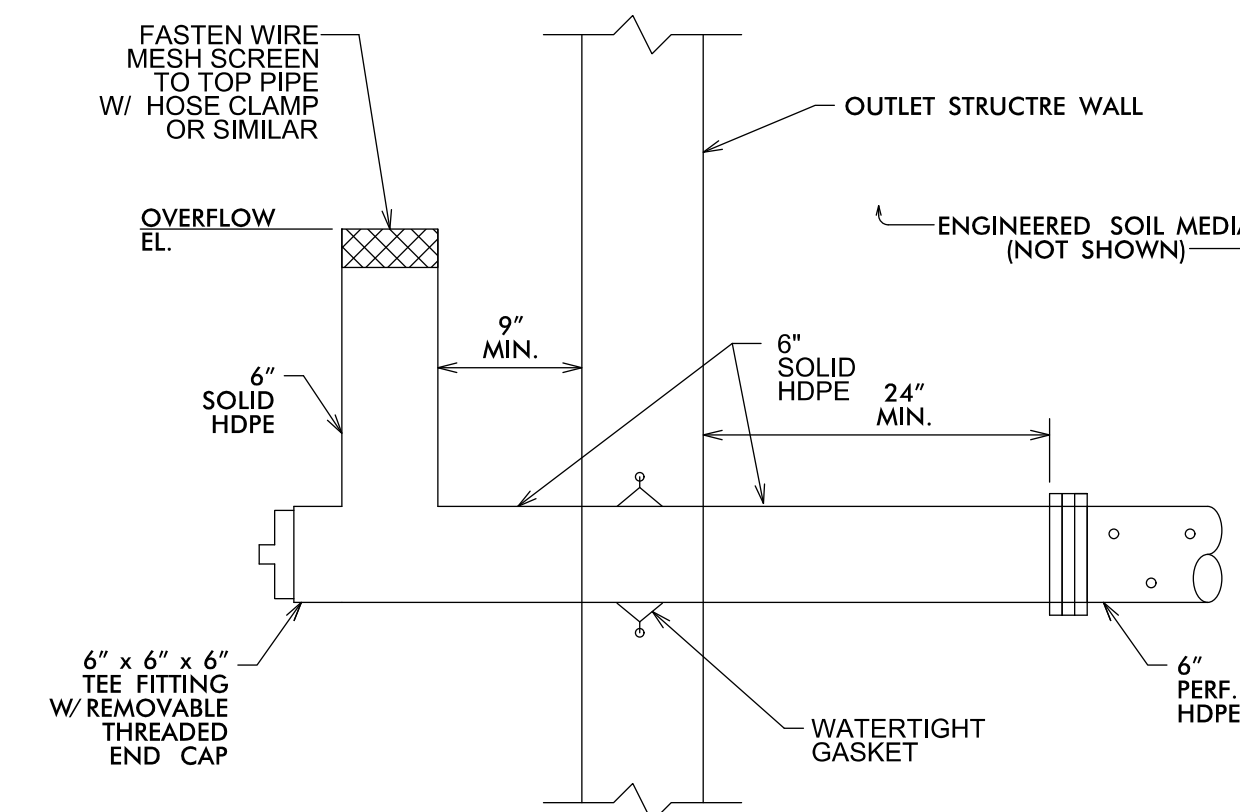
BASIN REF.	TOP BOX EL.	TOP BERM EL.	TOP BERM WIDTH	BOTTOM EL.	BOTTOM SOIL MEDIA EL.	SOIL MEDIA THICKNESS	BOTTOM STONE EL.	UNDERDRAIN INVERT	BOX / OUTLET PIPE INVERT	UNDERDRAIN OVERFLOW EL.
1	2632.0	2633.5	10.0'	2630.0	2627.0	36"	2626.0	2626.0	2624.0	2628.5



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	2631.0	5.00'	2629.0	18.5'	CLASS B RIPRAP

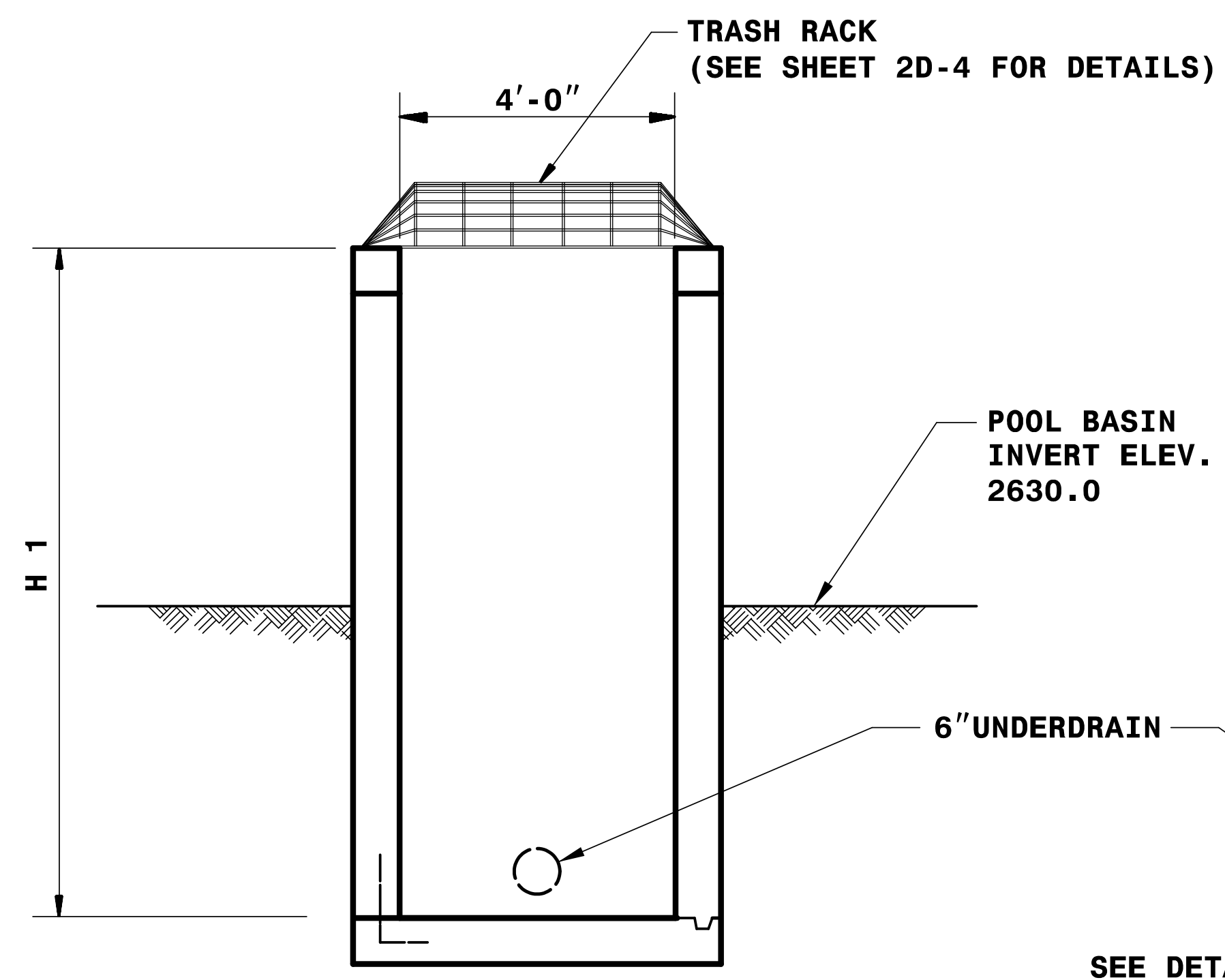


UNDERDRAIN UPTURNED ELBOW / OVERFLOW N.T.S.

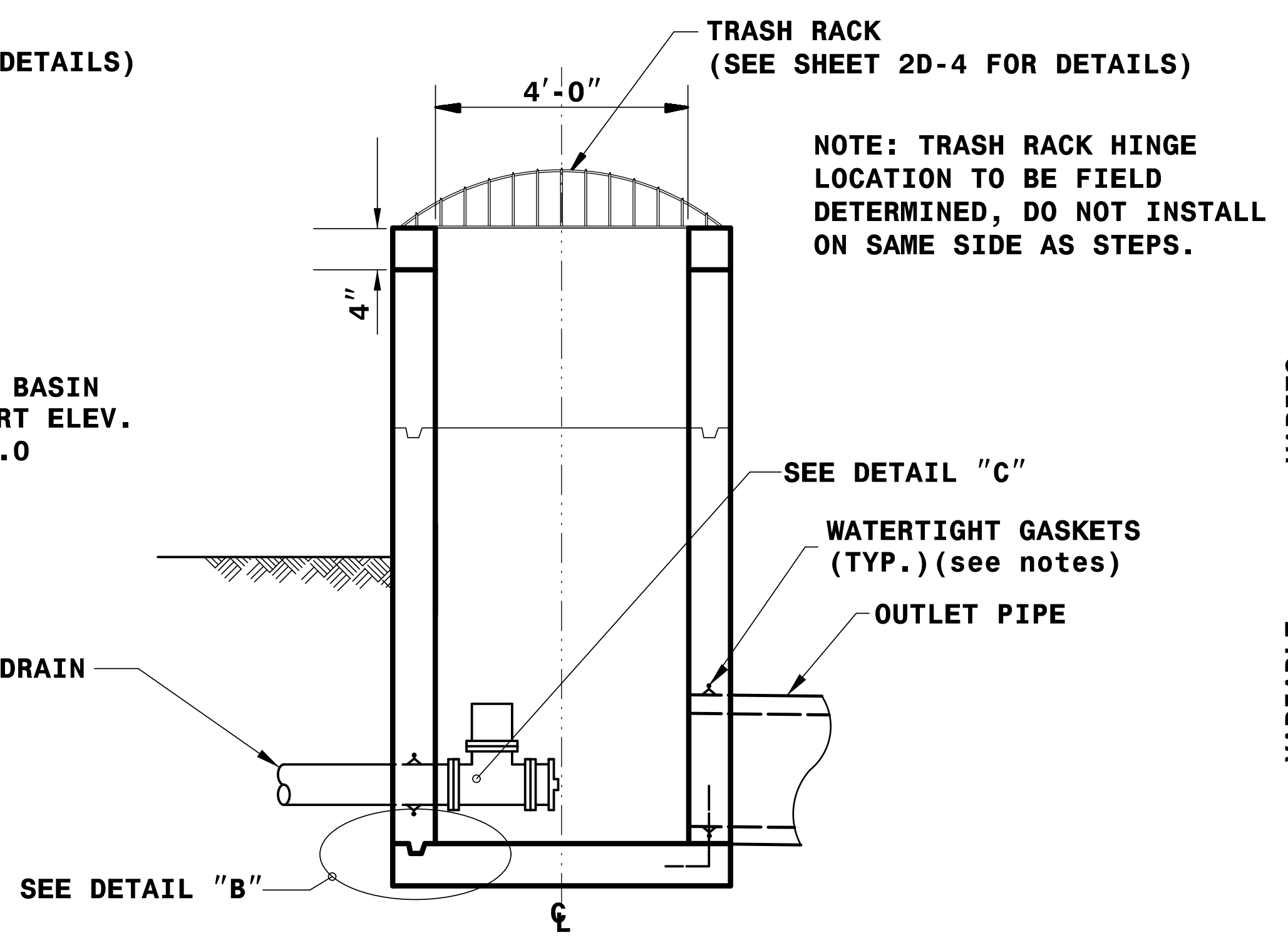
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PROJECT REFERENCE NO. <i>R-4436MI</i>	SHEET NO. <i>2D-3</i>
PROJECT ENGINEER	
	
4/21/2017	

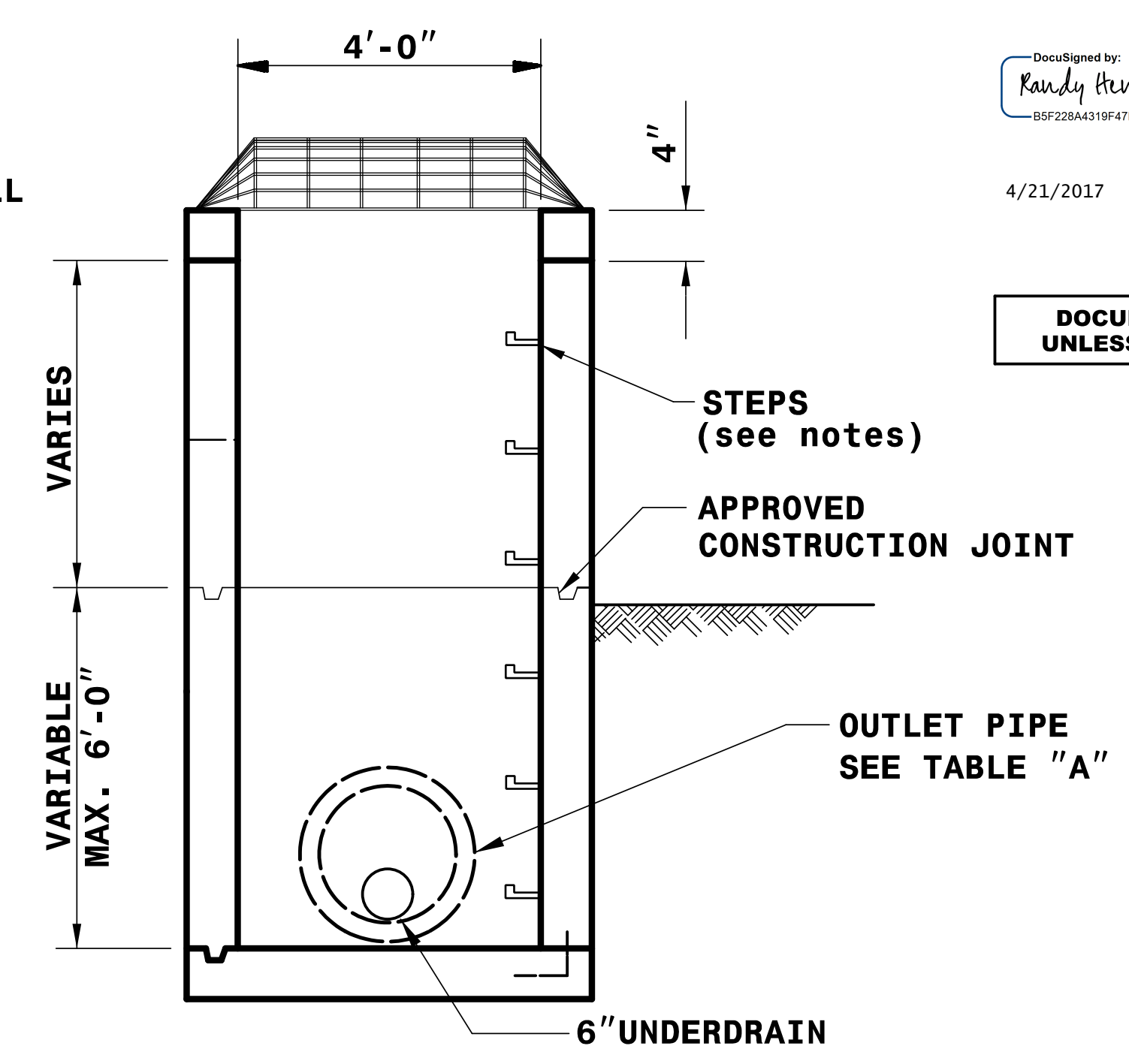
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STRUCTURE SIDE 1



STRUCTURE SIDE 2

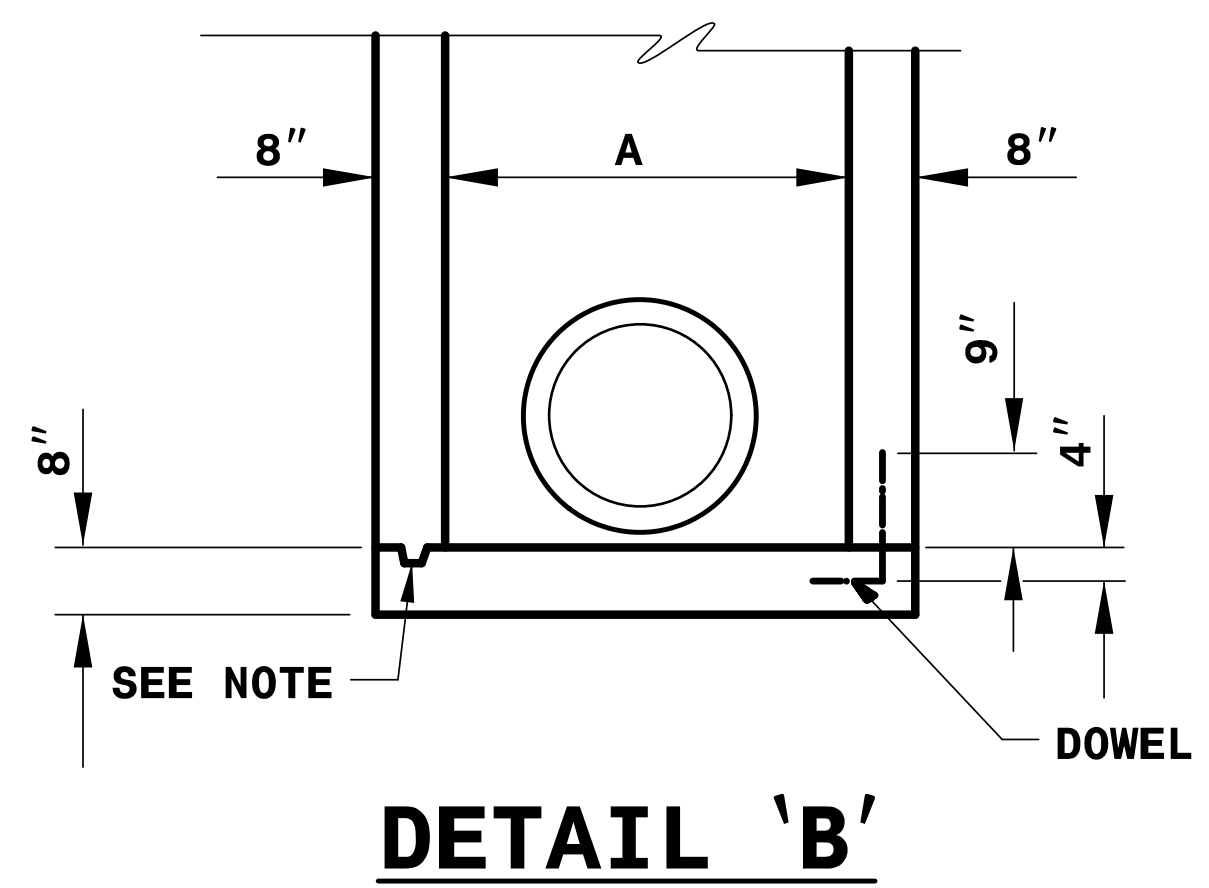


STRUCTURE SIDE 3

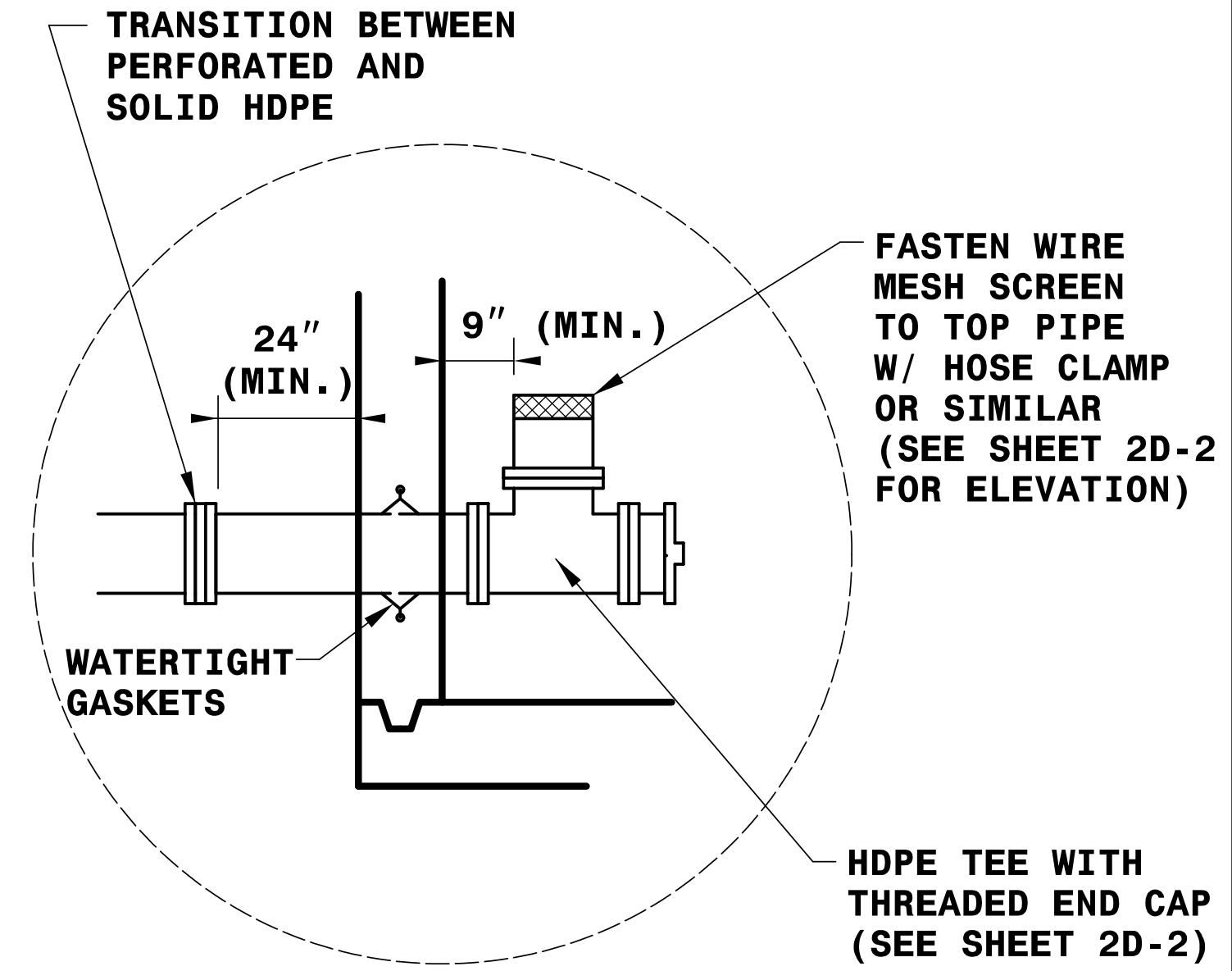
TABLE "A"

MINIMUM DIMENSIONS FOR OUTLET CONTROL STRUCTURE						
BASIN	PIPE D	OUTLET PIPE INVERT	BOX PIPE HEIGHT H1	TOP OF BOX ELEV.	UNDER DRAIN INVERT	
1	18"	2624.0	8'-0"	2632.0'	2626.0'	

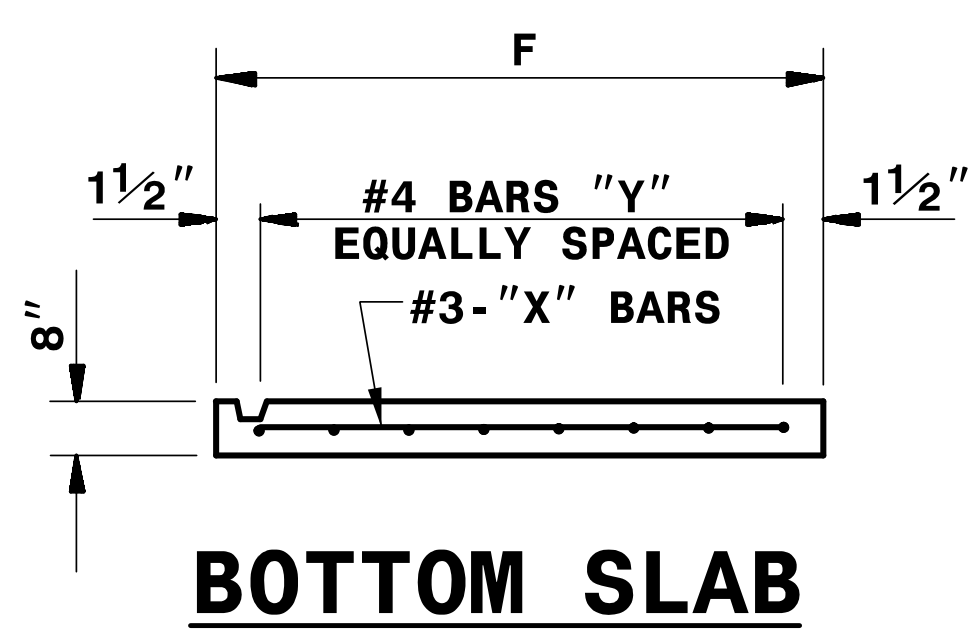
PIPE D	"A"	BARS-X		BARS-Y		"F"	TOTAL CONCRETE QUANTITIES
		QTY.	LENGTH	QTY.	LENGTH		
18"	4'-0"	6	5'-1"	6	5'-1"	5'-4"	4.4 CU.YDS.



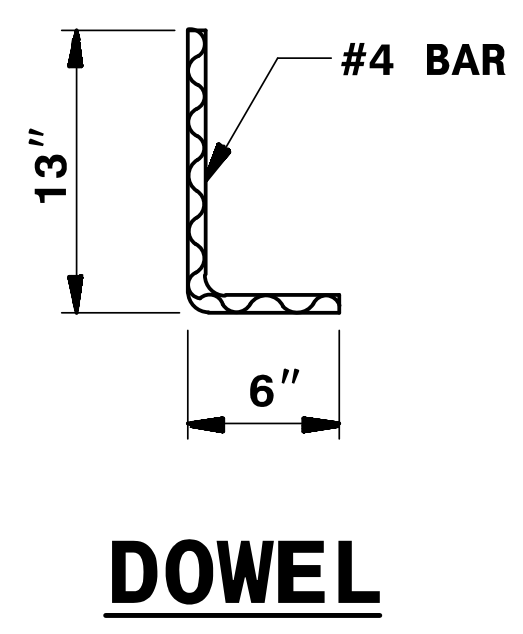
DETAIL 'B'



DETAIL 'C'



BOTTOM SLAB



DOWEL

GENERAL NOTES:

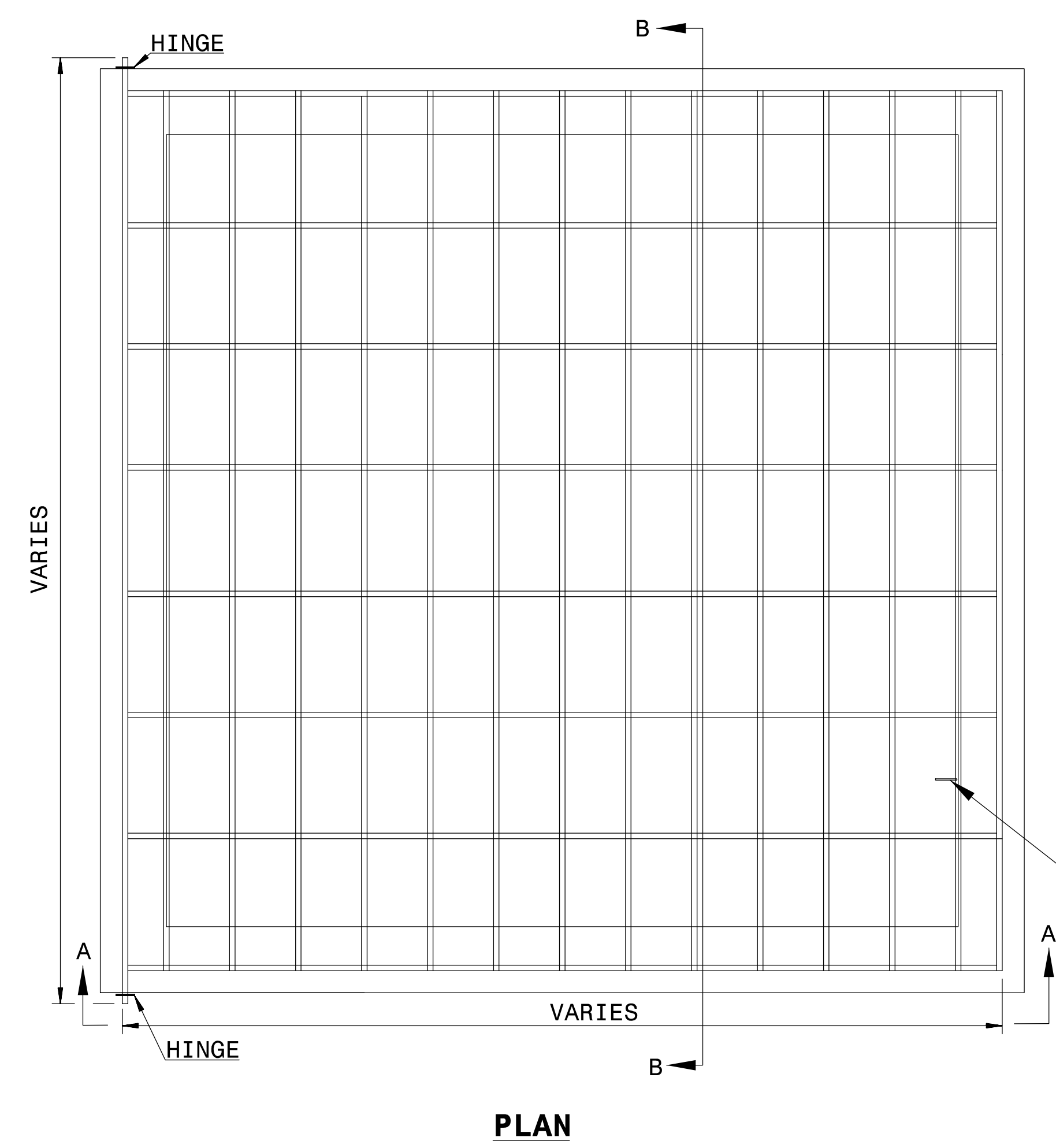
- * CHANGES IN ELEVATIONS MUST BE APPROVED BY THE ENGINEER.
- * CLASS 'B' CONCRETE TO BE USED THROUGHOUT. PRECAST CONCRETE STRUCTURES TO BE SUBMITTED FOR APPROVAL. USE STD 840.45.
- * OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2 INCH KEYWAY, OR #4 BAR DOWELS AT 12 INCH CENTERS, AS DIRECTED BY THE ENGINEER.
- * 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 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.

4/21/2017 R-4436MI_Plans_VR4436MI_Hyd_det_2D-3.dgn

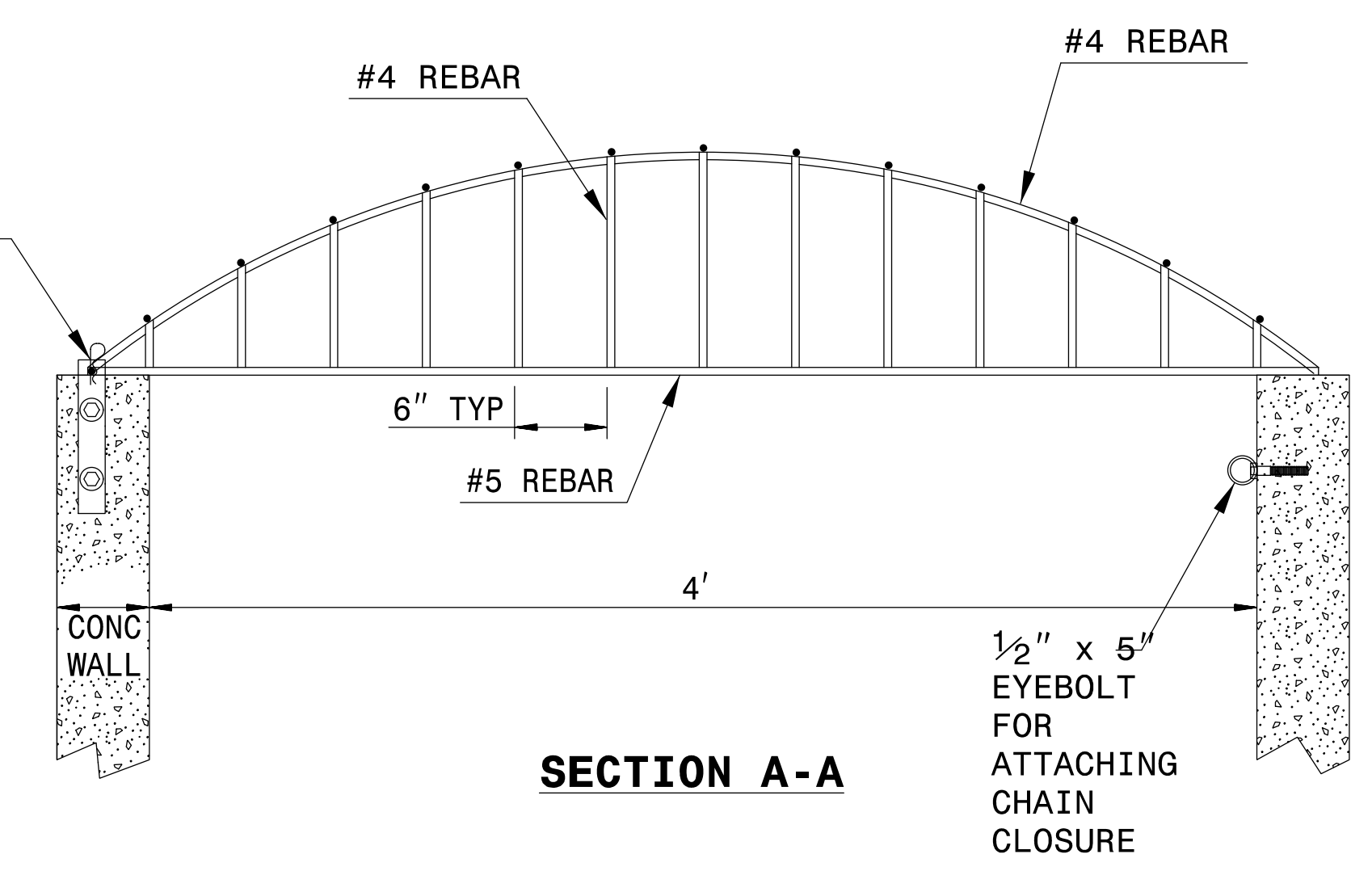
TRASH RACK DETAILS



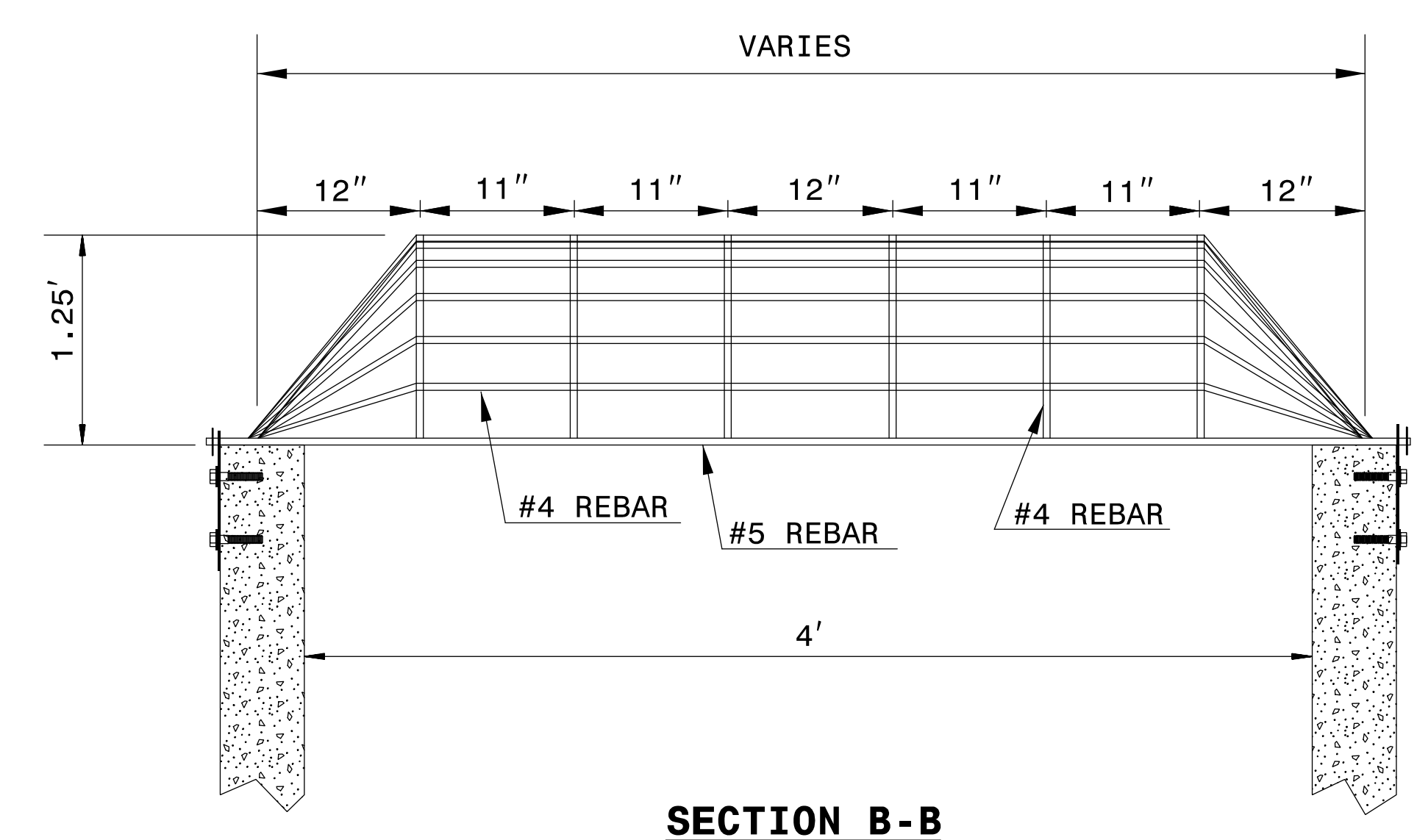
HINGE LOCATION TO BE FIELD DETERMINED, DO NOT INSTALL ON SAME SIDE AS STEPS

- RISER TRASH RACK NOTES:
1. ALL JOINTS SHALL BE FULLY WELDED AROUND JOINT WITH A MINIMUM OF A 1/4" 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.

EYEBOLT (MOVE AS NECESSARY)



SECTION A-A



SECTION B-B

**REBAR TRASH RACK
NOT TO SCALE**

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PROJECT REFERENCE NO. <i>R-4436MI</i>	SHEET NO. <i>3B/3D</i>
PROJECT ENGINEER	

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UNLESS ALL SIGNATURES COMPLETED**

SUMMARY OF EARTHWORK
(for Stormwater BMP's)

ITEM DESCRIPTION	UNIT	QUANTITY
		PROJECT TOTALS
UNCLASSIFIED EXCAVATION	CY	360
EMBANKMENT	CY	90
ENGINEERED SOIL MEDIA	CY	135
WASHED NO. 57 STONE	TON	63
RIPRAP, CL B	TON	66

SUMMARY FOR EROSION CONTROL
(for Stormwater BMP's)

ITEM DESCRIPTION	UNIT	QUANTITY
		PROJECT TOTALS
SEDIMENT CONTROL STONE (NO. 5 OR 57)	TON	14
EROSION CONTROL STONE CL. A	TON	49
EROSION CONTROL STONE CL. B	TON	8
SEEDING & MULCHING	ACR	0.5
SODDING	SY	730
WATER	MG	25
1/4" HARDWARE CLOTH	LF	60

DRAINAGE SUMMARY
(for Stormwater BMP's)

ITEM DESCRIPTION	UNIT	QUANTITY
		PROJECT TOTALS
12" CS PIPE CULVERT	LF	84
12" CS PIPE ELBOW	EA	2
UNDERDRAIN PIPE - 6" HDPE PERFORATED	LF	86
UNDERDRAIN PIPE - 6" HDPE NONPERFORATED	LF	8
6" CAP (THREADED)	EA	2
18" HDPE	LF	366
6" x 6" x 6" HDPE TEE	EA	1
GEOTEXTILE FOR DRAINAGE (TYPE 2, NON-WOVEN)	SY	252
POLYPROPYLENE NONWOVEN GEOTEXTILE FABRIC	SY	271
OUTLET STRUCTURE BOX (SEE SHEET 2D-3)	EA	1
REBAR TRASH RACK (SEE SHEET 2D-4)	EA	1
JUNCTION BOX	EA	3
FRAME W/COVER (840.54)	EA	3
ADJUSTMENT OF DI	EA	2
PIPE REMOVAL (18" RCP)	LF	290

LIST OF PIPES

REFERENCE	HDPE PIPE				C.S. PIPE	PIPE REMOVAL LIN. FT.	REMARKS
	6" PERFORATED PIPE	6" SOLID	18"	12"			
BASIN 1	86	8					SEE DETAILS ON SHEETS 2D-1 AND 2D-2
BASIN 1 TO 0406			68				
0402 TO BASIN 1				84			
0403 TO 0404			130				
0404 TO 0405			146				
0405 TO 0406			22				
0403 TO 0406					290		EXIST. 18" RCP
TOTALS (FT)	86	8	366	84	290		


LIST OF STRUCTURES

STRUCTURE NO.	DESCRIPTION	TOP ELEVATION	INVERT IN ELEVATION	INVERT OUT ELEVATION	PRECAST DRN. STRUCTURE STD. 840.45	J.B. STD. 840.31 OR 840.32	MANHOLE FRAME AND COVER STD. 840.54	TRASH RACK	REMARKS
0401	BASIN OUTLET STRUCTURE	2632.0	2626.0	2624.0	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	JUNCTION BOX 1	2654.0	2648.4	2647.5		1	1		EXTRA DEPTH BOX: PER EACH (0' THRU 5.0') = 1, 5.0' THRU 10.0' = 1.5 LIN. FT. (FIELD VERIFY)
0403	EXIST. DI								TO BE ADJUSTED FOR NEW OUTLET PIPE. SEE SHEET 4.
0404	JUNCTION BOX 2	2637.0	2630.5	2630.0		1	1		EXTRA DEPTH BOX: PER EACH (0' THRU 5.0') = 1, 5.0' THRU 10.0' = 2 LIN. FT. (FIELD VERIFY)
0405	JUNCTION BOX 3	2631.5	2628.5	2626.5		1	1		
0406	EXIST. DI								TO BE ADJUSTED FOR NEW INLET PIPES. SEE SHEET 4.
TOTALS (FT)					1	3	3	1	

8/17/99

NOTES:

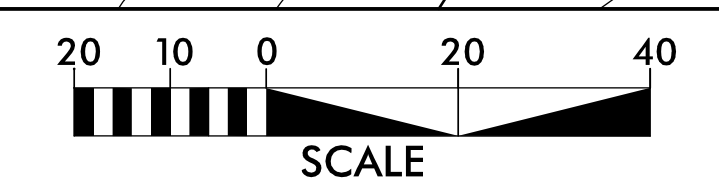
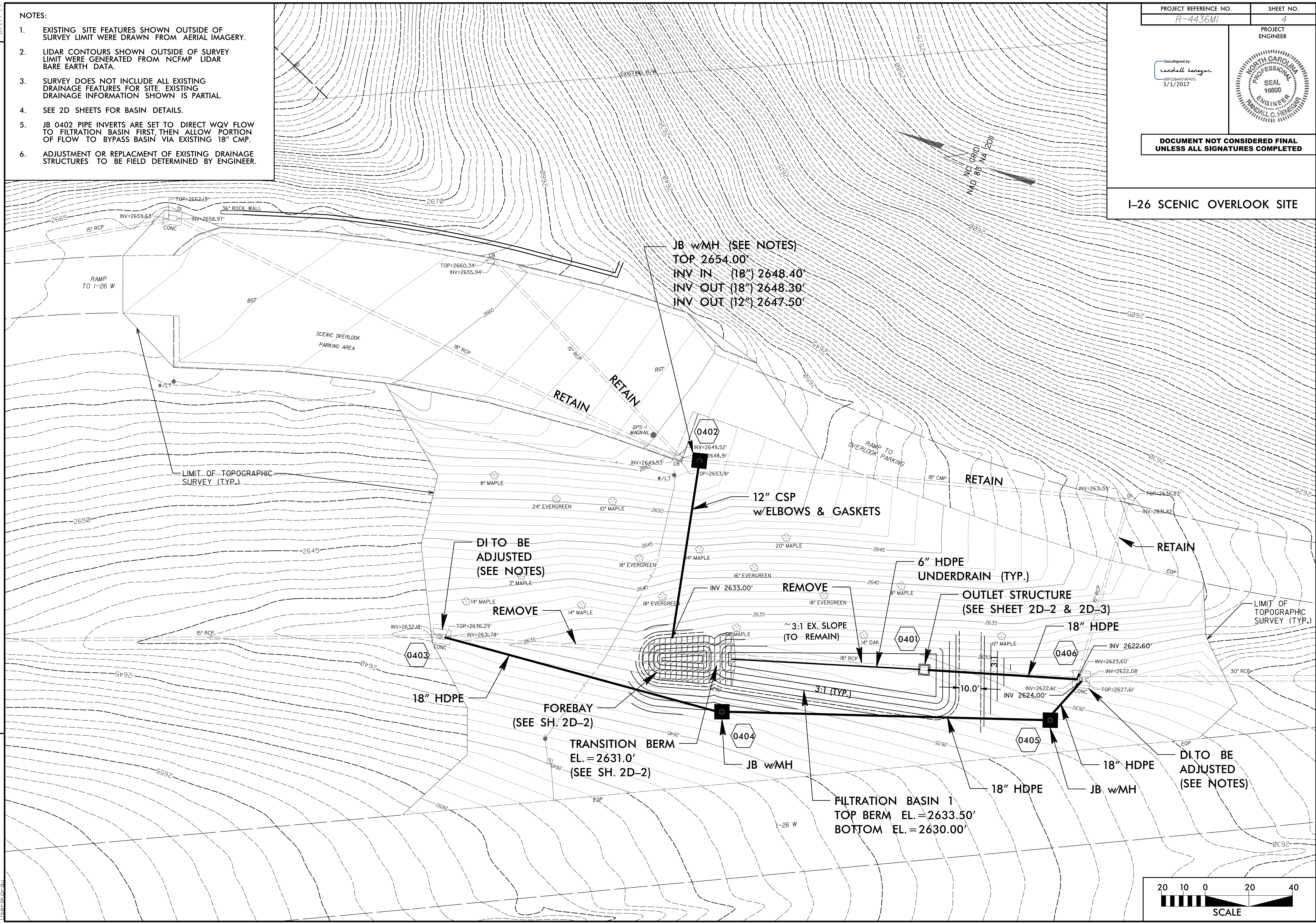
- EXISTING SITE FEATURES SHOWN OUTSIDE OF SURVEY LIMIT WERE DRAWN FROM AERIAL IMAGERY.
- LIDAR CONTOURS SHOWN OUTSIDE OF SURVEY LIMIT WERE GENERATED FROM NCFMP LIDAR BARE EARTH DATA.
- SURVEY DOES NOT INCLUDE ALL EXISTING DRAINAGE FEATURES FOR SITE. EXISTING DRAINAGE INFORMATION SHOWN IS PARTIAL.
- SEE 2D SHEETS FOR BASIN DETAILS.
- JB 0402 PIPE INVERTS ARE SET TO DIRECT WQV FLOW TO FILTRATION BASIN FIRST, THEN ALLOW PORTION OF FLOW TO BYPASS BASIN VIA EXISTING 18" CMP.
- ADJUSTMENT OR REPLACEMENT OF EXISTING DRAINAGE STRUCTURES TO BE FIELD DETERMINED BY ENGINEER.

PROJECT REFERENCE NO. R-4436M1	SHEET NO. 4
PROJECT ENGINEER	
	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

I-26 SCENIC OVERLOOK SITE

REVISIONS

2/23/2017 R-4436-Hydro-Utilities-R-4436M1-Plans-VR-4436M1-Hyd_psh_4.dgn

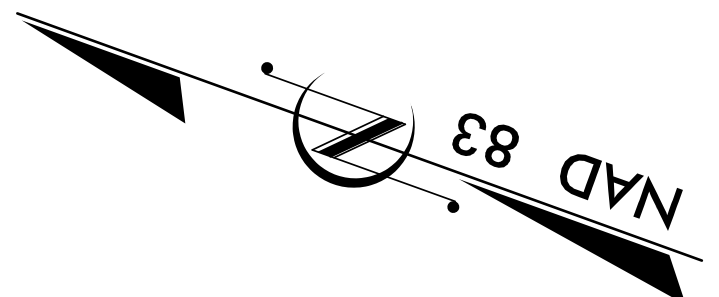


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SITE DESCRIPTION	STABILIZATION TIME	TIMEFRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 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 CONTROL PLAN

PROJECT REFERENCE NO. R-4436M1	SHEET NO. EC-1
PROJECT ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



EROSION AND SEDIMENT CONTROL MEASURES

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

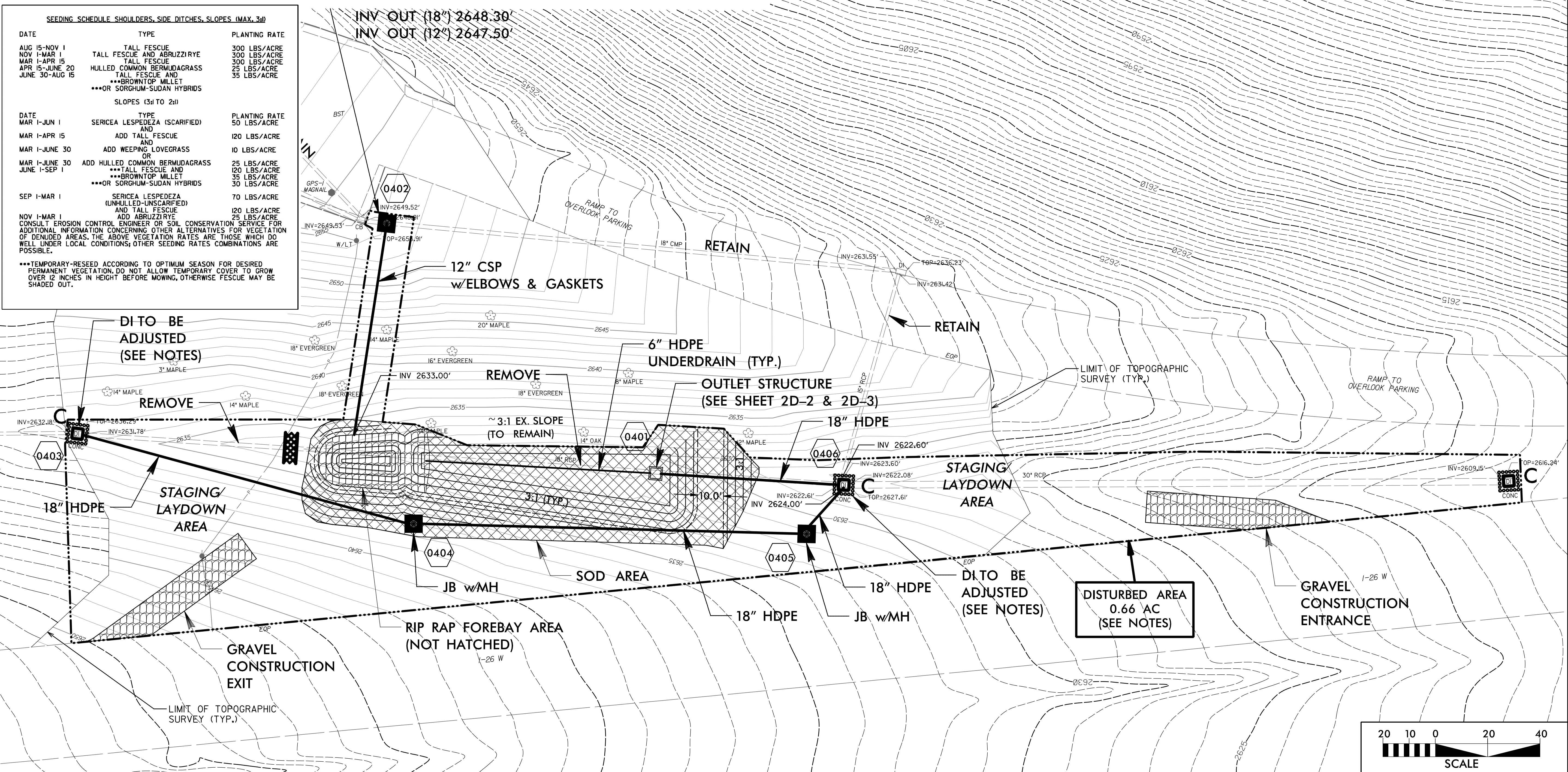
THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE AUGUST 3, 2011 AND ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES DIVISION OF WATER RESOURCES.

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.

----- LIMIT OF DISTURBANCE

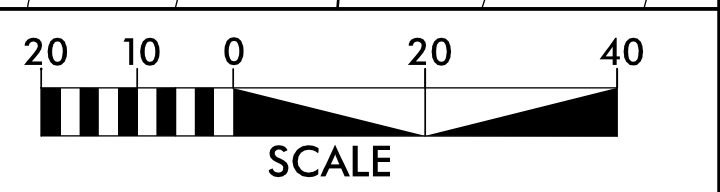
SEEDING SCHEDULE SHOULDERS, SIDE DITCHES, SLOPES (MAX. 3:1)

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	SERICA LEPEDEZA (SCARIFIED) AND ADD TALL FESCUE	50 LBS/ACRE
MAR 1-APR 15	ADD TALL FESCUE	120 LBS/ACRE
MAR 1-JUNE 30	ADD WEEPING LOVEGRASS OR ADD HULLED COMMON BERMUDAGRASS	10 LBS/ACRE
MAR 1-JUNE 30	ADD HULLED COMMON BERMUDAGRASS ***TALL FESCUE AND ***BROWNTOP MILLET ***OR SORGHUM-SUDAN HYBRIDS	25 LBS/ACRE 120 LBS/ACRE 35 LBS/ACRE 30 LBS/ACRE
JUNE 1-SEP 1	***OR SORGHUM-SUDAN HYBRIDS	30 LBS/ACRE
SEP 1-MAR 1	SERICA LEPEDEZA (UNHULLED-UNSCARIFIED) AND TALL FESCUE	70 LBS/ACRE
NOV 1-MAR 1	ADD ABRUZZI RYE	120 LBS/ACRE
CONSULT EROSION CONTROL ENGINEER OR SOIL CONSERVATION SERVICE FOR ADDITIONAL INFORMATION CONCERNING OTHER ALTERNATIVES FOR VEGETATION OF DENUDEED 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.		



REVISIONS

2/23/2017 R-4436M1_Hydro-Hydraulics-R-4436M1_Plans-R-4436M1_EC.dwg
 User: rcooper



TRAFFIC CONTROL PLAN

PROJECT REFERENCE NO. R-4436MI	SHEET NO. TC-1
PROJECT ENGINEER	
DocuSigned by: randall henger 85F228A4319F47D... 3/1/2017	

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

1-1-12

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

SHEET 2 OF 3
1101.01

DETAIL A

DETAIL B

DETAIL C

DETAIL D

GENERAL NOTES

- USE FLUORESCENT ORANGE SHEETING (TYPE VII OR HIGHER) ON ALL ADVANCED WORK ZONE SIGNS.
- DO NOT INSTALL ADVANCE WARNING SIGNS MORE THAN 3 DAYS PRIOR TO BEGINNING OF WORK UNLESS COVERED.
- 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.
- ALL SIGN SPACING DIMENSIONS ARE APPROXIMATE, FIELD ADJUST AS NECESSARY OR AS DIRECTED.
- 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.
- WHEN NECESSARY, USE SPLICING IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1110.01.
- DO NOT BACK BRACE SIGN SUPPORTS.
- 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

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.

1-1-12

ENGLISH STANDARD DRAWING FOR
TEMPORARY LANE CLOSURES DIVIDED MULTI-LANE ROADWAY - 1 LANE CLOSED (FOR ROADWAYS >= 60 MPH)

SHEET 4 OF 15
1101.02

LEFT LANE CLOSURE

RIGHT LANE CLOSURE

GENERAL NOTES

- IF NECESSARY USE THIS STD. FOR ONE-WAY CITY TYPE STREETS WHERE SIGNS MAY BE MOUNTED ON BOTH SIDES OF THE ROADWAY.
- PLACE ARROW BOARDS ON THE SHOULDER (PAVED OR UNPAVED). PLACE ARROW BOARDS WITHIN THE TAPER IF SHOULDER DOES NOT EXIST. MEET THE REQUIREMENTS FOR STOPPING SIGHT DISTANCE AT THE ARROW BOARD LOCATION. IF NEEDED, EXTEND LANE CLOSURES AT THE BUFFER SPACE, SUCH THAT STOPPING SIGHT DISTANCE TO THE ARROW BOARD IS MET (SEE STD. 1101.11 SHEET 2).
- PLACE DRUMS IN TAPERS AT THE MAXIMUM SPACING EQUAL IN FEET TO THE POSTED SPEED LIMIT. PLACE DRUMS ALONG THE WORK AREA AT THE MAXIMUM SPACING EQUAL IN FEET TO 2 TIMES THE POSTED SPEED LIMIT.
- REFER TO STD. 1101.11, FOR "L" DISTANCE AND BUFFER SPACE.
- REFER TO STD. 1101.02 SHEETS 9 AND 10 FOR TREATMENT OF LANE CLOSURES THRU INTERCHANGES.
- INSTALL LANE CLOSURES WITH THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE UPSTREAM SIDE OF TRAFFIC. REMOVE LANE CLOSURES AGAINST THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE DOWNSTREAM SIDE OF TRAFFIC.
- POSITION THE TMA TO MAINTAIN A ROLL-AHEAD DISTANCE AS RECOMMENDED BY THE MANUFACTURER AND CONTINUOUSLY ADVANCE TMAS AS WORK PROGRESSES.
- PLACE CHANGEABLE MESSAGE SIGN (CMS) ON THE OUTSIDE OF THE TRAVELWAY AS DIRECTED BY THE ENGINEER. PLACE CMS APPROXIMATELY 1 MILE IN ADVANCE OF THE W20-5 SIGNS. IF TRAFFIC BACKS UP TO WHERE THE CMS IS INITIALLY PLACED, RELOCATE CMS 1/2 MILE IN ADVANCE OF ANTICIPATED BACKUP. CONTINUE TO MONITOR TRAFFIC, MOVE CMS APPROXIMATELY 1/2 MILE IN ADVANCE OF ANTICIPATED BACKUP.
- DO NOT EXCEED A 2 MILE LANE CLOSURE LENGTH UNLESS OTHERWISE SHOWN IN THE TMP OR AS DIRECTED BY THE ENGINEER.

LEGEND

- FLASHING ARROW BOARD (TYPE C)
- FLASHING ARROW BOARD, TYPE "C" (96"x48" MIN.), "CAUTION MODE"
- TRUCK MOUNTED ATTENUATOR (TMA)
- CHANGEABLE MESSAGE SIGN (CMS)
- DRUM
- PORTABLE SIGN
- DIRECTION OF TRAFFIC FLOW

ENGLISH STANDARD DRAWING FOR
TEMPORARY LANE CLOSURES DIVIDED MULTI-LANE ROADWAY - 1 LANE CLOSED (FOR ROADWAYS >= 60 MPH)

SHEET 4 OF 15
1101.02

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

1-1-12

ENGLISH STANDARD DRAWING FOR
DRUM

SHEET 1 OF 1
1130.01

DRUM

GENERAL NOTES

- 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.
- 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.
- USE TYPE 3 OR HIGHER HIGH INTENSITY PRISMATIC SHEETING.
- SEE THE DEPARTMENT'S APPROVED PRODUCT LIST AT <https://apps.dot.state.nc.us/vendor/approvedproducts>.
- REFER THE STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES FOR ADDITIONAL INFORMATION.

ENGLISH STANDARD DRAWING FOR
DRUM

SHEET 1 OF 1
1130.01

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

1-1-12

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

- 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.
- SEE THE DEPARTMENT'S APPROVED PRODUCTS LIST AT <https://apps.dot.state.nc.us/vendor/approvedproducts>.
- USE TYPE IV OR HIGHER HIGH INTENSITY PRISMATIC SHEETING.

ENGLISH STANDARD DRAWING FOR
CONES

SHEET 1 OF 1
1135.01