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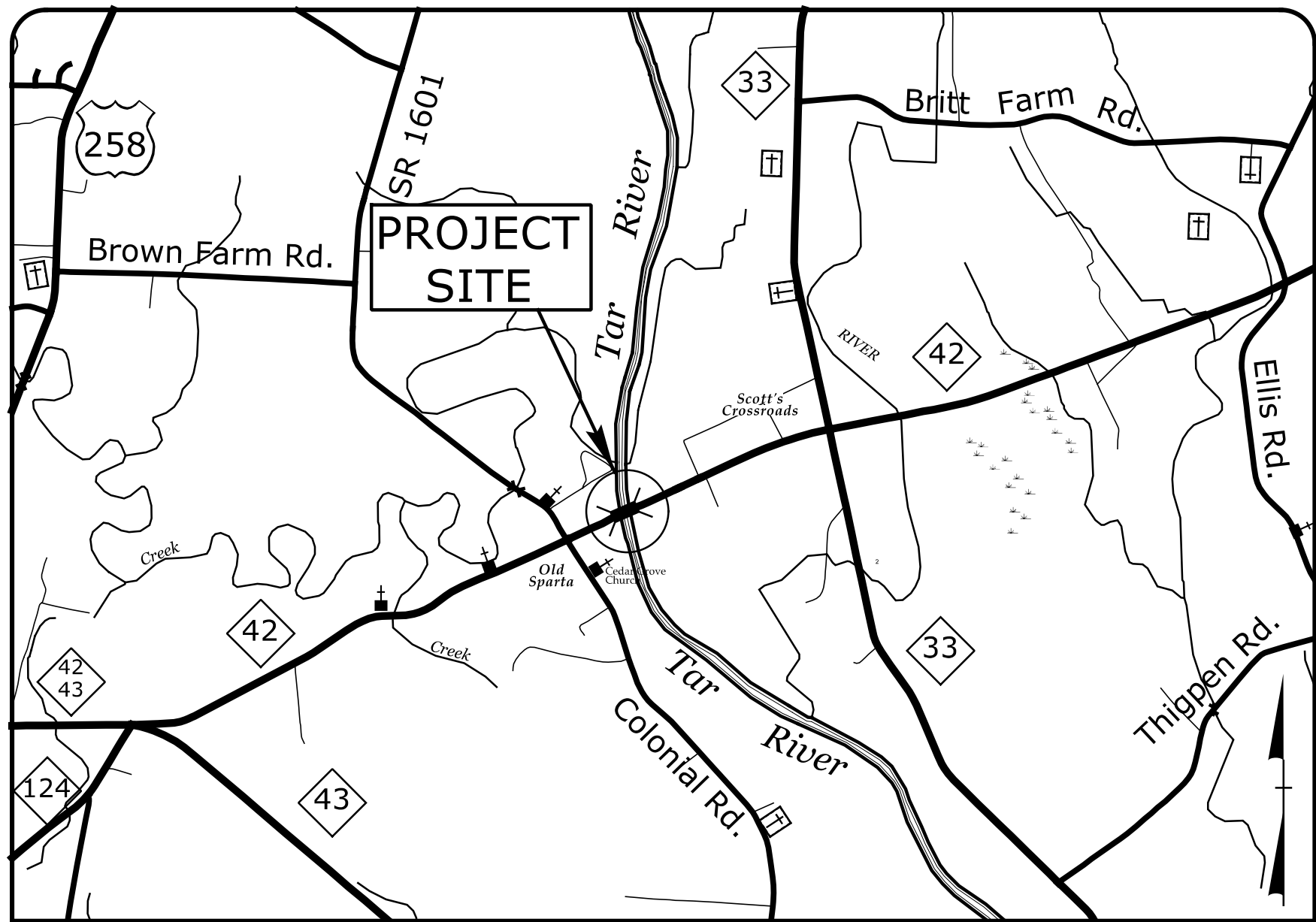
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TIP PROJECT: B-4932

CONTRACT: C203938

See Sheet 1A For Index of Sheets
See Sheet 1B For Conventional Symbols



VICINITY MAP
NOT TO SCALE

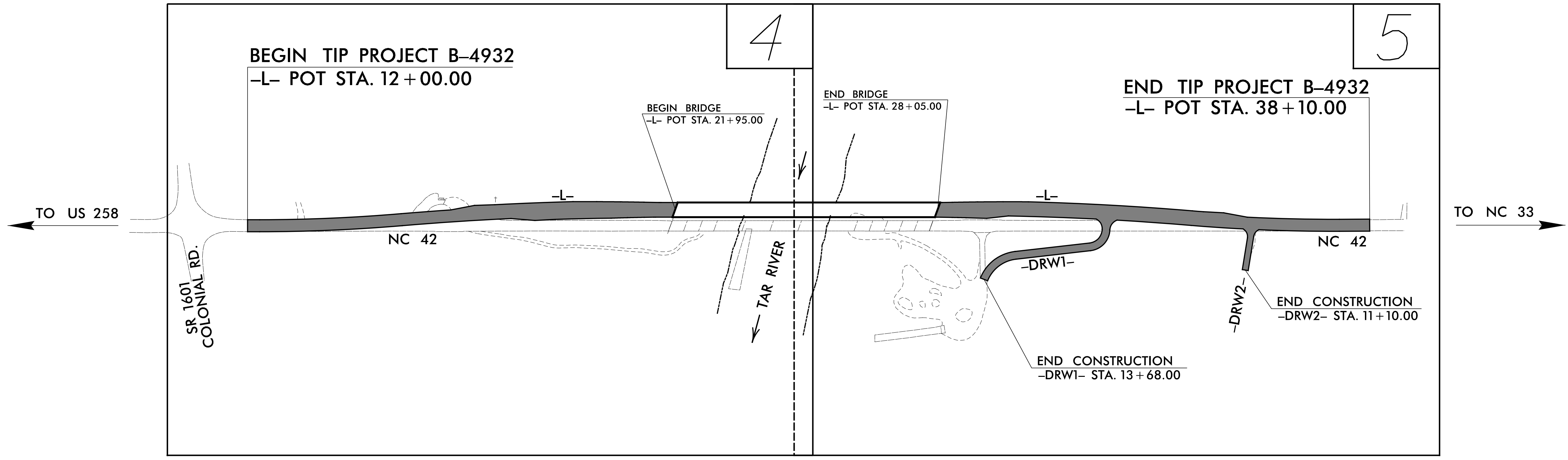
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
EDGECOMBE COUNTY

LOCATION: BRIDGE NO. 28 OVER TAR RIVER ON NC 42

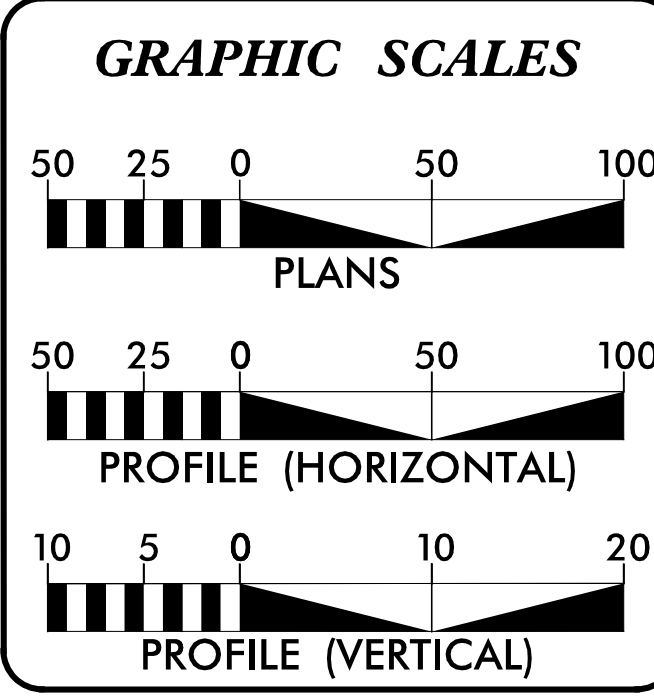
**TYPE OF WORK: GRADING, PAVING, DRAINAGE,
AND STRUCTURE**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4932	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
40137.1.1	BRSTP-0042(19)	PE	
40137.2.1		RW, UTIL.	
40137.3.1		CONST.	

NAD 83 NSRS 2007



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



DESIGN DATA

ADT 2017 =	2410
ADT 2037 =	3180
K =	9 %
D =	60 %
T =	32 % *
V =	60 MPH
* TTST =	22% DUAL 10%
FUNC CLASS =	MAJOR COLLECTOR REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4932	=	0.378 MI.
LENGTH STRUCTURE TIP PROJECT B-4932	=	0.116 MI.
TOTAL LENGTH OF TIP PROJECT B-4932	=	0.494 MI.

Prepared for the North Carolina Department of Transportation
In the Office of:
vhb Venture I
940 Main Campus Drive, Suite 500
Raleigh, NC 27606
NC License No. C-3705

SUNGATE DESIGN GROUP, P.A.
110 JONES FRANKLIN ROAD
RALEIGH, NORTH CAROLINA 27608
TEL: 919.876.8200 FAX: 919.876.8201
ENG. PERM. LICENSE NO. C480

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: MARCH 17, 2017

LETTING DATE: JUNE 19, 2018

NCDOT CONTACT: DAVID STUTTS, PE
STRUCTURES MANAGEMENT UNIT

JIMMY GOODNIGHT, PE
PROJECT ENGINEER

JERRY JAVELLANA, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

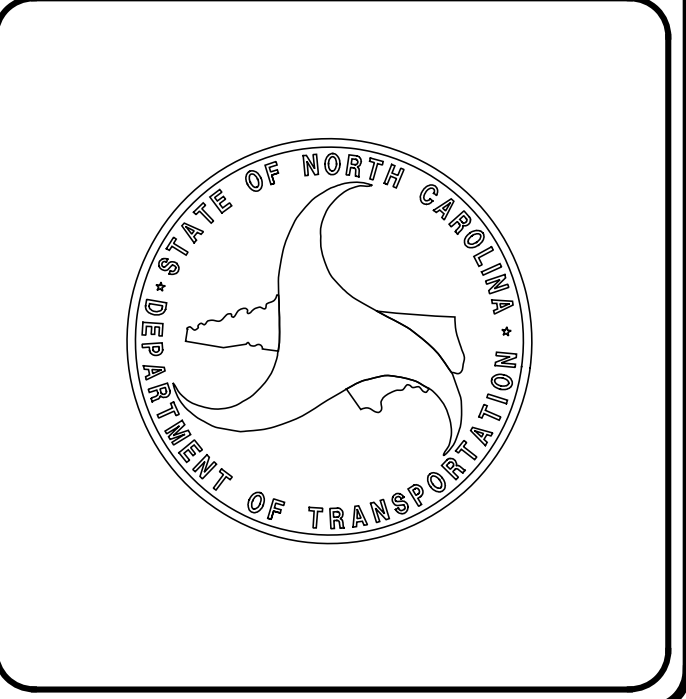
DocuSigned by:
Joshua G. Dalton
1089A28C14984C2

SIGNATURE:

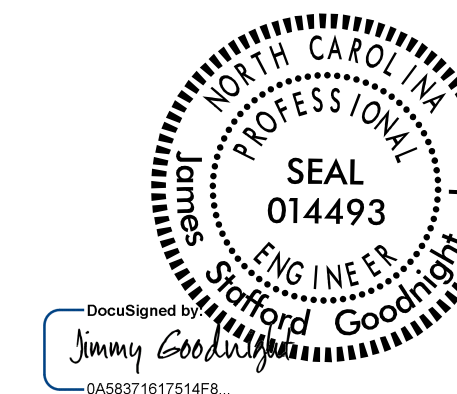
ROADWAY DESIGN ENGINEER

DocuSigned by:
Jimmy Goodnight
0458371617514F8

SIGNATURE:



DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA



DocuSigned by
James Stafford Goodright
0458271617514FE

INDEX OF SHEETS	
SHEET NUMBER	SHEET
1	TITLE SHEET
1A	INDEX OF SHEETS, STANDARD DRAWINGS, AND GENERAL NOTES
1B	CONVENTIONAL SYMBOLS
1C-1 THRU 1C-2	SURVEY CONTROL SHEETS
2A-1	PAVEMENT SCHEDULE, TYPICAL SECTIONS
2C-1	GUARDRAIL INSTALLATION
2G-1 THRU 2G-5	STANDARD REINFORCED SOIL SLOPE (RSS) WITH HIGH GROUNDWATER, STANDARD REINFORCED SOIL SLOPE (RSS) WITH LOW GROUNDWATER, GEOTEXTILE FOR EMBANKMENT STABILIZATION DETAILS
2H-1	STOCKPILE CONTAINMENT DETAIL
3B-1 THRU 3B-2	GUARDRAIL SUMMARY, REMOVAL OF EXISTING ASPHALT PAVEMENT, BREAKING OF EXISTING ASPHALT PAVEMENT, SHOULDER BERM GUTTER SUMMARY, EARTHWORK SUMMARY
3D-1	DRAINAGE SUMMARY
3G-1	GEOTECHNICAL SUMMARIES
3P-1	PARCEL INDEX SUMMARY
4 THRU 7	PLAN AND PROFILE SHEETS
TMP-1 THRU TMP-6	TRAFFIC MANAGEMENT PLANS
PMP-1 THRU PMP-2	PAVEMENT MARKING PLANS
EC-1 THRU EC-7	EROSION CONTROL PLANS
RF-1	REFORESTATION PLAN
SIGN-1 THRU SIGN-3	SIGNING PLANS
UO-1 THRU UO-3	UTILITIES BY OTHERS PLANS
X-1A	CROSS-SECTION SUMMARY
X-1 THRU X-16	CROSS-SECTIONS
S-1 THRU S-46	STRUCTURE PLANS

2018 ROADWAY ENGLISH STANDARD DRAWINGS

EFF. 01-16-2018
REV.

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" HIGHWAY DESIGN BRANCH - N. C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N. C., DATED JANUARY, 2018 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD.NO. TITLE

DIVISION 2 - EARTHWORK

- 200.03 METHOD OF CLEARING - METHOD III
- 225.02 GUIDE FOR GRADING SUBGRADE - SECONDARY AND LOCAL
- 225.04 METHOD OF OBTAINING SUPERELEVATION - TWO LANE PAVEMENT
- 275.01 ROCK PLATING

DIVISION 3 - PIPE CULVERTS

- 300.01 METHOD OF PIPE INSTALLATION
- 310.10 DRIVEWAY PIPE CONSTRUCTION

DIVISION 4 - MAJOR STRUCTURES

- 422.01 BRIDGE APPROACH FILLS - TYPE I STANDARD APPROACH FILL
- 422.03 REINFORCED BRIDGE APPROACH FILLS - TYPE A ALTERNATE APPROACH FILL FOR INTEGRAL ABUTMENT

DIVISION 5 - SUBGRADE, BASES AND SHOULDERS

- 560.01 METHOD OF SHOULDER CONSTRUCTION - HIGH SIDE OF SUPERELEVATED CURVE - METHOD I

DIVISION 6 - ASPHALT BASES AND PAVEMENTS

- 654.01 PAVEMENT REPAIRS

DIVISION 8 - INCIDENTALS

- 806.01 CONCRETE RIGHT-OF-WAY MARKER
- 806.02 GRANITE RIGHT-OF-WAY MARKER
- 838.21 REINFORCED CONCRETE ENDWALL - FOR SINGLE 54" PIPE 90 SKEW
- 838.51 REINFORCED BRICK ENDWALL - FOR SINGLE 54" PIPE 90 SKEW
- 838.75 NOTES FOR REINFORCED BRICK ENDWALL - STD. DWG. 838.51 THRU 838.52
- 840.00 CONCRETE BASE PAD FOR DRAINAGE STRUCTURES
- 840.25 ANCHORAGE FOR FRAMES - BRICK OR CONCRETE OR PRECAST
- 840.29 FRAMES AND NARROW SLOT FLAT GRATES
- 840.35 TRAFFIC BEARING GRATED DROP INLET - FOR CAST IRON DOUBLE FRAME AND GRATES
- 840.46 TRAFFIC BEARING PRECAST DRAINAGE STRUCTURE
- 840.66 DRAINAGE STRUCTURE STEPS
- 840.72 PIPE COLLAR
- 846.01 CONCRETE CURB, GUTTER AND CURB & GUTTER
- 846.04 DROP INLET INSTALLATION IN SHOULDER BERM GUTTER
- 862.01 GUARDRAIL PLACEMENT
- 862.02 GUARDRAIL INSTALLATION
- 862.03 STRUCTURE ANCHOR UNITS
- 862.04 ANCHORING END OF GUARDRAIL - B-77 AND B-83 ANCHOR UNITS
- 876.01 RIP RAP IN CHANNELS
- 876.02 GUIDE FOR RIP RAP AT PIPE OUTLETS

GENERAL NOTES:

2018 SPECIFICATIONS
EFFECTIVE: 01-16-2018
REVISED:

GRADING AND SURFACING OR RESURFACING AND WIDENING:
THE GRADE LINES SHOWN DENOTE THE FINISHED ELEVATION OF THE PROPOSED SURFACING AT GRADE POINTS SHOWN ON THE TYPICAL SECTIONS. WHERE NO GRADE LINES ARE SHOWN, THE PROFILES SHOWN DENOTE THE TOP ELEVATION OF THE EXISTING PAVEMENT ALONG THE CENTER LINE OF SURVEY ON WHICH THE PROPOSED RESURFACING WILL BE PLACED. GRADE LINES MAY BE ADJUSTED 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 III.

SUPERELEVATION:
ALL CURVES ON THIS PROJECT SHALL BE SUPERELEVATED IN ACCORDANCE WITH STD. NO. 225.04 USING THE RATE OF SUPERELEVATION AND RUNOFF SHOWN ON THE PLANS. SUPERELEVATIONS IS TO BE REVOLVED ABOUT THE GRADE POINTS SHOWN ON THE TYPICAL SECTIONS.

SHOULDER CONSTRUCTION:
ASPHALT, EARTH, AND CONCRETE SHOULDER CONSTRUCTION ON THE HIGH SIDE OF SUPERELEVATED CURVES SHALL BE IN ACCORDANCE WITH STD. NO. 560.01

SIDE ROADS:
THE CONTRACTOR WILL BE REQUIRED TO DO ALL NECESSARY WORK TO PROVIDE SUITABLE CONNECTIONS WITH ALL ROADS, STREETS, AND DRIVES ENTERING THIS PROJECT. THIS WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR THE PARTICULAR ITEMS INVOLVED.

GUARDRAIL:
THE GUARDRAIL LOCATIONS SHOWN ON THE PLANS MAY BE ADJUSTED DURING CONSTRUCTION AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHOULD CONSULT WITH THE ENGINEER PRIOR TO ORDERING GUARDRAIL MATERIAL.

TEMPORARY SHORING:
SHORING REQUIRED FOR THE MAINTENANCE OF TRAFFIC WILL BE PAID FOR AS "EXTRA WORK" IN ACCORDANCE WITH SECTION 104-7.

END BENTS:
THE ENGINEER SHALL CHECK THE STRUCTURE END BENT PLANS, DETAILS, AND CROSS-SECTION PRIOR TO SETTING OF THE SLOPE STAKES FOR THE EMBANKMENT OR EXCAVATION APPROACHING A BRIDGE.

UTILITIES:
UTILITY OWNERS ON THIS PROJECT ARE EDGEcombe MARTIN EMC (POWER), EDGEcombe COUNTY (WATER), CENTURY LINK (TELEPHONE), AND SUDDENLINK (CATV).

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS, EXCEPT AS SHOWN ON THE PLANS.

RIGHT-OF-WAY MARKERS:
ALL RIGHT-OF-WAY MARKERS ON THIS PROJECT SHALL BE PLACED BY CONTRACT.

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

12/2/2016

BOUNDARIES AND PROPERTY:

State Line	
County Line	
Township Line	
City Line	
Reservation Line	
Property Line	
Existing Iron Pin	
Computed Property Corner	
Property Monument	
Parcel/Sequence Number	
Existing Fence Line	
Proposed Woven Wire Fence	
Proposed Chain Link Fence	
Proposed Barbed Wire Fence	
Existing Wetland Boundary	
Proposed Wetland Boundary	
Existing Endangered Animal Boundary	
Existing Endangered Plant Boundary	
Existing Historic Property Boundary	
Known Contamination Area: Soil	
Potential Contamination Area: Soil	
Known Contamination Area: Water	
Potential Contamination Area: Water	
Contaminated Site: Known or Potential	

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

RAILROADS:

Standard Gauge	
RR Signal Milepost	
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	
New Right of Way Line with Pin and Cap	
New Right of Way Line with Concrete or Granite R/W Marker	
New Control of Access Line with Concrete C/A Marker	
Existing Control of Access	
New Control of Access	
Existing Easement Line	
New Temporary Construction Easement	
New Temporary Drainage Easement	
New Permanent Drainage Easement	
New Permanent Drainage / Utility Easement	
New Permanent Utility Easement	
New Temporary Utility Easement	
New Aerial Utility Easement	

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	
Existing Curb	
Proposed Slope Stakes Cut	
Proposed Slope Stakes Fill	
Proposed Curb Ramp	
Existing Metal Guardrail	
Proposed Guardrail	
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	

EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	
Bridge Wing Wall, Head Wall and End Wall	
MINOR:	
Head and End Wall	
Pipe Culvert	
Footbridge	
Drainage Box: Catch Basin, DI or JB	
Paved Ditch Gutter	
Storm Sewer Manhole	
Storm Sewer	

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.*)	
U/G Power Line LOS C (S.U.E.*)	
U/G Power Line LOS D (S.U.E.*)	

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

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

SANITARY SEWER:

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

MISCELLANEOUS:

Utility Pole	
Utility Pole with Base	
Utility Located Object	
Utility Traffic Signal Box	
Utility Unknown U/G Line LOS B (S.U.E.*)	
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	
End of Information	

6/2/99

PROJECT REFERENCE NO.	SHEET NO.
B-4932	1C-1
Location and Surveys	

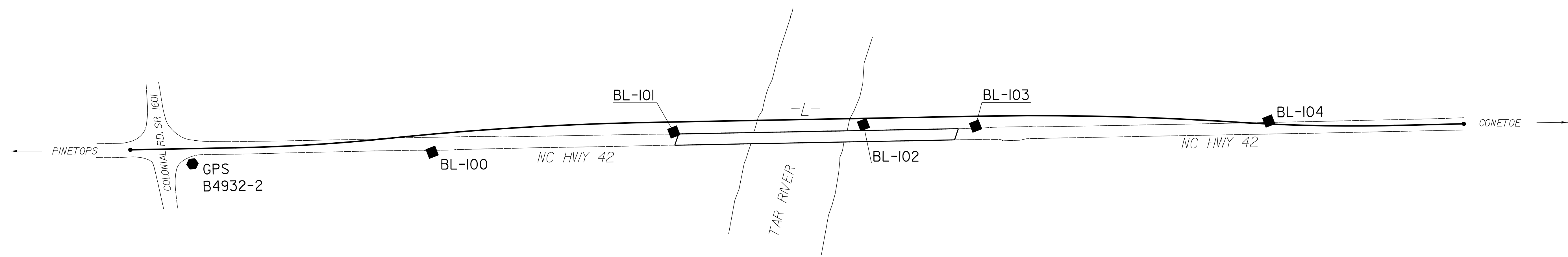
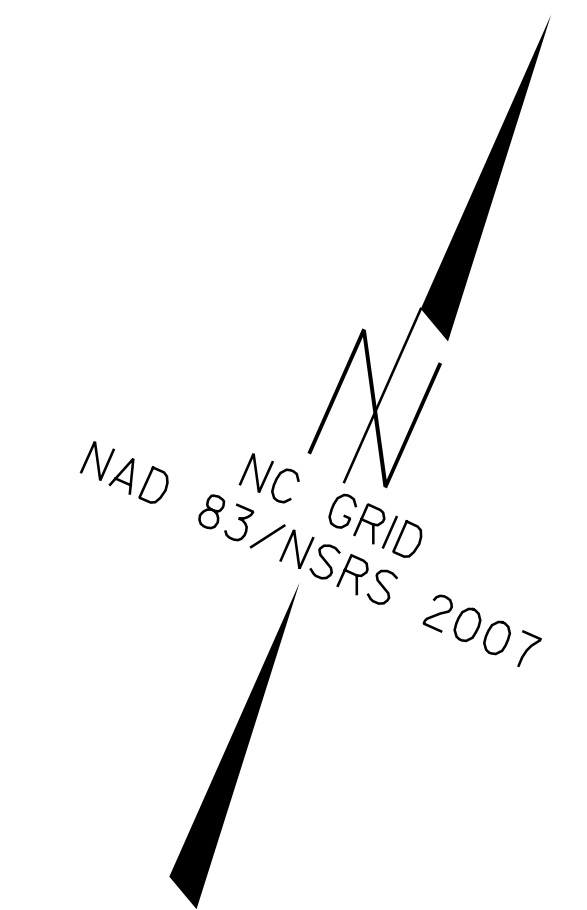
SURVEY CONTROL SHEET B-4932

FINAL

BL	POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
1		B4932-1	744926.1030	2427987.2770	42.28	OUTSIDE PROJECT LIMITS	
2		B4932-2	745204.8220	2428728.5410	40.88	11+33.67	33.19 RT
100		BL100	745437.9400	2429192.6940	41.06	16+50.75	39.08 RT
101		BL101	745689.7990	2429653.2450	42.87	21+77.75	21.81 RT
102		BL102	745870.5880	2430022.3020	17.65	25+88.62	13.67 RT
103		BL103	745965.9560	2430245.4560	43.08	28+31.18	21.40 RT
104		BL104	746232.9710	2430821.2950	39.29	34+66.35	6.26 LT

 30 ELEVATION = 41.92
 N 745505 E 2429093
 L STATION 15+97.00 68 LEFT
 TBM#1

 31 ELEVATION = 22.02
 N 745924 E 2430002
 L STATION 25+93.00 44 LEFT
 TBM#2



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "GPS B4932-2"

WITH NAD 83/NSRS 2007 STATE PLANE GRID COORDINATES OF
 NORTHING: 745204.822(fft) EASTING: 2428728.541(fft)
 ELEVATION: 40.8790(fft)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99992026

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "GPS B4932-2" TO -L- STATION 10+00 IS
 S78°58'42.09" 137.73

ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
 VERTICAL DATUM USED IS NAVD 88

NOTES:

1. THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:
[HTTPS://CONNECT.NCDOT.GOV/RESOURCES/LOCATION/](https://connect.ncdot.gov/resources/location/)
 THE FILES TO BE FOUND ARE AS FOLLOWS:
 B4932_LS_CONTROL.TXT
- SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.
- ◆ INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.
 PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.

NOTE: DRAWING NOT TO SCALE

12/5/2017 10:10:10 localiser

SURVEY CONTROL SHEET B-4932

FINAL

ROW MARKER CONCRETE OR GRANITE

ALIGN	STATION	OFFSET	NORTH	EAST
L	12+00.00	-30.00	745290.10003	2428762.00210
L	12+00.00	30.00	745235.70601	2428787.32581
L	14+00.00	-66.00	745409.28325	2428923.84709
L	14+50.00	55.00	745325.65499	2429024.54272
L	15+45.00	43.05	745382.64865	2429102.95096
L	15+50.84	-16.54	745437.32487	2429078.53784
L	15+53.66	-50.00	745467.76725	2429064.36464
L	15+62.82	-15.53	745442.39110	2429089.41952
L	15+65.74	-50.00	745473.76523	2429074.83733
L	18+50.00	-50.00	745610.61377	2429326.40566
L	19+10.00	-76.00	745661.32167	2429368.51632
L	20+64.00	67.74	745600.16664	2429570.16832
L	21+00.00	102.00	745584.39696	2429616.94424
L	21+22.82	-76.00	745755.28345	2429562.16897
L	21+22.82	102.00	745593.91452	2429637.29599
L	22+25.00	102.00	745637.04174	2429729.93102
L	22+25.00	68.00	745667.86502	2429715.58092
L	28+38.82	-76.00	746057.47964	2430211.27071
L	29+50.00	-60.00	746089.47081	2430320.12054
L	33+95.88	-60.00	746258.57294	2430736.95021
L	35+56.00	60.00	746205.07834	2430929.73734
L	35+56.00	54.39	746210.26397	2430927.58764
L	37+39.47	-60.00	746389.01646	2431048.96313
L	38+10.00	50.00	746319.55076	2431159.63654
L	38+10.00	60.00	746310.50388	2431163.89729
L	38+10.00	-60.00	746419.06639	2431112.76821
L	38+10.00	-50.00	746410.01951	2431117.02897

ROW MARKER PERMANENT EASEMENT

ALIGN	STATION	OFFSET	NORTH	EAST
L	13+72.00	70.00	745275.57844	2428961.31158
L	13+79.00	46.24	745299.96607	2428956.79492
L	13+92.00	76.00	745279.56771	2428982.17394
L	14+00.00	48.69	745307.55243	2428976.80195
L	14+15.00	-92.00	745439.13296	2428924.81971
L	14+38.00	-62.61	745423.70229	2428958.49124
L	14+44.00	-82.00	745443.57906	2428954.55234
L	20+30.00	-117.00	745751.99039	2429459.51763
L	20+30.00	-76.00	745715.06666	2429477.34003
L	22+04.00	-150.00	745856.63333	2429604.53352
L	22+72.00	-137.00	745873.54816	2429671.66688
L	23+06.00	-76.00	745832.59768	2429728.23593

TYPE	STATION	L	
		NORTH	EAST
POT	10+00.00	745178.4906	2428593.3506
PC	12+27.96	745274.7059	2428800.0159
PRC	15+58.54	745426.7884	2429093.4209
PT	21+22.82	745686.3844	2429594.2457
PC	28+38.82	745988.5805	2430243.3474
PRC	33+95.88	746202.2482	2430757.6268
PT	37+39.47	746334.7352	2431074.5277
POT	38+89.19	746398.5280	2431209.9789

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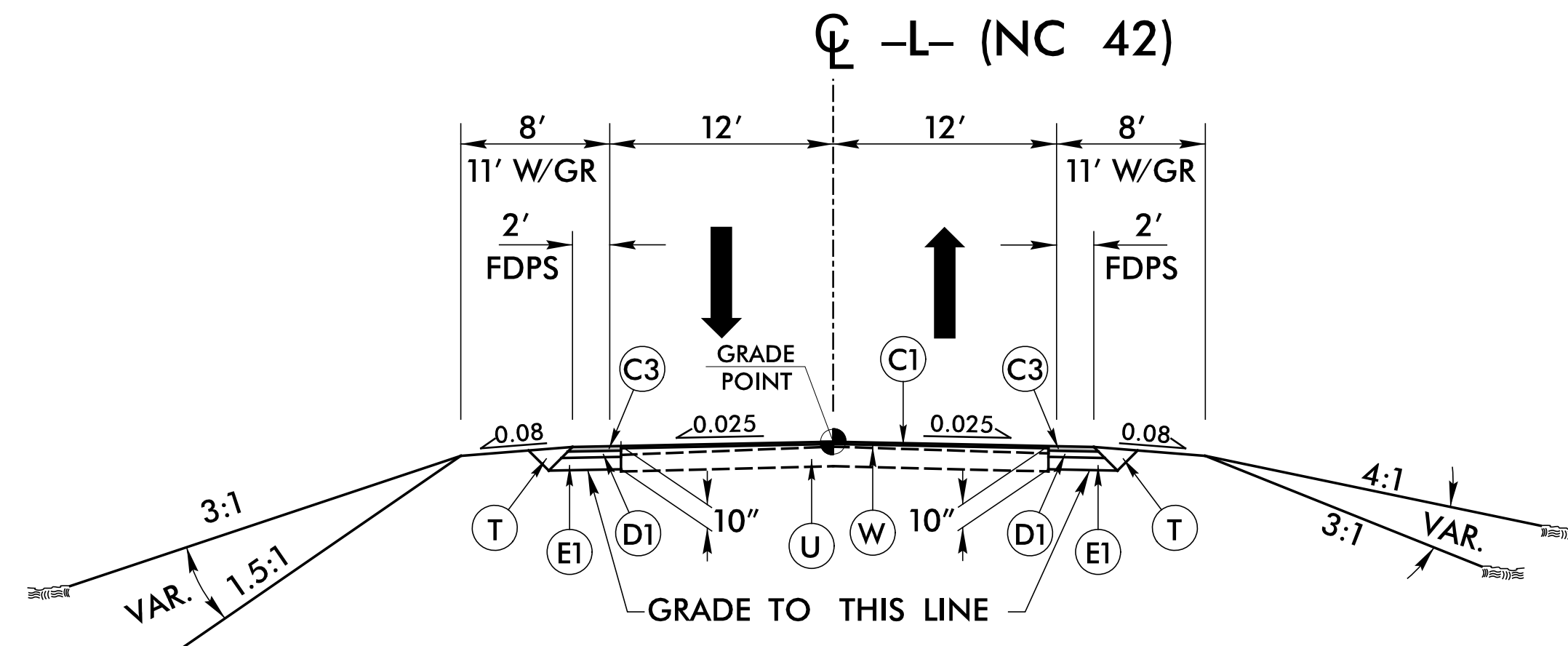
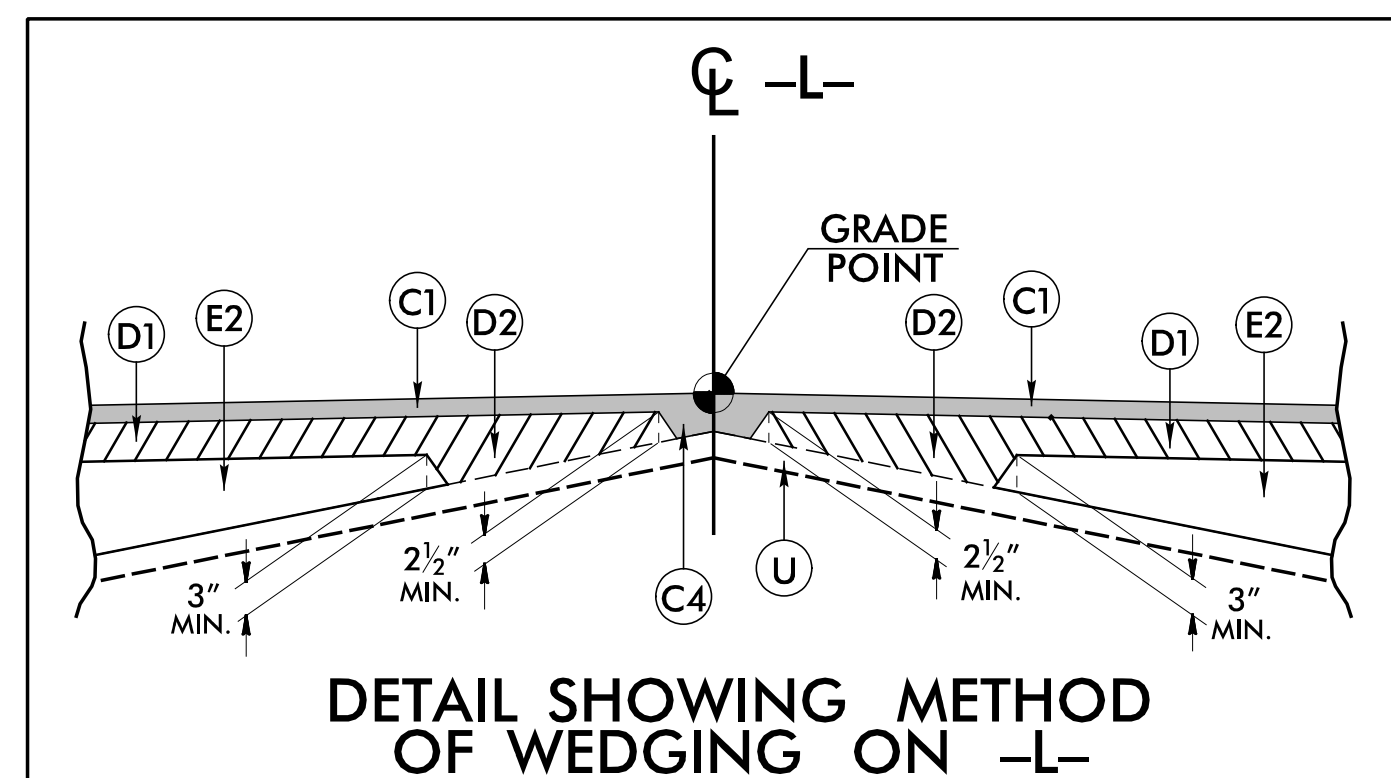
NOTE: DRAWING NOT TO SCALE

6/2/2019

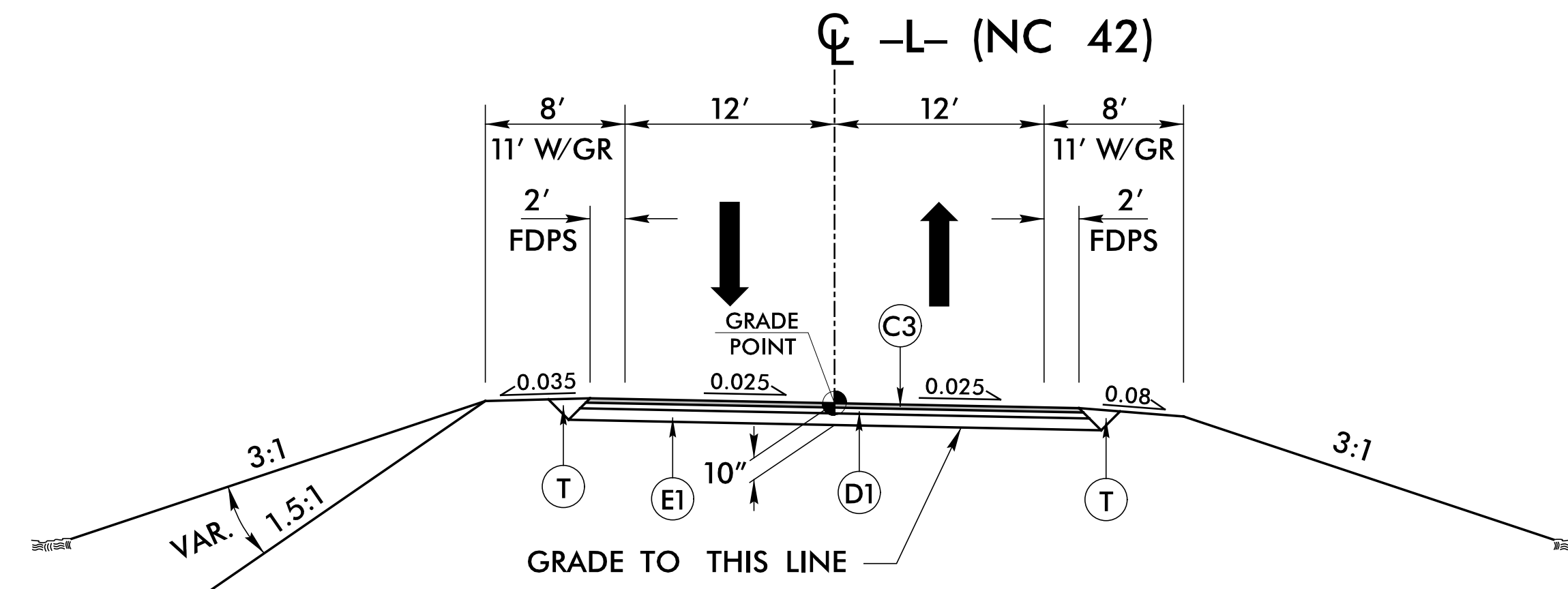
FINAL PAVEMENT SCHEDULE

C1	PROP. APPROX. 1½" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.
C2	PROP. APPROX. 2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C4	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH.
D1	PROP. APPROX. 3" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2½" IN DEPTH OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5½" IN DEPTH.
J	PROP. 8" AGGREGATE BASE COURSE
P	PRIME COAT AT A RATE OF 0.35 GAL/SY
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL)

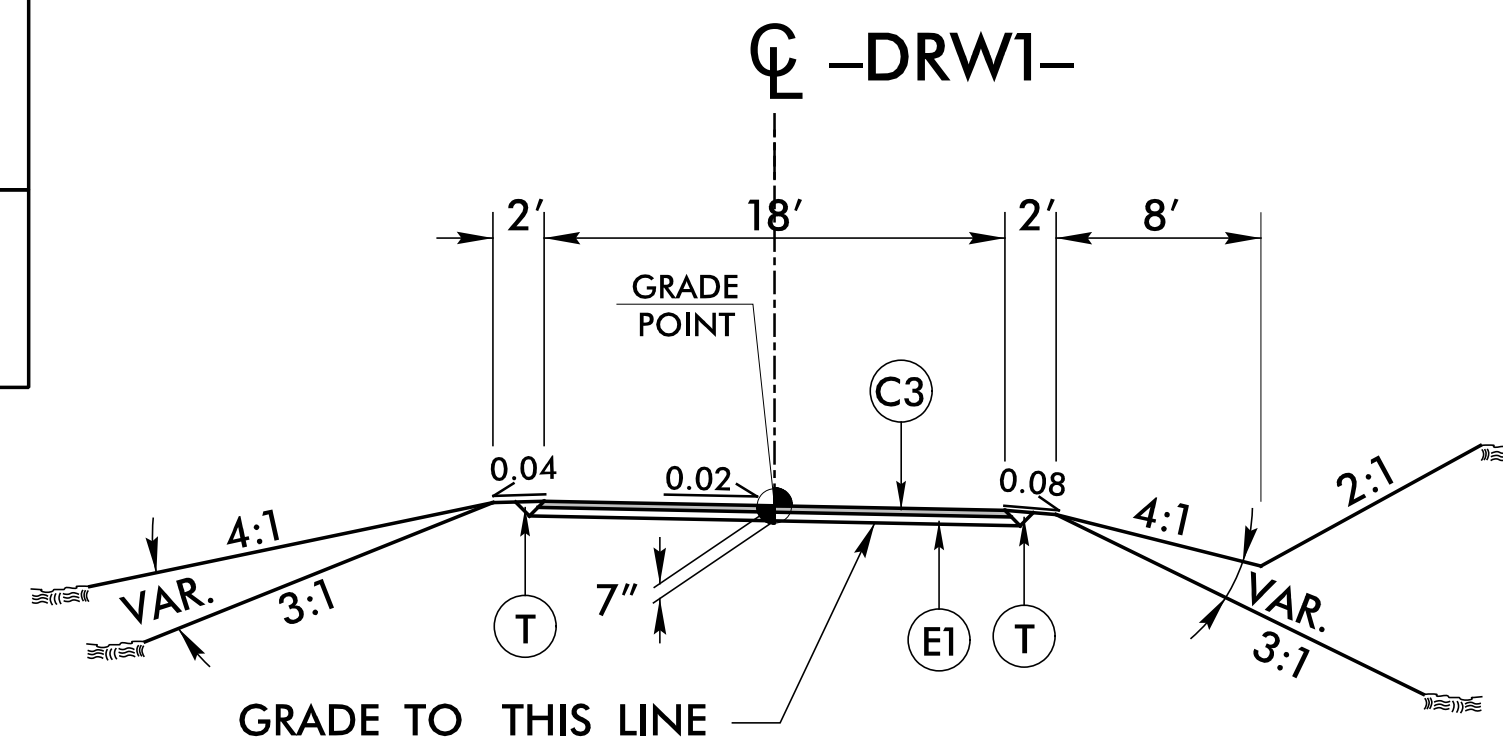
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



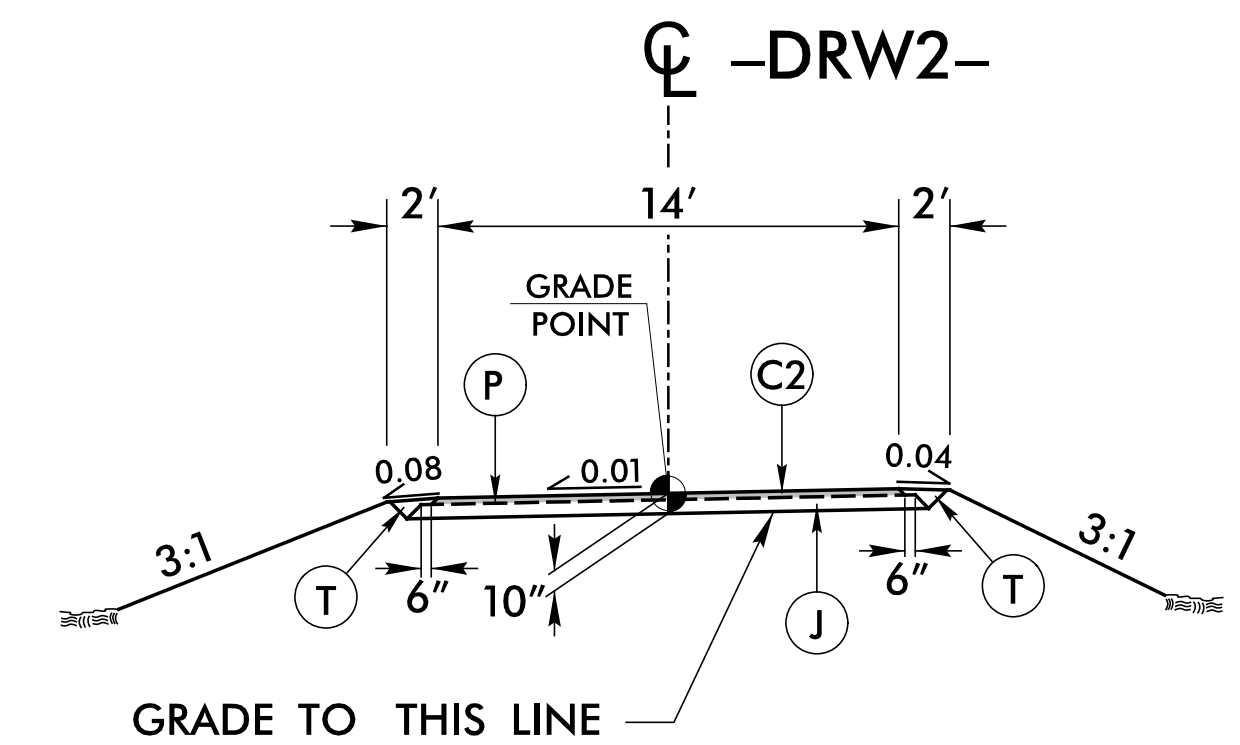
USE TYPICAL SECTION NO. 1
 -L- STA. 12+00.00 TO STA. 14+20.00
 -L- STA. 35+96.00 TO STA. 38+10.00



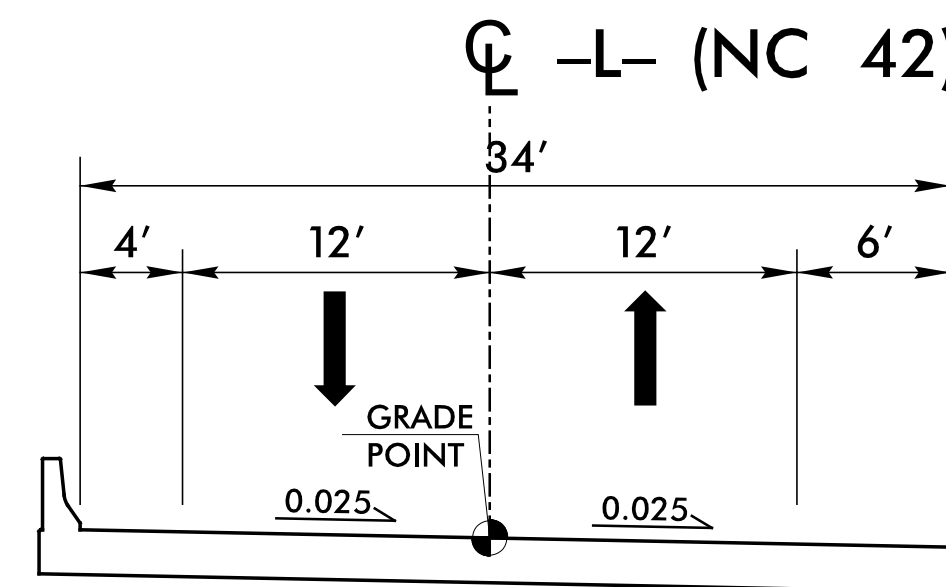
USE TYPICAL SECTION NO. 2
 -L- STA. 14+20.00 TO STA. 21+95.00 (BEGIN BRIDGE)
 -L- STA. 28+05.00 (END BRIDGE) TO STA. 35+96.00



USE TYPICAL SECTION NO. 3
 -DRW1- STA. 10+12.00 TO STA. 13+68.00



USE TYPICAL SECTION NO. 4
 -DRW2- STA. 10+12.08 TO STA. 11+10.00



USE TYPICAL SECTION ON STRUCTURE
 -L- STA. 21+95.00 (BEGIN BRIDGE) TO STA. 28+05.00 (END BRIDGE)

PROJECT REFERENCE NO. B-4932	SHEET NO. 2A-1
ROADWAY DESIGN ENGINEER JIMMY GOODNIGHT	PAVEMENT DESIGN ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

7/15/2016
 R:\Projects\B4932\ProJ\B4932_rdy_tjup.dgn
 localuser

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

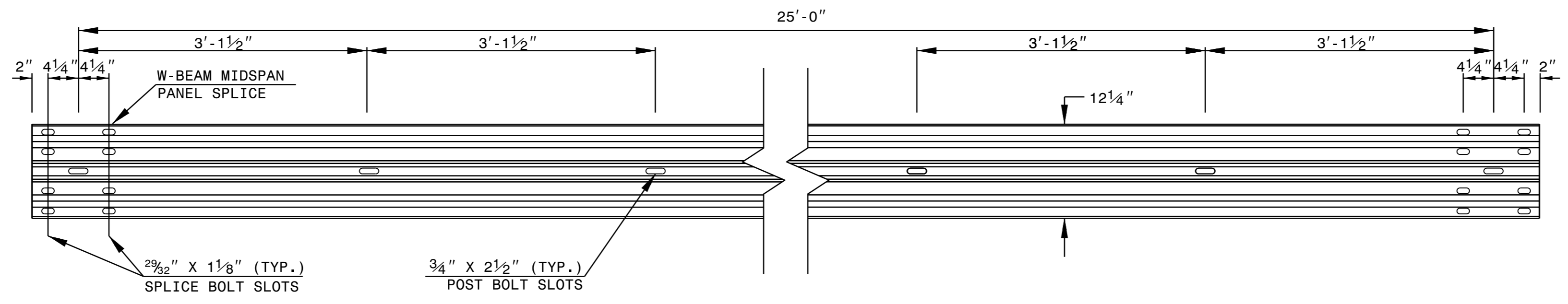
ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

SHEET 6 OF 8
862D02

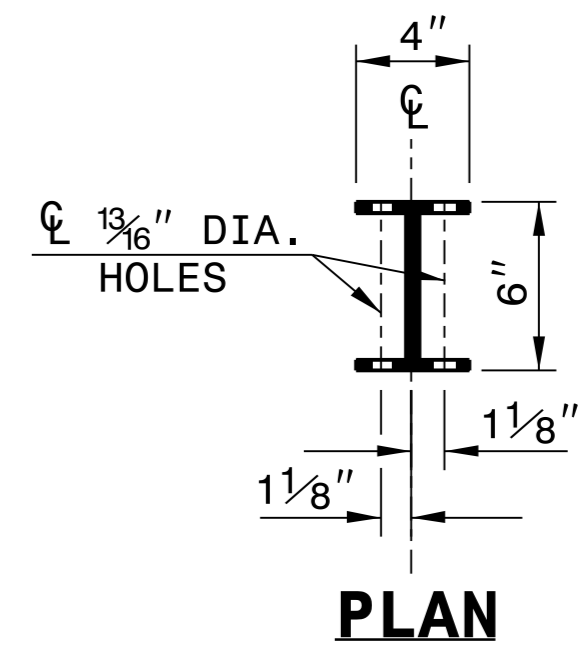
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY DETAIL DRAWING FOR
GUARDRAIL INSTALLATION

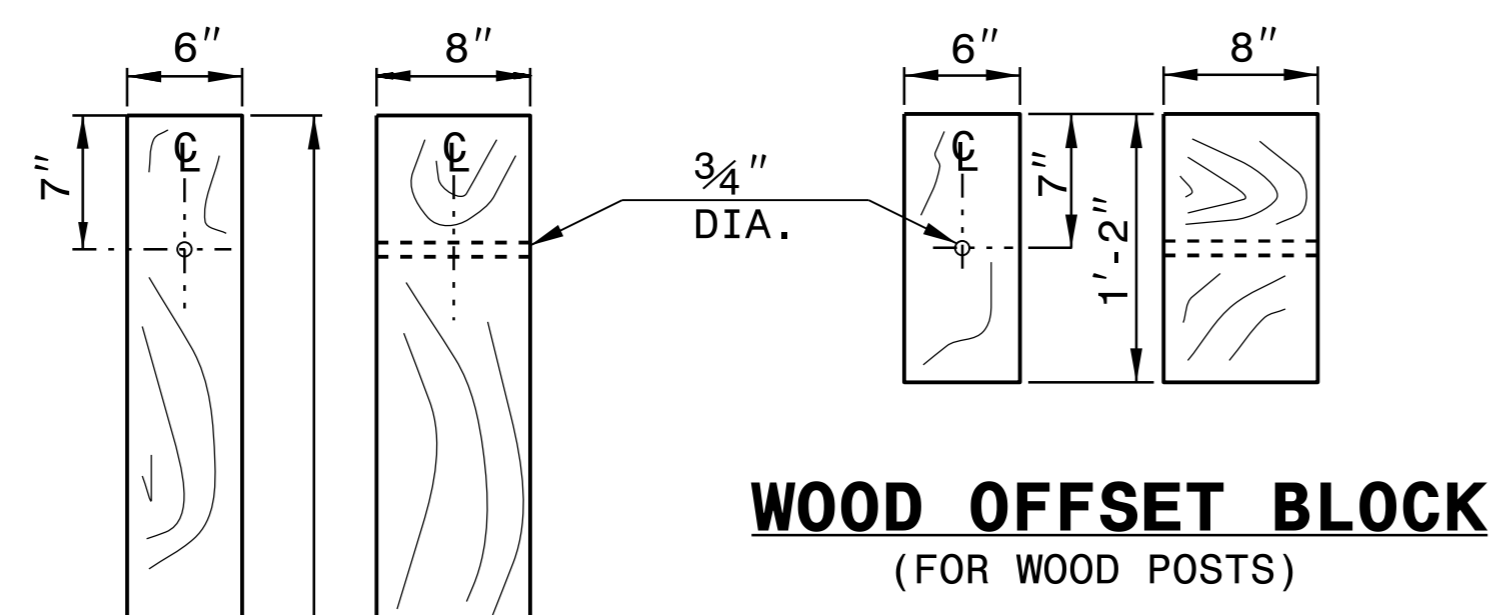
SHEET 6 OF 8
862D02



STANDARD W-BEAM GUARDRAIL



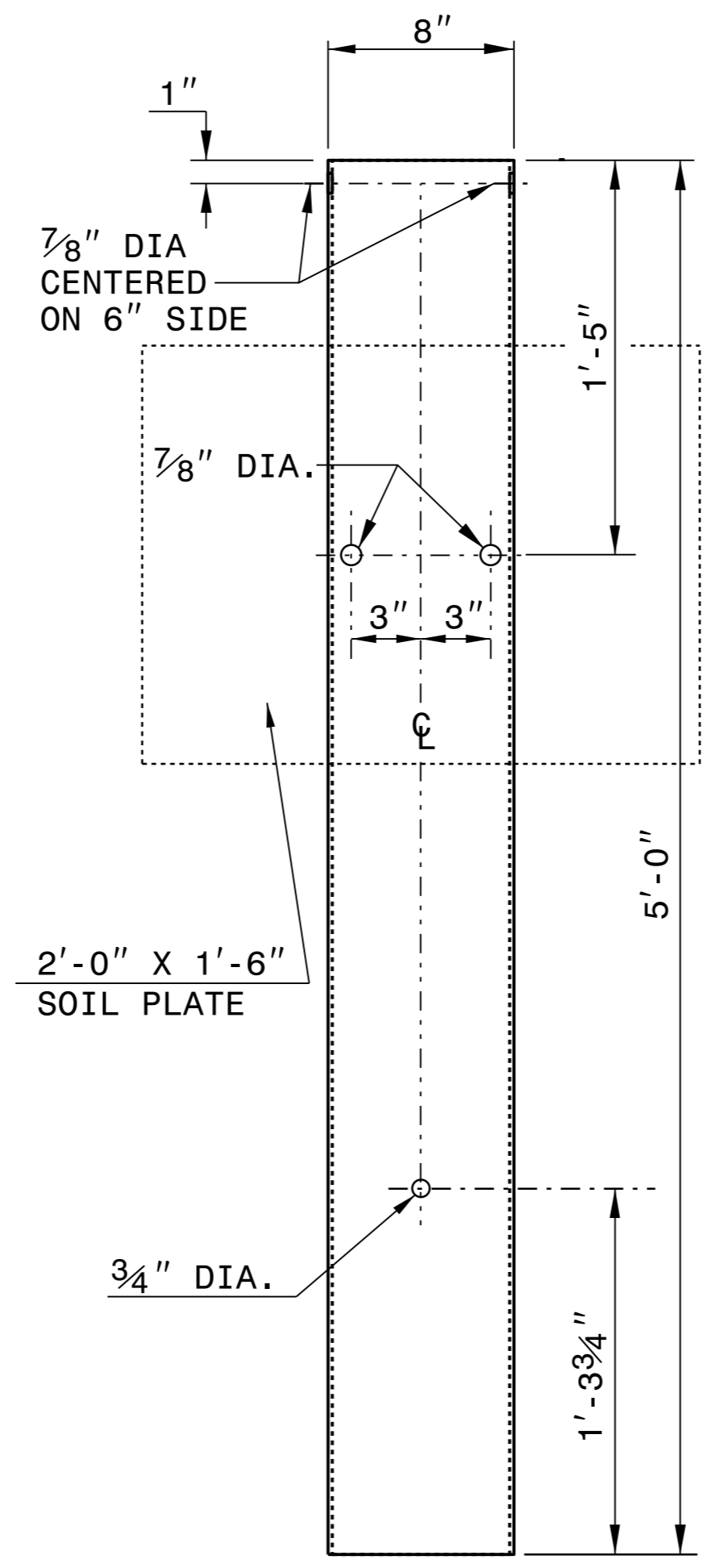
PLAN



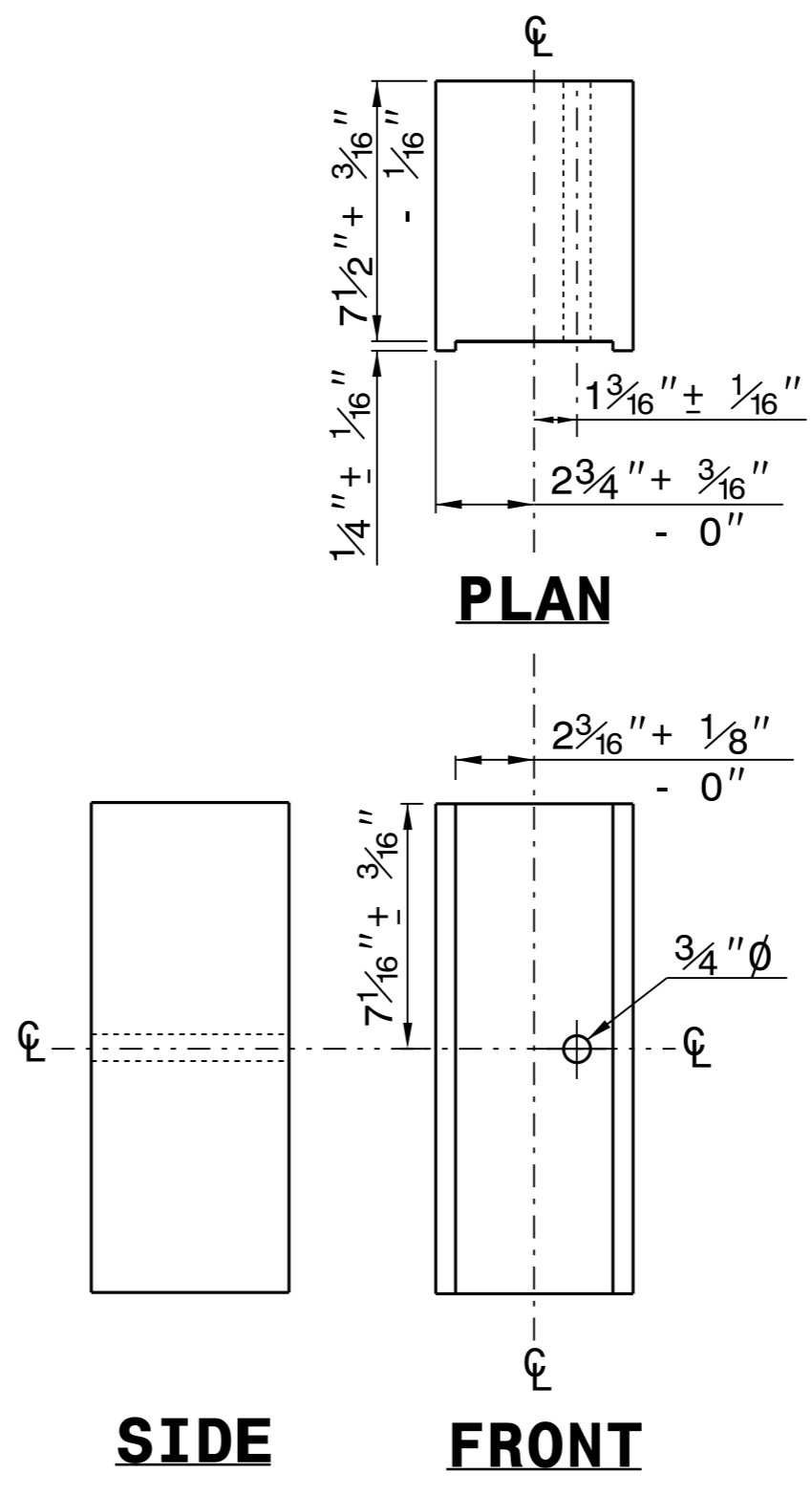
**WOOD OFFSET BLOCK
(FOR WOOD POSTS)**

**STANDARD
LINE POST**

**SHORT WOOD
BREAKAWAY POST**



**STEEL TUBE
TS 6"x8"x0.1875"**

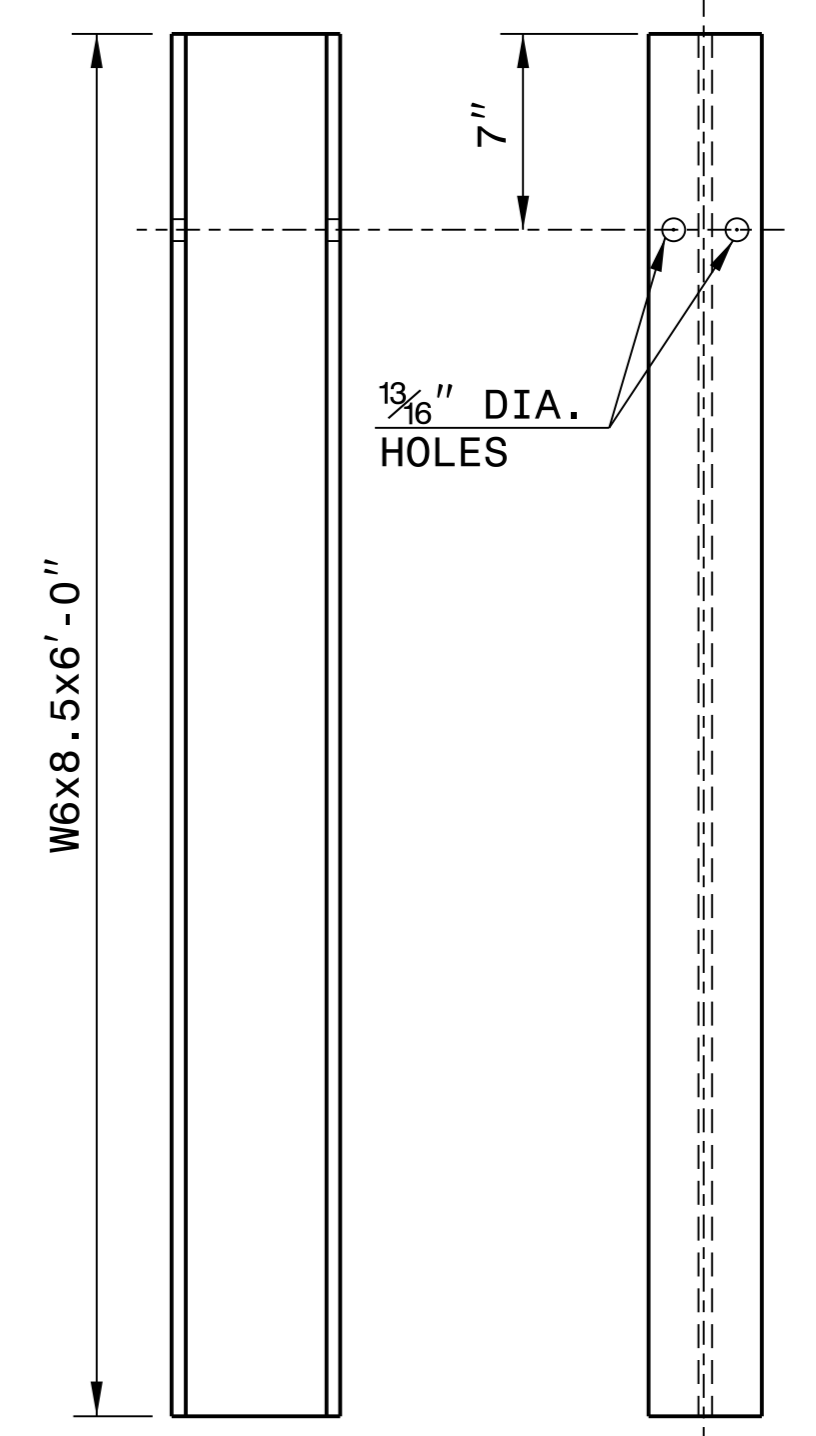


PLAN

SIDE

FRONT

**ROUTED
OFFSET BLOCK**

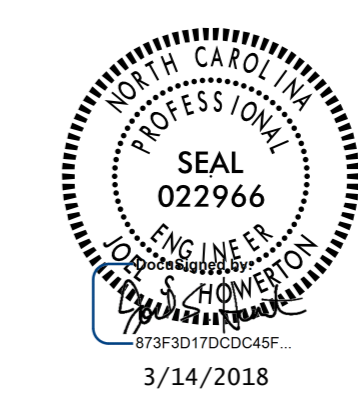


SIDE

FRONT

"W6" STEEL POST

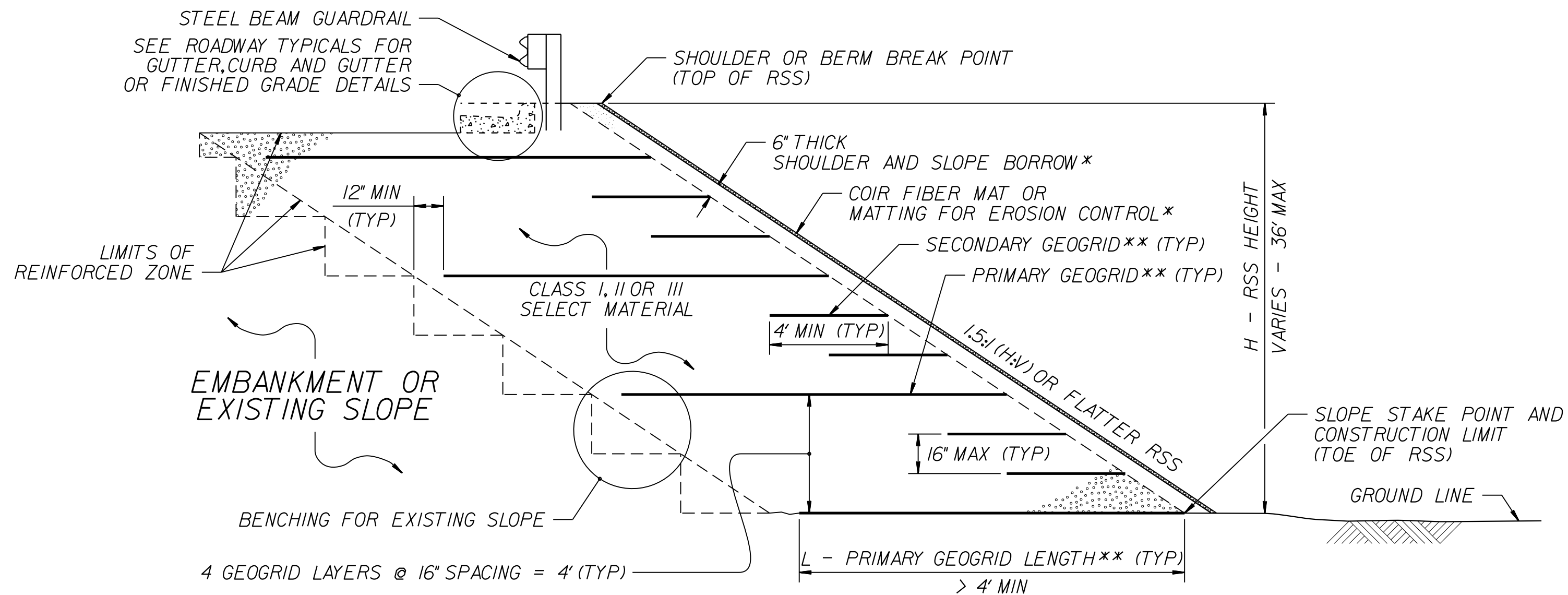
SYSTEM PARTS



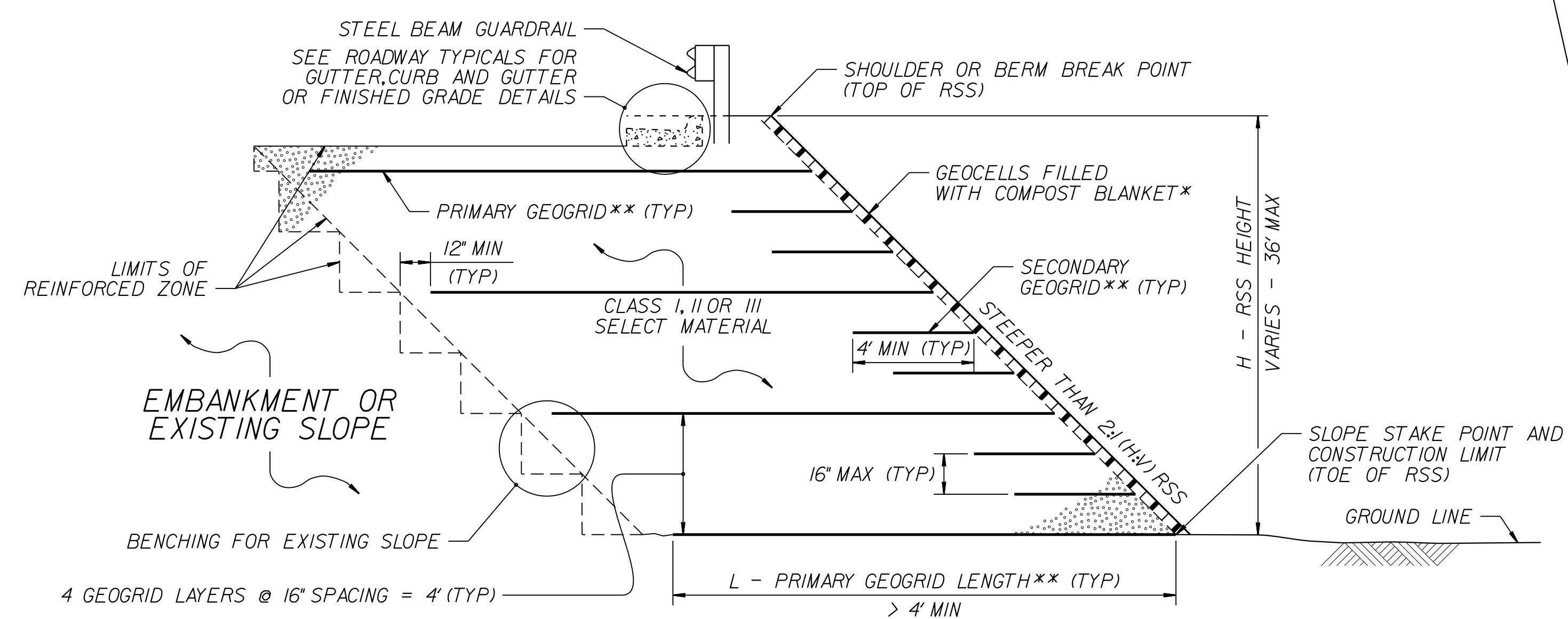
**CONTRACTS STANDARDS
AND DEVELOPMENT UNIT**
Office 919-707-6950 FAX 919-250-4119

SEE TITLE BLOCK

ORIGINAL BY: J. HOWERTON DATE: 3-7-2018
MODIFIED BY: DATE: _____
CHECKED BY: DATE: _____
FILE SPEC.: _____

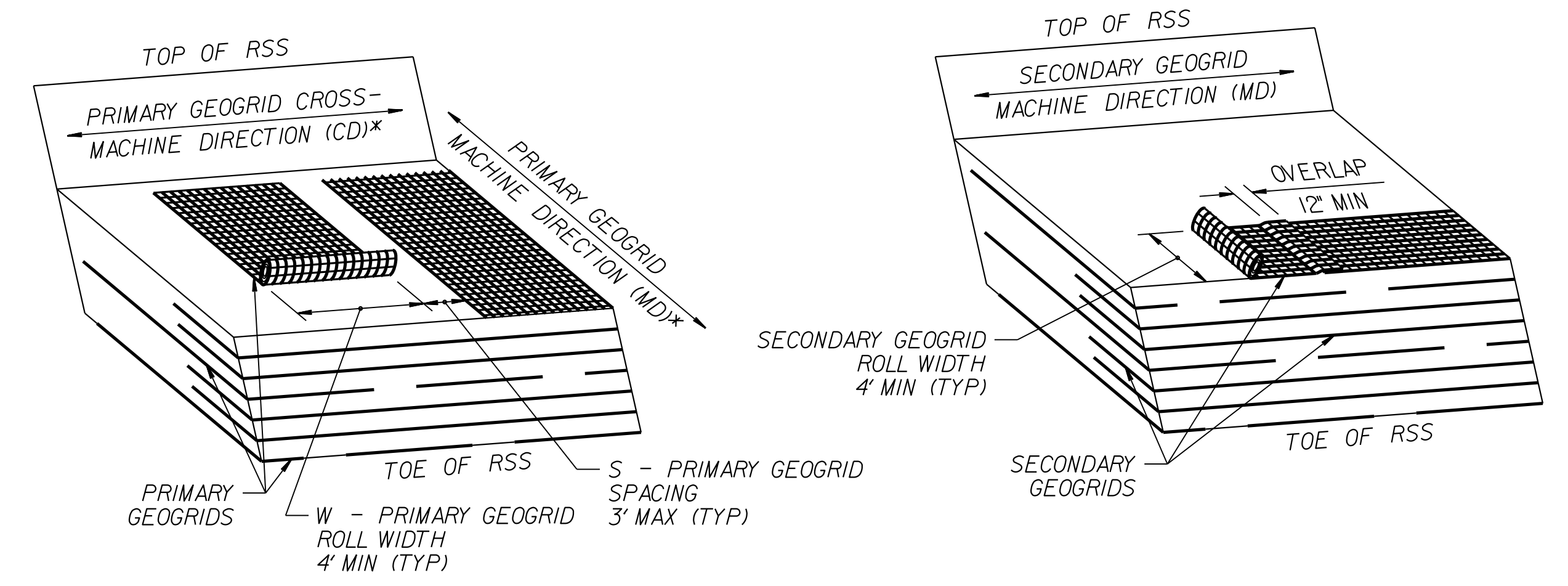


MATTING WITH SHOULDER AND SLOPE BORROW
*SEE NOTES 3 AND 11 ON SHEET 2.




GEOCELLS WITH COMPOST BLANKET
*SEE NOTES 3 AND 11 ON SHEET 2.

STANDARD REINFORCED SOIL SLOPE (RSS)
**SEE TABLES ON SHEET 2 AND GEOGRID PLACEMENT DETAILS.



GEOGRID PLACEMENT DETAILS
 $(\% \text{ COVERAGE} = \frac{W}{W+S} \times 100 \geq 75\%)$
*SEE NOTES 8 AND 9 ON SHEET 2.

PROJECT REFERENCE NO.	SHEET NO.
B-4932	2G-2
GEOTECHNICAL ENGINEER  GEOTECHNICAL ENGINEER	ENGINEER
Designated by: Scott A. Hidden DATE: 12/14/2017	SIGNATURE DATE
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

GEOGRID TYPE, DIRECTION	H (FT)	0 - < 12		12 - 24		> 24 - 36	
	SELECT MATERIAL CLASS	I	II OR III	I	II OR III	I	II OR III
PRIMARY GEOGRID, MD (SUBSTITUTE SECONDARY GEOGRID FOR PRIMARY GEOGRID FOR 2:1 (H:V) OR FLATTER RSS)	1:1 TO < 1.5:1 (H:V) RSS	900	500	1200	900	1800	1200
	1.5:1 TO 1.75:1 (H:V) RSS	500	500	900	500	1400	1000
	> 1.75:1 TO < 2:1 (H:V) RSS	500	500	600	500	1000	800
SECONDARY GEOGRID, CD	1:1 (H:V) OR FLATTER RSS	185					

LTDS – MINIMUM REQUIRED LONG-TERM DESIGN STRENGTH (LB/FT)
 (LTDS IS BASED ON 100% COVERAGE FOR PRIMARY GEOGRID.
 SEE NOTE 9 FOR LESS THAN 100% COVERAGE.)

NOTES:

- SEE EROSION CONTROL AND ROADWAY PLANS AND SUMMARY SHEETS FOR REINFORCED SOIL SLOPE (RSS) AND SLOPE EROSION CONTROL LOCATIONS.
- FOR STANDARD REINFORCED SOIL SLOPES, SEE REINFORCED SOIL SLOPES PROVISION. FOR STEEL BEAM GUARDRAIL, SEE SECTION 862 OF THE STANDARD SPECIFICATIONS.
- FOR SHOULDER AND SLOPE BORROW, SEE ARTICLE 1019-2 OF THE STANDARD SPECIFICATIONS. FOR GEOCELLS, SEE CELLULAR CONFINEMENT SYSTEMS PROVISION. FOR COIR FIBER MAT, MATTING FOR EROSION CONTROL AND COMPOST BLANKET, SEE EROSION CONTROL PROVISIONS, SECTION 1631 OF THE STANDARD SPECIFICATIONS AND ROADWAY STANDARD DRAWING NO. 1633.01.
- STANDARD RSS ARE BASED ON THE FOLLOWING IN-SITU ASSUMED SOIL PARAMETERS:
 UNIT WEIGHT, $\gamma = 120$ PCF
 FRICTION ANGLE, $\phi = 30$ DEGREES
 COHESION, $c = 0$ PSF
- DO NOT USE STANDARD RSS IF ASSUMED SOIL PARAMETERS ARE NOT APPLICABLE OR GROUNDWATER IS ABOVE TOE OF RSS.
- DO NOT USE STANDARD RSS WHEN VERY LOOSE OR SOFT SOIL OR MUCK IS BELOW RSS.
- GEOGRIDS ARE TYPICALLY APPROVED FOR ULTIMATE TENSILE STRENGTHS IN THE MACHINE DIRECTION (MD) AND CROSS-MACHINE DIRECTION (CD) OR LONG-TERM DESIGN STRENGTHS FOR A 75-YEAR DESIGN LIFE IN THE MD BASED ON MATERIAL TYPE. THE LIST OF APPROVED GEOGRIDS WITH DESIGN STRENGTHS IS AVAILABLE FROM:
connect.ncdot.gov/resources/Materials/Pages/Materials-Manual-by-Material.aspx
 DEFINE MATERIAL TYPE FROM THE WEBSITE ABOVE FOR SELECT MATERIAL AS FOLLOWS:

MATERIAL TYPE	SELECT MATERIAL
BORROW	CLASS I SELECT MATERIAL
FINE AGGREGATE	CLASS II OR III SELECT MATERIAL

IF THE WEBSITE DOES NOT LIST A LONG-TERM DESIGN STRENGTH FOR AN APPROVED GEOGRID IN THE MD, DO NOT USE THE GEOGRID FOR PRIMARY GEOGRID. IF THE WEBSITE DOES NOT LIST A LONG-TERM DESIGN STRENGTH FOR AN APPROVED GEOGRID IN THE CD, USE A LONG-TERM DESIGN STRENGTH EQUAL TO THE ULTIMATE TENSILE STRENGTH DIVIDED BY 7 FOR THE SECONDARY GEOGRID.

- DO NOT OVERLAP PRIMARY GEOGRIDS IN THE MD SO OVERLAPS ARE PARALLEL TO THE TOE OF RSS. POLYOLEFIN (e.g., HDPE OR PP) GEOGRIDS MAY BE SPLICED ONCE PER PRIMARY GEOGRID LENGTH IN ACCORDANCE WITH THE GEOGRID MANUFACTURER'S INSTRUCTIONS. USE POLYOLEFIN GEOGRID PIECES AT LEAST 4' LONG. DO NOT SPLICE POLYESTER TYPE (PET) GEOGRIDS.
- FOR PRIMARY GEOGRIDS WITH 100% COVERAGE, PLACE PRIMARY GEOGRIDS SO GEOGRIDS ARE ADJACENT TO EACH OTHER IN THE CD. FOR PRIMARY GEOGRIDS WITH 75% TO LESS THAN 100% COVERAGE,


$$\text{MINIMUM REQUIRED LONG-TERM DESIGN STRENGTH} = \text{LTDS BASED ON 100\% COVERAGE} \times (W + S) / W$$
 SEE TABLE FOR LTDS BASED ON 100% COVERAGE AND GEOGRID PLACEMENT DETAILS FOR PRIMARY GEOGRID ROLL WIDTH (W) AND SPACING (S). FOR PRIMARY GEOGRIDS WITH LESS THAN 100% COVERAGE, STAGGER PRIMARY GEOGRIDS SO GEOGRIDS ARE CENTERED OVER GAPS IN THE PRIMARY GEOGRID LAYER BELOW. DO NOT USE LESS THAN 75% COVERAGE FOR PRIMARY GEOGRIDS.
- DO NOT PLACE ANY GEOGRIDS UNTIL EXCAVATION DIMENSIONS AND IN-SITU MATERIAL ARE APPROVED.
- FOR SLOPE EROSION CONTROL, USE GEOCELLS OR MATTING ON SLOPE FACES OF RSS AS FOLLOWS:

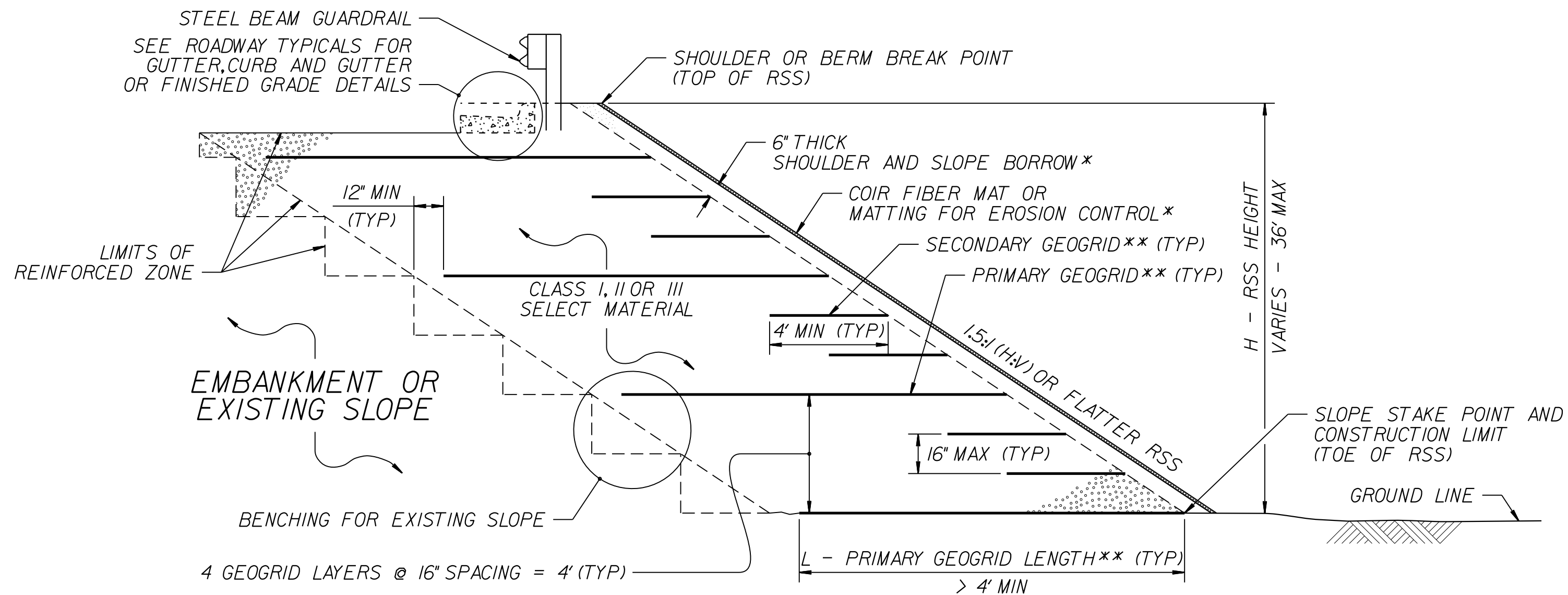
RSS ANGLE	SLOPE EROSION CONTROL
1:1 TO < 1.5:1 (H:V)	GEOCELLS WITH COMPOST BLANKET
1.5:1 TO < 2:1 (H:V)	GEOCELLS WITH COMPOST BLANKET OR COIR FIBER MAT WITH SHOULDER AND SLOPE BORROW*
2:1 (H:V) OR FLATTER	MATTING FOR EROSION CONTROL WITH SHOULDER AND SLOPE BORROW

*SEE REINFORCED SOIL SLOPES AND SLOPE EROSION CONTROL SUMMARY TABLE IN THE ROADWAY SUMMARY SHEETS FOR SLOPE EROSION CONTROL ON SLOPE FACES OF RSS 1.5:1 (H:V) TO STEEPER THAN 2:1.

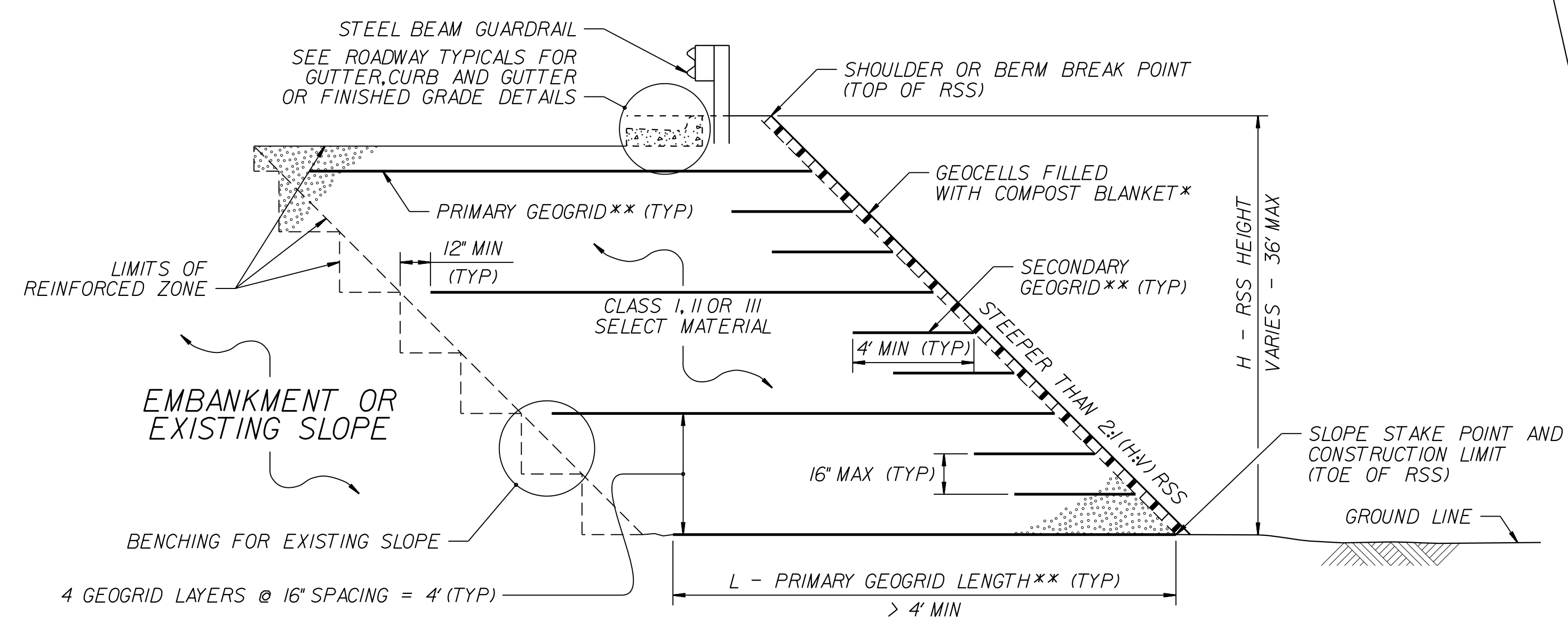
H (FT)	0 - < 12		12 - 24		> 24 - 36	
SELECT MATERIAL CLASS	I	II OR III	I	II OR III	I	II OR III
1:1 TO < 1.5:1 (H:V) RSS	1.25	1.20	1.15	1.10	1.10	1.00
1.5:1 TO 1.75:1 (H:V) RSS	1.10	1.00	0.95	0.90	0.90	0.85
> 1.75:1 TO < 2:1 (H:V) RSS	1.00	0.85	0.80	0.75	0.75	0.70

L / H RATIO (L > 4' MIN)
 (IF L ≤ 4', USE SECONDARY GEOGRID
 INSTEAD OF PRIMARY GEOGRID.)

 NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS GEOTECHNICAL ENGINEERING UNIT	STANDARD DETAIL NO. 1802.01
	STANDARD REINFORCED SOIL SLOPE (RSS) WITH HIGH GROUNDWATER SHEET 2 OF 2 DATE: 4-19-16

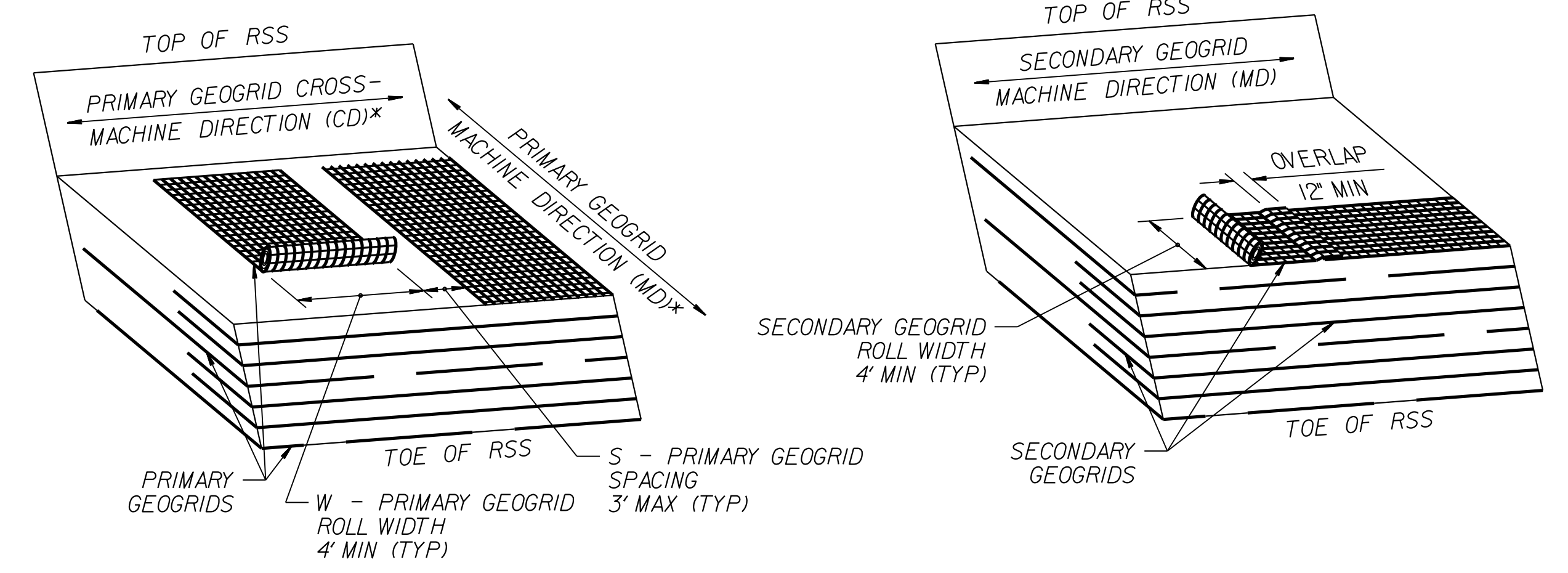


MATTING WITH SHOULDER AND SLOPE BORROW
*SEE NOTES 3 AND 11 ON SHEET 2.




GEOCELLS WITH COMPOST BLANKET
*SEE NOTES 3 AND 11 ON SHEET 2.

STANDARD REINFORCED SOIL SLOPE (RSS)
**SEE TABLES ON SHEET 2 AND GEOGRID PLACEMENT DETAILS.



GEOGRID PLACEMENT DETAILS
(% COVERAGE = $\frac{W}{W+S} \times 100 \geq 75\%$)
*SEE NOTES 8 AND 9 ON SHEET 2.

PROJECT REFERENCE NO.	SHEET NO.
B-4932	2G-4
GEOTECHNICAL ENGINEER  ENGINEER	ENGINEER
DocuSigned by: <i>Scott A. Hidden</i> 12/14/2017	DATE
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

GEOGRID TYPE, DIRECTION	H (FT)	0 - < 12		12 - 24		> 24 - 36	
	SELECT MATERIAL CLASS	I	II OR III	I	II OR III	I	II OR III
PRIMARY GEOGRID, MD (SUBSTITUTE SECONDARY GEOGRID FOR PRIMARY GEOGRID FOR 2:1 (H:V) OR FLATTER RSS)	1:1 TO < 1.5:1 (H:V) RSS	900	500	1200	900	1800	1200
	1.5:1 TO 1.75:1 (H:V) RSS	500	500	900	500	1400	1000
	> 1.75:1 TO < 2:1 (H:V) RSS	500	500	600	500	1000	800
SECONDARY GEOGRID, CD	1:1 (H:V) OR FLATTER RSS	185					

LTDS – MINIMUM REQUIRED LONG-TERM DESIGN STRENGTH (LB/FT)
 (LTDS IS BASED ON 100% COVERAGE FOR PRIMARY GEOGRID.
 SEE NOTE 9 FOR LESS THAN 100% COVERAGE.)

NOTES:

- SEE EROSION CONTROL AND ROADWAY PLANS AND SUMMARY SHEETS FOR REINFORCED SOIL SLOPE (RSS) AND SLOPE EROSION CONTROL LOCATIONS.
- FOR STANDARD REINFORCED SOIL SLOPES, SEE REINFORCED SOIL SLOPES PROVISION. FOR STEEL BEAM GUARDRAIL, SEE SECTION 862 OF THE STANDARD SPECIFICATIONS.
- FOR SHOULDER AND SLOPE BORROW, SEE ARTICLE 1019-2 OF THE STANDARD SPECIFICATIONS. FOR GEOCELLS, SEE CELLULAR CONFINEMENT SYSTEMS PROVISION. FOR COIR FIBER MAT, MATTING FOR EROSION CONTROL AND COMPOST BLANKET, SEE EROSION CONTROL PROVISIONS, SECTION 1631 OF THE STANDARD SPECIFICATIONS AND ROADWAY STANDARD DRAWING NO. 1633.01.
- STANDARD RSS ARE BASED ON THE FOLLOWING IN-SITU ASSUMED SOIL PARAMETERS:
 UNIT WEIGHT, $\gamma = 120$ PCF
 FRICTION ANGLE, $\phi = 30$ DEGREES
 COHESION, $c = 0$ PSF
- DO NOT USE STANDARD RSS IF ASSUMED SOIL PARAMETERS ARE NOT APPLICABLE OR DEPTH TO GROUNDWATER IS LESS THAN 7 FT.
- DO NOT USE STANDARD RSS WHEN VERY LOOSE OR SOFT SOIL OR MUCK IS BELOW RSS.
- GEOGRIDS ARE TYPICALLY APPROVED FOR ULTIMATE TENSILE STRENGTHS IN THE MACHINE DIRECTION (MD) AND CROSS-MACHINE DIRECTION (CD) OR LONG-TERM DESIGN STRENGTHS FOR A 75-YEAR DESIGN LIFE IN THE MD BASED ON MATERIAL TYPE. THE LIST OF APPROVED GEOGRIDS WITH DESIGN STRENGTHS IS AVAILABLE FROM:
connect.ncdot.gov/resources/Materials/Pages/Materials-Manual-by-Material.aspx
 DEFINE MATERIAL TYPE FROM THE WEBSITE ABOVE FOR SELECT MATERIAL AS FOLLOWS:

MATERIAL TYPE	SELECT MATERIAL
BORROW	CLASS I SELECT MATERIAL
FINE AGGREGATE	CLASS II OR III SELECT MATERIAL

- IF THE WEBSITE DOES NOT LIST A LONG-TERM DESIGN STRENGTH FOR AN APPROVED GEOGRID IN THE MD, DO NOT USE THE GEOGRID FOR PRIMARY GEOGRID. IF THE WEBSITE DOES NOT LIST A LONG-TERM DESIGN STRENGTH FOR AN APPROVED GEOGRID IN THE CD, USE A LONG-TERM DESIGN STRENGTH EQUAL TO THE ULTIMATE TENSILE STRENGTH DIVIDED BY 7 FOR THE SECONDARY GEOGRID.
- DO NOT OVERLAP PRIMARY GEOGRIDS IN THE MD SO OVERLAPS ARE PARALLEL TO THE TOE OF RSS. POLYOLEFIN (e.g., HDPE OR PP) GEOGRIDS MAY BE SPLICED ONCE PER PRIMARY GEOGRID LENGTH IN ACCORDANCE WITH THE GEOGRID MANUFACTURER'S INSTRUCTIONS. USE POLYOLEFIN GEOGRID PIECES AT LEAST 4' LONG. DO NOT SPLICE POLYESTER TYPE (PET) GEOGRIDS.
 - FOR PRIMARY GEOGRIDS WITH 100% COVERAGE, PLACE PRIMARY GEOGRIDS SO GEOGRIDS ARE ADJACENT TO EACH OTHER IN THE CD. FOR PRIMARY GEOGRIDS WITH 75% TO LESS THAN 100% COVERAGE,

$$\text{MINIMUM REQUIRED LONG-TERM DESIGN STRENGTH} = \text{LTDS BASED ON 100\% COVERAGE} \times (W + S) / W$$
 SEE TABLE FOR LTDS BASED ON 100% COVERAGE AND GEOGRID PLACEMENT DETAILS FOR PRIMARY GEOGRID ROLL WIDTH (W) AND SPACING (S). FOR PRIMARY GEOGRIDS WITH LESS THAN 100% COVERAGE, STAGGER PRIMARY GEOGRIDS SO GEOGRIDS ARE CENTERED OVER GAPS IN THE PRIMARY GEOGRID LAYER BELOW. DO NOT USE LESS THAN 75% COVERAGE FOR PRIMARY GEOGRIDS.
 - DO NOT PLACE ANY GEOGRIDS UNTIL EXCAVATION DIMENSIONS AND IN-SITU MATERIAL ARE APPROVED.
 - FOR SLOPE EROSION CONTROL, USE GEOCELLS OR MATTING ON SLOPE FACES OF RSS AS FOLLOWS:

RSS ANGLE	SLOPE EROSION CONTROL
1:1 TO < 1.5:1 (H:V)	GEOCELLS WITH COMPOST BLANKET
1.5:1 TO < 2:1 (H:V)	GEOCELLS WITH COMPOST BLANKET OR COIR FIBER MAT WITH SHOULDER AND SLOPE BORROW*
2:1 (H:V) OR FLATTER	MATTING FOR EROSION CONTROL WITH SHOULDER AND SLOPE BORROW

*SEE REINFORCED SOIL SLOPES AND SLOPE EROSION CONTROL SUMMARY TABLE IN THE ROADWAY SUMMARY SHEETS FOR SLOPE EROSION CONTROL ON SLOPE FACES OF RSS 1.5:1 (H:V) TO STEEPER THAN 2:1.

H (FT)	0 - < 12		12 - 24		> 24 - 36	
SELECT MATERIAL CLASS	I	II OR III	I	II OR III	I	II OR III
1:1 TO < 1.5:1 (H:V) RSS	1.00	1.00	0.90	0.85	0.85	0.80
1.5:1 TO 1.75:1 (H:V) RSS	0.90	0.80	0.75	0.70	0.75	0.70
> 1.75:1 TO < 2:1 (H:V) RSS	0.75	0.70	0.65	0.60	0.65	0.60

L / H RATIO (L > 4' MIN)
 (IF L ≤ 4', USE SECONDARY GEOGRID INSTEAD OF PRIMARY GEOGRID.)



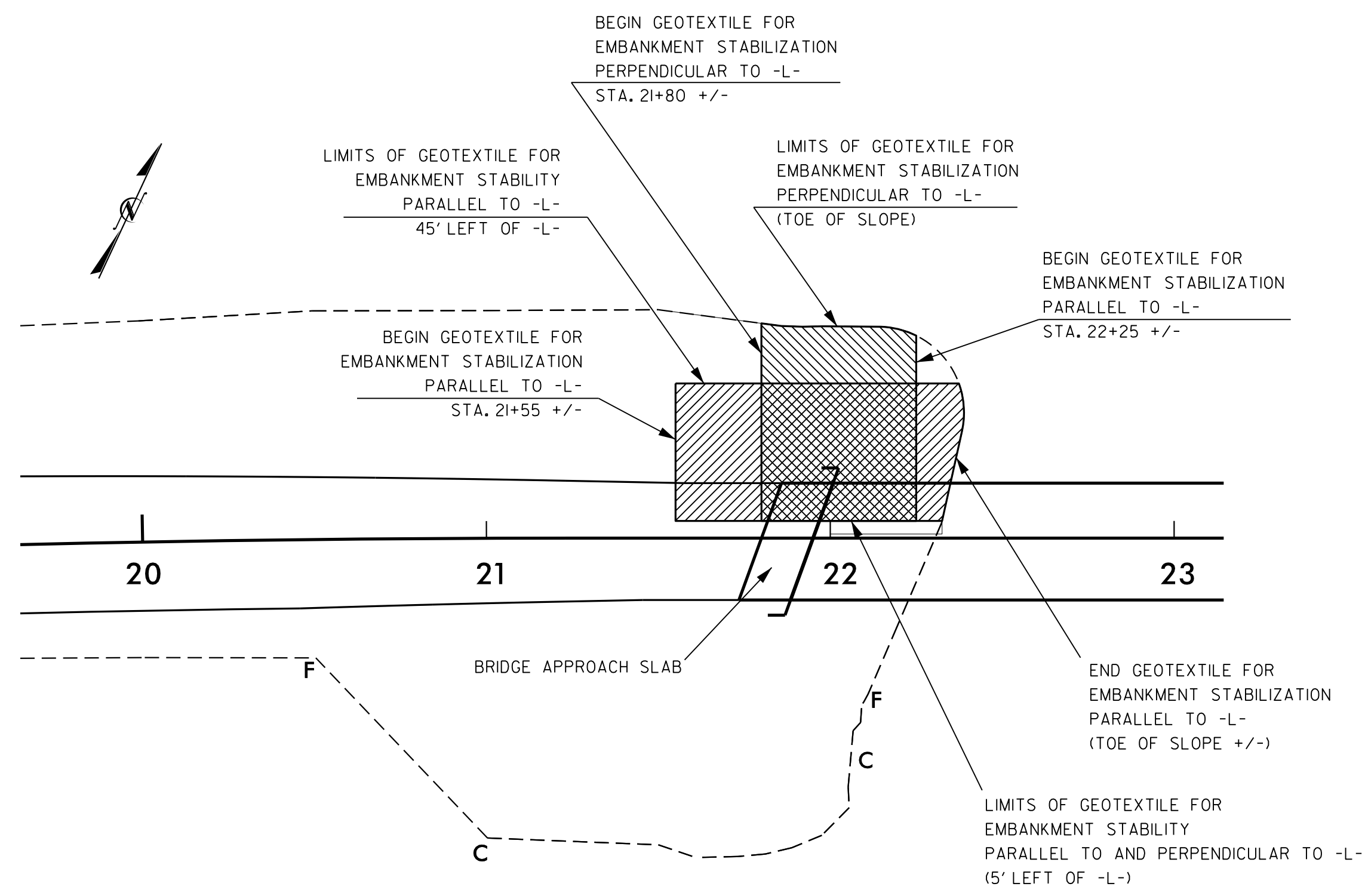
NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS

**GEOTECHNICAL
 ENGINEERING UNIT**

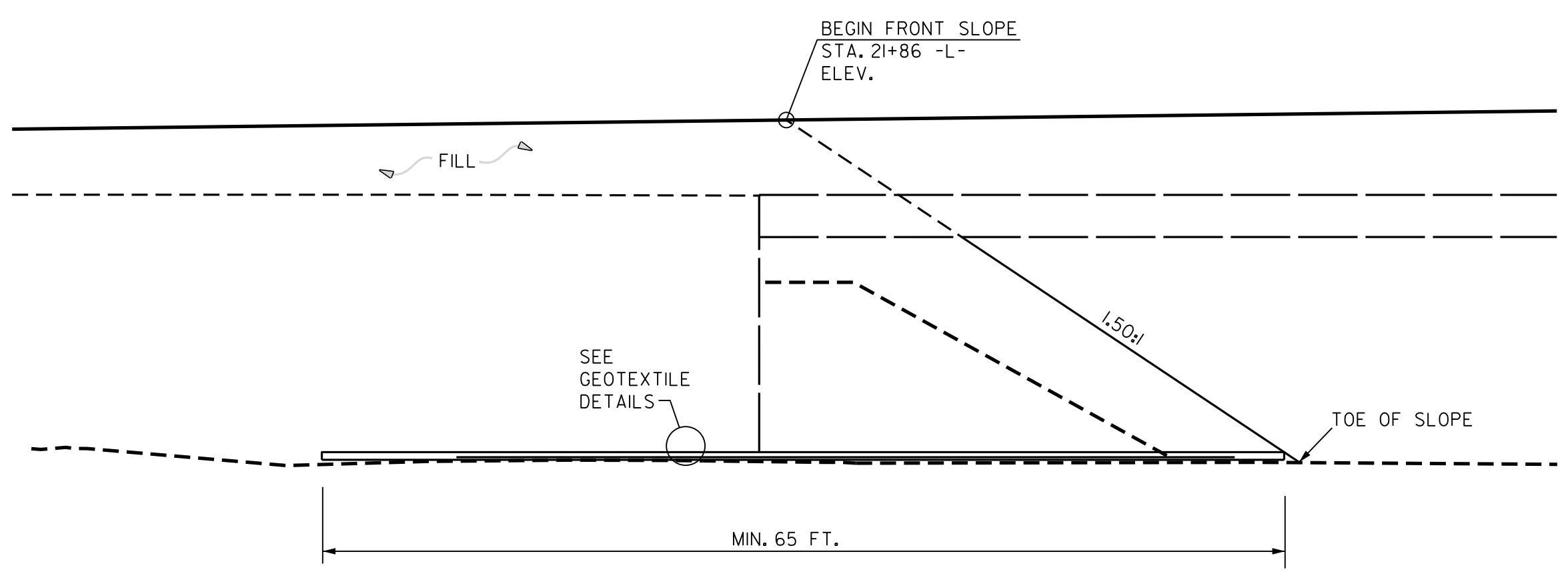
STANDARD DETAIL NO. 1802.02

 STANDARD
 REINFORCED SOIL SLOPE (RSS)
 WITH LOW GROUNDWATER
 SHEET 2 OF 2

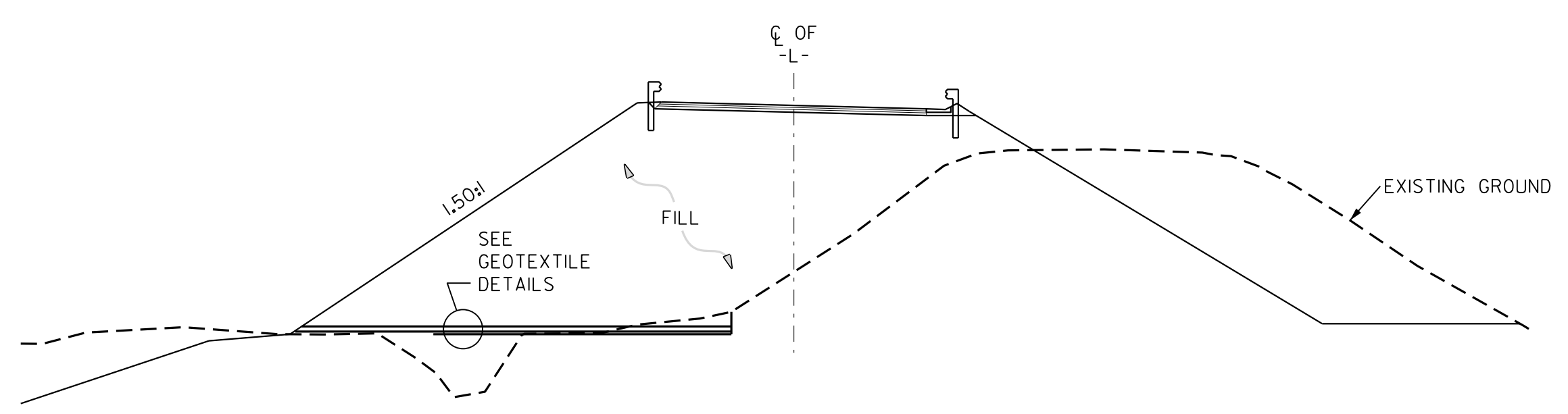
 DATE: 4-19-16



PLAN VIEW FOR LIMITS OF GEOTEXTILES
N.T.S.



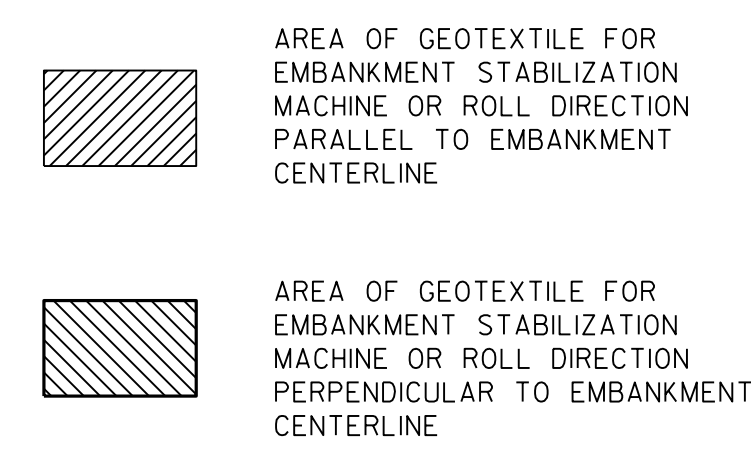
TYPICAL PROFILE VIEW
THROUGH 10 FT +/- LEFT OF -L-, N.T.S.



TYPICAL CROSS SECTION
N.T.S.

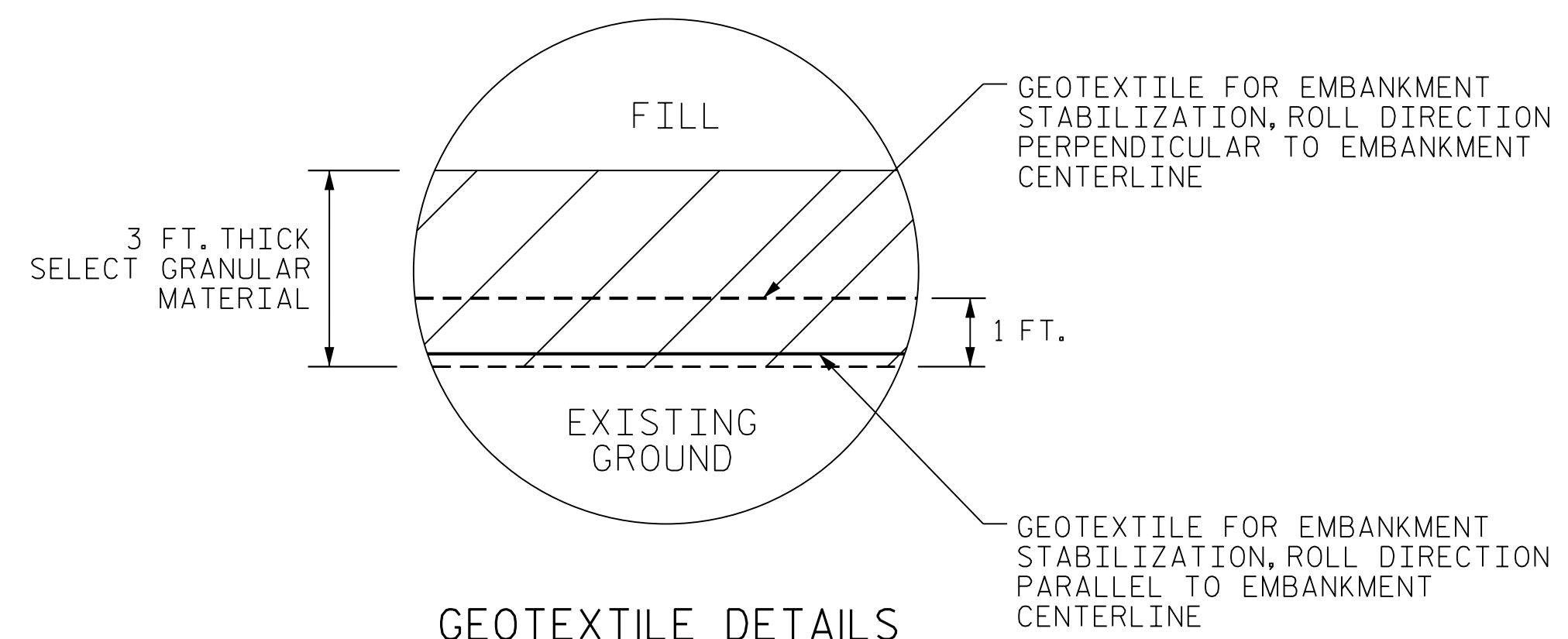
<i>QUANTITIES</i>	
GEOTEXTILE FOR EMBANKMENT STABILIZATION	650 SY#
SELECT GRANULAR MATERIAL	450 CY

* GEOTEXTILE FOR EMBANKMENT STABILIZATION ESTIMATED QUANTITY DOES NOT INCLUDE OVERLAPS OR WASTE.



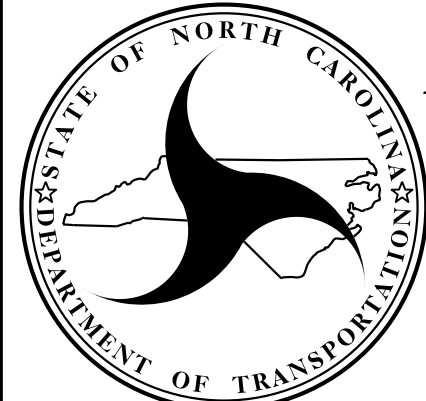
NOTES

1. DO NOT GRUB, ONLY CLEAR THE AREA WITHIN THE LIMITS OF THE GEOTEXTILE FOR EMBANKMENT STABILIZATION.
2. PLACE GEOTEXTILE FOR EMBANKMENT STABILIZATION PARALLEL TO EMBANKMENT CENTERLINE ON THE EXISTING GROUND AFTER CLEARING.
4. PLACE 1 FT. OF SELECT GRANULAR MATERIAL ON THE FIRST LAYER OF GEOTEXTILE.
5. PLACE GEOTEXTILE FOR EMBANKMENT STABILIZATION PERPENDICULAR TO EMBANKMENT CENTERLINE ON THE SELECT GRANULAR MATERIAL.
6. PLACE 2 FT. OF SELECT GRANULAR MATERIAL ON SECOND LAYER OF GEOTEXTILE.
7. PLACE THE GEOTEXTILE WITHOUT ANY WRINKLES OR CREASES.
8. NO SEAMS OR JOINTS ARE ALLOWED IN THE MACHINE DIRECTION OF GEOTEXTILE.
9. GEOTEXTILE FOR EMBANKMENT STABILIZATION SHEETS MUST HAVE A CONTINUOUS LENGTH OF 65 FT. MINIMUM.
10. THE TERMS ROLL AND MACHINE DIRECTION ARE USED INTERCHANGEABLY.
11. ALL JOINTS IN THE CROSS MACHINE DIRECTION MUST BE OVERLAPPED A MINIMUM OF 18 INCHES.
12. FOR GEOTEXTILE FOR EMBANKMENT STABILIZATION, SEE GEOTEXTILE FOR EMBANKMENT STABILIZATION SPECIAL PROVISION.



GEOTEXTILE DETAILS
N.T.S.

PREPARED BY: J. PARK	DATE: 12/2017
REVIEWED BY: J. BATTS	DATE: 12/2017



NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

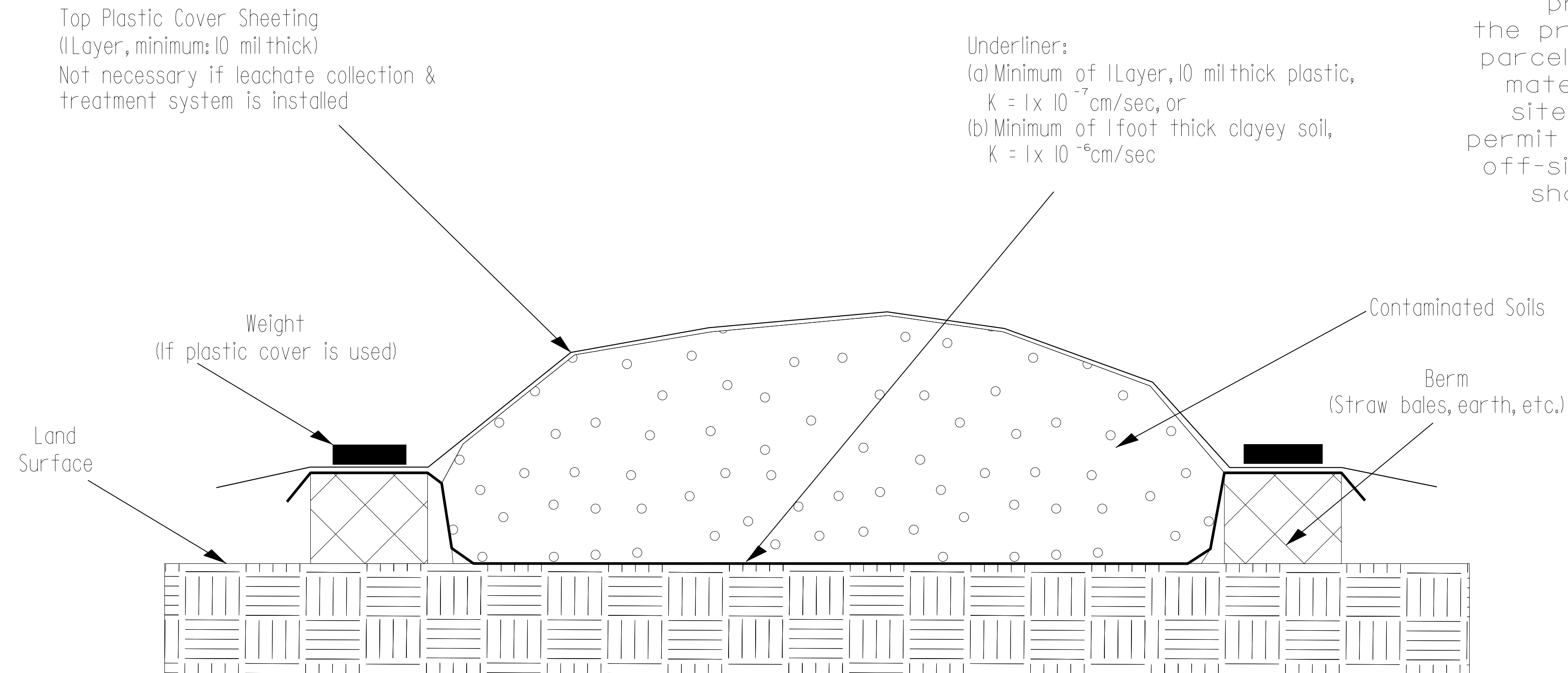
GEOTECHNICAL
ENGINEERING UNIT

REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		

GEOTEXTILE FOR EMBANKMENT STABILIZATION DETAILS

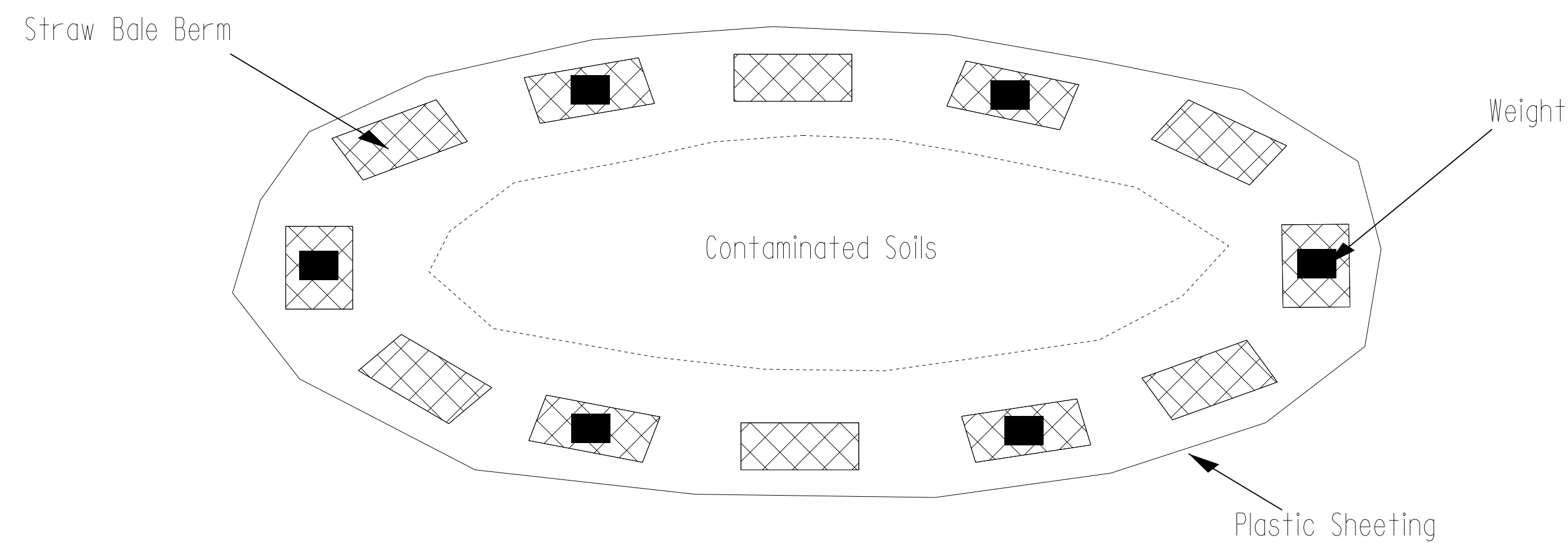
Detail for Temporary Containment of Contaminated Soil

Cross-Section View



NOTE:
The Contractor shall stockpile all contaminated soil excavated from a property in a location within the property boundaries of the source parcel. If the volume of contaminated material exceeds available space on site, the Contractor shall obtain a permit from the NCDEQ UST Section for off-site temporary storage. Stockpile shall be removed within 45 days.

Map View



GEOTECHNICAL ENGINEERING UNIT

EASTERN REGIONAL OFFICE
 WESTERN REGIONAL OFFICE
 CONTRACT OFFICE

STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 RALEIGH

STOCKPILE CONTAINMENT DETAIL					
REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		

PREPARED BY:	DATE:
REVIEWED BY:	DATE:

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

"N" = DISTANCE FROM EDGE OF LANE TO FACE OF GUARDRAIL.
TOTAL SHOULDER WIDTH = DISTANCE FROM EDGE OF TRAVEL LANE TO SHOULDER BREAK POINT.
FLARE LENGTH = DISTANCE FROM LAST SECTION OF PARALLEL GUARDRAIL TO END OF GUARDRAIL.
W = TOTAL WIDTH OF FLARE FROM BEGINNING OF TAPER TO END OF GUARDRAIL.
G = GATING IMPACT ATTENUATOR TYPE 350
NG = NON-GATING IMPACT ATTENUATOR TYPE 350

GUARDRAIL SUMMARY

SURVEY LINE	BEG. STA.	END STA.	LOCATION	LENGTH			WARRANT POINT		"N" DIST. FROM E.O.L.	TOTAL SHOUL. WIDTH	FLARE LENGTH		W		ANCHORS										IMPACT ATTENUATOR TYPE 350			SINGLE FACED GUARDRAIL	REMOVE EXISTING GUARDRAIL	REMOVE AND STOCKPILE EXISTING GUARDRAIL	REMARKS														
				STRAIGHT	SHOP CURVED	DOUBLE FACED	APPROACH END	TRAILING END			APPROACH END	TRAILING END	APPROACH END	TRAILING END	XI MOD	TYPE B-77	GREU TL-3	GREU MEDIAN	XIII	CAT-1	VI MOD	BIC	AT-1	EA	G	NG																			
-L-	17+25.82	22+00.82	LT	475.00'				18+50.00	VAR.	11'		250'		5'			1	1																											
-L-	18+88.45	21+88.45	RT	300.00'				20+15.00	VAR.	11'	150'		3'			1	1																												
-L-	28+10.82	34+73.32	LT	662.50'				33+45.00	VAR.	11'	250'		5'			1	1																												
-L-	27+98.45	29+35.95	RT	137.50'				27+98.45	VAR.	11'		50'		1'		1	1																												
-L-	17+96.98	21+88.71	RT																																391.12'										
-L-	17+96.99	21+78.87	RT																																379.47'										
-L-	27+95.92	28+92.23	RT																																96.71'										
-L-	27+85.78	28+90.45	RT																																104.53'										
TOTAL				1,575.00'												4	4																		971.83'										
DEDUCTION FOR ANCHORS				-275.00'												DEDUCTION FOR ANCHORS:																													
PROJECT TOTAL				1,300.00'																																									
SAY				1,300'																						SAY		980'																	
ADDITIONAL GUARDRAIL POST = 10 EACH																																													

REMOVAL OF EXISTING ASPHALT PAVEMENT

LINE	BEGIN STATION	END STATION	LOCATION	SQ. YD.
-L-	12+00	13+15	LT	12.82
-L-	12+00	14+20	RT	69.30
-L-	35+96	38+10	RT	36.86
-L-	36+67	38+10	LT	7.22
-L-	15+47	20+62	RT	732.37
-L-	28+44	31+85	RT	641.12
-L-	32+15	34+02	RT	142.35
-L-	14+20	15+00	LT/RT	230.18
-L-	35+02	35+96	LT/RT	264.49
TOTAL				2,136.71
SAY				2,140

BREAKING OF EXISTING ASPHALT PAVEMENT

LINE	BEGIN STATION	END STATION	LOCATION	SQ. YD.
-L-	15+00	21+81	LT/RT	963.15
-L-	27+91	35+02	LT/RT	1,083.50
TOTAL				2,046.65
SAY				2,050

SHOULDER BERM GUTTER SUMMARY

LINE	BEGIN STATION	END STATION	LOCATION	LINEAR FT.
-L-	20+50	21+75	RT	125.00
-L-	28+13	28+25	RT	12.00
TOTAL				137.00
SAY				140

COMPUTED BY: JBJ DATE: 08-28-2017
 CHECKED BY: JSG DATE: 09-06-2017

PROJECT REFERENCE NO. SHEET NO.
B-4932 *3B-2*

**DIVISION OF HIGHWAYS
 STATE OF NORTH CAROLINA**

SUMMARY OF EARTHWORK

IN CUBIC YARDS

STATION	STATION	UNCLASSIFIED EXCAVATION	UNDERCUT	EMBT +%	BORROW	WASTE
-L- 12+00.00	21+95.00	1,908		24,404	22,496	
	BEG. BRIDGE					
-L- 28+05.00	38+10.00	1,207		21,530	20,323	
END BRIDGE						
	SUBTOTAL	3,115		45,934	42,819	
-DRW1- 10+12.00	13+68.00	34		3,218	3,184	
-DRW2- 10+12.08	10+80.00	3		176	173	
	SUBTOTAL	37		3,394	3,357	
	TOTAL	3,152		49,328	46,176	
LOSS DUE TO CLEARING & GRUBBING						
	PROJECT TOTAL	3,152		49,328	46,176	
EST. 5% TO REPLACE TOP SOIL ON BORROW PIT						
					2,309	
	GRAND TOTAL	3,152			48,485	
	SAY	3,200			48,550	
ESTIMATED DDE = 3,100 CY						
ESTIMATED UNDERCUT = 950 CY						

(1-16-18)

STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS

SUMMARY OF REINFORCED SOIL SLOPES AND SLOPE EROSION CONTROL

LINE	Beginning Slope/ RSS (H:V)	Approx. Station	Ending Slope/ RSS (H:V)	Approx. Station	Location LT/RT	Reinforced Soil Slope (RSS) SY	Geocells SY	Coir Fiber Mat SY	Matting for Erosion Control SY
-L-	2.5:1	18+25.00	1.5:1	21+95.00	LT	1,850		1,850	
-L-	1.5:1	28+26.00	2.5:1	34+25.00	LT	2,000		2,000	
TOTAL SY:						3,850	0	3850*	0**

*Total square yards of "Coir Fiber Mat" is only the estimated quantity for slopes steeper than 2:1 (H:V) and may only represent a portion of the coir fiber mat quantity shown in the Item Sheets of the Proposal.

**Total square yards of "Matting for Erosion Control" is only the estimated quantity for RSS and may only represent a portion of the matting quantity shown in the Item Sheets of the Proposal.

SUMMARY OF ROCK PLATING

LINE	Beginning Slope (H:V)	Approx. Station	Ending Slope (H:V)	Approx. Station	Location LT/RT	Rock Plating Detail No. 1/2/3/4	Riprap Class* 1/2/B	Rock Plating SY
-L-	2.75:1	20+65 +/-	1.5:1	21+73 +/-	RT	2	2	600
TOTAL SY:								600

*Use Class 1, 2 or B riprap if riprap class is not shown for rock plating location.

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STATE OF NORTH CAROLINA
 DIVISION OF HIGHWAYS

PARCEL INDEX SUMMARY

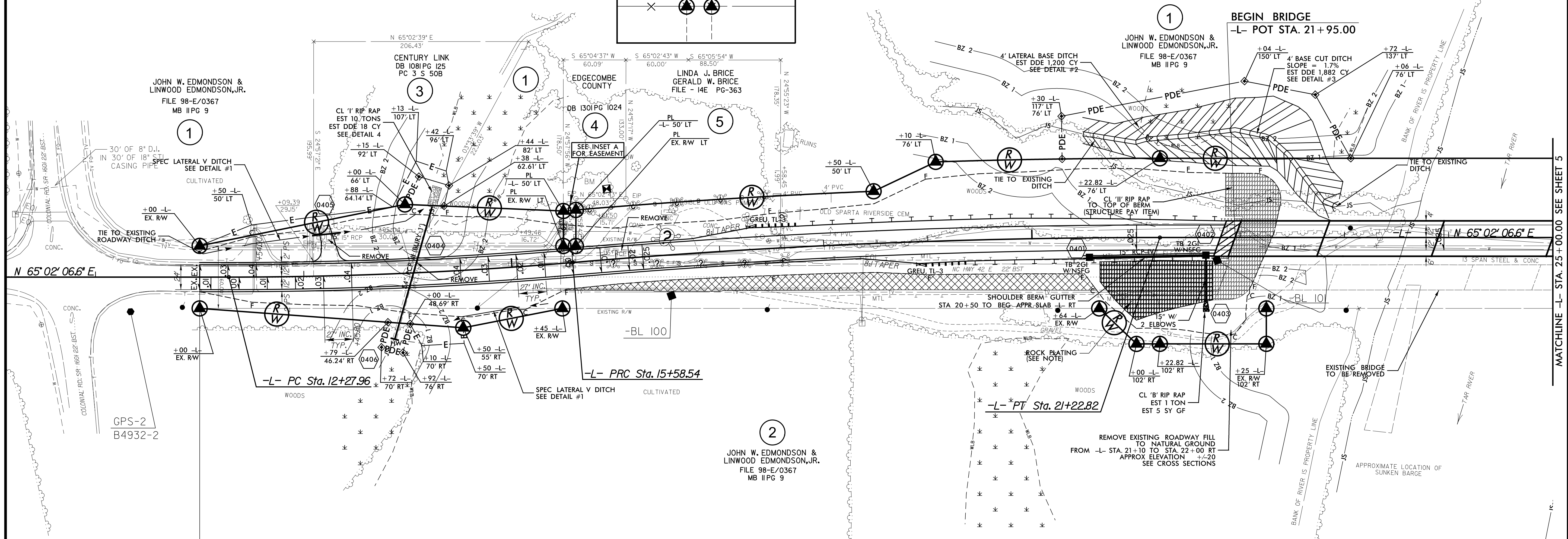
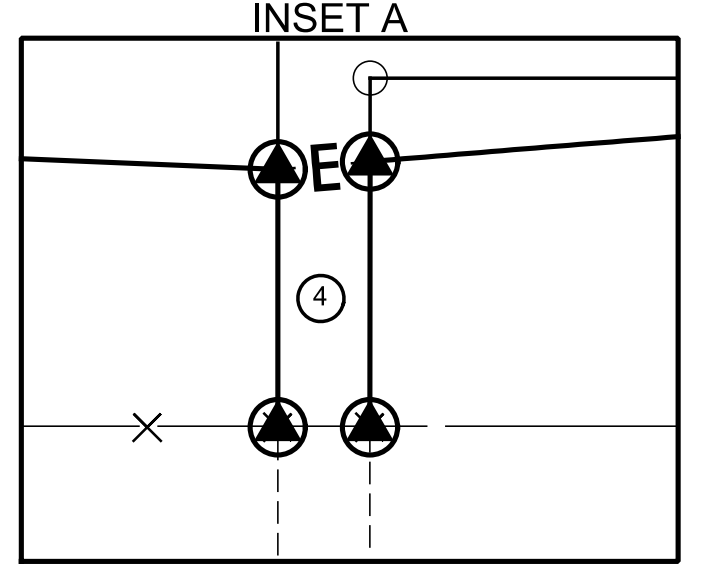
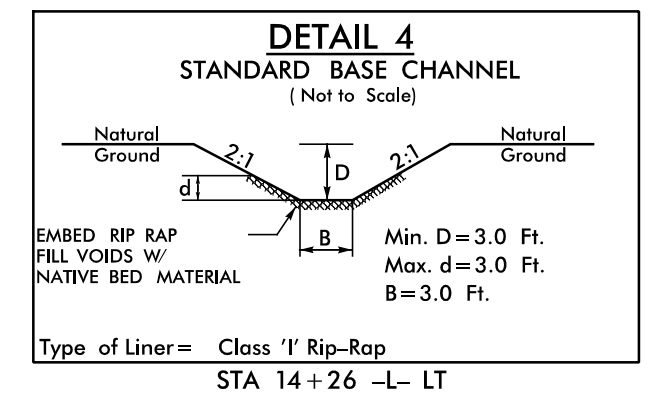
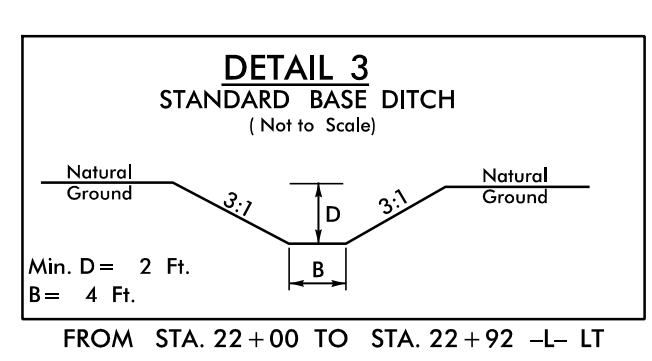
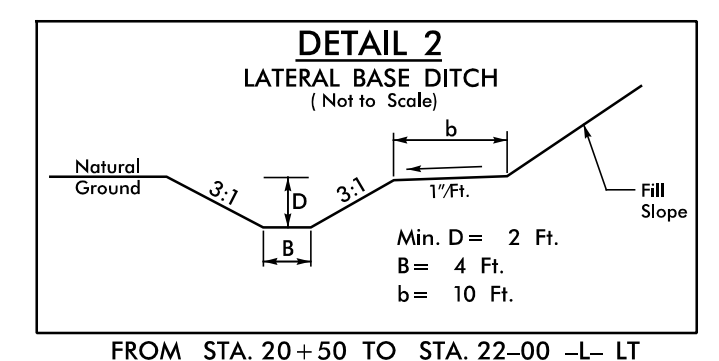
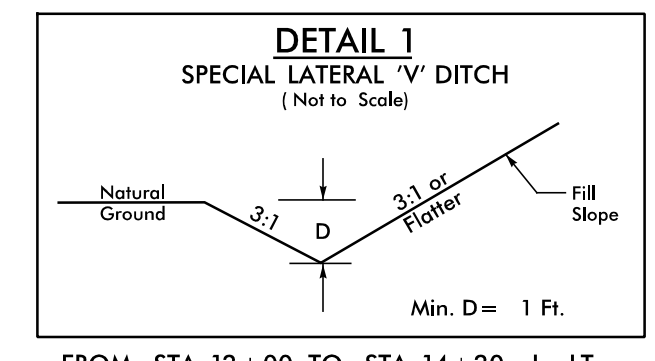
PARCEL NO.	SHEET NO.	PROPERTY OWNER NAME
1	4	JOHN W. EDMONDSON & LINWOOD EDMONDSON, JR.
2	4	JOHN W. EDMONDSON & LINWOOD EDMONDSON, JR.
3	4	CENTURY LINK
4	4	EDGEcombe COUNTY
5	4	LINDA J. BRICE, GERALD W. BRICE
6	5	THE STATE OF NORTH CAROLINA
7	5	ALICE J. HARRELL, EUGENIA J. WADE
8	5	JERRY B. TYSON
9	5	EUGENIA J. WADE

PROJECT REFERENCE NO. B-4932	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
Prepared by 	
1/23/2018	

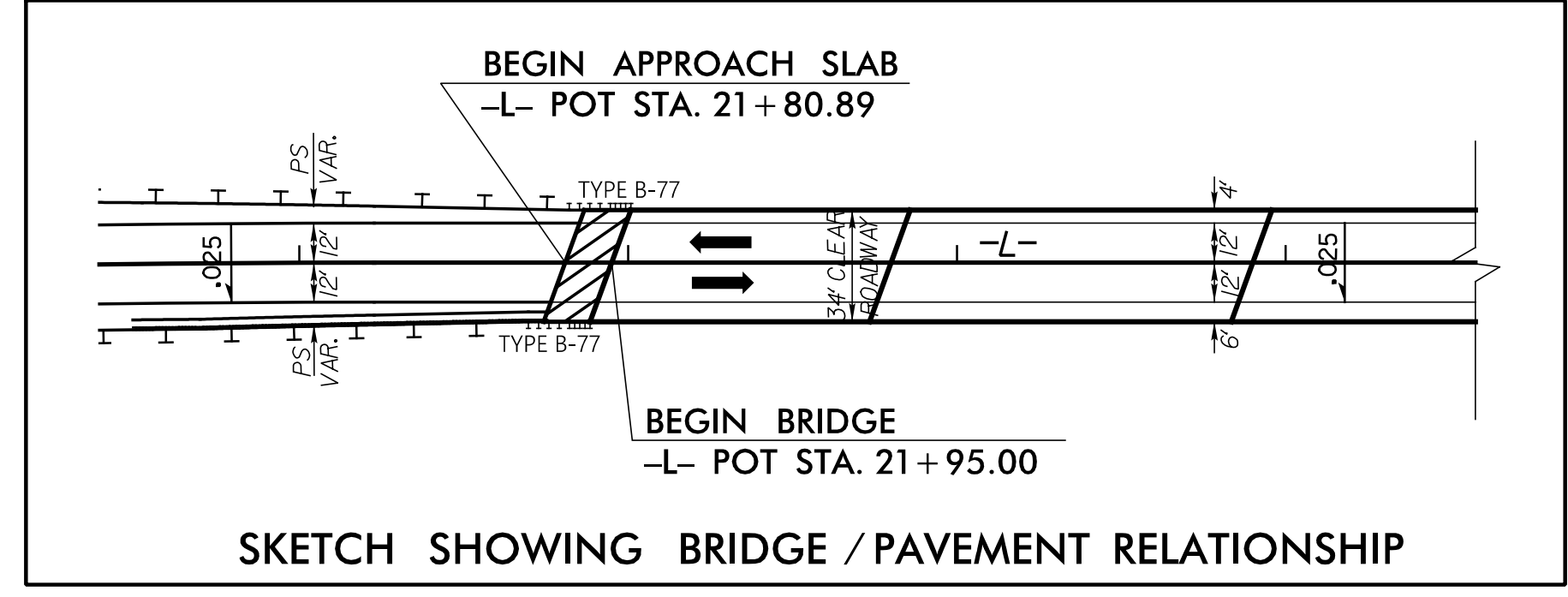
DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

-L- CURVE DATA

PI Sta 13+93.35 Δ = 4° 52' 08.6" (LT) D = 1' 28" 22.4" L = 330.58' T = 165.39' R = 3,890.00' SE = .04 RO = 107'	PI Sta 18+40.85 Δ = 4° 52' 08.6" (RT) D = 0' 51" 46.4" L = 564.28' T = 282.31' R = 6,640.00' SE = .025 RO = 67'
--	--



BEGIN PROJECT B-4932
-L- POT STA. 12+00.00



NOTES:

USE REINFORCED SOIL SLOPES (RSS)
AT -L- STA. 18+25+/- (2.5:1 SLOPE) TO 21+95+/- (1.5:1 SLOPE) LT
1,850 SY OF RSS, 1,850 SY OF COIR FIBER MAT
(SEE SHEETS 2G-1 THRU 2G-4)

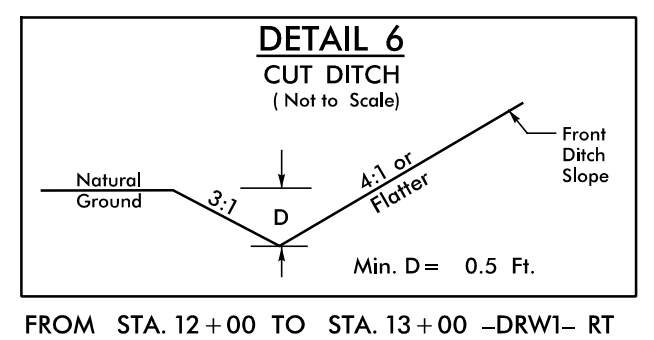
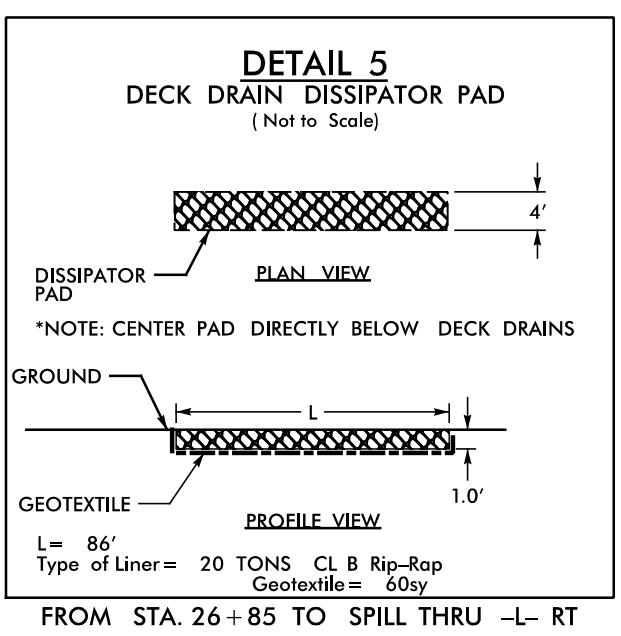
USE ROCK PLATING DETAIL NO. 2
AT -L- STA. 20+65+/- TO -L- STA. 21+73+/- RIGHT.
EXTEND ROCK PLATING LIMITS TO 2.75:1 (H:V) SLOPES.
600 SY, (SEE STANDARD ROCK PLATING DETAIL)

NOTE: TEMPORARY SIGNAL WILL BE USED FOR ONSITE DETOUR
FOR -L- PROFILE SEE SHEET 6
FOR STRUCTURE PLANS SEE SHEET S-1 THRU S-46

8/17/99
REVISIONS
GPS-2 B4932-2
12/26/2017
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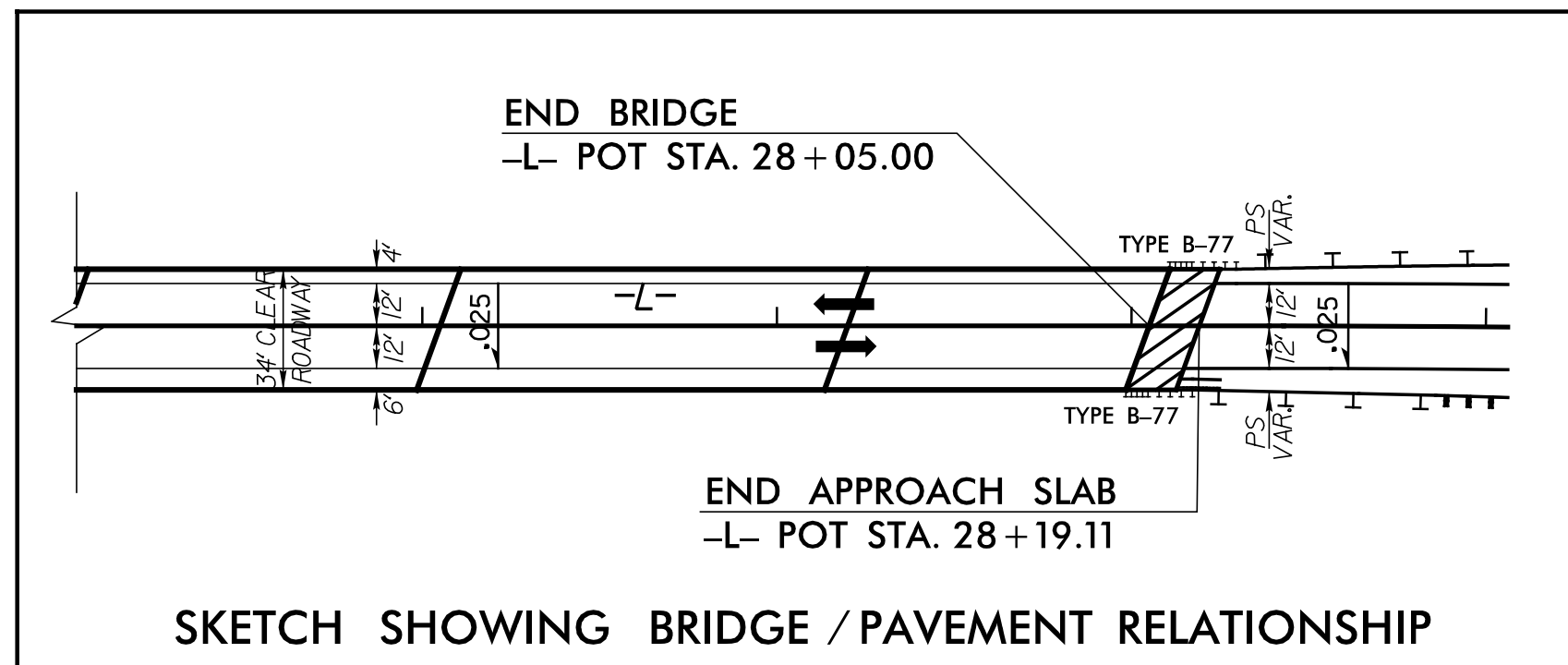
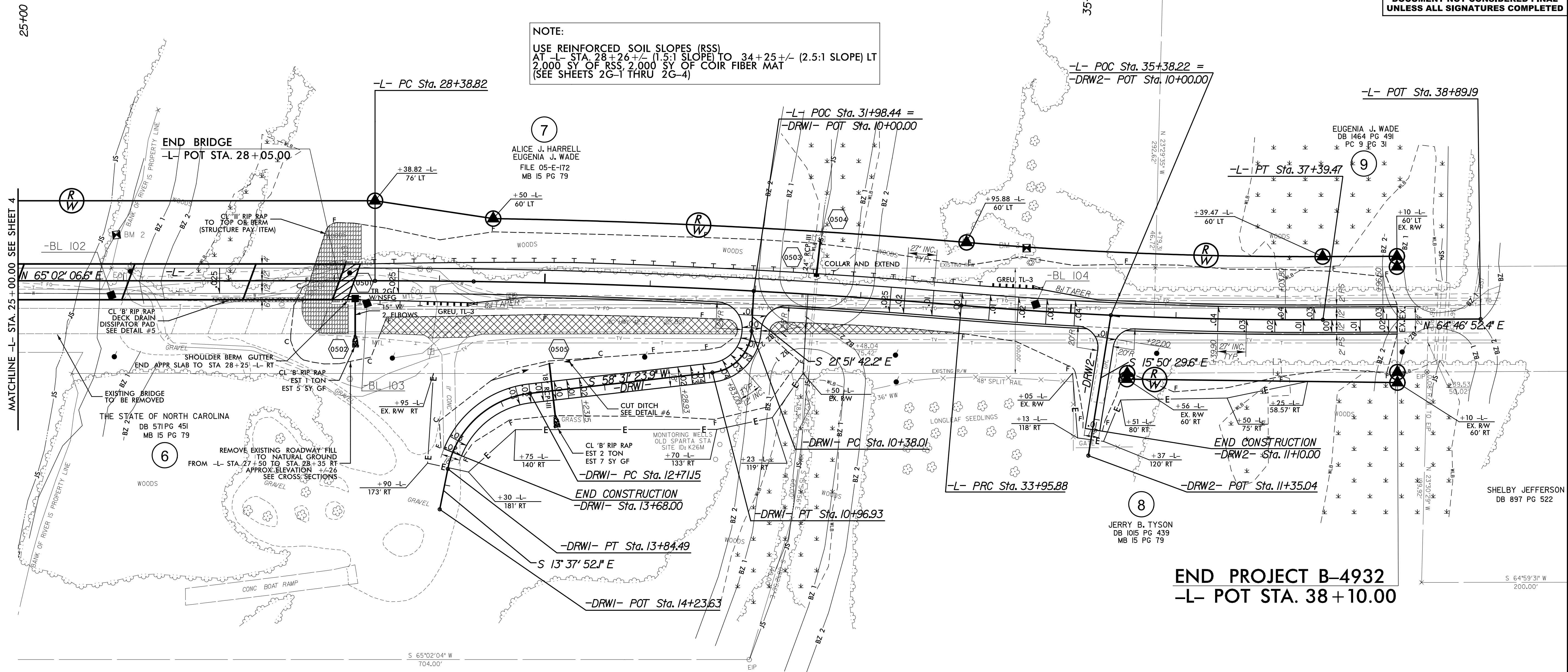
**DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED**

-L- CURVE DATA		-DRWI- CURVE DATA	
PI Sta 31+7.51	PI Sta 35+67.79	PI Sta 10+73.49	PI Sta 13+36.72
$\Delta = 4' 48" 24.6" (RT)$	$\Delta = 5' 03" 38.8" (LT)$	$\Delta = 80' 23" 06.1" (RT)$	$\Delta = 72' 09" 16.0" (LT)$
$D = 0' 51" 46.4"$	$D = 1' 28" 22.4"$	$D = 136' 25" 06.7"$	$D = 63' 39' 43.1"$
$L = 557.06'$	$L = 343.59'$	$L = 58.93'$	$L = 113.34'$
$T = 278.69'$	$T = 171.91'$	$T = 35.48'$	$T = 65.57'$
$R = 6,640.00'$	$R = 3,890.00'$	$R = 42.00'$	$R = 90.00'$
$SE = .025$	$SE = .04$	$SE = .04$	$SE = .03$
$RO = 67'$	$RO = 107'$	$RO = 48'$	$RO = 36'$



DECK DRAINS REQUIRED
6" DECK DRAINS ON 12' CENTERS
FROM STA. 26+90 TO STA. 27+02 RT.
FROM STA. 27+20 TO STA. 27+92 RT.

NOTE:
USE REINFORCED SOIL SLOPES (RSS)
AT -L- STA. 28+26+/- (1.5:1 SLOPE) TO 34+25+/- (2.5:1 SLOPE) LT
2,000 SY OF RSS, 2,000 SY OF COIR FIBER MAT
(SEE SHEETS 2G-1 THRU 2G-4)



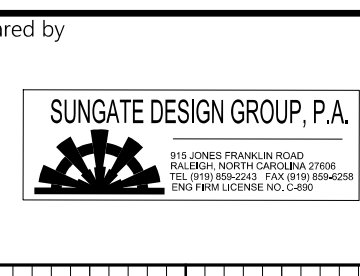
NOTE: TEMPORARY SIGNAL WILL BE USED FOR ONSITE DETOUR
FOR -L- PROFILE SEE SHEET 6
FOR -DRWI- & -DRW2- PROFILES SEE SHEET 7
FOR STRUCTURE PLANS SEE SHEET S-1 THRU S-46

REVISIONS

8/17/99
1/29/2017
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5/28/99

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PROJECT REFERENCE NO. B-4932	SHEET NO. 6
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
SEAL 014493 SUNGATE DESIGN GROUP, P.A.	SEAL 26971 SUNGATE DESIGN GROUP, P.A.

1/23/2018

BM#1
RR SPIKE IN BASE OF 36" OAK
ELEV.=41.93'
-L- STA.15+96, 67' LT

-L-

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 42,400	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 38.6	FT
BASE DISCHARGE	= 49,600	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 40.18	FT
OVERTOPPING DISCHARGE	= 67,000	CFS
OVERTOPPING FREQUENCY	= <500	YRS
OVERTOPPING ELEVATION	= 40.5	FT
DATE OF SURVEY	= 11-24-15	
W.S.ELEVATION AT DATE OF SURVEY	= 15.4	FT

BEGIN BRIDGE
-L- STA. 21+95.00

PIPE HYDRAULIC DATA
54" RCP Sta.14+06 -L-

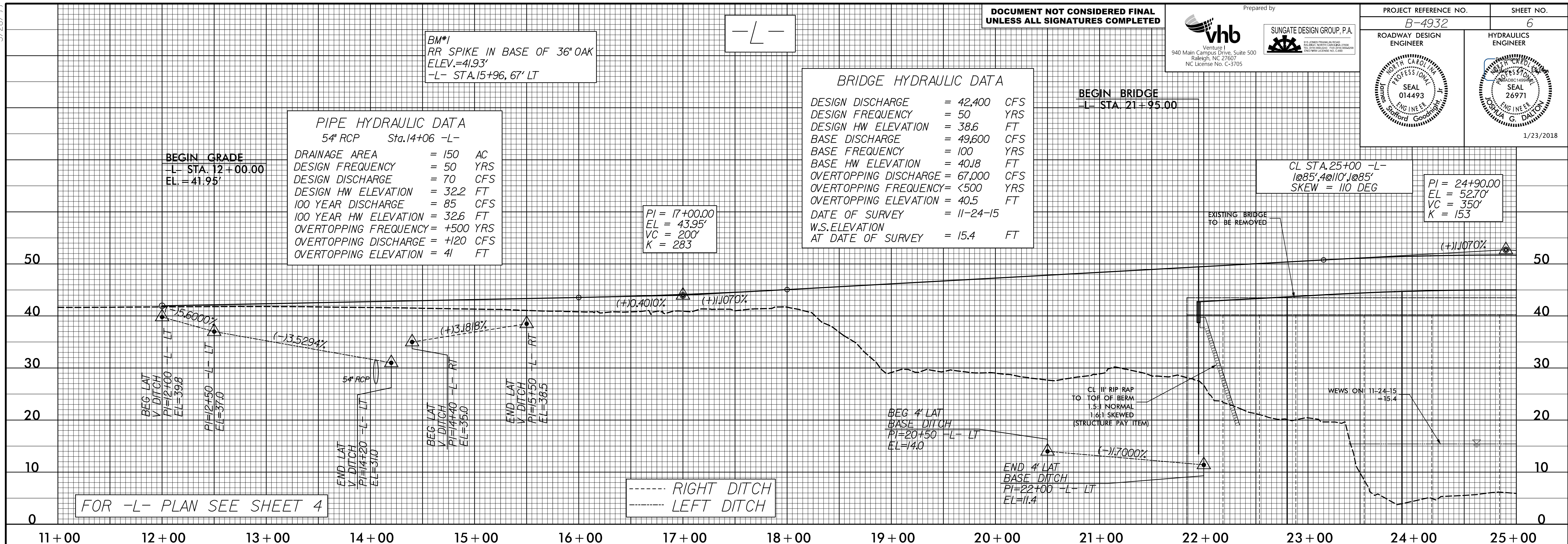
DRAINAGE AREA	= 150	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 70	CFS
DESIGN HW ELEVATION	= 32.2	FT
100 YEAR DISCHARGE	= 85	CFS
100 YEAR HW ELEVATION	= 32.6	FT
OVERTOPPING FREQUENCY	= +500	YRS
OVERTOPPING DISCHARGE	= +120	CFS
OVERTOPPING ELEVATION	= 41	FT

BEGIN GRADE
-L- STA. 12+00.00
EL.=41.95'

PI = 17+00.00
EL = 43.95'
VC = 200'
K = 283

CL STA.25+00 -L-
1@85', 4@110', 1@85'
SKEW = 110 DEG

PI = 24+90.00
EL = 52.70'
VC = 350'
K = 153



FOR -L- PLAN SEE SHEET 4

--- RIGHT DITCH
--- LEFT DITCH

BM#2
RR SPIKE IN BASE OF 14" GUM
ELEV.=22.03'
-L- STA.25+93, 43' LT

-L-

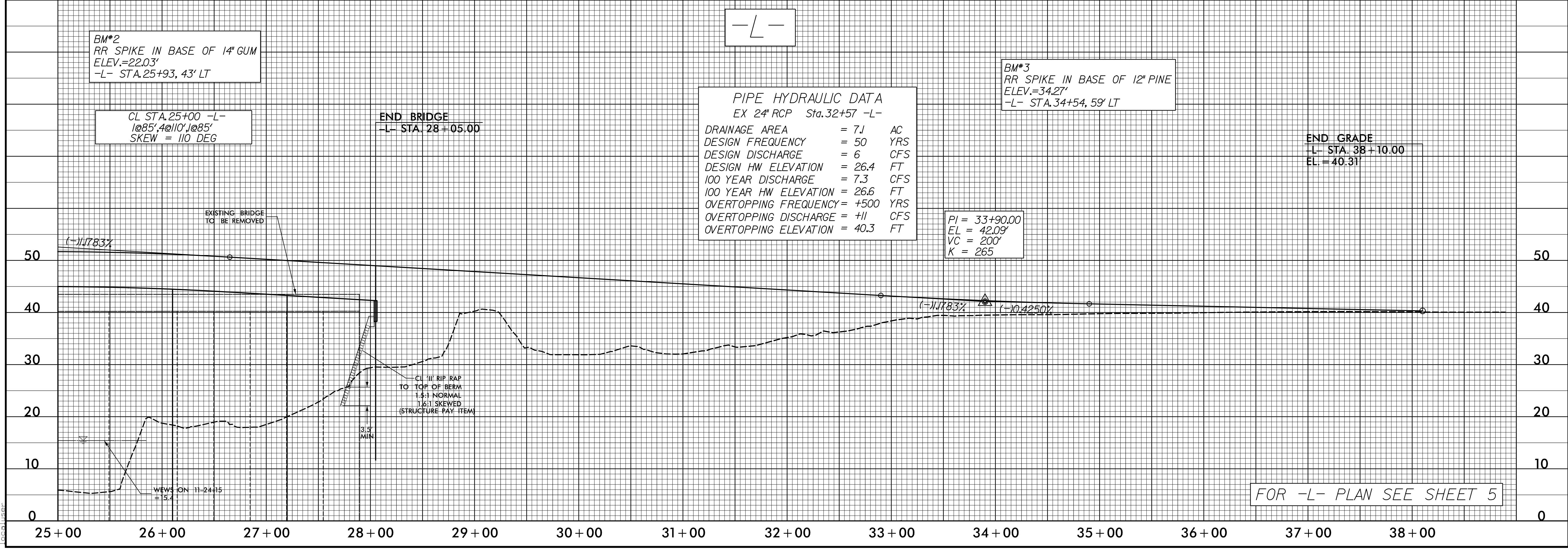
PIPE HYDRAULIC DATA
EX 24" RCP Sta.32+57 -L-

DRAINAGE AREA	= 7.1	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 6	CFS
DESIGN HW ELEVATION	= 26.4	FT
100 YEAR DISCHARGE	= 7.3	CFS
100 YEAR HW ELEVATION	= 26.6	FT
OVERTOPPING FREQUENCY	= +500	YRS
OVERTOPPING DISCHARGE	= +11	CFS
OVERTOPPING ELEVATION	= 40.3	FT

BM#3
RR SPIKE IN BASE OF 12" PINE
ELEV.=34.27'
-L- STA.34+54, 59' LT

PI = 33+90.00
EL = 42.09'
VC = 200'
K = 265

END GRADE
-L- STA. 38+10.00
EL = 40.31'



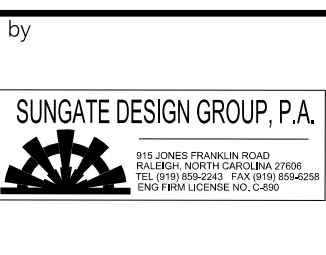
FOR -L- PLAN SEE SHEET 5

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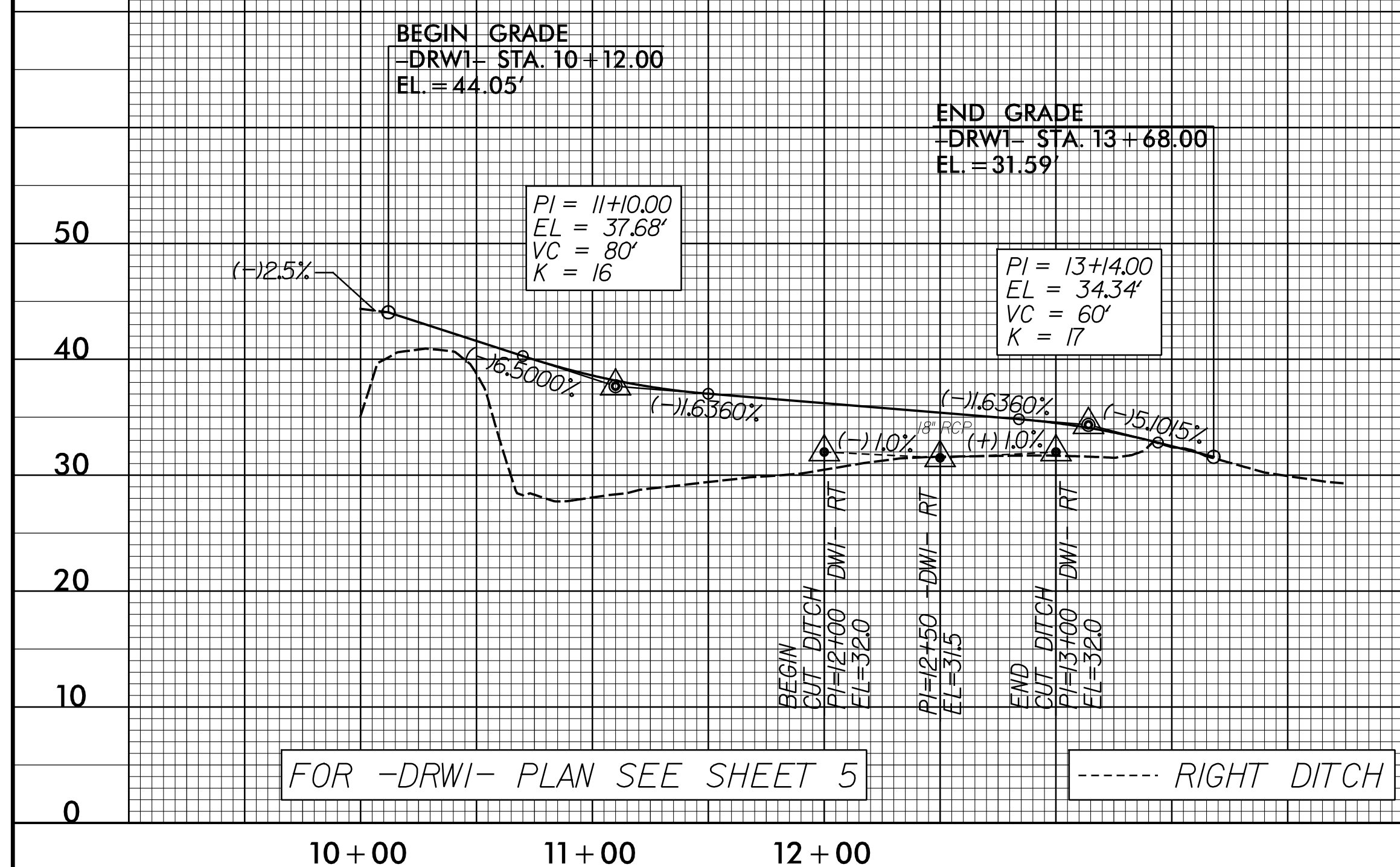
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-DRW1-

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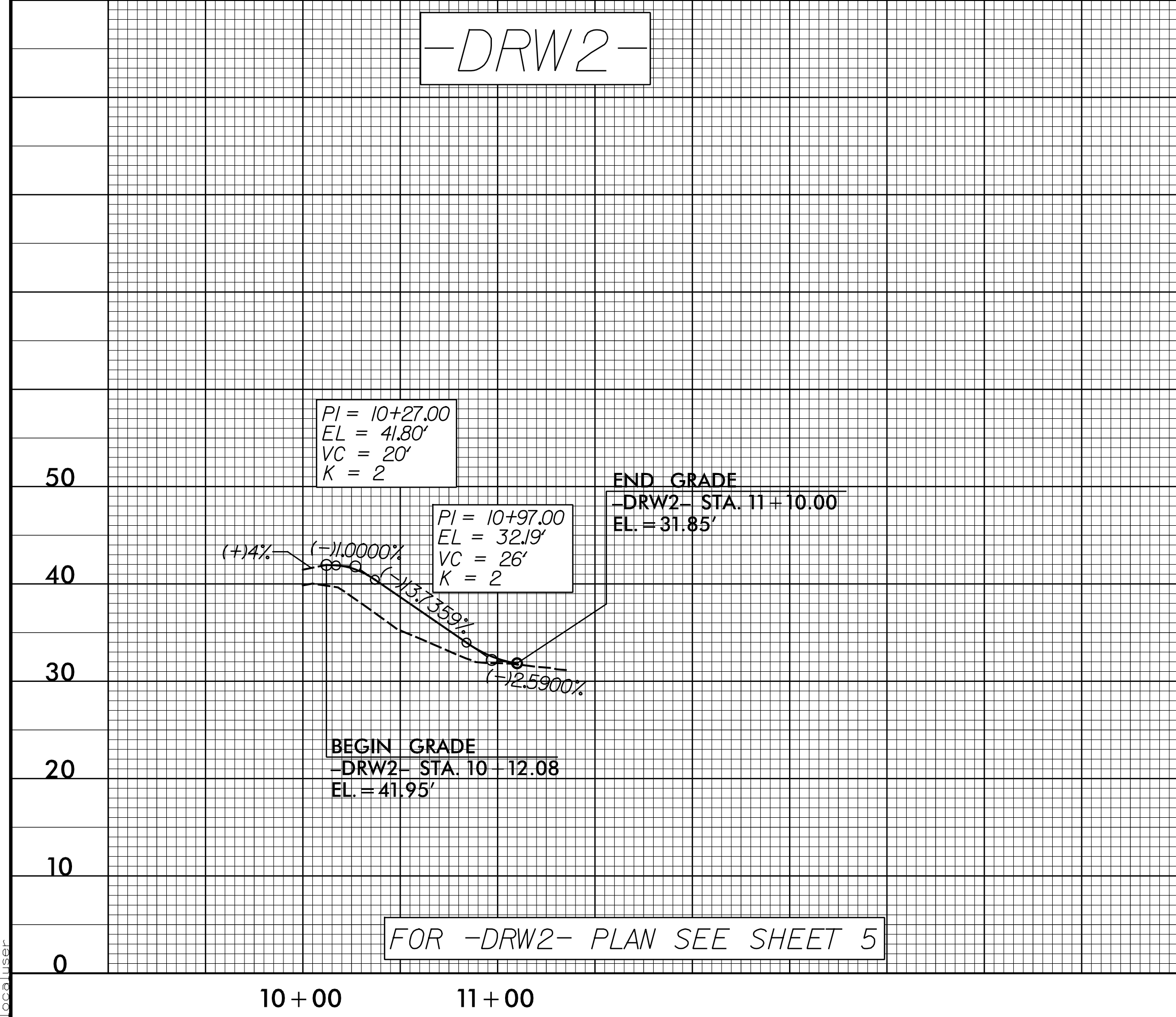
PROJECT REFERENCE NO. B-4932	SHEET NO. 7
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



PIPE HYDRAULIC DATA
18" RCP Sta.12+50

DRAINAGE AREA	= 0.3	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 11	CFS
DESIGN HW ELEVATION	= 32.0	FT
100 YEAR DISCHARGE	= 12	CFS
100 YEAR HW ELEVATION	= 32.0	FT
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING DISCHARGE	= 2+	CFS
OVERTOPPING ELEVATION	= 33.0	FT

-DRW2-



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1/23/2018